From: Wavelength charters [mailto:captdave@wavelengthcharters.com]
Sent: Tuesday, May 03, 2016 11:46 AM
To: Sammy Corbett <samjcorbett3@gmail.com>; sobxl1@gmail.com; Mark Gorges <captgorgesmfc@gmail.com>; Wicker Mike <amikewicker@gmail.com>; Joe Shute <captjoemfc@yahoo.com>; Rick Smith <rds.mfc@gmail.com>; Allison Willis <awillis.mfc@gmail.com>; Janet Rose <janetrosemfc@gmail.com>; Davis, Braxton C <Braxton.Davis@NCDENR.Gov>; Fish, Nancy <nancy.fish@ncdenr.gov>
Cc: Robert Schoonmaker <Robert@Carolinaexplorer.com>; Owen Sewell <Capefearbigfish@hotmail.com>; Charlie Schoonmaker <schoonfish@hotmail.com>
Subject: Striped Bass Need Your Help!

Director Davis and NC Marine Fisheries Commissioners,

Please review this important new information regarding the striped bass populations in the Neuse, Tar, and Cape Fear Rivers. RFA-NC requests you include the Rachels and Ricks report and the powerpoint presentation in the briefing book for your upcoming meeting in New Bern. It should be noted, as acknowledged on page 10 of the attached Final Report, that the catch-curve analysis was reviewed by Dr. Joe Hightower and Dr. Ken Polllock, two members of the NCSU faculty whose expertise is well established and includes fisheries biology, statistics, and modelling.

Based on this information, RFA-NC requests the MFC use proclamation authority to immediately eliminate or substantially reduce harvest of striped bass in the Tar and Neuse Rivers until a self sustaining population is restored. This would be similiar to management actions currently in place on the Cape Fear River which has no recreational or commercial harvest of striped bass. It is our understanding that the NCWRC is currently considering similar actions.

Thanks

Capt Dave Timpy, MS
RFA-NC

North Carolina Wildlife Federation

Affiliated with the National Wildlife Federation

1346 St. Julien Street
Charlotte, NC 28205
(704) 332-5696

1024 Washington St.
Raleigh, NC 27605
(919) 833-1923

May 5, 2016

Sammy Corbett, Chairman
North Carolina Marine Fisheries Commission
3441 Arendell Street
Morehead City, NC 28557

Dear Chairman Corbett:

Please consider this correspondence the official position and request of the North Carolina Wildlife Federation that the Marine Fisheries Commission (MFC) take immediate action to address excessive fishing mortality on striped bass in the Tar and Neuse rivers that is preventing that fishery from becoming sustainable.

Recent, conclusive genetic information shows that striped bass in these rivers are experiencing mortality from direct fishing harvest, by-catch, release injury, and illegal catch and sale in excess of the level required to reach and maintain sustainability. Almost all of the fish sampled exhibit genetic tags that identify them as stocked fish. The only remedy to achieve sustainability is to eliminate or significantly reduce mortality from commercial and recreational fishing as quickly as possible.

In response to a recent letter from the Wildlife Resources Commission (WRC) pointing out the seriousness of the most recent survey findings and recommending corrective action, Division of Marine Fisheries (DMF) disputed the conclusive data presented by WRC fishery biologists and refused to recognize the urgency of this situation. Their plan is to begin developing adaptive management strategies in 2018 when the striped bass fishery management plan is scheduled for a five year review. This nonchalant schedule to address such a clear and present danger to the striped bass fishery in the Tar and Neuse rivers is not only unprofessional but is also unconscionable. DMF cannot wait until 2018 to even begin looking at this problem. If this delayed schedule is followed, implementation of changes to the striped bass FMP will take another three years given all the administrative and legal steps required. No viable chance for recovery of the striped bass in these river systems will exist after such an unnecessary and ill-advised delay.

We urge MFC at its May meeting to instruct DMF staff to begin immediate preparation of a Supplement to the striped bass Fishery Management Plan to develop meaningful management measures in consultation with WRC to eliminate or significantly curtail fishing mortality in the coastal and joint waters of the Tar and Neuse rivers for implementation before the 2017 fishing season. The WRC is currently developing commensurate plans to reduce fishing mortality in the inland waters of these rivers.

Sincerely,

Tim Gestwicki, CEO

CC: Braxton Davis

From: Pickdvm@aol.com
To: Michelle.Hensley@ncdenr.gov, Kathy.Rawls@ncdenr.gov
CC: diane.lea@me.com
Sent: 5/5/2016 9:25:09 A.M. Eastern Daylight Time
Subj: Stripers in the Tar and Neuse rivers

Dear Ms. Hensley and Ms. Rawls,

Over the past eight years, the Wildlife Resources Commission (WRC) and the US Fish and Wildlife Service jointly produce and stock about 100,000 eight inch fingerling striped bass each year into the Tar and Neuse rivers in an attempt to restore natural spawning and sustainability of this predominately recreational fishery. Conclusive evidence collected over the past several years from genetic marking shows that mortality from commercial and recreational fishing and from unidentified sources such as hooking, net, and illegal take exceeds the ability of the fishery to be sustainable.

The WRC has formally asked the Division of Marine Fisheries (DMF) to consider restriction on commercial harvest of these stocked stripers. Reduction of commercial harvest would give the restoration attempt to return naturally spawning stripers to the river systems a better chance for success.

Unfortunately, DMF has responded in a negative fashion saying that they disagree with WRC's data, assessment, and recommendation. They plan to wait until 2018 when the striped bass plan is scheduled for review before they consider any changes to commercial fishing in the river systems. Then the study will take two years and no changes can be implemented before the 2021 fishing season. This is a callous, irresponsible, lazy approach to managing our valuable public trust resources in the face of such a clear and present danger.

I would appreciate any support you can provide in urging the DMF to take immediate action to make decisions based on the science justifying better and more immediate protection for these stocked fish. Reestablishing a self sustaining breeding population of striped bass in these waters would be mutually beneficial to both recreational and commercial interests. The most expeditious way to accomplish this mutually rewarding goal is to act quickly rather than delaying the matter for years.

Thank you for considering my comments.

James R. Pick 1970 River Road Pittsboro NC 27312 919-942-4016

From: rick sasser [mailto:rick.sasser@hotmail.com]
Sent: Thursday, May 05, 2016 9:29 AM
To: samjcorbett3@gmail.com; captgorgesmfc@gmail.com; captjoemfc@yahoo.com; sobxl1@gmail.com; rds.mfc@gmail.com; janetrosemfc@gmail.com; amikewicker@gmail.com; awillis.mfc@gmail.com; Fish, Nancy <nancy.fish@ncdenr.gov>
Cc: Davis, Braxton C <Braxton.Davis@NCDENR.Gov>; Vandervaart, Donald <donald.vandervaart@ncdenr.gov>; Evans, John <john.c.evans@ncdenr.gov>; Rep. John Bell <John.Bell@ncleg.net>; Rep. Jimmy Dixon <Jimmy.Dixon@ncleg.net>; jim.kelly@ncdenr.gov
Subject: Public Comment on behalf of CSMA Striped Bass for the May-2016 MFC Meeting

May 5th, 2016
North Carolina Marine Fisheries Commission
3441 Arendell Street
Morehead City, NC 28557

Subject: Public Comment on behalf of CSMA Striped Bass for the May-2016 MFC Meeting

Dear Commissioners,

The attempt to re-establish a spawning stock biomass of striped bass in the Central Southern Management Area (CSMA) is failing. Long-term data supported by recent genetics work shows that failure has been caused by commercial overfishing. The North Carolina Wildlife Resources Commission in partnership with the USFWS and academia understands this fishery quite well and has been diligently working towards restoration goals. Interagency communications show that the NCDMF has not come to the table in good-faith to discuss much needed and urgent management changes.

Recruitment overfishing by the commercial fishing sector has led to a truncated age structure preventing the establishment of a spawning stock biomass that can produce dominant year-classes. Mature dominant year classes are needed to increase egg deposition on the spawning grounds. Increasing the spawning stock biomass and advancing the female age-structure to older fecund individuals should lead to improved wild recruitment, which is the goal of Amendment 1 to the North Carolina Estuarine Striped Bass Fishery Management Plan as stated on page 1.

