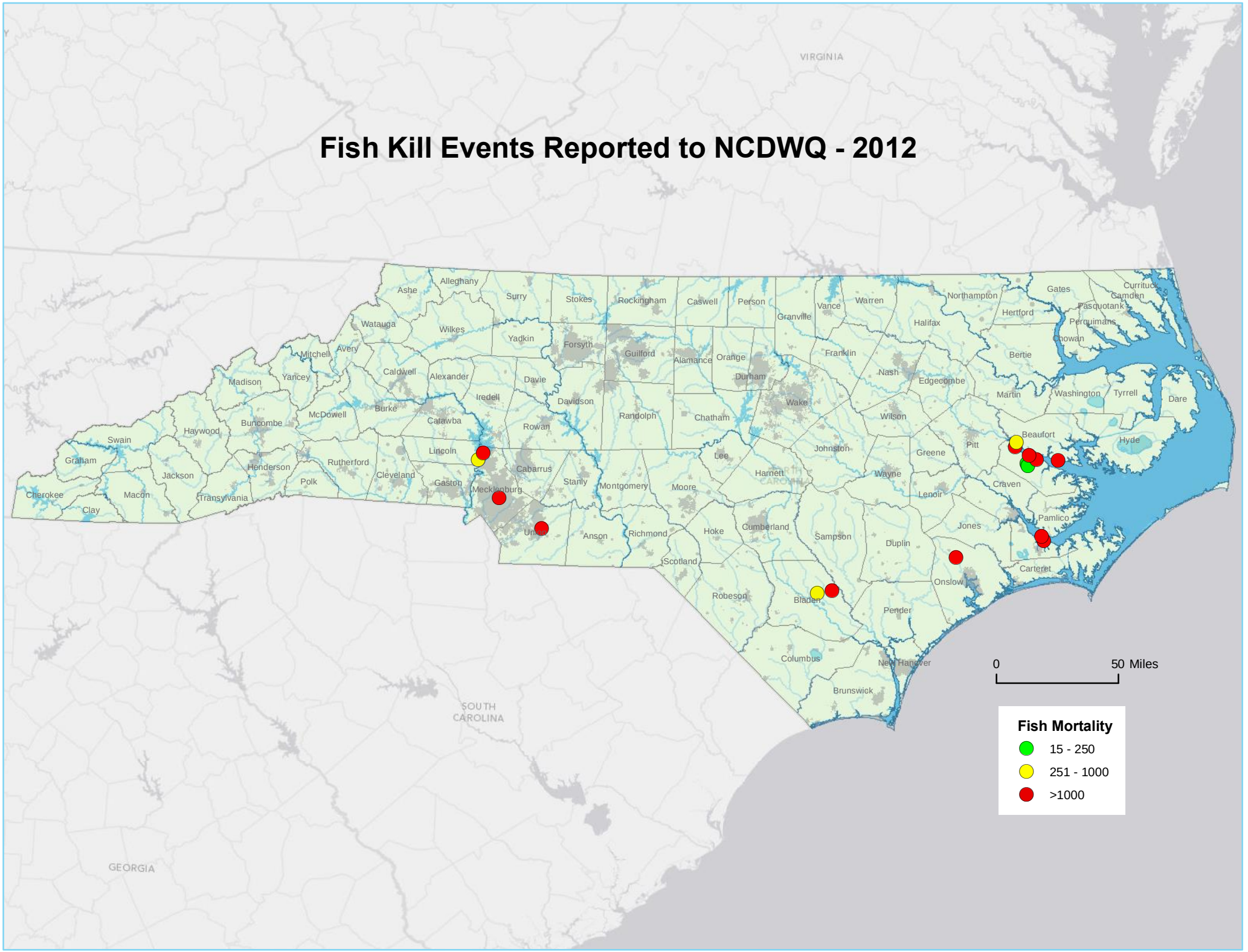
Fish Kill Events Reported to NCDWQ - 2012



