

## 13 Fish and crustaceans *by Ruby Céron Carrasco*

Sieved samples from 36 contexts produced fish remains. The samples were sieved through a 1 mm mesh for retents and 300  $\mu\text{m}$  for flots. Twelve samples were hand-collected on site. All the fish bone recovered was examined and identified to species where possible or to family level. Identification was done by comparison with a modern fish bone collection and by reference to relevant guides (Boyle *et al* in press; Rosello-Izquierdo 1988). The incidence of species in each period is given in Table 7.

The size of identified non-Gadoid species was calculated by comparison to modern specimens of known size. The size of Gadoid species has been calculated by giving an approximate size range. This was done by matching the archaeological material to modern fish skeletons of known size based on 'total body length'. Therefore, the elements were

categorised as 'very small' (< 15cm), 'small' (15–30 cm), 'medium' (30–60 cm), 'large' (60–120 cm) and 'very large' (> 120 cm).

Where appropriate, the major paired elements were assigned to the left or right side of the skeleton. All elements were examined for signs of butchery, and burning was also noted. The condition of the bone was recorded in all cases. The recording of condition was based on two characteristics: texture on a scale of 1 to 5 (fresh to extremely friable), and erosion on a scale of 1 to 5 (none to extreme). The sum of both was used as an indication of bone condition; fresh to extremely poorly preserved on a scale of 1 to 10 (after Jones 1991). The details of these analyses are tabulated in the archive of the project records at the National Monuments Record of Scotland and only a few of the main points are summarised here.

**Table 7 Fish bones**

Species	Period I	Period IV	Period V
Gadidae (cod family)	49	861	143
cf Gadidae	0	22	0
<i>Gadus morhua</i> (cod)	0	50	3
cf <i>Gadus morhua</i>	1	20	0
<i>Melanogrammus aeglefinus</i> (haddock)	0	8	5
cf <i>Melanogrammus aeglefinus</i>	0	2	0
<i>Pollachius virens</i> (saithe/coal fish)	11	21	4
<i>Pollachius Pollachius</i> (pollack)	116	142	0
cf <i>Pollachius Pollachius</i>	0	0	23
<i>Clupea heringus</i> (herring)	141	478	82
<i>Limanda limanda</i> (dab)	5	180	158
cf. <i>Limanda limanda</i>	0	197	319
Pleuronectidae (right-eyed flatfishes)	0	150	16
<i>Raja clavata</i> (rocker)	14	26	6
<i>Gurnardus gurnardus</i> (gurnard)	20	24	3
<i>Zeus faber</i> (john dory)	0	0	5
Salmonidae	59	9	10
<i>Perca fluviatilis</i> (perch)	37	42	114
<i>Rutilus rutilus</i> (roach)	0	6	0
<i>Anguilla anguilla</i> (eel)	0	15	10
Petromyzonidae (lamprey)	0	1	0
Total	453	2254	901

*Period I* Although only three contexts from Period I contained fish remains, ten different species were identified, of which the most abundant were herring (*Clupea harengus*) and 'small' size pollack (*Pollachius pollachius*).

*Period IV* Thirty contexts from this period contained fish remains, with fifteen different species identified. Gadidae were the most abundant, with pollack (*Pollachius pollachius*) being one of the dominant species identified. Other important species were the flatfishes of the *Pleuronectidae* family including dab (*Limanda limanda*). Herring (*Clupea harengus*) was also important.

*Period V* Five contexts from this period contained fish remains. Fourteen different species were identified, of which the dominant species present was the flatfish dab (*Limanda limanda*). The other important taxa were the Gadidae and herring (*Clupea harengus*).

### 13.1 Freshwater fish

The freshwater fishes present at Dundrennan were *Salmonidae* (salmon or trout), perch (*Perca fluviatilis*), eel (*Anguilla anguilla*) and roach (*Rutilus rutilus*). While salmon, trout and eel are flowing-river fish and may have been caught at burn entrances, perch and roach are lake and slow-moving river inhabitants and easily adapt to living in canals and ponds (Wheeler 1978). The use of fish ponds by medieval monasteries in Scotland has not been widely studied. The possible presence of fish ponds at Dundrennan and the recovery of fish elements from species such as perch and roach open interesting perspectives in the study and understanding of the economy and dietary rules of the monastic houses throughout Scotland.

Perch and roach were mainly represented by scale remains. Very few vertebrae were recovered from these species, which may indicate that the fish were scaled before preparation for food.

Period IV deposits contained the remains of the keratinized teeth of lamprey. This is the only hard part of lampreys and may survive in some archaeological deposits (Wheeler & Jones 1989). Although this species of the superclass *Agnatha* (*A* = without, *gnathos* = jaws), has quite an unprepossessing appearance, it has been commonly eaten in Europe. Scotland is no exception; in 1304 lampreys were imported from France to supply the king while staying at St. Andrews (Anson 1950).

### 13.2 Marine fish

Herring is particularly numerous in Period IV, and was represented almost entirely by vertebrae. Vertebrae are the most robust elements and so may have survived preferentially. Dundrennan may have been supplied with herring from a variety of sources. One of these could have been Loch Ryan, some 70 km to the west, where a prolific herring industry formerly flourished.

Gadidae were generally represented by 'small' specimens – mainly haddock, pollack and saithe. Some elements from 'large' cod were also recovered; some of these were large enough to be hand-retrieved on site. Period IV contained most of the Gadidae and included elements identified to pollack, saithe, cod and haddock. These have a long history as important sources of food and may either have been consumed fresh or as salted or dried products. This industry had been in practice from at least Norse times and expanded during post-medieval times to cater for Christian dietary norms, especially for Lent and other religious events, in which eating of meat was forbidden.

Flatfish from the *Pleuronectidae* family (right-eyed flatfishes), in particular dab (*Limanda limanda*), were especially abundant in Periods IV and V. Dab live over sandy ground and are found inshore all the year round. It is not surprising therefore that so much dab was recovered at Dundrennan, with the proximity of sandy coast around the Solway Firth.

### 13.3 Fish in economy and diet

Fish resources have played an important part in the religious and social history of Scotland. Many abbeys and other religious houses were granted fishing rights by the kings of Scotland, for example the Valliscaulian houses of Pluscarden, Beaully and Ardchattan derived a large part of their incomes from salmon fisheries from their foundation early in the 13th century (Anson 1950, 37).

In addition it is well-known that the Cistercians were experts in fish-farming. Many abbeys appointed a *frater piscatorius* for managing their fishponds and the sale of their products (Tobin 1995, 128). The presence of possible fishpond species at Dundrennan is therefore compatible with the historical evidence, although the evidence from Dundrennan is for consumption on site. It is not known whether the products of the fish-ponds were also traded.

The products of sea fishing were consumed at the abbey and could have derived from local areas, for example around the Solway Firth and the well-known herring fishery at Loch Ryan. The presence and abundance of flatfish in Periods IV and V may be indicative of a change in dietary rules or preferences at the abbey.

### 13.4 Crustaceans

Three fragments of crustacean remains were recovered from Period IV deposits. These fragments may have belonged to the edible crab (*Cancer pagurus*) but were too small for size determination or accurate identification. The species can be found among rocks and would have been readily available nearby.