



Gloucestershire
COUNTY COUNCIL



Severn Estuary Rapid Coastal Zone Assessment Survey

PHASE 2 FIELDWORK REPORT Volume 3: Appendices



for English Heritage (NHPCP project 3885)

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Version 3.2 FINAL, February 2013

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Appendix A - Full radiocarbon dating determinations

Alex Bayliss, Scientific Dating Co-ordinator, English Heritage

Appendix A1 – Round 1

The samples were dated by Accelerator Mass Spectrometry (AMS) at the Scottish Universities Environmental Research Centre in East Kilbride (SUERC-) and the Oxford Radiocarbon Laboratory (OxA-) respectively. The samples dated at SUERC were pre-treated using methods outlined in Hoper et al (1998), combusted following Vandeputte *et al* (1996), graphitized as described by Slota *et al* (1987), and measured by AMS (Xu et al 2004). The samples processed at ORAU were pre-treated using a standard acid/base/acid method followed by an additional bleaching step (Brock et al 2010), combusted, converted to graphite, and dated as described by Bronk Ramsey *et al* (2004). Internal quality assurance procedures and international inter-comparisons (Scott 2003) indicate no laboratory offsets and validate the measurement precision quoted.

The results reported are conventional radiocarbon ages (Stuiver and Polach 1977). The calibrated date ranges have been calculated by the maximum intercept method (Stuiver and Reimer 1986), using the program OxCal v4.1 (Bronk Ramsey 1995; 1998; 2001; 2009) and the IntCal09 data set (Reimer et al 2009). They are quoted in the form recommended by Mook (1986), rounded outwards to 5 years. Calibrated dates which may be affected by atmospheric ^{14}C produced in the atomic tests of the 1950s are denoted by *. The probability distributions of the calibrated dates, shown below, have been calculated using the probability method (Stuiver and Reimer 1993), and the same data.

The two radiocarbon results from fish-trap 10343 at Beachley are statistically consistent with a single calendar age ($T'=0.0$; $T'(5\%)=3.8$; $v=1$; Ward and Wilson 1978), and so both stakes probably relate to the primary construction of the structure. Similarly, the two radiocarbon results from braces of the probable fish-weir (10257) at Berrow Flats (Brean Beach) are also statistically consistent ($T'=1.5$; $T'(5\%)=3.8$; $v=1$) and may be part of the original construction of this feature; as are the two results from the trackway at Berrow Flats (Burnham-on-Sea) ($T'=0.9$; $T'(5\%)=3.8$; $v=1$).

The four radiocarbon results from elements of the V-shaped fish-trap at Oldbury Flats (10032) are statistically significantly different at 95% confidence ($T'=9.8$; $T'(5\%)=7.8$; $v=3$), but not at 99% confidence ($T'(1\%)=11.4$). SUERC-34354 is rather later than the other measurements from this structure. Either this result is a statistical outlier, or the sampled stake represents a later repair. The two radiocarbon results from fish-trap 10339, however, are statistically consistent with a single calendar age ($T'=0.0$; $T'(5\%)=3.8$; $v=1$), and so both samples probably relate to the primary construction of the structure. Similarly, the two determinations from fish-trap 10021 are also statistically consistent ($T'=0.3$; $T'(5\%)=3.8$; $v=1$), and probably relate to the initial construction of this structure.

From Oldbury Flats, fish-trap 10015, three measurements are available. The two measurements on timber 92A are statistically consistent (see Table 1, below) and so a weighted mean should be taken before calibration since these determinations are on the same sample. The weighted mean for this timber is also statistically consistent with SUERC-34357 ($T'=0.0$; $T'(5\%)=3.8$; $v=1$), and so both samples probably relate to the primary construction of the westernmost part of this structure.

The two radiocarbon results from woven basket fishing structure 10326/90 at Grange Pill, Woolaston are statistically significantly different at 95% confidence ($T'=5.1$; $T'(5\%)=3.8$; $v=1$), but not at 99% confidence ($T'(1\%)=6.6$). OxA-24678 is rather later than the other

measurement from this structure. Either this result is a statistical outlier, or the sampled roundwood represents a later repair. The two radiocarbon results from woven basket fishing structure 10326/88, however, are statistically consistent ($T'=0.5$; $T'(5\%)=3.8$; $\nu=1$), with both samples probably relating to the initial construction of the object. The two radiocarbon results from the hurdle structure 10328/87 are statistically significantly different at both 95% and 99% confidence ($T'=6.9$; $T'(5\%)=3.8$; $T'(1\%)=6.6$; $\nu=1$), and so the later measurement, SUERC-34347 probably represents a later repair. Finally, the two radiocarbon results from woven basket fishing structure 10326/86 are statistically consistent ($T'=2.2$; $T'(5\%)=3.8$; $\nu=1$), with both samples probably relating to the initial construction of the object.

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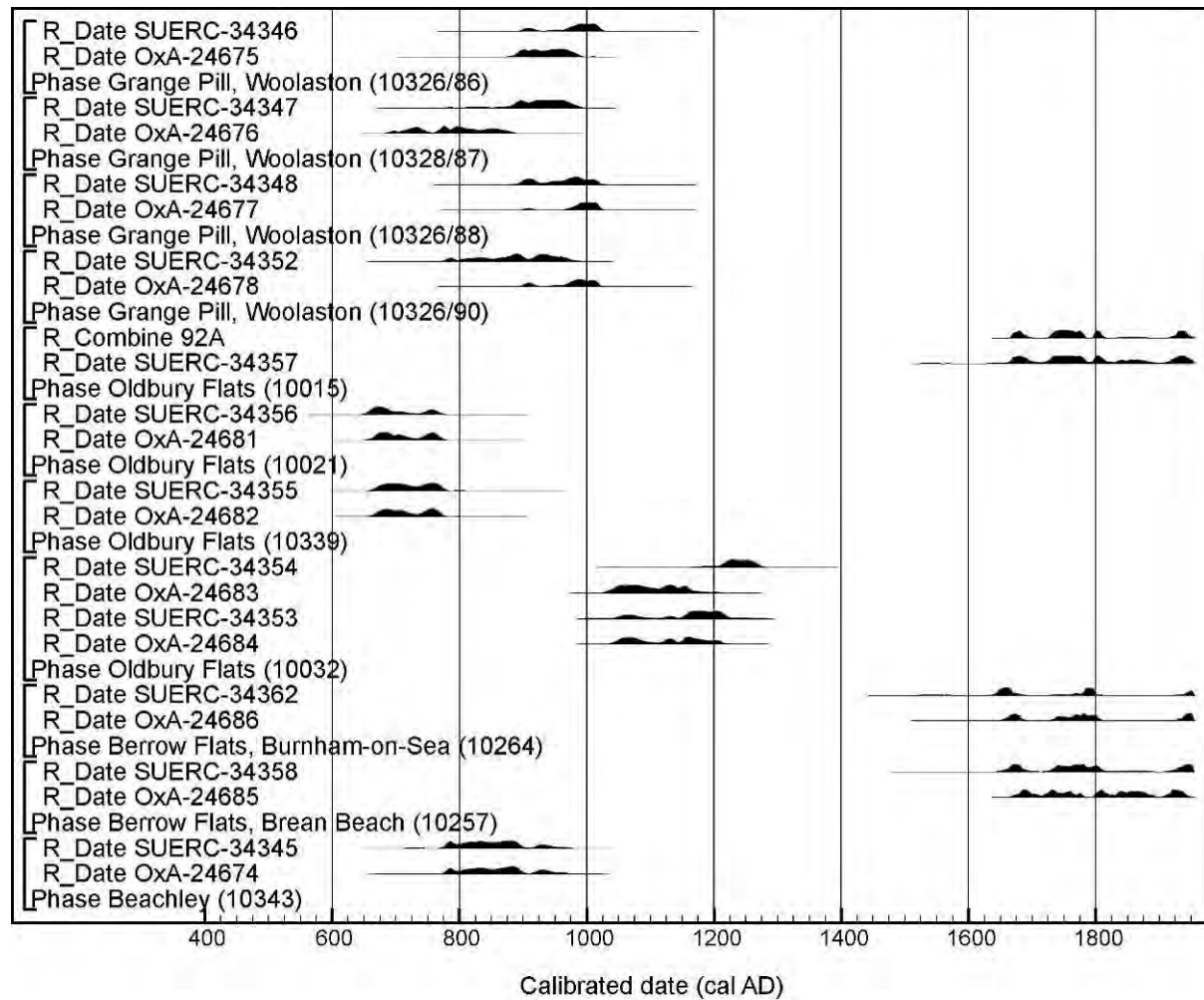
Table A1: Radiocarbon Dates and stable isotope measurements from samples from the Severn Rapid Coastal Zone Assessment Survey

Laboratory number	Sample	Radiocarbon age (BP)	$\delta^{13}\text{C}$ (‰)	Calibrated date (68% confidence)	Calibrated date (95% confidence)
Beachley (10343)					
OxA-24674	Sample 106E, <i>Quercus</i> sp., 14 rings to bark edge (outer rings sampled), stake from fish-trap 10343.	1169±27	-26.9	cal AD 780–895	cal AD 775–970
SUERC-34345	Sample 106G, <i>Quercus</i> sp., 11 rings to bark edge (outer rings sampled), stake from fish-trap 10343.	1175±30	-27.2	cal AD 780–895	cal AD 770–970
Berrow Flats, Brean Beach (10257)					
OxA-24685	Sample 70/10257B, unidentified roundwood with bark edge (outer rings sampled), from brace from possible fish-weir 10257.	138±24	-26.6	cal AD 1680–1940	cal AD 1665–1950
SUERC-34358	Sample 70/10257U, unidentified roundwood with bark edge (outer rings sampled), from brace from possible fish-weir 10257.	185±30	-26.8	cal AD 1665–1950	cal AD 1650–1955*
Berrow Flats, Burnham-on-Sea (10264)					
OxA-24686	Sample 76C, roundwood with bark edge, from vertical stake forming part of trackway 10264.	193±24	-26.3	cal AD 1665–1950	cal AD 1650–1955*
SUERC-34362	Sample 76M, roundwood with bark edge, from vertical stake forming part of trackway 10264.	230±30	-26.7	cal AD 1645–1800	cal AD 1640–1955*
Oldbury Flats (10032)					
OxA-24684	Sample 100A, roundwood with bark edge (outer rings sampled), from northern leader arm of V-shaped fish-trap 10032.	895±25	-28.7	cal AD 1050–1180	cal AD 1040–1215
SUERC-34353	Sample 100E, roundwood with bark edge (outer rings sampled), from northern leader arm of V-shaped fish-trap 10032.	870±30	-26.9	cal AD 1155–1215	cal AD 1045–1225
SUERC-34354	Sample 99B, roundwood stake with bark edge, from southern leader arm of V-shaped fish-trap 10032.	800±30	-22.4	cal AD 1215–1265	cal AD 1180–1280

OxA-24683	Sample 99A, <i>Quercus</i> sp. stake (outer 10 rings of sapwood), from southern leader arm of V-shaped fish-trap 10032.	918±25	-25.0	cal AD 1040–1160	cal AD 1025–1205
Oldbury Flats (10339)					
OxA-24682	Sample 94A, roundwood with bark edge (outer rings sampled), from V-shaped stake-built fish-trap with woven hurdle 'catch basket' (10339).	1292±24	-26.2	cal AD 670–770	cal AD 660–775
SUERC-34355	Sample 94B, roundwood with bark edge (outer rings sampled), from V-shaped stake-built fish-trap with woven hurdle 'catch basket' (10339).	1285±30	-25.9	cal AD 670–775	cal AD 660–780
Oldbury Flats (10021)					
OxA-24681	Sample 93A, <i>Quercus</i> sp. of eight-rings to bark edge (outer rings sampled), from stake-built fish-trap of unusual form (10021).	1300±24	-25.9	cal AD 665–770	cal AD 660–775
SUERC-34356	Sample 93B, roundwood with bark edge (outer rings sampled), from stake-built fish-trap of unusual form (10021).	1320±30	-25.9	cal AD 660–690	cal AD 650–775
Oldbury Flats (10015)					
OxA-24679	Sample 92A, <i>Quercus</i> sp. roundwood with bark edge (outer rings sampled) from stake-built fish-trap (10015).	182±23	-27.1	-	-
OxA-24680	replicate of OxA-24679	141±24	-26.9	-	-
weighted mean	T'=1.5; T'(5%)=3.8; v=1	162±17		cal AD 1670–1945	cal AD 1665–1950
SUERC-34357	Sample 92C, roundwood with bark edge from stake-built fish-trap (10015).	160±30	-25.3	cal AD 1665–1950	cal AD 1660–1955*
Grange Pill, Woolaston (10326/90)					
OxA-24678	Sample 90B, roundwood with bark edge (outer rings sampled), from woven basket fishing structure (10326/90).	1062±25	-27.2	cal AD 975–1020	cal AD 895–1025
SUERC-34352	Sample 90M, roundwood with bark edge, from woven basket fishing structure (10326/90).	1150±30	-27.2	cal AD 875–950	cal AD 775–980

Grange Pill, Woolaston (10326/88)					
OxA-24677	Sample 88A, roundwood stake with bark edge (outer rings sampled), from woven basket fishing structure (10326/88).	1048±25	-25.5	cal AD 985–1020	cal AD 900–1025
SUERC-34348	Sample 88D, roundwood stake with bark edge (outer rings sampled), from woven basket fishing structure (10326/88).	1075±30	-26.1	cal AD 900–1015	cal AD 890–1025
Grange Pill, Woolaston (10328/87)					
OxA-24676	Sample 87A, <i>Quercus</i> sp. with 14 rings to bark edge (outer rings sampled), from a hurdle (10328/87) which may either be part of a V-shaped fish-trap or a revetment associated with the fishing basket structures at this location.	1228±25	-25.5	cal AD 720–855	cal AD 685–885
SUERC-34347	Sample 87D, <i>Quercus</i> sp. with 12 rings to bark edge (outer rings sampled), from a hurdle (10328/87) which may either be part of a V-shaped fish-trap or a revetment associated with the fishing basket structures at this location.	1125±30	-25.7	cal AD 885–975	cal AD 830–990
Grange Pill, Woolaston (10326/86)					
OxA-24675	Sample 86A, roundwood (outer rings sampled), from woven basket fishing structure (10326/86).	1114±26	-25.4	cal AD 890–980	cal AD 880–995
SUERC-34346	Sample 86B, roundwood (outer rings sampled), from woven basket fishing structure (10326/86).	1055±30	-26.5	cal AD 975–1020	cal AD 895–1025

Figure A1: calibration of radiocarbon results from the Severn Rapid Coastal Zone Assessment Survey by the probability method (Stuiver and Reimer 1993)



Appendix A2 Round 2 (dated 28 June 2012)

The samples were dated by Accelerator Mass Spectrometry (AMS) at the Scottish Universities Environmental Research Centre in East Kilbride (SUERC-) and the Oxford Radiocarbon Laboratory (OxA-) respectively. The samples dated at SUERC were pre-treated using methods outlined in Hoper *et al* (1998), combusted following Vandeputte *et al* (1996), graphitized as described by Slota *et al* (1987), and measured by AMS (Xu *et al* 2004). The samples processed at ORAU were pre-treated using a standard acid/base/acid method followed by an additional bleaching step (Brock *et al* 2010), combusted, converted to graphite, and dated as described by Bronk Ramsey *et al* (2004). Internal quality assurance procedures and international intercomparisons (Scott 2003; Scott *et al* 2010) indicate no laboratory offsets and validate the measurement precision quoted.

The results reported are conventional radiocarbon ages (Stuiver and Polach 1977). The calibrated date ranges have been calculated by the maximum intercept method (Stuiver and Reimer 1986), using the program OxCal v4.1 (Bronk Ramsey 1995; 1998; 2001; 2009) and the IntCal09 data set (Reimer *et al* 2009). They quoted in the form recommended by Mook (1986), rounded outwards to 5 years. The probability distributions of the calibrated dates, shown below, have been calculated using the probability method (Stuiver and Reimer 1993), and the same data.

Each of the pairs of duplicate radiocarbon results from Line 10271 Stert Flats, from Line 20039 Blue Anchor, and from Point 89 Grange Pill are statistically consistent (Line 10271 Stert Flats $T'=0.4$; ($T'(5\%)=3.8$; $_ =1$; Line 20039 Blue Anchor $T'=0.9$; ($T'(5\%)=3.8$; $_ =1$; Point 89 Grange Pill $T'=1.0$; ($T'(5\%)=3.8$; $_ =1$; Ward and Wilson 1978). Each of these pairs of results could therefore be of the same actual age.

The two results from Stert Flats Sample 30021H, Line 20120, are statistically significantly different at 95% confidence ($T'=6.7$; $T'(5\%)=3.8$; $_ =1$; Ward and Wilson 1978), one of these results could be a statistical outlier, or the later result (OxA-26225 may represent later activity associated with the use of the structure.

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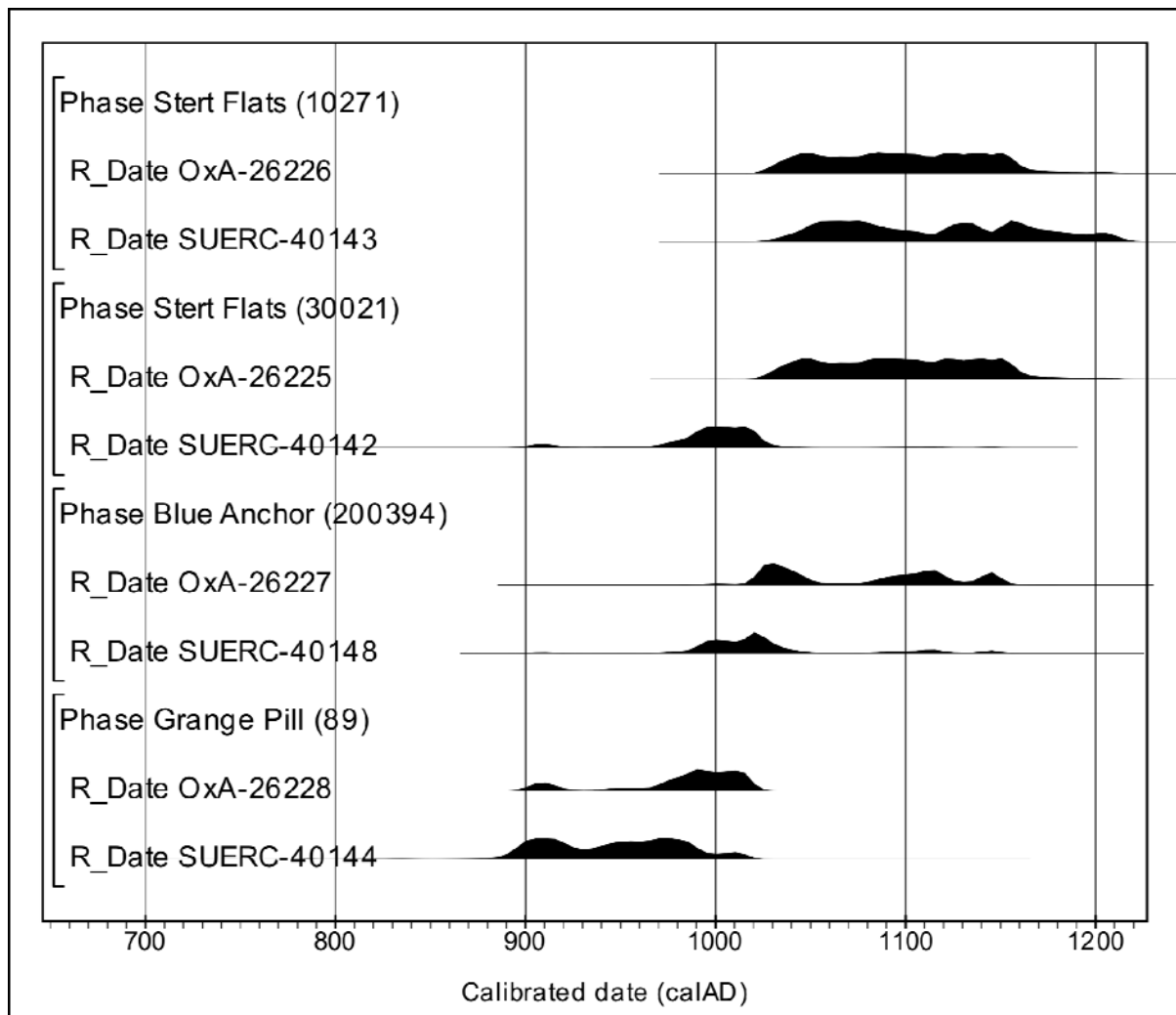
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Table A2: Radiocarbon Dates and stable isotope measurements from the second set of samples from the Severn Rapid Coastal Zone Assessment Survey

Laboratory number	Sample	Radiocarbon age (BP)	$\delta^{13}\text{C}$ (‰)	Calibrated date (68% confidence)	Calibrated date (95% confidence)
Stert Flats (Sample 10271)					
OxA-26226	Sample 10271A, Line 10271 Quercus sapwood outer c 5 rings from the apex of a stake built fish trap.	931±26	-25. 47	cal AD 1030–1160	cal AD 1020–1170
SUERC-40143	Sample 10271B, Line 10271. Quercus fast-grown roundwood (outer c5 rings) from the apex of a stake built fish trap.	905±30	-26.9	cal AD 1045–1170	cal AD 1030–1215
Stert Flats (Line 20120, Sample 30021)					
OxA-26225	Sample 30021H, Line 20120, Corylus/Alnus outer c 5 rings of roundwood stake from the fragmentary arm of a fish weir.	932±26	-25. 84	cal AD 1030–1160	cal AD 1020–1170
SUERC-40142	Sample 30021G, Line 20120, Corylus/ Alnus outer 5 rings of roundwood stake forming the fragmentary arm of a fish weir.	1035±30	-27.1	cal AD 985–1030	cal AD 900–1030
Blue Anchor (Line 20039)					
OxA-26227	Point 30008–4, Line 20039, Quercus sapwood outer rings from a stake from line associated with a stone walled fish weir.	974±25	-27. 21	cal AD 1020–1120	cal AD 1015–1155
SUERC-40148	Point 30008-6, Line 20039, Quercus sapwood outer rings from stake from line associated with a stone walled fish.	1010±30	-29.4	cal AD 995–1030	cal AD 985–1120
Grange Pill (Point 89)					
OxA-26228	Line No. 10326, Point 89B Alnus roundwood outer rings from a partly-exposed woven basket/wattling fishing structure.	1056±25	-26. 09	cal AD 980–1020	cal AD 900–1025
SUERC-40144	Line 10326, Point 89G, Quercus sapwood outer rings from a partly-exposed woven basket/wattling fishing structure.	1095±30	-28.6	cal AD 895–990	cal AD 885–1020

Figure A2: calibration of radiocarbon results from the second set of samples from the Severn Rapid Coastal Zone Assessment Survey by the probability method (Stuiver and Reimer 1993)



Appendix B – Summary of digital records produced and disseminated

B1 All records produced

B1.1 A wide variety of digital records have been produced during the main Phase 2 and Phase 2 pilot field survey work undertaken for the Severn RCZAS. Phase 1 reports and NMP mapping have already been disseminated to English Heritage and HERs.

B1.2 GPS survey records

A proforma recording sheet was produced for survey work on the Severn RCZAS (Catchpole and Chadwick 2010, Appendix C2) and these fields were used for all GPS survey records. Separate files were created for point records and line surveys.

Phase 2 pilot GPS survey records (2009) were produced using Trimble GeoXT GPS data loggers in Fastmap WorkFlow software. Many problems were encountered with this equipment and not all records were fully completed.

Main phase 2 field survey records (2010 and 2011) were produced using Magellan MMCX data loggers in Digiterra 6 software.

Original site records from dataloggers have been retained.

A second Digiterra version of the survey records was produced after field survey was completed. It was discovered that Digiterra provided a more user friendly method of amending attributes than exporting to Shapefile and amending within ArcGIS. The final version was modified in the following fashion:

- 2009 records were added and completed where possible.
- Survey lines and points were tidied for accuracy and where, for example, superfluous lines had accidentally been recorded due to operator malfunction. Where laser rangefinder recording had, for example, resulted in one point in a line being misplaced, these errors were corrected.
- SMP2 process units were checked and completed
- The 'previously recorded' attribute was checked against the data received in 2010 from NMR and HERs (2009 for North Somerset) and NMR and HER record numbers added where required.
- Descriptions were edited for completeness and expanded upon where very abbreviated notes had been made on site.
- RCZAS record cross references were checked and completed.
- All other attributes were rapidly checked for completeness.
- Samples taken were entered on a spreadsheet and cross referenced with Digiterra records.

Finally point and line shapefiles were exported from Digiterra for use in ArcGIS and dissemination. These have been further subdivided by HER area, giving total numbers of point and line survey records as follows:

- Gloucestershire 92 lines and 69 points;
- South Gloucestershire 109 lines and 35 points;
- Bristol 3 lines and 0 points;
- North Somerset 10 lines and 0 points;
- Somerset 342 lines and 94 points;
- Exmoor 42 lines and 14 points.

Records on or very near local authority boundaries have been included in shapefiles for both HERs involved. A 100m buffer was used for selection, apart from Exmoor where a 500m buffer was required as the shapefile supplied ended at the shoreline and a larger buffer was required to ensure inclusion of all relevant intertidal records.

B1.2 Daily logs

Immediately after each block of fieldwork was completed daily logs were produced detailing the general and feature specific observations made. The most significant of these are summarised in Volume 1, section 10 of this report. The daily logs in full are reproduced at Appendix C below. Daily logs for 2009 were included in Catchpole and Chadwick 2010, section 10.

B1.3 Digital voice recordings

In 2010 and 2011, digital voice recorders were used to provide a rapid way of recording observations on site. Original site recordings have been retained as MP3 files. The recordings have been typed up as word files, with necessary selective editing and grouping of files into folders by area. These transcriptions were used to provide information for the daily logs included at Appendix C, and thus for the summaries of archaeological features included in Volume 1, section 10. They will however, include extra fine detail of many individual features that may become the subject of future research and will thus be included in the data disseminated to HERs.

B1.4 Digital photographs

Very many digital photographs (jpg format) were taken during the Severn RCZAS fieldwork using GPS equipped cameras capable of producing shapefiles of where they were taken and the orientation of the camera. These include specific archaeological features that were surveyed using GPS data loggers but also many more recent features that were not. They include general shots of people and landscapes and also of items that members of staff found interesting at the time but that were not necessarily pertinent to the project, a red arrows display over Minehead Bay being noticeable amongst the latter.

- The 2009 pilot fieldwork produced 1123 files in 24 folders totalling 1.67GB.
- The 2010/11 fieldwork produced 5679 files in 83 folders totalling 8.12GB.

Due to the need to choose the most representative images for each recorded feature and because of the sheer number of photographs, images have been sifted and reorganised for dissemination. Selected photographs have been grouped into folders by local authority area and then place name. In each place name folder they have further grouped by RCZAS record number (line and point), otherwise unrecorded archaeological features and general landscape shots.

- Selection of photographs still results in 5,362 files in 783 folders totalling 6.91GB.

Using folder properties in Windows these break down by HER area as follows:

- Gloucestershire, 1,274 files, 196 folders, 1.54GB,
- South Gloucestershire, 794 files, 130 folders, 1.1GB,
- Bristol, 19 files, 7 folders, 22.1MB,
- North Somerset, 206 files, 28 folders, 306MB,
- Somerset, 2,658 files, 361 folders, 3.52GB.
- Exmoor, 411 files, 55 folders, 423MB

Shapefiles have been produced for each local authority area indicating the location of the selected photographs, these are included in the total number of files given above. Photo location shapefiles utilise the Exif data attached to each photograph. Some photographs were taken before the camera had attained an adequate GPS fix. Therefore these photographs will not be located on the relevant shapefiles. A very small number of photographs are incorrectly located, presumably due to a low number of satellites being available when they were taken. As with survey records, photographs on or very near local authority boundaries have been provided to both relevant HERs.

B1.5 Scanned paper records

A very limited number of paper records were produced in 2009 when digital equipment could not be made to function. A more detailed hand drawn plan was produced in 2010 of a putt basket, part of line 10054 (Aust, South Glos.). These records have been scanned and will be offered to the relevant HERs.

B1.6 Miscellaneous shapefiles

A number of other shapefiles have been produced to aid work on the project, to produce illustrations for this report and for presentations. These include:

- Project survey area;
- Areas visited during the phase 2 fieldwork (including initial assessment visits);
- Draft locations of Certificate of Privilege records of fixed engines.

B2 Records for dissemination

B2.1 To HERs and the NMR

The following digital data sets will be circulated to the relevant HERs and the NMR:

- Phase 2 field survey line and point shape files and associated attribute tables;
- Selected photos grouped by location and record number, with shapefile distribution plots;
- Word files of transcribed voice recordings, grouped by location;
- All RCZAS reports and PDs;
- Scans of hand produced records.

B2.2 To ADS

The appropriate elements of the project digital archive will be deposited with the Archaeology Data Service (ADS) in accordance with their guidelines and English Heritage requirements.

Appendix C – Detailed day records and descriptions of survey visits 2010-11

Day logs for the Phase 2a Pilot fieldwork are not included here as archaeology is described by area in the report into that phase of work (Catchpole and Chadwick 2010).

Pawlett Hams, River Parrett 07/6/2010

SMP2 PU 7d42

Riverbank survey by AMC & NW

Low tide: 09.00 AM BST

Rationale: To examine the Parrett riverbank of a low-lying area identified in the Flood Risk Management Strategy document as likely to require managed realignment in the medium term (20-50 years).

NW and AMC arrived in the area at c. 10.30 AM and parked up by Dodds Farm. A public footpath was used to head north-west towards the riverbank near Black Rock Clyce on the eastern bank of the River Parrett, and the team then proceeded north-eastwards along the riverbank. The first feature encountered was the wreck/hulk of a beached trow or barge, apparently of all iron construction with riveted seams and joins, up to c. 15m long and 3-4m wide (**Point No. 1, Line 10002**). Only the lower iron hull, iron keelsons and iron futtocks survived; and the vessel had broken its back, splitting in two along its length. Several other large metal hull fragments of lay around in the immediate vicinity. Any wooden elements seemed to be missing or eroded. An adjacent large metal post embedded in concrete but keeled over at an acute angle may have been an original mooring post. The tops of four to five wooden stakes were apparent, forming a right-angled structure with the long axis between the incoming tide and the vessel. The vessel may have been hulked/beached to provide bank revetment, as at Lydney and Purton in Gloucestershire. It had not been recorded by the NMP.

North of this were a few groups of timber stakes and posts that appeared to be relatively recent bank revetments, some associated with dumps of stone rubble. These were only recorded using the GPS camera. Possible shelving deposits eroding out of the riverbank may have been peat exposures, although it is perhaps more likely that these were earlier phases of compressed reed bed.

Further north again, however, was a series of linear stake and timber alignments (**Line No. 10001**) that seemed to represent several different phases of riverbank revetment, with the most recent the furthest out and closest to the incoming tide. The 'outermost' row of angled wooden stakes and posts was associated with dumps of stone rubble, but there were at least two other rows. Eroding out of the river cliff itself were further vertical and angled posts, but these were associated with wattle/hurdle structures – cribbing. This may represent late medieval/post-medieval land reclamation and riverbank revetment. In section there appeared to be horizontal bands or layers of cribbing, associated with dark grey silt deposits separated by reddish-brown alluvium. Above the upper layer of cribbing was a reddish-brown layer of mineralised (iron-panned) sediment; and above this was a deposit of stone rubble, apparently laid in a single layer or 'course'. So even the cribbing may reflect 2-3 phases of construction and use.

NW and AMC then moved northwards towards The Island, where no archaeology was visible in the riverine intertidal zone, although by now the tide was quite high. No riverbank revetment was visible, however. The team then turned around and moved southwards once more, walking down to just north of Cob's Leaze Clyce. Here there was a modern net line **(Point No. 2)** formed of scaffolding poles extending out into the river, but alongside it there was an earlier alignment of timber stakes first seen when the team approached the riverbank. Unfortunately, by the time the team returned the rising tide had covered the timber stakes, but these were probably not that old, although they had been recorded on the HER/NMP data. Just inland from this netline, however, was a raised subcircular fishing station approximately 20-30m across and recorded on the HER/NMP data. The stone rubble platform was approximately 1m high and supported a small metal shed **(Point No. 3)**, probably used to store nets and other fishing equipment. Two small rowboats were also beached nearby, so perhaps seine fishing or long net was still undertaken there. Next to the shed was a metal winch, presumably used to control the nets and/or the boats.

Further south at Cob's Leaze Clyce was the remains of a small wharf, consisting of a concrete and stone wharf with two outflow pipes with the paired timber footings of an old jetty extending into the river – none of the planking of this survived, only the timber support posts. It was unlikely to be very old. It had been partially obscured by a dump of rubble and the construction of new gates on a new outflow. This was only photographed and could not be formally recorded as the battery on the Magellan had died by this time.

Aust 08/06/2010

SMP2 PU SEV6 & BRIS1

Intertidal survey by AMC, BW & NW

Low tide: 11.00 AM BST

Rationale: To examine the intertidal area of the east bank of the River Severn by the First Severn Crossing bridge, where on an initial reconnaissance AMC had noted several stake-built structures in the intertidal zone also recorded on the HER/NMP.

The GCC team reached Aust at c. 10.00 AM and parked up on the lane near the old ferry terminal, then proceeded northwards along the concrete access road that leads to the electricity pylon. From there they proceeded along the cobbled beach below Aust cliffs, although keeping a suitably safe distance from them, then entered the rocky foreshore and intertidal zone to examine a series of wooden structures immediately south of and below the First Severn Crossing road bridge. These seemed to be net lines or putcher rank footings formed by paired wooden posts, some up to 1.5m high and 0.15-0.20m in diameter. One was a curving line running from E to SW, where it joined a straighter line heading W out into the river. Nick recorded the curving alignment and we took photographs (**Point No. 30000, Line 20000**). These were recorded on the HER data, and are likely to be relatively recent in date, early 20th century or later. Indeed, later comparison with the Environment Agency Certificates of Privilege records indicated that this structure was used until the 1980s.

From there the GCC team moved under the bridge to the western edge of Aust Rock, where one line of angled stakes was just visible in deeper mud. This was photographed which will give it a rough position but it could not be recorded due to the satellite 'shadow' effect of the bridge, and could not be accessed either due to the steep rocks and thick mud. It may have been another relatively modern net line though. The team then progressed northwards to the northern side of the bridge, where several possible curving lines of stone were photographed. These were not formed by mounded lines of rock, however, and may either result from natural geological fold lines exposed in the rock, or may be associated with the construction of the Severn Bridge. It was very hard to spot anything in this area, due to a extensive blanket covering of seaweed. A few isolated wooden stakes or posts were visible on the NW edge of Aust Rock, but these did not seem to form recognisable structures and were not recorded. The tide began to turn quite quickly and so the team retreated southwards and left the intertidal zone. It also began to rain quite heavily.

The GCC team sheltered from the most torrential rain for half an hour, then went out onto the foreshore by the wooden ferry ramp and took a core of sediment. By the edge of the salt marsh the sediment was all fine grained, grey organic-smelling alluvium, whereas nearer the old ferry building it was more consolidated reddish-brown alluvium.

Minsterworth 09/06/2010

SMP2 PU MAI1

Riverbank survey by NW & BW

Low tide: c. 13.40 PM BST

Rationale: To examine the Severn riverbank of a low-lying area identified in the Flood Risk Management Strategy document as likely to require managed realignment in the short term (0-20 years).

The GCC team parked at end of the road south of Highcross Farm, then followed the short stretch of footpath south-west to the river bank and then walked along the footpath adjacent to the river. Starting from grid position NGR SO 379171 216307 they then walked along the edge of the river bank and examined the nearside (western) bank. For much of the route, the far (eastern) bank was visible along much of the route and easier to see than nearside. In a few places thick vegetation and trees made viewing the river impossible, whilst in others dense undergrowth prevented access to the nearside bank. As the team walked along the path they also looked out for any features in the adjacent fields they passed through. Along much of the first kilometre or so it was apparent that the river bank had been reinforced with imported rock boulder 'armour'. These had been dumped along the eroding edge of the riverbank on both sides to stabilise it. At roughly SO 379310 215351 the GCC team recorded a small area of wooden revetment or cribbing, revealed by erosion of the bank which had removed the imported boulders, showing that archaeological remains may exist beneath the modern erosion defences (**Line No. 10003**). The survey also recorded the derelict remains of a building (Highlay House) in this area (**Point No. 4**).

The GCC team continued north-east along the river bank, but no features were present in the fields to the left and the only features observed on the riverbank were modern concrete revetments and a modern boat slip-way, none of which were recorded. At approximately SO 380415 215974 they recorded a probable brick-built fish house to the north-east of the footpath junction (**Point No. 5**), and then backtracked and followed the footpath north-west returning to the start position. No further archaeological features were identified while walking back.

Beachley 11/6/2010

SMP2 PU TID1

Intertidal and riverbank survey by AMC, BW & NW

Low tide: 14.10 BST

Rationale: To examine the intertidal area of the west bank of the River Severn where the Black Rock lave net fishermen (Richard and Martin Morgan) had identified a series of stake-built fishing structures in two locations – one group on a ‘shelf’ on an exceptionally low tide, near others several hundred metres north of the SARA station.

AMC, BW & NW drove down to Beachley and arrived at c. 11.30 AM, parking up by the SARA station. After changing into intertidal gear they used the slipway by the SARA station to access the intertidal zone and headed northwards along the west bank of the Severn. There were no surviving elements of the ferry boat that had been visible on Google maps aerial photographs being broken up, though rusting lengths of steel hawsers and many metal pins and other metal objects were still present in the area south of the rocky headland. The boat itself (the *Severn Princess*) is now berthed under a bridge in Chepstow.

Beyond the headland they moved several hundred metres to the north and waited for the tide to drop a little further. Whilst looking northwards to Slime Road and the putcher rank there, the team noticed stakes sticking out of the mud, and when they got closer to investigate it was apparent that these were the stake-built structures photographed by the Morgan brothers. These were located approximately 10m north of the white and blue navigation marker on a gently sloping blue-grey clay shelf covered in a few centimetres of softer silt, approximately 20m west of the existing riverbank. Some stakes were right on the edge of a pronounced drop-off or shelf by the main river channel itself.

There were several V-shaped fish traps built of roundwood stakes and small squared sections, with possible conjoined and/or overlapping examples pointing north and south (**Line Nos. 10004, 10005, 10006, 10007, 10008**). (There should really be another line on the GPS/GIS plot running NW-SE off the N end of 10007). This may mean that one or two weirs were designed to catch fish on the incoming tide with fish travelling upstream; and two when fish were swimming downstream on the outgoing tide. Alternatively, there were possibly rebuilds/different phases of use. There were numerous other alignments, however, some formed of pairs or three ‘interlocking’ stakes and horizontal hurdling elements, the latter often pinned in place by forked branches. No metal nails, bolts or any other fixtures were seen associated with any of these structures, except one or two items likely to have got there accidentally. NW recorded several of the V-shaped traps and linear alignments using the handheld GPS, and the team took lots of photographs too. Some of the alignments with horizontal elements appeared to run up shore towards the modern riverbank, and BW suggested that these might have formed a trackway leading to the fish traps, perhaps originally formed from horizontal hurdle panels (**Line No. 10009**).

Some horizontal elements seemed to be detached, and a few stakes were eroding out of the shelf at the very edge of the river channel, though it was rather hazardous to record these in detail. Some of the stakes seemed very cleanly eroded or even cut off at a height of 0.10-0.20m above the intertidal surface. They may have been exposed before, reburied, then exposed once again. Some of the bigger stakes, especially those closest to the river channel, had clear tool marks, with some being hexagonal or octagonal in cross section from the facets taken off them.

Some of the upright stakes in the fish traps and the other linear alignments were surrounded by stones, possibly a result of natural processes but perhaps in some instances a deliberate attempt to reinforce them. There may have been attempts to create patches of metallised surface by bringing in stone from more pebbly/cobbley areas to the north and south. It was clear that several overlapping structures and/or different phases of structures were all located in this one place, and the structures deserve detailed drawn scale planning in the future to record them properly.

After recording as much as they could the team headed back southwards again towards the SARA station, but some 20m south of the main concentration of stakes they found another stake alignment set at right angles to the modern river channel (**Line No. 10010**). This consisted of single and occasional double stakes. Just to the south again, another more isolated stake was identified that appeared initially to be a sawn plank, but digging around it indicated that it was shaped and it seemed to be the end of an oar/paddle blade, with an angled, rounded end, slightly convex laminar cross-section and a possible groove running down the length of the 'blade' (**Point No. 6**). This artefact was slightly worn but otherwise in a good state of preservation and was retained for further analysis and identification, being placed damp in a sealed plastic finds bag.

Approximately 50 south of this yet more stake alignments were identified, aligned at oblique angles to the modern river channel; and located on a more steeply shelving and rockier 'beach' (**Point No. 7**). It is likely that again these represented several overlapping fish weir structures, and were perhaps the leader arms of V-shaped traps. Rounded and squared stakes were both represented, but no horizontal elements were discerned.

Just to the south of these were several larger stakes that were rounded or squared in cross-section, possibly forming pairs or lines, at a slight tangent to the modern channel. These may have been from a putcher rank, or a V-shaped weir (**Point No. 8**). NW noticed a large rim sherd of splash-glazed late medieval or post-medieval pottery nearby and this was retained, although it is not clear if this was directly associated with the structure or not. The sherd was fairly 'fresh' and unworn, however.

The tide came in at a brisk pace, creeping visibly up rocks at the edge of the intertidal zone at a rate of about 10mm a second! The GCC team therefore walked back as soon as possible to the rocky headland, passing another couple of large wooden posts in a line set at right angles to the river, but probably from a more modern structure – metal fixtures were apparent further up the shore, and so this was only photographed. The team got back to the SARA station at about 4.30 PM, with no time to try and look for any features low down by the Hen & Chickens rocks.

Beachley 14/06/2010

SMP2 PU TID1

Intertidal survey by AMC, BW & NW

Low tide: 16.30 BST

Rationale: To examine the intertidal zone on the west bank of the Severn where lare net fishermen the Morgan brothers reported finding a variety of stake-built fishing structures; and to sample these structures.

The GCC team parked once again by the SARA lifeboat station, having arrived at Beachley at approximately 15.00 PM. After getting changed they then tried out the laser to see if it was able to connect to the handheld Magellan device. NW got it working, and BW used the laser to take several points on an unidentified wooden linear structure (**Line No. 10013**) underneath the First Severn Crossing bridge that AMC had photographed on a pre-survey site visit, possibly some form of revetment.

Carrying a spade and some plastic sample bags, the GCC team then proceeded along the shoreline northwards from the SARA station and round the headland to the area where the concentration of stake-built features had been recorded on Friday 11th June, at approximately NGR ST 5515 9170. Once there several of the larger stakes were for sampling – NW snapped one off by accident at the level of the intertidal surface (**Point No. 9, Line No. 10006**), as many were very fragile; but a spade-dug slot was then used to remove another larger example (**Point No. 10, Line No. 10005**). These two were close to the edge of the clay 'shelf' at the eastern side of the area, and had very 'fresh' looking internal structures with multiple rings. A third stake (**Point No. 11, Line No. 10004**) was dug out from a position higher up (west) on the clay shelf – this was not as well preserved however. None of these three stakes appeared to be oak.

After lifting and bagging the stakes the GCC team then returned southwards, but stopped by the Hen and Chickens rocks and ventured out along them. Only rocks and mud were visible. They then left the intertidal zone once more and returned to the SAR station and the van by approximately 5.30 PM.

Elmore Back 15/06/2010

SMP2 PU SHAR1

Riverbank survey by AMC, BW & NW

Low tide: c. 17.30 BST

Rationale: To examine the east bank of the Severn along the 'loop' at Elmore Back in order to identify fishing structures recorded on the tithe map, and any other archaeological features.

The GCC team parked up near Elmore Back Farm, and then used a public footpath through an orchard to gain access to the footpath running along the riverbank, turning eastwards and heading along behind (north of) some rows of cottages. One of their outbuildings may originally have been a fish house, but this was only photographed and not formally recorded. Unfortunately, as low tide was very late on this day the water level in the river was still really high, so it was not possible to see much along the riverbanks on either side of the river. A metal crane or jib for loading/unloading boats was identified on the opposite bank at a locale called Peshbrook and marked Ferry View on the GIS mapping, but this feature was only photographed and not recorded. At one point some possible cribbing was also seen and photographed, but it could also have been roots. Across the river on the northern, opposite bank there was a two-storey brick structure on the riverbank (in SMP2 PU MA11) that was probably a converted fish house, now used as some kind of den or writer's/artist's pad. This was recorded with the laser (**Point No. 13**).

There was little else to see, and at Severn Bank Farm the team turned to the SE along a large reen or rhyne ditch to investigate the other, eastern feature also known as the Great Wall on early maps. This was visible as a raised bank approximately 5-8m wide, but it was not entirely clear where its NW end was located – the first place it was definitely visible was just to the SE of the sluice west of Medbridge Covert, where it was a barely perceptible earthwork only c. 0.30m high. Further to the SE it became more obvious, and increased in height to 0.5-1m in places (**Line No. 10014**). Once again, as with the Great Wall on the western side of the Elmore loop, the land on the 'outer' side of the earthwork (in this case to the east of the linear bank) appeared to be higher than that on the 'inner' side of the earthwork (here to the W). This may be further evidence that the central part of the Elmore loop was deliberately kept as low-lying water meadow.

The GCC team then returned back along the reen and from Severn Bank Farm headed back westwards along the lane through Elmore Back hamlet. One of the vernacular buildings was photographed and recorded – a two storey brick-built building on the northern side of the lane, in an overgrown orchard, with an upper access hatch and a wooden lean to on its northern side, now in danger of collapse (**Point No. 14**). Given its location just to the south of the flood bank, this could have been a fish house at one point, although a chimney was not identified. A two storey brick-built storage structure on the south side of the lane was also recorded – probably not a fish house, but still a nice little outbuilding (**Point No. 15**).

It was clear that any attempt to identify some of the fishing structures/stations noted on the old tithe map from 1841 will need a very low tide. The team returned to the van and thence to Gloucester.

Wickes Green to Longney Green 16/6/2010

SMP2 PU SHA2

Riverbank survey by BW & NW

Rationale: To examine the Severn riverbank of a low-lying area identified in the Flood Risk Management Strategy document as likely to require managed realignment in the short term (0-20 years).

The GCC team parked in a car park next to Longney School and accessed the riverbank via a foot path running west from the school, heading north from grid point NGR SO 376150 212007 towards Waterend. The riverbank was very overgrown with reeds and other vegetation which made it difficult to access and observe the edge to the river, however, it was accessed wherever possible and there was a good view of the opposite, western bank. In the fields on the plateau behind the riverbank there was a broad ridge running roughly N-S, corresponding to a feature identified by the NMP as probably a previous flood defence bank. This was photographed but not recorded.

The only point/feature recorded was at NGR SO 375188 213713, a small brick-built structure which could have been a fish house or a building associated with the adjacent orchard (**Point No. 30001**). It had been rendered in concrete and the roof had been patched up using corrugated iron. The footings of the building had actually been cut into the defensive bank, and it had a small retaining wall running around the west side. It was marked on the current OS map and also on the OS map of 1884, though its function is not identified on either map.

The GCC team did not observe any further features, and continued to ST 375847 214430 and returned to the van via the road leading from Wicks Green to Longney.

Hock Cliffs to Frampton Pill 17/6/2010

SMP2 PUs SHAR5 & SHAR6

Riverbank and reen/rhyne survey by BW & NW

Rationale: To look for wooden features/structures identified by Tony Roberts, and Andy Howard of Birmingham University, in the sides of a large ditch.

The GCC team parked on the road into Fretherne at the top of a footpath just before the church (NGR ST 373816 208966). They walked down to the mouth of Hock Ditch to investigate a report of a possible *in situ* wooden structure within the ditch. The tide was low so visibility was good. Access to the ditch was over mud and silt that was very slippery and deep, so the ditch was observed from the top of the bank as it was deemed too unstable to enter the ditch itself. The only wooden items observed was tree debris which appeared to have been washed into the mouth of the ditch and become lodged in the surrounding mud. No worked pieces of wood were identified and no structures were observed.

The team continued southeast along the riverbank towards Frampton Pill and could see nothing of any interest or great age. Using the binoculars they observed what were thought to be fish traps on the opposite side of the river by Awre; and indeed these features were later identified (on ArcMap) as salmon putcher ranks.

The team then turned around and headed northwest towards Hock Cliffs to see if there was any evidence of the medieval settlement eroding from the cliffs as reported in the HER. Although the cliffs showed signs of fairly recent rock falls and land slips, no pottery or any other artefacts were recovered. The team returned to the van via the cliff top path so that they could look at the earthworks which were already recorded.

Oldbury Flats 22/06/2010

SMP2 PU SEV6

Intertidal survey by AMC, BW & NW

Low tide: 11.00 AM BST

Rationale: To examine the intertidal zone on the east bank of the Severn where NMP and HER records indicated surviving putcher ranks, and also where the initial site visit suggested that some of these ranks preserved traces of woven hurdle fish baskets. It was intended to examine and record these in more detail. Satellite/AP imagery from Google Maps and Bing! Maps indicated the likelihood of other unrecorded fishing structures surviving.

The GCC team parked in the small car park at the end of the lane near the entrance to the Whale Wharf industrial park and Littleton Warth. The weather was gloriously warm and sunny. Once the team members had put their gear on, they then walked up onto the flood defence bank and walked southwards along it, until we were at the northern edge of Blackstone Rock. Here they began to look for a linear feature faintly shown on Google and Bing! Maps. This feature proved to be a line of low, closely-set paired or tripled stakes that was possibly originally part of a stake-built fish trap, orientated roughly NW-SE (**Line No. 10015**). A single stake further out in the intertidal zone that may have been a continuation of 100015 was recorded (**Point No. 17**).

The line of 100015 was connected to a roughly NE-SW orientated line of single stakes (**Line No. 10016**) more widely spaced (c. 1-2m apart), the two different lines forming a T-shaped feature overall. It was not clear how this could have functioned as a fish trap, nor if Line No. 10016 was the same phase as Line No. 10015. Several other small groups or clusters of stakes in this general area were also recorded, although it was sometimes not clear what structure(s) these represented – probably several different phases of fragmentary features (**Point Nos. 16, 19 and 20**). To the north-west and north of line 10016 were additional but much shorter lines of low, closely set stakes (**Line Nos. 10017, 10018 and 10019**). Some of the low vertically-set stakes were associated with horizontal woven hurdling, suggesting that they were probably ‘leaders’ for fish traps; whilst other groups of stakes may have held individual fish baskets in place.

A probable putt rank (**Line No. 10020**) still had traces of several wattle fish baskets (‘butts’?) preserved along it. Several of these woven structures appeared to have large rocks or groups of smaller stones within them, although it was not clear if these had drifted into the features after their disuse, or if they had been used to weigh down the baskets. There was a cattle skull associated with some of the downstream posts, which was not retained but photographed and then left *in situ*; and one very fragile, smaller and more closely woven basket (**Point No. 21**) that may have formed the detachable ‘forewheel’ of a putt. This may have become detached from the original structure.

To the north of these stake groups the GCC team made the exciting discovery of several V-shaped fish traps, formed by lines of closely spaced stakes that were again eroded down so that they were only up to 0.10m high. These traps have not been formally recorded before. Two were abutting or overlapping (**Line Nos. 10021 and 10022**), and were either two conjoined V-shaped fish traps facing north-east (upriver), two slightly overlapping traps of different phases, or one W-shaped trap. The easternmost example was more eroded, with its ‘eastern’ arm or leader almost totally eroded away, no doubt as it lay slightly higher up the intertidal zone. Each arm or leader of the two V-shaped fish traps was 2-3 stakes in width, and the remains of horizontal hurdles were visible in places. The apexes of these structures

had dozens of stakes within them, presumably settings for different fish baskets (**Point No. 22**). Further to the north, a third possible V-shaped fish trap was also identified, much slighter in build and more fragmentary than the others, and possibly on a different orientation, apparently facing south-west or downriver (**Line Nos. 10024 and 10025**). These stakes may have been associated with a group of stakes that represented a basket holder (**Line No. 10024**). Another fragile and delicate fish basket, probably a putt 'forewheel', was also identified and photographed just to the east (**Point No. 23**). Another larger but isolated fish basket from a putcher or putt rank and made with heavier rods was also recorded, possibly the butt of a putt contraption (**Point No. 24**).

North of these fish traps there was a line of stakes running approximately north-west to south-east from the shore line out into the river. The south-western side started off as single stakes set at 0.40-0.50m intervals, but along the length nearer to the shore there were groups of 2-3 stakes, with the distance between them becoming closer eastwards (**Line No. 10026**). This gently curving feature was possibly the remains of a putcher rank, or perhaps given its construction more likely a putt rank. A much shorter north-west to south-east line of 6 single, widely spaced (c. 4m) stakes was also recorded nearby to the north-east (**Line No. 10027**). The likely function of this is unknown.

A further series of linear wooden built features lay further along to the north-east. The remains of a probable putcher rank were identified, orientated NW-SE and stretching from about 20m off the current shoreline out into the river, partly built across undulating gravel terraces as well as mud (**Line No. 10028**). On the easternmost stretch of this feature there were just a few single stakes surviving that measured 0.06-0.08m in diameter, but further westwards there were better preserved and more substantial (0.15-0.20m diameter) stakes set approximately 1-1.5m apart, with the pairs set roughly 1m away from one another. There was evidence on some of these for rough tooling with some squared off into hexagons and octagons, and some of the smaller ones more squared in cross-section.

Just to the north-east was another much longer but also broadly NW-SE orientated fishing structure, probably a 19th or early 20th century putt rank re-used as a more modern net line (**Line No. 10029**). This is the one marked on OS mapping as a 'Salmon Rank'. Rather than paired posts, this putt rank consisted of small groups of 4-8 posts in small parallel clusters, each group of parallel clusters several metres apart from the next. Many of the posts in both the putt rank and the later net line were clearly made of coniferous wood. Many of the much more modern net line poles set along the line of this structure were still 2-3m high, and many were lying at angles. Fragments of modern nylon nets and floats were still attached to some of these. On the southern side of this structure were outliers of angled posts forming short lines up to 2-3m in length, presumably bracing and supporting the downstream side of the rank. Some of these braces were very modern sawn squared planks. The putt or putcher baskets would presumably have originally faced upstream. Even without the modern net line there were clearly several phases of use and construction, and in particular a curvilinear line of single, widely spaced posts just to the south of 10029 may have been a related structural feature, or more likely a different, earlier phase of a structure of unknown function.

The full extent of some of the longer linear features could not be recorded on foot as the mud became progressively deeper and more sucking the further west one went towards the main river channel, and so the longest features were recorded with the TruPulse laser. The one especially large putcher rank (Line No. 10029) was also already recorded and marked on the OS maps.

The GCC team did not get as far north as Littleton Pill due to the large numbers of features that they recorded, but as the tide was beginning to come in with some pace they retreated to the shoreline and the van, then headed back to Gloucester.

Oldbury Flats 23/06/2010

SMP2 PU SEV6

Intertidal survey by AMC, BW & NW

Low tide: 12.10 PM BST

Rationale: To examine the intertidal zone on the east bank of the Severn where NMP and HER records indicated surviving putcher ranks, and also where the initial site visit suggested that some of these ranks preserved traces of woven hurdle fish baskets. It was intended to examine and record these in more detail. Satellite/AP imagery from Google Maps and Bing! Maps indicated the likelihood of other unrecorded fishing structures surviving.

Once more the GCC team parked up at the car park near Whale Wharf and Littleton Warth, and headed southwards, and again it was hot and sunny. They began the day's survey where they had finished off the previous day, at a large putcher rank complex recorded on the NMP and the Ordnance Survey map. About 100m north of this was another complex of stake-built, V-shaped fish traps that do not seem to have been previously recorded. At least 2, possibly 3 separate structures were present, with the two definite examples at least facing downriver (**Line Nos. 10030, 10031 and 10032**). Again, however, there may have been several different and overlapping phases. There was a small area of shingle here, and although these features might have made use of a naturally firmer locale, it is also possible that stones were brought in to form a crude, patchy metalled surface. Once again, the easternmost arm or 'leader' of the feature (10030) nearest the modern shoreline was the most heavily eroded and poorly preserved. The leaders again consisted of rows of stakes 2-3 stakes thick with occasional traces of horizontal hurdling, and each apex of these structures again contained large numbers of stakes for securing the actual fish baskets, many of these set at angles of 45-60 degrees. One arm appeared to overlap with another two, indicating possible different phases of use. It seems unusual that these structures faced downstream. One small subrectangular group of stakes that seemed to be for a basket lay immediately adjacent and 'outside' of the apex of one weir, although this might have been derived from an earlier or later phase of use.

