

# Special volume of “Biogeoscience”:

Catastrophic reduction of sea-ice in the Arctic Ocean  
– its impact on the marine organisms and  
ecosystems in the polar region –

This special volume will be mainly composed of results from  
two on-going Japanese projects for the Arctic Ocean marine ecosystem;

- “ECOARCS/GRENE” project led by Dr. T. KIKUCHI
- The project titled “Catastrophic reduction of sea-ice in the Arctic Ocean – its impact on the marine ecosystems in the polar region–” led by Dr. N.HARADA

Guest Editors: T. Hirawake, Y. Watanuki, J. Grebmeier, M. Chierici, M. Yamamoto-Kawai, M. Sampei, and K. Suzuki (Biogeoscience editor)



# Biogeosciences

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Definitions

## Biogeosciences (BG)

Co-Editors-in-Chief:

Michael Bahn, Katja Fennel, Jürgen Kesselmeier, S.W.A. Naqvi & Albrecht Neftel

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## News: 10th anniversary of Biogeosciences

24 July 2014

We are very pleased to announce the 10th anniversary of Biogeosciences; its first paper was published on 13th August 2004. Founded by Jürgen Kesselmeier and Jean-Pierre Gattuso, the journal has achieved rapid success and has ranked amongst the leading journals in geosciences as well as the top 25% of journals in ecology for several years. Three times in 2010 and twice in 2011, Biogeosciences gained the highest percent increase in total citations amongst all journals in the field of environment & ecology (<http://sciencewatch.com>). Recently we introduced, among other improvements, a free copy-editing service for all manuscripts and brought greater transparency to post-discussion review. We sincerely thank all editors, reviewers and authors for contributing to the tremendous success of Biogeosciences. We are sure that with their support the journal will continue to maintain its high level of excellence and achieve greater success in the future.

## Aims and Scope

Biogeosciences (BG) is an international scientific journal dedicated to the publication and discussion of research articles, short communications and review papers on all aspects of the **interactions** between the biological, chemical and physical processes in terrestrial or extraterrestrial life with the geosphere, hydrosphere and atmosphere. The objective of the journal is to cut across the boundaries of



Scheduled Special Issues

Transparent Post-Discussion Review introduced

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- 10th anniversary of Biogeosciences
- The University of Bremen and Copernicus Publications agree on central billing of publication fees
- Transparent Post-Discussion Review
- Article-level metrics available
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## Recent Papers

### 02 | BG, 21 Oct 2014:

Seasonal evolution of net and regenerated silica production around a natural Fe-fertilized area in the Southern Ocean estimated with Si isotopic approaches

### 03 | BG, 20 Oct 2014:

Forest response to increased disturbance in the central


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## Scheduled Special Issues

### Aerosol-Cloud Coupling And Climate Interactions in the Arctic (ACCACIA) (ACP/BG Inter-Journal SI)

- Guest Editors: W. T. Sturges, L. M. Russell, C. Robinson, L. Bopp, H. Wernli, and M. Krämer
- Timeline: 26 Sep 2014 – 30 Sep 2017

### Catastrophic reduction of sea ice in the Arctic Ocean – its impact on the marine organisms and ecosystems in the polar region

- Guest Editors: T. Hirawake, Y. Watanuki, J. Grebmeier, M. Chierici, M. Yamamoto-Kawai, M. Sampei, and K. Suzuki
- Timeline: 2 Sep 2014 – 30 Apr 2015
- [More Information](#)

The topical target areas are located in the Arctic Ocean and its marginal seas, including the Bering Sea. The marine ecosystem surrounding the Arctic Ocean is complicated, and it is difficult to predict the future because "disadvantage" phenomena such as ocean acidification and "advantage" phenomena such as improving light conditions for marine organisms, respectively, are simultaneously progressing. Investigations such as observations by research vessels and satellites, culture and breeding of plankton, and marine ecosystem models are necessary to understand not only the current status but also prediction of changes in Arctic environments and the impact on the ecosystem. In this special volume, the latest research findings are reported as follows: (1) description of recent environmental changes, physical and chemical properties associated with Arctic climate change; (2) temporal changes in primary production, secondary production and lower trophic level ecosystems; (3) recent changes in behavior and distribution of higher trophic level organisms including marine mammals; (4) the physiological response of marine phyto- and zooplankton having carbonate tests on warming or freshening associated with sea-ice melting; and (5) development of a new model for marine ecosystems in the Arctic Ocean, to reproduce the primary production by using the model and to understand the response of marine ecosystems on the catastrophic environmental changes caused by rapid sea-ice reduction. These reports can be valuable for not only for understanding the current environmental changes in the Arctic Ocean but also for obtaining new predictions of marine ecosystems of both low and high trophic level organisms including fish resources in this area. The prediction of fish resources in the Arctic Ocean would contribute to the planning of not only Japanese but also international policy for fisheries. This special issue is open to all submissions within the scope of this special issue.



