

**IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF PUERTO RICO**

_____)	
CORALATIONS, ET AL,)	
)	
Plaintiffs,)	
)	
v.)	Civil No. 12-1281 (SEC)
)	
NATIONAL MARINE FISHERIES SERVICE,)	
ET AL,)	
)	
Defendants.)	
_____)	

**PLAINTIFFS’ COMBINED OPPOSITION TO FEDERAL DEFENDANTS’ MOTION
FOR SUMMARY JUDGMENT AND REPLY TO FEDERAL DEFENDANTS’
OPPOSITION TO PLAINTIFFS’ MOTION FOR SUMMARY JUDGMENT**

Miguel Sarriera-Román, Esq.
Miguel Sarriera-Román Law Office
1104 Calle San Miguel
Quebradillas, PR. 00678

Stephen E. Roady (*pro hac vice*)
Earthjustice
1625 Massachusetts Avenue, N.W.
Washington, D.C. 20036-2212

Andrea A. Treece (*pro hac vice*)
Earthjustice
50 California Street, Suite 500
San Francisco, CA 94111

Counsel for Plaintiffs

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INTRODUCTION

The record in this case demonstrates unequivocally that the National Marine Fisheries Service (“NMFS” or “Defendants”) violated both the Endangered Species Act (“ESA”) and the Administrative Procedure Act (“APA”) when it issued the 2011 Biological Opinion (“BiOp”) authorizing fishing under Amendments 5 and 6 to the Caribbean Reef Fish Fishery (“Fishery”) Management Plan. NMFS’s conclusion that continuing to remove large numbers of parrotfish and other herbivorous fish from the reef ecosystem would not jeopardize elkhorn and staghorn coral or adversely modify their critical habitat was based upon a jumble of unsupported and contradictory assumptions. For instance, NMFS admitted that the condition of the corals’ critical habitat must *improve* in order for the species to survive and recover, and that the fishing it authorized will *degrade* that habitat. Yet NMFS chose to avoid a jeopardy or adverse modification determination by simultaneously arguing that fishing plays only a secondary role in affecting algal growth – and thus downplaying the negative effects of removing parrotfish – while assuming that a moderate decrease in fishing pressure will exert a significant enough influence on algal growth to benefit the corals and their critical habitat. NMFS relied upon this assumption even though NMFS admitted that it could not predict whether reduced parrotfish catch levels would have any effect on reducing algal growth on the reef. Moreover, NMFS arrived at its “no jeopardy” and “no adverse modification” conclusions by unlawfully *comparing* the effects of fishing to other threats instead of analyzing how *adding* fishing effects to the corals’ grim and worsening baseline situation affects their likelihood of survival and recovery.

The Defendants offer no meritorious arguments in defense of their actions. Their arguments cannot overcome the evidence in the record, which shows that NMFS acted contrary to scientific expertise and the law by dodging its central duty under the ESA to protect staghorn

and elkhorn corals and their reef habitat. Instead of using its authority to address the significant cumulative threat posed by the Fishery, NMFS hid behind large-scale, allegedly unmanageable threats as an excuse to avoid its duty to conserve these crucial, habitat-building coral species and their reef ecosystem. Moreover, NMFS failed to provide any effective means for monitoring the effects of the Fishery in the future and triggering a new examination of its impacts if the Fishery's negative effects exceed NMFS expectations. These actions violated the ESA and APA.

ARGUMENT

I. Defendants Fail to Demonstrate that the Biological Opinion's Determinations Were Rationally Connected to Their Findings and the Best Available Science

Defendants' Opposition largely fails to respond to Plaintiffs' arguments regarding NMFS's failure to establish a rational connection between the facts found and conclusions made, and its separate failure to base those conclusions on the best available science. Instead of addressing the BiOp's many conflicting findings and conclusions, Defendants claim that the court should simply defer to NMFS's opinion. Doc. 47 at 21. However, courts have refused to accept unsubstantiated agency assertions that species will be protected: "If this were sufficient, the [agency] could simply assert that its decisions were protective and so withstand all scrutiny." *PCFFA v. NMFS*, 426 F.3d 1082, 1092 (9th Cir. 2005). *See also Greenpeace v. NMFS*, 80 F. Supp.2d 1137, 1147 (W.D. Wash. 2000) (presumption of agency expertise may be rebutted if its decisions are not reasoned). "Internally contradictory agency reasoning renders resulting action 'arbitrary and capricious.'" *Defenders of Wildlife v. U.S. EPA*, 420 F.3d 946, 959 (9th Cir. 2005) (citation omitted). NMFS's BiOp may only be upheld if the court determines that the agency "considered the relevant factors and articulated a rational connection between the facts found and the choice made." *PCFFA v. NMFS*, 265 F.3d 1028, 1034 (9th Cir. 2001) (citations omitted).

Thus, Defendants must clearly explain how the BiOp's conclusions are based on the information in front of them and show that they are rational.

