

# UN-Dekade Ökosystemwiederherstellung

## 11. Online Dialog: Meere und Küsten

Dr. Bernadette Pogoda



AWI Nordseebüro



Scandinavian Fishing Yearbook



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# UN-Dekade Ökosystemwiederherstellung

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UNITED NATIONS DECADE ON  
**ECOSYSTEM  
RESTORATION**  
2021-2030

- Den Nutzen von Ökosystemen erkennen und sich für die Wiederherstellung einsetzen.
- Den notwendigen politischen Willen zur Wiederherstellung von Ökosystemen schaffen.
- Die zur weltweiten Umsetzung benötigten technischen Kapazitäten schaffen.

# Wissenschaftlicher Beirat

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- 17 Mitglieder
- Kultur- und Agralandschaften, Wälder, Moore und Feuchtgebiete, Gewässer und Auen, Küsten und Ozeane
- **Ziele: Kompetenz und Vernetzung, Kooperation und Entwicklungsimpulse**
- Statement des Beirats zur Unterstützung des EU Restoration Law

# Statement des Beirats

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2021-2030

- <https://www.undekade-restoration.de/wissenschaftlicher-beirat/statement>
- Impuls an die MdEP Umweltausschuss, Abstimmung EU Restoration Law (06/2023)
- UN-Dekade Online Dialog zum Statement und EU Restoration Law (06/2023)
- UN-Dekade Leitlinie in der Kooperation mit den Jungen Partner:innen (04/2024)
- **Basis für das UN-Dekade Fachforum „Woche der Umwelt“ in Berlin (06/2024)**

# Laufende Aktivitäten

- Junge Partner:innen **als Impulsgeber**, als Gesicht
- Website und Projektdatenbank
- Social Media und Newsletter
- **Projektauszeichnung**



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**Meere und Küsten: Bewerbung bis 16. Juni 2024**



# UN-Dekade Ökosystemwiederherstellung

## 11. Online Dialog: Meere und Küsten

### Renaturierung von Riffen, Seegraswiesen und Salzmarschen

#### - natürliche Lösungen im Klimawandel

Dr. Bernadette Pogoda

The logo for AWI Nordseebüro is located in the bottom left corner of the slide. It features the AWI logo (a blue globe icon and the letters 'AWI' in blue) followed by the text 'Nordseebüro' in a dark blue, sans-serif font.

AWI Nordseebüro



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# Naturschutzfachlicher Hintergrund



**Marine Strategy Framework Directive:**  
Achieving Good Environmental Status (GES)



**Flora Fauna Habitat Directive:**  
Good Conservation Status

Sustainably manage and protect marine and coastal ecosystems to avoid significant adverse impacts, including by strengthening their resilience, and take action for their **restoration** in order to achieve healthy and productive oceans.



Prevent,  
halt and  
reverse the  
degradation of  
ecosystems.



Habitatstrukturen  
Arteninventar  
Beeinträchtigung



# Ökologische Bedeutung der Riffe: Biodiversität

- Entstehung biogener Strukturen
- Habitat, Schutzraum, Nahrung, Laichgrund
- Filtrationsleistung
- Benth-Pelagische Kopplung
- ...

