

# Assessment of the condition of the white-clawed crayfish Austropotamobius pallipes in the River Wye Special Area of Conservation in 2014-2016

David Rogers & Elizabeth Watson

NRW Evidence Report No. 187

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Mike Howe, NRW Invertebrate Ecologist Dylan Lloyd, NRW Environmental Surveillance Officer Chris Dyson, NRW Regional Rivers Specialist Oliver Brown, NRW Fish Culture Officer Sue Hearn, NRW Rivers Ecologist

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### 1. Crynodeb Gweithredol

Rhwng mis Hydref 2014 a mis Medi 2016, cynhaliwyd gwaith i ddarparu'r data sydd ei angen i asesu a oedd Ardaloedd Cadwraeth Arbennig (ACA) Afon Gwy mewn cyflwr ffafriol ar gyfer y cimwch afon crafanc wen *Austropotamobius pallipes*. Arolygwyd Afon Edw, Nant yr Offeiriad, Nant Sgithwen, Nant Dulas (Builth Road), Nant Cleiro ac Afon Llynfi i asesu cyflwr poblogaethau a chynefin cimychiaid afon. Mae dwy afon bellach (Afon Duhonw ac Afon Irfon) yn cwblhau'r casgliad llawn o isafonydd ACA Afon Gwy. Fodd bynnag, ni chanfuwyd unrhyw gimychiaid afon yn y ddwy afon hyn yn 2003 ac nid oes unrhyw gofnodion dilynol, felly ni chafodd y rhain eu harolygu yn ystod yr arolwg cyfredol a thybiwyd nad oes unrhyw gimychiaid afon crafanc wen yn bresennol yn y ddwy afon hyn ar gyfer yr asesiad hwn.

Gwnaeth samplu ddilyn y fethodoleg a ddatblygwyd yn ystod rhaglen fonitro 2003 (Rogers a Watson 2004) ac roedd yn cynnwys cyfuniad o chwilio â llaw a rhwydo. Yn ystod yr arolwg, canfuwyd cimychiaid afon crafanc wen mewn ond tri o wyth isafon ACA Afon Gwy: Nant yr Offeiriad, Nant Sgithwen a Nant Cleiro (er nad yw'r olaf wedi'i chynnwys fel rhan o'r Ardaloedd Cadwraeth Arbennig (ACA), mae wedi'i chynnwys o fewn yr asesiad o gyflwr). Er bod niferoedd cimychiaid afon yn gymharol gadarn yn Nant yr Offeiriad a Nant Sgithwen, mae poblogaethau bellach wedi cael eu cyfyngu i'r rhagnentydd. Yn 2016, mae Nant Cleiro o hyd yn cefnogi poblogaeth lewyrchus, fel yr oedd yn 2003, ac mae hyn bellach yn ymddangos i fod yn un o boblogaethau mwyaf pwysig Afon Gwy gan nad oes lleihad mewn niferoedd na lledaeniad fel sydd wedi digwydd yn Nant Sgithwen a Nant yr Offeiriad. Mewn gwirionedd, mae niferoedd a lledaeniad wedi cynyddu yn Nant Cleiro. Mae'r diffyg cimychiaid afon crafanc wen yn Afon Edw, yn dilyn marwolaethau yn 2006, yn peri pryder gan fod y ddyfrffordd hon wedi bod yn bwysig iawn ar gyfer y rhywogaeth hon yn y gorffennol diweddar. Hefyd, roedd yn ymddangos fel nad oedd unrhyw gimychiaid afon yn Nant Dulas (Builth Road) yn 2015 er gwaethaf y ffaith bod y nant hon yn cefnogi poblogaeth dda yn ei rhannau isaf yn 2003.

Gan ddefnyddio'r amcanion cadwraeth dros dro fel rhan o'r asesiad o Statws Cadwraeth Ffafriol ar gyfer nodweddion Natura 2000, mae arolwg 2014–2016 yn dangos **nad yw ACA Afon Gwy yn cyflawni Statws Cadwraeth Ffafriol**. Er gwaethaf cynefin addas helaeth (Nodwedd 3) a diffyg clefyd ac absenoldeb rhywogaethau estron (Nodwedd 4), nid yw dwysedd y cimychiaid afon yn ddigon uchel (Nodwedd 1) ac nid yw'r dosbarthiad drwy gydol yr unedau monitro yn ddigonol (Nodwedd 2) ar gyfer ACA Afon Gwy i gyflawni Statws Ffafriol.

