

EVALUATION REPORT

Papahānaumokuākea Marine National Monument U.S.A.

Location: Northwestern Hawaiian Islands, Pacific Ocean

Global Ocean Refuge Status: Nominated (2017), Evaluated (2017)

MPAtlas.org ID: 8338

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1.	ELIGIBILITY CRITERIA	
1.1	Biodiversity Value	2
1.2	Effective Management & Compliance	3
2.	AWARD STATUS CRITERIA	
2.1	Regulations	6
2.2	Site Design & Management	7
3.	GLORES NETWORK PRIORITIES	
3.1	Ecosystem Representation	8
3.2	Ecological Spatial Connectivity	8

1.1 Eligibility Criteria: Biodiversity Value (must satisfy at least one)

- a. *Includes area of high species richness or endemism within the context of the biogeographic region.*

There are over 7,000 marine species living within the borders of the monument, which covers 10 islands and atolls¹ across 1,508,870 square kilometers.² The monument includes island, shallow water, seamount, and ancillary bank environments.

The Hawaiian Archipelago represents a highly isolated environment in the Pacific Ocean. The closest land mass is the mainland US, which is more than 2,000 miles away.³ The islands have a high level of endemism because of this geographic isolation. There are approximately 2,000 animal and plant species that are endemic to the site.⁴ A 2014 study of Northwest Hawaiian Islands (NWHI) coral reef fish assemblages found that endemism increased with latitude, with rates climbing from 16% to 92% along the island chain.⁵

- b. *Includes demonstrated historic or predicted ecological refugia.*
- c. *Includes rare, unique, or representative ecosystems.*
- d. *Includes area important for threatened species (including those identified by the IUCN Red List or national legislation), keystone species, or foundational species. Important areas include migration pathways and breeding, nursery, feeding, or assembly areas.*

The monument is home to many endangered species across major taxa: 4 sea turtles, 6 plants, 5 birds, 1 pinniped, and 6 cetaceans. There are also 22 species of birds that use the monument as a breeding or nesting site.⁶

¹ National Ocean Service. (2017). *About Papahānaumokuākea*. Retrieved May 2017 from <http://www.papahanaumokuakea.gov/new-about/>

² MPAAtlas. (2017). *Papahānaumokuākea Marine National Monument*. Retrieved May 2017 from <http://mpatlas.org/mpa/sites/8338/>

³ National Park Service. (2017). *Hawaii Volcanoes National Park*. Retrieved May 2017 from <https://www.nps.gov/havo/learn/nature/index.htm>

⁴ National Ocean Service. (2017). *About Papahānaumokuākea*. Retrieved May 2017 from <http://www.papahanaumokuakea.gov/new-about/>

⁵ Kane, C., Kosaki, R. K., & Wagner, D. (2014). High levels of mesophotic reef fish endemism in the Northwestern Hawaiian Islands. *Bulletin of Marine Science*, 90(2), 693-703. <http://dx.doi.org/10.5343/bms.2013.1053>

⁶ National Ocean Service. (2017). *About Papahānaumokuākea*. Retrieved May 2017 from <http://www.papahanaumokuakea.gov/new-about/>

1.2 Eligibility Criteria: Effective Management & Compliance (must satisfy all)

- a. *The MPA is designated by a legitimate and functional government representing the interests of civil society, and the MPA’s implementation meets the IUCN standards for recognizing indigenous peoples’ rights.*

The monument was designated by U.S. President George W. Bush in 2006 through Presidential Proclamation 8031, under the authority of the Antiquities Act (16 U.S.C. 431-433).⁷ The monument’s borders were later expanded through a presidential proclamation by President Barack Obama in 2016.⁸ In addition to its significant biological value, the monument was designated to protect sites that are important to native Hawaiian culture. The Office of Hawaiian Affairs, which protects the interests of native Hawaiians, is one of four government agency co-trustees of the monument.⁹

- b. *The MPA is designated to enhance the biodiversity value of the site.*

The 2016 Presidential Proclamation that expanded the monument summarized the biodiversity value of Papahānaumokuākea thusly: “The Monument and adjacent area are part of the most remote island archipelago on Earth. This biological and geographic isolation, coupled with unique oceanographic and geological conditions, has resulted in an ecosystem critical for new species formation and endemism. These forces result in some of the most unique and diverse ecological communities on the planet.”¹⁰ The published mission statement of the monument is, “To carry out seamless integrated management to ensure ecological integrity and achieve strong, long-term protection and perpetuation of NWHI ecosystems, Native Hawaiian culture, and heritage resources for current and future generations.”¹¹

- c. *The MPA designation is permanent or is effective for at least 25 years.*

The designation is permanent.¹²

- d. *A management plan, updated within the last 15 years, identifies and prioritizes significant threats to biodiversity and addresses those threats with measurable actions;*

⁷ Bush, G. W. (2006). *Proclamation 8031—Establishment of the Northwestern Hawaiian Islands Marine National Monument*. Online by Gerhard Peters and John T. Woolley, The American Presidency Project. Retrieved May 2017 from <http://www.presidency.ucsb.edu/ws/?pid=139>.