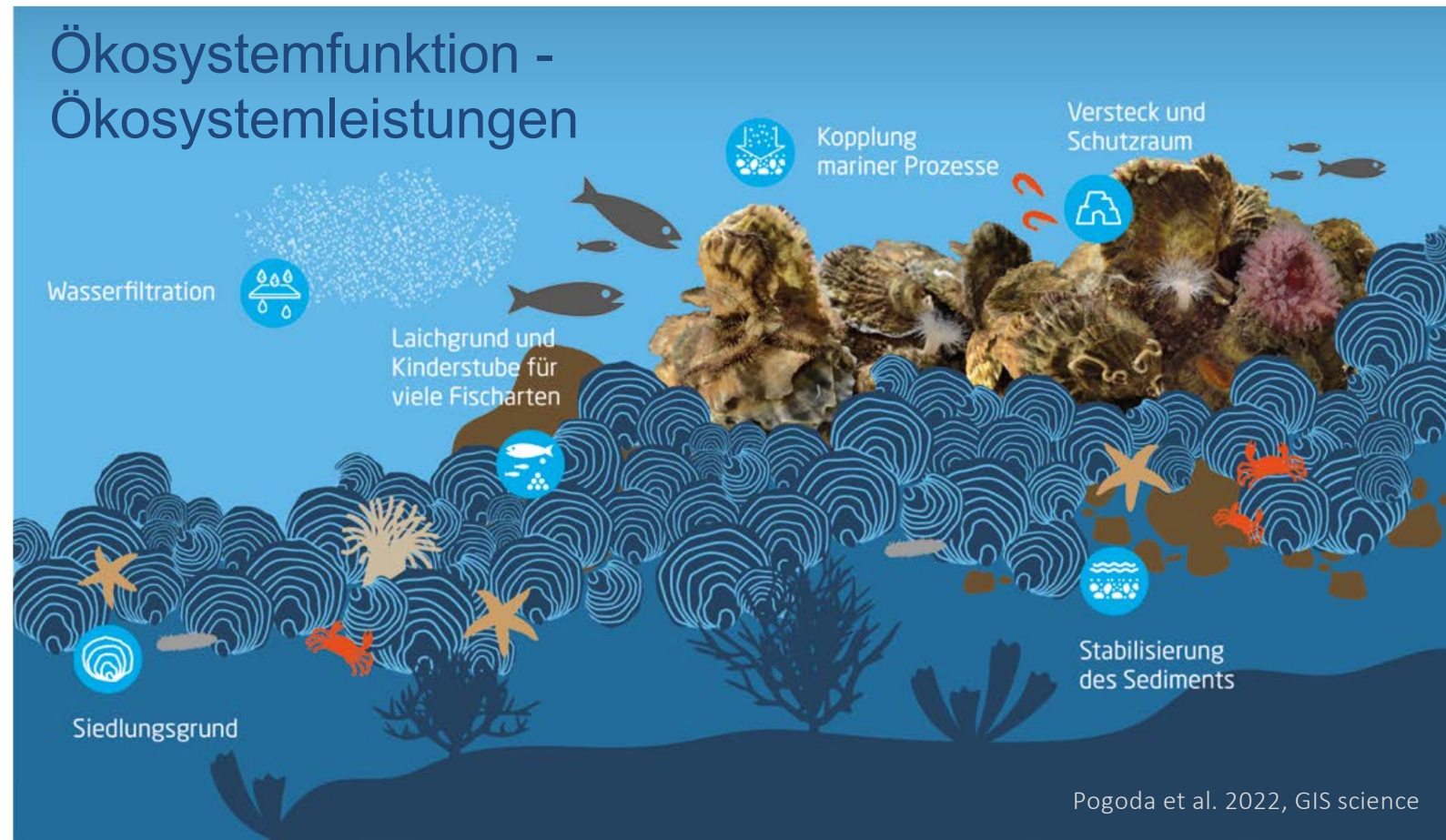


Abbildung 1: Austern sind Ökosystemingenieure und bilden durch ihr Schalenwachstum dreidimensionale Strukturen: biogene Riffe. Diese komplexen Habitate erfüllen wichtige