Yn 2013-14, cyflwynodd Uned Magu Pysgod Cynrig Cyfoeth Naturiol Cymru tua 3,000 o gimychiaid afon i Afon Chwefru, isafon o Afon Irfon. Fel rhan o'r gwaith cyfredol, roedd arolwg ychwanegol o hyd 1km mewn dwy rhan 500 medr o hyd yn y safleoedd cyflwyno wedi'i gynnwys, ond ni chanfuwyd unrhyw gimychiaid afon.

Mae argymhellion yn cynnwys adolygiad o'r mesurau amddiffyn ar gyfer poblogaethau cimychiaid afon crafanc wen sy'n goroesi a gwaith arolwg pellach i gadarnhau presenoldeb/absenoldeb cimychiaid afon brodorol ac estron ym mhob rhan o Afon Gwy a'i hisafonydd. Oherwydd pwysigrwydd Nant Cleiro ar gyfer cimychiaid afon, argymhellir bod yr isafon hon yn cael ei hysbysu fel rhan o SoDdGA Afon Gwy ac ACA Afon Gwy.

[Mae'r adroddiad hwn yn darparu cyfuniad o ganlyniadau arolygon cimwch afon 2014, 2015 a 2016 ac yn disodli adroddiadau arolwg 2014 a 2015 (Rogers a Watson, 2015 a 2016)].

### 2. Executive Summary

Between October 2014 and September 2016 work was undertaken to provide the data required to assess whether the River Wye SAC was in favourable condition for the white-clawed crayfish *Austropotamobius pallipes*. The Afon Edw, Nant yr Offeiriad, Sgithwen Brook, Dulas Brook (Builth Road), Clyro Brook and Afon Llynfi were surveyed to assess the condition of both crayfish populations and crayfish habitat. A further two rivers (Afon Duhonw and Afon Irfon) make up the full complement of the Wye SAC tributaries but no crayfish were found in these two rivers in 2003 and there are no subsequent records, so these were not surveyed during the current survey and it is assumed that no white-clawed crayfish are present in these two rivers for this assessment.

Sampling followed the methodology developed during the 2003 monitoring programme (Rogers & Watson 2004) and included a combination of manual searching and trapping. During the survey, white-clawed crayfish were only found in three of the eight tributaries of the River Wye SAC: Nant yr Offeiriad, Sgithwen Brook and Clyro Brook (although the latter is not included as part of the SAC, it is included within the condition assessment). Whilst crayfish numbers were relatively robust in Nant yr Offeiriad and Sgithwen Brook, populations have now become confined to the headwaters. In 2016, Clyro Brook still supports a thriving population as it did in 2003, and this now appears to be one of the most important populations in the Wye because there is no diminution in numbers or extent as in the Sgithwen and Offeiriad. In fact, both numbers and extent have increased in the Clyro. The 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. Also, there appeared to be no crayfish left in Dulas Brook (Builth Road) in 2015 despite supporting a good population in downstream reaches in 2003.

Using the provisional conservation objectives as part of the assessment of Favourable Conservation Status for Natura 2000 features, the 2014 - 2016 survey shows the River Wye SAC does **not achieve Favourable Conservation Status**. Despite abundant suitable habitat (Attribute 3) and a lack of disease and the absence of aliens (Attribute 4), the density of crayfish throughout is not high enough (Attribute 1) and the distribution throughout the monitoring units is not sufficient (Attribute 2) for the River Wye SAC to achieve Favourable Status.

In 2013-14, the Natural Resources Wales' Cynrig Fish Culture Unit implanted approximately 3000 crayfish into Afon Chwefru, a tributary of the Irfon. As part of the present work, an additional survey of a 1km stretch in two 500 metre sections at the introduction sites was included but no crayfish were found.

Recommendations include a review of protection for surviving white-clawed crayfish populations and further survey work to verify the presence/absence of native and alien crayfish throughout the main River Wye and all tributaries and sub-tributaries. Given the importance of Clyro Brook for crayfish, it is recommended that this tributary is notified as part of the Wye SSSI and Wye SAC.