Close to the 2-3 fishtraps was a separate subcircular stake setting that may have been for an individual fish basket, perhaps even for eels or lampreys (**Point No. 25**). This was just to the SW of feature 10030, and may have been related to it in some way. N.B. Later survey work at Oldbury suggested that this may have been a circular catch basket originally attached to the apex of 10030.

To the north-east of these fish traps were several more indeterminate, unrecorded groups of stakes, forming possible linear alignments in addition to more irregular clusters but recorded as just one linear feature (**Line No. 10033**). Several linear arrangements of larger stakes were probably putt and/or putcher ranks – these consisted of paired or small groups of posts set at right angles to the shoreline (**Line Nos. 10034 and 10035**). Further irregular lines or groups of stakes were also recorded (**Line Nos. 10036 and 10037**).

Further to the north-east again there were at least one, possible two unrecorded, V-shaped stake-built fish weirs identified (**Line Nos. 10038 and 10039**). These were slighter and more fragmentary than the two previous groups of similar features to the south, and the one definite example faced southwards downriver, overlapping with the arm of another further westwards towards the river. These were a mixture of roundwood and shaped stakes, the latter trimmed to form squared or 'pencil' points and cross-sections, projecting no more than 0.20m above the muddy intertidal surface. The tops of many of these stakes were rounded

and eroded. As before, there were concentrations of stakes near the apex of these structures that would seem to have been for supporting/anchoring fish baskets of some form, and some of these were set at angles of 45-60 degrees. Remnants of horizontal hurdling were also apparent at some points within the arms or leaders of these structures.

To the north of these V-shaped structures were the remains of at least two lines of paired posts/stakes (**Line Nos. 10042 and 10044**). These probably represent fragmentary late post-medieval or early modern putcher ranks, but at least some of the posts seem to have been made from very soft and easily eroded coniferous softwood.

Also to the north-east of the V-shaped structures several peat shelves were identified, eroding out from under c. 0.05-0.10m of sticky silt, and which in some cases had been cut by the stakes of later putcher ranks Line Nos. 10042 and 10044. There were at least two *in situ* root boles associated with this peat, along with some individual fallen branches (**Line Nos. 10040, 10043 and 10045**). No worked wood was identified and no artefacts were recovered, but charcoal was evident. The most obvious edges of the peat exposures were plotted. This may be a previously unrecorded exposure, as neither Alex Brown nor Hazel Riley record palaeo-environmental deposits south of Littleton Pill. Partly running across this peat was another putcher rank, and several other linear post settings, some possible putt or more likely putcher ranks, were located immediately to the north (**Line Nos. 10046-10050**). Feature 10046 was on the same alignment as 10044, and was thus either probably part of the same feature or represented another phase of build of the same overall structure. Some of the mud was becoming increasingly deep and difficult to move across, and so the lines of most of these features were recorded with the laser.

There then seemed to be a 'gap' in features up to Littleton Warth/Pill, although the sticky silt became increasingly deep the further north the GCC team progressed so it is not clear if this was a real lacuna in the distribution or simply a product of poor visibility in the deeper mud. As at Beachley/Slime Road, the mud thickened noticeably the further north one progressed, and this could have hidden V-shaped stake-built structures and related features such as fish baskets and fish basket supports. As the tide was beginning to come in, the team travelled no further than Littleton Pill, however. No archaeological features were visible along the banks of the pill, other than some collapsing modern revetment and platform structures. The team members then retired to the van and headed back to Gloucester.

Oldbury Flats 24/06/2010

SMP2 PU SEV5

Intertidal survey by AMC, BW & NW

Low tide: 13.15 PM BST

Rationale: To examine the intertidal zone on the east bank of the Severn where NMP and HER records indicated surviving putcher ranks, and also where the initial site visit suggested that some of these ranks preserved traces of woven hurdle fish baskets. It was intended to examine and record these in more detail. Satellite/AP imagery from Google Maps and Bing! Maps indicated the likelihood of other unrecorded fishing structures surviving.

Once more the GCC team parked up at the car park near Whale Wharf and Littleton Warth, and headed southwards, and again it was hot and sunny. The team began where they had finished the previous day, at the line of Littleton Warth; and headed north-eastwards towards Oldbury Power Station from this point. The first feature identified was an irregular group of stakes forming an indeterminate structure – recorded by laser as they were located in deep sucking mud just north of the Pill (**Line No. 10051**).

Some other features consisting of just a few stakes were only recorded using the GPS camera. Some of these may have been net lines, but others were very ambiguous. Several modern fishing stations were also noted – these used pieces of packing crates and other salvaged materials to form horizontal platforms and trackways, and may have been for either seine, long net or lave fishing. The stakes associated with them appeared to be very modern. These features were only photographed.

Much further to the west out into the modern river channel were two large, roughly NW-SE aligned putcher ranks in a staggered arrangement, identified on Google and Bing! Maps. The falling tide had not exposed all of them so they were recorded later in the day, but they are described here for ease of geographic location. They were relatively well preserved and survived to heights of 1-2 metres, so may be relatively recent in date (early to mid-20th century). The mud became increasingly deep and sucking on this part of the intertidal zone and team members could not even approach the beginning of the nearest structure as they were that far out. One was therefore recorded with the laser, although this proved difficult as it was at the extreme range even of the TruPulse device. One could not be recorded at all with the laser, so although it was given a record it will have to be plotted off the Google and Bing! aerial imagery.

The southernmost putcher rank (**Line No. 10055**) was orientated broadly NW-SE with posts at least 1.5-2m in height, becoming taller to the west. It was quite well preserved and the posts were set about 1m apart in pairs, and the pairs were themselves a similar distance away from one another. The timbers were clearly coniferous, and the rank was probably in use until relatively recently, perhaps as late as the 1970s/1980s. Located to the north of 10055 was another rank (**Line No. 10056**) which was on an unusual 'staggered' alignment with one NW-SE orientated section ending, and then c. 30m north of it the eastern end of another NW-SE section beginning again. These posts were again fairly well preserved and 1.5-2m in height and extended right out into the river on rock outcrops and sandbanks. It would appear that the western extensions of these putcher ranks would only have been accessible on foot at the very lowest tides, if then. Perhaps they were serviced by boat.

Even further out into the channel of the Severn were some isolated groups of stakes built on low rock formations, and these may well have been continuations of the two putcher ranks. A group of approximately 6-8 tall stakes might have been an extension of the last feature 10056, and there was also another small group of 4 tall stakes right out on the very edge of the intertidal zone, which may have been an extension of 10052 because it did have a slight curve, although there was a substantial gap, perhaps due to erosion. Further north towards the power station was a series of stakes right out in the river channel which are now not accessible at all, and the river may have deposited lots of silt since these were in use. All of these features were too distant for the laser and may have to be added 'by eye' to the recorded digital data through comparison with the aerial images.

The next major feature north of these was a well preserved putt or putcher rank (**Line No. 10052**), consisting of pairs and groups of 2-6 posts set apart from each other and orientated NW-SE in a gentle curve out towards the main river channel. The posts were mostly roundwood and quite substantial (0.08-0.15m) in diameter – most were quite badly eroded especially the upper parts of them which were quite spindly. They extended for approximately 50m and then became much more fragmentary. Far out into the river a small group of barely visible posts several hundred metres away may have formed the original eastern end of this line as they appeared to be on the same orientation, but of course this may have been a coincidence. The position of these posts could not be plotted as they were too far away even for the laser. The main alignment of paired posts in 10052 had a series of 8-10 irregularly spaced posts in a line approximately 2-3m north of it (**Line No. 10053**), slightly oblique to the main alignment. They may have been for additional bracing supports, but given that the baskets probably faced upstream (see below) these may have been an earlier structure rather than part of the same phase.

The most notable feature of rank 10052 was that on its southern side there were a series of relatively well preserved wattle fish baskets c. 1.3m long, with 6 very visible and well preserved examples with the tips of a few others just poking out of the mud (some recorded as **Line No. 10054**). The mud here was thick and compact and had buried the bases of the baskets. Both the horizontal and vertical weaving of the baskets and the stakes used to peg them into position were in good condition, and the rods used to make the butts were between 0.005-0.01m in diameter. The vertical stakes were generally between 0.02-0.05m in diameter. The wider open ends of these butts faced upstream, but the larger kypes or funnel-shaped entrances were missing. South of these probable butts were additional stakes where the more finely woven forewheel catch baskets would have been situated. There was no sign of these. Several baskets were held in place to the vertical stakes with withies, and no wire, metal nails or other fixtures were present, perhaps implying that this putt rank was later 19th century or early 20th century in date. Whilst the overall rank was relatively well preserved, the baskets will probably be gone in 5 years. A measured sketch plan was made of one of the baskets. Briegle Williams found a clay pipe bowl close to this structure that may be associated with its use and might provide a rough date for at least some of its lifespan.

North-east of the putt rank there were a few small indeterminate groups of posts that were again recorded mainly using the GPS camera. However, from the north side of Littleton Warth onwards the sediment became much thicker and stickier, and could easily have masked structures built of smaller stakes including additional V-shaped fish traps. Perhaps the team could return to examine this area after a scouring tide.

Heading northwards again, the GCC team found a NW-SE orientated hurdle trackway laid horizontally and extending approximately 10-15m out at right angles from the shoreline (Line No. 10057). At least three woven panels 0.5-0.6m in width were present, although the structure was partly buried in silt and more of its length and width may have been present. The sub-panel elements (sails) had slight grooves in them to assist the closely woven hurdle

rods in lying flat against them. Withy ties had been used to secure the hurdle panels to several vertical stakes that anchored this structure into the intertidal zone. Outlying stakes to the north and south of this structure were probably also associated with it. The whole structure appeared to end to the NW in a 'T-shaped' arrangement of stakes. The SE end was partly buried underneath the existing salt marsh silts. This, along with the lack of metal nails or wire, may indicate that it was late 19th century or earlier in date, but its position high up the intertidal zone may mitigate against this. Although this trackway could have been for landing a boat or a fishing stand, it might also have been used for long net fishing.

Further to the north-east there was an apparently relatively sterile area, although once again deeper mud deposits may have masked low-lying archaeological features. An unusual modern structure formed of wood and scaffolding pipes was photographed but not recorded, and then north of this was another long, slightly curvilinear putcher rank formed of paired and small groups of posts, that had then been re-used as a netline (**Line No. 10059**). This was a large feature extending NW-SE from the modern shoreline out into the intertidal zone for several hundred meters. It consisted of small clusters of 4 or 5 wooden stakes set 1-2m apart, later converted into a more modern net line using much taller posts that were still surviving to a height of 2-3m, grouped among the footings. The wood varied in condition, with the apparently earlier stakes much more eroded and only surviving to a height of c. 0.30-0.40m. The more recent net line poles were clearly coniferous. Some modern netting was still caught up in the tall wooden posts of the more recent netline. The structure extended far out westwards into the intertidal zone where deep sucking mud was present, so it was recorded with a laser. The line of 10059 was quite curved, markedly concave with the open part of the curve extending northwards facing upstream, presumably as a straight structure would have been more easily eroded by the tide

After another relatively blank area with thick mud, another putcher rank of paired posts was recorded using the laser. This began 10m from the shore and had a markedly sinuous, double curved alignment, and had been clearly truncated on its western edge (**Line No. 10060**). Not all of the posts were present, but these were approximately 1m apart NE-SW, with each pair of posts 2m from each other NW-SE. Some of the posts were squared, machine-sawed timbers and appeared fairly modern. They were short, only c. 0.30m in height and were in fairly good condition. This putcher rank was relatively isolated and not near any other groups of posts and stakes, although some may have been hidden under the silt. From this feature up to and including Cowhill Pill, no further archaeology was visible when the GCC team members walked along the shoreline. Scanning of the intertidal zone between Cowhill Pill and Oldbury Pill/Pilsdale Long Warth with binoculars did not identify any further archaeological features. As the tide was beginning to come in and as one of the team members had to get back to Gloucester for 4 PM for a medical appointment, they headed back to the van.

Oldbury Flats 25/06/2010

SMP2 PU SEV5

Intertidal survey by AMC, BW & NW

Low tide: 14.00 PM BST

Rationale: To examine the intertidal zone on the east bank of the Severn where NMP and HER records indicated surviving peat deposits and associated prehistoric finds of lithics, animal bone and footprints/hoofprints; and also where some possible fishing-related structures were recorded. There is also a stretch of shoreline where Romano-British pottery and other finds eroding out of the river cliff. Vanessa Straker had taken TC, BW and NW to this locale during the Stage 2a fieldwork in June 2009 when AMC was off on sick leave.

On this time occasion the GCC team parked up near Oldbury Power Station in a lay-by, and accessed the flood bank and shoreline via a footpath through a small nature reserve, which was full of wildflowers and different species of butterfly. The day was exceptionally sunny and hot.

The GCC team arrived at the shoreline and found a spot where to gain access to the edge of the intertidal zone without falling off the river cliff. They then proceeded south-westwards from this point, examining the river cliff and the area just in front of it for archaeological finds and features. They eventually came to the area where Romano-British pottery was eroding out and recovered three bags of finds, recording the length of the riverbank where these finds were eroding out (**Line No. 20001**), but the quantities were apparently smaller than on the visit in 2009. A lot of the pottery was quite fresh in appearance with little evidence for 'rolling', suggesting that it had only recently fallen out of the exposed section. Much slag was also identified, although only some of the smaller lumps were retained – some slags were up to 0.30m across. Some stone eroding out of the bank was possibly from structural features, though no actual stratigraphy or features could be discerned. The river was clearly actively undercutting and eroding substantial sections of river bank at this point, so what the long-term response to this erosion will be is not clear. Some future investigative excavation to establish the extent and nature of the archaeology would be nice!

After a quick lunch in the sunshine, the team then proceeded out onto the intertidal zone and the area where the known peat exposures were. The peat exposures in this part of Oldbury had already been recorded and published by Hazel Riley for EH and by Alex Brown and co-workers, so the team did not waste time repeating this process. Most of the peat was covered in sticky silt and mud deposits 0.05-0.10m thick, however, so it was not possible to identify any artefact scatters or human/animal tracks. Large quantities of roots and branches were associated with the peat and were visible at the exposed edges of the deposits, and some of these were clearly burnt with carbonised charcoal replacing the wood. Only a small section of a peat shelf was plotted (**Line No. 20002**). Although not *in situ*, two finds of animal bone were made – one a very large mammal vertebra, possibly from cattle/aurochs, and a large cattle or horse limb bone, this partly split. Both of these bones were stained back so although not *in situ* the team members were reasonably sure that they had been derived from the peat deposits rather than the later Romano-British site along the river edge. These two findspots were recorded (**Point Nos. 30002 & 30003**), and the bones retained for future ID and possible ¹⁴C dating. One piece of worked, burnt flint with a pronounced bulb of percussion was retrieved from near a peat edge, but although retained it was decidedly not *in situ* so its find location was not mapped.

Partly driven through some of the peat deposits was a series of stake-built linear features, with very low-lying and heavily eroded stakes. At least one of these lines was probably a putcher rank (**Line No. 20003**) with some evidence for paired posts already recorded on the HER, but other stakes represented smaller linear features or irregular groups of uncertain function (**Line Nos. 20005-20008**). These were often lines of single stakes – perhaps for net lines? At least one of these, however, may have been the remnants of a V-shaped stake built fish weir (**Line No. 20004**), but there were several different possible stake alignments in this one spot making certain identification difficult. They may all also have been part of just one or two features, but they would require much more detailed planning and investigation in order to confirm this.

Moving westwards and northwards across the rocky foreshore the GCC team identified several other probable NW-SE orientated putcher ranks (**Line Nos. 20009 & 20010**), but only short lengths of them had survived or were visible. The undulating rocky surface, the low, eroded nature of the stakes and the increasing amount of seaweed significantly hampered identification of these stake-built features. The team recorded numerous short lengths of stake-built features only a few metres long which were probably fishing-related structures; although of what sort could not be ascertained (**Line Nos. 20011-20013**). As many were orientated NE-SW along the line of the river these would not have worked as either ranks or as net lines, so they were possibly the leaders for ranks or V-shaped fish traps. In one shallow rock pool there was a small worked wooden peg of unknown date – this was retained and the find spot noted (**Point No. 30004**). Two posts were also photographed at the side of a rock-cut palaeochannel, perhaps for a netline; although no other posts could be found on the opposite ‘bank’.

The seaweed increased significantly in quantity towards the west, blanketing the rocky foreshore across approximately one third of the area the GCC team had hoped to examine. The team members proceeded as far north as the southern extent of the human-made lagoon associated with the power station, so the area between there and the shoreline was examined. However, it would be worth returning to this part of the Oldbury intertidal zone after a winter storm or spring tide early in 2011, when hopefully some of the seaweed would have been scoured off, and also the mud deposits over the peat exposures removed.

As it was getting late and the tide was about to turn the team members returned to the shoreline and the van. Clearly though, the area at Oldbury between Littleton Warth and the lagoon would repay further work if the mud deposits were to be scoured away.

Awre 30/06/2010

SMP2 PU GLO2

Intertidal survey by TC, AMC & NW

Low tide: 08.00 AM BST

Rationale: To examine the intertidal zone on the north-west bank of the Severn where NMP and HER records, along with APs and satellite imagery, indicated the existence of several possible putcher ranks. This is an area identified in the Flood Risk Management Strategy document as likely to require managed realignment in the short term (0-20 years).

As the low tides were largely unfavourable this week, being too early in the morning or late in the evening, the GCC team decided to examine as many areas as possible that were close to the GCCAS office in Gloucester. The team parked up by the side of the lane on the south-western edge of the village of Awre, by a gate that leads to a track down to the shoreline, although as this was marked private they did not venture down it in a vehicle. There was pedestrian access via a public footpath, however.

The team members walked to the shoreline, and noticed several possible putcher ranks to the south-west. However, to the north-east by a small headland, an object buried in mud by the shoreline appeared through binoculars to be part of a boat. The team therefore headed north-eastwards to investigate this feature, and had to clamber down a tricky bit of rough rubble seawall. The feature proved to be a gently curving part of the wooden hull of a boat, held together with iron brackets and bolts (**Point Nos. 28 & 29**), one extra point being taken to get the height due to satellite problems. These bolts were not too rusted and appeared to be machine-made and possibly galvanised, perhaps indicating a more recent date. Two attached sections were probably part of a rudder apparatus for a trow or barge, but this was far from clear. The section(s) of boat were located in deep, sloping sucking mud and were too hazardous to get next to on foot, so they were recorded from c. 10m away with the laser. The headland and shore at this point had been reinforced with modern stone rubble, so it may be that this boat hull section was being re-used as a timber bank revetment. Other features noted in the same general area (but not recorded) included large lumps of slag re-used as bank revetment material, and lengths of steel hawsers now overgrown and covered with reeds.

The team members then proceeded south-westwards, to a fairly modern putcher rank formed by machined, squared wooden posts arranged in pairs with some surviving horizontal beams. This feature began some c. 20m from the modern shoreline and extended for c. 30-40m down into a noticeable hollow in the river floor and back up the other side (**Line No. 10061**). Once again, it was located in mud thought to be too deep and sticking to access directly, plus it was in a slippery hollow, so it was again recorded with the TruPulse laser.

South-west of this putcher rank was a small brick building covered in concrete render that seemed to be still in use as a fish house (**Point No. 30**). Visible though the window inside it and arranged outside were many modern wire putcher baskets. The building did have a small chimney, and presumably an internal hearth. On the shore line close to it was a concrete ramp leading down to a large putcher rank that was clearly still in use, and someone had accessed it that morning as there were fresh tyre tracks present. This putcher is one of only two working examples left on the river, the other being a smaller seasonally-built feature at Broadoak. This larger, permanent putcher structure curved gently from the W to the NE, and contained at least 250+ wire putcher baskets, anchored to modern machined

and squared wooden beams and iron Reinforced Steel Joists (RSJs) (**Line No. 10062**). This modern structure had replaced an earlier wooden example, however, for close to the riverbank there were the remains of several large roundwood posts and a horizontal roundwood brace. Several additional timber posts were located immediately to the south-west of the putcher rank, again probably from an earlier phase (**Line No. 10063**).

Moving along the shoreline to the south-west for several hundred metres, the GCC team reached another fairly modern putcher rank, consisting of machined squared timbers, round telegraph poles and vertical RSJs set into a sloping concrete ramp that began c. 30-40 m from the shoreline (**Line No. 10064**). One wooden cross-beam survived. The mud was too deep and slippery to access this properly, and as the team were recording it with the laser the tide started to come in very rapidly, at approximately 1cm a second. Some 5m to the north of the modern putcher rank were 6 paired roundwood posts from what appeared to be an earlier putcher rank (**Line No. 10065**), but this vanished in just a few minutes under the rising tide before its full length could be recorded.

To the south-west of this locale, at least two putcher ranks were visible through binoculars close to Poulton Court and Brim's Pill. These were both recorded on the HER and NMP however, and as the tide was rising fast, it was likely that by the time the team members could have walked to them they would have been underwater. No other features were visible through binoculars. The team members therefore walked back to the van and returned to the GCCAS office in Gloucester.

Sedbury 07/07/2010

SMP2 PU TID1

Intertidal and shoreline survey by TC, AMC & NW

Low tide: c. 09.30 AM BST

Rationale: To examine the intertidal area of the west bank of the River Severn from the area where V-shaped fish traps and stake alignments near Beachley had been recorded and sampled on 11th and 14th June, past a large well-preserved putcher rank recorded on the HER and marked as a salmon catch, and north to the headland at in order to spot any unrecorded archaeological features.

TC, AMC and NW parked up on the southern edge of Sedbury in a residential road next to a public footpath that, via a footpath between houses, gave access down the cliffs to the salt marsh and salt grazing below. Once the team had suited up they went via the path and down the steps onto the salt grazing and then headed out onto the intertidal zone. Initially they headed southwards towards the northernmost extent of the area where the stake-built V-shaped fish traps and other structures had previously been recorded in June. There was a noticeable gap of several hundred metres between this northernmost limit, and the start of any other interesting features. A few stake-built structures were noted, consisting of a pair of stakes (**Point No. 37**), and another small group of stakes, but these were probably relatively recent in date. A large iron anchor was identified close to the edge of the salt marsh, and nearby was a section of chain. These may have been associated with the three tall metal posts on the edge of the foreshore, possibly representing a temporary mooring berth for quite a large boat or ship. These posts were just photographed.

Individual wooden posts or pairs of posts that were also present were probably relatively recent mooring posts. An unusual isolated modern feature consisted of a collapsed metal cage held in place by wooden posts – this may possibly have been an eel trap. Back northwards close to the point where the team had first gained access to the intertidal zone there was a partially incomplete putcher rank, consisting of quite sizeable paired posts curving from the W to the NE (**Line No. 10070**). The posts were eroded soft roundwood, at least some of it coniferous, and probably of relatively recent date. Just beyond this was another similar but more incomplete putcher rank (**Line No. 10071**), again eroded and again probably quite recent in date (20th rather than 19th century). Nearby was an unusual modern feature consisting of large iron bolts and two wooden stakes. A large modern mooring post was also recorded (**Point No. 38**).

Further to the north were several small groups of stakes forming indeterminate structures, and a short line of eroded single stakes that may have been a net line rather than a putcher rank. A potentially interesting metal object was identified and retained after its position was marked (**Point No. 39**) – although it was not associated with any features and was just lying on the intertidal surface partly buried by silt, it appeared to be some sort of rectilinear artefact or tool rectangular in cross-section and with a possible handle or haft. Cleaning this up may allow it to be identified. (N.B. After initial cleaning it seemed to be an iron file or possibly the corroded metal rung of a ship's ladder. The iron was actually very poor quality).

North of this was the large putt or putcher rank marked on the OS map of Slime Road as a 'salmon catch', though its orientation is actually slightly incorrect on the OS maps. Although eroded this was still substantially complete, and consisted of dense groups of stakes some up to 1.5m in height forming a curving structure orientated broadly E-W but curving towards the NE (**Line No. 10072**). Immediately south of it were other smaller groups of stakes, some

angled that would have been the supporting struts of this rank. It is possible from the numbers of stakes that this was originally a putt rank converted to putchers. Some modern wire putcher baskets were still present in amongst the collapsed and eroded superstructure, which was several hundred metres long and extended up onto the current edge of the foreshore. The putchers on the rank had faced upstream, and some floating debris such as tree trunks had come to rest against its northern face, presumably after it had been abandoned. Just to the north of it was a diffuse group of much smaller stakes forming one or more small indeterminate structures.

Moving northwards once again, there was then another gap in features where a small stream led out into the foreshore forming a small pill (Slimeroad Pill), and north of that there was a c. 150m stretch of intertidal zone with spaced pairs or groups of 3-4 stakes at the most, at roughly regular intervals along the edge of the existing deep channel (**Line No. 10072**). These seemed to be fishing stands of some sort, but as the mud was too deep to access them they were only plotted from a distance as points with the TruPulse laser.

Further north again the mud flats changed to more steeply shelving shingle beach, east of Sedbury Park. Here the team recorded the fragmentary remains of a fishing structure, with small stakes eroded almost down to the intertidal shingle surface (**Point No. 40**). This may have been the apex of a V-shaped weir, or part of a putt/putcher rank – only 4 low and eroded wooden posts were identified. This was recorded as the tide was coming in at a brisk pace. Slightly further up the intertidal zone nearby was a line of 3 eroded wooden stakes (**Line No. 10074**). Just round the slight headland some 200m to the north, another low, eroded putcher rank was recorded in a similar position and fragmentary state, although enough of it survived to be recorded as two separate lines of posts (**Line Nos. 10075 & 10076**). One modern metal galvanised bolt incorporating a catch was associated with one of the stakes, but this was probably later re-use of an earlier structure. Nothing further was visible through binoculars for the next several hundred metres to the north, in the slight bay just south of Pillhouse Rocks. As the tide was now coming in quite fast the team retreated back up the foreshore and walked back to the van.

Woodspring/Kingston Bay 08/07/2010

SMP2 PU KIN1

Intertidal and shoreline survey by AMC, BW & NW

Low tide: c. 10.30 AM BST

Rationale: To examine the intertidal area of Woodspring/Kingston Bay, and try and gain access to fish trap structures recorded by the NMP and HER, and also two known WW2 shipwrecks.

After driving down to Clevedon the team negotiated their way through the narrow lanes to Treble House Farm, where the owner Robert Cole had kindly agreed to allow them to park the van. The team members had to wait for about 20 minutes whilst two tractors were re-fuelling, but then parked in the yard behind the farmhouse and suited up. They then walked south-westwards through paths through fields until they came to the seawall and the shoreline of Woodspring Bay. They walked southwards down the tarmac footpath, encountering a group of slightly intimidating horned cattle – one a White Park, one an English Longhorn but at least two probable Spanish/French fighting bulls as well! The team members moved slowly past the bovid bestiary and then accessed the intertidal zone west of Channel View Farm, south of Kingston Pill.

The two known WW2 shipwrecks in the bay were highly visible, one clearly beyond the edge of the current low tide, but the other apparently on the edge, and it was along this north-south tidal limit that some of the fish traps were meant to be. The team therefore headed south-westwards towards the wrecks. They identified several isolated wooden mooring posts and occasional isolated wooden stakes or pairs of stakes, but no substantial structures. They did then record part of a possible V-shaped structure (**Line No. 10077**) and several curvilinear structures formed by arcs of low, eroded and insubstantial wooden stakes (**Line Nos. 10078-10080**). These were probably relatively recent hang net lines rather than fish weirs/traps, and each line that was recorded was made up of no more than 6-8 widely spaced stakes. These were recorded with the TruPulse laser as the mud became increasingly difficult to move through.

No more features could be identified in the deep sucking mud to the west and south-west, even through binoculars; and the thick sediment would also have made approaching the nearest WW2 shipwreck too arduous and hazardous. It was also apparent that there was still quite deep and extensive standing water between the day's lowest tidal limit and the nearest wreck in any case – presumably this wreck is only accessible at very low tides. The team therefore retreated back to the shoreline and headed back to the van.

Woodspring/Kingston Bay 09/07/2010

SMP2 PU KIN1

Intertidal and shoreline survey by AMC, BW & NW

Low tide: c. 11.30 AM BST

Rationale: To examine the intertidal area of Woodspring/Kingston Bay, and try and gain access to fish trap structures recorded by the NMP and HER, and also two known WW2 shipwrecks.

The GCC team parked the van up in the lane at West End, at the south-western edge of Clevedon, by the entrance to the small marina. They then walked south-west along the footpath and cycle track on top of the sea wall, accessing the intertidal zone at Gullhouse Point. Moving south-westwards across the mudflats, they identified a few isolated stakes or pairs of stakes, but these were not recorded as they did not form significant coherent structures. Most were probably of fairly recent date.

The team members did, however, identify an eroding peat shelf. This extended on a sinuous line approximately north-south for several hundred metres, and the edge of it was plotted both by walking along it but also with the laser (**Line Nos. 10081-10083**). In places it had been cut through by tidal outflow channels and these were filled with deep sucking mud, and consequently were somewhat hazardous to cross. Some channels were just too deep and wide to wade through, hence the use of the laser. The peat was between 0.08-0.10m thick and lay above a compact sticky blue clay, the latter pierced by many preserved rootlets and root holes. Amongst the compressed vegetation of the peat were many broad, linear leaves that were probably from reeds or rushes, but only a few small branches and twigs were identified. This may indicate that the peat was formed predominantly from reed swamp/water edge type vegetation. No artefacts, charcoal or animal tracks were noted, but much of the relatively flat surface of the peat was obscured by mud.

Approximately 100m west of this peat shelf and some 2-4m lower in height (as indicated by the laser) there was another peat shelf, just visible at the edge of the breaking water (**Line No. 10081-10084**). The mud overlying it was too deep to allow a closer approach though, so the approximate line of it was zapped in using the laser. As it was lower down the foreshore, this was likely to have been an earlier peat deposit, perhaps lying underneath the blue clay, but it was not possible to ascertain the stratigraphic/depositional relationship between the upper and lower peat exposures. There are no previous HER/NMP records for peat exposures at Woodspring/Kingston Bay, however, so these survey records may prove to be quite significant.

No other features were visible in the mudflats north of Kingston Pill, so the team proceeded northwards onto Blackstone Rocks. This had evidence for modern net lines in the form of metal spikes and scaffolding poles, in some cases driven into the bedrock, but these were not recorded although some were photographed. No stone or stake-built structures were discerned, however, although there was a great deal of seaweed blanketing the area. No structures were identified along the edge of the rock shelf where it dropped off. The team therefore returned to the marina at West End, taking photographs of some of the fairly modern wooden structures associated with the boat mooring and access.

Northwick Oaze – Goblin Ledge, & New Passage to Old Passage 12/07/2010

SMP2 PUs BRIS1 & BRIS2

Intertidal and shoreline survey by AMC, BW & NW

Low tide: c. 15.05 PM BST

Rationale: To examine the intertidal area of Northwick Oaze & Goblin Ledge/English Stones, and try and gain access to fish trap and other features recorded by the NMP and HER and record any new structures.

The GCC team parked at the end of the road at New Passage by Severn Lodge Farm, and then proceeded along the seawall past Red Ledge and over the bridge/sluice by The Pill, and walked onto the salt grazing land next to Northwick Oaze. Before they went to the foreshore and the intertidal zone, the team took photographs of the old structures associated with the disused military range there, including buildings, embrasures and revetments.

The team walked along the edge of the salt grazing foreshore until a point where they could see no further features between where they halted (south of Cake Pill) and the old ferry structure at Old Passage, Aust, about 1km away. No further archaeology was visible to the north through binoculars. The team then went onto the edge of the salt marsh and headed back southwards again, recording a series of features that they had noted on the way northwards. As all of these features were located in deep sucking mud, they were recorded with the laser.

The northernmost feature, roughly equidistant between the new and the old Severn bridges, was orientated NW-SE at right angles to the shoreline and consisted of an irregular row of single eroded stakes set on the edge of the salt marsh (**Line No. 20015**). There was then a small gap, and then in the intertidal mud there was another line of single stakes on broadly the same alignment (**Line No. 20014**), but with a noticeable kink in the line of it. These probably formed part of the same overall relatively modern structure, although it is possible they were different phases or different features. South of this was a NW-SE row of paired wooden stakes, again with a noticeable curve or kink to it to the north-west, part of a probable putcher rank (**Line No. 20016**). This was fragmentary and poorly preserved, but was probably of relatively recent date (20th C rather than 19th C). Some isolated posts on the edge of the salt grazing were only recorded with photographs. Dark laminated deposits were visible as thin layers (1-2cm) within the overall silt deposits eroding at the edge of the salt grazing, and these were photographed but not recorded in detail. They did not seem to be peat deposits, but might reflect periods of more low-energy hydrological regimes when more organic material had been deposited.

The next major structure to be identified consisted of a line of wooden stakes broadly parallel to the existing edge of the salt grazing, about 5-10m out into the mudflats of the intertidal zone (**Line No. 20017**). The northernmost stakes were relatively small in diameter, quite badly eroded and more widely spaced, but to the south the stakes became larger and more closely spaced, with whole roundwood branches being used and large stakes being grouped with 2-3 additional smaller supporting stakes. Many appeared to be soft coniferous wood. There was a 'corner' apparent at the southern end, with a line of stakes then extending inwards to the shoreline. Some flat stone slabs were sat on or partly within the intertidal surface at this junction. John Allen and Simon Haslett (in *Archaeology of the Severn Estuary* 17 2007) assert that this structure was a fish trap. The GCC team thought that this structure may have formed some sort of revetment along part of the riverbank, however, which had subsequently eroded back from this line. It was at an unusual angle to the shoreline (parallel

to it), unlike putt and putcher ranks or the V-shaped stake-built traps. Some metal beams or fixtures were also located next to the alignment, and there were scattered outlying stakes extending south-westwards too.

Closer examination showed that the southern, largely right-angled 'return' of 20017 was formed of closely paired stakes that may have been part of an earlier structure incorporated into a later revetment, perhaps an earlier putt rank or fish weir. Approximately 5m NE of the southern return was another possible line of stakes running at right angles to the shore, and some of these appeared to be paired. This too may have been an earlier structure, perhaps part of a putcher rank. As these additional groups of stakes could not be conclusively shown to be separate structures, however, they were all grouped and recorded as part of the overall right-angled revetment. (N.B. Allen and Haslett recorded a circular setting just 'a few metres to the south-west of the long arm of the fishtrap', and this looks the same as some of the circular settings that the team found at the apexes of V-shaped stake-built weirs at Oldbury and Beachley. On the survey visit the tram members did not see this structure, however, unless it was where the stone slabs were lying on top of the mud. The thickness of the mud deposits at Northwick Oaze may have concealed smaller stakes).

The angle of structure 20017, almost parallel to the modern shore line, seemed off for a V-shaped weir, and the great variety of materials used in its construction was different to the others noted by the team. But perhaps an earlier V-shaped structure had been re-utilised, firstly by a putt/putcher rank, and then perhaps it was re-used as a revetment with the addition of more oddly shaped wooden posts.

To the south-west of the revetment was a further line of spaced, eroded stakes, a few possibly in pairs (**Line No. 20018**). This may have been a fragmentary netline or putcher rank. Another short line of paired posts was noted, part of a probable putcher rank (**Line No. 20019**). There was then a final fragmentary line of eroded, paired posts with a slight curve or kink in it, probably another putcher rank, just north of The Pill (**Line No. 20020**).

The team stopped recording briefly and had lunch on a bench overlooking The Pill and the foreshore, as the tide continued to recede. They then went back out onto the intertidal zone and moved onto the rock ledge at Goblin Ledge, to try and access an unusual circular stone structure identified on Bing! and Google Maps aerial imagery. Goblin Ledge was a vast expanse of seaweed-covered rock interspersed with wave-cut rock pools and tidal channels, many of the latter still draining out as the tide fell (but draining northwards in a slightly disorientating manner). Several metal poles may have been from modern net lines, and one isolated wooden post was photographed but not recorded. There was no sign, however, of the one or two possible structures recorded by John Allen and the NMP off aerial photographs, just c. 20m north of the new Severn Bridge and c. 30m east of the circular structure (one recorded by Allen as ES-10 PRN 18303, and the other recorded as PRN 1375. It is likely that here Allen had plotted natural fault lines and rock shelves.

It was not possible to proceed closer than about 100-150m north of the circular stone structure, as a deep water-filled channel cut off access – it would only be accessible at very low tides. Allen had suggested that this was one of two artificial rock-cut channels leading to a stone weir (ES-10), but it was clearly a natural channel that had formed along an eroding fault line in the rock. The team recorded the nearest place they could get to the circular structure as a point, however (**Point No. 30005**). From a distance through binoculars, the stones in the circular structure just looked altogether wrong to be a fish weir – the stones were very large, some being c. 2m long, 1.5m wide and 1m thick, and the structure had less weed encrustation than the surrounding rocks, suggesting that it was actually not very old. It was most probably associated with the construction of the new Severn Bridge, and the stones might have been moved into position using large earth-moving machinery such as

360-degree excavators. Whether this was for a particular purpose or whether it was just the result of a bored machine operator is not clear. The deep water-filled channel also prevented the team from going southwards under the bridge and attempting to identify a large V-shaped fish weir recorded on the NMP and HER at English Stones. Again, this might be accessible on foot only at very low tides.

As it was now just past lowest tide and the team members did not want to get cut off by rising water in the other more shallow channels they had splashed through, we returned north-eastwards towards Red Ledge. They recorded one of the structures noted on the NMP and HER, the surviving remnants of a probable wharf or jetty called Robin's Quay on the digital Mastermap mapping. Two upright timber posts with sawn settings for horizontal planking were situated at the end of a line of further hardwood timber posts and piles driven into the rocky foreshore (**Line No. 20021**), some of these posts being up to 0.40m in diameter. There were also two fragmentary lines of large boulders that were probably also part of the foundations for this structure, which was approximately 30m long and up to 5m wide and orientated roughly north-west to south-east. The centreline of this feature was plotted with the GPS. Lying off the western end of this structure was a worked timber with regularly spaced holes for laths or dowelling, possibly once part of a timber-framed building. It was not clear if this timber had been reincorporated into the wharf structure, or if it was merely drifting tidal flotsam that had come to rest against it.

Another nearby wharf or jetty recorded on the NMP and HER survived for a length of c. 30m and to a height of c. 1m. This second feature, at a place marked Red Ledge, consisted of a rectilinear stone structure with faced sides and a horizontal paved surface, made of irregular mortared, hard metamorphic stones (**Line No. 20022**). The uppermost stones were flat and tabular, whilst the facing stones were more blocky; and it was oriented roughly east-west. This wharf was up to 2m wide and 15m long, but like the first example it was incomplete and did not extend all the way back to the current shoreline. This may imply considerable shoreline retreat, and/or the partial demolition or robbing of these structures. Set at the south-western end of the stone structure were two upright but eroded timber posts, presumably all that remained of a once more extensive timber extension.

As it was by now getting rather late, the team finished the recording, left the intertidal zone and headed back to the van.

Severn Beach/Gravel Banks 13/07/2010

SMP2 PU BRIS2

Intertidal and shoreline survey by AMC, BW & NW

Low tide: c. 16.00 PM BST

Rationale: To examine the intertidal area of Severn Beach and Gravel Banks, and try and gain access to fish trap and other features recorded by the NMP and HER and record any new structures.

The GCC survey team parked up at the southern end of the dead end lane parallel to the seawall at Severn Beach. It was a murky day, with rain threatening. The team members suited up and then walked south down the raised pathway on top of the sea wall, towards the modern power station. They climbed over or under the large outflow pipes that crossed the shoreline and carried on southwards across the salt marsh, until they reached New Pill Gout. There they recorded a series of coniferous roundwood timber tree trunks 2-3m high set along the edges of the pill, presumably to try and keep it open as it functions as an outflow for a large sluice gate and a modern drainage channel. Although the western extent of the pill had both sides lined with the timbers (**Line Nos. 10085 & 10086**), for part of its length only the northern edge was revetted in this manner. Further inland to the east, the timbers had fallen over against one another forming crossed poles. These timbers were probably fairly recent in date, but had been incorrectly recorded by the NMP as a groyne.

The team members then tried to cross the pill by going inland, but the existing railway and a fence prevented this. They therefore returned to the shore just north of the pill and tried to gain access there, but the mud was too deep and sucking and they had to give up only 10-15m from the shore as it felt too soft and sucking underfoot, with no sign of a hard underlying intertidal surface. The team members returned to the large outflow pipes, and following a metallised surface laid alongside their northern edge they were able to walk several hundred metres out onto the intertidal surface of Gravel Banks. They then moved south-west until they were roughly opposite the Avonmouth Power Station, where there was a wreck recorded on the HER/NMP.

As the team members got close to the visible wreck the mud deposits began to thicken again and became quite deep, making movement very difficult. It also started to rain and gust with wind quite heavily. What a miserable, bleak expanse of grey and brown nothingness Severn Beach is. The power station jetting out great gouts of steam gave it all a post-apocalyptic feel, like some low budget 80s sci-fi movie quite probably featuring Dolf Lundgren.

The team were able to get close and record the wreck, however (**Line No. 10087**). This was a wooden-hulled boat, quite wide in the beam, and with a possible rounded stern still surviving. There was a large keelson and most ribs were still intact, but the hull sides had largely disappeared. There was also a possible mast step visible. It may have been a barge or a trow. There were several pieces of debris around it, including one metal and wood feature that may once have been part of a rudder. This had possibly been re-used in another structure. This other structure lay just to the north of the wreck and was at right-angles to the shore, orientated NW-SE (**Line No. 10088**). It consisted of several eroded wooden stakes, and potentially incorporated some of the metal fittings from the wreck debris. Some of the posts appeared to be paired, so it is possible that it was a fragmentary putcher rank, or if not, a net line. Maybe the wreck attracted fish and made this a useful place to fish.

Far to the south, at least 400m closer to the Avonmouth Industrial estate, a collection of stakes was just visible in the mist, rain and gloom through binoculars. These features do not appear to have been recorded before, but accessing them on foot would be extremely difficult, and would certainly involve a long walk as the industrial estates are sealed off behind security fences and gates. It was also not clear if the possible features were situated in deep mud or on gravel.

The team members extricated ourselves from the sucking mud with some difficulty and then headed north-west, fanning out across the undulating gravel intertidal surface. They found an isolated timber that had lath holes in, either from a wreck or more likely flotsam, possibly a structural timber from a half-timbered building. This was only photographed. The team were heading for several fishing rank features recorded by the HER/NMP, but they did not identify any of the large features claimed to be there. These may have already largely eroded away. The team members did, however, record a short length of a stake-built linear feature with low, worn stakes eroded almost down to the intertidal surface, which was extremely hard to spot against the background gravel, pebbles and seaweed (**Line No. 10089**). Some stakes seemed to be in pairs, so this was possibly a putcher rank, but it was to the south-west of the recorded features. It may be a new feature, or it may be that the georeferencing of some of the HER/NMP records was out.

The team then walked northwards parallel to the shoreline, through the slightly otherworldly landscape of undulating gravel ridges, seaweed covered plateaux and quite deep palaeochannel 'wadis'. Apart from some metal stakes used as net lines, however, no other features were visible. Some fishing structures previously identified by Allen were recorded on the South Glos database, but none of these features were visible, and it is not clear if these were possibly the metal structures, or if the remains of them had gone completely. Alternatively, Allen may have been misinterpreting the sinuous lines of natural shingle ridges as fishing ranks. The negative evidence was recorded as a point (Point No. 41). Further to the north by the new Severn Bridge at English Stones some additional stake-built structures were visible through binoculars, although as they were quite tall it is possible that they too were of metal construction. N.B. These were subsequently recorded on 06/10/2010.

It was by now very late, well after low tide and the team members were very tired and sopping wet, so they therefore squelched back to the van.

Hills Flats 19/07/2010

SMP PU SEV3

Intertidal and shoreline survey by AMC & BW

Low tide: c. 09.00 AM BST

Rationale: To examine the intertidal area of Hills Flats, and try and gain access to fish trap and other features recorded by the NMP and HER and record any new structures. Also to investigate a possible causeway and a linear feature noted on satellite/AP imagery on Bing! Maps.

BW and AMC went down to Oldbury. They parked at the end of Shepperdine Lane by North Ham, where there was ready access to the foreshore and intertidal zone, and where a public footpath runs along the top of the flood defence bank.

It was quite cool and cloudy to begin with, but with sun starting to break through. There was an unknown problem with the Magellan GPS datalogger – the numbering sequence had reverted back to zero, and it appeared to have wiped many previous readings, although these have been backed up elsewhere at the office. Why this problem occurred was not clear. Also, the team had no underlying mapping for this area, although as the co-ordinates provided by the GPS appeared to concur with their position as shown on the paper copy of the OS map it would seem that this was functioning correctly and that the team members could therefore plot features despite the lack of associated mapping.

The team accessed the intertidal zone straight in front of the lane and recorded a linear causeway feature (**Line No. 10090**). This was up to 3m wide and 0.5-0.8m high, built of unconsolidated stone rubble and orientated approximately E-W. At its W end were several iron fixtures and pipes, and this suggests that this feature was somewhat recent in date and probably related to the construction of the power station and/or the tidal lagoon in the late 1960s. There was also a possible linear structure adjacent to this feature on the aerial images, orientated NE-SW. This proved to be a light rail or tram track (**Line No. 10091**), with recessed metal grooves set into linear concrete footings, lined in places with wooden plank shuttering. In between these was a c. 1.5m gap where the intertidal marl and shingle surface was exposed.

The structure was approximately 4.5-5m wide, and at its E end was a polygonal low concrete platform with various metal plates, brackets and other fittings. Both the rail track and the platform had large 6-sided bolts sticking up out of it. This feature would have been used during the construction of the lagoon and/or the power plant, perhaps as an additional jetty to offload supplies or to take excavated material away from the tidal lagoon. Modern metal cables and even lengths of electrical wiring from lighting rigs were all present around this feature. What was slightly puzzling about it, however, was that it ended at least 200m from the modern shoreline, and the rubble causeway leading to it would seem to be a much more poorly built structure than the tracks and platform. Perhaps large lorries were driven out directly onto the intertidal surface, however. The marl and shingle surface immediately north of the tidal lagoon was certainly exceptionally flat, unnaturally so, and this had probably been scraped or bulldozed by machine.

Possibly as a result, not many other features were recorded. One pair of round wooden posts with additional smaller wooden wedges was recorded by photograph only – as this was within the potentially stripped area they may not be that old. One line of small stakes was identified, however, orientated approximately NNW-SSE (**Line No. 10093**). Although

fragmentary, and the stakes low and eroded projecting only a few centimetres above the surface, as some appeared to be 'staggered' it is likely that these were originally in pairs and thus part of a putt or more likely a putcher rank. Some of the stakes were roundwood up to 0.08m in diameter, whilst others were squared or trimmed into 'pencil' points. Nearby were several stakes on a slightly different NE-SW alignment (**Line No. 10092**), and two of these were larger stakes, one nearly 0.30m high and 0.12m in diameter. Although recorded as a separate structure, a fragmentary part of a net line or a putcher rank, this may have been a curve or kink to the previous line of stakes, and thus part of the same overall feature.

No further features were visible in this area, although the rock and shingle shelf was covered in undulating deposits of soft mud and seaweed that hampered visibility. The team therefore proceeded north towards a wooden structure that was visible, almost opposite Chapel House (**Line No. 10094**). This proved to be a NW-SE line of paired wooden stakes or posts, some at least 1m in height, and set approximately 0.50m apart, another putcher rank and probably one of relatively recent date, already recorded on the HER/NMP. Most posts were roundwood, but some were squared in cross-section. This feature extended out to the NW from a low rocky shelf on the side of the river channel. As it was situated far out in deep mud and as the tide was starting to come in and had already covered some of the lower stakes on the NW end of the feature, the team recorded it using the laser from about 60m away.

As the tide was coming in fairly quickly the team members decided to repair to the van and head back to the office.

Hills Flats 20/07/2010

SMP2 PU SEV3

Intertidal and shoreline survey by AMC & BW

Low tide: c. 09.45 AM BST

Rationale: To examine the intertidal area of Hills Flats, and try and gain access to fish trap and other features recorded by the NMP and HER and record any new structures.

BW and AMC went down to Oldbury. They again parked at the end of Shepperdine Lane by North Ham and the Windbound Centre. It was quite cool and cloudy, but the forecast torrential rain and thunderstorms fortunately did not appear – just a refreshing light drizzle towards the end.

The team members walked along the flood defence bank avoiding some rather skittish cows, and then accessed the intertidal zone by a stake-built structure (**Line No. 10095**) near White House. This was formed of pairs of eroded roundwood stakes up to c. 0.40m high, and approximately 0.50m apart, set NW-SE broadly at right angles to the existing foreshore. At least some of the posts were made of coniferous wood, but only about 10m of the structure survived. It was likely to have been a putcher rank, however, perhaps of late 19th or early 20th century date.

Moving northwards from this feature, BW spotted a projecting lump that proved to be a surviving fragment of peat shelf on the sloping intertidal surface/shelf, only c. 2.5m long and 1.5m wide, but apparently *in situ* rather than washed down from higher up (**Point No. 42**). The deposit under the peat was not visible, even after a bit of furling with a trowel, as the peat was at least 0.30-0.40 thick, with a flat upper surface. It was very dark grey and black in colour, with dark reddish brown lenses and fibrous laminations, and mid-brown compressed leaves. No charcoal was visible. Next to it was a projecting tree trunk at right angles to the sloping intertidal surface, and apparently once connected to/buried within the peat. The wood was very dense, waterlogged and stained black, so this together with its orientation suggested that it was derived from the peat layer rather than simply being driftwood. The trunk was at least 1.5m long and up to 0.30-0.40m thick, so this would have been a not insubstantial tree. No artefacts or footprints were noted.

After a fairly big gap of over 50 metres there was an eroding peat shelf visible quite high up on the shoreline (**Line No. 10096**). This peat again had a flat upper surface, but this deposit was clearly above blue-grey clay that had visible waterlogged rootlets and root holes visible within it. This peat was approximately 0.20-0.30m thick and again largely very dark grey or black in colour, with some reddish brown laminations. This peat did contain charcoal, however, and waterlogged, stained fragments of twigs and branches. The eroding edge was recorded with the GPS. The modern eroding edge of the salt marsh indicated that at least 2.5m of silts overlay this peat, so it may well be part of the upper Wentlooge formation. There was also a smaller isolated block of similar peat further to the NW (**Point No. 43**), recorded with the GPS although this was not photographed.

Just to the north of the peat shelf was another complex of linear stake-built features. One short curving arc of eroded and paired stakes no more than 10m long and set NW-SE at a rough right-angle to the shore was a probable putcher rank (**Line No. 10098**). This began c. 20m from the shoreline. About 10m north of it was a far more substantial feature several hundred metres long, built from coniferous roundwood poles 0.12-0.15m in diameter and surviving to a height of at least 1.6-1.7m (**Line No. 10097**). These poles/posts were

arranged in pairs, and the pairs themselves seemed to occasionally cluster, with irregular gaps in between them. The large structure began at the modern shoreline/salt marsh edge and curved gently to the NW and N. North of this was a line of single posts, most placed on the same north-south line as many of the pairs of posts. South of the structure there were 3-4 lines of posts, again usually set on the same N-S alignment as the pairs of the main alignment. These would seem to be supports for a probable putcher rank – some posts in the northern line were set at an angle towards the main alignment. Presumably it faced northwards and upstream. This large structure survived quite well, and so was probably more recent in date than the smaller, fragmentary putcher rank just to the south of it. Iron piping, the rusting remains of a wheelbarrow and even iron cart wheels still attached to an axle indicated that it was in use until comparatively recently, perhaps the mid-20th century or even the 1970s-1980s.

Arranged almost at a right-angle to the NW end of the putcher rank were more stakes (**Line No. 10099**). These were orientated NE-SW, and the stakes were smaller in diameter (0.06-0.08m) and more eroded (up to 0.30m high). Some were roundwood, but others had been trimmed into 'pencil points' giving hexagonal or octagonal cross-sections. On the GPS records, the SW end of this feature should be much closer to the N end of 10097. Initially, close to the NW end of the main long putcher rank they were arranged in pairs, but after c. 10m they seemed to become just a single curving arc of stakes, on a broadly N orientation. These latter stakes were separated by a slight gap and so were recorded as a separate line on the GPS (**Line No. 10100**), but they were probably part of the same structure. The arc was fragmentary, with some very worn stakes only just visible in the intertidal surface, only 1-2cm high. It is not clear if these stakes were linked to and in use at the same time as the long putcher rank, or were earlier/later in date. As they were at a shallow oblique angle to the river channel, it is not clear how they functioned. The initial paired stakes suggested a putcher rank, but the single arc was more like a net line. Neither would seem to have worked very well unless they were set at right angles to the river, however, but they were at a 'shallow' angle orientated NE-SW. Allen suggests that this line was the leader arm for the putcher rank, and this seems most likely. The line of the curving arc in particular was difficult to plot due to the large gaps between the stakes, and their highly eroded nature.

The team members walked north-eastwards once more, but only a few obviously modern metal stakes/pins were visible. One especially large wooden post driven into the intertidal surface was obviously fairly modern in date, perhaps for a buoy or used as a mooring post. The team members did, however, record the eroding edge of additional peat deposits (**Line No. 10101**), similar in thickness and appearance to those described above, but associated with some large fragments of timber, including some quite large branches. Some of the latter were photographed. As the tide was coming in, the team then called a halt and retreated to the shore. There were no obvious archaeological features between the end point of this day and the line of the small unnamed pill, apart from some additional isolated blocks of peat.

Hills Flats 21/07/2010

SMP PU SEV3

Intertidal and shoreline survey by AMC & BW

Low tide: c. 11.00 AM BST

Rationale: To examine the intertidal area of Hills Flats, and try and gain access to fish trap and other features recorded by the NMP and HER and record any new structures.

BW and AMC went down to Oldbury. They parked at the end of Severn Lane by Severn House Farm, after knocking on the farmhouse door and obtaining permission. As on the day before, the forecast torrential rain and thunderstorms did not appear.

The team walked southwards along the flood defence bank until we reached Hill Pill which is meant to be the site of a Romano-British port. The team had halted just south of this pill the day before. Nothing was visible within the pill itself, and they then accessed the intertidal zone, looking along the existing eroding edge of the salt marsh for finds from the possible Romano-British settlement located by the pill. No archaeological finds or features were recognised, however.

The team members did, however, identify extensive peat deposits, and they recorded the eroding edge of these (**Line No. 10102**). These were generally large, level areas appearing around 20-30m from the present edge of the salt marsh where the overlying silts had eroded away, and extending outwards for some 50-60m. The eroding edge was often undercut, and isolated blocks of peat sat on underlying deposits often occurred further out into the river (westwards). The peat was generally thinner than that recorded some 50m further to the south the day before (Line No. 10101), being usually 0.08-0.15m thick, and it was more obviously laminated, often eroding back at different rates along the laminations. Whilst much of the peat again lay above blue-grey clay with visible waterlogged rootlets and root holes, in some places it appeared to sit directly on top of the undulating shingle and gravel ridges that formed the geology of the intertidal zone. Unlike the day before this peat was more obviously scoured but despite this, no obvious features, artefacts or footprints were identified, although a few very putative animal tracks were photographed. The peat was once again largely very dark grey or black in colour, with some reddish brown laminations. In some places the peat did contain charcoal, however, and some waterlogged, black-stained fragments of twigs and branches. Some wood was also present within the blue-grey clay. The rough line of the sinuous, eroding edge was recorded with the GPS.

