ART. VII – *Archaeological evaluation of the salmon coops, Corby Castle, Cumbria*

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IN September 2005, North Pennines Archaeology Ltd. undertook an archaeological evaluation of the salmon coops at Corby Castle, near Carlisle (NY 4687 5371). This comprised documentary research, an annotated survey, and a field evaluation, which focused on five small areas around the salmon coops and associated eyots or riverine islands (northern and southern), within the River Eden (Fig. 1). Corby Castle, which is visible as an early 19th century house, is situated to the south of the modern settlement of Great Corby, above the eastern bank of the river.

The River Eden is a major feature running through the eastern part of Cumbria, from Mallerstang in the south, to the Solway Firth in the north. As the river passes Great Corby and Wetheral, it flows northwards, and its course is framed by a steep-sided sandstone gorge. The archaeological work was commissioned following major flood damage during the winter of 2005, which necessitated repairs to the timber superstructure of the salmon coops, and the removal of flood deposits from the river channel.

Essentially coops are fish traps comprising a weir of stone, or other riverine structure designed to catch migratory fish. The salmon coops at Corby form a Grade I Listed structure and are purported to be one of the oldest functioning river fish traps in the United Kingdom (Plates 1 and 2). It is popularly believed that they were originally built by the monks of Wetheral Priory. The structure is situated at the southern tip of the northernmost of two eyots. The southern eyot creates a channel and holding pool for the fish, with the coops at the top end. Between the piers and abutments were a series of wooden pans (boxes fitted behind sluice gates for holding fish), and sluice gates, designed to catch salmon as they swam upstream to spawn. It was not known whether either of the associated eyots is entirely natural, or were artificial islands created to function as part of the fish trap. Although salmon are now rare in most English rivers, they were abundant until the time of the Industrial Revolution. Parson and White (1829) stated that: “the river Eden abounds with salmon, trout and eels; and several smaller streams have excellent trout. Red freestone abounds here”.

Fish traps are known in the United Kingdom from the Mesolithic period onwards, and are still used on some UK rivers, although the majority of known examples are located in river estuaries. Very little has been published on fish traps as a type of archaeological structure, but a large number of sites are recorded in the National Monument Record (NMR), and in individual County Historic Environment Records. The most common form is a “V”-shaped weir, pointing downstream, with a basket or net at the apex. These are particularly suited to catching migratory salmon, which pass over the weir during spates or rising tides, falling back at low tide to be caught in the basket. They are identified archaeologically in lowland waterways as rows of closely-spaced stakes, and in upland rivers (with rock beds) as weirs of stone or masonry. The latter are known as “croys” in Scotland and northern England.
FIG. 1. Survey plan of the River Eden showing the salmon coops and eyots.
Fish traps in Cumbria

The use of the term “coops” to describe a fish trap appears to be unique to Cumbria/Cumberland. Several examples of Cumbrian fish traps are known including an example at Netherby (NMR No. NY 37 SE 11). This site was partly exposed in 1989, following excavation of the riverbank below a dwelling known as “Coophouse” on the River Esk, and recorded by the RCHME in 1992. It comprised a series of at least 16 parallel dams, with stone grooves for wooden hurdles. The dams would have acted as holding tanks for the salmon (NY 3865 7148). It has been suggested that “Coophouse” was constructed as a folly in the grounds of Netherby Hall between 1772 and 1782, to be used as a vantage point overlooking the salmon coops. The coops were also dated to the 18th century, and are the closest parallel to the Corby Castle salmon coops. There is also a coursed sandstone revetment forming a retaining wall between the bank and the river terrace, which is remarkably similar to the pitched stone causeway recorded at Corby Castle.

