

**Geochemical Mapping of Western Europe  
towards the Year 2000.**

**REPORT No. 6**

**On the occurrence of overbank  
sediment in Denmark**



**Western European Geological Surveys.**

## **NGU Report 91.205**

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**WESTERN EUROPEAN GEOLOGICAL SURVEYS**

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**Report No 6**

**On the occurrence of overbank  
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**Report from a field excursion in Denmark  
23. may 1991**

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<p>Observations made on a field excursion indicate that overbank sediment exists and can be sampled in large parts of Denmark.</p>			
Emneord	Fagrapport	Geokjemi	Elveavsetning
	Regional kartlegging		

## **INTRODUCTION**

A short field excursion was arranged in Denmark (23. May 1991) with participants from Denmark (Bent Hasholt and Ole Stig Jacobsen) and Norway (Jim Bogen and Rolf Tore Ottesen).

The purpose of the excursion was to investigate the existence of overbank sediment in different geomorphological terrain in Denmark, i.e. 1) the till areas of eastern Jylland (Jutland) and 2) the glacial outwash areas of western Jylland.

The following locations were visited; 1) eastern Jylland: Vejle Å at Slotshov, Vejle Å at Vork and 2) western Jylland: Holme Å at Vesterdam, Ansager Å at Lavborg, Grindsted Å at Ålling, and Grindsted Å at Kalsgårde.

The main conclusion is that overbank sediment exists and can be sampled.

## **CHARACTERISTICS OF RIVER PLAINS IN JYLLAND**

### **Eastern Jylland**

In eastern Jylland the landscape is a hilly till terrain of relatively high relief. River valleys shaped in loose material are a characteristic element in the landscape. River plains are confined by valley walls. At the locations visited about 2 meters high sequences of overbank sediment are visible. Pure minerogenic layers interchange with organic rich layers. Extensive back-swamp areas exist away from the present river channel. These areas are dominated by organic material.

Sediment yields are estimated to 5-10 tons/km<sup>2</sup>/year bedload and 5-10 tons/km<sup>2</sup>/year suspended load. The sediments are formed mainly by channel- and bank erosion and through supply from ditches and agricultural land. Traces of formerly active gullying and mass movement were observed.

During the last 100 years an extensive lowering of channels has been carried out in order to dry up the river plains. The present river maintainance work involving clearing of the channels and dredging has resulted in artificial man-made deposits on top of the river banks.

### **Western Jylland**

Western Jylland consists of landscapes of pre Weichsel origin intersected by outwash plains from Weichsel. The rivers are rarely confined. At the visited locations, the top layers of the river plains consist of nearly pure organic material. Minerogenic matter banded with organic layers are present deeper in the sequence. Iron staining is common.

Sediment yields of suspended sediments are in the order of 10 tons/km<sup>2</sup>/year. Bed load amounts to 10-20 tons/km<sup>2</sup>/year. As in eastern Jylland the sediments are formed mainly by channel- and bank erosion and through supply from ditches. Undercutting of glacial materials in slopes adjacent to the rivers were observed.

The rivers of western Jylland are less influenced by man than to the rivers of eastern Jylland.

## **CONCLUSION**

Based on the observations made at the few locations we visited it was concluded that overbank sediment are present and can be sampled at least in large parts of Denmark.

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For the purposes of registration, storage and retrieval the reports are also numbered in the Open File Report Series of the Geological Survey of Norway, (NGU).

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