The contribution of logboats to understanding our past: evidence from Lough Corrib, Ireland

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Abstract: The study of boats is integral to understanding how societies lived and moved on and around lakes and rivers throughout time. This paper discusses the discovery and investigation of a number of newly discovered logboats from Lough Corrib. These are greatly adding to our knowledge in this area and providing new and exciting insights into the use of boats in the inland waterways, as well as providing a greater understanding of the wider lacustrine cultural landscape. This chapter provides an overview of work carried out by the Underwater Archaeology Unit of the National Monuments Service investigating over 30 logboats dating from the Neolithic to Medieval times. An overview of how these discoveries are enhancing our knowledge of the wide range of social practices taking place on the lake including raiding, hunting, warfare, travel and communication is presented. Particular focus is applied to a number of logboats which can be argued to have been deliberately sunk as part of ritual deposition.

Introduction

It is not surprising that, as an island subject to a damp, temperate climate and influenced by a seemingly never-ending cycle of Atlantic weather systems, large areas of the Irish landscape are dominated and delineated by water in the form of numerous rivers, lakes, bogs and streams. This network of waterways and wetlands has not only shaped and moulded the landscape, but also strongly influenced settlement patterns, land use, political developments and social practices, while also influencing the shape of ancient tribal and territorial divisions which still form the basis of many of the administrative boundaries today.

In recent centuries, the drainage of these waterways has resulted in the discovery of thousands of important artefacts, many of which now make up a large parts of the significant collections in the National Museum of Ireland in Dublin, the Ulster Museum in Belfast and many smaller designated museums around the country. Logboats form an important part of these collections, with over 560 recorded to date throughout Ireland (MacDowell 1983; Gregory 1997; Fry 2000; Wreck Inventory of Ireland Database (WIID)). Unfortunately, many of the boats found in earlier times were destroyed, broken up for fire wood, reused for farm buildings or removed from their anaerobic environment and left to dry out, resulting in their rapid deterioration and ultimate destruction. As a result, very little information is known about the early finds. Very often, these older finds were made when lake levels dropped in the summer months and the logboats were identified close to shore, having probably been exposed time and again over the centuries. The identification of logboats in deeper lake and river waters in recent times has created the possibility for developing a better understanding of the nature and significance of these vessels.

In Ireland, logboats have traditionally been considered simple or crudely made vessels with very little to contribute to mainstream archaeology and seen to be of interest only to early watercraft specialists. This has led to mainstream archaeology largely ignoring these finds, with only occasional passing mention in the principal archaeological textbooks. In recent years, however, this narrative has changed somewhat as result of targeted research and interventions by heritage authorities to record, research and at times save logboats under threat of being damaged or destroyed. In this regard, archaeological investigations carried out by the Underwater Archaeology Unit of the National Monuments Service in Lough Corrib have resulted in a remarkable range of finds being revealed, not only ancient logboats, but also the artefacts associated with the wrecks themselves (Brady 2014: 34–38, 2015: 20–21). These finds have begun to highlight the value and importance of such watercraft by providing new insights into how early watercraft changed and developed over time, while also highlighting the importance of such craft in their own right. Additionally, the role boats played in the domestic, industrial, social, ritual and martial lives of the past societies who lived and moved on and around the lake over several millennia is becoming clearer, thereby also highlighting the rich archaeological potential of our inland waterways, and lakes in particular.

Lough Corrib Location and historical background

Lough Corrib is located in County Galway in the west of Ireland. It is the second largest lake on the island of Ireland with a surface area of approximately 176 km². It is an irregularly shaped lake which measures 44km in length by 17 km at its widest, but it narrows to only 600 m near its central point. It is a relatively shallow lake dotted with well over 1,000 islands and islets. The Lough is generally...
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considered to have depths generally not exceeding 10 m; however, there are areas of deeper water at the northern end of the lake which reach 50 m plus. The lake has lots of folkloric associations, with its origin story probably being the best known.

The name Corrib is thought to be a corruption of Orbsen or Oirbsen, which is another name for Manannán Mac Lir, the mythical mariner who ruled the other world (Ó hÓgáin 1990: 286–289). Manannán has many watery associations, including being god of the sea (mac Lir literally meaning ‘son of the sea’) with a boat called Wave Sweeper in which he could travel over land and water (Kelly 2019: 34–41). Kelly has also suggested Manannán was protector of the solar boat on its nightly journey through the Underworld and should be regarded more as a solar deity than a sea god (Kelly 2019). In Irish tradition, Manannán was reputedly killed at the legendary battle of Moycullen (located on the west side of the lake), and when his grave was being dug, a great torrent of water poured from the hole to form the lake now called Lough Corrib. Given Manannán Mac Lir’s association with the origin-legend of the lake and boats, it is not unreasonable to put forwards the possibility that some of the boats, which were ritually deposited in the lake (see below) may have been dedications or votive offerings to Mac Lir himself.

The earliest representation in the literary sources of the Lough Corrib area may come from Ptolemy’s second-century AD Geography or Atlas, which provides a list of places, tribes and co-ordinates for the known world including Ireland. Orpen has suggested that Ausoba may represent Galway Bay or the 6 km-long River Corrib, which drains Lough Corrib and the wider area (Orpen 1894: 118). Ptolemy lists a tribe in the area known as the Auteini, which would indicate that in the later Iron Age, the area was one of a handful of locations known to merchants and mariners travelling along the Atlantic fringes important enough to be mentioned in Ptolemy’s map and Geography. As some of the logboats investigated so far date to this period, it is tempting to think we can associate these boats with a named Iron Age tribal group for which we have no other literary evidence. Over time, the lake was an important defining boundary between the surrounding ancient tribal territories, which by later Mediaeval times became the baronial districts which are extant today.