ökologische Funktionen (Steigerung der Biodiversität) und erbringen vielfältige Ökosystemleistungen (AWI, Foto Zankl).



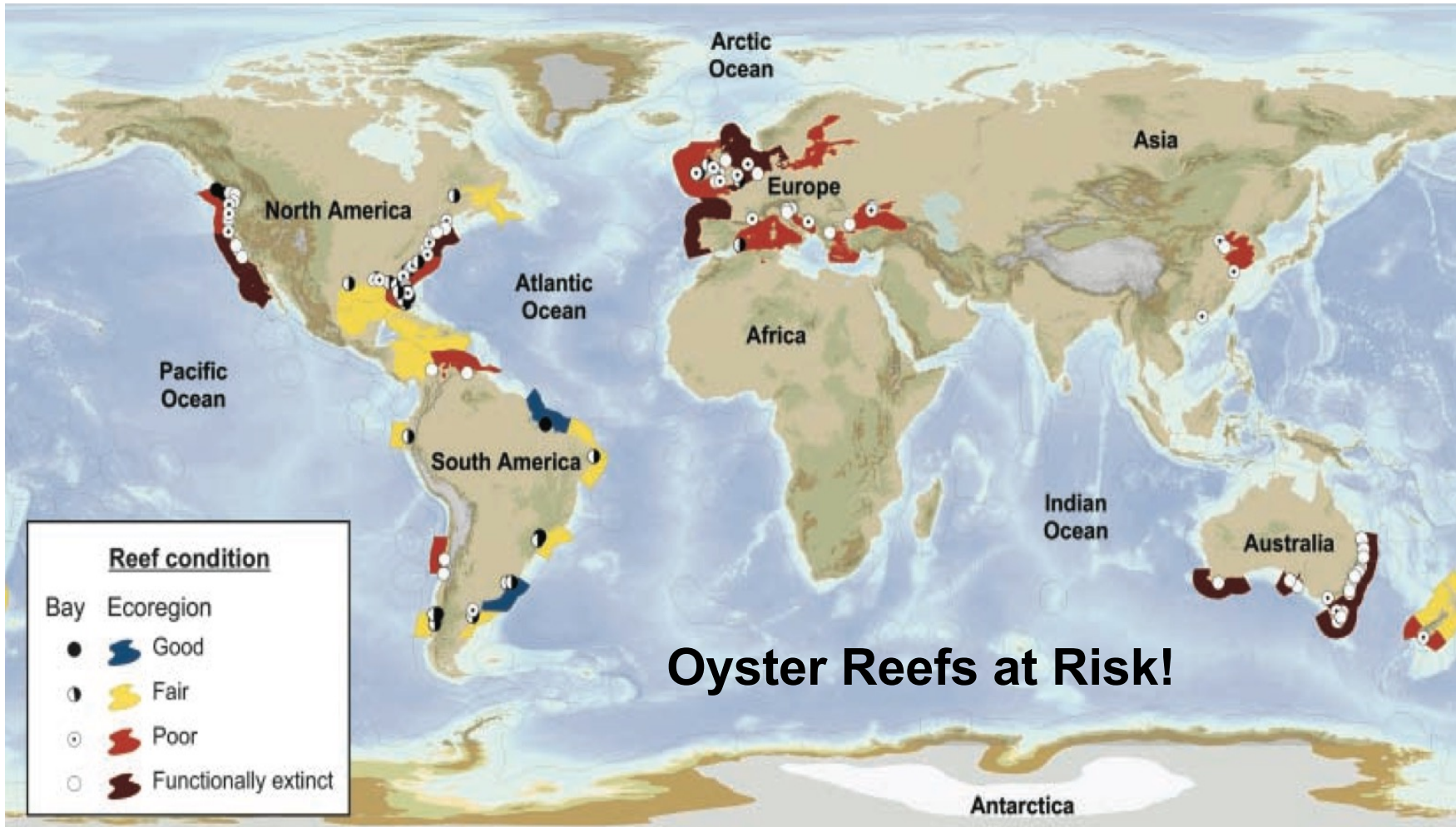
# Ökologische Bedeutung der Riffe: Biodiversität

