

**Title of Chapter in Book:** Oceanography

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**Abstract:** The ocean is arguably the largest habitat on the planet, and it houses an astounding array of life, from microbes to whales. Oceanography is the branch of Earth science that studies the Earth's oceans. It is the systematic scientific study of the oceans and deep sea with the goal of understanding their processes and phenomena. The relationship of oceans with other aspects of the Earth's environment is also highlighted in oceanographic studies. Biology, chemistry, geology and physics together make oceanography a richly interdisciplinary science. Although they contain most of the Earth's water and carbon and surface heat, and much of its biomass, the oceans do not operate alone. Together with the atmosphere, continents and ice-cover, they form a working platform, driven mostly by energy from the Sun. Earth science has four main components: hydrosphere, solid earth, atmosphere and biosphere. Water at the Earth's surface or near it, is termed the hydrosphere. It includes oceans, water vapor, ground water, lakes, rivers, and polar icecaps. The water distribution in the hydrosphere is as follows: oceans—97.54 percent, icecaps—1.81 percent, groundwater—0.63 percent, others—0.02 percent. It is obvious that we live on a water planet. Oceanography is studied in order to understand how oceans operate and how they interact with other aspects of the Earth system. Again, oceans are a vast source of food for the world's population. The oceans hold an enormous reservoir of minerals and they also hold reservoirs of fossil fuels or the potential for harnessing forces for energy development. The study of oceanography may be divided into four branches: biological oceanography, chemical oceanography, geological oceanography and physical oceanography.