The eroding edge of the salt marsh indicated that at least 2-2.5m of silts overlay this peat, so it may well be part of the upper Wentlooge formation. Although the upper surface of the peat was generally level or sloping very gently towards the west, in a few places it seemed to have slumped downwards in sinuous linear bands. It was not clear if this was because of the erosion of underlying deposits, or compression from deposits that originally lay above it. Alternatively, and probably more likely, these concave peat deposits may have formed within palaeochannels – at least one of these photographed, and it may have been a precursor to Hill Pill. Future investigation of this palaeochannel may be productive.

Further northwards, some very large tree root boles, roots and branches were identified, and some of these also appear to have been associated with peat deposits, probably being part of submerged forest (**Line No. 10103**). The wood was deciduous and stained black, and although its waterlogged outer surface was slightly soft the wood was generally very dense. Some more isolated large root and branch fragments were probably still derived from these

prehistoric deposits, rather than being flotsam and driftwood, as once again the wood was stained black.

Just to the south of the beginning of the large flood defence wall, a double line of wooden stakes was recorded, orientated NW-SE at right-angles to the modern shoreline (**Line No. 10104**). These stakes survived to a height of up to c. 0.20-0.30m and were up to 0.12m across, and the pairs were set approximately 1m apart. This was almost certainly another putcher rank of early modern or 20th C date.

To the north of this possible putcher rank was a NE-SW orientated line of single stakes (**Line No. 10105**), aligned across two shallow channels that may have been within one older palaeochannel. The presence of these channels may explain the odd orientation of this structure. These stakes were up to 0.40m high and 0.15m thick but were markedly irregular in size and spacing. This was probably a relatively recent net line, designed to catch the fish travelling through the shallow channels.

The team members had reached the southernmost level of the large sea wall, with no features visible in the immediate 100-200m to the north. As the tide was starting to come in they decided to finish for the day and returned to the shore and the van.

Hills Flats 22/07/2010

SMP2 PU SEV3

Intertidal and shoreline survey by AMC, BW & NW

Low tide: c. 12.45 AM BST

Rationale: To examine the intertidal area of Hills Flats, and try and gain access to fish trap and other features recorded by the NMP and HER and record any new structures.

The team again parked at the end of Severn Lane by Severn House Farm. Although it was cloudy and rain threatened in the distance it did not rain. Indeed, later on the sun came out and it became quite hot, though humid. As it was still several hours to lowest tide, the team members walked north-eastwards from Severn House Farm towards Berkeley Power Station along the path along the top of the sea wall. The first feature noted was a curving double line of tall eroded posts quite high up the shoreline, orientated approximately NNW-SSE (**Line No. 10106**). These were up to 2m in height and 0.45m in width but as they were coniferous softwood they were badly eroded, despite this structure probably being relatively recent in date, almost certainly 20th C. It was not entirely clear if the double line represented one or two phases – some of the outer, westernmost timbers were much shorter and heavily eroded, but although this may indicate that they were older greater, erosion might be expected on those closest to the water in any case. This structure may have been a breakwater or riverbank revetment, and did seem to be associated with some of the dumps of rubble in the area, designed to stabilise the bank. However, it is also possible that it formed a temporary wharf at one time.

No finds or features were noted in the eroding edge of the salt marsh/short sea cliff immediately below the large sea wall, but further peat shelves were recorded (**Line No. 10107**). This peat seemed to be more eroded and undercut than some of the peat recorded on the day before, and it was generally slightly browner in colour and more fibrous. There were some large waterlogged timbers associated with it that projected at right angles to the existing sloping shoreline, so these would seem to be the remnants of more submerged forest.

Moving northwards, a curving arc of quite recent timber posts was recorded, fairly high up on the sloping shoreline (**Line No. 10108**). The part of the structure right up against (and partly buried within) the sea cliff and old river sediments seemed to comprise part of a timber fence with square-sectioned elements, but the curving section consisted of a mix of roundwood and squared, sawn posts up to 1m high and 0.15m across. Although the section nearest the bank thus appeared to be a fence, the outer curve seemed more like a net line. It was of fairly recent, probably mid to late 20th C date in any case.

Apart from a drainage outlet and some isolated wooden posts high up on the foreshore that were photographed but not recorded, there were few features identified until the team members reached another stretch of sloping foreshore with eroding peat shelves visible. These were again laminated, eroding at differential rates along the laminations, and were also undercut. In places very large waterlogged, dense and dark-stained timbers projected from these deposits, with trunks, branches and roots all represented. Several different peat deposits seemed to be present (**Line Nos. 10109 & 10110**), separated by thin bands of blue-grey and reddish-brown clays and silts, but overall these deposits were at least 0.40-0.50m thick. In places the peat was above the mottled blue-grey clay with the rootlet remains, but in others it seemed to lie directly above the shingle geology. Although some of

these deposits (Line No. 10109) were accessed directly, others further to the north (Line No. 10110) were recorded with the laser.

No archaeological features were visible between the northernmost point the team members had reached and Berkeley power station, so the team returned southwards to record features south of and adjacent to Severn House Farm now the tide had dropped further, including a massive V-shaped fish weir recorded on the HER/NMP extending way out into the river channel via a series of rock shelves. The team members descended gingerly down onto the intertidal zone again via a more shallow sloping section of the sea wall. The first feature they recorded was south-west of the large fishing structure on Hayward Rock, and this consisted of a short length (10-15m) of wooden posts, some set in pairs approximately 1m apart set into the marl and shingle rock shelf geology (**Line No. 10111**). Larger roundwood stakes up to 0.15-0.20m in diameter had been eroded almost down to the intertidal surface, and so were only up to 0.10m high. Many had been wedged in place with smaller stakes and/or stones. It is likely that this feature was a fragmentary section of a putcher rank, perhaps of slightly earlier date (19th C) rather than 20th C.

The team walked out across the rock shelf and shingle geology westwards, and near the edge of one of the rock shelves were several timbers and branches, probably just flotsam. BW did find what appeared to be a sawn section of tree trunk or branch amongst this flotsam, however, with the wood very dark and dense and stained almost black in places. The flat sides were almost polished in appearance. It was not clear if this was an artefact or simply a product of erosion, but the find was retained and the photograph of it will mark the approximate find spot – it was clearly not *in situ* (**Point No. 44**). Moving to the north-west the team discovered another small row of at least 6 wooden stakes, set along the edge of a natural ridge that formed one side of a rock pool (**Line No. 10112**). It is likely that these roundwood stakes, up to 0.08m high and 0.10m across, probably formed a net line across a gap in the natural ridge, the natural rock pool forming a fish weir of sorts. No stakes were found on the opposite side of the gap, however, but there were some indications that the gap was artificial and may have been dug through the ridge – the sides of this gap seemed very straight. Unfortunately, the Magellan had not recharged properly the day before, and the battery now died after recording this feature.

As the tide had now fallen to its lowest the team walked and waded across the rock shelf at Hayward Rock northwards to the large V-shaped weir or netline that was recorded on the HER/NMP. The most visible upstanding remains consisted of mostly roundwood posts, some set in pairs and some surviving up to a height of 1-1.2m. The two 'arms' ran roughly N-S and NW-SE. Most of these stakes, 0.10-0.15m in width, were of fairly recent date, and large stretches had the remains of nylon netting strung between them, indicating their re-use as a net line. However, apparently older, much more eroded stakes only up to 0.10m high were visible next to or in between these more recent posts, and this indicates that there was an earlier series of stakes on the same alignment. On the NW-SE arm, remnants of horizontal hurdling had survived, perhaps indicating that before netting and use as net lines the structure had functioned more as the wattled leader arms of a fish weir. The apex of the fish weir was not a point with settings for a few baskets, but rather a c. 20m long rectilinear double line of vertical posts and horizontal wooden elements that would have formed the settings for a series of putchers or other fish baskets, so this means that in one phase of its life the large V-shaped feature functioned as an unusual combined fish weir and putcher rank.

Within the V-shaped 'internal' area of the fish trap there was a N-S line of double stakes approximately 10m long but set c. 1.5-2m apart, with stakes up to 0.20m thick often supported by additional smaller stakes and/or stones. Some postholes were visible in the sides of different eroding levels in the rock shelf, and it may be that the stakes had

exacerbated the erosion of the rock by weakening it and widening existing cracks. This was presumably an earlier putcher rank set on roughly the same site. Further to the north-east were several confusing lines of subrounded rock-cut postholes, up to 0.20m across, many with the remains of small wooden stakes surviving within them, wedged in with small stones. A broadly NW-SE and an adjacent NE-SW line of these features were identified. It is not clear if these were settings for baskets within the later phase of fish weir, or yet another phase of earlier structure. Clearly though, here were at least three phases of use out on this rock shelf, and the team recognised that they would have to return and record these in more detail, as only the very large V-shaped structure was recorded on the GIS.

In one place along the NW-SE arm of the large V-shaped structure there was a 'dump' of at least 6 relatively modern wire putcher baskets, probably representing the final disuse of the feature (in the 1970s or 1980s?). Another unrecorded short line of stakes was present near these – again, the team will have to return to plot it. Despite the dead Magellan, many photographs were taken of all the different features on Hayward Rock.

As the battery had died much earlier than anticipated and as the tide was starting to come in the team returned to the van and headed back to Gloucester.

Dunster Beach 26/07/2010

SMP2 PUs 7d21 & 7d22

Intertidal and shoreline survey by AMC, BW, NW & RB

Low tide: 13.30 PM BST

Rationale: To investigate in more detail fishing-related structures recorded on the NMP/HER records, and to try and access those features furthest out in the intertidal zone that may be the earliest in date.

The GCC survey team travelled down from Gloucester and after a few pit stops along the way drove to the car park at Dunster Beach, and there met up with Dr Richard Brunning of Somerset County Council. Everyone had a quick bit of lunch and then headed out onto the intertidal zone, towards the eastern end of the beach. There the team identified and recorded a series of linear stone features that probably related to relatively modern net lines, consisting mostly of single large or medium-sized boulders placed end to end, or just 2-3 boulders in width (**Line Nos. 10117, 10122, 10123, 10124, 10125, 10129, 10130 & 10134**). Various curves, U-shaped and V-shaped or even right-angled lengths of these lines were noted. Some of these relatively modern features had already been plotted by the NMP, some as V or U-shaped weirs. Features 10124 and 10126 may originally have formed one larger, V-shaped net hang.

Some fairly insubstantial and eroded stone-built features were recorded (**Line Nos. 10113 & 10114**) that were probably originally part of one structure. This ambiguous feature recorded in two sections may have been either a shallow V-shaped netline or a degraded weir – probably the former though, as it was rather insubstantial (**Line Nos. 10113/10114**). Alternatively, these features may have acted to funnel water towards a larger V-shaped weir just to the NE (**Line Nos. 10115 & 10116**). This latter structure had been recorded by the NMP, and other larger stone-built V-shaped fish weirs that had already been recorded were also noted and photographed (**Line Nos. 10131/10132, 10133**). The ‘arms’ of these stone fish weirs were very broad – at least 4-5m in width; and many had been dispersed by tidal action forming even broader spreads of material that were often hard to identify from the background scatter of boulders on the beach.

At the tidal edge several additional V-shaped stone built fish weirs were identified and recorded (**Line Nos. 10118/10119, 10120 & 10121**), although these had also been identified on the NMP/HER data. These were right at the edge of the day’s lowest tide, and it was apparent that additional recorded features lay further out but were not accessible. Clearly, if any previously unidentified structures were present on that part of Dunster Beach then the team would need an especially low tide in order to gain access to them, and they realised that they might have to return in the autumn for a day or so in order to achieve this. The arms of some fish weirs were also again plotted and photographed to record their state of preservation. Some of the ‘arms’ of the weirs were becoming quite dispersed, and if these features had been plotted off 1940s and 1950s photographs then the past 50-60 years of erosion were clearly taking their toll – some features will probably largely disappear in the next 5-10 years.

As was the case in the Stage 2a pilot work in 2009, many large rings or ‘doughnuts’ of stones were also identified, these probably once the supports for upright timber or metal posts from net lines. Some of these rings were photographed but were not recorded, however, as they probably related to fairly recent 20th C. fishing practices – metal poles were sometimes in association with them. It was not clear if Line No. 10124, a probable net hang

line, was spatially or stratigraphically linked in some way to 10126, a degraded weir. Net line 10134 may have made use of the position of weir 10133 as the latter would have continued to hold back water even when disused, whilst net line 10123 was for some of its length just to the NW of and broadly parallel to the W arm of weir 10122.

Other relatively recent features included small metal pegs set low into the intertidal surface, with small round holes in their flat rectangular surface. These occurred in small lines and were probably anchoring points for nets, but it was not clear what other structures may have supported the nets in such instances – some vertical posts would surely have been required for these. The arms of some fish weirs were also again plotted and photographed to record their state of preservation. One very wide and gently curving supposedly artificial feature plotted by the NMP (FID 6735 MONARCH 1453503) could not be identified, and only a few scattered individual stones were seen. A spot record was made of this fact (**Point No. 45**). This feature may have been dispersed by the tide and/or robbed in order to build other features, but given its shape it may also have originally consisted of a relatively ephemeral net line in any case.

Additional lines of stone associated with linear clearance and/or metal scaffolding poles were clearly from fairly modern net lines. Several of these were re-recorded in order to qualify the NMP/HER records, for in some instances it seems that net hang line features had been plotted as potential fish weirs (**Line No. 10122**). All in all, the team therefore identified and recorded 3-4 different types of early modern/modern fishing structures – net lines formed of the rings or doughnuts of stone, with or without surviving metal or wooden posts; net lines surviving as lines of large single boulders 2-3m apart; net lines surviving as lines of single boulders and cobbles or 2-3 cobbles in width, often intersecting; and lines formed by smaller metal stakes, some of these in 'zig-zag' conjoined V or W-shaped formations. Finally, there were also the stone fish weirs, but as yet there is no dating evidence for them, and tomorrow RB wanted the survey team to target some more of these in order to try and recover wooden stakes set near the apex of the weirs, for possible dating. However, it would also seem that even if some were post-medieval in date, many were kept in use or were re-used in the early modern and modern periods, with others being partially robbed and/or rebuilt, so trying to find dating evidence for such complexity will be extremely difficult.

As the tide was coming in, the team headed back up the beach and finished work. The GCC team members then checked into the Dunkery Beacon Hotel and had another warm welcome with tea and flapjack from Derek and Beccy, and then went out for a tasty meal at the Stag in Dunster.

Dunster Beach 27/07/2010

SMP2 PU 7d21

Intertidal and shoreline survey by AMC, BW, NW & RB

Low tide: c. 14.00 PM BST

Rationale: To investigate in more detail fishing-related structures recorded on the NMP/HER records, and to try and access those features furthest out in the intertidal zone that may be the earliest in date. Also to try and obtain dating evidence by sampling any wooden stakes that may survive at the apex of the stone V-shaped fish weirs.

After a full breakfast at the Dunkery Beacon Hotel the GCC team members downloaded photographs and voice recording entries etc, then made sandwiches and got ready to go out and record more features at Dunster, though this time they decided to try and concentrate on those furthest out and those which the 2009 Stage 2a work suggested might have wooden stakes surviving in them. They met up with Richard Brunning again and split up into two groups – RB with NW, and AMC with BW. NW and RB went east of the tidal pool at Dunster to try and locate a V-shaped fish weir with wooden stakes at its apex that had been recorded in 2009 during the Stage 2a fieldwork, whereas BW and AMC headed west of the tidal pool to try and find V-shaped weirs with wooden stakes.

NW and RB went back to feature HER PRN 27267, for when recorded in 2007 it was noted that there were wooden stakes at the apex. These were no longer visible, however, and even furling by hand and trowel could not locate them. If they were still *in situ* then they must have been covered by sediment, or they may have eroded completely in the intervening year. This illustrated the importance of taking samples of stakes during survey fieldwork rather than at a later date.

Although AMC and BW found several recorded V-shaped fish weirs, none had any stakes (wooden or metal) surviving at the apex. These were photographed and several were recorded in order to document their erosion – many of the arms of the weirs were becoming rather dispersed and fragmentary, and it was clear that once again, many would not really survive more than another c. 10 years.

One curving arc of boulders was probably part of a U-shaped fish weir (**Line No. 10135**), and this was formed from cobbles up to c. 0.8m in length and 0.5m wide, though most were smaller. The bank was 2-3m wide and survived to about 1m in height, but it was rather spread and diffuse. Particularly on its internal, landward side, a lot of clearance was evident. Weir 10135 had no clearly defined apex, though there was a gap where the wall was much lower that might have been an original gut or outflow channel filled in by tumble. The easterly arm of this feature was especially diffuse, more so than recorded on the NMP, and like the apex appears to have been subject to a lot of erosion.

AMC and BW also made a note that an NMP record (Somerset HER PRN 27251), shown as a line, was not altogether convincing as an anthropogenic feature. There was a hint of clearance on one side of it but was not clear if this was deliberate or not, and whilst a small section of it did appear to be artificial the rest was very unconvincing. It was on the same general NE-SW orientation as some of the lines of clearance subsequently recorded, however (see below), so may possibly have been a ground line gully.

AMC and BW tried to get out as far onto the intertidal zone as possible, but would have needed a lower tide to get out further. As they moved to the north-east they were skirting the

edge of a very densely cobbled part of the beach, with a higher cobble and pebble ridge extending seawards. On the northern and eastern sides of this ridge were a series of features recorded on the HER/NMP. One was a large U-shaped weir that was still relatively well preserved on its western arm, but its eastern arm had been greatly eroded. A series of metal stakes within it did not appear to correlate with the possible narrow weir part of the apex, and so these may have reflected later re-use of the structure.

Running off the edge of the raised cobble ridge were a series of features set roughly at right angles to it, orientated broadly NE-SW, recorded simply as lines on the HER/NMP records. These proved to be slight lines of clearance at least 50m long, with raised lines of boulders on their eastern edges (**Line Nos. 10136 & 10137**). It seemed that the main parts of these features were the 'negative' lines of clearance, rather than the 'positive' lines of the raised boulders. Along and within the lines of clearance there were faint indications of additional lines of large single boulders placed 2-3m apart, although as the background intertidal surface was all large cobbles this proved very difficult to discern. These may have been weights for nets, and the lines of clearance were thus probably associated with net lines. No wooden or metal posts were identified, but within the raised cobble ridges along the eastern sides of the lines of clearance were small areas up to 0.20m across filled with much smaller stones and gravel, which may mark where upright posts had been located but had then been removed. Only two of these lines were photographed and recorded in detail, though more probably existed in that location but were very hard to identify because of the 'background' boulder field. (N.B. Subsequent reading of Richard McDonnell's Minehead Bay report suggested that rather than being net hang lines, these linear features were ground line gullies, where lines of baited hooks were set out along the intertidal surface. The larger stones and the concentrations of stones may have marked the points where the baited hooks were weighted down).

In the same general area were several linear groups of stones and cobbles grouped into small 'cairns', with some of the stones set on end. One such line was recorded (**Line No. 10138**). These were unlike the 'doughnut' rings of net line post supports, but nevertheless seem to have fulfilled a broadly similar function, with indications from the positions of the stones within some of the 'cairns' that vertical posts had been withdrawn. These groups of stones formed several rough lines, and again although some more of these were discernible, others were very hard to identify against the background boulder field on that part of Dunster Beach. To the south-east of some of these features several rusting metal poles were lying on the intertidal surface, and these may have been derived from the cairn-like structures. Several fairly recent net lines with vertical metal poles, lines of clearance and spaced stone net weight lines were also identified, but although these were photographed they were not formally recorded.

Returning southwards back towards the shore and after meeting up with NW and RB, two large V-shaped stone weirs were recorded. One very large, fairly well-preserved V-shaped fish weir had slightly sinuous 'arms' several hundred metres long and c. 4-5m in width, and in places these survived up to 0.5m in height particularly on the 'inner' landward, SE and SW faces of the wall (**Line No. 10139**). This had been recorded on the NMP and during the Phase 2a pilot fieldwork. At the apex there was a narrow gut or outflow channel 0.5-0.8m wide, partly blocked by fallen stones. At the apex the walls were built up to nearly 1m in height, using large boulders which measured between 0.5-0.9m in length. There were no indications of wooden or metal stakes within the feature lines or on the seaward side of the feature. The pool created behind the walls was 0.3m deep even at low tide. There were 3 metal poles lying horizontally within the pool that may have been associated with the weir, or with a later phase of its use.

The arms of another stone built V-shaped feature previously recorded on the NMP and during the Phase 2a pilot were considerably eroded, with the easternmost arm largely dispersed altogether and turned into a spread of loose boulders only about 10m long (**Line No. 10140**). Even the slightly better preserved westernmost arm was only c. 20-30m long, and this may have eroded further since it was recorded in 2009. The apex on the other hand still survived fairly well and was nearly 1m in height, and due to the sloping beach level the apex was especially wide, nearly 10m wide from 'inner' to 'outer' 'point', but no gut or outflow channel was apparent. Even along the arms there did not appear to be any channels for letting the water out or as settings for nets or baskets, so it is unclear how this feature would have worked as a weir. It is possible that this structure was used as a dam to trap fish for hand netting or spearing, or perhaps flat fish were trapped up against the inner wall when the tide retreated.

Approximately 50m to the south-west of 10140 there was a better preserved V-shaped fishing structure, with a very well-preserved and broad apex (**Line No. 20035**). The arms were 4-5m wide but had still become low, eroded and somewhat diffuse. Once again there was no clear gut or outflow channel visible, however, with only a very small possible gap. There was no sign of any wooden or metal posts at the apex so this may have been another 'dam' rather than a fish weir. Running off the apex of 20035 to the NW were several narrow lines of smaller stones that were probably the weights of later net line hangs, probably making use of the pre-existing structure.

Much further to the south-east was an ambiguous feature that in places seemed like a subcircular area of clearance creating a shallow pool, with low, relatively unstructured and slightly irregular linear spreads of clearance rather than true, well-built 'arms'. These low banks of stone clearance were present on the northern, eastern and southern sides, though were not really apparent on the western side (**Line No. 10141**). There was a gap on the eastern side that did appear deliberate, although this was partly filled in with stones, with metal stakes lying horizontally nearby. This may have been a pool where water and fish were funnelled towards a small net structure placed across the gap, in use until fairly recently. The northern side was a dense mass of boulders, again possibly a product of clearance of the stones in order to create the pool. The boulders on the southern side of 10141 appeared to be more like one of the arms of a V-shaped fish trap, and were in a more rectilinear spread 4-5m wide and up to 0.5m high. This line extended further to the east than the semi-circular area of clearance, so the clearance may have taken place next to an earlier structure. It may be that here part of the clearance overlay the possible fragmentary 'arm' of an earlier fish weir, but as these stone features were both dispersed and hard to discern against the background beach cobbles this was hard to demonstrate conclusively.

Several additional rather enigmatic possible structures were also identified. One was a line of beach cobbles 2m wide curving across a stream mouth as it extended northwards out to sea. It was fairly intermittent and dispersed, but appeared to have been an eroded artificial feature (**Line No. 20029**). There were no posts visible along it but there were a few lying on the ground nearby which may have washed up from another feature or may have fallen from this feature. There was a small gap of about 5m partway along it, but this might just have been from where it had been washed away. The seaward end was covered by water and it extended further to the north. It is likely that this was part of a feature recorded by the NMP and HER (FID 6932 MONARCH 1452663, PRN 27225). Another feature appeared to be a natural pool or depression, partly formed by an extension of a natural gravel ridge (**Line No. 20024**). This had been recorded by the NMP and Som HER as a fish weir, however (FID 6885 MONARCH 1452716, PRN No. 28001). There was a 2m wide gap in the ridge that did appear to be artificial, and just to the south of this there was a line of stones from a probable net hang line. It is thus possible that people took advantage of an existing natural feature to create a fishing structure.

NW and RB also recorded a series of linear or curvilinear features that were lines of clearance in the natural beach cobbles (**Line No. 20023, 20025**), and these were probably net hang lines, or ground line gullies. Several narrow curvilinear lines of cobbles, groups of stones in 'cairns' or 'doughnuts' and even lines of single intermittent boulders were also recorded (**Line Nos. 20026, 20027 & 20028**), and these were probably the weights from net hang lines.

One extremely large and impressive feature was so wide that initially it was interpreted as a natural feature, but it proved to be an extremely large albeit low-lying and eroded V-shaped weir, with a sinuous northern arm that may have partly made use of a natural line of beach boulders (**Line Nos. 20030 & 20031**) (FID 3395 NMP 27219, PRN No. 28001). It continued to the outlet channel of the shallow 'lagoon' in this part of the beach. The bank was a substantial feature up to 5m wide, with a rubble 'outer' seaward face and traces of an 'inner' landward face consisting of a densely packed cobble faced wall. The eastern arm was more eroded and disrupted. The western arm of the structure was apparently joined by another line coming in from the west (20031). This may be evidence of a possible re-build, and/or an earlier feature on the same site. There were also indications that there were two or even 3 arms to the south-east in the western arm. This was a confusing mixture, potentially of several different rebuilds along this particular line. It may be that the two lines were formed by the inner and outer faces of stone, with the core having been robbed/eroded. Alternatively, the central line was the original arm and stones had been moved around to create the other 2 lines – possibly net lines following an earlier weir. There were several modern net lines 'upstream' in the lagoon consisting of scaffolding poles.

Another more unusual form of fish weir was a gently curving wall up to 1.5m wide orientated broadly NW-SE (**Line No. 20032**). Clearance on either side of this feature had taken place, creating a shallow pool 'behind' or landwards of the wall. There were several places where the water is coming through and flowing seaward – at least three deliberate outflow channels were identified – one a quite narrow gut, but the other two unusual forms with narrower, slightly convex lines of boulders and cobbles bulging north-westwards from the line of the weir structure, and with lines of boulders on the internal side of the structure leading towards these outlets. Each of the two outlets was 2-3m wide and they were separated by a gap of c. 2m. Large numbers of fish were observed swimming over these two outlet structures from the dammed pool of water behind. There were also large numbers of fish actively splashing at the water's edge where the tide was beginning to come in. It was not clear if they were spawning or if the excitement was being generated by the tidal turn. There was no evidence of any posts or any metal or wooden structures associated with weir 20032.

Just to the north of 20032 was a large wall of beach cobbles about 2m wide and extending for at least 40m, but covered by water at the seaward end so it probably extended further (**Line No. 20033**). It was fairly dispersed, and there was a metal post lying at one end of the feature so may have been in recent use. Lying inland or south and west from 20032 were numerous lines of boulders, interpreted as weights for net hang lines. These boulder lines were not plotted but photos were taken of the features.

A large V-shaped weir was recorded that had been plotted by the NMP (NMP 27261) and also in the 2009 pilot (FID 25). It consisted of broad, low cobble banks 2- 4m wide, with a more sinuous northern arm that seemed decidedly shorter than on the NMP plot (**Line Nos. 20036 & 20037**). There was a shallow water-filled pool about 20m across behind the arms but there was no apparent gap at the apex, so this may have been another pool that dammed the water to allow the hand netting or spearing of fish. In the pool 'behind' the structure to the south and west were lots of horizontal metal posts under the water, and these may have come from a disused net line nearby, or from within the feature.

One very short feature was recorded that was about 5m long, and consisted of boulders with metal poles at the seaward end, with cobbles cleared from either side of it (**Point No. 30006**). The function was not clear. This had also been photographed during the Phase 2a pilot in 2009, on the 13/03/2009. It was probably fairly recent in date.

As the tide was advancing inshore like a remorselessly advancing thing the survey team retreated towards the shoreline, noting and photographing but not recording several apparent net lines of stones as we went. They then took some photographs of a very modern semi-circular net line structure formed by wooden posts and nylon netting that was clearly from this year (**Line No. 20038**). The posts were spaced about 10m apart with nets in between tied to the posts and held down with lines of beach cobbles. This showed that at least some people in the area were continuing to fish with semi-fixed structures at Dunster Beach, and it was a good example of how net lines functioned – the team members took lots of photographs of it.

Unfortunately, halfway through the survey there seemed to be a problem with one of the GPS cameras, with a message indicating all of its memory was full. It later transpired that it had the wrong sort of SD card (the high density ones do not work in these Ricoh cameras), and it had therefore recorded the survey shots for that week on its internal memory only. Once the internal memory was full it had no more room.

That evening the GCC team members went out to the White Horse Inn at Exford, where there were excellent and large freshly made venison and steak and kidney pies.

Blue Anchor Bay 28/07/2010

SMP 2 PUs 7d22 & 7d23

Intertidal and shoreline survey by AMC, BW, NW & RB

Low tide: c. 15.10 PM BST

Rationale: To investigate in more detail fishing-related structures recorded on the NMP/HER records, and to try and access those features furthest out in the intertidal zone that may be the earliest in date. Also to try and obtain dating evidence by sampling any wooden stakes that may survive in the V-shaped fish weirs.

After a very minimal breakfast and downloading of the previous days records (on account of all the pie still inside their intestinal tracts), the GCC team members met up with Richard Brunning at the parking along the straight section of the sea front road between Blue Anchor station and the pub on the headland, by the Home Farm camping and caravan park. Unfortunately, they only had the one working camera due to the unsuitable SD card, so although they split into two teams (BW and RB, AMC and NW), the one person with the camera (AMC) had to run between the two teams to take the photographs. Fortunately, the features being examined were all relatively tightly grouped in one area.

The first features the team wanted to examine were the peat deposits recorded towards the western side of Blue Anchor Bay, by the western end of the concrete sea wall. These were readily apparent as raised mounds and lines with green seaweed and algal growth, against the mud and sand of the intertidal surface. The team tried to access them by walking out at right angles to the beach but the mud proved too deep and sticky so they walked westwards until they found a low gravel ridge and then walked eastwards back to the peat. Several isolated wooden posts were photographed but not recorded during this walking – these were probably relatively recent mooring posts.

The peat deposits were raised blocks and 'islands' up to 0.40m above the intertidal surface, many badly eroded and undercut by tidal action forming oddly-shaped small stacks. BW and NW recorded the rough outline of some of the larger exposures using the Trupulse laser (**Line No. 10142**). Other blocks were recorded as points (**Point Nos. 30010 & 30011**).

The peat was primarily a dark reddish brown colour and extremely woody, and many of the 'islands' were formed by peat surviving around masses of tree root boles and fallen branches, so there was clearly submerged forest here. The GCC team members had taken the auger with them to investigate/sample these deposits, and RB, BW and NW took turns augering their way into the bowels of the peat. There was an upper peat layer up to 0.15m thick, separated from a lower peat by a dark, mottled grey brown clayey marine silt turning into a bluish grey clay. There were flecks and small pieces of charcoal within the upper mixed marine silt deposit. The lower peat was very dense and compressed, and at least 0.25m thick. The peat and wood was very compressed, with what appeared to be flattened planks actually turning out in section to be flattened roundwood branches with bark all the way around. Most of the wood was non-oak but deciduous. Leaves and some reeds were also identifiable within the upper peaty material. The lower peat was often exposed in broad, level shelves with only some mud above, where the overlying clayey silts and upper peat had been eroded away. The lower peat too had compressed root boles, roots and roundwood branches preserved within it, again very compressed by the weight of overlying sediments that had long since eroded away. Some of the flattened branches lay in accumulations that initially appeared structural, but closer inspection by RB indicated that this was not the case. The upper and lower peat and especially the wooden remains had

been subjected to intense boring by marine bivalve 'shipworm' molluscs, with the calcite-lined burrows of this species penetrating deeply into the peat and wood.

RB noted a small projecting piece of wood above the surface of the upper peat and he excavated this, revealing it to be a wooden deciduous roundwood stake at least 0.25m in length and imbedded in a lower wooden branch or plank, and the lower peat. The upper peat seemed to have formed around this stake, rather than it having been driven through it, so RB sampled the stake for possible future dating purposes (**Point No. 46**).

As it was by now nearly lowest tide for that day the survey team then moved northwards towards the fishing structures previously recorded in this area of Blue Anchor Bay. BW recorded one broad eastern arm of part of a fish weir, up to 6m wide, but increasingly dispersed and eroded by the tide. The western arm of this structure was better preserved (**Line No. 20039**), but the apex contained only metal stakes. The 'inner', western edge of the eastern weir arm had been reused as part of a net line, with a series of metal stakes placed parallel to it. Along the length of the western arm, BW identified several groups of small eroded wooden stakes, mostly in groups of 2-3 but with one trapezoidal group of at least a dozen. These were recorded, and it was decided to sample these on the way back.

Meanwhile, NW recorded several even more dispersed linear stone spreads that were probably all that was left of one fish weir structure (**Line Nos. 100143, 100144 & 100147**). Some were associated with spreads of more compact gravel and shingle, but in some cases only faint traces of the outer and inner faces of lines of stones making up the fish weir arms survived. This may have been through erosion, but it is also highly likely that many structures had been deliberately robbed and dismantled to provide the materials for two more recent fish weir features that we identified next. These initially appeared to be one very well preserved V-shaped weir, with an apex and faced boulder-walled arms surviving up to 1m in height and 2m in width, laid in rough courses, with metal stakes set in the everted outflow by the apex. NW starting recording it and then realised it was conjoined with another V-shaped weir in a similar excellent state of preservation immediately to the north-west, the two structures forming one large W-shaped feature (**Line No. 10145**). The second weir also had well preserved faced arms and an everted outflow, once again with metal stakes set there for some kind of basket structure. The two apex outflows were both approximately 1m wide. It was clear that the NW one of the two weirs was a rebuild of an earlier feature on the same alignment. The junction between the conjoined V-shaped structures, at the central part of the 'W', clearly overlay a partially robbed and denuded earlier fish weir arm. Only part of the eastern arm of this earlier weir had survived (**Line No. 20040**).

The second, western structure in 10145 had an unusual L or C-shaped line of cobbles 2m long and 2m wide appended to the eastern side of the apex outflow, the function of which was not clear (for a holding basket perhaps?). A metal stake was set near the corner of this structure, which was much lower than the rest of the well-preserved fish weir and only 2-3 stones in width. The state of preservation of the conjoined W-shaped weirs 10145 and the small size of the barnacles on the boulders and cobbles used to make them suggested that they were relatively recent (certainly post-1960s, perhaps even more recent – the past 10-15 years?) and had only gone out of use a few years ago.

To the east, west and north of the conjoined weirs were several narrow curvilinear and linear lines of cobbles and boulders, some continuous but others more irregularly spaced, which were likely to have been derived from relatively recent net lines. NW and BW recorded some of these with the GPS, with RB and AMC doing voice descriptions (**Line Nos 10146 & 20041**). Some of the large U-shaped net lines had been recorded by the NMP and were thought to be fish weirs, but these were still recorded in order to correct and update the original classifications. Some of these had also become dispersed by the tide, and/or robbed

for stone, and consequently were had to identify and plot; or were not visible at all and may have been completely robbed or eroded (**e.g. Point No. 48**). In one place a possible net line (**Line No. 20041**) ran partly parallel to the denuded bank of a fish weir arm (**Line No. 20042**), but alternatively the narrower line of stones might have represented the 'inner' face of a wider bank represented by the wider rectilinear spread of material. Some features plotted by the NMP were no longer visible.

As the tide was now visibly encroaching the survey team returned southwards back to where BW had identified the wooden stakes within the line of the stone V-shaped fish weir arm 20039. The team members then dug out about 5-6 from the mud and gravel as samples (**Point No. 30008**); despite the fact that some had been firmly wedged in with small split stakes and/or stones. RB was able to demonstrate that some were of oak – the others were another deciduous species. He took the stakes for species ID, following which it might prove possible for future dendrochronological or ¹⁴C dating over to Nigel Nayling. After retrieving the stakes the team had a quick look at the possible infantry section post at the end of the sea wall, and then finished for the day.

That evening the GCC team went out to a pub on the sea front near the old harbour at Minehead, on a classic grey and drizzly summer's evening at the British seaside. The food was only okay-ish, however.

Blue Anchor Bay 29/07/2010

SMP2 PU 7d22 & 7d23

Intertidal and shoreline survey by AMC, BW, NW & RB

Low tide: c. 15.40 PM BST

Rationale: To investigate in more detail fishing-related structures recorded on the NMP/HER records, and to try and access those features furthest out in the intertidal zone that may be the earliest in date. Also to try and obtain dating evidence by sampling any wooden stakes that may survive in the V-shaped fish weirs.

After breakfast at the Dunkery Beacon Hotel the GCC team members downloaded the previous day's records, and they then headed out to find an SD card more suitable for the second GPS Ricoh camera, which NW found in a WH Smith in Minehead. The GCC team members then met up with Richard Brunning at the Driftwood Café behind the sea front at Blue Anchor Bay, where everyone had tea and cake and lunch. They then suited up and headed out onto the intertidal zone at the western end of the bay where it merged with Dunster Beach, in order to record as many fishing-related features as far out as possible.

Before the team headed out, however, they took photographs of the infantry section post at the western end of the sea wall (Point 30009). In addition to the different sized embrasures for different weapons, there was an odd horseshoe-shaped sunken position on the roof – it was not clear if this was for aircraft spotters, for a range finder or a separate mortar/gun position. (N.B. All these infantry section posts had them, and Amanda Dickson pers. comm. says that they were meant to be for a light AA gun, though it is doubtful if they were ever used for this purpose). The poor quality concrete with lots of large pebble inclusions was crumbling and probably could not have resisted the Nazi hordes for long.....

AMC teamed up with NW, and RB teamed up with BW – both Ricoh cameras were operational once more. Both teams initially noted several relatively ephemeral net lines formed by arcs of stones, either single stones spaced at irregular intervals or small groups of stones forming narrow lines (**Line Nos. 10148 & 20043**). NW and AMC recorded the line of a V-shaped fish weir (**Line No. 10149**). The eastern arm was up to 8m wide but very dispersed and eroded, although the western arm was better preserved and ran back inland to the south-west for c. 200m. The apex of this fish weir featured one possible narrow outflow 1m wide, although the stones at this point were jumbled and dispersed. A short distance further along the western arm was another possible gap, again approximately 1m wide, though it was not clear if this was an original outflow too, a later modification or simply the product of differential erosion. Several arcing net lines were appended to the northern side of this fish weir, but these were probably fairly recent in date.

A nearby more ambiguous structure may have been either a wide net line or a narrower arm of a fish weir – the feature had been eroded and dispersed (**Line Nos. 20044 & 20046**). In some places only two lines of stones from this feature remained, and so it was not clear if these were the inner and outer faces of an eroded bank, or simply two net lines. It was recorded as 2 separate linear features when in fact it was just a single feature, this was due to the fact that the feature was very intermittent and the recorder initially failed to identify the full length. It was a long curving net line consisting of thin lines of stones, in some places the line was thin, maybe just a single line of boulders but in other places the line became much thicker but still too thin to be a wall for a weir. At the curve of the apex the feature turned into 2 lines which showed evidence of possible phasing.

Next to this feature was a V-shaped structure (20045), the stones were fairly sporadic but where it ran alongside 20044 it became more substantial which indicated that this feature may have robbed stones from 20044 and therefore may be more recent. A single metal post was recorded in this feature at the apex.

Several net lines were then recorded by both teams, most recorded on the HER/NMP but some with the assumption that these were fish weirs or parts of fish weirs (**Line Nos. 20045, 20047, 10150 & 10152**). Some were demonstrably modern in date, however, as they were associated with metal pipes and other metal posts and fixtures. A number of V-shaped net lines have undoubtedly been misinterpreted from APs as fish weirs, whereas they are actually more ephemeral and possibly much more recent features. NW and AMC moved northwards towards the outgoing tidal limit, as BW and RB were also doing slightly further to the east.

At the edge of the outgoing tide, several lines of boulders and cobbles ran into the water, although at a lower tide all of these stone features would have been exposed. These were V or U-shaped net line features with the points of their apexes facing northwards out to sea, associated with metal stakes and other metal fixtures, and which ran out into the water. Another line of boulders that only partly emerged from the breakers was associated with looped iron posts/stakes that were not identified anywhere else at Dunster Beach/Blue Anchor Bay (**Line No. 10153**). All were probably fairly modern though. Once again, there were some ambiguous features that may have been either narrow fish weirs, or relatively substantial net lines (**Line Nos. 10154 & 10155/10156**). NW and AMC reached the eastern side of the features that had been recorded previously at Dunster Beach on the 26th, so the team had covered a good spread of the intertidal zone here.

BW and RB also recorded several ambiguous features, as well as more obvious net lines (**Line Nos. 20048, 20051 & 20052**). These had just the net weights remaining and no posts. One notable feature recorded by BW and RB was a tick shaped feature (**Line No. 20050**) which was marked on the NMP as a larger V-shaped structure. The reduction in size from that recorded in the photo used for the NMP project shows that a large section of it had either been eroded or removed. The feature was a net line with metal poles and boulders used for net weights.

The one net line recorded (20051) consisted largely of a line of single beach boulders, but where this line crossed a V-shaped weir (**Line No. 20049**), the stones became more dense but in other places it was more sporadic. This may indicate that 20051 may have robbed the earlier weir and was in part at least made of stones from an earlier structure. The earlier large V-shaped weir 20049 was partly covered by mud and had also been dispersed and/or robbed in places, the latter probably to build surrounding net lines. The arms of this weir were quite dispersed and spread out in places and the apex was in poor condition. There were no posts or stakes associated with this feature.

As the tide was turning both teams reached the western edge of an extensive spread of deep mud that covered much of the eastern part of Blue Anchor Bay. One possible line of boulders ran out into this, and a small group of V-shaped fishing structures had been recorded in the middle of it by the HER/NMP. These were not visible. The mud proved too deep to allow access, however, and it would have masked any features in any case. The features to the east might only be exposed in the future by a scouring tide.

The tide was by now visibly coming in so the survey team headed southwards back towards the shore and went back to the van. They then went to the cliffs at the eastern end of Blue Anchor Bay where recent rock falls (including one huge block of stone) had exposed some

amazing geology. The GCC team members then bade goodbye to Richard until the week beginning the 9th August, agreeing to meet up in the car park at St Audrie's Bay.

After a lovely meal at the Piggy in the Middle restaurant in Porlock and a last fine breakfast (for a week) at the hotel, the team drove back to the office in Gloucester on Friday morning. As the tide was very late that day, it would not have been possible to do any fieldwork on the Friday. This did allow the GCC team to download data on the GCC network, however, and transcribe some of the voice recorder files.

Hills Flats – Hayward Rock 05/08/2010

SMP2 PU SEV3

Intertidal and shoreline survey by AMC & BW

Low tide: 9.10 AM BST

Rationale: To investigate in more detail fishing-related structures recorded on the NMP/HER records, and to record in more detail fishing structures noted by Severn House Farm but not recorded on last visit to Hills Flats due to battery failure.

BW and AMC arrived at c. 9.45 AM and parked up next to Severn House Farm, thinking that low tide was at 10.30 AM, but unfortunately this was an hour out (BST versus GMT). The team members then suited up and proceeded out onto the intertidal zone almost directly 'in front' of Severn House Farm, i.e. just to the north-west of it, near the rock outcrops called The Cup and Hayward Rock. They found piece of worked wood with several mortice holes in it, which was just photographed rather than recorded as it was of unknown date and provenance.

Just to the south of the large V-shaped fishing structure recorded on the HER/NMP the team noticed additional rock-cut postholes in the natural marl rock shelf, similar to a group that had identified within the apex of the larger structure. These were up to 0.40m diameter, though most were 0.15-0.20m in diameter, and were all filled with small stones and tabular shingle, some of the latter probably being original packing for the timber posts. Some timber posts up to 0.15m in diameter were still visible within these postholes, but were very worn and eroded and only projected a little way (up to 50mm) above the intertidal surface. The postholes were arranged in a roughly staggered, occasionally paired NW-SE line, and were thus probably from a dismantled putcher or putt rank, with some additional postholes either representing braces or struts for the original rank, or perhaps replacements for some of the posts. Only c. 20m of its length could be identified (**Line No. 10157**), with recording hampered by the large quantity of seaweed on the intertidal surface.

Further to the NW, additional rock-cut postholes of similar dimensions were recorded, one posthole being exposed in section where the marl had sheared off and revealing it was at least 0.25m deep. These were arranged in a roughly NW-SE line, gently curving to the west, and at a slight tangent to the existing post-built V-shaped fishing structure (**Line No. 10158**). This may therefore have been at least one earlier putt or putcher rank on the same site. A greater length of this row was recorded, and more of these postholes were arranged in pairs and in threes. The triple posts may again indicate supporting angled bracing timbers on the downstream side of the putcher rank, additional supports for the baskets, or alternatively a slightly different phase or rebuild of the same basic structure. A similar, even longer linear group of rock-cut postholes was also recorded just to the north (**Line No. 10159**). This may or may not be the same structure represented by the postholes of Line No. 10157.

The tide was coming in fast, so by 10.20 AM and before they could record the large V-shaped structure and more rock-cut postholes it was already time to leave the intertidal zone as it was visibly rising. The survey team will have to return another time to record all of the features present in this locale. Subsequent consultation of the website showed that the low tide reading for the day had not been corrected for British Standard/Summer time, and it was actually lowest tide at c. 9.10 AM. Coupled with a trend towards fast tidal turnarounds, with a small tidal bore predicted on the 6th, this explains the relatively sudden tidal rise. Team members (AMC) shall have to read the website tide tables more carefully in future and correct for the time difference!

St Audrie's Bay 10/08/2010

SMP2 PU 7d24

Intertidal and shoreline survey by AMC, BW, NW, RB & PM

Low tide: 12.40 PM BST

Rationale: To investigate in more detail the find spot of Pleistocene faunal remains (mammoth) and peat deposits recorded in the Bay, and any identifiable fishing structures.

The GCCAS team were meant to have met up with Richard Brunning at St Audrie's Bay the day before (Monday 9th), but unfortunately BW's house was burgled and the wallets of her and her partner taken, so she had to spend Monday morning cancelling bank cards etc. The team therefore did not leave Gloucester until lunchtime, and as the low tide was at midday they therefore missed Monday's tidal window. The team travelled down to Wootton Courtenay and the Dunkery Beacon Hotel, and met up with Peter Murphy from English Heritage for an evening meal – he will be accompanying the team on the survey the next day (10th August).

It was a somewhat damp and drizzly day on the morning of the 10th August when the GCCAS team and PM met up with Richard Brunning at the public car park next to the St Audrie's Bay caravan park. After suiting up everyone then walked down the ramp and stairs onto the beach, noting the eroding remnants of the polite landscape grotto feature immediately to the east. At the top of the cliff just to the west of the waterfall some eroding and rather precarious walls barely survived, whilst at the bottom an equally precarious bit of coursed archway also represented this 18th/19th century complex. In front of the cliff is situated a V-shaped stone and wood feature, consisting of rectangular stone lias blocks laid in courses surrounding a loose rubble core, with a line of 4 vertical metal posts with horizontal decayed timber planks in the centre of the structure. The eastern arm of the V was becoming eroded and there were many gaps in it. It disappeared underneath a spread of beach cobbles and then it disappears into the stone by the waterfall. This was almost certainly some form of early modern breakwater, possibly associated with the folly/grotto complex, but this has been erroneously recorded by the NMP as a possible slipway or fish trap. It was photographed but not formally recorded.

The survey team then headed northwards along the natural geology ridges to try and find any peat deposits associated with the Pleistocene faunal remains. Unfortunately, only a few small lenses of peat were visible around the find spot, in a small patch exposed amongst the beach cobbles (**Point No. 53**). The peat was very organic and quite silty, almost like organic mud, and had grey clay on top and underneath blue grey clay. It was only about 0.05m thick, and it was not clear if this was an *in situ* peat bed or an eroded block. The peat seemed to be within a channel about 1m wide, cutting through red marl on either side of it and with cobbles lying above. No faunal remains were identified. Did the original mammoth tooth find therefore come from this channel, or from the geology it was cutting? There may have to be more detailed investigation of this area at some point, though not as part of the RCZAS.

Towards the NW side of the bay, several very modern fishing net line hangs were identified, consisting of scaffolding pipes and/or road pins set into the gravel and shingle surface. These were photographed but not formally recorded. Several slightly earlier fishing related features were identified, however, which were recorded. A possible setting of two posts surrounded by angular beach cobbles was recorded as 2 points (**Point Nos 51 & 52**). The roundwood posts were up to 0.10m in diameter, but the wood appeared to be fairly modern.

A short alignment of at least four wooden posts was also identified, with eroded roundwood posts up to 0.10m in diameter only projecting a few centimetres above the intertidal surface (**Line No. 10160**). The wood itself was very spongy and soft and probably would not last much longer, although it was not coniferous or obviously modern. Several of these stakes were sampled by RB. The stakes/posts were each surrounded by small piles or 'doughnuts' of stones between 0.5-0.6m in diameter and similar to some of those seen on Dunster Beach, although some of the stone settings were more like rectangular cists rather than rounded piles. Some of the stones were placed upright on their narrow ends and were up to 0.5m in length. Although only four posts remained in a line, there were possibly more extending out towards the tidal interface. The eroded nature of the posts suggests that although this was probably a hanging net line, it may be of 19th or even later 18th century in date rather than being modern. Additional similar features would be very hard to spot as the tide has dispersed the stones and the wooden posts are so low and eroded.

Further to the east, a short line of three wooden posts was identified (**Line No. 10161**), in the mud on the western side of a slightly raised gravel spit. The posts were round wood and approximately 0.10m in diameter, but although very eroded but the wood appeared very 'fresh' and therefore probably quite modern. At least one metal post was visible further northwards out to seawards in deeper mud deposits, but it was not clear if this was related to the wooden posts or not.

One modern net line was also recorded (**Line No. 10162**). This consisted of a very 'shallow' V-shaped alignment of metal posts, along with several large beach cobbles spaced 1-2m apart. One end of the net hang appeared to have been anchored to a low gravel bank, the other secured to bedrock. It was associated with a small, shallow embayment with the apex of the V pointing eastwards and ending just before a very muddy area. One of the metal posts was present at the apex. Another nearby feature consisted of a line of three large metal posts, some with metal and plastic wire around them, with a pair of slightly smaller posts at the northern end. This latter feature was only photographed and not recorded with a Magellan.

A line of wooden posts approximately 20m long was also identified (**Line No. 10163**), consisting of single posts spaced about 5m apart. Some of these posts were squared and looked sawn so were probably quite recent and were therefore not sampled. Small additional post holes had been dug into the gravel in some places that had become filled with blue grey clay, presumably after the posts had been withdrawn. The SE end of this probable net line hang ended on a slightly higher area of gravel but the other end just seemed to peter out. Another nearby feature was a 'row' of just two round wood posts 0.10m in diameter, and only 2-3m apart E-W (**Line No. 20053**). Each low eroded post was surrounded by large beach cobbles. As this may have been part of an early modern net line it was recorded.

A modern net line made up of wooden poles but of fairly modern date was also recorded (**Line No. 20054**) as it had been used as the survey base line for the find of the mammoth tooth in St Audrie's Bay. Another feature consisted of a curvilinear arc of small to medium sized cobbles, the convex 'bulge' of the feature facing roughly NE (**Line No 20055**). Along most of its length this was 3-4 stones wide or up to 0.5m, though in places it had been spread further by the tide. Extending for approximately 60-70m along a slight shelf at the northern edge of the intertidal zone, it was not clear if this was originally a net line (more likely), or a very degraded and dispersed fish weir.

A NE-SW orientated irregular line of low, eroded small and medium sized boulders was identified, probably originally between 0.5-1m in width, but breached and dispersed by the tide with gaps of 3-4m in its length in some places (**Line No. 20056**). It was not clear if this was one arm of a V-shaped fish weir with an eroded apex at the NW end and then a

vanished return SE back towards the shoreline; or if it was just a net line. It was on a slightly different angle to the net lines elsewhere, which tended to be at right angles to the shoreline, and as there was no evidence for wooden or metal upright posts this could have been the remains of a badly eroded fish weir.

Another feature consisted of a roughly straight line formed by groups of small to medium sized cobbles extending out approximately NE-SW across the bay (**Line No. 20057**), but cutting across the line of 20056. The groups of stones often consisted of large tabular blocks laid on edge with smaller stones within them, probably the packing around some vertical posts. No wooden or metal posts were visible within these clusters of stone, however. The line extended towards the higher geology at the western end of the bay. In one place there was an angled metal post sticking out of the intertidal surface but it was not surrounded by one of the small 'cairns' of stones so it was unclear if this had belonged to the main phase of use of this structure, or was of a different date. A further feature of this type on a broadly similar alignment was identified just to the west, and again consisted of a line of stone piles with large tabular stones set on edge and more rounded cobbles surrounding small central places where an upright post would have been positioned (**Line No. 20058**). The groups of stones were about 5m apart but like 20057 there were no wooden or metal posts surviving within them. This was another probable net line.

AMC, BW and PM moved further westwards along the shingle part of the beach. PM noticed a rather subtle and hard to identify structure consisting of a line of small and medium sized boulders placed sideways on to one another, forming a very low 'drystone wall' type feature only one course high and up to 0.5m thick (**Line No. 20059**). This was orientated roughly NE-SW, and had a gap almost exactly in the centre of the line, c. 1.2m wide, although it was not clear if this was a structural part of the feature for baskets or nets or simply the result of later erosion – just to the E of it some large boulders which might have tumbled back from it. The line of stones formed the western edge of a subrectangular area that had been deliberately cleared of larger stones (**Line No. 20060**) and even with the tide out this still had a shallow pool of standing water within it. On the seaward/northern edge of the cleared area there was no clear walling as such, just a shallow pile of clearance from the pool so the course of stones merged into the natural boulder ridges on this part of the bay. This may have been some form of weir, or simply the remains of a 'dam' to create a pool where fish could be gathered using hand nets. It could also have functioned as a catch pool to store live fish in after they had been caught.

The northernmost feature recorded during the day was a possible setting of five wooden posts forming a right angle, perhaps set within a larger stone setting which seems to have been protecting them (**Point No. 30012**). The posts were up to 0.10m in diameter and two of them had particularly pronounced dark, almost black cores with spongy orange/brown outer wood around them, so they did not appear to be very modern in date. No additional posts or stone settings could be found in the vicinity, however, so it was not clear what this structure was used for.

As the tide was beginning to come in the team headed south-eastwards higher up and long the beach, to investigate some possible lithic find spots at the foot of the cliffs below the holiday village. No archaeology was observed there. Heading back westwards towards the entrance to the beach, and just to the east of the waterfall near some natural rock shelves, a roughly NNW-SSE line of c. 27 very large posts was recorded (**Line No. 10164**). The biggest posts were up to 0.50m in diameter, the smallest c. 0.30m across, and they were possibly elm or lime and fairly modern in date. The construction method seems to have been to dig a long trench and then put the posts in, then backfill this with gravel and clay. The feature may have been some sort of breakwater or groyne but its function was not clear, although it may have been one of the structures shown on old maps of St Audrie's Bay.

The team had finished much of the central and western area of the bay; and as the rain was becoming heavier and more unpleasant and the tide was right in it seemed like a good excuse to leave. The hard geology across much of the eastern part of the bay would seem to have little potential for significant archaeological finds.

Dunster Beach – west 11/08/2010

SMP PUs 7d20 & 7d21

Intertidal and shoreline survey by AMC, BW, NW, RB & PM

Low tide: c. 14.20 PM BST

Rationale: To investigate in more detail fishing-related structures recorded on the NMP/HER records, and to try and access those features furthest out in the intertidal zone that may be the earliest in date. Also to try and obtain dating evidence by sampling any wooden stakes that may survive at the apex of the stone V-shaped fish weirs.

The GCC team had breakfast and checked the equipment, but they were not able to download any files or do any other post fieldwork analysis as AMC had brought the wrong laptop computer down! Peter Murphy had gone off in the morning to explore the area and we arranged to meet him down at Dunster Beach. The team then headed down to Dunster Beach to meet him and Richard Brunning; it was quite crowded for once as the Red Devils and the Red Arrows were doing a display over Minehead in the afternoon. The weather was sunny and warm but it was quite windy.

The team were surveying an area at the western end of Dunster Beach, in an area just to the north of Lower Marsh farm. RB and BW accompanied by PM surveyed the western section of this area, whilst AMC and NW surveyed the eastern section.

RB and BW headed out seawards to follow the tide out and to record those features lying furthest out – some of these features remained partly submerged but others were just poking out of the water so they recorded as well as possible. Numerous net hang lines were noted, some represented by intermittent lines of stones used as net weights, whilst others still had upright metal posts remaining in addition to stone net weights. Most obvious net lines were probably fairly recent in date, especially those which had metal uprights, and only photographs were taken of these. Some net hang lines had obviously used stones robbed from nearby features and many intersected or ran across other net lines. Only a few previously unrecorded net lines were recorded (**Line Nos. 20077, 20078, 20080 & 20081**).

