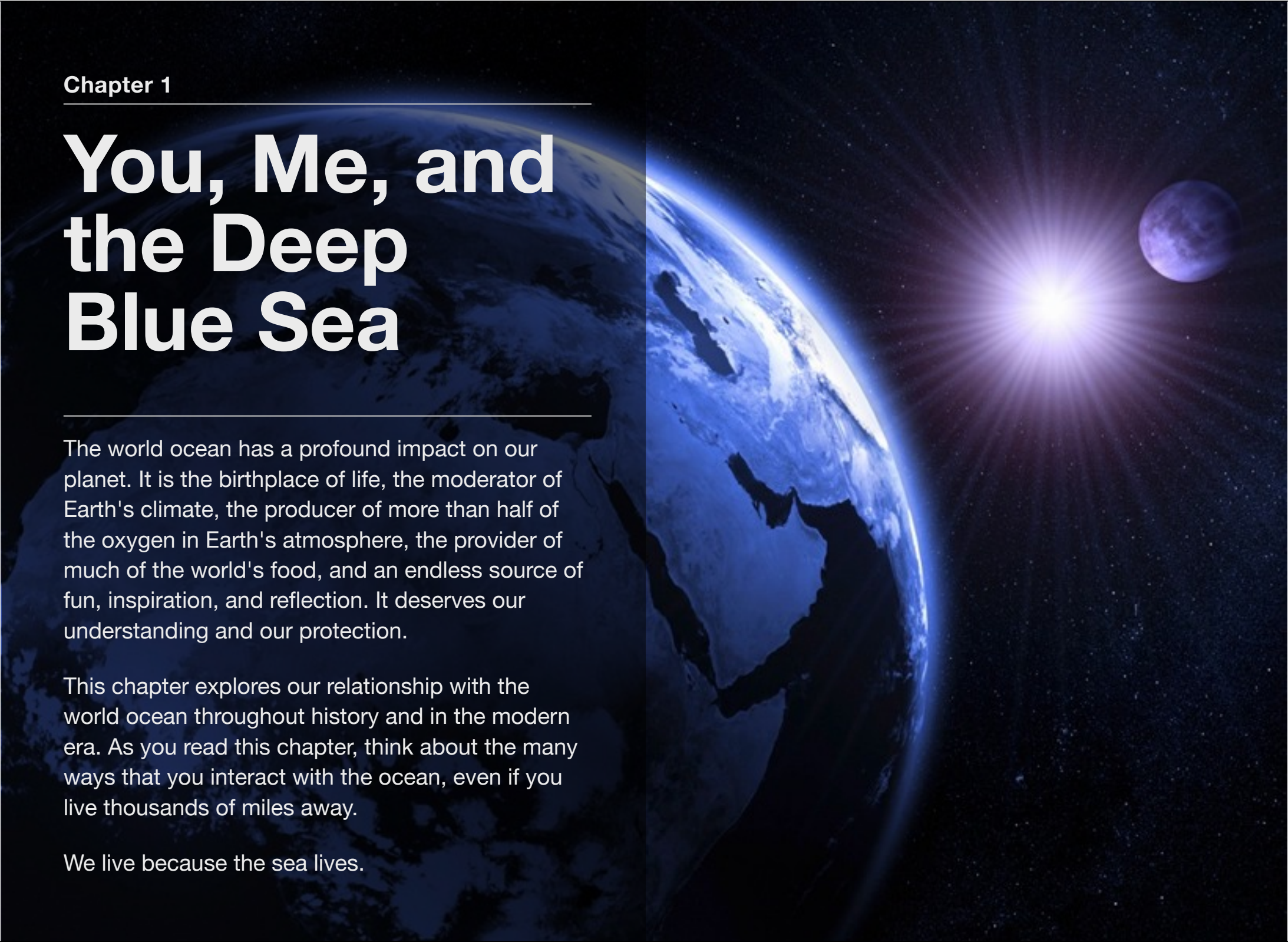


CHAMBERLIN OCEAN ENTERPRISES PRESENTS

# The Deep Blue Sea

by W. Sean Chamberlin, PhD



Chapter 1

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# You, Me, and the Deep Blue Sea

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The world ocean has a profound impact on our planet. It is the birthplace of life, the moderator of Earth's climate, the producer of more than half of the oxygen in Earth's atmosphere, the provider of much of the world's food, and an endless source of fun, inspiration, and reflection. It deserves our understanding and our protection.

This chapter explores our relationship with the world ocean throughout history and in the modern era. As you read this chapter, think about the many ways that you interact with the ocean, even if you live thousands of miles away.

We live because the sea lives.