As an initial matter, Defendants incorrectly assert that Plaintiffs argue that "the ESA requires NMFS to avoid any adverse effects whatsoever on listed species." Doc. 47 at 14. Plaintiffs never made this argument. Rather, Plaintiffs explained that NMFS failed to demonstrate, as it must under the ESA and APA, that the levels of fishing it authorized were sufficient to avoid the likelihood of jeopardy to staghorn and elkhorn coral and adverse modification of their critical habitat. Doc. 44 at 9-15. NMFS failed to make that demonstration.¹ Nothing in its Opposition brief explains that failure.

Defendants' arguments regarding best available science also miss the mark. Defendants protest that Plaintiffs "have identified no other 'better' information that NMFS failed to consider." Doc. 47 at 16.² Yet Plaintiffs made clear that the problem with the BiOp is not that NMFS lacked information but that it did not base its decision on that information. The record here is clear: it plainly shows that NMFS biologists examined the best available science regarding the impacts of fishing on staghorn and elkhorn corals and their critical habitat, and that

¹ Defendants' assertion that Plaintiffs "suggest that NMFS should have chosen an alternative fishing regime" is also incorrect. Doc. 47 at 16. Here again, Plaintiffs' argument is more basic: NMFS must demonstrate that the fishing regime it chose to authorize is not likely to jeopardize staghorn and elkhorn coral or adversely modify their critical habitat. Doc. 44 at 11-15; 16 U.S.C. § 1536(a)(2). *Southwest Ctr. for Biological Diversity v. U.S. Bureau of Reclamation*, cited by Defendants, is inapposite. That case discusses the sufficiency of reasonable and prudent alternative measures chosen by agency to allow an action to proceed after the consulting agency had determined that the action as originally proposed would jeopardize a listed species. 143 F.3d 515, 523 (9th Cir. 1998).

² The case cited by Defendants discusses the wildlife agency's latitude to use uncertain scientific information when it believes it is necessary to list a species on an emergency basis under ESA section 4. *City of Las Vegas v. Lujan*, 891 F.2d 927, 933 (D.C. Cir. 1989). The statute specifically directs wildlife agencies to make prompt use of their authorities to prevent significant risk to the species even if data regarding that risk are not entirely certain. *Id.* at 932. Thus, to the extent it is relevant here, that case merely demonstrates the underlying intent of the ESA to give the benefit of the doubt to the species when information is uncertain.

science demonstrated that the Fishery's effects, when added to the corals' severely degraded baseline condition, were likely to cause jeopardy and adverse modification. Doc. 44 at 9-10, 15. The record further shows that, contrary to these findings, NMFS decided that such fishing would not jeopardize the corals or adversely modify their habitat. Ultimately, the record shows that the BiOp failed to establish a rational connection between this scientific evidence and its ultimate "no jeopardy" and "no adverse modification" decisions. Hence, NMFS's violation is not in failing to "consider" the right information. It is in failing to "use" that information as the basis for its determinations, as is required under the ESA. *See* 16 U.S.C. § 1536(a)(2).

At heart, Defendants' defense of the BiOp relies on two unsupported assumptions. First, Defendants assume that fishing is not a significant factor in the "phase shift" from coral-dominated to algal-dominated coral reef habitat. They base this assumption on the observation that the shift to algal domination is "similarly severe" on reefs in Puerto Rico, St. Thomas/St. John, and St. Croix, even though fishing pressure is currently heaviest in St. Croix. Doc. 47 at 20. Second, Defendants assume that any decrease in fishing will avoid jeopardy and adverse modification by resulting in some unknown, unquantifiable improvement in grazing and mitigation of algal cover. Doc. 47 at 14, 18. Neither of these assumptions is supported by the record, including the scientific studies included in it. Further underscoring the arbitrary nature of NMFS's decisions, these two central assumptions do not even comport with one another. In the end, NMFS attempts to avoid a jeopardy or adverse modification determination by simultaneously downplaying the negative effects of harvesting significant numbers of parrotfish while claiming that – despite the supposedly secondary role of fishing in affecting algal growth – a moderate decrease in fishing pressure will result in a measurable benefit to the corals and their critical habitat. This approach is illogical and arbitrary. NMFS cannot have it both ways: healthy

fish populations either have a beneficial effect on corals, or they do not. If they do, then depleting fish populations harms corals. If herbivorous fish populations do not affect corals, then a decrease in fishing pressure will not increase coral health.

An examination of NMFS's assumption regarding the role of fishing in the "phase shift" to algal dominance reveals numerous, fatal flaws. First, NMFS's assertion that phase shifting is "similarly severe" throughout the U.S. Caribbean despite alleged differences in fishing pressure ignores key scientific findings and facts. It ignores the fact that fishing pressure on parrotfish was just as heavy in Puerto Rico in the early to mid-1980s as it is in St. Croix now, AR 10341. This heavy fishing pressure throughout the U.S. Caribbean coincided with the initial shift to algal dominance observed across U.S. Caribbean reefs. AR 10287. The BiOp also notes that fish of some species have become smaller and less abundant over time as macroalgal cover has increased and coral cover "had declined dramatically." AR 10287. The fact that reef habitat at all the islands began to shift towards an algae-dominated state at the same time that fishing pressure was high across the region indicates that fishing may have played a role in that shift. Indeed, coral researchers have suggested as much. *See, e.g.*, AR 10277; 12419-22; 12531-32, 12635-36.

