



May 8, 2023

VIA EMAIL

Dr. Harriet L. Nash  
Deputy Director  
Coral Reef Conservation Program  
National Oceanic and Atmospheric Administration  
harriet.nash@noaa.gov

Re: 2023 Strategy Scoping

Dear Dr. Nash:

We appreciate your consideration of the following comments on topics NOAA should address in its National Coral Reef Resilience Strategy. The scope of the Strategy is quite broad, reflecting the reality that many activities and environmental factors affect the health of coral reef ecosystems. The need to address these effects is urgent. Across the U.S. and beyond, coral reefs have declined dramatically, largely due to pollution, coastal development, and unsustainable fishing activities. Climate change and ocean acidification pose a current and ongoing threat. Addressing these threats through already available policy and regulatory mechanisms will be crucial to saving the reefs we have, building their resilience to withstand changing ocean conditions, and ultimately to build back healthy coral reefs that support biodiversity; protect shorelines; and provide cultural, subsistence, scientific, economic, and recreational value for coastal communities and their visitors. We urge NOAA to embark on an ambitious effort to harness its existing authority and that of other agencies to directly address human-caused harm to coral reef ecosystems and affirmatively promote their recovery. Here, we offer high level recommendations about how NOAA could develop a roadmap for this approach in its Strategy and look forward to providing additional information and detail as this process progresses. We also offer additional recommendations concerning research and public participation in coral reef management, with an emphasis on incorporating indigenous and Native knowledge.

**Overarching Recommendation: Form interagency taskforce to identify specific management actions and use existing legal authorities to address continuing and emerging threats to the resilience of coral reef ecosystems**

Federal and state agencies have the ability to address many of the threats to coral reef ecosystems by appropriately using their existing authorities to regulate activities that contribute to pollution, sedimentation, disease spread, physical damage, and ecological impairment. NOAA's 2018 Coral Conservation Program appropriately recognizes the need to address some of these threats through cooperation with other agencies and partners. We recommend that NOAA go further by working with key regulatory agencies to identify specific regulatory actions those agencies can undertake to promote coral reef recovery and resilience, and establish an expeditious timeline for the agencies to take those actions. To help illustrate this idea, we

provide a few examples of the ways in which NOAA and other agencies could apply existing legal authorities to address key threats.

***Address threats to listed corals and critical habitat using the Endangered Species Act***

NOAA has listed 24 coral species as threatened or endangered under the Endangered Species Act (ESA) and has designated critical habitat for two of those species. The fact that so many species meet the criteria for ESA protection reflects the dire condition of coral reef ecosystems. But these listings also bring both the duty and tools to recover these species and the habitats on which they depend.

The ESA establishes two central obligations for federal agencies. First, Section 7(a)(1) requires the Secretaries of the Interior and Commerce to review the programs they administer and utilize those programs to further the survival and recovery of listed species. It also requires all other federal agencies, in consultation with and with the assistance of the Secretaries, to use their authorities to carry out programs to further survival and recovery of listed species.<sup>1</sup> Second, Section 7(a)(2) imposes a continuing and affirmative duty on federal agencies to “insure that any action authorized, funded, or carried out by such agency is not likely to jeopardize the continued existence of any endangered species or threatened species or result in the destruction or adverse modification of” its critical habitat. 16 U.S.C. § 1536(a)(2). ESA regulations define “action” to include the promulgation of regulations; actions that may directly or indirectly cause modifications to the land, water, or air; and granting of licenses and permits. 50 C.F.R. § 402.02. The duty to consult is ongoing. ESA regulations reflect that obligation by requiring reinitiation of consultation when the incidental take limit is exceeded; new information reveals the action may affect listed species or critical habitat in a manner or to an extent not previously considered; the action is modified in way that causes it to affect listed species or critical habitat in a way that was not considered in the biological opinion; or a new species is listed or critical habitat designated that may be affected by the identified action.<sup>2</sup>

Together, these provisions require federal agencies to ensure that their actions do not impair a species’ survival or recovery—that is, to prevent further harm—and to affirmatively promote their survival and recovery using each agency’s existing authorities.

We urge NOAA to prioritize the full and faithful implementation of both of these requirements. With respect to Section 7(a)(2), we urge NOAA to expeditiously reinitiate and complete updated consultations with respect to actions that affect coral species that were listed after NOAA completed its last consultation on the action or otherwise meet the reinitiation criteria set forth in ESA regulations. For example, in 2014, NOAA listed five new species of coral that occupy the U.S. Caribbean but, to our knowledge, has yet to complete updated consultations on the effects that the U.S. Caribbean reef fish fishery and other fisheries have on these species. Similarly, the best available science shows that dredging acts as a vector for stony coral tissue loss disease, which has devastated corals off the Florida coast and has spread throughout the Caribbean. Yet potentially devastating dredging operations continue to proceed

---

<sup>1</sup> 16 U.S.C. §§ 1532(3), 1536(a)(1).

