Estimation of potential indirect effects of sediment transport from mussel seed fisheries on eelgrass beds

General information
State: Published
Organisations: National Institute of Aquatic Resources, Danish Shellfish Centre, Aarhus University
Authors: Saurel, C. (Intern), Mohn, C. (Ekstern), Andersen, K. L. (Intern), Bak, F. (Intern), Barreau, P. D. A. (Intern), Petersen, J. K. (Intern)
Publication date: 2017
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GIS- og model-værktøj til forudsigelse af ålegræs retablering sites

General information
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Organisations: National Institute of Aquatic Resources, Danish Shellfish Centre, Styrelsen for Vand & Naturforvaltning (SVANA), DHI Denmark, Syddansk Universitet
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How to increase mussel longline production in Denmark?

General information
State: Published
Organisations: National Institute of Aquatic Resources, Danish Shellfish Centre
Authors: Saurel, C. (Intern), Andersen, L. K. (Intern), Barreau, P. D. A. (Intern), Boesen, H. (Intern), Petersen, J. K. (Intern)
Publication date: 2017
Event: Abstract from Dansk Havforskmøde, Helsingør, Denmark.
Main Research Area: Technical/natural sciences
Publication: Research › Conference abstract for conference – Annual report year: 2017

Identifying the optimal depth for mussel suspended culture in shallow and turbid environments

Bivalve aquaculture is commonly carried out in shallow water systems, which are susceptible to resuspension of benthic particulate matter by natural processes such as tidal currents, winds and wave action, as well as human activity. The resuspended material can alter the availability of food particles for cultured bivalves. The effect of resuspended material on bivalve bioenergetics and growth is a function of the quality and concentration of resuspended particles and background diet in the water column. Given the potential for positive or negative impacts on bivalve growth and consequently on farm productivity, farmers must position the cultured biomass at the appropriate depth to benefit from or mitigate the impact of this resuspended material. A combination of field measurements, a 1-D vertical resuspension model and a bioenergetic model for mussels based on Dynamic Energy Budget (DEB) theory has been carried out for a mussel farm in Skive Fjord, a shallow Danish fjord, with the aim of identifying the optimal depth for culture. Observations at the farm location revealed that horizontal advection is more important than vertical resuspension during periods with
predominant Eastern winds. In addition, high background seston in the water column reduces the impact of resuspension on the available food for mussels. The simulation of different scenarios in terms of food availability suggested minimal effects of resuspension on mussel growth. Based on this finding and the fact that phytoplankton concentration, the main food source for mussels, is usually higher in the upper part of the water column, suspended culture in the top ~3m of the water column seems to be the optimal practice to produce mussels in Skive Fjord.
Invasive skaldyr i Limfjorden

General information
State: Published
Organisations: National Institute of Aquatic Resources, Danish Shellfish Centre, University of Bergen, University of Copenhagen
Authors: Petersen, J. K. (Intern), Glenner, H. (Ekstern), Nielsen, P. (Intern), Lützen, J. (Ekstern)
Pages: 36-40
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Main Research Area: Technical/natural sciences

Konsekvensvurdering af fiskeri efter blåmuslinger ved og øst for Horsens Fjord samt Endelave 2017

General information
State: Published
Organisations: National Institute of Aquatic Resources, Danish Shellfish Centre, Section for Monitoring and Data
Authors: Nielsen, P. (Intern), Canal-Vergés, P. (Intern), Nielsen, M. M. (Intern), Geitner, K. (Intern), Petersen, J. K. (Intern)
Number of pages: 46
Publication date: 2017
Mussel fishery in Natura 2000 sites - a success story from Denmark

General information
State: Published
Organisations: National Institute of Aquatic Resources, Danish Shellfish Centre
Authors: Nielsen, P. (Intern), Petersen, J. K. (Intern)
Publication date: 2017
Main Research Area: Technical/natural sciences
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Optimization of mitigation mussel culture for nutrient extraction and animal feedstock replacement: An introduction.

General information
State: Published
Organisations: National Institute of Aquatic Resources, Danish Shellfish Centre
Authors: Taylor, D. (Intern), Saurel, C. (Intern), Nielsen, P. (Intern), Petersen, J. K. (Intern)
Number of pages: 2
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Main Research Area: Technical/natural sciences
Electronic versions:
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Palmaria palmata hatchery – from tetraspores to seedlings

General information
State: Published
Organisations: National Institute of Aquatic Resources, Danish Shellfish Centre
Authors: Schmedes, P. S. (Intern), Nielsen, M. M. (Intern), Reitan, K. (Ekstern), Petersen, J. K. (Intern)
Publication date: 2017
Main Research Area: Technical/natural sciences
Publication: Research › Conference abstract for conference – Annual report year: 2017

P-E performances of four Danish S. latissima populations – Is low light traits persistent and traceable in the F1-generation?

General information
State: Published
Organisations: National Institute of Aquatic Resources, Danish Shellfish Centre
Authors: Schmedes, P. S. (Intern), Nielsen, M. M. (Intern), Reitan, K. (Ekstern), Petersen, J. K. (Intern)
Søpunge – en ny proteinlkode som biomasse i bioraffinering?

General information
State: Published
Organisations: National Institute of Aquatic Resources, Danish Shellfish Centre, University of Gothenburg
Authors: Møller, L. F. (Intern), Petersen, J. K. (Intern), Havenhand, J. (Ekstern)
Publication date: 2017
Event: Abstract from Dansk Havforskermøde, Helsingør, Denmark.
Main Research Area: Technical/natural sciences
Publication: Research › Conference abstract for conference – Annual report year: 2017

Testing the potential for improving quality of sediments impacted by mussel farms using bioturbating polychaete worms

Biodeposits from farmed mussels severely influence the biogeochemistry of sediments by increasing the levels of organic matter (OM). Mitigation of such negative impacts is important for the development of sustainable aquaculture operations. As a step towards developing methods for remediation of coastal sediments affected by mussel farming, the effects of the polychaete, Hediste diversicolor was evaluated experimentally. In a series of field- and laboratory experiments we tested hypotheses about the effects of polychaetes on sediment oxygen consumption, nutrient fluxes and sulphide pools under different polychaete densities and sedimentation regimes. The experimental results support the idea that polychaetes can mitigate negative effects on the benthic environment beneath mussel farms. H. diversicolor oxidized the sediment and generally enhanced the oxygen consumption, and thus the decomposition of OM. The accumulation of pore water sulphides were reduced and fluxes of nutrients across the sediment-water interface increased. Additional calculations suggest that the effects of polychaetes were mainly indirect and driven by increased microbial activity due to the borrowing activity of the polychaetes. Trends of increasing decomposition with increasing polychaete density suggest that the decomposition could be further enhanced by higher densities. Overall, we concluded that H. diversicolor is a potentially strong candidate for remediation of mussel farm sediments. The results show that sediments inhabited by H. diversicolor have high assimilative capacity of OM and oxygen conditions are significantly improved following the addition of polychaetes at naturally occurring densities. However, technological developments are needed in order to allow the approach to be used in practice.

General information
State: Published
Organisations: National Institute of Aquatic Resources, Danish Shellfish Centre, University of Gothenburg, University of Southern Denmark
Authors: Bergström, P. (Ekstern), Carlsson, M. S. (Ekstern), Lindegarth, M. (Ekstern), Petersen, J. K. (Intern), Lindegarth, S. (Ekstern), Holmer, M. (Ekstern)
Pages: 161–176
Publication date: 2017
Main Research Area: Technical/natural sciences

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BFI (2015): BFI-level 1
Scopus rating (2015): SJR 0.79 SNIP 1.1 CiteScore 1.37
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 1
Scopus rating (2014): SJR 0.674 SNIP 0.943 CiteScore 1.23
Web of Science (2014): Indexed yes
BFI (2013): BFI-level 1
Undersøgelser af stenrevs potentielle 'kvælstofeffekt' samt bidrag til genetablering af stenrev i Natura 2000-området 'Løgstør Bredning, Vejlerne og Bulbjerg'

General information
State: Published
Organisations: National Institute of Aquatic Resources, Danish Shellfish Centre, NIVA Denmark Water Research, Geological Survey of Denmark and Greenland, Aarhus University, DHI Denmark, University of Copenhagen
Authors: Jørgensen, T. B. (Forskerdatabase), Fossing, H. (Forskerdatabase), Markager, S. (Ekstern), Stæhr, P. A. (Forskerdatabase), Dahl, K. (Ekstern), Mehlberg, F. (Ekstern), Middelboe, A. L. (Ekstern), Andersen, J. (Ekstern), Nielsen, M. M. (Intern), Petersen, J. K. (Intern), Jensen, J. B. (Ekstern), Al-Hamdani, Z. K. (Ekstern)
Publication date: 2017
Main Research Area: Technical/natural sciences
Publication: Research - peer-review › Journal article – Annual report year: 2015

Blå biomasse – potentialer og udfordringer for opdræt af muslinger og tang

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Fiskeri efter søstjerner i Limfjorden. Fagligt grundlag for en forvaltningsplan

General information
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Organisations: National Institute of Aquatic Resources, Danish Shellfish Centre, Section for Ecosystem based Marine Management, Section for Monitoring and Data
Authors: Petersen, J. K. (Intern), Gislason, H. (Intern), Fitridge, I. (Intern), Saurel, C. (Intern), Degel, H. (Intern), Nielsen, C. F. (Intern)
Number of pages: 35
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http://www.aqua.dtu.dk/Publikationer/Forskningsrapporter/Forskningsrapporter_siden_2008
Publication: Research › Report – Annual report year: 2016

Hvad ved vi om marine virkemidler?

General information
State: Published
Organisations: National Institute of Aquatic Resources, Danish Shellfish Centre, Aarhus University, DHI Hørsholm, University of Southern Denmark
Authors: Timmermann, K. (Ekstern), Erichsen, A. C. (Ekstern), Bruhn, A. (Ekstern), Fossing, H. (Ekstern), Petersen, J. K. (Intern), Flindt, M. (Ekstern)
Number of pages: 4
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Publication date: 2016
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Publication information
Journal: Vand & Jord
Volume: 23
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ISSN (Print): 0908-7761
Ratings:
Impact of environmental conditions on biomass yield, quality, and bio-mitigation capacity of Saccharina latissima

Seaweeds are attractive as a sustainable aquaculture crop for food, feed, bioenergy and biomolecules. Further, the non-value ecosystem services of seaweed cultivation (i.e. nutrient recapture) are gaining interest as an instrument towards sustainable aquaculture and for fulfilling the aims of the EU Marine Strategy Framework Directive. Environmental factors determine the yield and quality of the cultivated seaweed biomass and, in return, the seaweed aquaculture affects the marine environment by nutrient assimilation. Consequently, site selection is critical for obtaining optimal biomass yield and quality and for successful bio-mitigation. In this study, 5 sites for cultivation of Saccharina latissima were selected within a eutrophic water body to guide site selection for future kelp cultivation activities. Results were coupled to marine monitoring data to explore the relationship between environmental conditions and cultivation success. The biomass yields fluctuated 10-fold between sites due to local variations in light and nutrient availability: Yields were generally low, i.e. up to 510 g fresh weight (FW) per meter seeded line; however, the dry matter contents of protein and high-value pigments were high (up to 17% protein and 0.1% fucoxanthin). Growth performance, biomass quality and bio-mitigation potential was restricted by low availability of light and bioavailable phosphorus, and biofouling through juvenile suspension feeders was a critical factor at all cultivation sites. At specific sites, the tissue metal contents (Pb and Hg) exceeded the limit values for feed or food. Our results emphasize the importance of careful site selection before establishing large-scale cultivation, and stress the challenges and benefits of kelp cultivation in eutrophic waters.
Investigation of hatchery techniques and cultivation systems for cost-efficient production of valued seaweeds

**General information**
State: Published
Organisations: National Institute of Aquatic Resources, Danish Shellfish Centre
Authors: Schmedes, P. S. (Intern), Canal-Vergès, P. (Intern), Nielsen, M. M. (Intern), Reitan, K. (Ekstern), Petersen, J. K. (Intern)
Publication date: 2016
Main Research Area: Technical/natural sciences
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Konsekvensvurdering af fiskeri efter blåmuslinger ved og øst for Horsens Fjord samt Endelave 2016

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Organisations: National Institute of Aquatic Resources, Danish Shellfish Centre, Section for Monitoring and Data
Authors: Nielsen, P. (Intern), Nielsen, C. F. (Intern), Geitner, K. (Intern), Petersen, J. K. (Intern)
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Links:
http://www.aqua.dtu.dk/Publikationer/Forskningsrapporter/Forskningsrapporter_siden_2008
Publication: Research › Report – Annual report year: 2016

Magnitude, spatial scale and optimization of ecosystem services from a nutrient extraction mussel farm in the eutrophic Skive Fjord, Denmark

Suspended mussel aquaculture has been proposed as a possible mechanism by which to remove excess nutrients from eutrophic marine areas. In this study, seasonal mussel growth and water clarification (through seston and phytoplankton depletion) were studied at a commercial-scale nutrient extractive mussel farm in a highly eutrophic Danish fjord. Spatial variations in mussel biomass were examined throughout the year and no significant differences were detected within the farm. Food depletion by mussels was examined at spatial scales ranging from individuals to the entire farm and surrounding area. Phytoplankton depletion on the scale of individual mussel loops, determined using the siphon mimic approach, indicated between 27 and 44% depletion of chlorophyll a (chl a). Farm-scale depletion was detected and visualized based on intensive 3D spatial surveys of the distribution of chl a and total suspended particulate matter concentrations both inside and outside the farmed area. Average reductions in food supply within the farm ranged from 13...
to 31%, with some areas showing >50% food depletion. A food depletion model was developed to estimate the optimal mussel density required to maximize removal of excess phytoplankton. The model employed mussel clearance rate estimates derived from the observed magnitude of food depletion within the farm. Model results indicate that the mussel population filtration rate could be increased by 80 to 120% without any negative feedback on mussel growth. This could be accomplished by approximately doubling the standing stock of mussels in the farm, hence doubling the amount if nutrients removed at mussel harvest.

**General information**

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Organisations: National Institute of Aquatic Resources, Danish Shellfish Centre, Bedford Institute of Oceanography, Aarhus University
Authors: Nielsen, P. (Intern), Cranford, P. J. (Ekstern), Maar, M. (Ekstern), Petersen, J. K. (Intern)
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Publication date: 2016
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- BFI (2016): BFI-level 1
- Scopus rating (2016): CiteScore 2.19 SJR 0.945 SNIP 1.051
- Web of Science (2016): Indexed yes
- BFI (2015): BFI-level 1
- Scopus rating (2015): SJR 0.867 SNIP 0.867 CiteScore 2.25
- Web of Science (2015): Indexed yes
- BFI (2014): BFI-level 1
- Scopus rating (2014): SJR 0.861 SNIP 1.047 CiteScore 2.25
- Web of Science (2014): Indexed yes
- BFI (2013): BFI-level 1
- Scopus rating (2013): SJR 1.253 SNIP 1.495 CiteScore 2.45
- ISI indexed (2013): ISI indexed yes
- BFI (2012): BFI-level 1
- Scopus rating (2012): SJR 0.729 SNIP 1.108 CiteScore 1.19
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- Scopus rating (2011): SJR 1.144 SNIP 1.167
- Web of Science (2011): Indexed yes
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**Marine virkemidler: Beskrivelse af virkemidlernes effekter og status for vidensgrundlag**

**General information**

State: Published
Organisations: National Institute of Aquatic Resources, Danish Shellfish Centre, DHI, Syddansk Universitet, Videncenter for landbrug (SEGES), Danmarks Naturfredningsforening, Naturstyrelsen, Aarhus University, NaturErhvervstyrelsen
Authors: Timmermann, K. (ed.) (Ekstern), Boye, A. G. (Ekstern), Bruhn, A. (Ekstern), Erichsen, A. C. (Ekstern), Flindt, M. (Ekstern), Fossing, H. (Ekstern), Gertz, F. (Ekstern), Jørgensen, H. M. (Ekstern), Petersen, J. K. (Intern), Schwærter, S.
Mussel longline extension of the production season

General information
State: Published
Organisations: National Institute of Aquatic Resources, Danish Shellfish Centre
Authors: Saurel, C. (Intern), Andersen, L. K. (Intern), Barreau, P. D. A. (Intern), Boesen, H. (Intern), Errard, M. (Intern), Nielsen, P. (Intern), Petersen, J. K. (Intern)
Publication date: 2016
Event: Abstract from Aquaculture Europe, Edinburgh, United Kingdom.
Main Research Area: Technical/natural sciences
Publication: Research › Report – Annual report year: 2016

Shellfish and seaweed gardening: Danish experience

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Organisations: National Institute of Aquatic Resources, Danish Shellfish Centre
Authors: Petersen, J. K. (Intern), Nielsen, C. F. (Intern), Bak, F. (Intern)
Publication date: 2016
Event: Abstract from Aquaculture Europe, Edinburgh, United Kingdom.
Main Research Area: Technical/natural sciences
Publication: Research › Conference abstract for conference – Annual report year: 2016

The use of shellfish for eutrophication control

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Organisations: National Institute of Aquatic Resources, Danish Shellfish Centre, Aarhus University
Authors: Petersen, J. K. (Intern), Saurel, C. (Intern), Nielsen, P. (Intern), Timmermann, K. (Ekstern)
Pages: 857-878
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Main Research Area: Technical/natural sciences
Publication information
Journal: Aquaculture International
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BFI (2017): BFI-level 1
Web of Science (2017): Indexed Yes
BFI (2016): BFI-level 1
Scopus rating (2016): CiteScore 1.34 SJR 0.563 SNIP 1.014
Web of Science (2016): Indexed yes
Validating GIS tool to assess eelgrass potential recovery in the Limfjorden (Denmark)

Eelgrass is a key indicator for the water quality in Europe (WFD, European Union, 2000). However, although water quality has been improved in most Danish water bodies, the eelgrass population does not seem to be recovering. In this study, we validate and further develop a GIS tool designed by Flindt et al. (2016), to evaluate the potential of eelgrass reestablishment in Danish waters. The GIS tool was tested in two large broads of the Limfjorden, Løgstør and Lovns broad (Denmark), where two scenarios are run. The first scenario was set up including modelled data, whereas the second scenario included both monitored and modelled data. All scenarios were validated with monitored data collected over a 5 years period in the two broads. The developed GIS tool highlights areas with eelgrass potential, both for vegetative growth and sexual reproduction, in accordance with those found in situ in the period 2009-2013, in the two investigated broads. A combination of modelled and monitored data was found to be optimal to achieve accurate predictions for eelgrass development in the Limfjorden using this GIS tool. In order to implement the current model or to use this GIS tool in other locations, it is needed to have detailed knowledge of the area in focus, especially on the controlling ecosystem parameters and pressures. This eelgrass GIS tool is been proven to be especially beneficial as site selection tool for marine spatial planning e.g. in relation to the implementation of the WFD and the ICZM directives (WFD, ICZM), to help assessing anthropogenic/targeted environmental impacts e.g. assessing mussel fisheries impacts and is as well a powerful tool to optimize monitoring cost efficiency. Finally, the described GIS tool, originally set for Odense fjord (Denmark) by Flindt et
al. (2016), has been validated with data from Limfjorden, corroborating the efficiency of the studied tool in Danish waters.

**General information**

*State:* Published  
*Organisations:* National Institute of Aquatic Resources, Danish Shellfish Centre, DHI, University of Southern Denmark  
*Authors:* Canal-Vergés, P. (Intern), Petersen, J. K. (Intern), Rasmussen, E. K. (Ekstern), Erichsen, A. (Ekstern), Flindt, M. R. (Ekstern)  
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BFI (2017): BFI-level 2  
Web of Science (2017): Indexed Yes  
BFI (2016): BFI-level 2  
Scopus rating (2016): CiteScore 2.43 SJR 0.941 SNIP 1.089  
Web of Science (2016): Indexed yes  
BFI (2015): BFI-level 2  
Scopus rating (2015): SJR 1.087 SNIP 1.112 CiteScore 2.43  
Web of Science (2015): Indexed yes  
BFI (2014): BFI-level 2  
Scopus rating (2014): SJR 1.135 SNIP 1.353 CiteScore 2.7  
Web of Science (2014): Indexed yes  
BFI (2013): BFI-level 2  
Scopus rating (2013): SJR 1.153 SNIP 1.329 CiteScore 2.53  
ISI indexed (2013): ISI indexed yes  
Web of Science (2013): Indexed yes  
BFI (2012): BFI-level 2  
Scopus rating (2012): SJR 1.029 SNIP 1.229 CiteScore 2.28  
ISI indexed (2012): ISI indexed yes  
Web of Science (2012): Indexed yes  
BFI (2011): BFI-level 2  
Scopus rating (2011): SJR 1.183 SNIP 1.134 CiteScore 2.34  
ISI indexed (2011): ISI indexed yes  
Web of Science (2011): Indexed yes  
BFI (2010): BFI-level 2  
Scopus rating (2010): SJR 1.077 SNIP 1.132  
Web of Science (2010): Indexed yes  
BFI (2009): BFI-level 2  
Scopus rating (2009): SJR 1.294 SNIP 1.26  
Web of Science (2009): Indexed yes  
BFI (2008): BFI-level 1  
Scopus rating (2008): SJR 1.335 SNIP 1.312  
Web of Science (2008): Indexed yes  
Scopus rating (2007): SJR 1.335 SNIP 1.363  
Web of Science (2007): Indexed yes  
Scopus rating (2006): SJR 1.223 SNIP 1.548  
Web of Science (2006): Indexed yes  
Scopus rating (2005): SJR 1.441 SNIP 1.327  
Scopus rating (2004): SJR 1.046 SNIP 1.089  
Web of Science (2004): Indexed yes
An integrated ecosystem approach for assessing the potential role of cultivated bivalve shells as part of the carbon trading system

The role of bivalve mariculture in the CO2 cycle has been commonly evaluated as the balance between respiration, shell calcium carbonate sequestration and CO2 release during biogenic calcification. However, this approach neglects the ecosystem implications of cultivating bivalves at high densities, e.g. the impact on phytoplankton dynamics and benthic-pelagic coupling, which can significantly contribute to the CO2 cycle. Therefore, an ecosystem approach that accounts for the trophic interactions of bivalve aquaculture, including dissolved and particulate organic and inorganic carbon cycling, is needed to provide a rigorous assessment of the role of bivalve mariculture in the CO2 cycle. On the other hand, the discussion about the inclusion of shells of cultured bivalves into the carbon trading system should be framed in the context of ecosystem goods and services. Humans culture bivalves with the aim of producing food, not sequestering CO2 in their shells, therefore the main ecosystem good provided by bivalve aquaculture is meat production, and shells should be considered as by-products of this human activity. This reasoning is key to split the CO2 released due to respiration between meat and shell when constructing a specific CO2 budget for shells for evaluating the potential of including bivalve shells, and not the whole organism, in the carbon trading system. Concluding, an integrated ecosystem approach as well as an understanding of the ecosystems goods and services of bivalve aquaculture are two essential requisites for providing a reliable assessment of the role of bivalve shells in the CO2 cycle
Anvendelse af blåmuslinger til husdyrfoder

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Authors: Petersen, J. K. (Intern), Nielsen, C. F. (Intern), Nørgaard, J. V. (Forskerdatabase), Steenfeldt, S. (Forskerdatabase), Fitridge, I. (Intern)
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http://www.aqua.dtu.dk/Publikationer/Forskningsrapporter/Forskningsrapporter_siden_2008
Bioaccumulation of metals (Cd, Cu, Ni, Pb and Zn) in suspended cultures of blue mussels exposed to different environmental conditions

Farming of suspended mussels is important for generating high protein food and animal feed or for removing nutrients in eutrophic systems. However, the harvested mussels must not be severely contaminated by pollutants posing a potential health risk for the consumers. The present study estimated the bioaccumulation of cadmium, copper, nickel, lead and zinc in suspended blue mussels (Mytilus edulis L.) in the Limfjorden, Denmark, based on observations and modelling. Modelling was used to assess the suitability of suspended blue mussels as animal feed and food products at sea water metal concentrations corresponding to Good Ecological Status (GES) in the European Union Water Framework Directive (WFD) and in future climate change scenarios (higher metal concentrations and higher temperatures). For this purpose, GES is interpreted as good chemical status for the metals using the Environmental Quality Standards (EQS) defined in the WFD priority substance daughter directives. Observations showed that suspended mussels were healthy with respect to metal pollution and generally less polluted than benthic mussels due to the smaller contact with the contaminated sediment. The model results showed that the WFD targets for Cd, Ni and Pb are not protective with respect to marine mussel production and probably should be reduced for marine waters. Climate changes may increase the metal contamination of mussels, but not to any critical level at the relatively unpolluted study sites. In conclusion, WFD targets should be revised to assure that the corresponding body burdens of metals in mussels are below the safety limits according to the EU Directives and the Norwegian classification for animal feed and food production.
Blue mussel (Mytilus edulis) growth at various salinity regimes determined by a Dynamic Energy Budget model

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Organisations: National Institute of Aquatic Resources, Danish Shellfish Centre, Section for Marine Ecology and Oceanography, Aarhus University, Orbicon
Authors: Saurel, C. (Intern), Maar, M. (Ekstern), Landes, A. (Intern), Dolmer, P. (Ekstern), Petersen, J. K. (Intern)
Publication date: 2015
Event: Abstract from 18. Danske Havforskermøde, Copenhagen, Denmark.
Main Research Area: Technical/natural sciences
Publication: Research › Conference abstract for conference – Annual report year: 2015

Chemical composition and standardized ileal digestibility of protein and amino acids from blue mussel, starfish, and fish silage in pigs
Mussels cultured on lines for nine months and harvested in March were boiled to removeshells and processed into a dry meal or a silage acidified by formic acid. Starfish meal was prepared from starfish caught in May, and a starfish juice fraction was obtained by pressing fresh starfish. Commercial fish silage from farmed salmon was also included in the experiment. The standardized ileal digestibility (SID) of crude protein (CP) and amino acids (AA) was evaluated in a Latin square design with pigs (initial weight 39.3 kg) fitted with a simple T-cannula in the terminal ileum. Diets contained 131–162 g CP/kg and 5 g chromic oxide/kg. Endogenous losses of protein and AA were estimated by feeding an N-free diet. On a dry matter (DM) basis, mussel meal contained 605 g, mussel silage 575 g, starfish meal 700 g, starfish juice 393 g, and fish silage 776 g CP/kg. The ratio of AA to CP ranged from 0.83 to 0.87. The content of crude fat was high in the...
mussel products (157–161 g/kg DM), and the starfish meal and juice were high in ash (203 and 474 g/kg DM) with one-fourth being calcium. The AID of CP was 0.74, 0.81, 0.70, and 0.61 for mussel meal, mussel silage, starfish meal, and fish silage. The SID of CP was 0.83, 0.87, 0.80, and 0.68 for mussel meal, mussel silage, starfish meal, and fish silage. For both CP and AA digestibility, the lowest (P<0.05) was found in fish silage and the highest (P<0.05) in mussel silage. In conclusion, both mussel and starfish products showed chemical characteristics arguing for their use as feedstuffs in pig diets. Processing into silage rather than meal increased the SID of CP and AA, and both mussel products and starfish meal had greater SID compared to commercial fish silage.

