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February 22, 2023

Comments of the Coastal Fisheries Reform Group on File No. 27106, NCDMF's Application for an Individual Incidental Take Permit under the Endangered Species Act of 1973 (Dec. 2, 2022), Submitted by the Duke Environmental Law and Policy Clinic

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VIA ELECTRONIC & CERTIFIED MAIL

Ms. Angela Somma, Chief, Endangered Species Conservation Division
Office of Protected Resources
National Marine Fisheries Service
1315 East-West Highway
13th Floor
Silver Spring MD 20910
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Re: Comments of the Coastal Fisheries Reform Group on File No. 27106, NCDMF's Application for an Individual Incidental Take Permit under the Endangered Species Act of 1973 (Dec. 2, 2022), Submitted by the Duke Environmental Law and Policy Clinic

Dear Ms. Somma:

Thank you for the opportunity to submit comments on NCDMF's application for an Incidental Take Permit, which would authorize takes of several species of sea turtles, Atlantic sturgeon and shortnose sturgeon in the state's gill net fisheries. As noted in the Notice of Application, NCDMF proposes to combine two ITPs – one for sea turtles and one for Atlantic sturgeon – that are set to expire in August 2023 and 2024, respectively.[1]

On behalf of our client, the Coastal Fisheries Reform Group, we respectfully request that NOAA Fisheries deny the application and ban the use of anchored gill nets for all commercial and recreational fisheries in the state's inshore waters. First, the draft ITP should be delayed until NOAA Fisheries has conducted a Biological Assessment and issued a Biological Opinion as required by the Endangered Species Act, along with the required analysis pursuant to the National Environmental Policy Act, and is prepared to release those analyses

[1] NCDMF, Application for an Individual Incidental Take Permit under the Endangered Species Act of 1973 (Dec. 2, 2022) ("NCDMF Application").

contemporaneously with the draft ITP. Without the contemporaneous release of those materials, the ability of interested members of the public to fully understand the implications of the permit and submit informed comments is impaired. Second, NC DMF's take requests are based on unreliable data and grossly underestimate the actual take of sea turtles and Atlantic and shortnose sturgeon. Moreover, take requests impermissibly are based on projected reductions in fishing effort rather than what the populations of protected species can tolerate. Third, NC DMF's Habitat Conservation Plan fails to include a robust assessment of the impacts of gill net bycatch on the ecosystem, and, moreover, fails to propose measures that will minimize and mitigate these impacts to the maximum extent practicable, in violation of the Endangered Species Act. Our analysis of the permit application and its shortcomings is provided below, along with scientific studies and public records in support of this request.

In the alternative, CFRG requests that NOAA Fisheries issue an ITP that authorizes lower take levels for sea turtles and sturgeon and that mandates the implementation of the specific mitigation and habitat conservation measures set forth in the Recommendation section, below.

I. Introduction

The North Carolina Coastal Fisheries Reform Group (CFRG) has deep concerns with the manner in which this ITP application has been released, the scope of the proposed ITP, the lack of reliable data or proposals to generate reliable data in the application, and, most importantly, the failure of the ITP to recognize the steep decline of the health of North Carolina's estuarine fisheries—both as an independent concern and as a threat to sea turtles and sturgeon. CFRG has vested interests in the health of North Carolina's coastal fisheries and considerable knowledge about the current ITPs, both of which inform their position on this application.

This section of our comments provides an introduction to the Coastal Fisheries Reform Group and background information on the ITP for sea turtles. Parts II and III outline our objections to the issuance of the ITP based on violations of the Endangered Species Act and the National Environmental Policy Act caused by the piecemeal process NOAA Fisheries is employing for public review and comment. Part IV details historic and ongoing violations of ITP #s 16230 and 18102 that not only should have resulted in permit revocation, but also undermine confidence in take estimates and future compliance. Parts V and VI document violations of the Habitat Conservation Plan requirements for the issuance of an ITP and provide additional information about the impacts caused by anchored gill nets. Part VII sets forth recommendations for improving the ITP in the event that NOAA Fisheries decides to proceed with issuance.

A. Description of CFRG

The North Carolina Coastal Fisheries Reform Group (CFRG) is a non-profit organization dedicated to protecting North Carolina's coastal and marine public trust resources. As part of this mission, CFRG advocates for sustainable fishing practices and measures to protect and restore coastal and estuarine fishing habitats. Its members live, work, and recreate in North Carolina's coastal waters, conduct extensive public outreach and education efforts concerning North Carolina's natural marine resources, and some derive all or part of their livelihood from North Carolina's fisheries.

Over time, CFRG has grown increasingly concerned by slips in compliance with and erosion of the requirements dictated by the existing sea turtle and sturgeon ITPs. These concerns are exacerbated by continued declines in the health of the southern flounder fishery (as well as many other fisheries), declines in water quality and abundance of submerged aquatic vegetation (SAV), and a lack of transparency about the operation of the Estuarine Gill Net Permit (EGNP) program. CFRG and its members – along with other stakeholders such as the Coastal Conservation Association of NC and the NC Wildlife Federation – have repeatedly brought these concerns to the attention of the MFC, NCDMF staff, and even state legislators, advocating for specific measures that would restore SAV, improve and expand protections for nursery areas and essential fish habitat, place restrictions on fishing gear that destroys fish habitat (such as inshore trawls and gill nets), and improve the state's Trip Ticket program. Unfortunately, neither the state agencies nor the General Assembly has responded positively to these efforts, and these organizations recently have turned to the state and federal courts for relief.[2]

B. Background/History of ITP

North Carolina's gill net fishery operates in virtually all estuarine, inshore waters of North Carolina. While southern flounder has been the primary target due to its economic value, gill nets are also used to target a variety of other commercial species: weakfish, bluefish, Atlantic croaker, striped mullet, spotted seatrout, Spanish mackerel, striped bass, spot, red drum, black drum, and shad[3] – some of which are managed as "bycatch" fisheries. Historically, southern flounder was one of the most economically valuable fisheries in North Carolina estuarine waters, but landings and value peaked in the 1990s[4] (as they have for most of these other gill net fisheries).

Peak season for southern flounder is roughly from September to November each year, before juvenile flounder emigrate out of estuarine waters to spawn offshore;[5] the timing coincides with the presence of large numbers of sea turtles that come into the warm estuarine waters to forage before moving back into the oceans as the shallow waters cool.[6] The primary season for American and hickory shad is in the spring, which coincides with the spring migration of Atlantic sturgeon in the Albemarle Sound.[7] Significantly, "the Roanoke River [which empties into

[2] *See., e.g.,* Coastal Conservation Ass'n *et al.*, v. State of NC, 2022-NCCOA-589, No. COA21-654 (Sept. 6, 2022); NC Coastal Fisheries Reform Group v. Capt. Gaston LLC, *et al.*, 4:20-cv-00151-FL (U.S. Dist. Ct, Eastern Dist. NC).
[3] NOAA Fisheries, North Carolina Inshore Gillnet Fishery (2020). https://www.fisheries.noaa.gov/national/marine-mammal-protection/north-carolina-inshore-gillnet-fishery-mmpa-list-fisheries#historical-information (last visited Jan. 18, 2022); *see also* NMFS Section 7 Consultation and Biological Opinion for ITP #16230 (Sept. 6, 2013), p. 4.
[4] NCDMF, North Carolina fishery management plan: southern flounder (Paralichthys lethostigma), Amendment 2.
[5] NCDMF, North Carolina fishery management plan: southern flounder (Paralichthys lethostigma) (2005).
[6] Marydele Donnelly, Sea Turtles and North Carolina Inshore Fisheries (2007). https://conserveturtles.org/11520-2/ (last visited February 20, 2023).
[7] NCDMF Fishery Management Plan Update: Atlantic sturgeon (Aug. 2021).

Albemarle Sound] is the only North Carolina river with a known spawning population," although juvenile and adult Atlantic sturgeon have been documented within other rivers in the state.[8]

As NMFS itself notes, gill nets are a major source of mortality for sea turtles and Atlantic sturgeon. For example, sea turtles become entangled in gillnets while foraging for food and are easily ensnared as they try to escape. Ensnared turtles will drown if they cannot reach the surface to breathe; even if they are able to reach the surface to breathe, the nets easily cut through a turtle's soft flesh and cause deep wounds that are vulnerable to infection – or may sever the ensnared limb.[9]

High rates of bycatch in North Carolina's southern flounder fishery led the Karen Beasley Sea Turtle Rehabilitation and Rescue Center (the Beasley Center) to file suit against NC's Division of Marine Fisheries and Marine Fisheries Commission in 2010 under the Endangered Species Act.[10] After several months of negotiation, the parties reached a settlement in this lawsuit that placed restrictions on the deployment of gill nets in this fishery. Among other provisions, the settlement applied to all state-managed waters and gill net fisheries, limited soak times to overnight when sea turtles are much less active, required low profile gillnets that would better target flounder and further reduce sea turtle bycatch, and required DMF to observe a minimum of 7% of all reported trips, with a goal of covering 10% of all reported trips. Adequate observer coverage is an essential component of limiting bycatch of protected species, and also provides a more robust body of information on which to base management decisions. Observer coverage is so important that the state agreed to close the fishery not only when bycatch rates were high, but also when the state was unable to meet the minimum 7% coverage requirement, regardless of the reason for this inability. Finally, the state agreed to apply for and obtain an ITP from NMFS in order to continue operating the gill net fisheries. After nearly two years of review, comment, and amendment, NMFS issued ITP #16230 in 2013. The permit authorized a total of 720 takes per year[11] across all species of sea turtles, and approved NCDMF's proposal to monitor and implement the permit according to six management units created to provide improved oversight and adaptive management.

Before NMFS issued ITP #16230, the Beasley Center closely monitored implementation and compliance of the parties' settlement agreement. NCDMF sent them regular observer and take reports and took quick action to close the fishery when large numbers of turtles were observed in areas with high fishing pressure. Once NMFS issued the ITP, however, the Beasley Center stopped monitoring implementation, trusting that the state's compliance would continue and that NMFS would intervene and enforce the permit if the state's compliance slipped.

Other stakeholders, including CFRG, continued to monitor bycatch reports and observer coverage levels, as well as trip ticket information. As detailed below and documented in the

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[8] *Id.* p. 3.

[9] NOAA Fisheries, Fishing Gear: Gillnets. Available at https://www.fisheries.noaa.gov/national/bycatch/fishing-gear-gillnets (last visited January 16, 2023).

[10] *See* NMFS Section 7 Consultation and Biological Opinion for ITP #16230 (Sept. 6, 2013), pp. 4-8, for a more extensive history of gill net and sea turtle interactions, and associated ITPs, in NC coastal waters.

[11] This number includes 78 observed takes (live and dead), 428 estimated live takes, and 214 estimated dead takes. NMFS Section 7 Consultation and Biological Opinion for ITP #16230 (Sept. 6, 2013) p. 78.

