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Technical Report: The fish bone from Berwick Workspace, Berwick-upon-Tweed (site code BTW06)

by

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Summary

This report presents an analysis of the fish bones from Berwick Workspace, Berwick-upon-Tweed. The small assemblage comprised sieved and hand collected bone from four periods. Results indicated small, young whiting, haddock and other cod family fish were commonly consumed, likely caught from local coastal waters. Larger cod and related fish were also found but in small quantities, indicating some exploitation of deeper, open water fishing grounds. A number of other marine or migratory species were also found in small quantities, and no freshwater species were found. Butchery marks indicate possible importation of prepared cod in the earlier, potentially high-status periods of the site.

KEYWORDS: BERWICK-UPON-TWEED, FISH BONES, ZOOARCHAEOLOGY, MEDIEVAL

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The fish bone from Berwick Workspace, Berwick-upon-Tweed (site code BTW06)

Introduction

This report details the analysis of 668 identified fish bones from Berwick Workspace, Berwick-upon-Tweed. The site is located within the Elizabethan town walls, and was likely within the 12th and 13th century Scottish burgh. Berwick-upon-Tweed is located on the river Tweed, and adjacent to the North Sea, making access to both fresh water and marine fish possible. Four broad periods were represented, with some further subdivisions into phases. Relevant contexts containing fish bone from Period 1a and 1b were associated with structural features, while those from Period 1c were pits and layers associated with demolition. These latter features may have originated from an ecclesiastical or monastic structure, likely a building of high status. Period 1 dates to the 13th and 14th centuries. Relevant Period 2 contexts include soil accumulations and a pit cut. These are associated with a general abandonment of the entire site area, and are of late medieval date, possibly 14th century. Period 3 contexts include pit fills, a pit cut and a metalling event, all associated with a new structure of early post-medieval date built at this time. This and subsequent structures may be of domestic function. Building continued into the post-medieval Period 4, when relevant contexts include soil accumulations, drain fills and robbing features (Frain and Mabbitt 2007a; Frain and Mabbitt 2007b).

Recovery included sieving of bulk samples (comprising fractions of 2-4mm and >4mm) as well as hand collection. Small quantities of fish bone found in the light fraction (i.e. the flot) were grouped into the relevant residue. Less than 10% of the identified fish bones were derived from hand collection, meaning that the well known biases caused by differential collection of larger elements and species can be avoided (Jones 1982); the emphasis will therefore be placed on the sieved subset, with hand collected material contributing only to certain aspects of the analysis. The two sieved fractions have been grouped into ">2mm" for the purposes of this report, but using the raw data, they can be divided should the need arise for comparison with assemblages only sieved to 4mm.

Most of the identified, sieved material came from Periods 1 and 2, while the small quantities of identified hand collected material were evenly divided between all four periods. The final two periods are represented by only small quantities of bone so can only be discussed briefly; in any case, their broad dating makes them difficult to discuss. The emphasis of this report will therefore be on the material associated with high status structures in Period 1 and of 13th to 14th century date, as well as on the late medieval Period 2, although it is, as yet, less well understood and is only tentatively dated to the 14th century. Preservation was generally good, meaning that this material has a high rate of identification and can therefore contribute to our understanding of medieval fishing and fish consumption.

Methods

This assemblage was recorded using the York System, an Access database utility designed for recording zooarchaeological assemblages, as well as the extensive reference material available in the Department of Archaeology, University of York. The recording protocol is fully detailed in Harland *et al.* (2003). Briefly, this entails the detailed recording of the 18 most commonly occurring and easily identified elements, termed quantification code (QC) 1. For each of these, the element, species, approximate size, side, fragmentation, texture, weight and any modifications are recorded in detail. Fish vertebrae (QC2) are recorded in more limited fashion, with counts, element and species recorded. Some elements are unusual and particularly diagnostic, like otoliths, and are fully recorded (QC4). The final category of

material (QC0), includes elements not routinely identified as well as unidentifiable material. Elements that are from very unusual species, or that are butchered, are recorded in detail even if not from the QC1 category. Data analysis involved structured database queries, as well as manipulation using Excel.

The complete archive has been submitted to the excavators as both an Access file and as simple text files containing the same data. These are also kept on file in the Fishlab at the University of York.

