Burr Heneman – Bio, MCL Annual Meeting 2021

My environmental roots included important childhood years living on the west coast of Florida with the Gulf of Mexico outside the front door and a lagoon and mangrove forest in our back yard. When we moved north, I sailed on Long Island Sound and explored its shores on foot. Summers included backpacking and canoe trips in Maine and the Everglades.

My environmental career can be sorted, for convenience, into the four major themes that I've tried to make seem coherent below. I would add two other threads that run through the other four. One is a pattern of involvement with new ventures. The various planning processes were firsts of their kinds. The San Francisco Bay Harbor Safety Committee was a new, more participatory approach to maritime safety. The Marine Life Management Act is radically reforming California's ocean and fisheries management. 'Marine debris' as an umbrella issue, was a new idea. Mapping coastal currents created new science consortia to apply a new technology in an innovative way. The Packard Foundation's decision to create a first-ever global seabird conservation program. Even the project to build 'condos' for Galapagos Penguins was a novel conservation approach. The second common thread has been volunteerism. I began as an avid volunteer – in Marin – for MCL, CNPS, PRBO, and our national parks. That's how I got my start. In mid-career, I made time for as many volunteer projects as I could. And my involvement with environmental issues now is again as a volunteer.

1. Planning, mostly for how we live on the land – I moved to Marin and became involved with our environment in 1971. For me, it was the beginning of a golden age of planning. I was lucky to be invited onto the MCL board in the early '70s, where the redoubtable Frances Stewart and I were the West Marin committee for a while. As a young newcomer, I had as examples gods like Peter Behr, Grace and Ted Wellman, and youngsters such as Nona Dennis, Susan Stomp, Phyllis Faber, and others. I learned from them how to think rigorously about basic values, trade-offs, short- and long-term effects, mitigation strategies, and how to advocate effectively.

In the '70s I was fortunate to be either near the center or on the periphery of a series of new and bold planning processes. The eccentric village I lived in developed its first community plan, largely without guidance from the County. The California Coastal Plan radically changed the future of undeveloped parts of the coast. In '73, GGNRA in California and Gateway in New York/New Jersey became the first examples of a new idea: urban national recreation areas, and GGNRA had a creative and vigorous Superintendent in Bill Whalen. I got to be part of developing the new park's first General Management Plan when Bill appointed me to his Trails Advisory Committee (1973-'75) and especially after Secretary of the Interior Cecil Andrus appointed me to the Citizens Advisory Commission, where I served with Ed Wayburn and Amy Meyer (late '70s-early '80s). At the same time,

the Commission advised the Point Reyes National Seashore as it developed its resource management plan.

I lost my volunteer status when Christo asked me to manage the environmental and construction planning for *Running Fence,* a 24-mile long, 18-foot high, white nylon curtain running through Sonoma and Marin counties (1975-'76). I was also involved in the permit process gauntlet before planning commissions and supervisors in both counties, the Regional and State Coastal Commissions, the State Lands Commission, and then all of those repeated after the State Coastal Commission denied a permit at the end of the first round.

I left Running Fence to co-found and launch Commonweal with Michael Lerner (1976-'80). I was originally drawn to the project by the opportunity to give the unusual, 1,200 acre RCA property in Bolinas a new beginning by introducing environmentally friendly stewardship, a process that Commonweal continues today.

I bought five acres in Bolinas in 1971 and immediately began the rewarding process of restoring native plant habitats to what had been an overgrazed pasture. The house followed. From 1976 to 1980 I built the house I designed, largely out of recycled materials, as was fairly common in West Marin in the '70s. I was practicing land-use planning and development as I believed it should be.

Beginning in 1980, my attention was taken up by a string of projects related to the ocean. But in recent years, I've returned to land, to Marin, to my Point Reyes Seashore backyard, and back to my volunteer roots with my involvement in the Seashore's ranch management planning (2013-present).

All of these experiences were about our relationship to land and how we change it, live on it, enjoy it, and preserve it. They also had in common being new ventures open to bold and original ideas. In other words, those years trained me to assume that progressive, even radical solutions should be on the table for consideration when addressing entrenched problems or new opportunities.

2. Oil spills — My career has been oddly punctuated by first-hand experiences with oil spills – four of them – beginning with the 1971 spill in the Golden Gate. Those spills then led to my involvement with policy work on oil spill response and prevention. The lesson I learned in each spill is that prevention is everything when it comes to major spills; response accomplishes little.