Appendices to these comments, CFRG is concerned that both the state and NOAA Fisheries have failed to comply with and enforce the terms of the permit. Low rates of observer coverage – which frequently falls below the mandatory minimum levels set forth in the ITP;[12] NCDMF's non-enforcement regarding fishers' violations of observer requirements; and aberrations in the EGNP and Trip Ticket program data have resulted in undercounted and underestimated take levels for both sea turtles and Atlantic sturgeon, violating the current ITPs and, by extension, degrading habitat for ecologically important and economically valuable marine resources.[13]

II. NOAA Fisheries Must Conduct and Publish a Section 7 Analysis Prior to Issuing an ITP

A. Overview of Section 7 Requirements

Biological opinions are required under ESA Section 7 for all federal agency actions, including issuance of permits. 16 U.S.C. § 1536. If endangered or threatened species are present in the geographic area affected by the federal action and likely to be impacted by the action, then federal agencies move on to a consultation with either NOAA Fisheries or USFWS. *The Endangered Species Act: Overview and Implementation*, Congressional Research Service, 32 (Mar. 4, 2021). Based on that consultation, the Secretary must issue a biological assessment (BA) or biological opinion (BiOp) *before* the acting agency moves forward. *Id.* at 33–34. This requirement applies even when the federal action is the issuance of an ITP to a third-party. *See, e.g.*, *Turtle Island Restoration Network v. NMFS*, 340 F.3d 969, 974 (9th Cir. 2003) ("When the acting agency is either the Fisheries Service or the FWS, the obligation to consult is not relieved, instead, the agency must consult within its own agency to fulfill its statutory mandate") (citing 16 U.S.C. § 1536(a)(2) & 50 C.F.R. §§ 402.14, 402.01(b)).

The issuance of an ITP is discretionary federal agency action and therefore subject to the Section 7 consultation requirements. *See Turtle Island*, 340 F.3d at 974. In issuing an ITP, NOAA Fisheries therefore typically undertakes Section 7 consultation and the corresponding BiOp requirements in addition to the habitat conservation plan submitted with the ITP application. *Overview & Implementation* at 42. While the habitat conservation plan (HCP) and the BiOp sometimes serve mirroring purposes under Section 10 and 7 of the ESA, the BiOp provides critical analysis independent from that of the applicant and allowing for further evaluation of the permit. *See Klamath-Sisikiyou Wildlands Cent. v. NOAA*, 99 F.Supp.3d 1033, 1042–44 (N.D.

[12] *See* Appendix F, email from Chris Batsavage, Feb. 16, 2018, 9:35 AM ("Gill net fishermen avoiding our observers has become an [sic] growing problem that impracts our ability to meet the minimum observer requirements in the ITP."); Email from Donna Wieting, July 28, 2014, 12:49 PM ("The Spring 2014 report indicates that the NCDMF has failed to meet the requirements for monitoring large mesh gillnets in five of six management units as described in the permit."); Email from Lee Paramore, May 10, 2021, 9:34 AM ("Area coverage has been poor. Small mesh coverage has been lacking. Random coverage has not occurred.").

[13] See Appendix F, email from John McConnaughey, Oct. 4, 2019 ("Effort is likely much higher but I don't think we have a way to gauge that.")

Calif. 2015) (discussing in parallel the HCP attached to an ITP, the environmental impact statement drafting in compliance with NEPA, *and* the BiOps prepared by NMFS and FWS).[14] This additional analysis by NMFS is critical to a full understanding of the potential incidental takes' impact on the endangered species. *See id.*

Finally, when a BA or BiOp is required, federal agencies and permit applications are obligated to provide the "best scientific and commercial data available." 50 C.F.R. § 402.14(d). Where the data is demonstrably incomplete or incorrect, the rule requires NOAA Fisheries to seek out better information. *See San Luis & Delta-Mendota Water Auth. v. Jewell*, 747 F.3d 581, 602 (9th Cir. 2014). Moreover, during this consultation process, NOAA Fisheries must review all relevant information, evaluate the "environmental baseline," evaluate the action's impact on critical habitat, offer an opinion on whether the action jeopardizes listed species or adversely modifies critical habitat, evaluate alternatives, produce recommendations, produce an incidental take statement – and, once again, use the best available data to meet these requirements. 50 C.F.R. § 402.14(g). Where incidental takes will occur, NOAA Fisheries must suggest or establish measures to monitor and mitigate those takes. *Id.* § 402.14(i).

B. Deficiencies of the NOA

NCDMF's ITP application is severely lacking in its treatment of sea turtle and sturgeon habitat and biological significance. As discussed in more detail in Sections V and VI below, the HCP fails to include any meaningful evaluation of adverse effects on the area or reasonable measures for mitigation. To the extent that these elements are even mentioned, their explanation is cursory, flawed, and/or fails to provide adequate information for either public comment or NOAA Fisheries decision-making. As such, a BiOp is necessary not only to satisfy Section 7 of the ESA, but also to remedy these shortcomings and provide additional analysis directly from NOAA Fisheries, rather than from the applicant. *Compare* ITP No. 16230 (2013). Without such analysis, neither NOAA Fisheries nor the public can fully understand the potential consequences this ITP would have on North Carolina's coastal environment and endangered species. Moreover, even if NOAA Fisheries plans to publish a BiOp at some unspecified future date, the piecemeal approach to publishing this permit application and the associated documents places unfair roadblocks for stakeholders and members of the public to understand and participate in the permitting process. As it stands now, the application itself falls short of providing complete information and analysis to the public.

First, the data on the expected takes for all species is based on data produced through an observer program that, as discussed below, has systematically failed to obtain reliable, representative, and reasonable coverage of the North Carolina gillnet fisheries.[15] Observer

[14] For example, the BiOP would consider whether the authorized take would affect the species' distribution as well as its abundance, and whether critical habitat – regardless of formal designation – would be affected.

[15] *See* Appendix F, email from Lee Paramore, May 10, 2021 9:34 AM ("Area coverage has been poor. Small mesh coverage has been lacking. Random coverage has not occurred on many trips are done with the willing repetitively and others are never observed."); Email from Barbie Byrd, Apr. 24, 2020 5:39 PM ("In some cases, there were only

coverage has demonstrably focused on a small group of fishers (roughly 3% of permit holders) who respond to NC DMF's requests for observation.[16] Observers have been successful in booking trips on less than 1% of their recorded attempts in many seasons.[17] As such, the data produced by observers—on which the application exclusively relies—does not, and indeed cannot, reflect an accurate picture of the interactions between gillnets and protected species.[18] NOAA Fisheries should therefore supplement this data with its own information and additional analysis of the North Carolina estuarine fisheries to achieve a more complete picture of the affected environment.

Second, the estimated impacts of the applicant's program on listed species fail to fully consider the flaws in the data and the significance of unknown impacts.[19] For example, the application admits that there is uncertainty about the population of Atlantic sturgeon, yet claims that the authorized takes will not jeopardize the sturgeon population.[20] How can the agency be certain that the permit will not jeopardize the protected species when it lacks this baseline information, especially in light of concern about the trends of the Chesapeake Bay DPS, which is likely to be found in NC estuarine waters? This lack of information is further compounded by the low observer requirements for small-mesh gillnet fisheries in both the current ITP and the application. Small-mesh gillnets are becoming more popular in North Carolina's coastal fisheries, with fishers deploying them when areas are closed to large-mesh nets, thereby posing an increased threat to sturgeon. Sturgeon's fins and snouts can be easily caught in small-mesh gillnets, yet the proposed ITP and HCP provide no information on these impacts and maintain the current 2% observer coverage goal – a shockingly small target that the agency rarely meets – for these nets. Therefore, a BiOp is critical to more thoroughly evaluate the impact this gear type will actually have on the listed species.

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9 reported trips and we didn't observe any of them. But in other cases there were 844 reported trips and we didn't observe any of them.").

[16] *See* Appendix F, email from Nancy Fish, July 22, 2014 ("Based on observer reports, if fishermen see an observer, they simply leave the scene and do not fish their gear."); Email from Kathy Rawls, July 14, 2020, ("[W]e have not met observer coverage in certain MU's in certain seasons in certain years …. This is not a rare event, but I think when you the amount of contact effort it takes for observers to get one trip, you will understand why."); Email from Lee Paramore, May 10, 2021 ("[M]any trips are done with the willing repetitively and others are never observed.").

[17] Appendix A (ELPC, Observer Coverage and Incidental Takes of Sea Turtles Reported Under Incidental Take Permit No. 16203 and of Atlantic Sturgeon Reported Under Incidental Take Permit No. 18102 (2022)).

[18] For example, NC DMF's Director's Report, issued in February 2021, states that the agency had a mere 1.5% success rate for observer trip bookings during the prime fall gill net season. The Director's Report dated August 2021 states that observers spoke with someone only 34% of the time, and scheduled a trip only 0.9% of the time.

[19] NDMF is acutely aware of this issue. *See* Appendix F, email from Katy West, Feb. 16, 2018, ("If we do a new ITP this whole sampling design needs an overhaul.").

[20] NCDMF Application p. 34. *See also* telephone conversation between Hayden Dubniczki, Duke ELPC, and Mike Wicker, USFWS, Feb. 15, 2023 (noting that Atlantic sturgeon "are in bad shape" and that it is counter-intuitive to use a gear-type that "will interact with a listed species [sturgeon] in a predictably negative way.")

Third, the application's consideration of the North Carolina estuarine habitat is also insufficient.[21] The application claims that there is no strong evidence of how anchored gillnets affect marine habitat. However, the application addresses only the interaction between gillnets and the marine bottom. It does not, for example, consider the impacts of the amount of bycatch produced by gillnets, nor the habitat impacts of dead discards from gillnets, both of which NCDMF's biologists concedes is high.[22] It does not investigate the impact of the gear across species, or the interrelatedness of those species in the ecosystem impacting sea turtles and sturgeon. All of these concerns affect the habitat for the listed species, and so the ITP cannot be fully evaluated until NOAA Fisheries conducts a jeopardy analysis that fully considers these threats.

Fourth, in its considerations of efforts to mitigate, minimize, and monitor the impacts of the requested ITP, the application simply proposes to continue an observer program that is functionally the same as the flawed, non-compliant program currently in place.[23] The minor changes to the observer program listed in the application provide no solutions to the inaccuracies, non-responsiveness of fishers, and its own lack of enforcement. As such, the HCP provides no protections for either the protected species or the habitat they live in.

Fifth, the limitations on soak time, net length, gear configuration, area closures, and fishing days put forward as avoidance efforts in the application rely entirely on fisher compliance with the regulations.[24] As demonstrated by the failures of the current ITPs described above, fisher compliance is utterly ineffective as a means of mitigating gill nets' impacts on listed species.[25] As such, the application requires a BA or BiOp that would generate actual proposals for mitigation and enforcing mitigation measures. Without such mitigation measures, the ITP stands at risk of required revocation under Section 10 of the ESA. *See* 16 U.S.C. § 1539(a)(1)(C) ("The Secretary *shall* revoke a permit issued under the paragraph if he finds that the permittee is not complying with the terms and conditions of the permit") (emphasis added).

Finally, the alternatives that the application considers do not address the relative risks of jeopardizing sea turtles, sturgeon, and their habitat.[26] Rather, the reasons for dismissing each

[21] *See* NCDMF Application p. 39.
[22] *See, e.g.,* NC Southern Flounder FMP Amendment 3 (May 2022), pp. 16, 17, 26, 84, 157, 158.
[23] NCDMF Application p. 40. *See also,* Appendix F, email from Jacob Boyd, Feb. 16, 2018 11:24 AM ("There is really no way to verify each fisherman is fishing within the allotted time."); Email from Glenn A. Stewart, Mar. 20, 2019 ("I did not expect an answer or a call back from looking at the call log. As far back as I could see, 9/25/17, we have made 10 attempts to contact him. He responded to one call."); Email from Barbie Byrd, Sept. 4, 2020 11:17 AM ("[W]e only have 5 permanent observers and one temporary/part-time observer.").
[24] *See* NCDMF Application Section 7.C.2.
[25] *See* Appendix F, email from Chris Batsavage, Feb 16, 2018 9:35AM ("Gill net fishermen avoiding out observers has become an [sic] growing problem that impacts out ability to meet the minimum observer requirements in the ITP…. [T]he requirement for fishermen to fish their large mesh gill nets every 24 hours is largely unenforceable."); Email from Jacob Boyd, Feb. 16, 2018, 11:24 AM ("It is as bad as ever and getting worse.") (replying to Chris Batsavage).
[26] *See* NCDMF Application Sec. 7D, pp. 56-57.

alternative center on the difficulty of implementation and on the impacts on the fishing communities. While those are certainly important considerations, evaluation of alternatives' habitat and species impact are *required* considerations.