Several 'doughnuts' or rings of stones were noted in association with net lines, as well as some slightly larger piles or 'cairns', but these probably all supported vertical wooden or metal posts at some point (**e.g. Point No. 30013**). Several features were recorded that had been recorded by the NMP as weirs, but these were probably most likely relatively recent net hang lines (**Line Nos. 20062, 20069**). Some of these (such as Line No. 20062) were broadly parallel to some fish weir features, and thus may have been using them still to help channel water and fish into the hang nets. Some features were ambiguous in form and function. One curving line of beach cobbles (**Line No. 20064**) was apparently tied into the edge of a gravel bank and curved across a lower lying patch of shingle. It was several stones thick in places and denser than most of the net lines, but with metal poles lying on the intertidal surface around it and the fact that it may once have been a continuous line of stone suggests that it was in fact a net line of some form. Broadly parallel to this to the NE and recorded by the NMP as a weir was another curving line of cobbles (**Line No. 20065**) that was probably also a net hang line. It had a series of wooden posts along it spaced 3-10m apart, and a metal pole was also 5m north of two of the wooden posts. Three wooden stakes were found at the end of the feature but their condition suggested that they were modern so they were not sampled. To the NE of 20065 was a short arc of large boulders (**Line No. 20066**), again from a net hang line.

Another probable net line (**Line No. 20067**) aligned NW-SE had been built almost on top of an earlier eroded fish weir (**Line No. 20068/10166**). At the SE end of 20067 there was an acute angle where the line of stones doubled back on a NE-SW line for a short distance, partly across a shallow natural channel in the beach. Line 10166 was one arm of a possible V-shaped weir recorded on the HER/NMP, but the stones were extremely dispersed. The original arm was probably c. 1m wide, and it could be traced for several hundred metres in a gently curving arc from the NW to SE, where it disappeared under mud.

Several possible weirs plotted by the NMP (**Line Nos. 20070, 20071, 20072/20076, 20074, 20075 & 20079**) were rather low, dispersed and eroded features, some of them also partly or largely covered by drifting sand deposits. No metal or wooden stakes were identified in or next to these features and in places the stones were dense enough to indicate possible banks or walls had been situated there, but little of them was still visible. In addition, with some features (20065 and 20070) tube worm concretions had also partly obscured their lengths. It is thus possible that some could have also have been net lines.

One feature plotted by the NMP as a V-shaped weir was initially thought to be natural in origin (**Line No. 20061**), but subsequent investigation in this area recorded a short stretch of beach cobble wall that probably was a fragmentary part of a weir (**Line No. 20063**). This suggests that there was originally a feature in this locale but that it had become much dispersed and eroded. With close study of the digital photographs 20061 is just visible as a low ridge, albeit obscured by seaweed.

Pete Murphy left partway through the survey session, which meant that he missed the displays by the Red Devils and the Red Arrows – the latter was especially impressive as the jets were flying low over the beach just over the heads of the survey team and the display lasted for 25 minutes. RB in particular took lots of photographs.

NW and AMC headed out to the eastern part of the area where there were gravel patches and ridges, to another area where there were many features marked on the NMP/HER. It was again found that some of these features were either no longer visible (**Line Nos. 10165, 10172**) (although part of 10172 may have been recorded as 10173), whilst others had become so badly eroded that they may not have been identified had they not been previously plotted (**Line Nos. 10173, 10180**). Many of these appeared as very diffuse lines of stone. One feature recorded by the NMP as the line of a structure seemed to be a 'negative' feature created by an area of clearance of beach cobbles rather than the 'positive' line of a bank or wall from a weir (**Line No. 10175**). This may have been cleared as an area where ground line hooks were placed. Some relatively modern net line hangs were also recorded (**Line Nos. 10176, 10177**).

Several well-preserved weir features were recorded, however. One substantial, sinuous and seaweed-covered arc of boulders (**Line No. 10167**) approximately 2m wide and up to 1m high was noted as starting in the SE, curving to the NE and then apparently had a slight kink or return to the W and SW, where may have abutted or conjoined with another feature (see 10168 below). Its exact SE end was not clear, however, as it had been robbed or dispersed by tidal action. No clearly defined guts or outflow channels were identified. At one point along the bank there was a break approximately 2-2.5m wide, but this had some boulders within it and little sign of straight channel sides. Although this could have been a later breach caused by tidal erosion or robbing, there was a roughly cleared channel extending seawards from this point to the NE, so this gap may have been an original feature. Alternatively, this feature could have been a dam to trap water for hand netting, rather than a fish trap. The identified SW end of the western extent of feature 10167 seemed to run onto a natural boulder ridge on the beach, which although may have had clearance added to it and been 'tidied up' a bit did not appear to be an anthropogenic feature (**Line No. 10168**). It was much

broad, up to 15m across, but only 0.70m high. After this 'gap', the next obviously structural part of this overall feature (10169) began, stretching across a lower-lying natural channel in the beach. Essentially therefore, these were two conjoined structures but with the area between a collection of boulders that may or may not have been natural. The next part of the feature initially appeared to be more like a 'conventional' V-shaped fish weir (**Line No. 10169**), with its apex pointing to the NE. The apex was a roughly triangular pile of boulders with no visible gut or outflow channel, though there was a narrow gap to the E of the apex up to 0.5m wide.

Behind 10167, 10168 and 10169 there was a broad shallow pool on the S side where there was extensive boulder clearance – the resulting pool was up to 0.3m deep. Some metal scaffolding poles from net hangs were visible lying on the bottom of the pool. Towards the S end of the western arm of 10169 there was another gap where stone may have been eroded, but there was a line of stones running broadly E-W off the inner face of the bank and stretching into the pool. There were two groups of boulders by the gap that may once have supported upright posts, though there were no posts visible within them. Within the pool it appeared that some stones had been used to create two smaller, U-shaped interlinked banks in the middle of it, although the function of these was not clear. This group of three features may have functioned more to dam up water for netting than as fish weirs.

Other well-preserved fish weirs were noted (**Line Nos. 10174, 10181 & 10182**). Some stratigraphic relationships could be deduced, for example with 10174 having been built across 10173, and probably having partly robbed the earlier structure. Several possible fish weir features were also recorded that were present but which were rather denuded, dispersed and/or eroded (**Line Nos. 10171, 10174, 10178 & 10183**). It is possible that some of the more ambiguous of these features (such as 10183) were actually the remains of net hang lines rather than weirs.

After the tide had started to come in the survey team headed back inland recording a few features as they went. The majority of modern net lines visible were not recorded. The team then headed back to the cars, with the GCCAS team members returning to the Dunkery Beacon Hotel.

Watchet to Blue Anchor 12/08/2010

SMP2 PU 7d24

Intertidal and shoreline survey by AMC, BW, NW & RB

Low tide: c. 15.10 PM BST

Rationale: To investigate in more detail any fishing-related structures recorded on the NMP/HER records, and to try and access those features furthest out in the intertidal zone that may be the earliest in date. Also to try and obtain dating evidence by sampling any wooden stakes that may survive at the apex of any stone V-shaped fish weirs, and to find and record any unknown archaeological features.

The GCCAS team members met up with RB in the car park by the marina on the E side of Watchet harbour, and then NW went off with RB to in the van to drop his car off at Blue Anchor Bay so that the team would not have to walk all of the way back from there once we had finished our survey that day. The survey team then suited up and proceeded out onto the intertidal zone via the concrete steps near the Watchet boat repair yard, on the eastern side of Watchet Harbour.

The team walked westwards past the harbour entrance, but did not record the large elm posts that represented the temporary harbour erected after the huge storm of 1900 – these had been recorded in 2009 during the pilot Stage 2a fieldwork. They then walked along the beach and/or intertidal zone although the slippery rocky outcrops made going difficult. During this time the team members saw several modern net line hangs formed by metal scaffolding poles and photographed these, but did not formally record them. No other archaeological features were visible. The team also photographed some rather alarming development work on top of a cliff on the western side of Watchet, where a large 360 excavator was working right on the very edge of a cliff that was actually undercut at its base. Not a good place to buy or rent a house or a static caravan...

Moving westwards still, apart from some rather stunning geology and well preserved fossils there was little of note. Warren Bay was devoid of archaeology, and only on the very eastern edge of Blue Anchor Bay were any more features identified, although these were once again modern net lines formed by metal poles and posts. These were photographed but not recorded. Thus, although this short stretch of coast has much to admire from an aesthetic and geological perspective, it has little to recommend it in terms of its archaeological potential. No formal records were made at all during this day's survey. BW had to return to Gloucestershire that evening by train to go off on leave.

Kilve 13/08/2010

SMP2 PU 7d28

Intertidal and shoreline survey by AMC & NW

Low tide: c. 15.50 PM BST

Rationale: To investigate in more detail any fishing structures or other relevant archaeology.

As BW had gone on leave the survey team was reduced to just NW and AMC. They initially parked up near the medieval Kilve chantry chapel, and took some photographs of this structure. It is not in a good state of preservation, and clearly requires significant restoration work to prevent the propped-up walls from collapsing altogether. The team then drove further north and parked near the beach path. They got ready and then walked along the path towards the beach, taking some photographs of the unusual 19th century brick-built furnace that was part of an unsuccessful attempt to extract oil from shale on a commercial basis. The team also took photographs of a 19th century lime kiln. Once on the beach itself, as the team members waited for the tide to fall they moved westwards, and recorded an extant brick built WW2 observation post on top of the cliff using the laser (**Point No. 54**).

The team then moved out onto the intertidal zone to the NW where the NMP had recorded some possible fishing structures (FID 2196). The team members could not find any sign of anthropogenic features, however, so it is possible that this was a misinterpretation of natural rock outcrop formations. On one of the rock shelves they did find some possible archaeological features, though these were far from conclusive. A possible V-shaped spread of stones was identified (**Line No. 10184**), consisting of medium and large rounded cobbles with a possible apex 5-6m across and remnants of two arms. This possible structure may have faced NW. These stones were very dispersed by the tide, however, and though they might represent a very eroded fish weir it could also have been a natural accumulation of boulders. The hard and flat rock surface at this point would allow a great deal of movement of material, especially during winter storms. Just to the north of Line No. 10184 there was an even more ambiguous line of boulders and cobbles that may have been all that was left of one arm of a fish weir (**Line No. 10185**), but once again this was far from certain. It would be good to examine some of the APs for Kilve Bay just to see if the team's records married with any possible structures visible from the air.

Further to the west, some further possible fishing structures recorded by the NMP (FID 2270) also proved to be non-existent. The team took a point where a structure was meant to be (**Point No. 55**) and a photograph of the negative evidence. The only vaguely linear accumulation of stones that they could see was almost certainly natural in origin. However, 30-40m north of this point there was a modern net line formed by metal posts.

The team then finished and returned to the van, and drove back to Gloucester and the office.

Minehead – Warren Point 17/08/2010

SMP2 PU 7d20

Intertidal survey by AMC & NW

Low tide: c. 05.40 AM BST

Rationale: To investigate in more detail fishing-related structures recorded on the NMP/HER records, and to try and access those features furthest out in the intertidal zone that may be the earliest in date. Also to try and obtain dating evidence by sampling any wooden stakes that may survive at the apex of the stone V-shaped fish weirs.

The team members got up just before 5 AM and left the Dunkery Beacon Hotel in the dark, and drove the van along Minehead sea front towards the parking spaces by the golf club at Warren Point. They suited up and then proceeded onto the intertidal zone, heading northwards to reach those features exposed at the lowest point of the tide – the team arrived near the water's edge at the approximate lowest tide time of 05.40 AM. Many fish weir structures were apparent out in the surf and as shadows under the water, so it was obvious that it was not an especially low tide and that as a consequence the team will probably have to return another time when the tides are more favourable, perhaps later in September after they have finished at Stert and Berrow. Several large fishing structures also ran out into the sea and were thus partially submerged.

The first structure the team recorded (**Line No. 10186**) was the fragmented and denuded remnants of a V-shaped stone built fish weir. Although the subtriangular apex of the fish weir was still visible, no outflow channel was apparent. The structure's westernmost arm was orientated approximately south-west to north-east, but was very fragmentary and dispersed. The easternmost arm, aligned north-west to south-east, was also quite dispersed but more of its length and breadth survived – it was up to 2m wide. As this feature had been so eroded by tides, and perhaps also robbed to build other fish weir structures, much of it was low lying and actually still under water.

The next feature recorded (**Line No. 10187**) was one arm of a fish weir structure orientated roughly SW to NE, probably the westernmost arm. It had a noticeable kink in its alignment, and this was because it had partly re-used the line of one arm of an earlier fish weir (Line No. 10189). The eastern end of line 10187 was itself clearly overlain by the subtriangular apex of a later, much more well-built V-shaped stone fish weir (**Line No. 10188**). This was between 1.5-2m wide and survived up to a height of 0.40m. Much of the westernmost arm of 10188 had been robbed, leaving around 5m of its length where it merged into the apex, but this was nearly at right angles to the underlying bank/arm of 10187. The easternmost arm of 10188 was much better preserved, however, and curved in a gentle arc towards the SE. In places it survived to a height of at least 0.5m, and accumulating sand deposits had added to its width. The team then recorded the earliest structure in this local sequence (**Line No. 10189**); the much denuded and dispersed remnants of another V-shaped fish weir. This was barely distinguishable from the underlying cobble beach with low, dispersed arms and a barely identifiable rounded apex. The eastern arm of 10189 was very denuded and dispersed, but a straight section of the western arm was just apparent, and this was overlain obliquely by the kinked arm of 10187. The kink of 10187 of course re-used part of the original line of 10189. The complicated sequence in this area thus seemed to be 10189, followed by 10187 and then 10188.

The next feature identified (**Line No. 10190**) was a relatively well-preserved stone built fish weir, but due to the now incoming tide only part of its sinuous western arm could be

recorded. This was nevertheless a substantial feature hundreds of metres in length, up to 2m wide and surviving in places up to 1m in height, especially where it had been built across undulations in the underlying sandy beach in this area. Additional sand had also built up against it. Its 'inner', SE face would have originally appeared similar to a faced, near vertical drystone wall, but on its NW-facing or seaward side it was more dispersed. Within the triangular area of this fish weir a small accumulation of stones was just visible against the incoming tide, with one metal and relatively recent wooden post set next to it. The original purpose of this could not be ascertained. Part of the way along the western arm of 10190 and on its NW-facing seaward was another accumulation of stones – this once again seemed to be a deliberate construct rather than a natural pile of boulders, but once again this was unclear and it too was becoming submerged. The SE end of 10190 ran up onto a natural cobble ridge that separated Warren Point from the lower area of Minehead Bay proper, and the arm continued for at least 40m across this raised area. If the survey team can return and record the entirety of 10190, this will be one of the largest features in the whole RCZAS project area.

Heading further east around Warren Point, the team recorded another small V-shaped fish weir (**Line No. 10191**), a partly dispersed and denuded feature that had had sand accumulate against and across it. The arms were 2-3m wide but fairly dispersed. A possible outflow channel 0.30m wide was present on the western arm of the feature just 2-3m south of the apex, but the subtriangular apex itself contained a possible outflow channel too, though due to the erosion this was unclear. The eastern arm of 10191 was even more dispersed. To the east of this was a gently concave arc of wooden stakes (**Line No. 10192**), each stake being up to 0.12-0.15m thick, 0.15-0.20m high and spaced 5-6m apart. At least some of these roundwood stakes were made from coniferous wood. It curved from the SW to the NE and then back to the SE, and was probably once part of a net line. It was intersected by a N-S line of much larger posts 0.15-0.25m in diameter and up to 0.40m in height (**Line No. 10195**), some again conifers, that ran at right angles to the line of the beach and the shore and went down the intertidal zone into the incoming tide. Another similar line of posts lie further to the east, (**Line No. 10194**). These were probably beach stabilisation structures or groynes.

NW then identified a small V-shaped structure formed by much smaller split or squared stakes up to 0.12m in width, though most were smaller (**Line No. 10196**). This was probably a small net line. Some of the stakes or the net itself may have been further supported by a few accumulations of stones associated with some of these stakes. Immediately to the east of the net line was the probable remnants of another V-shaped fish weir, forming a tick-shaped (√) structure (**Line No. 10197**). The longer and better preserved eastern NW-SE orientated arm ran off a natural boulder ridge, and the western SW-NE arm was shorter and more dispersed. There was an accumulation of stone where the apex had been, but it was not clear if this was originally subtriangular in shape as there were indications that additional stone forming a subrectangular structure had been added to it. The exact location of any outflow channel was likewise unclear, though one possible example leading through the apex and its subrectangular extension, and one just to the south along the western arm were both photographed. On the seaward, NE-facing side of the eastern arm was a curving line of boulders defining a semi-circular space. This may have been part of the original fish weir or a later addition, but its function was not clear.

Further to the north-east were the very poorly preserved remnants of another V-shaped fish weir, associated with an area of cleared ground forming an intertidal pool. The arms and the apex were barely visible and were dispersed, although a possible outflow channel was identified in the eastern arm with a linear structure extending back southwards into the cleared zone (**Line No. 10198**). Some of this possible feature appeared to be piles of clearance rather than well defined linear structure, and several possible phases of build may

have been represented, all dispersed and eroded by tides. Part of the curving arc of its eastern NW-SE orientated arm was just visible as two fragmentary lines of stones.

The tide was now covering most visible fishing structures. Moving south-westwards back towards the shore, the survey team recorded a curving line of angled timbers, associated with at least two horizontal planks (**Line No. 10199**). Most of the planks were set at angles of between 45-80 degrees and were rectangular in cross-section, and there were some iron fixtures apparent in places. It may be that this was part of a wooden ship hull re-used as beach revetment – the differentially angled timbers and the horizontal planks plus the curving gently concave line would suggest this. Some roundwood coniferous posts were also visible, however, although these may represent later repairs of an earlier structure. The team members then headed back to the van.

The GCC survey team repaired back to the Dunkery Beacon Hotel for a full breakfast having worked up a hearty appetite, then spent the rest of the morning and part of the afternoon downloading photographs and processing GPS entries etc.

Minehead – Warren Point 18/08/2010

SMP2 PU 7d20

Intertidal survey by AMC & NW

Low tide: c. 06.30 AM BST

Rationale: To investigate in more detail fishing-related structures recorded on the NMP/HER records, and to try and access those features furthest out in the intertidal zone that may be the earliest in date. Also to try and obtain dating evidence by sampling any wooden stakes that may survive at the apex of the stone V-shaped fish weirs.

The team members got up at 5 AM and again drove the van along Minehead sea front towards the parking spaces by the golf club at Warren Point. They suited up and then proceeded onto the intertidal zone, heading eastwards to try reach those features exposed at the lowest point of the tide and to 'fill in' a gap in the survey between the westernmost point they had reached whilst out at Dunster Beach (RB & BW), and the features they had identified the day before. Unfortunately, once again it was not an especially low tide, and some fish weir structures were once again only just apparent out in the surf and as shadows under the water. Others lay submerged altogether, and may have to be investigated at a future date.

The first feature investigated was found by navigating onto it with the handheld GPS. It consisted of a broad but V-shaped stone fish weir with two NE-SW and NW-SE orientated arms (**Line No. 10200**), enclosing a flat or gently concave area where most of the larger beach cobbles had been cleared to form the feature. The two arms were broad features 1-2m in width and mostly just one 'course' of stones in height, but somewhat dispersed by the tides. The western arm in particular was very hard to distinguish from the surrounding beach cobbles, being just fractionally larger on the whole than those in their surrounds, and within just a few years this is likely to be largely dissipated altogether. The apex of this weir was also rather denuded and dispersed, and so consequently it was difficult to identify any clear outflow channel. A small gap was recorded here that was up to 1m in width, but this may have been the result of natural erosion. A barely discernible line of stones ran northwards from this point for approximately 3m, however, and this structure (if such it was) may have been associated with an outflow channel. To the east of this putative outflow channel and appended to the E side of the apex was a possible circular structure up to 1-1.2m across, formed by boulders and cobbles placed in a circle. If this was a genuine structure then its original function is unclear, though if the circle of stones once stood higher than it could have functioned as a catch pool in which to store fish and keep them alive/cool once they were removed from the net or basket at the apex of the fish weir.

In an area of compacted and generally small to medium sized beach pebbles and cobbles, the next feature the team recorded (**Line No. 10201**) was again barely discernible only as a line of slightly larger and slightly raised cobbles up to 1.5-2m wide. In a few places, however, lines of facing stones on this NE-SW orientated structure were just visible. East of this line was a large flat or gently concave area of compacted beach pebbles that had been deliberately cleared of most of its large boulders. This slightly 'hollowed' area sloped downwards to the north. The other, eastern arm of the fish weir structure was not identified.

The next feature (**Line No. 10202**) was a subrectangular tidal pool at least 10-15m wide and c. 40-50m long created by the removal of large boulders and cobbles and piling them onto the edge of a natural cobble ridge on the western side of the pool to form a rough revetment or 'wall' up to 0.80m in height; and on the lower, eastern side of the pool to form an arcing

stone bank or wall up to 2m wide, curving from the SE to the NW, now quite denuded from tidal erosion. Across the northern, seaward side of the pool, a low bank up to 2m wide had been created, although this had also been denuded and dispersed by tidal forces. An approximately 1m wide gap in this roughly E-W orientated bank or 'dam' may have been an original outflow channel, but no wooden or metal stakes or fixtures were visible. One possible roughly N-S line of larger boulders within the pool may have formed a subdivision within it.

The next number (**Line No. 10203**) was given to a record from the HER/NMP for a fish weir that actually proved to be a relatively recent net line formed from metal pipes and posts.

Moving eastwards along the cobbled beach the survey team encountered another naturally 'hollowed' area where clearance of larger boulders and cobbles to its sides may also have taken place, and where its outwash route northwards to the sea may have been artificially elaborated too, with two possible N-S lines of large cobbles marking the edges of a channel up to 2m across. NW was not convinced by this feature, so although in AMC's opinion it was at least partly anthropogenic, it was only recorded using the GPS camera.

The next feature was a substantial stone built fish weir (**Line No. 10204**) consisting of a western bank up to 2m wide and 1-1.2m high in places curving round from the SE to the north and then back to the NE. In places the large cobbles and boulders were almost like drystone walling, laid in rough courses and it generally became higher towards the north, where at the 'apex' of the feature there was an outflow channel up to 1m wide. Metal spikes, poles and other fixtures were evident both in places along the western arm of the fish weir, and also around the outflow channel, where fallen and still upright metal scaffolding poles suggested quite a complex fish catching device. The eastern arm of 10204 was more like a broad, flat-topped stone rubble bank than a wall, being up to 3-4m wide and slightly more dispersed than the western example. The eastern arm curved round from the north towards the SE and then back to the south. The two curvilinear arms were thus more like an amphitheatre or a henge in plan than a V or even a U-shaped fish weir. The c. 70-80m wide area within this fish weir had been largely cleared of large boulders, and at the southern side it sloped upwards forming an open end on this side (but see 10205 and 10210 below).

Next to the SE end of the western arm of 10204 there was a short length of additional boulder and cobble walling, only c. 3m long, 1-1.5m wide and orientated roughly E-W (**Line No. 10205**), with a short kink 2-3m long to the SW. This seemed to be the remnants of an earlier fish weir, possibly largely robbed to provide material for 10204. There were faint traces of a possible NW facing outflow channel 1m wide forming a keyhole-shaped structure, but this feature was very denuded and dispersed and will be gone altogether within a few years.

The next feature had to be located and identified using the GPS due to its denuded state, and consisted of a largely straight SW to NE aligned arm of a fish weir, between 1.2-1.5m in width and marked by two distinct lines of outer and inner facing cobbles placed side by side and slightly larger than the surrounding natural beach spread (**Line No. 10206**). The upper part of this arm was denuded, however, and no more than a single course of stones survived. One or two large boulders placed edgewise on and smaller boulders and cobbles formed the 'core' of this structure, but without the lines of facing stones it would be very difficult to spot. Given its orientation this was probably the western arm of a large V-shaped fish weir, but the eastern arm was not visible at all, and the northern section of the western arm and any apex were submerged beneath the sea water beyond this day's lowest tidal limit. Some fallen metal pipes were present just off the NW face of this structure, and at least 30-40m further out in the sea to the NW additional upright metal poles marked a net line.

The survey team continued eastwards along the beach, trying to identify and record as many structures on or near the day's tidal limit as possible, for it was now starting to come back in. There AMC & NW found at least six unusual formations/concretions of ferrous material – it was not clear if this was a natural iron-panned deposit, though it seemed too extensive and solid for that; or some form of slag. It is possible that slag had been poured onto the beach when it was still covered with water, forming these strange twisted shapes and excrescences, although what this metalworking activity consisted of, when and why it took place there is unclear. Alternatively, the slag may have been ballast from upriver (the Forest of Dean metalworking sites?) and had been dumped overboard at some point. Only a photograph of some of this material was taken.

The next feature (**Line No. 10207**) was only located through using its HER/NMP plot, as it was not obvious at all. It consisted of a slightly raised linear spread of cobbles up to 1.5m wide, raised slightly off the beach and with extra seaweed marking its course, but otherwise appearing to be a natural raised ridge. It was highly dispersed and denuded, and will be altogether gone in just a few years. It was orientated SW-NE, and represented the westernmost arm of a V-shaped fishing weir, the apex of which was submerged beyond the incoming tide. At least 70-80m further east, a short length of SE-NW orientated bank may have been the eastern arm of this same structure, though once again this was extremely diffuse and barely discernible from the background natural beach cobbles.

Further east another V-shaped stone fish weir was also partly submerged, but the sloping northern extensions of its western and eastern arms were just visible as a shadow under the water and as a line of seaweed in the surf (**Line No. 10208**). The western arm was a SW-NE broad, slightly raised but dispersed line of boulders and cobbles partly covered by seaweed, and the eastern arm was not recorded as it had already been plotted by the NMP. The area enclosed by the two arms formed a subtriangular pool at least 1m or more in depth. Further out to sea, a NNW-SSE orientated line of metal posts marked a net line to the north of the fish weir. The higher parts of the two arms of 10208 further up the beach to the south were once again extremely difficult to distinguish from the underlying natural cobbles.

Another large, partially natural hollow in the beach appeared to have also had deliberate clearance of the largest boulders and cobbles within it, this material then being placed around the sides of the pool emphasising further the natural cobbled sloping sides of the feature (**Line No. 10209**). To the north was a relatively stone free gap at least 5m wide where the pool drained into the sea, and on the western side of this was a subrectangular or trapezoidal feature that seemed to be an artificial bank. This projected eastwards from the western cobbled ridge for approximately 5m in length, and formed a roughly straight N-S western edge to the outflow channel at least 4m long. It is likely that here people had converted a largely natural pool into a fish weir, with netting or structures placed across the gap (though no wooden or metal posts were identified), and/or handheld nets used to scoop fish out of the pool behind.

Returning westwards and higher up the beach towards Minehead, the survey team noted two N-S lines of stones set 1m apart and running northwards down the beach for at least 20m. These may have been weights for relatively modern net lines, and only photographs were taken of them.

As the team passed back by the southern end of the large cleared area behind 10204, they noticed a previously unidentified low, broad stone bank mostly 1-2 'courses' high and 3-3.5m wide, gently curving outwards to the north and with two outflow channels 0.8m and 1m wide built c. 5m apart within it (**Line No. 10210**). The western edge of the arc curving SW towards Minehead narrowed to around 1-1.2m and was slightly higher, up to 0.40m of stones surviving. A group of fallen metal pipes and pins was photographed near to the SW end of

10210. It is not clear if it was merely an upper fish catching feature within one overall feature along with 10204, or whether it belonged to an earlier phase. The latter seems more likely, and 10204 may well have been partly built with stones robbed from 10210.

Further west another flattened or hollowed pool was associated with a barely visible low stone bank up to 1.2m wide and 5m long, forming the eastern edge of this feature (**Line No. 20211**). The northern end of this short and much denuded wall may have originally curved round to the NW, where there was another short stretch only just apparent, along with a possible gap between the two short lengths of walling that may once have been an outflow channel, although this was far from certain. Another roughly N-S line of boulders within the irregularly shaped pool may have been another phase or an internal subdivision of some form. To the west and south of 10211, a flat and relatively cobble free area had been cleared, with some of this clearance forming low and irregular piles along the southern edge of this zone.

Just a few metres further south again of 10211 and slightly higher up the beach was a broadly subrectangular area of clearance c. 20m wide E-W and 30-40m long N-S, associated with a worn wooden roundwood post 0.80m high that was possibly coniferous in origin. This may have been the mooring post for a beach-berthed boat, possibly a fishing vessel. To support this admittedly somewhat speculative hypothesis, there also appeared to be a distinct 'notch' in the rough line of clearance along the southern edge of the cleared area associated with 10211. This may have been to facilitate access for a boat keel. This area and the post were photographed but not recorded in detail with the GPS.

Heading back west towards Minehead, the team recorded another roughly N-S line of groyne posts on a mixed sand and cobble area. The roundwood posts were up to 0.30m in diameter and 8-10m apart, although the two southernmost posts were c. 20m apart (**Line No. 10212**). The posts did not extend far down the intertidal zone, perhaps because there the beach surface changed to cobbles.

The team members next recorded another small fish weir with two denuded, curving but broadly SE-NW and SW-NE orientated arms up to 1.5-2m wide (**Line No. 10213**). The flat area east and south of these two arms had been cleared of larger boulders and cobbles, and the keyhole-shaped feature also included an outflow channel 3m wide with linear extensions 2-3m long extending N-S on each side. The western arm was the longer and straighter of the two, but both were difficult to identify and will be largely eroded altogether in the next few years. A possible E-W line of larger stones just to the east and 1m south of the outflow channel may have marked a subdivision within the pool and weir, or another phase of use. Unusually, this feature was largely open to the east.

Several possible but ambiguous features were photographed but not recorded. There were some accumulations of cobbles that may have been natural, but possibly also marked heavily robbed/eroded fish weir features that were now fragmentary. Another single post, possibly for mooring, was also again associated with a hollowed, cleared area with stones piled to either side and this may have marked an additional beach berth of a boat.

Further west again, the team passed a small natural drainage channel across the beach. Running tangentially across this at one point was a SE-NW aligned section of stone bank at least 20m long, c. 1.2m wide and 0.25m high (**Line No. 10214**). The SE end of this had a distinctly rounded terminal, but the NW end was marked by a gap 1m wide that may have been the original outflow through this feature. It was not clear if the bank had extended further to the NW just beyond this point, as it was rather dispersed here. It is likely that this would have dammed up the natural water channel or stream and fish could have been caught by extending a net across the outflow gap.

Further downstream to the NW, a line of cobbles that was photographed but not recorded may have marked where another net was strung across the channel. Several ambiguous pools close to Minehead Bay were also photographed – the cobbled banks surrounding these showed some signs of having had clearance added to them and the pools themselves did seem relatively free of larger boulders and cobbles, but whether this was from tidal scouring or anthropogenic activity was hard to ascertain. They did not have clearly artificial outflow channels or walls associated with them, so were not recorded.

The team members then headed back to the van, and thereafter returned to the Dunkery Beacon Hotel for breakfast, spending the morning and afternoon downloading photographs and GPS entries.

Minehead – Warren Point 19.08.2010

SMP2 PUs 7d19 & 7d20

Intertidal survey by AMC & NW

Low tide: c. 07.50 AM BST

Rationale: To investigate in more detail fishing-related structures recorded on the NMP/HER records, and to try and access those features furthest out in the intertidal zone that may be the earliest in date. Also to try and obtain dating evidence by sampling any wooden stakes that may survive at the apex of the stone V-shaped fish weirs.

AMC and NW again got up early and parked along the sea front at Minehead. They then proceeded onto the intertidal zone, heading westwards and northwards along the beach whilst waiting for the tide to fall. The first feature that was noted was a short line of five squared posts approximately 8cm by 8cm in size, projecting around 0.40m above the beach and set c. 10m apart (**Line No. 10215**). These were set in a slightly curved but broadly N-S orientated line. One of these posts was only c. 0.10m in height, however. An additional smaller squared post only c. 0.05m across and again only 0.10m high lay 5m to the west of one of the N-S posts. This small structure was fairly recent in date, and may have been a small net line, though this was unclear.

One specially tall (c. 3-4m?) wooden post was set into the western end of the beach – this may have been an especially large mooring post, or perhaps originally supported a light or some other navigation device. It was photographed but not recorded, as it was probably of fairly recent date (20th century).

The next feature to the west was a sinuous but broadly SW-NE orientated alignment of posts, running out from the western side of the sea wall just to the east of the old harbour (**Line No. 10216**). This consisted of large roundwood, seaweed-covered posts up to 0.30m in diameter and 1.5m high, set approximately 8-10m apart and running for several hundred metres across the intertidal zone, with an especially prominent concave curved section adjacent to the sea wall. At least some of these large roundwood posts were coniferous. They were probably part of a net hang line, of relatively recent date as some of the bark was still present on the wood – perhaps no more than 20-30 years old? Driven into the beach next to each of these posts and in some cases attached to them were much taller birch roundwood branches or poles up to 2-3m in height but no more than 0.15m in diameter, and most still with the bark attached. The barnacle growth on these posts was minimal and suggested that they were no more than 5-10 years old, part of an even more recent net line.

The team examined the area around the harbour at the western end of Minehead Bay, but no archaeological features were visible. They then returned eastwards along the water's edge, as by now it was nearly lowest tide. Where several stone-built fish weirs had been recorded by the NMP/HER however, there was nothing but an extremely diffuse spread of large boulders and cobbles. No fragments of structures could be discerned, and it seems that any such features on this part of the beach must have been destroyed by tidal action/and or people using or maintaining the beach.

Several small isolated *in situ* deposits of peat had been photographed higher up the central part of Minehead Bay, but the team members then proceeded to an area where there were many eroding blocks of peat associated with submerged forest. Large branches and the remains of tree root boles were associated with a black twiggy peat between 0.10-0.15m thick, occurring in isolated flat-topped blocks no more than 20m across. Where marine

boring organisms and/or tidal scoring had removed the larger pieces of wood, the erosion of the peat seems to have quickly followed. NW traced a very rough GPS line (**Line No. 10217**) around the general area of these eroding peat occurrences, which seem likely to be largely gone altogether in the next 5-10 years.

The team then moved further eastwards and over the spit or ridge of cobbles at the eastern end of Minehead Bay, where they noted the peat deposits seen on Tuesday morning. These were similar to those seen within line/area 10217, except that several were visibly concave on their upper surface, possibly because the peat had formed in palaeochannels, or in this instance more probably where they had been deformed by the weight of overlying sediments. Once again the rate of erosion of these was severe, and NW put another rough line around the largest occurrences (**Line No. 10218**).

One accumulation of boulders and cobbles may have been the remnants of the apex of a fish weir. This was only photographed, as NW did not think it was worth recording using the GPS. It could have been the last denuded traces of a V-shaped fish weir and part of its arms, but may have been a natural accumulation. In a few years it will be even more dispersed by the tides.

As no more archaeological features were visible and as the tide was now covering the few that had been apparent, the team headed back to the van, and thereafter returned to the Dunkery Beacon Hotel for breakfast. They will have to return to Minehead Bay when there is a more favourable tide.

Minehead Bay – central 23/08/2010

SMP2 PUs 7d19 & 7d20

Intertidal survey by AMC, BW & NW

Low tide: c. 12.15 PM BST

Rationale: To investigate in more detail fishing-related structures recorded on the NMP/HER records, and to try and access those features furthest out in the intertidal zone that may be the earliest in date. Also to try and obtain dating evidence by sampling any wooden stakes that may survive at the apex of the stone V-shaped fish weirs.

The GCCAS survey team drove down from Gloucester and arrived at the Old Harbour in Minehead at approximately 11.30 AM. The team members suited up and then proceeded onto the intertidal zone just to the west of the old harbour where the tide was still too high, so they proceeded eastwards round the harbour wall into Minehead Bay itself where they could already see some fishing structures that had not been exposed when NW and AMC had last visited the week before. It was quite blustery with some rain showers.

North-east of the harbour wall, a possible small fishing structure was visible in the surf line, as a curving but dispersed line of rocks up to 1.2-1.5m wide appearing through the water. A possible apex for this structure was also visible, facing NE. The cobbles used to build it were rather dispersed, and in a few years it will probably have gone altogether. This was photographed but NW did not wish to record this structure, however, and wanted to press on to the more obvious features whilst the tide was still dropping. Further to the east was a more ambiguous feature, where there were two short lengths of apparent bank c. 3-5m long and 1m wide that seemed to have been derived from clearance of the beach immediately to the south and north. These possible arms curved outwards to the NW and NE, with a small gap between them c. 1m wide with two faced line of boulders defining the edges of the gap and forming a southwards facing, keyhole shaped structure. The function of this is hard to ascertain, although it may have been associated with fishing. Once again, it was photographed but not recorded.

Moving eastwards again, the team identified a previously unrecorded fish weir feature. This consisted of a low cobble bank approximately 1-1.5m wide and up to 0.5m, with an inner width of c. 4m. It was a horseshoe shaped in plan, or a three-sided subrectangular/subrounded shape, with the northern-eastern and eastern lines of cobbles being the most prominent (**Line No. 10219**). The north-western arm was rather denuded and dispersed. Some rusting chain was visible near one of the arms but no wooden or metal fixtures or posts were identified, and the feature did not have an obvious apex. A possible outflow channel c. 1m wide on the north-western side was photographed, but this was unclear and may have resulted from later erosion. This feature may thus have functioned as a pool for trapping water and netting fish rather than a fish weir, but this was unclear.

Several possible net lines were identified in this general area, some forming gentle NW-SE arcs, others more straight NE-SW lines at right angles to the shore. One of the larger and more definite examples (**Line No. 10220**) was recorded. This was orientated roughly NE-SW and consisted of a slightly sinuous line of larger cobbles and boulders extending out into the sea, where a series of metal poles up to c. 1.5m high were also visible. The stones would have been the weights for the linear nets. The line of stones was quite dispersed in places, and there also appeared to be several lines of stones on occasion, suggesting several phases of use. This net line was located next to a large V-shaped fish weir (see 10221 below) and the curving NE end of the net line was broadly parallel to the arm of the fish weir.

The line of metal posts then curved round the apex of the large fish weir and extended E and SE.

The next feature to be recorded was the large V or U-shaped fish weir (**Line No. 10221**). This had long, slightly sinuous arms at least 4-5m in width and over 100 metres long, with indications in places that larger boulders had been used to build 'faces' to the inner and outer edges of these arms. The NW-SE arm was especially well preserved with a section c. 25m from the apex almost like a well-built drystone wall. The SW-NE orientated arm was slightly less well preserved, and towards its SW end was lower and more dispersed. The seaward ends of both arms were slightly narrower; and curved round to form the apex. The apex consisted of a subtriangular projecting structure, but no clear outflow channel was visible. There was, however, a short section of wall c. 2m wide by the apex which was much narrower; and there may have been an outflow present here when more of it survived to a greater height. There were occasional metal poles noted within the pool of water south of the apex and by the apex itself, many of the latter rusted and concreted together. It is not clear if net line 10220 was a much later re-use of this structure, or if it was designed as an overspill feature to catch any additional fish spilling over from 10221. At least two gently curving lines of stones from net lines extended eastwards from the SE end of the NW-SE arm of 10221 – these were only photographed rather than being formally recorded and plotted.

The SE-NW orientated arm of 10221 was less regular in shape and had two apparently projecting lines of stone on its northern face. At least one of these seemed to be a low, faced line of stones on a slightly different alignment to the arm of 10221, and this may have been an earlier fish weir partly robbed but incorporated within the overall line of the later structure. Visible in the surf line but still largely submerged by the sea were several other cobble built banks that could not be recorded – these included HER/NMP numbers 1455323 and 1455321.

The next feature to be recorded was shown as a 'tick-shaped' (√) fish weir on the NMP (**Line No. 10222**), but although the westernmost arm was very short and denuded there were differences in construction between the arms that suggest it might actually have been two different features at one point, or at least two phases. The eastern arm was 1-1.5m thick and much more substantial and well-defined, and probably part of a fish weir, whilst the western arm had only its lines of inner and outer facing stones clearly visible, with only a few core wall stones in between. This might suggest, however, that it was actually part of a net line.

A NW-SE line of larger boulders visible on the beach was probably another net line (**Line No. 10223**), but although the ends of this feature were easily visible being up to 0.5m wide it had been rather dispersed and denuded around the central extent of the line. Approximately 1.5m to the NE of this feature was another even more degraded and patchy line of stones that was not separately recorded, but this was probably another phase of net line on the same general alignment. No posts were associated with these features.

To the north-east, and partly submerged in the water, was an arcing and sinuous line of stones extending from the SW northwards, and then curving round to the NW (**Line No. 10224**). This was recorded with the laser as it was partly underwater. The SW end was up to 2m wide but for most of its length it was narrower at c. 0.5-1m. Several metal posts were situated close to this feature but did not seem to be directly associated with it. It is thus not clear if this feature was a net line or a fish weir – probably the latter though. There was a noticeable kink in the sinuous seaward line of the stone arm, and northwards from this point the line of stones was thinner at 0.5m. This might suggest a difference in builds, and/or different phases of use. To the east of this feature were several rather ephemeral lines of stones that may have been

The next feature (**Line No. 10225**) was a short length of stone cobbles belonging to HER/NMP feature 1455325. Most of it was underwater, however, and although previously recorded as a roughly U-shaped feature it was rather denuded and dispersed.

A point was taken on an area of peat deposits (**Point No. 60**), although these were largely submerged and as the tide was by now coming in they were being rapidly submerged. As with the peat recorded by the GCC team the week before in Minehead Bay, this peat was very dark in colour and extremely woody, but it was being badly damaged and degraded by wood boring molluscs.

To the SW of Line No. 10224 was a roughly NNW-SSE orientated broad stone bank up to 2-3m wide in places and several hundred metres long, but very low and denuded (**Line No. 10226**). Some of the gaps in it were the result of tidal erosion, but there was one 3m wide gap that seemed to be the result of deliberate clearance and which was associated with a c. 3-4m long 'horn' extending eastwards from the northern side of the gap. This broad bank was the eastern arm of a V-shaped fish weir. The apex lay to the north just by the incoming tide, but this was very low and dispersed, and there were only faint traces surviving of the SW-NE orientated western arm of this feature. This arm was not recorded with the GPS, although it was photographed.

Within the NNW-SSE line of 10226, two low and eroded roundwood stakes were identified, approximately 2.5m apart and up to 0.10m in diameter, but only projecting a few centimetres above the beach surface. Recorded as a single point (**Point No. 61**), they were excavated and bagged as possible dating samples and for species ID. The wood seemed quite fresh and orange in colour, perhaps indicating that these two stakes were not especially old, and their ends had been roughly trimmed and squared off to form 'pencil points'.

The next feature to be identified was a series of small groups of stones, some set on end, forming probable supports for vertical posts (**Line No. 10227**). Some of these groups of stones (at least 6) had very low wooden stakes 0.08-0.10m in diameter surviving within them. This was probably at least one or more net lines, with the features appearing to form a very rough V-shape with the apex facing north, though the overall shape was not entirely clear. Another modern net line consisted of upright metal posts and poles set approximately 10m apart and aligned roughly NE-SW, along with a series of large boulders c. 5m apart that were probably net weights (**Line No. 10228**). Some of the metal posts had rope tied at the top, and this feature may have been in use until fairly recently. Another feature in this general area recorded on the HER/NMP as a V-shaped weir 1455327 was no longer visible, except as a possible dispersed spread of stones.

Returning westwards as the tide was coming in, a small patch of clearance was apparent, associated on its eastern side with a broadly N-S linear bank 3-4m long, more a line of clearance than a true built feature and with a vertical metal pole or pipe at its northernmost end. Immediately to the west was a short line of boulders on a similar alignment, possibly a net line. Alternatively, because of the subrectangular area of clearance, this may have been a mooring place for a boat. This feature, probably relatively recent, was only photographed and not formally recorded. Several other clearance features and/or net line features were also noted in this general area, but again were only photographed and not recorded. The team then returned to the van, and headed off to the Dunkery Beacon Hotel.

Gore Point, Porlock Weir 24.08.2010

SMP2 PU 7d14 & 7d15

Intertidal survey by AMC, BW & NW

Low tide: c. 12.45 PM BST

Rationale: To investigate in more detail fishing-related structures recorded on the NMP/HER records, and to try and access those features furthest out in the intertidal zone that may be the earliest in date. Also to try and obtain dating evidence by sampling any wooden stakes that may survive at the apex of the stone V-shaped fish weirs.

The GCC team arrived at Porlock Weir around c. 11.30 and parked up in the public car park there. It was a very windy morning with occasional rain showers. They suited up and then headed westwards behind the shingle ridge until they reached the shingle ridge at Gore Point, where they walked down onto the intertidal zone. The beach here was a mix of large rounded cobbles and boulders with rock pools, but it was also covered in lots of seaweed. This, coupled with the strong wind on the even more exposed Gore Point, meant that it was very tricky to walk across and even stay upright on occasion.

The first feature the team recorded (**Line No. 10229**) was a stone-built line or bank at right angles to the shore, around 1.2-1.5m wide and with a distinct rounded butt end on the shoreline. Extending broadly N-S, it may have been rebuilt at its northern seaward end where it appeared to narrow. A possible eastwards return of this structure was just visible in the surf, and it may have been an acute V-shape in plan, unlike the broader V-shape examples elsewhere. This structure was very tightly and firmly built, with cobbles from 0.10-0.15m in length up to huge boulders 1m or greater in length that would have taken a great deal of effort to put into place. This might reflect the greater tidal forces and winds at the exposed site of Gore Point. It was recorded with a laser as it was extending into the sea.

The next feature extended in a large arc from the shore line into the breakers and was thus also recorded with the laser (**Line No. 10230**). The arm curved out to the NE and then turned to the E, but it became much narrower at that point and may have been remodelled/rebuilt. The bank was at least 1m wide and 1m high. On its western side in particular it had several stratigraphic relationships with earlier/later features and this area will probably need to be recorded in more detail at a future point when there is a lower tide. (N.B. Further recording of these features was undertaken in April 2011, during an especially low tide, see below). The western half of feature 10230 was recorded separately (**Line No. 10232**) as the Magellan stopped working briefly during the recording of 10230.

To the SW of Line No. 10230 was a gently curving but broadly N-S line of what initially appeared to 5-6 separate regular mounds or piles of stones, almost like cairns, each 3-4m in diameter and up to 0.80m high, and between 0.5-1.5m apart from one another (**Points 63-67**). The team initially thought that these might be a line of clearance, cached stones for building or possibly conger eel traps, and/or that the gaps between each pile of stones had originally had nets strung between them, but then they noticed that each 'cairn' was linked to its neighbours by lower 'causeways' of stone up to 2m wide and a few courses of stone high. Furthermore, to the NW many more linear features extending northwards into the sea had been built using this construction technique – when the tide was coming in they appeared to be separate mounds, but were all linked like points 63-67 by lower linear arms or banks. This is a very peculiar form of construction the team have not encountered anywhere else in the region so far, and it may reflect a different local construction tradition, or some specialist

functional difference in their use. (N.B. Richard McDonnell later suggested that these 'cairns' may simply reflect piles of stones created and curated for future use in fish weir construction/reconstruction, but this does not explain their relatively regular size and spacing from one another though, nor the low-lying banks or 'causeways' linking them). Many of the linear banks recorded by the NMP and also by Hazel Riley at Minehead Bay have no arcs or even right angles visible at their northern seaward ends, unlike many of the Gore Point linears, and how these would have worked as fishing structures is not clear. It may be that the mounds or cairns originally supported large upright posts for net lines, and were so large because of the exposed nature of Gore Point and the strong winds and currents there, but there were no visible traces of any surviving associated wooden or metal poles. This seems an unlikely explanation. (N.B. These may have been similar to other subcircular 'heaps' recorded in Minehead Bay in April 2011, and possibly used for catching conger eels or other fish. Alternatively, they may have been similar to Scottish 'croys').

Within the area encompassed by fish weir 10230/10232 was another shorter, broadly N-S orientated bank, again constructed as a series of mounds 2-3m across and up to 0.80m high linked by lower areas of bank 2m wide but only c. 0.20m high (**Line No. 10231**). It was not clear whether this linear feature originally terminated at the northernmost visible rounded pile or whether it was originally longer but had subsequently been robbed during the construction of 10230/10232. As 10231 was within the overall area of 10230/10232 it seems unlikely perhaps that they were in use at the same time, but this was far from clear.

Immediately to the west of 10230/10232 was a large, low area of clearance up to 20-30m wide, where most of the larger cobbles and boulders had been cleared off the beach to leave a broad, shallow pool with a bottom made up mostly of crushed shell. (N.B. Further investigation in April 2011 reiterated the almost complete clearance, and it is possible that this pool and several other similar examples at Gore Point may have been for oyster cultivation). On the western side of this cleared area was a very substantial linear bank up to 8-10m wide where it extended up onto the shoreline, merging with a natural boulder ridge (**Line No. 10234**). It extended a long way northwards into the surf so although part of it was recorded by laser, its full extent could not be plotted. From the top of the bank to the bottom of the pool it was nearly 1m high in places, and very solidly built. In the surf line it appeared to narrow, however.

Between 10234 and 10232 was a straight and broadly east-west orientated stone bank up to 0.5m high at least but narrower in width than 10232 and 10234, that initially appeared to be linking the two N-S banks. What became apparent was that this east-west bank (**Line No. 10233**) had slight gaps 0.5-1m wide between its ends and feature 10232 and the much larger feature 10234. As well as this east-west 'cross bank' 10233, just visible out in the surf were the remains of another E-W bank which was already partly underwater and was not recorded. It may be that these two cross-banks were added after the construction of the two N-S banks that obviously formed part of two larger fish weirs. The cross banks may have been put in place to create ponds where fish could be netted, and/or perhaps caught in nets or baskets in the slight gaps with the main N-S banks. These may have been stratigraphically later but in use at roughly the same time, or might reflect later reuse of the N-S structures after they had gone out of use as weirs. The team will have to survey these features at a lower tide to answer these questions. (N.B. This happened in 2011, although this additional survey was still not able to record all of the visible complexity at this part of Gore Point).

To the west of the large fish weir 10234 there was a mass of linear 'cairn' alignments and more conventional looking fish weir arms or lines of boulders. As the tide was coming in it was clear that there were at least 3-4 broadly N-S lines formed by piles of stones, in addition

to the stone banks. This area was very complex and not easy to understand, and would repay more detailed survey at a much lower tide, perhaps in the spring.

As the tide was now coming in with alacrity the team decided to record some of the larger fish weirs visible at the western end of Gore Point, in the slight embayment there. The largest fish weir (**Line No. 10235**) consisted of banks up to 5m wide and constructed from extremely large cobbles and boulders, some of the latter 1m or more in length and built in rough courses almost like drystone walling. The area behind the apex had been partially cleared to form a subtriangular pool over 30m wide at its broad base towards the SE. To the NW was the apex of the weir, where there was a well-formed outflow channel or gut at least 1m high and at least 0.8m high, although as the tide and surf were breaking against this feature in this spot it was not possible to take detailed measurements. This could be done in the future at a lower tide (N.B. This occurred in April 2011). There were several iron scaffolding poles lying on top of the bank and also a length of blue nylon rope, and there were metal poles by the apex too. The weir might thus have been in use until recently, or alternatively may have been re-used for net lines.

On the western side of 10235 and the small embayment was another smaller fish weir (**Line No. 10236**), only partly exposed in the incoming tide. It was recorded using the laser as it was largely underwater, but as the water interfered with some of the readings taken off upstanding rocks the NMP plot is probably more accurate! It had a lower boulder built bank, less substantial than others in this area. Again, this will probably need to be recorded in more detail at a future date. With the tide now quite high, the team stopped work for the day and headed back to the hotel.

Minehead Bay - central 25.08.2010

SMP2 PUs 7d19 & 7d20

Intertidal survey by AMC, BW & NW

Low tide: c. 13.30 PM BST

Rationale: To investigate in more detail fishing-related structures recorded on the NMP/HER records, and to try and access those features furthest out in the intertidal zone that may be the earliest in date. Also to try and obtain dating evidence by sampling any wooden stakes that may survive at the apex of the stone V-shaped fish weirs.

The GCC team parked up at the eastern end of the esplanade near Butlins. The day was dark and miserable with big dark clouds, strong winds and scudding rain lashing down. The car park was already c. 10cm deep in water in places when the team arrived, and hardly anyone else except a few foolhardy dog walkers were out and about in the extreme conditions. The team put on all their waterproofs and then proceeded out into the central and eastern parts of Minehead Bay, with Warren Point forming a rough eastern boundary to the survey area that day, as AMC and NW had already surveyed the features to the east of the headland there. As there were only three of us but a large number of features, NW and AMC had two Magellans on the go but BW was forced to dash between them to take the photographs, which was hardly ideal.

The first feature recorded was the two arms of a large V-shaped stone weir, recorded as two separate lines (**Line Nos. 20082 & 20083**). The westernmost arm was quite wide, approximately 4-5m, but was quite low and dispersed, no more than 0.80m high in a few places. There were signs of deliberate clearance along the western arm, where cobbles had been removed from the beach surface in order to construct it, leaving a sandy strip alongside part of its length. It became more spread out towards the apex of the weir, possibly a result of the pressure of the outflowing water. The pool within it to the east was quite deep, up to 1m deep and possibly deliberately cleared too, but it had standing water within it so it could not be accessed directly. There were no signs of metal or wooden posts either within the arms or in the pool itself. The easterly arm was more dispersed than the western arm, and there were no signs of the clearance seen on the western side. It often seemed to merge into the surrounding beach cobbles and was harder to identify. Both arms were constructed using the large beach cobbles with smaller stones and sand in between. The apex pointed north, but there was no obvious gap or channel visible there, although this may have become infilled over time. (N.B. On Richard McDonnell's survey plan of Minehead Bay this is feature no. 102).

Just to the west was another large V-shaped weir (**Line No. 10237**) constructed of large beach cobbles with the apex pointing NW. It was very well defined with well built, roughly coursed arms, especially the inner faces of the arms which were very regular and similar to dry stone walling in many places. The outer part of the arms was not as regularly built and was quite spread out, and looked more like linear banks of stones rather than walling. The arms were up to c. 4m wide near the apex, but narrowed southwards inland where they merged into the cobble beach. The NW facing subtriangular apex was well defined, with a channel up to 1m wide and perhaps up to 1.5m high/deep, forming a short channel with metal scaffolding poles running along the well built inside stone faces of the channel and with two metal posts in the centre of the channel, just north of the apex, presumably to secure some sort of basket or net. There was water pouring through the outflow channel or gut so it could not be accessed directly. This must have been in use until fairly recently. There were further scaffolding poles forming a structure along part of the westernmost arm,

perhaps to support a netline, but whether the two were used together or whether the net line was later is not clear. The pool in the centre of the weir appeared quite deep and at 1m+ could not be directly accessed on foot. One of the gaps in the less substantial western arm may have been a second outflow channel or gut. 'Behind' the apex within the partly cleared subtriangular area south of the two arms were possible additional stone-built features, perhaps of different phases and dates (see 10242 and 10243 below).

A linear N-S stone feature (**Line No. 10238**) that was marked on the NMP was then recorded, consisting of a broad, low and fairly dispersed bank of stones approximately 5m wide on its southern inland extent, but narrowing seawards to the N at c. 2-3m in width. The bank was poorly formed with no posts associated with it, and the eastern edge was more distinct than its western line. Either side of the bank had been cleared of stones so it may be that the cleared channels are the feature and the bank is a by product of this clearance. (N.B. Subsequently, Richard McDonnell's report on his work in Minehead Bay suggests that rather than a net line for hang nets, this could have been one or two ground line gullies for a long baited line of hooks (possibly his no. 109)).

Another large V-shaped weir (**Line No. 10239**) spanned a cleared channel within the gravel beach surface. It was well built using large beach cobbles and constructed almost like a dry stone wall in places, especially on the 'inner' southward face of the walling. The outer seaward facing side of the sinuous arms consisted more of mounded smaller cobbles and pebbles. The structure was fairly narrow, 1-1.5m in places and 1-1.5m in height. Some of the gaps in the N to SW orientated western arm may have been deliberate outflow channels, but this was unclear. There were no signs of any metal or wooden poles within/behind it. It was thus not clear if the structure originally had deliberate gaps for water to flow through or if it was used merely to create a pool and funnel the water down into the larger V-shaped fish weir 10237 just to the north. (N.B. On Richard McDonnell's survey plan this is feature no. 101).