Furthermore, the best available science indicates – and the BiOp admits – that even moderate fishing pressure on parrotfish and other herbivorous fish may prevent them from effectively mediating algal growth once this phase shift has occurred. AR 10337-39, 10354 12886, 12994, 13007. Significant fishing pressure on parrotfish and other herbivorous fish has persisted throughout the region ever since the phase shift initially occurred. In fact, parrotfish populations in Puerto Rico and St. Thomas/St. John remain dominated by smaller fish and larger species of parrotfish remain rare – indicating that even reduced fishing pressure is having a significant effect on the populations and their ability to graze enough algae off the reef to reverse

the shift to algal dominance. AR 10347, 10349, 10353, 10991-97, 11260-64, 12880-86.

Therefore, scientific evidence indicates that fishing may have played a role in the initial shift to algal dominance starting in the 1980s and that continued fishing has served to maintain that shift.

Finally, NMFS admits that it does not know what the current population or biomass of parrotfish is at any of the islands. AR 10343, 10344-45. Therefore, NMFS has little basis to assume that parrotfish populations are substantially healthier or more abundant in Puerto Rico and St. Thomas/St. John than they are in St. Croix. Nor does NMFS have quantitative data regarding the relative extent of algal cover or dominance at the various islands. Instead, it simply suggests that the shift towards algal dominance is similarly severe – presumably meaning that algae is the dominant space occupier on most U.S. Caribbean reefs. AR 10285. As noted above, scientific studies provide a ready explanation for this phenomenon: fishing pressure has stymied the ability of grazing fish to eat enough algae to reverse the shift to algal dominance.

In sum, NMFS presents no sound scientific basis to presume that fishing does not play a significant role in algal growth. Instead, the record supports the conclusion that NMFS biologists pointed to early on: the ongoing harvest of parrotfish and other herbivores at significant levels has helped foster the degradation of staghorn and elkhorn habitat and continues to do so at the peril of the species. Doc. 44 at 9-10, 14-15.

NMFS biologists and the BiOp itself cite numerous peer-reviewed studies demonstrating that fishing of herbivores significantly alters the diversity and population structure of herbivorous species and facilitates algal overgrowth and degradation of coral reef habitat. *See, e.g.*, AR 10282, 10284, 10339-40, 28123, 28136. In contrast, the BiOp does not cite any peer-reviewed studies to support its latter-day “phase shift” argument. The BiOp’s own statements actually expose the arbitrariness of this argument: NMFS acknowledges that “[o]ver several

decades, the re-occupation of substrate previously suitable for coral asexual/sexual reproduction by macroalgae established a feedback loop resistant to coral re-colonization.” AR 10406. NMFS blames the combination of a massive die-off of staghorn and elkhorn from disease and the massive die-off of *Diadema* for the phase shift, AR 10402. But even if the shift towards algal dominated reef habitat was *initially* set in motion by large-scale die-offs of corals and *Diadema*,³ NMFS does not explain how this finding rationally translates to a conclusion that fishing pressure on herbivorous fish is not an important factor *now*. NMFS’s argument is especially difficult to fathom given that parrotfish are now the only herbivores left that can effectively graze fleshy macroalgae and are now therefore *more* important than they were historically. AR 8744, 12162, 12878, 12994, 13042-44.

Indeed, the record demonstrates that this was a “new” argument formulated by NMFS managers after the BiOp’s original, principal author had determined that the Fishery was likely to result in jeopardy to staghorn and elkhorn corals and adverse modification of critical habitat. AR 25386, 31185, 31190. The record further shows that this argument was an apparent attempt to build a “defensible” basis for making a “no jeopardy” determination in the face of the scientific judgment that a “jeopardy” determination was warranted. *Id.*

While Defendants suggest that this disagreement represents nothing more than a “lively debate,” Doc. 47 at 20, the record does not evidence such an open exchange. Rather, the record shows that NMFS biologists in the Office of Protected Resources openly discussed their concerns and backed them up with numerous peer-reviewed studies, and that in response NMFS

³ Scientific studies have found that *Diadema* actually only played the dominant grazing role on reefs that had already been overfished, whereas herbivorous fish played a more prominent ecological role on less intensively fished reef ecosystems. AR 12157-58, 12162; 12848-49, 12860-61; 12878; 28154. This further undermines NMFS’s theory that herbivorous fish play only a moderate role in affecting algal growth and coral reef health.

leadership directed that Office to pursue a different approach to reach a “no jeopardy” and “no adverse modification” conclusion. AR 26014, 26243. Thus, unlike the cases Defendants cite, here the agency did not present substantial evidence to support its decision or provide a reasoned explanation for its change in course. *Cf. Fund for Animals v. Norton*, 365 F. Supp. 2d 394, 417-18 (S.D.N.Y. 2005) (scientific disagreement did not undermine agency’s decision because agency presented substantial evidence to support its decision); *National Ass’n of Homebuilders v. Defenders of Wildlife*, 511 U.S. 644, 658-59 (2007) (so long as proper procedures were followed a change in agency’s interpretation of legal requirements was not a fatal inconsistency).