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## Recent Papers

**06 | BGD, 17 OCT 2014:**  
Soil organic carbon in the Sanjiang Plain of China: storage, distribution and controlling factors

**07 | BGD, 16 Oct 2014:**  
Shape of the oceanic nitracline

**08 | BGD, 16 Oct 2014:**

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# Title list of Planned articles to be submitted to the special issue of Biogeoscience

MSNo.	Authors	Title
1	Jiang, K., J. Zhang*, S. Hirayama, M. Yamamoto-Kawai, T. Hirawake	Biogeochemical process of surface sediment and its changes in Chukchi Sea using rare earth elements
2	Kondo Y., H. Obata, A. Ooki, S. Nishino, T. Kukuchi, N. Hioki, K. Kuma	Distributions of trace metals (Cu, Zn, Mn, Ni, Pb and Cd) in the western Arctic Ocean
3	Mizobata K., E. Watanabe, N. Kimura	Intraseasonal variability of the Beaufort Gyre and its impact on the distribution of Pacific-origin water in the Pacific sector of the Arctic Ocean
4	Nishino, S. and T. Kikuchi+GRENE collaborator	Water mass characteristics and their temporal changes in the biological hotspot of the southern Chukchi Sea
5	Ota, N., H. Ueno, M. Itoh, T. Kikuchi, K. Mizobata, E. Watanabe	Heat budget of the Chukchi Sea
6	Yamamoto-Kawai, M. and Mifune T.	Distribution of aragonite undersaturated water in Chukchi Sea
7	Zhang* J., S. Hirayama, K. Jiang, H. Narita, S. Nishino, M. Yamamoto-Kawai, K. Shimada and T. Kikuchi	Water mass structure and nutrient distribution of the western Arctic Ocean using chemical tracers
8	Fujiwara A., T. Hirawake, K. Suzuki, I. Imai, L. Eisner, S. Saitoh	Inter annual variability of phytoplankton community size structure and primary production in the Chukchi and Bering Sea shelf region: a satellite remote sensing approach
9	Ikenoue T., K.R. Björklund, P. Dumitrica, S. Kruglikova, A. Krabberød, K. Kimoto	Joergensenium xxxxx n. gen., n. sp. (Entactinaria, Radiolaria): its distribution of Canada basin and northwind abyssal plain in the western Arctic Sea.
10	Itoh M., M. Kitamura, J. Onodera, A. Fujiwara, T. Hirawake, S. Nishino, T. Kikuchi	Temporal variability of zooplankton biomass from ADCP time series data in the Western Arctic
11	Kimoto, K., J. Onodera, N. Harada, M. Honda, Y. Tanaka	Calcareous zooplankton flux seasonality in the Arctic sediment traps.
12	Matsuno, K., A. Yamaguchi, A. Fujiwara, J. Onodera, E. Watanabe, N. Harada, T. Kikuchi	Seasonal changes in zooplankton swimmer and faecal pellets collected using a sediment trap in the western Arctic Ocean
13	Onodera, J., S. Nishino, Y. Kawaguchi	Fixed point observation of diatom flora and water mass condition in the northern Chukchi Sea in late summer 2013
14	Ooki, A., K. Kuma, S. Nishino, T. Kikuchi	Measurements of biogenic halocarbons in the Chukchi sea and Arctic Ocean basin in 2012.
15	Uchimiya M., C. Motegi, Y. Kawaguchi, J. Inoue, S. Nishino, T. Nagata	Atmospheric forcing resulted in enhanced heterotrophic prokaryote production in the water column of the Chukchi Sea, western Arctic Ocean in early fall
16	Yamaguchi, A., K. Matsuno, A. Fujiwara, J. Onodera, E. Watanabe, N. Harada, T. Kikuchi	Life cycle of dominant calanoid copepods in the western Arctic Ocean.
17	Saruwatari, K., M. Satoh, N. Harada, I. Suzuki, Y. Shiraiwa	Morphological responses of subarctic and Arctic <i>Emiliana huxleyi</i> coccoliths to the growth temperatures and salinity during culture
18	Satoh M., F. Itoh, K. Saruwatari, N. Harada, J. Onodera, M. Itoh, I. Suzuki, Y. Shiraiwa	Isolation and characterization to the growth temperature of coccolithophore, <i>Emiliana huxleyi</i> from the Arctic Sea
19	Kokubun, N, T. Yamamoto, D. Kikuchi, Y. Watanuki, A. Kitaysky, A. Takahashi	Foraging habitat use of thick-billed murres: why do they go farther from the colony?
20	Nakano, T., A. Yamazaki, H. Sasaki, J. Yamamoto, Y. Watanuki, Y. Sakurai	Changes in the abundance of macro-epibenthos and demersal fish collected by bottom-trawl in 1990's and 2010's in northern Bering and Chukchi Seas
21	Nishizawa, B., K. Matsuno, Y. Iwahara, E. Labunski, K. Kuletz, A. Yamaguchi, Y. Mitani, Y. Watanuki	Spatial distribution of krill and Short-tailed shearwaters in the Bering Sea and Arctic during summer
22	Otsuki, M., Y. Mitani*, D. Mizuguchi, K. Amakasu, S. Nishino, T. Kikuchi	The presence of fin whale vocalizations is correlated with zooplankton abundance in the southern Chukchi Sea.
23	Sasaki, H.*, K. Matuno, A. Yamaguchi	Habitat model for zooplankton
24	Yamamoto, T.*, K. Hoshina, B. Nishizawa, C.E. Meathrel, R.A. Phillips, Y. Watanuki	Movement of short-tailed shearwaters with environmental gradient in the sub-Arctic Pacific and Arctic seas through summer to autumn
25	Watanabe E	Relationship of primary productivity around the Chukchi Borderland with Beaufort Gyre Variation
26	Yoon S., M.J. Kishi, E. Watanabe	Estimating potential habitat for chum salmon ( <i>Oncorhynchus keta</i> ) in the Western Arctic using a bioenergetics model coupled with a three-dimensional lower trophic ecosystem model



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