

Biography of Captain Charles Moore

Algalita Marine Research Foundation Founder and Research Coordinator



A third generation resident of Long Beach, California, Captain Charles Moore grew up in and on the Pacific Ocean. His father was an industrial chemist and avid sailor who took young Charles and his siblings sailing to remote destinations from Guadalupe Island to Hawaii. Charles attended the University of California at San Diego where he studied chemistry and Spanish.

After 25 years running a woodworking and finishing business, Charles founded Algalita Marine Research Foundation in 1994. In 1995 he launched his purpose-designed, aluminum-hulled research vessel, *Algalita*, in Hobart, Tasmania, and helped organize the Australian Government's first "Coastcare" research voyage to document anthropogenic (human-caused) contamination of Australia's east coast. Upon his return to California, he became a coordinator of the State Water Resources Control Board's Volunteer Water Monitoring Steering Committee and developed chemical and bacterial monitoring methods for the Surfrider Foundation's "Blue Water Task Force." As a member of the Southern California Coastal Water Research Project's Bight '98 steering committee, he realized the need for and provided a research vessel so that Mexican researchers from Baja California could participate for the first time in assessing the entire Southern California Bight along the coastline from Point Conception to San Diego.

Oceanographic Research Vessel *Algalita* and its Captain found their true calling after a 1997 yacht race to Hawaii. On his return voyage, Captain Moore veered from the usual sea route and saw an ocean he had never known. "Every time I came on deck to survey the horizon, I saw a soap bottle, bottle cap or a shard of plastic waste bobbing by. Here I was in the middle of the ocean and there was nowhere I could go to avoid the plastic." Ever since, Captain Moore has dedicated his time and resources to understanding and remediating the ocean's plastic load. Along with collaborators from the Southern California Coastal Water Research Project he developed protocols for monitoring marine and beach micro-plastics which are now used worldwide.

He is the lead author of two scientific papers published in *Marine Pollution Bulletin*:

- "A Comparison of Plastic and Plankton in the North Pacific Central Gyre". Article by C.J. Moore, S.L. Moore, M.K. Leecaster, and S.B. Weisberg, Algalita Marine Research Foundation and Southern California Coastal Water Research Project. Published in *Marine Pollution Bulletin* 42 (2001) 1297–1300.

- "A Comparison of Neustonic Plastic and Zooplankton Abundance in Southern California's Coastal Waters". Article by C.J. Moore, S.L. Moore, S.B. Weisberg, G.L. Lattin, and A.F. Zellers; Algalita Marine Research Foundation and Southern California Coastal Water Research Project. Published in *Marine Pollution Bulletin* 44 (2002) 1035–1038.

The first paper documented his 1999 study, which shocked the scientific world when it found 6 times more plastic fragments by weight in the central Pacific than the associated zooplankton. His second paper found that plastic outweighs plankton by a factor of 2.5 in the near coastal surface waters of Southern California.

He also is the sole author of a review article in the October 2008 issue of *Environmental Research*, "Synthetic polymers in the marine environment: A rapidly increasing, long term threat," and along with Richard Thompson, Fred vom Saal, and Shanna Swan, edited the July 27, 2009 Theme issue of the *Philosophical Transactions of the Royal Society B* titled "Plastics, the environment and human health."

To date, Captain Moore has conducted ocean and coastal sampling for plastic fragments through more than 40,000 miles of the North Pacific Ocean, across 22 degrees of latitude and 70 degrees of longitude. His latest 10,000 mile voyage took him and his crew two-thirds of the way to Japan across the International Dateline. Captain Moore's work has been highlighted in numerous major media outlets, including ABC's Nightline, Good Morning America, National Public Radio, Rolling Stone, and The Wall Street Journal.