> *The goals of Amendment 1 to the North Carolina Estuarine Striped Bass FMP are to achieve sustainable harvest through science based decision-making processes that conserve adequate spawning stock, provide and maintain a broad age structure, and protect the integrity of critical habitats.*

Exploitation in this fishery exceeds the CSMA management target and threshold mandated by the FMP. The commercial fishing sector is harvesting 70% of all striped bass in the CSMA. It is estimated that when mortality from unreported landings, illegal harvest, dead discards from active fishing gears, and mortality from ghost commercial fishing gears are included along with reported commercial trip ticket landings that the commercial fishing sector is responsible for 85% or more of all striped bass mortality in the CSMA.

Genetic sampling studies show that at least 93% of the river stocks are from hatchery origin. There is a high probability that the remaining 7% of the stock is of hatchery origin that was stocked prior to 2010 when genetic parentage based marking begun. If true, then the CSMA has become almost entirely a "put-grow-take" fishery. Stocking was never intended to enable a fishery in which the commercial sector takes 85% of the fish.

The original purpose of stocking the CSMA can be found on page 301 of the FMP.

> *Specific objectives for stocking striped bass into coastal river systems include attempts to increase spawning stock abundance while promoting self-sustaining population levels appropriate for various habitats and ecosystems.*

Also on page 301 of the FMP, you can see that stocking was not thought to be of significant importance.

> *Results suggested striped bass stocked in the Neuse and Tar rivers appeared to contribute little to the spawning stocks in these systems.*

Through genetic Parentage Based Sampling, we now know that the importance of stocking the CSMA has changed significantly. Genetic sampling has proven that stocking is not supplementing an existing wild stock, but is the stock. Biologists believe that this fishery is close to 100% stocked origin. Stocking is crucial. If stocking stops, this fishery will completely disappear within five to six years with a striped bass in the CSMA becoming a rarity.

I, along with others, have been requesting for over a year that the NCMFC/NCDMF address the glaring mortality level that violates the management goals of the FMP. It is now clear that the importance of hatchery stocked fish is a complete paradigm shift undermining the tenets of Amendment 1 to the North Carolina Estuarine Striped Bass Fishery Management Plan.

Action on behalf of the resource is urgently needed.

The FMP gives proclamation authority to the DMF Director to address the urgent biological needs of this fishery. On page 9, this authority is clearly detailed.

> *"It should also be noted that under the provisions of this FMP the NCDMF Director and the NCWRC Chief of Inland Fisheries will maintain the ability to establish seasons, authorize or restrict fishing methods and gear, limit quantities taken or possessed, and restrict fishing areas as deemed necessary to maintain a sustainable harvest."*

The WRC voted to take action in Inland waters. I ask that this commission by motion and vote require the DMF Director to take similar action in Joint and Coastal waters including closing the commercial fishery and requiring full time attendance in other gill net fisheries in order to reduce mortality from regulatory discards. These actions should remain in effect until completion of the next amendment process.

The above request is based solely on the biological needs of this important fishery. The economic need is just as compelling. State and federal agencies have been spending in excess of $600,000 annually to stock the Neuse and Tar River systems. The commercial harvest of these stocked fish has an annual value of approximately $60,000. It's hard to make a profit on 10-cents of income for every $1 spent, unless it's not your dollar! Commercial harvest is about subsidized short-term financial gain for a few that is preventing long-term recovery of this important public trust resource for all of the citizens of North Carolina.

I have included as attachments files in my possession related to this matter. A review of these documents will clearly show the need for immediate action. I ask that you take such action at your May meeting. As

esteemed biologist and highly respected research professor Dr. Roger Rulifson clearly stated in his February 17th, 2016 communications with NCDMF staff -

> *"We cannot wait 3 years. In that period of time the wild Tar and Neuse striped bass populations will be extinct. This is clearly confirmed independently by both otolith and genetics studies. What you are suggesting will be a put-and-removal fishery, with no recruitment. This will cost the fisheries agencies hundreds of thousands of dollars in revenue. If stocking stops, so does the fishery. I ask that NCDMF reconsider their position, as this is an emergency situation and we still have a small window in which to act."*

Please do not be the commission that allowed our CSMA striped bass to go extinct.

Sincerely,

Rick Saser
Goldsboro, NC
919-738-3900

CCA North Carolina

To: NC Marine Fisheries Commission May. 13, 2016

From: Coastal Conservation Association of NC

Re: Public Comment on Central Region Management Area (CSMA) Striped Bass for May 2016 MFC Meeting

Mr. Chairperson and Commissioners,

CCA NC has prepared a "White Paper" that is attached. The web address of an appendix containing the full text bibliography and other supporting materials is: https://drive.google.com/drive/folders/0B0qlokkxkPyHNi01RHJqdFZKUUU

In this white paper, CCA NC has made several recommendations including an immediate proclamation to stop overfishing on these imperiled stocks. CCA NC asks the MFC to direct the Director to use his statutory power to intervene.

CSMA striped bass are just 2 of the 16 finfish stocks managed by North Carolina. CCA has examined these 16 species from the NC DMF website and only 4 species stock status are listed as viable. This should be an embarrassment to the Commission, Division and DEQ (DENR) leadership. For so many of these fish stocks, data documenting their status has been around for many FMPs, including Central Region striped bass, Southern flounder, red drum, spot, and croaker. The state of NC finfish species did not occur overnight and will not be recovered soon. Get busy.

Again, CCA NC appreciates the Commission offering our organization the opportunity to comment on coastal fishery resource issues, and the work that the Commission does to conserve and protect those resources. Thank you.

Sincerely,

Chris Elkins PhD
President, Coastal Conservation Association of North Carolina

Dedicated to the Conservation of North Carolina's Marine Resources
4809 Hargrove Road, Suite 123 Raleigh, NC 27616
(919) 781-3474 (FISH) Fax (919) 781-3475 contact@ccanc.org
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A Tale of Two Rivers: The Extirpation of Striped Bass in the Neuse and Tar/Pamlico Rivers

A Coastal Conservation Association North Carolina (CCA NC) White Paper

Introduction

In North Carolina, estuarine striped bass (*Morone saxatilis*) have for at least a century been an important species both for recreational and commercial harvest. Striped bass are anadromous, meaning that they annually migrate from the ocean into inland rivers and streams to spawn; when the eggs hatch, the resulting larvae and young fish "grow out" in estuarine waters, with mature adults then returning to the estuaries and/or the open ocean. The fate of North Carolina estuarine striped bass parallels the history of other anadromous fish stocks in the United States. Overfishing, construction of dams that block spawning migration and natural river/stream flow, and the loss of habitat have predictably extirpated or greatly reduced native fish runs. In our state, the bulk of the estuarine striped bass spawning has occurred in the northern Albemarle Sound/Roanoke River system—the Albemarle Sound/Roanoke Management Area (referred to, respectively, in various Striped Bass plans as either the Albemarle Sound Management Area (ASMA) or the Roanoke River Management Area (RRMA); or collectively as the Albemarle/Roanoke (A/R) management area—with lesser spawning runs in the smaller rivers systems in the central and southern portions of the state—collectively called the Central—Southern Management area (CSMA).

Under current North Carolina law, fish stocks occurring in coastal waters are managed by the North Carolina Division of Marine Fisheries (DMF) under policies set by the North Carolina Marine Fisheries Commission (MFC), while fish stocks occurring in inland waters are managed by the North Carolina Wildlife Resources Commission (WRC). Those management jurisdictions overlap in state "joint waters", which are essentially those estuarine areas where state freshwater rivers flow into the coastal water bodies influenced by ocean currents and salinities. Striped bass occur in North Carolina throughout these joint waters.

North Carolina estuarine striped bass stocks nearly collapsed in the late 20th Century due to overharvest and the other aforementioned problems that extirpated historic anadromous fish spawning runs. As a result of Congressional concern over the demise of North Carolina striped bass stocks in the late 1980s, a number of new striped bass

studies were funded, and the MFC and the WRC in November of 1990 entered into a Memorandum of Agreement for the joint management of North Carolina striped bass stocks. The ultimate outcome of that agreement, based on the Congressionally mandated studies completed by the United States Fish and Wildlife Service (USFWS), was the 1994 adoption by MFC and WRC of an historic, joint Estuarine Striped Bass Fisheries Management Plan (Joint Plan) that drastically reduced harvest in the A/R management area. Unfortunately, since state striped bass harvest outside the A/R management area had in then recent history been largely insignificant, harvest reduction management measures in the CSMA were largely an afterthought of the Joint Plan. Under Joint Plan management strictures, striped bass in the A/R region were declared recovered by 2001, although increased harvest levels since recovery was declared have forced additional management measures.