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- ...



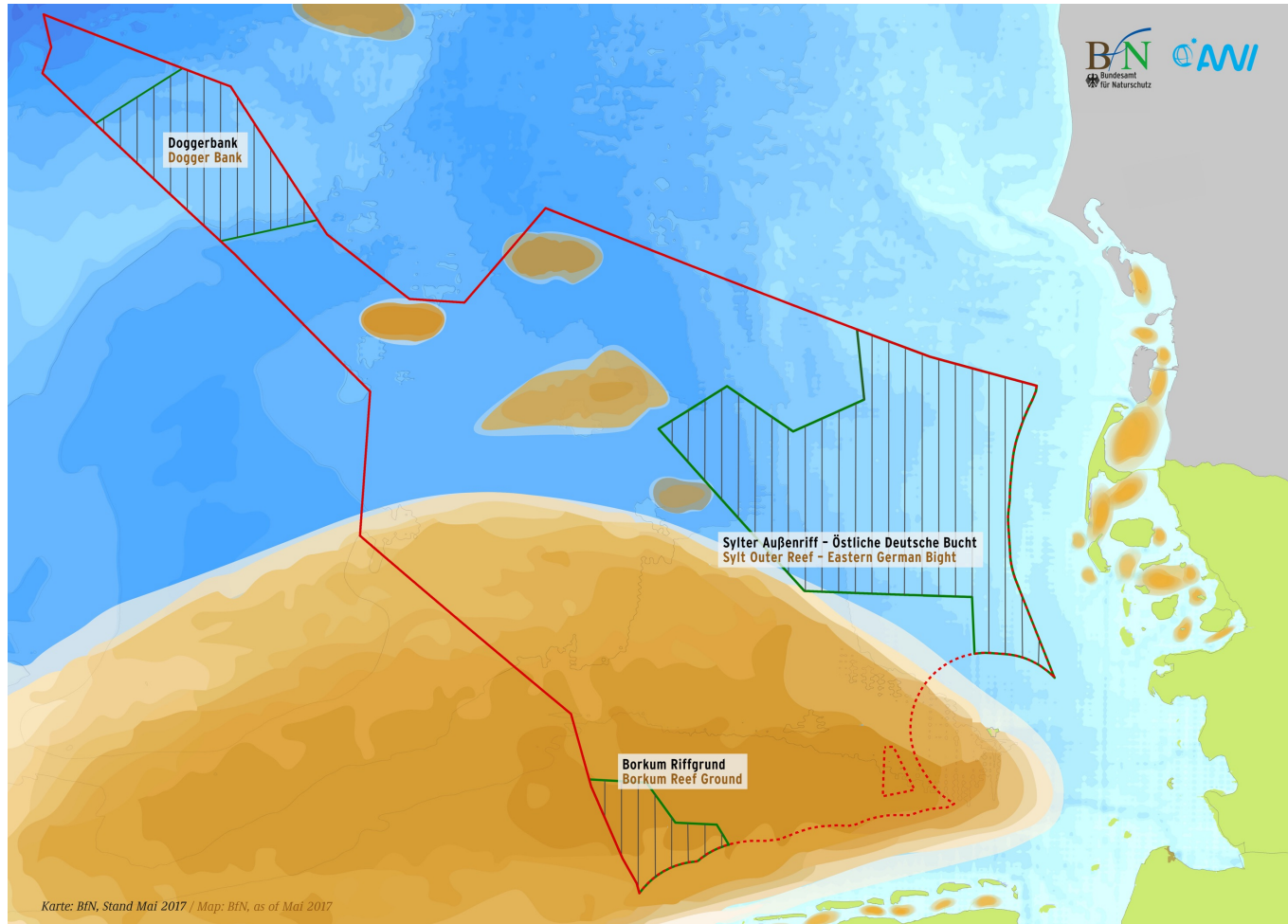
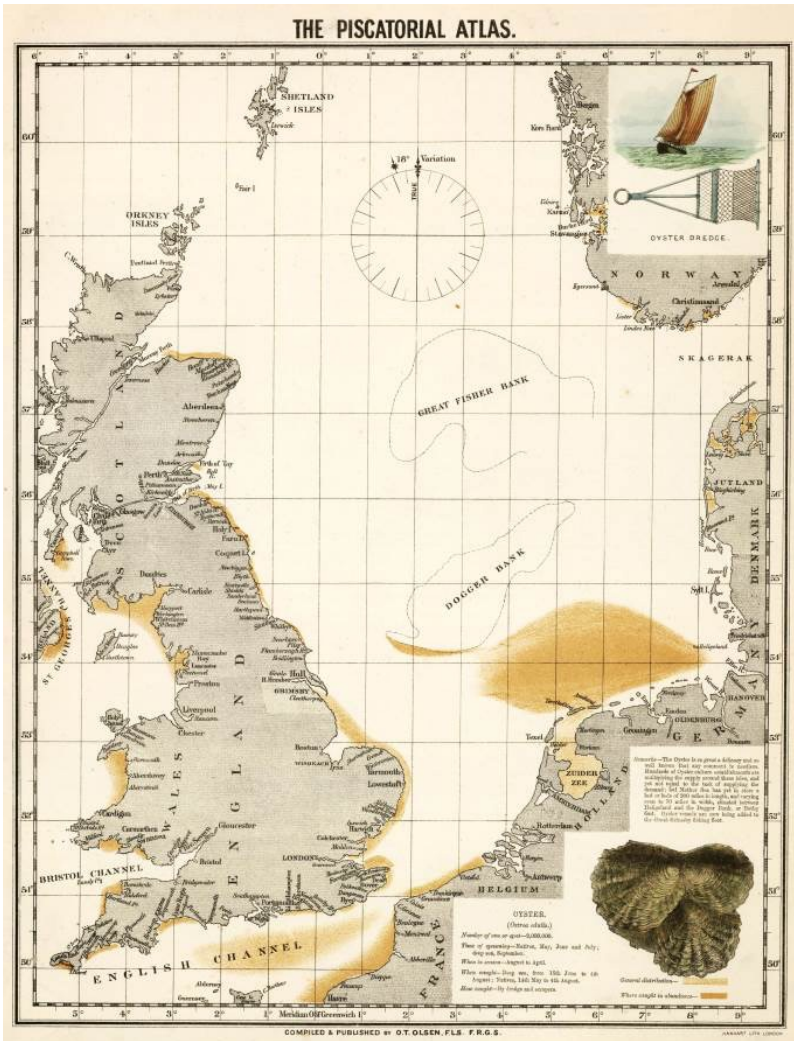
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# Internationaler Hintergrund



