

## **FAQs**

### **January 2010 cold weather fish kills**

*Updated: 01/29/2010*

#### **How many fish have been killed as a result of the cold weather in early January?**

We don't know and most likely will not know exactly how many fish were killed. Fish deaths resulting from long-term exposure to cold have been reported statewide. The widespread nature of this event, across multiple species and aquatic habitats statewide, makes it nearly impossible to quantify the magnitude of these fish kills, especially by species or region. However, FWC scientists are collecting information from around the state to assess the impacts.

#### **What kinds of fish were affected?**

Fish from many waterways statewide were affected, including freshwater lakes, ponds, canals, estuaries and near-shore coastal waters. Reports to FWC offices, the FWC Fish Kill Hotline and observations by FWC staff in the field indicate that a wide variety of freshwater and saltwater species have been affected by severe cold temperatures.

Some of the marine species include snook, tarpon, bonefish, mullet, red and black drum, catfish, groupers (Nassau, black, gag, red and goliath), snapper (red, lane and mangrove), grunts, jacks, ladyfish, barracuda, parrotfish, several baitfish species, stingrays, and sharks.

Freshwater species impacted are almost exclusively exotic species such as tilapia, brown hoplo, and suckermouth catfish. The only regulated freshwater species that experienced significant impacts was the peacock bass in the southern part of the state.

#### **Are all impacts of fish kills negative?**

No. Impacts of these fish kills can be viewed as both positive and negative. Two positive impacts are that native freshwater fish species were largely unaffected by cold temperatures, so exotic freshwater fish primarily died-off, and all but one of the exotic species killed were from illegal introductions and are generally considered undesirable (note: a significant recreational fishery has developed for several illegally introduced fish including the oscar and Mayan cichlid). A short-term, negative impact has been the widespread kill of the legally introduced, recreationally important butterfly peacock bass.

## **What type of data will scientists use to assess the impacts of these cold weather fish kills?**

Information from the numerous cold-related reports made to the FWC's Fish Kill Hotline is being compiled and reviewed to provide scientists with a general picture of the geographic extent of the event (i.e., which counties reported cold-related kills), as well as a general picture of the number of species affected and some information on the size-classes of species affected. Reports also indicate if the kills continue or if the fish begin to show signs of disease.

This anecdotal information is helpful to provide a broad perspective of the impacts to the state's fisheries. However, for a variety of reasons, counts of dead fish are not considered an accurate measure of the overall effect on fish populations. First, agencies do not have the resources to count all of the dead fish. They cannot verify each count nor the species reported. Second, the numbers reported are not reliable for scientific analysis as some dead fish are never seen by anybody because they are consumed by scavengers before they ever float or wash up on shore. Other fish may be moved by currents, winds, or tides and end up in inaccessible locations, such as undeveloped mangrove shorelines, where they might not be observed.

Unfortunately, because it is virtually impossible to accurately determine the number of fish that have died or to know the actual population sizes of many fish species, it makes the task of measuring the overall effects of this cold event challenging.

The only reliable way to assess the impact of massive mortality events like this cold kill or a red tide is to look at data from scientific, long-term surveys. These surveys are long-term, distributed over different areas of the state, and follow standardized, statistically-based sampling protocols. Therefore, they provide a "before-and-after" perspective of the extent of the impact. Scientists use catch rate data from their surveys to evaluate if there are changes over time which will provide an estimate of the relative level of impact.

## **When will the data be available?**

As soon as our scientists have collected and analyzed enough data to develop conclusions. Some of the initial information from reports to the FWC's Fish Kill Hotline is available via the online database at <http://research.myfwc.com/fishkill/>.

It will take additional time for researchers to collect and analyze long-term survey data which may provide a better picture of how much our fish populations were impacted by this cold-kill. Some information may be available approximately two to three months following the event, while additional details will become available over the course of a year or more.

The FWC's Fisheries-Independent Monitoring program has been sampling fish populations in Florida's major estuaries for nearly 20 years. This program has established annual abundance estimates for a wide variety of saltwater species throughout Florida, including snook, red drum, and spotted seatrout. Standardized monthly sampling of adult, sub-adult, and juvenile snook stocks in Tampa Bay, Charlotte Harbor and the Indian River Lagoon will be used by FWC scientists to measure any relative changes in overall snook abundance in these systems, possibly related to this cold event. Scientists will also be able to assess whether there are changes in the recruitment of young fish into these systems, too.

By continuing these long-term sampling efforts, FWC scientists will be able to look for possible near-term effects on Florida fish populations, but also get some measure of the relative recovery of these populations over time.

**Why did the FWC issue the executive order establishing a longer closed season for snook and establishing closed seasons for bonefish and tarpon?**

The FWC issued the executive order for snook, bonefish and tarpon [http://myfwc.com/docs/Newsroom/EO\\_10\\_03\\_SnookTarponBonefish.pdf](http://myfwc.com/docs/Newsroom/EO_10_03_SnookTarponBonefish.pdf) in an abundance of caution to protect these important Florida game fish species from further harm caused by the recent prolonged cold weather in the state. The order was a precautionary management measure as a result of the potential impacts of the cold kill. The FWC took these steps to provide protection for these species and to give research scientists time to evaluate the extent of damage that may have been done to the stocks of these species during the unusual cold-weather period. We also recognized the importance of providing additional protection for snook during their spring spawning season.

