

Chairman's Report





NORTH CAROLINA MARINE FISHERIES COMMISSION
DEPARTMENT OF ENVIRONMENTAL QUALITY

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Greenville
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Raleigh
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Harkers Island

Jan. 9, 2018

Dr. Roger Rulifson
110 Field Street
Greenville, NC 27858

Dear Dr. Rulifson,

The U.S. Secretary of Commerce has requested that Governor Cooper submit the names of qualified candidates to be considered for an at-large appointment to the Mid-Atlantic Fishery Management Council (Council) in August 2018. The N.C. Marine Fisheries Commission is responsible for compiling a list of nominees for the governor's consideration. At its Nov. 15-16, 2017 business meeting, the commission reviewed information from candidates interested in an appointment to the Council. Your name was among those selected by the commission for submission to Governor Cooper as a nominee for an appointment to the Council.

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I wish to congratulate you on your selection by the commission as a nominee for an at-large appointment to the Mid-Atlantic Fishery Management Council. Please feel free to contact Dr. Duval by phone at 252-808-8011 or by email at michelle.duval@ncdenr.gov if you need additional information concerning the nomination process.

Sincerely,

A handwritten signature in cursive script that reads "Sammy Corbett".

Sammy Corbett, Chairman
N.C. Marine Fisheries Commission

MD/nf
Enclosure

Cc: John Nicholson Steve Murphey
Tim Webster Nancy Fish
Andy Miller Michelle Duval



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Jan. 9, 2018

Mr. Joseph W. Smith
207 S. 17th Street
Morehead City, NC 28557

Dear Mr. Smith,

The U.S. Secretary of Commerce has requested that Governor Cooper submit the names of qualified candidates to be considered for an at-large appointment to the Mid-Atlantic Fishery Management Council (Council) in August 2018. The N.C. Marine Fisheries Commission is responsible for compiling a list of nominees for the governor's consideration. At its Nov. 15-16, 2017 business meeting, the commission reviewed information from candidates interested in an appointment to the Council. Your name was among those selected by the commission for submission to Governor Cooper as a nominee for an appointment to the Council.

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Jan. 9, 2018

Ms. Sara Winslow
102 Phelps Street
Hertford, NC 27944

Dear Ms. Winslow,

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Jan. 9, 2018

Mrs. Anna Barrios Beckwith
1907 Paulette Road
Morehead City, NC 28557

Dear Mrs. Beckwith,

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Jan. 9, 2018

Mr. Robert Lorenz
1509 Meridian Terrace
Wilmington, NC 28411

Dear Mr. Lorenz,

The U.S. Secretary of Commerce has requested that Governor Cooper submit the names of qualified candidates to be considered for an at-large appointment to the South Atlantic Fishery Management Council (Council) in August 2018. The N.C. Marine Fisheries Commission is responsible for compiling a list of nominees for the governor's consideration. At its Nov. 15-16, 2017 business meeting, the commission reviewed information from candidates interested in an appointment to the Council. Your name was among those selected by the commission for submission to Governor Cooper as a nominee for an appointment to the Council.

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Jan. 9, 2018

Capt. Thomas Roller
807 Deerfield Drive
Beaufort, NC 28516

Dear Capt. Roller,

The U.S. Secretary of Commerce has requested that Governor Cooper submit the names of qualified candidates to be considered for an at-large appointment to the South Atlantic Fishery Management Council (Council) in August 2018. The N.C. Marine Fisheries Commission is responsible for compiling a list of nominees for the governor's consideration. At its Nov. 15-16, 2017 business meeting, the commission reviewed information from candidates interested in an appointment to the Council. Your name was among those selected by the commission for submission to Governor Cooper as a nominee for an appointment to the Council.

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Tim Webster Nancy Fish
Andy Miller Michelle Duval

To the Members of the Marine Fisheries Commission:

How do I write this letter to most effectively make my point? What words do I choose to have enough of an impact to move you to action? When will you take the steps that are necessary to bring our estuarine resources back to where they need to be? These are all questions that I struggle with every time I am out on the water and witness what is happening in our primary nurseries. I wonder if an anecdotal reminder of how it used to be will sway any opinions. I debate filling my comments with the findings from recent studies that show from both a scientific and economic perspective how much of a benefit a healthy coastal fishery would be. Regrettably, I also wonder if this email will make any difference at all because it is more likely that you will succumb to the all too familiar deny, distract, and delay tactics that the commercial lobby relies on to forestall any significant action when it comes to changing policy in favor of the resource.

The reality is that our marine resources are in an unnecessary state of decline. We treat our rivers, creeks, and sounds as if they are a limitless source of a smorgasbord to be harvested. We allow commercial gear in areas where it should never be. We turn a blind eye when some of those fishermen set a net where they are not allowed, or when they take more than their daily limits. We continue to allow the loss of coastal habitat and to pollute our waters to the detriment of all.

Commercial and recreational fishermen alike agree that we have both a water quality issue and a habitat loss issue that must be addressed. This commission needs to make a strong statement that pollution from sewage spills, sedimentation from overdevelopment upriver, and the release of effluent from hog farms must be curtailed. While no one can prevent flooding from severe storms, we can certainly set better standards with regard to construction, storage, and repair that will minimize the extreme pollution of all forms that accompanies them. Loss of shoreline and coastal development must be addressed. While it is true that many of these changes will fall on other agencies, you can directly address all of the problems mentioned above in one fell swoop.

