

Environmental Conditions on the SW Iceland Shelf over the Last 500 Years

Umhvervisumstøður í útsynningspartinum á íslenska landgrunninum tey seinastu 500 árinu

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Úrtak

Umhvervisbroytingar frá 1400 til 1993 vórðu greinaðar við at brúka royndir úr einum kassakjarna, sum varð tikin upp úr útsynningspartinum á íslenska landgrunninum. Lívrúnnið kolevni, stöðug C og O istotop-lutföll, foraminiferal savnan og álógumagnetisk parameter vórðu máld móti royndum úr kjarnanum. Hetta tilfar varð plottað móti kalendaraárum og samanborið við vísitalvur yvir havís úr Íslandi. Smáar, men reglu-fastar, broytingar í hesum *proxies* vórðu tulkaðar á tann hátt, at tær vístu økt jarðarslit í Íslandi, minni gróður í havinum og minkað saltinnihald í sambandi við, at sjógvurin flutti seg suðureftir millum umleið 1790 og 1920.

Extended abstract

Multiple environmental proxies were measured on a 54 cm long box core taken from the SW Iceland shelf in 1993 during cruise

93030 of the Canadian ship, *CSS Hudson*. The core was raised from Jökuldjúp, a basin on the shelf where sediments from the last deglaciation to the present are preserved in a 20-m thick sequence. Our interest in analysing the core was in recovering a detailed record of environmental conditions during the last several centuries. The site is under the influence of the Irminger Current, which carries warm, saline Atlantic water northward along the shelf. Because of the warmth of this current, sea ice has rarely been observed in this area, even during the most severe sea-ice intervals of the historical record.

The chronology of the core was estab-

lished by converting the basal radiocarbon date to calendar years and assuming a linear sedimentation rate from the base of the core to the year of collection, 1993. Organic carbon, stable C and O isotope ratios, foraminiferal assemblages, and sediment magnetic parameters were measured on samples from the core. These data were plotted against calendar years and compared to the Iceland sea-ice index. The environmental proxies show small but consistent changes that are interpreted to indicate increased soil erosion on Iceland, decreased marine productivity, and reduced salinities related to southward migration of sea ice between *ca.* 1790 and 1920. These interpretations are consistent with climatic cooling, increased storminess, and reduced vegetation cover on Iceland. Although the core site mainly lies beyond the direct influence of sea ice, it is sensitive to the overall climatic deterioration manifested by the sea-ice record.