

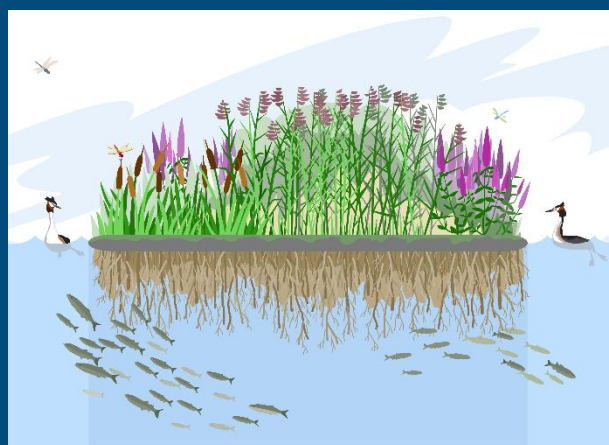
Policy Brief # 1

Background – Floating wetlands and remediation of eutrophication

One option to tackle internally accumulated nutrients in eutrophicated coastal waters is phytoremediation and the harvest of emergent macrophytes. Besides the harvest of natural wetlands, a new solution has arisen: Floating wetlands! Floating structures are planted with native emergent macrophytes. The plant roots adsorb phosphorus and nitrogen directly from the water, enhance particle settling due to the reduction of flow velocity and offer diverse habitats for fish, birds and insects.



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How to choose the right plant species?



- ✓ Use native and non-invasive emergent macrophytes.
- ✓ Choose perennial plants, if possible with aerenchyma (“air channels”).
- ✓ Consider local environmental conditions, e.g. salinity and climate.
- ✓ Think about biomass utilization (e.g. fodder, energy, construction material) before harvest.
- ✓ Decide if you want to use the floating islands also as biodiversity hotspots (e.g. integration of endangered species such as *Iris pseudacorus*) or tourist attraction (e.g. integration of flowering plants such as *Lythrum salicaria*).

Recommendations – What to consider prior to installations?

- ✓ Talk to stakeholders and make a list of possible installation sites.
- ✓ Gather information regarding environmental conditions and location factors.
- ✓ Water depth, water level fluctuations, waves and currents influence anchoring.
- ✓ Take into account regional fisheries, tourism, maritime traffic and nature protection areas in order to prevent spatial conflicts of use.
- ✓ Get informed about regional laws and regulation



| Case study | Permits required (national language): | Permits required (English): | Relevant laws: | State authority (national language): | State authority (English): |
|--|--|--|--|--|---|
| Szczecin Lagoon, Mecklenburg-Vorpommern, Germany | Naturschutzrechtliche Genehmigung | Permission issued under environmental law | §13-18 BNatSchG, §40 NatSchAG M-V | Untere Naturschutzbehörde LK Greifswald-Vorpommern | Nature conservation authority of the district |
| | Wasserrechtliche Erlaubnis | Permission issued under water law | §8/9/43 WHG + §23/89 LWaG | Untere Wasserbehörde StALU Vopommern | Lower level water authorities |
| | Strom-und schiffahrtspolizeiliche Genehmigung | License of the river and shipping police | §31 WaStrG | Wasserstraßen-und Schifffahrtsamt WSA Stralsund | Waterways and Shipways Office |
| Puck Bay Pomorskie, Poland | Pozwolenie na wznoszenie i wykorzystywanie sztucznych wysp, konstrukcji i urządzeń | Permit for construction and usage of artificial islands, constructions and devices | Ustawa z dnia 21 marca 1991 r. o obszarach morskich i administracji morskiej - Art. 23 | Urząd Morski w Gdyni | Maritime Office Gdynia |
| | Zgoda na zajęcie obszaru morskich wód wewnętrznych | Permit for use of internal marine waters area | Prawo Wodne, art. 20 ust. 1, pkt. 4 | Urząd Morski w Gdyni | Maritime Office Gdynia |
| | Uzgodnienie sposobu oznakowania wyspy | Agreement on a way (method) of marking the island | Gospodarki Morskiej z dnia 4 grudnia 2012 r. w sprawie oznakowania nawigacyjnego | Kapitanat portu we Władysławowie | Władysławowo harbour authority |
| Curonian Lagoon Neringa, Lithuania | Leidimas | Permit for the construction in the coastal zone | LR vidaus vandens transporto kodeksas | Vidaus vandens kelių valdytojas (Neringos savivaldybė) | Neringa municipality |
| | Leidimas | Permit for the construction in the waterways and port areas | LR vidaus vandens transporto kodeksas | Aplinkos Apsaugos Agentūra | Environmental Protection Agency |
| | Poveikio aplinkai vertinimas | Environmental Impact Assessment | LR Planuojamos ūkinės veiklos PAV įstatymas | Klaipėda Regioninė Aplinkos Apsaugos Agentūra | Klaipėda Regional Environmental Protection Agency |

More information

Karstens, S., Nazzari, C., Bâlon, C., Bielecka, M., Grigaitis, Z., Schumacher, J., Stybel, N., Razinkovas-Baziukas, A. (2018): Floating wetlands for nutrient removal in eutrophicated coastal lagoons: Decision support for site selection and permit process. *Marine Policy* 97, 51-60.