Review of the composition and current utilization of Calanus finmarchicus – Possibilities for human consumption

Background: The continuous high expectations on the world's fisheries to provide products for human consumption is leading to increased overexploitation of fishing stocks. This unsustainable exploitation desperately calls for other suitable resources that can relieve the pressure on the fisheries. The utilization of Calanus finmarchicus has been proposed as a suitable alternative. There is, however, still a question of both ecological and economical sustainability of such exploitation. Scope and approach: This review describes currently utilized marine resources, and compares the suitability of C. finmarchicus as a useful alternative for those resources. Additionally, the review describes the life history and chemical composition of C. finmarchicus. Current utilization of C. finmarchicus is also described, along with industrial methods used to derive various products from Calanus, as well as a discussion of other potential products from the resource. Key findings and conclusions: C. finmarchicus can potentially be considered an alternative marine resource as it has a unique lipid composition, is rich in antioxidants, and contains diverse enzymes. However, the question of sustainable catching remains unanswered and must be addressed before C. finmarchicus can be considered for utilization.
Calanus hyperboreus and the lipid pump

Lipid-fuelled overwintering by copepods can be a regionally important contribution to carbon sequestration in the deep oceans. Here, we estimate the contribution for Calanus hyperboreus, found in abundance in the northern reaches of the North Atlantic and Arctic Ocean. Estimates for regions with high overwintering populations, Fram Strait, Greenland Sea and Iceland Sea lie between 3.5 gC m$^{-2}$ yr$^{-1}$ and 6.0 gC m$^{-2}$ yr$^{-1}$ at depths of 1000–3000 m, comparable to the flux of detrital organic carbon at commensurate depths. Apart from the variation in the abundance of overwintering populations, these estimates are most sensitive to mortality rates. We present a general model based on metabolic theory and isomorphism that can be used to constrain estimates for data poor species in other parts of the global ocean.

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Web of Science (2015): Impact factor 3.66
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Persistent shift of Calanus spp. in the south-western Norwegian Sea since 2003, linked to ocean climate

The southwestern Norwegian Sea is characterized by an inflow of warm and saline Atlantic water from the southwest and cold and less saline East Icelandic Water (EIW), of Arctic origin, from the northwest. These two water masses meet and form the Iceland-Faroe Front (IFF). In this region, the copepod Calanus finmarchicus plays a key role in the pelagic ecosystem. Time-series of C. finmarchicus and Calanus hyperboreus in May and September, extending back to the early 1990s, were studied in relation to phytoplankton bloom dynamics and hydrography. The main reproductive period of C. finmarchicus started consistently earlier south of the IFF, resulting in different life cycles and stage compositions in the two water masses.

In 2003, a sudden shift occurred north of the IFF, resulting in a similar phenology pattern to south of the IFF. Before this, only one generation of C. finmarchicus was produced in the Arctic water, but the earlier reproduction enabled the species to produce two generations after 2003. Simultaneously, C. hyperboreus, an expatriate in the EIW, largely disappeared. Food availability is unlikely the reason for the phenological differences observed across the front, as the typical pattern of the phytoplankton spring bloom showed an earlier onset north of the IFF. Temperature and salinity peaked at record high values in 2003 and 2004, and therefore possible links to oceanography are discussed. The dominant role of Calanus spp. and the potential linkages to water mass exchanges may herald strong effects on the ecosystem and pelagic fish in this subpolar Atlantic region under expected climate change.
State of the Earth’s Oceans
The oceans cover 70% of the Earth’s surface and are an essential part of the whole earth system. The oceans have a fundamental role in controlling our climate, are an important buffer for atmospheric CO₂ and are one of the most important sources of protein and lipids exploited for human consumption. In spite of their importance for climate, and exploitation our knowledge of the oceans is less than our knowledge of space.

Satellite remote sensing over last 20 years has been revolutionary for marine research as it revealed the intricate patterns of the marine environment, its currents, blooms, hot spots, upwelling zones and more. Many crucially important processes do take place at the ocean surface, such as heat flux, deep water formation, primary production. However, over and above covering the 70% of the earth’s surface the Ocean is 3-Dimensional and includes over 90% of the habitable space on this planet out of the detection of satellite or other airborne sensing.

There is a need to develop observational platforms and systems that can detect processes in the deep oceans. During the last 10 years a major international effort has been on underwater ocean observation technology. Argo floats and gliders have revealed the oceans heat storage and shown that 93% of the heat associated with global warming has gone into the oceans since the industrial revolution. Undulating video plankton recorders give us information of patchiness under the ocean surfaces, green laser cameras detect organisms in murky waters of the coastal zones and new generation of sensors give us the opportunity to sniff out DNA. At DTU, we are tantalizingly close to the forefront of this innovation, innovation that is crucial for our sustainable exploitation of the world’s oceans.

Advection loss of overwintering Calanus finmarchicus from the Faroe-Shetland Channel
The flow of deep water from the Norwegian Sea to the North Atlantic via the Faroe-Shetland Channel is one of the critical bottlenecks in the meridional overturn circulation. It is also a flow that potentially carries with it a large number of the overwintering copepod, Calanus finmarchicus, a regionally important secondary producer. Using a high resolution hydrodynamic model, MIKE 3 FM, we simulate the overflow of deep water and estimate the associated loss rate of C. finmarchicus as a function of the water depth strata within which they reside. We estimate a net advective loss from the Norwegian Sea population of 80 +/- 10 kt carbon bound in lipids of C finmarchicus biomass per year, a number that constitutes about 50% of the total overwintering population. Estimates of water mass characteristics and particle tracking suggest that the fate of individuals transported in the overflowing water is to be entrained into warmer waters of the North Atlantic Basin, a habitat that appears to be unsuitable for successful overwintering. (C) 2015 Elsevier Ltd. All rights reserved.
A journey from light into darkness: Fatty acids in the marine ecosystem: From photosynthesis to copepod lipids and sequestration

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A new compact, cost-efficient concept for underwater range-gated imaging: the UTOFIA project

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Biogeography of key mesozooplankton species in the North Atlantic, by manual counting methods, and egg production of Calanus finmarchicus

Here we present a new, pan-Atlantic compilation of data on key mesozooplankton species, including the possibly most important copepod, Calanus finmarchicus. Distributional data of ten representative zooplankton taxa, from recent (2000–2009) Continuous Plankton Recorder data, are presented, along with basin-scale data of the phytoplankton colour index. Then we present a compilation of data on C. finmarchicus including observations of abundance, demography, egg production and female size with accompanying data on temperature and chlorophyll. This is a contribution by Canadian, European and US scientists and their institutions. http://doi.pangaea.de/10.1594/PANGAEA.820732, http://doi.pangaea.de/10.1594/PANGAEA.824423, http://doi.pangaea.de/10.1594/PANGAEA.828393.
Seasonal copepod lipid pump promotes carbon sequestration in the deep North Atlantic

Significance
Every autumn across the North Atlantic, large numbers of zooplankton copepods migrate from the surface waters into the ocean's interior to hibernate at depths of 600–1,400 m. Through this migration, they actively transport lipid...
carbon to below the permanent thermocline, where it is metabolized at a rate comparable to the carbon delivered by sinking detritus. This “lipid pump” has not been included in previous estimates of the deep-ocean carbon sequestration, which are based on either measurements of sinking fluxes of detritus, or estimates of new primary production. Unlike other components of the biological pump, the lipid pump does not strip the surface ocean of nutrients, and decouples carbon sequestration from nutrient replenishment, a process we term the “lipid shunt.”

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Seasonal variation in population dynamics of Calanus finmarchicus in the south western Norwegian Sea

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Sustainable development of the Nephrops fishery in the Kattegat-Skagerrak region

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Biogeography of key mesozooplankton species in the North Atlantic, by manual counting methods, and egg production of *Calanus finmarchicus*

Here we present a new, pan-Atlantic compilation of data on key mesozooplankton species, including the possibly most important copepod, *Calanus finmarchicus*. Distributional data of ten representative zooplankton taxa, from recent (2000–2009) Continuous Plankton Recorder data, are presented, along with basin-scale data of the phytoplankton colour index. Then we present a compilation of data on *C. finmarchicus* including observations of abundance, demography, egg production and female size with accompanying data on temperature and chlorophyll. This is a contribution by Canadian, European and US scientists and their institutions. http://doi.pangaea.de/10.1594/PANGAEA.820732, http://doi.pangaea.de/10.1594/PANGAEA.824423, http://doi.pangaea.de/10.1594/PANGAEA.828393.

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**Bridging the gap between marine biogeochemical and fisheries sciences; configuring the zooplankton link**

Exploring climate and anthropogenic impacts on marine ecosystems requires an understanding of how trophic components interact. However, integrative end-to-end ecosystem studies (experimental and/or modelling) are rare. Experimental investigations often concentrate on a particular group or individual species within a trophic level, while tropho-dynamic field studies typically employ either a bottom-up approach concentrating on the phytoplankton community or a top-down approach concentrating on the fish community. Likewise the emphasis within modelling studies is usually placed upon phytoplankton-dominated biogeochemistry or on aspects of fisheries regulation. In consequence the roles of zooplankton communities (protists and metazoans) linking phytoplankton and fish communities are typically under-represented if not (especially in fisheries models) ignored. Where represented in ecosystem models, zooplankton are usually incorporated in an extremely simplistic fashion, using empirical descriptions merging various interacting physiological functions governing zooplankton growth and development, and thence ignoring physiological feedback mechanisms. Here we demonstrate, within a modelled plankton food-web system, how trophic dynamics are sensitive to small changes in parameter values describing
zooplankton vital rates and thus the importance of using appropriate zooplankton descriptors. Through a comprehensive review, we reveal the mismatch between empirical understanding and modelling activities identifying important issues that warrant further experimental and modelling investigation. These include: food selectivity, kinetics of prey consumption and interactions with assimilation and growth, form of voided material, mortality rates at different age-stages relative to prior nutrient history. In particular there is a need for dynamic data series in which predator and prey of known nutrient history are studied interacting under varied pH and temperature regimes.

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Web of Science (2015): Impact factor 3.512
Web of Science (2015): Indexed yes
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BFI (2011): BFI-level 2
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Web of Science (2011): Impact factor 3.142
Here we present a new, pan-Atlantic compilation and analysis of data on Calanus finmarchicus abundance, demography, dormancy, egg production and mortality in relation to basin-scale patterns of temperature, phytoplankton biomass, circulation and other environmental characteristics in the context of understanding factors determining the distribution and abundance of C. finmarchicus across its North Atlantic habitat. A number of themes emerge: (1) the south-to-north transport of plankton in the northeast Atlantic contrasts with north-to-south transport in the western North Atlantic, which has implications for understanding population responses of C. finmarchicus to climate forcing, (2) recruitment to the youngest copepodite stages occurs during or just after the phytoplankton bloom in the east whereas it occurs after the bloom at many western sites, with up to 3.5 months difference in recruitment timing, (3) the deep basin and gyre of the southern Norwegian Sea is the centre of production and overwintering of C. finmarchicus, upon which the surrounding waters depend, whereas, in the Labrador/Irminger Seas production mainly occurs along the margins, such that the deep basins serve as collection areas and refugia for the overwintering populations, rather than as centres of production, (4) the western North Atlantic marginal seas have an important role in sustaining high C. finmarchicus abundance on the nearby coastal shelves, (5) differences in mean temperature and chlorophyll concentration between the western and eastern North Atlantic are reflected in regional differences in female body size and egg production, (6) regional differences in functional responses of egg production rate may reflect genetic differences between western and eastern populations, (7) dormancy duration is generally shorter in the deep waters adjacent to the lower latitude western North Atlantic shelves than in the east, (8) there are differences in stage-specific daily mortality rates between eastern and western shelves and basins, but the survival trajectories for cohort development from CI to CV are similar, and (9) early life stage survival is much lower in regions where C. finmarchicus is found with its congeners, C. glacialis and/or C. hyperboreus. This compilation and analysis provides new knowledge for evaluation and parameterisation of population models of C. finmarchicus and their responses to climate change in the North Atlantic. The strengths and weaknesses of modeling approaches, including a statistical approach based on ecological niche theory and a dynamical approach based on knowledge of spatial population dynamics and life history, are discussed, as well as needs for further research.
Biological oceanography across the Southern Indian Ocean – basinscale trends in the zooplankton community

We present a study on the protozooplankton 45 mm and copepods larger than 50 mm at a series of contrasting stations across the Southern Indian Ocean (SIO). Numerically, over 80% of the copepod community across the transect was less than 650 mm in size, dominated by nauplii, and smaller copepods, while 80% of the biomass (as mg C m³) was larger than 1300 mm in body length. Predation by the carnivorous copepod Corycaeus sp. was estimated to be able to remove up to 2% d⁻¹ of the copepods o1000 mm in size. By the help of grazing models we estimated that primary producers were mainly grazed upon by ciliates and heterotrophic dinoflagellates (40–80% d⁻¹ combined) in temperate waters but appendicularians became increasingly important in the tropical waters grazing about 40% of the biomass per day. Despite their high abundance and biomass, copepods contributed less than 20% of the grazing at most stations. Secondary production was low (carbon specific egg production o0.14 d⁻¹) but typical for food limited oligotrophic oceans.