<sup>2</sup> 50 C.F.R. § 402.16.

under the 2020 South Atlantic Region Biological Opinion, which does not reflect recent science on how the disease spreads and does not contain adequate mechanisms to ensure that dredging activities do not jeopardize coral species or adversely modify their critical habitat. NOAA must update this biological opinion and others that pertain to proposed or future dredging activities (including maintenance, expansion, and new dredging) to ensure any authorized dredging does not risk the future of listed corals and the reefs they occupy. NOAA should also revisit its determination that Florida may carry out activities under Clean Water Act sec. 404 without engaging in formal consultation with NOAA. State-permitted activities under this authority can and likely do have downstream effects on corals and other listed marine species, and controlling such sources of watershed pollution is essential to conserving corals and their habitat. Similarly, we recommend that NOAA request that the U.S. Environmental Protection Agency (EPA) reinstate consultation with respect to its approval of relevant water quality standards and total maximum daily loads (TMDLs) in areas where corals are at greatest risk.

In addition, NOAA should step into its role under Section 7(a)(1) by working with other federal agencies to identify specific actions they will take under existing authorities to affirmatively promote conservation of listed coral species and their critical habitat, as well as expeditious timelines for taking those actions. For example, NOAA should work with other agencies to identify opportunities to fund crucial infrastructure improvements, particularly in under-resourced communities, to improve wastewater treatment and reuse, enhance garbage disposal and reduction, and reduce non-point source pollution that impacts coral reefs.

### ***Threats to address with regulatory action using all available legal authorities***

#### Water Quality

Degraded water quality threatens nearly every coral reef ecosystem in the U.S. and beyond. Water quality concerns, including turbidity, nutrient load, sedimentation, and chemical contamination, stem from a wide variety of activities on land and in the water. We appreciate that NOAA's 2018 Coral Conservation Program included objectives to assist with watershed management plan development and provide technical assistance to establish water quality targets for sediments and nutrients for key watersheds. We recommend that NOAA go further in its Resilience Strategy to identify the management actions needed to achieve necessary water quality targets, including updates to permit programs or standards and consistent enforcement of the standards.

For example, we recommend that NOAA work with EPA to increase enforcement concerning Clean Water Act violations that harm coral reefs and work with delegated states to do the same. NOAA should also urge EPA to require states to establish stringent TMDLs for pollutants that harm coral reefs, take meaningful measures to address nonpoint source pollution that contributes to exceedances of water quality standards, and decrease permitted pollutant levels for any point sources that discharge to the same waterbodies. Further, NOAA's prior work

after disasters such as the BP Oil Disaster should not go unrecognized, and this strategic plan should build more accountability into its programmatic funding to save coral reefs.<sup>3</sup>

Key sources of water quality concerns include:

- Sediment and nutrient runoff from nonpoint source pollution, which smothers corals and coral habitat, fuels algal blooms that block light needed for zooxanthellae to photosynthesize and produces toxins harmful to corals and other animals important to coral reef ecosystems, and spreads pathogens and disease (e.g., nonpoint pollution stemming from agricultural activities, feral animals denuding the landscape, land-clearing associated with coastal zone development);
- Inadequately treated wastewater from wastewater treatment plants, overflows, cesspools, and other sources;
- Point source pollution such as sewage outfalls, refineries, and manufacturing facilities.

### Disease

As noted above, water pollution and dredging function as vectors for diseases that harm corals and other organisms crucial to maintaining healthy coral reef ecosystems. We recommend that NOAA identify areas vulnerable to serious disease and prioritize actions to limit its spread, as well as research and interventions to help coral reefs resist and recover from those diseases.

### Direct physical damage

Direct physical damage to corals is also concerning, as it can expose coral colonies to disease and algal overgrowth, and many corals can take years to regrow. We recommend NOAA examine large-scale sources of physical damage, including projects like dredging or blasting for port maintenance and expansion projects, as well as more diffuse sources like boat anchors and trampling or breakage by swimmers, snorkelers, divers, and beach goers.

### Ecologically unsustainable fishing and commercial aquarium collection

Fishing and commercial aquarium collecting can have significant, detrimental effects on coral reefs through direct physical damage and removing key ecosystem engineers. For example, corals are damaged when traps are dropped on them or when fishing net or line wraps around a colony and causes abrasions. Aquarium collecting can cause similar damage when collectors attempt to extract fish and other organisms from coral heads.

