

# Assessment of the condition of the white-clawed crayfish *Austropotamobius pallipes* in the River Wye Special Area of Conservation in 2014

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NRW Evidence Report No. 74

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# 1. Crynodeb Gweithredol

Ym mis Hydref/Tachwedd 2014, fe arolygwyd rhannau o ACA Afon Gwy ar Afon Edw, Nant yr Offeiriad a Nant Sgithwen am gimwch yr afon grafanc wen er mwyn asesu cyflwr poblogaeth cimwch yr afon a chynefin cimwch yr afon. Roedd y samplu yn dilyn methodoleg a ddatblygwyd yn ystod rhaglen fonitro 2003 (Rogers & Watson 2004), ac roedd yn cynnwys cyfuniad o chwilio â llaw a thrapio. Ymgymerwyd â'r gwaith i gyflwyno ychydig o ddata oedd ei angen i asesu p'un a oedd cimwch yr afon grafanc wen mewn cyflwr ffafriol yn ACA Afon Gwy.

Tra bydd rhaid casglu ragor o ddata cyn y gall asesiad llawn gael ei wneud, mae'r diffyg ymddangosiadol o gimwch yr afon grafanc wen yn Afon Edw, wedi marwoldeb yn 2006, yn bryderus o ystyried bod hyn wedi bod yn ddyfrffordd bwysig ar gyfer y rhywogaeth hon yn y gorffennol. Tra bod niferoedd cimychiaid yr afon yn gymharol gadarn yn Nant yr Offeiriaid a Nant Sgithwen, roedd poblogaethau wedi'u cyfyngu yn bennaf i flaenddyfroedd.

Mae'n bwysig i gwblhau gwaith arolwg cimwch yr afon grafanc wen ar ACA Afon Gwy yn 2015 er mwyn i ganlyniadau 2014 gael eu cyfuno fewn i asesiad cyffredinol.

# 2. Executive Summary

In October/November 2014, parts of the River Wye SAC on the Afon Edw, Nant yr Offeiriad and Sgithwen Brook were surveyed for white-clawed crayfish to assess the condition of both the crayfish populations and crayfish habitat. Sampling followed the methodology developed during the 2003 monitoring programme (Rogers & Watson 2004), and included a combination of manual searching and trapping. The work was undertaken to provide some of the data required to assess whether the white-clawed crayfish in the River Wye SAC was in favourable condition.

Whilst further data will need to be collected before the full assessment can be made, the apparent lack of white-clawed crayfish in the Afon Edw, following a mortality in 2006, is worrying given that this has been a very important waterway for this species in the recent past. Whilst crayfish numbers were relatively robust in Nant yr Offeiriad and Sgithwen Brook, populations were mostly confined to the headwaters.

It is important to complete survey work for white-clawed crayfish on the River Wye SAC in 2015 so that the 2014 results can be amalgamated into an overall assessment.

# 3. Introduction

### 3.1. Background information

The white-clawed crayfish *Austropotamobius pallipes* is a feature of the River Wye Special Area of Conservation (SAC). The SAC designation aims to ensure that populations within selected sites are in Favourable Condition and that Favourable Conservation Status (FCS) is maintained across its range. Favourable Condition is defined by a Conservation Objective that is assessed by monitoring appropriate attributes against agreed thresholds. To this end, a standardised monitoring protocol for the white-clawed crayfish was developed as part of the 'LIFE in UK Rivers' project (Peay, 2002).

Surveys for crayfish within the mid-Wye catchment in 1995 and 2002 helped to determine its status and distribution, and identified the most important tributaries on the River Wye (Rogers & Holdich, 1995; Rogers & Watson, 2003). These are Afon Duhonw, Afon Edw, Afon Irfon, Afon Llynfi, Clyro Brook, Dulas Brook (Builth Road), Nant yr Offeiriad and Sgithwen Brook. The surveys also enabled the setting of provisional thresholds for condition assessment within these key tributaries. Using a modified version of the standardised UK monitoring protocol, a condition assessment of the population in the Wye SAC was undertaken in 2003 (Rogers & Watson, 2004). During the course of the monitoring programme, the protocol was further modified to include trapping as well as manual searching to improve the volume of data.

Using five attributes to determine favourable condition (see Table 1), the 2003 assessment concluded that the white-clawed crayfish population was in unfavourable condition, although it was noted that the only failing threshold was the average number of crayfish recorded in each habitat patch. The authors suggested that the "lower limit of [greater than one] is set too high and should be revised" (Rogers & Watson, 2004).

White-clawed crayfish were found in 6 of the 8 monitoring units, being absent from the Afon Duhonw and the Afon Irfon. Whilst porcelain disease was recorded at low incidence, no signal crayfish were detected in any of the monitoring units. Suitable habitat was recorded in 79% of the sampled habitat patches and all monitoring units had a GQA Biological Class of A or B.

Since 2003, signal crayfish appear to have spread within the Bachawy, a tributary of the mid-Wye, despite attempts to control numbers, and may now be in the main Wye river channel (Chris Dyson, pers. comm.). The dispersal of signals within the mid-Wye catchment will have a serious impact upon white-clawed crayfish, by both direct competition and the spread of crayfish plague. Overall the last three years, a captive-rearing programme has released 3000 juvenile white-clawed crayfish into the Afon Chwefru (a tributary of the Afon Irfon). This needs to be taken into account when assessing the condition of the Irfon monitoring unit.

### 3.2. Objectives

The objective of the 2014 survey work was to undertake monitoring of the whiteclawed crayfish and its habitat within the River Wye SAC in order to report on condition as part of the assessment of Favourable Conservation Status for Natura www.naturalresourceswales.gov.uk Page 2 2000 features. The scope of the project was limited by financial constraints and weather conditions, given that the work was commissioned late in the year.

l d	ble 1. Conservation	on Objective for the w	mile-clawed clayinsh in the River wye SAC in 2003
	Attribute No.	Conservation objective (when the feature is in favourable condition)	To maintain the white-clawed crayfish <i>Austropotamobius pallipes</i> in the River Wye SAC in favourable condition where:
	1	Lower limit	the average number of crayfish recorded in each habitat patch is: greater than 1
			where:
	2	Lower limit	crayfish are present in 5 of the 8 monitoring units
			and where:
	3	Lower limit	there is an absence of alien crayfish and plague, and a <10% incidence of porcelain disease
		Habitat quality	
	4	Lower limit	Suitable habitat should be present in 60% of the sampled habitat patches
			and where:
	5	Lower limit	water quality is at GQA Biological Class A or B in 5 of the 8 monitoring units
	Definition of suit	able white-clawed	River beds with cobble and boulders larger than
	crayfish habitat		15cm along the longest axis, and with little or no siltation.

#### 4. **Methods**

Monitoring of current condition followed the Common Standards approach adopted during the 2003 assessment, including the use of traps as well as manual searches.

The Nant yr Offeiriad, Edw, Sgithwen Brook, Dulas Brook (Builth Road) [and Llynfi] were considered to be the most important **monitoring units** because most crayfish were found within these tributaries in 2003, and therefore monitoring efforts focussed here in 2014.

A total of 16 x 500m stretches were selected randomly within each monitoring unit (see Appendix A to C). Starting from the downstream end of the stretch, a 100m sampling site was selected within each stretch which contained five suitable habitat patches measuring from 1 to 20m<sup>2</sup>. Within each habitat patch, 10 potential refuges (large cobble or boulder >15cm along longest axis) were searched and the number of cravfish recorded. Given the low population levels currently found on the River Wye, the examination of relatively small numbers of refuges sometimes failed to find any crayfish, and timed searches of 15 minutes within each habitat patch were more appropriate as well as the use of traps.

A crayfish habitat recording form was completed for each site. The form consists of the following:

- Basic survey details, including conditions at the time of the survey.
- Habitat details in each habitat patch.
- An overall appraisal of habitat for crayfish and ease of survey in the site.
- Crayfish record, the details of the catch.

A photograph was taken at each site and incorporated into the habitat recording form and where crayfish were found, details were recorded on a crayfish species survey form. Following examination, the crayfish were returned to the water in the position from whence they came.

Special attention was paid to Health and Safety procedures for fieldwork in the water and to the use of appropriate precautions to prevent the spread of crayfish plague.

#### 4.1. Methods of Analysis

#### 4.1.1. Crayfish catch

The crayfish catch was analysed as follows:

- Geographical distribution of crayfish within the monitoring unit showing sites and abundance on a scale of distance upstream from the confluence of the River Wye.
- Crayfish abundance per site as number of crayfish caught at each sampling site, relative abundance at each site and average abundance per monitoring unit. Classification was graded using the 5-point scale shown in Table 2.

Table 2: Average counts of crayfish and classification of population abundance (after Peay, 2002).

Average number of crayfish per site	Population abundance
>5	Very high
>=3, <=5	High
>=1, <3	Moderate
>0, <1	Low
0	Absent/undetected

- Size distribution of population.
- % of population as juveniles less than 25mm carapace (CL)
- Health of population, % of population with thelohaniasis (porcelain disease).
- % of adult females showing signs of breeding.

#### 4.1.2. Habitat

Each sampling site was evaluated for crayfish habitat according to abundance of habitat as shown below.

 Evaluation of crayfish habitat for whole site (scored separately for margins, midchannel and banks):

0	Not evident or only minimal potential for refuges	
1	Present but localised or sparse, in less than a third of site	
2	Frequent, covering more than a third of site, or frequent, but small patches	
3	Abundant. Potential refuge habitat continuous, or semi-continuous, along more than two- thirds sample site	

An evaluation of crayfish habitat score was calculated for each tributary surveyed and also for the River Wye SAC to assess the presence of suitable crayfish habitat.

### 4.1.3. Water quality

Water quality data was not collected during this survey.

## 5. Results

The following sections of monitoring units (or tributaries) were surveyed - National Grid Reference down and upstream limits are shown in brackets.

Afon Edw (SO 12602 52787 – SO 13667 57908)

Nant yr Offeiriad (SO 09650 43123 - SO 01648 44173

Sgithwen Brook (SO 08312 40030 - SO 04475 39228)

### 5.1. Afon Edw

### 5.1.1. Abundance

The Afon Edw is approximately 18 km in length and was divided into thirty-six 500m stretches. Sixteen of these were selected randomly and were to be sampled using the standard method and trapping but due to the weather conditions during the survey, only sites 11 - 16 were able to be sampled. No crayfish were caught during the present survey.

Site	Distance from confluence (km)	No of crayfish per site	Average abundance per	Classification of population abundance	
			paten		
1	0	Not surveyed			
2	1	Not surveyed			
3	2	Not surveyed			
4	2.5	Not surveyed			
5	3	Not surveyed			
6	4	Not surveyed			
7	4.5	Not surveyed			
8	6	Not surveyed			

# Table 3: Classification of population abundance – Afon Edw. COMBINED: STANDARD AND TRAPPING

9	6.5	Not surveyed		
10	o	Not surveyed		
11	10	0	0	Absent/undetected
12	10.5	0	0	Absent/undetected
13	11	0	0	Absent/undetected
14	14	0	0	Absent/undetected
15	16.5	0	0	Absent/undetected
16	17	0	0	Absent/undetected
Total		0		
		Classification for monit	ABSENT/UNDETECTED	

### 5.1.2. Habitat

# Table 4: Summary of evaluation of crayfish habitats - Afon Edw. See Section 4.1.2 for explanation of values.

Site	In margin	In mid channel	In banks	
Edw				
1	Not surveyed			
2	Not surveyed			
3	Not surveyed			
4	Not surveyed			
5	Not surveyed			
6	Not surveyed			
7	Not surveyed			
8	Not surveyed			
9	Not surveyed			
10	Not surveyed			
11	2	2	2	
12	2	2	2	
13	2	2	2	
14	3	3	3	
15	3	3	3	
16	3	3	3	
Total (Sites 11 – 16)	15	15	15	
Total for Afon Edw (Sites 11- 16) 83%				

### 5.2. Nant yr Offeiriad

#### 5.2.1. Abundance

Nant yr Offeiriad is approximately 9.5 km in length and was divided into nineteen 500m stretches. Sixteen of these were randomly selected and sampled using the standard method and trapping. A total of 122 crayfish were caught on Nant yr Offeiriad. Raw data can be found in Appendix 1.

### Table 5: Classification of population abundance – Nant yr Offeiriad.

	COMBINED STANDARD AND TRAPPING						
Site	Distance from confluence (km)	No of crayfish per site	Average abundance per patch	Classification of population abundance			
1	0	0	0	Absent/undetected			
2	0.5	0	0	Absent/undetected			
3	1	0	0	Absent/undetected			
4	1.5	0	0	Absent/undetected			

5	2	0	0	Absent/undetected
6	2.5	0	0	Absent/undetected
7	3	0	0	Absent/undetected
8	3.5	0	0	Absent/undetected
9	4	0	0	Absent/undetected
10	4.5	0	0	Absent/undetected
11	5.5	8	1.6	Moderate
12	6.5	32	6.4	Very high
13	7	48	9.6	Very high
14	7.5	14	2.8	Moderate
15	8	12	2.4	Moderate
16	8.5	8	1.6	Moderate
Total		122		
		Classification	•	MODERATE

### 5.2.2. Analysis of catch in Nant yr Offeiriad

A total of 122 crayfish (45 females and 77 males) were caught on Nant yr Offeiriad. Carapace lengths ranged between 17 and 47 mm. Figure 1 illustrates carapace length frequency.



Figure 1: Summary of carapace length frequency of crayfish caught on Nant yr Offeiriad.

Table 6 shows analysis of other information gathered on examination of crayfish caught. Individual crayfish details can be found in Appendix 1.

Table 6: Other information regarding	ng crayfish p	population on N	ant yr Offeiriad.
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	Percentage of crayfish affected
Thelohania	8 (6%)
Damage	18 (15%)
Indication of females breeding (with glair)	39 (87%)

### 5.2.3. Habitat

Site	In margin	In mid channel	In banks		
Nant yr Offeiriad					
1	3	3	3		
2	3	2	1		
3	2	2	1		
4	3	3	0		
5	3	3	1		
6	2	3	2		
7	3	3	1		
8	3	3	2		
9	2	3	2		
10	3	3	3		
11	3	3	3		
12	3	3	2		
13	3	3	3		
14	2	3	3		
15	2	2	2		
16	2	2	2		
Total	42	44	31		
Total for Nant yr Offeiriad Monitoring Unit 81%					

# Table 7. Summary of evaluation of crayfish habitats - Nant yr Offeiriad. See Section 4.1.2 for explanation of values.

### 5.3. Sgithwen Brook

### 5.3.1. Abundance

Sgithwen Brook is approximately 8 km in length and was divided into sixteen 500m stretches.

Due to time limitations only sites 9 - 16 were surveyed during the present survey. Crayfish were found in most of these upstream sites and as in the 2003 survey, Site 14 had the highest abundance. No crayfish were found at the most upstream site, (Site 16) where the land use changes in character to conifer forest, despite the dense population immediately downstream.

A total of 98 crayfish were caught on Sgithwen Brook. Raw data can be found in Appendix 1.

		COMBINED STANDARD AND TRAPPING			
Site	Distance from confluence (km)	No of crayfish per site	Average abundance per patch	Classification of population abundance	
1	0	Not surveyed			
2	0.5	Not surveyed			
3	1	Not surveyed			
4	1.5	Not surveyed			
5	2	Not surveyed			
6	2.5	Not surveyed			
7	3	Not surveyed			
8	3.5	Not surveyed			
9	4	7	1.4	Moderate	
10	4.5	4	0.8	Low	
11	5	8	1.6	Moderate	
12	5.5	2	0.4	Low	
13	6	4	0.8	Low	
14	6.5	54	10.8	Very high	
15	7	19	3.8	High	
16	7.5	0	0	Absent/undetected	
Total		98			
		Classification for this section		MODERATE	

### Table 8: Classification of population abundance in Sites 9 - 16 – Sgithwen Brook.

### 5.3.2. Analysis of catch in Sgithwen Brook

A total of 98 crayfish (42 females and 56 males) were caught on Sgithwen Brook. Carapace lengths ranged between 16 and 42 mm. Figure 2 illustrates carapace length frequency.



Figure 2: Summary of carapace length frequency of crayfish caught on Sgithwen Brook (Sites 9 -16).

Table 9 shows analysis of other information gathered on examination of crayfish caught. Individual crayfish details can be found in Appendix 1.

Table 9: Other information regarding crayfish population on Sgithwen Brook.

	Percentage of crayfish affected
Thelohania	4 (4%)
Damage	8 (8%)
Indication of females breeding (with glair)	29 (69%)

### 5.3.3. Habitat

Table 10: Summary of evaluation of crayfish habitats - Sgithwen Brook. See Section 4.1.2 for explanation of values.

Site	In margin	In mid channel	In banks	
Sgithwen Brook				
1	Not surveyed			
2	Not surveyed			
3	Not surveyed			
4	Not surveyed			
5	Not surveyed			
6	Not surveyed			
7	Not surveyed			
8	Not surveyed			
9	3	3	1	
10	3	3	3	
11	3	3	2	
12	3	3	1	
13	3	3	2	
14	3	3	3	
15	3	3	2	
16	3	3	1	
Total (Sites 9- 16)	24	24	15	
Total for Sgit	88%			

# 6. Discussion – Analysis of Attributes

The project objective was to report on condition as part of the assessment of Favourable Conservation Status for Natura 2000 features using the provisional conservation objectives as supplied with the project specification (Table 1, Section 2) which lists the lower limits for these. The following sections address each of the attributes and determine whether the lower limit has been attained in this survey. It should be noted, however, that survey work in 2014 only considered three of the eight monitoring units and any assessment is incomplete until the other five units are surveyed.

#### Attribute 1: Average number of crayfish

The average crayfish per patch was greater than one (the limit, see Table 1) i.e. above the threshold, in the Offeiriad and Sgithwen (Sites 9-16) but not the Edw (Sites 11-16; Table 11).

Monitoring unit	Total crayfish caught	Number of patches	Average crayfish per patch
Offeiriad	122	80	1.5
Edw (Sites 11-16)	0	30	0
Sgithwen (Sites 9-16)	98	40	2.5

Table 11: Average crayfish per patch in each monitoring unit.

### Attribute 2: Crayfish distribution

Crayfish were found in two of the three monitoring units surveyed (Table 12) and further survey work will need to be undertaken to establish whether five monitoring units (the limit, see Table1) house crayfish and this Attribute is met.

### Table 12: Distribution and density of crayfish in monitoring units.

Monitoring unit	Classification
Offeiriad	Moderate
Edw (Sites 11-16)	Absent/undetected
Sgithwen (Sites 9-16)	Moderate

### Attribute 3: Alien crayfish/plague and porcelain disease

No non-native crayfish were found in the survey, there was no evidence of plague and less than 10% incidence of porcelain disease (the limit, see Table 1), thus this Attribute has been met in the areas surveyed.

### Table 13: Incidence of the lohania in crayfish from each monitoring unit.

Monitoring unit	Incidence of Thelohania
Offeiriad	6%
Edw (Sites 11-16)	Not applicable
Sgithwen (Sites 9-16)	4%

### Attribute 4: Habitat Quality, extent of suitable habitat

All of the areas surveyed had suitable habitat present in more than 60% of the sampled patches, which is sufficient for this Attribute to be met.

Table 14. Percentage		Παρπαι		
Monitoring unit	In margins	In mid-channel	In banks	Overall evaluation
Offeiriad	88%	92%	65%	81%
Edw (Sites 11-16)	83%	83%	83%	83%
Sgithwen (Sites 9-16)	100%	100%	63%	88%
Suitabl	le habitat in ar	ea surveyed		83%

### Table 14: Percentage of suitable habitat

# 7. Conclusion

Although conclusions cannot be drawn about the River Wye SAC as a whole until more survey work is done, one can comment on the three monitoring units surveyed. Nant yr Offeiriad was surveyed fully and yielded 1.5 crayfish per patch with low incidence of Thelohania (6%) and sufficient suitable habitat. It met all the Attribute needs of the SAC, although it should be noted that whilst the crayfish population is dense in places it is only found in the upper reaches of this river.

