

## **Final Proposed Sanctuary Management Plan Recommendations From Hudson Canyon Advisory Council Subcommittees**

### **Resource Protection and Conservation**

#### **Strategy 1: Ensure compliance with sanctuary regulations and other applicable laws.**

Activity: Ensure sufficient enforcement presence in the sanctuary through partnerships and applicable interagency collaboration and coordination.

Activity: Encourage voluntary compliance as a tool to inform users about sanctuary regulations.

#### **Strategy 2: Increase and encourage access and [sustainable][responsible] (NOAA to advise) use of sanctuary resources by fostering greater awareness among user groups while preserving existing uses and experiences.**

Activity: Build capacity for access and responsible use of sanctuary resources by fostering awareness among user groups.

Activity: Provide practical information for users, such as shipwreck identification maps and information, accessibility options, regulations, and contact information.

#### **Strategy 3: Monitor vessel traffic compliance.**

Activity: Coordinate with relevant agencies (such as USCG and EPA) and sanctuary users to monitor container ships, bulk freighters, and vessels carrying hazardous materials for compliance with IMO recommended tracks.

Activity: Where applicable, coordinate with the USCG on contact and notification for vessels deviating from tracks.

Activity: Coordinate at a regional level on reducing the number of whale ship strikes in the sanctuary, including working with USCG regarding the proposed traffic fairways near the proposed sanctuary and adapting existing Sanctuary programs (e.g. Whale Safe) in the sanctuary.

Activity: Evaluate and implement options for engaging stakeholders in determining use of the sanctuary, including convening workshops, organizing surveys, or encouraging the voluntary use of Automatic Identification System (AIS).

**Strategy 4: Working with the Federal partners and relevant stakeholders (e.g., dive community, fishing industry, transportation industry, ecotourism industry and scientists), develop an inventory of sanctuary resources with focus on biotic, abiotic, cultural and aesthetic attributes.**

Activity: Develop a thorough inventory of the living marine resources in the Hudson Canyon acknowledging the effects of climate change and other factors.

Activity: Establish a catalog of shipwrecks, structures, and historic resources within sanctuary boundaries.

Activity: Assess the aesthetic features of the Hudson Canyon that produce value to the area. (e.g., protecting the dark sky experience of overnighting in the Canyon region)

**Strategy 5: Develop a strategy to identify habitats, living resources, and other unique sanctuary features that may require additional protections as “special areas of concern” and are known to provide essential ecological services to the sanctuary and the broader region.**

Activity: Using data collected by the sanctuary’s conservation science program as well as other research programs, participate in the Essential Fish Habitat process to assist in identifying Habitat Areas of Particular Concern.

Activity: Through a collaborative process, develop a strategy to protect the habitats that were identified as “special areas of concern”.

Activity: Determine the need to take a proactive approach and address specific ecosystem management issues.

Activity: Review existing protections afforded to special areas of concern such as those through the Frank Lautenberg Deep Sea Coral Protection Area and Amendment 16 of the Mackerel, Squid and Butterfish Fishery Management Plan with the focus on determining if existing protections are adequate or if protections from uses other than fishing are warranted.

**Strategy 6: Collaborate and coordinate with relevant government agencies and the military on actions that could impact sanctuary resources.**

Activity: As appropriate and in consultation with the Sanctuary Advisory Council, make recommendations to the existing fishery management authorities (MAFMC, NEFMC, ASMFC and the NMFS Atlantic Highly Migratory Species Management Division) on fishery management measures that existing regulatory bodies could implement to support advancement of sustainable fishing and protection of sanctuary resources.

Activity: Coordinate with the Navy regarding Atlantic Fleet training and testing activities that may occur in the sanctuary. Collaborate to establish a mechanism through which the Navy and NOAA can work together on an ongoing basis to ensure Navy activities within the sanctuary are conducted in a manner that avoids to the maximum extent practicable any adverse impacts on resources in the sanctuary.

Activity: Periodically meet with the Navy to identify ways to share, combine and maximize resources to conduct mutually beneficial research activities (e.g., habitat mapping) and to identify additional sources of data that support sanctuary management (e.g., bathymetric data and ocean noise monitoring).

Activity: Ensure the USCG notifies the sanctuary of any compliance/enforcement actions and incident reports, including sinkings. Ensure NOAA evaluates how these incidents could have impacts on sanctuary resources. Ensure staff are trained and available to respond as needed.

Activity: Coordinate with the USCG and other emergency response organizations through the local Area Contingency Planning process for response to oil and other spills (including hazardous materials).

Activity: Track and review projects, plans and proposed actions of other agencies that may affect sanctuary resources and provide information to federal, state and local agencies regarding sanctuary policies and regulations.