There was a NNE-SSW orientated low stone bank (**Line No. 10240**) up to 3m wide set on top of a gentle natural ridge on the cobble beach, and located between 2 large fish weirs, one of which was 10237. It was very hard to identify as it blended in with the natural beach cobbles, and was barely visible as a slightly raised line of stones heading seawards, where it curved round slightly towards the N. Along its length there were clusters of upright stones that seemed to have been deliberately placed as post supports, but no wooden or metal posts were visible. It was therefore a possible net hang line, and did not have any associated clearance such as the net lines or ground line gullies further to the E. Alternatively, it may have been a much degraded weir arm, although there were no signs of an apex or a return to the east.

At the NW side of the bay were a series of linear stone clearance features that were the odd straight lines recorded by the NMP. A series of lines were recorded as separate features but were given a single description as essentially they were all of the same construction (**Line Nos. 20086, 20087, 20089, 2090, 2091, 2092 & 2093**). The features consisted of lines of sand approximately 1-1.5m in width, cleared of most/all stones with low linear banks of stones running parallel to the cleared areas. The cleared channels of sand may have been where net lines were placed with the stones banks simply a by-product of the clearance. (N.B. Richard McDonnell describes these as ground line gullies in his Minehead Bay report (grouped as no. 064), although it is likely that some net hang lines were also present). Most of the features no longer had any posts remaining in them but one did have a single metal pole with stone supports. Some of the lines, such as 20093, were still quite clear and well preserved but others such as 20092 had become partly infilled and dispersed once more. Line 20093 had several clusters or 'doughnuts' of stones and also a few large individual stones running down the centre of the cleared area – these were presumably for net posts

and weights. Not all of the features plotted on the NMP could be reached and recorded due to the tidal conditions, but enough have probably been investigated to confirm that they are indeed anthropogenic features and linked to net line and/or ground line fishing. It is also possible that ground line gullies were reused for net hang lines.

A roughly NW-SE aligned low bank of stones (**Line No. 10241**) 2-3m wide and only 1-2 stones in height (up to c. 0.20m) was recorded, apparently appended at a rough right angle to the westernmost arm of fish weir 20082/20083. It was quite dispersed in places and seemed to be more a product of clearance rather than a well built feature. On either side of it there was a subrectangular area of clearance, each approximately 60-70m long and 20-30m wide, although these areas of clearance were not recorded with the GPS. Erosion and shore drift had caused the two subrectangular areas to start filling up with stones once more. What this feature represented is not clear. It may have been clearance for net lines, or perhaps more likely, an attempt to create broad shallow pools to fish using nets.

South of the large V-shaped weir 10237 were two fragmentary fishing weir structures (**Line Nos. 10242 and 10243**). Both features were poorly preserved and quite 'scrappy', with thin and partly dispersed, irregular/sinuuous arms. The apexes of these structures were the most obvious parts of them, especially with 10243. They were probably earlier features that have eroded and/or which were partly robbed for stone. No posts were visible with them but they were recorded as the tide was coming back in, driven onshore by the strong gusting winds. Alternatively, they may have been slighter features also linked to 10237 to catch as many fish as possible within the same area.

The team members moved gradually westwards across Minehead Bay, still battered by wind and driving rain. The next large fish weir was also recorded using two numbers (**Line Nos 20094-20095**), with 20094 assigned to the smaller eastern arm and 20095 to the larger western arm that actually comprised the bulk of the feature. The two arms were quite sinuous in plan, and the E example was 2-3m wide, broadening towards the surviving apex to 4-5m. The western arm was generally 4-6m in width. It was generally well built, especially on its inner southwards facing elevation, near vertical in places, where it resembled drystone walling at least 4-5 courses of cobbles in height. The apex of this feature was particularly unusual. The wall split into two at this point, with an inner, landward face narrowing to a shallow arc not more than 0.5m thick and mostly comprised of just one line of boulders, whilst on the northern, seawards side two projecting 'horns' extended northwards and seawards before curving back in again leaving a gap just c. 1m wide. This formed an almost fully enclosed D-shaped area approximately 5-7m wide (E-W) and 5-6m long (N-S). Near the gut or outflow channel on the N side of the D-shaped area was a metal pole, presumably to anchor a basket or affix netting. (N.B. On Richard McDonnell's survey plan this is feature no. 108).

The walls that formed the D at the apex of 20094/20095 were fairly low and dispersed. This may have formed a smaller secondary weir within the apex as a form of water management to allow a larger volume of water to flow out but to keep it at a steady rate. Alternatively, with netting across the gap it may have allowed a greater quantity of fish to be trapped, which were possibly scooped out with hand nets. Either way, it is so far a unique feature that the survey team had not encountered on any other fish weirs. The western arm 20095 continued to curve round and there was some form of 'recess' west of the apex, with a well-built, nicely faced cobble wall facing southwards into the pool. There was another possible outflow channel within this recess with a metal pole on the northern, seaward side. The wall at this point was up to 1-1.5m in height, especially around the recess. The eastern arm merged into a natural gravel bank or ridge located on the intertidal zone and seemed to make deliberate use of this natural feature. The overall weir was thus located between two of these ridges which would themselves have acted to funnel water and fish northwards.

Several other features were recorded on the Magellan by AMC but were not photographed or logged using the voice recorder as he did not have a camera with him, and BW and NW were already some distance away. These were all fairly minor and eroded features. Part of a possible fish weir arm (**Line No. 10242**) was up to 1.5m wide, but very dispersed and eroded. The western end of this line of stones curved northwards and may have been part of an apex, though this was far from clear. Another low and narrow (0.5m wide) curvilinear line of stones (**Line No. 10243**) was set between two natural cobble ridges and may have been a short weir or a net line designed to take advantage of this natural channel. Just to the south was another possible fragmentary V-shaped weir (**Line No. 10244**), with the eastern arm and apex heavily denuded and eroded and the western arm almost completely gone. There was no visible outflow channel, and this feature may have been designed to act as a dam to create a pool for hand netting. (N.B. Richard McDonnell also noted these 3 features, located to the south of his feature no. 101). To the west was another short feature up to 0.5m wide, a line of large cobbles and boulders each up to 0.80m in length again spanning a natural channel in the cobble beach, and this too may have formed a small weir or dam.

The next major fish weir to be recorded to the west was also plotted as two separate lines (**Line Nos 20096-20097**), although it was a single structure that may have continued in use until fairly recently, as it showed signs of being regularly maintained. The walls were well-built and quite regularly coursed like drystone walling, with a near vertical face on the inward, southern facing elevation, though some sections had begun to collapse into the pool. Unlike the other weirs in this area the seaward side of the arms did not comprise broad banks but were again almost vertical walls, perhaps because it was constructed on a wide expanse of sand and it was easier to construct a rough wall rather than transport a larger amount of cobbles to form wide banks. The well-defined apex faced NW, on a different alignment to many of the other weirs, and was c. 2-2.5m in width. An unusual metal framework of scaffolding poles extended vertically upwards from just in front of each inner face of the outflow channel, with another bent and curbed pole secured across the top forming an arch like a goal or a greenhouse-type cloche support. This was another unique structure not seen elsewhere. Several smaller vertical metal posts were also present within the outflow channel, and there was another cluster of them c. 5m to the SE, and a few more poles c. 5m to the NW of the seaward side of the apex. These were obviously settings for nets, and the large goal-like structure would probably have had netting tied around the posts and anchored to the poles on the outside of the apex to create a large funnel-shaped trap. The internal cluster of posts may also have secured this, or may have belonged to another phase of use. The pool created by the weir was large and deep and had a mostly sandy bottom, created by clearance. The NE arm 20096 merged into a natural gravel and stone bank to the east, whilst the SW arm 20097 was orientated landwards towards the higher part of the beach where it appeared to link up with several smaller fish weirs. Within the SE broader part of the pool, within the area defined by the weir, were several lines of stones that may have been additional net lines, or small weirs to control the flow of the water. Alternatively, these might reflect earlier, partly robbed fishing structures.

This was another fish weir plotted as two separate lines (**Line No. 20097 & 20098**), although this was conjoined to 20096-20097. This was a very sinuous, undulating feature in plan with well-built walls up to 2-3m wide and 0.5m high. The apex faced W or WNW and was approximately 1m wide at its narrowest point on the outer side of the wall but the gap was wider on the 'inside' SE face of the wall, up to 3m in width. The apex was everted with two 'horns' extending outwards towards the WNW. There was a mixture of wooden and metal posts in and around the apex, with the wooden posts fairly eroded but in cross section appearing to be like relatively modern fence posts. Within the area of the pool created by 20097/20098 was another large V-shaped fish weir feature (see 10246 below), possibly of a different date or phase, although one of the outflow gaps in the western arm of 10246 matched the position of the apex of 20097 and 20098 so it possible that these were in use

concurrently as part of a wider water management and fishing system. (N.B. On Richard McDonnell's survey plan this is feature no. 118).

To the south of 20097/20098 was the large V-shaped weir (**Line No. 10246**). The arms of this weir were quite solid although the eastern arm was slightly more dispersed, and consisted of a broad bank up to 5-6m in width and 0.5-0.75m in height that was attached to a natural cobble ridge on the beach. The western arm was especially well-built and had short lengths of coursed and faced wall surviving, and was up to 4m wide and 0.6m high. The main apex faced NW and led into the large pool behind 20097/20098, and was 2-3m wide, although the sides of the outflow channel or gut had begun to erode into the gap. The western arm had at least six subsidiary guts or outflow channels constructed along it, although these were not recorded in detail. One of these mirrored the apex in 20097/20098, perhaps implying that both features were part of the same water management and fishing complex. There was at least one possible subsidiary gut in the eastern arm of 10246 too. In the partly cleared pool 'behind' and to the SE of this weir were numerous metal poles and posts, and several upright near the centre. There were several shorter poles, one of which had some nylon netting wrapped around it, but these were somewhat randomly placed and may have been settings for different types of smaller nets. Some posts probably related to later net line hangs, however – there was a long net line parallel to the western arm of 10246 which appeared to be quite modern as it was in relatively good condition still. The beach here seemed to have been deliberately cleared, though whether this took place during the construction of the weir, and/or the net line, was not clear. (N.B. On Richard McDonnell's survey plan this is feature no. 116).

There were clearly many more features in this area and both in and below the incoming tide and surf, but with the tide coming in quite rapidly now the survey team retreated southwards back up the beach. On the way back to the van they recorded a small feature noted on the way out, one not previously noted by the NMP. This was a small and poorly preserved, fragmentary V-shaped weir, with a north facing apex (**Line No. 10247**). It consisted of a low, dispersed bank of stones 1-2m wide and 0.4m in height, and with a gut or outflow channel c. 2m wide, though this was partly infilled with eroded stones. There may have been another subsidiary outflow channel on the eastern arm, though this may equally have been from erosion. There were two large wooden posts 5m apart on the 'inner' or southern side of the eastern arm, both round wood and 0.10-0.15m in diameter, and though eroded probably or relatively modern date. (N.B. On Richard McDonnell's survey plan this may be feature no. 107).

The team retreated back to the van, sodden but unbowed. Minehead was still very dark and wet, and hardly anyone was visible still. One thing that did emerge out of this awful day was just how well the kit functioned in very wet conditions – the Magellans both worked fine, although sometimes it was hard to read the small screens simply because of the amount of water running across them! And despite the wind, most of the voice recordings were okay too, and these were conditions where written records would definitely not have been possible at all. The only drawback noted in retrospect was the Ricoh cameras – although in themselves waterproof, without lens hoods the lenses were constantly wet and thus many of the photos had large drops and/or were very blurred as a result. They have to be continually wiped to take decent photos in such conditions.

N.B. Many of the features further down the intertidal zone were re-photographed in April 2011 when conditions were hot and sunny, and a few were also re-recorded too (see below).

Lilstock 26.08.2010

SMP2 PUs 7d28, 7d29 & 7d30

Intertidal survey by AMC, BW & NW

Low tide: c. 14.00 PM BST

Rationale: To investigate in more detail fishing-related structures recorded on the NMP/HER records, and to try and access those features furthest out in the intertidal zone that may be the earliest in date. Also to try and obtain dating evidence by sampling any wooden stakes that may survive at the apex of the stone V-shaped fish weirs.

The survey team arrived at Lilstock and after suiting up accessed the intertidal zone near the remains of the old harbour wall/quay. This known feature was not formally recorded except with photographs as it was on the NMR, NMP and HER. It consisted of a series of ashlar stone blocks and subsquare cobbles (in granite?) up to 1m long, with on the western side much larger shale slabs up to 2m long and 1m high. Orientated roughly NE-SW, the NW seaward end was distinctly stepped in profile.

To the NE of this feature, and on a different NW-SE alignment, was another stone built feature also previously recorded by the NMP/HER. This was recorded and plotted with the GPS so that the team could comment on its state of preservation etc (**Line No. 20101**). Described on maps as a breakwater, it is probably more likely to have been another quay. This also consisted of a series of slate slabs 1-1.5m long, in this instance laid end on end to one another, with on its eastern side a lower flat series of ashlar hard stone slabs and blocks up to 1.2m long, especially large at the NE end. Some of the slate slabs had been pushed over, probably by tidal forces, and the northern end of this structure had been eroded and damaged, along with some its 'core'. Towards its SE end the slabs turned to the SW and disappeared into the cobble and shingle beach, whilst a much shorter and smaller stone structure was appended to its western side at a right angle. This subsidiary structure was only recorded with photographs.

No features were visible eastwards from this point along the receding tide line, so the team then moved westwards along the intertidal zone, heading for a group of possible fishing structures recorded on the NMP. Some of these seem to have been purely geological in origin, so the team members noted this where applicable. About 500m to the west, however, the team identified a roughly NNE-SSW orientated feature consisting of a line of stone 'doughnuts' or piles of stones used to support upright posts, probably as part of a net hang line (**Line No. 20102**). Some of the stones in clusters of 6-12 stones were stood on end in very unnatural positions, and each cluster was up to 0.5-0.7m across, and 2-5m apart from one another. No traces of wooden or metal posts were recorded, and no other obvious net lines were seen in the immediate area. The team members thus headed westwards once more.

A few hundred metres to the west, the team encountered two conjoined V-shaped stone fish traps or weirs, with their apexes facing to the NNE. As they were conjoined they were recorded as a single line (**Line No. 20103**), though for some reason the easternmost arm of the eastern weir was not plotted, although this was admittedly very low lying and not very obvious, though it is just visible on one of the photographs. The intertidal beach in this area consisted of markedly angular and subangular blocks and cobbles, and it was sometimes difficult to spot the lines of the arms of the weirs against the natural surface. The arms of the two features were low-lying rubble banks between 1.5-3m wide and up to 0.4m high, with the western arm of the westernmost weir being the most massive. The arms disappeared into

the natural contours of the quite steeply sloping cobble beach, and on the landward inner or southern sides the areas behind the arms had been partly cleared. In places these cleared areas had accumulated finer mud deposits, partly emphasising the inner southern edges of the arms. The apex of the eastern weir was poorly preserved and the outflow channel or gut was barely visible, but the apex of the western weir was better preserved. The gut there was up to 1m wide at its northern seaward end, broadening southwards with the V of the weir. Despite some cobbles having eroded into the channel, it was apparent that the side of the gut of the western weir had once been straight and faced. No wooden or metal fixtures were apparent.

Some features plotted by the NMP to the west of the two weirs were simply outcropping shelves of natural rock, and note was made of these instances. The westernmost feature identified by the GCC survey team was a roughly E-W line of stones 0.20-0.30m wide set across a rock pool (**Line No. 20103**), either a small dam or more likely the weights of a net line set across this natural feature. No metal or wooden posts were identified.

Apart from some relatively modern beach defence groynes formed by multiple lines of eroded wooden posts, which were photographed but not plotted or recorded, no other archaeological features were visible so the team returned to the van and then back to Gloucester.

Berrow Sands/Berrow Flats 01.09.2010

SMP2 PUs 7d45 & 7d44

Intertidal survey by AMC, BW, NW, RB & RMcD

Low tide: c. 18.15 PM BST

Rationale: To investigate in more detail fishing-related structures recorded on the NMP/HER records, and to try and access those features furthest out in the intertidal zone that may be the earliest in date. Also to try and obtain dating evidence by sampling any wooden stakes that may survive.

NW and BW had met up with Richard Walsh of Specialist Vehicles Ltd at Berrow Beach the day before, and had had their initial induction in how to use the Argocat and load/offload it from the trailer. Unfortunately, AMC had to return to Gloucester in the Landrover as the key had snapped off in the fuel cap lock, so the Landrover needed this replacing.

On this morning, the team hitched up the trailer and rove from Cannington to Berrow Beach, and parked up near the southern end of the car park area where they met up with Richard Brunning and Richard McDonnell. The team members then unloaded the Argocat, and once everyone suited up and got all the gear into the vehicle NW drove us out onto the mudflats exposed at the lower, seaward part of the beach. Unfortunately, the Argocat soon got bogged down, only about 20-30m from the firmer sand. When driving along the vehicle created a 'bow wave' of mud, which over time built up into a large ridge in front of it. NW changed tack several times, but this kept happening. Added to this problem there were underlying troughs or channels in the intertidal surface that were filled by very thin mud, and the Argocat was prone to 'bedding down' within these. With some skilful driving from NW and a helping push from RB, they got the Argocat unstuck and then drove it back onto the firmer sand.

Clearly, only hovercraft are capable of getting across the mud at Berrow. Although there are sandier and firmer, more shallow deposits further out from shore, in between there are deep sucking mud deposits, which according to the beach patrols and other locals have become significantly deeper in recent years. Compared to the points and lines the team surveyed in the pilot Phase 2a in 2009, when we could use the hovercraft to get across this deeper mud, the team were not able to get as far out in 2010. Unless EH can buy/rent a hovercraft, or unless anyone can find someone who owns one and will take a survey team out there, there is little prospect of the furthest, westernmost features recorded by the NMP at Berrow being directly accessible.

The team then used the Argocat to drive northwards along the beach, and they got out at intervals to investigate and record features. One of these was a large U-shaped fish weir or net hang line, forming a large arc up to c. 300m in length with the concave side facing E (**Line No. 10248**). These wooden stakes were spaced 0.5-1m apart and were 0.2-0.5m in height. The wood was in good condition but appeared to be fairly modern in date.

The feature was close to a heavily eroded peat shelf. The rough line of the main part of this exposure was recorded (**Line Nos. 10249 & 10250**), although there were also isolated heavily eroded blocks further seawards to the west. The peat was quite thin and varied in thickness from 0.02-0.10m. There was little obvious wood visible within it, and it was lying on a layer of blue-grey clay. A sample of this peat was taken (**Point No. 30014**). At this sample point the top few centimetres and the bottom few centimetres were taken from the layer

which was 9.5cm thick. Part of this peat shelf was recorded during the Stage 2a pilot fieldwork in 2009 (Polyline No. 2).

In this general area the NMP records show a fishing structure marked as a V-shaped weir (No. 1451228) but this was in fact a modern hang net line formed from metal posts. Only photographs were taken of this.

The next feature the survey team identified further to the north consisted of a broadly NE-SW orientated line of densely packed stakes, up to 40-50m long but at least 0.2m wide – in some places this feature was at least 12 stakes in width (**Line No. 10251**). There were large stakes at 0.3-0.4m intervals, surrounded by smaller stakes. The largest stakes were 0.02-0.03m in diameter, some slightly bigger, but most stakes were small roundwood only 10-20mm in diameter. Some stakes were at slight angles of 45-60 degrees, and tilted towards the NW. The stakes were very low and eroded, and most lay within a 'channel' eroded through the peat as a result of the stakes having been driven through it, making the weakened peat more susceptible to erosion along the line of the later feature. This feature was probably one arm of a fishing structure, possibly a V-shaped weir. More of this feature was undoubtedly hidden by deposits of mud. This 'hedge' type construction using multiple vertical stakes rather than horizontal hurdling has been noted by both Richards before, at Berrow and on Stert Flats, and may be another local regional form. Some of the stakes were sampled for species ID and for possible dating (**Point No. 68**).

Just to the NW of 10251, the line of another multiple stake alignment/arm was identified, this one orientated NNE-SSW and extending for at least 150m. The small roundwood stakes formed two roughly parallel lines approximately 0.80-0.90m apart, both forming a spread up to 1m in width (**Line No. 10252**). Again, the stakes were very closely set, and some had been driven into the peat layer and had again caused a line of erosion through the peat deposit. The western end of this feature was covered by water, and the eastern end was covered by mud. Samples of wooden stakes were also taken from this feature (**Point No. 69**). The very shallow oblique angle of this feature, almost parallel to the modern shoreline was somewhat puzzling, as it was not clear how this would have 'worked' as a fish trap in relation to tidal rises and falls. It may have formed part of a structure recorded on the NMP (FID 3342/3343, MONARCH 1450737).

As the tide was now coming in and it was late evening, and as the beach gate got locked at 7.30 PM, the team decided to call a halt to the day.

Brean Sands 02.09.2010

SMP2 PUs 7d45 & 7d44

Intertidal survey by AMC, BW, NW & RB

Low tide: c. 18.45 PM BST

Rationale: To investigate in more detail fishing-related structures recorded on the NMP/HER records, and to try and access those features furthest out in the intertidal zone that may be the earliest in date. Also to try and obtain dating evidence by sampling any wooden stakes that may survive.

There was no RMCD today as he was being visited by his daughter and grandchild. The low tide was even later in the evening. The weather was nice and sunny though, which helped. As the team could not get the Argocat out across the soft deep mud to where the furthest archaeology was located, they left it behind at the Gurney Mill B&B in Cannington. After meeting up with Richard Brunning and with the cooperation of the beach patrols to unlock gates, the survey team headed further north in the Land Rover up the beach area.

A few modern net line features formed by metal posts were photographed but not formally recorded. The extensive deposits of peat recorded the day before continued northwards, again with a few isolated blocks on the seawards or western side of a very sinuous outcropping and eroded edge. The latter was recorded as a rough line running northwards along the beach, becoming more fragmentary to the north (**Line Nos. 10253, 10254 & 10259**). Associated with this peat was a broadly E-W but sinuous band of peat with a notably concave profile and raised edges that probably marked the course of a palaeochannel (**Line No. 20105**). It was approximately 1.5-2m in width and snaked through the peat layer and out to sea, whilst the eastern landward end disappeared under the mud. The peat was up to 0.22m thick in the middle of the dished channel fill deposits, but became thinner towards the edges of the channel. A black-stained animal bone (bovid?) probably derived from the peat channel fill was found on top of the surface of the underlying blue-grey clay next to an eroding 'face' within the peat palaeochannel deposits (**Point No. 30015**). RB thought that the feature was originally a sinuous channel in the salt marsh, then there may have been a period of regression, and then a peat layer had formed over the salt marsh and in-filled the channel. Subsequent erosion had removed the once underlying softer alluvial deposits, leaving the firmer peat standing proud.

A short fragmentary line of single stakes was recorded (**Line No. 10255**), orientated roughly NNE-SSW, but although poorly preserved (less than 0.10m high), it was likely that the wood was relatively modern in date. This feature may therefore have been a net line.

Moving north once more, there was a N-S line of small roundwood stakes, only visible in fragmentary form beneath mud or appearing as a wetter linear channel running along the beach parallel to the shore (**Line No. 10257**). Most of the stakes were 0.03-0.04m in diameter and very low, barely protruding above the mud, but they were arranged side by side so that they formed a feature up to 0.5m in width. In some places there were smaller horizontally twigs apparent, woven between the upright stakes. In one place the stakes appeared to split into 2 lines about 0.20m apart – the seaward or western line had vertical stakes, but those nearer the shore were set at angles of 45-80 degrees. There were also several outlying posts 1.8-2m seawards (W) of the main line, with stakes angled at 30 degrees towards the larger structure. These were several metres apart, and seem to have been bracing struts. Approximately 20 roundwood stakes were sampled, and 3 of the bracing rods (**Point No. 70**). What this feature represents is unclear. As it is parallel to the

shore it is very different to stone and wood V-shaped fish weirs, although neither end of the feature was visible and there may have been angled leader arms present at one time. The 'fence' may not have channelled fish into baskets though, but instead might have acted to physically trap fish against it as the tide went out – possibly flat fish?

A fish trap was recorded on the NMP in this area (No. 1450733) but was no longer visible and may have been covered by mud or have been totally eroded. Just to the west of 10257, however, was a small line of 5 wooden stakes, possibly forming the apex of a V-shaped structure (**Line No. 10258**). The roundwood stakes were up to 0.4m high and 0.07-0.10m in diameter, but there were also several bamboo stakes with twine tied to them next to this feature. It was probably a relatively modern net line, but it may have formed at least part of the feature recorded by the NMP.

Another eroded and fragmentary exposure of peat was recorded in this area (**Line No. 10259**), the undulating peat being quite clayey with lots of organic content such as reeds, and only 0.05m thick. There were actually two peat layers with a layer of blue/grey clay in between them, the clay itself containing many organic remains such as reeds, especially at the top of it at the interface with the upper peat.

Further to the north, another fragmentary but roughly N-S line of wooden roundwood stakes was identified (**Line No. 10260**), with the stakes set at angles, their tips pointing seawards to the W at 70-80 degrees. At the southern end of this feature there was a group of stakes which spread over 2 metres but was largely covered by sand and mud so its true form was unclear. Sample of stakes were taken from this feature (**Point No. 71**).

The sun was by now starting to set, illuminating the fabulous prehistoric field system features along the summit of Brean Down. But that also meant that it was getting late, the tide was coming in, and it was time to retire for the evening before the beach wardens locked the gates to the beach.

Brean Sands/Berrow Flats 06.09.2010

SMP2 PUs 7d45 & 7d46

Intertidal survey by AMC, NW, RB & RMcD

Low tide: c. 12.30 PM BST

Rationale: To investigate in more detail fishing-related structures recorded on the NMP/HER records, and to try and access those features furthest out in the intertidal zone that may be the earliest in date. Also to try and obtain dating evidence by sampling any wooden stakes that may survive.

There was some 'faffing' around first thing in the morning in Gloucester when TC and AMC had to drive to a caravan equipment store so that TC could buy a wheel clamp for the trailer for the Argocat, NW and AMC then drove the Land Rover and the Argocat down to Burnham on Sea and went straight to the northern part of Berrow Flats at Brean Beach. The Argocat trailer only just got down the steep concrete ramp onto the beach. Richard Brunning and Richard McDonnell then arrived. We then suited up and proceeded out on foot onto the intertidal zone, leaving the Argocat on its clamped trailer. The wind was picking up and rain threatened.

The survey team headed NW to the base of the cliffs on the southern side of Brean Down, admiring the rock climbing abilities of the feral goats. Only a few metal stakes from modern net lines were visible out in the mud, which the Brean Sands Beach Warden had informed the team members was particularly thick and treacherous. The team therefore kept to the higher boulder beach below the cliffs and skirted round on this to the headland just SW of Brean Down, where there was a gravel and boulder ridge extending out into the sea. Here a large, stone-built V-shaped weir was visible against the now incoming tide, the apex unfortunately already underwater. NW recorded the northern, NE-SW orientated arm of this feature with the Magellan (**Line No. 10261**) but as the tidal turnaround is very fast at the northern end of Berrow Flats, the stone arms were becoming submerged before the team could get the laser connected to record the southernmost NW-SE orientated arm, although this was photographed. It was up to 2m wide in places and consisted of a low spread of angular boulders and cobbles. Although the apex was not seen, there was another subsidiary outflow channel in the southernmost arm, and this was up to 1.2m wide with faced lines of boulders defining the gap. No wooden or metal stakes or poles were visible. There were, however, suggestions of small stone built 'horns' or extensions extending from either side of this feature seawards towards the west.

Just to the SE of the southernmost leader arm of Line No. 10261, RB noted around 6 wooden stakes, and he sampled one of these (**Point No. 72**). Initial examination suggested the wood was relatively modern. It is not clear if these roundwood stakes, up to 10-12cm in diameter, were once associated with the southernmost arm of the fish weir, or if they were from a later net line located parallel to it just a few metres away to the SE. The tide was now coming in with alacrity though so the team retreated westwards before they got cut off on the headland.

Just before they left the headland altogether, however, the team members noted some eroding flat peat shelves, consisting of a roughly N-S and E-W erosion edge (**Line No. 10262**) with some additional isolated raised areas out in the mud flats. This peat was a dark reddish brown in colour with lots of compressed organic/plant material including reeds within it. It did not appear to be as 'woody' as the peat deposits the team had recorded a few days before to the south, and RB speculated that it may have been from a lower, earlier peat

formation/bed. There was another possible fish weir recorded on the HER/SMP further to the east, but nothing of this was visible under deep mud deposits. A point was taken to show that the team had been there though **(Point No. 73)**.

Moving back eastwards along the boulder beach below the cliffs, RB and RMcD noted a small cave or fissure in the cliffs. They crawled into it and photographed it in a welter of excitement, but NW and AMC wisely stayed out, though they also photographed its entrance to give it a rough GPS position. There was nothing of archaeological interest within the cave.

The team then moved southwards down the mudflats on Brean Beach, but apart from a few isolated metal stakes no archaeological features were visible. On the HER/NMP records, there are quite a few fish weir features were plotted in this general area but unfortunately these were by now under the incoming tide, and earlier on nothing had been visible in this area through binoculars in any case. The threatened rain now started to come driving in, and with the tide rapidly advancing as well everyone headed back up the beach. It may be necessary to return to Berrow Flats after a potentially scouring tide, but at the moment and as the team found last week, many of the archaeological features that have been previously recorded are now inaccessible due to deep sucking mud deposits, and/or are also obscured by the same mud. Much of the archaeology between Black Point to the north and Warren Farm to the south thus appears to have been obscured by thick deposits, so even with a hovercraft these would not be accessible or available to record.

Berrow Sands/Berrow Flats 07.09.2010

SMP2 PUs 7d43 & 7d44

Intertidal survey by AMC, NW, RB & RMcD

Low tide: c. 13.20 PM BST

Rationale: To investigate in more detail fishing-related structures recorded on the NMP/HER records, and to try and access those features furthest out in the intertidal zone that may be the earliest in date. Also to try and obtain dating evidence by sampling any wooden stakes that may survive.

The GCCAS team members met up with RB and RMcD in the Berrow Sands car park, and the beach warden unlocked the gate and let the team park up the Landrover and trailer just to the south of the line of wooden and concrete posts. The team unloaded the Argocat off the trailer and suited up. The day was blustery and cloudy but with some sunshine. The team then drove southwards along the upper beach past the wreck of the Norden and around the slight headland, before stopping to go out and examine an area of mudflats on foot, one that was largely blank on the HER/NMP records. Apart from very occasional single wooden stakes, however, of modern date, the team did not identify any archaeological features. The intertidal surface allowed team members to go out on foot several hundred metres from the raised shoreline, but in places the mud was deeper and more treacherous. A Royal Navy Sea King helicopter out on some sort of exercise out in the bay helped to focus attention on the possible perils of the mudflats. At one point walking back to the Argocat, the mud deposits became deep and so soft that it was almost like quicksand, so the team members were very glad to leave that area. They returned to the Argocat and drove further southwards, keeping an eye out seawards and occasionally stopping to scan with binoculars. No archaeological features were identified though.

RB and RMcD noticed some concrete posts lying partly exposed in sandy beach deposits that may be the remnants of Second World War anti-glider/beach defences. Some of these posts were photographed, but they were not recorded with the Magellan.

The team covered a large distance in this manner without seeing any visible archaeology, and eventually they came to the banks of the River Parrett just north of Burnham-on-Sea by the wooden lighthouse by around 2 PM. They recorded various items of detritus here, including a possible iron porthole cover and part of an engine. The lines of some wooden stake/post-built structures were just visible on the southern bank of the River Parrett at least 300-400 metres away at the water's edge where the tide was starting to come back in (at OS NGR c. ST 2900 5040). These were too far away for the team to record with the laser, however, and even if they had been on the other side of the Parrett the deep sucking mud along the riverbanks would have prevented them from gaining direct access. The locations of these stakes were photographed, but without telephoto lenses the features themselves will be virtually invisible in those images. These wooden structures were probably relatively recent mooring posts and landing stages in any case, but it is just possible that some could be the fishing structures marked in this general area on some of the earlier navigational charts of the Bristol Channel.

RMcD remembered seeing and photographing a brushwood trackway of unknown date in this general area at least 10-15 years ago. After some walking up and down he and NW located this feature, and the team all set to work recording it. It manifested itself as two slightly sinuous lines of stakes approximately 2-2.5m apart, and orientated approximately NW-SE (**Line Nos. 10264 & 10265**). The northernmost line was recorded as 10264, the

southernmost as 10265. There were larger stakes set vertically or at acute angles (70-80 degrees), up to 0.06m in diameter, and in groups of 2-3. Between these were much smaller vertical or acutely angled stakes only 0.03-0.04m across. In general there were two lines of single stakes, but in places the lines were several stakes wide, and there were sometimes additional smaller stakes. In a few places there were also lines of stakes visible running down the central area between the two lines, and there were also outlying stakes, especially on the NE side of the feature. There were some small twigs up to 0.01m in diameter laid horizontally like hurdles between some of the vertical stakes, and also much finer material that may have been traces of the edges of the brushwood, although much of the central brushwood area of the trackway was not visible, lying under several centimetres of mud. This feature would need excavating to try and establish its exact purpose.

The team took samples of stakes from each of the two main lines for species ID and possible dating purposes (**Point Nos. 74, 76 & 77**). The larger stakes proved to be driven at least 0.20-0.25m through a thick sticky dark grey clay and into underlying compact sand deposits, and it was not possible to recover their tips, though one roundwood stake up to 0.06m in diameter had clearly been trimmed into a point that was square in cross-section, though the tip itself was not retrieved. Some samples of the horizontal woven elements were also taken for species ID.

The trackway was broadly parallel to the current course of the River Parrett, and it may have been constructed to facilitate access along this area. RMcD had recorded another trackway some distance further to the north and higher up the intertidal zone, but its location seemed to have been buried in drifting sand deposits. The only other feature noted in the area was a large timber with a mortice hole in it (**Point No. 75**), that with the addition of some heavy duty chain seemed to have been re-used as an anchor block or mooring point. This was of relatively recent date.

As the tide was now advancing up the banks of the Parrett rather rapidly, the team finished taking samples and recording them, then got back into the Argocat and returned back northwards up the beach to where the trailer had been parked. Some rain squalls hit the vehicle during their return, but these were only short-lived.

Stert Flats 08.09.2010

SMP PU 7d36

Intertidal survey by AMC, NW, RB, RMcD & VS

Low tide: c. 13.20 PM BST

Rationale: To investigate in more detail fishing-related structures recorded on the NMP/HER records, and to try and access those features furthest out in the intertidal zone that may be the earliest in date. Also to try and obtain dating evidence by sampling any wooden stakes that may survive.

The GCCAS survey team travelled to the Natural England car park by Dowells Farm whose owner Robin Prowse was the former site manager who used to work for Natural England, and he had a copy of the key to the gate at the end of the lane to allow vehicular access. In addition to meeting up with Richard Brunning and Richard McDonnell; Vanessa Straker from English Heritage was also along for the survey visit. Although it was a tight squeeze, the Argocat seemed to manage okay with everyone in it. The weather was cloudy but quite warm, with sunny spells, so perfect for survey.

The survey tram drove along the lane NE, then kinked with the road to the NW past Manor Farm, and then out past one of the tower bird viewing platforms onto the undulating dune shoreline and thence onto the intertidal zone. They travelled NE across Fenning Island, and then turned to the NW to head towards the complex of wooden fish traps previously recorded by RB and RMcD, some of the furthest out of which had proved to be Anglo-Saxon in date. They got as close as possible in the Argocat, which could cope very well with the predominantly sand and shingle conditions – there were only a few occasions when deeper, soft mud lying in natural hollows in the intertidal surface caused the vehicle to 'bog down' temporarily, but NW was always able to extricate it. The survey team then dismounted to begin surveying on foot.

Both RB and RMcD remarked on how much the physical topography and deposit/sediment characteristics of the area had changed since their last visits. Whilst more features seemed to be visible in some places, as at the NW end of the 'spit' of land where the fish traps were concentrated, to the SW many had been buried by drifting sand deposits. One Anglo-Saxon dated wooden fish trap marked by a stone cairn at the apex had largely disappeared – only the very top of the cairn was now visible as a small group of unprepossessing-looking stones. On the way into this area, a NE-SW line of eroded stake-built features were recorded that consisted of two rows of stakes up to 0.06m in diameter and set c. 2m apart, the tops of which were quite eroded so may have been bigger than they appeared on the surface (**Line No. 10266**). The seaward or western line consisted of two stakes and the eastern line of 6 visible stakes, but it was recorded as a single line on the Magellan. The wood seemed relatively recent, and this may have been part of a putcher rank that originally stretched across the Gutterway.

NW and VS went off towards the NE to look for features identified by the NMP and by RB previously, whilst RB and AMC went to the NW. RMcD was walking around doing reconnaissance and trying to identify new features, or existing features that were no longer that obvious.

Beginning with the NW group, an apex of a weir formed by 3 larger radially split oak timbers was identified (**Line No. 10267**) – this may have been sampled before by RB as they looked as though they had had their tops sawn off. The posts were approximately 1.5m apart, and a

few possibly associated posts immediately to the west were sampled (**Point No. 79**). (N.B. This may also have been previously sampled in 2009 as Point No. 33 on the 22nd June 2009).

Various generally single stake-width lines extended out from this apex that were recorded as separate features due to the complexity of this relatively small area – several different fish traps may have been rebuilt, or there may have been different phases of construction essentially one feature. The stakes were usually between 0.5-1m apart from one another, but there were sometimes longer and more irregular gaps, probably caused by erosion. It seems more likely that there were at least three different V-shaped fish traps in slightly different positions at this locale. Two different lines of eroded roundwood stakes may have been associated with 10267 (**Line Nos. 10269 & 10272**). The very low, eroded stakes were extremely hard to spot in the sand and shingle surface as they only protruded by 0.03-0.05m, and it was hard to make sense out of all of the small stakes. Another row of small stakes parallel to 10269 (**Line No. 10268**) might also have been associated with 10267 in a different phase. A sample of stakes was taken from 10269 (**Point No. 78**).

Another V-shaped feature was recorded with an apex formed by larger split oak stakes and arms or leaders constructed out of single lines of small, roundwood stakes (**Line No. 10271**). The northernmost line of this structure survived better than the southern arm. The apex of 10271 was located on the edge of a short length of broadly N-S shingle ridge so may have been deliberately positioned to take advantage of this position (although of course the shingle may have shifted). It is possible that 10267/10269/10272, 10268 and 10271 were associated with two features recorded by the NMP, but plotted slightly out of position owing to the lack of reference points (FID 5628 & 6416, MONARCH 973951).

To the NE was a probable conjoined V or W-shaped fish weir structure (**Line No. 20106**), previously recorded and sampled by RMcD and RB. It was in a fairly poor state, with mixed deciduous stakes – mostly roundwood but with a few square-trimmed pieces. The stakes were once again highly eroded, only protruding a few centimetres above the surface. Near the apex of the northernmost V, there were several larger stakes 0.15-0.17m in diameter, possibly of oak. Further west was part of the V-shaped apex of another fish weir previously sampled by RB, and which had proved to be Anglo-Saxon in date (**Line No. 20107**). It was partially covered by mobile sediment. To the SE of this feature were additional further groups of stakes visible as little patches in the mud, which could not all be recorded.

Several fragmentary lines or arms of additional stakes were recorded further to the NE (**Line Nos. 20108, 20109 & 20110**). These may have been linked to another large V-shaped structure and its apex in the general area (**Line No. 20111**). The north-eastern arm of 20111 may have been rebuilt in a second phase as there was another broadly parallel line of stakes c. 0.5m to the NE of the main line that was recorded with the Magellan. The stakes were a mix of roundwood and split/trimmed stakes, so there may have been some oak in it. On the NE arm they were very low (0.05m) and eroded, and between 0.05-0.08m in diameter. Towards the apex there were more split wood stakes with larger stakes at the apex, generally in better condition. Line 20110 at least may have been another fragment of 20111's southernmost arm, and it was a short curving line of 6 or so stakes partly covered by the sediment; whilst 20108 and 20109 may have been a different phase of feature on the same general site. Samples were taken of 20110 (**Point No. 30017**) and of 20108 (**Point No. 30016**). Some or all of these stake alignments may have been related to features previously plotted by the NMP, but probably slightly out of their true position (e.g. FID 5927 MONARCH 1450435 & FID 5631 MONARCH 1450438).

After about half an hour beyond lowest tide time, RMcD deemed it prudent to return to the Argocat and drive back to the shore. The team heartily concurred with this notion, and

stopped off only briefly at the bird observation tower once they had reached dry land to take in the general views across the flatness.

Stert Flats 09.09.2010

SMP2 PU 7d36

Intertidal survey by AMC, NW, RB & RMcD

Low tide: c. PM BST

Rationale: To investigate in more detail fishing-related structures recorded on the NMP/HER records, and to try and access those features furthest out in the intertidal zone that may be the earliest in date. Also to try and obtain dating evidence by sampling any wooden stakes that may survive.

Although it had rained overnight it was another largely lovely day, with quite a lot of sunshine. The GCCAS team met up with RB and RMcD and made their way out onto the intertidal zone using the Argocat, as on the day before. Soon after starting to record features, however, AMC noticed a problem with one of the GPS cameras – its battery levels started dropping, and looking through the rangefinder lots of moisture became apparent. This was condensation on the *inside* of the camera – this had never happened before. Presumably this was also causing the battery to short out, thereby draining the charge from it. It is not clear why this happened, although it may be that the case did not dry off enough overnight, and combined with the temperature differential between the cool B&B room and the hot sun this caused condensation to form. It never happened before (N.B. Or indeed, after this incident....). But this meant the survey team were limited to one camera for the day's survey visit – RMcD therefore flitted back and forth in order to take photos, but this unfortunately meant that the team members could not split up into two groups to cover more area and more features. Nevertheless, many features were recorded.

On this visit the team reached the edge of the main area of interest at Stert somewhat early, so whilst they waited for the tide to fall by the V-shaped structures they recorded some later features too, including a series of probable putcher rank footings consisting of rows of paired stakes/posts (**Line Nos. 10274-10281, 20112-20116**). These were in varying stages of preservation – some posts were up to 0.40m high and up to 0.15m wide, but most were lower, smaller in diameter and quite eroded, and the double rows were fragmentary with gaps in them. All were orientated broadly NE-SW, with some heading towards the Gutterway, although the NE ends of these features were often obscured by sand and mud. Only some had been recorded by the NMP. The GPS plots of the features once again showed how the NMP aerial plots of features were slightly out at Stert Flats, due to the lack of reference points. For instance, the putcher rank recorded by us as 10274 was almost certainly FID 5897 MONARCH 1450364, plotted some 10m further to the NE. Putter rank 20116 was probably originally recorded by the NMP as FID 5642 MONARCH 972260.

Some other groups of stakes were recorded in this same area that were probably either fragmentary putt or putcher ranks, or were nevertheless linked to this (**Line No. 10273**). Some lines of stakes or small groups of stakes were no doubt replacements/repairs for existing structures.

The survey then moved further to the NW to record groups of features at the furthest accessible edge of the Stert Flats 'peninsula'. RMcD investigated a sandy spit jutting out to the NW that went further out than any part of the intertidal zone he and RB had been on before, which had probably formed in the past five years or so, but no features were visible along it. At the edge of the slight rise formed by a shingle ridge, a series of post or stake-built structures were recorded that were probably fragments of V-shaped fish weirs. Two fragmentary, eroded lines of largely single roundwood stakes were probably the

southernmost arms of two V-shaped traps (**Line Nos. 20117 & 20118**). Samples of wooden stakes were taken from these two features for species ID and potential dating purposes (**Point Nos. 30018 & 30019 respectively**); although RB noted that in the field the wood appeared relatively recent in date. Again, it is likely that these formed part of features recorded by the NMP but in slightly the wrong place, once more c. 10m too far to the NE (recorded as FIN 5870 MONARCH 1450424 and FIN 5923 MONARCH 1450425 respectively). Several smaller lines or groups of wooden stakes were also recorded and sampled (**Line No. 20120, Point No. 30021**) (**Point Nos. 81 & 82**). In addition, a V-shaped fish weir with a cairn at its apex, previously recorded by RB and RMCD with a stone beach cobble cairn at its apex, was recorded as it was now largely covered with sand deposits (**Point No. 30020**).

Some 15-20m 'off' the shingle ridge to the NE there was the line of a conjoined series of putcher or putt ranks recorded by the NMP as a zig-zag line. This could not be directly accessed due to thick mud deposits, but parts of it were recorded using the laser (**Line Nos. 10282 & 10283**). It was in a generally good condition, however, with lines of single stakes and a few groups of up to 10 stakes that might mark where the putt baskets were originally located. It is interesting that very few features have been recorded beyond this point, so the edge of the shingle ridge and the area just to the NW of it may indeed mark the original 'edge' of the intertidal zone. A small gravel, shingle and boulder ridge was apparent some 30m to the NW, and AMC was just able to gain access to this area by walking along runnels cut into the mud by tidal streams. Although the very low tide had exposed an area approximately 40m by 20m in extent, no archaeological features were visible on it, even very low eroded posts. As AMC did not have the camera, this furthest extent of survey access was recorded as a point (**Point No. 30022**), even though it was not a feature.

It was also not possible to see or access any of the features recorded to the SE on the NMP – deep mud and drifting sand deposits appear to have covered the features in that part of Stert Flats, although it may be worth trying to return to this areas at a future date.

It was now just past the lowest tide time, and in order to prevent us being cut off by the tide coming in from behind to the east along the Gutterway and cutting us off it seemed prudent to withdraw. There was just enough time to record a fragment of another V-shaped weir arm (**Line No. 10284**) and to take some samples of wood from split oak stakes at the apex of one of the fish weirs recorded the previous day (Line No. 10271). (N.B. No point number appears to have been generated on the GPS/GIS for this sample, though photos give an idea of its rough location).

The team returned to the Argocat and started heading back inland. At one point along the return route the team stopped, however, to note that a V-shaped fish weir recorded on the NMP (FID 5797 MONARCH 1450419) was not visible on the ground.

Stert 13/09/2010

SMP2 PU 7d36

Intertidal survey by BW, NW & RMcD

Low tide: 16.20 BST

Rationale: To investigate in more detail fishing-related structures recorded on the NMP/HER records, to access those features not recorded on previous visits and to try to identify any features not recorded on the NMP/HER. Also to try and obtain dating evidence by sampling wooden stakes from V-shaped stake-built fish weirs.

AMC was away for the day so NW and BW met Richard McDonnell in the car park at Stert at about 2pm. The weather was overcast and fairly dry but very windy. The team unloaded the Argocat, and NW drove them out to Stert flats. The previous week the team had worked in an area which had a lot of features marked on the NMP/HER, but they had stopped recording at a certain point so this was the team started. The team headed out to an area where there were lots of putcher ranks, most of which were recorded the previous week but NW had noted that there were a few which had not yet been recorded so this was the starting point for the day.

NW and BW recorded three putt or putcher ranks, all as double lines (**Line Nos. 10285 & 10286, 10287 & 10288, 10289 & 10290**) which were of similar construction to all the others recorded in this area, and were again on a broadly NE-SW alignment. The stakes of these were again arranged in two rows, but within each row in groups or clusters where the baskets may originally have been, and most were very eroded. While they were recording these features RMcD had a quick wander to see if he could spot any more features and he also went over to the Gutterway to check on its condition. He also went to collect some of the shrapnel from the recently exploded Second World War German parachute mine to give to NW!

Further to the NE the team spotted some small wooden stakes that on closer inspection turned out to be the apex of a much-eroded V-shaped weir (**Line No. 10292**). The stakes in the arms were small and spaced far apart, and seemed to have been squared although due to erosion appeared initially to be rounded. The stakes at the apex were larger than those in the arms of the feature, square cut and more densely packed, and formed a long 'funnel', presumably once leading to a net or basket. As the stakes at the apex were fairly large and square cut these were sampled for species ID and dating evidence. (N.B. This was not recorded as a separate sample point number though). As elsewhere at Stert, it is apparent that this feature has probably been previously plotted by the NMP, but in a slightly incorrect place c. 10m to the NE, presumably due to the lack of reference points across the intertidal mud flats (FID 5633 MONARCH 1450420).

The team then travelled back to the SE and headed towards the large V-shaped weir. This was a very substantial structure and must have taken a lot of effort and resources to build and maintain. It had been recorded and dated to the 16th and 17th centuries during previous fieldwork by Richard Brunning (in *Archaeology in the Severn Estuary 18* (2007); feature no. 046). The team recorded this feature using four separate lines (**Line Nos. 10293-10296**) because there were several different phases apparent. Much of the feature consists of two densely packed alignments of stakes, the southernmost orientated NNW-SSE and the other ENE-WSW, in association with a raised gravel or shingle ridge that seems to have been a deliberate part of the design rather than the result of natural accumulation. Some larger boulders were placed within this, some set on end again indicative of deliberate placement.

The arms were between 1.25-2m in width and had a maximum height at the apex of 0.5m. At the apex the inner walls were constructed of the large round wood posts, and then the outer area was constructed from the smaller stakes. Within the triangular area at the apex 'behind' the arms were groups of stakes that probably once supported baskets – there was no gut or outflow channel.

Most of the stakes forming the bulk of the two arms were small, up to 0.05m in diameter and mainly low and eroded (10294, 10296). At irregular intervals there were single or paired larger roundwood stakes up to 0.10m in diameter. Within this overall structure, however, there were lines of slightly larger, taller stakes up to 2-3 stakes thick, some possibly squared in cross section (10293). These were a different, notably more reddish colour than the lower stakes, and in places at least seemed to form part of a different phase. On the 'inner' landward or E and SE facing sides of the structure were additional small groups of taller stakes that may have been reinforcing struts or settings for baskets. There were also occasional stakes 2-5m seawards (or W and NW) of the main structure that may have been supports, repairs or a different overall phase of structure. The SE end of the south-western arm appeared to run into or under a gentle shingle ridge, so its full original extent was unclear. The very end of this arm curved slightly to the south.

Approximately halfway along the northernmost arm there was a large gap at least 20m wide, within which only a few single stakes were apparent. This again seemed to be a deliberate design feature rather than the product of later erosion. The purpose of this was unclear. (N.B. We were later informed by Brendan Sellick, the retired mudhorse fisherman at Stolford, that during the non-fishing season, large weirs often had stakes removed to create gaps to allow the fish out and then once the season started again the gaps were filled in with brushwood/trimmings from hedging). Approximately halfway between the apex and the gap, the 'inner', landward face of the weir appeared to kink slightly, although the outer line of stakes and shingle ridge was not as markedly kinked. This kink coincides to some extent with the NE end of a stake-built feature identified the next day (10300/10301, see 14/10/2010 below), and this may again indicate different phases of construction.

There was a NNW-SSE orientated stake line running off the apex of the weir (**Line No. 10297**), on the same alignment as the south-western arm of the weir but probably from a different phase. This consisted of a single line of wooden stakes. A slight dogleg in the outermost line of the gravel/shingle bank by these stakes on the NW side of the apex also suggests a different phase of activity. There were also hints of another NW-SE line of stakes to the west of 10297, but this was not recorded.

The team did not sample the large stake and gravel weir feature, but if samples were to be taken in the future their locations would have to be very precise and a detailed scale plan should be drawn to show exactly where the stakes came from as it looks like there could be a few phases of rebuilding within the arms. There were numerous features within the weir which the team left to be recorded the next day (see records for 14/09/2010 below).

Richard McDonnell checked the causeway to see its condition and he thought that it had eroded slightly. The team considered taking the Argocat across the Gutterway but RMCD thought that even at the causeway the water was too deep and that the mud on the other side looked like it had increased in depth and it was therefore too risky to take the machine across.

The team headed back to the car park, via a quick trip up the tower hide but as the weather was increasingly poor they could not see anything!

Stert 14/09/2010

SMP2 PU 7d36

Intertidal survey by AMC, BW, NW & RMcD

Low tide: 16.20 BST

Rationale: To investigate in more detail fishing-related structures recorded on the NMP/HER records, to access those features not recorded on previous visits and to try to identify any features not recorded on the NMP/HER. Also to try and obtain dating evidence by sampling any wooden stakes that may survive.

AMC had returned from his day away and so the three GCCAS team members headed down to meet Richard McDonnell in the car park at Stert at about 2.30pm. The weather was overcast, rainy and windy and no-one fancied heading out into the bleakness of Stert but there was a job to do so they set off for the last time in the Argocat. The survey team headed out to the large V-shaped stake-built weir recorded the day before, as there were still internal features and a few outlying structures to record. NW and BW took charge of the Magellan and the voice recorder whilst AMC took the photos, RMcD gave advice and information to help interpret the features and he also scouted around looking for more features.

The team recorded two short lines of stakes (**Line Nos. 10298 & 10299**) which were very eroded, and were situated just to the SE of the large V-shaped weir. These appeared to be split wood or squared stakes which were barely visible above the intertidal surface. 'Line' 10299 consisted of only two stakes, however, and 10298 only of 5 stakes. These may have been supports for baskets or other related structures, for nets, or might have been fragments of different phases of structure. This double line had been recorded by the NMP (FID 5890 MONARCH 972246), but again in the slightly wrong place.

The team next recorded a double line of NE-SW orientated wooden stakes, possibly a putt or putcher rank (**Line Nos. 10300 & 10301**). This feature has previously been recorded and sampled by Richard Brunning (in *Archaeology in the Severn Estuary 18* (2007); feature no. 206). It was situated on the inside of the NE arm of the large weir. Although they thought that it probably was not directly associated with the weir but had simply made use of the latter's positioning, it was notable that this was the approximate point at which the 'inner', landward face of the weir appeared to kink slightly (see 13/10/2010). Each stake line in 10300/10301 itself consisted of two main rows of larger stakes, with clusters of 5-10 smaller stakes set in between, especially towards the NE end of the feature. Each stake line was up to 0.40-0.60m wide. The difference in construction of 10300/10301 from the more obvious putcher ranks formed largely by two rows of single posts may perhaps indicate that this was a putt rank.

The weather now began to close in markedly, with driving wind and rain. Visibility also dropped accordingly. The team soldiered on like heritage heroes.

A short line of stakes was recorded about 10m inside of the gap in the large weir 10293/10294/10296 (**Line No. 10302**). This was a concentrated line of c. 20 cut and roundwood stakes, possibly part of a weir and perhaps a fragmentary earlier structure to the main large structure although this was far from clear.

The last feature the team recorded was a single line of NNW-SSE orientated stakes, with the NNE end apparently joined onto or abutting the large weir at right angles (**Line No. 10303**). These were either single stakes or set in small groups of 2-3 stakes. It was far from clear

whether this an internal feature of the main weir, the fragment of an earlier feature, or a later feature that had utilised the weir.

The survey team members were all pretty cold, wet and miserable. The rain was horizontal and visibility had deteriorated to around c. 30m, so everyone thus decided to call it a day and jumped into the Argocat to travel back to the shoreline. On the way AMC and RMcD jumped out to look at the state of the causeway and to take some pictures. The team briefly considered crossing the Gutterway to take a look on the other side but the weather and state of the tide made it too risky so they continued back to the shore. The team talked to Richard about the possibility of crossing to Stert Island at some point in the future and having a look at the features that are meant to be at the northern end of the island, and they decided that a date in spring time at a very low tide may be good for this. (N.B. This visit took place in April 2011, see below).

Stolford 15/09/2010

SMP2 PU 7d34

Intertidal and shoreline survey by AMC, BW, NW & RB

Low tide: c.15.00 PM BST

Rationale: To investigate in more detail fishing-related structures recorded on the NMP/HER records and to access any features which have not been previously recorded. Also to try and obtain dating evidence by sampling any wooden stakes that may survive.

The GCCAS spent the morning downloading files and photos before heading off to meet Richard Brunning at the car park by the sea wall in Stolford. When they got there it was blowing a gale and the tide was still very high so everyone sat in the Land Rover discussing what had been done and what areas or features in Somerset it would be good to revisit and/or sample at a future date. The team then suited up and headed to the east of the rocky area at Stolford to try and access the fishing structures marked on the NMP/HER. The foreshore was very rocky and covered in mud and seaweed which made it difficult to walk across and to see any features.