The Afon Edw was surveyed in the upper reaches before the weather (causing increase in river depth, colour and flow) prevented downstream surveying. No crayfish were found although there was sufficient suitable habitat quality. The absence of crayfish was thought to be due to a crayfish mortality in 2006 which was highlighted to the current surveyors by local residents. This mortality was investigated by the Environment Agency at the time but no cause of death was identified. The following account was supplied by Catrin Grimstead of Natural Resources Wales:

"In 1977 native crayfish were found at two downstream sites on the River Edw (Lilley *et al.*, 1979). Subsequently, in 1988, it was shown to hold a large population of native crayfish within the midstream section both upstream and downstream of Hundred House and at a downstream site upstream of Aberedw (Foster, 1996). Subsequent surveys found many crayfish at downstream (Holdich, 1993) sites and at several sites along the stretch of river from Hundred House to Aberedw (Rogers & Holdich, 1995). Although the number of individuals found showed considerable decline, subsequent reports from the following ten years confirmed their presence along this stretch (Slater & House, 2001; Rogers & Watson, 2003b; Slater & Howells, 2003a; Howells, 2005) and further upstream from Frank's Bridge (Rogers & Watson, 2003b). The decline in numbers were suspected to be the result of a sheep dip pollution event (Slater & House, 2001), as the Environment Agency reported a pollution incident of unknown cause in 1997 (Environment Agency, 1997), and / or the result of increased siltation following deforestation in the area (Slater, 2002; Slater & Howells, 2003a).

"A subsequent Environment Agency Wales investigation in 2006 reported many dead native crayfish along the river upstream of Frank's Bridge but no cause of death was identified (Environment Agency, 2006). The most recent survey of eight of the sites which contained crayfish in 2003 (Rogers & Watson, 2003b) found no crayfish remaining (Slater *et al.*, 2008b). It is unknown if there has been a further pollution event in the river. Both the 2006 and the 2008 surveys found freshwater invertebrates, including gammarus and insect larvae, and fish within the river. A previous report on a pyrethroid pollution incident on the Sgithwen Brook showed that freshwater invertebrates, salmon and trout fry rapidly returned to the area in the years following the event, but that crayfish did not (Wilkins, 1998). It is therefore possible that an unreported incident occurred on the River Edw between 2004 and 2006, after which the freshwater fauna returned to the area with the exception of the native crayfish."

The absence of crayfish in 2006 when other riverine invertebrates and fish were found is more suggestive of crayfish plague than a pollution incident, with the disease going undetected. Further investigation of the tributaries of the Edw, particularly those adjacent to the Bachawy which supports signal crayfish, would be worthwhile to ascertain whether there were any signal crayfish in the catchment and maybe shed light on the reason for the disappearance.

Sgithwen Brook was surveyed in the upper reaches before time limited the survey. The average catch per patch was high, at 2.5 crayfish per patch, but this is likely to be lower for the river as a whole if the population density follows the same pattern as found in 2003 (Rogers & Watson 2004).

It is important to complete survey work for white-clawed crayfish on the River Wye SAC in 2015 so that the 2014 results can be amalgamated into an overall assessment.

## 8. Recommendations

- Survey the five monitoring units of the River Wye SAC not done in the present survey (Afon Duhonw, Afon Irfon, Afon Llynfi, Clyro Brook and Dulas Brook) and complete survey work on the Afon Edw and Sgithwen Brook.
- Survey tributaries of the monitoring units to assess native populations and possible distribution of signals.

# 9. References

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# 10. Appendices



10.1. Appendix A: Location of sampling stations and distribution of white-clawed crayfish in the Afon Edw in October 2014.



10.2. Appendix B: Location of sampling stations and distribution of white-clawed crayfish in Nant yr Offeiriad in October 2014.



10.3. Appendix C: Location of sampling stations and distribution of white-clawed crayfish in Sgithwen Brook in October 2014.

10.4. Appendix D: Details of individual white-clawed crayfish records in Nant yr Offeiriad in October 2014.

Catchment	Wye		River	Offeiriad			Site reference	11	
Date	10/10/2014		Surveyors	DR LW			Sheet no.	1	
Record no.	Species	Sex	Carapace length, mm	Damage	Disease	Breeding	Moult	Sub-site location ref.	Catch method
1	A.p	М	32						4
2	A.p	М	36						4
3	A.p	М	35						4
4	A.p	F	34			G			4
5	A.p	М	39						4
6	A.p	F	28		PD				4
7	A.p	М	32						4
8	A.p	М	27	AL OI					4

### Site 11

### **CRAYFISH RECORDING FORM**

### Site 12

Catchment	Wye		River	Offeiriad			Site reference	Site reference 12		
5	40/40/0044						Sheet			
Date	10/10/2014		Surveyors	DRLW			no.	2		
Record	Species	Sex	Carapace length, mm	Damage	Disease	Breeding	Moult	Sub-site location ref.	Catch method	
1	A.p	M	22	ML				P1	1	
2	A.p	F	27			G		P2	1	
3	A.p	F	32			G		P2	1	
4	A.p	М	26	MR	PD			P2	1	
5	A.p	F	20		PD			P3	1	
6	A.p	М	19					P3	1	
7	A.p	М	42					P3	1	
8	A.p	М	35	MR				P3	1	
9	A.p	F	32			G		P4	1	
10	A.p	F	17					P4	1	
11	A.p	М	27						4	
12	A.p	F	28			G			4	
13	A.p	М	36						4	
14	A.p	F	26	ML	PD				4	
15	A.p	М	30	MR					4	
16	A.p	М	34						4	
17	A.p	F	28			G			4	
18	A.p	М	28						4	
19	A.p	М	36						4	
20	A.p	F	26			G			4	
21	A.p	М	29	OI					4	
22	A.p	М	30						4	

23	A.p	М	28				4
24	A.p	F	28		G		4
25	A.p	М	26	RL			4
26	A.p	М	34				4
27	A.p	М	26				4
28	A.p	F	32		G		4
29	A.p	F	30		G		4
30	A.p	М	34				4
31	A.p	М	26				4
32	A.p	М	28				4

Catchment	Wye		River	Offeiriad			Site reference 13		
			_				Sheet		
Date	10/10/2014		Surveyors	DR LW			no.	3	
Record no.	Species	Sex	Carapace length, mm	Damage	Disease	Breeding	Moult	Sub-site location ref.	Catch method
1	A.p	F	34			G		P1	1
2	A.p	М	47					P1	1
3	A.p	F	28			G		P1	1
4	A.p	F	28			G		P2	1
5	A.p	М	24	ML				P2	1
6	A.p	М	42					P2	1
7	A.p	F	23			G		P2	1
8	A.p	М	34					P2	1
9	A.p	М	19		BS			P2	1
10	A.p	М	17					P2	1
11	A.p	М	28e					P2	1
12	A.p	М	42					P2	1
13	A.p	М	41					P2	1
14	A.p	М	42					P3	1
15	A.p	М	35		PD			P3	1
16	A.p	F	42			G		P3	1
17	A.p	М	34					P3	1
18	A.p	М	19					P3	1
19	A.p	М	41					P3	1
20	A.p	F	32			G		P3	1
21	A.p	М	22					P3	1
22	A.p	F	22			G		P3	1
23	A.p	F	29			G		P3	1
24	A.p	М	42					P3	1
25	A.p	М	34					P3	1
26	A.p	F	28	OM		G		P4	1
27	A.p	М	44					P5	1
28	A.p	М	26					P5	1
29	A.p	М	37					P5	1
30	A.p	М	30					P5	1
31	A.p	М	38						4
32	A.p	F	21	MR	PD				4

33	A.p	F	35		G		4
34	A.p	F	26		G		4
35	A.p	F	37		G		4
36	A.p	М	33				4
37	A.p	М	25				4
38	A.p	М	27				4
39	A.p	F	31		G		4
40	A.p	М	34				4
41	A.p	М	32				4
42	A.p	М	31	MR			4
43	A.p	М	33				4
44	A.p	F	19		G		4
45	A.p	М	27				4

### **CRAYFISH RECORDING FORM**

Catchment	Wye		River	Offeiriad			Site reference	13	
Date	10/10/2014		Surveyors	DR LW			Sheet no.	3a	
Record no.	Species	Sex	Carapace length, mm	Damage	Disease	Breeding	Moult	Sub-site location ref.	Catch method
46	A.p	М	35						4
47	A.p	F	26			G			4
48	A.p	М	28						4

#### Site 14

Catchment	Wye		River	Offeiriad			Site reference	14	
Date	10/10/2014		Surveyors	DR LW			Sheet no.	4	
Record no.	Species	Sex	Carapace length, mm	Damage	Disease	Breeding	Moult	Sub-site location ref.	Catch method
1	A.p	F	30	OI		G		P2	1
2	A.p	F	30			G		P2	1
3	A.p	М	29					P2	1
4	A.p	F	27			G		P2	1
5	A.p	F	29			G		P3	1
6	A.p	М	29					P3	1
7	A.p	F	31			G		P4	1
8	A.p	М	34		PD				4
9	A.p	F	27			G			4
10	A.p	F	28			G			4
11	A.p	М	35						4
12	A.p	М	24	ML					4
13	A.p	F	24			G			4
14	A.p	М	26						4

## **CRAYFISH RECORDING FORM**

Catchment	Wye		River	Offeiriad			Site reference	15	
Date	09/10/2014		Surveyors	DR LW			Sheet no.	5	
Record no.	Species	Sex	Carapace length, mm	Damage	Disease	Breeding	Moult	Sub-site location ref.	Catch method
1	A.p	М	21	AR				P4	1
2	A.p	М	39					P4	1
3	A.p	М	20					P5	1
4	A.p	F	31			G			4
5	A.p	М	28	ML					4
6	A.p	М	29						4
7	A.p	F	26			G			4
8	A.p	М	29						4
9	A.p	F	24			G			4
10	A.p	М	34						4
11	A.p	М	35						4
12	A.p	F	27	MR		G			4

### Site 16

Catchment	Wye		River	Offeiriad			Site reference	16	
Date	09/10/2014		Surveyors	DR LW			Sheet no.	6	
Record no.	Species	Sex	Carapace length, mm	Damage	Disease	Breeding	Moult	Sub-site location ref.	Catch method
1	A.p	F	17		PD			P3	1
2	A.p	М	30						4
3	A.p	М	36						4
4	A.p	М	29						4
5	A.p	М	29						4
6	A.p	F	28			G			4
7	A.p	F	30			G			4
8	A.p	М	25	OI					4

10.5. Appendix E: Details of individual white-clawed crayfish records in Sgithwen Brook in October 2014.

### Site 9

# CRAYFISH RECORDING FORM

Catchment	Wye		River	Sgithwen			Site reference	ç	)
Date	16/10/2014		Surveyors	DR LW			Sheet no.	Sg1	
Record no.	Species	Sex	Carapace length, mm	Damage	Disease	Breeding	Moult	Sub-site location ref.	Catch method
1	Ар	М	36					P5	1
2	Ар	М	32					P5	1
3	Ар	F	22			G		P5	1
4	Ар	М	32						4
5	Ар	М	36						4
6	Ар	М	35						4
7	Ap	М	30						4

### Site 10

### **CRAYFISH RECORDING FORM**

Catchment	Wye		River	Sgithwen			Site reference	10	
Date	16/10/2014		Surveyors	DR LW			Sheet no.	2	
Record no.	Species	Sex	Carapace length, mm	Damage	Disease	Breeding	Moult	Sub-site location ref.	Catch method
1	Ар	F	21	OI	PD			P3	1
2	Ар	F	17						4
3	Ар	М	33						4
4	Ар	М	30						4

### Site 11

Catchment	Wye		River	Sgithwen			Site reference	1	1
Date	16/10/2014		Surveyors	DR LW			Sheet no.	Sg 3	
Record no.	Species	Sex	Carapace length, mm	Damage	Disease	Breeding	Moult	Sub-site location ref.	Catch method
1	Ар	М	19					P2	1
2	Ар	М	19					P4	1
3	Ар	F	36	RM		G		P5	1
4	Ар	F	32			G			4
5	Ар	F	31			G			4
6	Ар	М	42						4
7	Ар	М	34						4
8	Ap	М	25	LM					4

## **CRAYFISH RECORDING FORM**

Catchment	Wye		River	Sgithwen			Site reference	1	2
Date	16/10/2014		Surveyors	DR LW			Sheet no.	Sg 4	
Record no.	Species	Sex	Carapace length, mm	Damage	Disease	Breeding	Moult	Sub-site location ref.	Catch method
1	Ар	М	33						4
2	Ap	F	36			G			4

### Site 13

### **CRAYFISH RECORDING FORM**

							Site		
Catchment	Wye		River				reference	1	3
							Sheet		
Date	15/10/2014		Surveyors	DR LW			no.	Sg 5	-
Record no.	Species	Sex	Carapace length, mm	Damage	Disease	Breeding	Moult	Sub-site location ref.	Catch method
1	Ар	М	23					P5	1
2	Ар	F	18						4
3	Ар	М	25						4
4	Ар	М	18						4

### Site 14

Catchment	Wye		River	Sgithwen			Site reference	14	
Date	15/10/2014		Surveyors	DR LW			Sheet no.	Sg 6	
Record no.	Species	Sex	Carapace length, mm	Damage	Disease	Breeding	Moult	Sub-site location ref.	Catch method
1	Ар	F	22			G		P1	1
2	Ар	F	17					P1	1
3	Ар	М	19					P1	1
4	Ар	М	16					P1	1
5	Ар	М	17					P1	1
6	Ар	М	17					P1	1
7	Ар	F	23			G		P2	1
8	Ар	М	16					P2	1
9	Ар	F	16					P2	1
10	Ар	М	16					P2	1
11	Ар	М	17					P2	1
12	Ар	М	18					P2	1
13	Ар	F	22			G		P2	1
14	Ар	F	16					P3	1
15	Ар	М	18					P3	1
16	Ар	F	17					P4	1
17	Ap	М	16					P5	1

18	Ар	М	40	LM RM				4
19	Ар	М	38					4
20	Ар	F	34			G		4
21	Ар	F	32			G		4
22	Ар	М	31					4
23	Ар	М	31					4
24	Ар	М	35					4
25	Ар	F	28			G		4
26	Ар	F	34			G		4
27	Ар	М	36		PD			4
28	Ар	F	32			G		4
29	Ар	F	34	LM		G		4
30	Ар	F	30			G		4
31	Ар	М	20					4
32	Ар	F	30			G		4
33	Ар	F	29			G		4
34	Ар	М	32					4
35	Ар	F	27					4
36	Ар	М	22					4
37	Ар	F	30					4
38	Ар	F	31			G		4
39	Ар	М	30					4
40	Ар	М	28					4
41	Ар	М	34	RM				

Catchment	Wye		River	Sgithwen			Site reference	14	
Date	15/10/2014		Surveyors	DR LW			Sheet no.	Sg 6a	
Record no.	Species	Sex	Carapace length, mm	Damage	Disease	Breeding	Moult	Sub-site location ref.	Catch method
42	Ар	М	36	OM					4
43	Ар	F	35			G			4
44	Ар	М	18						4
45	Ар	F	28			G			4
46	Ар	М	20						4
47	Ар	М	24						4
48	Ар	М	24						4
49	Ар	М	22		PD				4
50	Ар	М	22						4
51	Ар	F	24	RL					4
52	Ар	F	28			G			4
53	Ар	F	28	G					4
54	Ар	М	28						4

Catchment	Wye		River	Sgithwen			Site reference	15	
Dete	45/40/2044		Curricovoro				Sheet	Sa 7	
Date	15/10/2014		Surveyors	DR LW			no.	Sg /	
Record								Sub-site	Catch
no.	Species	Sex	mm	Damage	Disease	Breeding	Moult	ref.	method
1	Ap	F	32	0		G		P1	1
2	Ар	F	19			G		P1	1
3	Ар	М	18					P1	1
4	Ар	М	18					P2	1
5	Ар	М	17					P2	1
6	Ар	М	18					P4	1
7	Ар	М	16					P4	1
8	Ар	F	27			G			4
9	Ар	F	25			G			4
10	Ар	М	34						4
11	Ар	М	28						4
12	Ар	F	20		PD				4
13	Ар	F	16	LM					4
14	Ар	F	26			G			4
15	Ар	М	20						4
16	Ар	М	28						4
17	Ар	F	26			G			4
18	Ар	F	18						4
19	Ар	F	19			G			4

# 10.6. Appendix F: White-clawed crayfish habitat survey forms for Afon Edw, October 2014.

Catchment	Wye		River	Edw			Site (no., name)		11	
Date (dd/mm/yy)	14/10/2014	Surveyors	DR LW				Grid ref.	SO 12602 5	2787	
Weather, good 1, mod 2, poor 3	2	Flow norm 1, low 2, fall 3, rise 4	4					Start and finish time	1500-1700	
Photo ref. &								THE PARTY	AND AT N	
Location	At 300m							The second	A DESCRIPTION OF THE OWNER	141
Site length (m)	400									
Width channel (m)	5	Descript. (channel features, landuse)								
	sample patch 1	lanaacoy	sample pa	tch 2	sample pa	atch 3	sample patch	4	sample patch 5	
Survey method, std 1, quad 2, net/kick 3, trap 4,								-		
view 5	1 &	. 4	1&4		1&4	1	1 8	4	1 & 4	
standard)										
Extent (I x w	_ /				/					
patch) Channel (1	5x1		3x1		5x1		2x2		4x1	
margins, 2 mid, 3										
both, other specify)	3		1		1		1		3	
Feature (1 marg.	0.3		0.2		0.3		0.3		0.2	
d'water, 2 pool, 3 glide, 4 run, 5	2		4		2		1		4	
Refuges in	5		4		5		4		4	
channel	tick all present in	patch, main type(	s) searched	in red						
cobble (6.5-15cm)	YES		YES		YES		YES		YES	
25.6cm)	YES		YES		YES		YES		YES	
boulder (25.6- 40cm)	YES		YES		YES		YES		YES	
boulder (>40cm)	YES		YES		YES		YES		YES	
rubble (give size)	YES		YES		YES		YES		YES	
woody debris										
other urban debris									YES	
tree roots, fine										
moss										
filamentous algae										
other submerged										
emergents										
Main substrate			1		1		ı		L	

**CRAYFISH HABITAT SURVEY FORM** 

h

bedrock						
cobble (6.5-15cm)						
pebble (<6.5cm)						
gravel (<1.6cm)						
sand (<2mm)						
clay						
silt	YES		YES	YES	YES	YES
Siltation						
none						
low						
moderate	YES		YES	YES	YES	YES
high						
none						
cobble/boulder			YES	YES	YES	
tree roots, large	YES		YES			YES
vertical or						
dry stone wall						
other reinforced						
cravfish burrows						
Shading above	MOD		MOD	MOD	MOD	MOD
Cravfish	MOD					
manually						
Crayfish by trap						
Total crayfish caught						
Evaluation		Notes (survey o	conditions, patches	s etc.):		
for whole site (0						
none, 1 pres., 2						
freq., 3 abund.)	Score					
in margins	2					
in mid channei	2					
in mid channel	2					
in mid channel in banks surveyability	2 2 2					
in mid channel in banks surveyability Problems pollution 1.	2 2 2					
in mid channel in banks surveyability Problems pollution 1, erosion 2, (E if	2 2 2					
in mid channel in banks surveyability Problems pollution 1, erosion 2, (E if >33% affected), aliens 3	2 2 2					
in mid channel in banks surveyability Problems pollution 1, erosion 2, (E if >33% affected), aliens 3. Total crayfish (by	2 2 2					
in mid channel in banks surveyability Problems pollution 1, erosion 2, (E if >33% affected), aliens 3. Total crayfish (by 1 method, note	2 2 2					
in mid channel in banks surveyability Problems pollution 1, erosion 2, (E if >33% affected), aliens 3. Total crayfish (by 1 method, note total(s) by other methods in notes	2 2 2					