Preservation

The fish bone was generally well preserved, with most QC1 specimens of 'good' or 'fair' texture (see Table 1 for all taphonomy data). Percent completeness scores indicate just over a third of all QC1 elements were fragmented to 20-40% of their original size, with only about 15% of all bone being almost complete. Fragmentation was slightly higher in Period 2 than in Period 1. However, identification rates were high, with only a third of sieved fragments remaining unidentified, indicating the good overall condition of the fish bone.

Small quantities of burnt bone were found, representing less than 2% of all bone. Period 3 had the highest percentage, at 5.6%, although given the small quantities involved, this may represent random variation. Evidence of crushing was found on 2.4% of all bone, with slight variation between periods. One example of acid etching – indicating digestion – was observed in Period 1. No patterning of species or element was observed for any of these modifications.

Results

Species

A total of 1021 bones were examined, of which 617 were identified to element and species (QC1, QC2 or QC4) from the sieved fraction. A further 51 of these diagnostic elements were identified from hand collected material. The majority of species identified belonged to the cod family, with significant quantities of herring also recovered (see Table 6 for summary of common and latin names). In addition, five elements were identified from unusual species, and although quantified as QC0, they are worth mentioning. These include two ray family teeth from Period 2, one grey gurnard cranial element from Period 2, and two fragments of gurnard family from Period 1c.

Table 2 presents basic NISP data by species. Looking at all sieved fish bone, the species recovered comprise, in rank order: haddock, whiting, herring, cod, cod family, halibut family, ray family, saithe, salmon/trout, eel, sand eel family, saithe/pollack, pollack, ling, Atlantic horse-mackerel/scad, and flounder. A much more limited species range was found using hand collection, as is expected given that this method of recovery favours only the larger species and elements. Species recovered using this method comprise, in rank order: cod, ling, haddock and angler.

The fish species found at Berwick Workspace indicate a reliance on marine fishing, which is to be expected given the site's location adjacent to the North Sea. General trends observed throughout English fish bone assemblages for the medieval period also indicate an emphasis on marine fishing, particularly cod, cod family and herring (Barrett *et al.* 2004a; Barrett *et al.* 2004b). All marine species found at the site are to be expected in this region of the North Sea. The few finds of migratory or fresh water fish – including salmon/trout and eels – may have been caught in the river Tweed and are restricted to the first two periods. However, the complete absence of any fresh water fish, like pike, perch or members of the carp family, suggest a very low level of river fishing from the 13th century onwards. Today, the Tweed is

known as a salmon and trout river, but a variety of other fresh water species can be found there (Clayton 1997) – most of which were missing from the archaeological assemblage. Some of the smaller fish recovered, like the sand eels, may have been stomach contents of the larger ones, or may have been stomach contents of marine bird species.

Periods 1 and 2 contained sufficient quantities to examine changes through time. Quantities of whiting increased substantially through time from 20% to 53%, while haddock decreased from 38% to 20%. Herrings decreased slightly from 17% to 12% and cod, saithe and halibut family fish also decreased through time between these two periods. This may be related to the changing function of the site, with Period 1 associated with monastic structures and Period 2 of as-yet unknown function.

Fish sizes

Fish sizes can be investigated using broad size categories recorded for QC1 elements, as well as by applying regression equations to certain measurements to determine total fish lengths (e.g. Jones 1991; Watt *et al.* 1997; see further references in Harland *et al.* 2003). Data are summarised in Table 3. Quantities are small, requiring a reliance on the broad size categories rather than metrical data. However, despite this, patterning can be observed through time. Sieved Period 1 cod family fish are from a variety of sizes, from 15cm up to 100cm total length, with a reliance on fish of 30-50cm in length. This includes cod, haddock, saithe and whiting. By Period 2, there is a slight tendency towards increasing reliance on fish of only 30-50cm in length. Sizes from Periods 3 and 4 continue to emphasis the 30-50cm total length fish. Hand collection obviously favours the larger sizes, with cod and ling of over 100cm found in most periods. These size ranges recovered suggest most of the cod family fish caught were small, likely from inshore, coastal populations of younger fish. The few finds of very large fish indicate that deeper, open water habitats were exploited, but not on a large scale. Larger cod and cod family fish might be imported as prepared meat, a possibility that will be investigated further using butchery and element patterning, as well as comparative assemblages.

