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The biogeochemistry of the Laptev and East Siberian Sea.

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The biogeochemistry of the Laptev and East Siberian Sea.

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The Siberian shelf seas are a very biogeochemical dynamic region. They receive a lot of river runoff containing nutrients and dissolved and particulate organic matter; exchange waters with the deep Arctic Ocean; exchange gases with the atmosphere and have an extensive biological activity. These processes impact the concentrations of chemical constituents that set the frame for the magnitude of the fluxes. In the summer 2008 we studied the biogeochemistry of the waters in the eastern Laptev Sea, the East Siberian Sea and the western Chukchi Sea during the International Siberian Shelf Study 2008 (ISSS-08). The findings reveal substantial differences from close to the coast and northwards as well as between the western and eastern regions. Close to the coast the signature is influenced by mixing between the river runoff and the seawater, while the outer regions show a more typical marine signature. Overlaying this pattern is the impact by microbial decay of organic matter, in the west dominated by terrestrial OM and in the east by marine OM. The microbial decay results in low oxygen levels, reaching as low as 40 % in the shallow areas.

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