





# The International Geoscience Programme (IGCP)

Since 1972, UNESCO, through the International Geoscience Programme (IGCP) and in partnership with the International Union of Geological Sciences (IUGS), has harnessed the intellectual capacity of a worldwide network of geoscientists to lay the foundation for our planet's future, focusing on responsible and environmental resource extraction, natural hazard resilience and preparedness, and adaptability in an era of changing climate. UNESCO, the only United Nations organization with a mandate to support research and capacity building in geology and geophysics, and its flagship programme, the International Geoscience Programme, actively contribute to society and to the implementation of the Sustainable Development Goals.

## IGCP's Contribution to SDG 14



A UNESCO project in Chile is working to reconstruct phytoplankton (microalgae) distributions and composition over the past 1000 years using sediments from western Patagonia. Phytoplankton form the base of the food web in the ocean and are responsible for converting carbon dioxide to oxygen via photosynthesis. Phytoplankton can also have detrimental effects and a group known as harmful algae can cause damage to human health, wildlife, fisheries and aquaculture production. A dramatic example of such damage was the 2016 mass mortality event that killed nearly 12% of Chile's salmon production. It was the worst fish and shellfish mass mortality ever recorded. The results of this project contribute to the preservation and protection of biodiversity in Patagonia, and the prediction of harmful algal blooms to assess the feasibility of future aquaculture projects in the region.

The world's oceans – their temperature, chemistry, currents and life – drive global systems that make the Earth habitable for humanity. Over three billion people rely on marine and coastal biodiversity for their livelihood. These habitats are also essential as a climate regulation system, absorbing around 30% of the carbon dioxide in the atmosphere. Despite that, currently 30% of the world's fish stocks are overexploited and below the level at which they can produce sustainable yields; ocean acidification has risen by 26% since the beginning of the industrial revolution; and marine pollution is reaching alarming levels, with an average of 13,000 parts of plastic waste found for every square kilometre of ocean. **SDG 14 aims to enhance marine conservation and promote the sustainable use of marine resources through international agreements and law.**



Above: recovering a gravity coring instrument full of sediment from the Gualas River Delta, Patagonia, Chile; and measuring the sediment content of a previously collected core. Credit: Claudia Aracena Pérez.

LEARN MORE ABOUT UNESCO'S WORK IN GEOSCIENCE  
ON OUR WEBSITE AND FOLLOW US ON SOCIAL MEDIA.