Background to the logboat discoveries and follow-up investigations by the Underwater Archaeology Unit

The logboats came to light during hydrographic surveys of the lake undertaken by Trevor Northage, a master mariner...
who mapped the lake from 2008–2014 in order to produce navigation charts for recreational use (Northage 2014). In addition to the detailed charts produced of the lake, side-scan sonar data collected during the survey has revealed and imaged important new information regarding the bathymetry, geology, ecology and make-up of the lakebed, as well as imaging a large number of previously unrecorded logboats and wreck sites. As part of its wider statutory brief to manage and regulate activity on underwater archaeological sites in Ireland, including the inspection of new discoveries, the Underwater Archaeology Unit (UAU) of the National Monuments Service (NMS) liaised with Mr Northage on his discoveries, following his reporting of new finds to NMS. The UAU then began to undertake its own surveys of the lake, as it clearly retained further extensive and significant underwater cultural heritage. Since 2012, the UAU has been carrying out a systematic programme of surveys and investigation in Lough Corrib identifying, documenting and analysing these sites, while also recording them in the WIID.

During the course of our work, a number of threats to these sites have been identified, highlighting the need for more proactive investigation and rescue work to ensure that some of the more fragile, vulnerable and archaeologically significant sites are protected. This has led to a number of important artefacts being recovered from the lake to ensure their long-term protection. The threats to these sites vary and include unregulated diving activity on a number of logboats (all diving on archaeological wrecks over 100 years old requires a licence issued by NMS), accidental damage as a result of anchoring by boating traffic and increased storm activity as a result of climate change, an issue which is only going to increase with time (Daly 2019; Harkin et al. 2019). Damage as a result of the spread of invasive species to the waterway such as *Dreissena polymorpha* (zebra mussels) and *Lagarosiphon major* (curly waterweed) are also identifiable threats.

In addition to the anthropogenic threats, the normal range of erosive and biological forces are also evident in the lake, with wood borers and chironomid larvae degrading the boats over time and destroying important evidence such as original features and tool marks. To date, over 60 potential sites have been dived and investigated by the UAU, of which 30 have been confirmed to be ancient logboats, with a further four sites being confirmed as wooden lake boats dating to between the eighteenth and twentieth centuries. There are a further 15 potential logboat sites and geophysical anomalies still to be investigated, and when combined with the previously documented historic finds, there are potentially 53 logboat sites. The threats to these sites are varied and include unregulated diving activity on a number of logboats, accidental damage as a result of anchoring by boating traffic and increased storm activity as a result of climate change, an issue which is only going to increase with time (Daly 2019; Harkin et al. 2019). Damage as a result of the spread of invasive species to the waterway such as *Dreissena polymorpha* (zebra mussels) and *Lagarosiphon major* (curly waterweed) are also identifiable threats.

Figure 1.2. Distribution of known logboats at Kilbeg and Knockferry represented by the yellow dots. Known archaeological monuments on land are represented by red dots. Ordnance Survey Ireland License No OSI-NMA-014, reproduced courtesy of Tailte Éireann, Government of Ireland.
sites located in the lake, with the possibility that many more will be discovered.

**Ferrying point**

Most of the boats identified during the hydrographic surveys are located within a 6 km stretch of the central part of the lake where the waters are shallowest and the lake is narrowest. Mr Northage focussed his surveys primarily in this area. The number of logboats now known from here, as identified during the surveys, may indicate a certain bias in the strength of the concentrations recorded, but this may be explained by the intensity of survey specific to that stretch of water. There may certainly be similar concentrations elsewhere awaiting discovery. This middle section of lake, however, is also the narrowest part of the waterway through which all traffic travelling from the lower lake to the upper lake must pass. It is also a known ferry point between Knockferry and Kilbeg, which would have served to link the ancient tribal and political boundaries on either side of the lake. This narrow stretch of water would have provided a more sheltered and therefore safer crossing point than the wider and exposed expanses of water to the north and south, which can become extremely choppy and difficult to navigate during any sort of windy weather. It is therefore not surprising that a number of ferrying points were used during the nineteenth and twentieth centuries in this area, as was also the case in earlier times, at different locations (Spellissy 1999: 258, 420).

The concentration of 16 logboats all within 1 km of each other and all within 600 m of the Knockferry/Kilbeg crossing point only serves to confirm that this area was an important ferrying point from at least the Middle Bronze Age onwards. Many of the logboats found here would have been eminently suitable as ferries, such as the 10 m-long Late Bronze Age Kilbeg logboat dating to the tenth century BC. Its spacious floor would have been ideally suited for carrying people, animals or cargo. Equally so, the 10.25 m-long oak logboat (Kilbeg 3), which is subdivided into four sections by three low transverse ridges, could have performed a similar function (see Figures 1.1 and 1.4). Apart from serving as a crossing point, this area would also have been an important waterway through which all north-south traffic travelled and, therefore, an important location from a strategic point of view, where movement of boats, people and goods could more easily be monitored and controlled.

The logboats investigated by the UAU thus far have a date range from the middle Neolithic to the sixteenth century AD. As would be expected with a collection of boats spanning such a long time period (5,000 years), they vary in size, style, construction, complexity, function and level of preservation. The earliest boat, the Callownamuck logboat, is the longest logboat found in the lake, measuring 15.67 m. Unusually from an Irish perspective, the Callownamuck logboat was fashioned from a pine tree. In Ireland, the majority of boats are constructed using oak, with only 1% of Irish examples constructed from other species such as alder or poplar (Gregory 1997: 162–163; Holtzman 2019).