With the passage of the North Carolina Fisheries Reform Act of 1997 (FRA) state fisheries management for all "commercially or recreationally significant species" is accomplished via the development and implementation of a specific Fisheries Management Plan (FMP) according to requirements and procedures set out in the FRA. North Carolina striped bass are one such species. The original, FRA-required North Carolina Estuarine Striped Bass FMP (2004 FMP) was adopted by the MFC and WRC in 2004. Because the FRA requires every FMP to be updated at least every five years, the 2004 FMP was updated in Amendment 1 to the 2004 FMP (Amendment 1) adopted by the MFC and WRC in 2013. Subsequent striped bass management concerns in the A/R region led to the development and implementation of the "November 2014 Revision to Amendment 1 to the North Carolina Estuarine Striped Bass FMP" (2014 Revision). Development of Amendment 2 to the original, 2004 FMP is planned beginning in 2018.

As evidenced by the recovery of A/R striped bass stocks in North Carolina, drastic harvest reduction is the single most important tool available to state fisheries managers for recovering declining anadromous stocks. The inadequate, and often counterproductive, response to the loss of native fish spawning stocks has been to construct fish hatcheries, the products of which can interfere with recovery of native stocks. The abundance of hatchery fish camouflages the loss of native fish and insidiously undermines attempts to control the factors responsible for the loss of the native stocks in the first place. The quintessential example is found in the salmon fisheries of the Pacific Northwest. For more than two hundred years, hatcheries have failed to recover the native salmon fisheries because the causes of the original declines continue to be ignored (Taylor and Cronon, 2015).

While management measures necessary to recover North Carolina striped bass in the RRMA and ASMA have been proven, there has been no corresponding improvement in the plight and condition of North Carolina striped bass stocks outside the A/R region. For that reason, the remainder of this paper deals only with striped bass management in the CSMA.

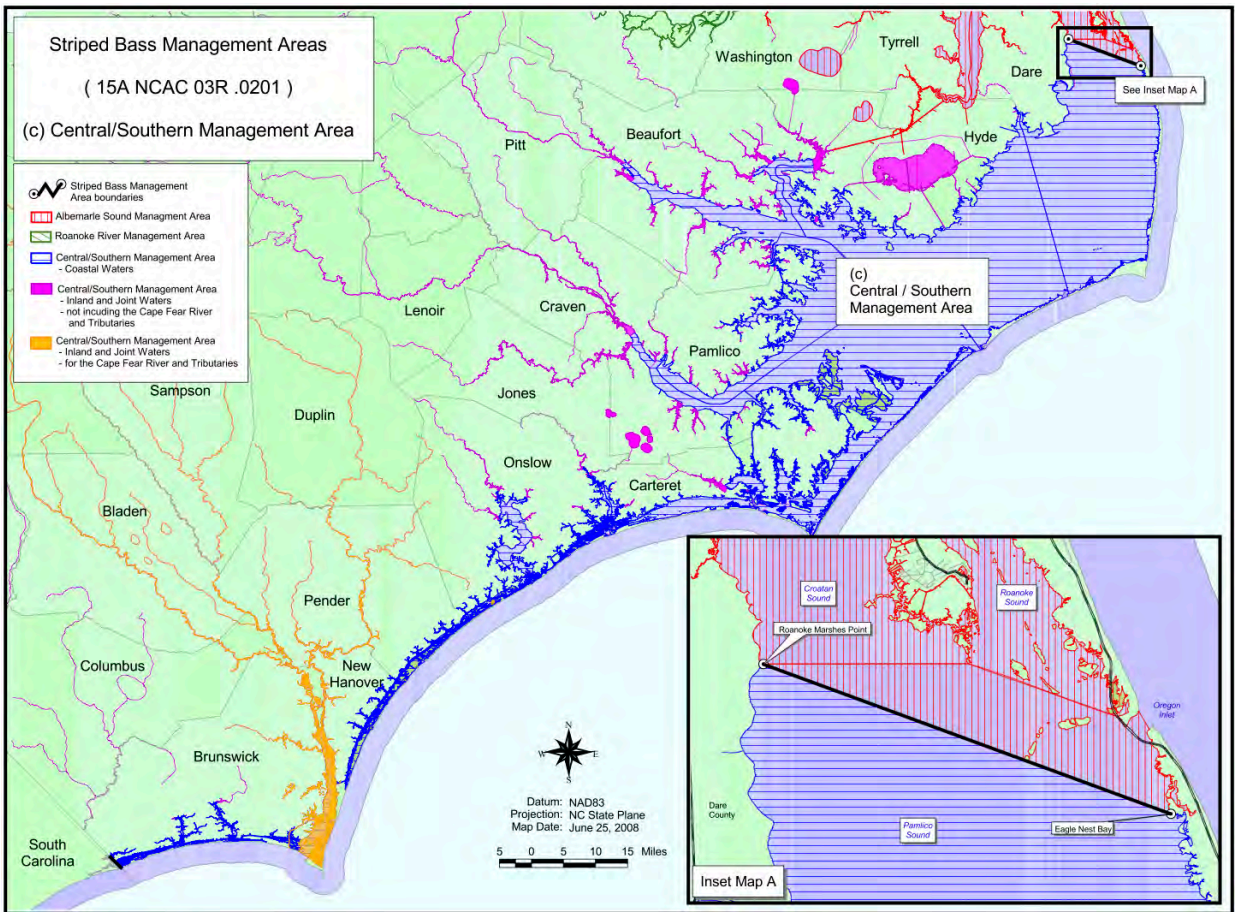

Figure 1. Map of Central Region Management Area for estuarine striped bass (NC DMF)

The geographic area of the CSMA includes the waters from the Tar and Pamlico Rivers, including their estuaries, south to the South Carolina border (*see* Figure 1, above). In the CSMA there are three relatively large river systems that historically harbored healthy striped bass populations and whose stocks are now in trouble: the Neuse River system, the Tar/Pamlico River system, and the Cape Fear River system. A total harvest moratorium of striped bass was implemented in 2008 in the Cape Fear River system because of a complete collapse of striped bass spawning stocks in that area, so state southern river systems are not the focus of this discussion. Instead, it will focus exclusively on the plight of striped bass in the Neuse and Tar/Pamlico Rivers systems and their respective adjoining estuaries.

In each of the three CSMA river systems a stocking program of phase II (*i.e.*, "fingerlings" 6-8 inches in length), hatchery-raised striped bass has been underway for decades. About 100,000 fish are stocked every year in the lower reaches of their respective CSMA river systems (see 2010-2014 Neuse/Tar/SB Stocking and Amendment 1, 2013). The source of the fish for the Neuse and Tar/Pamlico rivers stocking is the USFWS's Edenton, North Carolina fish hatchery. Operations at the Edenton hatchery are funded by federal dollars (by contrast, the source of fish for the

now closed Cape Fear River system is the Watha hatchery that is funded by recreational fishing excise taxes from the so-called “Dingell-Johnson Act”). The cost of each phase II hatchery fish varies between $1.50 and $2.25 (Personal Communication, USFWS). In addition, funding for scientific studies to monitor stocked fisheries is also supplied by Dingell-Johnson funds. Thus, the total, annual, publicly financed cost of the CSMA striped bass stocking program has been in excess of $750,000.00. Restoring native reproduction in the CSMA would not only conserve most of this expense for other uses, but would also potentially be an economic boon for CSMA area tourism, just as the striped bass fishery in the Roanoke River is for the town of Weldon, North Carolina.

CSMA Striped Bass Fisheries Issues

Excessive Striped Bass Harvest

Under the state’s current striped bass fisheries management regime, the Neuse and Tar/Pamlico Rivers support very modest recreational and commercial fisheries. The harvest season for both sectors is limited to a month or two annually, but there is a popular catch-and-release recreational fishery during other times of the year. The directed commercial striped bass gill net fishery in the Neuse and Tar/Pamlico rivers has an annual quota (“Total allowable catch,” or “TAC”) of 25,000 pounds; however, additional significant commercial sector removals may occur as bycatch in non-directed commercial fisheries and unreported commercial landings (as where the fish are kept for personal consumption or given to friends and family).

The entire commercial TAC issue is complicated by the fact that when the original Joint Plan was adopted, the biological “benchmarks” chosen for recovery of state striped bass stocks were based on A/R management area data, since historical striped bass data for the CSMA were virtually nonexistent. The assumption was made that the plights of the various stocks were similar enough that what would work to recover striped bass in the A/R management area would also work for that purpose in the CSMA. That premise remains untested, because when the Joint Plan was adopted, DMF arbitrarily imposed the current 25,000 pound TAC for the CSMA to allow commercial harvest to continue at then current levels, although the appropriate plan benchmarks would have dictated that the CSMA TAC be some 13,600 pounds, or roughly half the harvest actually implemented. That issue is more fully explained below. However, as a result of that TAC choice, almost 25 years of purposeful overharvest of striped bass has been permitted in the Neuse and Tar/Pamlico Rivers systems.