## Section 1

# Yo Ho, Yo Ho, An Ocean Life for Me



### WHAT WE'LL EXPLORE

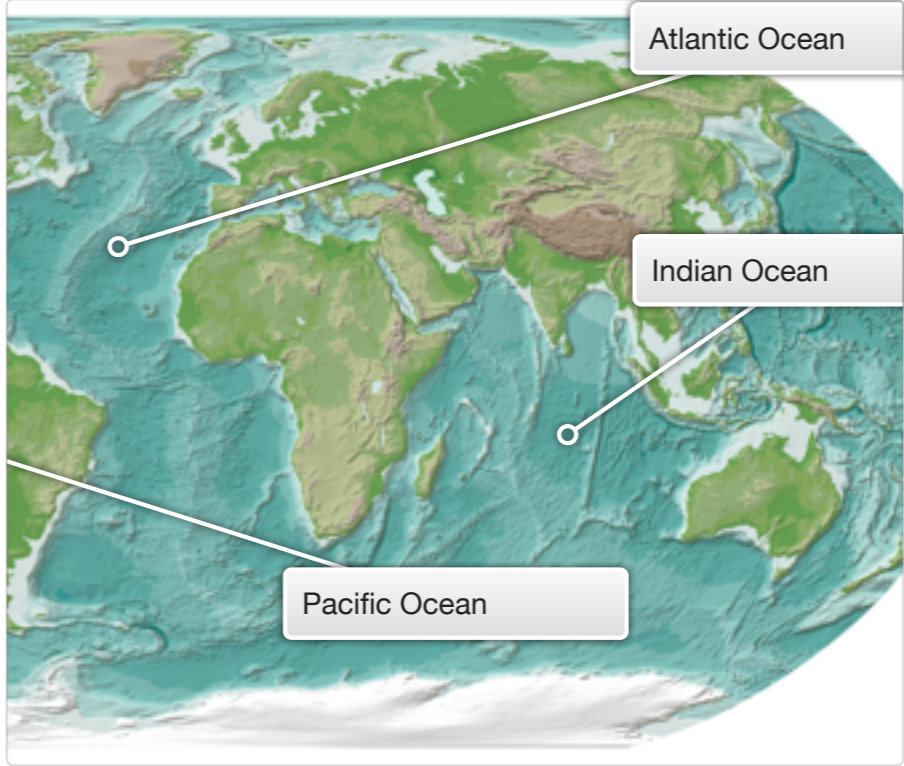
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1. Cave Men of the Sea
2. The First Boat People
3. Navigating Without a GPS
4. The First Ocean Scientists

Human history is full of fascinating stories and none are richer than the tales of the sea. Oceanography as a modern, interdisciplinary, 21st-century science finds its roots among early explorers, pirates, buccaneers, shippers, and navies who desired to gain a practical edge in their pursuit of new resources, new lands, unimaginable riches, and decisive conquests. Knowledge of the world ocean and how it works was key to the success of ocean explorers and their nations. It might even be said that the greatest civilizations were those who learned best how to sail upon and navigate the tempestuous sea.

In this chapter, we explore the historical development of oceanography in its broadest terms to provide a sense of the challenges facing early ocean explorers, how they overcame those challenges, and how their solutions to those challenges paved the way for modern exploration and study of the ocean. The treatment here is by no means exhaustive, nor even representative of the complete span of oceanographic history. Consider this chapter a kind of brief tour of the ship, a first lesson in getting to know the ropes, a glimpse of history through the eyes of an oceanographer. If you come away from this chapter wanting to know more about the ocean, and appreciating the team effort that underlies many ocean discoveries, then this chapter has done its job. Let's get underway!