**Evidence for communication, transfer of ideas and technological advancement**

The broad range of logboat types are providing evidence for communication, technological advancement in boat construction and design over time, including the introduction of new repair techniques in line with technological advances which were taking place in Britain and on the Continent at the same time. For example, the floor of the poorly preserved Lee’s Island logboat had developed a split along its centreline for over half its length; it was subsequently repaired using the same techniques used to build the Bronze Age plank-built boats known from England and Wales (see Wright 1990; Clark 2004 for example). The split was sealed using moss caulking covered by a longitudinal lath which was lashed in place using withies. A number of wooden cleats were inserted into the floor of the boat, through which rods were inserted to help stabilise the split sides of the logboat and provide structural strength. The Lee’s Island boat has been dated to 3023 ± 27 BP (1390–1134 cal BC, 2-sigma) and, whilst it is still a logboat, the use of similar sewn plank boat technology to repair the splits provides the earliest evidence for the existence of such technology in Ireland during this period. The emerging evidence for the wider use of plank built boats outside of Britain is also being highlighted (Crumlin-Pedersen and Trakadas 2003; Kastholm 2015; Wickler 2019), with a number of Bronze Age and Iron Age examples from Denmark and Norway now identified. Consequently, the plank boat technology observed in the Lee’s Island logboat can also be viewed as an ‘indicator of a broader interregional tradition of plank-building in Western Europe’ as noted by Kastholm (2015: 1369). Nevertheless, this raises an intriguing question: if sewn plank boat building techniques were known, why did they not supersede logboats? It is possible that future discoveries will uncover evidence of sewn plank boats being more widely used on the lough and beyond. However, based on current findings, it appears that the logboat remained the preferred and prevailing style of boat in use until Medieval times, despite plank boat techniques being known at the time.

Other technological advancements include the introduction and changing style of seats over time and a change in method used to propel the boats. As McGrail (1978: 320) and Gregory (1997: 119–120) have noted, the method used to propel a boat can leave very little evidence, and rowing can be particularly hard to detect, unless features such as footrests, thwars, oars and thole pins are preserved. In the absence of these features, it can only be assumed all other logboats were propelled by paddling. There is no evidence for the use of seats in the Neolithic or Bronze Age logboats so far discovered in Lough Corrib, and it is likely that paddling was the main method of propulsion for these vessels. Two of the Iron Age vessels have seats but are presumed to have been paddled in the absence of any
direct evidence for rowing. For example, the Lee’s Island 5 logboat (circa 200 BC) had two seats, which were made by inserting 7 cm-wide roundwood poles into the sidewalls of the boat near either end to form seats 5 cm below the top edge (see Figures 1.5 and 1.6). The Clydagh logboat, which is of a similar date, had at least three sets of parallel rectangular slots on its top edge for receiving three narrow flat plank seats; the vessel originally could have had more, but further investigation is required to confirm this. In the Mediaeval period, there is evidence for further development with Lee’s Island 3 logboat, the Illaunaconaun 1 logboat and the Carrowmoreknock logboat (see Figure 1.3), all constructed with footrests, oarlocks and plank seats which give direct Irish evidence that by the fifth century AD, rowing had become a common method for propelling vessels on the lough. The Carrowmoreknock logboat also contained the remains of the fragments of two oar handles. Rowing was certainly in use in Ireland by the first century BC with the exquisite gold model known as the Brightray boat, now on display in the National Museum of Ireland, having 15 oars represented and providing representative evidence for this method of propulsion for vessels. It is likely that some of the Iron Age vessels from Lough Corrib were rowed, but evidence has not survived due to the poor preservation of some of the boats from this period.

Logboat size, availability of suitable trees, and depletion of forests

Over time, the boats become more refined: lighter in construction with thinner walls and floors indicating technological advancement in boat construction techniques due to the use of better tools and the development of a better understanding of the basic principles of hydrostatics and hydrodynamics. In tandem with this, there is a general trend for the logboats to decrease in size over time; the Neolithic boat is the longest, measuring 15.79 m in length. The Bronze Age logboats, while still impressively large vessels, are slightly smaller in overall size, ranging from 13.00 m to 6.20 m in length (Lee’s Island 2 logboat has a surviving length of 6.20 m, but its original length would have been at least 1 m longer, based on its current dimensions). Overall, the Iron Age logboats are slightly smaller again and range from 11.3 m to 7.54 m in length. There is a notable reduction in the size of Mediaeval vessels, with all five examples investigated by the UAU being less than 6.50 m in length. The Carrowmoreknock vessel is the longest, measuring 6.30 m, whereas the one-man canoe from Rinnaknock measures 3.30 m long, although its bow and stern are not intact, and its original size is estimated to have measured just under 4 m. The gradual decrease in size of the logboats over time appears to reflect the gradual decrease in woodland cover, with forests being cleared for cultivation, development of human settlements and as a resource for everyday living, which would have included the building of boats. Continuous forest clearance resulted in younger, smaller trees being cut down and used before they had a chance to grow large enough to be fashioned into large-sized boats, which were more common in earlier times.