Catchment	Wye		River	Edw		Site (no.,		12
Outonmont	Wyc			Luw		name)		
Date (dd/mm/yy)	14/10/2014	Surveyors	DR LW			Grid ref.	SO 12384 5	3394
Weather, good 1, mod 2, poor 3	2	Flow norm 1, low 2, fall 3, rise 4	4				Start and finish time	1300-1500
Photo ref. &	1						- No	
Location	In first 100m					JAN C	S. Ne	
Site length (m)	400							
Width channel (m)	5	Descript. (channel features, landuse)	Series of po glides	ols wit	th slow flowing			
Curries and the d	sample patch 1		sample pato	:h 2	sample patch 3	sample patch 4	ļ	sample patch 5
survey method, std 1, quad 2, net/kick 3, trap 4, view 5	1 &	4	1&4		1 & 4	1 &	4	1 & 4
Details (if not standard)								
Extent (I x w patch)	2x1		3x1		3x2	3x1		2x1
Channel (1 margins, 2 mid, 3 both, other								
specify)	1		1		3	1		1
Depth (metres)	0.2		0.2		0.3	0.2		0.2
d'water, 2 pool, 3 glide, 4 run, 5 riffle)	3		3		2	3		3
Refuges in channel	tick all present in	patch main type	(s) searched i	n red				
cobble (6.5-15cm)	YES	paton, main typo	YES	iniou	YES	YES		YES
cobble (15- 25.6cm)	YES		YES		YES	YES		YES
boulder (25.6- 40cm)	YES		YES		YES	YES		YES
boulder (>40cm)	YES		YES		YES	YES		YES
rubble (give size)								
woody debris	YES				YES			
other urban debris	VEO		VEO					VE0
tree roots, fine	YES		YES		YES	YES		YES
filamentous algae								
other submerged veg.								
emergents								
Main substrate beneath								
bedrock	YES		YES					
cobble (6.5-15cm)								

#### **CRAYFISH HABITAT SURVEY FORM**

pebble (<6.5cm)						
gravel (<1.6cm)						
sand (<2mm)						YES
clay						
silt				YES	YES	
Siltation						
none						
low						
moderate	YES		YES	YES	YES	YES
high						
Refuges in bank						
cobble/boulder			YES		YES	
tree roots, large			YES			YES
vertical or undercut bank	YES			YES		
dry stone wall						
other reinforced						
crayfish burrows						
Shading above	LIGHT		LIGHT	HEAVY	HEAVY	MOD
Crayfish manually						
Crayfish by trap						
Total crayfish caught						
Evaluation crayfish habitat for whole site (0 none, 1 pres., 2 freq., 3 abund.)	Score	Notes (survey c	conditions, patches e	etc.):		
in margins	2					
in mid channel	2					
in banks	2					
surveyability	2					
Problems pollution 1, erosion 2, (E if >33% affected), aliens 3.						
Total crayfish (by 1 method, note total(s) by other methods in notes if applicable)	0					

Catchment	Wye		River Edw		Site (no., name)	13			
Date (dd/mm/yy)	14/10/2014	Surveyors	DR, LW				Grid ref. SO 12047 53		3816
Weather, good 1, mod 2, poor 3	2	Flow norm 1, low 2, fall 3, rise 4	4					Start and finish time	1100 - 1300
Photo ref. &								13 <u>198</u> 7	
Location	In first 100m.							15-24	CAR CAR THE
Site length (m)	400	Descript. (channel features, landuse)	Land use - grazing with stock						
	sample patch 1	landuse)	access.			sample patch 4		sample patch 5	
Survey method, std 1, quad 2, net/kick 3, trap 4, view 5			1 & 4		1 & 4		1 & 4		1 & 4
Details (if not standard)		·							
Extent (I x w									
patch)	5x1		7x1		2x2		2x2		5x1
margins, 2 mid, 3 both, other specify)	1		1		3		2		1
Dopth (motrop)			0.2		0.2		0.2		0.2
Feature (1 marg. d'water, 2 pool, 3 glide, 4 run, 5 riffle)	0.2		4		5				3
Refuges in	data all anno and fa		) l l !				•		
channel	tick all present in	patch, ain type(s	) searched in	n rea	VEC		VEC		VEC
cobble (0.5-15cm) cobble (15-	YES		TEO		163		TEO		160
25.6cm) boulder (25.6-	YES		YES		YES		YES		YES
40cm)	YES		YES		YES		YES		YES
boulder (>40cm)	YES		YES		YES		YES		YES
rubble (give size)	YES		YES	3 YES			YES		YES
woody debris									
tiee ioots, line									
filamentous algae									
other submerged									
veg.									
Main substrate			l		l		I		
beneath									[]
bedrock			YES		YES		YES		
							1		

#### **CRAYFISH HABITAT SURVEY FORM**

pebble (<6.5cm)						
gravel (<1.6cm)						
sand (<2mm)	YES					YES
clay						
silt						
Siltation						
none .			· · · · · · · · · · · · · · · · · · ·			N/50
low				YES		YES
moderate	YES		YES		YES	
high Refuges in bank						
none						
cobble/boulder						
tree roots, large			YES	YES	YES	YES
vertical or undercut bank	YES					
dry stone wall						
other reinforced						
crayfish burrows						
Shading above	MOD		MOD	LIGHT	LIGHT	MOD
Crayfish manually						
Crayfish by trap						
Total crayfish caught						
Evaluation		Notes (survey of	conditions, patches	s etc.):		
crayfish habitat						
none, 1 pres., 2						
freq., 3 abund.)	Score					
in margins	2					
in mid channel	2					
in banks	2					
surveyability	2					
Problems						
erosion 2. (E if						
>33% affected),						
aliens 3.						
1 method, note						
total(s) by other						
methods in notes	0					

Catchment	Wive		River Edw		Site (no.,		14	
Outorintent	1190					name)		17
Date (dd/mm/yy)	14/10/2014	Surveyors	DR LW		Grid ref.	SO 11549 55871		
Weather, good 1, mod 2, poor 3	2	Flow norm 1, low 2, fall 3, rise 4	4				Start and finish time	0900-1100
Photo ref. &							AST C	
Location	In first 100m						SE1 -	
Site length (m)	100	Descript. (channel features, landuse)	Land use - Agriculture with occasional stock access to water.					
	sample patch 1	,	sample pa	tch 2	sample patch 3	sample patch 4	1	sample patch 5
Survey method, std 1, quad 2, net/kick 3, trap 4, view 5	1 & 4		1 & 4		1 & 4	1 &	4	1 & 4
Details (if not standard)								
Extent (I x w			22		22	4-0		4.0
Channel (1	3x2		372		3X2	772		4X2
margins, 2 mid, 3 both, other specify)	3		3		3	3		3
Depth (metres)	0.2		0.2		0.3	0.2		0.3
Feature (1 marg. d'water, 2 pool, 3 glide, 4 run, 5 riffle)	3		3		2	2		3
Refuges in	tick all present in	natch main type(s	) searched i	n red				
cobble (6.5-15cm)	YES	paten,main type(a	YES	inicu	YES	YES		YES
cobble (15-	VEC		VES		VES	YES		VES
boulder (25.6-			NEO		120	VES		120
40cm)	YES		YES		YES	160		YES
rubble (give size)								
woody debris	YES		YES					
other urban debris								
tree roots, fine	YES		YES		YES	YES		YES
moss								
filamentous algae								
veg.								
emergents Main substrate								
beneath			1		T			
bedrock								
cobble (6.5-15cm)						YES		

#### **CRAYFISH HABITAT SURVEY FORM**

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pebble (<6.5cm)						
gravel (<1.6cm)	YES		YES			
sand (<2mm)						
clay						
silt				YES		YES
Siltation						
none	VEC		VEC	VEC	VEC	VEC
WOI	TES		YES	TES	165	TES
moderate						
Refuges in bank	YES		YES	YES		YES
cobble/boulder					YES	
tree roots, large					YES	
vertical or undercut bank						
dry stone wall						
other reinforced						
crayfish burrows						
Shading above	MOD		MOD	HEAVY	HEAVY	HEAVY
Crayfish manually						
Crayfish by trap					•	•
Total crayfish caught						
Evaluation crayfish habitat for whole site (0 none, 1 pres., 2 freq., 3 abund.)	Score	Notes (survey c Only dead crayf	conditions, patches fish found; no mor	s etc.): Approximate ibund. Wye and Us	ely 6 years ago local resident re k Foundation informed but no o	eported crayfish mortality. cause identified.
in margins	3					
in mid channel	3					
in banks	3					
surveyability	3					
Problems						
erosion 2, (E if						
>33% affected),						
Total crayfish (by						
1 method, note						
total(s) by other methods in notes						
if applicable)	0					

Catchment	Wye		River Edw			Site (no., name)	Site (no., name) 15		
Date (dd/mm/yy)	13/10/2014	Surveyors	DR LW				Grid ref.	SO 12632 5	7817
Weather, good 1, mod 2, poor 3	1	Flow norm 1, low 2, fall 3, rise 4	1					Start and finish time	1500-1700
Photo ref. &								AN	
Location	In first 100m							12 3.0	
Site length (m)	2.5	Descript. (channel features, landuse)	Land use - grazing. Very heavy stock accesss in areas. Areas of deep pools and small stony riffles. Some mud banks with possible crayfish burrows.						
	sample patch 1		sample patch 2 sample patch 3		sample patch 4		sample patch 5		
Survey method, std 1, quad 2, net/kick 3, trap 4, view 5	1 &	4	1 & 4		1 & 4		1 & 4		1 & 4
Standard)									
Extent (I x w	5x1		222		4x2		6x2		3v2
Channel (1	541		372	382			0/2		572
margins, 2 mid, 3 both, other specify)	1		3		3		3		3
Depth (metres)	0.3		0.3		0.3		0.2		0.4
Feature (1 marg. d'water, 2 pool, 3 glide, 4 run, 5 riffle)	4		3		3		3		3
Refuges in	tick all proport in	natch main type	(c) coarchod i	a rod					
cobble (6.5-15cm)	YES	paten, main type	YES	neu	YES		YES		YES
cobble (15-	VES		VEC		VEC		VEC		VEC
boulder (25.6-	165		TEO		TES		TEO		TES
40cm)	YES		YES		YES		YES		YES
rubble (give size)	163		160		TES		163		123
woody debris									
other urban debris									
tree roots, fine	YES		YES		YES		YES		
moss									
filamentous algae									
other submerged									
emergents									
Main substrate beneath			· · · · · · · · · · · · · · · · · · ·				·		
bedrock									
cobble (6.5-15cm)									

pebble (<6.5cm)						
aravel (<1.6cm)						
sand (<2mm)						
clay						
silt	YES		YES	YES	YES	YES
Siltation	120		120	120		120
none						
low						
moderate	YES					
high			YES	YES	YES	YES
Refuges in bank none				YES	YES	
cobble/boulder						
tree roots, large			YES			YES
vertical or undercut bank	YES		YES	YES	YES	YES
dry stone wall						
other reinforced						
crayfish burrows						
Shading above	LOW		HEAVY	MOD	HEAVY	HEAVY
Crayfish manually						
Crayfish by trap						
Total crayfish caught						
Evaluation crayfish habitat for whole site (0 none, 1 pres., 2 freq., 3 abund.)	Score	Notes (survey o	conditions, patches e	etc.):		
in margins	3					
in mid channel	3					
in banks	3					
surveyability	3					
Problems pollution 1,						
erosion 2, (E if >33% affected),						
Total crayfish (by						
1 method, note						
total(s) by other methods in notes						
if applicable)	0					

Catchment	Wye		River	Edw		Site (no., name)	16		
Date (dd/mm/yy)	13/10/2014	Surveyors	DR LW			Grid ref.	SO 13203 5	7976	
Weather, good 1, mod 2, poor 3	1	Flow norm 1, low 2, fall 3, rise 4	1				Start and finish time	1300-1500	
Photo ref. &							State of		
Location	In first 100m					al al	approx and		
Site length (m)	100								
Width channel (m)	3	Descript. (channel features, landuse)	Land use gra Highly agricu	azing a Iltural a	and woodland. area.				
Current method	sample patch 1		sample patch	12	sample patch 3	sample patch	4	sample patch 5	
std 1, quad 2, net/kick 3, trap 4, view 5	1 &	4	1 & 4		1 & 4	1 & 4		1 & 4	
Details (if not									
Extent (I x w									
patch) Channel (1	3x1		3x1		4x1	2x2		4x2	
margins, 2 mid, 3 both, other specify)	1		2		1	3		1	
Depth (metres)	0.2		0.3		0.2	0.2		0.2	
Feature (1 marg.					-				
d'water, 2 pool, 3 glide, 4 run, 5 riffle)	4		3		3	5		2	
Refuges in channel	tick all present in	natch main type	e(s) searched i	n red					
cobble (6.5-15cm)	YES		YES	inica	YES	YES		YES	
cobble (15- 25.6cm)	YES		YES		YES	YES		YES	
boulder (25.6- 40cm)	YES		YES		YES	YES		YES	
boulder (>40cm)	YES		YES		YES	YES		YES	
rubble (give size)									
woody debris	YES		YES		YES	YES		YES	
other urban debris									
tree roots, fine	YES				YES			YES	
moss									
filamentous algae									
veg.									
emergents									
beneath			1						
bedrock									
cobble (6.5-15cm)									

nobble (s6 Fem)						
					VEC	
graver (<1.6cm)					165	
sand (<2mm)						
clay	YES		YES	YES		YES
Siltetion						
none						
low						
moderate	YES		YES	YES	YES	YES
high						
Refuges in bank none						
cobble/boulder						
tree roots, large	YES		YES	YES	YES	YES
vertical or undercut bank						
dry stone wall						
other reinforced						
cravfish burrows						
Shading above	HEAVY		HEAVY	MOD	MOD	MOD
Crayfish manually						
Crayfish by trap						•
Total crayfish						
Evaluation crayfish habitat for whole site (0 none, 1 pres., 2 freq., 3 abund.)	Score	Notes (survey substrate.	conditions, patches e	etc.):Variable patch	es with lots of fallen trees. De	ep stone layer to reach
in margins	3					
in mid channel	3					
in banks	3					
surveyability	3					
Problems pollution 1, erosion 2, (E if >33% affected), aliens 3.						
Total crayfish (by 1 method, note total(s) by other methods in notes if applicable)	0					

# 10.7. Appendix G: White-clawed crayfish habitat survey forms for Nant yr Offeiriad, October 2014.

		UNATIO			0.1		
Catchment	Wive		River	Offeiriad	(no.,	1	
Catoninent	vvye		KIVEI	Ollelliau	Grid ref.		
					(d/s		
Date (dd/mm/yy)	13/10/2014	Surveyors	DR LW		end)	SO 0965	50 43123
		1, low 2,				and	
Weather, good 1,	1	fall 3, rise	1			finish	1100 1200
Dhoto rof 8	1	4				ume	1100-1300
		from roadbrid	<b>a</b> 0				
Location	view upstream		ge		-		
					Contraction of the second		
	100						
					Contrast.		
Site length (m)							At a second
					Sec. 1	Acr.	
		<b>B</b>					GANNES
Width channel (m)	5	Descript. (channel	Access goo	od through garden.			
		features,	urban. Otte	rs known to be in			
		landuse)	area. Good	d habitat present.		_	
	sample		sample	sample	sample		sample
Survey method std 1	paterri		pateriz	paterio	pateri 4		paterio
quad 2, net/kick 3,							
trap 4, view 5	1 &	4	1&4	1 & 4	1 &	. 4	1 & 4
standard)							
Extent (I x w patch)	1x3		2x2	2x2	3x1		3x2
Channel (1 margins, 2							
mid, 3 both, other	3		2	3	1		3
	0.3		0.4	0.2	0.1		0.3
Depth (metres)	0.0		0.4	0.2	0.1		0.0
d'water, 2 pool, 3	1		3	4	4		3
glide, 4 run, 5 riffle)							
Refuges in channel	tick all present	in patch, mair	n type(s) sear	rched in red	1		
cobble (6.5-15cm)	YES		YES	YES	YES		YES
cobble (15-25.6cm)	YES		YES	YES	YES		YES
boulder (25.6-40cm)	YES		YES	YES	YES		YES
boulder (>40cm)	YES		YES	YES	YES		YES
rubble (give size)	YES		YES	YES	YES		YES
woody debris							
other urban debris							YES
tree roots, fine	YES		YES				YES
moss							YES
filamentous algae							
other submerged veg.							
emergents							
Main substrate							
bedrock							YES
cobble (6.5-15cm)							
				1			

CRAYFISH HABITAT SURVEY FORM

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pebble (<6.5cm)						
gravel (<1.6cm)	YES		YES	YES	YES	
sand (<2mm)						
clay						
silt						
Siltation						
none	YES		YES	YES	YES	YES
noderote	120		120	120		
high						
Refuges in bank						
none						
cobble/boulder			YES	YES	YES	YES
tree roots, large	YES			YES	YES	YES
vertical or undercut bank	YES				YES	
dry stone wall						YES
other reinforced						
crayfish burrows						
Shading above	MOD		MOD	MOD	MOD	MOD
Crayfish manually						
Crayfish by trap						
caught						
Evaluation cravish		Notes (surve	ey conditions, p	patches etc.):		
habitat for whole	Saara					
site (0 none, 1 pres, 2 freq, 3	Scole					
abund.)						
in margins	3					
in mid channel	3					
in banks	3					
surveyability	3					
Decklasse wellstage 4						
erosion 2. (E if >33%						
affected), aliens 3.						
Total crayfish (by 1						
by other methods in	0					
notes if applicable)						

Catchment	Wye		River	Offe	iriad	Site (no., name)	2
Date (dd/mm/\\\)	13/10/2014	Surveyors	DRIW			Grid ref	SO 09542 42629
Weather, good 1, mod	10/10/2014	Flow norm 1, low 2, fall 3, rise 4	1				Start and finish time 0900-1100
Photo ref. &						- ALAN AND AND AND AND AND AND AND AND AND A	
Location	Mid Point at fo	otbridge					
Site length (m)	100						
Width channel (m)	6	Descript. (channel features, landuse)	Access do woodland f woodland. pools, som Excellent h	wn vei footpa Series ne very nabitat	ry steep th. Landuse - s of riffles and / deep. throughout.		
	sample patch 1		sample patch 2		sample patch 3	sample patch 4	sample patch 5
Survey method, std 1, quad 2, net/kick 3, trap 4, view 5	1 &	4	1 & 4		1 & 4	1 &	4 1&4
Details (if not standard)							
Extent (I x w patch)	1x6		3x3		6x1	5x2	3x2
Channel (1 margins, 2 mid, 3 both, other specify)	3		2		1	3	3
Depth (metres)	0.3		0.2		0.2	0.3	0.3
Feature (1 marg. d'water, 2 pool, 3 glide, 4 run, 5 riffle)	4		5		2	3	3
Refuges in channel		tick	all present ir	n patch	n, main type(s) se	arched in re	d
cobble (6.5-15cm)	YES		YES		YES	YES	YES
cobble (15-25.6cm)	YES		YES		YES	YES	YES
boulder (25.6-40cm)	YES		YES		YES	YES	YES
boulder (>40cm)	YES		YES		YES	YES	YES
rubble (give size)	YES		YES		YES	YES	YES
woody debris							
other urban debris							
tree roots, fine							
moss							
filamentous algae							
other submerged veg.							
emergents Main substrate							
beneath							
bedrock	YES		YES		YES	YES	YES
cobble (6.5-15cm)							
pebble (<6.5cm)							
gravel (<1.6cm)							