In short, without a BA or BiOp, there is no way for the public or NOAA Fisheries to fairly assess the likelihood that this proposed ITP will jeopardize listed species or damage critical habitat. That uncertainty, combined with the sheer scope of the proposed ITP and NOAA Fisheries' obligation to issue BiOps for ITPs, means that it is imperative that the agency provide the public with complete information on the permit application in a cohesive manner. The piecemeal roll-outs of the application, BiOp, and NEPA analysis requires would-be commenters to monitor the Federal Register, prepare separate comments, and even hire professional staff to complete the process again and again, all while making a living on the water and in small coastal communities. It is simply unreasonable to expect the stakeholders here, especially the recreational and commercial fishers, to have the time and resources to keep up with this unnecessarily segmented process. In light of the missing information, likelihood of confusion, and piecemeal effects, NOAA Fisheries should withdraw the current application and wait to reissue until it has completed the BiOp and required NEPA analysis.

III. The NOA does not comply with NEPA

NOAA Fisheries' NOA and NCDMF's application fall short of NEPA's requirements. The statute, regulations, and caselaw are consistent in requiring environmental review and analysis *before* a permit can be considered. Conducting the analysis after a draft permit has been sent for public review and comment undermines NEPA's objective of informed decision-making through informed public participation.

NEPA requires that "to the fullest extent possible" federal agencies shall "include in every …. major Federal action[ ] significantly affecting the quality of the human environment, a detailed statement by the responsible official on:

(i) the environmental impact of the proposed action,
(ii) any adverse environmental effects which cannot be avoided should the proposal be implemented,
(iii) alternatives to the proposed action,
(iv) the relationship between local short-term uses of man's environment and the maintenance and enhancement of long-term productivity, and
(v) any irreversible and irretrievable commitments of resources which would be involved in the proposed action should it be implemented." 42 U.S.C. § 4332.

NEPA further requires that *prior to* making such a statement, Federal officials must consult other involved Federal agencies, and that copies of the statement be made available to the public for comment. *Id.*

For federal permits that require a NEPA analysis, the implementing regulations promulgated by the Council on Environmental Quality (CEQ) require the permitting/action agency to "commence the [environmental review] as soon as practicable after receiving the application."40 C.F.R. § 1502.5. Where possible, agencies are expected to work with government applicants – including state governments – during the application process so that the agency can begin the NEPA analysis prior to receiving the application. *Id.* The regulations also require the permitting/acting agency to solicit public comments "on potential alternatives and impacts, and identification of any relevant information, studies, or analyses … in the notice of intent to prepare" the environmental review. 40 C.F.R. § 1500.3(b)(1). The regulations specify that "agencies should integrate the NEPA process with other planning and authorization processes at the earliest reasonable time," 40 C.F.R. § 1501.2(a), and that "whenever practicable, agencies **shall review and publish environmental documents and appropriate analyses at the same time** as other planning documents." 40 C.F.R. § 1501.2(b)(2) (emphasis added). This level of coordination is designed to avoid potential conflicts between the proposed action and NEPA's objectives. As the U.S. Supreme Court has ruled, "the moment at which an agency must have a final [environmental impact] statement ready 'is the time at which it makes a recommendation or report on a *proposal* for federal action." *Kleppe v. Sierra Club*, 427 U.S. 390, 406 (1976) (citing *Aberdeen & Rockfish R.C. v. SCRAP*, 422 U.S. 289, 320 (1975)).

The NOA and associated application for an ITP do not comport with the process set forth in NEPA, its implementing regulations, and the case law interpreting those requirements. The NOA states that NMFS "intends to prepare an Environmental Assessment (EA) to consider a range of reasonable alternatives and fully evaluate the direct, indirect, and cumulative impacts likely to result from issuing a permit." 87 Fed. Reg. 245, 78661. However, NOAA Fisheries provides no indication for the timeline or progress towards issuing the EA, stating only that "once a draft of the EA is complete," the public will be able to comment on it. *Id.* As such, NOAA Fisheries' approach to addressing its NEPA obligations is insufficient for two main reasons.

First, NEPA regulations specify that NOAA Fisheries should have been working with NCDMF to develop the application so that a draft EA could be prepared and published with the application, or at least soon thereafter. [27] *See* 40 C.F.R. § 1501.2(b)(2) & § 1502.5. Second, because the application functions as a notice of a proposal for federal action, case law interpreting NEPA requires that the environmental analysis be ready with the notice. *See Kleppe*. Instead, NOAA Fisheries merely published an application that contains little environmental context, erroneously asserts that anchored gillnets do not negatively affect estuarine habitat, and focuses on economic and regulatory issues rather than environmental

[27] Internal emails from NCDMF recognize that this interaction should have been taking place well before the application was finalized and released. *See* Appendix F, email from Lara Klibansky, Feb. 6, 2019 8:24 AM ("I asked about timelines for ITP applications and basically we should start it now.").

impacts and consequences. In fact, the application includes no reference to any environmental research conducted in reaching its conclusions. These deficiencies serve to highlight the importance of NEPA's requirements for coordination of permit review and environmental review: to satisfy the statute's primary objectives of informed public participation and decision-making.

In short, this application and notice fail to meet even the lowest burdens imposed by NEPA. Through its failure to coordinate the permit evaluation with the required NEPA analysis, NMFS has erected a barrier to fully informed public comment, and thus to informed decision-making.

IV. NCDMF has violated non-discretionary provisions of ITP # 16230.

As noted in Section II.B., above, NOAA Fisheries must revoke an ITP upon a finding of non-compliance by the permittee. As detailed below, NCDMF has repeatedly violated the non-discretionary provisions of ITP #s 16230 and 18102. This section provides detailed analysis documenting violations that not only are ongoing, but that are certain to continue.[28]

As NMFS acknowledges in its National Bycatch Report, this novel permit – which covers a single gear type used throughout the year and throughout the state's coastal waters *and* authorizes that gear's incidental take of several endangered species – is necessitated by "observer coverage showing substantial takes in [flounder and other] inshore large-mesh gillnet fisheries."[29] To protect endangered species and comply with the ESA's strict exceptions to its general prohibition on take of these species, ITP #s 16230 and 18102 impose explicit take limits for observed and estimated annual takes by species and mandates minimum levels of observer coverage of the state's large and small mesh gill net fisheries. In turn, NCDMF has created a separate permit – the Estuarine Gill Net Permit (EGNP) – for the state-authorized gill net fisheries to facilitate implementation of the ITP. The EGNP includes explicit requirements for communication with official observers. NCDMF has frequently violated the terms of both ITP #s 16230 and 18102 and failed to enforce the requirements of its own EGNP.

A. NCDMF frequently violates non-discretionary requirements for minimum observer coverage.

As the National Bycatch Report notes, NOAA Fisheries is unable to provide adequate observer coverage levels for the NC Coastal Gillnet program, which encompasses the Pamlico Sound Gillnet Restricted Area (PSGNA). The reasons for this inability is irrelevant; the point is that "a significant portion of the fishing community is not observed."[30] As the report explains, "a lack

[28] *See* NCDMF Application p. 40 (stating that the observer program will operate consistent with current practices).
[29] NOAA, "U.S. National Bycatch Report" p. 148 (2011) ("2011 National Bycatch Report"). Available at https://repository.library.noaa.gov/view/noaa/31335. Last accessed February 19, 2023.
[30] *Id.* pp. 153-154. NCDMF is aware of this problem on its own end as well. *See* Appendix F, email from Barbie Byrd, Apr. 24, 2020 5:39 PM ("In some cases, there were only 9 reported trips and we didn't observe any of them. But in other cases there were 844 reported trips and we didn't observe any of them.").

of representative observer coverage may bias bycatch estimates either negatively or positively." [31]

This same principal applies to NCDMF's inability to maintain minimum levels of observer coverage of its own gill net fisheries. [32] Because "actual take numbers would likely be substantially higher than the number of observed takes,"[33] providing adequate observer coverage is essential to understanding and limiting the impact of the fishery on protected resources. NCDMF's failure to provide consistent observer coverage that meets minimum requirements means that its bycatch estimates are unreliable.

We have reviewed the annual reports NCDMF submits to NMFS in accordance with ITP #s 16230 and 18102 and compared its reports of observer coverage with the state's Trip Ticket program data, which includes overall fishing effort and landings. As documented in Appendix A, NCDMF has covered less than 7% of reported large mesh gill net trips in 7 out of 21 (33%) open seasons in Management Unit A; 5 out of 15 (33%) open seasons in Management Unit B, 4 out of 7 (57%) open seasons in Management D1, and 4 out of 17 (23.5%) in Management Unit D2. In fact, only in Management Unit E has NCDMF provided consistent observer coverage that meets the requirements specified in the ITP. Appendix A, Tables A-1 and B-1. The situation is similar for small mesh gill net trips, with many seasons during which NCDMF observed no trips at all. *Id.* Tables A-2 and B-2.

Pursuant to the ESA and the terms of ITP #s 16230 and 18102, NOAA Fisheries has the authority to rescind the permits if observer coverage is not met.[34] 16 U.S.C. § 1539(a)(1)(C). Despite warning the state of this authority several times over the past decade, NOAA Fisheries chose not to exercise this authority and instead worked with the state to develop a 5-point plan to address deficiencies in coverage.[35] NCDMF has not yet issued its annual report for ITP year 2022, which is the first full year of the 5-point plan's implementation, so it is not possible to evaluate its efficacy. Regardless, however, the lack of consistent minimum coverage levels over at least 9 of the 10 years of the permit's implementation undermines confidence in the state's take estimates. And, because those take estimates form the basis for the state's new ITP application, we are concerned that the request is unrealistic and inaccurately characterizes the impact of the gill net fisheries on protected resources and estuarine habitat.

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[31] 2011 National Bycatch Report pp. 153-154. Representative coverage means, at least in part, a random coverage of fishers across the subject areas. NCDMF has not achieved this. *See* Appendix F, email from Lee Paramore, May 10, 2021 ("[M]any trips are done with the willing repetitively and others are never observed.").

[32] *See* Appendix F, email from Casey Knight, Mar. 3, 2022, ("We are struggling to meet our coverage.") (referring to gill net observers for shad fishery).

[33] NMFS Section 7 Consultation and Biological Opinion for ITP #16230 (Sept. 6, 2013) pp. 67-70.

[34] NMFS has threatened this kind of action, but never followed through on its duty to revoke a permit that is violated. *See* 16 U.S.C. § 1539(a)(1)(C); *see also* Appendix F, email from Eddie Eatmon, July 28, 2014, 12:49 PM ("Failure to comply with the permit conditions to monitor, minimize, and mitigate impacts to sea turtles could result in enforcement action.") (forwarding an email from Donna Wieting, Director of Office of Protected Resources).

[35] *See* Appendix B (correspondence between NCDMF and NMFS, Office of Protected Resources, August 2020-March 2021).

B. NCDMF has not enforced the EGNP

In 2014, the NCDMF director issued Proclamation M-24-2014, which required anyone using anchored gill nets to harvest marine resources in Inland Coastal Waters to obtain an Estuarine Gill Net Permit (EGNP). This special permit, which is available free of charge, sets forth requirements for communications and cooperation with NCDMF observers to facilitate the state's compliance with minimum observer requirements imposed in ITPs. These communication requirements include returning observer phone calls, providing accurate contact information, and allowing observers aboard their vessels or on alternative platforms. The permit also clearly states that violations of these (and other) requirements may result in suspension of revocation of the permit, in accordance with state regulations set forth at 15A NCAC 03H.0103, 15A NCAC 03O. 0502, and 15A NCAC 03O. 0504.[36]

Despite these clear requirements, the rates of fishers' non-compliance have been high from the beginning. The non-compliance rate in the first ITP year of 2015 was 53.2% and reached an all-time high of 94.5% in ITP year 2020. In ITP year 2021, the non-compliance rate was 65%.

