

Time-series studies at the Deep-Sea Observatory HAUSGARTEN

The marine Arctic has been an integral part of the history of our planet over the past 130 million years and contributes significantly to the present functioning of the earth and its life. The global cycles of a variety of materials fundamental to life and the state of the atmosphere depend to a significant extent on arctic marine processes.

The past decades has seen remarkable changes in the Arctic, of which we do not know whether these represent temporary perturbations, long-term trends, or a new equilibrium. The decrease of sea-ice extent and sea-ice thickness in the past decade is statistically significant. These alterations will directly affect food-web structures and ecosystem functioning.

Enabling the detection of expected changes in abiotic and biotic parameters in a transition zone between the northern North Atlantic and the central Arctic Ocean, the Alfred Wegener Institute for Polar and Marine Research established the Deep-Sea Observatory HAUSGARTEN in the eastern Fram Strait.

HAUSGARTEN comprises a network of 17 permanent stations covering a depth range of 1.000 to 5.500 m water depth ([see map](#)). Repeated sampling and the deployment of [moorings](#) and different [freefalling systems](#), which act as observation platforms, has taken place since the beginning of our studies in summer 1999. At regular intervals, a Remotely Operated Vehicle (ROV) is used for targeted sampling, the positioning and servicing of autonomous measuring instruments and the performance of *in situ* experiments. A 3.000 m depth-rated Autonomous Underwater Vehicle ([AUV](#)) further extends the sensing and sampling programmes at the observatory.

HAUSGARTEN represents a key site of the European Network of Excellence [ESONET](#) (European Seas Observatory Network) and the Infrastructure Projekt [EMSO](#) (European Multidisciplinary Seafloor Observatory), and is also a member of the [LTER](#) (Long-Term Ecological Research) Network.

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Project informations

Soltwedel et al. (2005). HAUSGARTEN: multidisciplinary investigations at a deep-sea, long-term observatory in the Arctic Ocean. *Oceanography*, 18 (3): 46-61.

Publications

[featuring results from the HAUSGARTEN observatory](#)



