

**Ocean Literacy for All in the United Nations**  
**Decade of Ocean Science for Sustainable Development**

**Overarching Message**

*All global citizens must be ocean literate so that they can make sound decisions in support of the sustainability of the ocean and its resources.*

**Recommended Actions**

- Each ocean science project/initiative in support of the Decade should require an ocean education and/or ocean literacy component.
- A percentage of the funding provided for ocean science programs in support of the Decade should be allocated for independent and collaborative national, regional, or international ocean science education and ocean literacy activities.
- All IOC member states should develop an ocean literacy strategy that is relevant to their respective issues, cultures, and research goals.

**Overview**

Most global citizens are not aware of how the state of the ocean and its resources affect their daily lives. They are also not aware of the extent of the services that the ocean provides, which are related to environmental, human health, economic, social, and geo-political factors. The importance of ocean research in support of these services is critical to society, yet the arena of the ocean and its related marine enterprises remain a mystery for a large portion of the global population.

The pressures of a growing human population, increased development and demand on natural resources, and climatic warming necessitate decision making in support of national, regional and international sustainable development goals. It is more important than ever for all citizens – coastal and inland - to be knowledgeable and aware of their relationship with the ocean, how it affects them, and the research and Indigenous Knowledge that is addressing pressing ocean-related concerns. This is the essence of **ocean literacy** - an understanding of the ocean's influence on people and people's influence on the ocean. To achieve essential ocean literacy for all citizens is a daunting task, requiring an understanding of the Earth's complex systems and collaborative, interdisciplinary initiatives that involve multiple groups of stakeholders. The United Nations Decade of Ocean Science for Sustainable Development (2021-2030) will provide a platform and forum for broad international collaborations and partnerships, whereby Member States that have experience and resources in executing successful ocean literacy initiatives can

not only share with each other but also share with nations which are striving to implement similar activities with a common goal of using the international synergies provided by the Decade to explore new methods, practices and partnerships. The Decade will offer new ways for nations to work together and increase ocean literacy, as they strive to solve the immediate global pressures faced by the global ocean.

In 2015, the approval of the United Nations Sustainable Development Goal (SDG) for the ocean (SDG14 – *to conserve and sustainably use the oceans, seas, and marine resources*) was a major step forward in raising the visibility of ocean issues. If the SDG14 targets are to be achieved, citizen support of necessary policies to sustain healthy ocean systems is critical. In 2002, the United States initiated the first national ocean literacy initiative, led by a group of ocean scientists and education professionals from the College of Exploration, National Oceanic and Atmospheric Administration, COSEE (Consortium for Ocean Science Exploration and Engagement), and National Geographic Society. After broad input from hundreds of stakeholders, including the National Marine Educators Association, the *Ocean Literacy Essential Principles and Fundamental Concepts* were finalized. This seminal document identifies the content knowledge that an ocean-literate person in the U.S. should know by the end of secondary school. It has served as a framework for ocean literacy activities across the globe, particularly in Canada and the European Union (EU), where it has been adapted and integrated into large European Commission Horizon 2020- funded ocean literacy initiatives, such as the Sea Change and ResponSEAbLe projects.

It is important to emphasize that ocean literacy may have different meanings in different countries and cultures. For example, the EU has many different basins and regional seas with different cultural contexts and relationships to each other, while Inuit, First Nations and Métis peoples of Canada have their own respective knowledge and perspectives about the ocean and the sustainable use of its resources. Halting biodiversity loss, reducing marine litter, increasing the marine environment's protection, and ensuring sustainable economic growth will require that diverse nations and regions conduct ocean literacy activities that are culturally, geographically, and societally responsive.

### **Key Recommendations and Priorities**

Key recommendations for ocean education and ocean literacy activities during the Decade are based on outcomes from the Global Ocean Science Education (GOSE) Workshops, which were initiated in 2015 by COSEE and the College of Exploration, and the Intergovernmental Oceanographic Commission's International Ocean Literacy Conference held in December 2017. The three previous GOSE Workshops have brought together ocean scientists, education professionals, policy makers, and business leaders from over 30 nations to foster international collaboration and partnerships, advance ocean science education and ocean literacy, and identify

ocean science education priorities and strategies for the global ocean community. These Workshops have identified and built international consensus related to three major priorities for international collaborative ocean science education efforts:

- The Ocean and Human Health, including Coastal Resiliency;
- The Ocean's Role in Climate Change and the Effect of Climate Change on Ocean Systems; and
- Biodiversity, including Food Security & Fisheries.

Priorities have also been identified for ocean science topics to be integrated into ocean science education initiatives:

- Climate Change and Weather
- Loss of Biodiversity
- De-oxygenation of Coastal Waters
- Microplastics/Pollution
- Ocean Stressors
- Seabed Mapping
- Global Ocean Observing

High need activities for the international ocean science community require funding both at the national and international scale and include:

- Communication and teaching training for scientists and graduate students;
- Education and resources for business and industry, decision makers, non-profits, and the media;
- Reform of undergraduate ocean science education with special emphasis on identifying workforce needs for Blue Economy careers;
- Matching industry needs with university graduate programs;
- Support for ongoing global ocean literacy efforts;
- Increasing diversity in ocean science; and
- Establishment of a network of networks to support international ocean science initiatives.

In addition to the recommendations above, ocean literacy activities during the Decade should:

- Promote the global citizenry's understanding of the value of the ocean, ocean health, and ocean research.
- Take advantage of new open access data and visualization tools in education, outreach, and communication activities that engage the public.
- Define learning objectives and relevant metrics to determine gains in ocean literacy.
- Integrate social sciences and the arts.
- Establish partnerships with the business community to address their workforce needs.
- Foster the development of national ocean literacy strategies.

Stakeholders across the globe will identify potential collaborative, international ocean education and literacy activities in support of the Decade over the next year. From November 13-15, 2019, COSEE, the College of Exploration, the Atlantic Ocean Research Alliance, and Seabed 2030 will conduct the fourth GOSE Workshop in Reston, VA. Workshop participants representing many nations across sectors will work together during this time to begin planning activities for the Decade that are based on the priorities, needs, and recommendations described above.