General information
State: Published
Organisations: National Institute of Aquatic Resources, Danish Shellfish Centre, Aarhus University
Authors: Nørgaard, J. V. (Intern), Petersen, J. K. (Intern), Tørring, D. B. (Intern), Jørgensen, H. (Intern), Lærke, H. (Ekstern)
Pages: 90-97
Publication date: 2015
Main Research Area: Technical/natural sciences

Publication information
Journal: Animal Feed Science and Technology
Volume: 205
ISSN (Print): 0377-8401
Ratings:
BFI (2018): BFI-level 2
BFI (2017): BFI-level 2
Web of Science (2017): Indexed Yes
BFI (2016): BFI-level 2
Scopus rating (2016): SJR 0.903 SNIP 1.425 CiteScore 2.11
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 2
Scopus rating (2015): SJR 1.162 SNIP 1.495 CiteScore 1.97
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 2
Scopus rating (2014): SJR 1.234 SNIP 1.71 CiteScore 2.4
BFI (2013): BFI-level 2
Scopus rating (2013): SJR 1.129 SNIP 1.356 CiteScore 2.07
ISI indexed (2013): ISI indexed yes
Web of Science (2013): Indexed yes
BFI (2012): BFI-level 2
Scopus rating (2012): SJR 1.012 SNIP 1.306 CiteScore 1.72
ISI indexed (2012): ISI indexed yes
Web of Science (2012): Indexed yes
BFI (2011): BFI-level 2
Scopus rating (2011): SJR 1.12 SNIP 1.587 CiteScore 2.13
ISI indexed (2011): ISI indexed yes
Web of Science (2011): Indexed yes
BFI (2010): BFI-level 2
Scopus rating (2010): SJR 1.147 SNIP 1.423
BFI (2009): BFI-level 1
Scopus rating (2009): SJR 1.25 SNIP 1.755
BFI (2008): BFI-level 1
Scopus rating (2008): SJR 1.267 SNIP 1.639
Scopus rating (2007): SJR 0.758 SNIP 1.366
Scopus rating (2006): SJR 0.868 SNIP 1.254
Scopus rating (2005): SJR 0.747 SNIP 1.395
Scopus rating (2004): SJR 0.768 SNIP 1.485
Scopus rating (2003): SJR 0.718 SNIP 1.118
Scopus rating (2002): SJR 0.695 SNIP 1.318
Co-cultivation of sugar kelp (Saccharina latissima) and blue mussels (Mytilus edulis) in Limfjorden, Denmark, using mussel long line technology

General information
State: Published
Organisations: National Institute of Aquatic Resources, Danish Shellfish Centre, Aarhus University
Authors: Nielsen, M. M. (Forskerdatabase), Canal-Vergés, P. (Intern), Petersen, J. K. (Intern), Bruhn, A. (Ekstern), Rasmussen, M. B. (Ekstern)
Publication date: 2015
Main Research Area: Technical/natural sciences

Publication information
Journal: Journal of Applied Phycology
ISSN (Print): 0921-8971
Ratings:
BFI (2018): BFI-level 1
BFI (2017): BFI-level 1
Web of Science (2017): Indexed yes
BFI (2016): BFI-level 1
Scopus rating (2016): CiteScore 2.46
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 1
Scopus rating (2015): CiteScore 2.32
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 1
Scopus rating (2014): CiteScore 2.88
Web of Science (2014): Indexed yes
BFI (2013): BFI-level 1
Scopus rating (2013): CiteScore 2.78
ISI indexed (2013): ISI indexed yes
Web of Science (2013): Indexed yes
BFI (2012): BFI-level 1
Scopus rating (2012): CiteScore 2.68
ISI indexed (2012): ISI indexed yes
Web of Science (2012): Indexed yes
BFI (2011): BFI-level 1
Scopus rating (2011): CiteScore 2.29
ISI indexed (2011): ISI indexed yes
Web of Science (2011): Indexed yes
BFI (2010): BFI-level 1
Web of Science (2010): Indexed yes
BFI (2009): BFI-level 1
BFI (2008): BFI-level 1
Web of Science (2008): Indexed yes
Web of Science (2007): Indexed yes
Dansk produktion af linemuslinger til konsum

General information
State: Published
Organisations: National Institute of Aquatic Resources, Danish Shellfish Centre, University of Copenhagen
Authors: Frost, H. (Ekstern), Nielsen, R. (Ekstern), Petersen, J. K. (Intern), Larsen, V. B. (Forskerdatabase)
Number of pages: 21
Publication date: 2015

Publication information
Publisher: Københavns Universitet
Original language: English
Series: IFRO udredning
Number: 2015_04
Main Research Area: Technical/natural sciences
Electronic versions:

Publishers version
Publication: Research › Report – Annual report year: 2015

Effekter af blåmuslingefiskeri på bundfauna

General information
State: Published
Organisations: National Institute of Aquatic Resources, Section for Ecosystem based Marine Management, Danish Shellfish Centre, Section for Monitoring and Data
Authors: Dinesen, G. E. (Intern), Canal-Vergés, P. (Intern), Nielsen, P. (Intern), Filrup, K. (Ekstern), Geitner, K. (Intern), Petersen, J. K. (Intern)
Number of pages: 31
Publication date: 2015

Publication information
Publisher: Institut for Akvatiske Ressourcer, Danmarks Tekniske Universitet
ISBN (Electronic): 978-87-7481-223-4
Original language: Danish
Series: DTU Aqua-rapport
Number: 305-2015
Main Research Area: Technical/natural sciences
Electronic versions:

Publishers version
Links:
http://www.aqua.dtu.dk/Publikationer/Forskningsrapporter/Forskningsrapporter_siden_2008
Publication: Research › Report – Annual report year: 2016

Extractive cultures as a tool for mitigation of excess nutrient run-off from land

General information
State: Published
Organisations: National Institute of Aquatic Resources, Danish Shellfish Centre
Authors: Petersen, J. K. (Intern), Saurel, C. (Intern), Canal-Vergès, P. (Intern)
Number of pages: 1
Pages: 671
Publication date: 2015
Conference: 107 Annual Meeting, National Shellfisheries Associatio, Monterey, Californi, United States, 22/03/2015 - 22/03/2015
Faglig understøttelse af nye forvaltningsprincipper for muslingefiskeri: Kortlægning af makroalger og ålegræs i Natura 2000-områder i Limfjorden
General information
State: Published
Organisations: National Institute of Aquatic Resources, Danish Shellfish Centre
Authors: Canal-Vergés, P. (Intern), Petersen, J. K. (Intern)
Number of pages: 44
Publication date: 2015

Publication information
Publisher: Dansk Skaldyrcenter, Institut for Akvatiske Ressourcer
ISBN (Print): 978-87-7481-218-0
Original language: Danish
Series: DTU Aqua-rapport
Number: 304-2015
Main Research Area: Technical/natural sciences
Electronic versions:
Publishers version
Publication: Research › Report – Annual report year: 2016

Forskning, turisme og uddannelse: Biologi i bølgehøjde

General information
State: Published
Organisations: National Institute of Aquatic Resources, Danish Shellfish Centre
Authors: Nielsen, C. F. (Intern), Canal-Vergés, P. (Intern), Nielsen, P. (Intern), Gommesen, M. (Intern), Petersen, J. K. (Intern)
Publication date: 2015
Event: Abstract from 18. Danske Havforskermøde, Copenhagen, Denmark.
Main Research Area: Technical/natural sciences
Publication: Research › Conference abstract for conference – Annual report year: 2015

Growth and respiration in blue mussels (Mytilus spp.) from different salinity regimes

General information
State: Published
Organisations: National Institute of Aquatic Resources, Section for Marine Ecology and Oceanography, Danish Shellfish Centre, Orbicon, NIRAS A/S, University of Copenhagen
Authors: Landes, A. (Intern), Dolmer, P. (Ekstern), Poulsen, L. K. (Ekstern), Petersen, J. K. (Intern), Vismann, B. (Ekstern)
Pages: 373-382
Publication date: 2015
Main Research Area: Technical/natural sciences

Publication information
Journal: Journal of Shellfish Research
Volume: 34
Issue number: 2
ISSN (Print): 0730-8000
Ratings:
BFI (2018): BFI-level 1
BFI (2017): BFI-level 1
Web of Science (2017): Indexed Yes
BFI (2016): BFI-level 1
Scopus rating (2016): CiteScore 1.01 SJR 0.433 SNIP 0.644
BFI (2015): BFI-level 1
Scopus rating (2015): SJR 0.5 SNIP 0.75 CiteScore 1.02
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 1
Scopus rating (2014): SJR 0.425 SNIP 0.488 CiteScore 0.8
Web of Science (2014): Indexed yes
BFI (2013): BFI-level 1
Scopus rating (2013): SJR 0.564 SNIP 0.693 CiteScore 1.03
Growth potential of blue mussels (M. edulis) exposed to different salinities evaluated by a Dynamic Energy Budget model

For blue mussels, Mytilus edulis, one major constrain in the Baltic Sea is the low salinities that reduce the efficiency of mussel production. However, the effects of living in low and variable salinity regimes are rarely considered in models describing mussel growth. The aim of the present study was to incorporate the effects of low salinity into an eco-physiological model of blue mussels and to identify areas suitable for mussel production. A Dynamic Energy Budget (DEB) model was modified with respect to i) the morphological parameters (DW/WW-ratio, shape factor), ii) change in ingestion rate and iii) metabolic costs due to osmoregulation in different salinity environments. The modified DEB model was validated with experimental data from different locations in the Western Baltic Sea (including the Limfjorden) with salinities varying from 8.5 to 29.9 psu. The identified areas suitable for mussel production in the Baltic Sea are located in the Little Belt area, the Great Belt, the southern Kattegat and the Limfjorden according to the prevailing salinity regimes. The new model can be used for supporting site selection of new mussel nutrient extraction cultures in the Baltic Sea that suffers from high eutrophication symptoms or as part of integrated multi-trophic aquaculture production. The model can also be used to predict the effects of salinity changes on mussel populations e.g. in climate change studies.
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<th>Original Language</th>
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<td>2015</td>
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<td>2008</td>
<td>BFI-level 1</td>
<td>SJR 1.372 SNIP 1.236</td>
<td>Indexed yes</td>
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<td>2007</td>
<td>BFI-level 1</td>
<td>SJR 1.395 SNIP 1.269</td>
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<td>2006</td>
<td>BFI-level 1</td>
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<td>2005</td>
<td>BFI-level 1</td>
<td>SJR 1.146 SNIP 1.289</td>
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<td>2004</td>
<td>BFI-level 1</td>
<td>SJR 1.17 SNIP 0.958</td>
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<td>2003</td>
<td>BFI-level 1</td>
<td>SJR 1.035 SNIP 0.839</td>
<td>Indexed yes</td>
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<td>2002</td>
<td>BFI-level 1</td>
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<td>Indexed yes</td>
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**Konsekvensvurdering af fiskeri efter blåmuslinger i Lillebælt 2015**

**General information**
Muslingeproduktion i Vejle Fjord - muligheder og begrænsninger

General information
State: Published
Organisations: National Institute of Aquatic Resources, Danish Shellfish Centre, Section for Monitoring and Data
Authors: Nielsen, P. (Intern), Geitner, K. (Intern), Funk, E. S. (Intern), Petersen, J. K. (Intern)
Number of pages: 51
Publication date: 2015

Publication information
Publisher: DTU Aqua. Institut for Akvatiske Ressourcer
ISBN (Electronic): 978-87-7481-205-0
Original language: Danish
Series: DTU Aqua-rapport
Number: 295-2015
Main Research Area: Technical/natural sciences
Electronic versions:
Publishers_version
Links:
http://www.aqua.dtu.dk/Publikationer/Forskningsrapporter/Forskningsrapporter_siden_2008
Publication: Commissioned › Report – Annual report year: 2015

Muslinger som marint virkemiddel til fjernelse af næringsstoffer – miljøeffekter på fjordskala

General information
State: Published
Organisations: National Institute of Aquatic Resources, Danish Shellfish Centre, Aarhus University
Authors: Timmermann, K. (Ekstern), Bolding, K. (Ekstern), Maar, M. (Ekstern), Larsen, J. (Ekstern), Petersen, J. K. (Intern)
Publication date: 2015
Event: Abstract from 18. Danske Havforskermøde, Copenhagen, Denmark.
Main Research Area: Technical/natural sciences
Publication: Research › Conference abstract for conference – Annual report year: 2015

Mussel mitigation cultures: A cost-efficient and area-intensive tool to improve water quality in coastal waters

General information
State: Published
Organisations: National Institute of Aquatic Resources, Danish Shellfish Centre
Authors: Nielsen, P. (Intern), Saurel, C. (Intern), Timmermann, K. (Ekstern), Hasler, B. (Ekstern), Petersen, J. K. (Intern)
Publication date: 2015
Event: Abstract from Aquaculture Europe 2015, Rotterdam, Netherlands.
Main Research Area: Technical/natural sciences
Publication: Research › Conference abstract for conference – Annual report year: 2015

Payment for ecosystem services - paying mussel producers for nitrogen mitigation

General information
State: Published
Organisations: National Institute of Aquatic Resources, Danish Shellfish Centre, University of Copenhagen, Aarhus University
Authors: Hasler, B. (Ekstern), Petersen, J. K. (Intern), Zandersen, M. (Ekstern), Frost, H. (Ekstern), Ørum, J. E. (Ekstern), Timmermann, K. (Ekstern)
Publication date: 2015
Event: Abstract from 18. Danske Havforskermøde, Copenhagen, Denmark.
Main Research Area: Technical/natural sciences
Publication: Research › Conference abstract for conference – Annual report year: 2015

Pelagic and benthic nutrient regeneration processes in mussel cultures (Mytilus edulis) in a eutrophic coastal area (Skive Fjord, Denmark)
Long-line mussel farming has been proposed as a mitigation tool in eutrophic coastal areas as nutrients are removed from the ecosystem upon harvest of the crops and transferred back to land. Further mussels filter the water and thereby increase water transparency and promote benthic plant growth. Intensive mussel farming may, however, negatively affect the nutrient cycling in the local environment through nutrient regeneration in the water column and through sedimentation of biodeposits resulting in organic enrichment of the underlying sediments leading to hypoxic conditions. The objective of this study was to explore the environmental interactions of a long-line mussel farm located in a eutrophic coastal area (Skive Fjord, Denmark) by studying the nutrient cycling in the water column and sediments and assessing their contribution to the nutrient dynamics and oxygen conditions in the fjord. The mussel lines contributed with nutrients, primarily ammonium, to the pool of nutrients in the water column and the contribution increased as the biomass of mussels in the farm increased. The sedimentation of biodeposits was only slightly higher at the farm (51–86 %) compared with a reference site, and the impact on the benthic environment was limited. During most of the production cycle the farm was a net sink of N due to uptake of N in the sediments, but after 1 year, the farm became a net source of N to Skive Fjord. Mussel excretion accounted for ~82 % and sediments for ~18 % of the N released from the farm. The study shows that mitigation of nutrients by long-line mussel farming will be most efficient, if mussels are harvested within the first year of the production cycle.

**General information**

State: Published

Organisations: National Institute of Aquatic Resources, Danish Shellfish Centre, University of Southern Denmark

Authors: Holmer, M. (Ekstern), Thorsen, S. W. (Ekstern), Carlsson, M. S. (Ekstern), Petersen, J. K. (Intern)

Pages: 1629-1641

Publication date: 2015

Main Research Area: Technical/natural sciences

**Publication Information**

Journal: Estuaries and Coasts

Volume: 38

Issue number: 5

ISSN (Print): 1559-2723

Ratings:

- BFI (2018): BFI-level 1
- BFI (2017): BFI-level 1
- Web of Science (2017): Indexed Yes
- BFI (2016): BFI-level 1
- Scopus rating (2016): SJR 1.064 SNIP 1.035 CiteScore 2.27
- BFI (2015): BFI-level 1
- Scopus rating (2015): SJR 1.112 SNIP 1.033 CiteScore 2.04
- Web of Science (2015): Indexed yes
- BFI (2014): BFI-level 1
- Scopus rating (2014): SJR 1.207 SNIP 1.316 CiteScore 2.39
- BFI (2013): BFI-level 1
- Scopus rating (2013): SJR 1.33 SNIP 1.446 CiteScore 2.54
- ISI indexed (2013): ISI indexed yes
- BFI (2012): BFI-level 1
- Scopus rating (2012): SJR 1.327 SNIP 1.269 CiteScore 2.41
- ISI indexed (2012): ISI indexed yes
- Web of Science (2012): Indexed yes
- BFI (2011): BFI-level 1
- Scopus rating (2011): SJR 1.183 SNIP 1.174 CiteScore 1.98
- ISI indexed (2011): ISI indexed yes
- BFI (2010): BFI-level 1
- Scopus rating (2010): SJR 1.153 SNIP 1.004
- Web of Science (2010): Indexed yes
- BFI (2009): BFI-level 1
- Scopus rating (2009): SJR 1.081 SNIP 0.858
- BFI (2008): BFI-level 1
- Scopus rating (2008): SJR 0.941 SNIP 0.968
- Scopus rating (2007): SJR 1.086 SNIP 1.054
- Scopus rating (2006): SJR 1.275 SNIP 1.065
Pleje af østersbestanden i Limfjorden

**General information**
State: Published
Organisations: National Institute of Aquatic Resources, Danish Shellfish Centre
Authors: Nielsen, C. F. (Intern), Petersen, J. K. (Intern)
Number of pages: 31
Publication date: 2015

**Publication information**
Place of publication: Charlottenlund
Publisher: Institut for Akvatiske Ressourcer, Danmarks Tekniske Universitet
Original language: Danish

Series: DTU Aqua-rapport
Number: 291-2015
Main Research Area: Technical/natural sciences
Electronic versions:

**Publications**

Potentiale for optimering af muslingeopdræt i forhold til et mere arealintensiv virkemiddel til næringsstoffjernelse

**General information**
State: Published
Organisations: National Institute of Aquatic Resources, Danish Shellfish Centre, Aarhus University
Authors: Nielsen, P. (Intern), Cranford, P. J. (Ekstern), Maar, M. (Ekstern), Petersen, J. K. (Intern)
Publication date: 2015
Event: Abstract from 18. Danske Havforskermøde, Copenhagen, Denmark.
Main Research Area: Technical/natural sciences

Presfaktorer på miljøet i Limfjorden – betydning af fiskeriet på udvalgte nøgleparametre

**General information**
State: Published
Organisations: National Institute of Aquatic Resources, Danish Shellfish Centre, Section for Ecosystem based Marine Management
Authors: Petersen, J. K. (Intern), Canal-Vergés, P. (Intern), Dinesen, G. E. (Intern)
Publication date: 2015
Event: Abstract from 18. Danske Havforskermøde, Copenhagen, Denmark.
Main Research Area: Technical/natural sciences
Turning pests into protein – starfish by-product management in the Danish mussel industry

General information
State:Published
Organisations:National Institute of Aquatic Resources, Danish Shellfish Centre, Section for Ecosystem based Marine Management
Authors:Fitridge, I. (Intern), Nielsen, C. F. (Intern), Gislason, H. (Intern), Saurel, C. (Intern), Petersen, J. K. (Intern)
Publication date:2015
Event:Abstract from 18. Danske Havforskmøde, Copenhagen, Denmark.
Main Research Area:Technical/natural sciences
Publication:Research › Conference abstract for conference – Annual report year:2015

De Lokale Dyder: Udvikling af muslingeerhvervet i Limfjorden

General information
State:Published
Organisations:National Institute of Aquatic Resources, Danish Shellfish Centre
Number of pages:32
Publication date:2014

Publication information
Publisher:Institut for Akvatiske Ressourcer, Danmarks Tekniske Universitet
Original language:Danish
Main Research Area:Technical/natural sciences
Electronic versions:
Publishers version
Links:
http://www.aqua.dtu.dk/Publikationer/Forskningsrapporter/Forskningsrapporter_siden_2008
Publication:Research › Report – Annual report year:2015

From shellfish feeding to carrying capacity modelling

General information
State:Published
Organisations:National Institute of Aquatic Resources, Danish Shellfish Centre, New University of Lisbon
Authors:Saurel, C. (Intern), Ferreira, J. (Ekstern), Petersen, J. K. (Intern)
Publication date:2014
Event:Abstract from Annual Meeting of the National Shellfish Association, Jacksonville, FL., United States.
Main Research Area:Technical/natural sciences
Publication:Research › Conference abstract for conference – Annual report year:2014

Konsekvensvurdering af fiskeri på blåmuslinger i Lillebælt 2014

General information
State:Published
Organisations:National Institute of Aquatic Resources, Danish Shellfish Centre, Section for Monitoring and Data, Section for Ecosystem based Marine Management
Authors:Nielsen, P. (Intern), Geitner, K. (Intern), Christoffersen, M. (Intern), Petersen, J. K. (Intern)
Number of pages:51
Publication date:2014

Publication information
Publisher:Institut for Akvatiske Ressourcer, Danmarks Tekniske Universitet
ISBN (Electronic):978-87-7481-188-6
Original language:Danish
Series:DTU Aqua-rapport
Number:282-2014
ISSN:1395-8216
Main Research Area:Technical/natural sciences
Electronic versions:
Konsekvensvurdering af fiskeri på blåmuslinger og søstjerner i Løgstør Bredning 2014/2015

General information
State: Published
Organisations: National Institute of Aquatic Resources, Danish Shellfish Centre, Section for Monitoring and Data, Danish Shellfish Centre
Authors: Nielsen, P. (Intern), Canal-Vergés, P. (Intern), Geitner, K. (Intern), Nielsen, C. F. (Intern), Petersen, J. K. (Intern)
Number of pages: 66
Publication date: 2014

Publication information
Place of publication: Charlottenlund
Publisher: Danmarks Tekniske Universitet, Institut for Akvatiske Ressourcer - Dansk Skaldyrcenter
ISBN (Electronic): 978-87-7481-193-0
Original language: Danish
Applicant: NaturErhvervstyrelsen

Series: DTU Aqua-rapport
Number: 285-2014
ISSN: 1395-8216
Main Research Area: Technical/natural sciences

Multifactor stress for large cockle emergence in the Limfjord, Denmark?