[This report provides an amalgamation of the 2014, 2015 and 2016 crayfish survey results, and supersedes the 2014 and 2015 survey reports (Rogers & Watson, 2015 and 2016)].

#### 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 the 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. Although the authors suggested that the "lower limit of [greater than one] is set too high and should be revised" (Rogers & Watson, 2004), the Countryside Council for Wales and Natural Resources Wales have continued to use this threshold in assessing favourable condition. At that time, 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. Over the last three years, a NRW captive-rearing programme has released 3000 juvenile white-clawed crayfish into the Afon Chwefru (a tributary of the Afon Irfon).

#### 3.2. Objectives

The objective of the 2014-2016 survey work was to undertake monitoring of the white-clawed crayfish and its habitat within the River Wye SAC in order to report on its condition as part of the assessment of Favourable Conservation Status for Natura 2000 features (see Table 1 below).

Table 1: Conservation Objective for the white-clawed crayfish in the River Wye SAC in 2003 and 2014-16.

Attribute No.	Conservation objective (when the feature is in favourable condition)	To maintain the white-clawed crayfish Austropotamobius pallipes in the River Wye SAC in favourable condition where:
1		the average number of crayfish recorded in each habitat patch is:
	Lower limit	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
5 Lower limit		and where:
		water quality is at GQA Biological Class A or B in 5 of the 8 monitoring units
Definition of suitable white-clawed crayfish habitat		River beds with cobble and boulders larger than 15cm along the longest axis, and with little or no siltation.

### 4. Methods

Due to financial constraints, the survey work was undertaken over a three year period prioritizing rivers that had more recent white-clawed crayfish records, especially those with the most abundant populations.

In the 2003 survey, crayfish were found in the Afon Edw, Nant yr Offeiriad, Sgithwen Brook, Dulas Brook (Builth Road) Clyro Brook and Afon Llynfi and these were considered to be the most important **monitoring units**. Note that Clyro Brook has no statutory protection in terms of SSSI and SAC but was included as one of the monitoring units because of the presence of crayfish.

No crayfish were found in the Afon Irfon or Duhonw in 2003 (and there are no subsequent records) so these were not surveyed in 2014-2016 and it is assumed that no white-clawed crayfish are present in these two rivers for this assessment. However, a section up and downstream of the reintroduction points on the Afon Chwefru was included in the present survey to ascertain whether the 3000 juveniles introduced into Afon Chwefru had established a detectable population (see additional survey section 5.7) although these results are not included in the overall Conservation Status Assessment.

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

A total of 16 x 500m **stretches** were selected randomly within each monitoring unit (see Appendix A to F). 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 crayfish recorded.

A crayfish habitat recording sheet was completed for each site and includes 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 sheet and where crayfish were found, details were recorded on a crayfish species survey form. Following examination, 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.
- 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, mid-channel 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.

#### Results

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

2014 & 2015 - Afon Edw (SO077470 - SO137579)

2014 - Nant yr Offeiriad (SO096431 – SO012439)

2014 & 2015 - Sgithwen Brook (SO113415 – SO045391)

2015 - Dulas Brook (Builth Road) (SO020530 – SO063572)

2016 - Clyro Brook (SO232454 – SO192454)

2016 - Afon Llynfi (SO179388 – SO143230)

2016 - Afon Chwefru (SN999527 - SN988539)

(Afon Irfon and Duhonw were not surveyed)

#### 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. No crayfish were caught during survey work in 2014 and 2015.

Table 3: Classification of population abundance – Afon Edw.

		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	1	0	0	Absent/undetected
3	2	0	0	Absent/undetected
4	2.5	0	0	Absent/undetected
5	3	0	0	Absent/undetected
6	4	0	0	Absent/undetected
7	4.5	0	0	Absent/undetected
8	6	0	0	Absent/undetected
9	6.5	0	0	Absent/undetected
10	8	0	0	Absent/undetected
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 mon	itoring unit	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	3	3	3	
2	3	3	3	
3	3	3	3	
4	3	3	3	
5	3	3	3	
6	3	3	3	
7	3	3	3	
8	3	3	3	
9	3	3	3	
10	3	3	3	
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	45	45	45	
		Total for Afon E	dw monitoring unit	94%

# 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. There was a marked absence downstream but a total

of 122 crayfish were caught in the six most upstream sections of Nant yr Offeiriad in 2014. Raw data can be found in Appendix 1.