The 2004 FMP developed in response to the FRA says that for the A/R stock (the ASMA and RRMA stocks discussed previously) the appropriate harvest management target and biomass threshold—*i.e.*, “biological reference points”—are "a fishing mortality rate no higher than 0.22 and a SSB no lower than 400,000 lbs. for the A/R stock." (FMP 2004, p. 13).

Then as to the appropriate biological reference points for the CSMA stock, the 2004 FMP states that the goal is to: "Manage the CSMA stocks under the same exploitation rate targets and thresholds as selected for the A/R stock (F= 0.22, SSB 400,000 lbs.)”

and to “[i]mprove data collection on these stocks so that biomass thresholds and targets can be developed for these stocks." (FMP 2004, p. 14).

The 2004 FMP then goes on to recommend the previously noted 25,000 pound TAC for the CSMA striped bass stock without further comment. However, the choice of that TAC is explained in the 2013 Amendment 1 to Striped Bass FMP as follows:

> Total Allowable Catch (Quota)
>
> A quota is the maximum amount of fish a fishery may land within a specified period and is often used to prevent expansions in either the commercial or the recreational fisheries. This type of harvest restriction has an administrative cost associated with monitoring the fishery (dealer permits and daily reporting). For the commercial striped bass fishery the CSMA operates on a 25,000 lbs Total Allowable Catch (TAC). The original Albemarle/Roanoke (A/R) TAC was based on an 80% reduction in the historical harvest for the years 1972-1979. ***The CSMA TAC was selected by the director but if it had been based on the same criteria as the A/R it would have been ~13,500 lbs.*** The average annual CSMA landings from 1980-1993 comes closest to the 25,000 lbs TAC level selected. Changes to the TAC could be considered, however the lack of a sustainable harvest measure does not provide a quantitative basis for what the level of the TAC should be. In addition, possible increases in effort in the recreational harvest which is managed by season and trip limits could allow that sector’s harvest to expand. A quota for the recreational fishery is difficult to monitor given the number of anglers involved and the length of the season (Emphasis supplied) (Amendment 1, 2013, p. 390).

To paraphrase, state fisheries managers said in the 2004 FMP that: (1) because the agencies lacked good biological data to assess more appropriate biological reference points for the CSMA striped bass stock, North Carolina would manage the southern striped bass stock with the same biological reference points as the A/R stock—*i.e.*, target an 80% reduction of historic harvest levels in the CSMA just like they did in the A/R area; and (2) despite that choice of biological reference points for the CSMA stock, DMF ignored its own management directive and instead arbitrarily selected a TAC that was much higher than was warranted biologically, but was apparently much more acceptable to commercial fishermen and their political supporters. At best, CCA NC finds that a startling admission of both a subjective, scientifically unwarranted management decision, and an intentional failure to protect a publicly owned natural resource.

Mortality occurs in all fisheries. Some of that mortality is natural—*e.g.*, becoming prey to other fish, death from old age, death from disease or environmental fluctuations, *etc.*—while some mortality results from human activities, such as pollution or fishing. All indications are that the commercial fishing industry catches up to 80% of the striped bass harvested in the CSMA, and as previously noted, that the overwhelming majority of fish caught are hatchery raised fish.

A recent analysis of striped bass in the CSMA by WRC biologists (Rachels and Ricks, Rundle) indicated that “cryptic mortality” (essentially, unexplained mortality) was much greater than the totals of mortality from all known sources, including reported recreational and commercial harvests. Using even the highest known natural mortality rate for striped bass in this analysis could not explain the excessively high striped bass mortality rates in the CSMA. Accordingly, WRC biologists determined that the most likely explanation for the excessive CSMA striped bass cryptic mortality is that it results from illegal and underreported commercial harvest, dead discards from gillnet harvest, and harvest by ghost (abandoned) fishing gears. As a result of this analysis, the WRC biologists concluded that in the CSMA long-term recruitment overfishing is occurring in a striped bass stock with a severely truncated age structure, but that the stock condition would likely improve if harvest mortality was substantially reduced.

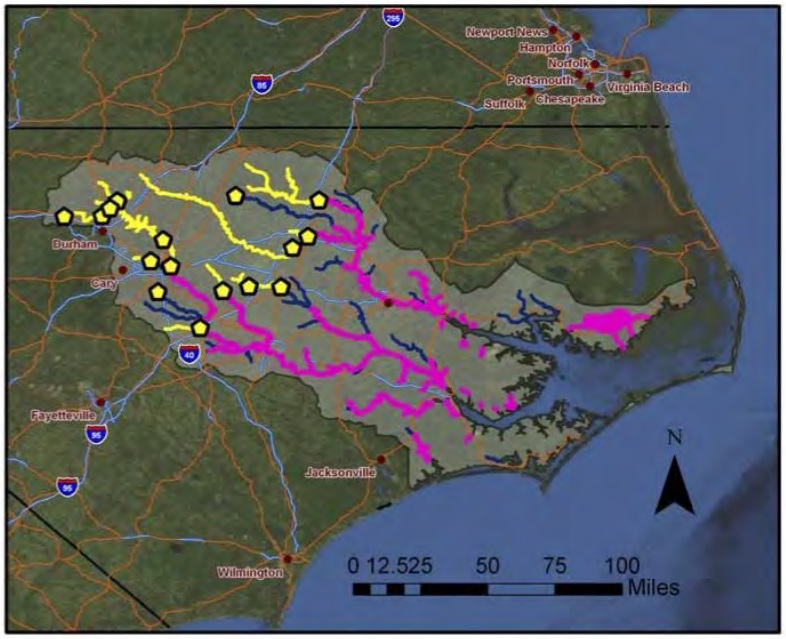

Figure 2. Rivers of the Tar Pamlico River Basin showing waters that could support anadromous fish based on spring flows-according to the National Marine Fisheries Service. The color pink represents designated Anadromous Fish Spawning habitat, the yellow/black pentagons show the current locations of dams, and the color yellow represents potential spawning habitats that are currently blocked by dams. The upper river is the Tar/Pamlico Rivers system, and the lower river is the Neuse River system. The southernmost river system of the CSMA—the Cape Fear River system—is not highlighted here since it has since 2008 been effectively closed to striped bass harvest. Also not shown are the adjoining estuaries that are part of the CSMA. (Reference Guide to NC Anadromous Fishes).

Reproductive Issues with CSMA Striped Bass & Resultant Loss of Genetic Diversity in North Carolina Striped Bass

Additionally, genetic studies by WRC scientists have revealed a steady decline in striped bass that are actually native to the Neuse and Tar/Pamlico rivers, so that today at most, only 7% or less of the fish caught there are of native origin (Rachels and Ricks, Rundle). Almost all native striped bass were shown to be greater than 19.5 inches in size. However, in the Neuse River system, spawning by wild, native striped bass is below detectable values, and elsewhere there is little recent evidence of native stock reproduction. Moreover, there is no evidence that hatchery fish are reproducing at all.

It is presumed that the lack of detectable spawning in genetically native CSMA stocks results from the extraordinarily low numbers of remaining native fish. The reason(s) for the lack of reproduction by *hatchery raised fish* is currently not known, but several hypotheses have been offered. One hypothesis is that hatchery raised fish lack "imprinting" (*i.e.*, instinctive programming to release eggs at a certain place or time) due to their age when released or geographic area where released. As stated, the fish are raised in Edenton until they are 6-8 inches in size and then the placement of the phase II fish is not in historical spawning grounds, but much further downstream. Moreover, until 2012 the brood stock used in hatcheries used for CSMA stocking came not from CSMA rivers, but from the Roanoke river, within the A/R management area (Amendment 1, 2013). The genetics of fish can be a critical factor, as fish have "evolved" in response to specific environmental factors in each of their respective natal streams. Thus, taken together, the lack of "imprinting" at the proper age from the proper river system coupled with the lack of genetically adapted brood stock are possible reasons for the lack of reproduction in hatchery reared fish.