In addition to high rates of non-compliance, NCDMF's efforts to contact fishers to schedule observer trips has declined. Although there were only 106 fewer EGNP holders in 2021 than in 2015 (2,572 compared with 2,678, respectively), NCDMF made nearly 7,500 fewer calls to schedule trips in 2021 than in 2015 (1,396 compared with 8,870, respectively). Moreover, NCDMF's success rate for booking observer trips was a mere 6.7% in 2015 – its most successful rate over seven ITP years – bottoming out at 1.0% in 2021. These statistics are detailed in a report the Duke ELPC sent to NOAA Fisheries on June 30, 2022, and which is attached to these comments as Appendix C.

As troubling as these high rates of non-compliance are, NCDMF's enforcement record is even worse. At 0.43%, ITP year 2015 represented the pinnacle of the agency's enforcement efforts. It issued no NOVs in ITP years 2019, 2020, or 2021, despite non-compliance rates of 57.4%, 94.5%, and 65.0%, respectively. Without even a modest effort to enforce the terms of the EGNP, fishers know there will be no risk to them for repeated and flagrant permit violations. Moreover, NCDMF's proposal to improve the observer program is ill-conceived, relying on fishers to proactively contact the agency and volunteer to be selected for observation.[37] Considering that the majority of these same fisheries refuse to answer their phones or allow observers, it is unlikely that they will initiate calls and volunteer themselves for observation

[36] *See also* EGNP Permit application, available at https://deq.nc.gov/media/27088/open (last visited February 21, 2023).

[37] *See* NCDMF Application p. 47; *see also* Appendix D (NCDMF Protected Resources Program Update to the North Carolina Marine Fisheries Commission (January 27, 2023), found in the Briefing Book prepared for the February 2023 MFC Meeting, pp. 121-155).

without some credible threat of enforcement with meaningful consequences for non-compliance.

NCDMF and NOAA Fisheries have acknowledged the state's inaction but have proposed no changes to the structure of the EGNP program or to the state's enforcement program. Even some concerned fishers have recognized the problem, reaching out to suggest other means of maintaining coverage.[38] The agencies' apparent disregard for flagrant and continuing violations is especially concerning in light of the efforts of NCDMF's own staff to address the violations and improve compliance. In a review of more than 1000 pages of agency emails obtained through a NC Public Records Law Request to NCDMF, staff share their concerns and propose innovations. For example, on Feb 16, 2018, Chris Batsavage writes:

> Gill net fishermen avoiding our observers has become a growing problem that impacts our ability to meet the minimum observer requirements in the ITP. The problem is greatest in the management units that do not have overnight soak times for large mesh gill nets (Management units A & C) because the requirement for fishermen to fish their large mesh gill nets every 24 hours is largely unenforceable.

Jacob Boyd responds:

> It is as bad as ever and getting worse. The only solution I can think of that would be enforceable is having a certain period each day the nets have to be out of the water completely (i.e., 10am – 2pm). Otherwise, there is really no way to verify each fisherman is fishing within the allotted time.

As another example, Glenn A. Stewart (a technician with NCDMF) emailed Lara Kilbansky (MFC Liaison) on March 20, 2019, stating,

> My proposal is to coordinate with the trip ticket program to target fishermen who actually use their gill net permit. I have been told by many permit holders I have contacted that they do not, or rarely fish gill net. They just have the permit in case they may one day want to use it.

The materials we have reviewed do not include responses to these proposals, but it is obvious from NCDMF's ITP application that these ideas were not implemented and will not be if the application is approved. These recommendations, and others discussed in more detail below, are appropriate to consider as means to minimize bycatch and mitigate its impacts to the maximum extent possible, as the ESA requires.

Granted, not all EGNP holders actually fish their permits, as NCDMF technical Glenn Stewart explained.[39] Because so many permit holders do not fish their permits, using it as the call list for the observer program causes tremendous inefficiencies. Moreover, the large gap between

[38] *See* Appendix F, email from Eddie Eatmon to Kathy Rawls, July 28, 2014, 12:49 PM.
[39] In fact, even the majority of SCFL and RCFL permit holders – 62% –don't report landings.

the number of permit holders and those who actually report landings contributes to a lack of confidence and trust in the agency and the Trip Ticket program, leading to open speculation in online forums that fishers are not reporting their landings. NCDMF must revise the EGNP program so that it can be used effectively in a more efficient and transparent observer program.

V. The Proposed HCP Violates the ESA

In addition to concerns with the observer program and lack of enforcement, the Habitat Conservation Plan (HCP) proposed by NCDMF fails to satisfy the minimum statutory, regulatory, and policy criteria for the issuance of ITP.

The requirement for an HCP plays an essential role in the ESA by asking for a promise, from both federal and non-federal entities, of efforts for conservation before undertaking any proposed activity that will adversely affect the covered species, their habitats, and the surrounding ecosystems. The HCP goes to the purpose of the ESA: to "provide a means whereby the ecosystems upon which endangered species and threatened species depend may be conserved, [and] to provide a program for the conservation of such endangered species and threatened species." 16 U.S.C. § 1531(b).

To serve this purpose, the ESA and its implementing regulations specify the requirements for an HCP and the issuance of ITP: an ITP may not be issued unless the applicant submits a "conservation plan" that specifies (i) the anticipated impact from such taking on the species; (ii) the steps the applicant will take to minimize and mitigate the impacts from such taking and the funding available for such measures; (iii) alternative actions considered and the reasons for not adopting them; and (iv) any other measures that the Secretary may require as necessary or appropriate for HCP's purposes. 16 U.S.C. § 1539(a)(2)(A); 50 C.F.R. § 17.22(b)(1)(iii). The Secretary must issue an ITP if it finds that: (i) the taking will be incidental; (ii) the applicant will, to the maximum extent practicable, minimize and mitigate the impacts of the taking; (iii) the applicant will ensure adequate funding for the HCP; (iv) the taking will not appreciably reduce the likelihood of the survival and recovery of the covered species in the wild; and (v) any additional measures required by the Secretary will be met. 16 U.S.C. § 1539(a)(2)(B).

In addition, HCPs must include biological goals and objectives for each species covered by the plan, adaptive management, monitoring protocols, permit duration, and public participation in the HCP process. *See* 65 Fed. Reg. 35,242 (June 1, 2000). Despite these clear requirements and detailed agency guidance, NCDMF's proposed HCP fails to meet the minimum criteria.

A. The HCP Fails to Assess the Likely Impact of Incidental Takes

The proposed HCP fails to satisfy the statutory and regulatory requirements of assessing the anticipated impacts from the permitted taking. The ESA and its implementing regulations require that HCPs specify the impact that will likely result from the taking. 16 U.S.C. § 1539(a)(2)(A)(i); 50 C.F.R. § 17.22(b)(1)(iii)(A); 50 C.F.R. § 17.32(b)(1)(iii)(C)(1); 50 C.F.R. § 222.307(b)(5)(i). Agency policy further requires that proposed incidental takes be expressed in

measurable and enforceable terms in the HCP and the ITP.[40] In fact, the adverse impacts from taking can be substantially greater than just the number of individual takes or acres of habitat.[41] These broader impacts must be considered based on the best science available and in a manner that is biologically sound.[42]

The HCP fails to adequately assess the adverse impact likely to result from the take for the following two reasons. First, the proposed HCP includes a model-based and a proportional-based method for estimating the incidental takes of the covered species in North Carolina's estuarine anchored gill net fishery, both of which use observer data obtained from 2013 to 2021.[43] This data is admittedly flawed and unreliable,[44] rendering the agency's methods incapable of delivering an accurate estimated impact. As we have shown in Section IV-A of this letter, the levels of observer coverage have been chronically low and inconsistent due in part to NCDMF's lack of compliance and reliance on data from a small subset of EGNP holders. Because these shortcomings are not corrected in the ITP application, estimates will continue to significantly underestimate the number of actual takes.

Second, and more importantly, the plan completely fails to address the adverse impact of the take and the use of gill nets on the habitats and thus, the broader ecosystem of North Carolina's coastal waters. Agency guidance requires permit applicant to consider the broader impact beyond the number of takes, based on the best available science.[45] Instead, the proposed HCP states that there is sparse information on habitat impact despite the wide use of anchored gill nets.[46] This assertion is supported by only a few studies, no rationale for how the best science is used.[47]

The HCP completely disregards the substantial and large-scale impact of the take and the use of gill nets on habitats and the ecosystem of North Carolina's coastal waters. Contrary to NCDMF's assertion, our research revealed substantial evidence of the negative impacts of anchored gill nets on sea turtles and sturgeon and the broader estuarine ecosystem. Anchored gill nets are the main type of gill net used in North Carolina,[48] with mesh size selected based upon the target species. For example, southern flounder is the primary target of large-mesh anchored gill nets (along with American Shad and catfishes), whereas small-mesh anchored gill

[40] USFWS and NOAA, Habitat Conservation Planning and Incidental Take Permit Processing Handbook (2016) ("USFWS HCP Handbook"), p. 8-4.

[41] *See id.* p. 8-1.
[42] *Id.* p. 9-30.
[43] NCDMF Application pp. 23-25.
[44] *See* Appendix F, email from Lee Paramore, May 10, 2021 9:34AM ("Data had to be collapsed across areas and months to get estimates in many cases …. We have to accept some uncertainty and lack of design/errors. Do we throw out 10+ years of data?").
[45] USFWS HCP Handbook p. 8-1 and p. 9-30.
[46] NCDMF Application p. 39.
[47] *Id.*
[48] *Id.* p. 11.

nets target a variety of species (e.g., striped mullet, bluefish, spotted seatrout).[49] But anchored gill nets also ensnare, injure, and kill non-target species through bycatch. Bycatch can lead to species-specific population decline, as well as 'higher order effects' which impact fisheries at the community and ecosystem levels (e.g., trophic cascades, fishing down food webs).[50] In fact, many of the species targeted by anchored gill nets, or commonly caught as bycatch, are in decline, including southern flounder, striped mullet, striped bass, and red drum.[51]
The indiscriminatory nature of anchored gill nets threaten protected species of sea turtles and sturgeons, contribute to the degradation of commercially and recreationally valuable fish stocks, and harm populations of other marine megafauna. We discuss these impacts in more detail in Section VI.

B. The HCP fails to Minimize and Mitigate Incidental Take

NCDMF's proposed HCP also fails to meet the requirements for developing steps to minimize and mitigate the likely impact of the incidental take. The ESA and its implementing regulations state that the permit applicant must develop and implement a conservation plan that includes minimization and mitigation measures in a way that offsets the impacts of the taking *to the maximum extent practicable*. *See* 16 U.S.C. §1539(a)(2)(B)(ii); 50 C.F.R. § 222.307(c)(2)(i). Often evaluated together, minimization measures are actions that will *reduce* the adverse impacts of the take assessed in the HCP, while mitigation measures are actions designed to *offset* the impact from the taking to the maximum extent practicable.