- 1971 Oil Spill — In January 197 two Standard Oil of California tankers collided in the Golden Gate, John Smail, Executive Director of Pt Reyes Bird Observatory, and I became volunteer logistics coordinators. Richardson Bay Audubon offered us office space, and we set up shop there. Our job was to support the hundreds of other

volunteers trying to save birds on beaches and clean them at the oiled seabird cleaning stations that popped up from Half Moon Bay to Bodega Bay. We all were trying to fill the vacuum created by the non-response from Standard Oil and the state. John and I spent the next several days moving volunteers, carboard boxes, cleaning agents, and rags to where they were needed and arranging transport of cleaned birds to the two main long-term rehabilitation center.

I paused my one-person carpentry business when the spill happened, thinking that would be for a few days. But when the San Francisco Zoological Society asked if I would manage the Oiled Seabird Rehabilitation Project based at the SF Zoo, I said yes. We released the last of the birds in our care five months later. (I didn't resume my carpentry business. I went back to my original career in broadcast news, taking a job as a news producer at CBS and KPIX-TV.)

- *Puerto Rican* explosion and fire — In October 1984, the tanker *Puerto Rican* exploded and broke apart eight miles outside the Golden Gate. The stern section sank. The urgent question was what to do about the bow section and who would do it. At the request of Congresswoman Barbara Boxer, I represented her on the Coast Guard's Regional Response Team until the bow section, after intense debate, was towed back into San Francisco Bay.
- In March 1989, the *Exxon Valdez* went aground on Bligh Reef. Immediately following the accident, the Ocean Conservancy (then, the Center for Marine Conservation, or CMC) asked if I would go to Alaska and write a report on the spill. I invited a colleague, Richard Townsend, to join me. We spent several weeks on Prince William Sound and in Anchorage and the Port of Valdez researching response to the spill. Richard and I wrote a 260-page report on the causes of the spill; the responses by Exxon, the State of Alaska, federal agencies, and Alaskan residents; and effects of the spill. My sections focused on the spill's effects on fisheries, marine mammals, birds, and oiled shorelines; wildlife rescue and rehabilitation efforts; and recommendations on spill response. Some of the recommendations in our report were included in both the federal and California oil spill prevention and response legislation that the Exxon Valdez spill inspired. (*The Exxon Valdez Oil Spill: A Management Analysis*, September 1989, Center for Marine Conservation, Washington, DC)

  Another consequence of my involvement in spills was that I was invited to serve on the Secretary of the Interior's Outer Continental Shelf Advisory Board, which I did for two years.
- Gulf War oil spill and fires — During the Persian Gulf War (January-February 1991), Saddam Hussein caused what is estimated to be the largest oil spill ever. At the same time, Iraqi forces set more than 700 oil wells on fire, causing enormous air pollution in the region, with fall out of soot at least as far away as the Himalayas. As the shooting stopped, a Scottish colleague, Roy Dennis, and I traveled to the Saudi Arabian Gulf coast to review response efforts and effects on seabirds, shorebirds and their habitats. We were representing the International Council for Bird Preservation and were there at the request of the Kingdom of Saudi Arabia's National Commission on Wildlife

Conservation. It turns out we were the first environmental NGO responders to the oil spill and fires. (My report was *The Gulf War Oil Spills: The ICBP Survey of the Saudi Arabian Gulf Coast, 1991*.)

Because of my prior experience in Saudi Arabia and Kuwait, I was invited by Brent Blackwelder to return to Saudi Arabia in June 1991 with an international investigatory team assembled by Friends of the Earth.

- Escort tugs for tankers — Because of my interest in spill prevention, I included the Sullom Voe oil port in Shetland on a personal trip later in 1991. Sullom Voe used state-of-the-art prevention techniques, and I wanted to learn about them.

  California's Oil Spill Prevention and Response Act, following the *Exxon Valdez* spill, created the San Francisco Bay Harbor Safety Committee, with members from industry, government, and the environmental community. I served as an environmental representative. (At the time, I was Director of the Pacific Region for the Ocean Conservancy – then CMC.) Incidents in which vessels lose propulsion or the ability to steer are more common than one would like to believe. Sullom Voe dealt with that hazard by requiring specialized tugs to escort tankers as they approached or left the port. My focus was on the Harbor Safety Committee was in similar tug escort requirements here. It took years, but tug escorts are now standard practice in San Francisco, San Pablo, and Suisun Bays and on the Sacramento River.

3. Ocean and fisheries management reform — This is the territory I was most significantly involved with for 25 years, and it began when I became executive director of PRBO (now Point Blue) in 1980.