Additional impediments for reproduction of *both native and hatchery raised* striped bass include dams that block upstream movement (Figure 2) and access to spawning grounds, loss of spawning habitat, and inappropriate river/stream flows during the spawning season caused by human stream flow manipulations to prevent flooding. The small Milburnie Dam in Raleigh is the last remaining upstream dam in the Neuse River, and is scheduled for removal in the next year or two (*See* http://milburniedam.com/, http://www.americanrivers.org/blog/removing-the-milburnie-dam-neuse-river-north-carolina/). Thirteen miles above Milburnie Dam is the Falls Lake Dam. This additional 13 miles of river—currently inaccessible to spawning striped bass—consists of a different geophysical bottom than downstream areas and represents important historical spawning habitat (Amendment 1, 2013).

There was historically an important recreational fishery just below Milburnie Dam as striped bass made their spawning run, but that fishery has become virtually non-existent with the decline of native fish in the Neuse River system. To put that reduction in perspective, currently only about 2 % of striped bass are caught in inland waters, demonstrating the staggering, historic decline of striped bass spawning in the CSMA (Rachels and Ricks).

General Failure of the Estuarine Striped Bass FMP

While it has been supplemented—but not entirely superseded by the somewhat curious 2014 Revision, the primary, current legal document for the management of striped bass in North Carolina coastal waters is Amendment 1 to the North Carolina Estuarine Striped Bass FMP. That latter document states:

> *The goals of Amendment 1 to the North Carolina Estuarine Striped Bass FMP are to achieve sustainable harvest through science based decision-making processes that conserve adequate spawning stock, provide and maintain a broad age structure, and protect the integrity of critical habitats. To achieve these goals, the following objectives must be met:*

1. *Identify and describe population attributes, including age structure, necessary to achieve sustainable harvest.*
2. *Restore, improve, and protect striped bass habitat and environmental quality consistent with the Coastal Habitat Protection Plan to increase growth, survival and reproduction.*
3. *Manage the fishery in a manner that considers biological, social, and economic factors.*
4. *Initiate, enhance, and/or continue programs to collect and analyze biological, social, economic, fishery, habitat, and environmental data needed to effectively monitor and manage the fishery.*
5. *Initiate, enhance, and/or continue information and education programs to elevate public awareness of the causes and nature of issues in the striped bass stocks, habitat, and fisheries, and explain management programs.*
6. *Develop management measures, including regulations that consider the needs of all user groups and provide sustainable harvest.*
7. *Promote practices that minimize bycatch and discard mortality in recreational and commercial fisheries.* Amendment 1, p. 11.

Sadly, but predictably, Amendment 1 has been an abysmal failure in the CSMA in terms both of meeting the overall plan goals, or even achieving a single plan objective. Consequently, it is CCA NC's adamant contention that Amendment 1 must be revised to remedy those failures. The native stocks in the Neuse and Tar/Pamlico Rivers systems and their unique genetic material are in peril due to drastic declines in the abundance of those stocks. CCA NC believes it is critical that immediate steps be taken to reverse this decline, although given the massive failure of state fisheries management agencies to properly protect this resource, it is possible that these stocks are already irretrievably lost.

Failure of Stocking as the Primary Recovery Strategy for CSMA Striped Bass

According to Amendment 1, the purpose of stocking hatchery raised striped bass within the CSMA is as follows: "Specific objectives for stocking striped bass into coastal river systems include attempts to increase spawning stock abundance while promoting self-sustaining population levels appropriate for various habitats and ecosystems."

As previously discussed, stocked hatchery fish are not spawning in the Neuse and Tar/Pamlico Rivers, and thus have done nothing to achieve either of these objectives. There have been no other management efforts aimed at restoring striped bass stocks in the Neuse and Tar/Pamlico Rivers systems; indeed, as more fully discussed below, the DMF adamantly refuses even to acknowledge that there is currently a resource problem with the central region striped bass stock, although both WRC biologists and independent fisheries scientists recognize the grave nature of the problem.

Chronic Failure of DMF to Understand Its Fisheries Management Role Under North Carolina Law

North Carolina General Statute § 113-181(a) sets out the powers and duties of the Division of Environmental Quality (DEQ), mandating that "[i]t is the duty of the

Department to administer and enforce the provisions of this Subchapter pertaining to the conservation of marine and estuarine resources." Moreover, § 113-181(b) provides that "[t]he Department is directed to make every reasonable effort to carry out the duties imposed in this Subchapter." DMF is the designated DEQ agency to accomplish that directive for publicly owned coastal fish stocks. So the relevant question is whether DEQ, through DMF, is making "every reasonable effort" to "administer and enforce the provisions" of North Carolina law "pertaining to the conservation of marine and estuarine resources." CCA NC believes that DEQ and DMF have failed to meet that requirement in recent history. It appears that despite that mandate, DMF continues to fundamentally misunderstand its proper role in managing the North Carolina public trust resources entrusted to its care. This has been particularly true since the enactment of the FRA, which DMF has often used as an excuse for shirking that statutory duty.

CCA NC realizes that this is a serious charge, and does not make this allegation lightly. But in support of that allegation CCA NC points to Amendment 1. In that document DMF, in considering whether potential legislative designation of striped bass as a "game fish" in coastal waters is a viable management option, states the following:

> The NCDMF has stated the following general concerns in regards to coastal game fish designations:
>
> - Contrary to the Fisheries Reform Act that is the guiding legislation for managing North Carolina's coastal fisheries.
> - Contrary to the strong public trust doctrine in North Carolina where coastal fishery resources belong to all of the citizens of the state (Amendment 1, 2013, p. 395).

Objectively, neither statement is true, rendering DMF's concerns on the issue unfounded. Rather, both "concerns" are indicative of DMF's fundamental misunderstanding of state fisheries management laws in general. First, the public trust doctrine does indeed mandate that coastal fishery resources belong to all state citizens. But it is a gross mischaracterization of that doctrine to cite it in support of resource management that allows a very few individuals to profit from possession and sale of that resource to the exclusion and detriment of the millions of others who possess equal ownership rights in those fish stocks. The number of North Carolina commercial fishing licenses is extremely limited, thereby eliminating the opportunity for most citizens to profit from harvesting public fish stocks. By contrast, game fish status for any publicly owned species would support the goals of the public trust doctrine, since every citizen would have equal opportunity to catch and possess—and thereby profit from—fishes so designated.

Similarly, there is nothing in the FRA as codified in state law that would—or could—lead DMF to conclude that game fish status for striped bass is contrary to that law. First of all, it is the General Assembly that makes policy as to public resources management, and it is impossible for CCA NC to see how a legislative decision setting that policy, even if it were a change from preexisting policy, could be characterized as "wrong." Under DMF's reading of state statutes the legislature is forever constrained by the current structure of the FRA. But even under that reading, DMF continues to misapprehend the intent of the FRA itself. The misunderstanding appears to derive

from the primacy DMF has vested in a very a small portion of the introductory, superfluous language in the bill that introduced the FRA legislation:

> Whereas, the General Assembly recognizes the need to protect our coastal fishery resources and to balance the commercial and recreational interests through better management of these resources; Now, therefore, The General Assembly of North Carolina enacts (the FRA)." S.L. 1997-400 House Bill 1097.

The introductory language that has become so significant to DMF has never been codified by the General Assembly as official state policy in actual law. However, even had it been it would not require exact "balancing" of commercial and recreational interests in state fisheries management, since the balancing language is preceded by legislative recognition of "the need to protect our coastal fishery resources." To accomplish that overriding, conservation goal—which is reflective of DMF's statutory duty under G.S. § 113-181—it is entirely reasonable to place a greater regulatory burden on the interest or activity—commercial or recreational—that is the primary threat to resource conservation in any given instance. To state it another way, disparate treatment of user groups by government agency action is entirely equitable, and lawful, where the underlying actions of members of the regulated community have disparate effect upon the public interest. As previously discussed in terms of harvest, that disparate effect is certainly true for CSMA striped bass stocks.

In contrast to DMF's overall regard of the FRA, the Act's clear mandate is to prevent overfishing in order to achieve long-term stock viability, as detailed in the portion of the FRA implementing state management of coastal fish stocks through FMPs. N.C. General Statute § 113-182.1(b) establishes the goal of FMP management under the FRA: "The goal of the plans shall be to ensure the long-term viability of the State's …. Fisheries…," and mandates that "Each plan shall: … Include conservation and management measures that will …. produce a sustainable harvest …," "[s]pecify a time period, not to exceed two years from the date of the adoption of the plan, to end overfishing," and "[s]pecify a time period, not to exceed 10 years from the date of the adoption of the plan, for achieving a sustainable harvest." *See* N.C.G.S. §§ 113-182.1(b)(3), (5) & (6). So the explicit keys to successful FMP management are "long-term (stock) viability," achieving and maintaining a "sustainable harvest," and the "end (of) overfishing."