**Strategy 7: Identify, evaluate, track, educate, and respond to potential threats and emerging activities that could impact sanctuary resources (e.g., offshore wind; submarine cables; aquaculture; illegal, unreported, and unregulated fishing; sand mining; mineral extraction; oil and gas exploration, etc.).**

Activity: Communicate regularly to the Sanctuary Advisory Council about these activities, and where applicable, the SAC can provide comment on proposed activities.

Activity: Develop outreach and educational materials for stakeholder and members of the public on emerging activities and potential threats.

Activity: Share data and communicate results of monitoring studies and how they inform our understanding of such activities. Explore opportunities for a shared, publicly accessible repository for this information.

Activity: Identify and make recommendations to address threats that fall outside of U.S. jurisdiction that jeopardize the long-term sustainability of the resources of the sanctuary.

Activity: Evaluate need to expand regulations to prohibit new and emerging threats.

## **Research and Monitoring**

**Strategy 1: Support science that is focused on the priority sanctuary activities and needs identified below. In consultation with SAC and other relevant partners, compile research and monitoring needs and activities into a Strategic Scientific Framework.**

Activity: Develop and maintain an annotated list of basic and applied research needs across a range of research themes applicable to sanctuary management, including heritage and cultural landscapes (see strategy 4), and changes due to climate change (see strategy 5).

Research themes: Species diversity/composition, remote sensing/surveys/mapping, habitat utilization, oceanography, economics, Mid-Atlantic Cold Pool, climate change, maritime heritage, maritime cultural landscapes.

Activity: Pursue additional NOAA support to augment proposed HCNMS resources, including NOAA ship time and other NOAA research and monitoring funding opportunities. Pursue other partnerships with academic, non-profit, etc. organizations.

Support could include NOAA Grants, Congressional funding, philanthropic funds, BOEM, state agencies. Would a proposed HCNMS consortium be useful to provide a framework?

Activity: Develop and partner on research proposals for outside funds to implement research priorities.

Possible connection with IOOS partner? Acoustic monitoring program?  
Fisheries management councils, NMFS, state agencies, regional management agencies, and partners

**Strategy 2: Facilitate the flow of science information among academic institutions, government agencies, and other organizations and sectors, and implement coordinated data management.**

Activity: Establish a strong data sharing plan that includes data standardization, warehousing, distribution, publication rules, etc.

Note: This is important because academic partners will want something solid in place to ensure partners receive appropriate credit for work, which is a sensitive issue.

Activity: Participate in formal research agreements with academic and other research institutions to integrate sanctuary research needs into the goals and objectives of these institutions.

Research partners could include aquariums, other non-profits, state agencies. Balance the challenges of managing too many partnerships while taking advantage of opportunities to distribute the workload to the appropriate folks with the expertise.

Note: The U.S. Navy does science/collects data - explore opportunities for information sharing

Activity: Ensure that monitoring data are collected to develop future Condition Reports. Integrate data sources and work with partners to collect relevant information.

Note: Passive Acoustic Monitoring/eDNA is a powerful tool and an opportunity for partnership, as is oceanographic monitoring through IOOS.

Activity: Emphasize/encourage projects that are co-developed and use expertise of commercial and recreational fishermen active in the Sanctuary; use their local/ecological knowledge to identify issues.

**Strategy 3: Characterize the sanctuary's biological and physical features to better understand relationships among ecosystem components, biodiversity, and system productivity, and create public awareness about this knowledge.**

Activity: Use existing sanctuary-focused data sets to examine ecosystem components and connections.

Note: This is preceded by the baseline characterization being completed as part of Management Plan development.

This would include benthic/demersal and pelagic habitats, deep-sea corals, large pelagics/highly migratory species, small pelagics, marine mammals, birds, crustaceans, cephalopods, etc.

Incorporate human communities in this ecosystem characterization.

Activity: Consider citizen science partnerships/opportunities

Activity: Work with partners to explore / collect / analyze data / bring attention to the NMS. These partners might include but are not limited to:

- City University of New York (CUNY)
- American Museum of Natural History (AMNH)
- Columbia University's Lamont-Doherty Earth Observatory
- SUNY Stony Brook's School of Marine and Atmospheric Science (SoMAS)
- NY Aquarium wildlife conservation society (Coney Island)
- Deep Ocean Stewardship Initiative (DOSI)
- Rutgers University
- Monmouth University

Note: The Sanctuary program / staff should be participating in this communication and coordination in addition to putting this responsibility on individual project scientists. Note relationship to other subcommittee recommendations including Education SC.

Note: Consider providing letters of support for partner organizations and projects where appropriate.

Activity: Maintain bibliography/resources to support this portfolio of work.

#### **Strategy 4: Explore other important research areas including Maritime heritage and Maritime Cultural Landscapes including Tribal considerations**

Activity: In partnership with Tribes, develop a research plan specific to maritime heritage and cultural landscape themes and questions.

