

**TESTIMONY OF DR. ALAN FRIEDLANDER, PH.D.**  
**BEFORE THE UNITED STATES HOUSE OF REPRESENTATIVE COMMITTEE ON**  
**NATURAL RESOURCES**  
**SUBCOMMITTEE ON WATER, WILDLIFE, AND FISHERIES**  
**HEARING: H.R. 8904 (REP. RADEWAGEN), TO AMEND THE MAGNUSON-**  
**STEVENS FISHERY CONSERVATION AND MANAGEMENT ACT TO PROVIDE**  
**FOR THE REGULATION OF FISHING IN MARINE NATIONAL MONUMENTS**

**JUNE 3, 2026**

## **Executive Summary**

I am a marine ecologist and fisheries scientist with more than forty years of experience studying marine ecosystems throughout the Pacific Ocean and around the world. I am one of a very small number of scientists who has conducted research across all of the U.S. Pacific Marine National Monuments, including the Pacific Islands Heritage Marine National Monument, Rose Atoll Marine National Monument, and the Marianas Trench Marine National Monument.

The primary conclusion of this testimony is straightforward:

**Marine monuments protect ecosystems. Fisheries management manages fisheries. These are complementary tools, not interchangeable ones.**

The scientific evidence demonstrates that:

- America's Pacific Marine National Monuments protect some of the last relatively intact marine ecosystems remaining on Earth.
- These monuments serve as irreplaceable scientific reference ecosystems that help us understand how healthy oceans function and recover from disturbance.
- Monument protections safeguard ecological processes—including predator-prey interactions, nutrient cycling, ecosystem connectivity, and biodiversity—that conventional fisheries management was never designed to protect.
- The Hawai‘i-based longline fishery and other U.S. Pacific fisheries have not suffered measurable economic harm from monument protections.
- Scientific studies increasingly indicate that large marine protected areas can provide benefits to adjacent fisheries through spillover and enhanced ecosystem productivity.
- Highly migratory species such as tuna and sharks benefit from large-scale protection.
- Reopening these areas would increase risks to sharks, seabirds, sea turtles, and other vulnerable wildlife through bycatch, marine debris, and ecosystem disruption.
- These monuments preserve important cultural and historical resources, including ancestral Pacific seascapes, Indigenous stewardship traditions, and the legacy of Hui Panalā‘au.

For these reasons, I respectfully oppose H.R. 8904 and urge Congress to maintain existing protections for America's Pacific Marine National Monuments.

## **Introduction and Qualifications**

Chairwoman Hageman, Ranking Member Hoyle, and Members of the Subcommittee:

Thank you for the opportunity to submit testimony regarding H.R. 8904 and the future management of America's Pacific Marine National Monuments.

My name is Dr. Alan M. Friedlander. I am a marine ecologist and fisheries scientist with more than four decades of experience studying marine ecosystems throughout the Pacific Ocean and around the world. I recently retired as Chief Scientist for National Geographic's Pristine Seas program and currently serve as an Affiliate Researcher at the Hawai'i Institute of Marine Biology, University of Hawai'i.

Over the course of my career, I have spent thousands of hours conducting underwater research and have authored or co-authored more than 300 scientific publications. I have conducted research across all of the U.S. Pacific Marine National Monuments, including the Pacific Islands Heritage Marine National Monument, Rose Atoll Marine National Monument, and the Marianas Trench Marine National Monument. Few scientists have had the opportunity to study all of these ecosystems firsthand.

Among the hundreds of coral reefs, islands, and marine ecosystems I have studied around the world, these monuments stand apart. The abundance of sharks, the intact food webs, and the functioning ecological relationships found in places such as Kingman Reef, Palmyra Atoll, Johnston Atoll, Rose Atoll, and the Marianas are unlike almost anything left in the modern ocean. They provide a rare glimpse of what healthy marine ecosystems once looked like before widespread human disturbance.

The views expressed in this testimony are my own.

## **Why These Places Matter to America**

America's Pacific Marine National Monuments are the Yellowstone and Grand Canyon of the sea. Just as Yellowstone protects one of the world's great terrestrial ecosystems and the Grand Canyon preserves an irreplaceable geological landscape, America's Pacific Marine National Monuments protect some of the last relatively intact ocean ecosystems remaining on Earth.

These places are more than remote islands and waters. They are living laboratories for science, refuges for biodiversity, cultural seascapes connected to Pacific peoples, and national treasures that belong to all Americans.

Once lost, the ecological and cultural values protected by these monuments cannot easily be restored.

## America's Last Wild Ocean Ecosystems

Marine ecosystems throughout the world have been fundamentally altered by fishing, habitat degradation, pollution, invasive species, and climate change. As a result, truly intact marine ecosystems have become exceedingly rare.