In the case of CSMA striped bass management under Amendment 1 (or the 2014 Revision), DMF acknowledges that "CSMA stocks are experiencing excessive total mortality (Amendment 1, 2013, p. 14), but rationalizes the problem as being insoluble through management action because the lack of good data means that "sustainable harvest can't be determined at this time" (Amendment 1, 2013, p. 12). To paraphrase, "there's a real mortality problem with CSMA striped bass, but there's nothing we can do about it." Under that interpretation of the FRA, conservation management measures will never be warranted in the absence of concrete data indicating overfishing and legal—rather than biological—non-sustainability. Of course that means for a stock, like CSMA striped bass, that have largely been extirpated by overharvest (or any cause), the absence of fish upon which to base an acceptable stock assessment will always

preclude new management measures. CCA NC finds that interpretation extremely troubling, and contrary to the overall public interest.

Indeed, in light of the previously discussed scientific concerns for the plight of CSMA striped bass under current management, coming from WRC and non-state agency fisheries biologists, DMF remains intractable in its position that there is no proven crisis in the case of CSMA striped bass, and that any necessary management changes for the area must wait until 2020 (though Amendment 2 development would begin in 2018, 2020 is presumably the earliest that Amendment 2 to the Estuarine Striped Bass FMP could actually be adopted and implemented). DMF has expressly based its resistance to management change on the objections summarized below:

1. The stock assessment(s) conducted by the WRC on the Neuse River striped bass stock (Rachels and Ricks 2015) was not peer reviewed by external stock assessment scientists, …. outside of the normal operating procedure for DMF stock assessments used to guide fishery management decisions in the FMP process.
2. The 2015 WRC Neuse report identifies incorrect CSMA fishing mortality targets.
3. The 2015 WRC Neuse report incorrectly evaluates fishing mortality estimates under two different stock assessment models.
4. WRC staff mischaracterizes its own data with respect to improvements in mean daily catch per unit effort (CPUE) or expansions of the age structure, with measurable improvements likely coinciding with distance from shore and tie down modifications imposed on commercial gill net fisheries in 2008.
5. The conceded fact that hatchery contributions in the Neuse and Tar Rivers systems are approaching 100% is irrelevant without first determining the percent hatchery contribution of striped bass throughout their entire range in the CSMA, especially in the commercial and recreational fisheries.

CCA NC simply believes that DMF is in denial, and its response to extra-agency concern over the demise of the CSMA stock is a delaying tactic to allow DMF to save face in relation to that demise and/or intended to allow commercial harvest to continue at its current rate for the foreseeable future. In either case, delay of a management response by DMF to the valid concerns raised from outside that agency is biologically irresponsible.

While full response to DMF's rationale for maintaining the status quo is beyond the focus and intent of this white paper, CCA NC summarizes its responses to the DMF objections 1-5 as follows:

1. The fact that the WRC study has not been peer reviewed does not render its data or conclusions invalid, particularly where major study findings are entirely consistent with all other previous and subsequent, peer-reviewed studies.

2. CSMA fishing mortality targets under both Amendment 1 and its 2014 Revision use F-targets that are proxy, being derived from ASMA, rather than CSMA, fisheries data; consequently, the two target sets are probably not statistically different. Moreover, the CSMA fishing mortality rate, at .71, is unsustainable and exceedingly high for any fishery. Other indices, such as a severely truncated age with very few mature fish, indicate that the CSMA stock is overfished. Large mature females are critical to spawning success and overfishing prevents them from making that crucial contribution.
3. DMF biologists appear confused by exactly what was done in the WRC study analysis. CCA NC has discussed this issue with WRC staff members, is certain that the study authors are not confused about their models and conclusions, and recommends they be consulted for clarity on this issue.
4. CCA NC has communicated with the study authors and they, again, stand by their study conclusions that any stock improvements are minimal and likely illusory. More importantly, it seems to CCA NC highly speculative and irresponsible for DMF to imply a direct cause and effect from tie down and locational gill net requirements imposed in 2008. A more likely explanation for any "improvements" seen in CSMA stocks is that in 2009 the stocking program doubled its efforts by stocking every year instead of alternate years as occurred from 1994-2008. It is ludicrous to claim that there were enough large age fish (n) in the CSMA system to produce a believable CPUE. To put this into perspective, the CPUE for striped bass in the A/R system is orders of magnitude larger.
5. Existing WRC fin clipping data from non-spawning sites indicate excellent agreement between spawning and non-spawning areas in that the overwhelming majority of CSMA fish are hatchery fish. DMF's desire for additional studies in no way justifies delaying management action on this stock.

For all of these reasons, CCA NC believes that DMF management of the CSMA striped bass stock falls short of both general statutory conservation mandates and specific directives of the FRA concerning the responsible management of the Neuse and Tar/Pamlico Rivers systems striped bass stocks in North Carolina.

Potential Management Solutions to the CSMA Striped Bass Dilemma

As previously noted, stocks of estuarine striped bass are co-managed by the WRC and the MFC, and the next Estuarine Striped Bass FMP Amendment is presently scheduled, under North Carolina law, to start in 2018 and would be implemented in 2020 at the earliest. That is simply not acceptable in terms of responsible management of a publicly owned natural resource.

Time is of the essence here. According to Dr. Roger Rulifson, a prominent fisheries biologist with decades of research experience pertaining to state striped bass stocks,

given the current rate of decline the Neuse and Tar/Pamlico Rivers, any remaining native striped bass stocks will be extirpated before FMP management revisions are in place under a new Amendment (Rulifson-Rock Email Exchange). In response to that dire warning, there are a number of proposals being discussed to restore Neuse and Tar/Pamlico Rivers striped bass stocks. In CCA NC's opinion, while it is likely a multipronged approach will be required to recover Neuse and Tar/Pamlico Rivers striped bass, any remedial strategy considered should first, if not primarily, focus on restoring genetically native striped bass stocks in those systems.

A. Options Within the Existing State Law Regulatory Framework

Option 1: Maintain the status quo.

While this is neither a viable, responsible management option for CSMA striped bass nor a true solution to the current CSMA striped bass management dilemma, it is mentioned here for completeness for two reasons. First, it is the current default position under state law pertaining to the FMP process. And secondly, it is the current option of choice of DMF biological staff without stated rationale. In the opinion of CCA NC, this "choice" is blatantly irresponsible, since it is not rationally supportable from a biologic, resource management or socioeconomic perspective.

Option 2: Implement an emergency Supplement to current Amendment 1 as soon as is legally possible.

Under North Carolina law, only the Secretary of the North Carolina Division of Environmental Quality (Secretary), DMF's parent agency, is able to authorize the MFC and the WRC to adopt temporary, emergency management measures to supplement an existing state FMP covering coastal waters. To do so the Secretary must find that adopting supplemental measures is "in the interest of the long-term viability of the fishery." N.C.G. S. 113-182.1(e1). In the case of CSMA striped bass, that necessarily means that the first order of business is to convince the Secretary of the critical nature of Supplement authorization. If and when Supplement authorization occurs, the MFC and WRC could immediately begin action to adopt and implement such emergency rules.

In that Supplement, at a minimum, the following issues must be discussed and addressed:

1. <u>Stop the bleeding in terms of excessive mortality</u>. By far, the major factor that impacts the short-term recovery of Neuse and Tar/Pamlico Rivers striped bass populations is commercial harvest, and for that reason directed commercial harvest of striped bass should be stopped in the entire CSMA immediately for several reasons. First, as previously discussed, commercial harvest represents the major source of CSMA striped bass mortality. By contrast, recreational harvest in the CSMA is minimal.

Secondly, commercial fishing is a hugely inefficient and expensive way to supply striped bass to the public. In preface, it is necessary to note that fisheries management decisions necessary to implement state law requirements to conserve and protect North Carolina public trust resources are always unnecessarily controversial where they affect individual livelihoods—both in the case of recreational and commercial fishermen—no matter how small the actual economic impact. In the case of Neuse and Tar Rivers systems striped bass harvest, the actual economic impact of a closure of directed commercial harvest in the CSMA would be minimal. As was pointed out in an April 8, 2016 letter submitted by Eb Pesci, Ph.D., to the WRC on the issue:

> … some will say that stopping this harvest will cause great hardship. However, that is not the case. At most, stopping the commercial striped bass harvest in all CMSA waters will eliminate the legal sale of 25,000 pounds of striped bass each year. From 2005 to 2014, the average annual commercial harvest of striped bass from the CMSA was 23,623 pounds [only 168 commercial fishermen reported a striped bass sale in 2013, which is the latest available data]. The CMSA striped bass harvest is on average, only 15% of the yearly harvest taken from internal waters in North Carolina, with the other 85% coming from the Albemarle Sound Management Area (ASMA) and Roanoke River Management Area (RRMA). In 2014, the reported commercial harvest from the CMSA was 25,085 pounds and this had a value of $68,607. This works out to an average of about $400 per commercial fishermen if about 168 fishermen reported sales in 2014 as was the case in 2013.