- Gill netting — Shortly after I went to PRBO from Commonweal (1980), we discovered that coastal gill nets were a new and serious problem. We eventually learned that thousands of seabirds, mostly Common Murres, were drowning in the nets each year as well as large numbers of sea otters, harbor porpoise, and harbor seals. I devoted much of my time while I was at PRBO to the difficult issues surrounding this wildlife/fisheries conflict. After I left PRBO in 1984, I continued that work as the U.S. Marine Mammal Commission's consultant in California. We persuaded CDFG (now CDFW) to begin an observer program on gill net boats. I raised funds to double the number of observers CDFG could hire. Carol Fulton of Friends of the Sea Otter and I took the lead in organizing an environmental coalition and writing and successfully lobbying seven bills that, over a period of six years, gradually shut down the gill net fishery entirely. In the process, we worked closely with our friend and colleague Zeke Grader, head of of the Pacific Coast Federation of Fishermen's Association, the main commercial fishing organization in Northern and Central California, along with many other individuals and organizations from Marin to Monterey, including MCL and Marin Audubon.

  In my years of involvement in the gill net issue, I learned how dysfunctional the state's marine life and fisheries management was. Guiding policies were almost non-existent.

The Fish and Game Commission set seasons for recreational fisheries and had authority to do little else. Each question arising in a commercial fishery, every proposed change in regulations, no matter how detailed, required passing a new law. It seemed that the state's fisheries were managed by a committee of 120 state senators and assemblymembers. The education I got in how not to manage fisheries was to benefit me a decade later when I was drafting the Marine Life Management Act.

- Marine Debris — The various forms of human litter in the ocean did not have an umbrella name until 1982. John Twiss, head of the U.S. Marine Mammal Commission, recognized that separate problems ranging from plastic ingestion by sea turtles and seabirds to northern fur seal entanglement in lost and discarded fishing gear, from storm overflow at sewage treatment plants to medical waste on beaches were part of a common problem. He proposed calling it 'marine debris'. John prompted the National Marine Fisheries Service to organize the first international conference on marine debris in Honolulu in late 1984, and contracted with me to help organize it.

  John also contracted with me to help fill some of the information gaps on marine debris in the world's oceans. My assignment was to compile all the information that was known or could be readily gathered through interviews, questionnaires, and strategically targeted field work in the northwest Atlantic Ocean, the Caribbean Sea, the Gulf of Mexico, and the Pacific coast of Baja California. My report (1988) covered the types, quantities, sources, and effects of marine debris and mitigation actions in those areas. It was one of the documents distributed to attendees at the Second International Conference on Marine Debris in 1989. I also presented one of the six overview papers at the beginning of the conference. (I chose not to stay involved with that issue. I had concluded that it was not one of the two or three greatest threats to our oceans and that there were no practicable solutions that would come from the U.S. where little of the ocean's burden of marine debris originates.)

- Federal fisheries management — When I was director of the Pacific region for the Ocean Conservancy (then CMC) in the early '90s, national environmental organizations were just becoming involved in federal fisheries management; we were one of the first and most active. Because I was known to the Pacific Fisheries Management Council through my involvement in the gill net issue, the Council picked me as the first environmental representative appointed to the Council's advisory panel for the troubled groundfish fisheries off of California, Oregon, and Washington. For the next four years, I spent five weeks each year in hotel meeting rooms with commercial and recreational fishermen, tribal representatives, processors, fisheries biologists, and management agency staff. It was an intense education for me in the what worked and didn't work under the federal Magnuson-Stevens Fishery Management Act. That education also proved to be useful to me for drafting the MLMA.
- Great white shark protection — While I was at the Ocean Conservancy (CMC), increasing knowledge of the vulnerability of the great white shark population led me to believe it was time to protect the species in at least part of its range. Much of what

had been learned was through research at the Farallones that had started when I was executive director of PRBO (now Point Blue), and I was still following the science closely. (PRBO/Point Blue manages the Farallones under a cooperative agreement with the U.S. Fish and Wildlife Service.) After putting together a coalition of sport and commercial fishermen, surfers, divers, and marine conservationists, I wrote and lobbied a bill carried by Assemblyman Dan Hauser and signed by Governor Pete Wilson. It made California the second jurisdiction in the world after South Africa to fully protect white sharks. The bill passed both houses without a vote cast against it. California had done its part in dispelling the legacy of fear that had lingered since *Jaws* in 1975. Several years later, white sharks received federal protection on the Atlantic coast and the entire Pacific coast.

- Marine Life Management Act — In 1996, Californians elected Fred Keeley, Santa Cruz, and Kevin Shelley, San Francisco, who would author two laws that have revolutionized the state's management of the marine life.