Beck MW, Brumbaugh RD, Airoidi L, et al. (2011) Oyster Reefs at Risk and Recommendations for Conservation, Restoration, and Management. *Bioscience* 61(2):107-116

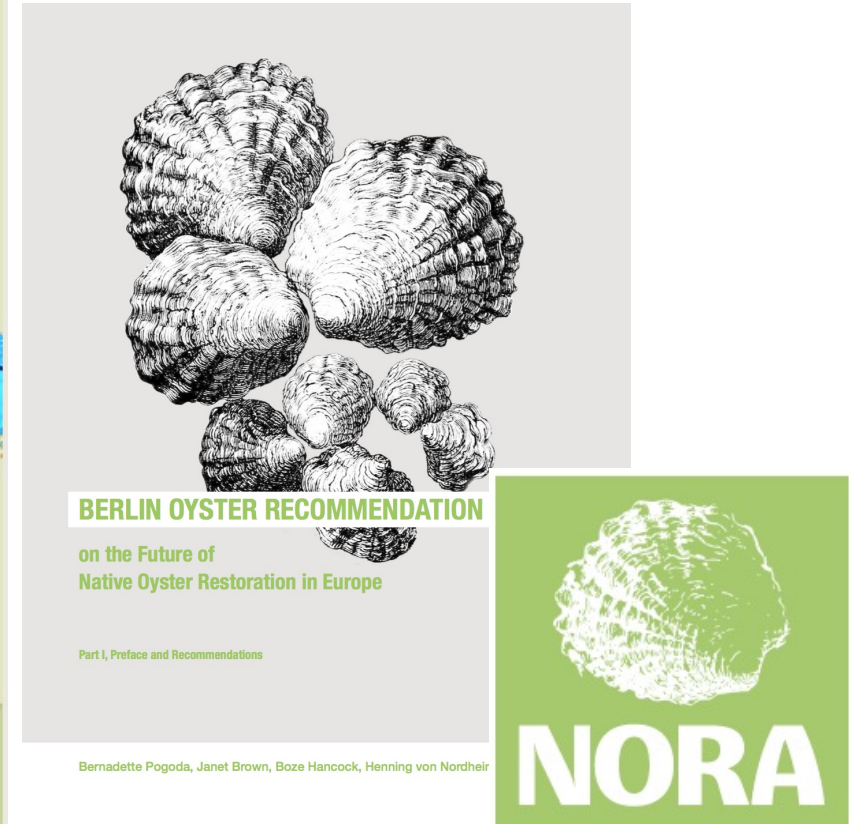
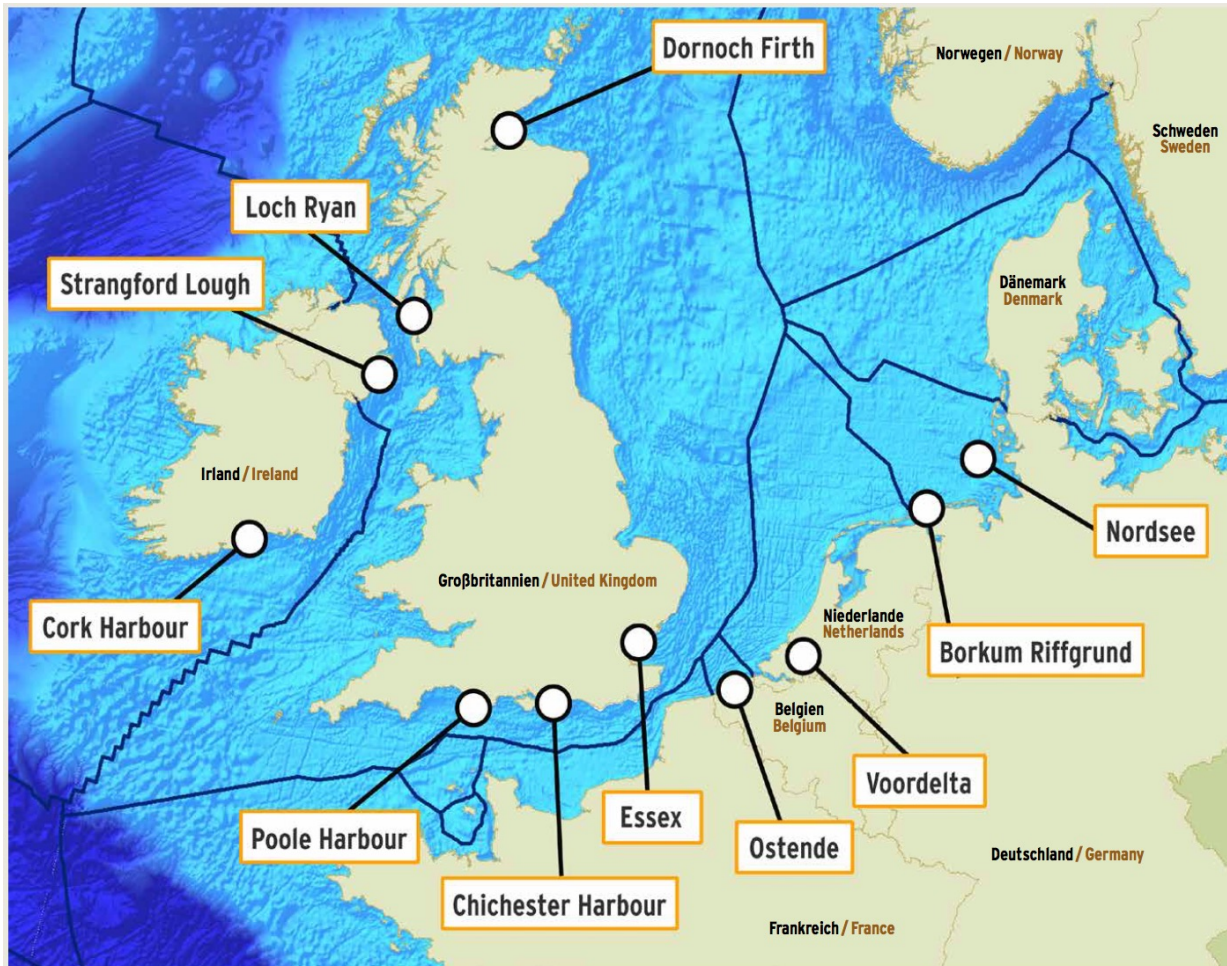
# Historischer Hintergrund



Karte: BfN, Stand Mai 2017 / Map: BfN, as of Mai 2017

Olsen OT (1883) Piscatorial Atlas, Pogoda et al (2020)

# Europäischer Hintergrund: NORA



Pogoda et al (2017)

[www.noraeurope.eu](http://www.noraeurope.eu)

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# Schritte zur Umsetzung

- Standortwahl & Habitateignung
- Pilotriff im Borkum Riffgrund
- Untersuchung der Biodiversität
- Erprobung, Erkenntnisse, Leitfaden
- Managementmaßnahmen & Realkompensation
- Entwicklung integrierter Maßnahmen