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Scopus rating (2016): CiteScore 2.76 SJR 1.453 SNIP 1.119
Web of Science (2016): Impact factor 2.48
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Web of Science (2015): Impact factor 2.684
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Sensitivity of Calanus spp. copepods to environmental changes in the North Sea using life-stage structured models

The copepods Calanus finmarchicus and C. helgolandicus co-exist in the North Sea, but their spatial distribution and phenomenology are very different. Long-term changes in their distributions seem to occur due to climate change resulting in a northward extension of C. helgolandicus and a decline of C. finmarchicus in this region. The aim of this study is to use life-stage structured models of the two Calanus species embedded in a 3D coupled hydrodynamic-biogeochemical model to investigate how the biogeography of C. finmarchicus and C. helgolandicus is modified by changes in ± 2°C sea water temperatures, overwintering and oceanic inflow in the North Sea. Life-stage structured models are validated against CPR data and vertical distributions north of the Dogger Bank in the North Sea for the reference year 2005. The model shows that 1) ± 2°C changes from the current level mainly influence the seasonal patterns and not the relative occurrence of the
two species, 2) changes due to oceanic inflow mainly appeared in the northern and southern part of the North Sea connected to the NE Atlantic and not in the central part and 3) the abundance of Calanus species were very sensitive to the degree of overwintering within the North Sea because it allows them to utilize the spring bloom more efficiently and independently of the timing and amount of oceanic inflow. The combination of lower temperatures, higher overwintering and oceanic inflow simulating the situation in the 1960s largely favoured C. finmarchicus and their relative contribution to Calanus spp. increased from 40% in the reference year to 72%. The +2°C scenario suggest that in a warmer future, C. finmarchicus is likely to decline and C. helgolandicus abundance will probably continue to increase in some areas.

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Web of Science (2017): Indexed yes
BFI (2016): BFI-level 2
Scopus rating (2016): CiteScore 3.4 SJR 1.944 SNIP 1.287
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Web of Science (2016): Indexed yes
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Scopus rating (2014): CiteScore 3.65 SJR 1.888 SNIP 1.445
Web of Science (2014): Impact factor 3.025
Web of Science (2014): Indexed yes
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Scopus rating (2013): CiteScore 3.87 SJR 2.37 SNIP 1.594
Web of Science (2013): Impact factor 3.986
ISI indexed (2013): ISI indexed yes
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BFI (2012): BFI-level 2
Scopus rating (2012): CiteScore 4.17 SJR 2.752 SNIP 1.775
Web of Science (2012): Impact factor 3.708
ISI indexed (2012): ISI indexed yes
Web of Science (2012): Indexed yes
BFI (2011): BFI-level 2
Scopus rating (2011): CiteScore 3.41 SJR 2.28 SNIP 1.326
Web of Science (2011): Impact factor 3.142
ISI indexed (2011): ISI indexed yes
Web of Science (2011): Indexed yes
BFI (2010): BFI-level 2
Scopus rating (2010): SJR 2.654 SNIP 1.58
We studied the response in development times of Calanus finmarchicus and Calanus helgolandicus to changes in temperature and food conditions. Grazing experiments were performed at different temperatures for both species, and the results were implemented in a stage-resolved zooplankton population model that predicted development times from biomass increments controlled by ingestion and metabolic losses. Predictions were validated against development data from the literature, and show that C. finmarchicus develops faster than C. helgolandicus below 11°C and slower above. The different relative development rates of the species are related to different temperature responses in ingestion rates. A temperature increase of 1°C to 2°C may have consequences for the relative contribution of C. helgolandicus and C. finmarchicus to the copepod community, and both seasonal and spatial displacements of the Calanus populations can be expected under climate change.
The effect of egg versus seston quality on hatching success, naupliar metabolism and survival of Calanus finmarchicus in mesocosms dominated by Phaeocystis and diatoms

We studied the effect of a developing Skeletonema marinoi/Phaeocystis spp. bloom on Calanus finmarchicus hatching success, early naupliar survival and metabolism. Our focus was (1) on the development of reproductive rates during a bloom initiation, peak and decline in relation to the production of potentially toxic algal metabolites and (2) on the proportional importance of female nutrition versus naupliar food environment for the production of viable nauplii. Despite polyunsaturated aldehyde (PUA) production by both S. marinoi and Phaeocystis sp., we did not observe any harmful effects on hatching success or naupliar survival and condition in any stages of the short-term (
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BFI (2009): BFI-level 1
Scopus rating (2009): SJR 1.183 SNIP 1.044
Web of Science (2009): Indexed yes
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Scopus rating (2008): SJR 1.245 SNIP 1.019
Web of Science (2008): Indexed yes
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Scopus rating (2002): SJR 1.366 SNIP 1.192
Web of Science (2002): Indexed yes
Scopus rating (2001): SJR 1.24 SNIP 1.135
Web of Science (2001): Indexed yes
Scopus rating (2000): SJR 1.442 SNIP 1.108
Web of Science (2000): Indexed yes
Scopus rating (1999): SJR 1.47 SNIP 1.288
Original language: English
DOIs:
10.1007/s00227-011-1843-z
Source: orbit
Source-ID: 314174
Research output: Research - peer-review › Journal article – Annual report year: 2011

Torsk og klima: Hvordan påvirker klimaændringerne torsken i Nordsøen?

General information
State: Published
Organisations: National Institute of Aquatic Resources, Section for Population Ecology and Genetics, Section for Ocean Ecology and Climate, Section for Public Sector Consultancy
Contributors: Rindorff, A., Brøgger Pedersen, J., Christensen, A., Grelckjrø, P., Höfle, H., Jonasdottir, S., Mariani, P., Munk, P., Møller, E. F., Maar, M., She, J., Tirsgaard, B., Vinther, M., Gislason, H.
Number of pages: 22
Publication date: 2012

Publication information
Place of publication: Charlottenlund
Publisher: Institut for Akvatiske Ressourcer, Danmarks Tekniske Universitet
Year: 2012
Original language: English
Electronic versions:
Torskogklima_web.pdf
Use of phytoplankton pigments in estimating food selection of three marine copepods

Experiments were carried out to test the use of algal pigments in zooplankton grazing studies with a special emphasis on estimation of food selection. The results demonstrated that pigment composition of the phytoplankton food was reflected closely in the three copepod species Centropages typicus, Temora longicornis and Acartia tonsa, as well as in their faecal pellets. The fate of the phytoplankton pigments was studied in A. tonsa fed a diatom and a cryptophyte at a low and a high prey concentration. The concentration of gut pigments generally declined rapidly within the first 5–10 min after feeding terminated. The decline in pigment concentration was faster in copepods fed high concentrations of phytoplankton and specially when fed the diatom. However, after 3h of no feeding only minor changes in gut pigment composition were found mainly in alloxanthin, chlorophyll a and diadinoxanthin. Traditional grazing experiments were carried out in parallel with pigment analysis in experiments where the copepod A. tonsa was exposed to a mixture of food organisms. The results demonstrated that the two methods gave similar results with regard to food selection and that with certain precautions, pigment analysis can be successfully used in food selection studies.

General information
State: Published
Organisations: Section for Ocean Ecology and Climate, National Institute of Aquatic Resources
Contributors: Oechsler-Christensen, B., Jonasdottir, S., Henriksen, P., Hansen, P.
Pages: 161-172
Publication date: 2012
Peer-reviewed: Yes

Publication information
Journal: Journal of Plankton Research
Volume: 34
Issue number: 2
ISSN (Print): 0142-7873
Ratings:
BFI (2018): BFI-level 1
Web of Science (2018): Indexed yes
BFI (2017): BFI-level 1
Scopus rating (2017): CiteScore 2.22 SJR 1.163 SNIP 0.979
Web of Science (2017): Impact factor 1.897
Web of Science (2017): Indexed yes
BFI (2016): BFI-level 1
Scopus rating (2016): CiteScore 1.92 SJR 1.123 SNIP 0.856
Web of Science (2016): Impact factor 1.983
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 1
Scopus rating (2015): CiteScore 1.77 SJR 1.029 SNIP 0.802
Web of Science (2015): Impact factor 2.15
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 1
Scopus rating (2014): CiteScore 2.24 SJR 1.098 SNIP 1.234
Web of Science (2014): Impact factor 2.407
Web of Science (2014): Indexed yes
BFI (2013): BFI-level 1
Scopus rating (2013): CiteScore 2.39 SJR 1.292 SNIP 1.101
Web of Science (2013): Impact factor 2.263
ISI indexed (2013): ISI indexed yes
Web of Science (2013): Indexed yes
BFI (2012): BFI-level 1
Scopus rating (2012): CiteScore 2.43 SJR 1.594 SNIP 1.109
Web of Science (2012): Impact factor 2.435
ISI indexed (2012): ISI indexed yes
Biological processes in the North Sea: comparison of Calanus helgolandicus and Calanus finmarchicus vertical distribution and production

Comparison of abundance, vertical distribution and reproduction of the cousin species, the boreal Calanus finmarchicus and temperate Calanus helgolandicus was carried out on four cruises in July and August north of the Dogger Bank, North Sea. During this period, the water column was highly stratified with a tidally generated deep chlorophyll maximum at 30 m depth. When co-occurring, a separation of the species was evident, where C. finmarchicus preferred colder (9°C) deeper waters, while C. helgolandicus stayed in the warmer (16°C) surface waters. Egg production rates (EPRs) were not statistically different between the species, and the population egg production depended primarily on female abundance and was generally higher for C. finmarchicus. EPRs of the Calanus spp. were best explained by the abundance of autotrophic and heterotrophic dinoflagellates, flagellates and ciliates. Hatching success remained over 90% at all times but the estimated naupliar survival (N1–N6) was only 9%. The chlorophyll maximum supported highest faecal pellet production and egg production at the stations close to the bank. This study shows that C. finmarchicus can remain reproductively active in the North Sea ecosystem longer than previously thought, and with warmer surface temperatures retreat to cooler, deeper waters utilizing the deep chlorophyll maximum. This implies that C. finmarchicus cannot be reliably sampled with the Continuous Plankton Recorder during summer.
Biological processes in the North Sea: vertical distribution and reproduction of neritic copepods in relation to environmental factors

We studied the vertical distribution and reproduction of dominant neritic copepod species in the Dogger Bank area and surrounding North Sea to reveal (i) if these species are concentrated in the subsurface chlorophyll maximum layer, (ii) if the chlorophyll maximum offers superior food conditions for reproduction compared with surface waters and (iii) if the secondary production is thus higher in the frontal areas with a subsurface chlorophyll maximum. In addition, we wanted to (iv) identify the most important environmental factors determining the reproduction of neritic copepods in the North Sea. We observed a higher egg production of cultured Acartia tonsa when fed with the seston from chlorophyll maximum, but no evidence of a higher copepod abundance in this layer. Secondary production was highest at the station closest to the upwelling of new nutrients, although seasonal differences in environmental variables probably overrode the differences between frontal and stratified stations. Copepod egg production on an annual basis seemed to be best predicted by the body size and specific fatty acids, with a high egg production, but low hatching success associated with a high EPA:DHA ratio. Total secondary production of small copepods seemed mainly related to the species composition, suggesting that factors controlling abundance of specific species rather than reproduction might be more important in determining the secondary production of copepods.