Total 2012 Fish Kills: 16

Total 2012 Fish Mortality: 306258

2012 Fish Kill Events (by County)

Date	Kill Number	Waterbody	Location	Mortality	Comments
Beaufort					
7/10/2012	WA12001	Little Creek	Blounts Creek	100	DWQ EMT responded to a fish kill call July 10th, 2012. The first observation of dead fish was July 8th. Previous hot, calm weather strongly indicates DO drop from algal bloom or organic decomposition. Although the team did not calculate the fish, the official siting counted approximately 100 bream and sunfish of smaller size (100-200mm) in length. No lesions were observed. The past several days contained no precipitation, no wind, and hot/hazy days with temperatures exceeding over 100 degrees F.
7/11/2012	WA12002	Chocowinity Bay	Chocowinity	6500	Conversations with local residents indicated the event most likely occurred overnight. Over 12 different species were observed along approximately 1.5 square miles from the headwaters of Crawford Creek downstream throughout Chocowinity Bay. Physical data indicated very little dissolved oxygen (~0.7-3.1 mg/L) near the headwaters of the Bay. DO levels seem to be more elevated downstream towards Twin Lakes and Cypress Landing Docks. Surface salinities range from 7-9 ppt, bottom salinities (1.5 meters) range from 10-11 ppt. pH values range from 6.7 to 7.1 along the Bay proper, with the highest value near 8.1 at Twin Lakes (% DO near 134 at the Lakes). The Washington area had been enduring extreme heat indexes for several consecutive days. The Bay had bloom activity recorded in the past. It is likely that bloom activity and the overnight localized storm activity (heavy rains, strong NW winds) created unfavorable scenarios for local fish and crab populations. Water samples were sent to DWQ's Laboratory Section for further analysis. The sample contained a bloom of the green algal flagellate Nephroselmis and the dinoflagellate Gyrodinium instriatum. Small round diatoms and the raphidophyte Heterosigma were also present in the sample. Nephroselmis has been present in local estuarine rivers for the past several years, but blooms are rarely observed here. It is not known to be toxic or harmful anywhere. Gyrodinium instriatum and Heterosigma frequently bloom in local estuarine rivers. The former has been cited in the academic literature as a nuisance species in Japan. The later has been cited as causing fish kills in other parts of the world. Neither alga has been known to cause fish kills in North Carolina.
7/12/2012	WA12003	Jacks Creek	Washington	1000	EMT responded to a fish kill called in by the City of Washington at Jack's Creek, July 12, 2012. Approximately 1000 fish consisting of shad, largemouth bass, bream, sunfish, carp, and gar perished early in the morning, most likely as a result of hypoxic conditions. Physical data indicated bloom-like conditons on the surface waters (DO % saturation over 125 in the afternoon). Bottom DO was near 1.7mg/L. Water temperatures were around 30 degrees C during previous days. Scattered thunderstorms observed in the area late in the afternoon. Water samples were sent to the Environmental Sciences Section for further analysis. The sample contained a dense and diverse mix of algal taxa common in North Carolina's freshwaters during summer. The dominant taxa in the sample were small round diatoms and the filamentous bluegreen Anabaena spiroides. Opinions differ as to whether Anabaena spiroides produces toxins, and no health problems due to bluegreen algae have been reported in North Carolina.