Courts have explained that "maximum extent practicable" means there are no further efforts the applicant could feasibly undertake to minimize or mitigate the impacts of the taking.[52] Agencies interpreting the standard further specify that this criterion will be met if the applicant demonstrates that the minimization and mitigation measures will *fully* offset the impacts. Alternatively, if the plan will not fully offset the impacts from taking, then the applicant must demonstrate that the proposed measures represent what the applicant can practicably accomplish.[53]

NCDMF's proposed HCP falls short of the minimization and mitigation requirement for two main reasons. First, because the assessment of likely impacts is insufficient to begin with, the HCP cannot properly assess the offsets of impacts. NCMDF's HCP significantly underestimates

[49] *Id.* p. 11 and p. 15.
[50] Lewison, Rebecca L., Larry B. Crowder, Andrew J. Read, and Sloan A. Freeman. "Understanding Impacts of Fisheries Bycatch on Marine Megafauna." *Trends in Ecology & Evolution* 19, no. 11 (November 1, 2004): 598–604. https://doi.org/10.1016/j.tree.2004.09.004: 601; Crowder, Larry B. and Steven A. Murawski. "Fisheries Bycatch: Implications for Management: Fisheries: Vol 23, No 6." Accessed January 31, 2023. https://www.tandfonline.com/doi/abs/10.1577/1548-8446(1998)023%3C0008%3AFBIFM%3E2.0.CO%3B2: 601; Pauly, Daniel, Villy Christensen, Johanne Dalsgaard, Rainer Froese, and Francisco Torres. "Fishing Down Marine Food Webs." *Science* 279, no. 5352 (February 6, 1998): 860–63. https://doi.org/10.1126/science.279.5352.860: 862
[51] *See* Appendix E (ELPC Report to CFRG December 2022, pp. 7-12.)
[52] *National Wildlife Federation v. Norton* (E.D.Cal. Sept. 7, 2005, No. CIV–S–04–0579 DFL JF, 2005 WL 2175874) 2005 U.S.Dist.LEXIS 33768 (*Natomas II*).
[53] USFWS HCP Handbook p. 9-28.

harm to the endangered species, and it fails to account for any broader impact of the take on the habitats and the coastal ecosystem as a whole. Thus, based on such insufficient assessment of likely impacts, any measure the HCP proposes certainly fails to completely offset or adequately mitigate all the negative impacts from the taking. The agency must first thoroughly and accurately assess and define the impacts of the taking to determine whether the proposed HCP measures meet the maximum extent practicable standard.[54]

Second, the HCP does not show that its proposed minimization and mitigation measures are sufficient to offset the impact from the taking. Moreover, the HCP fails to demonstrate that additional measures are not practicable and thus cannot meet the statutory standard of "maximum extent practicable." The minimization efforts proposed in the HCP primarily depend on "fisher compliance with existing statutes, regulations, proclamations, and permit conditions."[55] Yet the evidence shows chronic non-compliance with those same requirements.[56] Non-compliance, coupled with non-enforcement (including lack of evidence of enforcement of the updated NOV procedures of August 2021),[57] does not constitute "minimization" as contemplated by the ESA.

Essentially, NCDMF plans to maintain the same measures and regulations that have proven ineffective over the past ten years, proposing only minor changes.[58] More importantly, the plan fails to show how these measures are expected to offset the impact of taking in accordance with the statutory and regulatory requirement. Instead, the effects of such measures are briefly mentioned without any specificity. For example, as part of the HCP minimization efforts, the NCDMF is to implement "a variety of other regulations" for various FMPs enforced by the Marine Patrol.[59] As to effect, the HCP simply states that they "likely contribute to the minimization of takes" and that "some of these measures further reduce incidental takes of sturgeon and sea turtles."[60] There is no analysis to show how and why these measures can offset the impact. In short, there is no *actual* evidence that they can offset the adverse impact from the taking.

Similarly, all the mitigation measures are presented in general terms that lack specificity: e.g., "the NCDMF will continue to collect and share data," "will continue to support and assist research efforts," and "will also help with" events "with some regularity."[61] The HCP broadly explains how these measures work and simply asserts that they will help mitigate the impact of

[54] *Id.* p. 9-30.
[55] NCDMF Application p. 48.
[56] *See* Appendix F, email from Kathy Rawls, Mar. 18, 2019 ("I raised the issue of the lack of fisherman compliance with the ITPs, and NCFA [North Carolina Fisheries Association] fully agreed that it is a problem.").
[57] NCDMF Application p. 52.
[58] NCDMF proposes limited additional regulations as part of its minimization measures, such as additional regulations for MUs A and C during the Southern Flounder gill-net fishery and minor changes to area closure. *Id.* pp. 49-51.
[59] *Id.* p. 53.
[60] *Id.*
[61] *Id.* pp. 53-54.

the permitted taking.[62] It does not, however, explain *how* these general measures will have the effect of offsetting the impacts from the taking of sea turtles and sturgeon. Furthermore, the plan makes no mention of whether these measures can be feasibly achieved, nor does it show that additional measures to mitigate the broader impact on the collapsing fisheries and the ecosystem are unfeasible.[63]

NCDMF has received recommendations from other groups and individuals – including from its own staff members – to improve the existing monitoring and enforcement program. We were unable to determine whether those recommendations were evaluated. We believe additional measures to minimize and mitigate the impact are definitely feasible and necessary to be implemented. The "maximum extent practicable" standard requires the measures to completely offset the negative impact; if complete offsets are not possible, then the standard requires mitigation until no further feasible actions can be taken. The HCP fails to meet the statutory standard of "maximum extent practicable" and does not meet requirement of providing adequate minimization and mitigation measures in order for the ITP to be issued.

C. The HCP fails to meet adequate funding requirements.

The permit applicant must ensure adequate funding will be provided for the proposed HCP. 16 U.S.C. § 1539(a)(2)(B)(iii). Consistent with the statute, the agencies require the applicant to estimate the costs of HCP implementation by detailing all different types of costs incurred.[64] The plan should provide cost estimates for all proposed measures and specific categories of operation from upfront costs like hiring experts to future costs.[65]

The proposed HCP fails to meet these funding requirements. The plan states that the Commercial Fishing Resource Fund (CFRF) will be used to fund the observer program and any money left will be used to support sustainable commercial fishing.[66] However, no cost estimates or detailed funding plan is provided for the observer program or for the proposed steps of the minimizing and mitigating efforts.[67] Except for the small amount identified for purchasing tags and for genetic analysis of fin tips,[68] no funding is designated or estimated for the other proposed activities and mitigating measures such as conducting further research and developing outreach. Overall, the proposed HCP disregards NMFS' guidance on funding and fails to provide detailed cost estimates and specific funding plan required for implementing the measures it proposes.

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[62] *Id.* pp. 53-56.

[63] In fact, we have provided recommendations for feasible additional measures with details that NCDMF can implement to mitigate the negative impact of the take including proposed improvements for a stronger enforcement and better observer coverage. *See* Section VII, below.

[64] USFWS HCP Handbook p. 11-2.

[65] *Id.*

[66] NCDMF Application p. 40.

[67] *Id.*

[68] *Id.* pp. 53-54.

D. The HCP fails to comply with additional regulatory requirements and policy that ensure implementation.

To ensure implementation of the HCP, federal regulations and agency policy require HCPs to incorporate effective monitoring protocols and adaptive management. HCPs must include measures to monitor the effects of incidental take. 50 C.F.R. § 17.22(b)(1)(iii)(B); 50 C.F.R. § 17.32(b)(1)(iii)(C)(2); 50 C.F.R. § 222.307. Agencies interpret this rule to mean that HCP monitoring and reporting protocols must provide baseline information, evaluate compliance, and assess impacts and effectiveness to support conservation decisions.[69] In addition, the HCP must also include an adaptive management strategy to address and respond to changed circumstances identified in the plan.[70]

The proposed HCP application fails both permit requirements. First, its monitoring program is highly unreliable. The proposed monitoring strategy depends primarily on the observer program, which "will continue to operate in the same manner as current practices."[71] As we have shown in Section IV-A, the current observer program is deficient and incapable of collecting accurate information on number of takes, assessing effectiveness, or monitoring compliance. Similarly, the proposed plan further specifies that its adaptive management scheme that responds to changes and minimizes adverse impact also depends on information collected through the observer program.[72] Such adaptive measures are hardly sufficient to provide the right response to changed circumstances when the information it uses is misleading to begin with.

In short, the NCDMF's proposed HCP fails the permit issuance requirements on multiple grounds and further fails to comply with agency policy and guidance implementing the ESA in protecting and conserving the endangered species and their habitats. Such an HCP is completely inadequate to mitigate the adverse impact of incidental takes on the endangered species or to conserve and restore the degraded ecosystem of NC's coastal waters, especially with the continued use of destructive gears like anchored gill nets.

VI. Impacts of Gill Nets on Estuarine Ecosystems

Using NCDMF data and scientific literature as direct and contextual evidence, we discuss how anchored gill nets have contributed to the decline of protected species and commercial fish stocks in North Carolina's estuarine waters. Toward the end of this discussion, we address higher order effects, bycatch of other marine megafauna, and potential habitat degradation related to anchored gill nets.

<u>Bycatch of Protected Species</u>

[69] USFWS HCP Handbook p. 10-2.
[70] *Id.* p. 17-4.
[71] NCDMF Application p. 40.
[72] *Id.* p. 33.

Bycatch is the incidental catch and discarding of organisms, and it occurs when fishing gear catches species whose retention is non-economical or prohibited by law.[73] This phenomenon poses a serious threat to populations of long-lived marine megafauna like birds, sea turtles, marine mammals, and elasmobranchs.[74] In a review of 49 commercial U.S. fisheries, it was found that the Mid-Atlantic gill net fisheries (along with Northeast gill net fisheries and pelagic longline fisheries from other regions) had the highest number of documented bycatch species.[75] A review of the U.S. National Bycatch Report, and associated tables from the 3rd update of this document (Tables 3.5.1 and 3.5.2), make it clear that bycatch, inadequate observer coverage, and unreliable bycatch estimates have plagued North Carolina gill net fisheries, and the approval of the proposed ITP would allow this to continue unabated.[76] Here, we review the unlawful take of 7 species protected under the Endangered Species Act.[77]

All five species of sea turtle found in North Carolina waters are listed as threatened or endangered under the ESA.[78] Of these species, three are frequently caught as bycatch in North Carolina gill nets: [79] "the green sea turtle (listed as threatened in the North Atlantic Ocean

[73] Shester, Geoffrey G., and Fiorenza Micheli. "Conservation Challenges for Small-Scale Fisheries: Bycatch and Habitat Impacts of Traps and Gillnets." *Biological Conservation*, Ecoregional-scale monitoring within conservation areas, in a rapidly changing climate, 144, no. 5 (May 1, 2011): 1673–81. https://doi.org/10.1016/j.biocon.2011.02.023: 1673

[74] Wallace, Bryan P., Connie Y. Kot, Andrew D. DiMatteo, Tina Lee, Larry B. Crowder, and Rebecca L. Lewison. "Impacts of Fisheries Bycatch on Marine Turtle Populations Worldwide: Toward Conservation and Research Priorities." *Ecosphere* 4, no. 3 (2013): art40. https://doi.org/10.1890/ES12-00388.1: 1-2; Moore, J. E., K. A. Curtis, R. L. Lewison, P. W. Dillingham, J. M. Cope, S. V. Fordham, S. S. Heppell, et al. "Evaluating Sustainability of Fisheries Bycatch Mortality for Marine Megafauna: A Review of Conservation Reference Points for Data-Limited Populations." *Environmental Conservation* 40, no. 4 (December 2013): 329–44. https://doi.org/10.1017/S037689291300012X: 329-330

[75] Zollett, Erika A. "Bycatch of Protected Species and Other Species of Concern in US East Coast Commercial Fisheries." *Endangered Species Research* 9, no. 1 (December 2, 2009): 49–59. https://doi.org/10.3354/esr00221: 52-53

[76] 2011 National Bycatch Report, pp. 176 and 204; National Bycatch Report Update 3, Tables 3.5.1 and 3.5.2, available at https://www.fisheries.noaa.gov/resource/document/national-bycatch-report (retrieved February 19, 2023).