Element distribution

The proportions of fish elements present in an assemblage can be used as evidence of fish processing. Large cod and cod family fish can be butchered when fresh to remove most of the head and anterior vertebrae, and can then be air dried or salted to preserve the meat. This can then be shipped to a consumption site, where their remains, in the form of vertebrae and the cleithra – two large, paired elements at the back of the head – would be found (see Perdikaris 1996; Barrett 1997; Harland 2006 and references therein for archaeological and historical evidence for this well established trade within the North Sea and North Atlantic regions). Differences in proportions and sizes of cranial elements, cleithra and vertebrae can then be analysed to determine if a site contains entire fish, consumed whole, if any evidence of processing was found, or if consumption of prepared fish likely took place. This can be complemented by butchery evidence. The bones from Berwick Workspace are too few in number to fully analyse for these patterns (see Table 4 for quantification). The small quantities observed for each species in each phase suggest exploitation of entire fish, without definite evidence for or against the importation of prepared cod family fish. However, it is still possible to assess evidence for fish trade using butchery patterning.

Butchery

Ten elements contained butchery marks, as summarised in Table 5. Cod were the most commonly butchered species, followed by haddock, ling and whiting. Three cod abdominal vertebrae from Periods 1 and 2 displayed distinctive sagittal chop or knife marks, as though splitting the carcass on the left side of the midline plane. These were likely from very large cod, of over 100cm in length. To date the only other known examples are from Coppergate, York, primarily from 13th century deposits (currently under investigation by the author). There, quantities of large cod vertebrae were found displaying very similar

sagittal chop marks. Further work remains to be done on this pattern, as it has only just been identified on the Coppergate material. However, initial thoughts indicate it might be the result of splitting very large cod prior to drying or salting. The element proportions at Coppergate indicate these vertebrae were arriving without associated cranial elements but with cleithra, most likely as prepared fish. The identification of this pattern at Berwick suggests that it might be widespread within the North Sea region in the 13th and 14th centuries. Further work using isotopic analysis should be able to pinpoint the origin of these prepared fish within the North Atlantic region (following Barrett *et al.* 2007). Small knife marks on haddock and ling cleithra and from Periods 3 and 4 are also suggestive of imported, prepared fish. Other butchery evidence is inconclusive. The one example of butchered whiting, from Period 1, can be interpreted as decapitation, likely for immediate consumption.

Summary and conclusions

The fish bones from Berwick Workspace, Berwick, are a small, sieved and hand collected assemblage from a coastal settlement dating from the 13th century onwards. Emphasis was placed on examining the material from Period 1, a 13th and 14th century high status religious site, and Period 2, of possible 14th century date and as yet unknown function. The fish species recovered were almost entirely marine, and the few migratory species recovered were found in Periods 1 and 2, suggesting very little use of resources in the River Tweed. Many of the marine species found were from the cod family, and most were of small size and therefore young age. Whiting and haddock were particularly common in the first two periods. These and other small cod family were probably fished from local coastal waters and were likely deposited in their entirety at the site. A few finds of larger cod contained butchery marks suggesting they might have been imported as prepared meat, possibly from producer regions to the north, including the Northern Isles or Scandinavia. These were restricted to Periods 1 and 2, likely of 13th and 14th century date, and may be connected to the high status religious establishment identified in Period 1. The only known parallels are from 13th century domestic deposits at Coppergate, York, possibly indicating trading links or shared sources between these two east coast settlements – or, at the very least, shared butchery strategies between the two sites (Harland *et al.* 2007). Later, prepared ling and haddock might have arrived at Berwick. A small number of large cod family cranial elements were also found throughout the hand collected assemblage, indicating that deeper, open water was also exploited for fish consumed fresh at Berwick. A range of other species were recovered, including herrings, flatfish and rays. The herrings were likely deliberately targeted and were a commonly medieval foodstuff – possibly imported as a cured product, or eaten fresh – while the other species were either deliberately fished on a small scale, or were accidental bycatches when fishing for the more common species. Further work on ascertaining the precise date and origins of the large butchered cod could be beneficial to our understand of trade patterns and high status sites of the 13th and 14th centuries.

