Issue No. 12

November 2001

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florida aquaculture

Winter 2001-02: What's in Store

The Florida Climate Center at Florida State University has released a winter weather prediction that does not look good for Florida aquaculture. Damaging freeze events of at least three nights can be expected in central and northeast Florida during the upcoming winter season.

Last winter a prolonged cold spell triggered extensive kills of tropical ornamental fish and tilapia on farms in central and south-central Florida. A similar cold snap or snaps are likely this winter.

The Florida Climate Center examined sea surface temperatures in the tropical Pacific and decided this upcoming winter will be a neutral year. In neutral years (neither El Niño nor La Niña conditions) the position of the polar jet is highly variable and tends to meander over the entire continent. Due to this "unstable" pattern, the southern tier of the United States is more susceptible to the dramatic dips (or troughs) in the jet stream that push arctic air masses south from Canada. These are the severe arctic outbreaks that lead to freezing temperatures in the central and southern parts of Florida.

An examination of minimum temperatures from weather stations all over Florida from the past 50 years shows that a severe freeze event (28°F or colder) is up to three times more likely to occur in neutral years than during El Niño or La Niña. They also examined the occurrence of past events where freezing temperatures were recorded for three or more nights in a row. Similar to a single night of freezing temperatures, large portions of central and northeast Florida are more than twice as likely to see an extended freeze event this winter.

This prediction is based upon El Niño and La Niña. These climate shifts are well-known and are used to predict seasonal temperature and precipitation trends up to 12 months in advance. Their impact is particularly strong in Florida and the southeast United States. During the winter and spring months, El Niño brings plentiful rainfall (40 percent more than normal) and cooler temperatures to Florida. The last El Niño occurred in 1997-1998 and was one of the strongest on record. Conversely, La Niña is associated with warm and dry winter and spring seasons in Florida and the Southeast. A persistent La Niña is responsible for the warm winter temperatures and drought conditions in Florida for the past three years. While El Niño and La Niña affect the average temperature of the winter season as a whole, they tend to sup-

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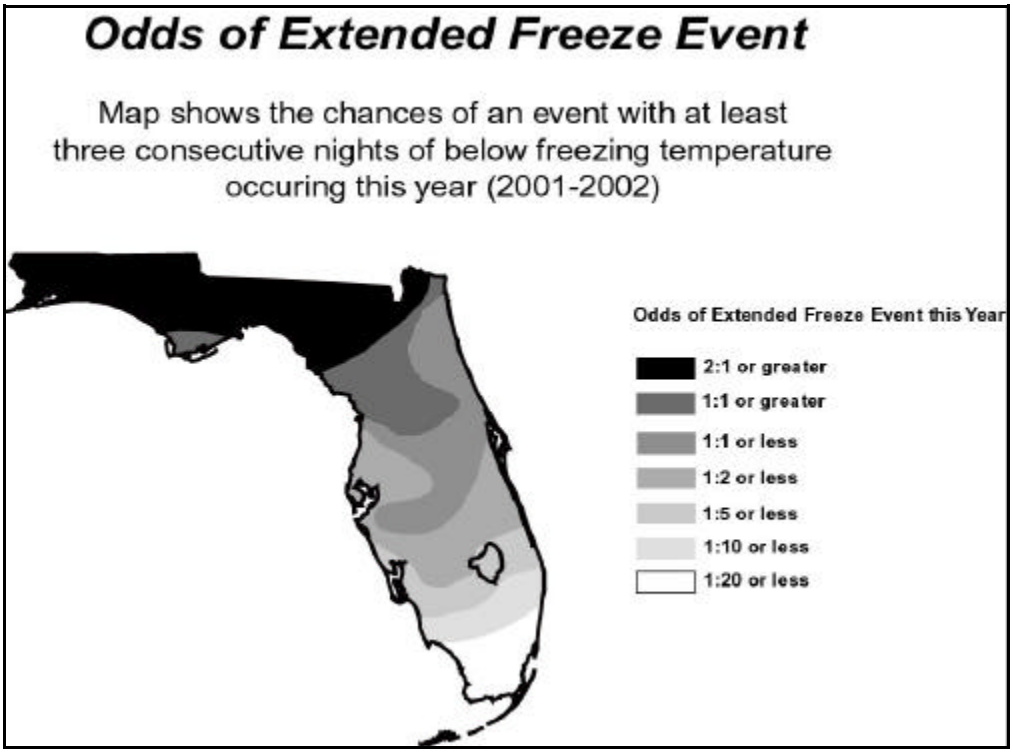
FLORIDA DEPARTMENT OF AGRICULTURE AND CONSUMER SERVICES

