From: jean nelson
To: Comments
Subject: [External] for Menhaden Management Board members meeting. Aug 6,2024
Date: Friday, August 2, 2024 8:14:52 AM

CURRENT ASFMC TAC ON MENHADEN REDUCTION FISHING IN THE CHESAPEAKE BAY HAS MANAGED TO KILL MORE BABY OSPREY CHICKS TO STARVATION THAN THAN DDT DID IN THE 1970's
PLEASE TAKE ACTION NOW

this request is made because by your own admission -
asfmc has no scientific data to back up the tac numbers they allow to be harvested from the bay . . .
without this information you have no idea if omega protein is taking 9 or 99 percent of the available menhaden from the bay each season.

nor do you know how much has to be left for the survival of the fish and birds who depend on menhaden for their survival . . .
without knowing what to leave how can you determine what can be safely taken.

ADVERSE IMPACT
menhaden are bred and raised in the protective confines of the almost completely enclosed chesapeake bay. when they are ready to migrate there is only one way out - into the ocean at the mouth of the bay near norfolk.

this fish in a barrel scenario makes it nearly impossible for any schools of menhaden to evade the omega ships working the bay and in order to get it into the ocean they still have to make it thru the fleet that sit at the mouth of the bay in norfolk to catch them coming and going.

removing such large numbers of menhaden destroys the fragile ecological balance of the estuary, has been shown to be the cause of the osprey chick kill and nest failure on the bay* and is no doubt impacting many other seabird fish or mammal in the bay who must rely on menhaden for needed for sustenance and survival.

YOUR JOB
a part of asfmc's stated management mission is to :

> Objective 1 – Rebuild, maintain, fairly allocate, and promote Atlantic coastal fisheries.
>
> Objective 2 – Provide the scientific foundation for and conduct stock assessments to support informed management actions.
>
> Objective 3 – Promote compliance with fishery management plans to ensure sustainable use of Atlantic coast fisheries.
>
> Objective 4 – Protect and enhance fish habitat and ecosystem health through partnerships

1- there is nothing fair about allocating 75 percent of the entire catch to virginia

2- there is no scientific foundation no stock acessment to justify your bay tac

3- your numbers in the bay are proving to be unsustainable and

4- you are not protecting and enhancing fish habitat not ecosystem health in the bay.

PLEASE PLACE A MORATORIUM ON FURTHER BAY HARVESTING UNTIL SUCH TIME THAT A SCIENTIFIC STUDY CAN BE COMPLETED TO GATHER THE SCIENTIFIC DATA YOU NEED TO SUPPORT ANY FURTHER ACTIVITY.

i fear it may be too late for the osprey in much of the bay. the signs of distress in the bay have been blinking red for years now. with little to no food this year those who leave this fall may not return.

pls remember that the bay belongs to the people of md and virginia - it's not the exclusive property of canadian owned omega.

they may threaten to leave if they don't get their way but their boats are built for ocean going operations so it should be a non issue.

sadly i fear that no matter what limitations va imposed on them - we will never get rid of them. no one else on the east coast even wants them in their waters..

PLEASE DO THE RIGHT THING. ITS YOUR JOB.

thank you

. . . . . .
* sources for osprey study
dr brian watts - director center for conservation biology

his study and annual reports were documented as a part of the ongoing 50 year study of osprey populations in the lower bay conducted by leading experts and scientists at william and mary.

and michael academia - william and mary / winner of the 2022 wm anderson award at international raptor research conference for the accent for his stitchers on supplemental feeding of osprey in mobjack bay.

From: normcohn@gmail.com
To: Comments
Subject: [External] Menhaden board meeting August 6
Date: Wednesday, July 31, 2024 2:05:28 PM

---

you must stop ALL menhaden fishing until a scientific study on the effects on the Chesapeake Bay fishery can be completed.

I am a pleasure fisherman and have watched the menhaden net fisherman pull and kill multiple species along with menhaden.

Kill the menhaden and destroy a food source for ALL larger species.
Fishing in the Bay gets worse every year and the destruction of the food chain is, I believe, the reason.

Sent from my iPhone

From: Steve Atkinson
To: Comments
Cc: Rick Elyar; Chris Dollar
Subject: [External] August 6 menhaden board meeting
Date: Thursday, August 1, 2024 10:36:16 AM

Good morning. On behalf of hundreds of saltwater anglers in Virginia, I provide the following comments for consideration by the menhaden management board:

It has become increasingly clear that menhaden in our Chesapeake Bay are being depleted at an alarming rate. While they are not considered overfished, this is a coast-wide designation and has nothing to do with conditions in the bay, the most important estuary and fish nursery on the east coast. In fact, your own scientists have stated that striped bass, which remain in decline, are the most sensitive to declines in menhaden, yet we allow large scale reduction fishing in the largest striped bass nursery on the Atlantic coast. Certainly striped bass can be both overfished and under fed.

For whatever reason, menhaden are no longer coming into the bay in large numbers as in the past, and when they do the reduction industry scoops them up almost immediately. It seems very likely this is causing significant harm to the fragile ecosystem. While we would all like to have more science on the bay, it appears that is not going to happen anytime soon because organized labor, industry lobbyists, and certain politicians will make sure that any study bills that come before our legislature get "postponed" as we saw this past February. The truth is the industry knows there is a problem in the bay, but they will never admit it, and will work very hard to hit their "bay cap" so that it does not get reduced any further. Last year they did not hit the cap and it appears they wont hit it this year. These are "red flags" to say the least! Add to this the recent research on osprey survival in the lower bay and you get the picture. Additionally, the observations of thousands of fishermen and bay admirers that menhaden schools have become smaller and less frequent is yet another red flag. Personally, I have been on the lower bay at least 10 times this year and have only observed one small school. Finally, as you may know, roughly 65- 70% of the entire Atlantic coast quota comes from a relatively small area of the Virginia coast. This is very concerning and greatly increases the likelihood of localized depletion of this important public resource.

It is past time to put the bay first and move the reduction fishery out of the bay until science can show it is not causing harm. The industry catches about two thirds of the total harvest in the ocean. Why not have them catch the other third there? The industry will claim this would put them out of business. While it may increase their operating costs, their business model can not possibly be based solely on being able to fish the bay. They are currently authorized to catch 112 million pounds from the bay annually. This removes a devastating amount of the "most important fish in the sea." Our bay, fish, mammals, and seabirds deserve better!

We call on you to do the right thing and protect our bay and recreational fishing economy.

Thank you for your consideration.

Steve Atkinson
Chairman, Virginia Saltwater Sportfishing Assn.
Virginia Beach, Va

From: Debbie Campbell
To: Comments
Subject: [External] Public Comment for Aug 6 Menhaden Management Meeting
Date: Friday, August 2, 2024 9:01:05 AM
Attachments: Menhaden Resolution (2).pdf

Members,
We are writing to ask you to ban industrial menhaden reduction fishing activity in VA State waters. We have attached the resolution passed by my poor, rural community in 2023. It explains the damage we suffer and illustrates the issue at hand.
Thank you.
Bill and Debbie Campbell
Kellam Dr
Silver Beach
VA 23350

RESOLUTION

A RESOLUTION OF THE NORTHAMPTON COUNTY BOARD OF SUPERVISORS APPROVING THE COUNTY'S POSITION THAT INDUSTRIAL ATLANTIC MENHADEN FISHING SHOULD BE PROHIBITED WITHIN THE WATERS OF THE CHESAPEAKE BAY AND THREE MILES OF ALL LANDS OF THE COMMONWEALTH AND REQUESTING THAT THE VIRGINIA MARINE RESOURCE COMMISSION AND STATE AGENCIES LEGALLY ESTABLISH AND ENFORCE A PROHIBITION OF THE INDUSTRIAL ATLANTIC MENHADEN FISHERY WITHIN THE WATERS OF THE CHESAPEAKE BAY AND WITHIN THREE MILES OF ANY LANDS OF THE COMMONWEALTH.