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Tables

Table 1: Taphonomy data

Burning and other modifications

All material, combined recovery methods					
Period	Burned	% of assemblage	Acid etching	Crushing	% of assemblage
1	10	2.0%	1	8	1.6%
2	3	1.0%		10	3.3%
3	4	5.6%		3	4.2%
4				3	2.1%
Total	17	1.7%	1	24	2.4%

Percent completeness of elements

QC1, >2mm sieving											
Period	1-20%		20-40%		40-60%		60-80%		80-100%		Total
1			33	36%	26	28%	21	23%	12	13%	92
2			24	49%	12	24%	10	20%	3	6%	49
3	1	7%	3	21%	3	21%	1	7%	6	43%	14
4			2	25%	3	38%	2	25%	1	13%	8
Total	1	1%	62	38%	44	27%	34	21%	22	13%	163

Surface texture

QC1, >2mm sieving							
Period	Good		Fair		Poor		Total
1	62	67%	30	33%			92
2	40	82%	9	18%			49
3	9	64%	4	29%	1	7%	14
4	4	50%	4	50%			8
Total	115	71%	47	29%	1	1%	163

Quantities of diagnostic elements per phase

	Sieved >2mm									Hand collected				Total
Period	QC0		QC1		QC2		QC4		Total	QC0	QC1	QC2	Total	
1	167	34%	92	19%	229	47%	3	1%	491	4	5	3	12	503
2	56	21%	49	18%	166	61%	2	1%	273	8	7	13	28	301
3	27	42%	14	22%	23	36%			64	1	5	2	8	72
4	68	64%	8	7%	30	28%	1	1%	107	22	9	7	38	145
Total	318	34%	163	17%	448	48%	6	1%	935	35	26	25	86	1021

Table 2: Number of identified specimens (NISP) by species (p=present but non-diagnostic)

NISP by Period, based on quantification of diagnostic elements (QC1, QC2, QC4)																	
Family	Common name	Sieved to >2mm						Sieved total		Hand collected				Hand collected total		Total
		Period 1		2		3	4			Per. 1	2	3	4			
Rajidae	Ray Family	3	0.9%	2	0.9%		1	6	1.0%							6
Anguillidae	Eel	2	0.6%	2	0.9%			4	0.6%							4
Clupeidae	Atlantic Herring	57	17.6%	26	12.0%	2	14	99	16.0%							99
Salmonidae	Salmon/ Trout	4	1.2%					4	0.6%							4
Gadidae	Cod Family	21	6.5%	14	6.5%	2	3	40	6.5%							40
	Cod	33	10.2%	10	4.6%	5	4	52	8.4%	5	17	5	12	39	76.5%	91
	Haddock	122	37.7%	45	20.7%	18	13	198	32.1%		1	1	3	5	9.8%	203
	Whiting	61	18.8%	114	52.5%	9	3	187	30.3%							187
	Saithe/ Pollack	1	0.3%					1	0.2%							1
	Pollack	1	0.3%					1	0.2%							1
	Saithe	4	1.2%	1	0.5%			5	0.8%							5
	Ling						1	1	0.2%	3	2	1		6	11.8%	7
Lophiidae	Angler												1	1	2.0%	1
Triglidae	Gurnard Family	p						p								p
	Grey Gurnard			p				p								p
Carangidae	Atlantic Horse-mackerel/ Scad	1	0.3%					1	0.2%							1
Ammodytidae	Sand Eel Family	2	0.6%			1		3	0.5%							3
Pleuronectidae	Flounder	1	0.3%					1	0.2%							1
	Halibut Family	11	3.4%	3	1.4%			14	2.3%							14
Total (QC1, QC2, QC4)		324	100.0%	217	100.0%	37	39	617	100.0%	8	20	7	16	51	100.0%	668
Unidentified (QC0)		167		56		27	68	318		4	8	1	22	35		353
Total		491		273		64	107	935		12	28	8	38	86		1021

Table 3: Fish size summary

Fish total lengths, determined by comparison with modern material, based on sizes recorded for all QC1 elements													
Common name	Total length	Sieved to >2mm				Sieved total	Hand collected				Hand collected total	Total
		Period 1	2	3	4		Period 1	2	3	4		
Atlantic Herring	15-30cm	3	2			5						5
Cod	15-30cm	2	1			3						3
	30-50cm	11	2	1	1	15						15
	50-80cm	4				4		1	1		2	6
	80-100cm	1	2	1		4		1		1	2	6
	>100cm						2	2	2	4	10	10
Cod Family	15-30cm	2	1	1		4						4
	30-50cm	3	5			8						8
	50-80cm	1	1			2						2
Haddock	15-30cm	4	1			5						5
	30-50cm	41	11	7	6	65				2	2	67
	50-80cm	4	1			5		1	1	1	3	8
Ling	>100cm						3	2	1		6	6
Saithe	15-30cm	1				1						1
	30-50cm	2				2						2
Whiting	15-30cm	3	2	1		6						6
	30-50cm	9	20	3	1	33						33