General information
State: Published
Organisations: Section for Ocean Ecology and Climate, National Institute of Aquatic Resources
Contributors: Koski, M., Jonasdottir, S., Bagaien, E.
Pages: 85-103
Publication date: 2011
Peer-reviewed: Yes

Publication information
Journal: Journal of Plankton Research
Volume: 33
Issue number: 1
ISSN (Print): 0142-7873
Ratings:
BFI (2018): BFI-level 1
Web of Science (2018): Indexed yes
BFI (2017): BFI-level 1
Scopus rating (2017): CiteScore 2.22 SJR 1.163 SNIP 0.979
Web of Science (2017): Impact factor 1.897
Web of Science (2017): Indexed yes
BFI (2016): BFI-level 1
Scopus rating (2016): CiteScore 1.92 SJR 1.123 SNIP 0.856
Web of Science (2016): Impact factor 1.983
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 1
Scopus rating (2015): CiteScore 1.77 SJR 1.029 SNIP 0.802
Web of Science (2015): Impact factor 2.15
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 1
Scopus rating (2014): CiteScore 2.24 SJR 1.098 SNIP 1.234
Web of Science (2014): Impact factor 2.407
Web of Science (2014): Indexed yes
BFI (2013): BFI-level 1
Scopus rating (2013): CiteScore 2.39 SJR 1.292 SNIP 1.101
Web of Science (2013): Impact factor 2.263
ISI indexed (2013): ISI indexed yes
Web of Science (2013): Indexed yes
BFI (2012): BFI-level 1
Scopus rating (2012): CiteScore 2.43 SJR 1.594 SNIP 1.109
Web of Science (2012): Impact factor 2.435
ISI indexed (2012): ISI indexed yes
Web of Science (2012): Indexed yes
BFI (2011): BFI-level 1
Scopus rating (2011): CiteScore 1.99 SJR 1.171 SNIP 1.049
Web of Science (2011): Impact factor 2.079
ISI indexed (2011): ISI indexed yes
Web of Science (2011): Indexed yes
BFI (2010): BFI-level 1
Scopus rating (2010): SJR 1.205 SNIP 0.983
Web of Science (2010): Impact factor 1.749
Web of Science (2010): Indexed yes
BFI (2009): BFI-level 1
Scopus rating (2009): SJR 0.935 SNIP 1.04
Web of Science (2009): Indexed yes
BFI (2008): BFI-level 1
Scopus rating (2008): SJR 1.178 SNIP 1.009
Web of Science (2008): Indexed yes
Scopus rating (2007): SJR 1.324 SNIP 1.218
Web of Science (2007): Indexed yes
Scopus rating (2006): SJR 1.197 SNIP 1.129
Web of Science (2006): Indexed yes
Scopus rating (2005): SJR 1.099 SNIP 1.055
Web of Science (2005): Indexed yes
Scopus rating (2004): SJR 1.033 SNIP 1.086
Scopus rating (2003): SJR 1.318 SNIP 1.289
Web of Science (2003): Indexed yes
Scopus rating (2002): SJR 1.113 SNIP 1.058
Web of Science (2002): Indexed yes
Scopus rating (2001): SJR 1.23 SNIP 0.992
Web of Science (2001): Indexed yes
Scopus rating (2000): SJR 1.651 SNIP 1.029
Web of Science (2000): Indexed yes
Scopus rating (1999): SJR 1.607 SNIP 1.174
Copepods and the biological pump: The potential effects of large vs. small copepods on vertical flux

General information
State: Published
Organisations: Section for Ocean Ecology and Climate, National Institute of Aquatic Resources
Contributors: Koski, M., Arendt, K. E., Lombard, F., Jonasdottir, S., Dutz, J., Kjellerup, S.
Number of pages: 143
Publication date: 2011

Host publication information
Title of host publication: Book of Abstracts
Source: orbit
Source-ID: 277482
Research output: Research › Conference abstract in proceedings – Annual report year: 2011

Effects of suspended sediments on copepods feeding in a glacial influenced sub-Arctic fjord

General information
State: Published
Organisations: Section for Ocean Ecology and Climate, National Institute of Aquatic Resources
Contributors: Arendt, K. E., Dutz, J., Jonasdottir, S., Jung-Madsen, S., Mortensen, J., Møller, E. F., Nielsen, T. G.
Pages: 1526-1537
Publication date: 2011
Peer-reviewed: Yes

Publication information
Journal: Journal of Plankton Research
Volume: 33
Issue number: 10
ISSN (Print): 0142-7873
Ratings:
BFI (2018): BFI-level 1
Web of Science (2018): Indexed yes
BFI (2017): BFI-level 1
Scopus rating (2017): CiteScore 2.22 SJR 1.163 SNIP 0.979
Web of Science (2017): Impact factor 1.897
Web of Science (2017): Indexed yes
BFI (2016): BFI-level 1
Scopus rating (2016): CiteScore 1.92 SJR 1.123 SNIP 0.856
Web of Science (2016): Impact factor 1.983
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 1
Scopus rating (2015): CiteScore 1.77 SJR 1.029 SNIP 0.802
Web of Science (2015): Impact factor 2.15
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 1
Scopus rating (2014): CiteScore 2.24 SJR 1.098 SNIP 1.234
Web of Science (2014): Impact factor 2.407
Web of Science (2014): Indexed yes
BFI (2013): BFI-level 1
Scopus rating (2013): CiteScore 2.39 SJR 1.292 SNIP 1.101
Web of Science (2013): Impact factor 2.263
Extensive cross-disciplinary analysis of biological and chemical control of Calanus finmarchicus reproduction during an aldehyde forming diatom bloom in mesocosms

Egg and faecal pellet production and egg hatching success of the calanoid copepod Calanus finmarchicus were monitored over a period of 14 days (14-28 April, 2008) while fed water from 4 differently treated mesocosms and ambient water. Two of the mesocosms used were inoculated with the polyunsaturated aldehyde (PUA)-producing diatom Skeletonema marinoi, while 2 received only nutrient additions with or without silica. The mesocosms developed blooms of S. marinoi, mixed diatoms or the haptophyte Phaeocystis pouchetii, respectively. Faecal pellet production of C. finmarchicus increased with increasing food availability. Egg production increased with time in all mesocosms to a maximum single female production of 232 eggs female\(^{-1}\) day\(^{-1}\) (average of 90 eggs female\(^{-1}\) day\(^{-1}\)) and followed the development of ciliates and P. pouchetii, but was not affected by the observed high (up to 15 nmol L\(^{-1}\)) PUA production potential of the phytoplankton. The hatching success of the eggs produced on the mesocosm diets was high (78-96%) and was not affected by either aldehydes in the maternal diet or exposure to the dissolved aldehydes in the water
Production and fate of copepod fecal pellets across the Southern Indian Ocean

General information
State: Published
Organisations: Section for Ocean Ecology and Climate, National Institute of Aquatic Resources
Contributors: Møller, E. F., Borg, M. A., Jonasdottir, S., Satapoomin, S., Jaspers, C., Nielsen, T. G.
Pages: 677-688
Publication date: 2011
Peer-reviewed: Yes

Publication information
Journal: Marine Biology
Volume: 158
Issue number: 3
ISSN (Print): 0025-3162
Ratings:
BFI (2018): BFI-level 1
Web of Science (2018): Indexed yes
BFI (2017): BFI-level 1
Scopus rating (2017): CiteScore 2.3 SJR 1.085 SNIP 0.936
Web of Science (2017): Impact factor 2.215
Web of Science (2017): Indexed yes
BFI (2016): BFI-level 1
Scopus rating (2016): CiteScore 2.41 SJR 1.269 SNIP 1.007
Web of Science (2016): Impact factor 2.136
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 1
Scopus rating (2015): CiteScore 2.21 SJR 1.349 SNIP 0.934
Web of Science (2015): Impact factor 2.375
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 1
Assessing the role of food quality in the production and hatching of Temora longicornis eggs

We utilized the varying fatty acid composition of phytoplankton to create 19 different food treatments based on different ratios of 5 potentially important fatty acids and offered these to the copepod Temora longicornis. Egg production and hatching was monitored and related to ingested carbon, dietary fatty acids and the utilization of maternal fatty acid reserves. Egg production rates depended on ingested carbon and the fatty acid 20:5n-3 from the diet and from the female reserves. Hatching success showed a significant dependence on the ingested and maternal fatty acids 22:6n-3, 18:5n-3 and 18:3n-3. Production of nauplii as a combination of egg production and hatching was highly dependent on the fatty acid 22:6n-3 and carbon ingestion. The study confirms the importance of n-3 polyunsaturated fatty acids for copepod reproduction and indicates that the female differentially utilizes its fatty acid reserves depending on dietary fatty acid availability during reproduction and that egg production and hatching are dependent on different dietary fatty acids.
Recruitment of lesser sandeel Ammodytes marinus in relation to density dependence and zooplankton composition

General information
State: Published
Organisations: Section for Population- and Ecosystem Dynamics, National Institute of Aquatic Resources, Section for Management Systems, Section for Ocean Ecology and Climate, Section for Shellfish
Contributors: Deurs, M. V., van Hai, R., Tomczak, M., Jonasdottir, S., Dolmer, P.
Pages: 249-258
Publication date: 2009
Peer-reviewed: Yes

Publication information
Journal: Marine Ecology Progress Series
Volume: 381
ISSN (Print): 0171-8630
Ratings:
BFI (2018): BFI-level 2
Web of Science (2018): Indexed yes
BFI (2017): BFI-level 2
Scopus rating (2017): CiteScore 2.53
Sandeel (Ammodytes marinus) recruitment in relation to density dependence and zooplankton composition

General information
Copepod reproduction is unaffected by diatom aldehydes or lipid composition

We investigated whether reduced reproductive success of copepods fed with diatoms was related to nutritional imbalances with regard to essential lipids or to the production of inhibitory aldehydes. In 10-d laboratory experiments, feeding, egg production, egg hatching success, and fecal pellet production of Temora longicornis were measured for six different diatom species as well as for a nondiatom control diet (Rhodomonas sp.). The experiments were accompanied by determinations of fatty acids, sterols, and polyunsaturated aldehydes (PUA) in the food. Although diatoms were generally ingested at high rates, they yielded a variable egg production response in copepods, ranging from high egg production in four species (two strains of Thalassiosira rotula, Chaetoceros affinis, and Thalassiosira weissflogii) to low egg production in two species (Leptocylindrus danicus and Skeletonema costatum). Egg hatching rates decreased after 4 d in all diatom treatments, irrespective of the egg production rate and without any relationship to diatom aldehyde production. Similarly, no evidence was found that diatoms are per se nutritionally inferior to nondiatom food. The lack of a distinct mechanism for the observed inhibitory activity of diatoms suggests that the cause(s) might be more complex. We suggest, as one possible explanation, that hatching-specific nutritional deficiencies might be induced by incomplete digestion following from the low gut passage time of diatoms, as indicated by a strong correlation between egg viability and fecal pellet production.

General information
State: Published
Organisations: Section for Ocean Ecology and Climate, National Institute of Aquatic Resources
Contributors: Dutz, J., Koski, M., Jonasdottir, S.
Pages: 225-235
Publication date: 2008
Peer-reviewed: Yes

Publication information
Journal: Limnology and Oceanography
Volume: 53
Issue number: 1
ISSN (Print): 0024-3590
Ratings:
BFI (2018): BFI-level 2
Web of Science (2018): Indexed yes
BFI (2017): BFI-level 2
Scopus rating (2017): CiteScore 3.81 SJR 1.871 SNIP 1.329
Web of Science (2017): Impact factor 3.595
Web of Science (2017): Indexed yes
BFI (2016): BFI-level 2
Scopus rating (2016): CiteScore 3.5 SJR 1.806 SNIP 1.253
"Good" and "bad" diatoms: development, growth and juvenile mortality of the copepod Temora longicornis on diatom diets

General information
State: Published
Organisations: Section for Ocean Ecology and Climate, National Institute of Aquatic Resources
Contributors: Koski, M., Wichard, T., Jonasdottir, S.
Pages: 719-734
Publication date: 2008
Peer-reviewed: Yes

Publication information
Journal: Marine Biology
Volume: 154
Issue number: 4
ISSN (Print): 0025-3162
Ratings:
BFI (2018): BFI-level 1
Web of Science (2018): Indexed yes
BFI (2017): BFI-level 1
Scopus rating (2017): CiteScore 2.3 SJR 1.085 SNIP 0.936
Web of Science (2017): Impact factor 2.215
Web of Science (2017): Indexed yes
BFI (2016): BFI-level 1
Scopus rating (2016): CiteScore 2.41 SJR 1.269 SNIP 1.007
Web of Science (2016): Impact factor 2.136
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 1
Scopus rating (2015): CiteScore 2.21 SJR 1.349 SNIP 0.934
Web of Science (2015): Impact factor 2.375
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 1
Scopus rating (2014): CiteScore 2.32 SJR 1.212 SNIP 1.031
Web of Science (2014): Impact factor 2.391
Web of Science (2014): Indexed yes
BFI (2013): BFI-level 1
Scopus rating (2013): CiteScore 2.4 SJR 1.276 SNIP 1.05
Web of Science (2013): Impact factor 2.393
ISI indexed (2013): ISI indexed yes
BFI (2012): BFI-level 1
Scopus rating (2012): CiteScore 2.43 SJR 1.319 SNIP 1.11
Web of Science (2012): Impact factor 2.468
ISI indexed (2012): ISI indexed yes
Web of Science (2012): Indexed yes
BFI (2011): BFI-level 1
Scopus rating (2011): CiteScore 2.22 SJR 1.155 SNIP 1.075
Web of Science (2011): Impact factor 2.276
ISI indexed (2011): ISI indexed yes
Web of Science (2011): Indexed yes
BFI (2010): BFI-level 1
Scopus rating (2010): SJR 1.248 SNIP 1.063
Web of Science (2010): Impact factor 2.011
Spring production of Calanus finmarchicus at the Iceland-Scotland Ridge

Distribution and reproduction activity of the calanoid copepod Calanus finmarchicus were studied in the waters between Scotland and Iceland in April 1997 during the expected time of the animals' ascent to surface waters following diapause. Ascent was taking place on both sides of the Iceland-Scotland Ridge, apparently from two separate overwintering centers. The population on the Faroe Shelf (FS) most likely came from the overwintering population in the Faroe Shetland Channel (FSC). Per capita egg production was highest on the FS (>30 eggs/female-1 day-1) and lowest in the Iceland Basin (10 eggs/female-1 day-1). The maximum clutch size recorded was on the FS (145 eggs). As the maximum clutch sizes that females produced were between 40% and 77% (area averages of the station maximum rates) of their size-specific reproduction potential, it is argued that egg production rates were generally food-limited. Chlorophyll a concentrations were, at all but one station, under 1 µg L-1. Chlorophyll-based ingestion could, theoretically, support the observed average egg production rates in the Iceland Basin and on the FS but only about 30% of the observed production at the stations in the East Icelandic Current (EIC). The carbon assimilated through ingestion of phytoplankton, Calanus own eggs and nauplii in the EIC was estimated to be too low to support the frequently observed production of clutches consisting of over 100 eggs. Cannibalism on eggs and nauplii was not likely to have constituted a significant component of dietary carbon intake. However, a combination of feeding and assimilation of reserved lipid remaining from overwintering could be sufficient to explain the observed per capita egg production rates. C. finmarchicus copepod stages 1-3 were only recorded in considerable numbers only on the FS. This suggests higher survival rates of eggs in the shelf waters.