Defendants’ attempt (Doc. 47. at 19) to dismiss these concerns as misplaced “snippets” concerning whether parrotfish were overfished is contradicted by the record itself. What the NMFS biologist pointed out in the e-mails cited by Defendants was the fact that NMFS leadership decided to assume that the catch limits it chose would result in sufficient increases in parrotfish stocks to mediate algal growth when – in actual fact – the Southeast Fisheries Science Center’s analysis revealed that they could not predict what, if any, response parrotfish stocks would have in response to the new catch limits. AR 26249, 27871. In other words, NMFS staff simply noted the glaring inconsistency between the fisheries scientists admitting, on the one hand, that they did not know whether the catch limits would have *any* effect in increasing parrotfish populations, and the NMFS managers’ decision, on the other hand, to base the BiOp’s “no jeopardy” and “no adverse modification” conclusions on an assumption that the same catch limits would result in a significant enough increase in the parrotfish population to mediate algal growth. There could hardly be a clearer case of an arbitrary and unsupported decision.

In an attempt to defend NMFS’s baseless assumption that the catch limits included in Amendment 5 and 6 were sufficient to avoid jeopardy and adverse modification, Defendants

suggest that “it follows logically that reducing authorized harvests in relation to historical harvests will result in an increase in populations of parrotfish and surgeonfish and thereby reduce adverse effects on listed coral.” Doc. 47 at 16. But the ESA requires that the BiOp’s determinations be based on best available science, not bare assumptions. NMFS admitted that it had no idea how the new catch limits would affect fish stocks or whether they would produce any change in algal growth. In contrast, the best available science shows that abundant, diverse populations of herbivorous fish, including many large individuals, are necessary to mediate algal growth and that even *moderate* levels of fishing pressure can prevent herbivores from grazing enough to mediate algal growth. AR 10353; 12162; 12849; 12860-61, 12866; 28123, 28136.

Moreover, even if NMFS’s assumption were correct that the new catch limits will foster an increase in herbivorous fish populations, NMFS must still demonstrate the increase is sufficient to prevent the Fishery’s ongoing adverse effects from causing likely jeopardy to elkhorn and staghorn coral or adverse modification of their critical habitat. *See, e.g., Wild Fish Conservancy v. Salazar*, 628 F.3d 513, 528 (9th Cir. 2010) (fact that agency action may result in marginal improvements in condition of an imperiled species is not sufficient to demonstrate that action is not likely to jeopardize species). The BiOp itself does not even attempt to make this showing. Instead, it simply assumes that Amendments 5 and 6 will result in some uncertain and unquantifiable increase in herbivorous fish biomass, which will lead to some uncertain and unquantified increase in grazing. AR 10349, 10351, 10404. In addition to lacking any basis for predicting a significant increase in herbivorous fish biomass, as discussed above, NMFS’s assumption also conflicts with substantial scientific evidence that the effectiveness of grazing by herbivorous fish depends largely on the size of fish and diversity of species present – and that

biomass alone is not a reliable indicator for grazing effectiveness. AR 10339, 10344; 10991, 10995-97; 12880; 28123, 28136 (e-mails from staff biologist summarizing science).

Finally, comparing the BiOp's two fundamental assumptions side by side further illuminates the arbitrary and capricious nature of the NMFS determinations. On the one hand, NMFS suggests that "the proposed action appears to have only a small, incremental role in what is believed to be only a moderate threat to the species," and argues that fishing for herbivorous fish has little effect on algal cover. AR 10403, 10407; Doc. 47 at 21-22. On the other hand, NMFS insists that virtually any increase in herbivorous fish biomass that may result from the implementation of Amendment 5 and 6 will yield a sufficient enough decrease in macroalgal cover to prevent the fishery's acknowledged, ongoing adverse effects from causing jeopardy to staghorn and elkhorn coral or adverse modification of critical habitat. AR 10404, 10409; Doc. 47 at 18. In other words, NMFS has said both that fish populations have little effect on corals and that they have a significant effect on corals. These are two utterly inconsistent positions. They are irreconcilable, and the Defendants have made no effort to harmonize them.

