

Biography

Roger Payne, Ph.D.

Founder and President, Ocean Alliance
32 Horton Street, Gloucester, MA, 01930, USA

Education:

The Dalton School, NYC; Summit NJ High School; Horace Mann School, Bronx, NY
B.A. Harvard University, 1956. Major in Biology
Ph.D. Cornell University, 1961. Major in Animal Behavior

Principal Research:

My early work was on hearing in bats, owls, and moths. My longest efforts have been studying baleen whales, with particular emphasis on acoustics, behavior, and levels of ocean contamination that affect them. At present I am part of "[Project CETI \(Cetacean Translation Initiative\)](#)", which is a 2020 TED [Audacious Project](#) in which I am one of attempting in alliance with others from several disciplines to use advanced machine learning and non-invasive robotics to listen to and translate the communications of sperm whales.

Present Position:

Founder/President, Ocean Alliance (founded in 1970 as the *Long Term Research Institute*, name changed to *Whale Conservation Institute* in 1988 then to *Ocean Alliance* in 1993)

Previous Employment:

1985-Present President, Ocean Alliance, the Institute I founded in Lincoln, MA, 1970, (The institute moved to Gloucester, MA in 2013)
1971-1984 Adjunct Associate Professor, Rockefeller University
1966-1971 Assistant Professor, Rockefeller University
1966-1983 Research Zoologist at Institute for Research in Animal Behavior (IRAB) Run jointly by Rockefeller University (51%) and the New York Zoological Society (49%). NYZS has since changed its name to the Wildlife Conservation Society (WCS).
1963-66 Assistant Professor of Biology, Tufts University
1961-63 Instructor in Biology, Tufts University
1961-64 Post Doctoral Appointment with Tufts Univ. Insect Physiologist, Prof. Kenneth Roeder
1957-1960 Assisted Cornell Prof. Thomas Eisner (Lab Asst, in Eisner's Introductory Biology course)
1957&58 Both summers Common Laborer in Otto Kapp Construction Company, Ithaca, NY. (How I earned tuition money while doing my dissertation research on owls in evenings).
1956-57 ^{winter} Research Assistant to Dr. William Drury, Massachusetts Audubon Society, Lincoln, MA
1953-55 Student Assistant to Professor Donald Griffin, Harvard Biology Dept.
1953-54 Asst., to head Periodicals librarian, Harvard Widener Library.
1953-54 Elevator operator, 55 E. 76 St., NYC (I often worked on weekends and holidays)
1953 ^{summer} Removing 180 feet of permafrost loess for Fairbanks Exploration Co., gold mine in AK.

Past Research Experience:

1955-56 I was a Student Research Assistant to Professor, Donald Griffin, Harvard University. studying bat echolocation, and helping run homing experiments in which we displaced nesting terns 500+ miles.

1955-56 Senior Thesis on the directional sensitivity of bats' ears (by recording cochlear microphonics).

1956-61 I wrote papers and my Ph.D. dissertation. I showed that barn owls can locate prey acoustically and strike it in total darkness based solely on hearing passive sound-clues made by their prey.

As a Cornell graduate student I assisted Prof Thomas Eisner with research on the defensive secretions of arthropods, which led to post-doctoral research in Kenneth Roeder's Laboratory at Tufts University.

Post-Doctoral Research:

I studied the directional sensitivity of the ears of noctuid moths and the neurophysiological correlates employed by these moths to avoid bats (with Dr. Kenneth Roeder, Tufts University)

Recent Research:

2020-2025 Project CETI: Designing and helping develop equipment with which to track sperm whales while recording their behavior and their clicks in an effort to translate the meaning (if any) of the sounds they make. The ultimate goal is to understand 'Sperm Whale Speak' well enough to be able to communicate with this species. CETI got one of the Audacious Grants the TED Foundation awards.

2010-2015. Gulf of Mexico Research: I participated in Ocean Alliance's 5-year research project in the Gulf of Mexico under the direction of Drs. John Wise and Iain Kerr, to measure the effects on Gulf life of the oil from the BP oil blowout in 2010, and of the chemicals used to remove the oil from sight.