[77] As noted elsewhere in this comment letter, gill nets intentionally and incidentally take other species, some of which are protected by the Endangered Species Act and the Marine Mammal Protection Act. While impacts on sturgeon, sea turtles, and bottlenose dolphins have been recognized and studied to some extent, reports of entangled alligators suggest another protected species may be negatively affected by anchored gill nets: the American alligator. For example, in 2018, Allen Jernigan, a licensed recreational guide and commercial fisher, reported finding an American alligator entangled in a piece of cutout gill net that had been shot through the head. Mr. Jernigan reported the take to NCDMF and the North Carolina Wildlife Resources Commission, but neither agency took any action. Other guides working in the New River area of Onslow County reported entanglements of other alligators around this same time, but again, no action was taken. While a limited search of scientific literature did not identify published studies of incidental takes of American alligators by gill nets, such reports should be investigated and, if confirmed, included in the assessment of impacts and studied in independent sampling efforts.

[78] NCDMF Application pp. 4-5.

[79] Interestingly, estimates for the bycatch of these species (excluding Kemp's ridley sea turtle) in North Carolina inshore gill net fisheries were provided in the original U.S. National Bycatch report, but not in subsequent updates. *Compare* 2011 National Bycatch Report p. 204, with NOAA Fisheries, *National Bycatch Report* Updates, https://www.fisheries.noaa.gov/resource/document/national-bycatch-report.

Distinct Population Segment), loggerhead sea turtle (listed as threatened in the Northwest Atlantic Ocean Distinct Population Segment), and Kemp's ridley sea turtle (listed as endangered throughout its range)."[80] On a global scale, bycatch has been consistently recognized as one of the most serious threats to sea turtle populations.[81] This was reaffirmed just 13 years ago, when researchers compiled and analyzed the first comprehensive dataset of global bycatch rates across major gear types for marine turtles (i.e., gill net, longline, and trawl fisheries). From 1990 to 2008, about 85,000 sea turtles were caught as bycatch worldwide; due to the small percentage of reported fishing effort and lack of data regarding bycatch in small-scale fisheries, however, researchers say this value underestimates bycatch by at least two orders of magnitude.[82]

This lack of data is characteristic of North Carolina estuarine fisheries, where there have been no self-reported takes of sea turtles in small or large-mesh gill nets since the Fall of 2019 – despite 26 observed sea turtle interactions in the Fall of 2019 alone.[83] The latest Protected Resources Program Update states that, in Fall 2022, there were 30 observed sea turtle interactions with large-mesh gill nets and 2 observed with small-mesh gill nets, and only 2 fishers reported sea turtle interactions in their gear (both turtles were dead).[84] Fishers' refusal to self-report is especially frustrating when we consider the "absence of population estimates" cited for all 5 sea turtle species, which makes it impossible "to know with precision the full impact incidental takes in estuarine anchored gill nets" will have on these species' populations.[85]

Bycatch has a relatively large effect on sea turtle population dynamics because adults and juveniles are affected, and gear fixed to the seafloor (e.g., anchored gill nets) appear to have higher mortality rates than gear set near the surface.[86] This statistic is directly relevant to NC fisheries, where 80% of gill net trips reported to NCDMF from 2014-2020 were anchored gill

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[80] Hoos *et al.* "Fisheries Management in the Face of Uncertainty," 2019, 3

[81] Wallace, Bryan P., Andrew D. DiMatteo, Alan B. Bolten, Milani Y. Chaloupka, Brian J. Hutchinson, F. Alberto Abreu-Grobois, Jeanne A. Mortimer, et al. "Global Conservation Priorities for Marine Turtles." *PLOS ONE* 6, no. 9 (September 28, 2011): e24510. https://doi.org/10.1371/journal.pone.0024510: 2; Donlan, C. Josh, Dana K. Wingfield, Larry B. Crowder, and Chris Wilcox. "Using Expert Opinion Surveys to Rank Threats to Endangered Species: A Case Study with Sea Turtles." *Conservation Biology* 24, no. 6 (2010): 1586–95. https://doi.org/10.1111/j.1523-1739.2010.01541.x: 1586-1587; Hamann, M., M. H. Godfrey, J. A. Seminoff, K. Arthur, P. C. R. Barata, K. A. Bjorndal, A. B. Bolten, et al. "Global Research Priorities for Sea Turtles: Informing Management and Conservation in the 21st Century." *Endangered Species Research* 11, no. 3 (May 26, 2010): 245–69. https://doi.org/10.3354/esr00279: 250 and 259; Wallace *et al.* "Impacts of Fisheries Bycatch on Marine Turtle," 2013, 1-2

[82] Wallace, Bryan P., Rebecca L. Lewison, Sara L. McDonald, Richard K. McDonald, Connie Y. Kot, Shaleyla Kelez, Rhema K. Bjorkland, Elena M. Finkbeiner, S'rai Helmbrecht, and Larry B. Crowder. "Global Patterns of Marine Turtle Bycatch." *Conservation Letters* 3, no. 3 (2010): 131–42. https://doi.org/10.1111/j.1755-263X.2010.00105.x: 131

[83] North Carolina Division of Marine Fisheries (NCDMF), *Annual Sea Turtle Interaction Monitoring of the Anchored Gill-Net Fisheries in North Carolina for Incidental Take Permit Year 2020*, 2021, 13-15

[84] Barbie Byrd to N.C. Marine Fisheries Commission, January 27, 2023, MEMORANDUM, February 2023 Briefing Materials, 120

[85] NCDMF, Application for an Individual Incidental Take Permit, 2022, 34-38

[86] Donlan *et al*. "Using Expert Opinion Surveys," 2010, 1592; Wallace *et al.* "Impacts of Fisheries Bycatch," 2013, 10

nets.[87] In addition to the efficacy of anchored gill nets in terms of bycatch, the spatio-temporal overlap of sea turtle migration and the use of large-mesh gill nets is troubling. The migration of southern Flounder out of the Pamlico Sound occurs between September and November (when most flounder are captured), and this coincides with sea turtles passing through the same corridor. This overlap results in significant increases in sea turtle bycatch during that time.[88] Along with the seasonal spike in sea turtle bycatch, sea turtle bycatch has increased over time. Duke MEM student (now PhD candidate) Brianna Elliot examined sea turtle takes in the North Carolina Southern Flounder fishery in the three years before and after issuance of the 2013 sea turtle ITP. She found that compared to the post-lawsuit period of 2010-2013, estimated and observed takes increased from 2013 to 2016, after the issuance of the ITP. In all years, observed takes exceeded authorized take limits. This information is troubling because gear and soak time modifications set forth in the ITP were intended to limit take, whereas the data shows that the 2013 ITP did not protect sea turtles as intended.[89] Without further modifications, this grim track record is likely to continue with the new ITP.

In addition to sea turtles, two species of sturgeon, Atlantic and shortnose sturgeon, are found in NC waters,[90] and both are listed as threatened or endangered depending on the defined DPS.[91] The shortnose sturgeon was listed as an endangered species in 1967, and the Atlantic sturgeon was listed in 2012.[92] These species were the focus of a directed fishery in the U.S. (more so the Atlantic sturgeon), but after catch in many rivers peaked in the 1890s and collapsed, much of the sturgeon harvest occurred as bycatch in the herring and shad fisheries.[93] Atlantic sturgeon are anadromous, whereas shortnose sturgeon infrequently venture into marine waters and may be amphidromous in part of their range. These life history characteristics pose major implications for bycatch in North Carolina estuarine waters.[94] Both Atlantic sturgeon and American shad, which is also anadromous, spawn in the Roanoke and Chowan Rivers. As Atlantic sturgeon enter the Albemarle Sound in Spring, and American shad exit in April, their migrations overlap, leading to an increase in Atlantic sturgeon takes as fishers

[87] NCDMF, Application for an Individual Incidental Take Permit, 2022, 11
[88] Hoos *et al.* "Fisheries Management in the Face of Uncertainty," 2019, 4
[89] Elliott, Brianna., Trends in Sea Turtle Take in the Large Mesh Southern Flounder Commercial Gillnet Fishery following the Authorization of an Incidental Take Permit in 2013 in North Carolina, 2017, 21 and 34
[90] In fact, five of the critical habitat areas for the Carolina DPS that NOAA Fisheries has designated are situated within the geographic range of the proposed ITP. *See* NOAA Fisheries, Atlantic Sturgeon Critical Habitat Map and GIS data (April 14, 2022). https://www.fisheries.noaa.gov/resource/map/atlantic-sturgeon-critical-habitat-map-and-gis-data (last accessed February 20, 2023).
[91] NCDMF, Application for an Individual Incidental Take Permit, 2022, 1
[92] Collins, Mark R, S Gordon Rogers, Theodore I J Smith, and Mary L Moser. "PRIMARY FACTORS AFFECTING STURGEON POPULATIONS IN THE SOUTHEASTERN UNITED STATES: FISHING MORTALITY AND DEGRADATION OF ESSENTIAL HABITATS." *BULLETIN OF MARINE SCIENCE* 66, no. 3 (2000): 917; Fisheries, NOAA. "Atlantic Sturgeon | NOAA Fisheries." NOAA, January 30, 2023. New England/Mid-Atlantic, Southeast. https://www.fisheries.noaa.gov/species/atlantic-sturgeon.
[93] Stein, Andrew B, Kevin D Friedland, Michael Sutherland. "Atlantic Sturgeon Marine Bycatch and Mortality on the Continental Shelf of the Northeast United States." *North American Journal of Fisheries Management* 24 (2004): 171–183: 172
[94] Stein *et al.* "Atlantic Sturgeon Marine Bycatch," 2004, 172

target the migrating shad.[95] Shortnose sturgeon mainly migrate upstream and downstream in rivers, and during these migrations, they are especially vulnerable to passive fishing gears such as anchored gill nets.[96] Additionally, both sturgeon species are long-lived and slow to maturity, which means their spawning populations are extremely sensitive to overfishing.[97]

Because sturgeon return to their natal rivers to spawn, they are thought of as belonging to a certain river population, and multiple river populations constitute a DPS. This adds a layer of nuance to investigating the status of Atlantic and shortnose sturgeon populations. According to Andrew Herndon, a natural resource specialist at NOAA Fisheries, the best available data regarding the Atlantic sturgeon Carolina DPS (which includes rivers in North and South Carolina) is from 2017. The Atlantic States Marine Fisheries Council (ASMFC) published a stock assessment which determined that all Atlantic sturgeon DPSs were depleted relative to historical levels.[98] Regarding the Carolina DPS, NOAA Fisheries has only recently begun to monitor riverine populations. From 2014 to 2021, there was no research specifically designed to monitor spawning populations in North Carolina. Even now, such research is limited to the Roanoke and Cape Fear Rivers, excluding three other potential spawning rivers: the Tar-Pamlico, Neuse, and Northeast Cape Fear Rivers.[99] This paucity of data makes it difficult to know the true status of Atlantic sturgeon in North Carolina waters. Similarly, there is a lack of data regarding shortnose sturgeon in North Carolina, but there have been no attempts to fill this knowledge gap. Even though the observer program and independent researchers have documented this species in North Carolina, NCDEQ does not consider the shortnose sturgeon a state-managed or interjurisdictional species.[100] Shortnose sturgeon spawn in the Yadkin-Pee Dee River, which stretches from North Carolina to South Carolina, so it is questionable why this endangered spawning population is not monitored.[101]

Sharp declines in Atlantic and shortnose sturgeon population size across their range (including North Carolina) have been caused by overfishing and habitat loss, and recent observer data tells us that North Carolina anchored gill nets are perpetuating this trend.[102] Even the limited

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[95] Hoos *et al.* "Fisheries Management in the Face of Uncertainty," 2019, 3-4

[96] NCDMF, *Application for an Individual Incidental Take Permit*, 2022, 3; Collins *et al. "*PRIMARY FACTORS AFFECTING STURGEON," 2000, 920

[97] NCDMF, *Application for an Individual Incidental Take Permit*, 2022 page 2-3; NOAA, *Shortnose Sturgeon,* 2023, retrieved on February 20, 2023 from fisheries.noaa.gov/species/shortnose-sturgeon; NOAA, *Atlantic Sturgeon,* 2023, retrieved on February 20, 2023 from https://www.fisheries.noaa.gov/species/atlantic-sturgeon; WWF, "Saving Sturgeons: A global report on their status and suggested conservation strategy," 2016, 18, retrieved from https://wwfint.awsassets.panda.org/downloads/Saving_sturgeons_A_global_report_on_their_status_and_suggested_conservation_strategy.pdf

[98] Atlantic States Marine Fisheries Commission 2017, 19

[99] Personal Communication between Hayden Dubniczki, ELPC, and Andrew Herndon, NOAA Fisheries (February, 2023).

