

International Council for the Exploration of the Sea (ICES) – Science for sustainable seas

The world's oceans play a crucial role in the functioning of the global environment. Marine ecosystems are driven by physical, chemical, and biological processes that influence the development of biological communities and exploitable resources. Understanding these processes is fundamental to interpreting human dependence and influence on marine ecosystems.

ICES (International Council for the Exploration of the Sea) is an intergovernmental organization advancing integrated scientific understanding of marine ecosystems and providing knowledge of human activities affecting, and affected by, marine ecosystems. As an independent marine science organization, ICES formulates, coordinates, and conducts research on oceanic and regional ecosystems, and advises international commissions and governments on marine policy and management issues. ICES goal is to ensure that best available science is accessible for decision-makers to make informed choices on the sustainable use of the marine environment and ecosystems.

ICES activities focus on the North Atlantic and adjacent European seas, as well as the Arctic Ocean. The work of ICES is facilitated through a network of more than 4000 scientists, from over 350 marine institutes in 20 member countries and beyond (with ICES experts coming from 45 countries), and the frequent engagement of other inter-governmental and non-governmental organizations, as well as industry.

The work of ICES is complemented by strategic partnerships, e.g., in the North Pacific (with the North Pacific Marine Science Organization; PICES) and in the Mediterranean Sea (with the Mediterranean Science Commission; CIEM, and the General Fisheries Commission for the Mediterranean; GFCM). Well established links to technology and innovation platforms, industry associations, and non-governmental organizations and observers ensure that ICES remains relevant and responsive to both end users and the public for the uptake of the scientific knowledge and deliverables that it generates. Interactions with clients, stakeholders, and partners are also important in identifying priorities for ICES.

ICES operates in a complex and changing marine science and policy landscape. Marine policy and legal instruments call for a strong science background to support their objectives and goals. The policy landscape is framed by intergovernmental agreements and conventions at the global, regional, and national levels. These mandates include United Nations Conventions, Regional Seas Conventions, European Union legislation, as well as bi- or multilateral agreements among ICES member countries, national legislation and policies.

ICES and Aquaculture

Since 1977 ICES has had scientific expert groups researching various environmental, genetic, and epidemiological effects of aquaculture.

With the increasing importance of aquaculture, based on the need to supply food to an expanding population, ICES in 2012 decided to revitalize its work in the field of aquaculture, and make this an area of strategic importance developing science and advice for aquaculture.

The industry and practice of aquaculture is one which is increasingly permeating many sectors of both science and society, from its status as one of the largest growing food production sectors (over half of the 47% of total fisheries production in 2011 was for human consumption) to that as a frontline issue for marine biologists and institutes looking to work towards its sustainable management.

ICES role is to deliver unbiased and non-political advice and science for the development of aquaculture in the North Atlantic. This includes developing and maintaining a good and positive synergy between harvest of wild resources and farmed marine organisms. ICES can help governments to develop internationally agreed criteria for responsible and sustainable aquaculture.

The newly established Working Group on Aquaculture (WGAQUA) will develop science and advice for aquaculture sustainability in the ICES area, addressing issues such as sea lice, pest and predator management, climate change, and impacts on wild species and fisheries. More information on WGAQUA can be found at: <http://www.ices.dk/community/groups/Pages/WGAQUA.aspx>

In 2014, one of the tasks of the group will be to prepare a response providing best available science to a policy request on the potential impact of cultivated fish on wild populations in the North Atlantic.

WGAQUA has the chief remit of developing science and advice for the sustainability of aquaculture in the ICES area, with a focus on the environmental effects of aquaculture, such as organic loading, the fate of waste products, the spread of parasites and disease, and interactions between wild and pen-reared fish. Environmental regulations should be based on reviewed scientific documentation establishing thresholds to avoid specific undesired impacts on the ecosystem. A natural role for ICES is to give advice on principles of assessing impacts to competent authorities.