2012 Fish Kill Events (by County)

Date	Kill Number	Waterbody	Location	Mortality	Comments
7/13/2012	WA12004	Blounts Creek	near Cotton Patch Landing	50	DWQ EMT responded to a fish kill called in by the Pamlico-Tar River Foundation July 13, 2012. Approximately 50 striped bass (200-500 mm) were counted along a 1.6 mile stretch upstream from Cotton Patch Landing on Blounts Creek. The kill may have occurred within the past 48 hours. Physical data recorded alon g the 1.6 mile stretch indicated water temperatures near 30 degrees C. Surface water oxygen levels were near 4.5 mg/L. DO fell below 2 mg/L at 1 meter below the surface. Salinities ranged from 9.3 - 11 ppt. No water samples were collected at the time.
9/10/2012	WA12006	Pamlico River	near Bayview Ferry	5256	The Estuarine Monitoring Team investigated a fish kill today Monday September 10, 2012. The EMT was notified of a fish kill Sunday evening at the Bayview Ferry Terminal on the north side of the Pamlico River. Approxiately 5,256 juvenile croaker and spot were found along a 3/4 mile stretch adjacent to the Ferry terminal. Although it was not observed by EMT staff , a local citizen did observe flounder, hogchokers, and mullet floating Sunday. Shorebirds were in large numbers, picking off remaining fish. Physical data recorded indicated less than 1.0 mg/L of oxygen near the kill area. Salinities were near 16 ppt. Dissolved oxygen began to increase to 7 mg/L within a mile from the shoreline. Salinities recorded at the center of the River were 11-20 ppt (surface to bottom). Weather data from the past 48 hours indicated heavy rain and winds from the North. It is likely that these winds may have caused a localized event that caused de-oxygenated waters to upwell along the shoreline. Samples were taken and sent to the DWQ's Laboratory Section and Environmental Sciences Section for further phytoplankton analysis. Results showed all taxa seen in the sample were typical in local estuarine rivers during summer. The most common taxa were small round diatoms, the green flagellate Nephroselmis, and the dinoflagellate Gyrodinium instriatum.
10/8/2012	WA12007	Pamlico River	Crystal Beach	10000	A fishkill was investigated by PTRF on October 8th, 2012 along the Pamlico River shoreline adjacent to Crystal Beach. An estimate of ~10,000 menhaden was calculated based on a 0.6 mile shoreline stretch. The fish were within 100-200 mm in length. Less than 50% of the fish had lesions. The fish were observed to be 3 - 4 days old based on the state of decay. Weather patterns during this time frame indicated heavy rainfall earlier in the week (Monday - Wednesday). Stormwater runoff may have been one of many stressors that caused this localized kill.
10/10/2012	WA12009	Pamlico River, Pungo River	tributaries of both rivers	100000	Citizens of Washington, Bath, Leechville, Belhaven, and Blounts Creek areas of the Pamlico and Pungo Rivers, along with the Pamlico Tar Riverkeeper called in various fish kills beginning in early October. The kills consisted of juvenile menhaden (100-400 mm). Lesions/red sores were also observed on a high percentage of these fish (>50%). Locations of these lesions were documented near the anal pore, dorsal fin, and ventral areas. The DWQ Estuarine Monitoring Team continued to receive phone calls regarding dead, dying and/or distressed menhaden. Affected areas documentation of decaying menhaden in tributaries of the Pungo River, including Pungo Creek, Tooley's Creek, Battilina Creek, Toms Creek, and Upper Dowry Creek. Washington area tributaries of the Pamlico river included the Pamlico River near, Bath Creek, Blounts Bay and Blounts Creek (upstream to Cotton Patch Landing). EMT staff recorded small algal blooms near Bath and Blounts Bay/Pamlico proper. Recent afternoon rainshowers produced run-off from adjacent riparian wetland areas into the headwaters of the Blounts Creek, as indicated by PTRF Riverkeeper's observations of highly turbid headwaters near Nancy and Herring run (which are just upstream of Cotton Patch Landing). Fish and water samples were taken October 10th , frozen and will be delivered to the NOAA laboratory for analysis of slime mold Aphanomyces invadens. Samples were taken October 10th , frozen and will be delivered to the NOAA laboratory for analysis of slime mold Aphanomyces invadens.

Total Kills for County: 7 **Total Mortality for County: 122906**

2012 Fish Kill Events (by County)

Date	Kill Number	Waterbody	Location	Mortality	Comments
Bladen					
5/16/2012	FA12001	White Lake		1000	Die off attributed to "natural causes". No other species involved. No lesions or sores observed on fish. Fish ranged in size from 5-9 inches.
6/26/2012	FA12002	Bay Tree Lake	east side	72000	Event estimated to have been occuring for days prior to investigation. Fish were in an advanced state of decomposition. All affected fish were identified as yellow (racoon) perch and located on the east side of the lake. Investigators reported no evidence of algal blooms or unusual water quality measurements. Similar die-offs of yellow perch were observe on White Lake during the Spring (see DWQ kill report FA12001 and DWQ Incident Report 201201663).
					Total Kills for County: 2 Total Mortality for County: 73000
Craven					
8/6/2012	WA12005	Neuse River	near Cherry Point Landing	2000	Several reports of a fish kill on the Neuse River near the mouth of Hancock Creek towards the ferry terminal were reported today Monday, August 06, 2012. The Riverkeeper indicated that the fish were several days old. His on-site investigation indicated that there was an on-going die-off that seemed to be localized in the location originally reported. The NC DWQ's Estuarine Monitoring Team received phone calls from the north side of the Neuse River near Camp Seafarer. These observations substantiated the weekend fish-kills from the south side, as the winds were continuously blowing the fish toward the north shore. Water quality data from UNC-CH's IMS indicated strong stratification, with surface salinities near 12ppt, bottom salinities over 20 ppt, and DO levels oscillating between 120% (top 2 meters) and 30% (below 2 meters). A local resident of the Cherry Point area indicated strong southerly winds Friday evening and some Saturday afternoon. He fishes the area frequently and did not see any dead or dying fish Friday, but did find some Saturday evening. Most of the flounder were over 13 inches. The menhaden, pinfish, and croaker were all under 10 inches. Estimates could be in the thousands. No samples were taken. No lesions were observed.
10/12/2012	WA12008	Neuse River	New Bern to Minnesott Beach	100000	Citizens of the New Bern area and local Riverkeeper called in various fish kills beginning near the end of September/early October. Initially these kills were smaller in number and located downstream on the Neuse River adjacent to Flanner's Beach and east towards the Ferry Terminal near Minnesott Beach. The kills consisted of juvenile menhaden (100-400 mm). Lesions/red sores were observed on a high percentage of these fish (>50%). Locations of these lesions were documented near the anal pore, dorsal fin, and ventral areas. Samples taken to NOAA laboratory for analysis documented the slime mold Aphanomyces invadens. This species of fungus tends to reproduce more frequently as falling ambient temperatures begin to cool the river temperatures down. It is ubiquitous in fresher waters worldwide and has been documented as a significant factor in NC coastal fish kills. In October, the Estuarine Monitoring Team continued to receive phone calls regarding dead, dying and/or distressed menhaden. These fish were observed to have a slightly lower percentage of lesion (<50%) coverage. The location of the kill seemed to continue upstream from the original areas into many major tributaries of the Neuse. This included Goose Creek, Broad Creek, Duck Creek, Northwest Creek, and Beard Creek. Heavy salinity stratification continued to add to the complexity of physical changes in the Neuse River estuary. Hypoxia began to attenuate in some areas as the water temperatures and sunlight became less problematic. However, recent afternoon rainshowers produced runoff from adjacent riparian wetland areas into the headwaters of the Neuse's major tribuataries. These factors (A. invadens, heavy precipitation) in concert with salt stress were determined to be a major reason for localized die-offs of menhaden and other species that were possibly compromised.
					Total Kills for County: 2 Total Mortality for County: 102000