This depletion of woodland in the area is also reflected in the pollen evidence taken from a core from Máin Éan (Maumeen), a corrie lake located approximately 8 km to the west of Lough Corrib (O’Connell 2021). The pollen evidence shows that there was a major reduction in woodland cover from the Neolithic onwards, stemming from the increased farming which continued throughout the Bronze Age and Iron Age. By the end of the twelfth century AD, the surrounding landscape has been largely depleted of forests. The pollen evidence indicates a near total collapse of oak coverage around 1200 AD (O’Connell 2021), which may explain why, out of the 50 plus logboats currently known from Lough Corrib, only one logboat dates to the thirteenth century or later. There were simply very few oak trees of suitable size left to make the logboats, and it is possible there was a switch to the use of skin boats on the lake at this stage. Skin boats or currachs/coracles required far less wood and were made using hazel rods (still growing in the area at the time) and ox hides. A vessel of this nature from this period has yet to be found, but their widespread use from prehistoric times onwards in Ireland has been well documented in the sources (O’Donovan 1856; Breen and Forsythe 2007).

Evidence for raiding and warfare

Also reflected in the logboat discoveries and their contents are other activities that were taking place on the lake. The discovery of a range of weapons in the boats, such as iron, bronze and wooden spears and iron axes, are providing valuable insights into how these weapons were possibly used for raiding, hunting, warfare and for protection (Brady 2014, 2015). In this regard, the Carrowmorenock logboat is probably the finest Irish example of a boat built as a war canoe during the Viking period, a turbulent time in Ireland with Irish and Vikings vying against each other for power. The 6.3 m-long canoe-shaped logboat is well-designed, finely crafted, built for speed and virtually intact, providing rare evidence for a high-status vessel dating to the eleventh/early twelfth centuries AD. The boat has a rounded transverse section, a rounded stern in all three planes and a bow which terminates in a rounded-point. The boat originally had five thwarts/seats made from willow, with one located at the stern comprised of a short, narrow, thin willow board which slotted into recesses on either side of the boat and was used by the helmsman or steersman or possibly even by a passenger. There are positions to accommodate additional seats, as indicated by four pairs of thwart rests, which survive as blocks, carved in the solid that project out from the internal sides of the boat and which supported the seat. These thwart rests are
regularly spaced along the main body of the boat, with three of the plank seats found in place. The remains of two thole pin holes (sockets in the gunwale to receive a pin, which projects upwards to provide a pivot for an oar) also survive on the top edge, although there originally would have been four sets of corresponding thole pin holes. The presence of seats, thole pin holes and two fragments of ash oars illustrate clearly that this boat was rowed, rather than paddled. Within the boat, some of the original contents and belongings of the crew were also found, including three Viking style battle-axes with attached cherry wood handles, an ironwork axe, two iron spear heads, a fossil rich stone and a carved red sandstone slab. The red sandstone slab has the appearance of a rough out for a grave slab, or perhaps it was planned to be used as a decorative or architectural feature on a stone church. If this is the case, it is probable that the slab was being transported to one of the nearby ecclesiastical sites, like Inchagoill, which are located on islands within the lake when the vessel sank.

The boat likely belonged to a high-status individual, such as an important ecclesiastical figure, one of the ruling elite or a local chieftain with his warrior crew. They may have been escorting him across the lake on tribal business, such as gifting a carved stone slab to one of the local churches or engaging with rival ruling chieftains and thus bringing gifts to support dialogue. While the boat may have sunk while transporting the red sandstone slab, it is evident from the vessel’s overall design and the presence of weapons on board, it was not primarily intended for everyday transportation, ferrying or fishing. Instead, this boat displays characteristics more akin to a war canoe or raiding vessel, suggesting its purpose was to serve as a means of maritime warfare. Manned by a crew of five well-equipped warriors, it provided the ability to traverse the Lough swiftly and patrol boat movements, exercise political control or engage in raids. Such maritime activities, including numerous attacks, raids and naval encounters, are frequently documented in Irish historical annals (O’Donovan 1856; Freeman 1944). While Viking fleets in the ninth and tenth centuries raided inland from the coast using the river Corrib to access Lough Corrib and further beyond, by the eleventh and twelfth centuries Gaelic Irish families like the O’Flaherty’s and the O’Connors were in control of the lake and had their own fleets of boats and were well able to defend their territory as a result. Subsequently, the Norman de Burgos who established a base in Galway also sought to control activity on the lake (O’Donovan 1856; Freeman 1944).

Accidental loss, deliberate deposition, or killing of boats?

A regular question which arises in regard to the logboats is why did they sink? Undoubtedly, most can be deemed to be accidental losses, but there are a number of logboats from the lake for which it can be argued they may have been deliberately sunk as part of ritual deposition. The Lee’s Island 5 logboat, along with its contents, is probably the most convincing example of deliberate sinking. It may have been scuttled as a votive offering, possibly to appease a deity, or as a boat burial; the latter is discussed below. It can be argued that other boats too from Lough Corrib were ritually deposited, while others could have been deliberately sunk for other reasons, including the deposition of spoils of war or war-booty or even ritualistic ‘killing’ of boats.

Both Van de Noort (2011: 217–221) and Prior (2004: 32) have suggested that there is good evidence in Britain during the Bronze Age and Iron Age for the practice of ritually killing boats. Prior (2004: 32) has argued that one way to ‘ritually destroy a boat is to sink it’, and that the Hanson logboat found in a gravel pit in Shardlow (Nottinghamshire) dating to c. 1500 BC with a cargo of sandstone blocks was a deliberate deposition. The Iron Age logboat found at Fiskerton also appears to be a ritual deposition, being fastened to the riverbed using wooden posts (Field et al. 2003: 24; Prior 2004: 32; Van de Noort 2011: 217–221; Markoulaki 2014: 114–118), and therefore considered also to represent a ritually ‘killed’ vessel. Clark (2004: 279) has suggested the Brigg Raft was ritually ‘killed’ after a post was driven through a hole in the boat’s
floor, fixing it to the riverbed and thus preventing it from doing what it should do, which is move in water. Champion (2004) has hypothesised that a number of the British sewn plank boats were connected to ritual deposition while also arguing that the Dover Boat was deliberately partially dismantled and abandoned as part of ritual killing in tidal waters of the River Dour at Dover.