⁸ Obama, B.H. (2016). *Presidential Proclamation – Papahānaumokuākea Marine National Monument Expansion*. Retrieved May 2017 from <https://obamawhitehouse.archives.gov/the-press-office/2016/08/26/presidential-proclamation-papahānaumokuākea-marine-national-monument>

⁹ National Ocean Service. (2017). *Management of Papahānaumokuākea*. Retrieved May 2017 from <http://www.papahānaumokuākea.gov/new-about/management/>

¹⁰ Obama, B.H. (2016). *Presidential Proclamation – Papahānaumokuākea Marine National Monument Expansion*. Retrieved May 2017 from <https://obamawhitehouse.archives.gov/the-press-office/2016/08/26/presidential-proclamation-papahānaumokuākea-marine-national-monument>

¹¹ National Ocean Service. (2017). *About Papahānaumokuākea*. Retrieved May 2017 from <http://www.papahānaumokuākea.gov/about/welcome.html>

¹² Bush, G. W. (2006). *Proclamation 8031—Establishment of the Northwestern Hawaiian Islands Marine National Monument*. Online by Gerhard Peters and John T. Woolley, The American Presidency Project. Retrieved May 2017 from <http://www.presidency.ucsb.edu/ws/?pid=139>.

the resources and capacity to implement the management plan are identified and secured.

A comprehensive management plan was published in 2008. There are six priority management needs, each with three to four specific fifteen-year action plans: 1) Understand and interpret monument resources. 2) Conserve wildlife and their habitats. 3) Reduce threats to monument resources. 4) Manage human activities. 5) Facilitate coordination between conservation and management. 6) Achieve effective operations.¹³ The threats identified in the plan are marine debris, alien species, maritime transportation and aviation, and emergency response to natural disasters. Each threat is addressed with corresponding strategies that cover specific prevention, mitigation, and monitoring actions. The annual budget and staffing necessary for those proposed strategies is dependent on funding for the federal agencies involved, which is in turn dependent on Congressional approval. Alternatively, a 2008 study identified the four most significant anthropogenic threats to the monument as sea-level rise, sea temperature rise, bottom fishing, and pelagic fishing in the wider Pacific.¹⁴ The authors noted that several of those threats were beyond the control of Papahānaumokuākea management.

- e. Regular monitoring of habitat and/or wildlife is conducted to measure progress with respect to conservation targets. A report of monitoring data is required at each GLORES audit after designation. Any negative biological trends identified through monitoring must be addressed in management plans. Progress toward identifying threats and addressing them must be documented.*

The Northwestern Hawaiian Islands Reef Assessment and Monitoring Program (NWHIRAMP) was established in 2000 to create protocols for the continued monitoring of the coral reefs of the NWHI. This collaboration between government agencies and non-profit and educational institutions involved quantitative surveys of fish, coral, algae, and invertebrates, with qualitative surveys of large fish, substrate type, oceanographic data, and sediment contamination.¹⁵ The Hawaii Institute of Marine Biology (HIMB) has a long-standing research partnership with the monument, focusing on conservation science.

Culminating in 2004, NOAA made significant initial efforts to map monument resources in order to establish a baseline against which future conservation targets could be measured. Efforts to increase the detail of these habitat and bathymetry maps is ongoing.

The 2008 management plan stresses the importance of annual monitoring of the abundance and diversity of marine organisms. It includes three strategies under the

¹³ NOAA, USFWS, & Hawaii DLNR. (2008). *Papahānaumokuākea Marine National Monument Management Plan*, p. ES-3. Retrieved May 2017 from http://www.papahanaumokuakea.gov/new-about/management/pdfs/vol1_mmp08.pdf

¹⁴ Selkoe, K. A., Halpern, B. S., & Toonen, R. J. (2008). Evaluating anthropogenic threats to the Northwestern Hawaiian Islands. *Aquatic Conserv: Mar. Freshw. Ecosyst.* 18: 1149-1165. DOI: 10.1002/aqc.961

¹⁵ Maragos, J., & Gulko, D., eds. (2002). *Coral Reef Ecosystems of the Northwestern Hawaiian Islands: Interim Results Emphasizing the 2000 Surveys*. U.S. Fish and Wildlife Service and the State of Hawaii Department of Land and Natural Resources. Honolulu.

