



Organic carbon release from coastal erosion of the Bykovsky Peninsula, Laptev Sea, Russia

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Arctic permafrost coasts make up about one third of the global coastline and are likely to witness some of the most dramatic changes linked to changing environmental conditions in the 21st century. Increasing sea level, warming sea temperatures, longer open water season and increasing open-water area all bear the potential to increase the impact on sediment and nutrient pathways in the nearshore zone.

In this study, we focus on a well studied location, the Bykovsky Peninsula, southern Laptev Sea, Russia to provide high resolution estimations of organic carbon release from its coastline. We build on recently published datasets from studies related to coastal geomorphology, paleogeography and oceanography, all available at large scale, to map and determine the fluxes of carbon coming from the coast throughout the second half of the twentieth century and to provide prospective numbers on the release of organic carbon in the years to come.