General information
State: Published
Mussels as a tool for mitigation of nutrients in the marine environment

Long-line mussel farming has been proposed as a mitigation tool for removal of excess nutrients in eutrophic coastal waters. A full-scale mussel farm optimized for cost efficient nutrient removal was established in the eutrophic Skive Fjord, Denmark where biological and economic parameters related to nutrient removal was monitored throughout a full production cycle (1yr). The results showed that it was possible to obtain a high area specific biomass of 60tWWha−1 equivalent to a nitrogen and phosphorus removal of 0.6–0.9 and 0.03–0.04tha−1yr, respectively. The analysis of the costs related to establishment, maintenance and harvest revealed that mussel production optimized for mitigation can be carried out at a lower cost compared to mussel production for (human) consumption. The costs for nutrient removal was 14.8€kg−1N making mitigation mussel production a cost-efficient measure compared to the most expensive land-based measures.

General information

State: Published
Organisations: National Institute of Aquatic Resources, Danish Shellfish Centre, University of Southern Denmark, Aarhus University
Authors: Petersen, J. K. (Intern), Hasler, B. (Forskerdatabase), Timmermann, K. (Ekstern), Nielsen, P. (Intern), Tørring, D. B. (Intern), Larsen, M. M. (Forskerdatabase), Holmer, M. (Ekstern)
Pages: 137-143
Publication date: 2014
Main Research Area: Technical/natural sciences

Publication information

Journal: Marine Pollution Bulletin
Volume: 82
Issue number: 1-2
ISSN (Print): 0025-326X
Ratings:
- BFI (2018): BFI-level 2
- BFI (2017): BFI-level 2
- Web of Science (2017): Indexed yes
- BFI (2016): BFI-level 2
- Scopus rating (2016): CiteScore 3.46 SJR 1.302 SNIP 1.331
- Web of Science (2016): Indexed yes
- BFI (2015): BFI-level 2
- Scopus rating (2015): SJR 1.245 SNIP 1.277 CiteScore 3.23
- Web of Science (2015): Indexed yes
- BFI (2014): BFI-level 2
- Scopus rating (2014): SJR 1.304 SNIP 1.425 CiteScore 3.04
- Web of Science (2014): Indexed yes
- BFI (2013): BFI-level 1
- Scopus rating (2013): SJR 1.208 SNIP 1.546 CiteScore 2.89
- ISI indexed (2013): ISI indexed yes
- Web of Science (2013): Indexed yes
- BFI (2012): BFI-level 1
- Scopus rating (2012): SJR 1.241 SNIP 1.377 CiteScore 2.64
- ISI indexed (2012): ISI indexed yes
- Web of Science (2012): Indexed yes
- BFI (2011): BFI-level 1
- Scopus rating (2011): SJR 1.248 SNIP 1.336 CiteScore 2.57
The seaweed challenge
Near-bed gradients in particles and nutrients above a mussel bed in the Limfjorden: influence of physical mixing and mussel filtration

The aim of this field study was to investigate the role of mussels on near-bed layer characteristics at different hydrodynamic regimes in a micro-tidal system. At Løgstør Broad, the Limfjorden, Denmark, we deployed ‘siphon mimics’ to sample chlorophyll a (chl a), particulate organic carbon (POC) and inorganic nutrients at different distances above the bottom. This was done without disturbing water column gradients and in a manner similar to mussel incurrent flow. Mimics were deployed at 2 sites: a site with a relatively dense mussel bed and a nearby sandy site without mussels. During the 2 wk field campaign, physical conditions in the fjord varied from extremely calm weather with low waves to quite windy with high waves. Results showed that under all conditions, the vertical concentration profiles of chl a were significantly depleted towards the mussel bed due to mussel filtration, whereas the degree of chl a depletion was correlated to wave height. Nutrient profiles consistently showed increasing concentration profiles towards the bed, identifying the mussel bed and the sediment as a source of nutrients with the highest gradients during the period with high waves. In conclusion, the near-bed concentrations of seston and nutrients in this study were temporally variable and closely linked to the physical structure of
the water column.

**General information**

State: Published
Organisations: Aarhus University, Royal Netherlands Institute for Sea Research - NIOZ, Dansk Skaldyrcenter
Authors: Petersen, J. K. (Intern), Maar, M. (Forskerdatabase), Ysebaert, T. (Ekstern), Herman, P. M. J. (Ekstern)
Pages: 137-146
Publication date: 2013
Main Research Area: Technical/natural sciences

**Publication information**

Journal: Marine Ecology Progress Series
Volume: 490
ISSN (Print): 0171-8630
Ratings:
- Web of Science (2017): Indexed yes
- Scopus rating (2016): CiteScore 2.4
- Web of Science (2016): Indexed yes
- Scopus rating (2015): CiteScore 2.56
- Web of Science (2015): Indexed yes
- Scopus rating (2014): CiteScore 2.75
- Web of Science (2014): Indexed yes
- Scopus rating (2013): CiteScore 2.79
- ISI indexed (2013): ISI indexed no
- Web of Science (2013): Indexed yes
- Scopus rating (2012): CiteScore 2.9
- ISI indexed (2012): ISI indexed no
- Web of Science (2012): Indexed yes
- Scopus rating (2011): CiteScore 2.85
- ISI indexed (2011): ISI indexed no
- Web of Science (2011): Indexed yes
- Web of Science (2010): Indexed yes
- Web of Science (2009): Indexed yes
- Web of Science (2008): Indexed yes
- Web of Science (2007): Indexed yes
- Web of Science (2006): Indexed yes
- Web of Science (2005): Indexed yes
- Web of Science (2004): Indexed yes
- Web of Science (2003): Indexed yes
- Web of Science (2002): Indexed yes
- Web of Science (2001): Indexed yes
- Web of Science (2000): Indexed yes
Original language: English
Electronic versions:
Publishers version. Embargo ended: 01/04/2017
DOIs:
10.3354/meps10444
Source: dtu
Dsn-ID: n:oat:DTIC-ART:intres/392312186::38657
Publication: Research - peer-review • Journal article – Annual report year: 2013

**Status and trends of Zostera marina in the Limfjorden**

**General information**

State: Published
Organisations: National Institute of Aquatic Resources, Danish Shellfish Centre
Authors: Canal-Vergès, P. (Intern), Tørring, D. B. (Intern), Nielsen, C. F. (Intern), Petersen, J. K. (Intern)
Publication date: 2013
Event: Abstract from Dansk Havforskermøde, Roskilde, Denmark.
Strategic approaches for aquaculture industry development: Flat oyster cultivation in Scandinavia

General information
State: Published
Organisations: Danish Shellfish Centre, Norwegian University of Life Sciences, University of Gothenburg
Authors: Joyce, A. (Ekstern), Lindegarth, S. (Ekstern), Petersen, J. K. (Intern), Murphy, C. (Ekstern)
Number of pages: 52
Publication date: 2013

Publication information
Original language: English
Main Research Area: Technical/natural sciences
Electronic versions:
Publishers version
Publication: Research › Report – Annual report year: 2013

Turbulent mixing limits mussel feeding: direct estimates of feeding rate and vertical diffusivity
Field measurements of physical and biological parameters, together with the estimation of mass transport and estimation of clearance rates (for feeding rate) using a biodeposition method (defecation) were combined to improve the understanding of the limiting factors that affect the feeding rate of blue mussels in an intertidal commercial re-laid benthic mussel bed. The study used an in situ feeding rate method to describe one of the mechanisms that underpins mussel bed self-patterning. The feeding rate of mussels measured using the in situ method (defecation) closely matched the rate of the measured turbulent transport of chl a. This relationship suggested that the supply rate of food limited the growth of mussels in this system. Vertical food depletion ([chl a]

General information
State: Published
Organisations: Bangor University, Danish Shellfish Centre
Authors: Saurel, C. (Intern), Petersen, J. K. (Intern), Wiles, P. (Ekstern), Kaiser, M. (Ekstern)
Pages: 105-121
Publication date: 2013
Main Research Area: Technical/natural sciences

Publication information
Journal: Marine Ecology Progress Series
Volume: 485
ISSN (Print): 0171-8630
Ratings:
Web of Science (2017): Indexed yes
Scopus rating (2016): CiteScore 2.4
Web of Science (2016): Indexed yes
Scopus rating (2015): CiteScore 2.56
Web of Science (2015): Indexed yes
Scopus rating (2014): CiteScore 2.75
Web of Science (2014): Indexed yes
Scopus rating (2013): CiteScore 2.79
ISI indexed (2013): ISI indexed no
Web of Science (2013): Indexed yes
Scopus rating (2012): CiteScore 2.9
ISI indexed (2012): ISI indexed no
Web of Science (2012): Indexed yes
Scopus rating (2011): CiteScore 2.85
ISI indexed (2011): ISI indexed no
Web of Science (2011): Indexed yes
Web of Science (2010): Indexed yes
Benthic grazing impact: coupling and uncoupling in relation to physical forcing

In the shallow micro-tidal cove Kertinge Nor, Denmark, a series of field campaigns were conducted from April 1995 to September 1996. During these campaigns, the effect of benthic grazing on phytoplankton concentrations was studied using a dual approach. In the first approach, the density, size distribution and in situ growth of 3 dominant benthic grazers were determined to assess grazing potential and its realisation. In the second approach, the realised grazing potential was estimated from the decline in area-specific chlorophyll a (chl a) concentrations after breakdown of stratification. Forcing functions were monitored continuously during the field campaigns using meteorological data, current meters, temperature loggers and CTD point measurements. In addition, measurements from a local monitoring program in Kertinge Nor were included in the data analysis. Stratification of the water column in the cove was mainly governed by wind speed and solar radiation and occurred 50 to 75% of the time. The potential grazing pressure of the benthic suspension feeders varied but was always greater than that required to graze the entire volume of the cove per day. Using both approaches, it was estimated that realised grazing was ~50% of the potential. The lack of realisation of the grazing potential could be attributed to a lack of mixing of the water column, which resulted in strong vertical gradients in concentrations of chl a. The primary mode of decoupling between benthic suspension feeders and phytoplankton was the stratification of the water column, which created refuges for the phytoplankton.
Effects of mussel farms on the benthic nitrogen cycle on the Swedish west coast

The biogeochemical impact of 3 long-line mussel farms (M1, M2 and M3) in Lysekil, Sweden, was investigated from before farm establishment until 1.5 yr after operation had begun. Sedimentation, benthic N flux, total oxygen uptake (TOU) and sulfate reduction rate (SRR) were all significantly increased below the mussel lines at all 3 farms. Effects of increased sedimentation rates were revealed by sediment profile imaging and were highest at Stn M2. These effects increased significantly with time of farm operation, indicating the accumulation of organic matter within sediments over time. Furthermore, more total particulate organic N deposited at farm stations was recycled into the water column compared to at reference stations (~45 versus ~13%), indicating an increased release of dissolved inorganic N from sediment below the mussel farms. At one station (M2) with the highest increase in sedimentation rate, denitrification seemed inhibited, while at another station (M3), with a less pronounced increase in sedimentation rate, denitrification was in fact stimulated, accounting for 13% of total sediment N removal. Calculations based on estimated values of N removal through mussel harvest and direct measurements of N input through changes in sedimentation, N regeneration from sediment to the water column through benthic fluxes and changes in denitrification showed, in all cases, a net removal of N from the system, as only 26 to 40% of the total amount of harvested N had been added to the sediments during the growth period.

General information

State: Published
Organisations: Danish Shellfish Centre
Authors: Carlsson, M. (Ekstern), Engström, P. (Ekstern), Lindahl, O. (Ekstern), Ljungqvist, L. (Ekstern), Petersen, J. K. (Intern), Svanberg, L. (Ekstern), Holmer, M. (Forskerdatabase)
Pages: 177-191
Publication date: 2012
Main Research Area: Technical/natural sciences

Publication information

Journal: Aquaculture Environment Interactions
Volume: 2
Issue number: 2
ISSN (Print): 1869-215X
Ratings:
BFI (2018): BFI-level 1
BFI (2017): BFI-level 1
Web of Science (2017): Indexed yes
BFI (2016): BFI-level 1
Scopus rating (2016): CiteScore 2.19 SJR 0.945 SNIP 1.051
Mussel farming can be used as a mitigation tool - A reply

General information
State: Published
Organisations: Danish Shellfish Centre
Authors: Petersen, J. K. (Intern), Timmermann, K. (Ekstern), Carlsson, M. (Ekstern), Holmer, M. (Ekstern), Maar, M. (Ekstern), Lindahl, O. (Ekstern)
Pages: 452-454
Publication date: 2012
Main Research Area: Technical/natural sciences

Publication information
Journal: Marine Pollution Bulletin
Volume: 64
Issue number: 2
ISSN (Print): 0025-326X
Ratings:
BFI (2018): BFI-level 2
BFI (2017): BFI-level 2
Web of Science (2017): Indexed yes
BFI (2016): BFI-level 2
Scopus rating (2016): CiteScore 3.46 SJR 1.302 SNIP 1.331
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 2
Scopus rating (2015): SJR 1.245 SNIP 1.277 CiteScore 3.23
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 2
Scopus rating (2014): SJR 1.304 SNIP 1.425 CiteScore 3.04
Web of Science (2014): Indexed yes
BFI (2013): BFI-level 1
Scopus rating (2013): SJR 1.208 SNIP 1.546 CiteScore 2.89
ISI indexed (2013): ISI indexed yes
Web of Science (2013): Indexed yes
BFI (2012): BFI-level 1
Comparative study of predatory responses in blue mussels (Mytilus edulis L.) produced in suspended long line cultures or collected from natural bottom mussel beds

Blue mussels (Mytilus edulis L.) are a valuable resource for commercial shellfish production and may also have uses as a tool in habitat improvement, because mussel beds can increase habitat diversity and complexity. A prerequisite for both commercial mussel production and habitat improvement is the availability of seed mussels collected with minimum impact on the benthic ecosystem. To examine whether mussels collected in suspended cultures can be used for bottom culture production and as tool in habitat improvement, the differences in predatory defence responses between suspended and bottom mussels exposed to the predatory shore crab (Carcinus maenas L.) were tested in laboratory experiments and in the field. Predatory defence responses (byssal attachment and aggregation) and morphological traits were tested in laboratory, while growth and mortality were examined in field experiments. Suspended mussels had an active response in relation to the predator by developing a significantly firmer attachment to the substrate and a closer aggregated structure. Bottom mussels had a passive strategy by having a thicker shell and larger relative size of the adductor muscle. In a field experiment mussels originated from suspended cultures had a higher length increment and lower mortality when compared to bottom mussels. It is concluded that suspended mussels potentially are an alternative resource to bottom culture and can be used in habitat improvement of mussel beds, but that the use of suspended mussels has to be tested further in large-scale field experiments.

General information
State: Published
Organisations: Section for Coastal Ecology, National Institute of Aquatic Resources, Danish Shellfish Centre
Authors: Christensen, H. T. (Intern), Dolmer, P. (Intern), Petersen, J. K. (Intern), Tørring, D. B. (Intern)
Pages: 1-9
Publication date: 2011
Main Research Area: Technical/natural sciences
Muslinger som virkemiddel: Fjernelse af næringssalte gennem kompensationsopdræt - og kommerciel udnyttelse heraf

General information
State: Published
Organisations: Dansk Skaldyrcenter
Authors: Petersen, J. K. (Intern), Mattesen, S. (Ekstern)
Number of pages: 8
Publication date: 2011
Turbulent, stratified flow through a suspended shellfish canopy: implications for mussel farm design

Observations were used to quantify the influences of turbulent flow and mixing through the suspended canopy formed by a shellfish aquaculture farm in the microtidal Danish Limfjorden. Observations included current meter/profiler timeseries data and turbulence microstructure profiling. The influence was 2-way in that the turbulence is partially driven by the canopy and in turn the canopy is affected by the turbulence. The canopy reduced the flow speeds within its interior, which was sufficient to reduce levels of turbulent kinetic energy so that within-canopy rates of turbulent kinetic energy dissipation $\varepsilon$ were between $10^{-8}$ and $5 \times 10^{-6}$ m$^2$ s$^{-3}$. Stratification and turbulence were generally inter-related. It was difficult to link the canopy effect to changes in stratification. This was partly due to a high degree of natural variability and partly because the canopy did not appear to generate that much mixing relative to background variability. Vertical diffusivities enabled estimates of the effect of mixing on nutrient depletion and suggest that in the investigated farm set-up vertical diffusivities are secondary in terms of contribution to this relationship but that they could play a dominant role in farms with a more spacious or compressed set-up of canopies. However, vertical flux estimates imply that there must be transverse fluxes of material. Results suggest several avenues for enhanced sustainable shellfish production. For example, canopy flushing can be enhanced with suitable arrangement of crop within a farmed area (heterogeneity). In addition, stratification persists within the canopy and so exposure to nutrient-deplete water can be minimized through staggered crop heights. However, to benefit from this knowledge, improved understanding of long-term variability in the background environment is required.
A model study of the regulation of blue mussels by nutrient loadings and water column stability in a shallow estuary, the Limfjorden

General information
State: Published
Organisations: Danish Shellfish Centre, National Environmental Research Institute
Authors: Maar, M. (Ekstern), Timmermann, K. (Ekstern), Petersen, J. K. (Intern), Gustafsson, K. (Ekstern), Storm, L. M. (Ekstern)
Pages: 322-333
Publication date: 2010
Main Research Area: Technical/natural sciences

Publication information
Journal: Journal of Sea Research
Volume: 64
ISSN (Print): 1385-1101
Ratings:
BFI (2018): BFI-level 1
BFI (2017): BFI-level 1
Web of Science (2017): Indexed yes
BFI (2016): BFI-level 1
Scopus rating (2016): CiteScore 1.98 SJR 0.932 SNIP 0.931
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 1
Scopus rating (2015): SJR 1.008 SNIP 1.007 CiteScore 2.09
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 1
Scopus rating (2014): SJR 0.977 SNIP 1.024 CiteScore 2.15
Web of Science (2014): Indexed yes
BFI (2013): BFI-level 1
Scopus rating (2013): SJR 0.928 SNIP 1.098 CiteScore 2
ISI indexed (2013): ISI indexed yes
Web of Science (2013): Indexed yes
BFI (2012): BFI-level 1
Scopus rating (2012): SJR 1.115 SNIP 1.06 CiteScore 2.18
ISI indexed (2012): ISI indexed yes
BFI (2011): BFI-level 1
Scopus rating (2011): SJR 1.371 SNIP 1.28 CiteScore 2.5
ISI indexed (2011): ISI indexed yes
BFI (2010): BFI-level 1
Degradation of mussel (Mytilus edulis) fecal pellets released from hanging long-lines upon sinking and after settling at the sediment

General information
State: Published
Organisations: National Environmental Research Institute
Authors: Carlsson, M. (Ekstern), Glud, R. N. (Ekstern), Petersen, J. K. (Intern)
Pages: 1376-1387
Publication date: 2010
Main Research Area: Technical/natural sciences

Publication information
Journal: Canadian Journal of Fisheries and Aquatic Sciences
Volume: 67
Issue number: 9
ISSN (Print): 0706-652X
Ratings:
BFI (2018): BFI-level 2
BFI (2017): BFI-level 2
Web of Science (2017): Indexed yes
BFI (2016): BFI-level 2
Scopus rating (2016): CiteScore 2.56 SJR 1.322 SNIP 1.163
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 2
Scopus rating (2015): SJR 1.256 SNIP 1.051 CiteScore 2.22
Web of Science (2015): Indexed yes

mytilus edulis, wind mixing, stratification, eutrophication, hypoxia, climate change

DOIs:
10.1016/j.seares.2010.04.007
Source: FindIt
Source-ID: 2184445521
Publication: Research - peer-review › Journal article – Annual report year: 2010
Influence of moderate and severe hypoxia on the diurnal activity pattern of lesser sandeel Ammodytes tobianus

General information
State: Published
Organisations: Section for Population Ecology and Genetics, National Institute of Aquatic Resources, Danish Shellfish Centre
Authors: Behrens, J. (Intern), Petersen, J. K. (Intern), Ærtebjerg, G. (Ekstern), Steffensen, J. (Ekstern)
Pages: 538-551
Muslinger som virkemiddel - Et pilotstudie

General information
State: Published
Organisations: Dansk Skaldyrcenter
Authors: Petersen, J. K. (Intern), Maar, M. (Ekstern), Holmer, M. (Ekstern)
Number of pages: 41
Publication date: 2010

Publication information
Original language: English
Main Research Area: Technical/natural sciences
Electronic versions:
Publishers version
Links:
http://naturstyrelsen.dk/publikationer/2011/jun/muslinger-som-virkemiddel-et-pilotstudie/
Publication: Research › Report – Annual report year: 2010

Opbevaring og konditionering af ferske muslinger - med fokus på optimering af kvalitet og holdbarhed

General information
State: Published
Organisations: Dansk Skaldyrcenter
Authors: Tørring, D. B. (Intern), Nielsen, C. F. (Intern), Petersen, J. K. (Intern)
Number of pages: 40
Publication date: 2010

Publication information
Publisher: Dansk Skaldyrcenter
Original language: Danish
Main Research Area: Technical/natural sciences
Electronic versions:
Publishers version
Publication: Research › Report – Annual report year: 2010

Supplerende bestandsundersøgelser af blåmuslinger, ålegræs og makroalger på lavt vand i Lovns og Løgstør Bredning i 2009

General information
State: Published
Organisations: National Institute of Aquatic Resources, Section for Coastal Ecology, Danish Shellfish Centre
Authors: Poulsen, L. K. (Intern), Dolmer, P. (Intern), Geitner, K. (Intern), Tørring, D. B. (Intern), Petersen, J. K. (Intern), Nielsen, C. F. (Intern), Christoffersen, M. O. (Intern), Kristensen, P. S. (Intern)
Number of pages: 31
Publication date: 2010

Publication information
Place of publication: Charlottenlund
Publisher: DTU Aqua. Institut for Akvatiske Ressourcer
ISBN (Print): 978-87-7481-123-7
The Limfjord, Denmark. SPICOSA study site 5

General information
State: Published
Organisations: Section for Coastal Ecology, National Institute of Aquatic Resources, Division of Seafood Research, National Food Institute, Section for Management Systems, Danish Shellfish Centre
Publication date: 2010
Event: Poster session presented at SPICOSA SAF meeting, Istanbul, .
Main Research Area: Technical/natural sciences
Source: orbit
Source-ID: 271276
Publication: Research › Poster – Annual report year: 2010

Depletion of plankton in a raft culture of Mytilus galloprovincialis in Ría de Vigo, NW Spain. I