As a commission, you can act to enhance the development of oyster farming along our coast. I'm sure you are aware of the recent documentary on PBS that featured the collaboration between Dr. Lindquist of UNC Chapel Hill and "Clammerhead" David Cessna to develop new materials and methods for oyster farming. We need more of this kind of teamwork desperately as we have lost roughly 90% of our native oyster reefs. That habitat is CRITICAL to our coast. It enhances water quality, reduces siltation, and stabilizes shorelines. Removing the destructive dredge boats and enacting programs and grants to convert over to oyster farming will also allow our native oyster reefs to re-establish themselves. Doing so will return a critical habitat to our coastline and that will benefit everyone. It will minimize the impact on commercial fishermen, in fact, it will provide them with a means to make a living that keeps them on the water, AND has an overall positive impact on the

environment. As a commission, I implore you to expand opportunities such as this that could be employed throughout our coast.

As impactful as it will be, the time is now to act to return our fish stocks to their historic levels. Flounder continue to be overfished, our native estuarine striped population is down to less than 10% of its historic level, river herring and sturgeon populations continue to struggle. Mature spot, croaker, and gray trout are all but gone from my home waters of the Neuse River.

As a commission, you courageously and appropriately passed the shrimp trawler restrictions last year. However, the rule making process continues to drag on as you negotiate and debate how to enact them. I encourage you enact those restrictions as they were approved without gutting them, and to do so at your next meeting in February. Though the commercial lobby will tell you differently, it is the best way to bring spot, croaker, and gray trout back to our rivers and creeks.

With our recent severe cold weather, again, you acted correctly in closing the speckled trout fishery through June 15, 2018. However, more action is required. Simply put, you must ban gill nets. They are archaic, destructive, and wasteful. **THEY MUST BE REMOVED!! IT IS RIDICULOUS** to allow a spool boat into ANY creek to unravel 800 yards of net to seine out trout (and anything else big enough to get entangled). **IT IS RIDICULOUS** to see a shoreline wrapped up with almost a MILE (1600 yards) of flounder net.

GILL NETS MUST BE BANNED IMMEDIATELY AND PERMANENTLY!!

Realistically, I know that you will not take that needed step. So, you need to consider other important options.

Most importantly, you need to increase enforcement of the regulations you already have on the books. More DMF and NCWF officers are needed to adequately patrol our vast coastal waters. The officers we currently have need to operate under a joint enforcement agreement. During the course of the fall and winter, I have seen and reported numerous violations by commercial fishermen. They net "behind the lines" regularly. They take far more fish than the daily limits allow. They will forego filling out a trip ticket and simply load up trucks full of fish to head to other parts of the country because they know they will not be caught. We cannot enforce the regulations we currently have because our enforcement lacks the ability to effectively do their jobs.

For each of the past two seasons, you have issued a temporary closure on nets due to either turtle or sturgeon interactions. Strengthening the observer program and closing the loopholes that allow commercial fishermen to report interactions that don't count to the total number of observations will be a benefit.

Finally, as a commission, use the science and data that is there to enact these changes. Many in the commercial lobby as well as the politicians in Raleigh that are in their back pocket claim that the science is not there. In reality, it is there, and it is **OVERWHELMING**. University professors, state biologists, scientists from NCWF and DMF have published numerous studies that show just how damaging current

commercial netting and trawling practices are to the populations of finfish and shellfish that call our waters home. NCDMF's own statistics show that only 4 of 22 managed species are currently viable. Stock assessments show a disproportionately large number of juvenile fish among those populations. In a recent study by biologist B. Ricks, the CSMA stripers were shown to be experiencing cryptic mortality because of unintended, excessive bycatch in gill nets targeting trout, shad, and flounder.

The commercial industry tries to poke holes in this information, touting their own industry studies as proof. Those studies have not been vetted, and are as invalid as they claim the other studies to be.

I realize that the scope of the job you have to do is daunting. Nonetheless, it is time to act. It is time to start reclaiming our estuarine ecosystem. No longer can the mantra of the Division of Marine Fisheries be to maintain maximum harvest. It must change to acting on the good of the resource, regardless of the impact of such action.

Thank you for your consideration on these issues!

Stuart Creighton
Oriental

NATURE | NEWS FEATURE

Ocean conservation: A big fight over little fish

Size limits have been a part of fisheries management for decades, but some fear that they are doing more harm than good.

Brendan Borrell

30 January 2013



Print

ILLUSTRATION BY WESLEY FERNANDES/NATURE; SOURCE: INT. INST. APPL. SYS. ANAL.

SHRINKING FISH: For Northeast Arctic cod, the age, size and weight of first-time spawners have fallen dramatically.

One April day, a fisherman named Johan Norman reeled in a female cod near the Norwegian village of Moskenes, where snow-capped mountains rise straight from the sea. He measured the fish: 82 centimetres from the tip of its snout to the tip of its tail. Then he pulled out his knife and sliced off several scales, placing them in a small envelope to deposit at the Institute of Marine Research in Bergen, Norway. The year was 1913.

Over the next century, as those scales sat in a repository, radical changes took place in the world's oceans. The small sailing vessels of Norway and other fishing nations were replaced with industrial bottom trawlers. In 1968, the North Atlantic cod harvest started a precipitous decline, as did other stocks, including salmon, sole and lobster. Then, in the early 1980s, biologists began to report another worrying phenomenon. Fish in some areas were growing more slowly, maturing earlier and laying fewer eggs than before¹. Not only was this an ominous sign for the sustainability of these fisheries, but smaller fish are less valuable than larger ones because they yield smaller fillets.