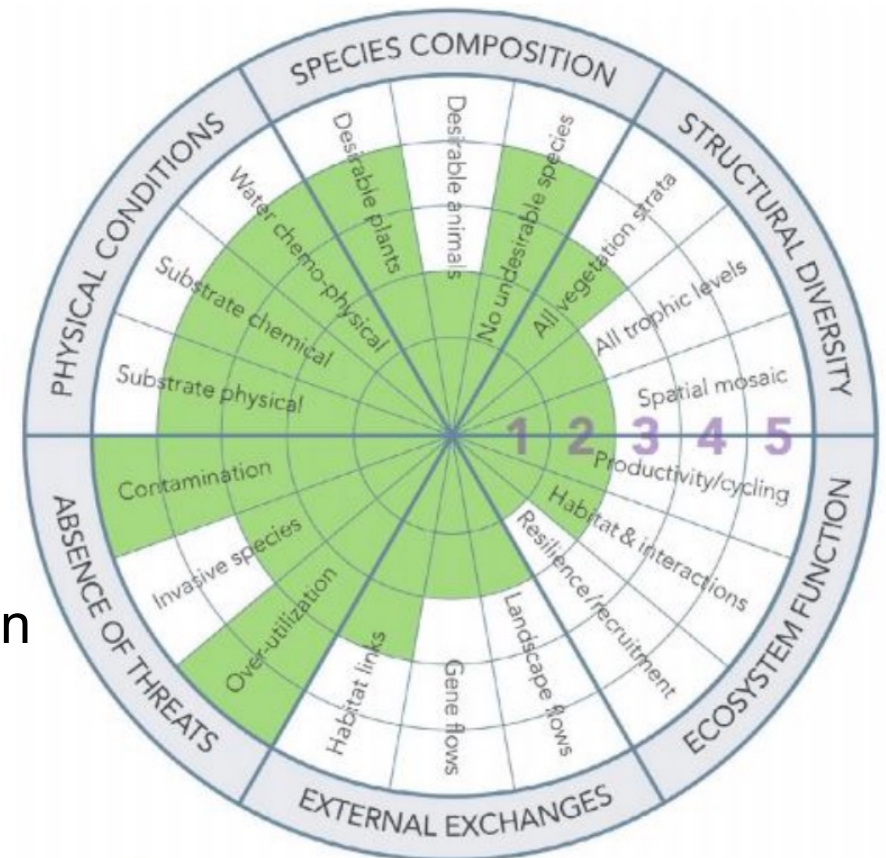
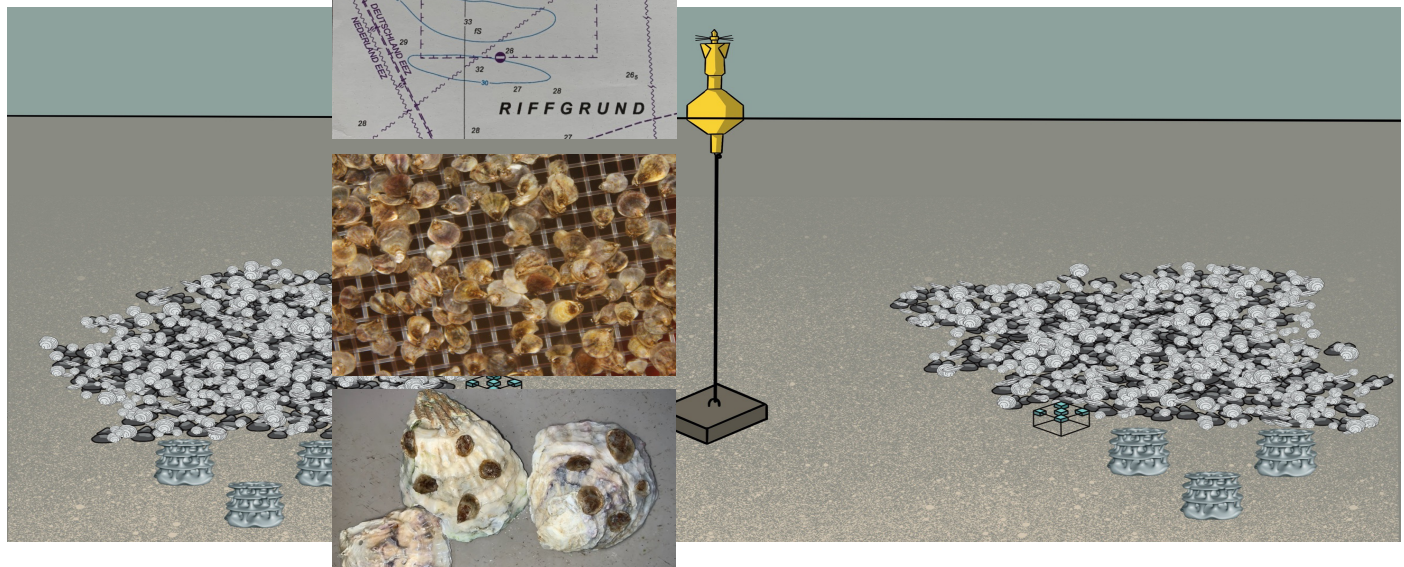
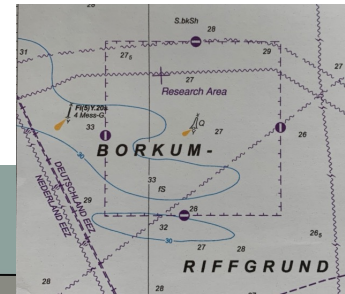
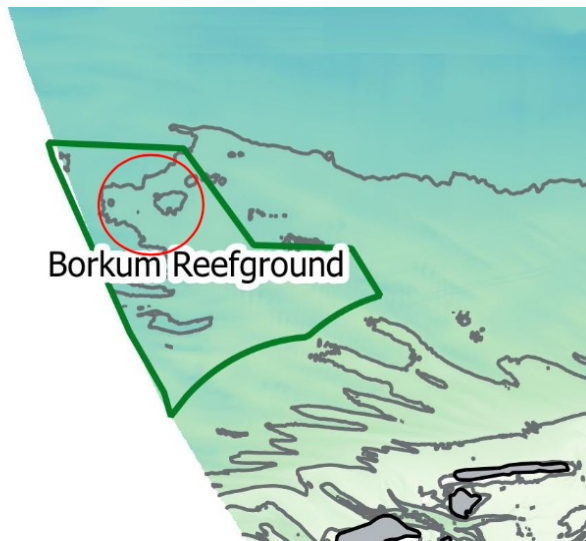
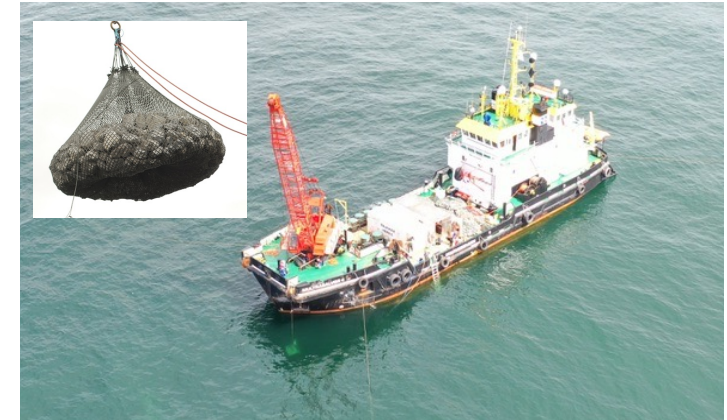