General information
State: Published
Organisations: Section for Ocean Ecology and Climate, National Institute of Aquatic Resources, Institute Administration
Contributors: Jonasdottir, S., Richardson, K., Heath, M., Ingvardsdottir, A., Christoffersen, A.
Pages: 471-489
Publication date: 2008
Peer-reviewed: Yes

Publication information
Volume: 55
Issue number: 4
ISSN (Print): 0967-0637
Ratings:

BFI (2018): BFI-level 1
Web of Science (2018): Indexed yes
BFI (2017): BFI-level 1
Scopus rating (2017): CiteScore 2.66 SJR 1.342 SNIP 1.161
Web of Science (2017): Impact factor 2.384
Web of Science (2017): Indexed yes
BFI (2016): BFI-level 1
Scopus rating (2016): CiteScore 2.76 SJR 1.453 SNIP 1.119
Web of Science (2016): Impact factor 2.48
BFI (2015): BFI-level 1
Scopus rating (2015): CiteScore 2.77 SJR 1.403 SNIP 1.19
Web of Science (2015): Impact factor 2.684
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 1
Scopus rating (2014): CiteScore 2.67 SJR 1.568 SNIP 1.314
Web of Science (2014): Impact factor 2.566
Web of Science (2014): Indexed yes
BFI (2013): BFI-level 1
Scopus rating (2013): CiteScore 3.11 SJR 2.048 SNIP 1.313
Web of Science (2013): Impact factor 2.825
ISI indexed (2013): ISI indexed yes
Web of Science (2013): Indexed yes
BFI (2012): BFI-level 1
Scopus rating (2012): CiteScore 2.81 SJR 2.067 SNIP 1.206
Web of Science (2012): Impact factor 2.816
ISI indexed (2012): ISI indexed yes
BFI (2011): BFI-level 1
Scopus rating (2011): CiteScore 2.68 SJR 1.969 SNIP 1.211
Web of Science (2011): Impact factor 2.421
ISI indexed (2011): ISI indexed yes
Web of Science (2011): Indexed yes
BFI (2010): BFI-level 1
Scopus rating (2010): SJR 1.915 SNIP 1.228
Web of Science (2010): Impact factor 2.372
Web of Science (2010): Indexed yes
BFI (2009): BFI-level 1
Scopus rating (2009): SJR 1.794 SNIP 1.313
BFI (2008): BFI-level 2
Scopus rating (2008): SJR 1.54 SNIP 1.135
Web of Science (2008): Indexed yes
Scopus rating (2007): SJR 1.747 SNIP 1.163
Web of Science (2007): Indexed yes
Scopus rating (2006): SJR 1.921 SNIP 1.217
Web of Science (2006): Indexed yes
Scopus rating (2005): SJR 2.161 SNIP 1.398
Scopus rating (2004): SJR 2.192 SNIP 1.513
Scopus rating (2003): SJR 1.908 SNIP 1.429
Web of Science (2003): Indexed yes
Scopus rating (2002): SJR 2.308 SNIP 1.807
Scopus rating (2001): SJR 2.739 SNIP 1.699
Time series analysis of intrinsic and extrinsic drivers of sandeel recruitment in the North Sea with emphasize on species specific Calanus copepod abundances and population density dependence

General information
State: Published
Organisations: Section for Population- and Ecosystem Dynamics, National Institute of Aquatic Resources, Section for Management Systems, Section for Ocean Ecology and Climate, Section for Shellfish
Contributors: Deurs, M. V., Tomczak, M., van Hal, R., Jonasdottir, S., Dolmer, P.
Pages: 1-16
Publication date: 2008

Host publication information
Title of host publication: ICES CM 2008
Volume: Q:12
Publisher: International Council for the Exploration of the Sea
Source: orbit
Source-ID: 238533
Research output: Research › Article in proceedings – Annual report year: 2008

Perspectives on marine zooplankton lipids
We developed new perspectives to identify important questions and to propose approaches for future research on marine food web lipids. They were related to (i) structure and function of lipids, (ii) lipid changes during critical life phases, (iii) trophic marker lipids, and (iv) potential impact of climate change. The first addresses the role of lipids in membranes, storage lipids, and buoyancy with the following key question: How are the properties of membranes and deposits affected by the various types of lipids? The second deals with the importance of various types of lipids during reproduction, development, and resting phases and addresses the role of the different storage lipids during growth and dormancy. The third relates to trophic marker lipids, which are an important tool to follow lipid and energy transfer through the food web. The central question is how can fatty acids be used to identify and quantify food web relationships? With the fourth, hypotheses are presented on effects of global warming, which may result in the reduction or change in abundance of large, lipid-rich copepods in polar oceans, thereby strongly affecting higher trophic levels. The key question is how will lipid dynamics respond to changes in ocean climate at high latitudes?.

General information
State: Published
Organisations: Section for Ocean Ecology and Climate, National Institute of Aquatic Resources
Pages: 1628-1639
Publication date: 2007
Peer-reviewed: Yes

Publication information
Journal: Canadian Journal of Fisheries and Aquatic Sciences
Volume: 64
Issue number: 11
ISSN (Print): 0706-652X
Ratings:
BFI (2018): BFI-level 2
Web of Science (2018): Indexed yes
BFI (2017): BFI-level 2
Scopus rating (2017): CiteScore 2.44 SJR 1.329 SNIP 1.036
Web of Science (2017): Impact factor 2.631
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<td>SJR 1.439, SNIP 1.086</td>
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<td>2011</td>
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<td>SJR 1.452, SNIP 1.136</td>
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<td>2007</td>
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<td>SJR 1.609, SNIP 1.367</td>
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<td>SJR 1.583, SNIP 1.539</td>
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<td>SJR 2.112, SNIP 1.616</td>
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<td>SJR 1.777, SNIP 1.495</td>
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<td>2000</td>
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<td>SJR 2.125, SNIP 1.462</td>
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Supplemental effects of diet mixing on absorption of ingested organic carbon in the marine copepod *Acartia tonsa*

**General information**
State: Published
Organisations: Section for Ocean Ecology and Climate, National Institute of Aquatic Resources
Contributors: Thor, P., Koski, M., Tang, K., Jonasdottir, S.
Pages: 131-138
Publication date: 2007
Peer-reviewed: Yes

**Publication information**
Journal: Marine Ecology - Progress Series
Volume: 331
ISSN (Print): 0171-8630
Ratings:
BFI (2018): BFI-level 2
Web of Science (2018): Indexed yes
BFI (2017): BFI-level 2
Scopus rating (2017): CiteScore 2.53
Web of Science (2017): Impact factor 2.276
Web of Science (2017): Indexed yes
BFI (2016): BFI-level 2
Scopus rating (2016): CiteScore 2.4
Web of Science (2016): Impact factor 2.292
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 2
Scopus rating (2015): CiteScore 2.56
Web of Science (2015): Impact factor 2.361
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 2
Scopus rating (2014): CiteScore 2.75
Web of Science (2014): Impact factor 2.619
Web of Science (2014): Indexed yes
BFI (2013): BFI-level 2
Scopus rating (2013): CiteScore 2.79
Web of Science (2013): Impact factor 2.64
ISI indexed (2013): ISI indexed yes
Web of Science (2013): Indexed yes
BFI (2012): BFI-level 2
Scopus rating (2012): CiteScore 2.9
Web of Science (2012): Impact factor 2.546
ISI indexed (2012): ISI indexed yes
Web of Science (2012): Indexed yes
BFI (2011): BFI-level 2
Scopus rating (2011): CiteScore 2.85
Web of Science (2011): Impact factor 2.711
Zooplankton fatty acid composition in the Baltic Sea: spatial and interspecific variation

General information
State: Published
Organisations: Section for Ocean Ecology and Climate, National Institute of Aquatic Resources
Contributors: Rönkkönen, S., Jonasdottir, S., Lindén, E., Karjalainen, M., Viitasalo, M.
Publication date: 2006
Peer-reviewed: No

Publication information
Journal: ICES C.M./2006
Volume: F.05
Original language: English
Source: orbit
Source-ID: 227319
Research output: Research - peer-review › Journal article – Annual report year: 2007

Colloquium on diatom-copepod interactions
From 3 to 6 November 2002, a colloquium was convened at the Benthos Laboratory of the Stazione Zoologica Anton Dohrn on Ischia, Italy, with the goal of evaluating the present status of the effects of diatoms on their main consumers, planktonic copepods, and to develop future research strategies to enhance our understanding of such interactions. These included (1) toxic effects of diatom metabolites on copepods, particularly reproduction, and (2) nutritional effects of diatoms on juvenile to adult copepods. Key issues involved in the impact of diatoms on the dynamics of natural plankton communities in situ were also addressed. During the plenary session, the most recent advances on this topic were presented. The plenary session was followed by 3 working groups on (1) production of aldehydes by phytoplankton, (2) toxic and nutritional effects of diatoms on zooplankton, and (3) the chemistry of diatom defense, as well as of their nutritional quality. These working groups focused on suggesting future research needs for the different topics. As a result, several recommendations were outlined, including experimental studies. It became evident that interdisciplinary efforts are needed, involving chemists, oceanographers and experimentalists, since many of the biological observations under controlled conditions and in situ require an integrated approach, including chemical causation. Extensive field observations based on common protocols are also recommended for investigation of the intrinsic variability of such effects and their environmental controls. Laboratory experiments are seen to be essential for the full understanding of environmentally occurring processes.

General information
State: Published
Effects of dietary fatty acids on the reproductive success of the calanoid copepod Temora longicornis

General information
State: Published
Organisations: Section for Ocean Ecology and Climate, National Institute of Aquatic Resources
Contributors: Arendt, K., Jonasdottir, S., Hansen, P., Gärtner, S.
Pages: 513-530
Publication date: 2005
Peer-reviewed: Yes

Publication information
Journal: Marine Biology
Volume: 146
Issue number: 3
ISSN (Print): 0025-3162
Ratings:
BFI (2018): BFI-level 1
Web of Science (2018): Indexed yes
BFI (2017): BFI-level 1
Scopus rating (2017): CiteScore 2.3 SJR 1.085 SNIP 0.936
Web of Science (2017): Impact factor 2.215
Web of Science (2017): Indexed yes
BFI (2016): BFI-level 1
Scopus rating (2016): CiteScore 2.41 SJR 1.269 SNIP 1.007
Web of Science (2016): Impact factor 2.136
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 1
Scopus rating (2015): CiteScore 2.21 SJR 1.349 SNIP 0.934
Web of Science (2015): Impact factor 2.375
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 1
Scopus rating (2014): CiteScore 2.32 SJR 1.212 SNIP 1.031
Web of Science (2014): Impact factor 2.391
Web of Science (2014): Indexed yes
BFI (2013): BFI-level 1
Scopus rating (2013): CiteScore 2.4 SJR 1.276 SNIP 1.05
Web of Science (2013): Impact factor 2.393
ISI indexed (2013): ISI indexed yes
BFI (2012): BFI-level 1
Scopus rating (2012): CiteScore 2.43 SJR 1.319 SNIP 1.11
Web of Science (2012): Impact factor 2.468
ISI indexed (2012): ISI indexed yes
Web of Science (2012): Indexed yes
BFI (2011): BFI-level 1
Egg production and hatching success in the calanoid copepods Calanus helgolandicus and Calanus finmarchicus in the North Sea from March to September 2001

Spatial and seasonal egg production rates (E-r) and egg hatching success in the copepods Calanus finmarchicus and Calanus helgolandicus were measured in the North Sea from March to September. Food availability was monitored by chlorophyll and protist concentrations and three size fractions of seston fatty acids. Seasonal and spatial distribution and production differed between the species. Calanus finmarchicus was found only offshore of the 50-m isobath, with decreasing E-r (37-28 eggs female\(^{-1}\) day\(^{-1}\)) from March to July. Calanus helgolandicus had two abundance peaks, in spring and autumn, with a low in May during which time the highest E-r were observed (38 eggs female\(^{-1}\) day\(^{-1}\)). At other times, E-r in C. helgolandicus remained lower than in C. finmarchicus (similar to 20 eggs female\(^{-1}\) day\(^{-1}\)). Normalized E-r (E-n) in both C. finmarchicus and C. helgolandicus were positively related to ciliate biomass while only negative relationships were found for all other variables measured. Hatching success in both Calanus species combined was significantly correlated with the essential fatty acid ratio 22:6n3/20:5n3.

