

Letters to the Editor

To the Editor:

The recent "Census of Marine Life" issue of *Oceanography* was outstanding on many counts. One was the wide diversity of authors' specialties: biologists, physicists, chemists, acousticians, engineers, etc., all working on the common topic of life in the sea. This was not always the case. This *Oceanography* issue made me think about my first exposure to life in the sea.

As a career meteorologist with little knowledge of life in the sea, I came to the Office of Naval Research (ONR) to lead an Ocean Sciences Division, that included "Ocean Biology" run by Eric Hartwig and Bernie Zahuranec. Both patiently taught biology to a physicist. Others must have done the same, because we now have an excellent interdisciplinary community of biologists, and physicists (plus chemists, geologists, etc.) as evidenced by the aforementioned author diversity. Great progress.

Whenever I discussed my division's work around the dinner table, my family only showed interest in the biological part. Physical oceanography or marine meteorology, even wind and waves, only elicited polite patience. Life in the sea, however, captured their interest. It still does.

One day I saw my first bioluminescence pictures. I was told this was common in the sea but rare on land. That evening on a family walk, fireflies lit up. I proudly told the family this was "...a rare example of terrestrial bioluminescence". That phrase still rings out in the Weinstein family whenever someone sees fireflies. Bioluminescence was only one of the wonders of life that I learned. The diversity was wonderful. It still is. This *Oceanography* issue shows how vital that diversity is to society.

I end with one more story. One day, one of Eric Hartwig's successors in Ocean Biology started a presentation with the statement that the goals of all life in the ocean are to "eat, avoid being eaten, procreate, defecate, and respire." Someone from the Anti-Submarine Warfare part of the department, called out "Those are my goals, too!" I guess that shows how we are all in this world together.

Alan Weinstein
Office of Naval Research

To the Editor:

Kudos on an outstanding issue of *Oceanography*! The Census of Marine Life is, indeed, a daunting proposition, but it is one that must be addressed. Your final editorial comment was right on target—"unless we begin—we won't even know what we don't know."

I also want to take this opportunity to suggest that a future issue of *Oceanography* could be similarly devoted to a "census of microbial marine life." As you know, less than one tenth of a percent of the microorganisms living in the oceans have been isolated and characterized. Based on molecular signatures, we know that vast numbers of microbes exist in the oceans and in the ocean floor. These yet-to-be-cultured microbes represent a new scientific challenge and another need for a census.

Thank you for considering my suggestion and for your continued dedication to the ocean sciences.

D. Jay Grimes
University of Southern Mississippi

This special issue was made possible by grants from the National Oceanic and Atmospheric Administration (NA87OAO448), South Carolina Sea Grant (E451A NA56RG0521), National Aeronautics and Space Administration (NAG5-7455), the National Science Foundation (OCE-98202060), Environmental Protection Agency (R826941-01-0), and the University of Maryland Center for Environmental Science. The U.S. Government has a royalty-free license throughout the world in all copyrightable material contained herein.

Glossary of Acronyms

<u>ACRONYM</u>	<u>DEFINITION</u>	<u>ACRONYM</u>	<u>DEFINITION</u>
ADCP	Acoustic Doppler Current Profiler	GEOHAB	Global Ecology and Oceanography of Harmful Algal Blooms
APROPOS	Advances and Primary Research Opportunities in Physical Oceanography Studies (USA-NSF Workshop)	GLOBEC	Global Ocean Ecosystem Dynamics Program
ARGOS	Array for Real-time Geostrophic Oceanography	GOES	Geostationary Operational Environmental Satellite
AUV	Autonomous Underwater Vehicle	GOM	Gulf of Mexico
AVHRR	Advanced Very High Resolution Radiometer	GOOS	Global Ocean Observing System
AVIRIS	Airborne Visible Infrared Imaging Spectrometer	GPS	Global Positioning System
BIOPS	Bio-Optical Inherent Optical Properties System	GSC	GOOS Steering Committee
BTM	Bermuda Testbed Mooring	GTOS	Global Terrestrial Observing System
CalCOFI	California Cooperative Oceanic Fisheries Investigations Program	HiROS	High Resolution Optical System
CASE	Climatology and Simulation of Eddies (oil industry consortium)	HOTO	Health of the Oceans Module
CBEFS	Chesapeake Bay Experimental Forecast System	ICSU	International Council of Scientific Unions
CBOS	Chesapeake Bay Observing System	IGBP	International Geosphere-Biosphere Programme
C-GOOS	Coastal - Global Ocean Observing System	I-GOOS	IOC-WMO-UNEP Committee for the Global Ocean Observing System
CLIVAR	Climate Variability and Predictability	IGOSS	Integrated Global Ocean Services System
C-MAN	Coastal Marine Automated Network	IOC	Intergovernmental Oceanographic Commission (UNESCO)
CODAR	Coastal RADAR	IOOS	Integrated Ocean Observing System
COFS	Coastal Ocean Forecast System	JGOFS	Joint Global Ocean Flux Study
CORMS	Continuously Operational Real-time Monitoring System	KF	Kalman Filter
CPSE	Coastal Predictive Skill Experiments	LAPS	Local Analysis and Prediction System
CTD	Conductivity, Temperature, and Depth	LEO-15	Long-term Ecosystem Observatory at 15-m depth
DAS	Data Acquisition System	LMR	Living Marine Resources Model
DDA	Delay Doppler Altimeter	LOICZ	Land-Ocean Interactions in the Coastal Zone
ECDIS	Electronic Chart and Display Information System	MBARI	Monterey Bay Aquarium Research Institute
EEZ	Exclusive Economic Zone	MEMS	Microelectromechanical Systems
EMAP	Environmental Monitoring and Assessment Program (EPA-USA)	MORS	Mid-Ocean Ridges
EPA	Environmental Protection Agency (USA)	MOSS	Marine Observation Satellite System
FNMOCC	Fleet Numerical Meteorology and Oceanography Center (U.S. Navy)	NASA	National Aeronautics and Space Administration (USA)
GCOS	Global Climate Observing System	NEMO	Naval Earth Map Observer
GDEM	General Digital Environmental Model	NLOM	NRL Layered Ocean Model
		NOAA	National Oceanic and Atmospheric Administration (USA)
		NOGAPS	Navy Operational Global Atmospheric Prediction System (USA)