  Neither Fred nor his Dave Bunn, his legislative aide, had direct experience with the existing system – they just knew it needed reform. Fred asked if I would be willing to help. My odd combination of experience, unique in the environmental community, meant I understood the faults of both the state and federal fishery management systems. I already had considerable experience writing legislation in consultation with the Department, recreational and commercial fishermen, and the environmental community. It was a unique, change-making opportunity. I got to work with Fred, whom I consider to be a public service hero, and Dave. I also got to be part of a coalition of wonderful colleagues: Warner Chabot, who had succeeded me at Ocean Conservancy; Rod Fujita at EDF; Karen Garrison and Annie Notthoff at NRDC; Zeke Grader of PCFFA and many other California fishermen I knew from my days with the Pacific Fisheries Management Council. Fred Keeley couldn't hire me, but fortunately the Packard Foundation funded two years of my more than full-time work on getting the MLMA from bill to law. That was the beginning of a long relationship with the Foundation.

  The MLMA has completely overhauled the way fisheries, especially commercial fisheries, are managed in California. Most important, it moved California further than any jurisdiction except possibly New Zealand and Australia toward sustainable, ecosystem-based fisheries management – managing fisheries as though ecosystems matter. And it finally delegated broad management authority from the Legislature to the Fish and Game Commission and Department of Fish and Game (now Fish and Wildlife).

  Assemblyman Kevin Shelley, meanwhile, authored the Marine Life Protection Act, which passed and was signed into law a year after the MLMA. The MLPA, most of the credit for which goes to Karen Garrison of NRDC, is the basis for the other great reform of California ocean management: the eventual network of marine protected areas that dot the coast from the Oregon border to Baja California.

- Implementing the MLMA — When Governor Wilson actually signed the MLMA – not a foregone conclusion -- I realized that the previous intense two years with numerous conflicts to settle was the easy part. The Fish and Game Commission and the Department of Fish and Game would need help with the significant challenges of implementing the sweeping reforms and delegation of new authority in the legislation. Our two management agencies had limited experience or lacked resources to take on modern fisheries biology, management strategies, and public involvement processes. I was able to put together a large public-private partnership – the California Ocean Policy Program -- that was blessed by the Commission and Department and funded by the Packard Foundation, the National Fish and Wildlife Foundation, NOAA, the Marisla Foundation, and others. The program was housed at Commonweal, returning me to the institutional home I co-founded and had left almost 16 years earlier.

  (On the strength of the new MLMA and the promise of the California Ocean Policy Program, I was awarded a Pew Fellowship in Marine Conservation in 1999.)

  The California Ocean Policy Program enlisted outstanding marine scientists from California and beyond. They were eager to help with what looked to be a promising reform experiment. (Several had become colleagues through my Pew Fellowship.) We funded public involvement specialists to help with the stakeholder consultations required by the MLMA. We worked side-by-side with Department staff and the Commission as they developed the state's first ever fishery management plan. We helped build a progressive coalition of environmental organizations and fishermen to support the reform initiatives. Very significantly, the program provided four years of funding for the under-staffed Commission to retain its first Marine Policy Consultant. The Commission retained Mike Weber, a friend and colleague since 1980. Mike, who already had an impressive resume, became an enormously influential force in ocean policy reform over the next 15 years, in California and internationally, first from his position at the Commission and then at the Resources Legacy Fund. For five years starting in 1999, Mike and I worked closely together on all aspects of MLMA implementation. We also took on a side project: co-authoring the *Guide to California's Marine Life Management Act*. The first edition was published by Commonweal in 2000. We revised it, and the California Wildlife Foundation published the second edition in 2018.

- Krill protection — In 1999, I learned that a commercial fishery for krill had started in British Columbia. The krill was used to make feed for farmed salmon. Krill are one of the key forage species for many higher trophic level species, such as fish (including salmon), whales, and seabirds. I proposed to Zeke Grader and his board at PCFFA that krill should be protected in California before a fishery started here. Zeke and I drafted a bill carried by Assemblywoman Virginia Strom-Martin of Sonoma County, and California became the first U.S. jurisdiction to ban krill fishing. Several years later, the Pacific Fisheries Management Council adopted protection for krill off of California, Oregon, and Washington.