Explanations for the shrinking fish have ranged from changes in seawater temperatures to a decline in food resources². But the real culprit could be the practices devised to protect the fisheries. As mandated by various laws and treaties, most trawlers' nets sport a large mesh that allows small, young fish to wriggle free. The reasoning is simple: harvest only the

oldest, fattest members of the population and let young fish live to spawn and contribute to the next generation. Fisheries scientists and conservationists support size restrictions because they are thought to protect populations, and fishermen are happy to concentrate on large, high-value fish.

But what if the underlying theory is wrong? Over the past five decades, scientists have come up with little evidence that reducing the catch of juveniles or small fish has improved the annual harvest. Instead, a small chorus of researchers is now arguing, fish are adapting to size restrictions by investing their energy into reaching sexual maturity earlier instead of growing large (see 'Shrinking fish'). And as a result of their small size, they produce fewer eggs. Although these scientists do not deny that overfishing is the greatest threat to fisheries, they say that this evolutionary pressure will have a pernicious impact that will be hard to reverse. "You can safely ignore it for a couple of years, but it's accumulative, so the problem keeps growing," says Mikko Heino, a biologist at the University of Bergen.

The theory is controversial, and many scientists are unconvinced. So last year, Heino turned to Norman's 100-year-old preserved cod scales for help. He extracted DNA from them and is piecing together the whole genome sequence of this fish and others in a hunt for changes in growth and development genes that might explain the species' shrinking size.

But even if the evolution idea is true, there is some disagreement over what to do about it. Only "a shrinking minority of fools" think that increasing fishing pressure on juveniles is smart or sustainable, says Carl Walters of the University of British Columbia in Vancouver, Canada.

The theory of fisheries-induced evolution can be traced back to 1981, when the Canadian fisheries scientist William Ricker suggested that coho salmon (*Oncorhynchus kisutch*) and pink salmon (*Oncorhynchus gorbuscha*) were maturing at a smaller size because Japanese gill-net fishermen were targeting only the largest fish on the high seas¹. By the 1990s, researchers had begun to notice the phenomenon in other species too. But for many years, the consensus was that environmental factors such as climate change and pollution were at play, not genetics.

Then, in 2002, David Conover and Stephan Munch at the State University of New York in Stony Brook published a contentious experiment³. They caught Atlantic silverside (*Menidia menidia*) off the coast of Long Island and established six captive populations of around 1,000 individuals each. After 190 days, they removed 90% of the fish from each population. In the first two populations, they took only the largest fish; in the second two they took only the smallest fish; and in the final two they took individuals of random size. They then stimulated the remaining 10% to breed. After four generations, the fish in the large-harvested populations were about one-third the average weight of those in the random-catch group.

But critics called the experiment unrealistic. The stimulated breeding essentially created a population with a fixed age at sexual maturity, so it was no surprise that removing larger fish favoured those that matured at a smaller size. By contrast, in a natural population, the size at maturity is relatively stable, but age at maturity varies. Slower-growing fish mature later, and faster-growing fish mature earlier. Thus, size limits could select for faster growth, a possibility that Conover and Munch's experiment did not allow. "I was outraged," recalls Walters. "They did an experiment that could only give one result."

Precocious cod

The dispute intrigued Heino, a theoretical biologist, who had begun working on his own approach to studying the life history of fish. In the past, researchers would chart a population's maturation reaction norm — the size and age at which fish

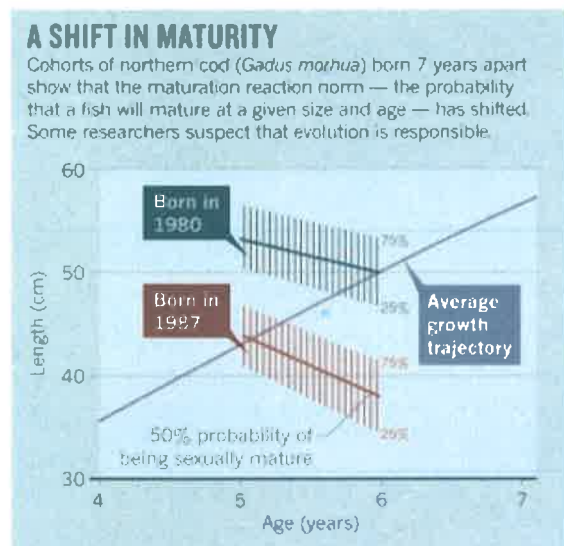
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typically become sexually mature. But Heino realized that comparisons of maturation reaction norms between populations could be misleading if they didn't take into account the variation in growth rates caused by food availability, climate or other environmental factors. So Heino developed a probabilistic approach that considers growth-rate variations.

Using this technique, he showed in a 2004 paper in *Nature*⁴ that northern cod (*Gadus morhua*) born in 1987 were maturing at a younger age and a smaller size than those born in 1980, and these changes preceded a dramatic collapse of the species off the coast of Canada in the late 1980s and early 1990s (see 'A shift in maturity').



SOURCE: REF. 4

"It's the most famous fisheries collapse in recent times," says Heino, "You would expect the potential for rapid evolution." Heavy fishing was the main cause of these changes, Heino says, but size-selective fishing compounded the problem. Critics point out that the trend coincided with colder water, heavy sea-ice cover and other factors².