1999-2005. The Voyage of the *Odyssey*: An around-the-world expedition in Ocean Alliance's 93' research vessel *Odyssey*. The 5.5 year trip had four goals:

- 1) To study background levels of toxic contaminants in all oceans (using as bio-indicators small plugs of sperm whale skin and blubber obtained with a biopsy dart—a technique to which many sperm whales show no visible reaction). These data were collected according to standardized protocols so contaminant levels in different ocean regions could be directly compared. Dr. John Wise of the University of Southern Maine was in charge of the analyses of the samples. The concentrations determined can be used as a baseline against which to compare future measurements similar to the ones we made, making it possible in future to determine not just the concentrations of ocean contaminants but the rate at which they are increasing.
- 2) To study the genetics of sperm whale populations by analysis of skin cells from the same plugs of tissue used for contaminant analyses.
- 3) Measurements of the sounds that sperm whales make to maintain their social structures and locate prey.

4) Public education, during the voyage. Ocean Alliance posted blogs to the internet to keep teachers and students current with the progress and discoveries of the Voyage of the *Odyssey*.

The expedition had collaborators in five laboratories:

Dr. Maria Cristina Fossi, University of Sienna, Italy (analysis of contaminant concentrations of synthetic, Persistent Organic Pollutants in a subset of samples from the *Voyage of the Odyssey*).

Drs. John Stegeman and Celine Godard, Woods Hole Oceanographic Institution (effects of contaminant loads on individual animals using biomarkers, specifically Cytochrome enzyme induction as a test of exposure to pollutants).

Dr. John Wise, University of Louisville (using cell lines grown from sperm whales to measure effects of specific concentrations of POPs on sperm whale cells). Wise also oversaw measurements of the concentrations of heavy metals in *Voyage* samples of sperm whale skin and blubber).

Dr. Scott Baker, University of Oregon (using genetic measures to determine relatedness of the sperm whales samples—a fundamental step in determining the boundaries of sperm whale “stocks”).

John Hildebrand, Scripps Institution of Oceanography (acoustics of beaked whales).

The scientific results of the voyage, were published and distributed to the research community, to teachers, and to the general public (via the US. public television website: pbs.org/odyssey).

1970-Present: Southern Right Whales: An ongoing, long term study of the demographics and behavior of right whales in Argentine waters based on data collected each year since 1970. We have achieved identification of 3,800+ individuals from natural markings on their heads (their so-called callosity patterns); measured live whales by photogrammetry; analysed social structure and behavior; correlated vocalizations with behavior; followed movements of individuals within breeding areas and during migration; modeled population size to assess speed of recovery of southern right whale populations. Now in its 51st year, ours is the world’s longest continuous study of any baleen whale species that is based on known individuals. 60+ countries now use our techniques to study whales.

1966-1991 Humpback whales: Long term studies of the vocalizations and behaviors of humpback whales, with continuous collections of recordings from 1966 to 1991 from the North Atlantic, from 1974 to 1982 from Hawaii, and from two years each in the Revillagigedo Islands (Mexico) and southeast Alaska.

Analysis of these recordings by Ocean Alliance scientists, particularly Katharine Payne, produced information on: annual changes in the songs of humpback whales including progressive changes in their songs in Hawaii throughout entire singing seasons; comparisons of early winter songs of humpback whales in the Caribbean with late spring Bermuda songs; comparisons of humpback whale songs from Bermuda and Hawaii; Overall comparisons of songs of humpback whales in four oceans.

Cornell University's MacCauley Library of Natural Sounds and the University of North Carolina at Greensboro's Music Department library will archive and make available globally to scientists, musicians, dancers, composers, etc., (for their work and compositions of any serious nature) ± 42 years of Ocean Alliance's natural sound recordings. We have just received a grant to digitize all and when finished, complete copies of all recordings will be made available on line.

Other Research Projects:

— I have studied the sounds that are correlated with bubble feeding by Alaskan humpback whales

— The Ocean Alliance was supported in the past with contracts from the U.S. Minerals Management Service during which we collected data in the Beaufort Sea on the responses of bowhead whales to potentially disturbing sounds associated with offshore oil drilling and industrial development. Recommendations from this work have featured strongly in the management procedures instituted by the US Government.

— Ocean Alliance did similar work on gray whales as they migrated along the N. American coast.