WHEREAS, Atlantic menhaden are an ecologically essential keystone species of the Chesapeake Bay ecosystem that support commercially and recreationally important fisheries, maintain water quality by filtering nutrients from the water, and provide essential nutrients for numerous species in the bay food chain; and

WHEREAS, industrial menhaden fishing in the Chesapeake Bay negatively impacts Northampton County by reducing the stock of menhaden available to support important fisheries and wildlife, reducing the populations of recreational and commercial fish species caught in purse seine nets as by-catch, and reducing the population of predator species such as osprey, dolphins, sharks, humpback whales, striped bass, redfish, weakfish, and speckled trout, all of which contribute to the general and tourism economy of Northampton County; and

WHEREAS, industrial menhaden fishing operates on a tactical level where they use spotter airplanes that can quickly cover the entire Chesapeake Bay in a matter of hours, the planes then locate schools of menhaden by air, and then quickly dispatch their boat fleet to extract schools of menhaden from the Chesapeake Bay with purse seine nets. By design, these highly efficient industrial extraction methods cause localized depletion of Atlantic menhaden in the Chesapeake Bay and it is not known how long it may take the Chesapeake Bay ecosystem to recover from excessive depletion of biomass, and whether a full recovery is even possible; and

WHEREAS, the Virginia Secretary of Natural Resources, Virginia Marine Resources Commission, and members of the Atlantic Menhaden Technical Committee of the Atlantic States Marine Fisheries Commission can not provide Northampton County scientific assurance that the spatial or seasonal stock of menhaden in the Chesapeake Bay is healthy, and the impact of localized depletion due to industrialized Atlantic menhaden fishing techniques in the Chesapeake Bay (VIMS et al. 2023); and

WHEREAS, both the Virginia Institute of Marine Science and the Maryland Department of Natural Resources published record low striped bass recruitment numbers for 2023, this is the fifth consecutive year of juvenile striped bass numbers being below the average and the second lowest striped bass index ever recorded since 1957 (MDNR et al. 2023, Small et al. 2023, VIMS et al. 2023); and

Whereas, research suggests industrial reduction menhaden fishing in the Chesapeake Bay could be responsible for a decline in striped bass (Buchheister et al. 2017, TRCP et al. 2019). The Virginia Institute of Marine Science linked striped bass starvation to a decline of forage food in the Chesapeake Bay, and starvation as a cause for predisposing fish to Mycobacteriosis, locally referred to as fish wasting disease (Cardinal et al. 2001); and

WHEREAS, the Virginia Institute of Marine Science recorded industrial menhaden trawlers catching striped bass in their purse nets in the Chesapeake Bay, the average size of the striped bass caught by these industrial menhaden trawlers was over 34 inches, well above the 31 inches established by the ASMFC, suggesting that the striped bass being caught by industrial menhaden trawlers as by-catch are of size to be important breeders for striped bass recovery (Kirkley et al. 1995, ASMF et al. 2023); and

WHEREAS, in 2023, the Center for Conservation at the College of William and Mary published record low osprey chick recruitment numbers in the Chesapeake Bay, the lowest recruitment numbers since 1970 as a result of starvation, a reproduction number that is lower than what occurred at any time during the DDT era and a much lower rate than is sustainable for the Bay population of Osprey (Hafner et al. 2023); and

WHEREAS, industrial menhaden fishing has caused fish kills and fish spills that have impacted public beaches, private property, and public health in Northampton County; and

WHEREAS, industrial menhaden fishing adversely impacts the economic well-being of Northampton County by disrupting the health of our local commercial industry; and

WHEREAS, industrial menhaden fishing adversely impacts the economic well-being of Northampton County by disrupting our local sport fishing industry; and

WHEREAS, industrial menhaden fishing adversely impacts the economic well-being of Northampton County by disrupting our local tourism industry, due to the adverse effects of fish spills, fish kills, the persistent rotting odor of fish spills and fish kills, and reduced sport fishing; and

WHEREAS, all other states on the Atlantic Coast have removed industrial menhaden fishing from their bays and state waters, and have now recorded positive ecological and economic responses in doing so (Main et al. 2023); and

NOW THEREFORE BE IT RESOLVED that the Northampton County Board of Supervisors, this 9th day of January, 2024, establishes the County's position that industrial

Atlantic menhaden reduction fishing should be prohibited within the waters of the Chesapeake Bay and three miles of all lands on the Commonwealth and requests that the Virginia Marine Resources Commission and state agencies legally establish and enforce a prohibition of the industrial Atlantic menhaden reduction fishery within the waters of the Chesapeake Bay and within three miles of any lands of the Commonwealth.

Northampton County Board of Supervisors

The undersigned Clerk of the Northampton County Board of Supervisors hereby certifies that the above is a true copy of a resolution adopted by the Northampton County Board of Supervisors on January 9, 2024.

Clerk, Northampton County Board of Supervisors

From: Brian Collins
To: Comments
Subject: [External] Aug 6th Meeting
Date: Friday, August 2, 2024 9:59:36 AM

It is unconscionable to allow 112m lb quota for Menhaden's in the bay with zero scientific data.

ASMFC is failing the public and destroying the Chesapeake Bay - ecosystem.

And the ignorance about the 230 million more lbs of Menhaden that can be caught at the CBBT and along the UNESCO world heritage site on the Virginia Coastal reserve is destroying Virginias saltwater fishing economy.

Shame on ASMFC

Thanks, Brian

From: Bill Dunn
To: Comments
Subject: [External] Re: Menhaden Board August 6th 2024 Meeting
Date: Wednesday, July 31, 2024 3:44:47 PM

To whom it may concern:

Please consider management restrictions of the reduction industry within the Va portion of the Chesapeake Bay. Do this in order to re-establish a menhaden biomass capable of supplying the Chesapeake Bay with the food source that has been depleted through localized depletion within Virginia waters.

I base this on daily observations over many years on the Va portion of the Chesapeake Bay.

Thanks,
Bill Dunn
Dunnsville, Va

From: Birding Eastern Shore
To: Comments
Subject: [External] Public Comment to Menhaden Board
Date: Thursday, August 1, 2024 10:16:38 AM

Birding Eastern Shore, Inc.
PO Box 193
Franktown, Virginia 23354
info@birdingeasternshore.org

August 1, 2024

Atlantic Menhaden Management Board
c/o Atlantic States Marine Resources Commission
1050 N. Highland Street
Arlington, VA 22201

RE: Osprey Impacts from Menhaden fishery in the Chesapeake Bay

Dear Atlantic Menhaden Management Board Members,

I am writing on behalf of Birding Eastern Shore, Inc., a nonprofit organization located on the Eastern Shore of Virginia (Accomack and Northampton Counties). Our primary activities involve educating the public about local birds and wildlife to inspire and promote conservation and appreciation of these natural resources. As birders, we observe and collect data on birds for inclusion in citizen science projects such as eBird and Osprey Watch.

