

Coastal seas: resources and risks

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Coastal seas are marginal parts of the global oceans, which are strongly and directly influenced by land. Coastal land is mostly inhabited, and often massively so. Thus, the land influence is modified by humans, e.g., by discharge of nutrients and pollutants, fixing coastlines, modifying sediment loads, extracting oil, gas, water and fish, introducing new species and more indirectly: climate change. Coastal environments present risks, such as high waves, strong winds, surges, alga blooms and erosion; they also provide opportunities of human exploitations, i.e. represent a resource. The coastal seas are subject to geophysical and ecological dynamics, but also to societal dynamics.

Challenges of coastal sea research concern the ability to detect and predict short-term hazards, possibly related to accidents, the detection of ongoing long-term changes, attributing plausible causes for such changes as well as anticipating future changes. The catalogue of changes comprises climate variability and change, modifications of land- and seascape, usage of resources or release of substances, to mention some. The scientific approaches CoastDat, COSYNA and CoastMap are briefly sketched, as well as the issue of embedding into a societal context.