When the Clydagh 2 logboat was discovered, it was initially thought this logboat may have been deposited on the lakebed as part of a prehistoric ritual deposition. This logboat is unusual in that it was deliberately cut into two sections which now lie 3 m apart and perpendicular to each other on the lake bed in 6 m of water. One section is orientated east to west, is 3.56 m long with a 47 cm-wide stern, and is 66 cm wide at its broken/open end. The second section lies 3 m to the south but is orientated north to south, with its open end facing away from section one. It is similar in size to section one, being 3.50 m long, 45 cm wide at its complete end, and 62 cm wide at its broken/open end. The original logboat was carved from oak, rectangular on all three planes and roughly finished. It is possible too that it was unfinished, given the rough surface and regularity of overcuts and tool marks visible on the logboat. The deliberate cutting of the boat into two halves near its mid-point is evidenced by tool marks at the severed edges of both ends as a result of the cutting process. As the width of the two broken ends do not match exactly, there being a 4 cm-difference in width, it is clear that a small middle section of the logboat was lost when the boat was cut in two.

The logboat’s location, almost centrally placed in Clydagh Bay, over 430 m from the nearest shoreline, indicates that the two parts of this vessel did not accidentally drift from the shoreline to this location. Instead, the logboat was cut carefully into two on the lakeshore and then floated out to a central location; this must have been pre-planned and would have taken a significant amount of effort. The two parts were then deliberately and carefully submerged on the lakebed in close proximity to each other. The initial interpretation for this act, when the logboat was first discovered by the UAU, was that it was deposited as a part of ritual activity, possibly in the Bronze Age. Champion (2004) suggests that when the British Bronze Age sewn plank boats were dismantled and deposited, they were being deliberately decommissioned, rendered useless and therefore ritually or symbolically ‘killed’. It appeared this theory could apply to the Clydagh 2 logboat. However, recently obtained radio carbon dates of each end of the boat have revealed that the logboat is not Bronze Age in date, as initially believed, but rather, halts from the ninth or tenth centuries AD. This new information makes it is highly unlikely the boat was destroyed as part of a ritual act. Instead, a more plausible explanation would appear to be it was destroyed during or after a military engagement. As mentioned earlier, naval battles were common on the lake, and the Viking raids on Lough Corrib in 927 and 928 AD (O’Donovan 1856; Freeman 1944), for instance, could have led to the destruction of an enemy’s boat by either side in an attempt to reduce their adversary’s naval power and influence.

Stone laden logboats

This author suggests three logboats from Lough Corrib provide evidence of being symbolically or ritually ‘killed’. A number of boats from Lough Corrib carried stones of varying sizes, but three contained large cargos of limestone blocks, including Kilbeg 3, Kilbeg 5 and Kilbeg 9. These three boats date to the mid-late Bronze Age, with Kilbeg 3 dating to 1202–1008 cal BC, Kilbeg 5 dating to 1415–1233 cal BC and Kilbeg 9 having a similar date of 1419–1280 cal BC. Kilbeg 3 is a 9.90 m-long oak logboat with five transverse low ridges creating six separate spaces in the boat, with the cargo of stone mainly concentrated in the middle two sections. The stones appear to have been carefully placed in the boat, lying on a thick layer of moss to prevent damage to the boat. A few random stones have scattered towards the stern, and a few loose stones appear to have fallen outside the boat. Kilbeg 5 is poorly preserved and smaller in size, measuring 6.80 m in length with just its floor surviving. Nine small stones and a larger boulder are located at the vessel’s stern, and there appear to be patches of clay or degraded limestone cobbles spread along the floor of the boat to its midway point; its forward end is largely devoid of stone. Kilbeg 9 is also poorly preserved, with just its 9.20 m-long floor surviving, although broken in several places. This vessel carried two piles of stone, a group of three large boulders at the stern, a smaller pile of ten stones at the bow and a scattering of stones also in the midship area of the boat.

It is possible there is a more prosaic explanation for the cause of sinking of these boats. One such scenario is they may have been inadvertently lost while navigating the lake due to the heavy loads of stone they were carrying. It is not unreasonable to consider these vessels could have become destabilised and swamped during bad weather, resulting in their ultimate demise on the lakebed. However, considering the close proximity of the three boats in a sheltered and relatively calm section of the lough, this explanation seems unlikely. There are other potential scenarios which could have resulted in them becoming submerged on the lakebed, including deliberate sinking. The wet storing of logboats to prevent them from drying out must be considered, and in 1966, Kunze (1968: 268–269) documented the wet storing of a logboat in Lake Mondsee, Austria. The boat was submerged in 2 m of water so that its upper edge was at least 1 m underwater. The boat was weighted and held down using stone and long poles to prevent the boat moving. Kunze also noted that this practice was also being carried out in the nineteenth century too. According to Kunze, the storing of the boat under water prevented the boat from drying out and cracking, increased its durability while also preventing splinters which could catch nets developing on the floor of the boat. The practice is still used today, with a team at the Kuratorium Pfahlbauten successfully wet storing a replica Bronze Age logboat underwater for an 11-year period before it was lifted to participate in a logboat race in 2016 (Cyril Dworsky, personal communication). Whether this practice was used in more ancient times, we do not know.
know, and so far there is no evidence for this in Ireland from any period.