Nevertheless, Heino's technique opened up a new field, called Darwinian fisheries management, and evolutionary biologists were soon trying to measure the impacts of size restrictions on other wild populations. A 2009 study⁵ used Heino's method to conclude that, of 37 commercial fish stocks, the majority were maturing earlier and at a smaller size than in the past, and that these effects were strongest in heavily fished populations.

Jeff Hard, a geneticist with the US National Oceanographic and Atmospheric Administration Fisheries Service in Seattle, Washington, says that in 1976 the largest class of female salmon — those greater than 100 centimetres in length — accounted for more than 20% of the fish spawning in one Alaskan river. Today, that number is less than 4%, and the number of eggs that females are producing has declined by 16%. But without genetic data from this and other populations, the findings can always be attributed to environmental changes. "It's almost impossible to prove these things," says Andrew Hendry, an evolutionary ecologist at McGill University in Montreal, Canada.

That is why Heino and others are looking to the DNA from historical samples of cod and other species for help. Filip Volckaert of the Dutch-language Catholic University Leuven in Belgium, for example, is sequencing DNA from otoliths, or ear bones, of yellowfin sole (*Limanda aspera*) from every decade back to the 1950s to identify genetic changes that might be linked to growth.

And Heino is complementing the genetic work with his own brand of lab experiment. Inside a special room at his university, he now has nine populations of guppies, and harvests between one-quarter and one-half of the population on the basis of size. To make the experiment more natural than that of Conover and Munch, he allows the guppies to reproduce freely at any age. And, as in nature, the breeding populations contain a wider range of ages and sizes. He expects the experiment, which he started in 2009, to run until 2014.

But it will take a lot to convince the sceptics. "Fisheries-induced evolution is an interesting side issue, but it's been greatly overblown," says Ray Hilborn, a fisheries scientist at the University of Washington in Seattle. There is no question that fished populations are evolving, he says, but some traits, such as earlier age of maturation, may make some fish populations more productive, not less so. The data suggesting that growth rates are slowing are also not yet convincing, he says. The best way to preserve fish populations is simply to fish less, he says.

Heino agrees, but wants to see other changes in marine policy. For example, he does not think that marine reserves should protect only spawning grounds — a common conservation strategy — because that gives another advantage to early-maturing fish, which return to the spawning grounds to breed sooner than late-maturing fish. Second, he says that it is time to abandon most size limits.

Support is growing for these views. Last year, an international group of fisheries experts published a policy paper in *Science*⁶ rejecting size limits for a wide range of reasons, including evolutionary issues. Jeppe Kolding of the University of Bergen studies small-scale fishing in Africa, and has found that areas where fishermen use illegal nets that catch large and small fish alike tend to have food webs that are diverse, intact and resemble unharvested areas, only with lower biomass. When fishing pressure is spread across species and sizes, he argues, fishermen can net more fish, yet the risk of wiping out individual populations is lower. “How can you tell me this is a bad fishing method?” he asks.

Heino knows that overturning entrenched fishing practices could take decades, and for now he is focusing just on the data. “It requires patience,” he says. “The practical implications are something that will keep developing for a long time.”

Nature **493**, 597–598 (31 January 2013) doi:10.1038/493597a

References

1. Ricker, W. E. *Can. J. Fish. Aquat. Sci.* **38**, 1636–1656 (1981).
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2. Kuparinen, A. & Merilä, J. *Trends Ecol. Evol.* **22**, 652–659 (2007).
[Show context](#) Article PubMed ISI
3. Conover, D. O. & Munch, S. B. *Science* **297**, 94–96 (2002).
[Show context](#) Article PubMed ISI ChemPort
4. Olsen, E. M. *et al. Nature* **428**, 932–935 (2004).
[Show context](#)
5. Sharpe, D. M. T. & Hendry, A. P. *Evol. App.* **2**, 260–275 (2009).
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6. Garcia, S. M. *et al. Science* **335**, 1045–1046 (2012).
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- **Fisheries: What's the catch?**
02 June 2010

- **Hatcheries may not save endangered fish**

04 October 2007

From elsewhere

- **Evolutionary Fisheries Ecology**

Author information**Affiliations**

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Feb. 2018 Public Comments

My handouts are graphs of the commercial and recreational catches of finfish that you manage. It is undeniable that the resource is overfished and trending to a point no return. River herring has reached that point.

Let's look at the facts:

Commercial catch without menhaden down 65% since 1980's
Recreational catch down 48% since 2000's

These facts come from your 2017 DMF License and Statistics Annual Report. The report's 395 pages contains all the data needed to manage our resource but must be used if needed change is to happen!

I have three inputs:

First:

Tell us the truth about the stock status based on science and eliminate the current designations, viable, recovering, concerned, depleted. These descriptions are influenced by politics and not solely based on science. Speckled Trout is the best example of a stock status lie. How in 2015 can the speckled trout rating go from depleted, your lowest rating to viable, your highest rating in one year,

Just tell us how a fish population is trending and at what rate.

