

Historical Perspectives

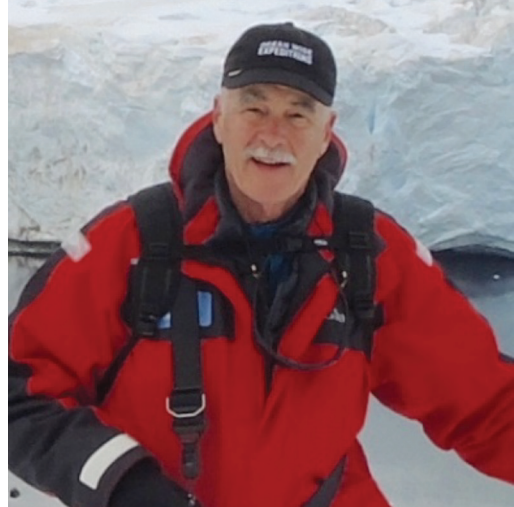
Dr. John Nightingale

(Born 1947)

In December 2018, Dr. John Nightingale retired from a 25-year role leading the global conservation organization Ocean Wise, formerly the Vancouver Aquarium Marine Science Centre. Part of John's lifelong vision of a world in which oceans are healthy and flourishing, Ocean Wise was established in 2017 and delivers that vision through its diverse initiatives: The Vancouver Aquarium, Ocean Wise Sustainable Seafood Program, Plastic Wise, The Coastal Ocean Research Institute, The Great Canadian Shoreline Cleanup, and partner/operator of Europe's largest aquarium, L'Océanogràfic (Valencia, Spain).

As a professional biologist and public communicator with a background in marine biology, organizational management, education, and ocean conservation, John helps millions of people to become aware, interested, and active in preserving the world's oceans. Through his work at the Vancouver Aquarium and prior to that at the New York Wildlife Conservation Society/New York Aquarium, the Seattle Aquarium, the Maui Ocean Centre, and Bios Inc., John has spearheaded the development and delivery of some of the world's most effective aquatic ecosystem science, interpretation, and public engagement programs in some of the world's best aquariums. He inspires children to become marine scientists; citizens to become volunteers and donors; and governments to enact policies protecting marine mammals, fisheries, and ecosystems.

During his 25 years at the Vancouver Aquarium and now its overarching parent organization, Ocean Wise, he guided the expansion of the organization's leadership in conservation, education, and research while focusing operations on



sustainability and solid fiscal performance. As a result, the Ocean Wise/Vancouver Aquarium is not only perhaps the "greenest" cultural public institution in Canada, it is the only one that is financially self-sufficient, operating without an annual subsidy from the government. Under John's leadership, Ocean Wise grew to a \$40M+ operation with over 500 staff members and 1,300+ volunteers.

Since the end of 2018, Dr. Nightingale has continued his work on ocean conservation and Arctic issues as a member of the Board of Directors of Polar Knowledge (POLAR), and he has worked with various working groups addressing ocean plastics and expanding public engagement in ocean awareness.

A Key to a Positive Future for Earth and Its Oceans

Dr. John Nightingale

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I am writing with a bit of a different point of view regarding the value and importance of having marine mammals in human care. A lot has been written about the importance of scientific knowledge achieved through research done with animals in the care of humans in zoos, aquariums, oceanariums, and research facilities. This knowledge is increasingly important for improving our ability to predict and mitigate the impacts of rapidly changing environments—something we must do if many species are to survive and thrive in this rapidly changing world. The understanding gained through basic care, specific research, and daily interactions is vital to assessing, predicting, and understanding our human impacts on these species in nature. Less has been written about the abilities of our institutions and organizations to help marine mammals in the wild through rescue efforts and other direct interventions. These contributions in both research and rescue, as I note below, are and will remain vital to the survival of some entire species of marine mammals.

I argue, however, that the primary and most valuable reason for having marine mammals in human care is public engagement. Simply put, in an increasingly urbanized world, fewer and fewer people have any personal experience with nature or the animals living in it. Combine that with the Internet world we currently live in where anyone can say anything—true or not—and the “general public” has less and less real information to use in judging future directions. As humans, we have a large and growing impact on natural ecosystems and their animal populations—on mammals plus all of the other species making up any specific habitat and ecosystem. It is we humans who will have to take actions to reduce those impacts. That means more of us humans need to be more interested in, and caring enough about, nature to do something about our impacts. We need people, ordinary people, more and more engaged with what is happening to, and in, our oceans.

Clearly, we need to provide for the health and well-being of all animals in human care. The definition of both health and well-being continues to evolve as we discover more about the physical and social needs of all of the animals we care for. Far too many facilities and organizations do not yet reach that constantly advancing “moving target.”



Almost everything we know about hearing abilities in cetaceans was learned from research with trained mammals—research actively participated in through training.

Suffice it to say, for this essay, that we need to keep improving both our facilities and our programs for the animals in our care. In particular, while many programs are paying more attention to the social needs of the animals in our care, many facilities are not yet developing the physical, enrichment, and social management programs these social species need. Without question, we need to accelerate the rate of change.

Research

Research remains absolutely important. Much of what we have learned about most marine mammals has come from their time in human care. Just as you could not expect your doctor to understand cancer from examining only deceased people, or by using

just binoculars, one could not expect scientists and veterinarians to know about physiology, energy needs, vision and hearing, keys to reproduction, and other factors without research facilitated by direct contact. Researchers, who most often come from universities, need a place to do this research. In Canada, there are no marine mammals in human care in any university or government laboratory—scientists working on such questions as “How much does a sea otter need to eat daily?” or “What is the hearing range of a dolphin?” can only do that work where they have direct access and a controlled environment. In all cases in Canada, and most in the U.S., that means in a zoo, aquarium, or oceanarium.

