

海洋学とは？ (What is Oceanography?)
答え [海洋学は総合科学です：『はじめて学ぶ海洋学』](#)

海洋学とは？ What is Oceanography?

日本人にとって『海洋学(Oceanography)』という言葉は、聞いた事があっても、具体的に説明して下さいと言われると返答に困るようです([別紙参照](#))。日本人にとってあまり馴染みのない海洋学のイメージは、海洋関連の研究をしている国内専門家と呼ばれる人であってもかなりあいまいに使われています。私がしばしば参考になっている欧米の教科書では以下のように、海洋学が説明されています。日本の所謂海洋系の教科書と異なり、欧米の教科書では海洋学が総合科学（あるいは学際的）であることを明確に示しています。海洋国家日本のグローバル化を目指すなら、『海洋学』本来のイメージを多くの人が理解している方が国際的軋轢を生じないのではと思います。

A. P. Trujillo and H. V. Thurman 著 “Essentials of Oceanography 9th edition” の中では、以下のように表現されています。

What is Oceanography?

Oceanography (Ocean = the marine environment, graphy = the name of a descriptive science) is literally the description of the marine environment. Although the term was first coined in the 1870s at the beginning of scientific exploration of the oceans, this definition does not fully portray the extent of what oceanography encompasses: Oceanography is much more than just describing marine phenomena. Oceanography could be more accurately called the scientific study of all aspects of the marine environment. Hence, the field of study called oceanography could (and maybe should) be called oceanology (ocean = the marine environment, ology = the study of). However, the science of studying the oceans has traditionally been called oceanography. It is also called marine science and includes the study of the water of the ocean, the life within it, and the (not so) solid Earth beneath it.

<中略>

The oceanography is typically divided into different academic disciplines (or subfields) of study. The four main disciplines of oceanography that are covered in this book are as follows:

*Geological oceanography <中略>

*Chemical oceanography <中略>

*Physical oceanography <中略>

*Biological oceanography <中略>

Other disciplines include ocean engineering, marine archaeology, and marine policy. Since the study of oceanography, it is frequently described as being an *interdisciplinary science*, or one covering all the disciplines of science as they apply to the oceans (Figure 1.1). The content of this book includes the broad range of *interdisciplinary science* topics that comprises the field of oceanography.

In essence, this is a book about all aspects of the oceans.

(A.P. Trujillo and H.V. Thurman , 2008, Chapter1.1 What Is Oceanography. in Essentials of Oceanography 9th edition,

詳しくは [『はじめて学ぶ海洋学』横瀬久芳 著 朝倉書店](#)
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xxiii, Pearson Education, Inc. ISBN: 0-13-240122-3. より)

T. Garrison 著 “Oceanography: An invitation to marine science” の中では、以下の
ように表現されています。

1.2 Marine Scientists Use the Logic of Science to study the Ocean

Marine science (or **oceanography**) is the process of discovering unifying principles in data obtained from the ocean, its associated life-forms, and its bordering lands. Marine science draws on several disciplines, integrating the fields of geology, physics, biology, chemistry, and engineering as they apply to the ocean and its surroundings. ***Nearly all marine scientists specialized in one area of research, but they also must be familiar with related specialties and appreciate the linkages between them.***

- * **Marine geologists** focus on questions such as the composition of inner Earth, the mobility of the crust, the characteristics of seafloor sediments, and the history of Earth’s ocean, continents, and ocean-atmosphere interaction
- * **Physical oceanographers** study and observe wave dynamics, currents, and ocean-atmosphere interaction.
- * **Chemical oceanographers** study the ocean’s dissolved solids and gases, and their relationships to the geology and biology of the ocean as a whole.
- * **Climate specialists** investigate the ocean’s role in Earth’s changing climate. Their predictions of long-term climate trends are becoming increasingly important as pollutants change Earth’s atmosphere.
- * **Marine biologists** work with the nature and distribution of marine organisms, the impact of oceanic and atmospheric pollutants on the organisms, the isolation of disease-fighting drugs from marine species, and the yields of fisheries.
- * **Marine engineers** design and build oil platforms, ships, harbors, and other structures that enable us to use the ocean wisely.

Other marine specialists study the techniques of weather forecasting, ways to increase the safety of navigation, methods to generate electricity, and much more.

(T. Garrison, 2012, Chapter 1.2 Marine Scientists Use the Logic of Science to study the Ocean. in Oceanography: An invitation to Marine Science 8th edition, 5-6, Brooks Cole, ISBN-13:978-1111990848. より)

K. A. Sverdrup and E. V. Armbrust 著 “An introduction to the world’s oceans”
の中では、以下のように表現されています。

Oceanography is a broad field in which many sciences are focused on the common goal of understanding the oceans. Geology, geography, geophysics, physics, chemistry, geochemistry, mathematics, meteorology, botany, and zoology have all played roles in expanding our knowledge of

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the oceans. Oceanography today is usually broken down into a number of *subdisciplines* because *the field is extremely interdisciplinary*.

Geological oceanography includes the study of Earth at the sea's edge and below its surface, and the history of the processes that formed the ocean basins. Physical oceanography investigates the causes and characteristics of water movements such as waves, currents, and tides and how they affect the marine environment. It also includes studies of the transmission of energy such as sound, light, and heat in seawater. Marine meteorology (the study of heat transfer, water cycles, and air-sea interaction) is often included in the discipline of physical oceanography. Chemical oceanography studies the composition and history of the water, its processes, and its interactions. Biological oceanography concerns marine organisms and the environment in the oceans. Ocean engineering is the discipline that designs and plans equipment and installations for use at sea.

(K. A. Sverdrup and E. V. Armbrust, 2008, Chapter1 The History of Oceanography. in An Introduction to the World's Oceans 9th edition, 2, McGraw-Hill Companies, Inc., ISBN-13:978-0073254838. より)