Stewardship and Struggle

Managing Hawaii's Natural and Cultural Heritage

Tourism is Hawaii's largest industry. It employs more people and generates more revenue than any other sector. Beaches and water draw visitors like magnets. Swimming, sunbathing, and snorkeling are among the most popular activities.

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Surf breaks on sandy beaches. Mist hovers in patches, mingling with morning sunlight. Lush mountains rise first in the background, then in the foreground, as each bend in the road catapults you toward wave-tossed shores. Maui's Route 30, heading south from the port of Lahaina, rivals the best coastal highways in the world. Crashing waves suit motorists, but beach goers and snorkelers converge on the highway's mile marker 14. Mile 14 is a place where the water is clear and shallow. It has surf that's safe for kids, with abundant coral and sea life. It's a snorkeler's heaven and a manager's headache. At times Mile 14 is overrun with visitors. It has minimal parking and no sanitation facilities. And, as if that's not enough, Zoe Norcross of Hawaii's Sea Grant Program adds grimly, "it has been the site of shark attacks." Managers worry about visitor safety and fear the loss of pristine conditions. In many respects Mile 14 is a stand-in for sites up and down Hawaii's coasts—picture perfect, but precarious and poised on the brink.

In Hawaii, where sun, surf, sand, and sea life coalesce in places like Mile 14, stories of stewardship and struggle are common. The challenge of balancing use, enjoyment, and resource protection is never-ending. Here are three stories

of special sites and special people. The sites are diverse. The opportunities and constraints differ. The characters include managers, commercial service providers, local residents, and tourists. They all contribute to the unfolding drama.

Kealakekua Bay on the Big Island of Hawaii

Pali-Kapu-o-Keoua is a sheer cliff on the northern coast of Kealakekua Bay with a history spanning time, nature, and cultures. The remains of ancient chiefs found their hiding places among the numerous lava tube openings on Pali's 600-foot face. These sites were guarded by only the highest of Hawaii's bloodline, guardians of utmost dedication who were willing to sacrifice to maintain the secrecy and safety of the iwi—the sacred bones of the deities. Captain James Cook also found his resting place here. A skirmish over a missing boat created a cultural clash leading to Cook's death on this beach in 1779. Today Kealakekua Bay is still nearly pristine, boasting a spectacular diversity of marine life. Dive tour operators flock to Ka'awaloa Cave, while local outfitters shuttle tourists and kayaks to a drop-off point near Melinda Pali's craft stall—an operation that was grandfathered in as an existing/traditional use when the site became a State Historical Park in 1973. Then and now, Melinda uses her craft stall as a platform to transform casual strollers into visitors with a sense of place and a knowledge of how life, death, and the struggles between the two still permeate this bay. The bay itself is a designated Marine Life Conservation District and a State Underwater Park. There is no on-site management, but managers at Hawaii's Division of Aquatic Resources in Honolulu view Kealakekua Bay as a "single-issue site." And that issue is dolphins.

The dolphins use the bay as a sheltered respite from the open sea. It is an ideal place for them to feed, rest, and socialize. Recently, however, managers worry that human-dolphin interactions may be chasing the dolphins away. The crux of the problem seems to be kayakers; at least, that's what Harry Alu thinks. Harry is a self-appointed caretaker who volunteers approximately 30 hours per week at Kealakekua Bay. A native Hawaiian and fourth generation resident of the area, he was born one cove to the south of Kealakekua Bay. The Hawaiian word for citizen is Maka'ainana, which means "those who tend the land," and Harry embodies this Hawaiian ideal in many ways. Harry picks up trash daily. He hauled away garbage until the garbage cans

The western shore of the Big Island features burial sites, heiaus, monuments, and royal grounds that were home to several generations of powerful chiefs. Just south of Kealakekua Bay, native Hawaiians established a pu'uhonua, or place of refuge, where criminals could flee for their life and be absolved from their crimes. In this region, coastal management is closely aligned with the preservation of Hawaiian culture and traditional land use practices.

were removed. Then he put up "no trash" signs to protect this sacred and serene area. He used fallen limbs as barriers to prevent cars from damaging tree roots. He planted cocoa, plumera, oyster, ginger, ti, and spider lily plants, paying $25 to an adjacent land owner for water for his plantings. He spearfishes at night and harvests lobster from caves, like previous generations. And he monitors what goes on in Kealakekua Bay.