- Related projects — There were other, related projects from about 2000 to 2005. For instance, the California Ocean Policy Program received funding that allowed me to make small, strategic grants to advance the science needed to support the ecosystem-based fisheries management mandated by the MLMA. Internationally, I became an advisor to the Marine Stewardship Council. Among other things, I was able to help fund two MSC workshops on a new challenge in MSC certification: how to assess 'small-scale, data-deficient fisheries' for possible certification. In 2004, for example, the tiny Baja California red rock lobster fishery became MSC certified.
- Mapping coastal currents — My work from 2003 through 2006 included a detour from science and conservation of living organisms and systems into physical oceanography. It happened that I was instrumental in the Legislature's send $21-million of bond measure funding to the State Coastal Conservancy to finance what became the Coastal Ocean Currents Monitoring Program (COCMP). The Coastal Conservancy asked me to help organize and launch the program, which I did over the next three years with Paul Siri, a friend and former Assistant Director of the Bodega Marine Lab. The science coalitions we organized included Scripps Oceanographic Institution, Cal Tech, University of Southern California, UC Davis, UCLA, Monterey Bay Aquarium Research Institute, SF State University, and Humboldt State University. COCMP used low-cost, shore-based, high-frequency radar stations on the entire coast to map the complex details of coastal surface currents in near real-time. A relatively new technology then, it has turned out to be a useful tool for applications from tracking and predicting oil spill trajectories to siting marine protected areas. California's program eventually became part of the U.S. Integrated Ocean Observing System: https://ioos.noaa.gov/project/hf-radar/

1980–2005 —Three of 'my' oil spills were during this period as well as significant detours into marine debris and physical oceanography, but the most significant projects involved how California manages its fisheries and marine wildlife. Writing legislation turned out to be a common theme for this period: solving the gill netting conflicts with seabirds and marine mammals; protecting great white sharks, a species at the top of the ocean food chain; protecting krill, a key species near the bottom of the food chain; and radically reforming California's ocean and fisheries management system through the MLMA.

4. Seabirds — Although I had been involved in oil spill prevention and response, marine debris, and fisheries management since 1971, seabirds were my great love. That fascination began when, as a 14-year old, I was visited Matinicus Rock, far off the Maine coast, with Roger Tory Peterson. I had the thrill of thrusting my hand far into a storm-petrel burrow and withdrawing a fluffy chick and banding it. My acquaintance with seabirds resumed after the 1971 oil spill when I spent days and nights for long stretches in the San Francisco Zoo's tropical aviary where we were rehabilitating Common Murres. That summer and the next I volunteered for PRBO banding cormorants on the Farallones. And when I was PRBO's executive director, I spent as much time on the Farallones as I could get away with, especially during the breeding season for the islands' 100,000 or so seabirds. (That

figure in 2020 is about 300,000, mostly Common Murres, whose population has recovered from the impacts of oil spills, gill netting, and the 1982-1984 El Niño.) In 1996, I returned to the Farallones for two months as a volunteer. My assignment was daily monitoring of the Common Murre study plot, one of the long-term seabird studies that had begun 25 years earlier. The following summer, I returned to Matinicus Rock for two months as a volunteer for Project Puffin, which is restoring several seabird species to islands in the Gulf of Maine. Other independent seabird studies took me to Shetland and the Pribilof Islands.

- Global seabird conservation — In 2006, the David and Lucile Packard Foundation decided to start a global seabird conservation program – a first for any foundation – and invited me to design and help launch it. The two main strategies were obvious. Most funding was devoted to restoring islands by eradicating invasive species that harm seabirds. (About 30% of the world's seabird species are on the IUCN Red List. More than 90% of those species breed on islands that have threats from invasive species. Invasive species eradications, done correctly, are as close to a permanent solution as there is in conservation biology.) A secondary strategy was a campaign to reduce mortality of albatrosses and other threatened seabirds in fishing gear, primarily long-line fisheries for tuna and swordfish. The Foundation funded me for four years, and again I based the project at Commonweal. Fifteen years later, the Foundation is still funding this program, now managed internally by a Foundation program officer. In that time, many islands, large and small, have been restored, for both seabirds and other species that share those biodiversity hot spots.
- Galapagos conservation — In 2009, I returned to my volunteer roots. Dee Boersma of the University of Washington asked me to join her and Godfrey Merlen, the great Galapagos naturalist/conservationist, in a Galapagos Penguin research and conservation project. Over the next three years, we spent many weeks cruising the western Galapagos islands, catching penguins for banding and measurements, building artificial penguin 'condos', and generally exploring the wonders of those islands. It was an experience of a lifetime. And our experiment of providing artificial nest sites for the penguins worked. We demonstrated that penguins used our 'condos' and that the approach can help keep this rarest of the world's penguin species from extinction.

  During those years, I became intensely involved with the Charles Darwin Research Station and its parent organization, the Charles Darwin Foundation. That led to my being elected president of the Foundation, a position I had to give up, along with the field work with Dee and Godfrey, after I broke my kneecap (at home – not on the Galapagos). But before I had to bow out, we began and completed a planning process that fundamentally changed the Foundation's research priorities to focus more on science needed for high-priority management issues in Galapagos National Park.