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## America's Ocean Wilderness: a Cultural History of Twentieth-Century Exploration

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A series of six biographical case studies, Gary Kroll's *America's Ocean Wilderness: A Cultural History of Twentieth-Century Exploration* examines the ways 19th-century conceptions of the American frontier were, during the 20th century, transferred to the oceans. Kroll shows how several prominent scientists and explorers advanced this conception of ocean wilderness by evoking similar language used to describe the American West. At various times, the ocean, Kroll observes, became 'a trove of inexhaustible resources, an area to be conserved for industrial capitalism, a fragile ecosystem requiring stewardship and protection from 'civilizing' forces, a geography for sport, a space for recreation, and a seascape of inspiration' (p. 7). As a result, Kroll argues, the ocean wilderness, like its terrestrial predecessor, experienced environmental decline. 'When the ocean became an important geography in the American mind at the beginning of the twentieth century?', he explains, 'so too began a process of utilization, degradation, and pollution, the consequences of which we are only beginning to realize' (p. 7).

Kroll begins with an examination of Roy Chapman Andrews, a naturalist at the American Museum of Natural History who built his career during the 1910s studying North Pacific whales. Like many East Coast Progressive Era conservationists, Andrews viewed the frontier often in contradictory terms: he saw it as both an engine of economic growth and remedy to the ills of industrial society. It was, in part, this dual

understanding of the frontier ? at once a place of extraction and enjoyment ? that animated a growing appreciation for hunting among eastern elites.

Andrews embraced these new elite attitudes about hunting and transferred them to the sea. Travelling as an observer to shore whaling stations in British Columbia and southwestern Alaska and later aboard whaling steamers based in Yokohama, Shanghai, and Hong Kong, Andrews often joined the hunt with relish. To his credit, Andrews recognized the brutal efficiency with which 20th-century whalers operated and drafted a bill (which never made it to the floor of Congress) that would have regulated the industry. Ever the Progressive, he embraced the whale hunt while seeking efficient, scientific means by which to sustain it. Ultimately, Kroll contends Andrews was ?part of a larger project of transforming the ocean into a geography of sport, an endeavor in which ocean fauna became game for America?s leisure class? (p. 29).

If Andrews was the Progressive conservationist who connected with the ocean wilderness by hunting its inhabitants, his colleague at the AMNH, Robert Cushman Murphy, was, in Kroll?s estimation, a romantic who believed that, like the American West, the ocean environment had changed dramatically due to the pressures of mechanization. Just as the railroads facilitated the exploitation of western resources, the modern steamship transformed the sea. And the only way to prevent the ocean?s further destruction, Murphy believed, was to construct a more accurate biological and historical assessment of its resources. His 1936 *Oceanic Birds of South America* led the Peruvian guano industry to adopt more sustainable practices. His environmental history of New Zealand urged decision-makers there to rethink agricultural policies in light of past human-induced environmental changes. Nevertheless, Murphy?s efforts were but short pauses in the broader patterns of environmental decline. As Kroll shows, Murphy was convinced that both terrestrial and marine environments were ?trapped in a destructive human process of discovery, exploitation, and exhaustion? (p. 64), a process set in motion when humans, ignoring the history of a place, came to believe its resources were inexhaustible.

Murphy acknowledged that oceans were deeply human spaces, but others saw in the sea a space that was wholly wild. On September 22 1932 ocean explorer William Beebe, while bobbing off the coast of Bermuda, climbed into a steel ball, or bathysphere, and was lowered on a cable to a depth of 2,200 feet. Via telephone, Beebe described what he saw ? fish, eels, orange and blue-white bioluminescence ? and those transmissions were broadcast over live radio. He later wrote several articles and a book about his exploits, which in Kroll?s estimation examined what has been called the ?pastoral impulse?, or the transformation of wilderness from something negative to something worth celebrating. What writers like Emerson, Thoreau, and Muir ?did for American [terrestrial] wilderness?, Kroll contends, ?Beebe did for the ocean? (p. 67).