2012 Fish Kill Events (by County)

Date	Kill Number	Waterbody	Location	Mortality	Comments
Mecklenburg					
5/21/2012	MO12001	Briar Creek	Charlotte	1275	Suspect Fish kill due to service work conducted by Atlantic Coast Contractors to a new sewer line (off line) located within the Charlotte Country Club adjacent to Briar Creek. They were using a water activated grout (Hydro Active Cut & Cut Activator) to fill holes and seal seams within the new sewer line. Product is very toxic to fish and other aquatic organisms. Some product was observed on the ground adjacent to the manhole a few feet from the stream.
7/27/2012	MO12003	Lake Norman	Near Cowans Ford Dam	873	The event involved mostly striped bass. Biologists believe striped bass chased bait fish (Alwifes) into an area of the lake where oxygen was depleted and became stressed. Once they became stressed they were unable to swim back into levels of the lake where suitable habitat existed and they perished.
8/2/2012	MO12004	Lake Norman	near Cowans ford Dam	1204	Dead catfish were observed near Cowans Ford Dam. Based on underwater camera footage and recent lake testing, investigators suspect catfish went deep chasing Alewives' and encountered low DO water (0.3 mg/l). They became stressed and some died before they could move out of the area. Duke had observed the catfish chasing the Alewives a few days ago on their underwater camera right before the die-off began. Fish tissue was collected and sent to Auburn University for analysis. Five channel and 10 blue catfish were sent for disease evaluation. The bacteria E. tarda was isolated from one of the channel catfish, but it was not thought to be significant, as no other bacterial infection was detected in the other fish examined. Gill tissue was fixed and histology revealed the presence of mild to moderate hyperplasia in six of the 15 fish presented. It was reported that the fish showed no clinical signs of disease and that the fish were in overall good health.
					Total Kills for County: 3 **Total Mortality for County: 3352**
Onslow					
6/25/2012	WL12001	Pond	Rock Creek Golf Course	3000	Kill likely due to DO fluctuations from algae bloom. Golf course maintance reported low DO on 6/24, but no time or values were provided. Kill happened overnight. Golf course said the last fertilizer or herbicide treatments had been over 2 months ago. Mats of algae seen along shoreline; water was fairly clear.
					Total Kills for County: 1 **Total Mortality for County: 3000**
Union					
7/11/2012	MO12002	Lake Twitty	near Monroe	2000	Water temperatures were 31-33, pH was 8.4-9.0, and DO was 4.5-5.0 mg/L on the surface but 0.0 mg/L five feet below the surface; consistent with an algal bloom. Lake Twitty suffers from algal blooms annually. City of Monroe personnel collected fish along the lake for disposal.
					Total Kills for County: 1 **Total Mortality for County: 2000**