	1		1	1	1	1
sand (<2mm)						
clay						
silt						
Siltation						
none	VES		VES	VES	VES	VES
IOW	120		120	120		
moderate						
Refuges in bank						
none						YES
cobble/boulder	YES		YES	YES	YES	
tree roots, large						
vertical or undercut						
bank						
dry stone wall						
other reinforced						
crayfish burrows						
Shading above	HEAVY		HEAVY	HEAVY	HEAVY	HEAVY
Cravifish manually						
Total cravfish						
caught						
		Notes (surve	ey conditions, p	atches etc.):		
Evaluation crayfish	Score					
(0 none, 1 pres., 2	Ocore					
freq., 3 abund.)						
in margins	3					
in mid channel	2					
in banks	1					
surveyability	2					
Drobleme cellution 4						
erosion 2, (E if >33%						
affected), aliens 3.						
Total crayfish (by 1						
by other methods in	0					
notes if applicable)						

		CRAYFISH	HABITAT S	URVE	Y FORM	-		
						Site		
Catabraant	Marc		Divor	Off.	oiriod	(no.,		
Calchinent	vvye		Rivei	Olle	einau	Grid	3	
Date (dd/mm/yy)	12/10/2014	Surveyors	DR LW			ref.	SO 08	926 42561
		Flow norm					Start and	
Weather, good 1, mod 2, poor 3	1	1, low 2, fall 3, rise 4	1	—			finish time	1500-1700
Photo ref. &								1.1.1
Location	In 1st 100m						1 tons	000115
Oite les eth (m)	100							
Site length (m)			Access v	ery d	difficult		250	
Width channel (m)	7	Descript. (channel features, landuse)	across fir very stee bank. Ex surveyab there.Go	eld ar p wo celler pility c od ha	nd down oodland nt once abitat.		Ger St	
	sample		sample		sample	sample		sample
	patch 1		patch 2		patch 3	patch 4		patch 5
Survey method, std 1, quad 2, net/kick 3, trap 4, view 5	1 &	4	1 & 4		1 & 4	1 8	. 4	1 & 4
Details (if not								
standard)								
Extent (I x w patch)	1x8		3x3		8x1	4x3		5x2
Channel (1 margins, 2 mid, 3 both, other specify)	3		2		1	3		3
Depth (metres)	0.3		0.3		0.1	0.2		0.3
Feature (1 marg. d'water, 2 pool, 3 glide, 4 run, 5 riffle)	4		4		4	2		2
Refuges in channel		tick all	present in p	atch, r	main type(s) s	searched in rec	1	
cobble (6.5- 15cm)	YES		YES		YES	YES		YES
cobble (15- 25.6cm)	YES		YES		YES	YES		YES
boulder (25.6- 40cm)	YES		YES		YES	YES		YES
boulder (>40cm)	YES		YES		YES	YES		YES
rubble (give size)								
woody debris								
other urban debris								
tree roots, fine								
moss				$\square$				
filamentous algae								

other submerged					
emergents					
Main substrate					
beneath					
bedrock				YES	YES
cobble (6.5-					
15cm)			_		
pebble (<6.5cm)					
gravel (<1.6cm)	YES	YES	YES		
sand (<2mm)					
clay					
silt					
Siltation					
none					
low	YES	YES	YES	YES	YES
moderate				<del></del>	T
high					
Refuges in bank	YES	YES	YES	YES	YES
cobble/boulder				1	
tree roots large		Т	+		
vertical or		+	+	1	T
undercut bank					
dry stone wall		+	+	1	1
other reinforced		+		+	+
cravfish burrows					
Shading above	HEAVY	HEAVY	HEAVY	HEAVY	HEAVY
Crayfish		+			1
manually					
Crayfish by trap					
Total crayfish					
caught					
Evaluation					
crayfish habitat	Score				
none, 1 pres., 2	30016				
freq., 3 abund.)					
in margins	2				
in mid channel	2				
in banks	1				
surveyability	3				
Problems pollution 1, erosion 2, (E if >33% affected),					
aliens 3.					
Total crayfish (by 1 method, note total(s) by other methods in notes if	0				

Catchment	Wye		River	Offe	eiriad	Site (no., name)	4	
Data (dd/www.ka)	40/40/0044	0				Oristant	00.005	00.40000
Date (dd/mm/yy)	12/10/2014	Flow norm	DR LW			Grid rer.	Start	96 42386
Weather, good 1, mod		1, low 2, fall 3. rise					and finish	
2, poor 3	1	4	1				time	1300-1500
Photo ref. &							44	A CONTRACT
Location	In 1st 100m					e - V		The set
Site length (m)	100							
						A.F.	and have	
Width channel (m)	7	Descript. (channel features, landuse)	Access do wooded ba woodland good habit	wn ve anks. I and gr at thro	ry steep _and use - razing. Looks oughout.			
	sample patch 1		sample patch 2		sample patch 3	sample patch 4		sample patch 5
Survey method, std 1, quad 2, net/kick 3,								
trap 4, view 5 Details (if not	1&	4	1&4		1 & 4	1&	4	1 & 4
standard)								
Extent (I x w patch)	1x7		3x3		6x1	3x2		1x7
Channel (1 margins, 2 mid, 3 both, other specify)	3		2		1	2		3
Depth (metres)	0.3		0.3		0.1	0.3		0.3
Feature (1 marg. d'water, 2 pool, 3	4		5		4	3		4
glide, 4 run, 5 riffle)		tick	all procent in	nate	a main type(s) so	archod in ro	d	
Refuges in channel	VES	lick		ιραιο			u	VES
CODDIE (6.5-15CM)	YES		YES		YES	YES		YES
boulder (25.6-40cm)	YES		YES		YES	YES		YES
boulder (>40cm)	YES		YES		YES	YES		YES
rubble (give size)								
woody debris								
other urban debris								
tree roots, fine								
moss								
filamentous algae								
other submerged veg.								
emergents								
beneath			1					1
bedrock								
cobble (6.5-15cm)	YES		YES		YES	YES		YES
pebble (<6.5cm)								
gravel (<1.6cm)			]			]		

sand (<2mm)						
clay						
silt						
Siltation						
none .	VES		VES	VES	VES	VES
low	163		163	163	TES	TES
moderate						
high Refuges in bank						
none	YES		YES	YES	YES	YES
cobble/boulder						
tree roots, large						
vertical or undercut bank						
dry stone wall						
other reinforced						
crayfish burrows						
Shading above	HEAVY		HEAVY	HEAVY	HEAVY	HEAVY
Crayfish manually						
Crayfish by trap						
Lotal crayfish						
		Notes (surve	ey conditions, pa	atches etc.):		
Evaluation crayfish						
habitat for whole site	Score					
freq., 3 abund.)						
in margins	3					
in mid channel	3					
in banks	0					
surveyability	2					
Broblems pollution 1						
erosion 2, (E if >33%						
affected), aliens 3.						
I otal crayfish (by 1 method, note total(s)						
by other methods in	0					
notes if applicable)						

							Site		
Catchment	Wye		River	Offe	eiriad		(no., name)	5	
Date (dd/mm/yy)	12/10/2014	Surveyors	DR LW				Grid ref.	SO 082	24 42923
Weather, good 1, mod 2, poor 3	1	Flow norm 1, low 2, fall 3, rise 4	1					Start and finish time	1100 - 1300
Photo ref. &									
Location	Upstream end						Sike.		
Site length (m)	100								
Width channel (m)	6	Descript. (channel features, landuse)	Access go Land use g woodland. river.	od aci grazin Stock	ross fields. g and c access to				
	sample patch 1		sample patch 2		sample patch 3		sample patch 4		sample patch 5
Survey method, std 1, quad 2, net/kick 3, trap 4, view 5	1 &	4	1 & 4		1 & 4		1 8	. 4	1 & 4
Details (if not standard)									
Extent (I x w patch)	3x2		1x5		5x1		1x6		3x3
mid, 3 both, other specify)	1		3		1		3		2
Depth (metres)	0.2		0.2		0.1		0.3		0.2
Feature (1 marg. d'water, 2 pool, 3 glide, 4 run, 5 riffle)	2		5		4		4		4
Refuges in channel		tick a	all present in	patch	n, main type(	s) sea	arched in re	ed	
cobble (6.5-15cm)	YES		YES		YES		YES		YES
cobble (15-25.6cm)	YES		YES		YES		YES		YES
boulder (25.6-40cm)	YES		YES		YES		YES		YES
boulder (>40cm)	YES		YES		YES		YES		YES
rubble (give size)	YES		YES		YES				
woody debris									
other urban debris									
tree roots, fine									
moss									
filamentous algae									
other submerged veg.									
emergents									
Main substrate beneath			[			T			,
bedrock									
cobble (6.5-15cm)									
pebble (<6.5cm)									
gravel (<1.6cm)	YES		YES		YES		YES		YES

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sand (<2mm)						
clay						
silt						
Siltation						
none						
low	YES		YES	YES	YES	YES
moderate						
high						
Refuges in bank none						
cobble/boulder	YES		YES	YES	YES	YES
tree roots, large vertical or undercut bank						
drv stone wall						
other reinforced						
cravfish burrows						
Shading above	MOD		HEAVY	MOD	MOD	MOD
Crayfish manually						
Crayfish by trap						
Total crayfish caught						
		Notes (surve	ey conditions, pa	atches etc.):		
Evaluation crayfish habitat for whole site (0 none, 1 pres., 2 freq., 3 abund.)	Score					
in margins	3					
in mid channel	3					
in banks	1					
surveyability	3					
Problems pollution 1, erosion 2, (E if >33% affected), aliens 3.						
method, note total(s) by other methods in notes if applicable)	0					

Catchment	Wye		River	Offe	iriad	Site (no., name)	6	
Data (dd/mm/ss)	12/10/2014					Crid rof	SO0769	4 42002
Date (dd/mm/yy)	12/10/2014	Surveyors	DR LW			Gild lei.	Start	1 43093
Weather, good 1, mod 2, poor 3	1	Flow norm 1, low 2, fall 3, rise 4	1				and finish time	0900-1100
Photo ref. &								
Location	In 1st 100m					A state		
Site length (m)	100							
							T	All the second
Width channel (m)	4	Descript. (channel features, landuse)	Access go Landuse g Shaded or stock on o	od via grazing n one s ther si	road bridge. 1 for sheep. side open to de.			
	sample patch 1		sample patch 2		sample patch 3	sample patch 4		sample patch 5
Survey method, std 1, quad 2, net/kick 3, trap 4, view 5	1 &	4	1 & 4		1 & 4	1 &	4	1 & 4
Details (if not standard)								
Extent (I x w patch)	2x2		4x2		4x2	2x2		5x1
Channel (1 margins, 2 mid, 3 both, other specify)	2		2		2	1		2
Depth (metres)	0.2		0.3		0.2	0.2		0.3
Feature (1 marg. d'water, 2 pool, 3 glide, 4 run, 5 riffle)	4		4		4	4		4
Refuges in channel		tick a	all present in	n patch	n, main type(s) se	arched in re	d	
cobble (6.5-15cm)	YES		YES		YES	YES		YES
cobble (15-25.6cm)	YES		YES		YES	YES		YES
boulder (25.6-40cm)	YES		YES		YES	YES		YES
boulder (>40cm)	YES		YES		YES	YES		YES
rubble (give size)								
woody debris								
other urban debris								
tree roots, fine	YES							
moss								
filamentous algae								
other submerged veg.								
emergents Main substrate								
beneath			1			1		
bedrock								
cobble (6.5-15cm)	YES		YES		YES	YES		YES
pebble (<6.5cm)								
gravel (<1.6cm)								

•					
sand (<2mm)					
clay					
silt					
Siltation					
low	YES	YES	YES	YES	YES
moderate					
high					
Refuges in bank none					
cobble/boulder		_		YES	YES
tree roots, large	YES	YES	YES		
vertical or undercut bank					
dry stone wall					
other reinforced					
crayfish burrows					
Shading above	MOD	MOD	HEAVY	HEAVY	MOD
Crayfish manually					
Crayfish by trap					
Total crayfish caught					
Evaluation crayfish habitat for whole site (0 none, 1 pres., 2 freq., 3 abund.)	Score				
in margins	2				
in mid channel	3				
in banks	2				
surveyability	3				
Problems pollution 1, erosion 2, (E if >33% affected), aliens 3.					
method, note total(s) by other methods in notes if applicable)	0				

Catchment	Wye		River	Offe	eiriad		Site (no., name)	7	
Date (dd/mm/yy)	11/10/2014	Surveyors	DR LW				Grid ref.	SO 0727	77 42979
Weather, good 1, mod 2, poor 3	1	Flow norm 1, low 2, fall 3, rise 4	1					Start and finish time	1500-1700
Photo ref. &									
Location	Upstream end							1A	Contract of the
Site length (m)	100								
Width channel (m)	5	Descript. (channel features, landuse)	Access fro use - wood riffles, wat some very	m roa dland. erfalls deep	dbridge. La Series of and pools -	nd		***	
	sample patch 1		sample patch 2		sample patch 3		sample patch 4		sample patch 5
Survey method, std 1, quad 2, net/kick 3, trap 4, view 5	1 &	4	1&4		1 & 4		1 &	. 4	1 & 4
Details (if not standard)									
Extent (I x w patch)	2x5		2x5		5x3		4x3		4x3
mid, 3 both, other specify)	2		2		3		1		1
Depth (metres)	0.3		0.3		0.2		0.2		0.2
Feature (1 marg. d'water, 2 pool, 3 glide, 4 run, 5 riffle)	4		4		3		4		4
Refuges in channel		tick a	all present in	patch	n, main type	(s) se	earched in re	d	
cobble (6.5-15cm)	YES		YES		YES		YES		YES
cobble (15-25.6cm)	YES		YES		YES		YES		YES
boulder (25.6-40cm)	YES		YES		YES		YES		YES
boulder (>40cm)	YES		YES		YES		YES		YES
rubble (give size)									
woody debris	YES						YES		
other urban debris									
tree roots, fine									
moss									
filamentous algae									
other submerged veg.									
emergents Main substrate beneath									<u>                                     </u>
bedrock									
cobble (6.5-15cm)	YES		YES		YES		YES		YES
pebble (<6.5cm)									
gravel (<1.6cm)									·]

sand (<2mm)					
clay					
silt					
Siltation					
none	VES	VES	VES	VES	VES
IOW	120	120	120	120	120
moderate					
Refuges in bank					
none					YES
cobble/boulder	YES				
tree roots, large		YES	YES	YES	
vertical or undercut					
dry stone wall					
other reinforced					
cravfish burrows					
Shading above	MOD	MOD	MOD	MOD	MOD
Crayfish manually					
Crayfish by trap					
Total crayfish caught					
Evaluation crayfish habitat for whole site (0 none, 1 pres., 2 freq., 3 abund.)	Score				
in margins	3				
in mid channel	3				
in banks	1				
surveyability	3				
Problems pollution 1, erosion 2, (E if >33% affected), aliens 3.					
notal crayfish (by 1 method, note total(s) by other methods in notes if applicable)	0				

					Site (no.,			
Catchment	Wye		River	Offe	eiriad	name)	8	
Date (dd/mm/\//)	11/10/2014	Surveyors				Grid ref	50 069	33 42733
	11/10/2014	Flow norm	DICEN			Ond fer.	Start	55 427 55
Weather, good 1, mod		1, low 2, fall 3, rise					and finish	
2, poor 3	1	4	1				time	1300-1500
Photo ref. &	Downstream e	nd						NOT THE STORE
Location								
							ALL -	
	100							Contraction of the second
Site length (m)								A CARE
						April 1		A REAL
Width channel (m)	F	Descript				1 Star	12/2	
	5	(channel	Access fro	m roa	d bridge. Land			
		features, landuse)	use - grazi Good habit	ng an tat thr	d woodland. oughout.			
	sample		sample		sample	sample		sample
	patch 1		patch 2		patch 3	patch 4		patch 5
Survey method, std 1, guad 2, net/kick 3								
trap 4, view 5	1 &	4	1 & 4		1 & 4	1 &	4	1 & 4
Details (if not standard)								
Extent (I x w patch) Channel (1 margins, 2	3x3		2x4		3x4	2x3		3x2
mid, 3 both, other	3		3		3	2		2
specify)	0.0							0.0
Depth (metres)	0.2		0.2		0.2	0.3		0.3
d'water, 2 pool, 3	4		5		5	4		4
glide, 4 run, 5 riffle)								
Refuges in channel		tick	all present in	n patch	n, main type(s) se	earched in re	d	
cobble (6.5-15cm)	YES		YES		YES	YES		YES
cobble (15-25.6cm)	YES		YES		YES	YES		YES
boulder (25.6-40cm)	YES		YES		YES	YES		YES
rubble (give size)						120		
woody debris						YES		
other urban debris								
tree roots. fine	YES				YES	YES		
moss								
filamentous algae								
other submerged veg.								
emergents								
Main substrate beneath								
bedrock								
cobble (6.5-15cm)	YES		YES		YES	YES		YES
pebble (<6.5cm)								
gravel (<1.6cm)								

sand (<2mm)					
clay					
silt					
Siltation					
none	VES	VES	VES	VES	VES
IOW	110				
moderate		+	+		+
Refuges in bank		 +	+		<u> </u>
none		ļ	<u> </u>		
cobble/boulder	YES	YES	YES	YES	YES
tree roots, large	YES	 ļ	ļ	YES	
vertical or undercut					
dry stone wall		1	+	+	+
other reinforced		 1	1	+	+
cravfish burrows		 1	1		1
Shading above	HEAVY	 HEAVY	HEAVY	HEAVY	HEAVY
Ondering above			1	1	1
Crayfish manually					
Crayfish by trap		 			
Total crayfish					
caught		 			
Evaluation cravfish					
habitat for whole	Score				
site (0 none, 1 pres., 2 freg., 3 abund.)					
in margins	3				
in mid channel	3				
in banks	2				
surveyability	3				
Problems pollution 1, $(F \text{ if } > 32\%)$					
affected), aliens 3.					
Total crayfish (by 1					
by other methods in	0				
notes if applicable)					

Catchment	Wye		River	Offe	eiriad	Site (no.) nam	, ie)	9	
Date (dd/mm/yy)	11/10/2014	Surveyors	DR LW			Grid	ref.	SO0626	4 42414
Weather, good 1, mod 2, poor 3	1	Flow norm 1, low 2, fall 3, rise 4	1					Start and finish time	1100 - 1300
Photo ref. &									
Location	Mid point					The second			
Site length (m)	100								
Width channel (m)	4	Descript. (channel features, landuse)	Access go Fully shad some eros with occas use - graz throughou	od via ed on ion. R ional ing . C t.	road bridge. left bank with light side field shading. Land Good habitat	d			
	sample patch 1		sample patch 2		sample patch 3	sam pato	ple h 4		sample patch 5
Survey method, std 1, quad 2, net/kick 3, trap 4, view 5	1.&	4	1 & 4		1 & 4		1 &	4	1 & 4
Details (if not standard)		•					1 0	•	
Extent (I x w patch)	2x3		2x4		2x4		3x1		3x3
mid, 3 both, other specify)	2		2		3		3		1
Depth (metres)	0.3		0.2		0.3		0.3		0.2
Feature (1 marg. d'water, 2 pool, 3 glide, 4 run, 5 riffle)	4		4		4		4		5
Refuges in channel		tick	all present ir	n patcl	n, main type(s	s) searche	d in re	d	
cobble (6.5-15cm)	YES		YES		YES	YES	5		YES
cobble (15-25.6cm)	YES		YES		YES	YES	3		YES
boulder (25.6-40cm)	YES		YES		YES	YES	6		YES
boulder (>40cm)	YES		YES		YES	YES	6		YES
rubble (give size)									
woody debris									YES
other urban debris									
tree roots, fine	YES								
moss									
filamentous algae									
other submerged veg.									
emergents									
Main substrate beneath									l
bedrock									
cobble (6.5-15cm)	YES		YES		YES	YES	5		YES
pebble (<6.5cm)									
gravel (<1.6cm)									

sand (<2mm)					
clay					
silt					
Siltation					
none	VES	VES	VES	VES	VES
WOI	120	120	120		120
moderate					
Refuges in bank					
none					
cobble/boulder	YES	YES	YES	YES	YES
tree roots, large	YES	YES	YES	YES	YES
vertical or undercut					
dry stopo wall					
other reinforced					
Shading above	MOD	HEAVY	HEAVY	MOD	HEAVY
Crayfish manually					
Crayfish by trap					
Total crayfish caught					
Evaluation crayfish	Saara				
habitat for whole site	Score				
freq., 3 abund.)					
in margins	2				
in mid channel	3				
in banks	2				
surveyability	3				
Drobleme nellution 4					
erosion 2. (F if $>33\%$	2				
affected), aliens 3.					
Total crayfish (by 1					
by other methods in	0				
notes if applicable)					