DIVISION OF AQUACULTURE

press the severe arctic outbreaks of cold air that cause damaging freezes. El Niño usually has a strong subtropical jet that "blocks" arctic air masses from entering Florida. La Niña limits the movement of the polar jet over the United States, steering winter storms and stronger cold fronts to our north.

The probability of freeze events this coming winter is presented as a map in terms of the odds of at least three consecutive nights of below freezing temperatures. In the black area, the odds of three nights of freezing weather are 2:1, or greater, this year. Likewise, the odds are better than even in the dark gray areas and about even in the light gray areas. The odds of three nights of freezing weather declines in the lighter gray areas, and in the white areas of South Florida freeze events will be rare.



The analysis and map for this article was generously provided by Dr. James O'Brien, State Climatologist, and his staff at the Florida Climate Center, Florida State University.

The Center has produced a free booklet entitled, "2001/2002 Winter Freeze Forecast for Florida," For a copy, contact David Zierden at 850-644-3417 or zierden@coaps.fsu.edu.

FAQs: La Niña and El Niño

What's the difference between La Niña and El Niño?
El Niño and La Niña are extreme phases of a naturally occurring climate cycle referred to as El Niño/Southern Oscillation. Both terms refer to large-scale changes in sea-surface temperature across the eastern tropical Pacific. Usually, sea-surface readings off South America's west coast range from the 60°s to 70s°F, while they exceed 80°F in the "warm pool" located in the central and western Pacific. This warm pool expands to cover the tropics during El Niño, but during La Niña, the easterly trade winds strengthen and cold upwelling along the equator and the west coast of South America intensifies. Sea-surface temperatures along the equator can fall as much as 7°F below normal.

Why do El Niño and La Niña occur?
El Niño and La Niña result from interaction between the surface of the ocean and the atmosphere in the tropical Pacific. Changes in the ocean impact the atmosphere and climate patterns around the globe. In turn, changes in the atmosphere impact the ocean temperatures and currents. The system oscillates between warm (El Niño) to neutral or cold (La Niña) conditions on average every two or seven years.

Does a La Niña typically follow an El Niño?
No, a La Niña episode may, but does not always follow, an El Niño.

* * *

This information was taken from a web site maintained by the National Weather Service's Climate Prediction Center (http://www.cpc.ncep.noaa.gov/).

Sources of Weather Information

The Florida Climate Center, http://www.coaps.fsu.edu/climate_center/, provides climate data, information, and services for Florida and the United States. The Center strives to provide climate data, extreme weather event information and special weather analysis. They are affiliated with the National Climatic Data Center (NCDC) in Asheville, North Carolina, and the Southeast Regional Climate Center (SERCC) in Columbia, South Carolina.

The University of Florida maintains the Florida Automated Weather Network (FAWN) at http://fawn.ifas.ufl.edu/. FAWN is designed to assist farmers with climate prediction information, management tools and weather data. This site also includes a number of hotlinks to weather-related sites and provides up-to-date weather information through a system of automated weather stations distributed throughout the state.

Winter Temperature Rule of Thumb

The Florida Climate Center provides this simple "rule of thumb" to predict the severity of approaching cold fronts.

If the high pressure center dips south of Dallas, Texas, there is a good chance Florida will see freezing temperatures. If the high stays north of Dallas, Florida is probably safe. Remember, this is just a rule of thumb and you should monitor the official National Weather Service forecasts and current conditions from FAWN for up-to-date information.