Second:

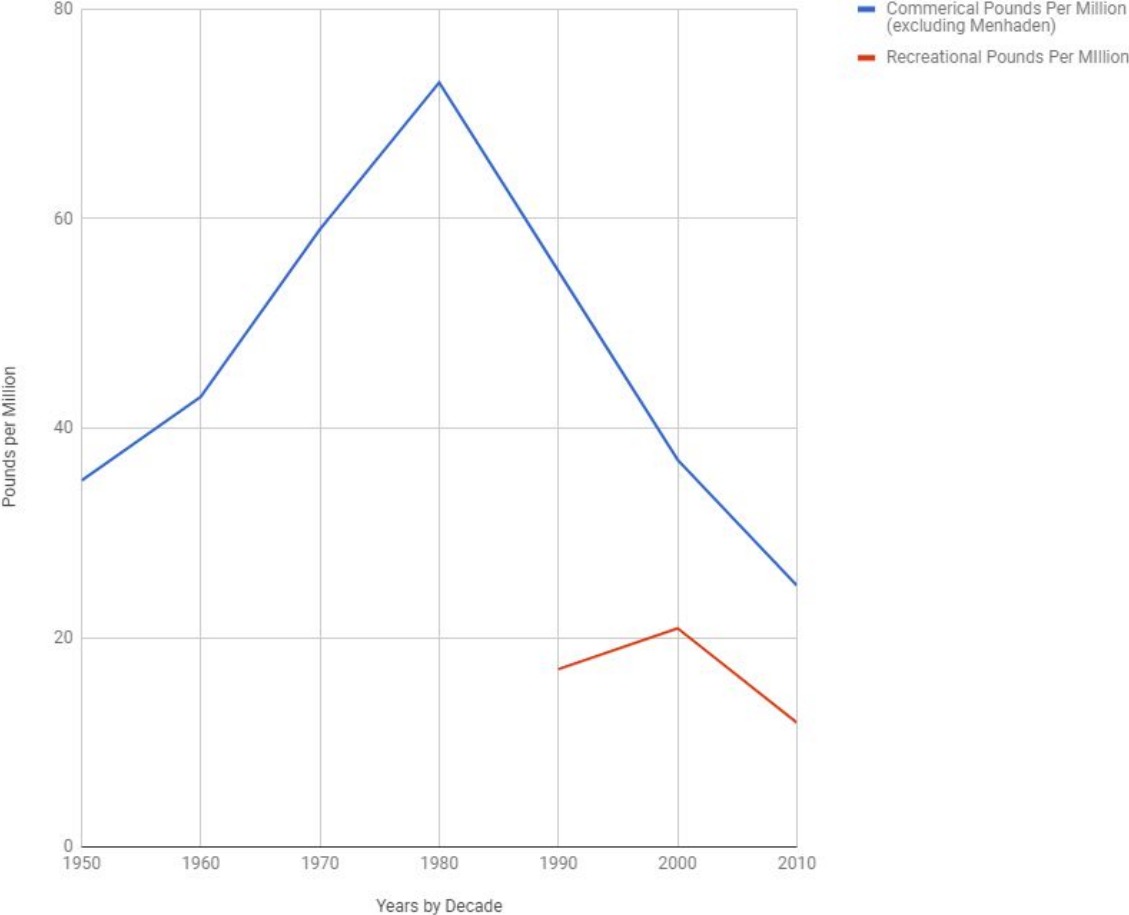
Only give commercial license to true commercial fishermen. Other states have figured this out. It's time to act.

Finally:

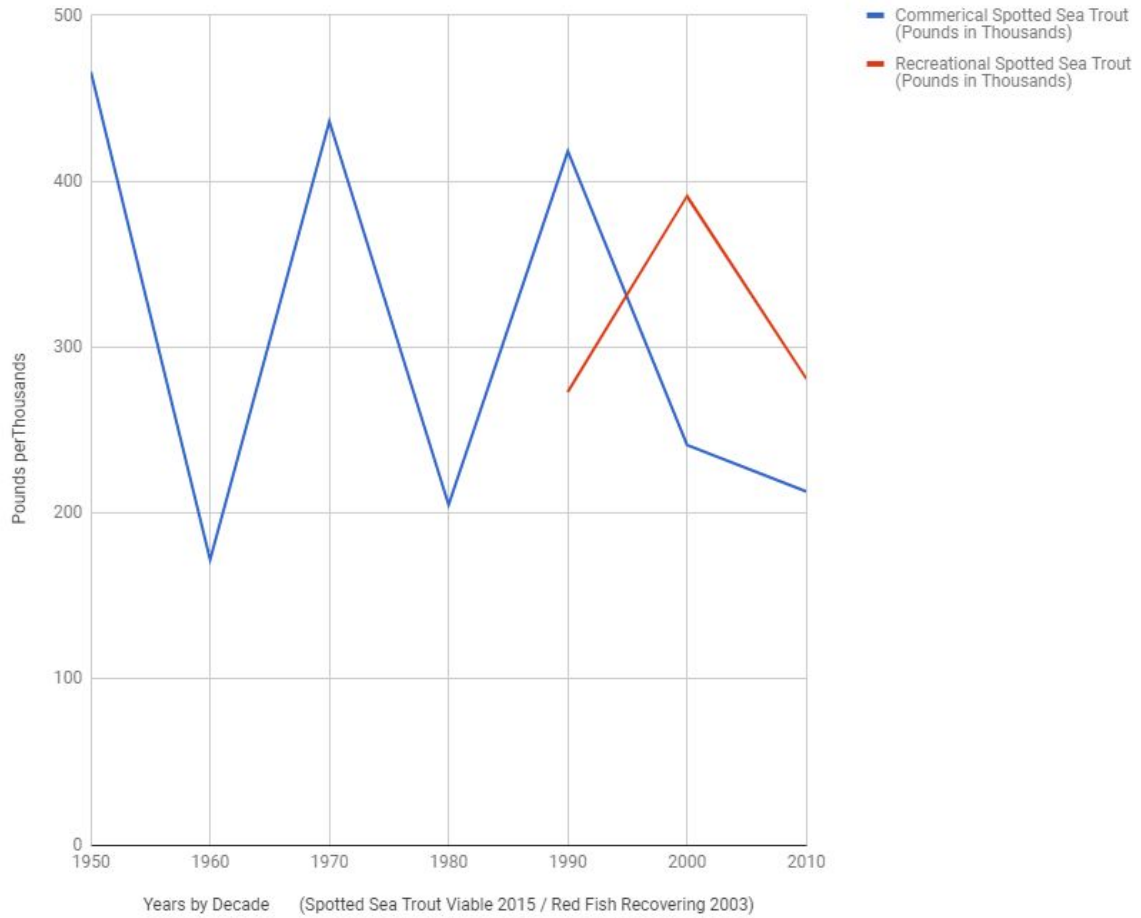
I believe you have to change from managing the catch to managing the resource. Manage for sustainability and then growth. Is that not what you volunteered for? The resource?