Marine Conservation Science Action Plan that address monitoring.¹⁶ These strategies outline the continued monitoring of shallow-water coral reef ecosystems, the establishment of monitoring for deep-water ecosystems, the adaptive management of monitoring protocols, collaboration in monitoring efforts, and the use of monitoring results in outreach and educational efforts.¹⁷

In addition to programs that monitor overall ecosystem health, the management plan also outlines monitoring programs for specific indicators, such as threatened and endangered species, migratory birds, critical habitats, marine debris, and alien species. Strategies for threatened and endangered species include annual monitoring programs for cetaceans, nesting sea turtles, nesting short-tailed albatrosses (*Phoebastria albatrus*), Laysan ducks (*Anas laysanensis*), Laysan finches (*Telespiza cantans*), Nihoa finches (*Telespiza ultima*), Nihoa millerbirds (*Acrocephalus familiaris kingi*), and all endangered plant species. Strategies for migratory birds include annual monitoring programs for avian diseases, contaminant levels, changes in population sizes, habitat quality, and migration patterns. Strategies for critical habitats include annual monitoring programs for lingering chemical contaminants, erosion, species composition of mixed plant communities, water quality parameters, reproductive success of tree-nesting seabird species, and plant and animal populations of cliff habitats. Strategies for marine debris include annual monitoring programs for hazardous materials and general marine debris accumulation. Strategies for alien species include annual monitoring programs for the eradication of invasive terrestrial and marine plant species, the detection of new alien species, and the prevention of invasive species spread.

f. The MPA garners high regulation compliance rate. Evidence of adequate resources and capacity (including budget and staff) for enforcement is required.

Because the area is so large, enforcement is challenging. The most pressing enforcement issues are illegal access, discharge, dumping, and poaching.¹⁸ In the past, enforcement has relied on the U.S. Coast Guard for over-flights and vessel patrols, as well as anecdotal reports from fishermen, researchers, and agency personnel. The monument co-trustees are currently planning to incorporate the use of remote surveillance (satellites, radar, vessel monitoring systems) to inform on-the-water law enforcement officers.¹⁹

The park's managers characterize enforcement of regulations in the park as active and consistent. They report that there have been very few fishing violations and those caught have been fined. They note, however, that in the "expansion area" that surrounds the core no-take area of the monument, the regulations for recreational fishing are still in progress

¹⁶ NOAA, USFWS, & Hawaii DLNR. (2008). *Papahānaumokuākea Marine National Monument Management Plan*, p. 119. Retrieved May 2017 from http://www.papahanaumokuakea.gov/new-about/management/pdfs/vol1_mmp08.pdf

¹⁷ NOAA, USFWS, & Hawaii DLNR. (2008). *Papahānaumokuākea Marine National Monument Management Plan*, p. 122. Retrieved May 2017 from http://www.papahanaumokuakea.gov/new-about/management/pdfs/vol1_mmp08.pdf

¹⁸ National Ocean Service. (2017). *Papahānaumokuākea Resource Protection*. Retrieved May 2017 from <http://www.papahanaumokuakea.gov/resource/enforcement.html>

¹⁹ National Ocean Service. (2017). *Papahānaumokuākea Resource Protection*. Retrieved May 2017 from <http://www.papahanaumokuakea.gov/resource/enforcement.html>

and not yet enforced (commercial fishing in the expansion area is banned, and this regulation is enforced).²⁰

2.1 GLORES Award Status Criteria: Regulations

Scores 1-3 = Platinum, 3-4 = Gold, 4-5 = Silver

Classification and scoring (1-8) of zones based on fishing gear, bottom exploitation, aquaculture, and boating.

Additional consideration: Buffer zones – zones of reduced human impact surrounding core no-take protected areas – enhance the conservation value of core no-take areas. An MPA that includes a large (>100 km²) no-take zone (Zone regulation score 1-3) surrounded by a buffer zone with a score 3-5 may be considered for a GLORES Platinum Award.

The overall regulation score for the monument is 1, based on a large no-take core zone and an even larger buffer zone with highly regulated access.

The inner core zone of Papahānaumokuākea, which was designated in 2006, is a no-take reserve with an area of 362,073 km².

Zone Score: 1

Number of fishing gear types allowed: 0

Fishing gear impact score: 0

Bottom exploitation & aquaculture index: 0

Anchoring & boating index: 0

The outer expansion, which was designated in 2016, covers 1,146,797 km². Within that buffer zone, commercial resource extraction activities are prohibited, while certain activities (Native Hawaiian practices, noncommercial fishing, scientific research, special ocean use, or conservation activities) are allowed only by permit.²¹ The most recent available permitting report is from 2015, before the expansion zone was designated.²²

Zone Score: 4 or 5

Number of fishing gear types allowed: Unknown (limited, noncommercial fishing by permit only, likely 1-5)

Fishing gear impact score: Unknown, less than 8

Bottom exploitation & aquaculture index: Aquaculture and bottom exploitation not allowed (0)

Anchoring & boating index: No anchoring (0)

²⁰ Athline Clark, Papahānaumokuākea Marine National Monument manager, personal communication, July 12, 2017.

