

Norse impacts on vegetation and landscape at the margin of the Greenland Ice Sheet

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The former Western Settlement (Old Norse: *Vestribygð*) of Greenland is marked by a collection of approximately 90 ruin groups representing the remains of former farms, shielings and store houses dating to the c. 11th-14th centuries AD. These are clustered around the interior of the fjords in the area between the modern Greenlandic capital of Nuuk and the Greenland Ice Sheet (GrIS). The rugged and highly mountainous topography of the region, and its location just south of the Arctic Circle, suggest that farming would have been very challenging. Indeed, many of the current narratives concerning the purpose for the establishment of the Western Settlement promote the importance of hunting and trade in valuable Arctic commodities (e.g. walrus ivory) as the dominant motivation for the Norse colonisation of this area – ahead of a search for new pasture. Nevertheless, a number of the individual ruin groups are of relatively large size and importance, and give the appearance of having operated, in part at least, as conventional Norse farmsteads after the fashion of those in the larger Eastern Settlement (ON: *Eystribygð*).

Several of the farms in the Western Settlement have been the focus of detailed archaeological investigation, ranging from the mapping of structures and their excavation, through to detailed investigations of assemblages of animal bone and insects collected from middens and the interiors of buildings. To date, however, relatively few palynological studies have been targeted at, or around the immediate vicinity of, these farms. Research conducted in the Eastern Settlement has successfully demonstrated how high-resolution pollen analysis and associated proxies (e.g. microscopic charcoal and coprophilous fungal spores), combined with radiocarbon (¹⁴C) AMS dating, can be particularly powerful tools in revealing information about the character and intensity of Norse impacts on vegetation and landscape around the individual farmsteads.

This paper presents a synthesis of new and existing palynological data from farms in the Western Settlement to examine the ‘footprint’ for settlement. In doing so, it contributes towards debates surrounding the role of pastoral farming in this landscape, and in refining ideas about the precise timing of settlement, i.e. the onset of *landnám* and the date of abandonment, of individual farmsteads (and thereby the Western Settlement more generally). Attention is focused upon three farms of medium to large size in close proximity to the margins of the GrIS: at Ujaragssuit (*Anavík*; V7), Umiivik (V15), and in Austmannadalen (V53d). Water-borne and landward access to these sites is currently made extremely difficult by high rates of sediment delivery, iceberg calving in the inner fjords, and sometimes near-impenetrable shrubby vegetation. The paper will consider whether the first Norse settlers may have faced similarly challenging circumstances in accessing these same locations, and how a different set of prevailing environmental conditions at the time of *landnám* may have made these sites more attractive propositions for settlement than might now be perceived.