Other possible Cumbrian inland river fish trap sites have been identified from map and place-name evidence. The presence of a coop at Grinsdale, north-east of Carlisle is indicated on the 1st Edition Ordnance Survey map of 1850, which shows a narrow channel on the west side of the River Eden, and “Coophouse Lane” nearby (NY 3700 5800). Two “coups” are marked on the 1st Edition Ordnance Survey map at Little Corby, near Warwick Bridge (NY 4744 5729 and NY 4748 5735). Although the spelling is different, these sites are located on narrow channels, formed by eyots on the west side of the River Eden, and are strong candidates for further fish trap sites. South of Corby, the 1st Edition Ordnance Survey map shows a possible fish weir marked at Fishgarth Holm (NY 4985 5017).

Historical background

Documentary research showed that there was indeed a fishery associated with Wetheral Priory at Corby by the late 11th century. However, it is unknown whether the location or style of this fishery corresponds to that of the present coops. A “fishery” was simply a convenient place to fish, geomorphologically disposed towards the holding of natural fish stocks. There need not have been any form of formal structure or river enhancement associated with it. Records confirmed the importance of fishing rights to the priory in the 12th century, and there was certainly a fixed fish pool, tank and weir at a location closely corresponding to the present coops and eyots by this time. In the 13th century the word “coops” was used for the first time in relation to Corby, but it is not known for certain what form these fish traps may have taken.

Corby Castle was built in the 13th or 14th century by the de Salkeld family as a pele tower, to guard a ford across the River Eden. Richard de Salkeld mentioned the fishery in an indenture dated 1342, and referred to weirs made of stone and timber in the location of the present salmon coops. The fishery remained in the possession of Wetheral Priory until it was dissolved in 1538. The endowments of Wetheral, including the fishing rights on the River Eden, subsequently went to Carlisle Cathedral in 1541. In the early 17th century Corby Castle passed from the de Salkeld family to the Howard family. At the start of the 18th century Thomas
Howard extensively remodelled the grounds of Corby Castle, and planted the northern of the two eyots with trees. The first cartographic depiction of the salmon coops is on the 1752 map of Corby Park, which included the coops and the northern eyot as part of the estate. It is not clear whether the southern eyot existed at this time.

The present fish trap comprises a series of three sandstone piers and two abutments stretching from the eastern bank of the River Eden to the southern tip (downstream end) of the northernmost of the two eyots. It was unclear whether these eyots were entirely artificial or were enhanced natural features, but stone capping over the northern eyot clearly indicated that it was in existence before the construction of the coops. The eyots are connected by a ford of pitched stone, forming a 46 m long and 20 m wide channel on the east side of the river. The salmon coops are depicted on early 19th century original engravings, which show the fish trap in a form similar to that which survives today (Plate 1).

The survey

Initial survey of the eyots revealed that they stood on natural sandstone bedrock, which was exposed at either end. Much of the eastern side of the southern eyot had been obscured by storm gravels. However, these had been eroded from the northern part, revealing that the eyot had been constructed from large piles of sandstone rubble. At the base of this rubble, 17 in situ horizontal timbers were observed, being 0.3 m in diameter. These were sub-circular with bark attached, suggesting whole trees had been used. The general impression was that a “platform” of east-west laid timbers had been used as the foundation of the southern eyot. Some of these had been hafted to a point, but as this served no obvious function, this was interpreted as evidence of timber re-use.

Plate 1. Etching of the salmon coops dated c.1832, with Corby Castle in the background (Anon.).
Much of the eastern side of the northern eyot had been exposed, and had suffered damage due to the recent flood activity. Stretches of revetment in timber and stone were exposed in six places along the edge of the northern eyot. Further areas of timber and stone revetment, and arched stonework were observed in the central section of the northern eyot, suggesting the built-up eyot was entirely artificial. At the southern end of the northern eyot an area of pitched stone had been exposed. North of this were a number of deposits of stone and concrete, suggesting consolidation of the eyot in the 20th century.