Director of the New York Zoological Society?s Department of Tropical Research, Beebe cut his teeth as a scientist in the jungles of British Guyana, but in 1923 he entered a new phase of oceanographic research. His first expedition was an exploration of the Sargasso Sea in the Atlantic and Humboldt Current in the Pacific, places that Beebe characterized as ?wilderness[es] of water? (p. 70). On these surveys, Beebe often emphasized a preternatural quality to the deep sea. His trawls retrieved exotic ?grotesques, dragons, and gargoyles? from depths of up to three-and-a-half miles that, according to Beebe, ?made the fairies, hobgoblins and elves of Dunsany, Barry, Blackwood, and Grimm seem like nature fakery? (p. 73).

Beebe?s early oceanographic work earned him modest acclaim, but it was his bathysphere that made him famous and made the deep sea a point of interest among the general public. After a series of dives in 1930 the *New York Times* went so far as to compare him with Columbus, Magellan, and Cook (p. 80). In the summer of 1934 Beebe made his final and deepest descent to 3,028 feet. Later that year, he published a popular account of his bathysphere work in a book titled *Half a Mile Down*, which earned mixed reviews, particularly among the scientific community, which questioned the value of the dives. Beebe deflected their jabs, Kroll observed, by invoking the sublime in his portrayal of the abyss. Unable to collect specimens at such depths, Beebe instead emphasized his role as an explorer, crafting descriptions that evoked feelings of isolation, terror, timelessness, and unearthliness. ?[I] shall never experience such a feeling of complete isolation from the surface of the planet Earth?, he wrote, ?as when, a few months ago, I dangled in a hollow pea on swaying cobweb a quarter of mile below the deck of a ship rolling in mid-ocean? (p. 89). Beebe

piqued American curiosity about a vast, new ocean world filled with awe-inspiring spectacles. These otherworldly qualities, Kroll contends, added legitimacy to his work and led many to believe that the ocean deserved protection.

Beebe's deft evocation of the sublime earned him acclaim, but none was able to convey a sense of wonder about the sea so elegantly as Rachel Carson. Although Carson was best known for her 1961 *Silent Spring*, which exposed the environmental disaster caused from overuse of the pesticide DDT, Kroll contends that her earlier work, *The Sea Around Us* (1951), warrants a closer examination. He argues that it was Carson who during the 1950s did much to transmit an "ocean-centric depiction of the earth in which humans were insignificant participants in a drama dominated by the role of the ocean" (p. 97).

After completing a Master's degree in biology at Johns Hopkins in 1932, Carson began working for the U.S. Bureau of Fisheries as a writer and editor. When one of her bureau articles titled, "World of Waters" was deemed inappropriate, Carson submitted it to the *Atlantic Monthly*, which published the article, earning Carson accolades. The essay's ocean descriptions melded poetics with scientific understanding and became the foundation for her first book titled *Under the Sea-Wind* (1941). In her combination of nature and science writing, Carson forged a new genre, which reached its apotheosis in *The Sea Around Us*. Launching her career as a scientific nature writer, the book highlighted the extent to which man was but an inconsequential speck on the surface of the earth's vast oceans. Writing in the wake of the Second World War, Carson admonishes mankind for its hubris. "The *Sea Around Us*," Kroll contends, "functioned as an anodyne for a national consciousness struggling to come to terms with the all too dominant stature of the American ego" (p. 119).

But in highlighting man's insignificance in the face of an inviolable ocean, Carson suggested, like so many terrestrial environmental observers before her, that humans could not fundamentally change an eternal sea. Kroll, however, is careful to point out that in the preface to the second edition of *The Sea Around Us* (1961), Carson changed her opinion. Having witnessed the destructive effects of nuclear testing, she admitted, "This belief, unfortunately, has proved to be naïve" (p. 122). Although Carson's *Silent Spring*, Kroll notes, has been widely accepted into the canon of American nature writing, it was *The Sea Around Us* that extended the ideas of Thoreau, Muir, and Leopold to the ocean. For Carson, Kroll explains, "The ocean became valuable not as a resource but as a symbolic geography of humility" (p. 123).