**Interactive 1.1** The World Ocean

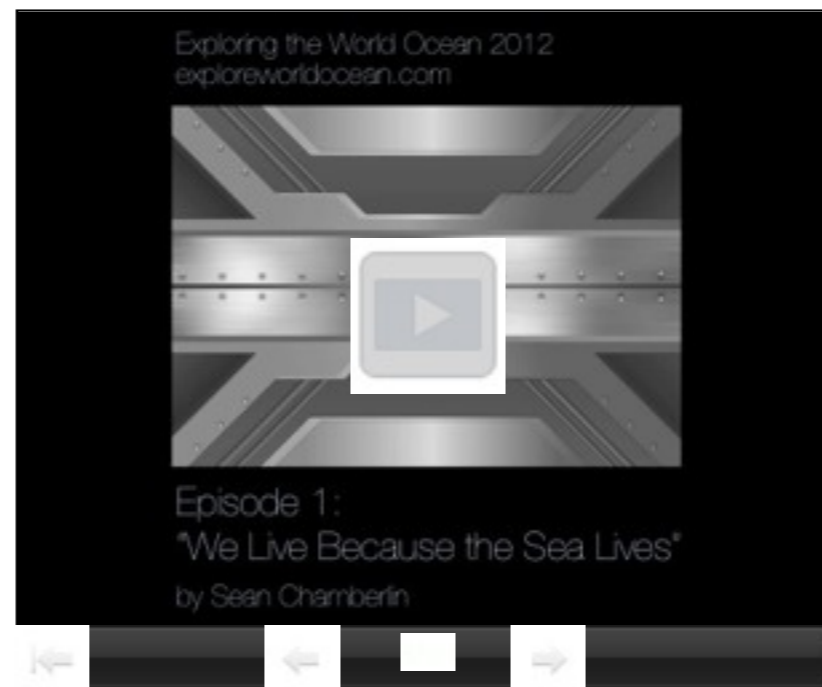


**Movie 1.1** Blue Whale off Dana Point, California



*Blue whales (*Balaenoptera musculus*) visit California annually during summer. They are the largest animals ever to have lived on our planet.*

**Interactive 1.2** Episode 1 of Lecture Series



*We live because the sea lives.*

Have you ever gazed into outer space at night and wondered, “what if?” “What if there was life on other planets?” “What if a UFO offered to take you along for a ride?” “What if you discovered something really cool that no one knew before?”

We’re naturally drawn to the stars, perhaps because early humans used them for navigation and migration across land and sea. Or perhaps it’s because we are visual creatures and it vexes us to be able to see so far but to recognize so little. There’s a mystery to the night and to the thousands of points of light that attend it.

But there’s an equally mysterious and intriguing view below our feet. Standing on the shore of the ocean, we see little more than waves and a distant horizon. But if you use our imagination, or better yet, dive beneath the waves, you’ll enter a world every bit as dazzling and awe-inspiring as the one above our heads.

When I stand at the end of a dock and peer down into the water, I think, “What if we could communicate with whales and dolphins? What if we could jump in a submarine and travel everywhere in the world ocean? What if the ocean held secrets that once unlocked would provide a limitless supply of food and energy to sustain human life?”

Even after centuries of human exploration, we know remarkably little about the ocean. The men and women who study the ocean, the oceanographers, grumble that we know more about the

surface of the moon and Mars than we know about the bottom of the ocean. Yet because of the work of these men and women, major new discoveries about the ocean seem to occur with regularity. Since the 1970s, new geologic structures on the seafloor—hydrothermal vents and cold seeps—have been discovered. Entirely new forms of life dependent on chemical energy instead of solar energy have been found. New exotic forms of life and new species are described almost every day. We now know that the ocean has absorbed some 80% of the excess heat trapped by accumulating greenhouse gases. We now know that certain locations in the ocean—what oceanographers call choke points—act like spigots to control the flow of surface and deep waters throughout the ocean basins. Oceanographers have now confirmed that giant rogue waves do exist, though they lack a good understanding of how they form and why they exist. And while we know that giant squid exist—we’ve seen them washed up on the beach—no one has ever observed one firsthand or filmed one underwater in the wild\*. Who knows what other new discoveries lurk in the shadows of the deep?

This book is meant to inspire the next generation of ocean explorers. It’s a clarion call, of sorts, for young men and women to look to the ocean as a path on which to pursue their dreams, no matter what they are, because, as you shall see, everything in the world relates to the ocean. It’s also a call to look to the ocean as a means to do some good in the world, not because the ocean is in some kind of danger (at risk of getting in trouble with my

environmentally-minded friends, let me say that the ocean and most of its life will survive just fine with or without humans), but because a life dedicated to exploring the ocean enriches human life for the scientific and spiritual ideas that spring from such exploration. It's a call to invent the next submarine (Minisub for Two?), the next new underwater communications network (the OceanNet?), or the next new scientific instrument for monitoring the ocean and reporting on its conditions (Ocean Weathercasts?). It's a call to bring to market new ways to feed the world, provide energy, produce medicines, extract minerals, supply beauty products, offer eco-adventures, or any of a myriad promising ventures offered by exploring, understanding, and protecting the ocean.

The two men I admire the most—John Glenn, the first American to orbit the Earth in a spacecraft, and Jacques Cousteau, the co-inventor of scuba and the first person to make underwater videos—inspired me to love science and exploration, and more than that, to pursue my dreams with a passion. I hope someone can inspire you to do the same.

*I don't know what you could say about a day in which you have seen four beautiful sunsets.*

- John Glenn, Space Explorer, My Hero.

*What is a scientist after all? It is a curious man looking through a keyhole, the keyhole of nature, trying to know what's going on.*

- Jacques Cousteau, Ocean Explorer, My Hero.

\*Sure, Japanese researchers filmed and took pictures of giant squid caught on a hook, but that doesn't count as a natural observation in my book, and hey, this is my book!

## References

Chamberlin, W. S, and Tommy Dickey. 2008. Exploring the World Ocean. McGraw-Hill.