Roger Payne's Service Appointments: Dates from memory

2013-2014	Trustee, then Chairman of the Board of Sea Shepherd Conservation Society-U.S.
1990-1991	Trustee, Whale and Dolphin Conservation Society
1988-1990	Review Panel member, Natl. Acad. Sciences, Natl. Research Council
1986-1989	Member Board of Directors, Harold Coolidge Center for Conservation
1983-1989	Member, Scientific Committee, International Whaling Commission
1979-1982	Member, Scientific Review Committee, Manomet Bird Observatory
1985-Present	Trustee (<i>ex officio</i>) of Ocean Alliance
1983-1989	Scientific Advisor to Antigua and Barbuda Delegation, International Whaling Commission
1976-1988	Scientific Advisor: Ocean Research and Education Society
1971, 1972	Member, U.S. Delegation, International Whaling Commission
1970-1983	Scientific Director, Whale Fund of the New York Zoological Society
1970-1973	Trustee, Environmental Defense Fund
1969	Director (one of several), Zero Population Growth
1968	Observer, International Whaling Commission
1966-1971	Educational Consultant, Wave Hill Center for Environmental Studies
Early 1960s	Member, Steering Committee: Elementary Science Study (ESS), Educational Services Incorporated (ESI)

Whale Conservation Activities: Committee Work

2004-2007	Scientific Consultant to the Sea Shepherd Conservation Society
2004	Member of IWC Scientific Committee reporting on effects of pollutants on whales.
1989-91	Member, of the US National Academy of Sciences/Natl. Research Council committee investigating and reporting on Mortality of Dolphins Caused by the Tuna Fishery.

- 1988-91 Member, Right Whale Recovery Team, U.S. Gov. NOAA (Nat. Ocean. Atmos. Admin.)
- 1983-89 Member, International Whaling Commission Scientific Committee creating funding proposals to be submitted on behalf of the IWC to UNEP for future global cetacean research needs. Payne served as Scientific Advisor to Antigua/Barbuda, and was a member of that country's delegation to the International Whaling Commission.
- 1983 Member, International Whaling Commission's Boston meeting that reviewed both initial and current stock estimates of right whales worldwide, (to determine the effects, if any, on this endangered species, of forty years of protection.)
- 1983 Member, International Whaling Commission's *Whales Alive* conferences (a workshop in the Seychelles followed by a meeting in Boston to consider the economic and other values of whales in their live state).
- 1983-1986 Scientific Advisor and Researcher in Residence: National Aquatic Resources Agency (NARA), Sri Lanka. Payne helped set up a training program in the NARA Marine Mammal Center where students from Sri Lanka and other Indian Ocean coastal states could become conversant in the latest benign research techniques for studying whales. By involving biologists from many Indian Ocean coastal states this Marine Mammal Center made an important contribution to educating students who have gone on to create and support whales and the IWC's Indian Ocean Whale Sanctuary.
- 1982 Member, IWC-sponsored meeting to make available to researchers the latest biological parameters used in population dynamics for modeling of right whale populations.
- 1982 Wrote proposal for a dual marine sanctuary for humpback whales in Hawaii and SE Alaska.
- 1981 Member, OAS meeting which sought to initiate programs to train Latin American biologists in cetology as a step towards whale conservation in Central American countries.
- 1981 Consultant to the acoustic firm Bolt, Beranek and Newman on the effects of tourist ship traffic noise on humpback whales in the inland waterways of SE Alaska
- 1980-1985 PI for Research sponsored by the Minerals Management Service on the effects on bowhead whales of noise generated during Alaskan North Slope Oil Exploration
1980. Member, IWC conference on The Ethics of Whaling and Intelligence of Whales
- 1979 Member, Workshop on Humpback Whales, meeting in Hawaii, sponsored by the U.S. Office of Coastal Zone Management to discuss the feasibility of creating a National marine sanctuary in Hawaiian waters.
- 1978 Member, Environmental Study Conference, Washington, D.C.
- 1978 Wrote policy statement on the ethics of whaling for U.S. Delegation to the International Whaling Commission Meeting, London
- 1978 Member, Marine Mammal Protection Workshop, Provincetown, MA
- 1977 Member, conference sponsored by the Marine Mammal Commission on Harassment of Whales, Honolulu, Hawaii
- 1977 Member, scientific panel considering protection of bowhead whales from current Eskimo whaling.
- 1977 Work leading to the creation of a reserve for Hawaiian humpback whales, Maui County, Hawaii. (It now exists)
- 1975 Wrote the section on whale watching as a low consumptive use for whales that was included in the report of an IWC-sponsored meeting in Bergen, Norway where it established the principle of the economic value of whales in their live state.

- 1975 Congressional testimony before House of Representatives for Resolution #448 to ban the importation of fisheries products from whaling countries
- Early 1970s Work leading to the establishment of an 860 sq. mile whale reserve (Golfo San José) off Peninsula Valdés, Argentina (achieved by 1974)
- 1974 Member, Advisory Committee on Marine Mammal Resources Research held by FAO at the United Nations,
- 1971 Member, International Conference on the Biology of Whales, Shenandoah National Park, VA
- 1971, 1972 Member, U.S. Delegation to the International Whaling Commission,
1970 Represented World Wildlife Fund International at the International Whaling Commission meeting.