Do we “know it all yet” as some assert? Not by a long shot. Just as we humans do not want our medical professionals to stop researching diseases such as cancer, we have only scratched the surface of our knowledge of marine mammals at the basic animal level. We know enough to be concerned for many species of animals, including most marine mammals, as they face the consequences of change—human-induced change—including pollution, impacts of the changing climate, and the resulting changes in the living patterns to which each species must learn to adapt to survive and thrive. We do not know enough, however, to either predict the impacts of our human actions nor to mitigate them. Research at the basic organism, the individual animal level, must expand to help guide us in our responses to rapid and vast ecosystem changes. That research must be combined with research on wild populations in the field to ensure we can predict outcomes and take responsive action where we can.

Animal Rescue

Less well covered by the media is the fact that the staff and volunteers in our institutions, who are most often the “first responders” to animal strandings and other emergencies in nature, are the people who care for the animals in human care every day. The expertise and training they acquire and maintain through working with live marine mammals daily enhances the skills they need to respond to animals needing help in the wild. If marine mammals cease to exist in human care, our expertise to care for and deal with wild animals will quickly diminish. Imagine if we asked our doctors to use only skills they could acquire by treating car crash victims at the scene. We soon would not trust most of their medical abilities.

The need is there. The only marine mammal rescue facility in Canada sees between 100 and 200 stranded animals each year on the west coast. On the east coast of the U.S., over 1,000 marine mammals strand each year. Strandings occur along



The necessary abilities used in rescuing marine mammals in the wild depend on the skills practiced in caring for them daily in aquariums and oceanariums. The anesthetics used were developed, tested, and put into practice using trained mammals in care.

every one of the 356,000 km of coastline in the world. Many countries, however, mostly those without robust aquariums and oceanariums to provide a knowledge core and often facilities, do not have organized rescue networks like those found in North America. Many zoos, aquariums, and oceanariums in the U.S. maintain and support marine mammal rescue networks. SeaWorld’s marine parks alone have rescued over 22,000 marine animals over the 45 years they have existed.

Public Engagement

In my view, the most important reason for keeping marine mammals in human care and making them accessible to ordinary people (the “general public”) is the benefit of having increasing numbers of ordinary people see and experience marine mammals. This is the major reason we need to continue keeping marine mammals in human care. The personal experience for more and more people most often means having local facilities where they can experience seeing and learning about the real thing. Learning, per se, is not



For many visitors to aquariums and oceanariums, moments like the one above are opportunities for a visceral connection. Being face to face with a living animal can only happen through direct interaction and often sparks interest and curiosity . . . and caring.

actually the goal. The first benefit is a personal sense of “realness”—the animal a person is looking at is a real, living thing. Secondly, most experts agree that we need more and more people who have some basic awareness, curiosity, and a resulting level of caring that is triggered by that personal experience. Author Richard Louv (2005) argues that the bond between nature and people, particularly the young, is broken in our society today. He maintains that the *nature deficit disorder* is growing. People simply have too little personal experience and, as a result, too little consciousness. Of course, people today can watch videos and can use the Internet and other means of seeing and learning about almost any topic. And people from special interest groups use social media to tell people to believe almost anything—true or not—that is, IF they are interested to begin with. Both studies and experts agree that humans learn most effectively through personal experience. If you are a young person, you can watch all of the videos you want. No amount of watching, however, can prepare a person for standing in front of a living whale, dolphin, sea lion, or sea otter.

If we want more people to be aware of, curious about, and participating in reducing human impacts on our oceans, we need to facilitate the

process that first generates interest, leading to some level of curiosity, and, ultimately, to an understanding of our impacts and what we need to do to reduce them. The saying, attributed to Senegalese forestry engineer Baba Dioum, “in the end, we will conserve only what we love, we will love only what we understand, and we will understand only what we are taught,” might be viewed as trite by some, but it is truer today in this digital age than it ever was. The growing body of nature learning shows clearly that personal experience—seeing, interacting with where possible, and truly understanding the multiple dimensions of any animal’s life—is the key to generating the empathy nature needs today . . . and tomorrow. Experiential learning is not just for kids, but it is doubly important for kids as they grow and develop more complex understanding.

That brings me to point out that not only do we need to provide continuing and evolving care for the animals in care, we need to focus on both the “art” and the “science” of broader and more effective public engagement. We need to use all of the “tools” we have, starting with facilities designed to foster that first connection, and then we need to foster continued engagement. We also need to improve the way visitors first interact with the animals, and then add the layers of information they seek based on that initial interest and curiosity. Such experiences need to be fostered through live human interactions with staff and volunteers, combined with engagement through all manner of technology-based assistance. Whether it is augmented reality, the use of videos, or follow-the-guest-home digital interactions, we need to provide more and more pathways because people are all different. In my view, it is increased public engagement that will more and more furnish the “license” to keep mammals in human care. We simply have to focus more on doing that more effectively.

I argue that we need more animals located in accessible facilities that provide the key health and welfare needs of all of the animals we keep in our care. We need these animals to thrive, but as importantly, to contribute to a better human understanding of why we should care more about what is happening in nature. If we do not improve both outcomes, we will lose the license of public sentiment.

Literature Cited

Louv, R. (2005). *Last child in the woods*. Algonquin Books. 334 pp.