Table 4: Element quantification

Common name	Element	Sieving to >2mm				Sieved total	Hand collection				Hand collected total	Total
		Per. 1	2	3	4		Per. 1	2	3	4		
Ray Family	Dermal Denticle	3	1		1	5						5
	Caudal Vertebra		1			1						1
Eel	Abdominal Vertebra		1			1						1
	Caudal Vertebra	2	1			3						3
Atlantic Herring	Articular	1				1						1
	Dentary	1	1			2						2
	Maxilla		1			1						1
	Otic Bulla		1			1						1
	Quadrate	1				1						1
	First Vertebra	1				1						1
	Abdominal Vertebra	21	11	1	10	43						43
	Caudal Vertebra	31	12	1	4	48						48
	Ultimate Vertebra	1				1						1
Salmon/ Trout	Caudal Vertebra	4				4						4
Cod	Articular			1		1		1	1		2	3
	Cleithrum	1				1	1				1	2
	Dentary		2			2	1		1	1	3	5
	Hyomandibular				1	1						1
	Infrapharyngeal	1	1			2						2
	Maxilla	6				6						6
	Opercular	1				1						1
	Parasphenoid							1	1		2	2
	Premaxilla	2	2			4		2		1	3	7
	Preopercular			1		1				1	1	2
	Quadrate	5				5				1	1	6
	Supracleithrum	1				1						1
	Vomer	1				1				1	1	2
	First Vertebra				1	1		1			1	2
	Abdominal Vertebra		1			1						1
	Abdominal Vert. Group 1	3	1			4	1	2	1	2	6	10
	Abdominal Vert. Group 2	3				3	1	5		2	8	11

Common name	Element	Sieving to >2mm				Sieved total	Hand collection				Hand collected total	Total
		Per. 1	2	3	4		Per. 1	2	3	4		
	Abdominal Vert. Group 3	4		1	1	6	1	5	1	1	8	14
	Caudal Vertebra Group 1	3	3	1	1	8						8
	Caudal Vertebra Group 2	2		1		3				2	2	5
Cod Family	Articular	1	4			5						5
	Cleithrum	1				1						1
	Dentary	1				1						1
	Maxilla	2	1			3						3
	Palatine		1			1						1
	Quadrate			1		1						1
	Scapula	1				1						1
	Supracleithrum		1			1						1
	Caudal Vertebra		1			1						1
	Abdominal Vert. Group 1	3			2	5						5
	Abdominal Vert. Group 2	1				1						1
	Caudal Vertebra Group 1	2				2						2
	Caudal Vertebra Group 2	9	6	1	1	17						17
Haddock	Articular	7	1			8						8
	Basioccipital	2			1	3						3
	Ceratohyal	1	1	1	1	4						4
	Cleithrum	7			1	8		1	1	3	5	13
	Dentary	1		3		4						4
	Hyomandibular	4	2			6						6
	Infrapharyngeal	2				2						2
	Maxilla	5				5						5
	Opercular	1			1	2						2
	Palatine	1		1		2						2
	Parasphenoid	2	2			4						4
	Posttemporal	4	1			5						5
	Premaxilla	2		1		3						3

Common name	Element	Sieving to >2mm				Sieved total	Hand collection				Hand collected total	Total
		Per. 1	2	3	4		Per. 1	2	3	4		
	Preopercular	2	2			4						4
	Quadrate	3	2			5						5
	Supracleithrum	3	2	1	2	8						8
	Vomer	2				2						2
	First Vertebra	1	1			2						2
	Caudal Vertebra		3			3						3
	Abdominal Vert. Group 1	11	6	1		18						18
	Abdominal Vert. Group 2	8	5			13						13
	Abdominal Vert. Group 3	17	10	2	5	34						34
	Caudal Vertebra Group 1	10	4	2	1	17						17
	Caudal Vertebra Group 2	26	3	6	1	36						36
Ling	Articular							1			1	1
	Basioccipital						1				1	1
	Ceratohyal							1			1	1
	Cleithrum								1		1	1
	Maxilla						1				1	1
	Palatine						1				1	1
	Caudal Vertebra Group 1				1	1						1
Pollack	Abdominal Vert. Group 2	1				1						1
Saithe	Articular	1				1						1
	Preopercular	1				1						1
	Quadrate	1				1						1
	Abdominal Vert. Group 3	1	1			2						2
Saithe/ Pollack	Caudal Vertebra Group 1	1				1						1
Whiting	Articular		2	2		4						4
	Basioccipital	1	1			2						2
	Ceratohyal	1				1						1