Catchment	Wye		River	Offe	eiriad		Site (no., name)	10	
Date (dd/mm/yy)	11/10/2014	Surveyors Flow norm	DR LW				Grid ref.	SO 058	61 42621
		1, low 2,						and	
Weather, good 1, mod 2. poor 3	1	fall 3, rise 4	1					finish time	0900-1100
Photo ref. &	In 1st 100m								
Location							A	16/3	
Site length (m)	100								
							die av	2014	and the second s
Width channel (m)	3	Descript. (channel features, landuse)	Access dow banks. Hea many large - grazing, s	wn ste avily v tree stock	eep wooded vooded with roots. Land us access to rive	se r.			
	sample patch 1		sample patch 2		sample patch 3		sample patch 4		sample patch 5
Survey method, std 1,									
trap 4, view 5	1 &	4	1&4		1 & 4		1 &	4	1 & 4
Details (if not standard)									
Stanuaru)									
Extent (I x w patch)	3x3		3x3		4x2		3x3		3x3
mid, 3 both, other specify)	2		2		1		3		3
Depth (metres)	0.4		0.4		0.2		0.25		0.3
Feature (1 marg.									
glide, 4 run, 5 riffle)	3		4		4		3		4
Refuges in channel		tick	all present in	patc	h, main type(s	s) se	arched in re	d	
cobble (6.5-15cm)	YES		YES		YES		YES		YES
cobble (15-25.6cm)	YES		YES		YES		YES		YES
boulder (25.6-40cm)	YES		YES		YES		YES		YES
boulder (>40cm)	YES								
rubble (give size)									
woody debris	YES				YES				
other urban debris									
tree roots, fine			YES						
moss									
filamentous algae									
other submerged veg.									
emergents Main substrate beneath									<u> </u> ]
bedrock	YES								
cobble (6.5-15cm)			YES		YES		YES		YES
pebble (<6.5cm)									
gravel (<1.6cm)									

	1		1	1	1	1
sand (<2mm)						
clay						
silt						
Siltation						
low	YES		YES	YES	YES	YES
moderate						
high						
Refuges in bank						
none						
cobble/boulder	YES			YES	YES	YES
tree roots, large			YES	YES	YES	YES
vertical or undercut						
dry stops well						
other reinferred						
Crayfish burrows						HEAVY
Shading above				TIEAVI		
Cravfish manually						
Cravfish by tran						I
Total crayfish						
caught						
Evaluation crayfish habitat for whole site (0 none, 1 pres., 2 freq., 3 abund.)	Score	Patch 1, dov 9.	vnstream end of	site was on bedro	ock with fewer refuge	∋s. Patch 2 like Site
in margins	3					
in mid channel	3					
in banks	3					
surveyability	3					
Problems pollution 1, erosion 2, (E if >33% affected), aliens 3.						
Total crayfish (by 1 method, note total(s) by other methods in notes if applicable)	0					

Catchment	Wve		River	Offe	eiriad		Site (no., name)	11	
Date (dd/mm/yy)	10/10/2014	Surveyors	DR LW				Grid ref.	SO 0526	69 43142
Weather good 1 mod		Flow norm						Start and	
2, poor 3	1	fall 3, rise 4	1					time	1500 - 1700
Photo ref. &	1								
Location	Downstream e	nd							
Site length (m)	100								
Width channel (m)	3	Descript. (channel features, landuse)	Access thr use grazin farmyard. farmyard.	ough g adja Site ju	farmyard. La acent to ist upstream	and of			
	sample patch 1		sample patch 2		sample patch 3		sample patch 4		sample patch 5
Survey method, std 1, quad 2, net/kick 3, trap	1.8	Δ	18/		1.8.4		1.8	1	184
Details (if not	10	4	104		10.4		10	4	104
standard)									
Extent (I x w patch) Channel (1 margins, 2	4x3		3x3		4x3		4x3		4x3
mid, 3 both, other specify)	3		2		3		2		3
Depth (metres)	0.3		0.3		0.3		0.3		0.3
Feature (1 marg. d'water, 2 pool, 3 glide, 4 run, 5 riffle)	4		4		5		4		4
Refuges in channel		tick a	all present in	patch	n, main type(	s) se	arched in re	d	
cobble (6.5-15cm)	YES		YES		YES		YES		YES
cobble (15-25.6cm)	YES		YES		YES		YES		YES
boulder (25.6-40cm)	YES		YES		YES		YES		YES
boulder (>40cm)									
rubble (give size)									
woody debris									
other urban debris									
tree roots, fine									
moss									
filamentous algae									
other submerged veg.									
Main substrate beneath					<u> </u>		<u> </u>		
bedrock									
cobble (6.5-15cm)	YES		YES		YES		YES		YES
pebble (<6.5cm)									
gravel (<1.6cm)									

sand (<2mm)						
clay						
silt						
Siltation						
none	VE0		NE0		N/50	VEO
low	YES		YES	YES	YES	YES
moderate			1			
high						
none						
cobble/boulder	YES		YES	YES	YES	YES
tree roots, large	YES		YES	YES	YES	YES
vertical or undercut bank	YES		YES	YES	YES	YES
dry stone wall						
other reinforced						
crayfish burrows						
Shading above	MOD		LIGHT	MOD	MOD	MOD
Crayfish manually						
Crayfish by trap				8		
Total crayfish caught				8		
Evaluation crayfish habitat for whole site (0 none, 1 pres., 2 freq., 3 abund.)	Score	Notes (surve	ey conditions, p	atches etc.):		
in margins	3					
in mid channel	3					
in banks	3					
surveyability	3					
Problems pollution 1, erosion 2, (E if >33% affected), aliens 3.						
method, note total(s) by other methods in	8					

Catchment	Wve		River	Offe	eiriad	Site (no., name)	12	
				0				
Date (dd/mm/yy)	10/10/2014	Surveyors	DR LW			Grid ref.	SO 046	35 43457
		Flow norm					and	
Weather, good 1, mod 2, poor 3	1	1, low 2, fall 3, rise 4	1				finish time	1300-1500
Photo ref. &								
Location	In 1st 100m							
							Carlos	SALAN I
	100							
								3
Site length (m)								Contraction of the
						States	22	A Sos (
Width channel (m)	3	Descript.						
		(channel	Good acce	ess ac	cross steep field			
		landuse)	woodland	graz				
	sample		sample		sample	sample		sample
Survey method std 1	patch 1		patch 2		patch 3	patch 4		patch 5
quad 2, net/kick 3, trap								
4, view 5 Details (if not	1 &	4	1&4		1 & 4	18	. 4	1 & 4
standard)								
Extent (I x w patch)	3x2		2x2		3x1	5x2		3x3
Channel (1 margins, 2 mid 3 both other	3		з		1	1		2
specify)						·		-
Depth (metres)	0.4		0.3		0.3	0.2		0.3
Feature (1 marg.	5		1		4	5		5
glide, 4 run, 5 riffle)			4		4	5		5
Refuges in channel		tick a	all present in	patch	n, main type(s)	searched in re	d	
cobble (6.5-15cm)	YES		YES		YES	YES		YES
cobble (15-25.6cm)	YES		YES		YES	YES		YES
boulder (25.6-40cm)	YES		YES		YES	YES		YES
boulder (>40cm)					1ES			
woody debris								
other urban debris								
tree roots, fine	YES		YES		YES	YES		YES
moss								
filamentous algae								
other submerged veg.								
emergents								
beneath								
bedrock								
cobble (6.5-15cm)								
pebble (<6.5cm)	VE0		VEO		VEO	VEO		×50
gravel (<1.6cm)	YES		YES		YES	YES		YES

sand (<2mm)						
clay						
silt						
Siltation none						
low	YES		YES	YES	YES	YES
moderate						
high						
Refuges in bank none						
cobble/boulder				YES	YES	YES
tree roots, large						
vertical or undercut bank	YES		YES			
dry stone wall						
other reinforced						
crayfish burrows						
Shading above	HEAVY		MOD	MOD	MOD	MOD
	1 1		3	4	2	
Crayfish manually	1		3	4	2	
Crayfish manually Crayfish by trap	1		3	4 22	2	
Crayfish manually Crayfish by trap Total crayfish caught	1		3	4 22 32	2	
Crayfish manually Crayfish by trap Total crayfish caught Evaluation crayfish habitat for whole site (0 none, 1 pres., 2 freq., 3 abund.)	Score	Patch 1 - ear	th banks on right :	4 22 32 side	2	
Crayfish manually Crayfish by trap Total crayfish caught Evaluation crayfish habitat for whole site (0 none, 1 pres., 2 freq., 3 abund.) in margins	1 Score	Patch 1 - ear	th banks on right :	4 22 32 side	2	
Crayfish manually Crayfish by trap Total crayfish caught Evaluation crayfish habitat for whole site (0 none, 1 pres., 2 freq., 3 abund.) in margins in mid channel	Score 3 3	Patch 1 - ear	th banks on right s	4 22 32 side	2	
Crayfish manually Crayfish by trap Total crayfish caught Evaluation crayfish habitat for whole site (0 none, 1 pres., 2 freq., 3 abund.) in margins in mid channel in banks	1 Score 3 3 2	Patch 1 - ear	th banks on right :	4 22 32 side	2	
Crayfish manually Crayfish by trap Total crayfish caught Evaluation crayfish habitat for whole site (0 none, 1 pres., 2 freq., 3 abund.) in margins in mid channel in banks surveyability	1 Score 3 3 2 3 3	Patch 1 - ear	th banks on right :	4 22 32 side	2	
Crayfish manually Crayfish by trap Total crayfish caught Evaluation crayfish habitat for whole site (0 none, 1 pres., 2 freq., 3 abund.) in margins in mid channel in banks surveyability Problems pollution 1, erosion 2, (E if >33% affected), aliens 3.	1 Score 3 3 2 3	Patch 1 - ear	th banks on right :	4 22 32 side	2	

		•••••••					Site		
Catchmont	Mhio		Pivor	Offe	viriad		(no.,	13	
Catoninent	vvye		RIVEI	One	lindu	_	name)	15	
Date (dd/mm/yy)	10/10/2014	Surveyors	DR LW				Grid ref.	SO 037	71 43539
		Flow norm						Start	
Weather, good 1, mod	4	fall 3, rise		_		_		finish	1100 1000
2, poor 3	1	4	1					time	1100-1300
									I
Location	In 1st 100m						21		
Site length (m)	100								
Width channel (m)	3	Descript. (channel features, landuse)	Access do wooded ba woodland a limited stoo Appears to	wn mo ink. La and gi ck acc be ex	oderately stee and use razing with cess to water. xcellent habita	ep at.			
	sample		sample		sample		sample		sample
Survey method, std 1	ραιοπι		pateriz		paterio		paterr 4		patono
quad 2, net/kick 3,	4.0		4.0.4		4.0.4		4.0	4	4.9.4
Details (if not	1 &	4	1&4		1&4		1 &	4	1&4
standard)									
Extent (I x w patch)	3x3		2x3		3x3		3x3		3x2
Channel (1 margins, 2 mid, 3 both, other specify)	3		3		3		3		3
Depth (metres)	0.3		0.3		0.2		0.2		0.2
Feature (1 marg. d'water, 2 pool, 3 glide, 4 run, 5 riffle)	3		4		4		4		5
Refuges in channel		tick	all present in	patch	n, main type(s	) sea	rched in re	d	
cobble (6.5-15cm)	YES		YES		YES		YES		YES
cobble (15-25.6cm)	YES		YES		YES		YES		YES
boulder (25.6-40cm)	YES		YES		YES		YES		YES
boulder (>40cm)									
rubble (give size)									
woody debris	YES						YES		YES
other urban debris						-+	VE0		
tree roots, fine	YES		YES		YES		YES		
moss									
filamentous algae									
other submerged veg.						$\rightarrow$			
Main substrate beneath									
bedrock									
cobble (6.5-15cm)									
pebble (<6.5cm)									
gravel (<1.6cm)	YES		YES		YES		YES		YES

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sand (<2mm)						
clay						
silt						
Siltation						
none	VES		VEC	VES	VEC	VEC
low	TES		TES	TES	TES	TES
moderate						
high						
none			YES			
cobble/boulder						
tree roots, large vertical or undercut bank	YES			YES	YES	YES
dry stone wall						
other reinforced						
oroufich hurrowo						
Shading above	HEAVY		HEAVY	HEAVY	MOD	HEAVY
onduring aborto	_					
Crayfish manually	3		10	12	1	4
Crayfish by trap				18		
Total crayfish caught				48		
		Patch 1 & 2	had earth banks w	ith no crayfish bu	rrows. An otter holt ha	s recently been
Evaluation crayfish habitat for whole site (0 none, 1 pres., 2 freq., 3 abund.)	Score	this site	it is believed that	otters have starte	d to use it. Photo of c	rayfish found at
in margins	3		PAR A	31 11 5	16 Jan March	2
in mid channel	3			11/10/00/00		
in banks	3				the state of the	
surveyability	3		19/24		1	
Problems pollution 1, erosion 2, (E if >33% affected), aliens 3. Total crayfish (by 1 method, note total(s) by other methods in	48					

Catabrant	Muc		Pivor	Offo	iriod		Site (no.,	14	
Catchment	vvye		River	One	anau		name)	14	
Date (dd/mm/yy)	10/10/2014	Surveyors	DR LW				Grid ref.	SO 030	00 43674
		Flow norm						Start and	
Weather, good 1, mod 2, poor 3	1	1, low 2, fall 3, rise 4	1	_				finish time	0900-1100
Photo ref. &	· · ·		•			_		unio	0000 1100
1 Par		In (	at 100m				and the sea		
Location		In 1	Access ov	er mo	orland. Land			P. Sala	Car an
			use moorland	and gr	azing and		THREE		The seal of
	100		throughou	t	400033		all and	A La	
Site length (m)							1		
								C. S.	1000
									SAV BARA
Width channel (m)	1	Descript.							
		features,							
	complo	landuse)	comple		comple		complo		comple
	patch 1		patch 2		patch 3		patch 4		patch 5
Survey method, std 1,									
4, view 5	1 &	4	1&4		1&4		1 &	4	1 & 4
Details (if not standard)									
Extent (I x w patch)	6x1		4x1		5x1		6x1		6x1
Channel (1 margins, 2	2		2		2		2		3
specify)	5		5		5		5		5
Depth (metres)	0.1		0.2		0.2		0.2		0.2
Feature (1 marg.	Б		1		1		1		4
glide, 4 run, 5 riffle)	J		4		4		4		4
Refuges in channel		tick	all present i	n patc	h, main types	s sea	arched in red	t	
cobble (6.5-15cm)	YES		YES		YES		YES		YES
cobble (15-25.6cm)	YES		YES		YES		YES		YES
boulder (25.6-40cm)	YES		YES		YES		YES		YES
boulder (>40cm)	150		169						
rubble (give size)							YES		
other urban debris									
tree roots, fine									
moss									
filamentous algae									
other submerged veg.	YES		YES		YES		YES		YES
emergents									
beneath							-		
bedrock									
cobble (6.5-15cm)									
pebble (<6.5cm)			N/50		2/50		) (FC		
gravel (<1.6cm)	YES		YES		YES		YES		YES

cand (<2mm)						
Sanu (<2mm)						
clay						
silt						
Siltation none						
low	YES		YES	YES	YES	YES
moderate						
high						
Refuges in bank none						
cobble/boulder						
tree roots, large						
vertical or undercut bank	YES		YES	YES	YES	YES
dry stone wall						
other reinforced						
crayfish burrows						
Shading above	NONE		NONE	NONE	NONE	NONE
			4	2	1	
Crayfish manually				<u> </u>		
Crayfish by trap				7		
Total cravfish caught				14		
		Notes (sum us		>++ )-		
Evaluation crayfish habitat for whole site (0 none, 1 pres., 2 freq., 3 abund.)	Score	Notes (surve	y conditions, patcl	hes etc.):		
Evaluation crayfish habitat for whole site (0 none, 1 pres., 2 freq., 3 abund.) in margins	Score 2	Notes (surve	y conditions, patcl	hes etc.):		
Evaluation crayfish habitat for whole site (0 none, 1 pres., 2 freq., 3 abund.) in margins in mid channel	Score 2 3	Notes (surve	y conditions, patcl	hes etc.):		
Evaluation crayfish habitat for whole site (0 none, 1 pres., 2 freq., 3 abund.) in margins in mid channel in banks	Score 2 3 3	Notes (surve	y conditions, patcl	hes etc.):		
Evaluation crayfish habitat for whole site (0 none, 1 pres., 2 freq., 3 abund.) in margins in mid channel in banks surveyability	Score 2 3 3 2	Notes (surve	y conditions, patcl	hes etc.):		
Evaluation crayfish habitat for whole site (0 none, 1 pres., 2 freq., 3 abund.) in margins in mid channel in banks surveyability Problems pollution 1, erosion 2, (E if >33% affected), aliens 3.	Score 2 3 3 2	Notes (surve	y conditions, patcl	hes etc.):		

Catchment	Wve		River	Offe	eiriad	Site (no., name)	15	
Date (dd/mm/yy)	09/10/2014	Surveyors	DR LW			Grid ref.	SO 0262 Start	20 43857
Weather, good 1, mod	1	Flow norm 1, low 2, fall 3, rise 4	1				and finish time	1100-1300
Photo ref. &								
Location	In 1st 100m						12	
Site length (m)	400m							
Width channel (m)	1	Descript. (channel features,	Access go Low water	od wa . Ver	alking from roa v few large	d.		
		landuse)	boulders/s	tones				
	sample patch 1		sample patch 2		sample patch 3	sample patch 4		sample patch 5
Survey method, std 1, quad 2, net/kick 3, trap 4, view 5	1 &	4	1&4		1 & 4	1.8	4	1 & 4
Details (if not		•						
Extent (Lx w potch)	3x1		4x1		5x1	5x1		7x1
Channel (1 margins, 2 mid, 3 both, other specify)	3		3		3	3		3
Depth (metres)	0.2		0.2		0.2	0.2		0.2
Feature (1 marg. d'water, 2 pool, 3	4		4		4	4		4
gilde, 4 fun, 5 fille)		tick all	present in p	atch.	l ring main type	(s) searched in	red	
cobble (6 5-15cm)	YES	tion an	YES	aton,	YES	YES	iou	YES
cobble (15-25.6cm)	YES		YES		YES	YES		YES
boulder (25.6-40cm)	YES		YES					
boulder (>40cm)								
rubble (give size)								
woody debris								
other urban debris								
tree roots, fine								
moss								
filamentous algae	VES		VES		VES	VES		VES
other submergea veg.								
Main substrate beneath			<u> </u>		1			۱۱
bedrock								
cobble (6.5-15cm)								
pebble (<6.5cm)			VEO		VEC	VEO		NE0
gravel (<1.6cm)	YES		1ES		YES	YES		1E2