Harry observes the interaction between visitors and the dolphin population in the bay. In December 2002, Harry estimated that the largest local outfitter, Pineapple Park, had 50 kayaks to rent; other vendors had 30 to 40 kayaks each. On high use days he counted approximately 45 kayaks on the bay. On an average day, he saw about 25 to 30 kayaks. Harry has observed kayak groups "leap frogging" dolphins—that is, paddling to where they think the dolphins are heading. It's illegal to directly approach or harass dolphins, so leap-frogging is a strategy that bends the rules, providing paddlers with a seemingly legitimate way to be with dolphins. He's observed tour companies dropping kayakers off at locations where dolphins are present. He suspects that outfitters have neglected to advise kayakers not to approach dolphins. A recent web search seems to confirm his suspicions. A local outfitter promotes themselves online as "kayak central," advertising that clients can "swim and kayak with dolphins…for your total Big Island adventure." Harry has seen a decline in spinner dolphins, a species of special management concern. By his estimate, in 2002, Kealakekua Bay hosted fewer than two or three dolphins per week .

Linda Shea Flanders, a Hawaii Division of Aquatic Resources employee, and Theresa Coble (not pictured) interviewed Harry Alu in December 2002 at Kealakekua Bay. In the short time that we met with him, it became clear that his deep appreciation for the site had inspired acts of care and service.

Kealakekua Bay may be a single-issue site, but the issue remains unresolved there and elsewhere. Dolphins, like sea turtles, humpback whales, and other marine life, hold a fascination for visitors. People want to connect with the meanings these creatures represent, including playfulness, resourcefulness and beauty. The need to connect with other living things may be a deep-seated urge, something hardwired into the human psyche. If so, then education is even more essential to balance use, enjoyment, and protection. An interpretive approach is to tell the story of Harry Alu, his local partners, and their stewardship efforts. The Kealakekua story suggests that even at a single-issue site, there are multiple opportunities to work together to preserve the resources and experiences that make the site special.

Molokini Shoal, Maui

On Maui, visitation frequently starts off-shore and stays off-shore. Cruise ships dock outside Lahaina and Kahului. Shopping and beach activities lure some visitors ashore, but others use their shore leave to whale watch, snorkel or take surfing lessons. Maui also serves as the gateway to the Hawaiian Islands Humpback Whale National Marine Sanctuary. The sanctuary comprises five marine protected areas distributed across the main Hawaiian Islands. It covers about 1,400 square miles. The largest contiguous portion of the sanctuary—about half the total sanctuary area—surrounds Maui, Lanai, and Molokai.

Claire Cappelle, a sanctuary employee, notes, "my co-workers and I never meet 97 percent of the people visiting the sanctuary." That translates to a lot of visitors who are not exposed to sanctuary programs and services, visitors who may not appreciate the area's unique resources. The Pacific Whale Foundation, headquartered on Maui, is a non-profit organization in a sea of commercial tour operators. With their for-profit counterparts, the Foundation interacts with that 97 percent of visitors who bypass sanctuary employees. They offer whale watching adventures, dolphin ecotours, sunset and dinner cruises, and Molokini snorkel tours. The foundation's mission is to "inspire and promote appreciation, understanding and protection of whales, dolphins, coral reefs and our planet's oceans," but the mission and motives vary among the operators who converge on Molokini Shoal.