We are very concerned about the crisis in Osprey reproductivity on the Eastern Shore of Virginia that appears to be caused by chick starvation prior to fledging. Recent research articles have linked the starvation of osprey chicks to the industrial-scale Menhaden Fishery within the Chesapeake Bay. (Please see, “Researchers Sound the Alarm Over the Chesapeake Bay’s Ospreys”, National Audubon Society Magazine, May 13, 2024 https://www.audubon.org/magazine/researchers-sound-alarm-over-chesapeake-bays-ospreys; “Demographic response of osprey within the lower Chesapeake Bay to fluctuations in menhaden stock,” Watts, et al., Front. Mar. Sci., 07 January 2024; Food supplementation increases reproductive performance of ospreys in the lower Chesapeake Bay, Watts, et al., Front Mar. Sci., 19 April 2023.

We ask that the Atlantic Menhaden Management Board of ASMFC initiate a study to evaluate the impacts of menhaden fishing on osprey populations and establish menhaden population levels required to maintain current population levels of Osprey in the Chesapeake Bay watershed. Research should focus not only on the population metrics such as quantity of both species, and age/size of menhaden schools, but also on the methodology of the industrial fishing activities. Menhaden fishing boats that supply Omega Protein’s plant in Reedville have been observed to fish in shallow

waters and to remove ALL fish, not just menhaden. Furthermore, their practice of clustering multiple boats at the mouths of Eastern Shore creeks should be studied, as that practice prevents any fish from entering the sub-estuaries of the Eastern Shore of Virginia where many of the osprey nests are located. Thank you for your attention to this matter.

Sincerely,

Roberta Kellam
President

From: Lud Kimbrough
To: Comments
Subject: [External] Menhaden Board Aug 6 Management Meeting
Date: Thursday, August 1, 2024 6:29:29 AM

Please implement management restrictions on the reduction fishery industry in the Chesapeake Bay.

Lud Kimbrough
lud.kimbrough@gmail.com

From:	Tom Lilly
To:	Tina Berger
Cc:	Lynn Fegley; Allison Colden; Russell Dize; Michael Luisi
Subject:	[External] Fwd: DECLINING SPRING MENHADEN IN CHESAPAKE BAY ..ACTION ON AUG 6th ?
Date:	Thursday, August 1, 2024 3:43:55 PM
Attachments:	Tale of Two Bays 4 pages.pdf IMG_1325 (4).PNG NOAA CHARTS XX.pdf Frontiers 2021 and pg 12.pdf

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Tina. This is for the Menhaden board, Bob Beal and James Boyle. Please send out with your supplemental materials and acknowledge receipt. Best wishes, Tom.
Sent from my iPhone

Begin forwarded message:

Subject: DECLINING SPRING MENHADEN IN CHESAPAKE BAY ..REQUEST FOR ACTION ON AUG 6th

To Bob Beal, James Boyle and the Menhaden board

I heard that the VA ospreys arrived on time in VA late February-early March this year but there has been "unprecedented " late egg laying and a large number of breeding females that didn't lay eggs at all. Evidently menhaden was so scarce the females couldn't find the nutrition they needed to reach breeding condition after their long migration. These ospreys are your ERP indicator species of problems with the menhaden harvest. (n.1) and (n.5) See last attached article "The Path to an Ecosystem Approach for Forage Fish Management....page 12 where ospreys are an ERP harvest indicator species. (last scan)

I also saw the reports on the Facebook site (Save our Menhaden) that on many days in May the purse seiners were able to find only a few schools, if that, in the VA bay. (n.2) If the menhaden weren't

there in May then they weren't there in late March or April either when the ospreys and the striped bass spawning stock needed the food the most. I believe those are facts.

The weekly factory catch records for May and June this year separated out for the bay and ocean, that we are told ASMFC staff received weekly from NOAA, that we have asked for would we strong evidence this trend is continuing. I have just learned Bob Beal will not allow the board to see that data in the possession of the Commission staff saying it is "confidential" ?

I thought we should look into this a little deeper to see if the poor showing of menhaden this spring was something new or was part of a trend. NOAA publishes a graph of total factory catches each year . While not broken down into bay vs Atlantic they are what we have to look at right now. The attachment has the totals for start up in mid May and end of May 2015-2023. (please note that the Chesapeake Bay and Atlantic catch totals for the factory fishing is separated out when NOAA Beauford lab sends these totals weekly during the season to the ASMFC.. But at this point, Bob Beal has ruled at although the commission has his data the menhaden board members can’t see it. ??

On the 2018 chart the lines are faint for the May start up but it looks like it was 17,500 tons start and 22,000 tons end May,(n.3) then on the 2023 chart start for the years 2020 and 2021 start mid May is about 6,000 tons and May end about 10,000 tons.(n.4) Isn't that over a 100% decline.

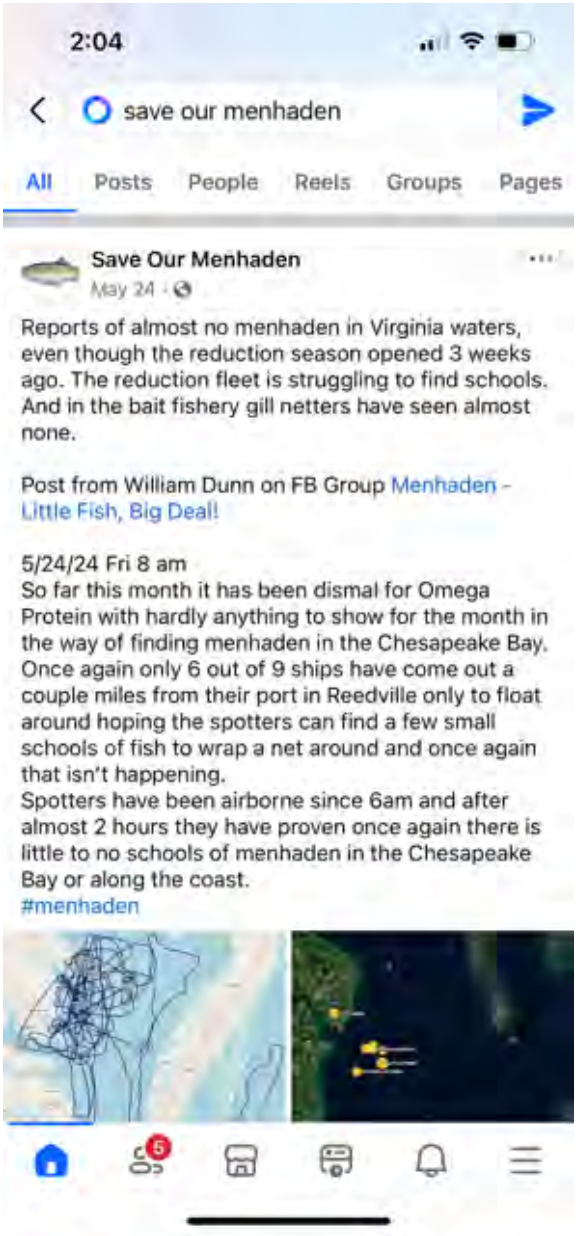
If we then look at the results for 2020-2023 there is nearly a 100% decline year to year in the mid May results with recovery in years 2020-2022 but what appears as a 200 or 300% decline in May end in just one year from 2022 to 2023. So by the end of May in the years 2015- 2018 there was about 15,000 tons caught by the end of May last year it was about 2,500 tons . And what was it in 2024?