Ron McCoy
Hampstead, NC

AVERAGE RECORDED COMMERCIAL AND RECREATIONAL FINFISH CATCH BY DECADE
2017 Division of Marine Fisheries License and Statistics Annual Report



AVERAGE RECORDED COMMERCIAL and RECREATIONAL Spotted Sea Trout CATCH BY DECADE 2017 Division of Marine Fisheries License and Statistics Annual Report



REMINDER

MANDATORY EDUCATION REQUIREMENTS

MANDATORY EDUCATION.

Public Servants and Ethics Liaisons. The State Government Ethics Act *requires* that every public servant and ethics liaison complete an ethics and lobbying education presentation/program approved by the State Ethics Commission *within 6 months* of the person's election, reelection, appointment, or employment **and** complete a refresher ethics presentation *at least every two years thereafter*.

The willful failure of a public servant serving on a board to comply with the education requirements may subject the person to removal from the board. The willful failure of a public servant who is a State employee to comply with the education requirement may be considered a violation of a written work order permitting disciplinary action. Therefore, if there are public servants in your agency or on your covered state board or commission who are past due for completing their ethics education requirements, **those individuals should attend a live presentation, distance video-streamed presentation or complete the online education as soon as possible.**

Legislators. The State Government Ethics Act *requires* that every legislator complete an ethics and lobbying education presentation/program approved by the State Ethics Commission and the Legislative Ethics Committee *within 2 months* of either the convening of the General Assembly to which the legislator is elected or the legislator's appointment, whichever is later, **and** complete a refresher ethics education presentation *at least every two years thereafter*.

The willful failure of a legislator to comply with these education requirements may subject the legislator to sanctions under the Legislative Ethics Act.

Legislative Employees. The State Government Ethics Act *requires* that every legislative employee complete an ethics and lobbying education presentation/program approved by the State Ethics Commission and the Legislative Ethics Committee *within 3 months* of the person's employment **and** complete a refresher ethics education presentation *at least every two years thereafter*.

The willful failure of a legislative employee to comply with these education requirements may subject the person to disciplinary action by their hiring authority.

Legislators and Legislative Employees may check the status of their ethics education by going to the General Assembly intra-net page. Legislators and legislative employees who are past due for completing their ethics education requirements should contact Denise Adams with the Research Division of the General Assembly at denise.adams@ncleg.net or 919-301-1991 to coordinate/schedule their ethics education training.

ETHICS AND LOBBYING EDUCATION TRAINING.

Public Servants and Ethics Liaisons may complete the required basic or refresher ethics and lobbying education training by either attending a live presentation, a distance video streamed presentation or completing the online education modules.

- **Live and Distance Video-Streamed Presentation Dates.** The State Ethics Commission has scheduled live ethics and lobbying education presentations and distance video-streamlined presentations for the remainder of 2014. Dates, locations, and registration information are on the Commission's website at:
www.ethicscommission.nc.gov/education/eduSchedule.aspx.
- **Online Education.** The State Ethics Commission also offers online ethics and lobbying education. The education modules and instructions are on the Commission's website at:
www.ethicscommission.nc.gov/education/eduOnline.aspx.

Legislators may complete the required basic or refresher ethics and lobbying education training by attending a live presentation at the beginning of the legislative session jointly provided by the Ethic Commission and the Research Division of the General Assembly.

Legislative Employees may complete the required basic or refresher ethics and lobbying education training by going online to the General Assembly intra-net page.

REGISTRATION AND QUESTIONS.

- **Public Servants and Ethics Liaisons** please contact Sue Lundberg at (919) 715-2071 or by e-mail at Education.Ethics@doa.nc.gov to register for ethics and lobbying education training or if you have ethics education questions.
- **Legislators and Legislative Employees** please contact the General Assembly ethics hotline at 919-301-1991 or email Denise Adams at denise.adams@ncleg.net if you have questions about the ethics and lobbying education training or have ethics education questions.

Thank you for giving this matter your immediate attention and for sharing this information with all members of your covered board, commission or committee, all staff and employees covered under the State Government Ethics Act, and all legislators and legislative employees.



NORTH CAROLINA

State Board of Elections & Ethics Enforcement

Mailing Address:
P.O. Box 27255
Raleigh, NC 27611-7255

Phone: (919) 814-0700
Fax: (919) 715-0135

KIM WESTBROOK STRACH
Executive Director

OCTOBER 26, 2017

TIPS FOR THE ONLINE ETHICS EDUCATION PROGRAM COMPATIBILITY ISSUES.