Molokini is a crescent-shaped island located approximately three miles off Maui's southwestern coast. Molokini Island is the remnant of an extinct volcanic crater. A shallow inner cove formed by the crater's submerged floor provides 77 acres of habitat for coral, tropical fish, and other marine species. Molokini is considered one of the top 10 dive sites in the world. By plunging into this underwater realm, one may leisurely observe the inner-workings of a vibrant coral reef ecosystem with visibility exceeding 100

feet in any line of sight. It's a mecca for tour operators, and that's where the trouble begins.

Russell Sparks, an education specialist for Hawaii's Division of Aquatic Resources on Maui, indicates that about 20 years ago Molokini experienced a great deal of anchor damage to the coral reef. To rectify the problem, the division installed 26 permanent moorings, alleviating coral impacts. However, a new problem emerged. The size of vessels converging on the spot has increased dramatically. Russell estimates that, on average, commercial boats today are three times bigger than they were in the past. Larger vessel size concentrates demand on the best mooring locations and increases the number of visitors crowded into that small area.

Moorings were intended to be allocated on a first-come, first-served basis. However, individual operators have apparently "laid claim" to specific moorings and, in a free-for-all fashion, they attempt to intimidate and oust interlopers. After all, the stakes are high. Each commercial operator has paying customers who were promised a Molokini snorkeling experience. Russell also believes that mooring competition has displaced non-commercial vessels; thus a whole category of users may have been eclipsed from the site.

Managers have problem-solving options, but solutions can be expensive in terms of start-up costs and staff time. Further, with no on-site personnel and limited jurisdiction, implementation can be tricky. Situations like this sometimes continue for years before enough people recognize the problem, understand the range of options, and are prepared to make the necessary concessions. Until then, tourists are part of the solution. Visitors can and should report any ecological impacts and unacceptable behavior they observe. If enough visitors call attention to a situation, change can be initiated. Molokini illustrates that both visitors and commercial operators are essential partners in managing the marine resource. Further, commercial service providers can improve resource protection and enhance visitor experience through their educational and interpretive efforts.

Hanauma Bay, City and County of Honolulu, Island of Oahu

In contrast to Molokini's relative seclusion, Hanauma Bay has remained in the public spotlight for decades with management actions scrutinized and controversial decisions contested. Specifically, the amount and type of use permitted on-site have been lightning rods of contention. Conventional wisdom suggests that once a use becomes entrenched at a site, practitioners tend to view that "historical use" as a right. The same is true for use levels. Once a site is overrun, it's hard to decrease use density. In fact, among recreation managers, it is almost axiomatic that there's no going back. Hanauma Bay Nature Preserve,

This crowded beach on Hawaii's big island is typical. Heavy visitation represents a challenge to interpretive managers trying to maintain cultural and natural resources on the island.

10 miles east of Waikiki Beach is the exception that, in this case, disproves the rule.

Since the bay lacks a fresh water supply, ancient Hawaiians primarily used the bay for fishing. In 1810, when the Kingdom of Hawaii was formed, Hanauma Bay became the property of King Kamehameha I. For many years the bay was the favorite fishing camp of Hawaiian royalty. Then and now, the bay teems with aquatic life.

Bluestripe snapper, spotted pufferfish, moray eels, reef triggerfish, bluefin trevally, squid, sea cucumber, sea urchins, octopus, green sea turtles and several species of tang and butterfly-fish thrive in the reef ecosystem. In 1967, amid much opposition, the 101-acre bay was designated as Hawaii's first Marine Life Conservation District. At that point, the harvesting of sea life came to an abrupt end. But other uses rushed in to fill the void. Visitors flocked to the beach, fed the fish everything from peas to potato chips, and snorkeled among the coral. Commercial use escalated. During peak periods, a university study estimated that commercial buses dropped off about 42 people every 57 seconds. Concern was expressed that the coral was being trampled to death. By the late 1980s, when visitation reached its peak, about three million visitors a year descended on Hanauma Bay, cramming into two acres of sand and three acres of grass.