General information
State: Published
Organisations: Section for Ocean Ecology and Climate, National Institute of Aquatic Resources
Contributors: Jonasdottir, S., Trung, N. H., Hansen, F., Gärtner, S.
Pages: 1239-1259
Publication date: 2005
Peer-reviewed: Yes
Growth of pike larvae (Esox lucius) under different conditions of food quality and salinity

General information
State: Published
Organisations: Section for Ocean Ecology and Climate, National Institute of Aquatic Resources
Contributors: Engström-Öst, J., Lehtiniemi, M., Jonasdottir, S., Viitasalo, M.
Pages: 385-392
Publication date: 2005
Peer-reviewed: Yes

Publication information
Journal: Ecology of Freshwater Fish
Volume: 14
Issue number: 4
ISSN (Print): 0906-6691
Ratings:
BFI (2018): BFI-level 1
Web of Science (2018): Indexed yes
BFI (2017): BFI-level 1
Scopus rating (2017): CiteScore 1.65 SJR 0.83 SNIP 1.046
Web of Science (2017): Impact factor 1.832
Web of Science (2017): Indexed yes
BFI (2016): BFI-level 1
Scopus rating (2016): CiteScore 1.66 SJR 0.8 SNIP 0.852
Web of Science (2016): Impact factor 2.054
BFI (2015): BFI-level 1
Scopus rating (2015): CiteScore 1.92 SJR 1.041 SNIP 1.186
Web of Science (2015): Impact factor 2.052
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 1
Scopus rating (2014): CiteScore 1.58 SJR 0.874 SNIP 0.979
Web of Science (2014): Impact factor 1.701
Web of Science (2014): Indexed yes
BFI (2013): BFI-level 1
Scopus rating (2013): CiteScore 1.77 SJR 0.98 SNIP 1.049
Web of Science (2013): Impact factor 1.59
ISI indexed (2013): ISI indexed yes
Web of Science (2013): Indexed yes
BFI (2012): BFI-level 1
Scopus rating (2012): CiteScore 2.05 SJR 1.075 SNIP 1.279
Web of Science (2012): Impact factor 1.935
ISI indexed (2012): ISI indexed yes
Web of Science (2012): Indexed yes
BFI (2011): BFI-level 1
Scopus rating (2011): CiteScore 1.65 SJR 0.969 SNIP 0.907
Web of Science (2011): Impact factor 1.573
ISI indexed (2011): ISI indexed yes
BFI (2010): BFI-level 1
Scopus rating (2010): SJR 0.819 SNIP 0.979
Web of Science (2010): Impact factor 1.432
Web of Science (2010): Indexed yes
BFI (2009): BFI-level 1
Scopus rating (2009): SJR 0.831 SNIP 1.051
BFI (2008): BFI-level 2
Scopus rating (2008): SJR 0.956 SNIP 0.985
Web of Science (2008): Indexed yes
Scopus rating (2007): SJR 0.803 SNIP 0.879
Web of Science (2007): Indexed yes
Scopus rating (2006): SJR 0.881 SNIP 1.164
Web of Science (2006): Indexed yes
Scopus rating (2005): SJR 0.677 SNIP 0.919
Web of Science (2005): Indexed yes
Scopus rating (2004): SJR 0.913 SNIP 1.176
Web of Science (2004): Indexed yes
Scopus rating (2003): SJR 0.961 SNIP 0.796
Web of Science (2003): Indexed yes
Scopus rating (2002): SJR 0.966 SNIP 1.085
Web of Science (2002): Indexed yes
Scopus rating (2001): SJR 0.701 SNIP 0.697
Web of Science (2001): Indexed yes
Scopus rating (2000): SJR 0.563 SNIP 0.854
Scopus rating (1999): SJR 0.588 SNIP 0.681

Original language: English
DOIs:
10.1111/j.1600-0633.2005.00113.x
Source: orbit
Source-ID: 225388
Research output: Research - peer-review › Journal article – Annual report year: 2005

The linkage between frontal hydrography and distributional patterns of meso-zooplankton and fish larvae

General information
State: Published
Organisations: Section for Ocean Ecology and Climate, National Institute of Aquatic Resources, Institute Management, Section for Management Systems
Contributors: Munk, P., Jonasdottir, S., Thomsen, H. A., Diekmann, R.
Pages: 1
Publication date: 2005
Peer-reviewed: No

Publication information
Journal: I C E S Council Meeting
ISSN (Print): 1015-4744
Ratings:
ISI indexed (2013): ISI indexed no
Comparative ecology of over-wintering Calanus finmarchicus in the northern North Atlantic, and implications for life-cycle patterns

General information
State: Published
Organisations: Section for Ocean Ecology and Climate, National Institute of Aquatic Resources
Pages: 698-708
Publication date: 2004
Peer-reviewed: Yes

Publication information
Journal: ICES Journal of Marine Science
Volume: 61
Issue number: 4
ISSN (Print): 1054-3139
Ratings:
BFI (2018): BFI-level 1
Web of Science (2018): Indexed yes
BFI (2017): BFI-level 1
Scopus rating (2017): CiteScore 2.98
Web of Science (2017): Impact factor 2.906
Web of Science (2017): Indexed yes
BFI (2016): BFI-level 1
Scopus rating (2016): CiteScore 2.63
Web of Science (2016): Impact factor 2.76
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 1
Scopus rating (2015): CiteScore 2.18
Web of Science (2015): Impact factor 2.626
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 1
Scopus rating (2014): CiteScore 2.62
Web of Science (2014): Impact factor 2.377
Web of Science (2014): Indexed yes
BFI (2013): BFI-level 1
Scopus rating (2013): CiteScore 2.46
Web of Science (2013): Impact factor 2.525
ISI indexed (2013): ISI indexed yes
Web of Science (2013): Indexed yes
BFI (2012): BFI-level 1
Scopus rating (2012): CiteScore 2.35
Web of Science (2012): Impact factor 2.277
ISI indexed (2012): ISI indexed yes
Web of Science (2012): Indexed yes
BFI (2011): BFI-level 1
Variations in the C, N, P and fatty acid composition of zooplankton in the Baltic Sea: implications to herring growth

General information
State: Published
Organisations: Section for Ocean Ecology and Climate, National Institute of Aquatic Resources
Contributors: Rönkkönen, S., Jonasdottir, S., Lindén, E., Karjalainen, M., Viitasalo, M.
Publication date: 2004
Peer-reviewed: No

Publication information
Journal: ICES C.M. 2004/
Volume: L:04
Original language: English
Source: orbit
Source-ID: 227318
Research output: Research › Conference article – Annual report year: 2004

Effect of heterotrophic versus autotrophic food on feeding and reproduction of the calanoid copepod Acartia tonsa: relationship with prey fatty acid composition

We determined the egg production efficiency (EPE: egg production/ingestion) and egg viability of the copepod Acartia tonsa Dana under different heterotrophic and autotrophic diets. EPE was estimated in adult females either as the slope of the linear relationship between specific egg production (EPR) and ingestion rates, or as the quotient: EPR/ingestion rate. The diets, offered in monoculture, were the heterotrophic ciliates Strombidium sulcatum or Mesodinium pulex, the heterotrophic dinoflagellate Gymnodinium dominans, the autotrophic cryptophyte Rhodomonas salina and the autotrophic dinoflagellate Gymnodinium sanguineum. The diets were also analyzed for fatty acid contents and composition, relationships with EPE and reproductive success were determined. Clear differences were found in the fatty acid contents and the composition of the different diets offered, but these differences did not correspond with variability in EPE. However, egg viability was correlated with ingestion of certain prey essential fatty acids; interestingly, our data do not show that ciliates and heterotrophic dinoflagellates are nutritionally superior prey for marine copepods, contrary to general expectations.

General information
State: Published
Organisations: Section for Ocean Ecology and Climate, National Institute of Aquatic Resources
Contributors: Broglio, E., Jonasdottir, S., Calbet, A., Jakobsen, H. H., Saiz, E.
Pages: 267-278
Calanoid copepods feed and produce eggs in the presence of toxic cyanobacteria Nodularia spumigena

**General information**

*State:* Published  
*Organisations:* Section for Ocean Ecology and Climate, National Institute of Aquatic Resources  
*Contributors:* Koski, M., Schmidt, K., Engström-Öst, J., Vitasalo, M., Jonasdottir, S., Repka, S., Sivonen, K.  
*Pages:* 878-885  
*Publication date:* 2002  
*Peer-reviewed:* Yes

**Publication information**

*Journal:* Limnology and Oceanography  
*Volume:* 47  
*ISSN (Print):* 0024-3590  
*Ratings:*  
*BFI (2018):* BFI-level 2  
*Web of Science (2018):* Indexed yes  
*BFI (2017):* BFI-level 2  
*Scopus rating (2017):* CiteScore 3.81 SJR 1.871 SNIP 1.329  
*Web of Science (2017):* Impact factor 3.595  
*Web of Science (2017):* Indexed yes  
*BFI (2016):* BFI-level 2  
*Scopus rating (2016):* CiteScore 3.5 SJR 1.806 SNIP 1.253  
*Web of Science (2016):* Impact factor 3.383  
*Web of Science (2016):* Indexed yes  
*BFI (2015):* BFI-level 2  
*Scopus rating (2015):* CiteScore 3.93 SJR 2.423 SNIP 1.408  
*Web of Science (2015):* Impact factor 3.66  
*Web of Science (2015):* Indexed yes  
*BFI (2014):* BFI-level 2  
*Scopus rating (2014):* CiteScore 3.73 SJR 2.118 SNIP 1.581  
*Web of Science (2014):* Impact factor 3.794  
*BFI (2013):* BFI-level 2  
*Scopus rating (2013):* CiteScore 3.98 SJR 2.244 SNIP 1.564  
*Web of Science (2013):* Impact factor 3.615  
*ISI indexed (2013):* ISI indexed yes  
*Web of Science (2013):* Indexed yes  
*BFI (2012):* BFI-level 2
Diet composition and quality for Calanus finmarchicus egg production and hatching success off south-west Iceland

Egg production and hatching success of the copepod Calanus finmarchicus was measured during spring and summer in the waters south-west of Iceland. Egg-production rates varied greatly, both temporally and spatially, with highest average rates found at a station with low chlorophyll-a concentrations (0.4 mg m⁻³). Excluding this high production rate from statistical analysis, the remaining egg-production rates were found to be positively correlated with phytoplankton biomass, as well as with parameters representing healthy phytoplankton condition, food quality and diatom-type fatty acids. Hatching success of eggs was negatively correlated with some saturated and monounsaturated fatty acids related to phytoplankton senescence.