The timber superstructure of the coops was in a poor condition due to the 2005 floods. Originally there had been parallel wooden gates between each pair of sandstone pillars but these were in need of repair. A floor of stone slabs was constructed within each opening, and these were angled to provide a strong rush of water over each one. The piers themselves were made of dressed sandstone blocks with embedded metalwork that appeared to be steel rather than iron, suggesting a relatively recent date for the structure. The piers were in good condition, and the lack of water erosion clearly indicated they were of no great antiquity.

The field evaluation

The field evaluation was undertaken in order to determine the nature, extent and state of preservation of structural elements associated with the two eyots, and to establish the character of these features in terms of date, function and sequence. It comprised the excavation of four 2 m by 2 m test pits (Areas 1, 3, 4, and 5) and measured sketches of the stonework forming the surface of the river bed (Area 2). These areas are labelled in Figure 1.

Area 1: The first test pit was excavated over the pitched stone capping at the northern end of the southern eyot, close to the ford connecting the two eyots (Fig. 2). A deposit of storm river gravels was found to overlay the pitched stone surface, which abutted the northern tip of the eyot. The stone surface was constructed of sandstone blocks orientated east-west, and was part of the artificial causeway which connected the two eyots. A portion of the pitched stones within the test pit formed a well-constructed kerb that incorporated a roughly-shaped timber. The south-east end of this timber had a "v"-shaped joint, which served no obvious function. The opposite north-west end was not excavated, but within the extent of the test pit another timber was exposed. This was aligned northeast-southwest, making a right angle with the kerb, and appeared to form a tenon joint where the two timbers intersected. Although the end of the second timber had rotted away, a round-headed nail was observed that would have secured it into the first timber. A deposit of large stones was seen, laid between the timbers and forming a level surface.

The excavated evidence from this test pit suggested that the construction of a timber and stone revetment to the eyot, and the laid stone deposit, had occurred at the same time as the construction of the pitched stone causeway, as part of a single phase of river management. However, dating evidence for this activity was limited to the hand-forged nail, which may be broadly dated to the medieval or, more likely, the post-medieval period.

Area 2: A measured sketch was made of the causeway between the two eyots (Fig. 2). This structure was 15 m long and 5.5 m wide and made of pitched stones,
measuring on average 0.6 m by 0.2 m in size. No obvious bonding was observed, but it was assumed that the stones were bonded into the underlying stone surface. The causeway was well-constructed, and at the northern end the angle of the pitched stonework, raised up to meet a weir and brick vaulting, forming part of the salmon coops structure itself (Plate 3). The causeway had been repaired a number of times, the most recent repair being a strip of concrete, laid at the northern end of the associated ironwork, probably for a fence.

Beneath the pitched stone surface at the north end a number of timbers were visible, aligned east-west. The timbers appeared to form a foundation platform for the causeway, and were similar to those observed in Area 1. On the west side, the pitched stone surface was observed to lay over at least 1.1 m of stonework, which was presumably terraced into the western river channel so that the near-level causeway could be constructed. The causeway was apparently constructed to create a drop between the shallow slower-moving eastern channel and the deeper faster-flowing western channel, to regulate the flow of water into the coops.
Area 3: The second test pit was excavated near the southern tip of the northern eyot, positioned to investigate whether the pitched stone capping continued in this area. This part of the eyot had suffered from erosion during the recent floods, but three sandstone slabs were revealed which were interpreted as part of the stone capping. These were overlain by river deposits and a depth of buried topsoil, above which were three deposits of worked sandstone blocks, interpreted as a crude repair to the eyot.

Area 4: A test pit was excavated on the east side of the central part of the northern eyot, to investigate whether pitched stone capping existed at that point. This was found to exist on the east side, bounded by a timber, aligned north-south (Fig. 3). The timber comprised a squared-off whole tree trunk with bark still attached. Abutting the timber was a well-constructed revetment of tightly packed stones, aligned north-south, which were similar to those seen in Area 1 and Area 2 (Plate 4). Abutting the western extent of these revetment stones was a deposit of larger stones, which appeared to have been laid to consolidate this part of the northern eyot. This surface was covered by alluvial silt deposits.