The first feature recorded was a peat deposit which was lying very close to the shore and was quite eroded (**Line No. 10304**). It varied in depth from only 0.05m up to 0.40m thick but was very woody with branches and trunks visible along with roots and tree boles.

As the team walked out into the intertidal zone they passed a broken outflow pipe of some sort, and a short line of stakes (**Line No. 10305**) was recorded here but these were assumed to be associated with the outflow pipe.

As the team headed further out, the mud became deeper so they decided to try and walk along water channels which had been cut through the mud by the ebbing tide. These channels enabled them to walk out further than they would have been able to had they not been there as the mud was well over wellie deep. There were a few modern net lines constructed from metal poles visible in the mud but the team did not record these as they were inaccessible and obviously recent.

As team members headed down the channel they noticed a peat layer appearing intermittently from under the mud, so they recorded all the lengths that were exposed along the channel but obviously they could not see its full extent as it was buried under thick mud. Three numbers to record it (**Line Nos. 10306, 10307 & 10308**). AMC and RB cleaned up a section of the peat so all the layers were visible and the team could record how deep it was. There were two distinct layers, the upper layer was a very dark peat approximately 0.05m deep, quite laminated with the remains of reeds visible within the deposit along with the occasional snail shell. The second layer was a lighter brown with occasional pieces of reed still visible and marked concentrations of snail shells – it was very different to the peat layer Line No. 10304 and lay above blue-grey clay.

AMC and RB headed further down the channel to see if they could access anymore features. Although it was possible to get out quite a long way along the tide-cut channel, on either side of this narrow route there was deep sucking mud over 1m deep. What was apparent was that many of the fishing structures recorded to the E and NE on the NMP were actually relatively recent net line hangs rather than weirs. As the tide was coming in early because of the wind and the channel was starting to fill up with water, they returned southwards once more. Meanwhile NW and BW used the laser to take a point out in the mud

(Point No. 84) – this was used to record the fact that the team members could not physically access this area but that they could see lots of modern net hang lines which were probably the ones recorded on the NMP/HER as fish traps.

As the team headed back in NW picked up an impressive ammonite fossil he found in a rock nearly 0.8m long. Richard helped him carry it partway back – it was lovely but rather large!

Hills Flats – Hayward Rock 22/09/2010

SMP2 PU SEV3

Intertidal and shoreline survey by BW & NW

Low tide: 15.20 PM BST

Rationale: To investigate in more detail a complex of fishing structures noted by Severn House Farm which was previously visited on the 5th August but due to a misinterpretation of the tide times they had arrived after low tide, so only had minimal time to record just a few features.

NW and BW arrived at c. 2.30 PM and parked up next to Severn House Farm, and the weather was clear and sunny and warm. They then suited up and proceeded out onto the intertidal zone almost directly 'in front' of Severn House Farm, i.e. just to the north-west of it, near the rock outcrops called The Cup and Hayward Rock. They located the area of postholes recorded during our last visit and then proceeded from this spot to find and record the other features in this area.

The southern end of the western arm of the large fishing structure seemed to be of a different type of construction and on a slightly different alignment, so we recorded it as a separate feature though it was probably contemporary with the main structure (**Line No. ???**). This consisted of a double line of staggered wooden posts, many of which had markings and metal fixings assumed to be the remains of horizontal attachments. These posts were placed in rock-cut postholes and often had numerous cut wooden wedges holding them in place and the remains of whole roundwood stakes, which were obviously the eroded remains of an earlier phase.

In the area to the east and west of the double line of posts were many rock-cut postholes. These were often covered in seaweed which made them hard to spot, but they were clearly cut into the red marl rock shelf. They were fairly consistent in size, measuring between 0.2-0.4m in diameter, some were filled with sand and pebbles while others still had the remains of wooden stumps visible within them. The wooden stumps in the postholes were a mixture of cut and round wood pieces which were interpreted as the remains of eroded posts and the wedges to hold them in place. With so many postholes visible in a small area it was often hard to determine which posthole belonged to which sequence; and there were a lot of overlapping lines. The team interpreted them as best they could; identifying lines by the diameter and orientation of the postholes but many of the lines were open to interpretation

The team walked along the western arm of the large net line which consisted of a single line of stakes with the remains of netting snagged around the posts. There was evidence that there were many different phases of this net line with post holes containing eroded posts running on roughly the same alignment. There was some protection of the posts with sand or cement filled rubble sacks packed at the base of the posts in places. BW and NW noted that there were a few sections where wattling or weaving could be seen lying at the base of the posts partly covered by sand and mud. This line also had a lot of other debris washed up against it including a watering can, a road cone, wooden logs, overalls, metal stakes and sanitary products (nice – one can only assume that there is an outflow pipe nearby!).

The rock shelf plateau on the 'inside' or south-eastern side of the V remained partly covered by water but the team were still able to record numerous rock cut post hole alignments. However, they knew from their previous visits that there were more but these unfortunately remained inaccessible.

Due to the tide, the team members had to record the post line running across the mouth of the feature and the eastern arm of the net line with the laser. They had accessed these features on a previous visit, however, and taken lots of photos; and knew that they were of the same construction as the western arm which they had already walked along. Wattling was visible in the eastern arm but it was higher up on the post than the wattling they had seen on the western arm.

Whilst almost at the apex of the feature, the team noticed two outlying stake structures roughly 50m to the west of the large feature. They headed out to record these features which were both single line structures formed from wooden stakes. Whilst recording the northernmost line they noticed that the tide was coming in around their ankles so they decided to make a hasty retreat. The incoming water had churned up the silt and it was hard to see deep patches of water.....hence why both NW and BW ended up with water-filled wellies! They headed back to the van and decided that another trip to this site would be worthwhile to finish the recording of the postholes.

Collow to Bullow 04/10/2010

SMP PU GLO3

Riverbank survey by AMC, BW & NW

Low tide: c. 15.00 PM BST

Rationale: To walk along the shoreline between Collow and Bullow Pills, in order to spot any fishing related structures, and also to record some of the current and possibly older features present around the two boatyards at Collow and Bullo.

The team arrived at the turn off on the southern side of Newnham where they were hoping to park. Aerial photographs on the GIS had been used to identify this as a suitable park up site, but since these images had been taken 4-5 years previously a padlocked gate had been installed to limit vehicular access, and the only two access lanes were in any case marked private for cottage use only. It was not clear how anyone actually gained access to the 'boatyard', though as the three vessels moored/sunk there appear to be large hulks it may be that no-one actually works on them anymore. The GCCAS team might have to approach the cottage owner directly if there is time on another occasion, to see if they can arrange access. The weather was wonderfully hot and sunny.

The team therefore had to proceed southwards along the public footpath, but this ran along the top of the steep cliffs and did not give access to the actual river bank below. As they walked along, however, they were able to take cautious sightings over the edge. Apart from stepped rocky shelves and mud deposits, and tangles of driftwood, they did not identify any archaeological features. Using binoculars they were also able to scan the western shoreline opposite from us at Arlingham, just to the north and south of the Old Passage Inn, and apart from one or two known pillboxes they could not see any features along there either.

Moving southwards through a woodland path, the team came to the small hamlet of Bullo. The team took some photographs of the disused dock basin that apparently closed in 1926, but which was dredged out and had new lock gates installed in 1991 as part of now aborted plans to turn it into a marina. Some large steel vessels are currently berthed in the outer dock but these seem to be used as static homes. Once again, the only way to access the riverbank at this point seemed to be through a private boatyard, and no-one was around when the team tried to make enquiries about the possibility of doing this.

The team therefore headed back northwards to the van, and drove to the car park on the northern side of Newnham. No features were evident along the river bank there, but they did walk southwards a short distance and took photographs of the remains of the concrete ferry pier from the old crossing that used to operate across the Severn to Arlingham.

As there was no more that they could usefully do out there that day, the team returned to the office in Gloucester.

Woolaston/Grange Pill 05/10/2010

SMP PU TID1

Intertidal and riverbank survey by AMC, BW & NW

Low tide: c. 1.30 PM BST

Rationale: To investigate the palaeochannel at Grange Pill to see if there were any wooden structures visible in it/next to it that might be prehistoric in date, and if there was time, to examine the area of Romano-British find spots N of Guscar Rocks.

The survey team drove down to Woolaston and asked one of the owners of Woolaston Grange for the key to the gate across the track down to Grange Pill. She showed us where the key was and this allowed the team to unlock the bollard installed there to stop access without permission. The track was more heavily rutted than when NW and AMC were last there over a year ago, but they parked up near the end of it at c. 11.45 AM and had a quick spot of lunch. They then suited up and accessed the intertidal zone at the SW side of Grange Pill, by the line of subrectangular concrete culvert pipes used as shore defences.

There was much less mud present than on the last visit in 2009 during the Phase 2a Pilot, both in terms of extent and thickness. Perhaps the area had been scoured following the recent heavy rains and the associated greater water flow within the river. The team were able to proceed to the SE down the sloping intertidal zone, which was a mixture of thin mud and reddish marl outcrop and shingle, featuring a number of natural 'shelves' or ledges' that were largely horizontal, higher up slope from the steeper edge of the actual active river channel. On the way down towards the river the team passed a possible linear arrangement of loose stone rubble. This was partly buried by mud, and may simply represent where stones had accumulated naturally along a tide line. It is possible that this was the remains of a structure, however, perhaps associated with the medieval quay. This may even be part of the stone structure recorded and published by Townley in 1999 (as site G). It was only photographed rather than being fully recorded.

The team reached the area where the peat shelves and associated submerged forest remains were present, and these were highly visible. Extremely large tree trunks had been exposed, some up to 20m in length and 1m in diameter, with many fallen branches and tree root boles also visible. Some tree root boles were 2m across. Some of the root boles in particular were associated with peat deposits up to 1m thick that sloped with the underlying geology downwards to the SE. This was a dense, black and very 'woody' peat, full of smaller branches and twigs. Several different layers of peat were visible in some of the eroded sections, separated from one another by laminated deposits of blue-grey clay. As there has been much work done on the peat and submerged forest deposits at Woolaston (Brown *et al.* 2006; Townley 1999), the team did not bother recording any of this formally, although they took photographs of some of the more spectacular trees and informative peat exposures. In one place a modern wooden survey pig had been driven into the surface, so this was photographed – it probably related to Brown *et al.*'s survey and planning. This appeared to have been driven in next to a horizontal hurdle element that appeared to be an archaeological structure.

The area of the palaeochannel was apparent as a slightly lower and gently concave area of the intertidal zone approximately 30m wide with shingle ridges on each side. Unfortunately, the team could find no traces of any wooden structures in it or immediately adjacent to it. There were some tree trunks and large waterlogged branches within it – some prehistoric, but also one probable driftwood root bole that had been swept in.

Just a few metres to the NE of the palaeochannel, however, the remains of numerous woven wicker and hurdle structures were identified, some of these almost certainly the ones recorded by Townley 1999, but more were evident. There was simply too much complexity for the team to be able to elucidate all of the structures – many were rather fragmentary, at least on the surface, and making sense of this would also have entailed a fair degree of cleaning up of the various features visible. Most of the features were buried under the mud and so only the top ends of the woven features could be seen poking out of the mud. NW therefore marked out a general line around the main area of the structures (**Line No. 10326**). The team then took samples of wood from 5 structures/groups of stakes and hurdles, which were recorded as a series of points (**Point Nos. 86-90**). These samples were for species ID and/or dating. Each point had one sample bag of wood removed, except for point 89 which had two bags taken. Point 89 was taken from an area of stakes surrounded by the remains of trees and roots, therefore although the team took samples from wood that they thought were stakes, there is a small possibility that one or two could be roots. Sample Point 90 was taken from one of the smaller and more intricately woven possible baskets, so this may only be suitable for species identification.

There seemed to be several different structures/types present, however. Firstly, there were very finely woven arcs of twigs, each twig no more than 5mm thick, and these were almost certainly the remains of some form of fish basket. These appeared to be at least 0.30-0.40m long, and broadly oval or elliptical in shape (N.B. very much like Townley's Site J Fig. 2d & Site H Fig. 2e). Slightly thicker elements (10mm) seemed to form horizontal braces and outer frameworks for some of these probable baskets, and in some instances there were also 0.03-0.05m thick horizontal and vertical stakes/hurdles that seemed to be holding these baskets in position or incorporating them into wider structures. The nature of such structures could not be ascertained, however, but they were certainly not putcher or putt ranks. Some might have been the remains of wattled fencing or walkways. Townley noted two possible V-shaped weirs at Woolaston, and another example at Waldings Pill to the SW, but these could not be identified during this particular survey visit – perhaps they were partly buried in shingle, or perhaps they had already been eroded. In places there were fragments of horizontal hurdling 0.01-0.02m thick woven between and held in place by vertical or angled stakes up to 0.10m in thickness, and these may have been the leaders or arms of V-shaped traps, but it was not possible to discern any overall pattern to them. Confusingly, a few of these elements appeared to have been anchored to pre-existing wood/roots from the submerged forest, so the team avoided these with their sampling in case they ended up with ancient wood.

Right at the edge of the main current river channel and at the day's tidal limit, approximately 10m to the SE of the main concentration of basket-like structures, additional wooden structures were identified in two places c. 5m apart on the edge of one of the shelves, consisting of horizontal hurdles and some vertical stakes orientated approximately NE-SW. These were all fragmentary and heavily eroded. One of these groups was also sampled (**Line No. 10327**). This could have been part of the arm or leader of a V-shaped fish trap, but alternatively they might represent revetment of this part of the intertidal zone to limit erosion to the fishing structures slightly higher up the zone. There was no horizontal brushwood apparent though, as with post-medieval and early modern 'cribbing'.

Other features were noted that appeared to consist of frameworks of slightly larger hurdles 0.03-0.05m thick, and lying horizontally on the intertidal surface. It was not clear if these were vertical leader elements of fish weirs that had simply fallen over, or if these were designed to be horizontal, possibly part of hurdle trackways similar to the example Townley found further to the SW at Horse Pill. One unusual and apparently horizontal structure consisted of a frame of two slightly curved but broadly parallel rods up to 0.03m in diameter and set c. 0.20-0.25m apart, with cross-struts 5-10mm wide running between them at 0.03-

0.05m intervals. Most of this structure appeared similar to a small, subrectangular 'snowshoe', although some of the cross-struts seemed to run off to one side. This may simply be a flattened part of a fish basket of a different type, but it seemed more specific than this. It may have been a salmon frail, used for transporting individual fish. This area of the intertidal zone should definitely be surveyed and recorded in much more detail at some future date by another project (this sadly not really being within the remit of the Severn RCZAS).

Having taken the samples, the team then proceeded to the SW along the intertidal zone towards Horse Pill. Approximately 300m to the SW there was a large pile of loose stone on the otherwise largely stone free gently shelving marl geology. The stones were roughly oval in plan with the long axis of the pile c. 10-15m in length and orientated roughly NW-SE, and the shorter width c. 5-8m across. The subangular blocks were up to 0.50m in length, and it was evident that tidal forces had begun to spread the stones out to the NE and SW. Given the largely stone free nature of the intertidal zone in this area, these stones would appear to have resulted from a deliberate dump, but they were too far down the foreshore to perform any revetment function. They may have been a dump of ballast, but the lack of weed growth or silting on them suggested that they were not very old. Only photographs were taken of them.

Approximately 500 metres further to the SW were the remnants of a relatively modern fishing station, consisting of wooden stakes squared in cross-section, metal poles and concrete railway sleepers, the latter no doubt derived from the nearby railway line, hopefully from a disused stash of spare sleepers rather than the working line itself! The concrete blocks may have acted as net weights, or may have been used to support additional upright posts which have since been removed. As this probable net hang was of recent date, it was only photographed and not formally recorded.

Some 150m to the SW were the remains of two probable putcher ranks, both aligned roughly NW-SE. The first feature consisted of a row of pairs of large wooden posts 0.10-0.15m in diameter, a few possibly old telegraph poles, many of which were surrounded by rings of stones used to support them (**Line No. 10330**). The two poles in each pair were set c. 1.5-2m apart from one another, and each pair was spaced 5-6m apart. The poles projected 1-1.2m above the foreshore, and although some were eroded most were in good condition and were probably relatively modern. Various iron bolts, nails, fixtures and lengths of metal chain were scattered around, as well as concrete slabs with iron fittings. No baskets or horizontal elements were present but this was almost certainly a putcher rank of relatively recent (20th C) date.

Less than 10m to the SW was another putt or putcher rank, on a slightly different alignment (**Line No. 10329**). The wooden posts comprising this structure were also c. 0.15-0.20m in diameter, but most were generally slightly thinner than those in Line 10330. The posts were spaced about 5m apart in the line, and the lines were about 1-5m apart but they become more spaced out as they extended SE down towards the river. They were arranged mainly in opposed groups of twos or threes rather than pairs, and although a few of these were upright, most were angled inwards into the line of the structure at c. 45-60 degrees. This seemed to have been the result of deliberate structural intent rather than later disuse. At the SE end next to the river there were two sets of paired posts rather than one set of paired posts, and also at the NW end nearest the bank. Many posts were obviously coniferous. Around 0.08-0.10m in diameter, they looked relatively modern and some still had bark attached to them. On the SW side of the feature were some additional groups of crossed posts – it was not clear if these were supports/bracing struts for the main structure, or represented an early phase of structure. The posts were slightly more eroded than those in 10330 and together with its different form of construction, this may indicate it was slightly

earlier in date, though probably still 20th C in origin. There were a few tabular pieces of stone lying around the base of some of the posts, probably to support them and/or provide a stable surface underfoot.

As the tide was now coming in very quickly the team decided to return north-eastwards back towards Grange Pill, and thence to the van.

English Stones 06/10/2010

SMP2 PU BRIS2

Intertidal Survey by AMC, BW & NW

Low tide: c. 1.20 PM BST

Rationale: To investigate the possible fishing structures recorded at English Stones and the northern part of Severn Beach, as recorded by John Allen from APs and by the NMP.

The team parked up at Severn Beach in the cul-de-sac and suited up. The weather was warm with hot sunshine in between cloudy spells. The team members proceeded westwards out onto the intertidal zone, where there was a narrow (c. 20m wide band) of deeper mud by the shoreline but then mostly shingle ridges and sandstone, mudstone and red marl rock platforms.

On the southern end of the large English Lake pool/channel in the bedrock, the South Glos HER had recorded feature 12144 as a fish trap, and this has been published by John Allen (2005: 40) as number ES-4 (**Point No. 91**). It is in fact *not* an anthropogenic structure at all, but rather a natural geological fault or shelf forming an outcropping seam of bedrock curving out across a tidal pool, giving the appearance of a slight weir.

The team then moved to the north in order to investigate two further previously recorded structures (NMP FID 11809/HER 1465104; and MSG 4283/PRN 7067). Two stone fish weirs built out of rubble were visible, but unfortunately as it was not an especially low tide (1.3m) they were both lying in water that was just a little bit too deep (c. 0.5m) to safely access on foot, especially as the outgoing tide was flowing very swiftly over the intervening area. Both were therefore recorded with the TruPulse laser, and photographed from as close a safe distance as possible. The first structure was only visible as one gently curving bank of rubble blocks orientated broadly NE-SW, some of the blocks up to 1m in length but most less than 0.5m long (**Line No. 10331**). The one visible wall or arm appeared to be at least 1m high in places, and there was no sign of another arm, though the complete plan and dimensions were hard to establish due to the water levels. This was not recorded by Allen, but it does not seem to be the larger structure recorded by the NMP either.

Just to the E of 10331 was a much more substantial V-shaped stone-built fish weir; that again could not be directly accessed due to the water levels. The two arms of this structure were recorded with the laser as two separate lines (**Line Nos. 10332 & 10333**), as the actual apex lay largely underwater. The slightly sinuous arms formed an acute V-shape, and there several metal poles visible at the apex. These may relate to two net hang lines, however, that may have been established on the existing earlier fish weir feature (see 10334 & 10335 below). A large feature has been recorded in this area by the NMP (No. 1465104), but the lines we recorded are much smaller and seem to be on a different alignment so it was not clear if what the team recorded is the same feature recorded by the NMP. (N.B. The NMP plot (NMP FID 11809/HER 1465104) does not seem to be in quite the right position and on the right orientation, however, so it may be that a lack of reference points has meant their transcription is slightly out). Similarly, Allen recorded this as a 'tick-shape' with a much shorter western arm, yet even on the AP he published it is clear that the arm actually was longer, just visible underwater on the image he used.

Parallel to the western arm 10333 and located just 1-2 metres W of it was a line of metal poles forming part of a net hang line (**Line No. 10334**). These also extended further to the NE, continuing the basic line of 10333. There was also a net hang line extending to the NE

from bank 10332 (**Line No. 10335**). The end of this was staggered slightly by 1-2m from the end of 10332, but it was apparent that between the metal poles of 10332 there were some lines of stone rubble just poking out of the water. These may have been from net weights, but it may be that 10332 was longer than recorded and originally extended further to the NE, with the gap between it and the SW end of 10335 perhaps being a gut or outflow channel. The poles at the apex of 10332/10333 were probably associated with these net hangs, although it is possible that the net hang and the weir were broadly contemporary. Net line 10334/10335 was made up mostly of angle irons with some road pins and scaffolding poles, so it was probably of very recent date.

After stopping to chat to some fishermen and admire their conger eels (!), the team then moved further to the SE to see if they could identify any more of the possible fishing structures recorded by Allen and also on the South Glos HER. In the location of South Glos HER No. 12143 there was a natural shingle and gravel bank or ridge (recorded by Allen as ES-3). On our previous visit, the team had recorded the lack of any structure here (**Point No. 41**) and noted that the feature recorded on the HER did not appear to exist. The published AP (Allen 2005, fig. 2g) is also far from convincing as a fish weir structure, but it is just possible, albeit unlikely, that there was a feature here and that its remnants actually formed the basis for subsequent natural deposition and the formation of the gravel and shingle ridge. No traces of any wooden posts or stakes were noted on the intertidal surface in this area, however, and it seems more likely that a purely natural shingle ridge was misidentified as a putt or putcher rank.

At the location of South Glos HER No. 12146 (recorded by Allen as ES-7), there actually was a short line consisting of 5 low stakes, 2 of which were wooden and 3 metal, the latter iron road pins with nylon rope tied around them, 2 of which had been bent into U-shaped hoops. The wooden posts were also very modern and also have the remains of netting tied around them. The team therefore did not make a formal record of this feature, but simply took photographs. It is thus possible that Allen mistook a relatively modern net hang line for a fish weir, but as his photographs were from the late 1940s and 1969, it may be that there were originally more wooden posts in this feature.

At the location of South Glos HER No. 12147 (recorded by Allen as ES-8) there was only a natural shingle, gravel and sand bank, with one small modern wooden stake set on the northern edge of this bank. This was not formally recorded, but was photographed. It again seems likely that a natural feature was misinterpreted by Allen as a fishing structure, based on lines apparently visible on the APs.

As the tide was coming in and the nearest possible unvisited fish weirs were some 400m to the north, and as it was getting late in the afternoon, the team decided to head back to the van and return to Gloucester.

Oldbury Flats – Aust to Littleton 07/10/2010

SMP PU BRIS2

Intertidal survey by AMC, BW & NW

Low tide: c. 14.40 PM BST

Rationale: To take samples of wooden stakes from the V-shaped stake-built fish weir structures recorded previously by the GCCAS team on 22nd June.

The survey team arrived at the small car park by the Whale Wharf industrial estate and parked up, then suited up and walked SW along the salt grazing. They then walked out onto the intertidal zone near Blackstone Rock, which had less mud lying across its surface than the last time the team members were here – the recent heavy rainstorms and high tides seemed to have contributed to a scouring effect, exposing more of the recorded structures, but also several new features we had not previously identified, or had only recorded parts of. They therefore took additional photos of known structures as some of them were showing up much more clearly. The light quality was also exceptionally good.

The team started at the SW end of the previously recorded area, and worked back towards Littleton Warth in the NE. They took samples from the first V-shaped or T-shaped fish trap structure (Line No. 10015) – one larger vertical roundwood stake, some bits of smaller stakes plus some thin brushwood elements that had been woven horizontally between the vertical stakes (**Point No. 92**). Line 10015 was more exposed than when it was originally recorded in June and along the northern side of the stake line in particular there were additional small angled stakes just visible above the surface. The GCCAS team left a modern wooden site peg in to mark the position of the larger stake they had removed, in the event of any future detailed planning.

The team then moved to the NE, where they sampled a larger stake roughly squared in cross-section from another previously recorded V-shaped structure, Line No. 10021 (**Point No. 93**). The large stake was removed from the western arm of this feature, from near the centre of its length, along with a few smaller outlying stakes. Once again, they left a modern wooden site peg in to mark the position of the larger stake they had removed.

Further to the NE, the team members noted a small feature not previously identified, consisting of a small, roughly V-shaped arrangement of stakes approximately 2m long on its NE-SW axis, with the apex pointing NE and the splayed open end facing downstream to the SW (**Line No. 10336**). The stakes were quite small (up to 0.05m diameter) and arranged mainly in two single lines, the stakes being 0.15-0.20m apart. There were a few stakes lying on the inside of the feature but no stakes forming arms leading into it. It is likely that this was the setting for where a single fish trap or basket was pegged out, rather than part of a putt or putcher rank.

Just to the north was a line of stakes orientated approximately NW-SE, at rough right angles to the bank (**Line No. 10337**). At the SE end the eroded upright roundwood stakes were spaced about 0.30m apart, and were c. 0.04-0.05m in diameter. Further to the NE there were some angled stakes that appeared to have been woven between the uprights, all facing towards the NE at quite a pronounced angle. This was probably the remains of hurdling, and this feature may have been one arm or leader of a V-shaped fish trap. If so, then this trap or weir might have been designed to catch fish on the outgoing tide. There was no visible basket or another arm at either end of this feature.

Nearby was a group of stakes that was not a clear linear feature but rather a somewhat diffuse spread of stakes, plotted as a roughly NE-SW line (**Line No. 10338**). The stakes, most 0.04-0.06m in diameter, were spread over a roughly 6m wide area, and although in some places they appeared to be forming lines this was not clear and there was no obvious form or structure evident. It is possible, however, that these stakes represented the eroded remains of one or more V-shaped features.

Moving to the NE the team noticed that a feature previously recorded on an earlier survey visit in June (Line No. 10024) was more exposed, and with the additional scouring what had been an unclear group of stakes had resolved themselves into the remains of another V-shaped structure, and the team therefore amended the original record with a new GPS plot (**Line No. 10339**). The wide angle of the V faced the incoming tide, and there was a cluster of stakes forming the apex of the V. The westernmost arm was constructed using hurdling, with some of the stakes angled towards the north. A sample was then taken of wooden stakes from the apex of 10024/10339 (**Point No. 94**), consisting of one large stake and a few smaller examples.

Just to the NE of Line 10024/10339 there was a circular arrangement of hurdling/weaving with the hurdling woven around vertical roundwood stakes set in a circle at least 1m across (**Point No. 95**). Well-preserved withy ties were visible in places tied around some of the stakes. This structure may have been a separate feature in its own right, or more likely, it was the catch basket of a V-shaped weir like other examples in this general area. Another point was taken nearby on a small area of woven twigs, possible in association with a single stake that had fallen over, unless this was part of one overall structure (**Point No. 96**). It is likely that this was part of a fish basket, or less likely part of a hurdle fencing panel. This feature was situated on the edge of a shingle bank and was eroding from blue-grey clay, so more remains of it were probably buried under the surface. Another point was taken on yet more fragments of hurdling (**Point No. 97**), associated with occasional larger stakes. This was possibly the remains of a single basket fishing station, or somewhere where loose remains had washed up. The few stakes present were lying at an angle, and it was not clear if these have fallen down or if this was the original design. It did look like hurdling with the material woven between upright stakes now at an angle, perhaps curving around in a slight U-shape to face the outgoing tide. At the NE end of this feature was a larger squared stake 0.08m across, possibly oak. The other upright stakes were roundwood and 0.05-0.06m in diameter, with the hurdling being much finer at 10mm in diameter. This feature could be investigated further at a future date if resources permitted.

Moving back along the intertidal zone, the team were able to add additional information to an earlier record (Point No. 25). This was located just to the SW of V-shaped features 10030 and 10031, and resolved itself into another circle of stakes c. 1m in diameter. At the NW end there were two lines of small stakes apparently leading out of/into the circle. To the north there was a random assortment of stakes between 3-15m away, though it was not clear if these were related to it. This complex may therefore have caught fish on both the incoming and outgoing tides. At the apex of V-shaped feature 10030, another subcircular arrangement of stakes was identified approximately 1m across (**Point No. 98**). This was probably another basket holding structure, so clearly there was a distinct form of this type of fish weir in use along the middle Severn. The stakes in point 98 were mostly roundwood, but some were split and quartered, and others squared. Samples were taken of the stakes in the Point 98 structure. There were also a few outlying stakes nearby.

Another part of the V-shaped stake-built fishing weir complex represented by lines 10030, 10031 and 10032 was also recognised. This single arm consisted of low and eroded stakes orientated roughly NW-SE, with the NW end largely covered by mud but the SE end fairly exposed where the mud had been scoured away (**Line No. 10340**). The stakes were mostly

roundwood and set in groups of 2 or 3, some set at angles and part of hurdle panels. No apex was identified, although the faint remains of a possible basket or catching/holding circular structure were just visible.

The scouring of the mud again clarified some features originally recorded in June. Another line of roundwood stakes (**Line No. 10341**), in a very gentle arc or curve, actually linked up with a previously recorded line (10037) to form another probable V-shaped fish weir. The stakes in 10341 were up to 0.10m in diameter and c. 0.10-0.20m in height, and there were hints of possible internal structures at the southern end of this line. Many of the stakes were angled. At the SW end of previously recorded V-shaped feature line 10038, yet another circular woven feature was identified, approximately 1m across (**Point No. 101**). This was again probably a basket or holding structure at the apex of a leader arm, and was fairly eroded and almost obscured by overlying pebbles and mud. It was evident that the circular hurdling had been set into a narrow channel or slot cut dug through into the underlying peat deposits. In another addition to a previously recorded feature (Line No. 10041), a narrow V-shaped arrangement of roundwood stakes (**Line No. 10342**) was seen to form the apex of a V-shaped weir, with additional larger quartered split stakes being part of an eroded circular basket or holding structure. Whilst most of the southern arm or leader of this structure previously recorded as 10041 was now more visible, a few additional stakes were identified that formed part of a more fragmentary and less well-preserved northern arm.

Finally, the team identified a group of stakes about 3m across that appeared to lie within another structure but which might represent another phase or a different feature altogether (**Point No. 103**). These were mostly quite small roundwood stakes, with one larger cut stake.

Moving back north-eastwards towards Littleton Warth, the team members photographed but did not record some additional peat deposits and associated tree root boles and fragments of branches. A linear arrangement of peat was evident, on a roughly ENE-WSW orientation, but it was not clear if this peat had formed within a palaeochannel that was now eroding out, or if this supposedly linear arrangement was simply a product of it eroding from above one shingle deposit and below another. As the team now had lots of samples, and as it was getting late and they were quite tired, they headed back to the van.

Beachley 08/10/2010

SMP2 PU TID1

Intertidal survey by AMC, BW & NW

Low tide: c. 15.30 PM BST

Rationale: To take additional samples of wooden stakes from the V-shaped stake-built fish weir structures recorded previously, and to try and identify and record the fish trap feature noted by the lave net fishermen the Morgan brothers and reported to GCCAS by Rick Turner.

The team arrived at Beachley and parked up by the SARA lifeboat station. They ate a spot of luncheon, then suited up and proceeded northwards along the top of the intertidal zone. Once they rounded the red marl headland, it was clear that unlike Oldbury, there had been additional deposition of mud compared to the last visit, rather than scouring. There was probably an additional 40-50mm of fine mud across the whole gently shelving area. This added silt meant that the V-shaped weirs were not as clear as they had been previously, and that the other more subtle features in this general area such as more widely spaced alignments of single stakes and the possible horizontal hurdling/trackway were unfortunately not visible at all.

Nevertheless, the team selected several more large stakes from the previously recorded structures and took these as samples (**Point Nos. 104 & 105**). They tried to retrieve them as whole stakes but most snapped off above their points, although BW was able to retrieve a nearly complete example with a pronounced acutely-trimmed 'pencil point'.

There was still half an hour or so until lowest tide, so the team waited whilst the river dropped another half metre or so. Near the two large rocks and the modern stake left in position by the Morgan brothers as a marker of the location, the team members began to notice wood sticking out of the eroded clay channel sides. Some of these were large horizontal and vertical pieces of roundwood up to 0.12m in diameter, and these probably represented some form of riverbank revetment (**Line No. 10345**). In other places along a c. 30m stretch of riverbank there was a line of single spaced roundwood stakes orientated at an oblique angle to the eroding river edge, and one area where horizontal timbers and brushwood were eroding out - this resembled the 'cribbing' encountered elsewhere (**Line No. 10344**). It is likely that all of these features represented riverbank revetments, but whether they were of the same date or represented different phases is not at all clear. The first and largest examples of wood (10345) were sampled – AMC gingerly lowered himself onto a shelf on the eroding bank, and by holding on to a ranging pole embedded in the clay he was able to safely gather some of the larger roundwood as a sample (**Point No. 106**). The line of single stakes and the cribbing were simply not accessible, however.

Immediately below and adjacent to the larger examples of roundwood revetment, the falling river levels were exposing additional roundwood stakes, and these proved to be part of the stake-built fish weir first noticed by the Morgan brothers (**Line No. 10343**). How they obtained their close up photographs safely is not clear – it was not possible at all for the GCCAS team members to get down on to the narrow eroding 'ledge' on which this feature was located. The clay riverbank was extremely steep and slippery. The feature consisted of a broadly NNE-SSW orientated line of stakes forming the westernmost arm, with roundwood stakes up to 0.10m in diameter, some set vertically and some at angles, with the remains of horizontal and gently angled hurdles up to 0.04m thick clearly woven in between them. This arm led to a funnel-shaped apex approximately 0.30m wide that itself led into the remains of

a rounded structure up to 0.50m across, and which consisted of vertical stakes with hurdles and brushwood densely woven around them. This would have formed the trap or holding pen for the fish. There were also remains of the easternmost NNW-SSE orientated arm of the weir, indicating that the splayed open end of this trap had faced southwards or downstream to catch fish on the incoming tide. This eastern arm was much more heavily eroded and fragmentary than that to the west, however, and it was also running off at a different angle to the western arm, implying that the riverbank here had always been at an angle. It was clear though that the structure as a whole was more eroded than when the Morgan brothers had photographed it – the rounded catch basket feature was virtually complete on their images for example, whereas when the team members saw it its eastern side was already largely eroded away. Large blocks of the clay riverbank were cracking and ‘calving off’; and it was clear that this particular fish weir will not be there at all in just a few more years.

Due to the hazardous nature of the slippery steep riverbank right next to the fast running river, the feature was recorded with the laser. It was just possible, however, for AMC to reach some of the southernmost stakes and hurdles in the western arm, and these were sampled (**Point No. 106**). At this point the arm had a very close spatial relationship with wood belonging to revetment 10345, and it may be that these were originally contemporary and formed part of one overall structure. It would certainly make sense for people to reinforce a steep riverbank if they had fishing structures on it; and possible revetment structures in close association with fishing features were also noted at Woolaston and further to the south at Beachley (see below).

It was by now lowest tide, and the team members had recorded the new features and sampled them as best they could. They therefore moved back to the south-west, but as the tide was especially low that day they followed the edge of the water in order to spot any new features, or additional lengths of recorded features. This proved to be the case. One previously recorded line of stakes resolved itself into a probable putcher rank (**Line No. 10010**), with additional stakes recorded near the water’s edge. The team also identified and recorded several new stake alignments, which, although not clearly definable in the much more stony and shingly riverbank, seem to have formed parts of additional V-shaped fish weirs (**Line Nos. 10346 & 10347, 10348**). These lines of stakes were on roughly NW-SE orientations. Some of those embedded in the reddish outcropping marl appeared to have been set within postholes. One possible small row of stakes seemed to be orientated broadly N-S along the edge of the channel (**Line No. 10347**), and these may have been a revetment rather than a fishing feature.

Whilst the team were moving southwards and recording these stake-built features, a British Army Apache Longbow helicopter came in low between our location and the old Severn Bridge, apparently in the process of landing at the army base at Beachley. However, it swooped back in low over the team to check out what they were doing, perhaps just out of curiosity or maybe to confirm that the team members were not a security risk, and for a moment the team felt very glad that they were not Afghan villagers celebrating a wedding!

The riverbank turned into sloping rock shelves, and apart from the few modern features the team had already previously noted and photographed on their previous trips, no new archaeology was evident there. As the tide was now coming in with great speed, the team headed back to the SARA lifeboat ramp and the van parked up nearby. Hopefully the samples that they took at Beachley may provide some dating evidence for the stake-built fish weirs and some of the revetment there.

Gatcombe & Brims Pill 16/03/2011

SMP2 PU GLO1 & GLO2

Intertidal and riverbank survey by TC & AMC

Low tide: c. 13.50 PM BST

Rationale: To have a look at Brims Pill where the Environment Agency have already ceased defending an area as outlined in the FRMS, and have thus abandoned it to salt marsh formation, and to check on possible stake-built structures and putcher ranks between Gatcombe and Brims Pill.

TC and AMC arrived at the end of the lane by Little Hagloe, and parked up just outside the very nice barn conversion. It was a slightly chilly, misty day. After getting changed, they then headed south-eastwards down a hollowed track along the public footpath until the railway line, where there was a pedestrian crossing. The path on the other side then led out onto the shore and allowed access to the intertidal zone, south of Poulton Court. From this point, the team proceeded north-east along the foreshore, which was a gently sloping mixture of laminated clays, sands and hard rock platform, the latter with subrectangular 'boulder' pavements and fault lines.

The team walked past several putcher ranks on the way up, which they decided to leave off recording until they were on the way back. AMC took some photographs of them just in case. There was then an extensive area of rock platform and shingle with nothing visible on it. The team members then moved north-eastwards up to Brim's Pill, crossing over it where it was shallow as it ran across the flat part of the intertidal zone. They then climbed up onto the NE bank and walked along the side of the pill for a while, but apart from a solitary stake sticking out of the side of it at one point, no features were visible. A small area of cribbing with vertical stakes and horizontal elements was identified on the NE 'corner' of Brim's Pill, and the HER appears to show some small structure at this point, but these stakes seemed to be associated with rubble dumps and were thus probably of relatively recent date. They were thus only photographed and not formally recorded.

No fishing structure was identified. In the distance, the team members could see the putcher rank that they had recorded when they had last visited the area south of Awre (**Line No. 10064**) but to the north-east of Brim's Pill. There were no obvious structures in between. The possible fishing features recorded on the HER may thus have already largely disappeared.

We then left Brim's Pill and walked back south-westwards along the intertidal zone, but once again did not identify any features, although there were some interesting unstratified finds of antler and horn core just SW of Brim's Pill that may potentially have been derived from some form of medieval/post-medieval production site.

Approximately 400m SSW of Poulton Court was the first structure we recorded (**Line No. 10349**), a short length of paired coniferous roundwood posts from an early modern putcher rank. It was only some c. 10m long with 6-8 posts on each side, and it was not clear what had happened to the eastern extent of it. The NW-SE line of it, however, was on a slightly different alignment to **Line No. 10350**, a much larger and more modern putcher rank that cut across it some 4-5m to the NW. This more recent putcher extended out into the active river channel, and TC only recorded as much of its length as he could physically access (c. 40m), but there was about another 10m visible as upright footings left partly underwater. As 10350 was so modern, however, it did not seem worth taking the time to set up the TruPulse laser to record this, although of course it was photographed. The main structure consisted of large

upright coniferous posts, some still up to 3m high, and some clearly intended as telegraph poles. These were either set into rock cut postholes which were then packed with additional short posts and/or concrete, or they were bolted to vertical RSJs that had been set into the rocky foreshore. Some of the verticals posts sheathed in metal to extend their lives and were still up to 2.5-3m high, and many of the horizontal supports for the wire putcher baskets still survived – a few of these were coppiced roundwood poles, but most were factory sawn lengths of 2x4 timber. Several rock-supported posts to the south of 10350 were probably originally angled bracing struts. This is probably the main structure recorded on the NMP/HER, due to its size.

There was a sloping glacia flood defence wall along this part of the foreshore made from subrectangular, unmortared blocks, and a flight of steeply angled stone steps led down to the NW end of Line No. 10349. Up on the salt marsh pasture bank above these steps was a collection of abandoned wire putcher baskets, and just to the NE was a small wooden shack with additional putcher baskets, nylon line, plastic fish boxes and other fishing paraphernalia. All of this was photographed, but not formally recorded. The site was thus clearly a regularly utilised fishing station for many decades, and was probably in use until at least the 1980s.

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Approximately 300m to the south-west was **Line No. 10351**, another putcher rank. The intertidal surface here was a mixture of shingle and natural 'blocky' platform. A line of paired wooden posts went down into a slight defile, then rose up again and extended down the intertidal surface for another few metres. After that point, quite widespread erosion of the natural block surface seems to have taken place and this also seems to have removed many of the posts, so its full extent no longer survives. It is possible that driving the wooden posts through the blocky natural rock layer may have accelerated its break-up and erosion. To the

north and NE of the line of paired posts, however, were some additional wooden posts, and there was also a much more eroded pair of large wooden posts situated in the water of the active river channel. The survey team could not resolve all of these into one additional structure, but it is likely that there several phases of earlier structure at this point. As the team members could not really plot them as a definite line, they only formally recorded Line No. 10351, and took photographs of the rest.

Just before the team headed off the foreshore, they noticed a wooden object just a 30m to the south of our original access point. This proved to be the large wooden rudder of a trow or barge (**Point No. 107**), which AMC had actually seen from the train in 2010. The team therefore did some preliminary recording of this and took some photographs – it was held together with large iron bolts and clamps, and part of the tiller bar survives. They also noted some rock-cut postholes and wooden stakes at this locale, but as the tide was by now coming in with some alacrity the team decided to finish for the day, and headed back upslope to the van. As they walked back up the hill, they realised that the footpath followed the line of what was quite a substantial holloway leading down to the possible fishing stations. On the way down this had appeared to be a field ditch, but it was clearly a holloway.

Gatcombe 18/03/2011

SMP2 PU GLO1

Intertidal and shoreline survey by TC & AMC

Low tide: c. 15.50 PM BST

Rationale: To do more recording of possible stake-built structures and putcher ranks between Gatcombe and Brims Pill.

TC and AMC arrived once again at the end of the lane by Little Hagloe, and parked up. It was a nice sunny day and quite warm. After getting changed and suiting up, they then headed south-eastwards down the footpath by the side of the hollowed track again, crossed over the railway line, and accessed the intertidal zone SSW of Hagloe House. They then walked south-west along the foreshore until they reached the large rudder they had briefly recorded on Wednesday 16th. TC filled in the point record for this (**Point No. 107**), and AMC took some more photographs of it.

The survey team then moved just a few metres to the north-east to record a series of rock-cut postholes, some with the stumps of posts remaining in, that they had first seen on Wednesday. These postholes were up to 0.20m across, and whilst some appeared to have no posts left in them and were filled with shingle, gravel and silt, others had the remains of low wooden stakes up to 0.12m in diameter still within them. It was not possible to ascertain what the wood was, but it was very soft and friable. Some of the posts were supported with tabular slabs packed into the posts, whilst others had 4-8 small split stakes inserted next to them, again to wedge them tightly into place. These postholes and posts seemed to form rough pairs, though the possible medial line running through them was somewhat irregular. Each posthole within each pair was up to 0.80m apart from its opposite number, whilst the pairs themselves were at irregular intervals from each other, depending on where those constructing the feature had been able to drive down into the stepped marl and shingle of the intertidal zone. Only three pairs of postholes could be recorded, although it seemed likely that the act of driving the posts in had exacerbated the erosion on this part of the foreshore and so several possible post settings had now eroded away completely as rock had split off. One posthole was selected as the 'type' context for the group (**Point No. 109**), and the rest recorded more briefly (**Point Nos. 109-114**). It seems likely that these postholes represent at least one phase of a putcher rank.

After recording these postholes, the tide was still falling so TC and AMC moved south-westwards towards Gatcombe. Just south of Cliff Grove they recorded the putcher rank that AMC had previously seen from the train, but beyond the NE limit of where the GCCAS team had surveyed up to in 2010. The existing putcher rank there was a very modern structure made up of quite recent appearing coniferous roundwood posts up to 1.20m high, some sheathed in metal piping like examples recorded near Purton (west) and Gatcombe in 2010, with others bolted to metal RSJs (**Line No. 10352**). Metal pins and angle irons also seem to have been used as putcher supports. These posts had been driven into the underlying rock and shingle intertidal surface, and many had then been secured with concrete. To the north and south of the main putcher rank were additional wooden and metal posts that were probably bracing struts, and the whole structure was surrounded by considerable detritus including many wooden posts and additional metal poles that were no doubt derived from the collapsed superstructure of the putcher rank.

The posts of Line No. 10352 higher up the intertidal area by the edge of the narrow strip of salt marsh were all wood, whereas those lower down were a mixture of wood and metal,

probably reflecting the need to replace and repair the lower parts of the structure as a result of tidal erosion. Near the edge of the active river channel were several much eroded, low wooden posts that probably represent an earlier phase of putcher located on the same fishing station, but as they were essentially on the same line these were only photographed and not recorded separately. This structure was recorded by the NMP and was on a 1947 aerial photograph, so there was probably at least one earlier incarnation of it. Although the putcher had been constructed on quite rocky and shingly stretch of foreshore, there was a distinct spread of shingle around it – this might have built up naturally around an existing structure, but some might have been brought in to create a rough metalled surface. Right down by the edge of the active river channel there was what appeared to be a dump of rock and shingle, with some concrete railway sleepers (possibly ‘acquired’ from railway line maintenance nearby) added for good measure. This created a roughly level platform up to 5m wide out into what was elsewhere a much more steeply sloping part of the intertidal zone. Several short vertical metal posts and poles were associated with this.

Just to the north of Line No. 10352, on top of the narrow strip of salt marsh by the side of the railway embankment, there were a series of vertical timbers and some collapsed timber beams from what was probably a small wooden structure like a shack. This structure may have been used to store fishing gear – the remains of several wire putcher baskets were next to it. The baskets and the remains of the wooden structure were photographed but not recorded. Only c. 5m to the south-west of the putcher was a mass of metal poles, nylon netting and also some coppiced wooden poles. These may have all been derived from the collapse and erosion of the putcher, but it is just possible that the wooden remains might be part of an earlier structure that had collapsed and was then covered in later detritus. Only excavation of this mound of different materials would be able to ascertain this. This was only photographed due to its ambiguity.

The team then moved further to the south-west towards Gatcombe, and just to make sure that their survey area overlapped with what had previously been recorded at Gatcombe, they recorded some of the cluster of stakes previously recorded as Point No. 36 on the 6th July 2010, now also recorded as **Point No. 108**. More of the timbers were visible, however, as the area had been scoured. They still did not resolve themselves into any discernible structure, however, and as their general distribution seemed to match the eroding edge of the salt marsh it seems likely that they were some form of riverbank revetment. Many of the timbers appeared to be squared in cross-section though most of what projected up above the surface had been eroded into a narrow, rounded point. One timber had a pre-existing hole bored through it, suggesting that they may have been re-used from some other structure. A lot of the wooden stakes/posts were quite dark and hard/dense, so these may have been oak and/or early modern or even later post-medieval in date rather than modern.

The survey team toyed with the idea of going further south-westwards to where AMC had seen the eroded paired posts of a small possible putcher rank some 300m to the SW of the one recorded in 2010 at Gatcombe, but time was getting on and the team would have been returning after low tide had they done this. They therefore decided not to chance it for one feature, and headed back to the north-east. Only c. 10m to the north-east beyond where they had recorded Point Nos. 107-115, however, they identified around 6 additional very low and eroded wooden stakes, once again in postholes set into the intertidal surface. These roundwood posts were 0.12-0.15m in diameter and the postholes were 0.15-0.20m across, and once again tabular rocks and/or small split stakes had been used to wedge the larger stakes/posts into position. Rough pairs of stakes were visible, with the posts in each pair being c. 1-1.20m apart. They seemed to form a short line on a NNW-SSE alignment (**Line No. 10353**), and were thus possibly part of an earlier putt or putcher rank. Only about 10m of its length could be traced, but there was quite a bit of sand in this area, and so additional stakes may have been masked. The wood was very dark and very solid, and may have been

oak. Along with their highly eroded nature, this could mean that these stakes/posts were of post-medieval rather than early modern/modern date.

Heading back north-eastwards, at the very edge of the water in the active river channel the team also noticed two short and eroded wooden posts (**Point No. 116**), and some 40m beyond these a group of at least 6 posts (**Point No. 117**). These posts were all heavily eroded, none more than 0.08m tall; and they were up to 0.15m in diameter. They were once again very dark and solid, and so might also have been oak. They were probably from fishing structures of some sort, but exactly what form of structure was not clear. Three of the 6 posts at Point No. 117 could be lined up to form a line at an E-W orientated angle to the river channel, and so *could* have been part of the leader arm of a V-shaped fish trap, but as only a few stakes were visible this is speculative. The first locale seemed to be within a natural fault or depression in the harder rock that had subsequently filled up with sand and the second spot was covered in fine silt, so many other stakes may be preset in this area but have been covered. Some of these wooden posts might have been linked to the medieval and post-medieval fishery mentioned in documentary sources, and the holloway that the team had noted on the 16th led down to near this spot, which may be significant.

As the tide was beginning to turn the team finished recording and headed back up the hill towards where they had parked the van, and finished work for the day.

Portishead – Woodhill Bay & Kilkenny Bay 21/03/2011

SMP2 PUs PORT2 & PORT3

Intertidal and shoreline survey by TC & AMC

Low tide: c. 14.45 PM BST

Rationale: To try and find remains of fishing structures/stations mentioned in historical records; and also to try to access a possible V-shaped wooden structure identified on Bing! Map aerial imagery.

TC and AMC arrived at the marina lake and parked in the café by the sea front. After a spot of breakfast and a cup of tea, they changed and then accessed the salt marsh from the promenade to the north-west of the lake, and started walking south-westwards. The salt marsh was cut by lots of tidal drainage outwash channels, which often made the going very difficult. The intertidal zone at this point was also cut by lots of the tidal channels, and the mud was very deep and hazardous so the team could not actually proceed out onto it.

The team members moved further to the south-west along the edge of the salt marsh, and noted several upright wooden posts/stakes. These appeared to form two linear features, which were recorded using the laser as the mud was far too deep to access their full lengths safely. The first (**Line No. 10354**) consisted of four pairs of posts; the posts in each pair being 0.80-1.00m apart from one another. These posts survived up to a height of c. 0.80m, but appeared to be made of fairly recent appearing machine-sawn softwood timbers up to 0.08m in width and rectangular in cross-section. Although these four pairs appeared to form one sinuous NW-SE orientated alignment, one of the pairs was set almost at 45 degrees to the others, so it was not clear if this was indeed part of the same structure. The purpose of this structure was also unclear – elsewhere at Northwick Oaze and other places throughout the RCZAS project area team members have previously interpreted such features as lightweight, crude putcher rank stands, but as TC remarked, the posts/stakes seem rather too flimsy to have supported such a structure. They might perhaps be related to net fishing instead. On any case, they were clearly relatively recent in date – the latter half of the 20th century in all probability.

Approximately 10m to the south-west of Line No. 10354 there was another possible linear structure, though only two groups of wooden posts could be identified (**Line No. 10354**). One was a pair, the other a pair with two additional stakes set side by side in between the other two. Again, their function was unclear, and they too were rectangular machined timbers that were clearly relatively recent in date. No other wooden posts or stakes were noted in this area.

The team moved south-westwards along the edge of the intertidal zone, which in places became rockier and allowed some access further out. Some of the smaller outwash channels cutting through the thick silts could also be followed, where they had cut through down to shingle, rock or clay. The team reached the point on the shoreline of Kilkenny Bay opposite where the possible V-shaped structure had been identified, but nothing was visible even through binoculars, and as it was near the edge of one of the outflow channels the mud was simply too deep and dangerous to walk out to and investigate in any case. The team passed across the southern part of Kilkenny Bay and onto the southern edge of Sugar Loaf Beach, just to the north of the cliffs on the edge of Mariner's Path. Although here the seaweed-covered rock outcrops allowed them to progress further northwards out into the intertidal zone, no features were visible in these, and in between these rock formations were embayments filled with deep mud. It is likely that the depth of silt would have masked any

surviving low wooden features. As nothing further was visible, the team returned to the van and thence to Gloucester.

Arlingham 22/03/2011

SMP2 PU SHAR4

Intertidal and shoreline survey by TC & AMC

Low tide: c. 18.55 PM BST

Rationale: To try and find any remains of fishing structures or stations, and also to investigate a series of features visible on the GIS aerial mapping and Bing! Maps, some of which appeared to be the pillboxes recorded on the NMP/HER, as well as a possible semi-circular earthwork.

The two GCCAS team members drove down to Arlingham and parked up by the Old Passage Inn restaurant. It was lovely sunny weather again. They walked to the public footpath near the Inn, and then started to move south-westwards, but almost immediately noticed a WW2 pillbox that had slid off its concrete base and fallen into the active river channel (**Point No. 118**), where it was being buried by silt and sand deposits. Only part of the block built concrete base/revetment was left on the riverbank, and only one corner of the actual pillbox was visible. There were some wooden planks underneath part of the collapsed structure that initially seemed to be part of a boat hull, but closer inspection showed that this was probably not the case. As these planks appeared to be fairly recent in date, this might mean that this collapse occurred over time rather than in one single incident, with some of it happening relatively recently.

As the team walked along the footpath and/or edge of the salt grazing around the Arlingham peninsula, first to the south-west and then turning south-eastwards, they photographed and recorded a series of pillboxes. The first (**Point No. 119**) had sunk into riverbank silts at an angle, tipping to the south so that only one gun port was just visible above the turf line on the bank. Like all the pillboxes recorded, this had been constructed of pre-cast rectangular concrete slabs reinforced with iron wire, which then had additional concrete poured on top of them to form part of the roof and additional concrete to seal any gaps. It is likely that it will have disappeared altogether within 10-20 years.

The aerial imagery suggested that there might have been a subcircular banked enclosure close to a field boundary near this point, immediately east of or 'behind' the flood bank. This was perhaps some form of post-medieval enclosure, and it was not on the NMP/HER. The field had been ploughed, however, and if this was ever a genuine earthwork then it has now disappeared.

The team passed a modern fishing station with various wooden and metal structures associated with it that were only photographed. The next pillbox (**Point No. 120**) had sunk horizontally into the riverbank silts, keeping it level but with the gun ports now only just visible above the turf. Photographs taken through the gun slits show that the pillbox was filled with silt. There was also a build up of c. 0.15m of earth and turf across part of the top of the flat pillbox roof. It is not clear if this was the remnants of an original deposit designed to camouflage the pillbox, or if it was merely riverine silts that had built up on top after several flooding events.

After reaching Hope Pill, the team turned northwards and cut across the peninsula via Arlingham, pausing only to photograph a few nice barns and have a quick look at the church and churchyard. Some of the old orchards in the area clearly had the trees planted along the tops of ridges, as described in the RCZAS Phase 1 NMP report. They reached the seabank footpath again just to the east of Arlingham Warth, and they then headed north-west to the

northern tip of the Arlingham peninsula before turning south-westwards to walk back towards the Old Passage Inn. Two features recorded on the HER in the area were not visible, and may have been eroded away from the riverbank altogether (MONARCH 1246020 & 1246012). At least one of these now vanished features may have been a pillbox, but the tide was very low by now, so something at least should have been visible if any of it still survived. Similarly, two linear features recorded by the NMP in the middle of the river channel by Broadoak were not visible (MONARCH 1445504). The survey team saw many examples of linear ridges on the edges of sand bars formed by slumping river silts, however, so it seems likely that this is what had been plotted.