This ~$68.6 thousand annual commercial harvest value must be evaluated against the annual ~$750 thousand cost of stocking and monitoring these fish—an approximate "return" of 9 cents on the dollar expended. As previously discussed, all of the stocking/monitoring costs are either paid for with general tax revenues or borne directly by recreational fishermen; nevertheless, *all* of the return is pocketed by less than 170 private citizens. These numbers indicate that in addition to making no biological sense, the current CSMA situation makes absolutely no economic sense.

Moreover, the CSMA TAC of 25,000 lbs. is only available to commercial fishermen for about a month during the year, and sometimes only for a matter of a few weeks. As noted, even when fully taken, the allowable TAC harvest results in an economic value of less than $69,000.00/yr., measured against an annual stocking investment in excess of $750,000.00, or more than ten times that amount. Farm-raised striped bass are both substantially cheaper to produce and represents a year round supply that dwarfs the wild fishery in volume and economic value. The current practice of stocking striped bass with the expenditure of USFWS funds in what amounts to a "put-and-take" commercial fishery

unfairly subsidizes a tiny segment of state citizens, and puts the government in economic competition with fish farmers, far outside the mandated role of the USFWS.

Thirdly, in addition to the spawning run directed commercial harvest of CSMA striped bass, there will remain a year-round bycatch striped bass fishery so long as gill nets are in the water directed at any other species. Possession and sale of striped bass taken as bycatch in the CSMA should continue to be prohibited (meaning that striped bass may neither be sold nor kept for personal consumption), and supplemental measures should require attendance of all CSMA gillnets to ensure that striped bass taken may be released while still alive.

Luckily, in addition to being the single most significant factor preventing the recovery of CSMA striped bass, commercial harvest is one factor over which state fisheries managers have complete control. For all of those reasons, commercial harvest of striped bass within the CSMA should be eliminated as entirely as is practicable until native striped bass stocks can measurably declare to be recovered.

2. Solve the mystery of poor reproduction. The Supplement should authorize studies aimed at understanding the current lack of striped bass reproduction in the CSMA, especially the as it pertains to the imprinting issue. A proposal to address imprinting has been made that would replace phase II stocking downstream with larval stocking upstream. Monitoring of larval survival, migration, genetics and reproduction are critical to unraveling this problem and determining possible solutions. Additional studies based on the results will likely also be necessary.

3. Remove physical barriers to striped bass spawning success. The Supplement should support the removal of the Milburnie dam that will open up historic, potentially critical spawning habitat for striped bass (and shad). If other dams are identified that are not serving their original purposes, the Supplement should support dam removal; if other existing dams need to remain, then the Supplement should seek and discuss methods for spawning bypass of the dams.

4. Redirect stream flow regimens toward spawning success. The Supplement should also explore methods of working with the U.S. Army Corps of Engineers at Falls Lake to maximize optimum water release patterns during the striped bass spawning season. Through thoughtful planning, enhanced water flows that more closely mimic natural, historic river flow patterns should aid in striped bass recovery, although CCA NC realizes that under human control, just as under natural regimens, in some years inadequate flows are unavoidable. Stream flow regulation from upstream dams in the Roanoke River was an important factor in the recovery of the A/R striped bass stock. There are many examples in fisheries biology showing that during certain years with favorable

environmental conditions, exceptional year classes have “carried” fish stocks through poor recruitment in succeeding years.

5. Change harvest size limits. Because the current data indicate that very few large fish are present in the population that and that large mature females are crucial to spawning success, CCA NC supports a minimum size limit of 26 inches for CSMA striped bass. Implementation of such a size limit would ensure that at least some fish are protected until they spawn and should result in improvement of the current, severely truncated age structure situation plaguing CSMA striped bass.

6. Educate CSMA recreational fishermen appropriately to minimize striped bass mortality. Current data show that recreational catch and release of CSMA striped bass in warmer months (*i.e.*, when water temperatures are higher) results in unacceptably high release mortality. The Supplement should implement an education program that encourages recreational fishermen not to target striped bass when water temperatures rise, and that stresses proper catch and release techniques that would maximize survival for striped bass caught in the warmer months. Those programs could potentially be funded through the existing Coastal Recreational Fishing License (CRFL) funds disbursement program.

In a March 11, 2016 meeting with the Secretary, CCA NC specifically requested that the Secretary authorize a Supplement to Amendment 1 to address the CSMA striped bass management dilemma. The Secretary had not informed CCA NC as to his decision in the matter at the time of release of this White Paper.

Option 3: Use Existing State Fisheries Management Agencies Proclamation Authority to Address the Outlined Issues.

Amendment 1 expressly states, at page 9, under the heading “Proclamation Authority for the ASMA, RRMA, and CSMA striped bass stocks” that

> It should also be noted that under the provisions of this FMP the NCDMF Director and the NCWRC Chief of Inland Fisheries will maintain the ability to establish seasons, authorize or restrict fishing methods and gear, limit quantities taken or possessed, and restrict fishing areas as deemed necessary to maintain a sustainable harvest.

In reference to that provision of the plan, since commercial harvest mortality is the major, readily controllable factor preventing the recovery of CSMA striped bass stocks, and because regulation of commercial harvest is solely under the authority of the MFC, only proclamation authority of the DMF Director is discussed below.

North Carolina G.S. § 113-221.1(b) authorizes the MFC to delegate to the Fisheries Director "the authority to issue proclamations suspending or implementing, in whole or in part, particular rules of the Commission that may be

affected by variable conditions." The MFC has delegated such authority to the Director in rule 15A NCAC 03H.0103, which sets out the variable conditions under which proclamation authority may be exercised. Those conditions expressly include “any of the following”:

> (1) compliance with changes mandated by the Fisheries Reform Act and its amendments; (2) biological impacts; (3) environmental conditions; (4) compliance with Fishery Management Plans; (5) user conflicts; (6) bycatch issues; and (7) variable spatial distributions.

In the case of the current management crisis facing CSMA striped bass stocks, variable conditions (2), (5) & (6) are directly applicable, thus authorizing the DMF Director to exercise his proclamation authority by suspending the rule allowing commercial and/or recreational harvest of striped bass that has been authorized by Commission rule in the coastal waters of the Neuse and Tar Rivers systems. From the standpoint of "biological impacts" as a variable condition, the rule also gives the DMF Director the authority to suspend any Commission rules allowing the harvest of other species of fish in the Neuse and Tar Rivers systems where the take of striped bass as bycatch is reasonably foreseeable.

It is clear to CCA NC that as explicitly authorized by Amendment 1, the DMF Director may lawfully, immediately use his proclamation authority to resolve much of the CSMA striped bass management dilemma by (1) suspending future proclamations that allow the directed commercial harvest of striped bass in Neuse and Tar Rivers systems coastal waters; (2) modifying all proclamations that allow the recreational harvest of striped bass in Neuse and Tar Rivers systems coastal waters; (3) changing the current size limit regulations for Neuse and Tar Rivers striped bass; and (4) modifying all proclamations that allow the use of gill nets within Neuse and Tar Rivers systems coastal waters to take species other than striped bass to prevent sale and possession of striped bass bycatch and to require net attendance in order to ensure that most striped bass are released alive.

Given the fact that this solution may be implemented immediately without action by the Secretary or the MFC, it would appear to be the most expedient potential solution to the CSMA striped bass dilemma. Unlike the Supplement route discussed above, there is no legal requirement for public hearings or input before this solution may be implemented. If the DMF Director is unwilling to voluntarily exercise his lawful authority to adequately conserve and protect CSMA striped bass stocks, then the MFC can, by motion and vote, require the Director to exercise such proclamation authority. The downside of this Option as a total solution to the current CSMA striped bass management crisis is that it is limited in potential scope, since existing MFC rules do not embrace the full range of issues that must be resolved in order to fully restore CSMA striped bass stocks.