Research comparing the remote Northwestern Hawaiian Islands with the populated Main Hawaiian Islands found that total fish biomass in the Northwestern Hawaiian Islands was more than 260 percent greater and that apex predators comprised more than 54 percent of total fish biomass compared with less than 3 percent in the Main Hawaiian Islands (Friedlander and DeMartini, 2002). These findings demonstrated that predator-dominated reef ecosystems, once common throughout the Pacific, have become rare.

Subsequent studies at Kingman Reef documented an inverted biomass pyramid dominated by sharks and other apex predators—a pattern rarely observed elsewhere in the modern ocean (Friedlander et al., 2010). Sandin et al. (2008) similarly identified remote Pacific reefs as among the least disturbed coral reef ecosystems remaining on Earth. More recently, Jones et al. (2018) found that marine wilderness now comprises only a small fraction of the global ocean, while Sala et al. (2021) highlighted the importance of protecting the remaining intact ocean ecosystems.

These studies demonstrate that America's Pacific Marine National Monuments protect ecosystems that are increasingly rare at a global scale. They provide some of the best remaining examples of what ocean ecosystems looked like before widespread industrial exploitation altered marine food webs throughout much of the world.

Scientists have referred to portions of these ecosystems as America's "Underwater Serengeti" because they still support ecological processes and wildlife assemblages that have largely disappeared elsewhere.

I have spent much of my career studying remote marine ecosystems throughout the Pacific and beyond. Few experiences have been as striking as descending beneath the surface at places such as Kingman Reef, Palmyra Atoll, Johnston Atoll, and Rose Atoll and encountering ecosystems dominated by large predators and intact food webs. In most parts of the world, such conditions exist only in historical accounts. In these monuments, they can still be observed firsthand.

Collectively, the Pacific Islands Heritage Marine National Monument, Rose Atoll Marine National Monument, and Marianas Trench Marine National Monument protect an extraordinary diversity of ecosystems ranging from coral reefs and pelagic waters to seamounts, hydrothermal systems, and the deepest ocean trench on Earth.

These monuments also serve as irreplaceable scientific reference ecosystems. Because intact marine ecosystems have become increasingly rare, they provide invaluable baselines for understanding ecosystem function, climate resilience, and recovery from disturbance.

## **Ecological Connectivity Across the Pacific**

One of the most important scientific discoveries of the last two decades is that marine ecosystems are connected across far greater distances than previously recognized.

The Pacific marine monuments are not isolated islands scattered across empty ocean. Rather, they function as components of a vast ecological network linked through ocean currents, species movements, nutrient transport, and evolutionary processes.

Johnston Atoll (Kalama) provides one of the clearest examples of this connectivity. Located between Hawai‘i and the central Pacific, Johnston serves as an important ecological stepping-stone that facilitates movement of marine species across the region. Genetic studies and oceanographic analyses indicate that Johnston plays an important role in dispersal and connectivity for numerous marine organisms, helping maintain biodiversity and resilience across the central Pacific (Bowen, 2016). Johnston's location makes it far more than an isolated atoll; it functions as an ecological bridge across the Pacific.

Research throughout the Pacific Remote Islands has demonstrated strong linkages among pelagic ecosystems, seabirds, islands, and coral reefs (McCauley et al., 2012). Tuna and other pelagic predators concentrate prey near the ocean surface where seabirds can forage efficiently. Seabirds subsequently transport marine-derived nutrients to islands through guano deposition. These nutrients then enter adjacent coral reef ecosystems where they enhance productivity, fish biomass, and ecosystem function.

In many respects, the Pacific monuments function as integrated ridge-to-reef-to-open-ocean ecosystems. Protecting only individual species while allowing degradation of ecological connections would undermine many of the values these monuments were established to protect.

## **Cultural and Historical Significance**

The Pacific marine monuments are more than biological treasures. They are also part of the cultural and historical heritage of the Pacific.

For centuries, Pacific Islanders traversed vast ocean distances using sophisticated systems of navigation based on stars, winds, currents, seabirds, and ocean swells. The islands and waters now protected within these monuments formed part of broader ancestral seascapes that connected people across Oceania. Protecting these ecosystems helps preserve not only biodiversity, but also the cultural traditions and stewardship values that continue to guide Pacific communities today.

These monuments also preserve the legacy of Hui Panalā‘au. Between 1935 and 1942, more than 130 young men, many of them Native Hawaiian and Kamehameha School students or graduates, were sent to Baker, Howland, and Jarvis islands to help establish and maintain a U.S. presence in the central Pacific. Their service contributed to the history of these islands and remains an important chapter in both Hawaiian and American history.

Johnston Atoll, known to many Native Hawaiians as Kalama, holds particular significance because of its position linking Hawai‘i with the broader tropical Pacific. It serves not only as an ecological stepping-stone for marine species, but also as part of a larger Pacific seascape that reflects the deep connections among people, culture, and the ocean.