The Farmer's Almanac Says

The Farmer's Almanac web site has not predicted winter weather for the Southeast, but indirectly confirms this will be a cold winter: "According to our time-tested formula, winter will begin early, with significant snows possible for the northern states during late November 2001. We also expect another very active winter weather pattern, especially in the Northeast. For there, we predict a few heavy snowstorms and even a near-blizzard (in the second week of February). Above-average precipitation will fall in the East and the Pacific Northwest, but the area from the Plains to the Great Lakes will be drier than normal." Their weather analysis and hot links to a variety of weather related web sites is posted at http://www.farmersalmanac.com.

The Second International Conference on Marine Ornamentals will be November 26 - December 1, 2001 at the Wyndham Palace Resort and Spa, Lake Buena Vista, Florida.

The conference includes over 70 speakers, a trade show, tours and excellent networking opportunities for anyone interested in marine ornamentals. Special emphasis will be placed on collection, culture and conservation topics.

Take advantage of this international meeting and attend. Visit the conference web site (http://www.ifas.ufl.edu/%7Econferweb/MO) or call (352-392-5930) to register.

BMP Notes

Who can buy live restricted species?

We hear this question most often from our certified tilapia producers. The Best Management Practices for restricted non-native species limits live sales to those individuals who have written authorization to possess a restricted species. As the seller it is your responsibility to ask the purchaser for proof of this authorization. If you are selling to an aquaculturist, that person must have both an Aquaculture Certificate of Registration and letter authorizing the farmer to possess a restricted species. These are issued by the Division of Aquaculture. Retailers, live haulers and recreational pond owners acquire their authorization from the Florida Fish and Wildlife Conservation Commission (FWC). Purchasers who do not have these authorizations can contact the Division. We can fast track the authorization process so that sales are not lost and we can provide the FWC forms if needed. Give us a call. The intent of the Aquaculture BMP program is to promote aquaculture development and protect Florida's environment.

Sales records of all live restricted species must be maintained and available for inspection for up to two years. If you are a producer of restricted species our staff will be asking to review these records during their regular BMP compliance visits.

If you have a question about BMPs, call or send them to Kal Knickerbocker, 850-410-0875 or knickek@doacs.state.fl.us.

Shrimp and Oyster Market Info Available

The Bureau of Seafood and Aquaculture Marketing has completed the coordination of two marketing research grants entitled "Identifying and Assessing Potential Direct Markets for Farm-raised Shrimp Grown on Small Farms" and "New Oyster Product: Processing and Market Research." The final reports for both these grants are available on the Bureau's website, www.fl-seafood.com.

In addition, two new grants have been awarded to the Bureau on behalf of the seafood and aquaculture industries for 2001-2002. These research projects are entitled "Market Analysis of Hispanic Consumer Attitudes Towards Seafood" and the "Gulf Oyster Industry Program: Integrated Oyster Market Research, Product Development and Evaluation, Promotion and Consumer Education Program for the Gulf of Mexico's Oyster Industry."

For additional information regarding any of these projects, call Tom Thomas or Paul Balthrop, 850-488-0163.

FDA Grant to Improve Shellfish Plant Inspections

The Division of Aquaculture has received a $50,000 grant from the U.S. Food and Drug Administration to develop and implement a model custom software and pen tablet computer inspection program. Through the use of this new system shellfish processing plant inspection, current shellfish sanitation, and critical food safety information will be made readily available to the plant inspectors, program managers and the U.S. Food and Drug Administration via an electronic connection to an Internet-based database. Time between inspections, in-plant inspection time, report errors and paperwork will be reduced and, most importantly, communication between plant owners and managers and the inspection staff improved.

The Division will field test and provide the system model for eventual adoption by other Interstate Shellfish Sanitation Conference member states. For additional information, contact Bobby Bickley at 850-488-5471.

Division of Aquaculture

The Division of Aquaculture is the newest division within the Florida Department of Agriculture and Consumer Services and was created by the Florida Legislature in 1999. 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 submerged sovereign land leases for the culture of shellfish or live rock.

The aquaculture and shellfish industry can acquire information 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. State offices are located in Apalachicola, Bartow, Cedar Key, Murdock, Palm Bay, Panama City and Titusville. Internet users can visit the Division's web site at **http://www.FloridaAquaculture.com** for industry and program information.

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