Common name	Element	Sieving to >2mm				Sieved total	Hand collection				Hand collected total	Total
		Per. 1	2	3	4		Per. 1	2	3	4		
	Dentary	1	6			7						7
	Hyomandibular		1			1						1
	Infrapharyngeal	2				2						2
	Maxilla	2	2			4						4
	Palatine	1		1		2						2
	Parasphenoid	2	1		1	4						4
	Posttemporal		1	1		2						2
	Premaxilla	1	3			4						4
	Quadrate		2			2						2
	Vomer	1	3			4						4
	First Vertebra	1	2	1		4						4
	Abdominal Vert. Group 1	2	8			10						10
	Abdominal Vert. Group 2	4	5	1	1	11						11
	Abdominal Vert. Group 3	13	33		1	47						47
	Caudal Vertebra Group 1	10	20	2		32						32
	Caudal Vertebra Group 2	19	24	1		44						44
Angler	Dentary									1	1	1
Atlantic Horse-mackerel/ Scad	Vertebra	1				1						1
Sand Eel Family	Caudal Vertebra	2		1		3						3
Flounder	Quadrate	1				1						1
Halibut Family	Penultimate Vertebra	1				1						1
	Abdominal Vertebra	3	1			4						4
	Caudal Vertebra	7	2			9						9

Table 5: Butchery summary

Species	Period	Element	Description	Interpretation	Size	Recovery
Cod	1	Abdominal Vertebra Group 1	Chop in sagittal plane, on left side just clipping articular facet and thus well off-centre; angling in slightly away from the ventral and towards the dorsal side	? Processing for preservation	>100cm	>4mm
Cod	2	Abdominal Vertebra Group 2	Two faint knife marks in sagittal place, on proximal left side, probably from the dorsal towards the ventral	? Processing for preservation	>100cm	Hand collection
Cod	2	Abdominal Vertebra	Chop in saggital plane, side not known; just a small sliver of side of vertebrae remains - the reverse of the pattern seen in Period 1	? Processing for preservation	80-100cm/ >100cm	>4mm
Cod	2	Premaxilla	Small knife cut on lateral edge of process, extending from outside to inside of mouth on diagonal	?	50-80cm	>4mm
Cod	2	Premaxilla	Small knife cuts removing slivers of bone, obliquely, around outside edge just adjacent to process, likely in frontal plane	?	80-100cm	Hand collection
Cod	3	Caudal Vertebra Group 1	Small knife mark on dorsal spine, on right side	? Butchery for immediate consumption	50-80cm	>4mm
Haddock	2	Supracleithrum	Small knife mark	? Possibly processing for preservation	50-80cm	>4mm
Haddock	4	Cleithrum	Small knife mark on lateral edge, in frontal plane	? Possibly processing for preservation	50-80cm	Hand collection
Ling	3	Cleithrum	Small knife mark on lateral edge, in frontal plane	Processing for preservation	>100cm	Hand collection
Whiting	1	Basioccipital	Chop in transverse plane, on ventral side, just behind the articular facet - so a chop when the fish is upside down, poss to remove the head after gutting?	Decapitation, likely for immediate consumption	50-80cm	>4mm

Table 6: Summary of common and latin names of fish mentioned in the text

Common name	Latin names
Ray Family	Rajidae
Eel	*Anguilla anguilla*
Atlantic Herring	*Clupea harengus*
Salmon/ Trout	Salmo
Saithe/ Pollack	Pollachius
Cod Family	Gadidae
Cod	*Gadus morhua*
Haddock	*Melanogrammus aeglefinus*
Ling	*Molva molva*
Whiting	*Merlangius merlangus*
Pollack	*Pollachius pollachius*
Saithe	*Pollachius virens*
Angler	*Lophius piscatorius*
Gurnard Family	Triglidae
Grey Gurnard	*Eutrigla gurnardus*
Atlantic Horse-mackerel/ Scad	*Trachurus trachurus*
Sand Eel Family	Ammodytidae
Halibut Family	Pleuronectidae
Flounder	*Pleuronectes flesus*