Arguments against these theories applying to the three Kilbeg logboats is that they are all currently submerged in 6 m of water, and lake levels were previously 1 m higher prior to drainage works in the mid-nineteenth century. It would have been impossible to remove all the stone and re-float the boats, given the depth of water. A further argument against this is their distance from the shoreline, begging the question as to why, if they were deliberately submerged for practical purposes, were they not submerged closer to shore where they could more easily be retrieved? Locating the boats would have been difficult, given they are all more than 250 m offshore. It is possible lake levels were lower at the time of their sinking, but there is no evidence for this. Additionally, the close proximity of the three boats together would indicate these were boats were not forgotten about after sinking and left on the lakebed, but rather, their deposition was an intentional act, and they were deliberately and permanently deposited on the lakebed. If this is the case, then it seems logical that the boats were deposited as part of ritual deposition. Another consideration is that all three boats were deliberately sunk by being loaded with boulders and stones to help ensure they sank and stayed submerged on the lakebed. Why this was done, we do not know, but maybe when a boat had reached the end of its useful life, it was decided to sink it as a votive offering. It therefore could be argued these boats were put beyond any further meaningful use and were ritually ‘killed’. The possibility they were associated with recently deceased individuals connected with the boat, possibly a drowning, might also be considered as a reason for their deposition.

### War offerings?

The Rabbit Island logboat is another vessel which might be considered as a votive offering, but this argument is not as convincing as is for some of the other logboats. Only the base of the 8.2 m log oak boat survives, in which four iron spear heads and fragmentary remains of their hafts were found. Along the starboard side near the bow of the logboat lie two loose pieces of wood with a series of circular holes and rectangular recesses positioned along their edges. It is unclear if these pieces of wood represented side planking which has fallen off the boat or the actual side walls had collapsed, and further investigation is required to confirm this. If this is side planking, then this vessel is an extended logboat, and only one of a few examples known in Ireland. The boat has been dated to c. 300 BC.

As highlighted above, the deliberate deposition of vessels in watery environments is well documented on the Continent with the Hjortspring boat (Crumlin-Pedersen and Trakadas 2003) being one of the best known examples. This Iron Age (c. 350 BC) warship was sunk as part of a ritual offering along with its contents, 138 iron spear heads and many other items which are interpreted as a sacrifice of the spoils of a battle or war (Kaul 2003: 141–185). Is it thus possible the Rabbit Island logboat was also a deposition representing spoils of war following a victory, or was perhaps sunk as a votive offering seeking to invoke the favour of a deity in advance of a military
engagement? Such scenarios are extremely difficult to prove, and it may also represent the accidental loss of a vessel carrying a hunting party or a crew just armed for self-defence purposes.

**Ritual deposition of the Lee’s Island 5 logboat**

The Lee’s Island 5 logboat is probably the most convincing and most remarkable example of the ritual deposition of a boat in water, and this is largely due to its high level of preservation, almost perfectly preserved to its top edge. The 7.54 m-long ash boat is parallel sided with a rectangular bow and stern in plan, both of which have inclined profiles. The boat has a maximum width of 70 cm and a maximum internal depth of 34 cm. While most of the logboats from Lough Corrib still have random patches of sapwood remaining in their hull structures, sapwood was generally removed during the construction process, as it is weaker and less durable than heartwood. However, Lee’s Island 5 is unusual in that its top edge is entirely formed of a thick layer of sapwood. Apart from indicating the bole of the parent tree was not much wider than the recorded width of the boat, it also demonstrates that ash trees of a larger size could not be sourced locally. This is supported by the analysis of pollen cores retrieved by O’Connell (2021) from Mám Éan (Maumeen) corrie lake, which confirms deforestation in the wider area. The upper works of the boat would therefore have been weaker and subject to damage, and this possibly explains why the side wall is thicker than most other logboats, being up to 8 cm in places.

The logboat had two seats or thwarts still in place, located 2.30 m and 1.60 m from the stern and bow, respectively. The seats are carved roundwoods measuring 7 cm in diameter. The stern seat was originally integrated into the side walls and held in place through a circular perforation on either side, into which the seat was fixed. The forward seat would originally have also been integrated into the side walls, but this end of the boat is slightly more worn, resulting in erosion of the original circular slots in the side walls which held the seat. As seats are located towards either end, a 3.60 m-internal space was left clear in the middle of the boat, which may have accommodated cargo while travelling or carried animals or other travellers/crew. The boat was flat bottomed with two thickness gauge holes, one slightly forward of amidships with its dowel still in place and a second one 40 cm aft of the stern seat with its dowel/plug missing. Another feature of the boat is that it developed a 4 m-long crack at the turn of its bilge on the port side. This is not surprising, as this is one of the thinnest parts of the boat, and a large component of the exterior of the boat is made up of sapwood. Two radiocarbon dates were obtained from the sapwood (754–409 cal BC (2 sigma) UBA–24534) and a cut piece of brushwood (375–171 cal BC (2 sigma) UBA–27785) found in the boat; all dates securely place the logboat in the early Iron Age period.