The survey team did record a series of known pillboxes in various states of preservation however – these were again all the same type, built from prefabricated, reinforced panels with additional poured concrete. **Point No. 121** had almost completely sunk into soft riverbank silts only c. 5m from the edge of the channel, and just one corner survived, tipped at an angle projected up to about 0.5m. It will have disappeared altogether within 5-10 years. **Point No. 122** was only visible as a turf-covered mound, and just one small corner of the concrete 0.15m long was visible. It must have been repeatedly covered by flood-borne silts. The pillbox at **Point No. 123** had also sunk but rather more evenly and horizontally, and the gun slits and the top of a possible doorway were just visible. Photographs taken through the slits reveal that it was filled with silt. This was one too had its roof partly covered in up to 0.20m of soil and turf – it is again not clear if this was an original WW2 attempt at camouflage, or merely the result of silting.

The team passed a modern riverbank revetment in an area where the bank was actively splitting off – the structure was formed from modern vertical and horizontal fence posts, plus the remains of dumped old Christmas trees! No further archaeological features were seen, so the team members walked back to the van and returned to Gloucester.

Alney & Maisemore 23/03/2011

SMP2 PU MAI2, MAI4 & MAI5

Riverbank survey by TC & AMC

Low tide: c. 19.25 PM BST

Rationale: To try and find any remains of fishing structures/stations; and any other structures that might be visible along the riverbank.

It was a lovely, hot sunny day. TC and AMC left Shire Hall and accessed the riverbank at Castle Meads via the footbridge immediately south of the lock. Just near there they took some photographs of some old tram tracks, and some of the surviving metal fixtures for tying up barges. The survey team members passed underneath the A430 road bridge, where they photographed but did not formally record a series of large squared vertical timber posts in and on the side of the river that were probably associated with some form of wharf or tying up places for river traffic. Slightly north-west of the bridge there were also several large cast iron 'mushroom-shaped' mooring posts, now becoming overgrown in woodland. Again, these would have been used for boats and barges to tie up, possibly whilst they were waiting for high water before proceeding further. The team then passed into the old canal cut, and took photographs of the disused and drained Llanthony Lock and the settings of the old lock gates, but again did not formally record them.

TC and AMC then proceeded north-westwards along the edge of the east riverbank of the Severn across the very low-lying floodplain of Alney Island from Oxlease to Lower Parting. The riverbank had a lot of willow scrub growing along it, and coupled with the still rather high water level this meant that we could see any features along the river banks themselves, although it seems highly unlikely that there was anything of significance.

At Lower Parting the team members turned northwards and walked along the river's edge by Port Ham to Over Bridge by the rail and road bridges there. Apart from some fairly modern vertical squared timber posts and some large circular metal posts, again probably for mooring, there was nothing worthy of even a photograph let alone formal recording. The survey team did take a photograph, however, of the mouth of the old canal cut on the west bank of the Severn near the old vineyard. They walked along the footpath along the eastern bank of the Severn up to Maisemore Ham without seeing anything of interest, then crossed over Maisemore Bridge onto the west bank of the Severn. Virtually underneath Maisemore Bridge on the western bank there were some wooden structures just visible, but these may well have been relatively recent revetment features. These consisted of a group of vertical wooden stakes, and a large horizontal squared timber. They were photographed but not formally recorded.

The team members walked northwards through the village of Maisemore and along the footpath up to Maisemore Weir itself, the northernmost part of our RCZAS project area. Here they sat in the sunshine and had lunch, then took some photographs to prove that they had been there. They walked southwards again and then back across Maisemore Bridge, but instead of returning the way they had come, they moved instead to the south-east along Three Choirs Way, across the northern part of Maisemore Ham. At a large artificial pond and a possible old mill building and just before the East Channel they turned to the south-west along the footpath. Just along near the riverbank there they identified the ruins of a small stone-walled building set into the corner of a field. The roughly dressed stone was largely unmortared and unbonded, and there was also some brick and tile present, early modern in appearance. The building was no more than 6m long and 3m wide, far too small even to

have been a rude peasant dwelling. It was recorded as a single point (**Point No. 124**). The river bank was only some 10m away, and the building was situated on one side of a smaller field or enclosure only c. 30m long and 12m wide. It is thus not clear whether this was a field corner barn or storage building of some sort (and there was certainly nothing to indicate a domestic function), or perhaps a fish house. The former seems more likely, however.

TC and AMC then carried on walking south along the footpath on the west bank of the East Channel, though much of the riverbank and even the far riverbank was hidden from view because of dense woodland scrub. This gave way to partly flooded grassland and the team walked across the floodplain when it opened out once more, and under the A430 road bridges again, but apart from one possible occurrence of cribbing near Over Bridge, photographed but not recorded, they did not see anything of interest. They therefore returned to the office.

Elmore, Weir Green 28/03/2011

SMP2 PU SHAR1

Riverbank survey by TC & JH (no voice recordings made this day)

Low tide: c. 11.29 BST (at Wellhouse Rock)

Rationale: This visit resulted from discussions with Simon Draper (Assistant Editor of *Gloucestershire Victoria County History*) regarding medieval and later records of weirs and Elmore in general. Elmore back and the two Great Walls had already been covered. This visit covered Weir Green to the easternmost footpath running south to the east of Severn Bank Farm to complete coverage of Elmore as that was the point that had been reached on 15 June 2010.

The crack team parked up at Weir Green around c. 9:30 AM. There was broken cloud with some sunshine later in the visit. The tide went out until c. 11:00 and then appeared to be somewhat static.

The survey team immediately noticed timbers recorded by Nick and Briege on the Minsterworth bank opposite Weir Green on 9th June 2010 (Line No. 10003) as cribbing. There appeared to have been more erosion of the bank behind the feature since the earlier photos, and several more photographs were taken on this visit, from across the river. Whilst detailed observations were not possible, there was less sign of cribbing but more substantial timbers seemed to be in evidence. The team members did wonder whether this feature contained elements of the weir that had given the area its name as well as the bank supporting cribbing behind; that had been recorded last year. A lack of knowledge of what a medieval or post-medieval 'weir' in the upper tidal river (rather than lower down the estuary) would have actually looked like and comprised means that the team members were far from certain whether this interpretation could be supported. Nothing was seen at the base of the Elmore river bank in this area due to dense willow scrub and a steep bank, making approaching the edge to look over foolhardy. The team moved slightly south of Weir Green in an attempt to get a better view at the end of the morning, but without success.

TC and JH then progressed northwards from Weir Green, without seeing much of interest. They photographed various features on the opposite or Minsterworth bank, including Highlay House (previously recorded by BW/NW as Point No. 4) and the large number of concrete drainage outflows on the Minsterworth bank), which JH got rather over enthusiastic over.

The next point of minor interest was Groundless Pool, which Simon Draper had said was recorded in documents as early as 1301, suggesting that if it had been created as a result of a sea wall breach this would suggest an early sea wall (Photos 6587-9). This is a medium-sized pond behind the modern river flood bank, with dense brambles along the edge and ducks and swans on the surface, not likely to give up any archaeological evidence to a rapid walk past survey. Whether it results from a breach and consequent erosion or deliberate digging is unclear, either seems perfectly feasible.

On the bend of the river a fish house was recorded (**Point No. 125**), from the (locked) gate in the surrounding fence. This structure is shown on the 1841 tithe plan transcribed by Gwatkin and the 1st edition 1: 2500 OS map (1884-6) where it is marked as 'fishing house'. It is not recorded on the HER. It is of red brick covered with crumbling render, with a clay tile roof and appears to be of 19th century date. It is maintained and was firmly locked. There is a corrugated lean-to at its western end. It has been provided with plastic guttering, downpipes and a water butt recently. JH took lots of photographs of it. Possibly once associated with

the fish house was a series of timber mooring posts on the bank (photos 6591-2, 6597-8), comprising large square-cut timber posts, some with a notch to hold a hawser and also a now derelict concrete and metal structure (**Line No. 10356**; photos 6599-66-6) along the bank at water level.

It is assumed that the mooring posts were used for barges to tie up and await high tide so that they could get upriver past Stonebench. Llanthony Lock was in use until 1924 and it seems possible that these posts were used until then by vessels avoiding the higher tolls on the ship canal. The concrete and metal structure may have been used by smaller vessels after that date.

There was no evidence to indicate what form of fishing was (and is) carried out from the fish house. There was certainly no sign of a putcher rank so some form of netting seems likely.

Westwards and downstream, photographs were taken of more drainage outflows on the opposite bank, random modern timbers at water level and a line of timbers, including iron bracing that seemed to be continuing an extant field boundary line down to the river's edge.

More due to a need to show JH how to use the TruPulse laser than an identified need for heritage management, the team recorded a line of roundwood revetment posts (presumably relatively recent) at water level on the opposite bank (**Line No. 10357**) below a very nice perry orchard and a presumably associated derelict and roofless yellow brick structure (**Point 126**), recorded on the 1st edition OS 1:2500 plan (1884-6) as Poolend House.

Grange Pill to Waldings Pill 29/03/2011

SMP2 PU TID1

Intertidal and riverbank survey by TC & AMC

Low tide: c. 11.43 AM BST (at Narlwood Rock)

Rationale: To try and access a feature seen in 1998 by Toby Catchpole and Elizabeth Townley in 1998, and photographed by TC and later recorded and published by Townley in 1999. This would appear to be a V-shaped stake-built fish trap similar to the examples at Beachley and Oldbury Flats.

TC and AMC initially parked near Woolaston Grange, and as luck would have it encountered the landowner Mr Robin Larkham, who told us where the key was hidden for the locked gate. They were then able to proceed through the gate down the rutted track, under the railway line and park up by Grange Pill, arriving by around 10 AM. They then suited up and proceeded out onto the salt grazing and then the intertidal zone, heading south-west. The team passed the point south-west of Grange Pill where AMC, BW and NW had got to on the last survey on 05/10/2010, by two relatively modern putcher ranks (Line Nos. 10329 & 10330). The team then pressed onwards to the south-west.

In the firm mud of the intertidal surface some animal hoofprints were identified, either deer or cattle, more probably the latter. Some of these were photographed and their location recorded (**Point No. 127**). These could have been left by modern farm beasts, but the laminations within the silt seemed to suggest that they had originally been under the nearby 1-1.5m of overlying alluvial silts. They may thus have been of some antiquity.

Further to the south-west, the line of Horse Pill presented some difficulties, and the team had to cross it by clambering over a fence and move along a narrow track near the side of the railway embankment. As had established from looking at aerial imagery on Bing! Maps and Google Earth, it was apparent that Townley had incorrectly located (on her published map in *Archaeology in the Severn Estuary* 9: 82, fig. 1) her feature at Walding's Pill when in fact there was no archaeology there, other than a few squared wooden posts of relatively recent date, probably for mooring. The team then proceeded south-westwards again along the edge of the salt grazing, but then noticed some timbers sticking up out of the intertidal zone so they made their way down over the eroding bank edge and out onto the mud.

Two small groups of wooden features a few metres apart were recorded, but these were grouped together as one record (**Point No. 128**). The group higher up the intertidal zone consisted of at least 4 vertical trimmed roundwood stakes up to 0.08m in diameter and up to 0.20m high, with the ends of other possible angled elements just visible. These formed a rhomboid shape. Just a few metres to the south-west was another group, consisting of two horizontal roundwood poles up to 0.06m in diameter with trimmed, almost pointed ends; sandwiched in between two layers of thinner roundwood rods up to 0.04m in diameter, forming a hurdle-like platform or trackway structure, but considerably cruder in form than the example the GCCAS team had recorded at Oldbury Flats the year before. This subrectangular structure might have been a small landing stage, or possibly associated with long net or net fishing, but in any case it did not appear to be very old.

The team then tried to move south-westwards, but when they reached Walding's Pill they found that they could not move further south without crossing over barbed wire fences, and without landowner's permission this seemed unethical. It was not possible to skirt around the pill low down on the intertidal zone either, as the mud was just too deep. It was clearly the

case, however, that the V-shaped, stake-built fish trap (Glos HER 20220) was not at Walding's Pill, so it was almost certainly on the side of the next, unnamed pill some 400m further to the SW, which is what the aerial images had suggested. It would be accessible from the farm and riding centre further to the south-west, and someone could do that in the future if necessary.

As it was by now nearing lowest tide they therefore turned around and starting heading back north-eastwards. Where a small stream had cut an erosion scar back into the edge of the salt grazing, they identified c. 20 small wooden stakes and posts that may represented some form of cribbing and revetment (**Point No. 129**). Some were vertical, but others were set at angles or were horizontal – there were also some traces of horizontal 'woven' elements like hurdling. At least 1m of alluvial sediments seemed to overly some of these wooden elements, so the date of this possible structure is not clear, though it could be post-medieval.

Further to the north-east the team photographed but did not record a pronounced deposit made up of iron slag that was visible in the section of the eroding salt grazing edge. This formed a deposit up to 0.50m thick, with lumps of slag up to 0.20m across. At least 1-1.5m of alluvial silt overlay these deposits, so it is possible that they could be Romano-British in date. As this was an irregular exposure, it was only photographed and not formally recorded, but it occurred some 50m NW of Line Nos. 10329 & 10330. The photographs (RIMG 6666-6668) will locate the deposit to within 2-3m, however.

Before the team headed back to the van, AMC took TC down onto Grange Pill to see the submerged forest deposits and also the fish basket structures, but there had been increased deposition of silt there and much less was visible than on the last visit with BW and NW. In the side of Grange Pill itself, TC and AMC did notice a large squared timber beam lying at an angle within the channel of the pill, along with possible evidence of vertical stone revetment. The latter was possibly related to the medieval quay or wharf, though it was not clear if the timber was *in situ* or had simply drifted into the pill. The mud was too thick and too dangerous to get close, so these features were only photographed and not formally recorded. As the tide was now visibly coming in, the team then headed back up the intertidal zone and onto dry land by the van, where they changed and then drove back to Gloucester.

Garden Pill, Strand & Upper Dumball, Rodley 01/04/2011

SMP2 PU GLO5

Intertidal and riverbank survey by TC & AMC

Low tide: 16.25 PM BST (at Sharpness)

Rationale: To 'fill in the gaps' in areas of the upper Severn that had not yet been visited as part of the Phase 2 RCZAS, and to examine some possible waterfront structures seen from the opposite bank of the Severn at Arlingham Warth on the 22nd March 2011.

TC and AMC drove down to Westbury-on-Severn and then down the narrow lane to Strand, in order to have a look at some waterfront structures that we had seen from the opposite bank of the Severn at Arlingham. They parked up by the 'dead end' of the road by around 10.30 AM, where there was a timber structure next to the modern concrete sea wall that might have once been part of a wharf or jetty. It consisted of a vertical, squared timber with an angled bracing timber attached to it 'behind' on the landward side. This was photographed but not recorded. The team then walked north-westwards along the public footpath to Severn Mill. The actual riverbank along here was covered in dense reeds and nothing was visible. By the old mill building itself, now converted into a house but which may have been a tidal mill, there were traces of stone and concrete block walling along the edge of Garden Pill, together with some vertical timbers. None of these was very old, and were just photographed. The bridge over the pill did have stone roughly dressed stone footings underneath it, however, pre-dating the current concrete structure, and these were photographed.

The team returned to where they had parked, and then walked south-eastwards down onto the narrow shingle beach where the tide was going out. A length of mortared stone wall was photographed, and this may again have been linked to an earlier wharf or jetty. Several other blocks of stone and loose timbers in this general area may also have been derived from a wharf or jetty. Unfortunately, at this point the camera battery died – the camera may have been slightly damp from condensation and the battery shorted out. No formal records were made in any case.

The team members then left Strand and drove eastwards towards Rodley, eventually parking up at the end of the lane by Blue Boys Farm. From there they walked onto the salt grazing along the public footpath, for part of the way along the top of the present flood defence bank. They walked eastwards and then north-eastwards around Upper Dumball, but did not see anything of interest on this bank, although they passed by Upper Framilode on the opposite bank where the blocked off entrance to the canal was just visible. As the camera batteries had died they could not take any photographs, however. They nearly got as far as Epney on the opposite bank, but as there were no features visible on the sand bar intertidal zone, and as there was not even any cribbing present, they called an end to the survey visit. TC marked a point (**Point 130**) on the Magellan to show how far they had come though. The team then returned to the van, and thence to Gloucester.

Sharpness to Berkeley & Purton (east) 12/04/2011

SMP2 PU SEV1

Intertidal and riverbank survey by TC & AMC

Low tide: 10.17 AM BST (at Sharpness)

Rationale: To 'fill in the gaps' in areas of the upper Severn that had not yet been visited as part of the Phase 2 RCZAS, in this case the area between Berkeley Pill and Sharpness Docks.

TC and AMC drove down to Sharpness, arriving around 9.00 AM. They parked up in the public car park and picnic area to the south of the docks, then suited up. They accessed the salt gazing along the side of the river via a public footpath just to the south of the large wooden quay/jetty, and walked south.

The tide was going out, and had exposed lots of rocky ledges to the south of the large wooden jetty. They could not access these directly, however, as there was a zone of deep, sucking mud in between the edge of the riverbank and the rocks, at least 20m wide. Further to the south, the rocks could be accessed closer to the riverbank, so the team members headed southwards. When they got to the point where they could walk westwards out onto the rocky ledges, however, rather than walk northwards back up towards the wooden jetty, they decided to keep going southwards in order to cover as much of the survey area as possible. If time and tide permitted they would access the northernmost area of rocky shelves on the way back.

The team members kept on moving southwards across the gently shelving rocky shelves, which consisted of soft reddish-brown marl with isolated boulders of darker, denser rock, spreads of shingle, and a thin covering of mud, washed away in places. There was also some seaweed cover. The team soon identified archaeology, consisting of pairs of low, eroded roundwood posts visible through the shallow mud, and on the scoured areas it was apparent that these were set into rock-cut postholes of a similar type to those at Hayward Rock and near Gatcombe. The postholes and posts were in pairs, within each pair up to 0.80m apart, and the pairs themselves about 1m apart (**Line No. 10358**). The wooden posts were up to 0.15m in diameter and the postholes up to 0.20m in diameter, the posts sometimes held in place by packing stones of marl and gravel, and/or smaller angular wooden wedges or stakes. This was almost certainly a putcher rank.

Approximately 15-20m to the south were further similar posts and rock-cut postholes from another probable putcher rank (**Link No. 10359**). There were more than two pairs of posts here, however, so it was not clear if there were several different phases of structure on the same site, or if it was perhaps a putt rank with additional posts. The former is quite likely though. In both 10358 and 10359 the posts were quite dark and dense, suggesting that they were not recent and/or not made from coniferous timbers. This may imply a later post-medieval (18th-early 19th century) rather than an early modern (later 19th-early 20th century) date.

The team members moved southwards once again, and the mud got thicker for a while, dangerously near to the tops of wellies. A small stream or outflow crossed the intertidal zone, and south of this, they identified further wooden posts and rock cut postholes (**Line No. 10360**). Many of the posts were larger roundwood examples, but in this feature in particular there seemed to be smaller examples of split stakes used as wedges. In fact,

some of the postholes had up to 7-8 posts and stakes set within them, and the line extended out into the active river channel – some posts were visible just above the water level.

There was then a long stretch of intertidal zone, approximately 600m of it, with no visible archaeology, and often with thick mud deposits that were too deep to physically access. Due west of Oakhunter Farm, however, the team members were able to drop back down onto the intertidal zone once again. Immediately to the north of a modern fence line were further paired roundwood posts, probably from another putcher rank (**Line No. 10361**). These posts were larger, up to 0.20m in diameter and surviving up to 0.40m in height; with some again supported by additional split stakes. Many had been driven down into the more shingly intertidal surface, rather than being set in postholes. Some of the posts were leaning at angles. The wood was quite dark and dense, again implying some age, but there were some metal poles associated with this rank, suggesting later reuse.

Approximately 40m to the south-west of 10361 was what initially appeared to be a single, large wooden post set into the intertidal surface, with a cone-shaped eroded upper surface (**Point No. 131**). On closer examination, however, this was found to be an eroded *in situ* tree stump, almost certainly from a submerged forest deposit. The wood was extremely dark and dense. Unusually however, no other preserved tree stumps or peat deposits were visible, although the stump was only c. 1m from the edge of the water level in the active river channel, so it is likely that there were more such remains close by under that water level.

The tree stump was the last archaeological feature that we identified before reaching the edge of Berkeley Pill. That channel was a hideous deep mass of nasty mud, and nothing was visible on the side of its deep mud-covered sides.

The team members then returned northwards, but by the time they got near the large wooden jetty at Sharpness Docks, the tide was coming in, and so they felt it would be unwise to try and walk onto the rock shelves there when these could not be accessed directly from the shore. It seems likely, however, that more rock-cut postholes and low wooden postholes might survive there, and also in the area of shoreline immediately north of Sharpness Docks, between the docks and Sharpness Point (SMP2 PU SHAR8) which again there was no time to access due to the incoming tide.

After getting changed, the team members drove around the docks and took some general photographs of the installations and older-looking buildings, although it was not possible to gain access to the actual working docks area. They then drove northwards to Purton, to re-examine the area of beached hulks to see how recent attempts to stabilise the riverbank and present the vessels had progressed. TC said that the riverbank had been stabilised and more of the vessels was now visible, especially of the large concrete barges. There were many more name plates and historical details. On the negative side, some of the wood on the surviving wooden vessels was in much poorer condition, and had continued to split and warp. There had also been further attempts to burn the timbers of some vessels.

The team took lots of photographs of the vessels at Purton as an erosion monitoring exercise, and then drove back to Gloucester.

Gatcombe (south) & Awre 13/04/2011

SMP2 PU GLO1 & GLO2

Intertidal and riverbank survey by TC & AMC

Low tide: 12.17 PM BST (at Wellhouse Rock)

Rationale: To 'fill in the gaps' in areas of the upper Severn that had not yet been visited as part of the Phase 2 RCZAS, in this case the area south-west of Gatcombe, where AMC had seen remains of a much slighter putcher rank from the train between Purton (FoD) and Gatcombe; and also the northern side of the Awre peninsula or 'loop', where Paul Barnett had said there were also remains of a barge or trow.

TC and AMC drove down to Gatcombe, arriving around 10.00 AM. They parked up near the railway line, suited up, and then accessed the intertidal zone by going underneath the railway arch near the old stone quay. They then walked south-westwards from this point, moving beyond the relatively modern putcher rank we had previously recorded in 2010 (Line No. 10069). AMC took some more photographs of 10069 in any case – what he had not seen in 2010 with BW and NW, because the water levels were higher then, was that the posts furthest out into the channel were sheathed in metal tubes – similar to the examples seen at Purton (FoD) and near Brims' Pill. On the riverbank nearby there was a flattened wire putcher basket that we had not previously noticed – again, this was photographed.

Approximately 500m to the south-west, the team found the features AMC had noticed from the train – a line of posts or postholes. At least six paired roundwood posts were visible just below the edge of the narrow strip of salt marsh by the side of the railway embankment, then there was a gap, and then some additional low eroded posts set into postholes and/or driven into the marl bedrock were visible lower down where the 'stepped' rocky shelves of the intertidal surface had been slightly more scoured by the tide (**Line No. 10362**). These posts were set in pairs about 1m apart, and the pairs were at irregular distances from another (sometimes c. 1m, sometimes less), and most of the posts had smaller wooden wedges/stakes associated with them. Some posts were also visible within the active river channel, poking up through the quite frisky water, so TC carefully recorded the line of these but did not risk wading out too far as there was a sudden drop off. This was a probable putcher rank.

Some 90-100m further to the south-west there were two additional lines of paired wooden posts (**Line Nos. 10363 & 10364**), with the latter being the most fragmentary, shortest and incomplete line of features. Once again, some posts were visible higher up the intertidal zone, there was then a scoured and eroded area on the convex outcropping zone, and then a few surviving posts and postholes near the water's edge. The posts of 10364 were a tad narrower (c. 0.10m) than those of the other similar features, but otherwise these were again likely to be early modern putcher ranks.

As time was pressing on and the team still wanted to visit Awre, they decided not to press on southwards to Purton, and thus there is still a small gap in the survey coverage for this part of the shoreline – only c. 200m though. Although no posts were visible through binoculars, it is possible that some very low wooden posts and/or rock-cut postholes may exist in this area. As the team members walked back to the railway arch at Gatcombe, however, they noticed another line of low, eroded wooden posts protruding from the mud mostly set in pairs approximately 0.80m apart, with each pair c. 1-1.2m distant from one another (**Line No. 10365**). The posts were up to 0.12m in diameter and no more than 0.20m high, and were of a relatively soft wood. The 1-2 nearest the waterline in the active river channel were more

scoured due to the current, and these were clearly set into rock-cut postholes up to 0.20m in diameter. Unlike other similar features north-west of Gatcombe and near Sharpness, there were no clear wedging stakes or packing stones visible. This was also likely to have been an early modern putcher rank. These posts were also quite small (c. 0.08-0.10m), and the line was much more fragmentary. There may have been more than one phase of putcher rank here, as some postholes were not set in obvious pairs.

The team members returned to the van and then drove around to the northern part of the Awre peninsula or 'loop', going through Awre itself and then heading up to Northington, parking up near Northington Farm. They then walked north-eastwards along the footpath which initially followed a narrow lane or driveway out into the fields. The team passed the two extremely large electricity pylons and skirting around the edge of a steep wooded scarp edge, dropping down onto the flat salt grazing land and the riverbank's edge. They walked westwards for a while, but nothing was visible along the riverbank at this locale, other than some dumps of stone rubble that probably represent relatively recent riverbank revetment, and a line of modern timbers, some squared, some roundwood and some re-used telegraph poles. These were of all different heights, one tall example being at least 1.5m high, but although they may have been a fishing station of some sort it seems unlikely that this was a putcher rank. They were photographed but not recorded.

They then walked back eastwards along the edge of the riverbank and did not see anything, not even cribbing. Approximately 900m to the north-east of Northington Farm, however, TC spotted some timbers sticking out of the side of the riverbank. Closer investigation showed that these were the remains of one, possibly two trows or barges, almost certainly the example mentioned by Paul Barnett. All were recorded as one find spot (**Point No. 132**). The wooden keelson and lower wooden ribs or futtocks of an entire hull were visible, orientated roughly WNW-ESE, but closer to the riverbank were a set of upper horizontal and vertical hull timbers on a different, almost NE-SW orientation. It seemed likely that the current had twisted the hulk, wrenching the upper timbers away from the lower hull. An E-W aligned boat shaped hollow in the river silts next to the keelson remains also indicated that the hull had moved. (N.B. Indeed, when AMC later looked for the position of this vessel on Google Earth and Bing! aerial imagery, the boat does appear to have moved significantly in the past 5-10 years since the aerial images were probably taken).

After recording and photographing the boat, the team members walked further to the east, but saw absolutely nothing, not even any cribbing or significant revetments. They reached a position approximately 1.5km of Guy Hall Farm, without having seen anything. They thus took a photograph to show their furthest position, and returned via the footpath and farm track to the van, where they changed before driving back to Gloucester.

Sedbury Cliffs to Pillhouse Rocks 13/04/2011

SMP2 PU TID1

Intertidal and riverbank survey by AMC & NW

Low tide: 11.57 AM BST (at Inward Rocks)

Rationale: To 'fill in the gaps' in areas of the upper Severn that had not yet been visited as part of the Phase 2 RCZAS, in this case the area north-east of Sedbury Cliffs up to Pillhouse Rocks.

NW and AMC drove down the A48 to Sedbury, turning off to find parking near Tump Farm. No parking was available, but Nick talked nicely in farm language to the farmer, who not only let the team drive into the yard but said that they could drive up the track and park in the field south of Park Grove to the west. This they duly did, although the track was somewhat rutted and a bit tricky in places, as they were driving in a van and not a 4x4.

After parking the team members suited up, then started walking westwards along the footpath down the hill towards Pighole Pill. This track was heavily rutted, and clearly used for off-road adventure activities. Pighole Pill was very picturesque, but there was no archaeology visible, so Nick and AMC moved south-westwards, initially along the edge of the narrow strip of silt grazing but then dropping down onto a series of relatively flat rocky ledges covered in up to 0.15m of mud.

The team members walked quite a way without seeing anything, but once they had got down to Sedbury Flats, they identified a few small paired posts from a WNW-ESE orientated putcher rank, these roundwood posts being up to 0.10m in diameter and only protruding c. 0.10m above the soft silt (**Line No. 10366**). These were presumably set into rock-cut postholes, though these were not visible under the mud. Extending off the line of paired posts at c. 45 degrees was a line of 3-4 single stakes spaced approximately 1.5-2m apart, recorded as part of the same feature. This may have been a leader arm, originally of upright hurdle panels, that directed fish into the putchers. It was very fragmentary however, and presumably we only recorded a small portion of it. This feature was only some 25m north-east of the northernmost feature (a putcher rank) recorded at Sedbury Cliffs in 2010 – this earlier feature being Line Nos. 10076 & 10077. These may have formed part of the same fishing station. Nick and AMC could thus be fairly sure that they had covered all of the area down to the last surveyed position the year before.

Nick and AMC then walked back northwards along the rocky shelves, but did not see any further archaeological features, not even rock-cut postholes in the areas scoured by the tide. This seemed strange given the flat and accessible nature of the rock shelves, but perhaps this area did not attract many fish, or the currents were unsuitable.

The team reached Pighole Pill, and were able to cross it by walking out to the east where the stream ran across the rocks and the mud was less deep. There were some timbers and two possible wooden posts visible in the pill itself, but some of these at least just seemed to be loose timbers that had drifted in. They then walked north-eastwards along the top of the pronounced rock shelves north of Pighole Pill, and then had to clamber round a quite narrow ledge on the headland, before dropping down briefly onto the muddy intertidal zone and then onto the salt grazing south and east of Rifleman's Copse. The actual intertidal zone was covered in deep, sucking mud, and no archaeological features were visible. They carried on until the southern bank of Sturch Pill, which was far too deep and muddy to cross safely. Unlike Pighole Pill, the team members could not cross it further out into the intertidal zone.

On the far northern side of the pill, a few (3?) isolated wooden stakes were visible, so they recorded these with the laser (**Point No. 133**), but it was not clear from their position what structure (if any) these may have formed, or how old they might have been. Apart from these small stakes, no obvious fishing structures or other archaeological features were visible through binoculars. The team members could have backtracked to Rifleman's Copse and then walked round the head of the pill to get onto its northern side and around Pillhouse Rocks, but as the lowest tidal limit had already been reached, and with the need to clamber round the narrow rocky ledge, they felt it prudent to withdraw. So the southern limit of The Wharf and the intertidal area next to Pill House has not been surveyed, but if anyone was to do this in future, access would be better via Pill House or the nearby riding centre.

NW and AMC then returned via the rocky ledges to Pighole Pill, and walked back up the track to the van. The cows in the field had not eaten the windscreen wipers or licked and rubbed the mirrors to pieces, so the team were able to return to Gloucester without incident.

Aust to Oldbury Flats 15/04/2011

SMP2 PU SEV6

Intertidal survey by AMC & NW

Low tide: 12.50 PM (at Beachley/Aust)

Rationale: To 'fill in the gaps' in areas of the upper Severn that had not yet been visited as part of the Phase 2 RCZAS, in this case the area between the Aust Rocks and the south-western end of Oldbury Flats at Blackstone Rock.

NW and AMC drove down to Littleton on Severn and parked up near Littleton Warth in the car park by the Whale Industrial Estate. It was nice bright day, and once the team members had suited up they walked up onto the flood defence and walked briskly to the south-west, so that they could cover as much of the area as possible. Near Blackstone Rock and the 'T-shaped' stake built feature they had recorded in previous survey visits, Nick and AMC walked across the salt grazing and then out onto the intertidal zone. Although there was less silt than the first time they had visited on the 22nd June 2010, there was slightly more than when the team had returned on the 7th October 2010. Nevertheless, overall visibility was good.

The team took some photographs of the possible putcher rank previously recorded (Line No. 10020), as it was showing up particularly clearly. They also took some additional photographs of T-shaped structure Line Nos. 10015 & 10016, again because it was showing up well. The team members identified some additional elements of this complex that they decided to record on the way back, but they did record a NW-SE orientated line of three roundwood stakes (**Line No. 10367**). Two of these stakes were only protruding c. 0.10m above the intertidal surface, but one was much larger, c. 0.08m in diameter and up to 0.75m high. It was not clear whether this structure related to 10015/10016, or was something separate.

NW and AMC then moved south-westwards and further out across the intertidal zone, towards Blackstone Rock. The mud became quite deep, and there was a stream or outwash channel that they could access directly. Nothing at all was visible in its dark deep ooze. They therefore moved south-westwards and the intertidal surface sloped upwards slightly and became a series of gravel and shingle ridges. Nothing was visible along the northern edge of the main gravel bank, and nothing was apparent further westwards either. When the team members turned to the south, however, they identified two lines of stakes leading across a natural channel in the intertidal surface. The mud was too deep in this depression to get anywhere near the features, but the survey team were able to record the position of these stakes with the laser, and take some photographs. The first feature was a double line of paired stakes (**Line No. 10368**) set into the south-west bank of the channel. At least 7-8 pairs of stakes were visible, with some individual stakes too. The stakes appeared quite narrow and some still stood up to c. 0.50m in height. This may have been a net hang across the channel, or possibly a relatively recent putcher rank. Just some 10m to the south of it were a few more stakes, set into the same bank, but only 2-3 stakes were visible so these were recorded as a point (**Point No. 134**).

The team then turned to the east and then the north-east across the undulating shingle ridges, some interspersed with quite deep pools with big fish splashing in them, though NW and AMC could not see the fish themselves. No archaeology was visible. Returning north-eastwards, they recorded a series of small stake alignments to the north-west, south-east and east of structure 10015/10016 (**Line Nos. 10369, 10370 and 10371** respectively). Line

10371 had previously been recorded as Point No. 19, but resolved itself slightly into a fragmentary line of single, spaced eroded stakes with some paired stakes at its eastern end. This may have been the highly eroded leader arm of a V-shaped fish trap, but what the other structures were was not clear at all. Line 10369 appeared to be a continuation of Line No. 10015, on a NW-SE alignment, but it then turned through a curved right-angle onto a NE-SW orientation, parallel to 10016. Line 10370 was also broadly parallel to Line No. 10016. These two lines, again of single spaced and highly eroded stakes, may thus have had something to do with 10015/10016, or may have been from a different phase and/or structure altogether.

Approximately 75m to the north-east, Nick identified some further low and eroded stakes (**Line No. 10372**). This was a grouping of at least 15 stakes, and although it was unclear what they formed it is possibly that they were the apex of another V-shaped fish trap. No clear leader arms were visible though, but there was at least 0.20m of silt in this area.

Further north-east again, the survey team approached the complex feature represented by Line Nos. 10021 and 10022, recorded back in June 2010. They identified a 'new' group of at least eight stakes (**Point No. 135**) just to the north-west of the apex of the larger complex, however, that may have formed some sort of outlying structure, or represented a different phase of construction or use. Some of the stakes were set at angles, so could have been settings for catch baskets. Only c. 6-7m to the north-east was another group of 15-20 stakes (**Line No. 10373**). These were either the apex for another V-shaped structure, one facing or opening upstream; or were perhaps the settings for one or more single catch baskets. The V-shape appeared to narrow to a funnel neck, as seen in some of the fish traps with circular catch baskets, though no circular catch basket appeared to have survived with 10373. They had been previously recorded in June 2010 as point 22, but fewer stakes were visible then. The location of them was interesting, for if they were indeed an apex facing upstream (to catch fish on the outgoing tide), they were situated within an overall structure represented by 10021 and 10022) where the apex created between the two appears to have faced downstream. This probably results from different phases of construction and use, however.

The tide was now on the turn, so NW and AMC headed back to the shore and the salt grazing, and then back to the van after which they returned to Gloucester.

Minehead Bay (central) 18/04/2011

SMP2 PU 7d19

Intertidal survey by AMC, AW & NW

Low tide: 13:13 BST (from Porlock Weir, with 10 minutes added)

Rationale: To finish surveying the lower (northernmost) central part of Minehead Bay which was not able to be completed during 2010, and especially to try and access any remains of the circular conger eel traps plotted there by the Phase 1 NMP aerial survey.

AMC, AW and NW drove down to Minehead in the morning, arriving at the Old Harbour car park at c. 10.30 AM. After a quick loo break the team suited up and headed out, accessing the intertidal zone near the remains of the old pier. They then walked westwards out into the central part of the bay.

The survey team tried to find a large V-shaped feature plotted by the Phase 1 NMP survey (FID 21719, MONARCH 1455318), but there were no real indications of it, just the general background spread of cobbles on the beach. There were some vague hints of concentrations of stone, but nothing that could be resolved into a structure. It seems likely that this feature, probable a stone fish weir, has now been totally eroded and dispersed. The team took a point (**Point No. 136**) to note that they had accessed the area though.

Roughly 30-40m to the north-west, however, the team members did find a line of clearance orientated NE-SW, and this was probably a ground line gully (**Line No. 10374**). Although some stones had rolled back into it, the clearance was still up to 2m wide. Just to the west and south-west of this clearance feature were at least 4-6 small rounded piles of stones or 'cairns', formed from tightly packed stones and beach cobbles up to 0.30m long. These piles of stone were 1.5-2m across, and up to 0.50m high, but whilst some were very regular, well-defined circular features, others were more irregular and had probably been eroded and partly dispersed. Rather than record all of these features individually, a point was taken at the centre of the most well-preserved examples (**Point No. 137**), but there were 4-6 separate features within a 20m radius. These piles of stone seemed too regular to be the result of clearance or dumps of ballast, and were probably fishing 'heaps' of some sort, used for catching conger eels amongst other species.

The team members moved further to the north-west as they were very keen to spot the nearest circular conger eel trap (FID 21979 MONARCH 1455313), but once again, apart from a confused general spread of stone no clear feature was visible. There was a faint indication of a circular depression with a slightly curvilinear ridge along its northern side, but nothing definitive. The team took photographs and a point (**Point No. 138**) to show that they had been there. It seems likely that this was the conger eel trap which Richard Brunning had mentioned had been damaged by a DUKW amphibious vehicle that had been operating in Minehead Bay for a short period. The eel trap now seems to have dispersed altogether.

Approximately 70-80m to the east and south-east, the team members recorded two V-shaped stone fish weirs previously identified by the NMP (**Line Nos. 10375 & 10376**), although the NMP had plotted them c. 10-15m too far to the east. Line No. 10375 was quite an extensive weir with a low stone bank up to 3m wide, but only surviving to one or two courses of stone. Its eastern leader arm was tied into a low, natural gravel ridge. Near the everted apex the leader arms narrowed considerably to only c. 1-1.5m in width, and there were signs that they may have been robbed and then rebuilt, particularly on the south-western side, indicating reuse. Two small 'horns' of stone extended outwards on each side

of the relatively well-defined gut or outwash channel, which was about 1-1.2m wide. Two small arms of stone also extended back into the apex of the weir from the gut, although this might reflect the original width of the leader arms. Several metal scaffolding poles were still set vertically on the northern or seawards side of the gut.

There were several dogfish splashing around in the shallows, and the team members had seen several dead or dying examples walking out. It is not clear if these had been stranded by the previous high tide, or were spawning. Certainly when AMC attempted to help one back out into deeper water, it turned round and headed back in again.

On the other, eastern side of the natural gravel ridge was **Line No. 10376**. This weir was much more heavily eroded, with much of the south-western leader arm now missing, although it had clearly been plotted on historic aerial photographs by the NMP. Part of the south-eastern extent of the other leader arm was still under water, so it appeared as a series of fragmented banks above the water level. No clear outflow channel was visible at the apex, which was also low and eroded.

Rather than get bogged down recording the fish weirs to the east and south-east, the team members took advantage of the extremely low tide to head out further to the north-east, to try and find the other circular conger eel trap. Along the way we photographed but did not record an isolated block of peat from the prehistoric submerged forest deposits in Minehead Bay – very fragmented and eroded. The team also saw an angler fish in the shallows, which was very angry and quite scary looking, despite being only about 0.25m long. The team members had not realised such deep water came into such shallow water, and spawning seemed the most likely explanation. The moveable lure on its head was clearly visible.

Eventually the team did find the conger eel trap – it proved to be a relatively well preserved circular stone bank 19-20m in diameter (**Line No. 10377**), set within a wider subcircular cleared area, the clearance presumably having been used to form the bank. The bank was a gently convex structure between 2.5-3m in width, slightly eroded and dispersed along the sides, and up to 0.50m high. There was no visible break or entrance. Within the bank there had been additional clearance. On the aerial photographs of Minehead a smaller circular pile of stones – the ‘heap’ – was visible in the centre, but only a small spread of stones now survived. Presumably eels took up lodging within the stones of the central heap, and then at low tides were driven out with the aid of dogs, the larger outer ring retaining some water and trapping them in a shallow pool. Having waited nearly a year to see this feature, it was good to finally record it.

Given the very low state of the tide, and despite the fact the NMP had not plotted anything further to the north, the team decided to carry out a speculative survey northwards. Nothing was visible to the north-west, and some possible weirs just turned out to be low natural ridges with shallow pools in between them. The team members did see some modern net hangs formed from metal scaffolding poles, however, which they took some photographs of. When they got closer, they realised that the cobble beach in this area had many ‘stone doughnut’ supports for net hang posts, some forming clear lines. Some of the stones were stood vertically on edge, probably following the removal of wooden or metal posts. Unlike the metal poles, some of the small heaps and rings of stone and cobbles contained the low, eroded remains of wooden posts within them. The team recorded one rough line of these doughnuts and wooden posts (**Line No. 10378**), but there were others present in this area. Future survey work could concentrate on plotting these.

The survey team could have walked for several hundred metres further out northwards into the intertidal zone, but there were no obvious features in the mid-distance. A low gravel ridge concealed the actual edge of the water at lowest tidal level, but as this area was only

exposed at the very lowest tides it is likely that there would have been any/many fish traps there. The team decided to head back inland and record all of the large and complex stone fish weirs that still needed to be recorded, as they knew from prior experience that when the tide did start coming in it would do so fairly rapidly. Once again, however, future speculative survey work could target this northern extent of Minehead Bay. As the team members turned to head back inland, they recorded the edge of an eroding peat deposit (**Line No. 10379**).

To the south, the team re-recorded in more detail recorded a feature they had first recorded on the 25th August 2010, as Line Nos. 20096-20098. This was the very large stone fish weir with the arched metal hop above the main gut, forming a goal-post like structure. Then, the tide was coming in, the gut was already largely submerged, and it was howling a gale and pouring with rain – the very worst day of the entire RCZAS project. Myself, Nick and Briege could only record it summarily. Now, on a nicer day and with a much lower tide, Nick, Andy and AMC could take more time to record it (as **Line No. 10380**). The stone leader arms were well-defined, in some places flat-topped rubble banks up to 3m wide at the base, and with many traces of internal and external facing, especially the inner face which was almost vertical. This weir was clearly abandoned only recently, or perhaps was even still in occasional use. Unusually, by the apex on each side of the gut or outflow channel the leader arms curved inwards to form an inverted channel 2-2.20m wide. The actual channel here was still at least 0.40m deep, above wellie depth on AMC, with the metal scaffolding stretching across and anchored on either side. On the inner, north-eastern side of the gut there were traces of a curving, semi-circular stone wall leading from the leader arm towards the rear of the gut, but the function of this is not known.

Outside the gut of Line No. 10380 were c. 10 metal scaffolding pipes arranged in two parallel rows about 1.5m apart that may have supported catch baskets and/or netting. Just 5m or so outside of (seawards) the north-west side of the southern leader arm of 10380 there were traces of a low rubble bank. These stones were only photographed, and not formally recorded, but they may well represent traces of an earlier fish weir on roughly the same site. This large stone fish weir also had a second, subsidiary gut further to the south. The narrow (1m wide) gut had vertical metal poles and RSJs associated with it, some evidently used to support the stone walls of the gut, but also for some form of catching structure. The stone walls of the gut extended seawards forming a slightly everted outflow channel. The area behind it had again been partly cleared of stone. The team members moved to the south and west, but AW also took photographs of the multiple guts that were visible in the distance along the line of Line No. 10256, again originally recorded on that wet day in August 2010 and so not very well photographed due to the driving rain.

The survey team then recorded **Line No. 10381**, another large V-shaped weir set within a largely cleared area of the beach. Its easternmost leader arm was up to 1.5m wide with a pronounced steep inner, landward-facing elevation, constructed like a drystone wall. Drifting sand had partially obscured the outer, seawards facing elevation of the walling, which was also slightly more tumbled down on its northern side too. The south-eastern end of the eastern leader arm was partly eroded and fragmented so that it was not clear where it actually ended – there were several isolated large boulders poking up through the drifting sand that might have been on the same alignment; and after only c. 10-15m from the south-eastern end there was a 5m gap in the eastern leader arm that appeared to be the result of erosion or robbing rather than reflecting a gut or outflow channel. Towards the north-west and the gut the walling became more pronounced and well-defined, up to 1-1.2m in height. The gut itself was slightly everted with the leader arms curving gently outwards at this point, forming an outflow channel around 1.2m in width. Vertical and angled metal scaffolding poles had been used as revetment posts to hold the stone in vertical walled faces, and several additional vertical poles were set vertically on the 'inside' and 'outside' of the gut. The western side of the gut also extended seawards for around 2m beyond the gut itself,

and this may have been a later addition. Just a few metres west of this the western leader arm turned and then extended towards the south-east, and this leader arm was more well-preserved, though once again sand had drifted against its outer face. This fish weir may have been use until very recently.

The team then moved westwards to record two partly overlapping stone fish weirs (**Line Nos. 10382 & 10383**). The easternmost end of the eastern leader arm of the earlier **Line No. 10382** was partly dispersed, and had also clearly been robbed in order to construct the later feature Line No. 10383. There was a gap of approximately 5m between 10382 and the point where 10383 overlapped it, but in order to save time during the survey the line of 10382 was recorded as if it had not been robbed and removed. There was also a pronounced gap of c. 10m on the other, western side of 10383 where the leader arm of 10382 had also been robbed and dispersed by the tide. The eastern arm of 10382 only became a more obvious feature some 10m from the apex, where it became a low stone bank up to 3m wide and 0.40m high. The apex itself was constructed of larger boulders up to 0.60m long and was subtriangular in shape, but it had become spread and slightly diffuse due to erosion. There was no apparent gut or outflow channel visible, and although this may have been due to the erosion, it is also possible that this feature never had such a feature. On the western arm of 10382, however, near the apex, there was a gap which although at least partly due to erosion, might have originally been a gut. The western leader arm of 10382 was up to 3m wide, but although constructed of large boulders up to 0.50m long it was becoming dispersed and eroded.

The team members then recorded the later stone fish weir with relatively sinuous stone leader arms (**Line No. 10383**), which is nonetheless the largest surviving fish weir in the central part of Minehead Bay. Its eastern leader arm was relatively narrow, up to 1m wide, but well-defined with larger boulders up to 0.50m long used to form distinct inner and outer faces to the drystone-wall style construction. This eastern arm also had a well-defined terminal on its southern end formed from very large boulders up to 0.60m long, an unusual feature in most fish weirs where the leader arms either just 'fade out' due to erosion, or extend onto natural ridges in the intertidal zone. The first part of the eastern leader arm of 10382 extends northwards from this terminal, but after c. 25m there is a very distinctive right-angled 'dogleg' where it was built up and over the eastern leader arm of earlier underlying fish weir Line No. 10382 (see above). The walling turns west for c. 5m to run along the top of the line of 10382, before turning again through 90 degrees and extending northwards once more. Some of the earlier stones of 10382 were clearly visible underneath those of 10383 in the short east-west orientated stretch of rebuild. An especially large boulder and a metal pole around 0.10m in diameter and 0.40m high are located at the first corner of the walling. Quite why this dogleg was constructed is not clear – it would have taken less effort simply to build straight across the line of earlier weir 10382 without the two right-angled corners, and this would have used less stone too.

The eastern leader arm of Line No. 10383 then curved to the north-west where the main part of it consisted of a low rubble bank up to 3m wide, and tidal scouring had the effect of leaving it along the top of a slight ridge of sand. Again, much of the area 'inside' or south of the leader arms had been cleared of cobbles and boulders. The tide was starting to come in by now and was rushing through the gut at the apex of 10383, which again was slightly everted with the leader arms curving outwards to the north. The actual gut was approximately 1.5m wide and the stone walling here was up to 1.2m in height, some of the stones held in place with vertical metal scaffolding poles. Due to the inrushing water it was not possible for the team members to see all of the details of this gut, but there were additional vertical metal poles set parallel to and just out from the internal and external faces of the stone walling for c. 4m on either side of the gut. Nylon rope was tied to some of the poles. The sinuous western leader arm was a flat-topped bank up to 3m wide with quite well

defined faces on both sides, but it was apparent that this weir was either still in occasional use or had not been disused for long. The cleared pool on the landward side of the leader arms held substantial amounts of water, and even with the tide just starting to come in was over 0.60m deep.

The team then walked quickly to the south-west to record another weir partially recorded in 2010 when it was almost underwater, but now they could do so in more detail. It was another generally V-shaped weir, previously recorded as Line No. 10221, but now re-recorded as **Line No. 10384**. The north-eastern leader arm consisted of a wide rubble bank at least 2m wide, and close to the apex a later net hang line of metal posts was parallel to this leader arm, with a parallel line of stones from net weights. There was a linear shingle ridge underneath the bank too. The inner or south-western face of the north-eastern leader arm was quite well-defined and up to 0.5m in height, with some especially large boulders up to 0.70m long used in its construction, and again similar to drystone walling. The subtriangular apex was up to 0.40m high. There was a possibly secondary gut on the north-eastern leader arm, whilst the gut at the main apex appeared to have deliberately blocked rather than this just being the result of erosion. Turning a fish weir into a tidal pool may have been part of the management of the draining tide across the intertidal zone. The western leader arm was less well-defined and more like a rubble bank, and was spread up to 3-4m wide. It eventually extended onto a natural boulder ridge on the intertidal zone at its south-western end.

As the tide was now coming in with some alacrity the team members very quickly headed westwards back to the Old Harbour and the van. On the way in they had noticed the small V-shaped stone weir present near the old pier, plotted by the NMP aerial survey, and there was just enough time to record this structure before it was covered by water. It consisted of a low stone bank up to 2.5m wide (**Line No. 10385**), but at the triangular apex there was no clear gut or outflow channel evident. It was very close to both the line of the old pier and the pier footings/stanchions, and a discharge pipe and an associated stone bank, so it seems odd that it was not more heavily disturbed or robbed during the construction of these features. It may be, however, that the fish weir actually post-dated them, and thus was of relatively recent date. With this record, the team had managed to record virtually all of the identifiable features in Minehead Bay during the RCZAS, with only a small number of features to the east off Warren point left unvisited. This was a good achievement.

After that it was time to change, get in the van and drive to the Dunkery Beacon Hotel to be greeted by tea and flap jack.

Stert Island 19/04/2011

SMP2 PU 7d36

Intertidal survey by AMC, AW, NW, RB and RMcD

Low tide: 15.13 BST at Burnham (14:40 at Hinkley Point)

Rationale: To see if the survey team could access and record any of the fish trap features recorded by the NMP aerial survey on the northern side of the Gutterway off the north-west tip of Stert Island, and to see if there were any surviving features on Stert Island itself.

In the morning NW, AW and AMC drove to Steart and met up with Richard Brunning and Richard McDonnell by Dowells Farm, having got slightly lost along the way in a maze of small lanes. The survey team did not lose too much time, however, and they got changed and then started the long trudge out to Stert Point and then out towards the north-west. The Argocat was sorely missed, but at least the weather was warm and sunny.

When the team had got as far as the causeway across the Gutterway the water was still too high to cross safely over to Stert Island, so Richard McD suggested that everyone walk further to the north-west and cross, by which time the tide would have dropped further. Everyone duly did so. Coming back along the northern bank of the Gutterway was hard work, however. Unlike the southern side which was mostly sand and firm mud, here the mud was deeper and stickier, and by the time the team members had trudged back to where the causeway was the level had lowered enough anyway. Good exercise nevertheless. The team had to walk back to the south-east in order to get onto the southern end of Stert Island, as the mud was simply too thick for anyone to veer off towards the island at an angle and save distance. The team did eventually reach firmer ground, however, and stopped for a snack and a drink on the western edge of Stert Island. There they were greeted by the amazing sight of a fox loping off, although Richard McD said that they used to cross over regularly to take bird's eggs and chicks.

The team then walked north-westwards along the western edge of Stert Island. They did see two large iron buoys that used to mark the navigable channel into Burnham and which had been previously recorded by Richard McDonnell during his Bridgwater Bay survey. Apparently the riveted one was built around 1900, and the welded one later (in the 1950s?). The team took photographs of them but did not formally record them.

Richard Brunning got quite excitable when he spotted some preserved wood, but it seemed from the stratigraphy that it was not very old. Richard McD said that there were preserved cattle hoof prints from when they had kept cattle on the island during the second World War.

Moving off the north-western tip of Stert Island, the team members walked for up to 500 metres to try and find any of the possible V and U-shaped structures recorded by the NMP aerial survey (e.g. FID 20262 & 20259, MONARCH 1450339 & 1450326). There was a lot of thick mud, though this was crossed by outwash channels which the team were able to walk along. Nevertheless, although team members repeatedly walked up and down along the lines of these where they should have crossed over the features, they could not see any archaeology – not a single solitary stake, and as the team included eagle-eyed RB and RMcD they should have spotted something. Some of the very broad and gentle 'U-shaped' features plotted by the NMP may have been net hangs, although RMcD said that he had never seen them off Stert Island. Otherwise, it seems likely that if there were stake-built features present, they were now so low and eroded, and/or buried by thick mud, that they are not visible and inaccessible. At least the team did not have to bother taking any samples

of stakes for dating purposes. In addition to some GPS photographs of the general blankness, the team also marked a point to show how far they had come but also to note that there was nothing visible (**Point No. 141**).

The team therefore returned to Stert Island, where RMcD found part of a linear feature that he had previously noted, probably a clay-filled ditch. The surrounding sediments were slightly softer and had eroded, leaving the filled ditch as a linear ridge slightly proud of the intertidal surface. The team therefore photographed and recorded the 5m or so of this feature that was visible (**Line No. 10386**), which may date to the time when there were buildings/houses on the island and a rabbit warren.

The team was anxious not to have to call the Coastguard or spend the night on the island, so everyone trudged back towards the causeway. Richard McD remembered that he had seen some stakes c. 30m from the edge of the channel, and when team members searched around they found a small group of very low, small and eroded wooden stakes, possibly associated with some form of horizontal hurdle structure (**Line No. 10387**). RB and AMC took samples for RB to analyse (**Point Nos. 139-140**), but it was far from clear what this structure was. It may have been part of a fish trap, and the NMP had recorded a large 'tick-shaped' structure here (FID 19999, MONARCH 1450358) that may have been a similar fish trap to the large stake and stone structure further to the south-west recorded in 2010. The alternative was that this was a timber precursor to the stone causeway, which was close by.

The time was getting on, and Richard McD was increasingly concerned that the team would be stuck on the wrong side of the Gutterway. Everyone heeded his advice and therefore crossed back over the channel, and headed back south-eastwards towards the shore in the late afternoon sun. It was a long old day and the survey did not find much, but at least the team did not have to worry about trying to record another group of fish traps. Sadly, that was the last day the GCCAS team would work with Richard McDonnell, so they said goodbye to him in the car park. The GCC team members will see RB again on Thursday.

Gore Point, Porlock 20/04/2011

SMP2 PU 7d14 & 7d15

Intertidal survey by AMC, AW & NW

Low tide: 14.20 PM BST (at Porlock Bay, so c. 10-20 minutes before)

Rationale: To try and finish recording the fish weirs that we started recording in 2010, but also to try and resolve the mystery of the many linear banks and small stone heaps that were also present at Gore Point but which had not been recorded by the NMP or any other surveys. The GCCAS team had also recorded many features in a hurry in August 2010, some using the laser when they were partly underwater.

The three GCCAS team members arrived in Porlock Weir at about 11 AM and parked up in the public car park there. The tide was still very high so as it was a nice day the team wandered around, ate some ice cream and then had lunch. Team members took more photographs of Porlock weir, including the two pill boxes camouflaged with pebble dashing, one of which is now tipping alarmingly down the pebble beach and may soon slide into the sea.