At that time the public and

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managers recognized that things needed to change, and change they did. Much of the credit goes to two managers: Alan Hong, who's employed by the City and County of Honolulu, and Peter Rappa, who works for Hawaii's Sea Grant Program. They persevered despite bureaucratic obstacles and political pressure. They built coalitions to safeguard resource conditions, ensure a quality visitor experience, and strengthen visitor understanding and appreciation for Hawaii's marine environment. They accomplished feats of recreation management that are the makings of legends.

The managers reduced the number of visitors by two-thirds, from about 10,000 people per day to approximately 3,000. They took the biggest bite out of visitation levels by eliminating commercial use of the site (except at upper level overlooks). Access was limited to the site by prohibiting overflow parking. Modest admission and parking fees for nonresidents were implemented. Next, they launched a conservation education program with their partner, the Friends of Hanauma Bay (and numerous benefactors). This included an education center with state-of-the-art exhibits and hands-on opportunities to learn about Hanauma Bay's history, geology, and marine life. In addition, they created a seven-minute orientation video that is mandatory viewing for all first-time visitors. Now everyone hears a conservation and safety education message before entering the water. Finally, admission tickets specify a viewing time for the orientation video, so visitors access the beach in controlled pulses via concessionaire-operated shuttles. Peter says with a smile, "The crowds are now more manageable, illegal parking has been eliminated, and the amount of litter and garbage has been reduced by 70 percent."

Some of these "feats" of recreation management inconvenience visitors. There's no doubt about it. But the story of Hanauma Bay shows how a couple of enterprising managers used a variety of management techniques, including access restrictions, admis-

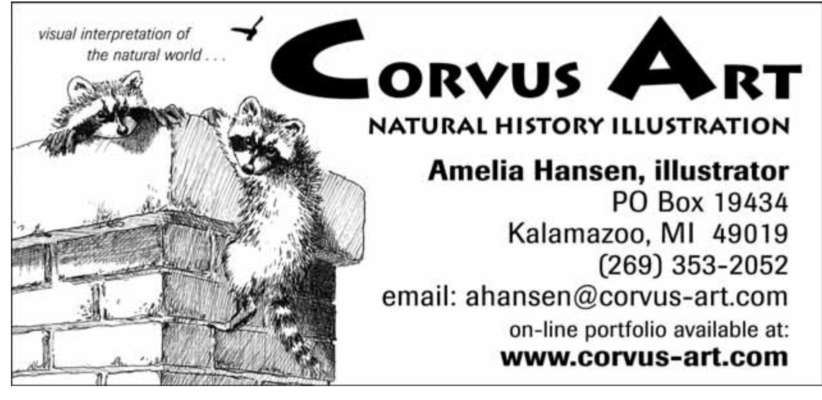
sion and parking fees, mandatory education programs, transportation systems, and plain old "do's and don'ts," to turn a site around, protecting resources and preserving experience quality.

Management Challenges, Resource Heroes

Hanauma Bay averages about 3,000 visitors per day. One island to the west, Kauai sees approximately 28,000 tourists per day. Keith Nitta, a planner for the county of Kauai, tells the story of a recent shift from a plantation-era land ethic of open coastal access to the exclusionary mindset of current shoreline landowners. Equally challenging are changes in visitor behavior. Keith explains, "We have a lot of untouched things that now people want to touch." Dave Aplin, then a manager at the Kilauea Point National Wildlife Refuge, quickly adds, "or stab!"

Managing Hawaii's coasts and ocean waters means managing consumptive and nonconsumptive use of the area's natural resources. Some marine areas are designated as "no take" zones, but most marine protected areas permit recreational angling, collecting, commercial harvesting, and traditional uses. In a 2002 interview, Brian Harry, superintendent of the Pacific Islands Support Office for the National Park Service, confided, "Our impression is that harvesting impacts are more significant than visitor-use impacts." And, he might have added, often more challenging. Coastal and marine managers in Hawaii wrestle with facilitating consumptive use while maintaining resource quality. They also wrestle with the challenge of protecting resources when sites have no special designation.