Examining gender and the ocean frontier, Kroll's chapter on ichthyologist Eugenie Clark, posits that the culture of exploration underwent major changes following the Second World War. Clark earned recognition because, as Kroll points out, she was a woman working in a "dangerous" male-dominated profession. Known as the "Shark Lady," Clark rose to prominence because she seamlessly combined traditional domestic roles with those of the postwar "career woman." Through her explorations, Kroll argues, Clark extended the culture of domesticity into the ocean. "In Clark's capable hands," writes Kroll, "the ocean became an extension of the home, a safe place filled with innocuous and beautiful organisms" (p. 128).

Clark was a scientist who reveled in making the undersea world accessible to the wider public. After earning a Ph.D. in zoology at NYU, she joined a project called the Scientific Investigations of Micronesia, where she was charged with surveying the poisonous fish of the South Pacific. In 1950 she went to Egypt to conduct diving surveys of fish in the Red Sea. Recounting her experiences in her 1953 *Lady with a Spear*, Clark described the sea in romantic and even docile terms. To one interviewer Clark explained, "It is one of the jobs of the marine biologist to make the environment of the sea more familiar and hence safer, through studying and understanding the animals which live in it" (p. 135). Although her readership was interested in her descriptions of exotic undersea environments, they were more fascinated, Kroll explains, by Clark herself "a woman who with fins on her feet and a spear in hand defied the gender norms of the time and made the sea a gentler place in the process."

The domestication of the sea was most evident in Clark's shark studies. At the Cape Haze Laboratory on Florida's Gulf Coast, Clark placed two lemon sharks and three nurse sharks in a pool and began a series of behavior studies. Among other experiments, she trained the sharks to respond to both a dinner bell and a

target for acquiring food, in essence, Kroll contends, domesticating one of the most fearsome predators in the ocean. She came to understand sharks in a way that, despite the release of the film *Jaws* in 1975, helped dispel the myth that all sharks were simply creatures to be feared. Clark believed that the human mistreatment of sharks often caused their aggression. "We should mind our manners?", she wrote. "If we break the rules and antagonize our hosts, we should be prepared to deal with the consequences?" (p. 146).

Clark's career as a scientist and explorer was in many ways complemented by her role as a mother. She often commented on how swimming and diving had helped her pregnancies, suggesting that to avoid discomfort, pregnant women should "just strap on an aqualung and go down to 16 feet. Then sit on the bottom for about an hour" (p. 145). Magazines often emphasized her dual role as mother and scientist, a woman who raised her children on the beach and then donned her mask to explore the nearby waters. Ultimately, according to Kroll, Clark at once embraced domesticity while defying it with her scientific career. Her ability to seamlessly combine the two promoted a new understanding of the ocean as a healthy, happy, homey place. This in turn, Kroll argues, transformed the American conception of the ocean wilderness from one of mystery and danger to one of domesticity and beauty.

Contextualizing the Cold War's effects on American conceptions of the ocean, Kroll concludes by examining Thor Heyerdahl, who jettisoned the technological trappings of modern civilization, and Jacques Cousteau, who fully embraced them. In 1947 Heyerdahl, with five crew members, sailed west from Peru for a 101 days on a balsa log raft. Christened *Kon-Tiki*, the raft travelled more than 4,300 miles to shores of the Tuamotu Islands to prove Heyerdahl's hypothesis that the Polynesian islands had been inhabited by people from South America. For Heyerdahl, the journey showed the purifying effects of the sea, particularly in a Cold War world plagued by destructive technology. A return to nature, he believed, would open the doors to peace. "Our voyage had united us with nature?", wrote Heyerdahl. "We had developed the senses of primitive man. We felt as if the ocean wind and the salt water had washed through body and soul and freed us from the problems that beset civilized man?" (p. 162).

