

Chilly waters deadly for non-native fish

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Think this winter's streak of cold snaps has been hard on you? Count your blessings you're not an equatorial African fish.

Tilapia, a popular target of fishermen on the San Antonio River, have been washing up dead on the banks since December, victims of unusually frigid water. Carcasses are now particularly numerous on the stretch of the river just north of Espada Dam.

The fish kill isn't limited to the tilapia, said Mike Gonzales, manager of the San Antonio River Authority's environmental services department. Another non-native fish — a South American armored catfish known as the plecostomus — has also been dying in droves since December.

Both are invasive species that likely made it into the river years ago when people dumped the catfish from their aquariums or used the tilapia as bait. They have since thrived in local waters, beating out native fish for food and territory, particularly in urban portions of the river.

"They are very aggressive and generally very tolerant of polluted water," Gonzales said. "But they don't handle the cold well."

The tilapia does well in polluted water because the fish carries its eggs in its mouth, which means it doesn't need pristine spawning habitat, said Ryan Smith, an aquatic ecologist at the Nature Conservancy's San Antonio office.

But both species have trouble in water cooler than 60 degrees and will die off quickly when the water temperature plunges to 50 degrees or lower, Gonzales said.

Thousands have died since December in groups of a few hundred at a time. Most of the kills have been limited to the stretch of river from South Alamo to Loop 410 South. During cold snaps, Gonzales said, the fish typically seek shelter in areas of the river that are warmed by large stormwater outfalls. But in that stretch, such havens are limited and the fish have trouble getting to them because of dams.



(Helen L. Montoya/Express-News)

Tilapia and a South American armored catfish have been washing up dead on the shores of the San Antonio River in what officials are calling a cold weather fish kill.

Gonzales expects the dead fish to continue popping up for a while, especially if there is another cold

snap. Even without more frigid weather, he thinks they'll continue to appear as carcasses that have been kept relatively fresh in the cold water begin to surface as the water warms. He doesn't believe the winter will kill off the river's populations of either fish, though. The populations have swelled, he said, in the last three or four mild winters.

Smith said such a mass killing of invasive fish would be helpful to native fish, particularly in the case of the catfish. The fish, which are a favorite in aquariums because of their ability to eat algae, have been known to change the ecology of whole rivers and streams with their voracious feeding.

"They basically eat anything on the bottom of the stream," Smith said. "When they're done, there is just no food left for anybody else."

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Online at: <http://www.mysanantonio.com/news/metro/stories/MYSA020907.01B.fishkill.1c9d8c3.html>

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Fish in the News, February 15, 2007

Questions:

1. The focus of this news story was the fact that cold snaps in the San Antonio have been killing off invasive species such as the Tilapia and Plecostomus (South American armored catfish).
2. This story is related to fish ecology in the sense that it deals with the population ecology of an invasive species, and how it changes the habitat of native fish by out competing them (under normal circumstances in this case). However, invasive species may be more delicate than they seem under abnormal conditions, particularly climate change.
3. The main human players in this story are the people who introduced these species to the San Antonio River by using tilapia as bait, and dumping armored catfish out of their aquariums into the river. Also, the fishermen who favor the tilapia contribute to the human side of this story. The main non-human players are of course the fish. This includes on one side, the armored catfish and the tilapia, and on the other side, the native species of fish.
4. There are several socioeconomic issues embedded in this story. One is that the fish that are native and valuable to this habitat are being thinned due to the tilapia and armored catfish, and the other is that the tilapia, which has become a very popular target for fishermen in this river, is being killed off due to cold snaps.
5. The reporting of this article seems somewhat biased, as the author neglects to write about the native species that the tilapia and plecostomus are out competing and seems to simply focus on the fact that "fish are dying". However, the report does seem to be accurate in its facts concerning this "cold weather fish kill".
6. Fish ecology knowledge that would help this situation would be to better understand the role that these invasive species are really having on the native populations of fish and the general ecology of this river system. This way, the most direct problems could be considered and possibly improved with a better understanding of the whole picture here. This might include estimating numbers of invasive species versus number of native species, the change in the habitat over time, etc.

7. In order to resolve this issue (which may be a positive one) fish ecologists could try to control the numbers of these fish, if they have a detrimental effect during the year. They also need to make sure that these invasive species don't die off in these cold snaps in great numbers so that the present state and biota of the river system has time to adjust.

Sources:

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