We expect the 2024 bay landings for this year would confirm that an ever decreasing amount of menhaden is coming into the Bay in March and April and it would be helpful for the menhaden board to discuss the options they have to try to correct this and to take all the reasonable steps possible to protect the meager supply of menhaden coming into the bay in the spring. One option is to rebuild the mid-Atlantic breeding stock by preventing the harvesting of nearly 51,000 tons of age 2 and younger fish in the bay each year so those billions of menhaden can mature and spawn in the mid Atlantic in a zone protected from harvesting and reverse the alarming trend of vanishing menhaden in the spring in Chesapeake Bay.

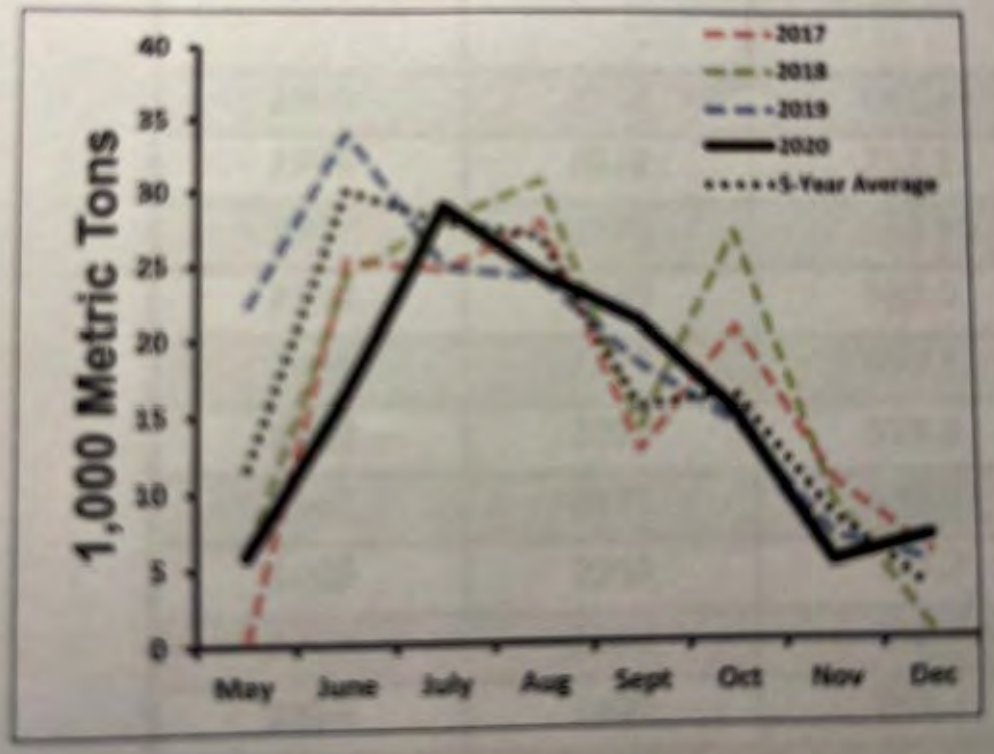
The consequences to the bay ecology and the quality of life of millions of people and their children that use and enjoy Chesapeake Bay will be affected either positively or negatively by whether you take decisive action to correct this ever worsening problem. Thank you Tom Lilly

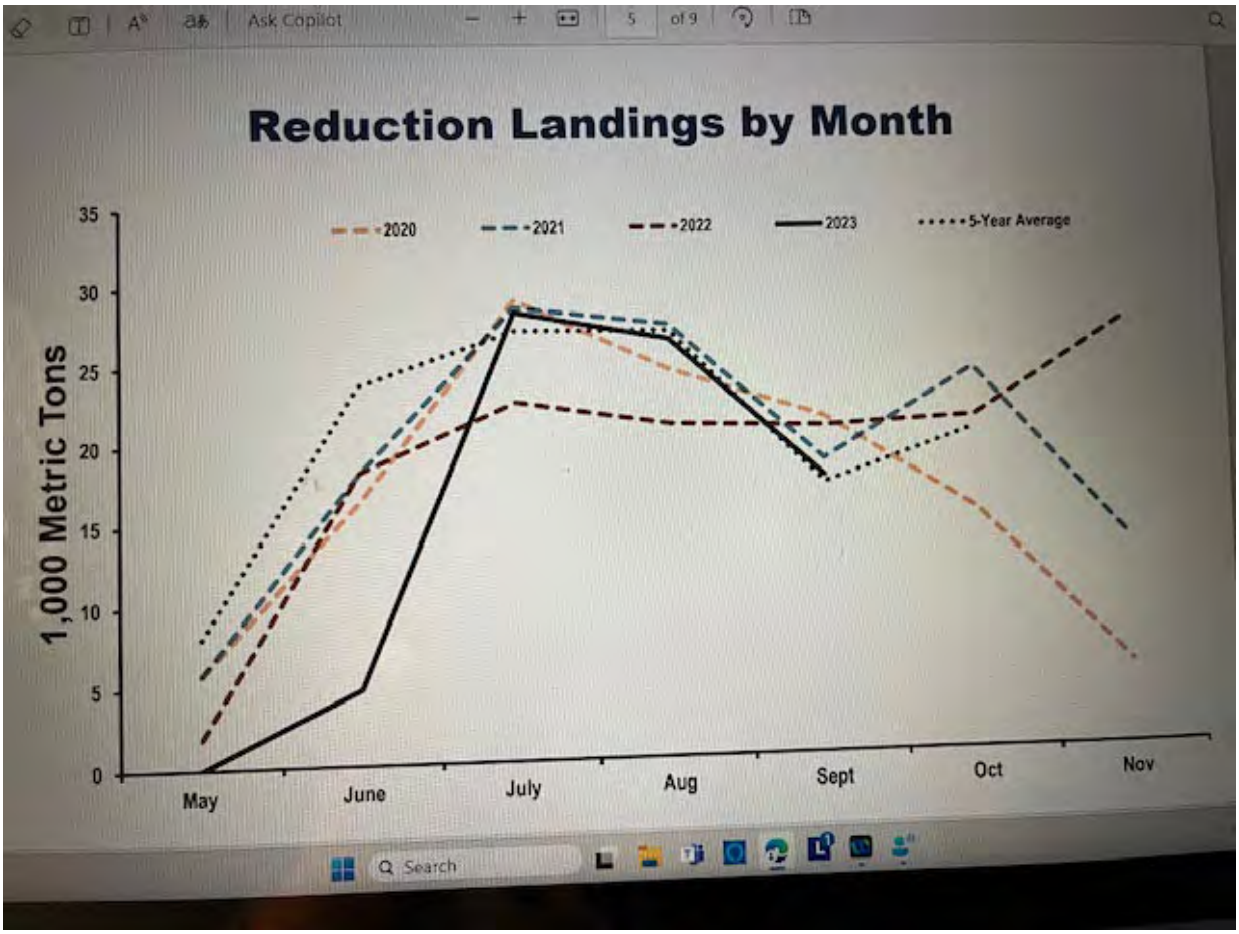
PS. FYI. Just for your consideration, please note that this is approximately the 25th quarterly menhaden board meeting that I have been involved with trying unsuccessfully to protect the menhaden forage base of Chesapeake Bay. Thank you for making Chesapeake Bay, Ospreys and ERP holistic management part of the board meeting Tuesday.

