Exploring the origins of the Fossdyke canal through sedimentary archives

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Introduction

- Lincoln is situated at the confluence of the River Witham and the Fossdyke canal, an artificial waterway connecting the River Trent to the Witham via Brayford Pool. (Fig. 1).
- It is generally believed the Fossdyke was constructed during the Roman Period[1][2][3] but this is solely on the basis of limited archaeological evidence.
- New research, based on remote sensing (LiDAR) and carbon-14 dating of sediments infilling an old river channel near Burton Waters, indicates pre-Roman river engineering could have been more widespread and on a larger scale than hitherto appreciated.

Research Objectives

- To collate existing documentary and archaeological evidence.
- To record and interpret evidence within sediment deposits.

The Sedimentary Record

- LiDAR topographical (elevation) image. The Fossdyke canal can be seen running north-west to south-east flanked by narrow embankments. (b) Corresponding street map showing the main features of the Fossdyke.
- A core sample was extracted from the old channel which was cut-off and disconnected from the River Till. The meandering palaeochannel can be seen running parallel to the straighter modern Fossdyke canal.
- Visible structures and carbon-14 dates are given alongside the main sediment horizons.

Documentary and Archaeological Evidence

- The earliest documented record of the Fossdyke is in Symeon of Durham’s c.AD 1129 Historia Regni Anglorum et Ducorum[4].
- Discovery of a Roman statuette[5] (Figs. 1b, 2), amphora (Fig. 1b), and possible Roman quarry[6] near the Brayford support an earlier date of construction.
- Pre-Roman finds (Fig. 1b) adjacent to the Fossdyke indicate areas of intensive settlement at Torksey and Burton Waters during the Iron and Bronze ages.
- Peat and Organic Matter (active channel flow)
- Minerogenic Sediment (active channel flow)
- Topsoil (ploughed)

Findings

- Most researchers propose construction occurred in the Roman Military or Colonial era[1][2][3].
- Researchers agree on the significance of the Lincoln Gap as a pre-Roman religious and cultural centre of significance[6].
- No documentary evidence prior to medieval period.
- Within the modern channel: no pre-Roman, two Roman (Fig. 1b) archaeological finds.
- Adjacent to the Fossdyke: 15 pre-Roman finds (Fig. 1b) (indicate concentrated settlement).

Methodology

- This paper originated from an ongoing investigation of Holocene and historical flood histories of the River Witham. Sediment cores were extracted adjacent to the Fossdyke using the University’s Dando Terrier Mk2 percussion drill rig including a single core from within the palaeochannel of the River Till (Fig. 3). Professor Macklin and John Lewin identified a sedimentary sequence within the core indicating a change in depositional environment from active river flow to wetland (Fig. 4). This implied a diversion of flow from the River Till into the new canal.

Conclusions

- Historical and documentary evidence is currently insufficient to date the Fossdyke. This study of sedimentary archives suggests the construction of the Fossdyke may have occurred in the early Iron Age and highlights the importance of considering sedimentary archive evidence.
- Should the Fossdyke prove to be of pre-Roman construction, this will be by far the oldest human-made watercourse in the UK. Perceptions of prehistoric engineering capabilities throughout the UK may need to be re-examined in light of an earlier dating of the Fossdyke.

References

[5] Statuette of Mars. ca. 150 AD. [Figure]. At: London: The British Museum, Britain, Europe and Prehistory. OA.248.
[9] Statuette of Mars. ca. 150 AD. [Figure]. At: London: The British Museum, Britain, Europe and Prehistory. OA.248.