[100] NCDMF Application *pp.* 4, 35; "Fishery Management Plans | NC DEQ." Accessed February 7, 2023. https://deq.nc.gov/about/divisions/marine-fisheries/managing-fisheries/fishery-management-plans#state-managed-species.

[101] NOAA, *Shortnose Sturgeon,* 2023, retrieved from https://www.fisheries.noaa.gov/species/shortnose-sturgeon#populations on February 19, 2023.

[102] NCDMF Application pp. 1-2.

information gleaned from incomplete observer data suggest that North Carolina anchored gill nets are perpetuating this trend. Researchers used observer fishing records to calculate Atlantic sturgeon bycatch and mortality rates for otter trawls, sink (anchored) gill nets, and drift gill nets from 1989 to 2000. They found that North Carolina was among the states with the highest rates of bycatch, and at least 22% of Atlantic sturgeon captured in sink gill nets experienced immediate mortality.[103] The researchers' results across fisheries suggest that the annual mortality of Atlantic sturgeon could be around 1,500 per year.[104] In NC, most Atlantic sturgeon takes in the large-mesh gill net fishery occur in the Albemarle Sound.[105] This is reflected in the latest Protected Resources Program Update, which states that in September 2022, there were 14 observed Atlantic sturgeon takes – all occurring in large-mesh anchored gill nets in Management Unit A (the Albemarle Sound).[106] From 2003 to 2020, on-board and alternate platform observers documented an astounding 484 Atlantic Sturgeon entangled in anchored gill nets in North Carolina.[107] The context provided by the researchers tells us that the actual number of Atlantic sturgeon takes could be much higher, and, because of uncertain population estimates, we cannot know the precise impact of estuarine gill net bycatch on the species.[108] Moreover, similar to the lack of self-reported sea turtle takes, there was only one self-reported Atlantic sturgeon take in 2018, five self-reported takes in 2019, and no self-reported takes in 2020.[109]

Unfortunately, the 2021 Fishery Management Plan Review disclosing Atlantic sturgeon take from 2003 to 2020 does not include any information regarding shortnose sturgeon.[110] Since the beginning of the NCDMF observer program in 2000, only two incidental takes of shortnose sturgeon have been observed.[111] Given the lack of information on this species, it would be illogical to assume that (1) the observed takes are an accurate representation of all shortnose sturgeon takes in North Carolina waters, and (2) any additional takes would not jeopardize the continued existence of the species.[112] Research is desperately needed to assess the status of this species, as well as Atlantic sturgeon, in North Carolina and how estuarine anchored gill nets may impact that status. The last biological assessment on this species was published by NMFS

[103] Stein *et al.* "Atlantic Sturgeon Marine Bycatch" (2004), pp. 171, 175 and 179.
[104] *Id.* p. 171
[105] Hoos *et al.* "Fisheries Management in the Face of Uncertainty" (2019), p. 3.
[106] Appendix D, p. 120; North Carolina Department of Environmental Quality (NCDEQ), *PROCLAMATION M-5-2021, Map 1*, "Press Releases," January 2012, accessed February 12, 2023, https://deq.nc.gov/media/19476/open.
[107] NCDMF *2021 Fishery Management Plan Review* (2022) p. 381.
[108] NCDMF Application p. 34.
[109] NCDMF, Annual Atlantic Sturgeon Interaction Monitoring of the Gill-Net Fisheries in North Carolina for Incidental Take Permit Year 2018, 2019, 14; NCDMF, Annual Atlantic Sturgeon Interaction Monitoring of Anchored Gill Net Fisheries in North Carolina for Incidental Take Permit Year 2019, 2019, 13; NCDMF, Annual Atlantic Sturgeon Interaction Monitoring of Anchored Gill-Net Fisheries in North Carolina for Incidental Take Permit Year 2020, 2021, 1.3
[110] NCDMF, *2021 Fishery Management Plan Review,* 2022, iii
[111] NCDMF Application p. 35.
[112] *Id.*

in 2010, which is shocking given their long-standing status as an endangered species.[113] This assessment stated that shortnose sturgeon bycatch in shad gill net fisheries "can be quite substantial," and that shortnose sturgeon are sensitive to fishing mortality because "they are a long-lived species, reach maturity at an older age, have lower maximum fecundity values, and 50% lifetime egg production occurs late in life."[114] The obvious threat facing shortnose sturgeon remains understudied and unaddressed.

Decline in Stock Size & Viability, and Higher Order Effects

In Baja, California, Mexico, researchers used at-sea observations and field experiments to quantify and compare the ecosystem impacts of lobster traps, fish traps, set gillnets, and drift gillnets. Of all four gear types, set (anchored) gill nets had the highest mean bycatch rates per trip – amounting to a mean discard rate of 34.3%. Except for shrimp trawls, this rate was higher than the global average for all industrial fishing gear types in the FAO discards database.[115] Given the prevalence of anchored gill nets in North Carolina estuarine waters, it is unsurprising that FMP reviews and scientific studies indicate this gear type is wreaking havoc on commercially and recreationally important stocks in North Carolina.

The 2021 Fishery Management Plan Review makes it clear that, during the 26 years of management under the Fisheries Management Reform Act of 1997, many North Carolina fish stocks have declined due to unrestrained overfishing and bycatch.[116] A review of the individual FMP updates for estuarine striped bass, red drum, southern flounder, spotted seatrout, striped mullet, American shad, Atlantic croaker, Atlantic sturgeon, bluefish, and weakfish (all fish stocks targeted by estuarine gill net fisheries) reveals that if a stock is not categorized as 'depleted,' 'overfished,' and/or 'experiencing overfishing,' its status is undetermined due to limited data, absence of an approved stock assessment, or uncertainty in adult stock size estimates. The only exceptions are spotted seatrout and American shad; Albemarle Sound populations of shad are sustainable, but their status in the Tar-Pamlico, Neuse, and Cape Fear rivers is unknown due to limited information.[117] In other words, North Carolina estuarine fish stocks are failing, and a lack of data means that even if some stocks are doing better than others, NCDMF is managing them blindly. Overfishing can theoretically occur with any gear type, but because anchored gill nets are left unattended in the water for long periods of time, this gear type is also contributing to the overfishing of non-target stocks. For example, striped bass (an overfished stock that is experiencing overfishing) are harvested from large-mesh anchored gill nets targeting southern flounder, and they are managed as a non-target bycatch fishery.[118]

In a study of the post-release survival of gill-netted, sublegal southern flounder in southeastern North Carolina, researchers accompanied several commercial gill net fishers during four

[113] NMFS, *BIOLOGICAL ASSESSMENT OF SHORTNOSE STURGEON Acipenser brevirostrum* (2010), p. 1.
[114] *Id.* p. 89.
[115] Shester and Micheli, "Conservation Challenges for Small-Scale," 2011, 1673 and 1679
[116] *See* Appendix E.
[117] NCDMF, *2021 Fishery Management Plan Review* (2022), pp. 73, 155, 236, 262, 284, 317, 346, 380, 413 and 475
[118] NCDMF Application pp. 11

seasonal periods: Summer 2007, Fall 2007, Spring 2008, and Summer 2008. Upon retrieval from gill nets, dead fish were documented, and live fish were observed for a 3-day period to estimate short-term, post-release survival. The discarding rate was 35% with an overall discard survival rate of 50%, and there was significant variation in survival estimates across seasons.[119] Another stock subjected to discarding in the North Carolina estuarine gill net fishery is red drum.[120] In a working paper prepared for the Southeast Data, Assessment, and Review (SEDAR) Program, it was estimated that, in 2004 and 2005, dead discards from the gill net fishery accounted for 46-51% of total commercial removals. Equally troubling is the estimate that, when combined with recreational removals, the NCDMF stock assessment failed to account for 14-18% of discards during that time.[121] Failure to account for discard mortality can result in less effective fisheries management policies.[122]

Whether discarded organisms die or not, there are potential long-term consequences that affect the individual, its population, and the broader ecosystem. It is generally accepted that the post-release survival of discards following capture in commercial fishing gear is dependent upon multiple factors: the length of time entangled in fishing gear, size of fish, water temperature, and handling by fishers.[123] Even if an organism survives entanglement and the post-release period, energy used to recover from the stress of capture cannot be used for growth or reproduction, resulting in unknown long-term effects.[124] Overexploitation can lead to change in the age or size structure of fish stocks due to preferential removal of older and larger individuals.[125] In addition to structural change in fish populations, there are other principal impacts of fisheries overexploitation, such as depletion or collapse of fish stocks (as reflected in the individual NC FMP updates), altered food webs, and changes in the structure, function, and controls of estuarine ecosystems.[126] Assuming that fisheries tend to switch from higher to lower trophic level species following changes in their relative abundance (fishing down the food web), overexploitation and bycatch in North Carolina estuarine fisheries could impose cascading effects which are changing the overall structure of the ecosystem.[127] As if this ecological degradation was not enough, discarded bycatch adds insult to injury by wasting commercially and recreationally important fish stocks with economic and intrinsic value.

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[119] Smith, William E., and Frederick S. Scharf. "Postrelease Survival of Sublegal Southern Flounder Captured in a Commercial Gill-Net Fishery." *North American Journal of Fisheries Management* 31, no. 3 (June 1, 2011): 445–54. https://doi.org/10.1080/02755947.2011.590116: 446-448 and 452

[120] *See* Appendix F, email chain from Kathy Rawls to Katy West, Mar. 18, 2016 (discussing the potential for shutting down certain fisheries due to a concerning stock assessment of red drum).