Click on to view.
(n.1) (n.2) (n.3)
(n.4) more legible pdf of n. 3-4



the fishery on July 7th. New York and New Jersey's menhaden fisheries remained open all year.




Ask Copilot
5 of 9
Reduction Landings by Month
1,000 Metric Tons
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2023
5-Year Average
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A TALE OF TWO BAYS: OSPREY FORTUNES DIVERGE

By: Bryan Watts

7/5/2023

Over the past few years, I have received questions from homeowners, watermen and keen observers around the lower Chesapeake Bay about osprey. Waterfront homeowners have been concerned about "their" pair (often nesting on a private platform). The watermen who have spent their springs out on the water for decades have been concerned about many pairs within the area where they work. The questions are generally the same. What is happening with the osprey? Why are they not producing any young? Nearly all of these inquiries have come from the main stem of the lower Bay. These are the salty polyhaline (above 18 parts per thousand salinity) areas of the Bay where osprey have historically depended on menhaden as their primary prey. Our observations over the decades suggest that the homeowners, watermen and general observers have legitimate reasons for concern.

Osprey brood on the upper James River near Hopewell, Virginia. Productivity within the tidal fresh reaches of the Bay continues to be above sustainable levels with the median brood size of 2. Photo by Bryan Watts.

One of the most prominent subestuaries of the lower Chesapeake is Mobjack Bay. We have osprey productivity data for this area dating back to 1970. Mitchell Byrd and a list of his graduate students including Bob Kennedy, Gary Seek, Chris Stinson, Tim Kinkead and Peter McLean monitored osprey within this location from 1970 through 1990. Monitoring shows that reproductive rate rises from the DDT era to a high in the early to mid-1980s and then begins to decline toward 1990. My graduate student, Andy Glass, worked in Mobjack during the 2006 and 2007 nesting seasons. More recently, Michael Academia worked in Mobjack during the 2021 nesting season. By 2006 productivity had declined to 0.75 young/pr or equivalent to rates documented prior to 1975. By 2021 productivity had declined to 0.32, a rate lower than any year since 1970.

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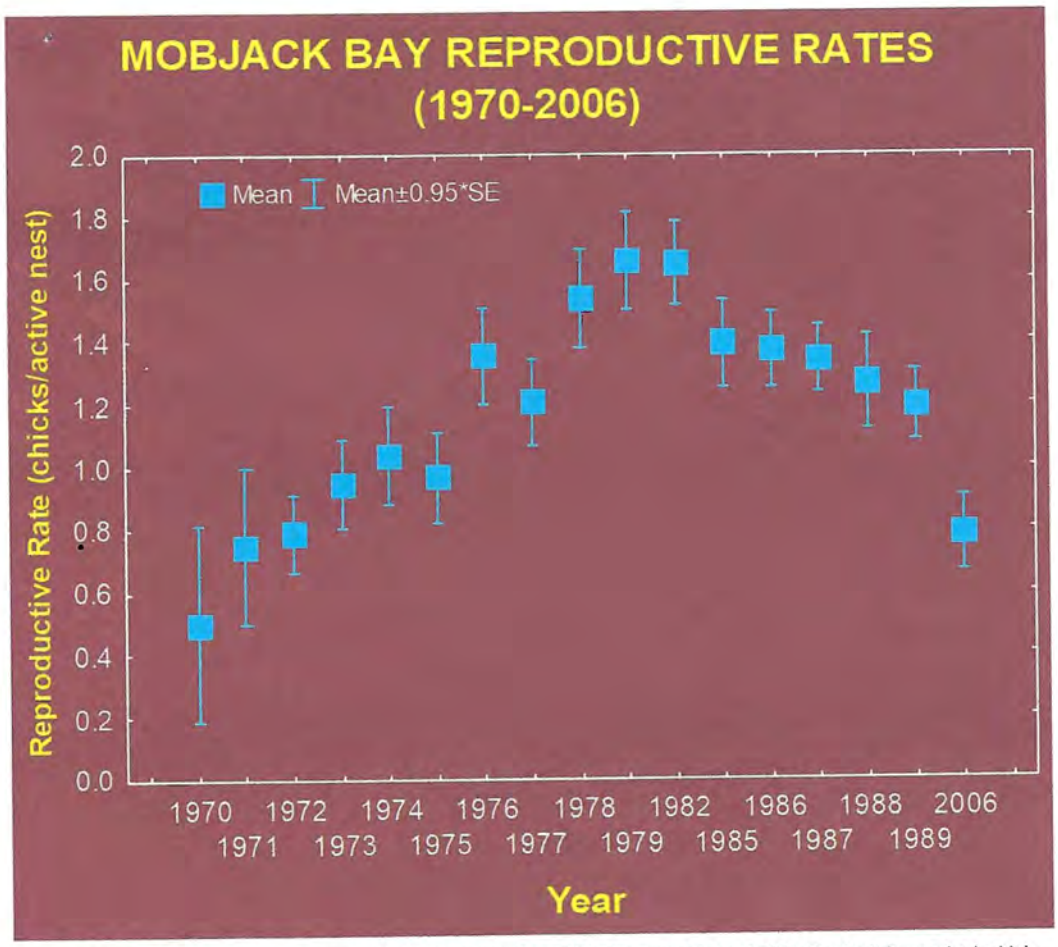


Graph of known osprey reproductive rates in Mobjack Bay from 1970 through 1989 and 2006. Productivity reached a high during the early to mid-1980s and by the mid-2000s fell below sustainable levels. Data from CCB

The underlying cause of reproductive failure in Mobjack has shifted from the DDT era to the present. In 1972, the hatching rate of eggs was 36.5%. Gains in productivity from the early 1970s through the mid-1980s was driven by an improvement in hatching rate as the population recovered from DDT. By the late 1980s, hatching rate was above 90% and in 2006 hatching rate was nearly 95%. Declines in productivity after 1985 have been driven by the starvation of young in nests after hatching. Between 1975 and 2006 fish delivery rates to nests dropped by more than 50% and the importance of menhaden in the diet also dropped by 50%. For most pairs, fish availability in Mobjack Bay is not adequate to raise even a single young. The study conducted in 2021 demonstrated that experimental supplementation of nests with menhaden was effective in reducing starving rates and driving productivity above maintenance levels. This result suggests that if the menhaden population was allowed to recover, osprey could return to sustainable reproductive rates.

