Boknis Eck Time Series Station

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-> www.bokniseck.de
Boknis Eck – Time Series Station

Coordinates: 54°32′N 10°03′E
Water depth: ~28 m
Standard sampling depths: 1, 5, 10, 15, 20, 25 m
Sampling interval: monthly

(Hansen et al., 1999)
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- Temp/Sal; CTD
- O₂
- Secchi depth
- pH
- PO₄³⁻
- NO₃⁻, NH₄⁺, SiO₂
- NO₂⁻
- Chl. a
- Primary production
- TBN, BP
- Zooplankton
- Trace gases
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Hydrographic setting:
- Seasonal inflow of North Sea water
- No river input
- Groundwater seepages south of BE

(from the North Sea)

(Weigelt, 1990)
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Trends in dissolved nutrients

(a) Phosphate

(b) Nitrate

(Lennartz et al., 2014)
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Occurrence of hypoxia

Trend in diss. oxygen at 25 m

(d) Oxygen (25 m) (Lennartz et al., 2014)
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Glider study, 9-16 July 2010
(Karstensen et al., 2014)

Temp, Sal, O2, Chl a, Turbidity, Buoyancy frequency
The location of BE is ideal
i) to study a coastal ecosystem under the influence of pronounced changes of salinity and
ii) to study biogeochemical processes sensitive to changes of dissolved oxygen
iii) to detect on-going long-term trends (eutrophication, deoxygenation, warming, acidification) and their effects on a coastal ecosystem

In the future
- detect short-term variabilities which cannot be detected with monthly sampling

Develop BE into
1) a fully equipped monitoring site and
2) utilize BE as a test site for novel sensor designs
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**BE & COSYNA**

Scientific question

What are the biological/ecological implications and socio-economic consequences of the on-going environmental changes?

→ BE as part of a *Coastal Observing System for the Baltic Sea*
→ Complementary to FerryBox Line Kiel-Oslo
→ Contributes to the operational synoptic description of the environmental status of the Baltic Sea
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Location of underwater observatory (~18m depth)

'Haugsarten' Sperrgebiet

Location of underwater observatory

BE time series site

Data & supply cable

ECKERNFÖRDE BAY
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Main Frame of Underwater Observatory
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Lander of Underwater Observatory
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Sensor Package of Underwater Observatory

- Sentinel ADCP
- MicroCAT SBE37-SMB-ODO
- Oxygen Optode 4330
- Hydro C-Plus CH4
- Hydro C – CO2