Option 4: Implement a Combination of Options 2 & 3 Above:

As noted, the use of existing state fisheries management agencies’ proclamation authority is the most expedient manner of resolving a large portion of the

management dilemma facing CSMA striped bass. However, given the potentially sensitive political nature of a decision to use proclamation authority to resolve the current CSMA striped bass crisis, it would appear prudent that the MFC follow up a decision by the DMF Director to exercise his proclamation authority in the case of CSMA striped bass—whether that decision is voluntary or directed by the Commission—with a formal request to the Secretary to authorize a Supplement to Amendment 1 in order to accomplish several necessary ends: (1) ensure additional public input on the CSMA striped bass issue; (2) formally codify in rule CSMA striped bass management decisions, just as was done in 2008 for Cape Fear Rivers system striped bass; and (3) implement other management changes necessary to the recovery of CSMA striped bass that cannot be accomplished through the use of proclamation authority, *e.g.*, implementing revised stream flow regimens for the Neuse and Tar Rivers and removing physical impediments to upstream spawning migrations.

For the reasons set out above, this is CCA NC's preferred option to resolve the current CSMA management crisis.

B. Options Outside the Existing State Law Regulatory Framework

Option 1: File a Lawsuit Seeking to Enjoin Current CSMA Fisheries Management Strategies

One potential legal route to resolve the current CSMA striped bass management crisis would be for some third (non-state agency) party to file a lawsuit in the appropriate North Carolina court challenging the current management regime as being arbitrary and capricious, or otherwise in violation of state law.

Takeover of fisheries management decisions by state courts to impose fairness and objectivity into such decisions is in some ways an attractive option to resolve this crisis, given DMF's long history of anti-conservation bias in fisheries resources management. Sadly, CCA NC has little doubt that at some point in the near future conservation organizations will have to resort to such an option in order to force DMF to perform its existing obligations under North Carolina law. At the same time, lawsuits challenging state agency decisions are expensive propositions for both parties to the litigation, difficult for a plaintiff to win because of judicial deference to state agency decision-makers, and seldom foster a relationship of amicability and cooperation between state agency personnel and interested stakeholders in considering future management issues. Moreover, a lawsuit would have little or no effect on problems preventing the full recovery of CSMA striped bass that are outside the regulatory purview of state agency decision-makers, such as dam removal and improvement of stream flow regimens.

Option 2: Introduce a Bill in the General Assembly to Address CSMA Issues

A second potential solution to the current CSMA striped bass management crisis outside the current regulatory process would be to pursue a so-called "legislative

fix" to the issue, wherein a bill imposing appropriate management changes for the CSMA would be introduced for consideration and adoption by the North Carolina General Assembly. Presumably, such a bill would have to await the 2017 "long session" of the legislature to be validly introduced.

While CCA NC is ready and willing to assist in authoring such a bill if necessary, this organization has traditionally not supported legislative micromanagement of North Carolina fisheries management issues. This is particularly true where, as in this instance, the management crisis is a result of state fisheries management agencies' failure to carry out their existing, statutory duties to conserve and protect publicly owned coastal fisheries resources. This option has the additional problem of not being responsive where time is of the essence, as is true in the case of CSMA striped bass stocks.

Conclusion

CCA NC hopes that this latest fisheries management "White Paper" will prove useful in promoting responsible public trust resources management in our state. CCA NC remains committed to the principle that state public trust resources must first be protected and conserved in the overall public interest, and exploited for any purpose only secondarily. To accomplish this objective, CCA NC stands ready to work with state and federal resource management agencies to resolve the issues set out in this document in a timely fashion, and to otherwise assist in any way possible in restoring North Carolina striped bass stocks to biologic and ecologic sustainability.

Bibliography

2010-2014 Neuse/Tar/SB Stocking. Wildlife Resources Commission. (Excel spreadsheet).

Amendment 1, 2013. "Amendment 1 to the North Carolina Estuarine Striped Bass Fishery Management Plan." North Carolina Division of Marine Fisheries and North Carolina Wildlife Resources Commission, North Carolina Department of Environment and Natural Resources.

Fisheries Reform Act of 1997. S.L. 1997-400. AN ACT TO ENACT THE FISHERIES REFORM ACT OF 1997 TO PROTECT, ENHANCE, AND BETTER MANAGE COASTAL FISHERIES IN NORTH CAROLINA.

FMP 2004. "North Carolina Estuarine Striped Bass Fishery Management Plan, Albemarle Sound Area and Central/Southern Area." The North Carolina Division of Marine Fisheries and The North Carolina Wildlife Resources Commission, North Carolina Department of Environment and Natural Resources

Personal Communication between C. Elkins & USFWS Staff. April 2016.

Rachels, Kyle T., and Benjamin R. Ricks. Neuse river Striped Bass Monitoring

Programs, 2015. Population Dynamics, and Recovery Strategies, Federal Aid in Sport Fish Restoration. Project F-108, Final Report. North Carolina Wildlife Resources Commission, Inland Fisheries Division.

Reference Guide to NC Anadromous Fishes. A Reference Guide to the Distribution of Anadromous Fishes in North Carolina Rivers. Prepared for the Wilmington and Charleston Districts, U.S. Army Corps of Engineers. September 2010.

Revision to Amendment 1, 2014. November 2014 Revision to Amendment 1 to the North Carolina Estuarine Striped Bass Fishery Management Plan. North Carolina Department of Environment and Natural Resources. Division of Marine Fisheries and North Carolina Wildlife.

Dr. R. Rulifson (ECU)—J. Rock (NCDMF) E-mail Exchange. April 2016.

Rundle, Kirk R. Striped Bass Fisheries And Monitoring Programs In The Tar River, North Carolina–2014. Federal Aid in Sport Fish Restoration. Project F-108, Final Report. North Carolina Wildlife Resources Commission, Inland Fisheries Division.

Taylor III, Joseph, William Cronon. 2015. Making Salmon: An Environmental History of the Northeast Fisheries Crisis. University of Washington Press.

From: Will Jones [mailto:willjones2788@gmail.com]
Sent: Tuesday, May 17, 2016 5:34 PM
To: Fish, Nancy <nancy.fish@ncdenr.gov>
Subject: North Carolina Striped Bass

Nancy,
I have your e-mail from Tricia Smith in response to my concern about striped bass in the Tar and Neuse. The coastal fish are a limited natural resource. I know and everybody at ncdenr must know about the spectacular failures in other fisheries You know the salmon runs in the west are destroyed by man and manmade policy. You know that redfish populations in the South have suffered due to bad management (and some have recovered due too better management). Commercial fishing that is not controlled does not lead to more fish and stronger resource: it leads to less fish and a weaker resource. The shad and menhaden resources are critical as are the striped bass. If somebody does not manage the resources they will disappear. You must know that. The resources will either be managed and increase in health and numbers or decrease and suffer in sustainability. Are we going to lose the striper runs in the coastal rivers and accept our fate just like the western states and salmon? Are we going to work to increase the health and vigor of the resources? We need healthy runs of all species in all NC rivers and anything else is unacceptable. As a sportsman and a tax payer in the USA and North Carolina, I expect environmentally sound decisions on resource management that focus on the environment and the resource. I do not expect short term commercial interest to be the deciding factor. Please manage the environment and resources, including the striped bass in the Neuse and Tar for all North Carolinians. Allowing commercial fishing to continue to destroy the resources is simply not a good thing for the State of North Carolina. Please take steps to focus on healthy environment and resource.
Sincerely,
Will Jones
25 Clarendon Rd
Asheville, NC 28806

Striped Bass Need Your Help

I am alarmed and concerned over the failure of the Division of Marine Fisheries (DMF) to cooperate with the Wildlife Resources Commission (WRC) to address the dire situation currently facing the striped bass in the Tar and Neuse rivers. Agency-stocked rivers at the expense of sport fishermen with hundreds of thousands of 8 inch striped bass fingerlings over the past several years in an attempt to restore naturally spawning stripers to the system. Conclusive genetic evidence now exits that natural spawning has not occurred and the entire fishery is supported by stocking. Mortality from commercial and recreational fishing in the form of direct catch, by-catch, release mortality, and illegal take exceeds the level that will allow natural spawning to restore the fishery to the river systems. We cannot wait until 2018 to begin exploring the possible ways to address this problem in the next scheduled striped bass plan review as DMF proposes. We must take action now.

In this regard, I am asking you as a member of the Marine Fisheries Commission to instruct the staff of DMF at your May meeting to immediately begin developing a Supplement to the striped bass management plan to relieve excess fishing mortality in the coastal and joint waters of the Tar and Neuse rivers in conjunction with commensurate action by the WRC in inland waters of these rivers. Thank you for your consideration.

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