Fig. 3. Plan of the Area 4 test pit, showing revetment on the east side of the northern eyot.
Area 5: The final test pit was excavated at the north end of the northern eyot, on its east side, where the eastern river channel was very slow-moving. Outcrops of the natural sandstone bedrock were observed in this area. Overlying this, was a north-south aligned *in situ* timber, similar to that observed in Area 4, forming a revetment on the east side. The timber contained two worked holes, which ran fully through it, suggesting the timber was reused. Abutting this timber was a layer of well-laid sandstone blocks, which arched with the contour of the eyot. These appeared to have been laid to reinforce the eastern side.

**Dating evidence**

No *in situ* finds were recovered from the excavated areas. Samples were taken from one of the exposed timbers on the southern eyot to see if a dendrochronological (tree ring) date could be obtained. Unfortunately, the samples were found to be unsuitable for dating, as insufficient rings survived.

Although conclusive dating evidence was lacking, two broad phases of eyot building were observed in Areas 1-5. The earliest structural phase was represented by a number of east-west aligned timbers, pitched stone, and stone/timber revetments in Areas 1 and 2 on the southern eyot. This phase may also include 17 east-west aligned timbers protruding from the eastern side of the southern eyot, although it is possible that these timbers may be of an earlier date still. The early sandstone surface in Area 3, pitched stone and timber revetment observed in Area 4, and arched stone and timber revetment in Area 5, may belong to the same broad phase of construction.

A later, cruder structural phase was observed in Area 3 and Area 4, overlaying deposits of alluvium. This comprised the construction of a rough sandstone surface, interpreted as a phase of repair work to the northern eyot. A stonework arch in Area 2, and pitched stone surface at the southern end of the northern eyot may also be attributed to this phase.

It is tempting to match the earliest broad phase of eyot construction discussed above to the start of the 18th century, when Thomas Howard remodelled the grounds of Corby Castle. In reality however, it is more likely that the structures observed during the evaluation represent repeated builds and repairs, dating broadly to the 17th and 18th centuries. It is apparent that the eyots were in existence prior to the construction of the salmon coops structure, which appears to be no earlier than the 18th century.

**Conclusions**

Documentary evidence indicates the River Eden near Corby Castle has been used for fishing from at least the medieval period, when it was associated with the monks of Wetheral Priory. However, the form of the early fishery is uncertain, and fixed structures may not have been used on the river until the 12th century, when weirs were constructed. It is unlikely that these early features would have survived, given the dynamic and destructive nature of the river in this area.

The field evaluation has indicated that the eyots were built as a form of river
Plate 3. The salmon coops today, looking north-west across the causeway in Area 2.
PLATE 4. Revetment stones and timber kerb of the northern eyot in Area 4 (looking west).
management in the 17th or 18th centuries, prior to the construction of the coops. It has been suggested that the eyots formed a channel in which fish would naturally accumulate, and that this channel is narrow enough to be netted. The pitched stone capping on the islands also provided a usable walking surface that would facilitate net-based fishing. This may have been the preferred method of fishing prior to the construction of the coops.

The Corby Castle salmon coops form a monument with no obvious parallel, as they are not based on the usual weir principle, but instead rely on the fish moving upstream through the piers to be trapped in the wooden pans. The sandstone structure of the coops does not appear to be of any great age, and is likely to be 18th or 19th century in date. It is also possible the coops were originally constructed to be seen from Corby Castle, as part of a deliberately designed landscape.

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Notes and References

3 RCHME, Coophouse Netherby, Arthuret, Cumbria, Royal Commission on the Historical Monuments of England (Report 1/94/100).
6 Ibid.
7 Nicholson and Burn, 330.
9 G. Smith, Map of Corby Park belonging to Philip Howard, 1752 Estate map of Corby Castle, (Carlisle Library).
10 Michael Heaton, pers. com.