#### **Strategy 5: Undertake research and monitoring to understand climate change effects on physical, biological, maritime heritage and human communities in Sanctuary**

Activity: Ensure that climate is a focal point of the Strategic Scientific Framework (see strategy 1).

Activity: Within the Sanctuary, considering establishing long-term sentinel monitoring sites.

#### **Strategy 6: Conduct monitoring to document if there are any legacy lost or intentionally disposed of materials that could pose threat to canyon species or habitats in the future (such as ghost/derelict fishing gear, lost munitions, or any other materials)**

Note: We recognize that significant dump sites occur inshore of Sanctuary boundaries.

## **Education and Outreach**

### **Strategy 1: Collaborate with partner institutions related to the Hudson Canyon to develop an educational curriculum regarding the region's ecology, resources, and history.**

Activity: Outreach to academic institutions and community-based organizations doing educational programming (e.g., Sea Grant and local schools such as the New York Harbor School) to share information and invite partnership.

Activity: Develop a series of K-12 and non-formal (after school and summertime; i.e. CPF Coastal Classroom, Rocking the Boat, etc.) teacher workshops that provide participants with classroom activities and introduce them to sanctuary programs.

Activity: Develop activities that incorporate emerging marine issues and climate literacy relating to the sanctuary and correlate to school curricula ensuring alignment with state and national science standards.

Activity: Develop activities for senior community members and invite their participation and voices in the development of HC curricula.

Activity: Educate teachers about the resources and programs of the sanctuary by providing professional development programs in local, regional and national teacher development venues such as the annual conference of the New York State Marine Education Association or NY Sea Grant professional development.

Activity: Develop activities that incorporate emerging marine issues and climate literacy relating to the sanctuary and correlate to school curricula ensuring alignment with state and national science standards.

Activity: Coordinate with local Departments of Education in NY, NJ, CT, and RI about incorporating HC into the curriculums.

Activity: Translate educational content into more languages to expand access.

Activity: Implement marine fisheries-related education programs that promote sustainable resources, e.g., reaching out to seafood consumers to explain sustainability, regional benefits and low carbon footprint of seafood harvested within the sanctuary (Seafood Watch cards).

Activity: Participate in an ecotourism regional initiative. Identify the inspiration, the reasons, and backdrop for why this region should be both protecting and promoting the sanctuary. Highlight the known environmental issues and research going on by local organizations and Federal agencies. Identify tourism and recreation businesses that could contribute the messaging by recognizing the HC designation program.

**Strategy 2: Develop sanctuary interpretation and outreach with partner organizations.**

Activity: Conduct outreach to museums, theaters, zoos, aquariums and education institutions to share information and invite partnership.

Activity: Engage in targeted outreach to local government and advisory boards to foster and promote sanctuary relevance and awareness. Work with the New York Aquarium to identify these groups to create engagement in awareness programs.

Activity: Coordinate with local marine science nature centers to provide interpretive training about the sanctuary for volunteers.

Activity: Deliver public presentations and serve as guest speakers with local communities, governments, and partner organizations to broaden awareness about the sanctuary.

Activity: Implement guided learning experiences for a wide range of culturally diverse audiences to build awareness and increase understanding of sanctuary resources, research, and ecosystem protection issues through education creating a narrative for all industries bringing about awareness of the Hudson Canyon and the importance of the sanctuary.

Activity: Implement interpretive experiences by using virtual technology and creating new apps. Include resources from other organizations (e.g., such as the Hudson Canyon fold-out map produced by National Geographic).

Activity: Coordinate with institutions (e.g., Steven's Institute of Technology in Hoboken, New Jersey), to educate and engage students in the New York Bight on buoy systems in the Hudson Canyon and their purpose.

Activity: Develop activities that incorporate emerging marine issues and climate literacy relating to the sanctuary and correlate to school curricula ensuring alignment with state and national science standards.

Activity: Share these activities with institutions like the National Marine Educators Association and promote with the New York State Marine Education Association.

Activity: Disseminate new literature among culturally diverse populations through networking with emerging not for profit marine groups that work with underserved students of color.



**Strategy 3: Develop media relations and marketing plans for regional and national outlets.**

Activity: Create press releases for media outlets about any new resources or events for the Canyon.

Activity: Coordinate and get approval to create an educational website with educational games.

Activity: Develop and maintain public social media profiles for the Sanctuary and a plan for their utilization.

Activity: Share/post photographs and video from remotely-operated vehicles from other research institutions (e.g., Rutgers, Lamont and University of Delaware).

Activity: Utilize partner and sympathetic organizations in social media dissemination (i.e. City Parks Foundation can post on IG and FB)

Activity: Create a photo library of the Canyon for educational and promotional materials.

Activity: Create a promotional video regarding the proposed HCNMS.

