



Article

Remote Sensing the Archaeological Traces of Boat Movement in the Marshes of Southern Mesopotamia

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Abstract: This study presents the results of the first remote sensing survey of hollow ways in Southern Mesopotamia between Baghdad and the Persian Gulf, primarily using the imagery in Google Earth. For archaeologists, hollow ways are important trace fossils of past human movement that inform about how people travelled in the past and what considerations were important to them as they moved through the landscape. In this study, remotely sensed hollow ways were ground-truthed and dated by association with both palaeochannels and known archaeological sites. Contextual and morphological evidence of the hollow ways indicate that they are likely the archaeological manifestation of ethnographically attested “water channels” formed through the dense reeds of marshlands in southern Iraq, not formed by traction overland like other known hollow ways. The map itself documents the first known hollow ways preserved underwater and one of the best-preserved landscapes of past human movement in the Near East.

Keywords: Iraq; hollow ways; routes; water channels; past mobility

1. Introduction

Remote sensing using aerial photography or satellite imagery has played an important role in the mapping of ancient routes, preserved as hollow ways for nearly a century [1]. Hollow ways, or eroded paths through the landscape, occur in many regions of the world, including North America [2], the Caribbean [3], Europe [4,5], and the Near East [6–9]. Hollow ways are formed by erosion from the traction of people and/or their animals walking the same route repeatedly [3,5,10]. As trace fossils formed by traction, they are the primary source of direct evidence of past human movement in the archaeological record besides footprints (such as in the work of [11]). Consequently, they are important features for understanding past travel practices. For example, in Costa Rica, Sheets [3] has described how hollow ways dating back 2500 years are consistent with the modern cultural practice of walking in a straight, single-file line between villages and cemeteries. Meanwhile, in the Jazira region of northern Syria and Iraq, Wilkinson [12] (pp. 111–120) distinguished three types of hollow way associated with three different activities: (1) regular travel from settlements to/from surrounding agricultural fields, (2) travel with flocks between settlements to/from pasture land beyond the agricultural fields, and (3) travel between settlements. Since, the development of a quantitative method for directly comparing digital route models with preserved hollow ways has enabled hypothesis testing of travel practices—did people travel fastest routes as people sometimes do today, easiest routes, shortest routes, or did they prioritize cultural variables in their movements like seeking permission from local headmen before travelling through different territories [13–15]. The hollow ways presented in this paper are hypothesized to be the result of an entirely different type movement: the movement of boats and possibly of the water buffalo traditionally herded in the area.