	1		1	1		1
sand (<2mm)						
clay						
silt						
Siltation none						
low	YES		YES	YES	YES	YES
moderate						
high						
Refuges in bank none						
cobble/boulder						
tree roots, large						
vertical or undercut bank	YES		YES	YES	YES	YES
dry stone wall						
other reinforced						
crayfish burrows						
Shading above	NONE		NONE	NONE	NONE	NONE
					2	1
Crayfish manually					-	•
Crayfish by trap				9		
Total crayfish caught				12		
Evaluation crayfish habitat for whole site		Notes (surve	y conditions, patc	hes etc.):		
(0 none, 1 pres., 2 freq., 3 abund.)	Score					
(0 none, 1 pres., 2 freq., 3 abund.) in margins	Score 2					
(0 none, 1 pres., 2 freq., 3 abund.) in margins in mid channel	Score 2					
(0 none, 1 pres., 2 freq., 3 abund.) in margins in mid channel in banks	Score 2 2 2 2					
(0 none, 1 pres., 2 freq., 3 abund.) in margins in mid channel in banks surveyability	Score 2 2 2 2 2					
(0 none, 1 pres., 2 freq., 3 abund.) in margins in mid channel in banks surveyability Problems pollution 1, erosion 2, (E if >33% affected), aliens 3.	Score 2 2 2 2					

Catchment	Wye		River	Offe	eiriad	Site (no., name)	16	
	00/40/0044	0				Oridaet	00.000	24.44040
Date (dd/mm/yy)	09/10/2014	Surveyors	DR LW			Grid ref.	Start Start	21 44210
Weather, good 1, mod		Flow norm 1. low 2.					and finish	
2, poor 3	1	fall 3, rise 4	1				time	0900-1100
Photo ref. &								
Location	In 1st 100m							AN AND AN
	400							
Site length (m)								
						1 Date	· · · /////	1 ALLEN
						Sale and		
Width channel (m)	0.5	Descript.						
		features,	Access go	od wa	lking from road.			
	sample	landuse)	Very few la	irge b	sample	sample		sample
	patch 1		patch 2		patch 3	patch 4		patch 5
Survey method, std 1,								
4, view 5	1 &	4	1&4		1 & 4	1 &	. 4	1 & 4
Details (if not standard)								
Extent (Lx w patch)	4x0.5		4x0.5		5x0.5	5x0.5		5x0.5
Channel (1 margins, 2 mid, 3 both, other specify)	3		3		3	3		3
Depth (metres)	0.2		0.2		0.2	0.2		0.2
Feature (1 marg.								
d'water, 2 pool, 3 glide, 4 run, 5 riffle)	4		4		4	4		4
Refuges in channel		tick	all present i	n patc	h, ring main typ	e(s) searched	ł	
cobble (6.5-15cm)	YES		YES		YES	YES		YES
cobble (15-25.6cm)	YES		YES		YES	YES		YES
boulder (25.6-40cm)								
boulder (>40cm)								
rubble (give size)								
woody debris								
moss								
filamentous algae								
other submerged veg.	YES		YES		YES	YES		YES
emergents	YES		YES		YES	YES		YES
Main substrate beneath				_				
bedrock								
cobble (6.5-15cm)								
pebble (<6.5cm)								
gravel (<1.6cm)	YES		YES		YES	YES		YES
	1		1	1	1	1		
--	-------	--------------	--------------------	------------	------	------		
sand (<2mm)								
clay								
silt								
Siltation none								
low	YES		YES	YES	YES	YES		
moderate								
high								
Refuges in bank none								
cobble/boulder								
tree roots, large								
vertical or undercut bank	YES		YES	YES	YES	YES		
dry stone wall								
other reinforced								
crayfish burrows								
Shading above	NONE		NONE	NONE	NONE	NONE		
				1				
Crayfish manually								
Crayfish by trap				7				
Total crayfish caught				8				
Evaluation crayfish habitat for whole site (0 none, 1 pres., 2 freq., 3 abund.)	Score	Notes (surve	y conditions, patc	hes etc.):				
in margins	2							
in mid channel	2							
in banks	2							
surveyability	2							
Problems pollution 1, erosion 2, (E if >33% affected), aliens 3. Total cravfish (by 1								
method, note total(s) by other methods in notes if applicable)	8							

# 10.8. Appendix H: White-clawed crayfish habitat survey forms for Sgithwen Brook, October 2014.

Catchment	Wye	-	River	Sgith	nwen		Site (no., name)		9
Date (dd/mm/yy)	16/10/2014	Surveyors	DR LW				Grid ref.	SO 08312 4	0030
Weather, good 1, mod 2, poor 3	1	Flow norm 1, low 2, fall 3, rise 4	1					Start and finish time	1500-1700
Photo ref. &							-001/12	SAM SCH	
Location	Immediately dow	nstream of 1st 10	0m				THUR ?!		
Site length (m)	100	Descript. (channel features, landuse)	Im Land use - woodland, grazing. Access - roadbridge at downstream end. Series of bedrock waterfalls, pools and stoney areas.						
	sample patch 1		sample pate	ch 2	sample pate	ch 3	sample patch	4	sample patch 5
Survey method, std 1, quad 2, net/kick 3, trap 4,								-	
view 5	1 &	. 4	1 & 4		1 & 4		1 8	. 4	1 & 4
Details (if not standard)									
patch)	3x2		6x1		6x1		6x1		6x1
Channel (1			••••						
margins, 2 mid, 3									
specify)	3		3		3		3		3
Dopth (motros)	0.2		0.2		0.3		0.2		0.3
Feature (1 marg.	0.2		0.2		0.3		0.2		0.3
d'water, 2 pool, 3									
glide, 4 run, 5	1		4		4		4		4
Refuges in	4		4		4		4		4
channel	tick all present in	patch, main type	(s) searched i	n red	•				
cobble (6.5-15cm)	YES		YES		YES		YES		YES
cobble (15- 25.6cm)	YES		YES		YES		YES		YES
boulder (25.6- 40cm)	YES		YES		YES		YES		YES
boulder (>40cm)	YES		YES		YES		YES		YES
rubble (give size)									
woody debris	YES		YES		YES		YES		YES
other urban debris									
tree roots. fine	YES								YES
moss									
filamentous algae									
other submerged									
emergents									
Main substrate									

bedrock						
cobble (6.5-15cm)	YES		YES	YES	YES	YES
pebble (<6.5cm)						
gravel (<1.6cm)						
sand (<2mm)						
clay						
silt						
Siltation none						
low	YES		YES	YES	YES	YES
moderate						
high						
Refuges in bank none			YES		YES	
cobble/boulder						
tree roots, large	YES			YES		YES
vertical or undercut bank						
dry stone wall						
other reinforced						
crayfish burrows						
Shading above	LIGHT		LIGHT	LIGHT	LIGHT	LIGHT
Crayfish manually	0		0	0	0	3
Crayfish by trap				4		
Total crayfish caught				7		
Evaluation crayfish habitat for whole site (0 none, 1 pres., 2 freq., 3 abund.)	Score	Notes (survey o	conditions, patches	etc.):Stock access	throughout.	
in margins	3					
in mid channel	3					
in banks	1					
surveyability	3					
Problems pollution 1, erosion 2, (E if						
>33% affected), aliens 3.						

Catchment	Wve		River Sgithwen		Site (no., name) 10		10	
	<b>,</b> -				-			-
Date (dd/mm/yy)	16/10/2014	Surveyors	DR LW			Grid ref.	SO 07659 3	9571
Weather, good 1, mod 2, poor 3	1	Flow norm 1, low 2, fall 3, rise 4	1				Start and finish time	1300-1500
Photo ref. &								
Location	400m mark							
Site length (m)	100							
Width channel (m)	3	Descript. (channel features, landuse)	Land use - a access via re	gricult	ural. Easy dge			
Our second states of	sample patch 1		sample patc	h 2	sample patch 3	sample patch 4	1	sample patch 5
Survey method, std 1, quad 2, net/kick 3, trap 4, view 5	1 &	4	1 & 4		1 & 4	1 &	4	1 & 4
Details (if not standard)								
Extent (I x w	5x1		7x2		7x2	5x2		7x1
Channel (1								
both, other specify)	1		1		2	3		3
Depth (metres)	0.4		0.2		0.3	0.3		0.3
Feature (1 marg. d'water, 2 pool, 3 glide, 4 run, 5								
riffle) Refuges in	4		4		5	5		4
channel	tick all present in	patch,main type	(s) searched i	n red	1/50			2450
cobble (6.5-15cm) cobble (15-	YES		YES		YES	YES		YES
25.6cm)	YES		YES		YES	YES		YES
40cm)	YES		YES		YES	YES		YES
boulder (>40cm)	YES		YES		YES	YES		YES
rubble (give size)	VES		VES		VEC	VES		VEC
other urban debris	163		TES		TES	163		165
tree roots, fine	YES		YES		YES			
moss			-		-			
filamentous algae								
other submerged veg.								
emergents								
Main substrate								
bedrock	<u> </u>				<u> </u>			
cobble (6.5-15cm)	YES		YES		YES	YES		YES

pebble (<6.5cm)						
gravel (<1.6cm)						
sand (<2mm)						
clay						
silt						
Siltation						
none			VE0	VEO	VE0	X50
IOW	YES		YES	YES	YES	YES
moderate						
Refuges in bank						
cobble/boulder	YES		YES	YES	YES	YES
tree roots, large	YES		YES	YES	YES	YES
vertical or undercut bank			YES		YES	
dry stone wall						
other reinforced						
crayfish burrows						
Shading above	мор		HEAVY	MOD	HEAVY	HEAVY
Onlading above	MOB					
Crayfish manually	0		0	1	0	0
Crayfish manually Crayfish by trap	0		0	1	0	0
Crayfish manually Crayfish by trap Total crayfish caught	0		0	1 3 4	0	0
Crayfish manually Crayfish by trap Total crayfish caught Evaluation crayfish habitat for whole site (0 none, 1 pres., 2 freq., 3 abund.)	0 Score	Notes (survey o	0 conditions, patches e	1 3 4 etc.):Excellent habi	0 itat throughout	0
Crayfish manually Crayfish by trap Total crayfish caught Evaluation crayfish habitat for whole site (0 none, 1 pres., 2 freq., 3 abund.) in margins	0 Score	Notes (survey o	0 conditions, patches e	1 3 4 etc.):Excellent habi	0 itat throughout	0
Crayfish manually Crayfish by trap Total crayfish caught Evaluation crayfish habitat for whole site (0 none, 1 pres., 2 freq., 3 abund.) in margins in mid channel	0 Score 3 3	Notes (survey o	0 conditions, patches of	1 3 4 etc.):Excellent habi	0 tat throughout	0
Crayfish manually Crayfish by trap Total crayfish caught Evaluation crayfish habitat for whole site (0 none, 1 pres., 2 freq., 3 abund.) in margins in mid channel in banks	0 Score 3 3 3	Notes (survey o	0 conditions, patches	1 3 4 etc.):Excellent habi	0 itat throughout	0
Crayfish manually Crayfish by trap Total crayfish caught Evaluation crayfish habitat for whole site (0 none, 1 pres., 2 freq., 3 abund.) in margins in mid channel in banks surveyability	0 Score 3 3 3 3 3	Notes (survey o	0 conditions, patches e	1 3 4 etc.):Excellent habi	0 itat throughout	0
Crayfish manually Crayfish by trap Total crayfish caught Evaluation crayfish habitat for whole site (0 none, 1 pres., 2 freq., 3 abund.) in margins in mid channel in banks surveyability Problems pollution 1	0 Score 3 3 3 3 3	Notes (survey o	0 conditions, patches of	1 3 4 etc.):Excellent habi	0 itat throughout	0
Crayfish manually Crayfish by trap Total crayfish caught Evaluation crayfish habitat for whole site (0 none, 1 pres., 2 freq., 3 abund.) in margins in mid channel in banks surveyability Problems pollution 1, erosion 2, (E if	0 Score 3 3 3 3 3	Notes (survey o	0 conditions, patches	1 3 4 etc.):Excellent habi	0 itat throughout	0
Crayfish manually Crayfish by trap Total crayfish caught Evaluation crayfish habitat for whole site (0 none, 1 pres., 2 freq., 3 abund.) in margins in mid channel in banks surveyability Problems pollution 1, erosion 2, (E if >33% affected), oliono 2	0 Score 3 3 3 3 3	Notes (survey o	0 conditions, patches	1 3 4 etc.):Excellent habi	0 itat throughout	0
Crayfish manually Crayfish by trap Total crayfish caught Evaluation crayfish habitat for whole site (0 none, 1 pres., 2 freq., 3 abund.) in margins in mid channel in banks surveyability Problems pollution 1, erosion 2, (E if >33% affected), aliens 3. Total crayfish (by	0 Score 3 3 3 3	Notes (survey o	0 conditions, patches	1 3 4 etc.):Excellent habi	0 itat throughout	0
Crayfish manually Crayfish by trap Total crayfish caught Evaluation crayfish habitat for whole site (0 none, 1 pres., 2 freq., 3 abund.) in margins in mid channel in banks surveyability Problems pollution 1, erosion 2, (E if >33% affected), aliens 3. Total crayfish (by 1 method, note	0 Score 3 3 3 3 3	Notes (survey o	0 conditions, patches	1 3 4 etc.):Excellent habi	0 itat throughout	0
Crayfish manually Crayfish by trap Total crayfish caught Evaluation crayfish habitat for whole site (0 none, 1 pres., 2 freq., 3 abund.) in margins in mid channel in banks surveyability Problems pollution 1, erosion 2, (E if >33% affected), aliens 3. Total crayfish (by 1 method, note total(s) by other methods in notes	0 Score 3 3 3 3 3	Notes (survey o	0 conditions, patches	1 3 4 etc.):Excellent habi	0 tat throughout	0