Popularized in his 1950 book *Kon-Tiki* and 1953 Academy Award-winning documentary *The Kon-Tiki Adventure*, Heyerdahl's expedition did much to bring Polynesian culture to America. The Tiki image was soon ubiquitous in restaurants, bars, and contemporary fashion. Tiki culture was embraced by surfers in California and Hawaii and popularized in the music of the Beach Boys and in films like *Gidget* (1959). Ultimately, Kroll argues that the proliferation of Tiki culture following Heyerdahl's expedition "provided an oceanic balm for America's cold war anxiety" (p. 176).

Whereas Heyerdahl escaped modernity on the ocean, Jacques Cousteau established a relationship with the underwater world using the latest available technology. "His work and his representations?", Kroll explains, "often had less to do with fish and coral reefs than with the technologies that enabled the human movement into, and conquest of, the ocean frontier" (p. 169). Following a car accident that crippled his left arm, Cousteau began swimming, diving, and spearfishing in his home waters of coastal France. During the early 1940s, Cousteau and a business partner produced the Aqua-Lung, the first device for self-contained underwater breathing, and in short order, they became the world's top distributor of scuba equipment. By the 1950s Cousteau was conducting underwater archeological research off Marseille and mapping underwater oil reserves in the Persian Gulf. He and his team then built a deep-sea submersible and a series of underwater research stations.

But it was Cousteau's entry into television during the 1960s that earned him widespread recognition. Although the first few episodes met with mixed reviews, *The Undersea World of Jacques Cousteau* soon adopted environmental protection as a unifying theme, which attracted a wider audience. He showed that although technology had in many ways caused environmental destruction of the ocean, it was technology that would ultimately lead to its repair. Cousteau even coined a term for his vision of technological environmental redemption: *ecotechnie*. If Heyerdahl was a rustic romantic who believed primitive communion with the oceans would deliver mankind from the anxieties modern civilization, Cousteau sought salvation by pushing the technological envelope.

Ultimately, what sets Kroll's book apart is that he doesn't simply ask *if* the ocean was a wilderness (in the terrestrial sense) by drawing tedious parallels. Rather, he identifies that wilderness frontiers are conceptual constructions shaped by culture and then maps the ways they changed over time. He discovered that by imposing terrestrial ideas about wilderness, no matter how benign – romance, motherhood, technological primitivism – onto the world's oceans, humans nevertheless precipitated their environmental decline. Although Kroll divides the book into separate biographical sketches, they follow a loose chronology and in several cases, he emphasizes professional connections between his subjects. Drawing from personal papers and letters, his subjects' published material, and contemporary newspaper and magazine accounts, Kroll skillfully balances his sources with his interpretations and the overarching narrative of each section. The result is a fast-paced book with ample detail. It's no coincidence that Kroll dedicated a chapter to Rachel Carson in which he highlights her ability to explain scientific concepts with poetic flair. In his pacing, word choice, and radiance of ideas, it is evident that Kroll has an eye for literary detail. Simply put, this book is well written.

Kroll's interpretation of the evidence is creative and smart. The final two chapters on Eugenie Clark, Thor Heyerdahl and Jacques Cousteau, are particularly strong. The chapter on Clark, which examines gender and the ocean, and the final chapter's section on Heyerdahl, which examines the proliferation of Tiki culture in post-war America, is downright entertaining. His analysis of American Museum of Natural History (AMNH) naturalist Roy Chapman Andrews examines 20th-century whaling in new light. Although Kroll considers the gruesome realities of the industry in broad terms, he also homes in on the ways the individual Andrews intellectualized the hunt. Ultimately, as Kroll is keenly aware, it was ideas that shaped an American ocean wilderness. Good environmental histories do not simply track change over time. Rather, they examine culture, perception, and the ways people like Andrews, Murphy, Beebe, Carson, Clark, Heyerdahl, and Cousteau thought about the world around them and how those ideas shaped the physical environment in return.

An important contribution to the growing fields of marine environmental and oceanic history, Kroll's work would have benefited from firmer placement within these growing and converging historiographies. By bridging terrestrial and oceanic environmental historiographies, he is pushing the scholarship forward. But ultimately, what is lost in the omission of a more detailed analysis of historical precedent is gained in its eminent readability. Kroll's book deserves ample praise.

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