General information
State: Published
Organisations: Aarhus University, Netherlands Institute of Ecology
Authors: Petersen, J. K. (Intern), Nielsen, T. G. (Intern), Duren, L. V. (Ekstern), Maar, M. (Ekstern)
Pages: 113-125
Publication date: 2009
Main Research Area: Technical/natural sciences

Publication information
Journal: Aquatic Biology
Volume: 4
Issue number: 2
ISSN (Print): 1864-7782
Ratings:
BFI (2018): BFI-level 1
BFI (2017): BFI-level 1
Depletion of plankton in a raft culture of Mytilus galloprovincialis in Ría de Vigo, NW Spain. II

**General information**
State: Published
Organisations: Aarhus University
Authors: Maar, M. (Ekstern), Nielsen, T. G. (Intern), Petersen, J. K. (Intern)
Pages: 127-141
Publication date: 2009
Main Research Area: Technical/natural sciences

**Publication information**
Journal: Aquatic Biology
Volume: 4
Issue number: 2
ISSN (Print): 1864-7782
Ratings:
BFI (2018): BFI-level 1
BFI (2017): BFI-level 1
Web of Science (2017): Indexed Yes
BFI (2016): BFI-level 1
Scopus rating (2016): SJR 0.847 SNIP 0.895 CiteScore 1.82
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 1
Scopus rating (2015): SJR 0.767 SNIP 0.713 CiteScore 1.41
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 1
Scopus rating (2014): SJR 0.681 SNIP 0.678 CiteScore 1.44
BFI (2013): BFI-level 1
Scopus rating (2013): SJR 0.641 SNIP 0.618 CiteScore 1.34
ISI indexed (2013): ISI indexed no
Web of Science (2013): Indexed yes
BFI (2012): BFI-level 1
Scopus rating (2012): SJR 0.814 SNIP 0.813 CiteScore 1.7
ISI indexed (2012): ISI indexed no
BFI (2011): BFI-level 1
Scopus rating (2011): SJR 0.844 SNIP 0.848 CiteScore 1.79
ISI indexed (2011): ISI indexed no
BFI (2010): BFI-level 1
Scopus rating (2010): SJR 0.899 SNIP 0.666
Web of Science (2010): Indexed yes
BFI (2009): BFI-level 1
Scopus rating (2009): SJR 0.631 SNIP 0.483
BFI (2008): BFI-level 1
Scopus rating (2008): SJR 0.461 SNIP 0.54
Original language: English
DOIs:
10.3354/ab00124
Source: orbit
Source-ID: 258314
Publication: Research - peer-review › Journal article – Annual report year: 2009
Eating your competitor: on the triangle between turbulence, copepod escape behaviour and predation from mussels

General information
State: Published
Organisations: National Environmental Research Institute
Authors: Jonsson, A. (Ekstern), Nielsen, T. G. (Intern), Hrubenja, I. (Ekstern), Maar, M. (Ekstern), Petersen, J. K. (Intern)
Pages: 143-151
Publication date: 2009
Main Research Area: Technical/natural sciences

Publication information
Journal: Marine Ecology - Progress Series
Volume: 376
ISSN (Print): 0171-8630
Ratings:
BFI (2018): BFI-level 2
BFI (2017): BFI-level 2
Web of Science (2017): Indexed yes
BFI (2016): BFI-level 2
Scopus rating (2016): CiteScore 2.4
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 2
Scopus rating (2015): CiteScore 2.56
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 2
Scopus rating (2014): CiteScore 2.75
Web of Science (2014): Indexed yes
BFI (2013): BFI-level 2
Scopus rating (2013): CiteScore 2.79
Local effects of blue mussels around turbine foundations in an ecosystem model of Nysted off-shore wind farm, Denmark

The development of off-shore wind farms along the coastline of north-west Europe is rapidly increasing; it is therefore important to study how this will affect the marine environment. The present study modelled the growth and feed-backs of blue mussels in natural beds and on turbine foundations in an off-shore wind farm (OWF) located in a shallow coastal ecosystem by coupling a dynamic energy budget (DEB) model to a small-scale 3D hydrodynamic-biogeochemical model. The model results showed that blue mussels located higher up in the water column on turbine pillars achieved a 7-18 times higher biomass than those located on the scour protection because the former experience an enhanced advective food supply. Secondly, the high biomasses of blue mussels on foundations created local 'hot spots' of biological activity and changed ecosystem dynamics due to their feed-backs e.g. ingestion of microplankton and copepods, excretion of ammonium and egestion of faecal pellets. The model results were supported by field measurements around foundations of Chl a concentrations and biomasses of the fauna community. Our study emphasised that OWFs seem to be particularly favourable for blue mussels in the western Baltic Sea and that the functioning of the OWFs as artificial reef ecosystems depends upon how the blue mussels interact with their local pelagic and benthic environment. © 2009 Elsevier B.V. All rights reserved.
ISSN (Print): 1385-1101

Ratings:
BFI (2018): BFI-level 1
BFI (2017): BFI-level 1
Web of Science (2017): Indexed yes
BFI (2016): BFI-level 1
Scopus rating (2016): CiteScore 1.98 SJR 0.932 SNIP 0.931
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 1
Scopus rating (2015): SJR 1.008 SNIP 1.007 CiteScore 2.09
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 1
Scopus rating (2014): SJR 0.977 SNIP 1.024 CiteScore 2.15
Web of Science (2014): Indexed yes
BFI (2013): BFI-level 1
Scopus rating (2013): SJR 0.928 SNIP 1.098 CiteScore 2
ISI indexed (2013): ISI indexed yes
Web of Science (2013): Indexed yes
BFI (2012): BFI-level 1
Scopus rating (2012): SJR 1.115 SNIP 1.06 CiteScore 2.18
ISI indexed (2012): ISI indexed yes
BFI (2011): BFI-level 1
Scopus rating (2011): SJR 1.371 SNIP 1.28 CiteScore 2.5
ISI indexed (2011): ISI indexed yes
BFI (2010): BFI-level 1
Scopus rating (2010): SJR 1.267 SNIP 1.242
Web of Science (2010): Indexed yes
BFI (2009): BFI-level 1
Scopus rating (2009): SJR 1.261 SNIP 1.071
Web of Science (2009): Indexed yes
BFI (2008): BFI-level 1
Scopus rating (2008): SJR 1.289 SNIP 1.156
Scopus rating (2007): SJR 1.402 SNIP 1.179
Web of Science (2007): Indexed yes
Scopus rating (2006): SJR 1.325 SNIP 1.165
Web of Science (2006): Indexed yes
Scopus rating (2005): SJR 0.987 SNIP 0.923
Scopus rating (2004): SJR 0.932 SNIP 0.957
Web of Science (2004): Indexed yes
Scopus rating (2003): SJR 1.366 SNIP 1.146
Web of Science (2003): Indexed yes
Scopus rating (2002): SJR 1.059 SNIP 0.926
Web of Science (2002): Indexed yes
Scopus rating (2001): SJR 1.131 SNIP 0.954
Web of Science (2001): Indexed yes
Scopus rating (2000): SJR 1.127 SNIP 1.021
Web of Science (2000): Indexed yes
Scopus rating (1999): SJR 1.182 SNIP 1.014

Original language: English
Aquatic Science, Ecology, Evolution, Behavior and Systematics, Oceanography, Artificial Reef, Blue Mussels, DEB-Model, Depletion, Wind Farm, artificial reef, benthic environment, biomass, bivalve, ecosystem dynamics, energy budget, fecal pellet, food supply, growth modeling, ingestion rate, marine environment, microplankton, pelagic environment, three-dimensional modeling, water column, wind farm, Atlantic Ocean, Baltic Sea, Denmark, Eurasia, Europe, Northern Europe, Scandinavia, Copepoda, Mytilus edulis

DOIs:
Oxygen deficiency impacts on burying habitats for lesser sandeel, Ammodytes tobianus, in the inner Danish waters

Starting in 1980s, the inner Danish waters have yearly been exposed to seasonal oxygen deficiency (hypoxia). Through spatial–temporal interpolation of monitoring data (1998–2005), we investigated oxygen deficiency impacts on suitable burying habitats for lesser sandeel (Ammodytes tobianus). Furthermore, the consequences of a predicted 4 °C temperature increase within this century were investigated. Maps of bottom oxygen deficiency (oxygen saturation ≤ Scrit of sandeel) were overlaid on maps of sediment composition. Throughout the study period (1998–2005), about 8% of the suitable sediments were affected by oxygen deficiency during an average year and 23% in the most severe year. Regional differences underlay the interannual variations. The extent of oxygen deficiency in enclosed regions varied from 20% to 33% of the suitable seabed being affected, whereas in open-water regions oxygen deficiency problems were limited during average years. However, large areas of the open-water seabed experienced oxygen deficiency during severe years. In such years, under a 4.0 °C temperature increase scenario, the extent of oxygen deficiency on open-water suitable patches was predicted to increase from 25% to about 40%.

General information
State: Published
Organisations: Section for Population- and Ecosystem Dynamics, National Institute of Aquatic Resources, Department of Environmental Science and Engineering, Danish Shellfish Centre
Authors: Behrens, J. (Intern), Ærtebjerg, G. (Ekstern), Petersen, J. K. (Intern), Carstensen, J. (Ekstern)
Pages: 883-895
Publication date: 2009
Main Research Area: Technical/natural sciences

Publication information
Journal: Canadian Journal of Fisheries and Aquatic Sciences
Volume: 66
Issue number: 6
ISSN (Print): 0706-652X
Ratings:
BFI (2018): BFI-level 2
BFI (2017): BFI-level 2
Web of Science (2017): Indexed yes
BFI (2016): BFI-level 2
Scopus rating (2016): CiteScore 2.56 SJR 1.322 SNIP 1.163
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 2
Scopus rating (2015): SJR 1.256 SNIP 1.051 CiteScore 2.22
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 2
Scopus rating (2014): SJR 1.443 SNIP 1.379 CiteScore 2.6
Web of Science (2014): Indexed yes
BFI (2013): BFI-level 2
Scopus rating (2013): SJR 1.421 SNIP 1.081 CiteScore 2.25
ISI indexed (2013): ISI indexed yes
Web of Science (2013): Indexed yes
BFI (2012): BFI-level 2
Scopus rating (2012): SJR 1.324 SNIP 1.196 CiteScore 2.29
ISI indexed (2012): ISI indexed yes
Web of Science (2012): Indexed yes
BFI (2011): BFI-level 2
Scopus rating (2011): SJR 1.423 SNIP 1.09 CiteScore 2.13
ISI indexed (2011): ISI indexed yes
Web of Science (2011): Indexed yes
BFI (2010): BFI-level 2
Scopus rating (2010): SJR 1.425 SNIP 1.118
Seasonal and spatial variations of benthic impacts of mussel longline farming in a eutrophic Danish fjord, Limfjorden

General information
State: Published
Organisations: Aarhus University
Authors: Carlsson, M. (Ekstern), Holmer, M. (Ekstern), Petersen, J. K. (Intern)
Pages: 791-801
Publication date: 2009
Main Research Area: Technical/natural sciences

Publication information
Journal: Journal of Shellfish Research
Volume: 28
Issue number: 4
ISSN (Print): 0730-8000
Ratings:
BFI (2018): BFI-level 1
BFI (2017): BFI-level 1
Web of Science (2017): Indexed Yes
BFI (2016): BFI-level 1
Scopus rating (2016): CiteScore 1.01 SJR 0.433 SNIP 0.644
BFI (2015): BFI-level 1
Scopus rating (2015): SJR 0.5 SNIP 0.75 CiteScore 1.02
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 1
Scopus rating (2014): SJR 0.425 SNIP 0.488 CiteScore 0.8
Web of Science (2014): Indexed yes
BFI (2013): BFI-level 1
Scopus rating (2013): SJR 0.564 SNIP 0.693 CiteScore 1.03
ISI indexed (2013): ISI indexed yes
BFI (2012): BFI-level 1
Scopus rating (2012): SJR 0.446 SNIP 0.647 CiteScore 1
ISI indexed (2012): ISI indexed yes
Web of Science (2012): Indexed yes
BFI (2011): BFI-level 1
Scopus rating (2011): SJR 0.548 SNIP 0.632 CiteScore 1.01
ISI indexed (2011): ISI indexed yes
Web of Science (2011): Indexed yes
BFI (2010): BFI-level 1
Scopus rating (2010): SJR 0.547 SNIP 0.628
BFI (2009): BFI-level 1
Scopus rating (2009): SJR 0.477 SNIP 0.549
Web of Science (2009): Indexed yes
BFI (2008): BFI-level 1
Scopus rating (2008): SJR 0.371 SNIP 0.551
Web of Science (2008): Indexed yes
Scopus rating (2007): SJR 0.492 SNIP 0.674
Scopus rating (2006): SJR 0.492 SNIP 0.615
Scopus rating (2005): SJR 0.397 SNIP 0.624
Scopus rating (2004): SJR 0.474 SNIP 0.757
Scopus rating (2003): SJR 0.481 SNIP 0.56
Scopus rating (2002): SJR 0.383 SNIP 0.634
Web of Science (2002): Indexed yes
Scopus rating (2001): SJR 0.652 SNIP 0.919
Scopus rating (2000): SJR 0.614 SNIP 0.838
Scopus rating (1999): SJR 0.689 SNIP 0.567
Original language: English
mussel farm, aquaculture, benthic impacts, sediment, oxygen uptake, sulfate reduction
DOIs:
10.2983/035.028.0408
Source: FindIt
Source-ID: 2185904514
Publication: Research - peer-review › Journal article – Annual report year: 2009

Udvikling af kulturbanker til produktion af blåmuslinger i Limfjorden

General information
State: Published
Organisations: Section for Coastal Ecology, National Institute of Aquatic Resources, Section for Management Systems, National Veterinary Institute, Danish Shellfish Centre
Number of pages: 127
Publication date: 2009

Publication information
Place of publication: Charlottenlund
Publisher: Danmarks Tekniske Universitet, Institut for Akvatiske Ressourcer - Dansk Skaldyrcenter
ISBN (Print): 978-87-7481-104-6
Original language: Danish

Series: DTU Aqua-rapport
Number: 212-09
ISSN: 1395-8216
Biofouling og skadevildere: Søstjerner

General information
State: Published
Organisations: National Institute of Aquatic Resources, Danmarks Miljøundersøgelser
Authors: Holtegaard, L. (Ekstern), Gramkow, M. (Ekstern), Petersen, J. K. (Intern), Dolmer, P. (Intern)
Number of pages: 130
Publication date: 2008

Publication information
Original language: Danish
Main Research Area: Technical/natural sciences
Electronic versions:
Bilag - Publishers version
Rapport - Publishers version
Publication: Research › Report – Annual report year: 2008

Blåmuslingeprojekt fase 3 - Integration og optimering af produktionsformer

General information
State: Published
Organisations: Danish Shellfish Centre, Section for Coastal Ecology, National Institute of Aquatic Resources, Danish Shellfish Centre
Authors: Tørring, D. (Ekstern), Gramkow, M. (Ekstern), Nielsen, C. F. (Intern), Redeker, S. (Ekstern), Holtegaard, L. (Ekstern), Freudendahl, A. (Ekstern), Petersen, J. K. (Intern), Carlsson, M. (Ekstern), Dolmer, P. (Intern), Christensen, H. T. (Intern), Kristensen, P. S. (Intern)
Number of pages: 154
Publication date: 2008

Publication information
Place of publication: Nykøbing Mors
Publisher: Dansk Skaldyrcenter
Original language: Danish
Main Research Area: Technical/natural sciences
Electronic versions:
Publishers version
Publication: Research › Report – Annual report year: 2008

Nye opdrætsteknikker

General information
State: Published
Organisations: Danish Shellfish Centre, Section for Coastal Ecology, National Institute of Aquatic Resources
Authors: Tørring, D. (Ekstern), Gramkow, M. (Ekstern), Holtegaard, L. (Ekstern), Petersen, J. K. (Intern), Dolmer, P. (Intern), Bækgaard, P. (Ekstern)
Number of pages: 77
Publication date: 2008

Publication information
Place of publication: Nykøbing Mors
Publisher: Dansk Skaldyrcenter
Original language: Danish
Main Research Area: Technical/natural sciences
Electronic versions:
Regime shift in a coastal marine ecosystem

General information
State: Published
Organisations: Environment Centre Ringkøbing, National Environmental Research Institute, Aarhus University
Authors: Petersen, J. K. (Intern), Hansen, J. W. (Ekstern), Laursen, M. B. (Ekstern), Clausen, P. (Ekstern), Carstensen, N. J. (Ekstern), Conley, D. J. (Ekstern)
Pages: 497-510
Publication date: 2008
Main Research Area: Technical/natural sciences

Publication information
Journal: Ecological Applications
Volume: 18
Issue number: 2
ISSN (Print): 1051-0761
Ratings:
BFI (2018): BFI-level 2
BFI (2017): BFI-level 2
Web of Science (2017): Indexed Yes
BFI (2016): BFI-level 2
Scopus rating (2016): CiteScore 4.4 SJR 2.265 SNIP 1.576
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 2
Scopus rating (2015): SJR 2.76 SNIP 1.759 CiteScore 4.63
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 2
Scopus rating (2014): SJR 2.593 SNIP 1.842 CiteScore 4.59
Web of Science (2014): Indexed yes
BFI (2013): BFI-level 2
Scopus rating (2013): SJR 2.676 SNIP 1.863 CiteScore 4.77
ISI indexed (2013): ISI indexed yes
Web of Science (2013): Indexed yes
BFI (2012): BFI-level 2
Scopus rating (2012): SJR 2.965 SNIP 1.937 CiteScore 4.55
ISI indexed (2012): ISI indexed yes
BFI (2011): BFI-level 2
Scopus rating (2011): SJR 3.286 SNIP 1.975 CiteScore 4.86
ISI indexed (2011): ISI indexed yes
Web of Science (2011): Indexed yes
BFI (2010): BFI-level 2
Scopus rating (2010): SJR 2.784 SNIP 1.675
Web of Science (2010): Indexed yes
BFI (2009): BFI-level 2
Scopus rating (2009): SJR 2.664 SNIP 1.759
BFI (2008): BFI-level 2
Scopus rating (2008): SJR 2.869 SNIP 1.749
Web of Science (2008): Indexed yes
Scopus rating (2007): SJR 2.805 SNIP 1.876
Scopus rating (2006): SJR 3.065 SNIP 2.06
Scopus rating (2005): SJR 2.819 SNIP 1.966
Scopus rating (2004): SJR 2.65 SNIP 1.832
Scopus rating (2003): SJR 2.808 SNIP 2.089
SPICOSA Design Step, SSA 5 Limfjorden, Denmark – progress and results

General information
State: Published
Organisations: Section for Coastal Ecology, National Institute of Aquatic Resources, Section for Shellfish, Section for Management Systems, Danish Shellfish Centre
Publication date: 2008
Event: Poster session presented at SPICOSA SAF Meeting, Faro, Portugal.
Main Research Area: Technical/natural sciences
Source: orbit
Source-ID: 251183
Publication: Research › Poster – Annual report year: 2008

SPICOSA Formulation Step, SSA 5 Limfjorden, Denmark – progress and results

General information
State: Published
Organisations: Section for Coastal Ecology, National Institute of Aquatic Resources, Danish Shellfish Centre
Publication date: 2008
Event: Poster session presented at SPICOSA SAF Meeting, Brest, France.
Main Research Area: Technical/natural sciences
Source: orbit
Source-ID: 251182
Publication: Research › Poster – Annual report year: 2008

SPICOSA System Design report: SSA 5 - Limfjorden, Denmark

General information
State: Published
Organisations: Section for Coastal Ecology, National Institute of Aquatic Resources, Section for Management Systems, Division of Seafood Research, National Food Institute, Danish Shellfish Centre
Number of pages: 26
Publication date: 2008

Publication information
Original language: English
Series: SPICOSA
Main Research Area: Technical/natural sciences
Ascidian suspension feeding

General information
State: Published
Organisations: Aarhus University
Authors: Petersen, J. K. (Intern)
Pages: 127-137
Publication date: 2007
Main Research Area: Technical/natural sciences

Publication information
Journal: Journal of Experimental Marine Biology and Ecology
Volume: 342
Issue number: 1
ISSN (Print): 0022-0981
Ratings:
BFI (2018): BFI-level 1
BFI (2017): BFI-level 1
Web of Science (2017): Indexed Yes
BFI (2016): BFI-level 1
Scopus rating (2016): CiteScore 2.03 SJR 0.937 SNIP 0.914
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 1
Scopus rating (2015): SJR 1.043 SNIP 0.823 CiteScore 1.87
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 1
Scopus rating (2014): SJR 1.145 SNIP 1.045 CiteScore 2.41
Web of Science (2014): Indexed yes
BFI (2013): BFI-level 2
Scopus rating (2013): SJR 1.294 SNIP 1.08 CiteScore 2.45
ISI indexed (2013): ISI indexed yes
Web of Science (2013): Indexed yes
BFI (2012): BFI-level 2
Scopus rating (2012): SJR 1.186 SNIP 1.021 CiteScore 2.27
ISI indexed (2012): ISI indexed yes
Web of Science (2012): Indexed yes
BFI (2011): BFI-level 2
Scopus rating (2011): SJR 1.067 SNIP 1.007 CiteScore 2.14
ISI indexed (2011): ISI indexed yes
Web of Science (2011): Indexed yes
BFI (2010): BFI-level 2
Scopus rating (2010): SJR 1.239 SNIP 1.017
Web of Science (2010): Indexed yes
BFI (2009): BFI-level 2
Scopus rating (2009): SJR 1.299 SNIP 1.208
Web of Science (2009): Indexed yes
BFI (2008): BFI-level 1
Scopus rating (2008): SJR 1.26 SNIP 1.134
Web of Science (2008): Indexed yes
Scopus rating (2007): SJR 1.214 SNIP 1.308
Web of Science (2007): Indexed yes
Scopus rating (2006): SJR 1.262 SNIP 1.247
Rapport om udvikling af kulturbanker til produktion af blåmuslinger i Limfjorden

General information
State: Published
Organisations: Section for Shellfish, National Institute of Aquatic Resources, Section for Management Systems, Section for Software and GIS development, National Veterinary Institute, Danish Shellfish Centre
Authors: Dolmer, P. (Intern), Kristensen, P. S. (Intern), Hoffmann, E. (Intern), Geitner, K. (Intern), Borgstrøm, R. (Intern), Espersen, A. (Intern), Petersen, J. K. (Intern), Bassompierre, M. (Intern), Tørring, D. B. (Intern), Gramkow, M. (Ekstern)
Number of pages: 89
Publication date: 2007

Publication information
Publisher: [s.n.]
Original language: Danish
Main Research Area: Technical/natural sciences
Electronic versions:
3704-3-07-0150_kulturbanker[1].pdf
Source: orbit
Source-ID: 233345
Publication: Research › Report – Annual report year: 2007

Tobisens strategi til at få it lit når den er nedgravet, og effekten af hypoxi på fiskens aktivitet

General information
State: Published
Organisations: University of Copenhagen, Dansk Skaldyrcenter
Authors: Behrens, J. (Intern), Glud, R. (Ekstern), Stahl, H. (Ekstern), Ærtebjerg, G. (Ekstern), Petersen, J. K. (Intern), Steffensen, J. (Ekstern)
Publication date: 2007
Main Research Area: Technical/natural sciences
Source: orbit
Source-ID: 251195
Publication: Research › Conference abstract for conference – Annual report year: 2007

Limfjorden i 100 år. Klima, hydrografi, næringsstofffærsel, bundfauna og fisk i Limfjorden fra 1897 til 2003

General information
State: Published
Organisations: Dansk Skaldyrcenter
Authors: Christiansen, T. (Ekstern), Christiansen, T. (Ekstern), Markager, S. (Ekstern), Petersen, J. K. (Intern), Mouritsen, L. (Ekstern)
Number of pages: 85
Modelling vertical mixing in the surface boundary layer using artificial age tracers

The temporal evolution of biogeochemical state variables in shallow coastal seas and estuaries is tightly coupled to the turbulent mixing in the water column. In addition to the general regulation of nutrients for living organisms, vertical mixing in the surface boundary layer also strengthens the coupling between the pelagic and benthic communities in areas where the surface boundary layer reaches the bottom boundary layer. Here we analyse vertical mixing rates in the surface mixed layer with a one-dimensional model simulating the conditions in a shallow fjord during a 5-year period. The mixing rates are quantified by the distribution of an artificial water age tracer, where the age is related to the time elapsed since the water left the surface. A method is developed and applied taking into account the diffusive mixing of old water from deeper water, and the influence of upward diffusive mixing on the water age throughout the mixed layer is quantified. The resulting age of the water at different depth levels ranges from typically about 6 h at 2 m depth to 1-4 days at 8 m depth. Large interannual variability of the age tracer in the mixed layer is seen during the late spring and summer period, and this can be related to the variability of wind generated turbulence. The distribution of the water age in the mixed layer is relevant for analysing the coupling between the pelagic and benthic biomasses in shallow coastal systems on length and timescales corresponding to the mixed layer depth and about 1 week, respectively.
Offshore windmill farms: Threats to or possibilities for the marine environment

A massive development of offshore windmill farms has been planned along the European coastline. This raises important questions about the possible effects on the marine environment. Effects during the construction period may be minimized to a negligible impact if care is taken to avoid areas containing rare habitats or species. Disturbance caused by noise, vibrations, and electromagnetic fields during windmill operation may, with present knowledge, be considered to be of minor importance to the marine environment. The reef effect (i.e. addition of a hard substratum) is believed to cause the largest impact on the marine environment and at different scales: the micro scale, which involves material, texture, and heterogeneity of the foundation material; the meso scale, which involves the revetments and scour protection; and the macro scale, which encompasses the level of the entire windmill farm. Effects on these scales are discussed in relation to results obtained from natural habitats, artificial reefs, and other man-made constructions at sea.