Date (dd/mm/yy)   16/10/2014   Surveyors   DR LW   Grid ref.   SO 06970.39107     Weather good 1. mod 2, poor 3   Fixen zom 1, in 5t 100m   Fixen zom 1, in 5t 100m   Image 2, in 50 m   Start and Image 2, in 50 m   Start and Image 2, in 50 m   Start and Image 2, in 50 m     Site langth (m)   1000   Descript. (channel features, combined pei nSte 10   Image 2, in 50 m   Image 2, in 50 m   Image 2, in 50 m     Site langth (m)   1000   Descript. (channel features, combined pei nSte 10   Image 2, in 50 m   Image 2, in 50 m   Image 2, in 50 m     Survey method, st 1, quad 2, rework 5, trap 4, in 8, 4   1 & 4   1 & 4   1 & 4   1 & 4     Survey method, st 1, quad 2, rework 5, trap 4, in 8, 4   1 & 4   1 & 4   1 & 4   1 & 4     Survey method, st 1, quad 2, rework 5, trap 4, in 8, 4   1 & 4   1 & 4   1 & 4   1 & 4     Survey method, st 1, quad 2, rework 5, trap 4, in 8, 4   1 & 4   1 & 4   1 & 4   1 & 4     Datals (f not specify)   2 / 2   2 & 3   3   0.2   3     Datals (f not specify)   2 / 2   0.2   0.2   0.2   0.2   0.2     Specify 1, rework	Catchment	Wye		River Sgithwen		Site (no., name)	(no., e) 11				
Weather, good 1, mid, por 3, Photo ref. 8. Location       In 1st 100m       Start and Infent time       Start and Infent time       Intent time       Intent time         Site length (m)       100       In 1st 100m       Intent time       Intent tim       Intent time       Intent	Date (dd/mm/yy)	16/10/2014	Surveyors	DR LW				Grid ref.	SO 06970 3	9107	
Photo R. & Location       In 1st 100m       Image: Control of the second sec	Weather, good 1, mod 2, poor 3	1	Flow norm 1, low 2, fall 3, rise 4	1					Start and finish time	1100-1300	
Location       In 1st 100m         Site length (m)       100       Descript. (channel tatures, landuse)       Land use - woodland. Access from readbridge in Site 10       Figure 2000       Sample patch 4       sample patch 5         Survey method, std 1, quad 2, netkick 3, trp 4, view 5       sample patch 1       sample patch 2       sample patch 3       sample patch 4       sample patch 5         Survey method, std 1, quad 2, netkick 3, trp 4, view 5       1 & 4       1 & 4       1 & 4       1 & 4         Starter (1 w specify)       2x2       4 & 2       3x2       8x1       10x1         Starter (1 w specify)       2x2       4 & 2       3x2       8x1       10x1         Depth (metres)       0.2       0.2       0.2       0.2       0.2       3         Depth (metres)       5       4       4       5       5         Vets       YES       YES       YES       YES       YES       YES         Vets       YES       YES       YES       YES       YES       YES       YES         voody dehts other utona dehts	Photo ref. &									Ne e la la	
Site length (m)   100     Uidth channel (m)   2.5   Land use - woodland. Access from readuridge in Site 10     Survey method, sid 1, quad 2, network and 2, sample patch 2   sample patch 3   sample patch 4   sample patch 5     Survey method, sid 1, quad 2, network and 2, network 3, respective 3,	Location	In 1st 100m						E Salar	NO PARS		
Width channel (m)   Descript. (channel features, 1 induse)   Land use - woodland. Access for sample patch 1   Sample patch 3   sample patch 4   sample patch 5     Survey method, std 1, quad 2, rewtkick 3, trap 4, view 5   sample patch 1   sample patch 2   sample patch 3   sample patch 4   sample patch 4   sample patch 4   sample patch 5     Survey method, std 1, quad 2, rewtkick 3, trap 4, view 5   1 & 4   1 & 4   1 & 4   1 & 4   1 & 4   1 & 4     Details (fin ct standard)   1   4   1 & 4   1 & 4   1 & 4   1 & 4     Extent (1 x w patch)   2x2   4 x2   3x2   8x1   10x1     Channel (1 margins, 2 mid, 3 both, other specify)   0.2   0.2   0.2   0.3   0.2     Peatrue (1 marg, dwater, 2 pol, 3 glide, 4 un, 5 riffe)   5   4   4   5   5     Refuges in channel   tick all present in patch, main type(s) searched in red vest 2, pol, 5   YES   YES   YES   YES     VES   YES   YES   YES   YES   YES   YES   YES   YES     voody debris obuider (x40cm)   YES   YES   YES   YES   YES   YES   YES     vest / YES   YES   YES   YES   YES   YES   YES   YES  <	Site length (m)	100									
Survey method, sid 1, quad 2, net/kick 3, trap 4, view 5       sample patch 1       sample patch 2       sample patch 3       sample patch 4       sample patch 5         Details (if not standard)       18.4	Width channel (m)	2.5	Descript. (channel features, landuse)	Land use - w roadbridge ir	roodla n Site	nd. Access fro	m				
Survey method, retkick 3, trap 4, view 5     1 & 4<	Survey method	sample patch 1		sample patcl	า2	sample patch	n 3	sample patch 4	ł	sample patch 5	0
Details (if not standard)       2x2       4x2       3x2       8x1       10x1         Extent (1 x w patch)       2x2       4x2       3x2       8x1       10x1         Channel (1 margins, 2 mid, 3 both, other specify)       1       1       2       2       3         Depth (metres)       0.2       0.2       0.2       0.3       0.2         Feature (1 marg. dwater, 2 pool, 3 gide, 4 run, 5 riffle)       5       4       4       5       5         Refuges in channel       5       4       4       5       5       5         VES       YES       YES       YES       YES       YES       YES       YES         voody debrs       YES       YES       YES       YES       YES       YES       YES         voody debrs       YES       YES       YES       YES       YES       YES       YES         versor string       Image: string stri	std 1, quad 2, net/kick 3, trap 4, view 5	1 &	4	1&4		1 & 4		1 &	4	1 & 4	
Statistical ()     2x2     4x2     3x2     8x1     10x1       Channel (1 margins, 2 mid, 3 both, other specify)     1     1     2     2     3       Depth (metres)     0.2     0.2     0.2     0.2     0.3     0.2       Feature (1 marg. dwater, 2 pool, 3 gilde, 4 run, 5     5     4     4     5     5       Feature (1 marg. dwater, 2 pool, 3 gilde, 4 run, 5     5     4     4     5     5       Refuges in channel     5     4     4     5     5       cobulder (25.6- 0400000000000000000000000000000000000	Details (if not										
Channel (1 margins, 2 mid, 3 both, other specify)       1       1       2       2       3         Depth (metres)       0.2       0.2       0.2       0.3       0.2         Feature (1 marg. divater, 2 pol, 3 glide, 4 run, 5 riffle)       0.2       0.2       0.2       0.3       0.2         Refuges in channel       tick all present in patch,main type(s) searched in red       5       4       4       5       5         VES       YES       YES       YES       YES       YES       YES       YES         volder (52.6 40cm)       YES       YES       YES       YES       YES       YES         veck ducm       YES       YES       YES       YES       YES       YES         voody debris       YES       YES       YES       YES       YES       YES         veck ydebris       YES       YES       YES       YES       YES       YES         voody debris       YES       YES       YES       YES       YES       YES         veck ydebris       YES       YES       YES       YES       YES       YES         itamentous algae	Extent (I x w patch)	2x2		4x2		3x2		8x1		10x1	
margins, 2 mid, 3     1     1     2     2     3       Depth (metres)     0.2     0.2     0.2     0.3     0.2       Feature (1 marg, dwater, 2 pool, 3     5     4     4     5     5       Refuges in channel     tick all present in patch,main type(s) searched in red     5     5     4     4     5     5       Refuges in cobble (6.5-15cm)     YES     YES     YES     YES     YES     YES     YES       boulder (25.6-40cm)     YES	Channel (1										
Depth (metres)0.20.20.20.30.2Feature (1 marg. dwater, 2 pool, 3 glide, 4 run, 554455Refuges in channel54455Refuges in channeltick all present in patch,main type(s) searched in redYESYESYESYEScobble (15- 25.6cm)YESYESYESYESYESYESboulder (25.6- 40cm)YESYESYESYESYESYESvessYESYESYESYESYESYESvoody debris tree roots, fineYESYESYESYESYESfilamentous algae other submergedImage: Searched in redImage: Searched in redImage: Searched in redmoss filamentous algae other submergedImage: Searched in redImage: Searched in redImage: Searched in redmoss filamentous algae other submergedImage: Searched in redImage: Searched in redImage: Searched in redmoss filamentous algae other submergedImage: Searched in redImage: Searched in redImage: Searched in redmoss filamentous algae other submergedImage: Searched in redImage: Searched in redImage: Searched in redImage: Searched in redmoss filamentous algae other submergedImage: Searched in redImage: Searched in redImage: Searched in redImage: Searched in redmoss filamentous algae other submergedImage: Searched in redImage: Searched in redImage: Searched in red	margins, 2 mid, 3 both, other specify)	1		1		2		2		3	
Feature (1 marg. dwater, 2 pool, 3 glide, 4 run, 5 riffle)   5   4   4   5   5     Refuges in channel   5   4   4   5   5     Refuges in channel   tick all present in patch,main type(s) searched in red   5   5     cobble (15 25.6cm)   YES   YES   YES   YES     boulder (25.6 40cm)   YES   YES   YES   YES     boulder (>40cm)   YES   YES   YES   YES     woody debris   YES   YES   YES   YES     woody debris   YES   YES   YES   YES     tree roots, fine moss   Image: Color of the submerged other submerged veg.   Image: Color of the submerged veg.   Image: Color of the submerged veg.   Image: Color of the submerged veg.	Depth (metres)	0.2		0.2		0.2		0.3		0.2	
d'water, 2 pool, 3 glide, 4 run, 5 riffle)   5   4   4   5   5     Refuges in channel   5   4   4   5   5     Refuges in channel   tick all present in patch,main type(s) searched in red   5   5     cobble (6.5-15cm)   YES   YES   YES   YES   YES     verse   YES   YES   YES   YES   YES     boulder (25.6- 40cm)   YES   YES   YES   YES   YES     veloder (>40cm)   YES   YES   YES   YES   YES     voody debris   YES   YES   YES   YES   YES     woody debris   YES   YES   YES   YES   YES     veg   Image: Comparison of the process of the	Feature (1 marg.										
Refuges in tick all present in patch,main type(s) searched in red     cobble (65-15cm)   YES   YES   YES   YES   YES   YES     cobble (15-25.6cm)   YES   YES   YES   YES   YES   YES     boulder (25.6-40cm)   YES   YES   YES   YES   YES   YES   YES     boulder (>40cm)   YES   YES   YES   YES   YES   YES   YES     voody debris   YES   YES   YES   YES   YES   YES     voody debris   YES   YES   YES   YES   YES     other urban debris   YES   YES   YES   YES   YES     filamentous algae other submerged veg.   Image: Standard	d'water, 2 pool, 3 glide, 4 run, 5 riffle)	5		4		4		5		5	
Cobine (15-15cm)   YES   YES   YES   YES   YES   YES   YES     boulder (25.6- 40cm)   YES   YES   YES   YES   YES   YES     boulder (>40cm)   YES   YES   YES   YES   YES   YES     woody debris   YES   YES   YES   YES   YES   YES     woody debris   YES   YES   YES   YES   YES     other urban debris   YES   YES   YES   YES     filamentous algae other submerged veg.   Image: Comparison of the submerged veg.   Image: Comparison o	Refuges in channel	tick all present in	natch main type	(s) searched in	n red						
cobble (15- 25.6cm)YESYESYESYESYESYESboulder (25.6- 400m)YESYESYESYESYESYESYESboulder (>40cm)YESYESYESYESYESYESYESYESrubble (give size)YESYESYESYESYESYESYESwoody debrisYESYESYESYESYESYESYESother urban debrisYESYESYESYESYESYEStree roots, fineIIIIIImossIIIIIIIfilamentous algae other submerged veg.IIIIIIIemergentsIIIIIIIIII	cobble (6.5-15cm)	YES	paton,main type	YES	nou	YES		YES		YES	
boulder (25.6- 40cm)   YES   YES   YES   YES     boulder (>40cm)   YES   YES   YES   YES     rubble (give size)   YES   YES   YES   YES     woody debris   YES   YES   YES   YES     woody debris   YES   YES   YES   YES     other urban debris   Image: Constraint of the second sec	cobble (15- 25.6cm)	YES		YES		YES		YES		YES	
HEG     HEG     HEG     HEG     HEG     HEG     HEG       boulder (>40cm)     YES     YES     YES     YES     YES     YES       rubble (give size)	boulder (25.6-	VES		VES		VES		VES		VES	
rubble (give size)   Image: matrix ma	boulder (>40cm)	YES		YES		YES		YES		YES	
woody debrisYESYESYESYESYESYESother urban debrisImage: Second Sec	rubble (give size)										
other urban debris   Image: Constraint of the submerged veg.   Image: Consubmerged veg. <t< td=""><td>woody debris</td><td>YES</td><td></td><td>YES</td><td></td><td>YES</td><td></td><td>YES</td><td></td><td>YES</td><td></td></t<>	woody debris	YES		YES		YES		YES		YES	
tree roots, fine   Image: Constraint of the submerged veg.   Image: Constraint of the submerged veg.   Image: Constraint of the submerged veg.	other urban debris										
moss   moss     filamentous algae other submerged veg.   Image: Comparison of the submerged other submerged to the submerged to th	tree roots, fine										
filamentous algae	moss										
other submerged veg. emeraents	filamentous algae										
emeraents	other submerged veg.										
	emergents										
Main substrate	Main substrate										
bedrock	bedrock										
cobble (6.5-15cm) YES YES YES YES YES	cobble (6.5-15cm)	YES		YES		YES		YES		YES	

pebble (<6.5cm)						
gravel (<1.6cm)						
sand (<2mm)						
clay						
silt						
Siltation						
none						
low	YES		YES	YES	YES	YES
moderate						
high						
none	YES		YES			
cobble/boulder				YES	YES	YES
tree roots, large					YES	YES
vertical or undercut bank				YES	YES	
dry stone wall						
other reinforced						
crayfish burrows						
Shading above	HEAVY		HEAVY	HEAVY	HEAVY	HEAVY
Crayfish manually			1		1	1
Crayfish manually Crayfish by trap			1	5	1	1
Crayfish manually Crayfish by trap Total crayfish			1	5	1	1
Crayfish manually Crayfish by trap Total crayfish caught		Notes (survey (	1	5 8 etc.):Excellent h	abitat	1
Crayfish manually Crayfish by trap Total crayfish caught Evaluation crayfish habitat		Notes (survey o	1 conditions, patches	5 8 etc.):Excellent ha	abitat	1
Crayfish manually Crayfish by trap Total crayfish caught Evaluation crayfish habitat for whole site (0		Notes (survey o	1 conditions, patches	5 8 etc.):Excellent h	abitat	1
Crayfish manually Crayfish by trap Total crayfish caught Evaluation crayfish habitat for whole site (0 none, 1 pres., 2 frog. 2 abund )	Score	Notes (survey o	1 conditions, patches	5 8 etc.):Excellent ha	abitat	1
Crayfish manually Crayfish by trap Total crayfish caught Evaluation crayfish habitat for whole site (0 none, 1 pres., 2 freq., 3 abund.) in margins	Score 3	Notes (survey o	1 conditions, patches	5 8 etc.):Excellent h	abitat	1
Crayfish manually Crayfish by trap Total crayfish caught Evaluation crayfish habitat for whole site (0 none, 1 pres., 2 freq., 3 abund.) in margins in mid channel	Score 3	Notes (survey o	1 conditions, patches	5 8 etc.):Excellent h	abitat	1
Crayfish manually Crayfish by trap Total crayfish caught Evaluation crayfish habitat for whole site (0 none, 1 pres., 2 freq., 3 abund.) in margins in mid channel in banks	Score 3 3 2	Notes (survey o	1 conditions, patches	5 8 etc.):Excellent ha	abitat	1
Crayfish manually Crayfish by trap Total crayfish caught Evaluation crayfish habitat for whole site (0 none, 1 pres., 2 freq., 3 abund.) in margins in mid channel in banks survevability	Score 3 3 2 3	Notes (survey o	1 conditions, patches	5 8 etc.):Excellent h	abitat	1
Crayfish manually Crayfish by trap Total crayfish caught Evaluation crayfish habitat for whole site (0 none, 1 pres., 2 freq., 3 abund.) in margins in mid channel in banks surveyability Problems	Score 3 3 3 2 3	Notes (survey o	1 conditions, patches	5 8 etc.):Excellent h	abitat	1
Crayfish manually Crayfish by trap Total crayfish caught Evaluation crayfish habitat for whole site (0 none, 1 pres., 2 freq., 3 abund.) in margins in mid channel in banks surveyability Problems pollution 1, crosion 2 (E if	Score 3 3 3 2 3	Notes (survey o	1 conditions, patches	5 8 etc.):Excellent h	abitat	1
Crayfish manually Crayfish by trap Total crayfish caught Evaluation crayfish habitat for whole site (0 none, 1 pres., 2 freq., 3 abund.) in margins in mid channel in banks surveyability Problems pollution 1, erosion 2, (E if >33% affected),	Score 3 3 2 3	Notes (survey o	1 conditions, patches	5 8 etc.):Excellent h	abitat	1
Crayfish manually Crayfish by trap Total crayfish caught Evaluation crayfish habitat for whole site (0 none, 1 pres., 2 freq., 3 abund.) in margins in mid channel in banks surveyability Problems pollution 1, erosion 2, (E if >33% affected), aliens 3.	Score 3 3 2 3	Notes (survey o	1 conditions, patches	5 8 etc.):Excellent h	abitat	1
Crayfish manually Crayfish by trap Total crayfish caught Evaluation crayfish habitat for whole site (0 none, 1 pres., 2 freq., 3 abund.) in margins in mid channel in banks surveyability Problems pollution 1, erosion 2, (E if >33% affected), aliens 3. Total crayfish (by 1 method note	Score 3 3 2 3	Notes (survey o	1 conditions, patches	5 8 etc.):Excellent h	abitat	1
Crayfish manually Crayfish by trap Total crayfish caught Evaluation crayfish habitat for whole site (0 none, 1 pres., 2 freq., 3 abund.) in margins in mid channel in banks surveyability Problems pollution 1, erosion 2, (E if >33% affected), aliens 3. Total crayfish (by 1 method, note total(s) by other	Score 3 3 2 3	Notes (survey o	1 conditions, patches	5 8 etc.):Excellent h	abitat	1
Crayfish manually Crayfish by trap Total crayfish caught Evaluation crayfish habitat for whole site (0 none, 1 pres., 2 freq., 3 abund.) in margins in mid channel in banks surveyability Problems pollution 1, erosion 2, (E if >33% affected), aliens 3. Total crayfish (by 1 method, note total(s) by other methods in notes	Score 3 3 3 2 3	Notes (survey o	conditions, patches	5 8 etc.):Excellent h	abitat	1

Catchment	Wye		River	Sgit	hwen	Site (no., name)		12
Date (dd/mm/yy)	16/10/2014	Surveyors	DR LW			Grid ref.	SO 06541 3	38597
Weather, good 1, mod 2, poor 3	1	Flow norm 1, low 2, fall 3, rise 4	1				Start and finish time	0900-1100
Photo ref. &							對統治	
Location	Mid point of site					305		
Site length (m)	100	Descript. (channel features,	Land use - w	voodla	nd and village.			
Width channel (m)	3	landuse)	Access via r	badbri	dge.			
Survey method, std 1, quad 2, net/kick 3, trap 4, view 5	sample patch 1	4	sample patc	h 2	sample patch	3 sample patch	<u>4</u> 8 4	1 & 4
Details (if not								
standard) Extent (I x w								
patch)	3x2		4x2		6x2	5x1		3x1
margins, 2 mid, 3 both, other								
specify)	2		1		3	1		3
Depth (metres)	0.2		0.2		0.2	0.2		0.2
Feature (1 marg. d'water, 2 pool, 3 glide, 4 run, 5 riffle)	4		4		4	4		4
Refuges in channel	tick all present in	natch main type	(s) searched ii	n red				
cobble (6.5-15cm)	YES	paton,main type	YES	mou	YES	YES		YES
cobble (15- 25.6cm)	YES		YES		YES	YES		YES
boulder (25.6-	YES		YES		YES	YES		YES
boulder (>40cm)	YES		YES		YES	YES		YES
rubble (give size)								
woody debris	YES		YES		YES	YES		YES
other urban debris								
tree roots, fine	YES		YES		YES	YES		YES
moss								
filamentous algae								
veg.								
emergents								
beneath								
bedrock	YES		YES		YES	YES		YES
cobble (6.5-15cm)								

pebble (<6.5cm)						
gravel (<1.6cm)						
sand (<2mm)	-					
clay	-					
silt						
Siltation						
none	YES		YES	YES	YES	YES
low						
moderate						
high Refuges in bank						
none						
cobble/boulder	YES		YES			
tree roots, large	YES		YES	YES	YES	YES
vertical or undercut bank	YES					
dry stone wall						
other reinforced						
crayfish burrows						
Shading above	HEAVY		HEAVY	HEAVY	HEAVY	HEAVY
Crayfish						
manually	0		0	0	0	0
manually Crayfish by trap	0		0	0	0	0
manually Crayfish by trap Total crayfish caught	0		0	2	0	0
manually Crayfish by trap Total crayfish caught Evaluation crayfish habitat for whole site (0 none, 1 pres., 2 freq., 3 abund.)	0 Score	Notes (survey o	0 conditions, patches of	0 2 2 etc.):	0	0
manually Crayfish by trap Total crayfish caught Evaluation crayfish habitat for whole site (0 none, 1 pres., 2 freq., 3 abund.) in margins	0 Score	Notes (survey o	0 conditions, patches (	0 2 2 etc.):	0	0
manually Crayfish by trap Total crayfish caught Evaluation crayfish habitat for whole site (0 none, 1 pres., 2 freq., 3 abund.) in margins in mid channel	0 Score 3 3	Notes (survey o	0 conditions, patches o	0 2 2 etc.):	0	0
manually Crayfish by trap Total crayfish caught Evaluation crayfish habitat for whole site (0 none, 1 pres., 2 freq., 3 abund.) in margins in mid channel in banks	0 Score 3 3 1	Notes (survey o	0 conditions, patches (	0 2 2 etc.):	0	0
manually Crayfish by trap Total crayfish caught Evaluation crayfish habitat for whole site (0 none, 1 pres., 2 freq., 3 abund.) in margins in mid channel in banks surveyability	0 Score 3 3 1 3 3	Notes (survey o	0 conditions, patches (	0 2 etc.):	0	0
manually Crayfish by trap Total crayfish caught Evaluation crayfish habitat for whole site (0 none, 1 pres., 2 freq., 3 abund.) in margins in mid channel in banks surveyability Problems pollution 1	0 Score 3 3 1 3	Notes (survey o	0 conditions, patches o	0 2 2 etc.):	0	0
manually Crayfish by trap Total crayfish caught Evaluation crayfish habitat for whole site (0 none, 1 pres., 2 freq., 3 abund.) in margins in mid channel in banks surveyability Problems pollution 1, erosion 2, (E if	0 Score 3 3 1 3 3	Notes (survey o	0 conditions, patches (	0 2 2 etc.):	0	0
manually Crayfish by trap Total crayfish caught Evaluation crayfish habitat for whole site (0 none, 1 pres., 2 freq., 3 abund.) in margins in mid channel in banks surveyability Problems pollution 1, erosion 2, (E if >33% affected),	0 Score 3 3 1 3	Notes (survey o	0 conditions, patches	0 2 etc.):		0
manually Crayfish by trap Total crayfish caught Evaluation crayfish habitat for whole site (0 none, 1 pres., 2 freq., 3 abund.) in margins in mid channel in banks surveyability Problems pollution 1, erosion 2, (E if >33% affected), aliens 3. Total crayfish /by	0 Score 3 3 1 3 3	Notes (survey o	0 conditions, patches (	0 2 etc.):		0
manually Crayfish by trap Total crayfish caught Evaluation crayfish habitat for whole site (0 none, 1 pres., 2 freq., 3 abund.) in margins in mid channel in banks surveyability Problems pollution 1, erosion 2, (E if >33% affected), aliens 3. Total crayfish (by 1 method, note	0 Score 3 3 1 3	Notes (survey o	0 conditions, patches of	0 2 etc.):		0
manually Crayfish by trap Total crayfish caught Evaluation crayfish habitat for whole site (0 none, 1 pres., 2 freq., 3 abund.) in margins in mid channel in banks surveyability Problems pollution 1, erosion 2, (E if >33% affected), aliens 3. Total crayfish (by 1 method, note total(s) by other	0 Score 3 3 1 3 3	Notes (survey o	0 conditions, patches of	0 2 2 etc.):		0