General information
State: Published
Organisations: Section for Ocean Ecology and Climate, National Institute of Aquatic Resources
Contributors: Jonasdottir, S., Gudfinnsson, H., Gislason, A., Astthorsson, O.
Pages: 1195-1206
Publication date: 2002
Peer-reviewed: Yes
Effects of toxic cyanobacteria on plankton assemblage: community development during decay of Nodularia spumigena

We studied the development of the plankton community in an artificially created toxic Nodularia spumigena bloom during a 2 wk enclosure study at the SW coast of Finland in the Baltic Sea. We measured bacterial abundance, dominant phytoplankton groups and ciliates, as well as concentrations of phytoplankton pigments, fatty acids, nodularin, protein and nutrients. A high POC:chl a (}

General information
State: Published
Organisations: Section for Ocean Ecology and Climate, National Institute of Aquatic Resources
Pages: 1-14
Publication date: 2002
Peer-reviewed: Yes

Publication information
Journal: Marine Ecology - Progress Series
Volume: 232
ISSN (Print): 0171-8630
Ratings:
BFI (2018): BFI-level 2
Web of Science (2018): Indexed yes
BFI (2017): BFI-level 2
Scopus rating (2017): CiteScore 2.53
Web of Science (2017): Impact factor 2.276
Web of Science (2017): Indexed yes
BFI (2016): BFI-level 2
Scopus rating (2016): CiteScore 2.4
Web of Science (2016): Impact factor 2.292
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 2
Scopus rating (2015): CiteScore 2.56
Web of Science (2015): Impact factor 2.361
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 2
Scopus rating (2014): CiteScore 2.75
Web of Science (2014): Impact factor 2.619
Web of Science (2014): Indexed yes
BFI (2013): BFI-level 2
Scopus rating (2013): CiteScore 2.79
Future marine zooplankton research - a perspective

During the Second Marine Zooplankton Colloquium (MZC2) 3 issues were added to those developed 11 yr ago during the First Marine Zooplankton Colloquium (MZC1). First, we focused on hot spots, i.e., locations where zooplankton occur in higher than regular abundance and/or operate at higher rates. We should be able to determine the processes leading to such aggregations and rates, and quantify their persistence. Second, information on the level of individual species, even of highly abundant ones, is limited. Concerted efforts should be undertaken with highly abundant to dominant species or genera (e.g., Oithona spp., Calanus spp., Oikopleura spp., Euphausia superba) to determine what governs their abundance and its variability. Third, zooplankton clearly influence biogeochemical cycling in the ocean, but our knowledge of the underlying processes remains fragmentary. Therefore a thorough assessment of variables that still need to be quantified is required to obtain an understanding of zooplankton contributions to biogeochemical cycling. Combining studies on the 7 issues from MZC1 with the 3 from MZC2 should eventually lead to a comprehensive understanding of (1) the mechanisms governing the abundance and existence of dominant zooplankton taxa, and (2) the control of biodiversity and biocomplexity, for example, in the tropical ocean where diversity is high. These recommendations come from an assemblage of chemical, physical and biological oceanographers with experience in major interdisciplinary studies, including modeling. These recommendations are intended to stimulate efforts within the oceanographic community to facilitate the development of predictive capabilities for major biological processes in the ocean.
Winter distribution of Calanus finmarchicus in the Northeast Atlantic

Data from plankton sampling and Optical Plankton Counter deployments during six cruises between December of 1994 and 1999 have been used to derive a composite three-dimensional distribution of the abundance of Calanus finmarchicus during winter (December-January) in the Norwegian Sea and Northeast Atlantic. There are two centres of abundance, one in the eastern Norwegian Sea and Faroe-Shetland Channel, associated with the interface between Norwegian Sea Deep Water and Intermediate Water layers, and another in the Irminger Sea southwest of Iceland in association with Labrador Sea Water. In the open Northeast Atlantic, the concentration of wintering animals is around 30% of that in the Norwegian Sea and the vertical distribution is more diffuse and on average deeper. Modelling studies have shown that the overwinter distribution and transport are key factors determining the spatial persistence of C. finmarchicus but, apart from the data presented here, there is little knowledge of these large-scale properties.
Buoyancy control of Calanus finmarchicus

General information
State: Published
Organisations: Section for Ocean Ecology and Climate, National Institute of Aquatic Resources
Contributors: Jonasdottir, S., Visser, A.
Pages: 5-6
Publication date: 1999
Peer-reviewed: No

Publication information
Journal: TASC Newsletter
Volume: 12
Original language: English
Source: orbit
Source-ID: 226078
Research output: Research › Journal article – Annual report year: 1999

Calanus finmarchicus egg production and food availability in the Faroe-Shetland Channel and northern North Sea: October-March

General information
State: Published
Organisations: Section for Ocean Ecology and Climate, National Institute of Aquatic Resources, Institute Administration
Contributors: Richardson, K., Jonasdottir, S., Hay, S., Christoffersen, A.
Pages: 153-162
Publication date: 1999
Peer-reviewed: Yes

Publication information
Journal: Fisheries Oceanography
Volume: 8
Issue number: Suppl. 1
ISSN (Print): 1054-6006
Ratings:
BFI (2018): BFI-level 2
Web of Science (2018): Indexed yes
BFI (2017): BFI-level 2
Scopus rating (2017): CiteScore 1.86
Web of Science (2017): Impact factor 1.794
Web of Science (2017): Indexed yes
BFI (2016): BFI-level 2
Scopus rating (2016): CiteScore 2.19
Web of Science (2016): Impact factor 1.578
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 2
Scopus rating (2015): CiteScore 2.4
Web of Science (2015): Impact factor 2.73
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 2
Scopus rating (2014): CiteScore 2.61
Web of Science (2014): Impact factor 2.543
Web of Science (2014): Indexed yes
BFI (2013): BFI-level 2
Scopus rating (2013): CiteScore 2.61
Web of Science (2013): Impact factor 2.542
ISI indexed (2013): ISI indexed yes
Web of Science (2013): Indexed yes
BFI (2012): BFI-level 2
Climate fluctuation and the spring invasion of the North Sea by Calanus finmarchicus

General information
State: Published
Organisations: Section for Ocean Ecology and Climate, National Institute of Aquatic Resources
Contributors: Heath, M., Backhaus, J., Richardson, K., Mckenzie, E., Slagstad, D., Beare, D., Dunn, D., Fraser, J., Gallego, A., Hainbucher, D., Hay, S., Jonasdottir, S., Madden, H., Mardaljeviv, J., Schacht, A.
Pages: 163-176
Publication date: 1999
Peer-reviewed: Yes

Publication information
Journal: Fisheries Oceanography
Volume: 8
Issue number: Suppl. 1
ISSN (Print): 1054-6006
Ratings:
BFI (2018): BFI-level 2
Web of Science (2018): Indexed yes
BFI (2017): BFI-level 2
Scopus rating (2017): CiteScore 1.86
Web of Science (2017): Impact factor 1.794
Web of Science (2017): Indexed yes
BFI (2016): BFI-level 2
Scopus rating (2016): CiteScore 2.19
Web of Science (2016): Impact factor 1.578
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 2
Scopus rating (2015): CiteScore 2.4
Web of Science (2015): Impact factor 2.73
Distribution and abundance of overwintering Calanus finmarchicus in the Faroe-Shetland Channel

General information
State: Published
Organisations: Section for Ocean Ecology and Climate, National Institute of Aquatic Resources
Contributors: Heath, M., Jonasdottir, S.
Pages: 40-60
Publication date: 1999
Peer-reviewed: Yes

Publication information
Journal: Fisheries Oceanography
Volume: 8
Issue number: Suppl. 1
ISSN (Print): 1054-6006
Ratings:
BFI (2018): BFI-level 2
Web of Science (2018): Indexed yes
Lipid content of Calanus finmarchicus during overwintering in the Faroe-Shetland Channel

General information
State: Published
Organisations: Section for Ocean Ecology and Climate, National Institute of Aquatic Resources
Contributors: Jonasdottir, S.
Lipids, buoyancy and the seasonal vertical migration of Calanus finmarchicus

General information
State: Published
Organisations: Section for Ocean Ecology and Climate, National Institute of Aquatic Resources
Contributors: Visser, A., Jonasdottir, S.
Pages: 100-106
Publication date: 1999
Peer-reviewed: Yes

Publication information
Journal: Fisheries Oceanography
Volume: 8
ISSN (Print): 1365-2419
Ratings:
Web of Science (2018): Indexed yes
Scopus rating (2017): CiteScore 1.86
Web of Science (2017): Impact factor 1.794
Web of Science (2017): Indexed yes
Scopus rating (2016): CiteScore 2.19
Web of Science (2016): Impact factor 1.578
Web of Science (2016): Indexed yes
Scopus rating (2015): CiteScore 2.4
Web of Science (2015): Impact factor 2.73
Web of Science (2015): Indexed yes
Scopus rating (2014): CiteScore 2.61
Web of Science (2014): Impact factor 2.543
Web of Science (2014): Indexed yes
Scopus rating (2013): CiteScore 2.61
Web of Science (2013): Impact factor 2.542
ISI indexed (2013): ISI indexed no
Web of Science (2013): Indexed yes
Scopus rating (2012): CiteScore 2.21
Web of Science (2012): Impact factor 2.195
ISI indexed (2012): ISI indexed no
Scopus rating (2011): CiteScore 2.42
Web of Science (2011): Impact factor 2.044
ISI indexed (2011): ISI indexed no
Web of Science (2011): Indexed yes
Web of Science (2010): Impact factor 2.015
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 (2003): Indexed yes
Web of Science (2002): Indexed yes
Original language: English
Source: orbit
Source-ID: 227754
Research output: Research - peer-review › Journal article – Annual report year: 1999
Climate fluctuations and the abundance of Calanus finmarchicus in the North Sea

General information
State: Published
Organisations: Section for Ocean Ecology and Climate, National Institute of Aquatic Resources
Publication date: 1997
Peer-reviewed: No

Publication information
Journal: ICES CM 1997/
Volume: T:05
Original language: English
Source: orbit
Source-ID: 225714
Research output: Research - peer-review › Journal article – Annual report year: 1998

Nutritional quality of two cyanobacteria: How rich is ‘poor’ food?
Cyanobacteria have often been described to be nutritionally inadequate and to interfere with zooplankton feeding. In laboratory experiments we offered 2 cyanobacteria, a unicellular Microcystis aeruginosa strain and the filamentous Nodularia spumigena, to the calanoid copepod Acartia tonsa as the sole diet and in food mixtures with the nutritious diatom Thalassiosira weissflogii. Egg production was used as criterion of food quality. The use of cyanobacteria alone was an insufficient diet. However, with increasing additions of M. aeruginosa and N. spumigena to the diatom, different effects were observed. Large additions of cyanobacteria resulted in lower egg production and often in elevated mortality of the females, but small additions of M. aeruginosa caused an increase of about 25% in egg production compared to a pure diatom diet. The influence of similar low concentrations of N. spumigena was weaker. We suppose that in the mixtures A. tonsa fed passively on M. aeruginosa, but not on the filaments of N. spumigena, and that ingested M. aeruginosa were used metabolically. As an additional test of the positive interactions between M. aeruginosa and T. weissflogii, different ratios of these species were offered to the copepods, while keeping the total food concentration constant. In mixtures egg production was higher than expected from the proportion of T. weissflogii. The highest egg production rates were observed at a 3:1 mixture of T. weissflogii to M. aeruginosa. We conclude that mono-specific food experiments may give a false impression of the nutritional quality of phytoplankton species. Cyanobacteria, which when fed alone prove to be poor food, may supplement the diet of A. tonsa

General information
State: Published
Organisations: Section for Ocean Ecology and Climate, National Institute of Aquatic Resources
Contributors: Schmidt, K., Jonasdottir, S.
Pages: 1-10
Publication date: 1997
Peer-reviewed: Yes

Publication information
Copepod recruitment and food composition: Do diatoms affect hatching success?

Laboratory experiments were conducted to differentiate between factors controlling the hatching success of copepod eggs. Factors that could affect viability of eggs; viz food quality, female condition and external factors were investigated. In a series of experiments the copepod Acartia tonsa Dana was fed several different diets while egg production and hatching success were monitored. The diet was analysed for fatty acid content as an indicator of food quality. Both egg production and hatching were found to be affected by the nutritional quality of the food. Hatching was also highly dependent on female fertility. External effects were tested by exposing eggs to diatom extracts. Negative effects were only evident at high extract concentrations, but disappeared when aeration was supplied to the solution. Oxygen measurements showed that failure to hatch was due to hypoxia in the extracts. No inhibitory or toxic effects of diatom cell components on hatching could be found.