Much of the boat’s contents survived in situ, including an iron spearhead with a fragment of its wooden haft located under the forward seat. A 2 m-long oar, carved from ash, also formed part of the cargo and was located in the forward half of the boat. The oar’s proportions are important with regard its function, having a blade length matching the handle length and closely resembling the portions of the steering oar from the first-century BC gold model from Broighter, Co. Derry (Farrell et al. 1975). This resemblance suggests that the oar in question could indeed be a steering oar. Furthermore, the oar is significantly oversized for a 7.54 m-long logboat, indicating that it was likely crafted for a larger vessel, further reinforcing its potential role as a steering oar. Integrated into the stern seat was a socketed and looped iron work axe, complete with its wooden haft. Remarkably, it looks as if the axe was purposely fixed to the boat with the intention of making it a permanent feature. In order to do this, a slight recess was carved into the side wall of the boat to accommodate the upper end of the axe handle so it could lean against the recess to help secure it in place. The seat was also lowered to the level of the axe handle, locking it firmly between the logboat floor and seat against the side wall. In order to lock the axe in place, a semicircular notch was carved out of the

![Figure 1.5. View of 7.54 m long ash logboat, Lee's Island 5, from the bow end. The steering oar and iron spear head are visible under the forward seat. Photo by Karl Brady, copyright National Monuments Service, Government of Ireland.](image-url)
upper side of the axe handle so that the seat’s round profile would neatly fit into the notch on the handle, ensuring it was locked in place. This rendered the axe redundant as a working tool by making it a permanent part of the boat and critically weakening its handle, resulting in the loss of its structural integrity and strength. The repositioning and lowering of the seat created voids in both sides of the boat near the waterline, which appear not to have been sealed or plugged and would have helped cause the boat to flood.

The reason why they went to such trouble to alter the axe and integrate it into the fabric of the vessel itself is open to interpretation. While we can only speculate about this, it seems that it was done as part of a process undertaken to deliberately sink the boat along with its contents—perhaps as a votive offering forming part of a ceremony connected to the ritual deposition of the boat at the bottom of the lake. The boat had clearly reached the end of its useful life, as evidenced by a 4 m-long crack that had developed along the chine of the port side with no visible attempts at repairs. The aft thickness gauge trenail is also missing, which could have been a deliberate act and would have facilitated the rapid ingress of water, and this, combined with the lack of any apparent effort to plug the voids left as a result of lowering the aft seat, would have led to additional water entering the boat if further use had been attempted.

If the boat was deliberately sunk as part of a votive offering, the question again arises as to the reason behind it. Iron was an extremely valuable commodity in the early Iron Age, and both the spear and axe would not have been placed

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**Figure 1.6. Top:** Early Iron Age hafted looped and socketed iron axe integrated into the stern seat of the Lee’s Island 5 logboat. Photo by Rex Bangerter, copyright National Monuments Service, Government of Ireland. **Below:** The iron axe after being recovered from the logboat. Note the semi-circular notch which was cut out of the axe handle so that the round profile of the thwart, when lowered, would fit neatly into the notch on the handle ensuring it was locked in place. Photo by Con Brogan, copyright National Monuments Service, Government of Ireland.
The contribution of logboats to understanding our past

within the logboat without due consideration. The boat and its contents do not appear to be a deposition connected with war. Evidence for war deposition weaponry can be seen from the Hjortspring boat, Nydam boats and other Iron Age boats known from Denmark (Crumlin-Pedersén and Trakadas 2003; Van de Noort 2011: 217–221), but the contents of Lee’s Island 5 logboat are a mix of utilitarian objects (work axe and oar) and only a single weapon (spear). Again, there are several suggested reasons that can be considered for the deposition, including to appease a deity and possibly even to honour Manannán Mac Lir, the mythical mariner who ruled the Otherworld and after whom the lake is named. The boat appears to have also reached the end of its useful life and perhaps needed to be disposed of and maybe ritually killed, as is seen with the Kilbeg logboats mentioned above. It may also have been an important boat to the people who made and used it and deserved special attention to mark a long or notable career operating on the lake. Perhaps it was associated with an important event or battle which occurred on the lake, or a tragedy such as a drowning. Another reason could be the boat was deliberately sunk to mark the passing of a person, perhaps the owner of the boat, one of its crew members or possibly a master craftsman or boat builder who made the boat. The axe integrated into the fabric of vessel may have been the very axe which cut down the tree and helped shape and maintain the boat over time, ultimately to be used as a key component of the ritual deposition of the boat.

There is also, of course, the possibility that the site represents a boat ‘burial’ in water, even though no human remains were found in the vessel during the archaeological excavation. Grinsell (1941) and Van de Noort (2011: 201–221) have both discussed the importance and widespread custom of boat burials in Europe during the Bronze Age, Iron Age and in later periods. Whilst there is no widespread evidence for this practice in Ireland, there is no reason to exclude the possibility for such practices here either. One can therefore ponder if Lee’s Island 5 represents the burial of an important individual who was laid to rest in the boat and submerged in the lake to aid their safe passage to the afterlife accompanied by some of his/her personal or prized belongings. Until these boats were discovered and archaeologically investigated, evidence for the ritual deposition of boats as votive offerings in Ireland was rare, with only a handful of examples known, an example being the deposition of the 15.24 m-long Early Bronze Age logboat in a bog in Lurgan, Co. Galway (Robinson et al. 1999).

Conclusion

The suggestions and ideas presented here by the author require further development and consideration, and those pertaining to ritual deposition highlight that the practice may have held greater significance and widespread prevalence within late-prehistoric societies in Ireland than previously thought. The logboats found in Lough Corrib give rise to numerous questions, and recent specialised publications by Strachan (2010), Goodburn (2019), Tanner (2019) and others, underscore the potential that can be revealed about each individual boat when subject to detailed specialist analysis. Moreover, it is evident that the study of the boats is integral to our understanding of how the local societies functioned and moved on and around the lake throughout time. This in turn can shed further light on activities which may have transpired on other lakes and rivers too, with logboats, sewn plank built craft and probably hide-covered boats in later periods playing vital roles in facilitating travel, trade and the transportation of goods and animals within Ireland’s freshwater environments.