The facts in this case closely parallel those in *Wild Fish Conservancy v. Salazar*, where the court invalidated the agency's conclusion that the continuation of fish hatchery operations would not jeopardize listed fish species. 628 F.3d at 520. In that case, as in this one, the agency had opined that the proposed operations would result in a small improvement to the species' condition but would nonetheless continue to contribute to the species' long-term decline. *Id.* at 520, 528. Moreover, as in the instant case, the agency in *Wild Fish Conservancy* had determined that the species' survival and recovery required that the species' numbers be maintained or expanded. *Id.* at 528-29. The court determined that the agency did not articulate a rational connection between its finding that the fish species' numbers would continue to decline (in part

due to continued project operations) and its conclusion that the proposed action was not likely to jeopardize the species. *Id.* In the instant case, NMFS admits that the Fishery, which has been under NMFS's management since 1985, AR 7094, has contributed to the degradation of elkhorn and staghorn corals and their critical habitat, and will continue to do so. AR 10279, 10282, 10314, 10345, 10353-54. NMFS argues that Amendments 5 and 6 may lessen the Fishery's contribution to some highly uncertain and unquantifiable degree. AR 10349, 10351, 10404. However, the "bottom line" is that these species and their habitat are expected to continue to decline as a result of the combined impacts of fishing, climate change, disease, and other factors. *See id.* at 528. Thus, the addition of fishing effects to the corals' baseline condition and other threats poses the likelihood of jeopardy and adverse modification. In fact, this is not a close question; as the NMFS biologist in charge of analyzing science for the BiOp concluded, a finding of adverse modification is a "slam dunk." AR 25386.

In short, the BiOp's "no jeopardy" and "no adverse modification" determinations simply do not comport with its own findings that an *increase* in the amount of suitable habitat and successful reproduction is necessary to ensure the survival and recovery of the species and that the Fishery will continue to contribute to the *degradation* of habitat and reproduction. *See* AR 10279, 10282, 10314, 10345, 10353-54 (acknowledging that fishing will continue to have adverse effects that act synergistically with other threats); 10401 (critical habitat analysis "seeks to determine if the adverse effects of the proposed action on the essential features of designated *Acropora* critical habitat will appreciably reduce the capability of the critical habitat to facilitate an *increased* incidence of successful sexual and asexual reproduction." (emphasis added)); AR 10409 (stating that the proposed action will not have any appreciable effect on macroalgal growth, meaning that it would not increase suitable substrate or successful reproduction).

NMFS's assertions in the BiOp that fishing authorized under Amendments 5 and 6 will not appreciably reduce the species' chances of recovery are especially dissonant. For example, NMFS suggests that non-lethal effects from fishing will not result in reduced coral reproduction because reproduction can still occur "when favorable conditions return." AR 10407. But NMFS also admits that such a return of favorable conditions is unlikely, since overarching conditions due to climate change, hurricanes, and disease are expected to get worse in the future, not better. AR 10408. Furthermore, as explained in Plaintiffs' opening brief, NMFS measures whether Amendments 5 and 6 result in some improvement in grazing (notwithstanding their conclusion that these actions would not have an effect on macroalgal growth) by considering whether conditions as a result of the proposed action will resemble those that existed in 2008, when the critical habitat for the species was designated. Doc. 44 at 12-13. In other words, NMFS measures whether fishing under Amendments 5 and 6 is likely to impair the survival and recovery of elkhorn and staghorn coral by comparing the effects of that fishing to the very conditions that impaired the species' chances of survival and recovery in the first place. In fact, the Biological Review Team that NMFS assembled to assess the status of elkhorn and staghorn coral determined in 2005 that the condition of the species was so degraded that their prognosis for recovery was "quite poor." AR 10641. NMFS's illogical frame of analysis conflicts with NMFS's own ESA Section 7 Handbook, which defines survival to mean "the species' persistence . . . *beyond* the conditions leading to its endangerment, with sufficient resilience to allow recovery from endangerment." AR 10400 (quoting U.S. Fish & Wildlife Serv. & NMFS Endangered Species Consultation Handbook (1998), p. E-15).

In sum, NMFS's BiOp fails to establish a rational connection between the facts found and the conclusions made, and fails to demonstrate that those conclusions are based on the best available science. The BiOp therefore violates the ESA and APA.

II. Defendants Refused to Address the Single Threat They Have Immediate Ability to Manage in Order to Prevent the Cumulative Effects of Fishing from Tipping the Coral Species Into Jeopardy and Adversely Modifying Critical Habitat.

The ESA affirmatively charges NMFS both with protecting elkhorn and staghorn corals and, more specifically, ensuring that the fishing activities it authorizes are not likely to jeopardize those corals or adversely modify their critical habitat. 16 U.S.C. § 1536(a)(1)-(2). Regulation of fishing is squarely within NMFS's authority. Yet NMFS evaded its duty to adequately manage the one threat to corals that is plainly within its power to manage – fishing – by downplaying its significance when compared to overarching, “uncontrollable” threats like global climate change and disease. This was arbitrary and unlawful.