General information
State: Published
Organisations: Section for Ocean Ecology and Climate, National Institute of Aquatic Resources
Contributors: Jonasdottir, S., Kiørboe, T.
Pages: 743-750
Publication date: 1996
Peer-reviewed: Yes

Publication information
Journal: Marine Biology
Volume: 125
Issue number: 4
ISSN (Print): 0025-3162
Ratings:
BFI (2018): BFI-level 1
Web of Science (2018): Indexed yes
BFI (2017): BFI-level 1
Scopus rating (2017): CiteScore 2.3 SJR 1.085 SNIP 0.936
Web of Science (2017): Impact factor 2.215
Web of Science (2017): Indexed yes
BFI (2016): BFI-level 1
Scopus rating (2016): CiteScore 2.41 SJR 1.269 SNIP 1.007
Web of Science (2016): Impact factor 2.136
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 1
Scopus rating (2015): CiteScore 2.21 SJR 1.349 SNIP 0.934
Web of Science (2015): Impact factor 2.375
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 1
Scopus rating (2014): CiteScore 2.32 SJR 1.212 SNIP 1.031
Web of Science (2014): Impact factor 2.391
Web of Science (2014): Indexed yes
BFI (2013): BFI-level 1
Scopus rating (2013): CiteScore 2.4 SJR 1.276 SNIP 1.05
Web of Science (2013): Impact factor 2.393
Contents and depletion of lipids in Calanus finmarchicus during overwintering in the North Atlantic

General information
State: Published
Organisations: Section for Ocean Ecology and Climate, National Institute of Aquatic Resources, Section for Population Ecology and Genetics
Contributors: Jonasdottir, S., St. John, M.
Pages: L:27
Publication date: 1995
Peer-reviewed: No

Publication information
Journal: I C E S Council Meeting
Copepod egg production in Long Island Sound, USA, as a function of the chemical composition of seston

General information
State: Published
Organisations: Section for Ocean Ecology and Climate, National Institute of Aquatic Resources
Contributors: Jonasdottir, S., Fields, D., Pantoja, S.
Pages: 87-98
Publication date: 1995
Peer-reviewed: Yes

Publication information
Journal: Marine Ecology Progress Series
Volume: 199
Issue number: 1-3
ISSN (Print): 0171-8630
Ratings:
BFI (2018): BFI-level 2
Web of Science (2018): Indexed yes
BFI (2017): BFI-level 2
Scopus rating (2017): CiteScore 2.53
Web of Science (2017): Impact factor 2.276
Web of Science (2017): Indexed yes
BFI (2016): BFI-level 2
Scopus rating (2016): CiteScore 2.4
Web of Science (2016): Impact factor 2.292
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 2
Scopus rating (2015): CiteScore 2.56
Web of Science (2015): Impact factor 2.361
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 2
Scopus rating (2014): CiteScore 2.75
Web of Science (2014): Impact factor 2.619
Web of Science (2014): Indexed yes
BFI (2013): BFI-level 2
Scopus rating (2013): CiteScore 2.79
Web of Science (2013): Impact factor 2.64
ISI indexed (2013): ISI indexed yes
Web of Science (2013): Indexed yes
BFI (2012): BFI-level 2
Scopus rating (2012): CiteScore 2.9
Web of Science (2012): Impact factor 2.546
ISI indexed (2012): ISI indexed yes
Web of Science (2012): Indexed yes
BFI (2011): BFI-level 2
Scopus rating (2011): CiteScore 2.85
Effects of food quality on the reproductive success of Acartia tonsa and Acartia hudsonica: laboratory observations

The effect of the chemical composition of food on the reproductive success of the copepods Acartia tonsa Dana and A. hudsonica Pinhey was studied in the laboratory. Laboratory-reared individuals were fed one of three monocultural diets at different stages of growth: the diatom Thalassiosira weissflogii, the flagellate Rhodomonas lens and the dinoflagellate Prorocentrum minimum. The diet was analyzed for carbon, nitrogen, protein, carbohydrate and fatty acid content.

Reproductive success was measured as eggs female(-1) day(-1) (E(r)) and as the hatching success of the eggs. The E(r) of Acartia spp. was correlated with protein and specific fatty acids [16:1 omega 7 (negative), 20:5 omega 3, 22:6 omega 3, and 18:0 (positive)] and, especially, the fatty acid composition of the algae expressed as the omega 3:omega 6 and 20:22 fatty acid ratios. The youngest diatom cultures and exponentially-growing flagellates displayed the highest E(r); the lowest E(r) was recorded for females fed the senescent diatom cultures. The development time of eggs was affected by the age of the phytoplankton culture fed to the female. Hatching success of eggs decreased with the age of the algal culture, but no correlation was found with the measured chemical components of the food.

General information
State: Published
Organisations: SUNY - The State University of New York
Contributors: Jonasdottir, S.
Pages: 67-81
Publication date: 1994
Peer-reviewed: Yes

Publication information
Journal: Marine Biology
Volume: 121
Issue number: 1
ISSN (Print): 0025-3162
Ratings:
BFI (2018): BFI-level 1
Web of Science (2018): Indexed yes
BFI (2017): BFI-level 1
Scopus rating (2017): CiteScore 2.3 SJR 1.085 SNIP 0.936
Web of Science (2017): Impact factor 2.215
Web of Science (2017): Indexed yes
BFI (2016): BFI-level 1
Scopus rating (2016): CiteScore 2.41 SJR 1.269 SNIP 1.007
Web of Science (2016): Impact factor 2.136
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 1
Scopus rating (2015): CiteScore 2.21 SJR 1.349 SNIP 0.934
Web of Science (2015): Impact factor 2.375
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 1
Scopus rating (2014): CiteScore 2.32 SJR 1.212 SNIP 1.031
Web of Science (2014): Impact factor 2.391
Web of Science (2014): Indexed yes
BFI (2013): BFI-level 1
Scopus rating (2013): CiteScore 2.4 SJR 1.276 SNIP 1.05
Web of Science (2013): Impact factor 2.393
ISI indexed (2013): ISI indexed yes
BFI (2012): BFI-level 1
Scopus rating (2012): CiteScore 2.43 SJR 1.319 SNIP 1.11
Web of Science (2012): Impact factor 2.468
ISI indexed (2012): ISI indexed yes
Web of Science (2012): Indexed yes
BFI (2011): BFI-level 1
Scopus rating (2011): CiteScore 2.22 SJR 1.155 SNIP 1.075
Web of Science (2011): Impact factor 2.276
ISI indexed (2011): ISI indexed yes
Web of Science (2011): Indexed yes
BFI (2010): BFI-level 1
Scopus rating (2010): SJR 1.248 SNIP 1.063
Web of Science (2010): Impact factor 2.011
Web of Science (2010): Indexed yes
BFI (2009): BFI-level 1
Scopus rating (2009): SJR 1.183 SNIP 1.044
Web of Science (2009): Indexed yes
BFI (2008): BFI-level 2
Scopus rating (2008): SJR 1.245 SNIP 1.019
Web of Science (2008): Indexed yes
Scopus rating (2007): SJR 1.368 SNIP 1.208
Web of Science (2007): Indexed yes
Scopus rating (2006): SJR 1.208 SNIP 1.082
Web of Science (2006): Indexed yes
Scopus rating (2005): SJR 1.259 SNIP 1.193
Web of Science (2005): Indexed yes
Scopus rating (2004): SJR 1.398 SNIP 1.216
Web of Science (2004): Indexed yes
Scopus rating (2003): SJR 1.347 SNIP 1.262
Web of Science (2003): Indexed yes
Scopus rating (2002): SJR 1.366 SNIP 1.192
Web of Science (2002): Indexed yes
Scopus rating (2001): SJR 1.24 SNIP 1.135
Web of Science (2001): Indexed yes
Scopus rating (2000): SJR 1.442 SNIP 1.108
Web of Science (2000): Indexed yes
Scopus rating (1999): SJR 1.47 SNIP 1.288
Original language: English
DOIs:
10.1007/BF00349475
The trophic role of mesozooplankton at 47°N, 20°W during the North Atlantic Bloom Experiment

The biomass and grazing rates of three size classes of mesozooplankton: 0.2-0.5 mm (small), 0.5-1.0 mm (medium) and 1.0-2.0 mm (large)—were quantified in the vicinity of 47-degrees-N, 20-degrees-W, from 25 April to 7 May (leg 4) and from 18 to 31 May 1989 (leg 5) as part of the North Atlantic Bloom Experiment (NABE) of the Joint Global Ocean Flux Study (JGOFS). Biomass was inversely related to body size, with the small size fraction accounting for >50% of the entire mesozooplankton biomass. Diel differences in biomass, however, were directly related to body size, indicating that vertical migration became more pronounced as the size of the animals increased. Total zooplankton biomass increased by almost a factor of 3 from the beginning to the end of the study. The average carbon-weight of individuals increased six-fold from leg 4 to leg 5 of the study. Carbon-specific rates of phytoplankton ingestion were (1) inversely related to body size; (2) greater at night for all size fractions; and (3) generally greater on leg 4 than on leg 5, particularly for the small size fraction. Grazing was dominated by the small size fraction (66% of the total grazing) on leg 4 and by the medium size fraction (44% of the total grazing) on leg 5. The removal of the daily primary production by mesozooplankton was not different from leg 4 to leg 5, averaging 2.7% day-1 (range 0.6-5.2% day-1). Comparisons of (1) estimated metabolic rates and (2) measured nitrogen excretion rates with daily rations of carbon and nitrogen, respectively, for zooplankton suggest that a phytoplankton diet only contributed about 50% of the daily carbon and nitrogen rations of animals. We hypothesize that mesozooplankton fecal pellets contributed <5% of the POC flux out of the euphotic zone measured with particle traps. However, we estimate that during leg 5, the active flux of dissolved nitrogen out of the euphotic zone due to mesozooplankton diel vertical migration was 26% of the passive PON flux.
Effects of food concentration on egg-production rates of two species of Pseudocalanus: Laboratory observations

General information
State: Published
Organisations: University of Washington
Contributors: Jonasdottir, S.
Pages: 33-43
Publication date: 1990
Peer-reviewed: Yes

Publication information
Journal: Journal of Experimental Marine Biology and Ecology
Volume: 130
ISSN (Print): 0022-0981
Ratings:
BFI (2018): BFI-level 1
Web of Science (2018): Indexed yes
BFI (2017): BFI-level 1
Scopus rating (2017): CiteScore 2.15 SJR 1.024 SNIP 0.89
Web of Science (2017): Impact factor 1.99
Web of Science (2017): Indexed yes
BFI (2016): BFI-level 1
Geographic variation in naupliar growth and survival in a harpacticoid copepod

General information
State: Published
Organisations: SUNY - The State University of New York
Contributors: Lonsdale, D., Jonasdottir, S.
Pages: 113-120
Publication date: 1990
Peer-reviewed: Yes

Publication information
Journal: Biological Bulletin
Volume: 179
ISSN (Print): 0006-3185
Ratings:
BFI (2018): BFI-level 1
Web of Science (2018): Indexed yes
BFI (2017): BFI-level 1
Scopus rating (2017): CiteScore 1.94 SJR 0.862 SNIP 0.671
Web of Science (2017): Impact factor 1.526
Web of Science (2017): Indexed yes
BFI (2016): BFI-level 1
Scopus rating (2016): CiteScore 1.68 SJR 0.869 SNIP 0.692
Web of Science (2016): Impact factor 1.95
BFI (2015): BFI-level 1
Scopus rating (2015): CiteScore 1.65 SJR 0.913 SNIP 0.586
Web of Science (2015): Impact factor 1.522
BFI (2014): BFI-level 1
Scopus rating (2014): CiteScore 1.45 SJR 0.681 SNIP 0.671
Web of Science (2014): Impact factor 1.638
Web of Science (2014): Indexed yes
BFI (2013): BFI-level 1
Scopus rating (2013): CiteScore 1.56 SJR 0.792 SNIP 0.63
Web of Science (2013): Impact factor 1.567
ISI indexed (2013): ISI indexed yes
BFI (2012): BFI-level 1
Scopus rating (2012): CiteScore 1.71 SJR 0.83 SNIP 0.797
Web of Science (2012): Impact factor 1.234
ISI indexed (2012): ISI indexed yes
BFI (2011): BFI-level 1
Scopus rating (2011): CiteScore 2 SJR 0.893 SNIP 0.845
Web of Science (2011): Impact factor 1.698
ISI indexed (2011): ISI indexed yes
BFI (2010): BFI-level 1
Scopus rating (2010): SJR 1.216 SNIP 1.032
Web of Science (2010): Impact factor 2.475
BFI (2009): BFI-level 1
Scopus rating (2009): SJR 1.044 SNIP 0.889
BFI (2008): BFI-level 1
Scopus rating (2008): SJR 0.845 SNIP 0.846
Scopus rating (2007): SJR 0.96 SNIP 0.963
Scopus rating (2006): SJR 0.738 SNIP 1.051
Projects:

Stock assessment and management of sole fishery (39383)
The project is focused on improving the stock assessment and management of sole fishery in the Skagerrak, Kattegat, Belts and Western Baltic Sea. Input to the stock assessment and the scientific basis for counseling on the sole population in Danish waters is developed continuously. This project aims at collecting biological data and acquire new knowledge on sole distribution as well as including knowledge from the fishermen and give advice on efficiency of using different fishing gear. The project is coordinated by DTU Aqua and is funded by the European Maritime and Fisheries Fund (EMFF).