²¹ Obama, B.H. (2016). *Presidential Proclamation – Papahānaumokuākea Marine National Monument Expansion*. Retrieved May 2017 from <https://obamawhitehouse.archives.gov/the-press-office/2016/08/26/presidential-proclamation-papahanaumokuakea-marine-national-monument>

²² National Ocean Service. (2016). *Papahānaumokuākea Marine National Monument Permitted Activities 2015 Annual Report*, p. 17. Retrieved May 2017 from http://www.papahanaumokuakea.gov/permit/par/15_par_web.pdf

2.2 GLORES Award Status Criteria: Site Design and Management

3 Attributes = Platinum, 2 Attributes = Gold, 1 Attribute = Silver

- a. *Size: MPA $\geq 100 \text{ km}^2$ or explicitly designed as part of a network of MPAs to support population connectivity*

The no-take zone of the monument covers 362,073 km². The regulated buffer zone covers 1,146,797 km². Following the expansion in 2016, Papahānaumokuākea became the largest marine protected area in the world, with a total area of 1,508,870 km².

- b. *Isolation: Ecological or other protected area buffers surround ecosystem(s)*

The islands and nearshore surrounding habitats are completely encompassed by the core no-take zone, with the exception of Salmon Bank.²³ The surrounding buffer zone (2016 expansion) extends outwards roughly 300 km, isolating the shallow water ecosystems with deep water.

- c. *Age: Protections in the site, comparable to the current protections, are ≥ 10 years old*

The original no-take area was established in 2006; the expansion area was added in 2016.

- d. *Community engagement: There is a formal process to engage the local community in the implementation and/or ongoing management of the MPA.*

The original executive order in 2000 that designated the Northwest Hawaiian Islands Coral Reef Ecosystem Reserve (which eventually became the inner no-take reserve zone of Papahānaumokuākea) required that Native Hawaiians contribute to the management of the reserve, with the goal of preserving Native Hawaiian practices. This included reserving three voting seats on the Reserve Advisory Council for Native Hawaiians. The Council also created a Native Hawaiian Cultural Working Group, which expanded the operational role of Native Hawaiian representatives. A grant given to the University of Hawaii's Kamakakuokalani Center for Hawaiian Studies also allowed for Native Hawaiians to help define cultural preservation priorities. During the process of turning the reserve into a larger monument, many public comments urged the continuous involvement of Native Hawaiians. In response to that input, the management plan includes three action plans to engage the local community within the management priority of Coordinating Conservation and Management Activities.²⁴ These plans address the continued involvement of Native Hawaiians for the life of the monument, the development of new partnerships with Native Hawaiian organizations, and the integration of Native Hawaiian traditional ecological knowledge into management plans.

²³ NOAA, State of Hawaii, & ESRI. (2012). Map of Papahānaumokuākea Marine National Monument. Retrieved May 2017 from http://www.fpir.noaa.gov/Library/DIR/dir_map_NWHIMNM.pdf

²⁴ NOAA, USFWS, & Hawaii DLNR. (2008). Papahānaumokuākea Marine National Monument Management Plan, p. 259. Retrieved May 2017 from http://www.papahanaumokuakea.gov/new-about/management/pdfs/vol1_mmp08.pdf

3.1 GLORES Network Priorities: Ecosystem Representation

The monument encompasses island, shallow water, coral reef, seamount, lagoon, and ancillary bank environments, with both pelagic and deep water habitats.²⁵ At a location of 25° N, 170° W, the monument sits at the border of the tropics.

Because the Global Ocean Refuge System is new this year, the ecosystems protected by Papahānaumokuākea Marine National Monument will be the first of these ecosystems within the region to be represented in a Global Ocean Refuge.

3.2 GLORES Network Priorities: Ecological Spatial Connectivity

Because the Global Ocean Refuge System is new this year, there are no other Global Ocean Refuges in the region with which to consider the ecological spatial connectivity contribution of Papahānaumokuākea Marine National Monument.

In future GLORES award cycles, we will describe the location of the MPA within the context of the existing GLORES network, considering connectivity.

²⁵ UNESCO World Heritage Center. (2017). *Papahānaumokuākea*. Retrieved May 2017 from <http://whc.unesco.org/en/list/1326>