							Site (no.,			
Catchment	Wye		River	Sgith	wen		name)		13	
Date (dd/mm/yy)	15/10/2014	Surveyors	DR LW				Grid ref.	SO 06010 3	8645	
		Flow norm								
Weather, good 1, mod 2, poor 3	1	1, low 2, fall 3, rise 4	1					Start and finish time	1500-1700	
Photo ref. &	l									St. La
Location	Towards upstrea	m end of site						- A Sol	and a	
Site length (m)	100	Descript						a la		
		(channel								and and a second
Width channel (m)	1.5	features, landuse)	Land use - g	razing, / acces	total stock	d.			and the second	and the second
	sample patch 1		sample patch	י 2	sample pa	tch 3	sample patch	4	sample patch	n 5
Survey method, std 1, quad 2, net/kick 3, trap 4,	1.8	4	184	· —	1.8.4		1.8	Δ.	1.9	
Details (if not	Γα	4	10.4		10.4		10	. 4	10	(4
standard)										
patch)	6x1		6x1		6x1		6x1		6x1	
Channel (1										
both, other specify)	3		3		3		3		3	
Depth (metres)	0.2		0.2		0.2		0.2		0.2	
Feature (1 marg. d'water, 2 pool, 3 glide, 4 run, 5 riffle)	4		4		4		4		4	
Refuges in	tick all procept in	natch main typ	o(c) coarchod	in rod	1		1			
cobble (6.5-15cm)	YES	paten, main typ	YFS	inteu	YES		YES		YES	
cobble (15-			×50							
25.6cm) boulder (25.6-	YES		YES		YES		YES		YES	
40cm)	YES		YES		YES		YES		YES	
boulder (>40cm)	YES		YES		YES		YES		YES	
woody debris										
other urban debris										
tree roots. fine										
moss	_									
filamentous algae							•			
other submerged veg.						•				
emergents										
Main substrate beneath					r		Γ		Γ	
bedrock										
cobble (6.5-15cm)										

pebble (<6.5cm)						
gravel (<1.6cm)	YES		YES	YES	YES	YES
sand (<2mm)						
clay						
silt						
Siltation	YES		YES	YES	YES	YES
low	120		120			
moderate						
high						
Refuges in bank						
cobble/boulder	YES		YES	YES	YES	YES
tree roots, large						
vertical or undercut bank	YES		YES	YES	YES	YES
dry stone wall						
other reinforced						
crayfish burrows						
Shading above	NONE		NONE	NONE	NONE	NONE
Crayfish manually						1
· · · · · · · · · · · · · · · · · · ·						
Crayfish by trap			·	3		
Crayfish by trap Total crayfish				3		
Crayfish by trap Total crayfish caught Evaluation crayfish habitat for whole site (0 none, 1 pres., 2 freq., 3 abund.)	Score	Notes (survey where there is	conditions, patches e more diversity of hab	3 4 tc.):Site is mostly itat	a straight channel except for t	he most upstream end
Crayfish by trap Total crayfish caught Evaluation crayfish habitat for whole site (0 none, 1 pres., 2 freq., 3 abund.) in margins	Score 3	Notes (survey where there is	conditions, patches e more diversity of hab	3 4 tc.):Site is mostly itat	a straight channel except for t	he most upstream end
Crayfish by trap Total crayfish caught Evaluation crayfish habitat for whole site (0 none, 1 pres., 2 freq., 3 abund.) in margins in mid channel	Score 3 3	Notes (survey where there is	conditions, patches e more diversity of hab	3 4 tc.):Site is mostly itat	a straight channel except for t	he most upstream end
Crayfish by trap Total crayfish caught Evaluation crayfish habitat for whole site (0 none, 1 pres., 2 freq., 3 abund.) in margins in mid channel in banks	Score 3 3 3 2	Notes (survey where there is	conditions, patches e more diversity of hab	3 4 tc.):Site is mostly itat	a straight channel except for t	he most upstream end
Crayfish by trap Total crayfish caught Evaluation crayfish habitat for whole site (0 none, 1 pres., 2 freq., 3 abund.) in margins in mid channel in banks surveyability	Score 3 3 2 1	Notes (survey where there is	conditions, patches e more diversity of hab	3 4 tc.):Site is mostly itat	a straight channel except for t	he most upstream end
Crayfish by trap Total crayfish caught Evaluation crayfish habitat for whole site (0 none, 1 pres., 2 freq., 3 abund.) in margins in mid channel in banks surveyability Problems pollution 1, erosion 2, (E if >33% affected), aliens 3.	Score 3 3 2 1	Notes (survey where there is	conditions, patches e more diversity of hab	4 tc.):Site is mostly itat	a straight channel except for t	he most upstream end
Crayfish by trap Total crayfish caught Evaluation crayfish habitat for whole site (0 none, 1 pres., 2 freq., 3 abund.) in margins in mid channel in banks surveyability Problems pollution 1, erosion 2, (E if >33% affected), aliens 3. Total crayfish (by	Score 3 3 2 1	Notes (survey where there is	conditions, patches e more diversity of hab	3 4 tc.):Site is mostly itat	a straight channel except for t	he most upstream end
Crayfish by trap Total crayfish caught Evaluation crayfish habitat for whole site (0 none, 1 pres., 2 freq., 3 abund.) in margins in mid channel in banks surveyability Problems pollution 1, erosion 2, (E if >33% affected), aliens 3. Total crayfish (by 1 method, note total(s) by other	Score 3 3 2 1	Notes (survey where there is	conditions, patches e more diversity of hab	3 4 tc.):Site is mostly itat	a straight channel except for t	he most upstream end
Crayfish by trap Total crayfish caught Evaluation crayfish habitat for whole site (0 none, 1 pres., 2 freq., 3 abund.) in margins in mid channel in banks surveyability Problems pollution 1, erosion 2, (E if >33% affected), aliens 3. Total crayfish (by 1 method, note total(s) by other methods in notes	Score 3 3 2 1	Notes (survey where there is	conditions, patches e more diversity of hab	3 4 tc.):Site is mostly itat	a straight channel except for t	he most upstream end

Catabraat	When		River Saithwen		Site (no., name) 14					
Catchment	vvye		River	Sgiu	iwen		name)		14	
Date (dd/mm/yy)	15/10/2014	Surveyors	DR LW				Grid ref.	SO 05720 3	8718	
Weather, good 1, mod 2, poor 3	1	Flow norm 1, low 2, fall 3, rise 4	1					Start and finish time	1300-1500	
Photo ref. &	1						- A PA		The Party	( MAR
Location	At 100 m betweer	n patches 1 and 2	2				and the second	ALL BER		
Site length (m)	100	Descript. (channel features,	Land use - farmyard and grazing. Irish bridge between Patches 1 & 2. Good habitat throughout. Easy							
width channel (m)	1.5 - 2.5	landuse)	sample patr	ugn ia sh 2	sample pa	tch 2	comple patch		sample pater	
Survey method, std 1, quad 2, net/kick 3, trap 4, view 5 Details (if not	1 &	4	1 & 4	11 2	1 & 4		1 8	4	1 8	4
standard) Extent (I x w										
patch)	6x4		8x2		5x1		5x1		5x1	
margins, 2 mid, 3 both, other specify)	3		2		3		3		3	
Dopth (motros)	0.3		0.3		0.3		0.3		0.2	
Feature (1 marg. d'water, 2 pool, 3 glide, 4 run, 5 riffle)	3		3		4		4		4	
Refuges in	tick all propert in	natch main type	(c) soorsbod i	n rod						
cobble (6.5-15cm)	YES	paten, main type	YES	nieu	YES		YES		YES	
cobble (15-	YES		YES		YES		YES		YES	
boulder (25.6-	VEC		VEC		VEC		VEC		VEC	
boulder (>40cm)	YES		YES		YES		YES		YES	
rubble (give size)										
woody debris							YES			
other urban debris										
tree roots, fine										
moss										
other submerged veg.										
emergents										
Main substrate beneath			r		I		Γ		I	
bedrock										
cobble (6.5-15cm)										

pebble (<6.5cm)						
gravel (<1.6cm)				YES	YES	YES
sand (<2mm)						
clay						
silt	YES		YES			
Siltation				VEO		VF0
none						YES
IOW	VEC		VEC			
moderale	TES		165			
Refuges in bank						
none	YES		YES			
cobble/boulder			YES			
tree roots, large			YES			
vertical or undercut bank			YES		YES	YES
drv stone wall						
other reinforced						
crayfish burrows						YES
Shading above	NONE		NONE	NONE	MOD	MOD
Crayfish						
Crayfish manually	6		7	2	1	1
Crayfish manually Crayfish by trap	6		7	2 37	1	1
Crayfish manually Crayfish by trap Total crayfish caught	6		7	2 37 54	1	1
Crayfish manually Crayfish by trap Total crayfish caught Evaluation	6	Notes (survey c	7	2 37 54 etc.):Good habitat	1 throughout. Six crayfish seen	1 walking across riverbed
Crayfish manually Crayfish by trap Total crayfish caught Evaluation crayfish habitat	6	Notes (survey of from Irish bridge	7 conditions, patches e e (in photo). Also rej	2 37 54 etc.):Good habitat ports of largest cr	1 throughout. Six crayfish seen ayfish ever seen in this area b	1 walking across riverbed y local farmers.
Crayfish manually Crayfish by trap Total crayfish caught Evaluation crayfish habitat for whole site (0 none, 1 pres, 2	6	Notes (survey of from Irish bridge	7 conditions, patches e e (in photo). Also re	2 37 54 etc.):Good habitat ports of largest cra	1 throughout. Six crayfish seen ayfish ever seen in this area b	1 walking across riverbed y local farmers.
Crayfish manually Crayfish by trap Total crayfish caught Evaluation crayfish habitat for whole site (0 none, 1 pres., 2 freq., 3 abund.)	6 Score	Notes (survey of from Irish bridge	7 conditions, patches e e (in photo). Also re	2 37 54 etc.):Good habitat ports of largest cra	1 throughout. Six crayfish seen ayfish ever seen in this area b	1 walking across riverbed y local farmers.
Crayfish manually Crayfish by trap Total crayfish caught Evaluation crayfish habitat for whole site (0 none, 1 pres., 2 freq., 3 abund.) in margins	6 Score 3	Notes (survey c from Irish bridge	7 conditions, patches e e (in photo). Also re	2 37 54 etc.):Good habitat ports of largest cra	1 throughout. Six crayfish seen ayfish ever seen in this area b	1 walking across riverbed y local farmers.
Crayfish manually Crayfish by trap Total crayfish caught Evaluation crayfish habitat for whole site (0 none, 1 pres., 2 freq., 3 abund.) in margins in mid channel	6 Score 3 3	Notes (survey c from Irish bridge	7 conditions, patches e e (in photo). Also re	2 37 54 etc.):Good habitat ports of largest cra	1 throughout. Six crayfish seen ayfish ever seen in this area b	1 walking across riverbed y local farmers.
Crayfish manually Crayfish by trap Total crayfish caught Evaluation crayfish habitat for whole site (0 none, 1 pres., 2 freq., 3 abund.) in margins in mid channel in banks	6 Score 3 3 3 3	Notes (survey of from Irish bridge	7 conditions, patches e e (in photo). Also re	2 37 54 etc.):Good habitat ports of largest cra	1 throughout. Six crayfish seen ayfish ever seen in this area b	1 walking across riverbed y local farmers.
Crayfish manually Crayfish by trap Total crayfish caught Evaluation crayfish habitat for whole site (0 none, 1 pres., 2 freq., 3 abund.) in margins in mid channel in banks surveyability	6 Score 3 3 3 3 3	Notes (survey c from Irish bridge	7 conditions, patches e e (in photo). Also re	2 37 54 etc.):Good habitat ports of largest cra	1 throughout. Six crayfish seen ayfish ever seen in this area b	1 walking across riverbed y local farmers.
Crayfish manually Crayfish by trap Total crayfish caught Evaluation crayfish habitat for whole site (0 none, 1 pres., 2 freq., 3 abund.) in margins in mid channel in banks surveyability Problems paclution 1	6 Score 3 3 3 3 3 3	Notes (survey of from Irish bridge	7 conditions, patches e e (in photo). Also re	2 37 54 etc.):Good habitat ports of largest cra	1 throughout. Six crayfish seen ayfish ever seen in this area b	1 walking across riverbed y local farmers.
Crayfish manually Crayfish by trap Total crayfish caught Evaluation crayfish habitat for whole site (0 none, 1 pres., 2 freq., 3 abund.) in margins in mid channel in banks surveyability Problems pollution 1, erosion 2, (E if	6 Score 3 3 3 3 3 3	Notes (survey of from Irish bridge	7 conditions, patches e e (in photo). Also re	2 37 54 etc.):Good habitat ports of largest cra	1 throughout. Six crayfish seen ayfish ever seen in this area b	1 walking across riverbed y local farmers.
Crayfish manually Crayfish by trap Total crayfish caught Evaluation crayfish habitat for whole site (0 none, 1 pres., 2 freq., 3 abund.) in margins in mid channel in banks surveyability Problems pollution 1, erosion 2, (E if >33% affected),	6 Score 3 3 3 3 3	Notes (survey c from Irish bridge	7 conditions, patches o e (in photo). Also re	2 37 54 etc.):Good habitat ports of largest cra	1 throughout. Six crayfish seen ayfish ever seen in this area b	1 walking across riverbed y local farmers.
Crayfish manually Crayfish by trap Total crayfish caught Evaluation crayfish habitat for whole site (0 none, 1 pres., 2 freq., 3 abund.) in margins in mid channel in banks surveyability Problems pollution 1, erosion 2, (E if >33% affected), aliens 3.	6 Score 3 3 3 3 3	Notes (survey c from Irish bridge	7 conditions, patches e e (in photo). Also re	2 37 54 etc.):Good habitat ports of largest cra	throughout. Six crayfish seen ayfish ever seen in this area b	1 walking across riverbed y local farmers.
Crayfish manually Crayfish by trap Total crayfish caught Evaluation crayfish habitat for whole site (0 none, 1 pres., 2 freq., 3 abund.) in margins in mid channel in banks surveyability Problems pollution 1, erosion 2, (E if >33% affected), aliens 3. Total crayfish (by 1 method note	6 Score 3 3 3 3 3	Notes (survey c from Irish bridge	7 conditions, patches e e (in photo). Also re	2 37 54 etc.):Good habitat ports of largest cra	throughout. Six crayfish seen ayfish ever seen in this area b	walking across riverbed y local farmers.
Crayfish manually Crayfish by trap Total crayfish caught Evaluation crayfish habitat for whole site (0 none, 1 pres., 2 freq., 3 abund.) in margins in mid channel in banks surveyability Problems pollution 1, erosion 2, (E if >33% affected), aliens 3. Total crayfish (by 1 method, note total(s) by other	6 Score 3 3 3 3 3	Notes (survey of from Irish bridge	7 conditions, patches e e (in photo). Also re	2 37 54 etc.):Good habitat ports of largest cra	throughout. Six crayfish seen ayfish ever seen in this area b	1 walking across riverbed y local farmers.
Crayfish manually Crayfish by trap Total crayfish caught Evaluation crayfish habitat for whole site (0 none, 1 pres., 2 freq., 3 abund.) in margins in mid channel in banks surveyability Problems pollution 1, erosion 2, (E if >33% affected), aliens 3. Total crayfish (by 1 method, note total(s) by other methods in notes	6 Score 3 3 3 3	Notes (survey of from Irish bridge	7 conditions, patches e e (in photo). Also re	2 37 54 etc.):Good habitat ports of largest cra	throughout. Six crayfish seen ayfish ever seen in this area b	1 walking across riverbed y local farmers.

Catchment	Wye		River Sgithwen		Site (no., name)	15		
Date (dd/mm/yy)	15/10/2014	Surveyors	DR LW			Grid ref.	SO 05116 3	8682
Weather, good 1, mod 2, poor 3	1	Flow norm 1, low 2, fall 3, rise 4	1				Start and finish time	1100-1300
Photo ref. &								
Location	In 1st 100m							
Site length (m)	100	Descript. (channel features, landuse)	Land use - woodland and grazing. Easy access across field. Good					
	sample patch 1	landuse)	sample na	tch 2	sample patch 3	sample patch 4		sample patch 5
Survey method, std 1, quad 2, net/kick 3, trap 4, view 5	1 &	4	1 & 4		1 & 4	1 &	4	1 & 4
Details (if not standard)								
Extent (I x w	270		21/2		4×2	511		Ex1
Channel (1	5,72		372		445	571		381
margins, 2 mid, 3 both, other specify)	3		3		1	3		3
Depth (metres)	0.2		0.2		0.3	0.2		0.2
Feature (1 marg. d'water, 2 pool, 3 glide, 4 run, 5 riffle)	5		5 2		3		5	
Refuges in	tick all present in	natch main type(	s) searched	in red	·			
cobble (6.5-15cm)	YES		YES	IIIIeu	YES	YES		YES
cobble (15-	VES		VES		VES	VES		VES
boulder (25.6-	NEO		120		120	120		1E0
40cm) boulder (>40cm)	YES		YES		YES	YES		YES
rubble (give size)	120		120		120	120		
woody debris	YES		YES					
other urban debris								
tree roots, fine	YES		YES					
moss								
filamentous algae			-					
veg.								
emergents Main substrate								
beneath					1			1
bedrock								
cobble (6.5-15cm)								

pebble (<6.5cm)							
gravel (<1.6cm)	YES		YES	YES	YES		YES
sand (<2mm)							
clay							
silt							
Siltation none							
low	YES		YES	YES	YES		YES
moderate							
high							
Refuges in bank none							
cobble/boulder	YES		YES	YES	YES		YES
tree roots, large	YES		YES				
vertical or undercut bank	YES		YES	_	YES		YES
dry stone wall							
other reinforced							
crayfish burrows							
Shading above	LOW		MOD	HEAVY	HEAVY		LOW
Crayfish manually	3		2			2	
Crayfish by trap				12			
Total crayfish				10			
Evaluation crayfish habitat for whole site (0 none, 1 pres., 2 freq., 3 abund.)	Score	Notes (survey c	conditions, patches	etc.):			
in margins	3						
in mid channel	3						
in mid channel in banks	3						
in mid channel in banks surveyability	3 2 3						
in mid channel in banks surveyability Problems pollution 1, erosion 2, (E if >33% affected), aliens 3.	3 2 3						

Catchment	Wve		River Saithwen		Site (no., name) 16					
	Wyo		29		name)					
Date (dd/mm/yy)	15/10/2014	Surveyors	DR LW			Grid ref.	SO 04620 39077			
Weather, good 1, mod 2, poor 3	1	Flow norm 1, low 2, fall 3, rise 4	1					Start and finish time	0900-1100	
Photo ref. &	1									
Location	Pond								E BE I	A Contraction of the
Site length (m)	100		Land use - forestry plus forestry store. Small stream channel with adjacent pond.							
Width channel (m)	1.5	Descript. (channel features, landuse)								
Survey method	sample patch 1		sample pat	tch 2	sample pa	atch 3	sample patch	4	sample pato	h 5
std 1, quad 2, net/kick 3, trap 4, view 5	1 &	4	1 & 4		1 & 4	ļ	1 &	. 4	1 8	& 4
standard)										
Extent (I x w patch)	8x1		8x1		8x1		8x1		8x1	
Channel (1 margins, 2 mid, 3										
both, other specify)	3		3		3		3		3	
Depth (metres)	0.2		0.2		0.2		0.3		0.2	
Feature (1 marg. d'water, 2 pool, 3 glide, 4 run, 5 riffle)	5		4 4			3		3		
Refuges in										
cobble (6.5-15cm)	YES		YES	inteu	YES		YES		YES	
cobble (15-	YES		VES VES			YES		YES		
boulder (25.6-	VES		VES		VES		VEQ		VES	
boulder (>40cm)	YES		YES		YES		YES		YES	
rubble (give size)										
woody debris	YES					YES				
other urban debris										
tree roots, fine										
moss						1				
filamentous algae other submerged										
veg.										
emergents Main substrate										
beneath			Γ		[		CONCRETE		1	1
bedrock										
cobble (6.5-15cm)										

pebble (<6.5cm)	YES		YES	YES		YES
gravel (<1.6cm)						
sand (<2mm)						
clay						
silt						
Siltation						
none	YES		YES	YES	YES	YES
low						
moderate						
high						
Refuges in bank	YES				VES	YES
cobble/boulder	120				120	120
troo roote Jargo						
vertical or						
undercut bank			YES	YES		
dry stone wall						
other reinforced						
crayfish burrows						
Shading above	MOD		MOD	MOD	MOD	MOD
Crayfish manually						
Crayfish by trap						
Total crayfish caught						
Evaluation crayfish habitat for whole site (0 none, 1 pres., 2 freq., 3 abund.) in margins in mid channel in banks surveyability Problems pollution 1, erosion 2, (E if >33% affected), aliens 3. Total crayfish (by 1 method, note total(s) by other methods in notes if applicable)	Score 3 3 1 3 3	Notes (survey ca Photos of river u	onditions, patches of upstream and down	etc.):Patch 4 - stream of pipe	river piped under track, conditional disection.	tains boulders and cobbles.

# 10.9. Data Archive Appendix

The data archive contains:

- [A] The final report in Microsoft Word and Adobe PDF formats.
- [B] Species records, which are held on the NRW Recorder 6 database.

Metadata for this project is publicly accessible through Natural Resources Wales' Library Catalogue <u>http://libcat.naturalresources.wales</u> or <u>http://catllyfr.cyfoethnaturiol.cymru</u> by searching 'Dataset Titles'. The metadata is held as record no 115954.



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