As Plaintiffs demonstrated in their opening brief, NMFS violated ESA Section 7 by *comparing* the effects of the Fishery to other threats facing elkhorn and staghorn coral and their critical habitat instead of analyzing whether the Fishery's effect, when *added to* these other threats, would jeopardize the species and adversely modify their critical habitat. Doc. 44 at 16-19. While Defendants argue that the BiOp did look at the Fishery's effects in the context of other effects, reading the BiOp itself demonstrates that this simply is not the case. Defendants point to the BiOp's acknowledgement that Fishery effects have acted synergistically with other threats to degrade coral habitat. Doc. 47 at 22. But Defendants fail to grapple with the fundamental inconsistency between (1) the BiOp's finding that synergistic effects from fishing have exacerbated other, allegedly unmanageable threats, AR 10354, and (2) the fact that the BiOp's conclusions are explicitly based on the premise that the *incremental* effects of the Fishery will not, “in and of themselves” cause jeopardy or adverse modification. AR 10407. In the BiOp,

NMFS states: “We acknowledge that many factors have worked synergistically to reduce the amount of substrate suitable for successful *Acropora* reproduction. We also acknowledge that this reduction in suitable substrate has degraded the species chances of surviving and recovering in the wild.” AR 10406-07. The BiOp also states:

Direct and indirect effects from the proposed action . . . are currently considered moderate threats to elkhorn and staghorn coral. However, managing these less severe threats may assist in decreasing the rate of elkhorn and staghorn corals’ decline by enhancing coral condition and decreasing synergistic stress effects. The *Acropora* [biological review team] concluded that these secondary stressors should be the main focus of regulatory and recovery actions such that the species would be better able to adapt to and recover from the continuing impacts of primary stressors such as diseases and rising sea surface temperatures.

AR 10408. The opening sentence in this statement thus expressly acknowledges that fishing pressure constitutes a threat to these corals. Yet NMFS manages to avoid the conclusion that the Fishery’s role in exacerbating other serious threats poses jeopardy to the species and adverse modification of their critical habitat by asserting elsewhere in the BiOp that “we believe the incremental impacts caused by the proposed action are not *in and of themselves* appreciably reducing capacity of critical habitat to provide an increased incidence of successful sexual/asexual reproduction (i.e., remain functional) currently or in the future,” AR 10404 (emphasis added). Hence, instead of analyzing how fishing acts synergistically – in a cumulative, additive way – with disease, rising sea surface temperatures, and hurricanes to affect elkhorn and staghorn corals and their critical habitat, the BiOp dismisses the importance of fishing by isolating fishing effects and comparing them to other effects. It is on this basis, for example, that NMFS argues that “[t]he harvest of herbivorous fish under the proposed action is likely exacerbating the phase-shift that is occurring or has occurred, but is not a primary cause.” AR 10403, 10406; *see also* AR 10403, 10407, 10408 (“the proposed action appears to have only a small, incremental role in what is believed to be only a moderate threat to the species.”).

Yet under the ESA it does not matter whether an action is a “primary cause” of conditions that jeopardize a species or adversely modify its critical habitat. What matters is whether the proposed action, when added to the baseline condition of the species and its habitat and cumulative impacts upon them, will tip the species into jeopardy or its habitat into adverse modification. *NWF v. NMFS*, 524 F.3d 917, 930 (9th Cir. 2007). In this case, due in part to the failure by NMFS to impose any catch limits for parrotfish prior to adoption of Amendment 5, the baseline condition of the coral species is that their populations have plummeted to a mere 2% of what they were just several decades ago and conditions are only expected to get worse in the future. These corals are so sparse and their habitat is so degraded by algal overgrowth that they can no longer reproduce in some areas. Doc. 44 at 3; *Cf.* AR 10406, 10408 (acknowledging that “many factors have worked synergistically to reduce the amount of substrate suitable for successful *Acropora* reproduction” and “that this reduction in suitable substrate has degraded the species chances of surviving and recovering in the wild.”). In 2005, NMFS’s Biological Review Team concluded that elkhorn and staghorn corals would suffer “severe and worsening extrinsic threats” in the foreseeable future and, as a result, the species’ “likelihood for recovery, and perhaps persistence . . . is likely to decline in the near future.” AR 10642. Given the grim status of the coral species and their critical habitat, even a supposedly “moderate” threat may be too much to allow for the species’ survival and recovery. To use an example, two hospital patients may contract the same secondary infection, which is only a relatively moderate health threat compared to the medical condition that necessitated hospitalization. But while a patient in stable condition may not suffer many additional effects from the infection, a patient in critical condition could die from the combination of his original illness and the new infection. Baseline conditions matter.

Defendants suggest that elkhorn and staghorn corals' "threatened" status means that these species "are not currently believed to be at risk of extinction" and that baseline conditions in the proposed action area cannot pose jeopardy to the species. Doc. 47 at 21. First, by definition, a "threatened" species is a species that is likely to become in danger of extinction within the foreseeable future. 16 U.S.C. § 1532(6), (20). Therefore, the fact that NMFS believes these corals are not "currently" in danger of extinction is irrelevant. Second, the "jeopardy" standard does not require that a proposed action drive a species to the brink of extinction, but rather that it appreciably reduce the species' chances of survival or recovery in the wild. 50 C.F.R. § 402.02; *NWF v. NMFS*, 481 F.3d 1224, 1237-38 (9th Cir. 2007).