The Lough Corrib logboats, in all their diversity, distribution and density, are of national importance, adding to our record for wrecks and expanding our understanding of the wealth of underwater cultural heritage which remains in the waters around and within Ireland. They are also of international significance. They now form part of a corpus of archaeological discoveries which assist with comparative studies on similar boats from Britain and on the Continent. Due to the number of wrecks in one lake so far discovered, they provide invaluable information on construction techniques, technological changes, boat building skills, function and resource availability. As the range of tools at their maker’s disposal increased in sophistication over the millennia, it allowed for the construction of highly crafted vessels, which no doubt were much prized and cared for, while also reflecting the wider cultural advances in society as whole.

Threats have been identified that could negatively impact or indeed destroy the logboats and their associated artefacts. Surveys and investigations by the UAU are continuing on Lough Corrib, to address the threats but also continue to expand our knowledge of these amazing craft. More extensive study of the wider landscape during all periods represented by the collection of boats is also being done to place the logboats within their wider cultural landscape, and this will be the subject of a series of articles and monographs currently being compiled. More questions will emerge, but it is hoped that so too will more conclusive evidence which will help to clarify many of those questions emerging about the logboats in the lake.

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References


Daly, C. 2019. *Built & archaeological heritage. Climate change adaptation sectoral plan for built and archaeological heritage*. Dublin: Department of Culture, Heritage and the Gaeltacht.


Grinsell, L. 1941. The boat of the dead in the Bronze Age. *Antiquity* 14(60): 360–369


Prior, F. 2004. Some thoughts on boats as Bronze Age artefacts. In P. Clark (ed.), *The Dover Bronze Age boat...*


More than 1,200 islands: narratives of Small Worlds in the Adriatic Sea in Greek and Roman times

Sebastian Adlung and Martina Seifert

Abstract: In the Adriatic Sea, there are more than 1,200 islands of different size and geomorphology between the western and eastern coastal areas. Over time, local communities and traders from different places in the Mediterranean built settlements or emporia, mainly on the larger islands, while smaller islands served as stopover points for maritime transport and trade. In ancient times, for example, the islands Vis, Korčula, Hvar and Palagruža became important through transport, geomorphology and natural environment. Within the context of the settlement of the Adriatic east coast, there is intense debate regarding the role of island communities and their identities as maritime societies in relation to the process of Greek and Roman migration. According to Wilkes, the common narrative includes top-down Romanisation and Roman centralisation, the establishment of the province of Dalmatia by Augustus and the decrease of piracy caused the Italic expansion to eastern Adriatic coastal areas. Aquileia, Pola and Salona were main port cities, with settlers and tradesmen arriving by maritime, fluvial or land routes. This chapter contributes to this topic by addressing the dynamics of settlement development and the interplay of the local communities on Adriatic islands. After a brief overview of selected findings, we consider which concepts of communication and connectivity could be used to describe regional and interregional places and players in more detail in the future.

Introduction

In the Adriatic Sea, more than 1,200 islands of different size and geomorphology are located between the western and eastern coastal areas. Local communities and traders from different places in the Mediterranean built settlements or trading places, mainly on the larger islands, while the smaller islands served as stopover points for maritime transport and trade.

Islands were important as visual landmarks, marketplaces and stopovers, and in Roman times there were probably some major port cities on the islands of the Adriatic Sea, as for example, within the bay of ancient Issa on Vis (Fairev et al. 2012). Presumably, due to location, accessibility, navigability and local supply situation, smaller areas of human interaction emerged. These include the northern archipelago reaching from the islands of Cres and Krk to Trogir, the central southern archipelago off Salona to Dubrovnik, and the central western archipelago reaching west from Vis to Viste and Sipontum on Gargano. In terms of size, number and topography, islands off the coast (e.g. Vis, Hvar, Korčula and Brač) differ from islands in the middle of the Adriatic Sea (e.g. Sušac, Palagruža and Tremiti). The islands near the coast provided diversified settlement areas because their numerous small bays could protect ships from winds or currents. For reasons of navigation and safety, they enabled the creation of shipping routes which generally ran from the Strait of Otranto and reached as far as the Venetian lagoons (Wasmayer 1976). Considering the state of nautical science, sailing along these coasts was a risky venture until recent times (Wasmayer 1976: 200–202). Sea routes of the Adriatic in northern and southeastern directions run along the eastern coast rather than the western one due to various stopping places, as well as a network of lighthouses and coastal lights. In addition to this widely navigable route, island landscapes also offered varieties of smaller routes, both between islands and between islands and the opposing mainland. Numerous ancient shipwrecks with their cargoes at or near the various islands provide valuable information about actors, travel routes and connections between settlements (e.g. Jurišić 2000; Kirigin et al. 2006).

The study presented here contributes to the understanding of human life by linking port research with human activities along the coast of the Adriatic Sea. Ancient harbours and landing sites along coasts and at rivers or canals of the Adriatic region were critically important to maritime trade (Zaccharia 2001). Here, next to lagoons, plains and mountainous coasts, diverse landscape conditions influenced human activities, for example, in agriculture and crafts, and harbours and landing sites served as locations of departure or destination for sea routes as well. Our study illustrates the need to consider the Adriatic space in a holistic perspective when dealing with maritime trade. It aims to strengthen this perspective by expanding existing discussions about the origins of amphorae as products of human craft activities, by incorporating research on harbours and landing sites to create a multifaceted study (Pesavento Mattioli and Carre 2009; Lipovac Vrkljan et al. 2017).