Activity: Develop educational and outreach kit including branded items for tabling (e.g.; tablecloth, postcards, swag, etc) and interactive games for the purposes of physical outreach.

Activity: Participate in local public events (fairs, conferences, etc.).

## **Recreation, Tourism, and Economic Development**

### **Strategy 1: Plan for on-land visitor centers and tourism facilities to engage the public on Hudson Canyon NMS.**

Activity: Evaluate what tourism facilities (such as visitor centers) should be planned and where they should be located.

Possible sites for visitor centers include National Park Service sites such as Sandy Hook, Castle Clinton, Fort Hamilton/Governors Island, Ellis Island, Fort Wadsworth Staten Island, Jamaica Bay National Wildlife Refuge Visitor Center, Monmouth University, Liberty State Park, museums, colleges, fishing ports such as Sheepshead Bay, Brooklyn College, NY Museum of Natural History, Liberty Science Center. (note: NY Aquarium has an exhibit)

Activity: Develop micro exhibits (including tabling displays and materials for conference expo/exhibit halls) in the form of video displays and posters that can be installed at maritime access points such as ferries, ferry terminals and marinas.

### **Strategy 2: Create opportunities for the public to visit the Hudson Canyon (perhaps in partnership with other sectors).**

Activity: Evaluate opportunities for boat tours to Hudson Canyon. Evaluate what boat trips should be planned and where would they leave from? Offer boat cruises from Ferry boarding facilities such as foot of Wall Street, Belford, Atlantic Highlands and Highlands, as well as other parts of the region.

Activity: Coordinate with whale cruise operators, maritime schools, wind companies, or charter boat associations to provide vessels. Work toward making the boat tours about the diversity of Hudson Canyon resources (e.g., not just about catching fish).

### **Strategy 3: Collaborate with relevant agencies, NGOs, and commercial/recreational industries to develop voluntary business recognition programs.**

Activity: Create incentive program for fishing entities, similar to the Blue Start operator program in Florida Keys NMS.

Activity: Continue involvement and expansion of existing business recognition programs, such as Whale SENSE

**Strategy 4: Collaborate with NOAA Fisheries to ensure sustainable fisheries in and around Hudson Canyon**

Activity: Evaluate current recreational and commercial fishing in and around the Hudson Canyon. Evaluate species and takes and methods.

Activity: Coordinate with NOAA Fisheries regarding recreational and recreational fishing guidelines for Hudson Canyon.

**Strategy 5: Support utilization and advancement of the marine technology sector to share information and gather data**

Activity: Characterize the marine technology sector in the Hudson Canyon region.

Activity: Consider an undersea observatory with cameras and sensors to be used for education and research and long term monitoring. This could include live observations of water temperature and ocean monitoring.

Activity: Reach out to industry, academia, and public agencies to identify elements of the marine technology sector that connect with HCNMS goals and investigate their utility in assisting the sanctuary as well as to understand if / where technology applications do not align with Sanctuary goals. Convene leaders from the marine technology sector as part of a tech symposium to identify applications and priorities for Hudson Canyon.

Activity: Assess other observation opportunities such as fly over drones or subsea vehicles to bring back images and data from the sanctuary.

**Strategy 6: Establish working relationships with economic and tourism development agencies and collaborate on strategies to use the sanctuary as a development asset.**

Activity: Identify and contact local, county, regional, and state economic development agencies to provide training on what the sanctuary is and the role it can and will play in the region.

Activity: Encourage agencies to incorporate the responsible use of the sanctuary into economic development strategies as a tool for development, and to include the HCNMS as an integral component of a larger tourism and economic concept for the greater New York Bight and associated inland tourism and economic assets.

**Strategy 7: Cultivate a generation of travelers who are also ocean stewards**

Activity: Work with tribes, local and state parks, museums, visitor centers, aquaria, and others to foster awareness of ocean health and sustainable tourism practices and

develop outreach materials that include Indigenous heritage as part of the sanctuary messaging.

Activity: Work with local on-the-water recreation vendors (e.g., kayak, paddle board, surfboard, etc. rental companies) to identify opportunities for marketing and sanctuary messaging, including wildlife viewing guidelines.

**Strategy 8: Evaluate the potential for Telecom Cable Corridors to provide economic development of Northeast and Greater US**

Activity: Consider existing and future telecom cable routes on either side of the Hudson Canyon to allow future connectivity in a region with significant wind area leases that might otherwise restrict new routes.

**Strategy 9: Evaluate opportunities for Sanctuary Program investment in Workforce Development for a range of ocean economy related roles**

Activity: Identify existing marine STEM related workforce development programs in the region and conduct gap assessment to see how NOAA Sanctuary Program can play supportive role (e.g. serve as a convener, provide grant support, link to other federal resources and programs).