Special Lecture Series:

- 1981 Tufts University, *Kenneth Roeder Memorial Lectures*
- 1980 Biology Lecturer in the *Frontiers of Science* series.
American Association for the Advancement of Science
- 1979 16th *Paul L. Errington Memorial Lecture*, Iowa State Univ.
- 1978 Cornell University, *Distinguished Lecture Series in Bio-communications*
- 1977 New York Zoological Society *Conservation Lectures*
- 1972 Rockefeller University, *Christmas Lectures*

Invited Lectures on Whale Research at:

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| AAAS | Linnean Society of New York |
| American Museum of Natural History | Montshire Museum |
| Animal Behavior Society | Marine Biological Laboratory (Woods Hole) |
| Auckland University | Naval Undersea Res. Center, New London, CT |
| Bedford Institute of Oceanography | National Geographic Society |
| Bell Telephone Laboratories | Mystic Aquarium |
| Brown University | New England Aquarium |
| Buffalo Zoological Society | New York Academy of Sciences |
| Cambridge University | New York Zoological Society |
| California Institute of Technology | Oberlin College |
| Chicago Field Museum | Oxford University |
| Cleveland Museum of Natural History | Princeton University |
| Cold Spring Harbor Laboratory | Rockefeller University |
| Colorado State University | Rutgers University |
| Columbia University | Salk Institute |
| Cornell University | Scripps Institute of Oceanography |
| Dartmouth University | Smith College |
| Denver Museum of Natural History | Smithsonian Institution |
| Explorers Club | Stanford University |
| Georgetown University | State University of NY at Stony Brook |
| Harvard University | State University of NY at Purchase |
| Kendall Whaling Museum | Temple University |
| Kenyon College | Tufts University |

United Nations
 University of California at Berkeley
 University of California at Los Angeles
 University of California at San Diego
 University of California at Santa Barbara
 University of Capetown
 University of Colorado
 University of Hawaii
 University of Indiana
 University of New Hampshire
 University of Oregon
 University of Pennsylvania
 University of Southern California
 University of Vermont
 University of Wisconsin
 Vermont Law School 4 lectures/panels
 Woods Hole Oceanographic Institution
 Yale University

Payne publishes for technical and general audiences. His publications include the books, "*Among Whales*" (1995); *Whale Songs* (2005—(only in Japanese)); and three recordings: "*Songs of the Humpback Whale*" (1970), "*Deep Voices*", (1975), and "*Whales Alive*" (1989). The latter are songs composed by whales, arranged and played by humans. [A more detailed bibliography is below.]

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Miscellaneous Media Coverage:

Payne has had numerous interviews on TV and radio talk shows. (e.g., 8 times on BBC-Radio)

His recordings have been used in several theater release films (e.g., *Star Trek IV*; The Imax film, *Whales* ;).

His work has been the subject of more than 40 television documentaries.

He writes and publishes *A Voice From the Sea*, a blog for Ocean Alliance;. It began as 72 short essays on ocean topics written during Ocean Alliance's around-the-world *Voyage of the Odyssey*, 2000-2005. These pieces were recorded in the field and broadcast. Find them at: pbs.org/Odyssey.

He has frequently testified in the US Congress, before congressional committees.

Music incorporating Payne's Whale Recordings:

1968: Charles Forbes of The New York Camerata commissioned the composer George Crumb to compose a trio for piano, flute and cello featuring Payne's recordings of humpback whales: called *Vox Balanae* , Crumb's piece is often performed, has won prizes and has been recorded by several Trios.

1968: The New York Philharmonic commissioned Alan Hovhannes to compose a work featuring Payne's recordings of humpback whale songs. The Hovhannes' piece, *And God Created Great Whales*, was the result. It has been performed by most major orchestras in North America, Europe, and Japan.

1968: Payne gave musician/composer Paul Winter whale recordings that Winter incorporated into five different pieces, on three of his albums. Payne co-produced one of those albums

1969: Payne gave Pete Seegar humpback whale recordings that inspired Seger to compose *The Song of the World's Last Whale*.

1970: Payne gave Judy Collins a whale recording that she used to accompany the whaling ballad, *Farewell to Tarwathie*. It is featured on her album: *Whales and Nightingales* (the album reached No 17 on Billboard charts.

1971: The American television sitcom *The Partridge Family* premiered a piece about *Whale Songs*, inspired by Payne's recordings.