Much like the species at issue in *Wild Fish Conservancy*, 628 F.3d at 519, which were also listed as threatened under the ESA, elkhorn and staghorn coral are at precariously low abundances in the areas affected by the Fishery and their habitat is severely degraded. NMFS simply fails to explain how the continuation of adverse effects from the Fishery, when added to the corals' admittedly worsening long-term situation, does not appreciably reduce the species' chances of survival and recovery. Indeed, fishery managers' failure to impose any limits on catch levels for parrotfish and most other herbivorous fish until 2011 likely contributed to the conditions that led to the listing of elkhorn and staghorn coral. Even if the implementation of Amendments 5 and 6 resulted in somewhat less severe adverse effects from the Fishery, the addition of marginally less severe Fishery impacts to a worsening baseline situation may nevertheless result in jeopardy to the species and adverse modification of their critical habitat. Yet NMFS completely fails to come to grips with this problem. NMFS's failure to examine the cumulative effects of the Fishery when added to increasing threats from disease, climate change, hurricanes, and other factors is arbitrary and violates both the APA and the ESA.

Contrary to Defendants' assertions, the cases Plaintiffs have cited speak directly to the issues presented here. In *NWF v. NMFS*, the court invalidated NMFS's "no jeopardy" biological opinion because NMFS had "impermissibly failed to incorporate degraded baseline conditions into its jeopardy analysis." 524 F.3d at 929. The court explicitly rejected the very approach followed here by NMFS; it rejected "comparing the effects of [the proposed action] on listed species to the risk posed by baseline conditions." *Id.* at 930. While the district court found that the proposed dam operations contributed to the endangerment of the species, the Circuit Court made clear that "[t]he proper baseline analysis is not the proportional share of responsibility the federal agency bears for the decline in the species, but what jeopardy might result from the agency's proposed actions *in the present and future human and natural contexts.*" *NWF v. NMFS*, 524 F.3d at 930, quoting *PCFFA*, 426 F.3d at 1093 (emphasis added by quote); *see also NWF v. NMFS*, 422 F.3d 782, 795 (9th Cir. 2005) (quoting district court decision). *Blue Water Fishermen's Ass'n v. NMFS* is also on point. The only distinguishable point is that in the *Blue Water* case – unlike this one – NMFS performed the correct jeopardy analysis:

The NMFS's ultimate task as an ESA consultant is to determine "whether the action, *taken together with cumulative effects*, is likely to jeopardize the continued existence of listed species." *Id.* § 402.14(g)(4) (emphasis added). To be passable under ESA regulations, then, the NMFS's jeopardy finding did not have to single out the pelagic longline fishery as *the* predominant activity jeopardizing the listed turtle populations. The NMFS need only have found that the pelagic longlining threat *together with other cumulative effects add up to* jeopardy. This is exactly what the NMFS did.

226 F. Supp. 2d 330, 341-42 (D. Mass. 2002) (emphasis added). This is the approach (adding the proposed action's effects to existing threats) that NMFS *should* have taken in the instant case, but did not. Instead, the BiOp's "analysis" consists of a series of unlawful comparisons. First, NMFS compared the discrete, incremental effects of the Fishery going forward to the grim baseline condition of the corals and their critical habitat, and opined that fishing was not a

primary cause of that grim state. AR 10403, 10406-07. Second, NMFS compared the Fishery's discrete, incremental effects to large-scale and, according to NMFS, unmanageable threats that NMFS predicts to worsen. AR 10404, 10408. By doing so, NMFS downplayed the importance of fishing and violated the ESA.

III. Defendants Failed to Establish a Meaningful Trigger for Re-initiating Consultation on the Fishery's Effects Should Those Effects Exceed the Level Predicted by NMFS

In their opening brief, Plaintiffs explained that the BiOp's incidental take statement and accompanying terms and conditions violated ESA requirements for several reasons. Doc. 44 at 21-24. First, NMFS failed to adequately explain why establishing a numerical take limit for the Fishery's indirect effects in promoting algal growth was not practicable. Second, the proxy that NMFS chose to use instead, monitoring the biomass of an unspecified suite of herbivorous fish, does not provide a reliable indicator of the Fishery's effects. Third, NMFS has no baseline data against which to compare whatever data it will end up collecting on herbivorous fish biomass, meaning that it has no way to detect changes in herbivorous fish biomass as a result of Amendments 5 and 6.⁴ Last, the BiOp fails to establish any proxy for take in Puerto Rico and St. Thomas/St. John even though the agency admits that such take will occur in these areas. With respect to the first point, Defendants correctly point out that NMFS may use a non-numerical proxy for take *if* it offers a rational explanation for why a numerical limit is not practicable *and* the proxy they choose is rationally related to the incidental take being monitored. *Arizona Cattle Growers Ass'n v. U.S. Fish & Wildlife Serv.*, 273 F.3d 1229, 1250 (9th Cir. 2001); *Wild Fish Conservancy*, 628 F.3d at 531. However, Defendants fail to explain why it was not possible for NMFS to establish a numerical limit *or* monitor take of elkhorn and staghorn coral more directly. Defendants' response simply restates the conflicting and conclusory statements made in the

⁴ Defendants fail entirely to respond to this argument. *See* Doc. 44 at 23-24.