The team members then got changed and started walking around to Gore Point. It was a lovely sunny and relatively still day, in contrast to the last time the survey team was here when it was very blustery. AMC had printed out a few of the aerial photographs used during the Phase 1 NMP, and these showed some features that the team had not seen during their last visit on the 24th August 2010, probably through lack of time. When the team got to the shingle ridge on the southern edge of Gore Point, with the benefit of hindsight some of these features were now really obvious.

To begin with, one of the largest fish weirs at Gore Point had been plotted by the NMP and recorded by the survey team in 2010 (as Line No. 10235) as a relatively equal sided, regular triangle with an apex to the north-west. From the APs, and from the team's position on the ridge, it was clear, however, that the southern leader arm of this feature extended much further south than had been previously recorded by the NMP or us in 2010, and that as well as the stone bank of the leader arm, there was also a distinct, separate linear zone of clearance adjacent to the bank. They therefore walked down onto the boulder beach and began recording the features. Firstly, the team members recorded the NNE-SSW orientated line of clearance, as **Line No. 10388**. This was up to 180m long and 3m wide, a very sizeable feature indeed. Although some stone had fallen back into the linear strip, especially due to tumble off the adjacent bank along its western side, it was obvious that at some point it had almost been completely cleared. Further north towards the apex, however, the cleared strip became increasingly indistinct.

In 2010 the team members had recorded the leader arms of the large fish weir (Line No. 10235) rather quickly with the laser as the tide was coming in. It was obvious that this was rather inaccurate, so they re-recorded the bank again. It became apparent that although the NMP plot of the shape was very accurate, the position was slightly too far west by c. 10m – no doubt a result of the lack of control points. All of the NMP plots seemed to be out by the same distance, supporting this idea. The team members recorded another 75m or so of bank on the southern leader arm – as **Line No. 10389**. The southernmost edge of this leader arm merged into the background boulders and cobbles on the intertidal zone. Within 10389 there were several metal pegs driven into the intertidal zone, one of which was photographed but not recorded, and it is possible that this clearance feature was re-used as a later ground line gully.

Although the team members then went off and recorded features lower down the intertidal zone, they later returned to re-record the rest of 10235 as **Line No. 10403**. This had very large, well-defined leader arms up to 4m wide, consisting of fairly flat-topped rubble with large boulders up to 0.80m long used as footings. The pronounced, everted gut or outflow channel was recorded in more detail – this was up to 1.2m wide, with pronounced stone extensions or ‘horns’ extending out from the apex of the fish weir for nearly 20m. The area south and behind the apex had been cleared of most large boulders, forming a deep convex pool with water over 1.5m deep when it was full. Near the southern part of the gut at the apex there was a length of angle iron and nylon rope, and additional lengths of angle iron or scaffolding pole were also present along both of the leader arms, suggesting that this feature was used or at least re-used until fairly recently. As detailed in the 2010 descriptions, the leader arm banks of 10235/10403 were massive, being nearly 1.5m high near the apex, up to 3m wide, and utilising large cobbles and boulders with a few examples nearly 1m in length.

The survey team decided to return and record the rest of the V-shaped weirs later on, and to carry on northwards to try and make sense of and record the numerous features along the northern and north-western parts of Gore Point. On the north-western side of Gore Point there are a series of distinct linear banks 2-3m in width, many gently curving or slightly sinuous in plan. These are clearly not geological features, although on the APs they do appear as such which may be why they have not previously been recorded. Some are convex banks, but others take the form of lines of small heaps or cairns, each cairn or heap 1-2m across and up to 1.2m high, separated by 0.5-2m from the next along each bank. The team photographed and recorded a series of these features (**Line Nos. 10390-10395**), but there were more directly to the north and further to the north-west that team members did not have time to record. There was also at least one distinct cairn or heap in between two of these banks (**Point No. 142**), but once again, more were visible elsewhere. In between the banks the areas had been largely or partly cleared, this stone being used to construct the banks and cairns, but the reason for this is unclear. The cleared areas may have acted like ground line gullies, whilst the stone heaps may have attracted fish such as eels. The heaps were too regular and too numerous to be simply dumps of ballast or piles of stone gathered for V-shaped weir construction. The team had recorded similar features in August 2010 further to the south-east. This part of Gore Point still requires more detailed work, and thus needs to be surveyed in much more detail in the future. Towards the end of the survey visit as the tide was encroaching the team members recorded two further banks to the east of the 10390-10395 group, and these will be detailed below.

The team then quickly went back southwards to the V-shaped weirs. The first they recorded (**Line No. 10396**) was a small weir originally appended onto the right leader arm of fish weir 10235/10403. Although added to the earlier weir, there was a gap between the eastern end of the east-west orientated leader arm of 10396 and 10235/10403, and it appeared that there had been robbing and/or erosion of the former’s leader arm at this point. The line of it could just be made out from some of the larger boulders used in its construction. After c. 10-15m the bank then became more obvious, being up to 1.2m high and 2-3m wide, with some large (up to 0.70m long) boulders used as inner and outer facing stones. The north-south leader arm was of similar construction, though it had survived better, although its southern extent is now unclear. There was no visible gut or outflow channel at the apex – perhaps through erosion and tumble, but this feature may never have had one.

Immediately to the south-west of 10396, and perhaps once contiguous with it, was V-shaped weir **Line No. 10397**. This had a relatively well-pronounced rubble bank 3-4m wide, though this had been spread somewhat by erosion and its north-western extent was in places hard to differentiate from the large natural boulder spread to the north and west. There were stretches of it, however, where two lines of larger boulders formed an inner and outer facing,

with other boulders used as core material. This was up to 1.2m thick, although it is not clear if this drystone wall style construction was on top of a wider rubble bank, if the latter was eroded of it, or if the 'walling' was actually a later partial rebuild. Line 10397 had a well-defined subtriangular apex with two pronounced stone 'horns' extending outwards to the north-west for c. 10m, on either side of a gut up to 1.2m wide. At the NW end of this gut and the 'horns' there was a secondary stone structure that looked like it may have been added on at a later date – these smaller stone 'horns' narrowed to a gap of just 0.50m.

Immediately to the west was another stone fish weir, **Line No. 10398**. This had a smaller stone bank up to 2m wide but less high than 10397, though the two were probably linked at some point. It was also more like a sloping glacis on the outer face, rather than faced stone walling, though larger boulders had again been used on the inner and outer sides of the leader arms. There was a partly cleared, deep pool behind the leader arms on their southern and south-eastern sides. The apex was less well-defined, and the gut was partly blocked and obscured by tumble off the banks. The gut was probably originally at least 1.2m wide, however, and there were traces of short stone 'horns' 2-3m long extending outwards to the north-west, but these were eroded and dispersed.

To the north-west of these features was an extensive boulder field. It may just be the desire of the human eye to create patterns, but there were hints within it of other possible structures to the north-west of 10398, and also one to the south as well. The latter is visible on the aerial photographs, but is fainter than the other V-shaped fish weirs and was not recorded by the Phase 1 NMP. Again, some more detailed survey work in this area might resolve further structures. There was a short length of bank or walling appended to Line No. 10398. This was just visible as a slightly curving length of rubble bank up to 10m in length, with faint traces of the outer facing stones surviving (**Line No. 10399**). This was probably the remnants of another V-shaped stone weir. It is likely that the largest and most prominent weirs at Gore Point may have continued in use until the mid-20th century at least, and as a consequence earlier structures may have been partly robbed in order to help rebuild the more recent examples.

To the south-west was another V-shaped stone weir, though its leader arms were eroded and partly dispersed (**Line No. 10400**), and in places only the larger inner and outer facing stones differentiated the line of them from the background boulder spread, the bank probably being c. 2m wide before erosion. The apex had two slightly everted, outward curving extensions defined by large boulders up to 0.60m long, on either side of a partially blocked gut that was originally 1m wide.

A larger and better preserved weir was situated to the south-west, and comprised faced banks 2-2.5m wide, the facing stones again being especially large boulders (**Line No. 10401**). Some were very large, over 1m long, and in a few instances may have been 'natural' earthfast boulders incorporated into the line of the bank. The gut was 1m wide and lined with large boulders, forming curving, everted extensions 2-3m long. It was partially blocked with tumble off the leader arm banks.

The survey team came across more stranded or partly stranded dogfish – these had probably come inland to spawn, and had been caught in shallow pools when the tide went out. Team members repatriated several into deeper water – they are well-muscled beasts, and can turn almost completely round to try and bite one's hands.

The westernmost feature the survey team recorded was a broad, subrectangular area of clearance at least 70m long and 20m wide, lined with raised banks of clearance (**Line No. 10402**). This was probably associated with the boat house or store house built into the face of the cliff to the south, and would have provided a space where a ship could come in at high

tide, and then safely beach itself during low tide, before floating out again at the next highest tide. At the southern part of this area of clearance there are natural outcropping ridges of hard rock, and some of these seem to have been dug away to create a flatter expanse. Oddly though, the cobble beach in front of the cliff-base structure was not cleared, so anything carried off or to any boat would have had to be manoeuvred over these large boulders and beach cobbles. The cliff base structure itself was photographed in detail, as it was in 2010, but not formally recorded. It has some unusual features, including an archaic appearing arrow slit, even though it is clearly of post-medieval or even early modern date. It contains some alcoves but could not have stored many goods, so it may therefore be in part a 'folly', part of a designed landscape that included a large house and Italianate terraced gardens at Worthy.

There had been a large group of marine biology or geology students out on the intertidal zone to the north-east, but after they had departed the survey team moved back in that direction, and recorded Line No. 10403 (described above). The team members then moved to the northern edge of Gore Point where the tide was starting to come back in, and recorded the last large fish weir. This had been partly recorded in 2010 (as Line Nos. 10230 & 10232), but the apex was under water at that time. The team now re-recorded it as one line (**Line No. 10404**). It enclosed an extremely large area of gently concave clearance, which even at lowest water was still a pool at least 1m deep near the apex. This had flat-topped rubble banks 3-4m wide as its leader arms, and a well-preserved subtriangular apex with a well-defined gut 1-1.2m wide. Projecting out from the outer face of its north-western leader arm was what appeared to be either a short length of bank up to 10-12m long on a NW-SE axis, or more probably two small additional heaps or cairns arranged in a row. They were photographed, but there was no time to formally record them. Again, future detailed survey could do this.

About 10m to the north-west of the apex of 10404 there was a line of another V-shaped bank, already partly submerged by the rising tide, and c. 5m beyond that another V-shape was just about visible. There was no time to formally record these, even with the laser, before they vanished underwater, but this suggests that there are remnants of other V-shaped weirs on the seaward side of 10404 that could be surveyed in detail at a future date. Alternatively, these features may represent the L-shaped stone banks that were recorded just to the west (see below). At least one is visible on an AP of Gore Point.

To the east of fish weir 10404, NW recorded another cleared channel that may have been a ground line gully (Line No. 10405). Several other similar features were present in this area, but there was not time to record any more. The team then recorded two curvilinear banks to the north-west of 10404. The first of these, **Line No. 10406**, seemed to post-date the linear bank 10234 recorded in 2010. On the NMP aerial plots, Line Nos. 10233 & 10234 had been recorded as part of the same V-shaped weir, with a gut opening to the north-west. On the ground it appears to be a different, more complex situation. There may have been an original V-shaped weir here, but 10234 was either built across it, extending to the north, or alternatively, 10234 was earlier, and then 10233 was a straight bank built to link it to 10404, leaving a slight gap in between them 1m wide as a gut or drainage channel. Line 10405 may then have been added to 10234, and it did appear to overlap onto it. Much more detailed survey would be required to ascertain the correct stratigraphic relationships. Line No. 10406 curved to the north-east, and at its northernmost end there was a right-angled return section of bank that extended to the north-west. The curving line of bank **Line No. 10407** lay c. 15m to the north-west and largely parallel with 10406, with the right angled section of 10406 nearly meeting it but leaving a gap of c. 2-3m wide. The subrectangular but curving sided space between 10406 and 10407 had been cleared of most stone, but in the cleared area there were two more distinct cairns or heaps of stone. These were only photographed and not recorded. The flat-bottomed cleared area had a lot of crushed shell present.

The area 'behind' or to the south and west of Line Nos. 10233 and 10234 had also been extensively cleared, leaving a deep, flat-bottomed pool, the bottom of which was covered in crushed shell. A short metal pin or peg driven into the bottom was recorded in this area (**Point No. 143**), but there were one or two others present. The area seemed excessively cleared compared to the inner areas behind the apexes of the V-shaped weirs, and these cleared zones may have performed a different function. Could they have been used for oyster beds? There was certainly oyster cultivation and/or storage after harvesting that took place in the main part of Porlock weir, and some of the fish weirs there seem to have been re-used for this purpose. Perhaps it also took place at Gore Point. Further fieldwork and documentary research may have to explore this possibility.

Between 10407 and the other group of linear banks (Line Nos. 10390-10395) there were other linear stone banks and stone heaps, but as the tide was now coming in very fast there was no time to record these, so they were photographed from a distance. There were also several right-angled bank features further to the north-east as well. Although the survey team was able to make sense of some of the complexity at Porlock therefore, this area still requires considerable further detailed survey to identify and record *all* of the features present there, and in some cases to ascertain the stratigraphic relationships between them. With the tide now rising rapidly they walked back up onto the shingle ridge, then headed back to the car park at Porlock weir. There the team members changed, and returned to the Dunkery Beacon Hotel. Later that evening the team went to the pub at Exford – venison stew and dumplings – well deserved after all they had done.

Stolford 21/04/2011

SMP2 PU 7d33

Intertidal survey by AMC, AW, NW & RB

Low tide: c. 15.56 BST (at Hinkley Point)

Rationale: To try and access the small, stone-built fish traps previously noted by Richard McDonnell during his Bridgwater Bay survey. These are meant to consist of rock cut slots filled with stone. Another aim was to see if the survey team can record any of the submerged forest deposits previously investigated by Nigel Nayling and Vanessa Straker, to get points on any sampled trees.

After the survey team's last fabulous breakfast at the Dunkery Beacon Hotel, they said a sad farewell to Beccy and Derek late in the morning, and then headed off to meet Richard Brunning at Stolford. The team dropped off a copy of part of the NMP report to the Sellick family, though unfortunately they were out. One of the aerial photographs used in the report actually shows one of the Sellicks tending their shrimp nets out in Stolford Bay. The team members then parked up by the sea wall, and waited for RB – they were ludicrously early. The day was hot and sunny. When he turned up everyone had lunch, then got ready to walk out.

As the survey in 2010 had covered the eastern part of the bay, the survey team on this day needed to head northwards along the rockier area to try and get to the approximate position where Richard McDonnell had identified and photographed some extremely unusual fish weirs. As they headed out onto the intertidal zone, however, the team members noticed some additional peat and submerged forest deposits to the west, so they went off and recorded those.

Several tree stumps, tree trunks and large branches were visible close to the shore, and one of these was recorded (**Point No. 144**), as it appeared to have been sampled by chainsaw, and was thus probably linked to the activities of Nigel Nayling. The first peat exposure was just to the north-west but was still relatively close (c. 45m) to the shore. This dark-reddish brown peat deposit was relatively flat, and was up to 0.25m thick, overlying mottled blue-grey clay. It had many water-filled erosion hollows within it, probably where tidal forces had broken up peat or the wood that held a lot of the peat together. It was also cut by several deeper outwash channels. Many of the larger examples of waterlogged wood exhibited the same damage from wood-boring molluscs that had been noted elsewhere, and this was clearly exacerbating the erosion.

Further to the west the mud became thicker and difficult to proceed across – this mud also masked some of the underlying erosion hollows and outwash channels, making it tricky walking. The team had to move back to the south-west, and as they started to do so a small alignment of low, eroded wooden stakes was recorded (**Line No. 10408**), on a NE-SW orientation. Further to the south-west there was another alignment of wooden stakes, some up to 0.30m high and a few arranged in small groups of 2-3 stakes, and some of the stakes were surrounded by stone rings or 'doughnuts'. This feature was orientated roughly north-south, but RB thought that the wood was relatively recent in date, and the feature seemed much more like an early modern or modern net hang line, so it was therefore only photographed and not formally recorded. Further to the south-west another peat exposure was recorded (**Line No. 10409**), with especially large tree trunks present within it. The peat was similar to that in Line No. 10408, and this peat deposit was especially eroded, and was cut by many outwash channels. To the south it overlay exposed geology, and here it was

more easily broken up by the tide. It extended much further to the west, but the survey team could not plot it here as the mud deposits became too thick to walk across easily and safely.

The team then walked northwards along the base of an erosion channel to see how far out they could get into the intertidal zone and if there any other archaeological features. Peat and submerged forest deposits were occasionally visible sticking out of the mud in the sides of the channel, but nothing else could be seen in the deep mud. A point was taken at the furthest possible northwards point that peat could be physically accessed (**Point No. 145**).

The survey team then headed north-eastwards across a series of flat rock shelves with no visible archaeology. Then they came across the row of V-shaped traps, approximately 450m north of Stolford Farm, and situated in between two natural ridges of bedrock. These features were hard to record and photograph as there was substantial seaweed cover in this area. At least four clear examples of fish traps were identified arranged in a row orientated NNE-SSW, with the open angle of their leader arms facing east – presumably this reflects how the water drains out from the intertidal zone at this point. The four features (**Line Nos. 10411-10414**) each consisted of two short rock-cut slots up to c. 8m long, the slots being 0.25-0.30m wide. The slots for the leader arms with filled with angular fragments of stone up to 0.30m long, along with some slate, the stones projecting up to 0.20m above the flat slate bedrock intertidal surface. The slots and the stones do not seem to be substantial enough to have supported vertical stone leader arms, so it seems more likely that the stones were actually packing for wooden structures such as hurdle panels that have disappeared and left no trace, although it is odd that no vertical wooden stakes at all were identified. At the apex of each small V-shape was a gap around 0.50m wide, where presumably some form of basket was fitted. (N.B. When Richard McDonnell subsequently e-mailed several of his photographs of the features to GCCAS, taken in 1994 when there was much less weed cover, it was clear that at the centre of each gap in each apex there was actually a smaller rock-cut slot 0.20-0.30m long. At each apex there would thus effectively have been two small guts or outflow channels, a very odd arrangement).

Each V-shaped fish weir was very close to the next, but they were not contiguous, being separated by gaps of 2-3m. Some 10m to the north-east, on the other side of one of the natural lines of outcropping bedrock, a fifth probable V-shaped trap was identified (**Line No. 20121**), but to the north-west there was a sixth possible example (**Line No. 20122**), though this was a less likely candidate, and it was not on the same alignment as the others. Nevertheless, because of the weed cover and the difficulty in identifying these relatively small and low-lying features, it is possible that there were a few more examples originally present.

In the far eastern distance the team members saw the mudhorse fishermen's 4x4 driving right out onto the intertidal surface! Adrian Sellick and a female co-worker then got out, and Adrian pushed his mud-horse out towards his nets in the far distance. RB went off to try and get photos of them in action, whilst the rest of the team members finished recording the V-shaped fish weirs. They then walked eastwards along one of the natural outcropping stone ridges. When they caught up with Richard, he pointed out some stone rubble near one of the apparently natural gaps in the ridge, which may indicate that a natural feature was exploited as a fish trap, but this was a only a possibility so although the team members photographed this gap and the nearby stones, they were not formally recorded as an anthropogenic feature.

The Sellicks were by now far to the north checking their nets, so the team decided to head back to shore, via their 4x4 to take some photographs of it out in the intertidal zone. The team members then followed the tracks of it back, and it seemed possible that some rock outcrops had been removed or altered in order to permit the vehicle to travel out as far as it

did. The team members reached the shore and where they had parked up earlier, and NW, AW and AMC got changed and ready to head back to Gloucester. The GCCAS team bid a very sad farewell to Richard Brunning, and it was quite a poignant moment as this was not only the last time that they would be working with him, but it was the last ever fieldwork survey day for the Severn RCZAS project. The GCCAS team members have had a lot of fun doing it, and found some very nice archaeology.

Appendix D – Concordance of RCZAS and Certificate of Privilege records

CoP Reference	Given NGR	Easting	Northing	RCZAS rec. no.	Notes
LHB000	ST 286 425	328600	142500	50039	
LHB001 (50/31)	ST 52982 84917	352982	184917	10332-5?	
LHB002 (50/31)	ST 53513 83724	353513	183724	N/A	Recorded by Riley (1998) but not visible when visited
LHB003 (48/28)	ST 56441 89820	356441	189820	20000	
LHB004 (47/28)	ST 57747 90619	357747	190619	10029	
LHB005 (45/24)	ST 58389 91848	358389	191848	N/A	NGR further out than reached by RCZAS
LHB006 (43/27)	ST 58643 91491	358643	191491	10056?	Several recorded by RCZAS near this NGR
LHB007 (43/23)	ST 58643 91491	358643	191491	10055?	Several recorded by RCZAS near this NGR
LHB008 (43/23)	ST 58643 91491	358643	191491	?	Several recorded by RCZAS near this NGR
LHB009 (43/23)	ST 58643 91491	358643	191491	?	Several recorded by RCZAS near this NGR
LHB010 (36/17)	ST 58791 92181	358791	192181	N/A	NGR further out than reached by RCZAS
LHB011 (36/17)	ST 58704 92163	358704	192163	N/A	NGR further out than reached by RCZAS
LHB012 (n/a see notes)	ST 58891 92252	358891	192252	N/A	NGR further out than reached by RCZAS
LHB013 (n/a see notes)	ST 58598 92168	358598	192168	N/A	NGR further out than reached by RCZAS
LHB014 (n/a see notes)	ST 58891 92252	358891	192252	N/A	NGR further out than reached by RCZAS
LHB015 (28/21)	ST 59116 91798	359116	191798	10059	
LHB016 (31/14)	under reservoir	360369	194834	N/A	Located on APs by NMP. Prob NMR 1385234
LHB017 (32/12)	ST 61481 96535	361481	196535	10094	
LHB018 (30/11)	ST 61915 96932	361915	196932	10097	
LHB019 (24/10)	ST 64096 98286	364096	198286	10157-9? 10310-25?	Multiple phases at this location
LHB020 (23/9)	ST 65727 99699	365727	199699	N/A	Not visited but recorded from APs, NMR 1466960
LHB021 (29/7)	? unknown no evidence of rank	366499	201483	10358?	NGR is for 10358

CoP Reference	Given NGR	Easting	Northing	RCZAS rec. no.	Notes
LHB022 (21/6)	SO 66547 01334	366547	201334	10360?	One of three ranks near this NGR, 10360 nearest.
LHB023 (21/6)	Prob under Sharpness Dock pier	366697	202054	N/A	Are 2 vis. on 1839 tithe map? NGR is taken from that
RHB001 (16/62)	ST 552 913 (estimated)	355200	191300	10013?	10013 is the only putcher like feature seen anywhere nr Lyde Rock
RHB002 (15/62)	ST 553 925 (estimated)	355300	192500	10072	
RHB003 (13/60)	ST 585 975 (estimated)	358500	197500	10329-30	
RHB004 (9/56)	SO 004 632	363200	200400	N/A	grid ref reversed? Not visited & not seen on APs
RHB005 (69/55)	SO 656 025 estimated from map	365600	202500	N/A	Not visited & not seen on APs
RHB006 (69/53)	SO 66295 03760	366295	203760	N/A	Not visited & not seen on APs
RHB007 (n/a immemorial usage)	SO 679 054 estimated	367900	205400	10069	
RHB008 (n/a immemorial usage)	SO 686 057 estimated	368600	205700	10352	
RHB009 (n/a immemorial use)	Rank 1 SO 69391 06364	369391	206364	10350	
RHB009 (n/a immemorial use)	Rank 2 SO 69199 06202	369199	206202	10351	
RHB010 (62/44)	SO 70197 06971	370197	206971	10064	
RHB011 (329/43)	SO 70459 07157	370459	207157	10062	
RHB012 (61/42)	SO 70607 07312	370607	207312	10061	
RHB013 (328/41)	SO 71314 07640	371314	207640	N/A	Area visited before CoP data held, rank not noticed.
RHB014 (n/a immemorial use)	SO 69964 12957	369964	212957	N/A	Seasonal, in-use

Appendix E - Wood samples - collated information, photographs and drawings

The following information is presented as a supplement to that contained in section 11.2 of the first volume of this report. It comprises a table in which assessment information from Richard Brunning, calibrated dates and species identifications from English Heritage, and further species identifications and other information from York Archaeological Trust has been collated. A few samples were discarded due to their poor condition but the majority of samples not identified to species were lost by a courier. The table is ordered by county from north to south, then alphabetically by place name and finally numerically by line number and point/sample number. Samples not identified to species were lost by a courier. The table is followed by photographs of samples taken by Richard Brunning and wood illustrations produced by Steve Allen at YAT.

Place	Line no.	Point/ Sample	Feature type	Species	Annual rings	Felled/ cut	Calibrated date (95% conf)	Other
Beachley	10004	104	fish trap	Quercus spp.				
Beachley	10004	11/3	fish trap	Quercus (immature)	11	winter		
Beachley	10005	10/2	Fish trap					
Beachley	10006	105		Ulmus spp.				
Beachley	10006	9/1	Fish trap					
Beachley	10343	106A	Fish trap	Quercus spp.	14			
Beachley	10343	106A(r)	Revetment					
Beachley	10343	106B	Fish trap					
Beachley	10343	106C	Fish trap					
Beachley	10343	106D	Fish trap	Quercus (immature)	11	spring		
Beachley	10343	106E	Fish trap	Quercus spp.	12	spring	calAD775-970	
Beachley	10343	106F	Fish trap					
Beachley	10343	106G	Fish trap	Quercus spp.	12	spring	calAD770-970	
Beachley		Find no. 1	Oar	Fraxinus excelsior L				Not suitable for dendro dating
Hills Flats	N/A	44?	Worked timber					
Woolaston	10326	86A	Fish basket?	Salix spp.	c. 12	uncertain	calAD880-995	
Woolaston	10326	86B	Fish basket?				calAD895-1025	
Woolaston	10326	86C	Fish basket?					
Woolaston	10326	86D	Fish basket?					
Woolaston	10326	88A	Fish basket?	Salix spp.	5	spring	calAD900-1025	

Place	Line no.	Point/ Sample	Feature type	Species	Annual rings	Felled/ cut	Calibrated date (95% conf)	Other
Woolaston	10326	88B	Fish basket?					
Woolaston	10326	88C	Fish basket?					
Woolaston	10326	88D	Fish basket?	Salix spp.	5	spring	calAD890-1025	
Woolaston	10326	88E	Fish basket?					
Woolaston	10326	88F	Fish basket?					
Woolaston	10326	88G	Fish basket?					
Woolaston	10326	88H	Fish basket?					
Woolaston	10326	88I	Fish basket?					
Woolaston	10326	88J	Fish basket?					
Woolaston	10326	89A	Fish basket?	Alnus spp.	6	winter		
Woolaston	10326	89B	Fish basket?	Alnus spp.			calAD900-1025	
Woolaston	10326	89C	Fish basket?					
Woolaston	10326	89D	Fish basket?					
Woolaston	10326	89E	Fish basket?	Quercus spp.	15			
Woolaston	10326	89F	Fish basket?	Quercus spp.	16			
Woolaston	10326	89G	Fish basket?	Quercus spp.	7		calAD885-1020	
Woolaston	10328	87A	Revetment/ fish trap	Quercus spp.	30		calAD685-885	
Woolaston	10328	87B	Revetment/ fish trap					
Woolaston	10328	87C	Revetment/ fish trap					
Woolaston	10328	87D	Revetment/ fish trap	Quercus spp.	14		calAD830-990	
Woolaston	10326/7	90A	Fish basket?					
Woolaston	10326/7	90B	Fish basket?	Corylus avellana L.	5	spring	calAD895-1025	
Woolaston	10326/7	90C	Fish basket?					
Woolaston	10326/7	90D	Fish basket?					
Woolaston	10326/7	90E	Fish basket?					
Woolaston	10326/7	90F	Fish basket?					
Woolaston	10326/7	90G	Fish basket?					
Woolaston	10326/7	90H	Fish basket?					

Place	Line no.	Point/ Sample	Feature type	Species	Annual rings	Felled/ cut	Calibrated date (95% conf)	Other
Woolaston	10326/7	90I	Fish basket?					
Woolaston	10326/7	90J	Fish basket?					
Woolaston	10326/7	90K	Fish basket?					
Woolaston	10326/7	90L	Fish basket?					
Woolaston	10326/7	90M	Fish basket?	Corylus avellana L.	5	spring	calAD775-980	
Woolaston	10326/7	90N	Fish basket?					
Aust	10015	92A	Fish trap	Quercus spp.			calAD1665-1990	
Aust	10015	92B	Fish trap					
Aust	10015	92C	Fish trap	Pomoidaea spp.	10	winter	calAD1660-1955	
Aust	10015	92D	Fish trap					
Aust	10015	92E	Fish trap					
Aust	10021	93A	Fish trap	Quercus spp.			calAD660-775	
Aust	10021	93B	Fish trap	Corylus avellana L.	9	winter	calAD650-775	
Aust	10021	93C	Fish trap					
Aust	10021	93D	Fish trap					
Aust	10032	100A	Fish trap	Pomoidaea spp.	12	winter	calAD1040-1215	
Aust	10032	100B	Fish trap					
Aust	10032	100C	Fish trap					
Aust	10032	100D	Fish trap					
Aust	10032	100E	Fish trap	Salix spp.	20	winter	calAD1045-1225	
Aust	10032	100F	Fish trap					
Aust	10032	99A	Fish trap	Quercus spp.	31		calAD1025-1205	
Aust	10032	99B	Fish trap	Ulmus spp.	11	spring	calAD1180-1280	
Aust	10339	94A	Fish trap	Fraxinus excelsior L.	5	winter	calAD660-775	
Aust	10339	94B	Fish trap	Acer campastre L.	15	winter	calAD660-780	
Aust	10041/ 10342	102A	Fish trap	Quercus spp.	20			
Oldbury	N/A	30004	wooden peg					

Place	Line no.	Point/ Sample	Feature type	Species	Annual rings	Felled/ cut	Calibrated date (95% conf)	Other
Blue Anchor	10142	46	within peat					
Blue Anchor	10142	47	driven into peat					
Blue Anchor	10142	46A	within peat					
Blue Anchor	10142	46B	within peat					
Blue Anchor	10142	46C	within peat					
Blue Anchor	10142	46D	within peat					
Blue Anchor	20039	30008-1	stone weir	Quercus spp.	c.46			Photo 1 below
Blue Anchor	20039	30008-2	stone weir	Quercus spp.	c.46			Photo 2 below
Blue Anchor	20039	30008-3	stone weir	Quercus spp.	c.55			Photo 3 below
Blue Anchor	20039	30008-4	stone weir	Quercus spp.	c.9		calAD 1015-1155	
Blue Anchor	20039	30008-5	stone weir	Quercus spp.	c.9			
Blue Anchor	20039	30008-6	stone weir	Quercus spp.	c.9		calAD 985-1120	
Blue Anchor	20039	30008-7	stone weir	Quercus (immature)	5	winter		
Blue Anchor	20039	30008-8	under stone weir	Alnus spp.	9	winter		
Blue Anchor	20039	30008-10	stone weir	Quercus spp.	c.18			Photo 4 below
Blue Anchor	20039	30008-11	stone weir	Quercus (immature)	13	spring		
Blue Anchor	20039	30008-12	stone weir	Quercus (immature)	c.6			
Blue Anchor	20039	30008-13	stone weir	Quercus (immature)	c.13			
Blue Anchor	20039	30008-14	stone weir	Quercus (immature)	c.15			tangentially faced c. 15 rings/10mm
Blue Anchor	20039	30008-15	stone weir	Quercus (immature)	c.8			tangentially faced c. 8 rings/10mm. Photo 5 below
Blue Anchor	20039	30008-16	stone weir	Quercus (immature)	c.5			radially faced c. 5 rings/10mm Photo 6 below
Blue Anchor	20039	30008-17	stone weir	Quercus spp.	c.6			
Blue Anchor	20039	30008-18	stone weir	Quercus (immature)	c,5			tangentially faced, c. 5 rings/10mm Photo 7 below
Blue Anchor	20039	30008-19	stone weir	Quercus spp.	c.30			Photo 8 below
Blue Anchor	20039	30008-20	stone weir	Quercus spp.	c.36			
Brean	10249	30014	peat bulk sample					

Place	Line no.	Point/ Sample	Feature type	Species	Annual rings	Felled/ cut	Calibrated date (95% conf)	Other
Brean	10251	68A	Fish trap?	Salix spp.	4	winter		Photo 9 below Drawing 1 below
Brean	10251	68B	Fish trap?	Salix spp.	6	winter		Photo 10 below
Brean	10251	68C	Fish trap?	Salix spp.	6	winter		Photo 11 below
Brean	10251	68D	Fish trap?	Salix spp.	4	winter		Photo 12 below
Brean	10251	68E	Fish trap?	Salix spp.	5	winter		Drawing 2 below Photo 13 below
Brean	10251	68F	Fish trap?	Salix spp.	4	winter		
Brean	10251	68G	Fish trap?	Salix spp.	5	winter		
Brean	10251	68H	Fish trap?	Salix spp.	4	winter		
Brean	10251	68I	Fish trap?	Salix spp.	5	winter		
Brean	10251	68J	Fish trap?	Salix spp.	8	winter		
Brean	10251	68K	Fish trap?	Salix spp.	4	winter		
Brean	10251	68L	Fish trap?	Salix spp.	4	spring		
Brean	10251	68M	Fish trap?	Salix spp.	4	winter		
Brean	10251	68N	Fish trap?	Salix spp.	4	spring		
Brean	10252	69A	Fish trap?	Alnus spp.	6	winter		
Brean	10252	69B	Fish trap?	Salix spp.	5	winter		
Brean	10252	69C	Fish trap?	Salix spp.	5	winter		
Brean	10252	69D	Fish trap?	Salix spp.	8	winter		
Brean	10252	69E	Fish trap?	Salix spp.	7	winter		
Brean	10252	69F	Fish trap?	Salix spp.	4	early spring		
Brean	10252	69G	Fish trap?	Salix spp.	5	winter		
Brean	10252	69H	Fish trap?	Salix spp.	4	winter		
Brean	10252	69I	Fish trap?	Salix spp.	4	spring		
Brean	10252	69J	Fish trap?	Salix spp.	3	spring		
Brean	10252	69K	Fish trap?	Salix spp.	5	spring		
Brean	10252	69L	Fish trap?	Alnus spp.	4	winter		

Place	Line no.	Point/ Sample	Feature type	Species	Annual rings	Felled/ cut	Calibrated date (95% conf)	Other
Brean	10252	69M	Fish trap?	Alnus spp.	4	spring		
Brean	10252	69N	Fish trap?	Salix spp.	4	winter		
Brean	10252	69O	Fish trap?	Alnus spp.	5	early spring		
Brean	10252	69P	Fish trap?	Salix spp.	3	spring		
Brean	10252	69Q	Fish trap?	Salix spp.	4	early spring		
Brean	10252	69R	Fish trap?	Salix spp.	4	winter		
Brean	10252	69S	Fish trap?	Salix spp.	3	spring		
Brean	10252	69T	Fish trap?	Salix spp.	7	winter		
Brean	10252	69U	Fish trap?	Viburnum opulusL. / V. Lantana L	9	early spring		
Brean	10252	69V	Fish trap?	Salix spp.	4	spring		
Brean	10252	69W	Fish trap?	Alnus spp.	8	winter		
Brean	10252	69X	Fish trap?	Salix spp.	5	spring		
Brean	10257	70A	Fish trap?	Salix spp.	5	early spring		Photo 14 below
Brean	10257	70B	Fish trap?	Alnus spp.	7	spring	calAD1665-1950	Photo 15 below
Brean	10257	70C	Fish trap?	Salix spp.	5	early spring		
Brean	10257	70D	Fish trap?	Alnus spp.	4	spring		
Brean	10257	70E	Fish trap?	Alnus spp.	7	spring		
Brean	10257	70F	Fish trap?	Corylus avellana L.	8	spring		
Brean	10257	70G	Fish trap?	Corylus avellana L.	5	winter		
Brean	10257	70H	Fish trap?	Alnus spp.	8	winter		
Brean	10257	70I	Fish trap?	Alnus spp.	5	winter		
Brean	10257	70J	Fish trap?	Alnus spp.	6	spring		
Brean	10257	70K	Fish trap?	Alnus spp.	5	winter		
Brean	10257	70L	Fish trap?	Alnus spp.	5	winter		
Brean	10257	70M	Fish trap?	Corylus avellana L.	6	winter		
Brean	10257	70N	Fish trap?	Fraxinus excelsior L.	7	winter		
Brean	10257	70O	Fish trap?	Corylus avellana L.	7	winter		

Place	Line no.	Point/ Sample	Feature type	Species	Annual rings	Felled/ cut	Calibrated date (95% conf)	Other
Brean	10257	70P	Fish trap?	Alnus spp.	6	spring		
Brean	10257	70Q	Fish trap?	Alnus spp.	8	winter		
Brean	10257	70R	Fish trap?	Alnus spp.	9	winter		
Brean	10257	70S	Fish trap?	Pinus sylvestris L.				tangentially faced axe chipping
Brean	10257	70T	Fish trap?	Corylus avellana L.	4	winter		
Brean	10257	70U	Fish trap?	Corylus avellana L.	12	spring	calAD1650-1955	
Brean	10257	70V	Fish trap?	Salix spp.	7	winter		
Brean	10257	70W	Fish trap?	Salix spp.	6	winter		
Brean	10257	70X	Fish trap?	Alnus spp.	4	early spring		
Brean	10260	71A	Fish trap?	Salix spp.	4	winter		
Brean	10260	71B	Fish trap?	Alnus spp.	6	winter		
Brean	10260	71C	Fish trap?	Alnus spp.	6	spring		
Brean	10260	71D	Fish trap?	Alnus spp.	5	winter		
Brean	10260	71E	Fish trap?	Alnus spp.	5	winter		
Brean	10260	71F	Fish trap?	Alnus spp.	6	spring		
Brean	10260	71G	Fish trap?	Alnus spp.	7	early spring		
Brean	10260	71H	Fish trap?	Alnus spp.	6	spring		
Brean	10260	71I	Fish trap?	Alnus spp.	5	winter		Photo 16 below
Brean	10260	71J	Fish trap?	Alnus spp.	7	spring		
Brean	10260	71K	Fish trap?	Alnus spp.	4	spring		
Brean	10260	71L	Fish trap?	Alnus spp.	4	winter		
Brean	10260	71M	Fish trap?	Alnus spp.	5	winter		
Brean	10260	71N	Fish trap?	Alnus spp.	6	spring		
Brean	10260	71O	Fish trap?	Alnus spp.	7	winter		
Brean	10261	?	stone weir					
Brean	40018	50024/14	Fish trap?					
Brean	40019	50023/13	Fish trap?					
Brean	N/A	50016/3	Stake	Quercus spp.				

Place	Line no.	Point/ Sample	Feature type	Species	Annual rings	Felled/ cut	Calibrated date (95% conf)	Other
Brean	N/A	50018/4	within peat	Quercus spp.				
Brean	N/A	50021/8	Fish trap?					
Burnham	10264	76	Trackway					Photo 17 below
Burnham	10264	76A	Trackway	Salix spp.	3	spring		
Burnham	10264	76B	Trackway	Salix spp.	3	early spring		Photo 18 below Drawing 3 below
Burnham	10264	76C	Trackway	Salix spp.	4	winter	calAD1650-1955	
Burnham	10264	76D	Trackway	Salix spp.	3	spring		
Burnham	10264	76E	Trackway	Salix spp.	4	winter		
Burnham	10264	76F	Trackway	Salix spp.	4	early spring		
Burnham	10264	76G	Trackway	Salix spp.	4	winter		
Burnham	10264	76H	Trackway	Salix spp.	4	winter		
Burnham	10264	76I	Trackway	Salix spp.	4	winter		
Burnham	10264	76J	Trackway	Salix spp.	4	spring		
Burnham	10264	76K	Trackway	Salix spp.	5	winter		
Burnham	10264	76L	Trackway	Salix spp.	4	winter		
Burnham	10264	76M	Trackway	Salix spp.	4	winter	calAD1640-1955	
Burnham	10264	76N	Trackway	Salix spp.	3	early spring		Photo 19 below
Burnham	10264	76O	Trackway	Salix spp.	2	early spring		Photo 19 below
Burnham	10264	76P	Trackway	Salix spp.	3	spring		Photo 19 below
Burnham	10264	76Q	Trackway	Salix spp.	2	winter		Photo 19 below
Burnham	10264	76R	Trackway	Salix spp.	2	early spring		Photo 19 below
Burnham	10264	76S	Trackway					
Burnham	10264	76T	Trackway					
Burnham	10264	76U	Trackway					
Burnham	10265	74A	Trackway					
Burnham	10265	74B	Trackway					
Burnham	10265	74C	Trackway					

Place	Line no.	Point/ Sample	Feature type	Species	Annual rings	Felled/ cut	Calibrated date (95% conf)	Other
Burnham	10265	74D	Trackway					
Burnham	10265	74E	Trackway					
Burnham	10265	74F	Trackway					
Burnham	10265	74G	Trackway					
Burnham	10265	74H	Trackway					
Burnham	10265	74I	Trackway					
Burnham	10265	74J	Trackway	Salix spp.	4	spring		
Burnham	10265	74K	Trackway					
Burnham	10265	74L	Trackway					
Burnham	10265	74M	Trackway					
Burnham	10264/5	77A	Trackway	Salix spp.	4	winter		
Burnham	10264/5	77B	Trackway	Salix spp.	4	winter		
Burnham	10264/5	77C	Trackway	Salix spp.	4	winter		
Dunster	40039	50038	stone weir					
Minehead	10226	61A	stone weir	cf Pseudotsuga menziesii				Drawing 4 below
Minehead	10226	61B	stone weir	cf Pseudotsuga menziesii				
St Audries	10160	N/A	net hang	Corylus avellana L.	10	spring		
Stert Flats	10267	79A	Fish trap	Quercus spp.	c. 100			Sent for dendro dating (not part of RCZAS) Photo 20 below
Stert Flats	10267	79B	Fish trap	Quercus spp.	c.145			Sent for dendro dating (not part of RCZAS) Photo 21 below
Stert Flats	10269	78A	Fish trap	Quercus spp.	18			
Stert Flats	10269	78B	Fish trap	Salix spp.	14	winter		
Stert Flats	10269	78C	Fish trap	Quercus spp.	16			
Stert Flats	10269	78D	Fish trap	Quercus spp.	13			
Stert Flats	10269	78E	Fish trap	Salix spp.	14	winter		
Stert Flats	10269	78F	Fish trap	Quercus spp.	9			

Place	Line no.	Point/ Sample	Feature type	Species	Annual rings	Felled/ cut	Calibrated date (95% conf)	Other
Stert Flats	10269	78G	Fish trap	Quercus spp.	14			
Stert Flats	10269	78H	Fish trap	Salix spp.	11	winter		Photo22 below
Stert Flats	10271	10271A	Fish trap	Quercus spp.	c.37		calAD1020-1170	Photos 23 and 24 below
Stert Flats	10271	10271B	Fish trap	Quercus spp.	11		calAD 1030-1215	Photo 25 below
Stert Flats	10274	10274A	Putcher rank?					
Stert Flats	10274	10274B	Putcher rank?					
Stert Flats	10274	10274C	Putcher rank?	Ulmus spp.	4	spring		
Stert Flats	10274	10274D	Putcher rank?					
Stert Flats	10274	10274E	Putcher rank?					
Stert Flats	10274	10274F	Putcher rank?					
Stert Flats	10274	10274G	Putcher rank?					
Stert Flats	10274	10274H	Putcher rank?	Ulmus spp.	9	spring		
Stert Flats	10274	10274I	Putcher rank?					
Stert Flats	10274	10274J	Putcher rank?					
Stert Flats	10274	10274K	Putcher rank?					
Stert Flats	10282	10282/3A	fish trap	Quercus spp.	c.45			Sent for dendro dating (not part of RCZAS) Photo 26 below
Stert Flats	10292	10292	Fish trap	Quercus spp.	c.47			Photo 27 below
Stert Flats	10387	139	Stakes and hurdling					
Stert Flats	10387	140	Stakes and hurdling					
Stert Flats	20108	30016	Fish trap	Quercus spp.	c.36			Drawing s 5a and 5b below Photo 28 below
Stert Flats	20111	30017A	Fish trap	Quercus spp.	c.41			
Stert Flats	20111	30017B	Fish trap	Corylus avellana L.	34	winter		
Stert Flats	20117	30018A	Fish trap	Alnus spp.	7	early spring		
Stert Flats	20117	30018B	Fish trap					
Stert Flats	20117	30018C	Fish trap					
Stert Flats	20118	30019	Fish trap	Quercus spp.	c.20			

Place	Line no.	Point/ Sample	Feature type	Species	Annual rings	Felled/ cut	Calibrated date (95% conf)	Other
Stert Flats	N/A	81	Fish trap	Quercus spp.	7+			
Stert Flats	20120	30021A	Fish trap					
Stert Flats	20120	30021B	Fish trap					
Stert Flats	20120	30021C	Fish trap					
Stert Flats	20120	30021D	Fish trap					
Stert Flats	20120	30021E	Fish trap					
Stert Flats	20120	30021F	Fish trap					
Stert Flats	20120	30021G	Fish trap	corylus/alnus			calAD 900-1030	
Stert Flats	20120	30021H	Fish trap	corylus/alnus			calAD 1020-1170	
Stert Flats	N/A	50034	Fish trap					

Botanical name:

Acer campestre L.

Alnus spp.

Corylus avellana L.

Fraxinus excelsior L.

Pinus sylvestris L.

Pomoideae spp.

Pseudotsuga menziesii

Quercus spp.

Salix spp.

Ulmus spp.

Viburnum opulus L. /*V. lantana* L

Common English name:

Field maple

Alders, exact species not determinable

Hazel

Ash

Scots pine

Apples, pears, hawthorns, exact species not determinable

Douglas fir

Oaks, exact species not determinable

Willows, exact species not determinable

Elms, exact species not determinable

Elder/Cotton Tree

Photographs of samples

All photographs Richard Brunning



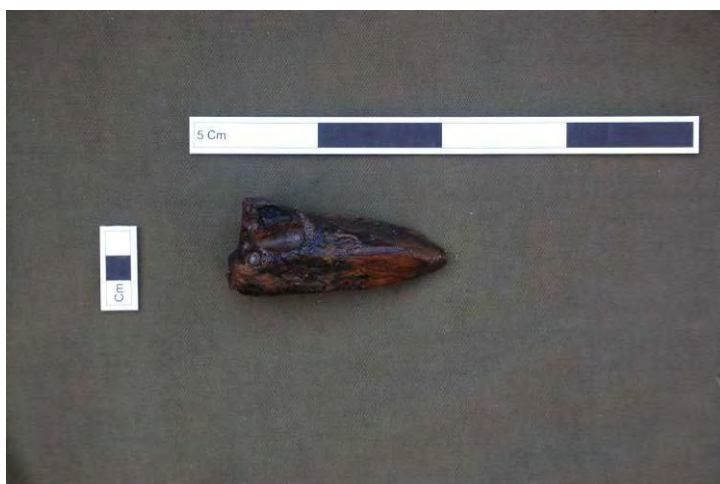
1. Blue Anchor line 20039. Sample 30008-1



2. Blue Anchor line 20039. Sample 30008-2



3. Blue Anchor line 20039. Sample 30008-3



4. Blue Anchor line 20039. Sample 30008-10



5. Blue Anchor line 20039. Sample 30008-15



6. Blue Anchor line 20039. Sample 30008-16



7. Blue Anchor line 20039. Sample 30008-18



8. Blue Anchor line 20039. Sample 30008-19



9. Brean line 10251. Sample 68A



10. Brean line 10251. Sample 68B



11. Brean line 10251. Sample 68C



12. Brean line 10251. Sample 68D



13. Brean line 10251. Sample 68E



14. Brean line 10257. Sample 70A



15. Brean line 10257. Sample 70B



16. Brean line 10260. Sample 71I



17. Burnham line 10264. Sample 76.



18. Burnham line 10264. Sample 76B



19. Burnham line 10264 horizontal elements. Samples 76N, O, P, Q and R



20. Stert Flats line 10267. Sample 79A



21. Stert Flats line 10267. Sample 79B



22. Stert Flats line 10269. Sample 78HB



23. Stert Flats line 10271. Sample 10271A.



24. Stert Flats line 10271. Tip of sample 10271A.



25. Stert Flats line 10271. Sample 10271B.



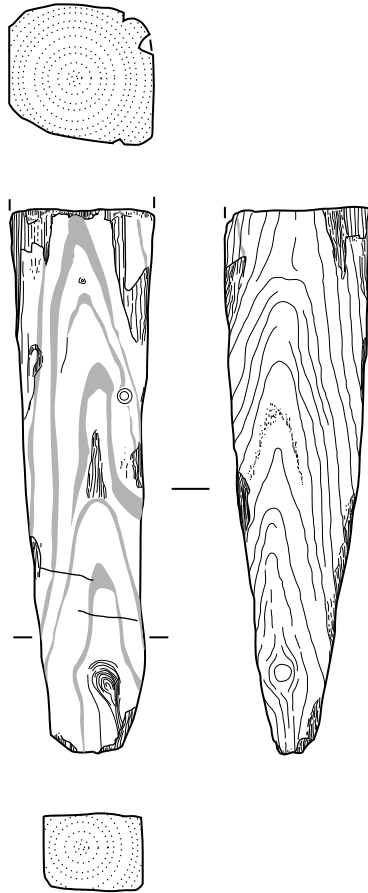
26. Stert Flats line 10282. Sample 10282/3A.



27. Stert Flats line 10292. Sample 10292.



28. Stert Flats line 20108. Sample 30016..



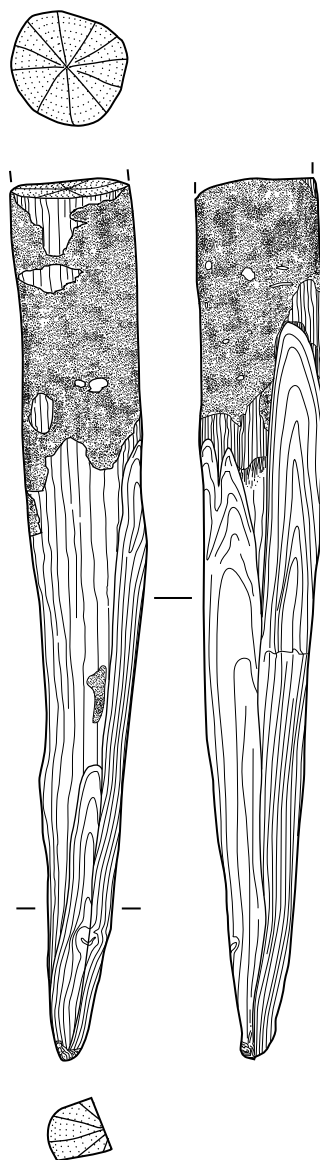
Minehead Line 10226

61 A

1:2

SJA 15.10.2012



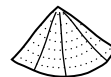
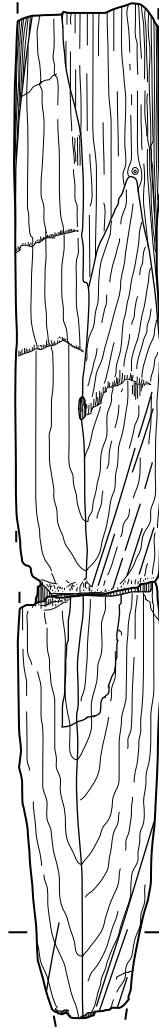
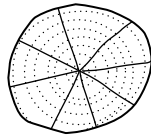


Brean Line 10251. Point 68

68 A

1:2

SJA 16.10.2012



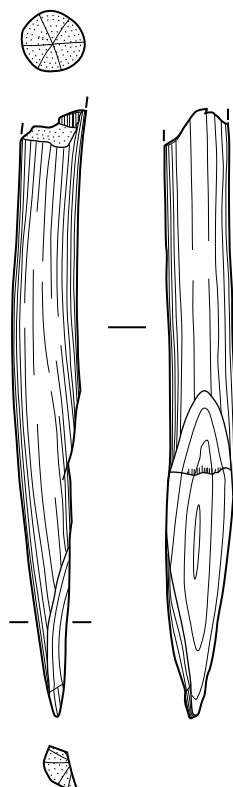
Brean Line 10251

68 E

1:2

SJA 15.10.2012





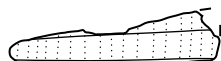
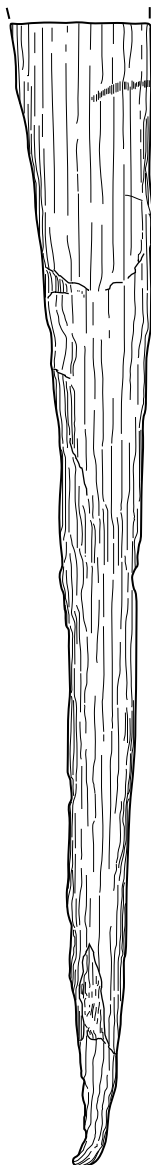
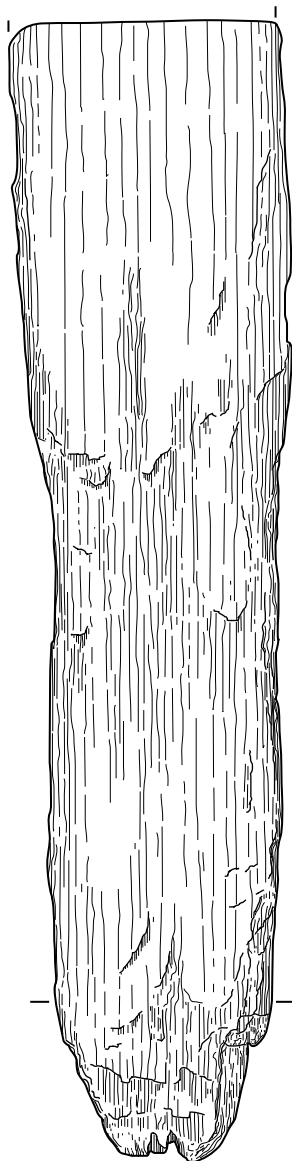
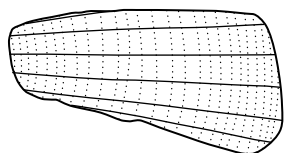
Burnham Line 10264. Point 76

76 B

1:2

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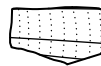
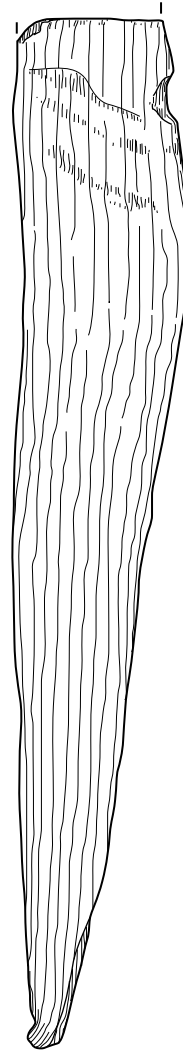
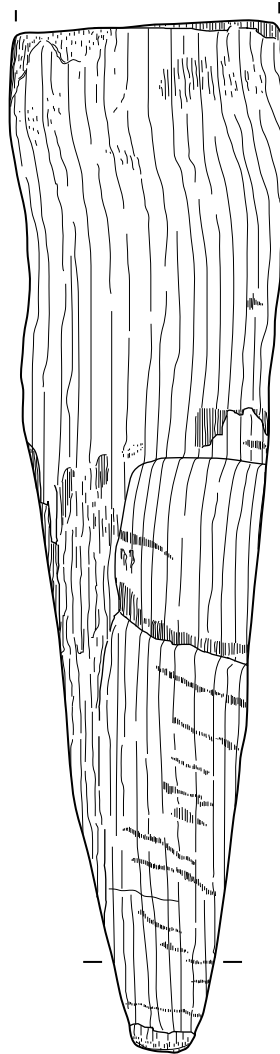
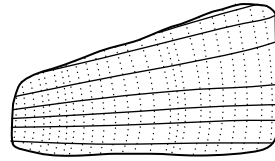


Stert Flats Line 20108. Point 30016

1:2

SJA 12.10.2012





Stert Flats Line 20108. Point 30016

1:2

SJA 12.10.2012

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