Sara Peck works for Hawaii's Sea Grant Program on the Big Island of Hawaii. She is passionate about Kahalu'u Bay and its unique resources. She claims the site is the best example of huge ancient lobata corals (*Porites lobata*). It also has a diverse fish population. It's shallow. And it's a great site for public education. Each year, 450,000 visitors flock to a site that's



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smaller than Hanauma Bay. Sara thinks the site is "well over carrying capacity." But without designation, she's limited in the management actions she can take. She can and does emphasize education and volunteer monitoring efforts, however.

Sara works with high school students to collect baseline data on the number of seconds of contact with live coral per person per entry in the bay. She also monitors visitors who've attended a "Reef Teach" program that explains how to protect coral to see if their behavior differs from those who were not exposed to the program. She wants to know if educational efforts make a difference in visitor behavior. Her goal at the site is to "try to get people to keep their feet off the reef!" Sara's approach to protecting this environment combines management, education, and research, tailoring actions to meet the needs of the site.

Aldo Leopold once said, "Barring love and war, few enterprises are undertaken with such abandon, or by such diverse individuals, or with so paradoxical a mixture of appetite and altruism as…outdoor recreation." Perhaps the sea ups the ante on terrestrial management, magnifying the appetite and the altruism. Perhaps it concentrates these tendencies to a flashpoint of conversion. Leopold highlights what we're up against. Norbert Wu, renowned ocean photographer, points the way ahead: "People protect what they know and love. Unfortunately, the world's oceans and their problems are not familiar to most people, and so they're ignored. I'm hoping I can help bridge this lack of awareness and help people understand the beauty, importance, and fragility of our oceans."

In Hawaii, managers, visitors, commercial operators, and local residents all play an important role in protecting coastal and marine resources. The sites are diverse. The opportunities and constraints differ. But in every case, each member of this cast of characters can contribute to protecting resources, preserving quality visitor experiences, and promoting increased understanding

and appreciation for the marine environment. This article showcases the efforts of those who strive to do just that, each a steward in their own way.

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The Delicate Balance of Culture and Nature

In 1976 the Polynesian Voyaging Society (PVS) navigated a canoe modeled after ancient vessels, from Hawaii to Tahiti. This nautical feat was accomplished without instruments by Micronesian navigator Mau Piailug. Thirty-three days after departure, 17,000 Tahitians—more than half the island's population—turned out to greet the canoe. According to PVS, "What began as a scientific experiment to prove a theory about the settlement of Polynesia, touched a deep root of cultural pride in Polynesian people." What happened behind the scenes, before the journey commenced, is a little-known tale.

For nine months, the society scoured the Big Island of Hawaii looking for koa trees to serve as the hulls of their voyaging canoe. The search was exhaustive, but not a single suitable tree was found. Their migratory quest was reinvigorated when the native people of southeast Alaska gave the society two 400-year-old spruce logs. The society now reflects on this chapter in their saga thus, "The ancient Hawaiians built hundreds of voyaging canoes from koa trees, but in 1990, given the decline of Hawai'i's native forests, we were unable to build even one. This taught us a powerful lesson: the health of our culture is strongly tied to the health of our environment."

Eric Andersen, unit manager at Kipahulu District in Haleakala National Park, echoes this sentiment. He is pictured above with a koa canoe that is under construction using native craftsmanship and traditional materials. He suggests that the health of native and non-native culture is tied to our ability to connect to sacred sites, sacred stories: "…awareness is very good because with our ancient heritage sites, we can't lock them up and say, 'You can't go there, period. It's just too sacred.' We can't do that because then you lose the story—and you don't just lose the story, you lose the reverence for our heritage, and you lose the connection to the people who live today."

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