First Name

Last Name

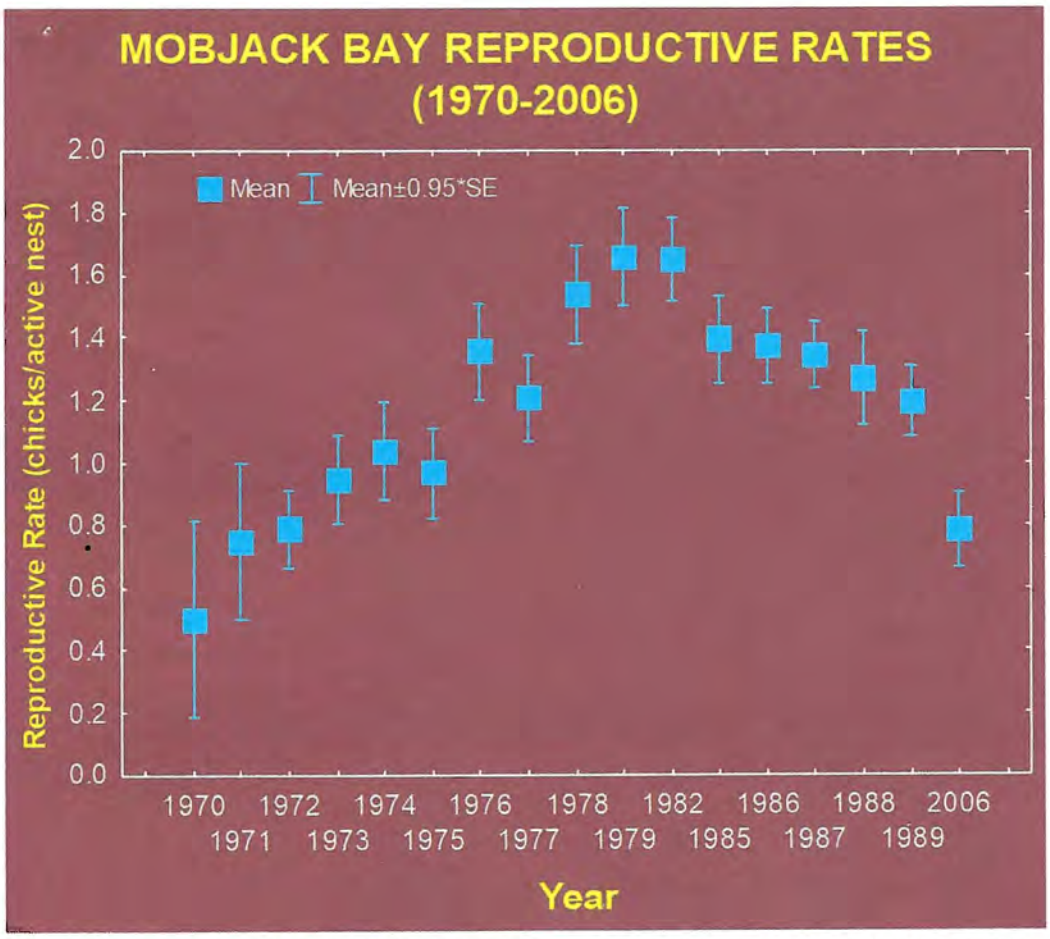
* = required field

Subscribe

Michael Academia uses a mirror pole to check an osprey in Mobjack Bay. During the 2023 breeding season, CCB checked productivity for more than 250 nests to better understand the spatial pattern of failures. Photo by Bryan Watts.

My response to homeowners, watermen and concerned osprey watchers about the lack of young in nests around the lower Bay is that the current fish availability is not high enough to allow osprey to reproduce sustainably. Their young are starving in the nest – most within the first week after hatching.

One of the added questions that homeowners and other observers have is, "Is this just a problem with my pair or is this more widespread?" On the broader population level, the question is, "What is the geographic extent of the demographic sink or black hole?" To begin to address this question, we conducted some broader surveys during the spring of 2023 to expand our view. We surveyed three polyhaline areas of the Bay including Mobjack Bay (Ware River, North River, East River), the lower York River and the Lynnhaven River. The findings were both shocking and depressing. Of the collective 167 nests monitored, only 17 were successful producing 21 young. The reproductive rate of 0.33 is less than 30% of what is needed for the population to break even.



Graph of known osprey reproductive rates in Mobjack Bay from 1970 through 1989 and 2006. Productivity reached a high during the early to mid-1980s and by the mid-2000s fell below sustainable levels. Data from CCB

The underlying cause of reproductive failure in Mobjack has shifted from the DDT era to the present. In 1972, the hatching rate of eggs was 36.5%. Gains in productivity from the early 1970s through the mid-1980s was driven by an improvement in hatching rate as the population recovered from DDT. By the late 1980s, hatching rate was above 90% and in 2006 hatching rate was nearly 95%. Declines in productivity after 1985 have been driven by the starvation of young in nests after hatching. Between 1975 and 2006 fish delivery rates to nests dropped by more than 50% and the importance of menhaden in the diet also dropped by 50%. For most pairs, fish availability in Mobjack Bay is not adequate to raise even a single young. The study conducted in 2021 demonstrated that experimental supplementation of nests with menhaden was effective in reducing starving rates and driving productivity above maintenance levels. This result suggests that if the menhaden population was allowed to recover, osprey could return to sustainable reproductive rates.

The Path to an Ecosystem Approach for Forage Fish Management: A Case Study of Atlantic Menhaden

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from BAM. All focal species had recently undergone single-species stock assessments, which provided life history, landings, and index data through 2017, as well as estimates of fishing mortality and population size. Newer data were not available for all of the groups included in the full NWACS EwE model; as a result, inputs for those groups were extrapolated from the terminal year of 2013.

The ERP WG evaluated the five ERP models based on their performance (i.e., residuals, sensitivities, and other diagnostics), their strengths and weaknesses, and their ability to inform the fundamental ecosystem management objectives (Buchheister et al., 2017a,b; McNamee, 2018; Uphoff and Sharov, 2018; Nesslage and Wilberg, 2019; Chagaris et al., 2020). The ERP WG ultimately recommended using the NWACS-MICE model rather than the other four for two reasons. First, the EwE framework used by the NWACS-MICE model was the only approach that could address both the top-down effects of predation on Atlantic menhaden and the bottom-up effects of Atlantic menhaden on predator populations, which were required to evaluate the key tradeoffs between Atlantic menhaden harvest and predator needs that were central to the identified ecosystem objectives. Second, the NWACS-MICE implementation was less data-intensive than the full NWACS model, which reduced some of the uncertainty associated with modeling the data-poor predators and prey in the full model. This meant the NWACS-MICE model could be updated more quickly and efficiently, on a timeframe that met manager's needs. Comparisons of the full and MICE versions of the NWACS model indicated that the NWACS-MICE model included the fish predators most sensitive to the menhaden population. Striped bass was the most sensitive fish predator to Atlantic menhaden harvest in both models. In the full NWACS model, nearshore piscivorous birds were also sensitive to Atlantic menhaden *F*, but their response was similar to striped bass over the range of scenarios explored by the full model (Southeast Data Assessment and Review [SEDAR], 2020b). This choice was consistent with a growing body of literature that has recommended models of intermediate complexity (i.e., MICE) for ecosystems as representing a compromise between complexity/realism and uncertainty for use in management (Plagányi et al., 2014; Collie et al., 2016; Punt et al., 2016). Specifically, the ERP WG recommended using the NWACS-MICE in conjunction with the single-species assessment model, BAM; the NWACS-MICE model would provide strategic advice about the trade-offs between Atlantic menhaden fishing mortality and predator biomass to set reference points, while the single-species model would be used to provide short-term tactical advice about harvest strategies to achieve the ERP *F* target (Chagaris et al., 2020; Southeast Data Assessment and Review [SEDAR], 2020b). The ERP report was peer-reviewed with the single-species assessment in 2019, and the ERP WG's recommended tool was deemed acceptable for management use by a panel of independent experts (Southeast Data Assessment and Review [SEDAR], 2020b). The peer-review panel also recommended the continued development of the alternative models going forward.