Figure 1. Progress evaluation 'recovery wheel' depicting a hypothetical 1-year old reconstruction project on its way to a 4-star condition. See page 20 on the [Standards](#)

# Pilotriff im Borkum Riffgrund

- Einrichtung "Research Area" 2019
- Errichtung Pilotriff mit Steinschüttung & Austern 2020



# Pilotriff im Borkum Riffgrund

[www.noraeurope.eu](http://www.noraeurope.eu)

[www.heimische-auster.de](http://www.heimische-auster.de)

[www.awi.de/europaeische-auster](http://www.awi.de/europaeische-auster)

[www.bfn.de/themen/meeresnaturschutz/artenschutzprojekte](http://www.bfn.de/themen/meeresnaturschutz/artenschutzprojekte)

[www.nordsee-life.nabu.de](http://www.nordsee-life.nabu.de)



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2021-2030



leben.natur.vielfalt  
das Bundesprogramm

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**ECOSYSTEM  
RESTORATION**  
2021-2030



# Standortwahl & Habitategnung

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DOI: 10.1002/aqc.3405



SPECIAL ISSUE ARTICLE

WILEY

## Site selection for biogenic reef restoration in offshore environments: The Natura 2000 area Borkum Reef Ground as a case study for native oyster restoration

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Tanja Hausen<sup>1</sup> | Corina Peter<sup>1</sup> | Roland Pesch<sup>3</sup> | Maïke Kramer<sup>4</sup> |  
Sandra Jaklin<sup>4</sup> | Peter Holler<sup>5</sup> | Alexander Bartholomä<sup>5</sup> | Rune Michaelis<sup>2</sup> |  
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Federal Agency for Nature Conservation with funds from the Federal Ministry for the Environment, Nature Conservation and Nuclear Safety, Grant/Award Number: 3516892001

### Abstract

- According to the EU Marine Strategy Framework Directive (2008/56/EC), marine protected areas (MPA) should contribute to a good environmental status of the European seas. Measures maintaining or restoring a favourable conservation status of protected species and habitats are mandatory according to the EU Habitats Directive (92/43/EEC).
- Identification of suitable sites for ecological restoration measures within MPAs is a crucial step towards successful conservation and sustainable MPA management. In terms of species restoration, it is important to restore the respective species with the best possible environment for growth, survival, fitness, and successful recruitment.
- This study provides a comprehensive list of site-selection criteria for ecological species restoration. Three general categories were chosen: (1) ecological history: evidence for the historical distribution; (2) feasibility of restoration: regulating framework and logistics; and (3) environmental conditions: quality of abiotic and biotic factors. A total of 16 site-selection criteria were identified and applied to biogenic reef restoration, namely for reefs of the native European oyster *Ostrea edulis*, in the German Bight.
- The Natura 2000 area Borkum Reef Ground was identified as a suitable site for oyster restoration. It is one of three MPAs in the German Exclusive Economic Zone of the North Sea, which have been declared as Nature Conservation Areas according to national legislation. The conservation objectives include maintenance or, if necessary, restoration of the habitat type 'reefs'. As a reef-building species, the European oyster *O. edulis* is of particular importance for this habitat type in terms of nature conservation.

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DOI: 10.1002/aqc.3917

RESEARCH ARTICLE

## Site selection for European nat restoration projects: An expert

Anna Hughes<sup>1</sup> | Krno Bončić<sup>2</sup> | Ton  
Fiz da Costa<sup>3</sup> | Alison Debney<sup>4,7</sup> | Luc  
José M. Fariñas-Franco<sup>10</sup> | Celine Gamble<sup>6</sup>  
Eric Holden<sup>13</sup> | Katherine Knight<sup>13</sup> | Jan  
Bernadette Pogoda<sup>15</sup> | Stéphane Pouvres  
Alec Reid<sup>18</sup> | Emilie Reuchlin-Hugenholz<sup>19</sup>  
David Smyth<sup>21</sup> | Brecht Stechele<sup>22</sup> | Ásá  
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**Funding information**  
Alfred Wegener Institute Helmholtz Centre for Polar and Marine Research; Bundesamt für Naturschutz; Bundesministerium für Umwelt, Naturschutz und Reaktionsicherheit; Nature Conservation

### Abstract

- The European nat historically create European seas.
- Overfishing and pollution, invasive the functional ext
- Although oyster rapidly gaining m an essential first s
- In this study, a th important factors restoration projec
- Consensus was n in site selection addition to the socio-economic a the temporal and and understandin influence the pote
- This list guides s which should be i