General information
State: Published
Organisations: Stockholm University, National Environmental Research Institute
Authors: Petersen, J. K. (Intern), Malm, T. (Ekstern)
Pages: 75-80
Publication date: 2006
Main Research Area: Technical/natural sciences

Publication information
Journal: Ambio
Volume: 35
Issue number: 2
ISSN (Print): 0044-7447
Ratings:
Oxygen deficiency impacts on habitats for lesser sandeel in the inner Danish waters

**General information**

**State:** Published

**Organisations:** University of Copenhagen, Danish Shellfish Centre

**Authors:** Behrens, J. (Intern), Carstensen, J. (Ekstern), Ærtebjerg, G. (Ekstern), Petersen, J. K. (Intern)

**Publication date:** 2006

**Event:** Abstract from 2nd International Symposium on Research and Management of Eutrophication in Coastal Ecosystems, Nyborg, Denmark.
Reference conditions and EQOs for aquatic vegetation and macrozoobenthos

General information
State: Published
Organisations: National Environmental Research Institute
Authors: Petersen, J. K. (Intern), Andersen, J. (Ekstern), Dahl, K. (Ekstern), Hansen, O. (Ekstern), Josefsson, A. (Ekstern), Karlsson, J. (Ekstern), Loo, L. (Ekstern), Magnusson, J. (Ekstern), Moy, F. (Ekstern), Nilsson, P. (Ekstern)
Number of pages: 138
Publication date: 2006

Publication information
Place of publication: Copenhagen
Publisher: The Nordic Council of Ministers
Original language: English
Series: TemaNord
Number: 2006:510
ISSN: 0908-6692
Main Research Area: Technical/natural sciences
Publication: Research › Conference abstract for conference – Annual report year: 2006

Blåmuslingeprojekt fase II

General information
State: Published
Organisations: Dansk Skaldyrcenter, Danish Shellfish Centre
Authors: Tørring, D. (Ekstern), Petersen, J. K. (Intern)
Number of pages: 126
Publication date: 2005

Publication information
Place of publication: Nykøbing Mors
Publisher: Dansk Skaldyrcenter
Original language: Danish
Main Research Area: Technical/natural sciences
Publication: Research › Report – Annual report year: 2005

Diskussion og perspektivering

General information
State: Published
Organisations: National Environmental Research Institute
Authors: Dahl, K. (Ekstern), Andersen, J. (Ekstern), Riemann, B. (Ekstern), Carstensen, J. (Ekstern), Christiansen, T. (Ekstern), Krause-Jensen, D. (Ekstern), Josefson, A. (Ekstern), Larsen, M. (Ekstern), Petersen, J. K. (Intern), Rasmussen, M. (Ekstern), Strand, J. (Ekstern)
Pages: 145-154
Publication date: 2005

Host publication information
Title of host publication: Redskaber til vurdering af miljø- og naturkvalitet i de danske farvande. Typeinddeling, udvalgte indikatorer og eksempler på klassifikation
Publisher: National Environmental Research Institute
Editors: Dahl, C., Andersen, J., Riemann, B.
Series: Faglig rapport fra DMU
Number: 535
Main Research Area: Technical/natural sciences
Publication: Research › Report chapter – Annual report year: 2005
Grazing impact of Oikopleura dioica and copepods on an autumn plankton community

Copepods and appendicularians are major grazers in the pelagic environment. They have different retention efficiencies for prey and may therefore exert a variable grazing pressure on the spectrum of pico- to micro-plankton. We determined clearance rates of both groups at one station during 24 h in the Gullmar fjord, west Sweden, in autumn 1999. Total potential prey biomass ranged from 75 μg C l(-1) at the surface to 14 μg C l(-1) at 30 m with a dominance of larger dinoflagellates (10-25 μm athecate species and Gymnodinium /Gyrodinium sp.) and the pennate diatom Pseudo -nitzschia sp. Grazer biomass was dominated by copepods (Acartia clausi, Paracalanus parvus) and appendicularians (Oikopleura dioica). O. dioica showed non-selective clearance rates of 0.7-1.8 ml μg C-1 h(-1) on most diatoms, flagellates and ciliates, whereas Pseudo -nitzschia sp. and dinoflagellates and ciliates > 25 μm m were not removed by O. dioica. Appendicularian grazing impact was 0.06% d(-1) on the phytoplankton and 0.4% d(-1) on bacterial biomass. Despite a seven-fold higher biomass, the grazing impact of copepods on phytoplankton biomass was only 0.28% d(-1) indicating that O. dioica had a proportionally greater impact and, in contrast to copepods, also utilised bacteria. The low observed grazing impact was due to a low grazer biomass and a prey community largely unavailable to the investigated grazers.

General information
State: Published
Organisations: Aarhus University, National Environmental Research Institute
Authors: Tonnesson, K. (Ekstern), Maar, M. (Forskerdatabase), Vargas, C. (Ekstern), Moller, E. F. (Ekstern), Satapoomin, S. (Ekstern), Zervoudaki, S. (Ekstern), Christou, E. (Ekstern), Giannakourou, A. (Ekstern), Sell, A. (Ekstern), Petersen, J. K. (Intern), Nielsen, T. G. (Intern), Tiselius, P. (Ekstern)
Pages: 365-373
Publication date: 2005
Main Research Area: Technical/natural sciences

Publication information
Journal: Marine Biology Research
Volume: 1
Issue number: 5
ISSN (Print): 1745-1000
Ratings:
BFI (2018): BFI-level 1
BFI (2017): BFI-level 1
Web of Science (2017): Indexed Yes
BFI (2016): BFI-level 1
Scopus rating (2016): CiteScore 1.26 SJR 0.638 SNIP 0.725
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 1
Scopus rating (2015): SJR 0.8 SNIP 0.835 CiteScore 1.45
BFI (2014): BFI-level 1
Scopus rating (2014): SJR 0.674 SNIP 0.872 CiteScore 1.34
Web of Science (2014): Indexed yes
BFI (2013): BFI-level 1
Scopus rating (2013): SJR 0.571 SNIP 0.66 CiteScore 1.09
ISI indexed (2013): ISI indexed yes
Web of Science (2013): Indexed yes
BFI (2012): BFI-level 1
Scopus rating (2012): SJR 0.672 SNIP 0.737 CiteScore 1.27
ISI indexed (2012): ISI indexed yes
Web of Science (2012): Indexed yes
BFI (2011): BFI-level 1
Scopus rating (2011): SJR 0.606 SNIP 0.681 CiteScore 1.13
ISI indexed (2011): ISI indexed yes
Web of Science (2011): Indexed yes
BFI (2010): BFI-level 1
Scopus rating (2010): SJR 0.577 SNIP 0.664
Web of Science (2010): Indexed yes
BFI (2009): BFI-level 1
Redskaber til vurdering af miljø- og naturkvalitet i de danske farvande. Typeinddeling, udvalgte indikatorer og eksempler på klassifikation
Effects of food concentration on clearance rate and energy budget of the Arctic bivalve Hiattella arctica (L) at subzero temperature

The influence of food concentration on clearance rate, respiration, assimilation, and excretion at −1.3 °C was studied on individuals of the bivalve Hiattella arctica (L.) from Young Sound, NE Greenland. Clearance rate, assimilation efficiency, respiration, and excretion rates were determined over a range of food concentrations using the microalga Rhodomonas baltica as food source. Physiological rates were generally low but responded significantly to increased food levels. Clearance rates and assimilation efficiency were reduced at increased food levels, whereas respiration and excretion increased. Assimilation efficiency was generally high, which may be an adaptation to the low food concentration during most of the year in NE Greenland. Low filtration rates limited ingestion rates and resulted in a low maximum assimilation of 3 J h⁻¹. Despite the low food intake, very low food concentrations were required for individual specimens to obtain a positive energy budget. Predicted growth based on rates of assimilation and respiration were compared to published estimates of annual growth in Young Sound. We estimate that 3 weeks of growth in the laboratory under optimal food conditions could match annual growth in situ. We interpret this as evidence that food limitation is the primary impediment to growth in this Arctic population.
Main Research Area: Technical/natural sciences

Publication information
Journal: Journal of Experimental Marine Biology and Ecology
Volume: 311
Issue number: 1
ISSN (Print): 0022-0981
Ratings:
BFI (2018): BFI-level 1
BFI (2017): BFI-level 1
Web of Science (2017): Indexed Yes
BFI (2016): BFI-level 1
Scopus rating (2016): CiteScore 2.03 SJR 0.937 SNIP 0.914
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 1
Scopus rating (2015): SJR 1.043 SNIP 0.823 CiteScore 1.87
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 1
Scopus rating (2014): SJR 1.145 SNIP 1.045 CiteScore 2.41
Web of Science (2014): Indexed yes
BFI (2013): BFI-level 2
Scopus rating (2013): SJR 1.294 SNIP 1.08 CiteScore 2.45
ISI indexed (2013): ISI indexed yes
Web of Science (2013): Indexed yes
BFI (2012): BFI-level 2
Scopus rating (2012): SJR 1.186 SNIP 1.021 CiteScore 2.27
ISI indexed (2012): ISI indexed yes
Web of Science (2012): Indexed yes
BFI (2011): BFI-level 2
Scopus rating (2011): SJR 1.067 SNIP 1.007 CiteScore 2.14
ISI indexed (2011): ISI indexed yes
Web of Science (2011): Indexed yes
BFI (2010): BFI-level 2
Scopus rating (2010): SJR 1.239 SNIP 1.017
Web of Science (2010): Indexed yes
BFI (2009): BFI-level 2
Scopus rating (2009): SJR 1.299 SNIP 1.208
Web of Science (2009): Indexed yes
BFI (2008): BFI-level 1
Scopus rating (2008): SJR 1.26 SNIP 1.134
Web of Science (2008): Indexed yes
Scopus rating (2007): SJR 1.214 SNIP 1.308
Web of Science (2007): Indexed yes
Scopus rating (2006): SJR 1.262 SNIP 1.247
Web of Science (2006): Indexed yes
Scopus rating (2005): SJR 1.164 SNIP 1.134
Web of Science (2005): Indexed yes
Scopus rating (2004): SJR 1.091 SNIP 1.121
Web of Science (2004): Indexed yes
Scopus rating (2003): SJR 1.351 SNIP 1.341
Scopus rating (2002): SJR 1.385 SNIP 1.323
Web of Science (2002): Indexed yes
Scopus rating (2001): SJR 1.363 SNIP 1.269
Web of Science (2001): Indexed yes
Scopus rating (2000): SJR 1.349 SNIP 1.245
Grazing on pelagic primary producers - the role of benthic suspension feeders in estuaries

Intercalibration of mussel Mytilus edulis clearance rate measurements

Clearance rate (CR) was measured in blue mussels Mytilus edulis L. from Aiguillon Bay and the Oosterschelde using 3 different methods: the flow-through method, the bio-deposition method and the indirect or clearance method. CR differed significantly as a function of the method used and of the origin of the mussels. CR measured with the bio-deposition method were significantly lower than rates measured with the other methods. Results for the flow-through method depended, however, on how CR was calculated. CR using the flow-through and indirect methods was on average 10.0 l g(-1) h(-1) in mussels from Aiguillon Bay and 5.3 l g(-1) h(-1) in mussels from the Oosterschelde. The significantly lower CR of mussels from Oosterschelde was related to condition index and gill area, but could not entirely be explained by these factors.

Publication information
Journal: Marine Ecology - Progress Series Online
Volume: 267
ISSN (Print): 0171-8630
Ratings:
Web of Science (2017): Indexed yes
Scopus rating (2016): CiteScore 2.4
Web of Science (2016): Indexed yes
Scopus rating (2015): CiteScore 2.56
Web of Science (2015): Indexed yes
Scopus rating (2014): CiteScore 2.75
Web of Science (2014): Indexed yes
Scopus rating (2013): CiteScore 2.79
ISI indexed (2013): ISI indexed no
Web of Science (2013): Indexed yes
Scopus rating (2012): CiteScore 2.9
ECOLOGY, MARINE, OCEANOGRAPHY, SUSPENSION-FEEDING BIVALVES, FILTRATION-RATE MEASUREMENTS, OYSTER CRASSOSTREA-GIGAS, SEASONAL-VARIATION, PUNCTADA-MARGARITIFERA, CERASTODERMA-EDULE, PEARL OYSTER, STONY ROAD, BODY-SIZE, ABSORPTION

Source: dtu
Source-ID: n::oai:DTIC-ART:isi/274648654::38666
Publication: Research - peer-review › Journal article – Annual report year: 2004
Methods for measurement of bivalve clearance rate - hope for common understanding

General information
State: Published
Organisations: National Environmental Research Institute
Authors: Petersen, J. K. (Intern)
Pages: 309-310
Publication date: 2004
Main Research Area: Technical/natural sciences

Publication information
Journal: Marine Ecology Progress Series
Volume: 276
ISSN (Print): 0171-8630
Ratings:
Web of Science (2017): Indexed yes
Scopus rating (2016): CiteScore 2.4
Web of Science (2016): Indexed yes
Scopus rating (2015): CiteScore 2.56
Web of Science (2015): Indexed yes
Scopus rating (2014): CiteScore 2.75
Web of Science (2014): Indexed yes
Scopus rating (2013): CiteScore 2.79
ISI indexed (2013): ISI indexed no
Web of Science (2013): Indexed yes
Scopus rating (2012): CiteScore 2.9
ISI indexed (2012): ISI indexed no
Web of Science (2012): Indexed yes
Scopus rating (2011): CiteScore 2.85
ISI indexed (2011): ISI indexed no
Web of Science (2011): Indexed yes
Web of Science (2010): Indexed yes
Web of Science (2009): Indexed yes
Web of Science (2008): Indexed yes
Web of Science (2007): Indexed yes
Web of Science (2006): Indexed yes
Web of Science (2005): Indexed yes
Web of Science (2004): Indexed yes
Web of Science (2003): Indexed yes
Web of Science (2002): Indexed yes
Web of Science (2001): Indexed yes
Web of Science (2000): Indexed yes
Original language: English
ECOLOGY, MARINE, OCEANOGRAPHY, MYTILUS-EDULIS, FEEDING BIVALVES, ABSORPTION, GROWTH
Source: dtu
Source-ID: n:oai:DTIC-ART:isi/274397121::38665
Clearance rates in the Arctic bivalves *Hiatella arctica* and *Mya* sp.

Filtration was studied in two Arctic clams, *Hiatella arctica* and *Mya* sp., collected in Young Sound, Northeast Greenland. Clearance rates were determined as a function of ambient temperature and algal cell concentration, using the clearance method and feeding with a unicellular flagellate. For both species, clearance rates increased with increasing temperature from...
Functional response of Oikopleura dioica to house clogging due to exposure to algae of different size

General information
State: Published
Organisations: University of Gothenburg, Phuket Marine Biological Centre, University of Hamburg, National Centre for Marine Research, National Environmental Research Institute
Authors: Tiselius, P. (Ekstern), Petersen, J. K. (Intern), Nielsen, T. G. (Intern), Tönnesson, K. (Ekstern), Maar, M. (Ekstern), Møller, E. (Ekstern), Satapoomin, S. (Ekstern), Zervoudaki, S. (Ekstern), Christou, E. (Ekstern), Giannakourou, A. (Ekstern), Sell, A. (Ekstern), Vargas, C. (Ekstern)
Pages: 253-261
Publication date: 2003
Main Research Area: Technical/natural sciences

Publication information
Journal: Marine Biology
Volume: 142
ISSN (Print): 0025-3162
Ratings:
BFI (2018): BFI-level 1
BFI (2017): BFI-level 1
Web of Science (2017): Indexed Yes
BFI (2016): BFI-level 1
Scopus rating (2016): CiteScore 2.41 SJR 1.198 SNIP 0.993
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 1
Scopus rating (2015): SJR 1.315 SNIP 0.932 CiteScore 2.21
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 1
Scopus rating (2014): SJR 1.204 SNIP 1.041 CiteScore 2.32
Web of Science (2014): Indexed yes
BFI (2013): BFI-level 1
Scopus rating (2013): SJR 1.272 SNIP 1.064 CiteScore 2.4
ISI indexed (2013): ISI indexed yes
BFI (2012): BFI-level 1
Scopus rating (2012): SJR 1.306 SNIP 1.107 CiteScore 2.43
ISI indexed (2012): ISI indexed yes
Web of Science (2012): Indexed yes
BFI (2011): BFI-level 1
Scopus rating (2011): SJR 1.145 SNIP 1.073 CiteScore 2.22
ISI indexed (2011): ISI indexed yes
Web of Science (2011): Indexed yes
BFI (2010): BFI-level 1
Scopus rating (2010): SJR 1.235 SNIP 1.069
Web of Science (2010): Indexed yes
BFI (2009): BFI-level 1
Scopus rating (2009): SJR 1.178 SNIP 1.052
Web of Science (2009): Indexed yes
BFI (2008): BFI-level 2
Scopus rating (2008): SJR 1.236 SNIP 1.022
Kvalitetsvurderingssystem for habitatdirektivets marine naturtyper. Fase 1: Identifikation af potentielle indikatorer og tilgængelige data

General information
State: Published
Organisations: National Environmental Research Institute
Authors: Dahl, K. (Ekstern), Larsen, M. (Ekstern), Rasmussen, M. (Ekstern), Andersen, J. (Ekstern), Petersen, J. K. (Intern), Josefson, A. (Ekstern), Lundsteen, S. (Ekstern), Dahlöf, I. (Ekstern), Christiansen, T. (Ekstern)
Number of pages: 91
Publication date: 2003

Publication information
Publisher: Danmarks Miljøundersøgelser Miljøministeriet
Original language: Danish
Series: Faglig rapport fra DMU
Number: 446
Main Research Area: Technical/natural sciences
Links:
http://www.dmu.dk/1_viden/2_Publikationer/3_fagrapporter/rapporter/FR446.pdf
Publication: Research › Report – Annual report year: 2003

Marine områder 2002 - miljøtilstand og udvikling. NOVA 2003

General information
State: Published
Organisations: National Environmental Research Institute, Aarhus University
Number of pages: 106
Relationship between specific dynamic action and food quality in the solitary ascidian Ciona intestinalis

General information
State: Published
Organisations: National Environmental Research Institute, University of Southern Denmark
Authors: Sigsgaard, S. J. (Ekstern), Petersen, J. K. (Intern), Iversen, J. J. L. (Intern)
Pages: 1143-1149
Publication date: 2003
Main Research Area: Technical/natural sciences

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Journal: Marine Biology
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Ratings:
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BFI (2017): BFI-level 1
Web of Science (2017): Indexed Yes
BFI (2016): BFI-level 1
Scopus rating (2016): CiteScore 2.41 SJR 1.198 SNIP 0.993
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 1
Scopus rating (2015): SJR 1.315 SNIP 0.932 CiteScore 2.21
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 1
Scopus rating (2014): SJR 1.204 SNIP 1.041 CiteScore 2.32
Web of Science (2014): Indexed yes
BFI (2013): BFI-level 1
Scopus rating (2013): SJR 1.272 SNIP 1.064 CiteScore 2.4
ISI indexed (2013): ISI indexed yes
BFI (2012): BFI-level 1
Scopus rating (2012): SJR 1.306 SNIP 1.107 CiteScore 2.43
ISI indexed (2012): ISI indexed yes
Web of Science (2012): Indexed yes
BFI (2011): BFI-level 1
Scopus rating (2011): SJR 1.145 SNIP 1.073 CiteScore 2.22
ISI indexed (2011): ISI indexed yes
Web of Science (2011): Indexed yes
BFI (2010): BFI-level 1
Scopus rating (2010): SJR 1.235 SNIP 1.069
Web of Science (2010): Indexed yes
BFI (2009): BFI-level 1
Scopus rating (2009): SJR 1.178 SNIP 1.052
Web of Science (2009): Indexed yes
BFI (2008): BFI-level 2
Biologiske effekter af råstofindvinding

General information
State: Published
Organisations: Danmarks Miljøundersøgelser
Authors: Lisbjerg, D. (Intern), Petersen, J. K. (Intern), Dahl, K. (Ekstern)
Number of pages: 56
Publication date: 2002

Publication information
Publisher: Danmarks Miljøundersøgelser Miljøministeriet
Original language: Danish
Series: Faglig rapport fra DMU
Number: 391
Main Research Area: Technical/natural sciences
Publication: Research → Report – Annual report year: 2002

Biologiske effekter af råstofindvinding på epifauna

General information
State: Published
Organisations: National Environmental Research Institute
Authors: Lisbjerg, D. (Intern), Petersen, J. K. (Intern), Dahl, K. (Ekstern)
Number of pages: 56
Publication date: 2002

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Publisher: Danmarks Miljøundersøgelser Miljøministeriet
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Original language: English
Series: Danmarks Miljøundersøgelser. Faglig Rapport
Number: 391
ISSN: 0905-815X
Main Research Area: Technical/natural sciences
Filtration rate in seven Scandinavian ascidians: implications of the morphology of the gill sac

The ascidian branchial basket is functionally responsible for pumping water through the animal. Within Ascidiacea the branchial basket and the stigmata are morphologically variable and these features are important taxonomical characters. However, the functional significance of this morphological variation has not been studied in great detail. Here, we have measured filtration rates in seven ascidians: Clavelina lepadiformis (Order Aplousobranchiata); Ciona intestinalis, Corella parallelogramma, Ascidia virginea (Order Phlebobranchiata); Boltenia echinata, Molgula manhattensis, Pyura tessellata (Order Stolidobranchiata) and compared these rates with the morphological characteristics of the branchial basket and the stigmata. Filtration rates were measured in the laboratory and determined from an exponential reduction in algal cell (Rhodomonas sp.) concentration as a function of time. The branchial baskets of the experimental ascidians were dissected free and photographs were taken of the entire basket and of the stigmata. It was found that filtration rates in the investigated ascidians are determined primarily by the area of the branchial basket and the length of the ciliary band lining the stigmatal openings, and that the form of the stigmatal opening has no impact on filtration rates.
Abundance and biomass of the bivalve *Hiatella arctica* (L.) was investigated at depths from 10 to 80 m along 6 transects in the high-Arctic fjord Young Sound, NE Greenland (74 degrees 18.58'N, 20 degrees 15.04'W). The highest abundance was found at a depth of 20 m, and the mean intertransect density at this depth was found to be 57 ind. m(-2) with a biomass of 6.2 g shell-free dry weight (SFDW) m(-2). Age was estimated by counting annual growth rings in acetate peels made by cutting through the umbo region. The age of the oldest individual was estimated to be 126 yr. The Von Bertalanffy growth function fitted to length-at-age data showed that a maximum shell length (L-infinity) of 37 mm was attained in
approximately 35 yr. The mean annual growth rate was 0.14 yr\(^{-1}\) corresponding to a mean annual production of 0.30 g SFDW m\(^{-2}\) (depth 10 to 60 m). The annual somatic production-to-biomass ratio was 0.095. The size distribution of clams was bimodal with a group of very small (shell length 6 to 8 mm) individuals and another group of individuals around the maximum shell length. Large individuals are relatively abundant as a result of their long life span and the absence of significant mortality agents in this area. Based on production estimates, the carbon demand of the H. arctica population accounts for 3.6 % of pelagic production in outer Young Sound.

