



Environmental Concerns Committee

February 18, 2009

Stephen T. Smith, Chairman
DENR
Environmental Management Commission
1617 Mail Service Center
Raleigh, North Carolina 27699-1617

Tom Reeder, Director
DENR
Division of Water Resources
1611 Mail Service Center
Raleigh, North Carolina 27699-1611

Subject: Water Conservation and Fishery Resources in North Carolina

Dear Mr. Smith and Mr. Reeder:

The North Carolina Chapter of the American Fisheries Society (NCAFS) believes that effective water conservation initiatives must be implemented in North Carolina to prevent long-term water shortages and corresponding fishery resource declines in the future. Historically, North Carolina citizens have benefited from an abundance of water; thus, a major challenge will be educating the public about limited water supplies and the need to conserve. Nevertheless, given population projections, the importance of water conservation actions to existing and future municipal needs, economic viability, and the high quality fisheries of our state cannot be over emphasized.

The NCAFS urges the Environmental Management Commission and North Carolina Department of Environment and Natural Resources to fully implement Session Law (S.L.) 2008-143 which includes:

- **Incorporation of water conservation measures in water shortage response plans for local governments.** The NCAFS supports having mandatory restrictions on non-essential water uses in these plans.
- **Collection of water use data for agriculture.** Information about industrial usage must be collected under S.L. 2002-167. This information should be used to enact new legislation to require water conservation actions and planning by these users during droughts.
- **Formulation of water supply plans.** The NCAFS believes that long term measures that help avoid water shortages such as wastewater reuse programs and stormwater management that promotes ground water recharge must be included for these plans to be effective.
- **Inclusion of fishery professionals on the Drought Management Advisory Council to ensure consideration of fishery habitat needs during droughts.**

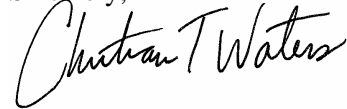
Water withdrawals for irrigation, water supply, and industrial uses can cause extensive and lasting harm to North Carolina's fisheries and aquatic resources. They lower water tables and degrade or destroy wetlands, riparian habitats, and shallow water nursery habitats. Also, they can alter nutrient dynamics and physical habitat to the extent that habitat for endemic fishes becomes unsuitable. Reduced flows due to withdrawals can lead to increased deposition of sediment in important habitats and reduce water turbulence and mixing of atmospheric oxygen with water. Increased water temperatures and concurrent decreases in dissolved oxygen in summer can cause fish kills or promote disease and reduced growth that leads to die-offs, particularly during drought.

Construction of new reservoirs for additional water supply and power needs are detrimental to existing stream fishery resources. Flooding eliminates riverine habitats and limits native fish biodiversity. Reservoirs trap nutrients and sediment, which degrades downstream habitat. Reduced stream flows from evaporative losses, withdrawals, and controlled releases reduce the extent of critical habitats and inhibit fish migration, growth, and spawning. In the coastal region of North Carolina, striped bass, American shad, and blueback herring are economically important stocks that need sufficiently high "attracting" flows for spawning. Elevated temperatures and decreased dissolved oxygen below reservoirs can reduce the survival of juvenile striped bass and shad in nursery areas, especially in the Roanoke, Tar and Neuse river watersheds. Given these factors, existing reservoirs must be managed to consider all uses within a watershed, including fisheries and aquatic resources, and proposals for new water supply reservoirs should thoroughly address the ramifications on fishery habitats.

Similar to agriculture and industry, fishery resources are an important component of North Carolina's economy that will continue to suffer without improvements in water conservation. In 2006, an estimated 1.2 million recreational fishermen contributed \$1.9 billion to the economic output of North Carolina, supported 20,000 jobs, and generated \$121 million in tax revenue¹. In western North Carolina where drought conditions have been extreme, trout streams are a limited and important fishery resource to the local and statewide economy. They provide recreation for about 130,000 anglers that contribute about \$225 million to the North Carolina economy annually². Future drought and misuse of water resources have the potential to adversely impact our state's fisheries and aquatic resources and severely curtail recreational fishing opportunities.

The NCAFS urges effective and timely implementation of the actions outlined in S.L. 2008-143. These actions and mandatory and permanent water conservation measures are necessary in North Carolina to meet ever increasing demands, to sustain economic viability, and to maintain quality fisheries. NCAFS is a unit of the American Fisheries Society (AFS) which was founded in 1870 and is the oldest and largest professional society of its kind in existence. Our membership is represented by 102 scientists from state and federal regulatory and resource management agencies, academic institutions, and private organizations. The AFS promotes scientific research and enlightened management of aquatic resources for optimum use and enjoyment of the public. With its diverse and knowledgeable membership, the NCAFS can help assess the effects of dwindling water resources on fisheries and recommend appropriate actions to help mitigate those effects. Thank you for your attention to this matter and please do not hesitate to contact me at 919-989-7058 if you would like to discuss this issue.

Sincerely,



Christian T. Waters, President
North Carolina Chapter, American Fisheries Society

¹ The 2006 Economic Benefits of Hunting, Fishing and Wildlife Watching in North Carolina. 2008. NC Wildlife Resources Commission.

² NC Trout Anglers' Participation in and Satisfaction with Trout Fishing and Their Opinions on Specific Regulations. 2007. NC Wildlife Resources Commission.