Please share this information with your Agency's covered employees and the members of your Boards and Commissions:

Computers with Windows 10

- Use Microsoft Edge & Microsoft Internet Explorer
- May also work with Foxfire
- Program does **not** work with Google Chrome

Mac Computers

- Use Firefox to open Online Education; if audio does not work, right click "No Audio" button and allow microphone so that audio works.

Computers with Windows 7 & 8

- Use Internet Explorer as your browser

If the above suggestions do not resolve the problem for the person, we recommend they use a computer at a public library, Community College or University as the program seems to run fine on these computers. **NOTE: individuals are required to complete the ethics education PRIOR to their education due date even if they encounter problems with the online program.**

INDIVIDUALS MUST FULLY COMPLETE THE ONLINE PROGRAM.

Many people are not fully completing the online ethics education program. If within a few minutes after you "completed" the online program you do not receive an emailed certificate of completion from us, you probably have **not** fully completed the program. **If one fails to fully complete the online program, we cannot credit them with completing the required ethics education training.**

To complete the program, when one comes to the slide that says "Congratulations," they **MUST** click on the box that says "complete program." Clicking on this box brings them to a form where they enter identifying information and "certify" that they have taken the complete program. After providing this information, they need to click on the "submit" button; we are then notified of their completion, their record is updated and they will be emailed a certificate of completion from us.

If you or any of your people have any questions, please contact us at (919) 814-3600.



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KIM WESTBROOK STRACH
Executive Director

State Board of Elections and State Ethics Commission Merged into One New State Board

On June 1, 2017, a panel of superior court judges dismissed a lawsuit challenging the constitutionality of Session Law 2017-6, the [state law](#) creating the Bipartisan State Board of Elections and Ethics Enforcement (State Board). The new State Board merges the N.C. State Board of Elections and the N.C. State Ethics Commission and assumes duties formerly overseen by these two agencies, along with lobbying compliance carried out by the Secretary of State. Though parties to the lawsuit may seek additional review on appeal, for now, the consolidated State Board is the agency to enforce North Carolina's elections, ethics and lobbying laws.

Currently, the ethics staff and the election staff of the State Board are housed in different buildings. However, the goal is for all staff to be housed in one building by September 1, 2017. **So, the ethics staff will be moving soon, but until then we will remain at our present location at 424 North Blount Street in Raleigh and our direct telephone number remains 919-814-3600.**

Although the State Board is a new entity, the State Government Ethics Act (Ethics Act) remains in effect and applies to the same individuals as it did prior to this merger. **The duties and obligations of the Ethics Act remain, including the *SEI filing requirements and the Ethics Education training requirements*.** In addition, the duties of Agency Heads, including Board Chairs, and those of Ethics Liaisons remain the same.

If you have questions or need additional help, please feel free to contact us at 919.814.3600

Sue Lundberg, Education Attorney - Gretchen Aycock, SEI Attorney



NORTH CAROLINA

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Vol. 20, Issue 4



Holiday Edition



November 2017

The Holidays Are Quickly Approaching!

Each year at holiday time the State Ethics Commission, now the State Board of Elections and Ethics Enforcement (State Board), receives numerous questions concerning the gift bans of the State Government Ethics Act (SGEA) and the Lobbying Law and what exceptions, if any, might be applicable to holiday events and holiday gift-giving. This newsletter summarizes those gift bans and provides general information on a few of the common gift-giving situations and holiday events. As always, you should contact the Ethics Unit of the State Board if you have any doubt about what you should do in a particular situation.

The SGEA's Gift Ban prohibits public servants, legislators and legislative employees from accepting gifts from certain givers *unless* an exception to the gift ban applies and allows the gift to be received.

The Lobbying Law Gift Ban prohibits direct and "indirect" gift giving from lobbyists, lobbyist principals and liaison personnel to a public servant, legislator or legislative employee *unless* a gift ban exception applies and allows the gift to be given. (An **indirect gift** is a gift given to another with the intent that a legislator, legislative employee or public servant be an "ultimate recipient.")

There is **no de minimus or small gift exception**. In other words, unless a gift ban exception applies, all gifts from these certain givers are prohibited regardless of value.



If You Are A:	You Generally Cannot Accept Gifts From:
Public Servant	<ul style="list-style-type: none"> • Lobbyists • Lobbyist Principals • "Interested Persons"
Legislator or Legislative Employee	<ul style="list-style-type: none"> • Lobbyists • Lobbyist Principals • Liaison Personnel
If You Are A:	You Generally Cannot Give Gifts To:
Lobbyist or Lobbyist Principal	<ul style="list-style-type: none"> • Legislators • Legislative Employees • Public Servants
Liaison Personnel	<ul style="list-style-type: none"> • Legislators • Legislative Employees

Names of lobbyists, lobbyist principals and liaison personnel can be found at: <http://www.secretary.state.nc.us/lobbyist/>.

Names of public servants, legislators and legislative employees can be found at: <http://www.ethicscommission.nc.gov/coverage/coveredPersons.aspx>

There is no list of "interested persons." However, **interested persons are individuals or organizations:**

- 1) doing or seeking to do business of any kind with the public servant's agency or board;
- 2) engaged in activities that are regulated by the public servant's agency/board; or
- 3) having a financial interest that may be substantially affected by the public servant's action or inaction.

You Wear Your Covered Person Hat At All Times!