**General information**
- State: Published
- Organisations: Aarhus University, National Environmental Research Institute
- Authors: Sejr, M. K. (Ekstern), Sand, M. K. (Ekstern), Jensen, K. T. (Ekstern), Petersen, J. K. (Intern), Christensen, P. B. (Ekstern), Rysgaard, S. (Forskerdatabase)
- Pages: 163-169
- Publication date: 2002
- Main Research Area: Technical/natural sciences

**Publication information**
- Journal: Marine Ecology Progress Series
- Volume: 244
- ISSN (Print): 1616-1599
- Ratings:
  - Web of Science (2017): Indexed yes
  - Scopus rating (2016): CiteScore 2.4
  - Web of Science (2016): Indexed yes
  - Scopus rating (2015): CiteScore 2.56
  - Web of Science (2015): Indexed yes
  - Scopus rating (2014): CiteScore 2.75
  - Web of Science (2014): Indexed yes
  - Scopus rating (2013): CiteScore 2.79
  - ISI indexed (2013): ISI indexed no
  - Web of Science (2013): Indexed yes
  - Scopus rating (2012): CiteScore 2.9
  - ISI indexed (2012): ISI indexed no
  - Web of Science (2012): Indexed yes
  - Scopus rating (2011): CiteScore 2.85
  - ISI indexed (2011): ISI indexed no
  - Web of Science (2011): Indexed yes
  - Web of Science (2010): Indexed yes
  - Web of Science (2009): Indexed yes
  - Web of Science (2008): Indexed yes
  - Web of Science (2007): Indexed yes
  - Web of Science (2006): Indexed yes
  - Web of Science (2005): Indexed yes
  - Web of Science (2004): Indexed yes
  - Web of Science (2003): Indexed yes
  - Web of Science (2002): Indexed yes
  - Web of Science (2001): Indexed yes
  - Web of Science (2000): Indexed yes
- Original language: English

**ECOLOGY, MARINE, OCEANOGRAPHY, POPULATION-DYNAMICS, COMMUNITY STRUCTURE, MARINE ECOSYSTEM, MYTILUS-EDULIS, CHUKCHI SEAS, BARENTS SEA, MINERALIZATION, SHELF, RESPIRATION, ANTARCTICA**

**Source**: dtu
**Source-ID**: n:oai:DTIC-ART:isi/275745598::38670
**Publication**: Research - peer-review › Journal article – Annual report year: 2002

**Importance of copepods versus appendicularians in vertical carbon fluxes in a Swedish fjord**

We examined and quantified the contributions of copepods and appendicularians to the vertical flux of carbon during autumn and spring in Gullmar Fjord (west coast of Sweden). Faecal pellet-production rate was determined for major copepod and appendicularian species. In addition, house-production rates were estimated for the appendicularian
Oikopleura dioica. Vertical flux of pigments, faecal carbon and appendicularian houses were measured using short-term (24 h) deployments of sediment traps at 2 depths (15 and 30 m). Copepods dominated the community biomass in both spring and autumn and their pellets dominated the faecal carbon flux. O. dioica houses with attached detritus were an important component of the biogenic carbon flux in October (15.3 mg C m(-2) d(-1)), equaling the contribution from copepods at 15 m and 50% of the flux at 30 m. At that time, we observed a loss rate of 70% d(-1) of the houses produced in the water column. In the spring, although Fritillaria borealis dominated the appendicularians, its houses did not appear to contribute to the biogenic flux. Our results suggest that oikopleurids and fritillariids may not operate equivalently in biogeochemical cycles. Because of the significant contribution of appendicularians to carbon fluxes, they should be incorporated in future flow models of coastal oceans.

General information
State: Published
Organisations: University of Gothenburg, National Centre for Marine Research, Phuket Marine Biological Center, National Environmental Research Institute
Authors: Vargas, C. A. (Ekstern), Tonnesson, K. (Ekstern), Sell, A. (Ekstern), Maar, M. (Forskerdatabase), Møller, E. F. (Ekstern), Zervoudaki, T. (Ekstern), Giannakourou, A. (Ekstern), Christou, E. (Ekstern), Satapoomin, S. (Ekstern), Petersen, J. K. (Intern), Nielsen, T. G. (Intern), Tiselius, P. (Intern)
Pages: 125-138
Publication date: 2002
Main Research Area: Technical/natural sciences

Publication information
Journal: Marine Ecology Progress Series
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Scopus rating (2016): CiteScore 2.4
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Scopus rating (2015): CiteScore 2.56
Web of Science (2015): Indexed yes
Scopus rating (2014): CiteScore 2.75
Web of Science (2014): Indexed yes
Scopus rating (2013): CiteScore 2.79
ISI indexed (2013): ISI indexed no
Web of Science (2013): Indexed yes
Scopus rating (2012): CiteScore 2.9
ISI indexed (2012): ISI indexed no
Web of Science (2012): Indexed yes
Scopus rating (2011): CiteScore 2.85
ISI indexed (2011): ISI indexed no
Web of Science (2011): Indexed yes
Web of Science (2010): Indexed yes
Web of Science (2009): Indexed yes
Web of Science (2008): Indexed yes
Web of Science (2007): Indexed yes
Web of Science (2006): Indexed yes
Web of Science (2005): Indexed yes
Web of Science (2004): Indexed yes
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Web of Science (2001): Indexed yes
Web of Science (2000): Indexed yes
Original language: English
ECOLOGY, MARINE, OCEANOGRAPHY, TUNICATE OIKOPLEURA-VANHOEFFENI, PARTICULATE ORGANIC-Carbon, Zooplankton Fecal Pellets, Northeast Water Polynya, Sub-Arctic Pacific, Marine Snow, Permanent Station, Tropical Waters, Grazing Impact, Growth-Rates
Source: dtu
Source-ID: n:oat:DTIC-ART:isi/273122853::38671
Publication: Research - peer-review › Journal article – Annual report year: 2002
Invertebrate re-colonisation in Mariager Fjord (Denmark) after a severe hypoxia. II. Blue mussels (Mytilus edulis L.).

A severe hypoxic event was observed in the Danish estuary Mariager Fjord during August 1997. For two weeks the entire water column was anoxic in the innermost 20 km of the estuary and even after 5 weeks the surface water had not attained 100% oxygen saturation. All metazoa were considered extinct. A sampling programme the following spring and summer 1998 was initiated at three stations representing an east-west gradient within the anoxic part of the estuary. With a frequency of 2-4 weeks we sampled larvae and newly settled common blue mussel (Mytilus edulis L.) in order to describe re-colonisation. In July and October 1998 and March 1999 recruitment was estimated from bottom sampling at the experimental stations. Mapping of the blue mussel population was performed in spring and fall of 1999 measuring coverage, abundance and biomass along 14 transects. Due to extinction of the benthic community, mussels were recruited entirely from the outer section of the estuary and/or from the Kattegat. Two distinct cohorts of mussel larvae were identified and shell growth rates of up to 5.8 mm d-1 were observed. Settlement peaked approximately 1 month after the highest densities of the first cohort of mussel larvae were observed. Lack of growth and settlement of the second cohort larvae could be attributed to functional food limitation. Difference in initial recruitment success between stations was levelled by high mortality during the first year. Due to hypoxia the inner section of Mariager Fjord is susceptible to defaunation regularly, but the population of blue mussels, which dominates the benthic fauna of the estuary is remedied after approx 2 years by re-colonisation from adjacent sections of the estuary. The population was, however, not in stable equilibrium.

General information
State: Published
Organisations: National Environmental Research Institute, Roskilde Universitet
Authors: Petersen, J. K. (Intern), Stenalt, E. (Forskerdatabase), Hansen, B. W. (Forskerdatabase)
Pages: 215-226
Publication date: 2002
Main Research Area: Technical/natural sciences

Publication information
Journal: Ophelia
Volume: 56
Issue number: 3
ISSN (Print): 0078-5326
Ratings:
BFI (2008): BFI-level 1
Scopus rating (2007): SJR 0.393 SNIP 0.65
Scopus rating (2006): SJR 0.39 SNIP 0.739
Scopus rating (2005): SJR 0.379 SNIP 0.659
Scopus rating (2004): SJR 0.473 SNIP 0.556
Scopus rating (2003): SJR 0.591 SNIP 0.651
Web of Science (2003): Indexed yes
Scopus rating (2002): SJR 0.496 SNIP 0.69
Web of Science (2002): Indexed yes
Scopus rating (2001): SJR 0.599 SNIP 1.008
Web of Science (2001): Indexed yes
Scopus rating (2000): SJR 0.633 SNIP 1.349
Scopus rating (1999): SJR 1.094 SNIP 1.035

Original language: English
Source: dtu
Source-ID: n:oai:DTIC-ART:biosis/168027443::38674
Publication: Research - peer-review › Journal article – Annual report year: 2002
Invertebrate re-colonisation in Mariager Fjord (Denmark) after severe hypoxia. I. Zooplankton and settlement.

A severe hypoxic event was observed in the innermost 20 km of the Danish estuary Mariager Fjord during August 1997 where the entire water column was totally anoxic for two weeks causing extinction of almost all metazoa. A sampling programme was initiated the following spring and summer at three stations in the anoxic part of the estuary. We describe the re-colonisation by zooplankton and in particular meroplankton, and the subsequent potential settlement by bivalves, gastropods, polychaetes and cirripeds. Due to extinction of the benthic community the zooplankton organisms were considered recruited entirely from outside the study area. Two water intrusions from the open water Kattegat were identified based on calculations of mass balance of salt and on phytoplankton composition. Rotifers were the first zooplankters to appear followed by cladocerans and copepods. The meroplanktonic bivalve larvae were followed by polychaete larvae, gastropod larvae and last cirriped nauplii, all with a maximum density of 5X103-10X103 individuals m-2 d-1. Due to hypoxia the inner section of Mariager Fjord is susceptible to defaunation regularly, but the benthic diversity is remedied after a surprisingly short time by recolonisation from adjacent sections of the estuary.

General information
State: Published
Organisations: Roskilde Universitet, National Environmental Research Institute, County of Arhus
Authors: Hansen, B. W. (Forskerdatabase), Stenalt, E. (Forskerdatabase), Petersen, J. K. (Intern), Ellegaard, C. (Ekstern)
Pages: 197-213
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Main Research Area: Technical/natural sciences

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BFI (2008): BFI-level 1
Scopus rating (2007): SJR 0.393 SNIP 0.65
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Scopus rating (2005): SJR 0.379 SNIP 0.659
Scopus rating (2004): SJR 0.473 SNIP 0.556
Scopus rating (2003): SJR 0.591 SNIP 0.651
Web of Science (2003): Indexed yes
Scopus rating (2002): SJR 0.496 SNIP 0.69
Web of Science (2002): Indexed yes
Scopus rating (2001): SJR 0.599 SNIP 1.008
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Scopus rating (2000): SJR 0.633 SNIP 1.349
Scopus rating (1999): SJR 1.094 SNIP 1.035
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Organisations: National Environmental Research Institute
Authors: Ærtebjerg, G. (Ekstern), Andersen, J. (Ekstern), Carstensen, J. (Ekstern), Christiansen, T. (Ekstern), Dahl, K. (Ekstern), Dahllöf, I. (Ekstern), Fossing, H. (Ekstern), Greve, T. M. (Forskerdatabase), Hansen, J. L. (Ekstern), Henriksen, P. (Ekstern), Josefsen, A. (Ekstern), Krause-Jensen, D. (Ekstern), Larsen, M. M. (Ekstern), Markager, S. (Ekstern), Nielsen, T. G. (Intern), Pedersen, B. (Ekstern), Petersen, J. K. (Intern), Risgaard-Petersen, N. (Forskerdatabase), Rysgaard, S. (Ekstern), Strand, J. (Ekstern), Ovesen, N. B. (Ekstern), Ellermann, T. (Ekstern), Hertel, O. (Ekstern), Skjøth, C. A. (Forskerdatabase)
Number of pages: 94
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Series: Danmarks Miljøundersøgelser. Faglig Rapport
Number: 419
ISSN: 0905-815X
Main Research Area: Technical/natural sciences
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Publishers version
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http://www2.dmu.dk/1_viden/2_Publikationer/3_fagrapporter/rapporter/FR419.pdf (Link to full text)

Mussel production in Danish waters

General information
State: Published
Organisations: Section for Shellfish, National Institute of Aquatic Resources, National Environmental Research Institute
Authors: Kristensen, P. S. (Intern), Petersen, J. K. (Intern)
Pages: 24-25
Publication date: 2002
Main Research Area: Technical/natural sciences

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Journal: Bulletin of the Aquaculture Association of Canada
Volume: 102-3
ISSN (Print): 0840-5417
Ratings:
ISI indexed (2013): ISI indexed no
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ISI indexed (2011): ISI indexed no
Original language: English
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Publication: Research › Journal article – Annual report year: 2002

Changes in Arctic Marine Production (CAMP)

General information
State: Published
Organisations: National Environmental Research Institute
Authors: Rysgaard, S. (Ekstern), Glud, R. (Ekstern), Wenzhöfer, F. (Ekstern), Kühl, M. (Ekstern), Krause-Jensen, D. (Ekstern), Christensen, P. (Ekstern), Borum, J. (Ekstern), Pedersen, M. (Ekstern), Hansen, J. (Ekstern), Sejr, M. (Ekstern), Petersen, J. K. (Intern), Sand, M. (Ekstern), Kunnerup, O. (Ekstern), Acquarone, M. (Ekstern), Born, E. (Ekstern),
Feeding activity, retention efficiency, and effects of temperature and particle concentration on clearance rate in the marine bryozoan Electra crustulenta

Various factors influencing clearance rate were elucidated on the bryozoan Electra crustulenta (Pallas). Measurements of clearance rates were performed using the algae Rhodomonas sp. (6 μm in diameter). Clearance rates were related to the area of the active zooids within the colonies in order to obtain area-specific clearance rates. Specific area was 42% of the total colony area. Several replicates were performed with each colony to obtain maximum clearance rate (F-max). F-max increased with temperature from 90 ml h⁻¹ cm⁻² at 6 degreesC to 229 ml h⁻¹ cm⁻² at 22 degreesC. Clearance rate decreased at increasing algal cell concentration from 1600 to 19 000 cells ml⁻¹. The decrease in clearance corresponded to a maximum ingestion rate at particle concentrations > 8500 Rhodomonas sp. cells ml⁻¹. E. crustulenta zooids are capable of retaining and ingesting particles in the range from ca 5 to ca 30 pm in diameter. Smaller particles are less efficiently retained due to the structure of the feeding apparatus, the lophophore and larger particles due to the size of the mouth (30 pm in diameter). Feeding activity was observed on single zooids and it was found that zooids have periodical retraction of the lophophore. At low particle concentrations (ca 1500 cells of Rhodomonas sp, ml⁻¹) the lophophore is retracted 5 x h⁻¹ for periods of 38 s. Zooidal activity measured as the time of protruded lophophore thus leads to an activity of 95% of the total time. At high algae concentrations, zooidal feeding activity decreased to 70% as the lophophore was retracted more frequently (10 x h⁻¹) and for longer periods of time (107 s). Despite the decreased activity at high algae concentration, this could only account for 50% of the decrease in clearance rate. Thus, regulatory mechanisms of the clearance rate other than retraction of the lophophore must be considered in bryozoans.
Flow and particle distributions in a nearshore seagrass meadow before and after a storm

General information
State: Published
Organisations: University of Girona, Technical University of Denmark
Authors: Granata, T. (Ekstern), Serra, T. (Ekstern), Colomer, J. (Forskerdatabase), Casamitjana, X. (Ekstern), Duarte, C. (Ekstern), Gacia, E. (Ekstern), Petersen, J. K. (Intern)
Pages: 95-106
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Main Research Area: Technical/natural sciences

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Journal: Marine Ecology Progress Series
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Web of Science (2017): Indexed yes
Scopus rating (2016): CiteScore 2.4
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Web of Science (2015): Indexed yes
Scopus rating (2014): CiteScore 2.75
Web of Science (2014): Indexed yes
Scopus rating (2013): CiteScore 2.79
ISI indexed (2013): ISI indexed no
Web of Science (2013): Indexed yes
Scopus rating (2012): CiteScore 2.9
ISI indexed (2012): ISI indexed no
Web of Science (2012): Indexed yes
Scopus rating (2011): CiteScore 2.85
ISI indexed (2011): ISI indexed no
Web of Science (2011): Indexed yes
Web of Science (2010): Indexed yes
Web of Science (2009): Indexed yes
Web of Science (2008): Indexed yes
Web of Science (2007): Indexed yes
Web of Science (2006): Indexed yes
Web of Science (2005): Indexed yes
Web of Science (2004): Indexed yes
Web of Science (2003): Indexed yes
On the problems of epibioses, fouling and artificial reefs, a review

Artificial reefs in marine environments are in most cases submerged structures consisting of dumped waste material or specific constructions made with the purpose of enriching the local fish populations and other marine life to the benefit of recreational and commercial fisheries. Such structures are susceptible to fouling and will successively develop assemblages, which may or may not resemble epibioses on natural substrata. Studies of artificial reefs have focused predominantly on fish assemblages and have largely disregarded the development of sessile biota and their structural and functional relationships. In addition, most studies are from tropical or subtropical environments. To manage and understand artificial reefs, a whole-ecosystem approach is necessary, incorporating studies of all aspects of hard substratum ecology including both structural and functional variables. This review is an attempt to evaluate the present knowledge of ecological aspects of artificial reefs, emphasising the role of sessile hard substratum biota.

General information
State: Published
Organisations: Flinders University, National Environmental Research Institute
Authors: Svane, I. (Ekstern), Petersen, J. K. (Intern)
Pages: 169-188
Publication date: 2001
Main Research Area: Technical/natural sciences

Publication information
Journal: Marine Ecology
Volume: 22
Issue number: 3
ISSN (Print): 0173-9565
Ratings:
BFI (2018): BFI-level 1
BFI (2017): BFI-level 1
Web of Science (2017): Indexed Yes
BFI (2016): BFI-level 1
Scopus rating (2016): SJR 0.639 SNIP 0.669 CiteScore 1.38
BFI (2015): BFI-level 1
Scopus rating (2015): SJR 0.728 SNIP 0.667 CiteScore 1.34
BFI (2014): BFI-level 1
Scopus rating (2014): SJR 0.775 SNIP 0.834 CiteScore 1.44
BFI (2013): BFI-level 1
Scopus rating (2013): SJR 1.506 SNIP 1.16 CiteScore 2.75
ISI indexed (2013): ISI indexed yes
Clearance capacity of Electra bellula (Bryozoa) in seagrass meadows of Western Australia

Filtration rates were measured as the clearance of algal cells (Rhodomonas sp.) in the laboratory for the bryozoan Electra bellula (Hincks). The colony clearance rates were related to both total and specific (active) area of the colony, and a closer correlation was obtained when relating clearance to specific area. All results were therefore related to specific colony area. On average 49% of total colony area had active zooids. Clearance rates were measured at temperatures ranging from 16 to 24 degrees C. Maximum specific clearance rates (F-max) were from the 2-3 replicates with the highest specific clearance rates out of 3-8 experiments performed with each colony. F-max varied from 69 ml h(-1) cm(-2) at 16 degrees C to 107 ml h(-1) cm(-2) at 24 degrees C. Highest F-max of 115 ml h(-1) cm(-2) was measured at 20 degrees C. Dry weight (DW) related to total area by W-DW = 5.15 mg cm(-2) and ash-free dry weight (AFDW) by W-AFDW = 1.15 mg cm(-2). F-max = 9.5 1h(-1) g(-1) DW and 43 1h(-1) g(-1) AFDW at 22 degrees C. The clearance capacity of bryozoan communities in seagrass meadows of Western Australia is estimated by use of these results. (C) 2000 Elsevier Science B.V. All rights reserved.
General information
State: Published
Organisations: National Environmental Research Institute
Authors: Lisbjerg, D. (Intern), Petersen, J. K. (Intern)
Pages: 285-296
Publication date: 2000
Main Research Area: Technical/natural sciences

Publication information
Journal: Journal of Experimental Marine Biology and Ecology
Volume: 244
Issue number: 2
ISSN (Print): 0022-0981
Ratings:
BFI (2018): BFI-level 1
BFI (2017): BFI-level 1
Web of Science (2017): Indexed Yes
BFI (2016): BFI-level 1
Scopus rating (2016): CiteScore 2.03 SJR 0.937 SNIP 0.914
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 1
Scopus rating (2015): SJR 1.043 SNIP 0.823 CiteScore 1.87
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 1
Scopus rating (2014): SJR 1.145 SNIP 1.045 CiteScore 2.41
Web of Science (2014): Indexed yes
BFI (2013): BFI-level 2
Scopus rating (2013): SJR 1.294 SNIP 1.08 CiteScore 2.45
ISI indexed (2013): ISI indexed yes
Web of Science (2013): Indexed yes
BFI (2012): BFI-level 2
Scopus rating (2012): SJR 1.186 SNIP 1.021 CiteScore 2.27
ISI indexed (2012): ISI indexed yes
Web of Science (2012): Indexed yes
BFI (2011): BFI-level 2
Scopus rating (2011): SJR 1.067 SNIP 1.007 CiteScore 2.14
ISI indexed (2011): ISI indexed yes
Web of Science (2011): Indexed yes
BFI (2010): BFI-level 2
Scopus rating (2010): SJR 1.239 SNIP 1.017
Web of Science (2010): Indexed yes
BFI (2009): BFI-level 2
Scopus rating (2009): SJR 1.299 SNIP 1.208
Web of Science (2009): Indexed yes
BFI (2008): BFI-level 1
Scopus rating (2008): SJR 1.26 SNIP 1.134
Web of Science (2008): Indexed yes
Scopus rating (2007): SJR 1.214 SNIP 1.308
Web of Science (2007): Indexed yes
Scopus rating (2006): SJR 1.262 SNIP 1.247
Web of Science (2006): Indexed yes
Scopus rating (2005): SJR 1.164 SNIP 1.134
Web of Science (2005): Indexed yes
Scopus rating (2004): SJR 1.091 SNIP 1.121
Web of Science (2004): Indexed yes
Scopus rating (2003): SJR 1.351 SNIP 1.341
Beat frequency of cilia in the branchial basket of the ascidian Ciona intestinalis in relation to temperature and algal cell concentration