### **Fisheries Have Not Been Harmed by Monument Protections**

The principal justification advanced for reopening marine national monuments to commercial fishing is that existing protections impose economic hardship on fisheries. The available scientific evidence does not support that claim.

Importantly, the Hawai‘i-based longline fishery has consistently harvested its allowable catch without access to monument waters. These fisheries did not depend on these areas before monument expansion and do not depend on them today.

The Hawai‘i-based longline fishery operated successfully before monument expansion and has continued to do so afterward. Studies evaluating fishery performance following monument expansion found little or no measurable negative impact on catch rates, revenues, or participation (Medoff et al., 2022; Lynham and Villaseñor-Derbez, 2024). Following monument expansion, catch rates in the Hawai‘i deep-set longline fishery increased by approximately 8% and revenues increased by approximately 9%, demonstrating that monument protections did not adversely affect fishery performance (Lynham et al., 2020).

Historical fishing records further demonstrate that many monument waters were not heavily utilized prior to protection. Commercial fishing effort within portions of the Pacific Remote Islands was limited, and some areas experienced little or no documented fishing activity before monument expansion.

The question before Congress is therefore not whether the fisheries can survive without access to these protected waters. The evidence demonstrates that they can.

The question is whether the relatively small and uncertain benefits of reopening these areas justify the ecological risks associated with weakening protections for some of the most intact marine ecosystems under U.S. stewardship.

### **Fisheries Benefit from Protection**

An increasing body of scientific evidence suggests that large marine protected areas can provide benefits to adjacent fisheries. Studies conducted around Papahānaumokuākea following monument expansion documented increased catch rates for several commercially important tuna species in waters adjacent to the monument (Medoff et al., 2022). These findings suggest that protected ecosystems may contribute to enhanced productivity and spillover benefits beyond monument boundaries.

More recent studies similarly indicate that large marine protected areas can provide measurable benefits for highly migratory species, including tunas (Lynham and Villaseñor-Derbez, 2024).

These findings challenge the long-standing assumption that highly mobile species derive little benefit from large-scale protection.

Healthy ecosystems support productive fisheries. Protecting key habitats, ecological interactions, and ecosystem processes can enhance resilience and productivity throughout broader ocean regions.

The emerging scientific consensus is that marine conservation and fisheries productivity are not mutually exclusive objectives. In many cases, they are complementary.

### **Mobile Species Benefit from Large Marine Protected Areas**

One argument frequently made against large marine protected areas is that highly migratory species such as tuna and sharks move beyond protected boundaries and therefore receive little benefit from protection. Scientific evidence increasingly suggests otherwise.

Recent telemetry studies conducted within the U.S. Pacific Islands documented prolonged residency of yellowfin tuna around oceanic islands and atolls (Gilmour et al., 2025). Other studies have shown that skipjack tuna, sharks, and numerous pelagic species exhibit site fidelity and repeated use of particular habitats, seamounts, and island systems (Sibert and Hampton, 2003; Wells et al., 2012; Gallagher et al., 2021).

Importantly, large marine protected areas do more than protect individual animals. They safeguard spawning habitat, migration corridors, ecological interactions, and ecosystem processes that support population productivity and resilience. The growing body of scientific evidence indicates that large marine protected areas provide meaningful conservation benefits even for highly mobile species.

### **Risks of Reopening Marine Monuments to Commercial Fishing**

The ecological value of America's Pacific Marine National Monuments derives largely from their relative lack of industrial disturbance. Reopening these ecosystems to commercial fishing would introduce a suite of impacts that extend far beyond the direct harvest of target species.

### **Ecological Impacts of Fishing**

Commercial fishing affects many species beyond those targeted for harvest. Longline and purse-seine fisheries interact with sharks, seabirds, sea turtles, rays, and marine mammals, while fishing mortality remains a major driver of global declines in oceanic sharks and rays (Pacoureau et al., 2021). Many species commonly encountered in Pacific fisheries are now considered threatened or endangered.

Fishing can also disrupt ecological processes that help maintain healthy marine ecosystems. Removal of large predators may alter food-web structure, affect predator-prey interactions, and reduce ecosystem resilience (McCauley et al., 2015). In the U.S. Pacific Islands, ecological connections among pelagic predators, seabirds, islands, and coral reefs contribute to ecosystem

productivity and function (McCauley et al., 2012). Protecting these ecosystems therefore requires more than simply maintaining sustainable harvest levels for individual species.

## **Marine Debris and Drifting Fish Aggregating Devices**

Industrial fishing also introduces risks associated with marine debris and drifting fish aggregating devices (dFADs). Numerous studies have documented dFAD strandings on coral reefs, damage to sensitive habitats, entanglement of wildlife, and accumulation of marine debris throughout the tropical Pacific (Amon et al., 2020; Gomez et al., 2020; Curnick et al., 2021).