**What science did the FWC take into consideration before issuing the executive order to extend the snook closed season and implement closed seasons for bonefish and tarpon?**

This action was taken after consultation with agency research staff that was (and is) actively monitoring and collecting information on widespread fish kill reports received from the field. The FWC determined that temporary protective action was needed to give research scientists time to evaluate the extent of damage that may have been done to the stocks of these species during the unusual cold-weather period.

**Why didn't the FWC issue protective orders for other saltwater species affected by the cold weather?**

While reports received indicated that many saltwater species were impacted by cold weather, similar cold weather events in the past have caused substantial snook mortality and it was clear that the 2010 event appeared to be especially severe for this species. The FWC also received several reports of cold weather impacts on bonefish and tarpon, so action was taken as a precautionary measure to protect these important Florida game fish species.

**Will the executive order for snook, bonefish and tarpon be extended and will it include other species?**

The FWC took action to temporarily close the snook, bonefish and tarpon fisheries as a precautionary measure. We intend to examine all available information on the extent and impact of the freeze during the time of these closures and then make a determination whether any additional actions are needed to protect these fisheries. Also, while we have observed mortality of other saltwater and freshwater species of fish, we do not yet have sufficient information to determine whether any actions are necessary. We will keep the public and officials apprised as we continue to evaluate the impacts of this year's cold weather event.

**Will regulations need to be implemented to protect species affected by this cold weather event?**

We won't know whether regulatory action is necessary until we determine the extent of the cold weather impacts to saltwater fish.

**Are fish kills unusual?**

No. Fish kills are not uncommon in Florida and may be caused by a variety of factors including red tide, low dissolved oxygen conditions, pollution, and extreme temperatures, both hot and cold.

### **How does the 2010 fish kill event compare with events in other years, such as cold weather kills in 1977 and 1989?**

It is not really feasible to scientifically compare this event to events in previous years, in part, because the methods of observing and assessing impacts have changed over time. However, some anecdotal reports, including comments from people who observed conditions in previous years, suggest this year's event compares to the events in those years.

The number of freshwater fish killed was probably significantly higher than historic cold related fish kills due to the exotic species expanding their range northward in response to the mild winters in recent years.

### **Has the FWC ever used an executive order to close fisheries?**

In its 10-year history, the FWC has only used executive orders to close harvest of largemouth bass in freshwater systems during management activities such as drawdowns. However, the previous Marine Fisheries Commission had the ability to enact a 90-day emergency rule if certain criteria were met. The MFC did so in the fall of 1994 to temporarily close the harvest of oysters in Apalachicola Bay after a hurricane, and implemented two others in 1986 and 1987 to prohibit all harvest of redfish due to overfishing concerns.

### **What do we do with dead fish?**

Cold-related fish kills are naturally occurring events and are generally left to nature to clean up. No state agency, including FWC, provides cleanup services for natural fish kills. Following fish kill events, natural scavengers, such as birds and other animals, usually provide cleanup within a week or so, depending on the scale and duration of the kill. In some cases, local authorities or private groups may conduct cleanup activities, but usually only if resources allow.

The FWC issued Executive Order 10-02 ([http://myfwc.com/docs/Newsroom/EO\\_10\\_02\\_DeadFish.pdf](http://myfwc.com/docs/Newsroom/EO_10_02_DeadFish.pdf)) which temporarily waives certain saltwater fishing regulations to allow people and local communities to legally dispose of dead fish. Many people are consulting with local sanitation authorities regarding the proper method of disposal of the dead fish they are collecting. The order has been extended and is in effect through February 28.

### **Do dead fish have to be disposed of?**

No. The fish will be consumed by other animals or eventually decompose naturally.

**How do I get a refund for my snook stamp and my fishing license?**

There is no current provision to do so. License fees for snook and other saltwater species go directly to FWC research efforts, including monitoring and evaluating the health and status of these fisheries, including during these kinds of unforeseen cold weather events.

**Will the state cancel tarpon tags this year?**

There is no proposal to do so. It is anticipated that persons who have purchased tarpon tags will be able to use them after the executive order for tarpon expires on April 1.

**How can I contact the agency to ask specific questions about the freeze kill and any future actions FWC is contemplating?**

Comments can be sent to [marine@myfwc.com](mailto:marine@myfwc.com) and they will be reviewed by FWC staff.

**What do people do with live shells that have washed up on the beach? Are they included in the executive order?**

The order applies to dead saltwater fish. If you find live invertebrates or shellfish on the beach, follow regular FWC regulations for these species, which are available online at [http://myfwc.com/RULESANDREGS/SaltwaterRules\\_index.htm](http://myfwc.com/RULESANDREGS/SaltwaterRules_index.htm).

**Are fishing tournaments for snook, bonefish and tarpon still legal?**

Yes, as long as they are catch and release only during the extent of the FWC's executive order and all other fishing regulations are complied with. Tarpon tags may not be used during the extent of the temporary tarpon closure.

**Will there be any disaster relief for persons adversely affected by the 2010 fish kill, e.g., fishing guides, the commercial industry, etc.?**

The FWC is working with other state and federal agencies to determine how persons affected by the cold weather fish kills may be provided relief. However, no specific funds have been identified at this time.

**Where can I find more information about the recent FWC executive orders and fish kills?**

This information is available online at [http://myfwc.com/RULESANDREGS/Saltwater\\_Regulations\\_FishKills.htm](http://myfwc.com/RULESANDREGS/Saltwater_Regulations_FishKills.htm) and [http://research.myfwc.com/features/category\\_sub.asp?id=1697](http://research.myfwc.com/features/category_sub.asp?id=1697).