Edelvang, K., Project Manager, National Institute of Aquatic Resources, Section for Oceans and Arctic
Jørgensen, O. A., Project Participant, National Institute of Aquatic Resources
Støttrup, J. G., Project Participant, National Institute of Aquatic Resources
Brown, E. J., Project Participant, National Institute of Aquatic Resources
Vinther, M., Project Participant, National Institute of Aquatic Resources
Storr-Paulsen, M., Project Participant, National Institute of Aquatic Resources
Boje, J., Project Participant, National Institute of Aquatic Resources
Hüssy, K., Project Participant, National Institute of Aquatic Resources
Jonasdottir, S., Project Participant, National Institute of Aquatic Resources
Munk, P., Project Participant, National Institute of Aquatic Resources
Krag, L. A., Project Participant, National Institute of Aquatic Resources
Hansen, J. H., Project Participant, National Institute of Aquatic Resources
Frandsen, R., Project Participant, National Institute of Aquatic Resources

16/09/2016 → 31/12/2018
Keywords: Research area: Fisheries Management
Project: Research

Intelligent oceanographically-based short-term fishery forecasting applications (GOFORIT) (39270)
Fisheries for short lived species are highly variable because they primarily target a low number of age groups within stocks as well as irregularly recruiting year-classes. As a result, environmental fluctuations (e.g., temperature, food abundance), which cause major changes in fish productivity, can lead to rapid fluctuations in fishing opportunities and stock declines if fishing effort is not reduced accordingly. Such fluctuations are not foreseen or accommodated by management advisory frameworks for short-lived species, which generally assume environmental stability and constant productivity. The GOFORIT project will use climatic and oceanographic process knowledge with the goal to improve short-term fishery forecasts. The project is coordinated by DTU Aqua. Funding The project is funded by EU, COFASP, ERA-NET.

MacKenzie, B., Project Coordinator, National Institute of Aquatic Resources, Section for Oceans and Arctic
van Deurs, M., Project Participant, National Institute of Aquatic Resources
Jonasdottir, S., Project Participant, National Institute of Aquatic Resources

01/04/2015 → 01/04/2018
Keywords: Research areas: Oceanography & Marine Populations and Ecosystem Dynamics & Marine Living Resources
Collaborators: National Institute for Marine Research and Development, Marine Research Institute Reykjavik, Institute of Marine Sciences, Central Fisheries Research Institute
Project: Research

Prey selection and behaviour of copepods fed on toxic and nontoxic algae
Xu, J., PhD Student, National Institute of Aquatic Resources
Kiærboe, T., Main Supervisor, National Institute of Aquatic Resources
Juel Hansen, P., Supervisor
Jonasdottir, S., Examiner, National Institute of Aquatic Resources
Saiz, E., Examiner
Selander, E., Examiner, National Institute of Aquatic Resources
Stipendie fra udlandet
01/12/2014 → 28/02/2018
Award relations: Prey selection and behaviour of copepods fed on toxic and nontoxic algae
Project: PhD

**Resolving the chemical structures responsible for the UV-visible spectroscopic properties of dissolved organic matter in aquatic environments**
Wünsch, U., PhD Student, National Institute of Aquatic Resources
Stedmon, C., Main Supervisor, National Institute of Aquatic Resources
Koch, B., Supervisor
Murphy, K. R., Supervisor
Jonasdottrtir, S., Examiner, National Institute of Aquatic Resources
Christensen, J. H., Examiner
Osburn, C. L., Examiner
Institut stipendie (DTU)
15/12/2014 → 28/02/2018
Award relations: Resolving the chemical structures responsible for the UV-visible spectroscopic properties of dissolved organic matter in aquatic environments
Project: PhD

**Effects of oil spill and spill response technologies on ecosystems in ice-covered arctic oceans**
Toxværd, K. U., PhD Student, National Institute of Aquatic Resources
Nielsen, T. G., Main Supervisor, National Institute of Aquatic Resources
Hjorth, M., Supervisor
Jonasdottrtir, S., Examiner, National Institute of Aquatic Resources
Dahlof, I., Examiner
Tremblay, J., Examiner
Industrial PhD
01/10/2014 → 10/09/2018
Award relations: Effects of oil spill and spill response technologies on ecosystems in ice-covered arctic oceans
Project: PhD

**Baltic zooplankton; eco-physiology and adaptation**
Christensen, A. M., PhD Student, National Institute of Aquatic Resources
Koski, M., Main Supervisor, National Institute of Aquatic Resources
Dutz, J., Supervisor, National Institute of Aquatic Resources
Jonasdottrtir, S., Examiner, National Institute of Aquatic Resources
Guerrero, H. G. D., Examiner
Tiselius, P., Examiner
Grundforskningsfonden
01/06/2014 → 20/12/2017
Award relations: Baltic zooplankton; eco-physiology and adaptation
Project: PhD

**Underwater time of flight image acquisition system (UTOFIA) (39240)**
This project offers a compact and cost-effective underwater imaging system for turbid environments and will fill the current gap between short-range, high-resolution conventional video and long-range low-resolution sonar systems. The camera system utilizes high frequency laser pulses synchronized with rapid shutter operations on nano second time scales to radically reduce the interference of back scatter on visual images. Using this range-gated imaging technology, the system will extend the imaging range by factor 2 to 3 over conventional video systems. At the same time, the system will provide video-rate 3D information. UTOFIA offers a new modus operandi for the main targeted domains of application: marine life monitoring, harbour and ocean litter detection, fisheries stock assessment and aquaculture, seabed mapping, offshore industry and civil security. The project is a collaborative effort between engineering companies producing the laser components, the camera systems, the software control and processing systems as well as the deployment platforms. The project also involves companies charged with integrating the system and its commercialization into the market place. The role of DTU Aqua is twofold; it is responsible for a series of field and laboratory trials to demonstrate the proof-of-concept and to feed back into the engineering design process, and it is responsible for the exploitation and dissemination dimension of the project, particularly with respect to marine science, fisheries and aquaculture applications. The consortium is coordinated by SINTEF, Norway. The project is funded by EU, Horizon2020.
Visser, A., Contact Person, National Institute of Aquatic Resources, Section for Oceans and Arctic
Mariani, P., Project Participant, National Institute of Aquatic Resources
Jonasdottrtir, S., Project Participant, National Institute of Aquatic Resources
Cruise with RV Dana. North Atlantic-Arctic Ocean Coupling: Deep water overflows and surface water outflow (NAAO) (38928)

This cruise was planned as an essential part of the Danish contribution to oceanographic fieldwork as part of the NAACOS project (2011-2014), funded by the Strategic Research Council. The main objectives of the cruise were to obtain a comprehensive suite of physical, chemical and biological oceanographic measurements across the East Greenland shelf, extending into the Greenland Sea, and to study the deep-water overflow in the Denmark Strait. The data collected on this cruise formed the basis of validating and improving circulation and ecological models in the region and developing new approaches to tracing freshwater and organic carbon exported from the Arctic. The project was funded by the Danish Center for Marine Research.

North Atlantic - Arctic coupling in a changing climate: Impacts on ocean circulation, carbon cycling and sea-ice (NAACOS) (38888)

Climate change is most pronounced at high latitudes, with rapid and dramatic changes observed in sea-ice coverage, circulation and the ecosystem. These changes have profound effects both at the regional scale as well as globally. The North Atlantic and Arctic Ocean are the headwaters of the thermohaline circulation (THC), the global heat engine responsible, amongst other things, for the relatively mild climate we experience in Denmark. Subtle change in sea-ice formation, deep water circulation, and freshwater supply on a relatively local scale will have repercussions around the world. More subtle still are the back-feedbacks these processes have on climate change. Sea-ice coverage and the earth’s albedo is one feedback, but there is also the drawdown and sequestering of atmospheric CO2 in deep waters by physical and biological processes. The whole is an intricate weave of interrelated mechanisms: the scientific challenge to draw together expertise across disciplines to address these issues was accomplished; the strategic outcome was a suite of knowledge-based tools designed to reduce the uncertainty and contribute to climate policies. The NAACOS team comprised a number of well-recognized scientists with profound experience and a significant international collaboration. NAACOS developed and refined oceanographic models using remote sensing and observations to evaluate the impact of high latitude climate change on circulation, deep water formation, sea-ice and carbon flux, and their implications at regional scales. The project was coordinated by DTU Aqua. The project was funded by the Danish Council for Strategic Research and a DHI student stipend.

Arctic plankton in a changing climate (38783)

Climate change impacts the marine arctic environment through changes in ice cover, ice thickness, irradiance, freshwater outflow, concentrations of nutrients and CO2 and the stratification. These factors determine the production, seasonality and fate of the planktonic primary production in the marine ecosystem. Plankton is fueling stocks of fish, marine birds and mammals and through that constitutes the base of the Greenlandic economy. The aim of the project was to gain knowledge about the interaction between climate, oceanography and plankton in the vulnerable Greenlandic marine ecosystem through field and laboratory experiments. The project was interdisciplinary and closely coordinated with the other projects under the Greenland Climate Research Centre. The project was funded by the Commission for Scientific Investigations in Greenland (KVUG), Greenland Climate Research Centre, Danish Centre for Marine Research, and Carlsberg Foundation. The project was coordinated by DTU Aqua.
EURO-BASIN: European basin-scale analysis, synthesis and integration (EURO-BASIN) (38899)
EURO-BASIN was designed to advance our understanding on the variability, potential impacts, and feedbacks of global change and anthropogenic forcing on the structure, function and dynamics of the North Atlantic and associated shelf sea ecosystems as well as the key species influencing carbon sequestration and ecosystem functioning. Like the entire biosphere, marine ecosystems such as the North Atlantic and its associated shelf sea ecosystems can be characterized by emergent properties controlled by a dynamic network of interactions and relationships and not static entities. This system complexity is what Martin Luther King Jr. called "an inescapable network of mutuality" scientists today define as complex adaptive systems (CASs). EURO-BASIN has represented the first attempt of creating future prognosis of marine ecosystem states sensitive to CAS dynamics using as its test case the North Atlantic. Long-term prediction of the status of these CAS systems, population dynamics of key species and hence management of marine systems requires the implementation and advancement of an ecosystem approach for the management of marine resources sensitive to CAS dynamics. What is the ecosystem approach? Unlike a single species approach, the ecosystem approach takes into account population and ecosystem responses to changes in the Earth's climate, fisheries, and interactions between them. In EURO-BASIN not only did we monitor and assess how North Atlantic marine ecosystems behaved in the past, but also predict how they will respond under possible future climate change scenarios. Hence, the results of this project have provided important recommendations for better marine resource management in the European Union. The project had participants from 23 European universities and research institutions as well as collaborations with key institutions and Universities in the US and Canada. The project was coordinated by DTU Aqua. The project was funded by EU, Framework Programme 7.
St. John, M., Project Manager, National Institute of Aquatic Resources, Section for Marine Ecology and Oceanography
Köster, F., Project Manager, National Institute of Aquatic Resources
MacKenzie, B., Project Manager, National Institute of Aquatic Resources
Andersen, K. H., Project Participant, National Institute of Aquatic Resources
Jonasdottir, S., Project Participant, National Institute of Aquatic Resources
Kiørboe, T., Project Participant, National Institute of Aquatic Resources
Koski, M., Project Participant, National Institute of Aquatic Resources
Munk, P., Project Participant, National Institute of Aquatic Resources
Stæhr, K., Project Participant, National Institute of Aquatic Resources
Vinther, M., Project Participant, National Institute of Aquatic Resources
Visser, A., Project Participant, National Institute of Aquatic Resources
Grigorov, I., Contact Person, National Institute of Aquatic Resources
FP7 Contract ID: 264933
01/01/2010 → 31/12/2014
Keywords: Research areas: Marine Populations and Ecosystem Dynamics & Oceanography & Marine Living Resources
Project: Research

Fatty acids in the marine food chain (38160)
Primary production by autotrophic phytoplankton fuels the marine ecosystem and this energy is passed through the food web by trophic interactions. Understanding how energy flows through these interactions is vital for understanding how marine ecosystems function. The efficiency of energy transfer from primary producers to higher trophic levels depends on the efficiency of secondary producers utilizing the new carbon. This crucial link is still poorly understood and most often we observe that secondary production is not simply correlated with phytoplankton biomass. However, reproduction and growth of secondary producers, such as copepods, depend also on food quality. The goal of this project is to investigate the effect of essential fatty acids on copepod reproduction, growth and survival. Essential fatty acid are the ones the copepod need but has to attain from the food, as it cannot synthesize those de-novo. The project is based on series of laboratory, field and mesocosm studies with the focus on understanding on how food composition, both chemical composition and type affect growth and mortality all contribution to population dynamics of the copepod species. In addition the project has a strong teaching factor for masters and PhD students in form of advanced summer schools. The project is coordinated by DTU Aqua.
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01/01/2004 → 31/12/2013
Activities:

ICES - Working Group on Mackerel and Horse Mackerel Egg Surveys - WGMEGS (External organisation)
Period: 2015
Sigrun Jonasdottir (Participant)
National Institute of Aquatic Resources
Section for Marine Ecology and Oceanography
Degree of recognition: International

Related external organisation

ICES - Working Group on Mackerel and Horse Mackerel Egg Surveys - WGMEGS
Activity: Membership › Membership of committees, commissions, boards, councils, associations, organisations, or similar