

Aligning Essential Ocean Variables across disciplines

to better underpin ocean knowledge, indicators, and policy decisions

Essential Ocean Variables (EOVs) are the core set of variables needed to track the state, variability, and health of the ocean. Coordinated through the Global Ocean Observing System (GOOS), EOVS observations underpin ocean science, forecasts, and sustainable ocean management.

ObsSea4Clim, BioEcoOcean, and BioGeoSea, three Horizon Europe projects, each address EOVS in a different domain: physics, biology and ecosystems, and biogeochemistry.

The three projects joined forces within the EOVS Network, coordinated by EuroGOOS, with the joint objectives to:



Close **critical gaps** in EOVS coverage to strengthen monitoring and scientific assessments



Collaborate across domains to **co-design** ocean observation requirements



Deliver **actionable** indicators to support policy and decision-making

Together, these efforts contribute to a more integrated and fit-for-purpose ocean observing system.

Contact the EOVS Network: eov.forum@eurogoos.eu



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GOOS Essential Ocean Variables

The backbone of a sustained and evolving global ocean observing system



Turbulent diapycnal fluxes



Ocean surface heat flux



Sea surface height



Sea surface salinity



Subsurface temperature



Sea surface temperature



Ocean bottom pressure



Sea state



Ocean surface stress



Subsurface salinity



Sea ice



Surface currents



Subsurface currents



Oxygen



Inorganic carbon



Dissolved organic carbon



Particulate matter



Ocean colour



Nutrients



Stable carbon isotopes



Transient tracers



Nitrous oxide



Ocean sound



Marine debris



Seabirds
abundance
& distribution



Sea turtles
abundance
& distribution



Fish
abundance
& distribution



Marine mammals
abundance
& distribution



Coral
cover & composition



Seagrass
cover & composition



Microbes
biomass
& diversity



Benthic invertebrates
abundance
& distribution



Phytoplankton
biomass
& diversity



Zooplankton
biomass
& diversity



Mangroves
cover & composition



Macroalgal canopy
cover & composition



Physical EOVs



Biogeochemical EOVs



Biology & Ecosystems EOVs



Cross-disciplinary EOVs



Pilot EOVs



EOVs also identified as Essential Climate Variables (ECVs)

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