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# People, lakes and seashores: Studies from the Baltic Sea basin and adjacent areas in the early and Mid-Holocene



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#### ABSTRACT

During the Early and Mid-Holocene significant changes in the ecology and socio-cultural spheres occurred around the Baltic Sea. Because of the underlying climatic changes and thus environmental alterations, the area was the scene for various cultural developments during the period under investigation. In the course of the melting of the glaciers at the end of the last Ice Age, isostatic and eustatic movements caused continual changes to the Baltic Sea basin. Changes in water level, however, affected not only the Early and Mid-Holocene coastlines, but also the whole Baltic Sea drainage system, including large lakes, rivers and watersheds in the hinterland were also dramatically impacted by these ecological changes. Prehistoric people were thus affected by changes in resource availability and reduction or enlargement of their territories, respectively. In order to evaluate the impact of changes in the water and land networks on the environment, resource availability, and human behaviour, and to reconstruct human responses to these changes, we pursue an interdisciplinary approach connecting environmental and archaeological research highlighted through different case studies.

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#### 1. Introduction

During the Early and Mid-Holocene, people living around the Baltic Sea experienced great variations in their relationship with their environment. After palpable changes, catastrophic events in some cases, in the relationship between land and water during the Late Pleistocene, the changes that occurred in the subsequent millennia were slower, but they had just as lasting effects on humans. Consequently, human populations had to adapt and transform established behaviours and settlement system and develop new coping mechanisms (e.g. Björck, 1995a; Schmölcke et al., 2006; Stroeven et al., 2016; Sørensen et al., 2013; Terberger,

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2004). Isostatic and eustatic processes caused a wide range changes to environments around the Baltic Sea (e.g. Andrén et al., 2011; Björck, 1995b). For instance, in the northern part, at the latitude of Central Sweden, an archipelago emerged and grew (e.g. Björck, 1995a; Swärd et al., 2017). Early use of this landscape thus required boats. The archipelago landscape gradually came to serve as a bridge in contacts between present-day Sweden and Finland. The results of shoreline displacement with increased land masses were also significant for settling inland, not least for the relationship between the coastal area and larger lakes. While Gotland was colonised, there is also evidence of contacts between the coast and inland around the Baltic Sea (Boethius et al., 2017). Further south, in the area of the modern-day southern Baltic Sea coast, shoreline displacement evolved differently as considerable areas of land were gradually inundated. Due to the changing shoreline, Bornholm was gradually isolated from the continent (e.g. Björck, 1995a). However, a noticeable submerging of the coasts need not always have had negative consequences. Since when parts of the Baltic area became available for settlement due to upheaval, other inundated parts were indeed consequently lost as territories but transformed into fishing grounds, for instance (cf. Tallavaara and Seppa, 2011, 221). The nutrient content increased or the salinity of the water changed in a way that benefited fishing or seal hunting. From southern Denmark and northernmost Germany, there is an extensive body of evidence about submarine settlement remains today (e.g. Fischer, 1987, 1995; Grøn, 2011; Hartz et al., 2014; Klooβ, 2015; Lübke et al., 2011; Terberger, 2007; Warden et al., 2017).

The emergence of new and breaking off of old communication corridors had to be faced as well as adjustments in different spheres of daily life. Thus, changes in the landscape did not only have physical consequences, they also helped shaping the conceptual world that governed ideas and norms of people. Besides long-term changes which influenced Prehistoric people, short term climatic oscillations were affecting the Early and Mid-Holocene huntergatherers as well. While these are sometimes discussed as one of the triggers leading to sedentary lifeways and other cultural changes in the Mediterranean and Central Europe (e.g. Dolukhanov, 1997; Gehlen and Schön, 2005; Gronenborn, 2010; Wicks and Mithen, 2014; Woodman, 2009), the northern European Meso-lithic has rarely been discussed in this respect (cf. Breivik et al., 2017; Manninen, 2014).

The present study aims to give an overview of recent advances in the archaeology of the Baltic Sea basin and adjacent areas (Fig. 1). We pursue to present an interdisciplinary approach by bringing together evidence from environmental and archaeological research, which serves to evaluate human-environment interactions in the region. The impact of environmental and geographical changes on resources and human societies is discussed through various case studies from around the Baltic Sea. Alongside a brief summary of climatic oscillations and their impact, the case studies will highlight aspects of modern research on Early and Mid-Holocene hunter gatherer populations. Incorporating ethnoarchaeological perspectives further underlines current challenges and possibilities of Mesolithic research around the Baltic Sea basin and adjacent areas.

## 2. Early Holocene climate oscillations in northern Europe – a discussion of the available evidence and its possible implications

There is a long-living notion of favourable weather conditions during the Mesolithic in central and northern Europe associated with the pronounced rapid warming during the early Holocene. Nevertheless, over the past decades, a growing number of palaeoenvironmental records have testified a higher than assumed climatic variability during the early Holocene in the area. Evidence has been found in ice cores (e.g. Alley et al., 1997; Thomas et al., 2007), marine sediments (e.g. Bond et al., 1997, 2001), glacier dynamics (e.g. Matthews et al., 2000; Seierstad et al., 2002), lake sediments (e.g. Björck et al., 1997; Boettger et al., 2009; Magny et al., 2007; Prasad et al., 2007; Von Grafenstein et al., 1998; Zolitschka and Negendank, 1998), tree rings (e.g. Spurk et al.,



Fig. 1. Location of discussed sites in modern Europe (base map: <sup>©</sup> EuroGeographics for the administrative boundaries).

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