More insidious, and perhaps more far-reaching, is the damage done by removing herbivores from the reef. Herbivores like parrotfish, tangs, and urchins are critical to controlling algal overgrowth, reducing competition between corals and algae, and providing clear substrate

---

<sup>3</sup> For example, in the Gulf of Mexico, NOAA proposed a resiliency plan after the BP Oil Disaster that this new coral reef strategy could build upon and craft more accountability into its programs. [https://www.coris.noaa.gov/activities/gom\\_strategy/welcome.html](https://www.coris.noaa.gov/activities/gom_strategy/welcome.html).

necessary for both sexual and asexual coral reproduction. Excessive removals through fishing and collection can push a coral reef past the threshold at which coral growth can keep pace with algal growth, speeding coral declines and eliminating suitable coral reef habitat for hundreds of species. There is also evidence that removing top predators like sharks alters the abundance and behavior of herbivores and destabilizes coral reef ecosystems, making them less resilient to coral bleaching events and other threats.

We recommend that NOAA work with its Office of Sustainable Fisheries, state agencies, and other relevant authorities to restrict aquarium collection and commercial and recreational fishing for herbivores, as well as sharks and other species important to maintaining ecosystem function. These policies should also protect spawning and feeding aggregation sites. Such policies should account for subsistence and cultural uses. We also encourage NOAA to continue to work with relevant entities to expand selective fishing for invasive species.

Similarly, NOAA's strategic plan should include stated goals to further mitigate the harm done to coral reefs, such as Flower Garden Banks in the Gulf of Mexico from the invasive lionfish, a species that was introduced as an aquarium fish and has spread from Florida across the Gulf and throughout the Caribbean.

### **Additional Recommendations: Building capacity and inclusion to foster better management**

A number of the topics NOAA is contemplating for its Strategy offer important opportunities to incorporate indigenous knowledge, empower communities to manage coral reefs for resilience, and build capacity to carry out management. To that end, we offer the following, high-level recommendations.

#### ***Addressing remaining gaps in coral reef ecosystem research, monitoring, and assessment Providing data essential for coral reef fisheries management***

We recommend that NOAA prioritize resources to provide for research, monitoring, and assessment of coral reefs in underserved areas. For example, the Hawai'i Coral Reef Assessment and Monitoring Program provides valuable data to assess coral reefs in the state but should be expanded to include more reefs where such information could help support subsistence users and community management.<sup>4</sup>

#### ***Building capacity for coral reef fisheries management***

NOAA's Strategy should support community-based management of coral reefs, leveraging the knowledge of Native Hawaiians and other indigenous peoples to foster connection and long-term sustainability. Indigenous knowledge offers essential insights into how these ecosystems functioned before colonialism and industrialism took hold—and perhaps how coral reefs could function again if we managed them with the recognition that our well-being is

---

<sup>4</sup> See, e.g., locations of study sites covered by the Hawaii Coral Reef Assessment and Monitoring Program. [http://cramp.wcc.hawaii.edu/LT\\_Monitoring\\_files/lt\\_study\\_sites.htm](http://cramp.wcc.hawaii.edu/LT_Monitoring_files/lt_study_sites.htm).

intertwined with theirs. Indigenous knowledge can also fill gaps in our understanding of long-term ecological baselines. Many scientific studies and management decisions tend to be based on much more recent data representing a coral reef's "baseline" state, which in most cases already represents a massive decline in the system's coral cover and the abundance and diversity of species occupying the reef. That gap in scientific understanding can dangerously bias management decisions towards scarcity and continued decline, whereas traditional knowledge would provide a more complete, accurate picture of what a healthy ecosystem looks like and what actions are necessary to achieve that.

***Focus Areas should include areas with high conflict between coral sustainability and industry development***

Pursuant to Section 204(b) of the reauthorized CRCA, one of the required elements of the National Strategy must include an analysis of continuing and emerging threats to the resilience of U.S. coral reef ecosystems. One of the deepest threats is the further expansion of the federal leasing program in the Gulf of Mexico and the ongoing water quality threats from the Mississippi River. As such, a statement of a national goal to further the protection of Gulf South coral reefs, and greater assessment of watershed management plans for the Mississippi River in particular, could enhance the total amount of coral reef protections for all the U.S.'s third and often forgotten coastline.<sup>5</sup>

\*\*\*\*\*

The dire state of coral reefs in the U.S. and throughout the globe calls for an aggressive, far-reaching strategy to arrest more immediate, localized threats and promote resilience while we tackle the ongoing, overarching threats of climate change and acidification. We encourage NOAA to respond with the urgency and vision that this moment demands. We appreciate your consideration and work to protect coral reefs and look forward to working with you on these recommendations as you move forward with developing the Strategy.

Sincerely,



Andrea A. Treece  
Senior Attorney, Oceans Program

---

<sup>5</sup> Some of the strategies found in literature could in fact be utilized to enhance the national strategy and prioritize substantive conservation and preservation efforts in the Gulf of Mexico and beyond. See, for example: <https://www.frontiersin.org/articles/10.3389/fmars.2019.00807/full>.