To elucidate the effects of temperature and algal cell concentration on pumping of water in the ascidian Ciona intestinalis a number of different experiments were performed. Beat frequency of the lateral cilia in the openings of the branchial sac was measured in intact specimens using a microprojection objective and a monochrome CCD video camera. At constant low algal cell concentration, beat frequencies increased linearly with temperature from 4.0 Hz (±0.5) at 7.4 °C to 13.6 Hz (±1.6) at 20.1 °C. At a constant temperature of 15 °C, beat frequency decreased with increasing algal cell concentration from approximately 3000 to >10 000 Rhodomonas sp. cells ml⁻¹. The decrease was observed both in experiments where
The ascidians had been acclimated to a fixed algal cell concentration and in experiments with changing concentrations. Effect of algal cell concentration on squirting/siphon closure and flow velocity in the exhalent siphon was measured using a thermistor. At low algal cell concentrations, flow velocity in the exhalent siphon was stable, apart from a few short squirts. At very high algal cell concentrations, the flow velocity was reduced and much less stable, with prolonged squirting. The effect of gut content on filtration was studied in experiments with specimens acclimated to high algal cell concentrations. Results showed a close relation between gut clearance and filtration rate. From the experimental results and a qualitative analysis of the Ciona-pump it was concluded that the ciliary beat frequency is proportional to the water flow through the sea squirt and that changes in pumping caused by temperature or algal cell concentration are under nervous control or governed by enzyme kinetics, rather than being a result of physico-mechanical properties, i.e. pump efficiency versus flow resistance, of the ascidian pump.
Scopus rating (2007): SJR 1.348 SNIP 1.21
Web of Science (2007): Indexed yes
Scopus rating (2006): SJR 1.195 SNIP 1.09
Web of Science (2006): Indexed yes
Scopus rating (2005): SJR 1.253 SNIP 1.198
Web of Science (2005): Indexed yes
Scopus rating (2004): SJR 1.392 SNIP 1.228
Web of Science (2004): Indexed yes
Scopus rating (2003): SJR 1.333 SNIP 1.274
Web of Science (2003): Indexed yes
Scopus rating (2002): SJR 1.268 SNIP 1.19
Web of Science (2002): Indexed yes
Scopus rating (2001): SJR 1.241 SNIP 1.158
Web of Science (2001): Indexed yes
Scopus rating (2000): SJR 1.22 SNIP 1.124
Web of Science (2000): Indexed yes
Scopus rating (1999): SJR 1.448 SNIP 1.303
Original language: English
DOIs:
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Source: dtu
Source-ID: n:oai:DTIC-ART:springer/34102248::38679
Publication: Research › Journal article – Annual report year: 1999

**Kunstige rev – formål og anvendelse**

**General information**
State: Published
Organisations: National Environmental Research Institute
Authors: Petersen, J. K. (Intern)
Pages: 12-14
Publication date: 1999
Main Research Area: Technical/natural sciences

**Publication information**
Journal: Miljø og vandpleje
Volume: 23
ISSN (Print): 1397-5951
Original language: Danish
Publication: Communication › Journal article – Annual report year: 1999

**Is there a case for artificial reefs in Denmark?**

**General information**
State: Published
Organisations: Section for Coastal Ecology, National Institute of Aquatic Resources, Unknown
Authors: Støttrup, J. (Intern), Helmig, S. (Ekstern), Petersen, J. K. (Intern), Krog, C. (Ekstern), Zorn, R. (Ekstern), Madsen, H. (Ekstern), Møller, A. (Ekstern)
Pages: 1-11
Publication date: 1998
Main Research Area: Technical/natural sciences

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Journal: ICES CM 1998/
Volume: V:5
Original language: English
Source: orbit
Source-ID: 227549
Publication: Research › Conference article – Annual report year: 1998
In situ growth of the ascidian Ciona intestinalis (L.) and the blue mussel Mytilus edulis in an eelgrass meadow

General information
State: Published
Organisations: National Environmental Research Institute, Roskilde Universitet
Authors: Petersen, J. K. (Intern), Schou, O. (Ekstern), Thor, P. (Ekstern)
Pages: 1-11
Publication date: 1997
Main Research Area: Technical/natural sciences

Publication information
Journal: Journal of Experimental Marine Biology and Ecology
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ISSN (Print): 0022-0981
Ratings:
BFI (2018): BFI-level 1
BFI (2017): BFI-level 1
Web of Science (2017): Indexed Yes
BFI (2016): BFI-level 1
Scopus rating (2016): CiteScore 2.03 SJR 0.937 SNIP 0.914
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 1
Scopus rating (2015): SJR 1.043 SNIP 0.823 CiteScore 1.87
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 1
Scopus rating (2014): SJR 1.145 SNIP 1.045 CiteScore 2.41
Web of Science (2014): Indexed yes
BFI (2013): BFI-level 2
Scopus rating (2013): SJR 1.294 SNIP 1.08 CiteScore 2.45
ISI indexed (2013): ISI indexed yes
Web of Science (2013): Indexed yes
BFI (2012): BFI-level 2
Scopus rating (2012): SJR 1.186 SNIP 1.021 CiteScore 2.27
ISI indexed (2012): ISI indexed yes
Web of Science (2012): Indexed yes
BFI (2011): BFI-level 2
Scopus rating (2011): SJR 1.067 SNIP 1.007 CiteScore 2.14
ISI indexed (2011): ISI indexed yes
Web of Science (2011): Indexed yes
BFI (2010): BFI-level 2
Scopus rating (2010): SJR 1.239 SNIP 1.017
Web of Science (2010): Indexed yes
BFI (2009): BFI-level 2
Scopus rating (2009): SJR 1.299 SNIP 1.208
Web of Science (2009): Indexed yes
BFI (2008): BFI-level 1
Scopus rating (2008): SJR 1.26 SNIP 1.134
Web of Science (2008): Indexed yes
Scopus rating (2007): SJR 1.214 SNIP 1.308
Web of Science (2007): Indexed yes
Scopus rating (2006): SJR 1.262 SNIP 1.247
Web of Science (2006): Indexed yes
Scopus rating (2005): SJR 1.164 SNIP 1.134
Web of Science (2005): Indexed yes
Biological structure in a shallow cove (Kertinge Nor, Denmark) - Control by benthic nutrient fluxes and suspension-feeding ascidians and jellyfish

In 1991 Kertinge Nor was characterized by a high benthic autotrophic biomass dominated by the filamentous macroalgae Chaetomorpha linum which reduced the flux of inorganic nitrogen and phosphorus from the sediment to the water column. A dense population of filter-feeding ascidians Ciona intestinalis (up to 270 individuals m\(^{-2}\)) had a significant controlling impact on the phytoplankton biomass. Also, small jellyfish Aurelia aurita were present in extremely high densities (up to 300 individuals m\(^{-3}\)) controlling the zooplankton population. During a long period of calm and warm weather in the summer of 1992 the filamentous algal mat rose from the sediment surface. High amounts of nutrients were then released to the water column causing a phytoplankton bloom (up to 120 μg chlorophyll a l\(^{-1}\)), but the zooplankton biomass remained low due to intense predation by the A. aurita population. It is concluded that Kertinge Nor is an unstable eutrophic ecosystem in which interactions between suspension-feeding organisms and mobilization of nutrients from the sediment pool (enhanced by a former sewage disposal) control the biological structure.
Growth and energetics in the ascidian Ciona intestinalis

Rates of growth, filtration and respiration of the ascidian Ciona intestinalis (L.) were measured in the laboratory in the presence of food (flagellate Rhodomonas sp.) concentrations ranging from 0 to 12 000 cells ml\(^{-1}\) (0 to 500 \(\mu\)g C l\(^{-1}\)). Weight-specific growth rate (dry weight of body parts not including the tunic) increased sigmoidally with increasing algal cell concentration to 7.7% d\(^{-1}\). Maximum specific growth rate was related to age rather than size. A condition index (CI = DWbody/DWtotal) reflected level of growth. Specific filtration rate decreased logarithmically with increased algal cell concentration. Weight-specific respiration rate showed a relation to algal cell concentration similar to that shown by weight-specific growth rate. All rates were transformed into units of carbon, and a carbon budget was established for 2 size groups. Assimilation efficiency (AE) was approximately 50% but decreased at the highest carbon concentrations. The amount of carbon assimilated per body unit that was needed to maintain body (not including the tunic) or total (including the tunic) carbon was independent of initial size and amounted to 10 or 16 \(\mu\)g C mg C\(^{-1}\) d\(^{-1}\), respectively. Gross growth efficiency (GGE) and net growth efficiency (NGE) Varied with food concentration and approached a level of 0.23 or 0.78, respectively, in terms of body carbon. In terms of total carbon, GGE was found to be 0.27 to 0.28 and NGE to be 0.79. Costs of maintenance were greater in the largest ascidians, while costs of body growth were equal in the 2 size groups (0.21 to 0.23).

General information

State: Published
Organisations: National Environmental Research Institute
Authors: Petersen, J. K. (Intern), Schou, O. (Ekstern), Thor, P. (Ekstern)
Pages: 175-184
Publication date: 1995
Main Research Area: Technical/natural sciences

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Web of Science (2016): Indexed yes
Scopus rating (2015): CiteScore 2.56
Web of Science (2015): Indexed yes
Scopus rating (2014): CiteScore 2.75
Web of Science (2014): Indexed yes
Larval dispersal in the ascidian Ciona intestinalis (L.). Evidence for a closed population

Dispersal in ascidians is influenced by the reproductive mode and the mobility of a non-feeding larva. All available evidence indicates that mechanisms have evolved to ensure settlement close to the adult population. Populations of the solitary ascidian Ciona intestinalis (L.) are generally found heterogeneously distributed both spatially and temporally, and in Scandinavian waters the species is usually confined to fjords and inlets. In a shallow terminal cove, Kertinge Nor, a patchy distributed Ciona population is found abundantly forming dense aggregates on the eelgrass Zostera marina. The purpose of this study was to demonstrate that dispersal in a population of this solitary ascidian is limited and local. Our results showed that the Ciona population in Kertinge Nor is highly local and dispersal to the outside as well as influx of larvae through the narrow Kerteminde Fjord is most likely limited or non-existent, since recruitment only occurs in the cove proper. In model simulations with jellyfish grazing pressure some larvae may be retained in the plankton for dispersal but insignificant numbers of eggs and larvae were recorded in the field in regular plankton samples. On a smaller scale (eelgrass leaves), Ciona was found aggregated indicating epibenthic retention of eggs or egg-strings.
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 1
Scopus rating (2015): SJR 1.043 SNIP 0.823 CiteScore 1.87
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 1
Scopus rating (2014): SJR 1.145 SNIP 1.045 CiteScore 2.41
Web of Science (2014): Indexed yes
BFI (2013): BFI-level 2
Scopus rating (2013): SJR 1.294 SNIP 1.08 CiteScore 2.45
ISI indexed (2013): ISI indexed yes
Web of Science (2013): Indexed yes
BFI (2012): BFI-level 2
Scopus rating (2012): SJR 1.186 SNIP 1.021 CiteScore 2.27
ISI indexed (2012): ISI indexed yes
Web of Science (2012): Indexed yes
BFI (2011): BFI-level 2
Scopus rating (2011): SJR 1.067 SNIP 1.007 CiteScore 2.14
ISI indexed (2011): ISI indexed yes
Web of Science (2011): Indexed yes
BFI (2010): BFI-level 2
Scopus rating (2010): SJR 1.239 SNIP 1.017
Web of Science (2010): Indexed yes
BFI (2009): BFI-level 2
Scopus rating (2009): SJR 1.299 SNIP 1.208
Web of Science (2009): Indexed yes
BFI (2008): BFI-level 1
Scopus rating (2008): SJR 1.26 SNIP 1.134
Web of Science (2008): Indexed yes
Scopus rating (2007): SJR 1.214 SNIP 1.308
Web of Science (2007): Indexed yes
Scopus rating (2006): SJR 1.262 SNIP 1.247
Web of Science (2006): Indexed yes
Scopus rating (2005): SJR 1.164 SNIP 1.134
Web of Science (2005): Indexed yes
Scopus rating (2004): SJR 1.091 SNIP 1.121
Web of Science (2004): Indexed yes
Scopus rating (2003): SJR 1.351 SNIP 1.341
Scopus rating (2002): SJR 1.385 SNIP 1.323
Web of Science (2002): Indexed yes
Scopus rating (2001): SJR 1.363 SNIP 1.269
Web of Science (2001): Indexed yes
Scopus rating (2000): SJR 1.349 SNIP 1.245
Web of Science (2000): Indexed yes
Scopus rating (1999): SJR 1.562 SNIP 1.12
Original language: English
Source: dtu
Source-ID: n::oai:DTIC-ART:elsevier/82922375::38681
Publication: Research - peer-review › Journal article – Annual report year: 1995

Responses to hypoxia of plaice, Pleuronectes platessa, and dab, Limanda limanda, in the south-east Kattegat: distribution and growth

Plaice, Pleuronectes platessa, and dab, Limanda limanda, were sampled with a Glommen lobster trawl at 25 to 40 m depth in the SE Kattegat during spring and autumn of 1984 to 1990. During autumn, hypoxia (O2-concentration < 3 mg l⁻¹) occurred in the bottom water below the halocline for four to ten weeks every year, except in 1984 when moderate hypoxia (O2-concentration 3–5 mg l⁻¹) occurred. Biomass of both species was shown to be negatively correlated with oxygen concentration during autumn. Further, a decrease in population mean total length was observed during the study
period in both spring and autumn samples. Laboratory studies of growth of juvenile plaice and dab, at 15° C and 30–34%, showed that growth is reduced at 50 and 30% O2-saturation for both species during a 20 d period. There was some adaptation to hypoxia resulting in less reduction of growth during the second half of the experiment. The frequency of fish eating was reduced in plaice at 30% O2-saturation. Reduced mean total length of the plaice and dab population of the SE Kattegat is discussed in view of sublethal effects of oxygen deficiency.

General information
State: Published
Organisations: Kristineberg Marine Research Station
Authors: Petersen, J. K. (Intern), Pihl, L. (Ekstern)
Pages: 311-321
Publication date: 1995
Main Research Area: Technical/natural sciences

Publication information
Journal: Environmental Biology of Fishes
Volume: 43
Issue number: 3
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Ratings:
BFI (2018): BFI-level 1
BFI (2017): BFI-level 1
Web of Science (2017): Indexed Yes
BFI (2016): BFI-level 1
Scopus rating (2016): SJR 0.765 SNIP 0.765 CiteScore 1.43
BFI (2015): BFI-level 1
Scopus rating (2015): SJR 0.724 SNIP 0.821 CiteScore 1.28
BFI (2014): BFI-level 1
Scopus rating (2014): SJR 0.784 SNIP 0.955 CiteScore 1.47
BFI (2013): BFI-level 1
Scopus rating (2013): SJR 0.727 SNIP 0.851 CiteScore 1.27
ISI indexed (2013): ISI indexed yes
BFI (2012): BFI-level 1
Scopus rating (2012): SJR 0.555 SNIP 0.761 CiteScore 1.09
ISI indexed (2012): ISI indexed yes
BFI (2011): BFI-level 1
Scopus rating (2011): SJR 0.529 SNIP 0.637 CiteScore 0.96
ISI indexed (2011): ISI indexed yes
BFI (2010): BFI-level 1
Scopus rating (2010): SJR 0.502 SNIP 0.581
BFI (2009): BFI-level 1
Scopus rating (2009): SJR 0.72 SNIP 0.844
Web of Science (2009): Indexed yes
BFI (2008): BFI-level 1
Scopus rating (2008): SJR 0.735 SNIP 0.901
Scopus rating (2007): SJR 0.776 SNIP 0.789
Scopus rating (2006): SJR 0.74 SNIP 0.886
Scopus rating (2005): SJR 0.747 SNIP 0.922
Scopus rating (2004): SJR 0.678 SNIP 0.764
Web of Science (2004): Indexed yes
Scopus rating (2003): SJR 0.799 SNIP 0.907
Scopus rating (2002): SJR 0.824 SNIP 1.009
Scopus rating (2001): SJR 0.885 SNIP 0.96
Scopus rating (2000): SJR 0.604 SNIP 1.027
Scopus rating (1999): SJR 0.727 SNIP 1.016
Original language: English
DOIs:
10.1007/BF00005864
Filtration capacity of the ascidian Ciona intestinalis and its grazing impact in a shallow fjord

Filtration capacity of the ascidian Ciona intestinalis (L.) was measured in the laboratory and determined from the exponential reduction in algal cell (Rhodomonas sp.) concentration as a function of time. Filtration rate (F, ml min⁻¹) as a function of dry weight (W, g) was found to be F = 118 W(total)⁰.⁶⁸ and F = 199 W(organ)⁰.⁶⁷ for total dry weight and dry weight of organs, respectively. Ascidians starved at least 12 h had, after addition of algal cells, an initial lag-phase (1 to 2 h) with low filtration rates before constant high rates were attained. The duration of the initial lag-phase was longer at low algal cell concentrations. At algal cell concentrations above 10 to 15 x 10³ cells ml⁻¹, the filtration rate declined to a lower level after some time, possibly correlated with the filling of the gut. In the temperature range 4 to 21-degrees-C, maximum filtration rate (F(max), ml min⁻¹ ind.⁻¹) increased linearly with increasing temperature (T, degrees-C) according to F(max) = 1.46T⁻¹.²¹. Above 21-degrees-C filtration rate declined rapidly with increasing temperature. The population density of C. intestinalis in the shallow cove Kertinge Nor, Fyn, Denmark, was estimated using analysis of stereophotographs. Population density varied greatly over the year with maximum densities in autumn. The filtration potential of the C intestinalis population varied during the year between 0. 1 and 1.0 times a volume equivalent to the total water volume of the cove per day. The results suggest that the population of C. intestinalis in Kertinge Nor may have an important grazing impact on the phytoplankton in late summer-early fall.

General information
State: Published
Organisations: University of Southern Denmark, National Environmental Research Institute
Authors: Petersen, J. K. (Intern), Riisgård, H. (Ekstern)
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Publication date: 1992
Main Research Area: Technical/natural sciences

Publication information
Journal: Marine Ecology Progress Series
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ISSN (Print): 1616-1599
Ratings:
Web of Science (2017): Indexed yes
Scopus rating (2016): CiteScore 2.4
Web of Science (2016): Indexed yes
Scopus rating (2015): CiteScore 2.56
Web of Science (2015): Indexed yes
Scopus rating (2014): CiteScore 2.75
Web of Science (2014): Indexed yes
Scopus rating (2013): CiteScore 2.79
ISI indexed (2013): ISI indexed no
Web of Science (2013): Indexed yes
Scopus rating (2012): CiteScore 2.9
ISI indexed (2012): ISI indexed no
Web of Science (2012): Indexed yes
Scopus rating (2011): CiteScore 2.85
ISI indexed (2011): ISI indexed no
Web of Science (2011): Indexed yes
Web of Science (2010): Indexed yes
Web of Science (2009): Indexed yes
Web of Science (2008): Indexed yes
Web of Science (2007): Indexed yes
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Tolerance, behavior and oxygen consumption in the sand goby, Pomatoschistus minutus (Pallas), exposed to hypoxia

General information
State: Published
Organisations: Marine Biological Laboratory
Authors: Petersen, J. K. (Intern), Petersen, G. (Ekstern)
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Scopus rating (2010): SJR 0.774 SNIP 0.834
Web of Science (2010): Indexed yes
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Web of Science (2009): Indexed yes
BFI (2008): BFI-level 2
Scopus rating (2008): SJR 0.883 SNIP 0.968
Projects:

Mitigation Cultures of Mussels - Ecological Impact

National Institute of Aquatic Resources
Period: 01/05/2017 → 30/04/2020
Number of participants: 4
Phd Student: Taylor, Daniel (Intern)
Supervisor: Nielsen, Pernille (Intern)
Saurel, Camille (Intern)
Main Supervisor: Petersen, Jens Kjerulf (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Samfinansieret - Andet
Project: PhD

Cultivation potential of brown and red macroalgae species integrated with open Salmond fish Aquaculture

National Institute of Aquatic Resources
Period: 01/12/2016 → 30/11/2020
Number of participants: 5
Phd Student: Etter, Siv Anina (Ekstern)
Supervisor: Håndå, Alexander (Ekstern)
Olsen, Yngvar (Ekstern)
Petersen, Jens Kjerulf (Intern)
Main Supervisor: Petersen, Jens Kjerulf (Intern)
Cultivation potential of brown and red macroalgae species integrated with open Salmond fish Aquaculture

National Institute of Aquatic Resources
Period: 01/12/2016 → 30/11/2020
Number of participants: 5
Phd Student:
Etter, Siv Anina (Intern)
Supervisor:
Håndå, Alexander (Ekstern)
Olsen, Yngvar (Ekstern)
Reitan, Kjell Inge (Ekstern)
Main Supervisor:
Petersen, Jens Kjerulf (Intern)

Investigations of hatchery techniques and cultivation systems for cost-effective production of valuable seaweeds

National Institute of Aquatic Resources
Period: 15/08/2016 → 14/08/2019
Number of participants: 4
Phd Student:
Schmedes, Peter Søndergaard (Intern)
Supervisor:
Nielsen, Mette Møller (Intern)
Canal-Vergés, Paula (Intern)
Main Supervisor:
Petersen, Jens Kjerulf (Intern)

Management of mussel fishery in Horsens Fjord and Lillebælt (39338)

It is the main aim of the project to the scientific basis for managing mussel fishery in two Natura 2000 areas: H52 Horsens Fjord and H96 Lillebælt with focus on the key ecosystem components eelgrass and macro algae. Based on detailed mapping of eelgrass beds, occurrence of macro algae and composition sampled using video transects, sampling by diver of macro algae and sediment sampling maps of eelgrass and macro algae are created. The data will also serve as input to a GIS model of potential recovery of eelgrass based on several different layers of information, e.g. sediment characteristics, shear stress (from hydro dynamic modelling), presence of eelgrass etc. Maps and models will serve as input to management in relation to permits to dredging for mussels in Natura 2000 areas according to guidelines in the Danish mussel policy. As a specific, additional activity it will be tested if drones can be used to map eelgrass beds. This will be performed in collaboration with DTU Space.

This project is coordinated by DTU Aqua.

The project is funded by the Ministry of Environment and Food of Denmark and the European Marine and Fisheries Fund (EMFF).

National Institute of Aquatic Resources
Danish Shellfish Centre
National Space Institute
Development of new tools to assess the environmental effects of fishing (TASSEEF) (39371)
The project aims to develop new knowledge about the indirect effects on the marine environment of fishing dredgers, in particular to develop new tools and methods at the level of entire basins to establish new knowledge about fishing effects.

The primary outcome of the project will be new tools for the management of shellfish fisheries in the Limfjorden.

Specifically, it will be possible to establish:

- protection zones around eelgrass.
- ecosystem services that mussel fishing supplies in very nutrient-enriched regions.
- development of the scientific basis for the management of fisheries in coastal areas – mussel translocation/relaying.
- perennity of the tools.

The project is coordinated by DTU Aqua.

The project is funded by Ministry of Environment and Food of Denmark and the European Maritime and Fisheries Fund (EMFF).

National Institute of Aquatic Resources
Danish Shellfish Centre
Aarhus University
Danish Meteorological Institute
Association of Mussel Producers
Limfjorden Fishermen Organization

Management plan for development of sustainable fisheries for blue mussels, cockles and oysters in the Danish Wadden Sea (39357)
The aim of this project is to develop options for a sustainable fishery for blue mussels, oysters and cockles in the Wadden Sea both within and outside the Natura 2000 site. This is achieved by estimation of stock sizes of blue mussels, cockles and Pacific oysters within the Natura 2000 site as well as cockles and razor clams in relevant fishing areas outside Natura 2000 site. Furthermore, new and more cost-effective methods for monitoring each target species will be developed and tested. Finally, a management plan for sustainable fishing for mussels, cockles and oysters in the Wadden Sea will be provided.

The effect of the project will be that within 3 years, one or more sustainable fisheries for mussels, cockles and oysters will be initiated in the Wadden Sea, as well as a scientific documentation of important fishing grounds for shellfish is provided.
to counter potential closures of significant areas for shellfish fishing due to spoil dumping. In addition, new and more cost-effective methods for stock assessments will be developed. In conclusion, this will result in a scientific based management of the shellfish fishery in the Wadden Sea, which will be beneficial for the shellfish fishery.

The project is coordinated by DTU Aqua.

The project is funded by Ministry of Environment and Food of Denmark and the European Maritime and Fisheries Fund (EMFF).