Current Management

The development and implementation of ERPs for Atlantic menhaden was a lengthy process (Figure 4 and Table 1), but in August 2020, ASMFC adopted the approach from the ERP WG for management use. The ERP target was defined as the maximum *F* on Atlantic menhaden that would sustain striped bass at their biomass target when striped bass were fished at their *F* target. The ERP threshold was defined as the maximum *F* on Atlantic menhaden that would keep striped bass at its biomass threshold when striped bass was fished at its *F* target. For both reference points, all other species in the model were fished at their *status quo* (i.e., 2017) *F* rates. Striped bass was the focal predator species for this analysis because it was the most sensitive to Atlantic menhaden *F* in both the NWACS-MICE and the full NWACS models. Thus, levels of Atlantic menhaden *F* that sustain striped bass should also sustain piscivorous birds and less sensitive predators, in the absence of significant disruptions to the ecosystem (Southeast Data Assessment and Review [SEDAR], 2020b). With these ERP targets and thresholds, the Atlantic Menhaden Management Board reviewed projections from the single-species model, BAM, and set a quota for 2021 and 2022 of 194,400 mt, a 10% decrease in the quota from 2020.

FIGURE 4

Forecast for the 2021

Gulf and Atlantic Menhaden Purse-Seine Fisheries and Review of the 2020 Fishing Season

March 2021

Southeast Fisheries Science Center, NOAA Beaufort Lab, NC

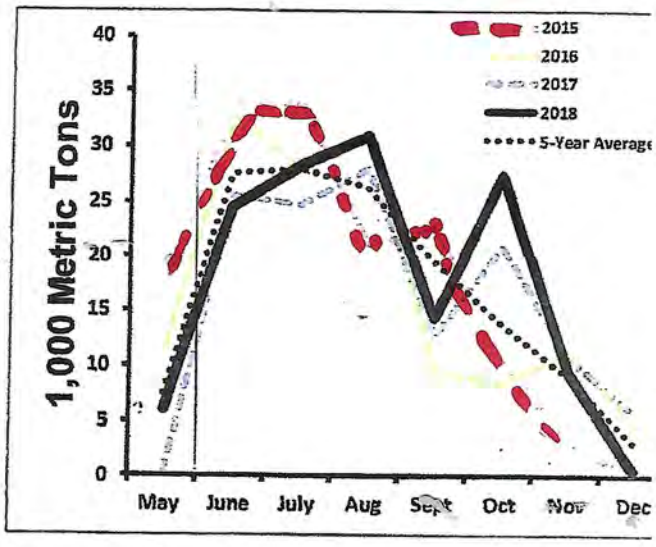
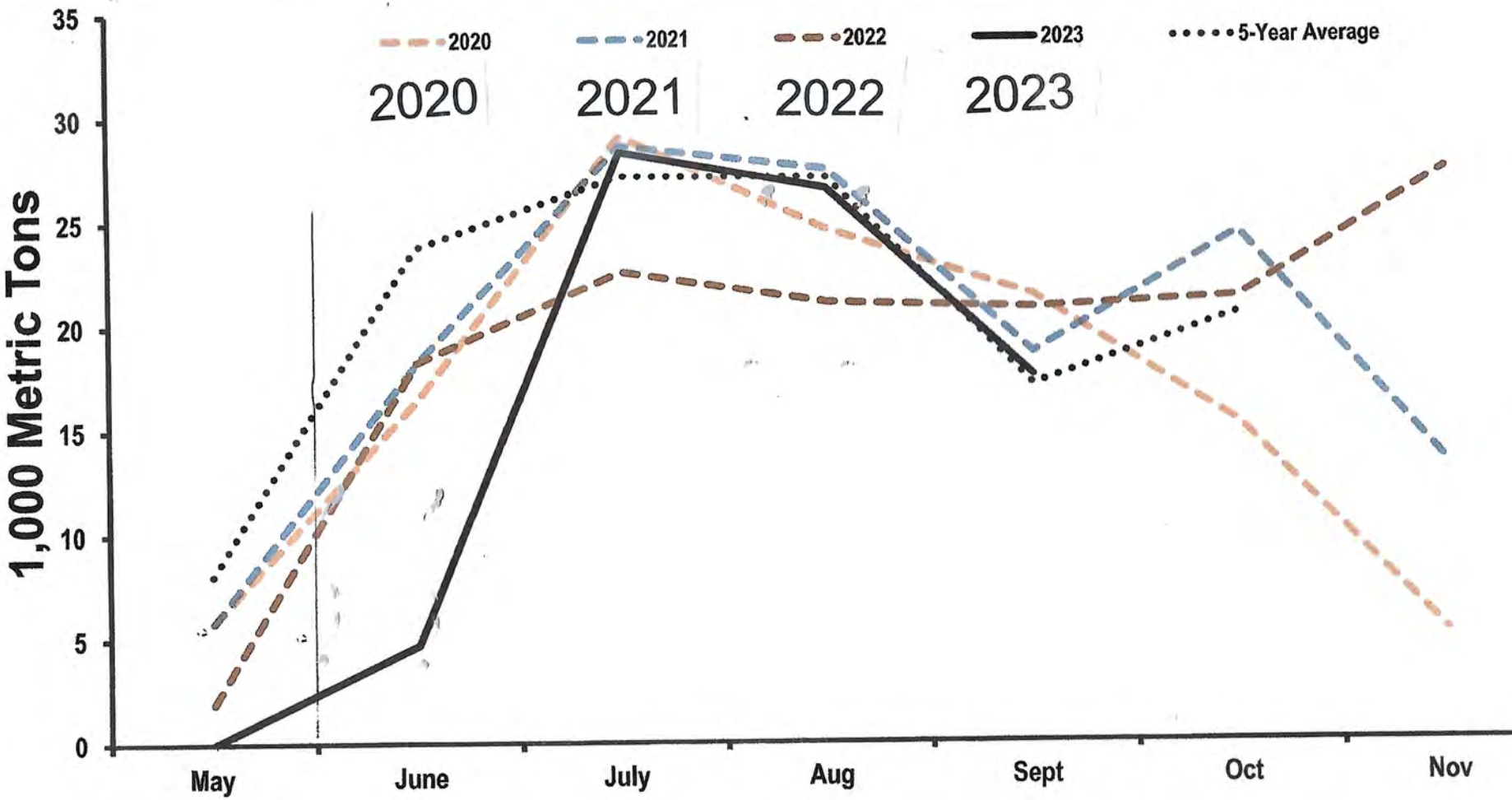


Figure 4. Atlantic Menhaden landings by month, 2014 2018.

