



## N.C. Department of Environment and Natural Resources

Release: Immediate  
Date: Oct. 10, 2014

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### Widespread fish kills on Neuse and Tar-Pamlico rivers

**RALEIGH** – State officials have observed dead and dying menhaden fish this week in the Neuse and Tar-Pamlico river basins, but say widespread fish kills are not unusual during the fall and could be the result of naturally occurring conditions.

Most of the menhaden exhibited red spots or lesions.

Menhaden seem to be particularly sensitive to fluctuating estuarine conditions like those that occur during the spring and fall. These factors can combine to create stressful conditions for fish in the Neuse and Tar-Pamlico estuaries. Stressed fish may suffer scale loss which, in turn, presents an opportunity for *Aphanomyces invadans*, a common water mold, to take hold and cause infection. In most cases the infection plays a secondary role, weakening the fish and making them more susceptible to low oxygen or blooms of toxic algae.

*A. invadans* grows best in the low salinities portion of estuaries. These low salinity areas serve as nurseries for large populations of juvenile Atlantic menhaden, the most commonly infected fish in the southeastern United States. *A. invadans* also grows best at the intermediate temperatures. Consequently, fish with lesions in North Carolina's estuaries tend to be more abundant in the spring and fall and much less common in the middle of the summer or in winter.

The fall season marks the end of the period that young fish mature in the rivers and begin to move to the sea. Fish that have not migrated by late September and October may be less hardy than those that migrate earlier. As a result, the fish migrating later in the year may be more susceptible to changes in water temperature or oxygen levels, invasive bacteria and other stress factors.

Samples of the fish have been collected by staff with the state N.C. Division of Water Resources for further analysis. Algal bloom activity has also been recorded in some tributaries. *A. invadans* does not infect humans and poses no threat to human health.

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