[121] Paramore, L., An Estimate of Red Drum Removals from the North Carolina Estuarine Gill Net Fishery Occurring from both Recreational Users of Gill Nets and from Regulatory and Unmarketable Discards, 2009, 21

[122] Smith and Scharf, "Postrelease Survival of Sublegal," 2011, 445

[123] Gray, Charles A. "Management implications of discarding in an estuarine multi-species gill net fishery." *Fisheries Research* 56 (2002) 177–192: 190

[124] Smith and Scharf, "Postrelease Survival of Sublegal," 2011, 452

[125] Kennish, Michael J. "Environmental Threats and Environmental Future of Estuaries." *Environmental Conservation* 29, no. 1 (2002): 78–107: 84

[126] Kennish, "Environmental Threats and Environmental Future," 2002, 90

[127] Pauly *et al*. "Fishing Down Marine Food," 1998, 862-863

Bycatch of Marine Megafauna (and Habitat Degradation)

In addition to ESA-listed sea turtles and sturgeon and the other species listed above, anchored gill nets also capture other species of marine megafauna in inshore waters, including the bottlenose dolphin and various sea birds.[128] A study conducted by the U.S. Fish and Wildlife Service (USFWS) revealed a sobering number of migratory waterbird mortalities associated with nearshore anchored gill nets in New Jersey, Delaware, Maryland, and Virginia.[129] The author observed dead birds in net retrievals, beach surveys, and 400m offshore; and the distribution of set nets was observed via aerial surveys. Based on the observation of fishers retrieving their nets, the author estimated that from February to April 1998, a minimum of 2,387 birds were killed in the study area; and certain bird species were more vulnerable to gill net capture than others due to their distribution (e.g., red-throated loon).[130] Two studies of smaller scale were conducted by NCDMF in the Albemarle Sound, Pamlico Sound, and the Neuse River. In the latter two areas, multifilament and monofilament gill nets were deployed from January 1 to August 1, 2000, and only cormorants and loons were caught. However, in the Albemarle Sound, floating and submerged shad gill nets were deployed from January 1 to April 15, 2000, and only the submerged nets resulted in incidental take. Three species of birds (red- throated loon, the double-crested cormorant, and the pied-billed grebe) were caught, and all birds were found dead.[131] Given that each of NCDMF's studies was conducted with a limited number of nets in less than a year, these results are not representative of all incidental bird takes in NC estuarine gill nets. In addition to the species encountered in these studies, NCDMF has captured the following species in fishery independent studies: the greater scaup, lesser scaup, canvasback, redhead, red-breasted merganser, ruddy, and old squaw also get entangled in NC gill nets.[132]

NOAA documented the bycatch of Northwest Atlantic coastal bottlenose dolphins in Mid-Atlantic gill net fisheries from 2007 to 2015. The mean maximum dolphin bycatch estimates increased from 2007-2011 to 2011-2015, and only the Northern North Carolina estuarine stock exceeded its potential biological removal level in both periods.[133] From 2011 to 2015, the average annual estimate of bottlenose dolphin bycatch in the Northern North Carolina estuarine system was 16.42 individuals.[134] Large marine vertebrates are apex species, meaning they play important roles in food-web structure and ecosystem function. Zooming out from our previous discussion of fishing down marine food webs, the incidental removal of high trophic

[128] NCDMF, *North Carolina Fishery Management Plan, Southern Flounder (Paralichthys lethostigma)*, 2005, 228
[129] Forsell, Douglas J., *Mortality of Migratory Waterbirds in Mid-Atlantic Coastal Anchored Gillnets During March and April 1998*, 1999, i
[130] Forsell, Mortality of Migratory Waterbirds, 1999, i-ii and 18
[131] NCDMF, North Carolina Fishery Management Plan (2005), pp. 235-236
[132] *Id.* p. 236.
[133] NOAA, *Common Bottlenose Dolphin (Tursiops truncatus) Gillnet Bycatch Estimates along the US Mid-Atlantic Coast, 2007-2015,* 2018, 31
[134] NOAA, *Table 3.5.2,* 2019, retrieved on February 19, 2023 from https://www.fisheries.noaa.gov/resource/document/national-bycatch-report

level species like seabirds and dolphins can also lead to cascading ecological changes – which can be difficult to detect.[135]

Compared to lobster traps, fish traps, and drift gillnets, anchored gill nets have been found to have the highest impact on temperate kelp forest habitat by damaging and removing corals and kelp.[136] There are no coral or kelp in North Carolina estuarine waters, but studies on the habitat effects of artisanal fishing gear (particularly gill nets) have been scarce, and the results of these studies are variable.[137] This uncertainty does not justify ignoring the potential impacts of anchored gill nets on the estuarine environment.

VII. Recommendations

NMFS should consider the following recommendations before revising and re-releasing NCDMF's ITP application. To be clear, several of these recommendations represent the minimum required by law and environmental justice. However, as it stands now, the ITP application is so lacking in reliable information and effective mitigation strategies that NCCFRG strongly urges NMFS to deny the permit or *substantially* revise its contents.

A. Re-issue permit draft along with BiOp and EA/EIS so that public has full info and can submit more informed comments.

First and foremost, NMFS should withdraw the draft permit and re-issue it only once a BiOp and EA/EIS can be published for comment alongside the draft. As discussed above, these assessments, with their focus on species health and environmental impact, provide critical insight into the overall and long-term consequences of the ITP. These assessments are essential to understanding the ITP—both from the public perspective and from NMFS's—for three main reasons.

First, without the BiOp and EA/EIS, the public has no reliable or independently sources information about the consequences of the ITP on North Carolina's estuarine habitat. Currently, potential public commenters are left to conduct their own outside research, often with limited resources and expertise, in an effort to meaningfully comment on the proposed ITP. The BiOp and EA/EIS would serve to increase the overall amount of information available regarding the ITP, and that information would at least allow for more capable comments that require less time and resources to produce. Considering the constituencies affected by this ITP, including commercial fishers, coastal communities, and conservation groups, this information is vital to the public's ability to participate in the administrative process. Without these documents, NOAA Fisheries is effectively requiring fishers and their concerned counterparts to give up time they would otherwise spend making a living on the water to conduct research they may not have the expertise to effectively synthesize.

[135] Lewison *et al*, "Understanding Impacts of Fisheries Bycatch," 2004, 601
[136] Shester and Micheli, "Conservation Challenges for Small-Scale," 2011, 1678-1679
[137] Shester and Micheli, "Conservation Challenges for Small-Scale," 2011, 1674

Second, until it conducts the required NEPA analysis and BiOp, NOAA Fisheries – and members of the public – must rely on the applicant's HCP to evaluate potential impacts. This limited information creates a serious conflict of interest problem: because NCDMF drafted the HCP, the plan inherently strives to present the limited data in a light most favorable to issuing the ITP. Separate from the many concerns about the thoroughness and integrity of the HCP, discussed above, this conflict demands objective independent analysis.

Third, NOAA Fisheries is legally required to present all of the relevant environmental materials at the same time as or as close in time as possible to the ITP draft. For example, NEPA and its relevant regulations and caselaw all require that NOAA Fisheries begin the environmental analysis process as soon as possible *and* that it release the EA/EIS *alongside* the ITP application. If for no other reason than to comply with the minimum legal requirements, NOAA Fisheries must withdraw the ITP until it can be paired with an EA/EIS.

B. Ban anchored gill-nets

Gillnets are indiscriminate gear, capable of ensnaring anything that swims into it or alights on it (e.g., seabirds). Although larger mesh sizes may succeed in limiting bycatch of smaller species or individuals, there is no commercially-viable mesh size that can prevent ensnaring sea turtles; indeed, gillnets were so successful at ensnaring sea turtles that it was the gear of choice for commercial sea turtle fisheries before those were banned. (Wiztell 1994)

As discussed above, bycatch of protected species and non-target species in North Carolina's estuarine waters has resulted in a cumulative decline in the health of the state's fisheries. Across the board, species targeted by gill nets have suffered from overfishing and seen declines in stocks. Sea turtles and sturgeon continue to be entangled in gill nets. Increasing use of small mesh gill nets means greater bycatch of juvenile fish. For more than a decade, seasons for target species have continued to be shortened, management areas continue to be closed, and observer coverage remains minimal. All told, North Carolina can only be said to be managing the estuarine gill net fishery through collapse.

Yet in states where gill nets have been banned, finfish species have rebounded. Other gear types, which limit the issues with bycatch and dead discards, have successfully replaced gill nets. Reduced bottom fouling from anchored gill nets and dead discards means better habitat for target species and protected species. Long-term, any costs of banning gill nets are substantially outweighed by the improved health and sustainability of the fisheries.

Even if NOAA Fisheries refuses to ban gill nets in North Carolina waters, it should evaluate the option as an alternative. Given the short seasons, imposed quotas, and demonstrated negative consequences of the gill net fisheries, NCDMF should include banning gill nets as a serious potential alternative in reevaluating this ITP application. Other gear types could replace gill

nets without lowering the fisheries quota, and almost any other gear type would substantially reduce bycatch and other environmental externalities imposed by gill nets.[138]

C. Require fishers to use illuminated gillnets

Scientific studies have shown that illuminating gillnets with green LED lights is effective at mitigating sea turtle bycatch. More recent studies have shown that the same technology significantly reduced mean rates of total discarded bycatch biomass – and did so without harming target catch rates. See Senko, et al., "Net illumination reduces fisheries bycatch, maintains catch value, and increases operational efficiency." 32 Current Biology Feb. 2022 (green LED lights placed on coastal gillnets reduced mean total discarded bycatch biomass by 63%). If banning gill nets is not possible, illuminating them may at least protect sea turtles. However, it is worth noting that this solution does not carry the benefits to finfish (including sturgeon) and other species as banning gill nets entirely.

D. Substantially improve *and* enforce observer requirements

The current observer coverage model has proven to be entirely ineffective. Fishers dodge observers' calls and avoid them on the water. Even where coverage meets the stated goal for a season, it falls short of capturing a representative sample of the gill net fishers. To remedy these shortcomings, NOAA Fisheries should require one or more of the following modifications to the observer program:

North Carolina's EGNP and the required Trip Tickets should be used to target fishers who are regularly fishing gill nets. As discussed above, the current method of calling every fisher with a permit is inefficient and isn't working. A small change could lead to improved results: using the prior year's Trip Ticket logs, observers could limit their calls to ENGP holders who reported landings in the prior year. Another option could be to limit issuance of an EGNP to those who have reported landings from the Trip Ticket Program in, e.g., three of the past five years.

Another alternative is to alter the model of observer coverage. A certain percentage of EGNP holders could be *required* to carry an observer on 100% of their trips. For example, if every EGNP required an observer certificate, those EGNPs could easily be organized into large and small boats, such that a certain percentage of the issued permits for large boats could carry an observer on all trips and a certain percentage of small boats could be observed from an alternative platform on 100% of their trips. Fishers could be included in a random lottery for each season, ensuring not only the goal percentage of coverage but also that the observers cover a random selection of gill net fishers.

Finally, meaningful enforcement *must* be a key component of any authorized observe program. For example, permits should be revoked if fishers either fail to report their trips or fail to

[138] NCDMF concedes as much, conceding that pound nets, which "capture fish by entrapment, as opposed to gilling or entanglement," result in discards that have a higher chance of survival. NC Southern Flounder FMP Amendment 3, p. 26 (May 2022). *See also id.,* p. 16 ("Giggling for southern flounder results in very little bycatch of non-flounder species since fish are gigged by sight."). https://deq.nc.gov/media/30784/open

comply with the observer requirements. Unreturned phone calls, refusals to take an observer, and unreported trips all contribute to the current problems with the observer coverage. Without greater enforcement, improved compliance cannot reasonably be expected.

E. Shorten timeframe for ITP

Finally, the ITP application's time frame is far too long. Even if some or all of the above recommendations are implemented, the sheer scope of the proposed ITP—covering an entire state and seven endangered species—demands that NOAA Fisheries shorten its applicable timeframe. Shortening the time frame to three-five (3-5) years would allow NOAA Fisheries and NCDMF to reevaluate stock assessments, compliance, and any new strategies (such as NCDMF's 5-point plan, which is in the early stages of implementation) in a more timely fashion. Waiting 10 years to conduct another BiOp, EA/EIS, or HCP is simply unacceptable for an ITP this significant – especially considering the dire status of the Southern Flounder and other fisheries. Stated simply, it is irresponsible to set take limits based in part on assumptions that fish stocks will be rebuilt.

Thank you for your consideration of these comments.

Sincerely,

/s/ Michelle B. Nowlin

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