1979: Payne co-produced and narrated a record of whale songs which the National Geographic Society (NGS) enclosed in its magazine to accompany an article by Payne. At the time NGS had 10.5 million members and had to order that many records (from the Evatone Company). To this day, that single order for 10.5 million records remains the biggest, single, print order in the history of the recording industry.

1987: Payne co-produced the record album *Whales Alive* with Paul Winter. It is compositions by

humpback whales arranged and performed by Winter and keyboardist Paul Halley, with narration by Leonard Nimoy.

Films That Payne Co-wrote, Co-directed Or Presented, and that feature his work:

- 1970s NHK-TV made two, hour-long Television specials on Payne's work. [Just in Japanese].
- 1980-85 Robin Brown made two TV Specials on Payne's work, one for his series *Nature Watch*
- 1989 *Magnificent Monsters of the Deep* Survival Anglia's TV special about Payne's work
- 1990-92 *In the Company of Whales*. Payne hosted this 90min Discovery Channel TV-Special,
- 1992 Charlie Rose did an hour-long interview with Payne for *One on One with Charlie Rose*.
- 1991-93 Payne hosted a Discovery Interactive Video Curriculum for *In the Company of Whales*.
- 1996-97 *Whales* An IMAX film Co-directed and co-written by Payne and featuring his work.
- 1994-95 *Finite Oceans*, Payne was Writer/Presenter for this Discovery Channel special.
- 2007 *Gaia Symphony #6* Jin Tatsumura's film about Ravi Shankar, Roger Payne & Kelly Yost.
- 2012 *A Life Among Whales*. A 50 min.TV documentary on Payne and his whale research.
- 2015 An Argentine film, *Jane and Payne*, is about Payne introducing Jane Goodall to right whales.
- 2020 It is 50 years since *Songs of the Humpback Whale* came out and there have been 5 films and Podcasts, plus several radio interviews celebrating that record's triggering of the Save-The-Whales movement (and by its success, some claim, igniting the conservation movement).

Film Awards and nominations for the Above Films:

- 1992 *In the Company of Whales* won a *Genesis Award*, (From: Ark Trust, Inc.).
- 1992 *In the Company of Whales* won a *Golden Eagle Award* (for script writing).
- 1992 *In the Company of Whales* won an *American Cable Excellence (ACE)* award.
- 1992 *In the Company of Whales* nominated for an *Emmy Award* for best TV documentary.
- 1992 *One on One with Charlie Rose* won an *American Cable Excellence (ACE)* award.
- 1992 Roger Payne interview in *One on One with Charlie Rose* wins the **Emmy for Best Interview**.
- 1997 *Finite Oceans* nominated for **Best TV Documentary**.
- 1998 IMAX film *Whales* won a *Special Jury Award* and *Gold* at the Houston World-Fest.

Payne's Honors and Awards:

- 1976 *James Duggan Memorial Award*; American Littoral Society
- 1978 *Knighthood* in *The Order of the Golden Ark* (bestowed by Prince Bernhard of the Netherlands)
- 1980 *Member of Honor*, World Wildlife Fund
- 1980 *Albert Schweitzer Medal*, Animal Welfare Institute (shared with Katharine Payne)
- 1981 Promoted to *Officier* in *The Order of the Golden Ark* (by Prince Bernhard of the Netherlands)
- 1984 *MacArthur Fellowship* (at the time a \$325,000 award spread over five years)
- 1985 *Distinguished Alumnus Award*, Horace Mann School, Bronx, NY
- 1988 '*Global 500*' Award, from the United Nations Environmental Program (UNEP)
- 1989 *Joseph Wood Krutch Medal in Conservation*; from the Humane Society of the United States (shared with his then wife, Katharine Payne).
- 1994 *Lyndhurst Prize Fellowship* (\$120,000 spread over two years); Lyndhurst Foundation
- 1999 *Writing and Society Award* from the U. Mass. (Amherst) English Department
- 2005 *2006 Indianapolis Prize* (Finalist but not the winner)
- 2006 *Lifetime Achievement Award*, From Earthwatch
- 2006 *Blue Ocean Award for Science* from the Blue Ocean Institute

- 2006 *Ocean Conservation Award* from the Aquarium of the Pacific
- 2007 *Earth Trustee Award* from the New Zealand Chapter of the Earth Society)
- 2007 *2008 Indianapolis Prize* Finalist (finalist but not the winner)
- 2007 *Dawkins Prize* (from Balliol College, Oxford University)
- 2009 \$50,000 Award from Flying Elephants Productions (Gregory Colbert's organization)
- 2015 *Earthcare Award* from Sierra Club International

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