For affiliations refer to page 12

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DOI: 10.1002/aqc.3928

RESEARCH ARTICLE

WILEY

## Come, tell me how you live: Habitat suitability analysis for *Ostrea edulis* restoration

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Sarah Hauser<sup>3</sup> | Bérenger Colso<sup>1</sup> | Manuel Dureuil<sup>4</sup> | Jochen Krause<sup>4</sup> |  
Kathrin Heinicke<sup>4</sup> | Christian Pusch<sup>4</sup> | Simone Eisenbarth<sup>4</sup> | Axel Kreutle<sup>4</sup> |  
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<sup>1</sup>Shelf Seas Systems Ecology, Alfred Wegener Institute Helmholtz Centre for Polar and Marine Research, Bremerhaven/Helgoland/Sylt, Germany

<sup>2</sup>Institute for Applied Photogrammetry and Geoinformatics, Jade University of Applied Sciences, Oldenburg, Germany

<sup>3</sup>Department of Geoinformatics, Munich University of Applied Sciences, Munich, Germany

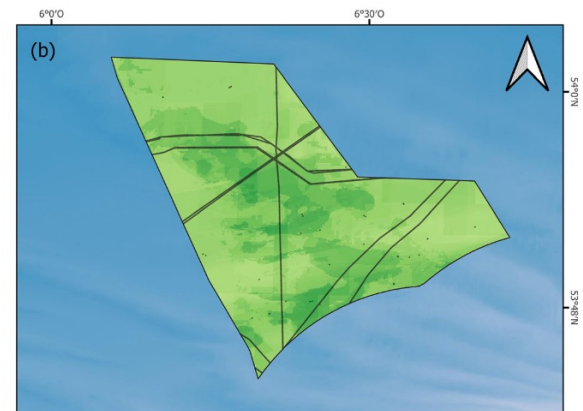
<sup>4</sup>Marine Directorate, German Federal Agency for Nature Conservation (BfN), Putbus, Germany

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Email: tanja.hausen@awi.de

### Funding information

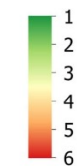
German Federal Agency for Nature Conservation (BfN), Grant/Award Numbers: FKZ 3520892013, FKZ 3519892016, FKZ 3516892001



## Borkum Reef Ground

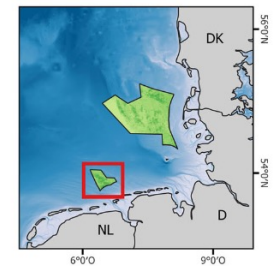
Exclusion zones

Suitability Scores



ETRS89/UTM32 1 : 400.000

0 2,5 5 7,5 10 Nautical Miles



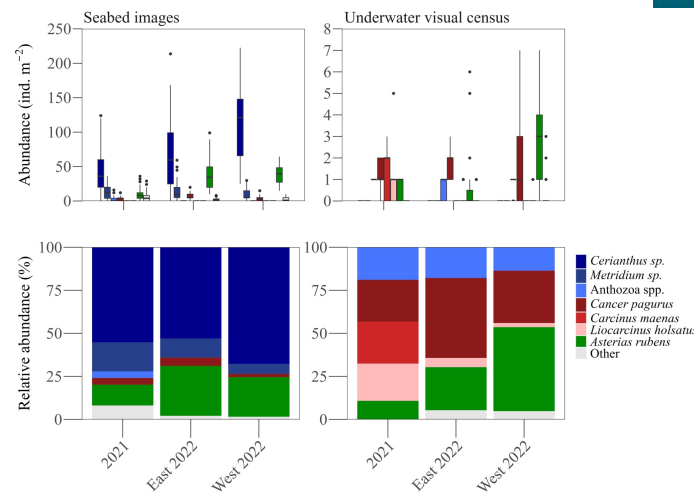
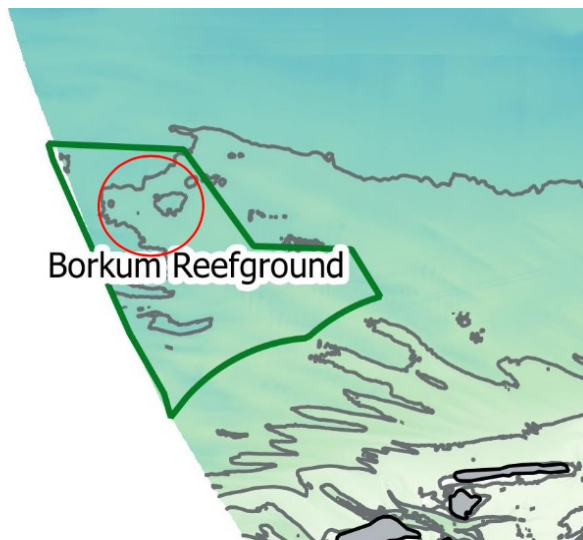
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Aquatic Conserv: Mar Freshw Ecosyst. 2023;1–18.

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# Pilotriff im Borkum Riffgrund

- NORA Monitoring-Leitfaden
- Biodiversitätsmonitoring 2021, 2022, ... 2023
- Austern: Wachstum, Fortpflanzung & Konnektivität



Pineda-Metz et al. in prep.