Remember, if you are a legislator, legislative employee or public servant, you “wear that hat” at all times, not just during the holidays, and not just when you are engaged in your official duties or employment. Therefore, you should always consider the following before accepting a gift:

- **Is this a “gift” as defined in the Ethics Act?** (A “gift” is anything or service with monetary value, regardless of the value).
- **Who is paying for or funding the gift** (*i.e.*, is the gift directly or indirectly being paid for or funded by a lobbyist, lobbyist principal, liaison personnel or “interested person?”)?
- **If it is a gift from one of these prohibited givers, does the gift fit within a gift ban exception?** Note that if an exception does not apply, you cannot accept the gift. Exceptions listed in G.S. 138A-32(e)



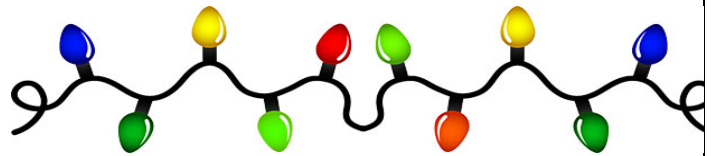
Holiday Gift Giving Hypo

Gifts from Extended Family:

You are a public servant as a member of a State board covered under the SGEA. Your daughter-in-law has a computer service contract with your board, thus she is an “interested person” to your agency. Interested persons are prohibited givers so you can only accept a gift from them if the gift fits within a gift ban exception.

Q. May your daughter-in-law give you a Christmas present?

A. Yes. G.S. 138A-32(e)(7) exception applies. Gifts given by extended family members or a member of the same household are permissible even though the person would otherwise be prohibited from giving such a gift and you would otherwise be prohibited from accepting it.



Common Questions Asked

Q. Is a Holiday *Greeting Card* a gift?

A. No. Holiday greeting cards are not gifts. Thus, they may be given and received without violating the gift ban.

Q. Is a Holiday *Gift Card* a gift?

A. Yes. Holiday gift cards that can be exchanged for something of value are gifts and may not be given or received unless a gift ban exception applies.

Q. What should I do if I receive a prohibited gift?

A. Promptly decline it, return it, pay fair market value or face value for it, or donate it to a charity or the State. You should also keep a written record of your actions.

Q. Are there exceptions to the gift ban?

A. Yes. But there are four things you must remember regarding the exceptions:

- 1) specific criteria must be met for each exception;
- 2) you can only accept the gift(s) the exception allows;
- 3) the gifts usually must be reported to the Secretary of State by the giver with the report including the name of the recipient and a description and value of the gift; and
- 4) the report is a public record.



Holiday Gift Giving Hypo

Gifts Given Generally to all Others:

You are a public servant and your insurance company is a lobbyist principal. Around the holidays, the company gives calendars to all of its clients and to the general public.

Q. Are you allowed to accept a calendar?

A. Yes. G.S. 138A-32(e)(6) exception applies. Gifts of items generally made available or distributed to the general public or all other State employees by a prohibited giver do not violate the gift ban and are allowed to be given and accepted.



Charitable Solicitations

The Holidays present many opportunities for charitable donations. However, legislators, public servants and judicial officers are prohibited from soliciting charitable donations from subordinate State employees. This rule does not apply to generic written solicitations to all members of a class of subordinates.

HAPPY NEW YEAR



Contact the State Board's Ethics Advice Unit for detailed guidance and advice at 919-814-3600 or www.ethicscommission.doa.nc.gov.

Food & Beverage Exception

There are several exceptions allowing for food and beverages for immediate consumption at certain types of events. However, if the person paying for or funding the event is a prohibited giver, the specific conditions/rules of the particular exception must be met for the legislator, legislative employee or public servant to eat and drink the food and beverages at the event.



Holiday Party Hypo

You are a covered public servant. Your neighbor is a lobbyist and is having a neighborhood holiday party where food and beverages will be served.

Q. May you attend the party and eat and drink the food and beverages being served to all of the attendees?

A. Because the food and beverages are a gift under the SGEA and are being given by a lobbyist, to be able to eat and drink an exception must apply. Gifts given as part of a business, civic, religious, fraternal, personal or commercial relationship are permissible if two conditions are met: (1) the relationship is not tied to your public service or position; and (2) the gift is given under circumstances that a reasonable person would conclude that the gift was not given to lobby you.

In this case, (1) You were invited to a neighborhood party because you are a neighbor, not because you are a public servant. The food and beverages are being given to you as a neighbor of this lobbyist and this relationship is not tied to your public service or position; and (2) you are being given the same gift of food and beverages as all of the attending neighbors. Therefore, a reasonable person would conclude that the gift was not being given to lobby you.

The two conditions of this exception are met so you may attend the neighborhood holiday party and eat and drink food and beverages.

2018 Meeting Planning Calendar*

January						
Su	Mo	Tu	We	Th	Fr	Sa
	1	2	3	4	5	6
7	8	9	10	11	12	13
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21	22	23	24	25	26	27
28	29	30	31			

February						
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18	19	20	21	22	23	24
25	26	27	28			

March						
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25	26	27	28	29	30	31

April						
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29	30					

May						
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27	28	29	30	31		

June						
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24	25	26	27	28	29	30

July						
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29	30	31				

August						
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26	27	28	29	30	31	

September						
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30						

October						
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28	29	30	31			

November						
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25	26	27	28	29	30	

December						
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16	17	18	19	20	21	22
23	24	25	26	27	28	29
30	31					

	MFC
	ASMFC
	SAFMC
	MAFMC
	State Holiday

	Southern Regional AC
	Northern Regional AC
	Finfish AC
	Habitat and Water Quality AC
	Shellfish/Crustacean AC

*Advisory Committee dates not yet available