National Institute of Aquatic Resources
Danish Shellfish Centre
National Space Institute
Fiskeriselskabet Cardium

Period: 11/01/2016 → 14/07/2018
Number of participants: 3
Research area: Shellfish and seaweed
Project participant:
Petersen, Jens Kjerulf (Intern)
Nielsen, Mette Møller (Intern)
Project Coordinator:
Nielsen, Pernille (Intern)

Investigations of the potential "nitrogen effect" of stone reefs, and contribution to the re-establishment of a stone reef in the Natura 2000 area "Løgstør Broad, Vejerne and Bulbjerg" (The Stone Reef Project) (39354)

As well as many inner Danish waters, Limfjorden is highly eutrophied due to land-based nutrients runoff, and some areas in the fjord often suffer from anoxia events. The current project evaluates the effect of stone reefs as a possible complementary tool in water planning related to the water framework directive (2000/60/EF) to reduce the negative outcome of such events. For this purpose, the project involves the establishment of a stone reef in Løgstør Broad in 2017 as well as comprehensive analysis of the potential "nitrogen effect" of already existing stone reefs in the broad.

The outcome of the project will help to assess whether stone reefs can be a future use as an instrument of retaining nitrogen in water management plans.

The project is coordinated by Limfjordsrådet, Aalborg Municipality
National Institute of Aquatic Resources
Danish Shellfish Centre
Limfjordsrådet
Aarhus University
Geological Survey of Denmark and Greenland
NIVA Denmark Water Research
DHI

Period: 01/01/2016 → 31/12/2020
Number of participants: 2
Research areas: Marine Habitats & Ecosystem based Marine Management
Project participant:
Petersen, Jens Kjerulf (Intern)
Nielsen, Mette Møller (Intern)

Effects on benthic habitats of fishing activities

National Institute of Aquatic Resources
Period: 15/12/2015 → 14/12/2018
Number of participants: 3
Phd Student:
McLaverty, Ciaran (Intern)
Mussel season prolongation (FOMUS) (39273)
The overall objective of FOMUS is to increase the production of longline farmed mussels and ensure that a larger proportion of the increase in value of the primary product takes place in Danish companies.

This is achieved through the development of new production methods with a focus on changing production cycle in order to extend the harvest season. Sales only cover a short period of time from June to August and the goal is to extend the season for 6-8 months.

FOMUS covers the entire value chain and supports the development of sustainable mussel production.

The project is funded by the Ministry of Environment and Food of Denmark through the Green Development and Demonstration Program (GUDP).

This project is coordinated by DTU Aqua.

National Institute of Aquatic Resources
Danish Shellfish Centre
Seafood Limfjord
Vilsund Blue
Period: 01/04/2015 → 01/06/2018
Number of participants: 8
Research area: Shellfish and Seaweed
Project participant:
Nielsen, Carsten Fomsgaard (Intern)
Boesen, Helge (Intern)
Barreau, Pascal David Alain (Intern)
Bak, Finn (Intern)
Andersen, Lars Kyed (Intern)
Nielsen, Pernille (Intern)
Project Manager, academic:
Saurel, Camille (Intern)
Project Coordinator:
Petersen, Jens Kjerulf (Intern)
Project Grow mussels and oysters - Sea Gardens In Limjorden (39249)
The aim for this project is to create a focus on healthy and sustainable exploitation of Limfjordens potential and bring life back into the harbour areas.

- Better utilization of Limfjorden's resources.
- Increased focus on seafood and seaweed as exciting, healthy and delicious produce on the dinner table.
- More readily available social activities for the general public.
- Development of sustainable activities on empty harbors.
- Better links between water and city.
- Participate in social activities with sustainability in focus.

The project will give ordinary citizen the opportunity to "grow" mussels, oysters and seaweed in a social community without needing separate skills and without having to invest in an area.

This project is coordinated by Limfjordsrådet.
Starfish as a new source of marine protein (STARPRO) (39272)
The amount of starfish (Asterias rubens) is increasing in Danish coastal waters – especially in the Limfjorden. They consume large amounts of mussels thus creating a big problem for the mussel fishery. STARPRO will try to establish a sustainable fishery of starfish in order to transform them into feed ingredient thereby reducing predation and at the same time create a new source of valuable protein.

The purpose of STARPRO is to establish a sustainable fishery for starfish in preparation for producing a 100% organic feed ingredient for monogastric livestock. The project includes the whole value chain with the concrete goal to develop cost-effective methods for production of starfish flour and within a few years establish a fishery of 10,000 t of starfish a year amounting a production of 2,500 t of flour a year. Activities in STARPRO will be stock assessment of starfish, testing of methods for the production of starfish flour from pretreatment to the grinding of dried starfish, development of feed blend for poultry and pigs.

Expected results:
- Organic feed with a large protein content
- Frame work for sustainable fishery for starfish in Denmark

Expected effects of the project:
- Establishing a new profession in fabrication of starfish flour
- Increase employment through the establishment of starfish fishery and Danish production of starfish
- Removal of nutrients from the fjords and coastal waters through fishing of starfish.
- Reduced the discharge of nutrients from organic animal husbandry due to increased feed efficiency.
- Increased sustainability and profitability of mussel fishery as a result of reduced predation on mussels.

This project is coordinated by DTU Aqua.
The project is funded by the Ministry of Environment and Food of Denmark through the Green Development and Demonstration Program (GUDP).
Nielsen, Carsten Fomsgaard (Intern)
Saurel, Camille (Intern)
Barreau, Pascal David Alain (Intern)
Andersen, Lars Kyed (Intern)
Bak, Finn (Intern)
Project Manager, academic:
Møller, Lene Friis (Intern)
Project Coordinator:
Petersen, Jens Kjerulf (Intern)

Development of sustainable mussel production (Idékataloget) (39250)
It is the overall objective of the project to develop sustainable methods of mussel production involving mussel fisheries, on-bottom culture and off-bottom long-line culture.
With regard to mussel fisheries, a GIS-based model of eelgrass habitats and their potential recovery was developed and has been reported. Further, macro algae were mapped in selected estuaries. In relation to on-bottom culture, focus has been on testing whether moving mussels from deeper to shallower areas during oxygen depletion was tested. Results showed that this can be a good strategy to move mussels that grew rapidly after relay in contrast to mussels not moved that died due to oxygen depletion. It is however important that careful monitoring of the relayed mussels are carried out by the fishermen as mussels otherwise risk to be eaten by starfish. Experiments with relay of mussel spat from water column spat collectors are currently being carried out.
In relation to long-line farming, DTU Aqua provided basic information and numbers to an economic analysis of the industry carried out by Copenhagen University, Department of Food and Resource Economy.

This project is coordinated by DTU Aqua.

The project was funded by the Ministry of Food, Agriculture and Fisheries through a special governmental funding for sustainable fisheries ("Bæredygtighedspuljen").

National Institute of Aquatic Resources
Danish Shellfish Centre
Period: 01/01/2014 → 31/12/2016
Number of participants: 7
Research areas: Shellfish and Seaweed & Coastal Ecology
Project participant:
Canal-Vergés, Paula (Intern)
Nielsen, Pernille (Intern)
Saurel, Camille (Intern)
Nielsen, Carsten Fomsgaard (Intern)
Tørring, Ditte Bruunshøj (Intern)
Fitridge, Isla (Intern)
Project Coordinator:
Petersen, Jens Kjerulf (Intern)

New methods and models for population estimates of mussels with the use of GPS data (39088)
Based on the new management requirements from authorities and industry, the access to new data collection and the desire for more mussel fishing areas, there is a need for the development of new tools for monitoring and managing shellfish stocks.

The aim of the project was to develop new methods and models for estimating shellfish stocks in Denmark that may include several types of information to the management. The project worked with stratified extensive sampling strategies such as sidescan sonar, video recordings, data from automated GPS loggers from industry's own data and classical biomass collection.

Based on the data collected different types modeling tools was developed. The project has resulted in a new management tools for population estimation with different degrees of detail and types of information.

This project was coordinated by DTU Aqua.

The project was funded by the Danish Ministry of Food, Agriculture and Fisheries and the European Fisheries Fund (EFF).
National Institute of Aquatic Resources
Danish Shellfish Centre
Orbicon

Foreningen Muslingeerhvervet
Period: 01/01/2014 → 30/06/2015
Number of participants: 8
Research areas: Coastal Ecology & Observation Technology & Marine Living Resources
Project participant:
Canal-Vergés, Paula (Intern)
Saurel, Camille (Intern)
Thygesen, Uffe Høgsbro (Intern)
Stage, Bjarne (Intern)
Kristensen, Kasper (Intern)
Pedersen, Eva Maria (Intern)
Geitner, Kerstin (Intern)

Project Coordinator:
Petersen, Jens Kjerulf (Intern)

Project

Oyster hatchery (39313 & 39085 & 39233)
Hatchery production of European oyster spat (Ostrea edulis) in a land-based hatchery facility and feasibility study with analysis of the technological and economic conditions for the establishment of a new large scale shellfish hatchery with multiple functions.
The aim is to optimize hatchery processes in order to get stable output at all stages from mother to spat. It is a specific object to develop techniques to insure stable survival in the settling phase, including working with different feed concentrations and compositions.

A particular aim is also to maintain hatchery knowledge at Danish Shellfish Centre, DTU Aqua for research purpose and dissemination centre as well as to ensure the base for the establishment of a real full-scale hatchery with capacity for both research/development and production in partnership with private companies. Moreover produces spat for other projects, restoration and further breeding at Danish Shellfish Centre.

This project is coordinated by DTU Aqua.

The project is funded by the fund “Fonden Limfjordens Skaldyrcenter”.

National Institute of Aquatic Resources
Danish Shellfish Centre
Period: 01/01/2014 → 31/12/2016
Number of participants: 5
Research area: Shellfish and Seaweed
Project participant:
Barreau, Pascal David Alain (Intern)
Hansen, Anita (Intern)

Project Manager, academic:
Petersen, Jens Kjerulf (Intern)
Nielsen, Carsten Fomsgaard (Intern)
Møller, Lene Friis (Intern)

Project

Starfish - power and management (Søstjerner) (39087)
The overall objective of the project was to provide the scientific basis for management that can lead to the establishment of a commercial fishery of starfish (Asterias rubens) in primarily the Limfjorden, including Natura 2000 areas. The project background was the increasing prevalence of starfish that is both a threat to the mussel fishing and a potential source of income for fishing. In the project, the population of starfish and production was determined and analyzed and based on population stock estimates and stock modeling a total allowable quota of 10,000 tonnes annually was estimated as a conservative annual catch, which is considered sufficient to maintain a potential starfish meal industry. Effect of fishing was determined both for the population of starfish, the stock of mussels and benthic components like infauna and macroalgae. It was shown that using the starfish purse seine will have no or negligible effects on infauna and blue
mussels. In terms of biodiversity and biomass of macro algae, no significant effects of the purse seine, including a load of 300 tonnes of starfish in the net, could be detected. Torn of macro algae leafs were however detected in the purse seine after fishery over macro algae habitats and this was included in management advise on effects of starfish fisheries. A guide for management including recommendations on environmental impact and starfish populations were developed.

This project was coordinated by DTU Aqua.
The project was funded by the Danish Ministry of Food, Agriculture and Fisheries and the European Fisheries Fund (EFF).

National Institute of Aquatic Resources
Danish Shellfish Centre
Department of Applied Mathematics and Computer Science
Foreningen Muslingeerhvervet
Centraforseningen for Limfjorden
Period: 01/01/2014 → 30/06/2015
Number of participants: 6
Research areas: Shellfish and seaweed & Coastal Ecology & Marine Living Resources & Ecosystem based Marine Management
Project participant:
Nielsen, Carsten Fomsgaard (Intern)
Fitridge, Isla (Intern)
Saurel, Camille (Intern)
Thygesen, Uffe Høgsbro (Intern)
Gislason, Henrik (Intern)
Project Coordinator:
Petersen, Jens Kjerulf (Intern)

New application of farmed blue mussels: Mussel meal (39089)
The aim of this project was to create knowledge and develop the use of mussels as feed supplement for poultry and pigs. Specifically, the objective was to optimize the rearing of mussels, optimize the process and examine the biological basis for the use of mussels as feed supplement for poultry and pigs.

The results show that crude protein content and fatty acid content in mussel meal was at 57% and 15%, whereas the silage had a content of 17% and 5%. The analyzes showed a high proportion of pure protein and mussel amino acid composition was close to the values found in fish meal.

Experiments on pigs showed that there was no problem getting the pigs to eat the feed mixes with mussels and the digestibility of crude protein and amino acids was higher than for the control feed mixture of fish protein. Feed mixed with mussel silage gave the best digestibility. Overall experiments show that there is a clear potential for mussels as a protein source especially for pigs.

This project was coordinated by DTU Aqua.
The project was funded by the Danish Ministry of Food, Agriculture and Fisheries and Vækstforum Region Nordjylland.

National Institute of Aquatic Resources
Danish Shellfish Centre
Aarhus University
Vilsund Blue
Period: 13/07/2012 → 31/12/2014
Number of participants: 3
Research areas: Shellfish and seaweed & Coastal Ecology
Project Manager, academic:
Nielsen, Carsten Fomsgaard (Intern)
Fitridge, Isla (Intern)
Oyster care in Limfjorden (39120)
The purpose of the project was to develop methods for long-term efforts to support a stable population of oysters (Ostrea edulis) suitable for the fishery.

The project aimed to determine the real size of the stock of oysters in Nissum Broads by calculating the stock in shallow water and hence the overall reproductive potential in the area. Knowledge of the population size distribution can also be used to identify areas with frequent reproduction.

The project tested whether it was possible to collect oysters on collectors placed in the water column. On bottom growth and survival rates of different types of oysters (oysters collected in the water column, oysters from hatchery and oysters fished in shallow water) were tested. The end result was a best practices description concerning the best sources of spat.

Estimation of oysters in shallow waters showed that in several areas there was a significant amount of oysters. The study also showed that in some areas of the fjord especially in shallow water there were many oysters of the invasive pacific oyster, Crassostrea gigas.

Stock assessment of oysters in shallow water provides a much more detailed picture of the total population of oysters in the Limfjord.

The collection of oyster spat from the water column is not uniform in different areas and release date of larvae also had some impact on the amount of oysters on the collectors. In some areas collection of pacific oysters is a problem.

Stock enhancement of the European flat oysters in Limfjorden can be done in different ways, but will have to take place over a longer period, it apparent that a stock enhancement in Limfjorden is more difficult than expected. A successful program must involve several parameters, such as:
- Amount of pacific oysters in sub-areas of Limfjorden.
- Areas suitable for relaying of oysters spat
- Best source and size of spat for the area

This project was coordinated by DTU Aqua.
The project was funded by the Danish Ministry of Food, Agriculture and Fisheries and the European Fisheries Fund (EFF).

Long-term management plans for mussel production (39121)
The purpose of this project was to point out areas suitable for blue mussel production – using Vejle Fjord as a study case area – in relation to environmental factors e.g. distribution of eelgrass, macro algae and benthos but also using input from the local municipalities, environmental NGOs, mussel fishermen and other stakeholders like e.g. anglers, sailors, canoeist, kayaker and divers and their use of the sea into account. Based on input from authorities, environmental conditions like e.g. occurrence of eelgrass and concentrations of Chl. a were mapped establishing the basis for optimal location of fishery, relay plots and mussel farming. This was contrasted to local use of the Vejle Fjord and other recreational values. The two sets of information was merged a different areas in the Veje Fjord were appointed suitable for various forms of mussel production. Furthermore, the project also wanted to inform how each mussel production approach (fishery, long-line farming and on-bottom cultures) is carried out, managed by the authorities as well as the environmental impacts.
associated to the different mussel production methods in order to create local awareness. During the course of the project, the information campaign changed local perception of mussel production resulting in a new local policy on utilization of the fjord for mussel production.

This project was coordinated by DTU Aqua.

The project was funded by the Danish Ministry of Food, Agriculture and Fisheries and the European Fisheries Fund (EFF).

National Institute of Aquatic Resources
Danish Shellfish Centre
Period: 05/07/2012 → 31/12/2014
Number of participants: 5
Research areas: Shellfish and Seaweed & Coastal Ecology
Project participant:
Poulsen, Louise K. (Intern)
Geitner, Kerstin (Intern)
Funk, Emma Sigrid (Intern)
Nielsen, Pernille (Intern)
Project Coordinator:
Petersen, Jens Kjerulf (Intern)

The macroalgae biorefinery - Sustainable production of 3G energy carriers and fish feed from macroalgae (MAB3) (39165)
MAB3 is a four-year research project promoting biomass resources from the sea, namely algae. The overall goal is to contribute to solving the challenges with food and energy supply and find ways to exploit the sea instead of farm land.

The project aim is to develop new technologies in laboratory and pilot scale that will lead to sustainable growth and subsequent conversion of two brown algae (Saccharina latissima and Laminaria digitata) into three energy carriers - bioethanol, biobutanol and biogas - and a high-protein fish feed supplemented with essential amino acids.

This project was coordinated by DTU Aqua.
The project was funded by the Danish Council for Strategic Research.

National Institute of Aquatic Resources
Danish Shellfish Centre
Aarhus University
National University of Ireland
Technical University of Denmark
University of Siena
University of Hamburg
Aller Aqua A/S
Orbicon
DONG Energy A/S
Vitalys I/S
DanGrønt Products A/S
Period: 01/03/2012 → 29/02/2016
Number of participants: 3
Research areas: Shellfish and seaweed & Coastal Ecology
Project participant:
Canal-Vergés, Paula (Intern)
Tørring, Ditte Bruunshøj (Intern)
Macroalgae - Technical support for new principles of management in mussel fishery (39090)
The main purpose of the study was to provide knowledge on key ecosystem components, with special emphasis on macroalgae in Natura 2000 areas in Limfjorden in order to improve the scientific basis for management of shellfish fisheries. In addition, effects of closing areas for shellfish fisheries on benthic vegetation were studied by comparing coverage of macroalgae and eelgrass in two adjacent areas, one of them having been protected from fisheries for the last 20 years.

Primary method was monitoring through video surveys to create a description of seabed composition, existing habitats and coverage of macroalgae and eelgrass. Approximately 800 recordings were performed covering 5 broads in Limfjorden.

This project was coordinated by DTU Aqua.

The project was funded by the Danish Ministry of Food, Agriculture and Fisheries and the European Fisheries Fund (EFF).

National Institute of Aquatic Resources
Danish Shellfish Centre
Period: 01/01/2012 → 31/01/2015
Number of participants: 2
Research area: Coastal Ecology & Shellfish and Seaweed

Local strength - strengthening the rural areas, by adding competencies (39086)
The overall aim the project "Local strength" was to demonstrate how the supply of knowledge and skills to a rural area with low income, high unemployment and decreasing job opportunities can stimulate local industries and companies and thereby prepare it for the necessary development and adaptation into a national and international context. The objectives of the project were based on innovation and change within the sustainable exploitation and production of shellfish in the western part of the Limfjorden because this part of the country is the main area for shellfish production. The specific objectives were: - To strengthen the overall shellfish industry through networking and joint activities within shellfish businesses and a R&D institution on common issues like e.g. food safety. - Adaptation of the shellfish fishery into a more sustainable and competitive fishery by developing new methods and forms of production, e.g. by the development of relay cultures, documentation of environmental impact and creation of buffer zones around eelgrass beds. - Develop cost-saving methods for mussel farming in relation to e.g. buoy handling, optimal sowing etc.- Creating added value through development of new mussel and oyster products. - Create broader revenue for the mussel farmers by development of new species e.g. seaweed. - Establish a generic branding of shellfish from the Limfjorden. This project was coordinated by DTU Aqua.

The project was funded by Danish Business Innovation fund, The North Denmark Region and Morsø Municipality.

National Institute of Aquatic Resources
Danish Shellfish Centre
Foreningen Muslinge erhvervet
Centralforeningen for Limfjorden
Muslingestrømpe Nykøbing ApS
Seafood Limfjord
Danish Aquaculture Association
Limfjords-Kompagniet A/S
Vilsund Muslingeindustri A/S
Period: 11/01/2010 → 31/10/2013
Number of participants: 5
Research areas: Shellfish and seaweed & Coastal Ecology
Project participant:
Nielsen, Carsten Fomsgaard (Intern)
Nielsen, Pernille (Intern)
Canal-Vergés, Paula (Intern)
Saurel, Camille (Intern)

Project Coordinator:
Petersen, Jens Kjerulf (Intern)

Production of mussels: Mitigation and feed for husbandry (MUMIHUS) (38790)
The concept of MuMiHus was to develop and document mussel farming as a means of mitigating effects of eutrophication of the coastal zone. Specific objectives of the project were i) to adapt known mussel farming techniques to production of maximal biomass at lowest possible costs; ii) to assess environmental impact of blue mussel extraction culture with special focus on benthic effects; iii) to integrate the results in an ecosystem based management model in order to make an overall assessment of environmental impact; iv) to assess effects of low salinity and cyanobacteria occurrence on growth of blue mussels through bioenergetic studies; v) to develop management tools for and economic analysis of extraction cultures as a mitigation measure; vii) to assess bioaccumulation of contaminants in blue mussels as a prerequisite for future use of mussels as feed in husbandry.

MuMiHus demonstrated that mussel farming may be an efficient means of mitigation in terms area efficiency and it was shown that more biomass could have been produced per area unit. Environmental impact studies and modelling showed that in highly eutrophic areas like Skive Fjord, negative environmental impact of mussel farming on the benthic environment are difficult to detect due to the already high organic loading to the sediment. It was further demonstrated that mussel farming might have a relatively higher effect on environmental quality indicators like water transparency compared to load reduction. Based on physiological studies and assessment of environmental conditions a number of coastal areas in Danish waters were appointed as suited for mitigation culture of mussels. Costs of nutrient removal through mussel farming were calculated and cost effectiveness of mussel farming was shown to be compatible to most of the remaining available land based abatement measures. Concentration of hazardous substances in the mussels was shown not to be in conflict with use of the produced mussels for feed or human consumption.

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Danish Shellfish Centre
Aarhus University
University of Southern Denmark
Bolding Burchard Hydrodynamics
National Institute of Water and Atmospheric Research
Bedford Institute of Oceanography
Dalhousie University

Period: 01/01/2010 → 30/09/2013
Number of participants: 6
Research areas: Shellfish and seaweed & Coastal Ecology
Project participant:
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Project Manager, academic:
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Annual Environmental Impact Assessments (EIA) are conducted for each Natura 2000 site and in the Limfjorden in general before fishery on wild beds of mussels or oysters can be initiated. The Danish mussel and oyster fishery is managed by several regulations both implemented by government institutions as well as internal regulations within the fisheries associations. The overall framework was implemented in 2012 as "The mussel policy"; which states that the fishery should be sustainable and in accordance with the EU Habitat Directive. Furthermore, four key ecosystem components (eelgrass, blue mussels, macro algae and benthos) are designated in The Mussel Policy. For blue mussels, macro algae and benthos 15% cumulative area impacted by fishery is accepted, whereas for eelgrass it is 0%.

DTU Aqua performs annual surveys determining blue mussel and flat oyster abundance and biomass, regular surveys of eelgrass and macroalgae in all relevant Natura 2000 areas. Data are used for impact assessment of fishery and contain sustainable quotas of either mussel or oysters, protected areas for eelgrass and an assessment of the effects of fishery on the species included in the Natura 2000 plan. Furthermore, the cumulative area affected by fishery is calculated by analyzing black box data. The black box data show where the fisheries have taken place and how large areas that has been affected by logging the position of the vessels every 10 seconds and register any activity by the winch (starting or ending of fishing time).

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National Institute of Aquatic Resources

Danish Shellfish Centre
Period: 01/01/2008 → …
Number of participants: 4
Research areas: Coastal Ecology & Shellfish and Seaweed
Project participant:
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Activities:

Muslingeudvalget (External organisation)
Period: 2014
Jens Kjerulf Petersen (Participant)

National Institute of Aquatic Resources
Danish Shellfish Centre

Related external organisation

Muslingeudvalget
Activity: Membership › Membership of committees, commissions, boards, councils, associations, organisations, or similar