BiOp, and does not address the suggestions by NMFS's own biologists that the BiOp should require quantitative monitoring of available substrate for coral growth rather than herbivorous fish biomass. Doc. 47 at 24; Doc. 44 at 23-24. The only excuse NMFS offers is that the agency is uncertain regarding "[t]he incremental impact" of removing herbivorous fish on the reduction of suitable substrate. AR 10418. However, as explained above, NMFS's focus on the "incremental" impact of fishing is unlawful.

Further, NMFS fails to explain how monitoring herbivorous fish biomass provides a meaningful proxy for measuring the Fishery's effects on promoting algal growth when the agency admits that it has no idea what effect, if any, Amendments 5 and 6 will have on fish stocks, and suggests that whatever changes in biomass might occur may not have any effect on macroalgal growth whatsoever. Doc. 44 at 20-21; AR 10343, 10418; 26249; 27871. If changes in fish stocks or biomass are not expected to result in detectable changes in algal growth, and algal growth is the indirect effect that the BiOp must measure, then how does monitoring herbivorous fish biomass provide a useful measure of the Fishery's incidental take?

Moreover, Defendants fail to explain how monitoring some unspecified suite of the most common herbivorous fish provides a rational proxy for incidental take of corals. Defendants simply argue that they must use data collected on fish caught by the Fishery (known as "fishery dependent data") due to budget constraints. Doc. 47 at 24. However, Defendants fail to explain why they could not gather data on the species and size of fish that the Fishery removes. *See Or. Natural Res. Council v. Allen*, 476 F.3d 1031, 1038 (9th Cir. 2007) (agency statement that it had not yet performed a survey necessary to estimate take did not establish that measuring take was not practicable). This sort of fishery dependent data would provide a far more reliable means for monitoring the Fishery's effects than simply monitoring the generic biomass of all herbivorous

fish, regardless whether those fish are effective grazers or even belong to the species being fished under the proposed actions whose effects the BiOp is supposed to monitor.

Finally, Defendants' response that NMFS "elected to monitor biomass in St. Croix specifically, because this is the only area where NMFS anticipated a detectable herbivorous fish population response" does not establish that NMFS's choice was lawful. Doc. 47 at 24. NMFS admits that the Fishery will continue to contribute to algal growth and the degradation of elkhorn and staghorn habitat in Puerto Rico and St. Thomas/St. John. AR 10351, 10353, 10407. NMFS admits that this continued habitat degradation will result in incidental take throughout all three island areas. AR 10407, 10421. Having admitted that such take will occur, NMFS must monitor that take. *See Wild Fish Conservancy*, 628 F.3d at 531-32 (invalidating incidental take statement that failed to require monitoring and reporting to determine whether limit had been reached). The agency may not refuse to monitor the take it has authorized because it has chosen a proxy that does not accurately reflect that take.

IV. The Readily Identifiable Flaws in the Biological Opinion's Determinations Render NMFS's Reliance Upon that Opinion Arbitrary and Capricious and Unlawful.

The legal flaws described above render the BiOp invalid. As discussed in Plaintiffs' Opening Brief, the decision by NMFS's Office of Sustainable Fisheries to rely on the BiOp despite its fatal legal flaws was arbitrary and capricious and violated the APA and ESA.

CONCLUSION

For these reasons, the Plaintiffs respectfully request that the Court grant their Motion for Summary Judgment, deny Defendants' Motion for Summary Judgment, invalidate the October 4, 2011 Biological Opinion for the Reef Fish Fishery Management Plan for Puerto Rico and the U.S. Virgin Islands, and order NMFS to prepare a new BiOp that complies fully with the Endangered Species Act.

Dated this 16th day of November, 2012.

Respectfully submitted,

/s/ Miguel Sarriera-Román
Miguel, Esq.
USDC-PR 207714
Attorney for Plaintiffs
Miguel Sarriera-Román Law Office
1104 Calle San Miguel
Quebradillas, PR. 00678
Phone: (787) 630-8319
Fax: (787) 895-7243
email: msarriera@prtc.net

Stephen E. Roady (*pro hac vice*)
D.C. Bar 926477
Earthjustice
1625 Massachusetts Avenue, N.W.
Suite 702
Washington, D.C. 20036-2212
Telephone: (202) 667-4500
Facsimile: (202) 667-2356
sroady@earthjustice.org

Andrea A. Treece (*pro hac vice*)
CA Bar 237639
Earthjustice
50 California Street, Suite 500
San Francisco, CA 94111
Telephone: (415) 217-2000
Facsimile: (415) 217-2040
atreece@earthjustice.org

Counsel for Plaintiffs