Reduction Landings by Month



2023

From: Kelly Matthews
To: Comments
Subject: [External] Comments for Menhaden Board August 6 Management Meeting
Date: Wednesday, July 31, 2024 7:25:53 PM

I would like the Board to please consider management restrictions of the reduction industry within the Va portion of the Chesapeake Bay. Do this in order to re-establish a menhaden biomass capable of supplying the Chesapeake Bay with the food source that has been depleted through localized depletion within both Virginia and Maryland waters.

Thank you.

Kelly Matthews
Machipongo, VA

From: Christi Medice
To: Comments
Subject: [External] Menhaden and Chesapeake Bay
Date: Friday, August 2, 2024 3:02:36 AM

Greetings and Thank you all for taking the time to hear the various concerns concerning the Ecosystem damage currently going on in the Chesapeake Bay. The Menhaden that come into the bay serve many roles to help the Chesapeake stay the healthy sanctuary and nursery that residents all the way from North Carolina to New York have become dependent on. These little, oily fish assist in keeping the bay clean and is an important food source for the variety of fish, which I will not waste your time with the many names of the fish that are impacted by the massive harvesting each year, but there are also sea turtles, crustaceans, dolphins and, yes, whales. We cannot forget about the many different species of birds that are also suffering from this travesty. I could go on with many incidences that my friends and I have personally witnessed with various net spills and damage to the bay from the dumping of the bilge water, which does have ammonia and other chemicals just dumped into the bay like a big toilet bowl Every living creature is affected by the Industrial Reduction Fishing and this style of fishing needs to be placed back into the ocean. The nets being used are way to big for the bay. They drop into the water approximately 50 foot when the average depth of the bay is between 20-45 foot. The length of the nets are 1400-1500 foot long. The NFL football field from end zone to end zone is 360 foot. How many football fields would equal the size of just 1 of the Industrial Reduction Fishing nets? The answer is 3-4. This is a net that not only traps Menhaden by over a hundred thousand and much more, but the BiCatch they get is horrible! Not only 1 boat at a time, but up to 9 boats! Ridiculous!!!! Please hear our concerns! These huge boats need to fish in the ocean where the water goes over 100 feet and the nets would not dredge the bottom like the do in the Chesapeake Bay. The time has come to stop this style of fishing in the small waters of the bay. They are geared for ocean fishing!! It is common sense. Thank you for your time and consideration in the matter. I pray that you will see where we are coming from.
Christi Medice
757-442-9310

From: MARINA PIERCE
To: Comments
Subject: [External] Comments Regarding Reduction Fishing on Menhaden in the Lower Chesapeake Bay
Date: Thursday, August 1, 2024 11:54:06 PM

Atlantic States Marine Fisheries Commission -

I live along the shores of the Chesapeake Bay in Cape Charles, VA. As a wildlife photographer I am out in nature on a daily basis and have been saddened to see our wildlife, specifically osprey, struggle. In asking questions to learn more about why they are struggling I was pulled into the conversation about menhaden reduction fishing by Omega Protein out of Reedville, VA. I have been trying to educate myself on both sides of the issue but have come to the conclusion that this practice is degrading the ability of various wildlife to thrive, negatively impacting the ability of people to enjoy our beaches and threatening the livelihood of fishermen and everyone that depends on tourism in the Bay area. I support a study that would put science and fact on the table so sound decisions about the menhaden population in the Bay could be made.

I monitor osprey nests in our area. Last year none of them successfully got their chicks past the first few weeks. I witnessed a great deal of fighting among the chicks for the short time they survived which I'm told is a sign they did not have enough food. This year the six nests I'm monitoring seem to be fairing much better, but the size of fish the parents are returning to the nest with are fairly small. With the parents having difficulty finding fish, I can't imagine how difficult it will be for the babies to learn to fish. I've read the Bay was the largest concentration of osprey in the world during nesting season. It would be incredibly tragic to allow this unconstrained menhaden fishing to drive this iconic bird out of the Chesapeake Bay area.

Once made aware of the aircraft and boats associated with the fishing operation I have monitored their activity near our area, worried about the impact on the osprey. I was shocked to actually watch the operation just off shore beyond our break waters as aircraft circled overhead. More recently I watched 9 of their boats circling off our beach near Plantation Creek and some type of operation that involved five of the large boats circling around some target. Through my observations I have discovered a disturbing connection with their fishing and a brown, slimy foam that washes up on our beaches the following day. It is persistent, staying on the sand for roughly 3 days following a fishing operation. The appearance of the foam generally correlates with finding dead fish and skates on the beach as well. While I don't have the ability to track the discharge water from the main boats to the beach, the connection seems to be undeniable. With my own grandchildren that visit each summer and the large number of families that come to the Cape Charles beaches, this sludge and by-catch is very problematic and potentially dangerous.

In attempting to understand the alternative position, the only argument I've heard for maintaining the practice is the jobs at the plant in Reedville, VA. While those people and their livelihood are most certainly an important consideration, the jobs and livelihood of people all along the Bay are also a consideration. Comments to posts I've made on social media have been met with dozens of stories of sport fishermen who used to come here and no longer bother because there are no fish to catch. They have stories of going all the way to Maryland to get bait fish where they used to be readily available in the waters here. Having already suffered the loss of these sport fishermen, if the beaches become polluted that will drive away the families that visit each summer as well and have a disastrous impact on the Cape Charles economy.

Given the above concerns - the impact on wildlife in the water and on land, the pollution on our beaches and the potential loss of jobs and tourism all along the Chesapeake Bay - it would seem a simple decision to fund the study that would provide scientific data to the observations we are all making. It's unfortunate that the Virginia legislature was persuaded to put off the study. If Omega Protein is so certain there is no problem with their practices, then they should not fear an unbiased study to confirm that. I hope your group can help support the need to collect this data and make sound, unbiased decisions that protect the wildlife while we also protect people.

This letter has been coordinated with and supported by many of my neighbors in Bay Creek, a community in Cape Charles, VA. Thank you for your consideration. Photos to illustrate my concerns are attached as well.

Marina Pierce
134 Heron Pointe Drive
Cape Charles, VA


Marina Pierce
PHOTO BY THE BAY


Marina Pierce
PHOTO BY THE BAY


Marina Pierce
PHOTO BY THE BAY

From: Robert B. Pollard
To: Comments
Subject: [External] Menhaden
Date: Wednesday, July 31, 2024 4:13:04 PM

Please place a moratorium on industrial reduction fishing in the Chesapeake Bay until you have some science that proves the stock is not overfished in the bay.
Sent from my iPhone

From:	Andrea Steegmayer
To:	Comments
Subject:	[External] The Menhaden Board August 6th Management Meeting
Date:	Thursday, August 1, 2024 8:19:02 PM

To the Board
I am a big fan of the Chesapeake Bay and every living creature in it or that depends on its resources. Omega Fisheries has been overfishing the Menhaden. The Atlantic States Marine/Menhaden Board has chooses to ignore even the possibility of a scientific study on impact of the reduction menhaden fishing. To me this is absurd. Do we not need scientific validation for what we do ? Or does the Board decide this on feelings (so to speak) or crystal balls or to the business interests of a Canadian company?
I hereby want to make it known as a resident of Virginia that I am absolutely against the reduction fishing of the menhaden! Lots depends on this little fish that is much bigger than the profits it generates for Omega. Please change the agenda. We are Virginia taxpayers and would like to see a change based on science.
Best
Andrea Steegmayer

Sent from my iPhone