Because many monument ecosystems remain relatively undisturbed, preventing these impacts is often far more effective than attempting restoration after damage has occurred.

## **Why Magnuson-Stevens Cannot Replace Monument Protections**

The fundamental premise of H.R. 8904 is that fisheries management under the Magnuson-Stevens Fishery Conservation and Management Act can adequately replace protections provided through marine national monuments.

The scientific evidence suggests otherwise.

Magnuson-Stevens is among the most successful fisheries management laws in the world. Its primary purpose is to prevent overfishing, rebuild depleted stocks, and ensure sustainable harvest of fishery resources.

Marine monuments were created to achieve different objectives.

Fisheries management manages fisheries.

Marine monuments protect ecosystems.

These are complementary tools, not interchangeable ones.

Marine monuments protect biodiversity, ecosystem function, ecological connectivity, scientific resources, cultural landscapes, geological features, marine wilderness, and climate resilience at scales that extend beyond traditional fisheries management objectives (Jones et al., 2018; Letessier et al., 2019; Sala et al., 2021). Many of these values fall entirely outside the scope of conventional fisheries management.

For example, fisheries management does not directly protect:

- Ecological connectivity among Pacific islands;
- Seabird nutrient subsidies to coral reefs;
- Deep-sea biodiversity and hydrothermal vent ecosystems;
- Scientific reference ecosystems;
- Indigenous cultural seascapes;

- Historical resources associated with Hui Panalā‘au;
- Marine wilderness values; or
- Ecosystem resilience to climate change.

The question before Congress is therefore not whether fisheries management is important.

The question is whether fisheries management alone can protect the full suite of ecological, cultural, historical, and scientific values embodied by America's marine monuments.

The evidence indicates that it cannot.

### **Lessons from Papahānaumokuākea**

Although Papahānaumokuākea is not directly affected by H.R. 8904 because it is now managed as a National Marine Sanctuary, it provides an important case study for evaluating the ecological and fisheries outcomes of large-scale marine protection.

Prior to expansion of Papahānaumokuākea in 2016, opponents predicted substantial economic harm to the Hawai‘i longline fishery. Those predictions did not materialize.

Subsequent analyses found little or no measurable negative impact on fishery performance, while additional studies documented evidence of spillover benefits and increased catch rates adjacent to the monument.

Papahānaumokuākea demonstrates that large-scale marine conservation and successful commercial fisheries are not mutually exclusive. Indeed, the evidence increasingly suggests that ecosystem protection and fisheries productivity can be complementary objectives.

The experience of Papahānaumokuākea should serve as a cautionary lesson. Short-term predictions of economic harm often prove incorrect, while the ecological and scientific benefits of protection continue to accumulate over time.

### **Conclusion**

America's Pacific Marine National Monuments protect some of the last relatively intact marine ecosystems remaining on Earth.

They preserve globally significant biodiversity, irreplaceable scientific baselines, Indigenous voyaging heritage, the legacy of Hui Panalā‘au, and ecological processes that continue to function much as they did before widespread human disturbance.

The evidence demonstrates that monument protections have not harmed fisheries and may provide measurable benefits to them. At the same time, reopening these areas would expose some of the world's last relatively intact marine ecosystems to unnecessary risks.

As one of the few scientists who has conducted research across all of the U.S. Pacific Marine National Monuments—and across hundreds of marine ecosystems throughout the Pacific—I have witnessed firsthand how rare intact marine ecosystems have become.

The question before Congress is not whether American fisheries can survive without access to these protected waters. The evidence demonstrates that they can.

The question is whether we are willing to weaken protections for some of the last wild ocean ecosystems under U.S. stewardship for relatively small and uncertain gains in fishing opportunity.

Marine monuments protect ecosystems. Fisheries management manages fisheries. These are complementary tools, not interchangeable ones.

These monuments represent a globally significant conservation legacy. They safeguard biodiversity, scientific opportunity, cultural heritage, and some of the last relatively intact marine ecosystems remaining on Earth.

Future generations will not judge us by how many additional fish were harvested from the last wild places of the Pacific. They will judge us by whether we had the wisdom and foresight to protect them. These monuments represent a globally significant conservation legacy and some of the last opportunities to preserve intact ocean ecosystems for future generations. Once lost, these values cannot easily be restored.

For these reasons, I respectfully urge Congress to reject H.R. 8904 and maintain the protections that safeguard America's Pacific Marine National Monuments for present and future generations.

Thank you for the opportunity to submit this testimony for the record.

Respectfully submitted,

A handwritten signature in cursive script, reading "Alan Friedlander", is displayed within a light gray rectangular box.

**Alan M. Friedlander, Ph.D.**

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