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

		COMBINE	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 for monito	ring unit	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.

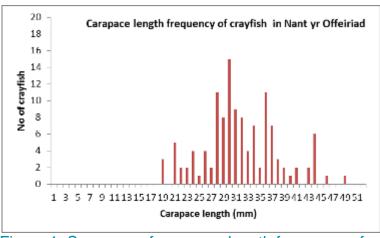


Figure 1: Summary of carapace length frequency of crayfish caught on Nant yr Offeiriad.

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 crayfish population on Nant yr Offeiriad.

	Percentage of crayfish affected
Thelohania	8 (7%)
Damage	18 (15%)
Indication of females breeding (with glair)	39 (87%)

#### 5.2.3. Habitat

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

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				

#### 5.3. Sgithwen Brook

#### 5.3.1. Abundance

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

Sites 9-16 were surveyed in 2014 survey and Sites 1-8 in 2015. Crayfish were found in most of the upstream sites as in the 2003 survey, with Site 14 having the highest abundance. No crayfish were found in the most downstream sites (Sites 1-5) or 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 120 crayfish were caught on Sgithwen Brook. Raw data can be found in Appendix 1.

Table 8: Classification of population abundance in Sgithwen Brook.

	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	2	0.4	Low			
7	3	13	2.6	Moderate			
8	3.5	7	1.4	Moderate			
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		120					
		Classifica	ation	MODERATE			

#### 5.3.2. Analysis of catch in Sgithwen Brook

A total of 120 crayfish (55 females and 65 males) were caught on Sgithwen Brook. Carapace lengths ranged between 16 and 42 mm. Figure 2 illustrates carapace length frequency.

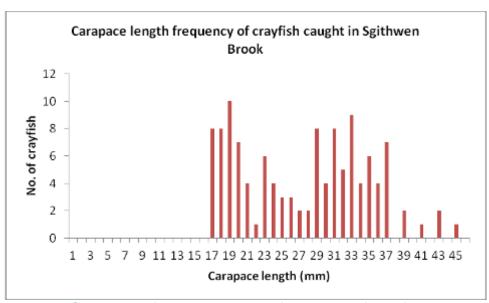


Figure 2: Summary of carapace length frequency of crayfish caught on Sgithwen Brook.

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	6 (5%)
Damage	14(12%)
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	3	3	3	
2	3	3	3	
3	3	3	3	
4	3	3	3	
5	3	3	3	
6	3	3	3	
7	3	3	3	
8	3	3	3	
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	48	48	39	
	To	tal for Sgithwen Broo	k Manitarina unit	94%

#### 5.4. Dulas Brook (Builth Road)

#### 5.4.1. Abundance

The Dulas Brook (Builth Road) is approximately 6.5 km in length and was divided into thirteen 500m stretches. The two most upstream sites (Sites 12 and 13) were dry and therefore unsuitable for survey. No crayfish were found in any sites during the survey in 2015.

Table 11: Classification of population abundance – Dulas Brook (Builth Road).

	Olassincation	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				

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		Classification for moni	ABSENT/UNDETECTED	
Total		0		
13	6	0	0	Absent/undetected
12	5.5	0	0	Absent/undetected
11	5	0	0	Absent/undetected
10	4.5	0	0	Absent/undetected
9	4	0	0	Absent/undetected
8	3.5	0	0	Absent/undetected

#### 5.4.2. Habitat

Table 12: Summary of evaluation of crayfish habitats – Dulas Brook (Builth Road). See Section 4.1.2 for explanation of values.

See Section 4.1.2	In margin		In banks	
Site	III IIIai yiii	III IIIIU CIIaiiiiei	III Daliks	
Dulas Brook (Builth Road)				
1	3	3	3	
2	3	3	3	
3	3	3	3	
4	3	3	3	
5	3	3	3	
6	3	3	3	
7	3	3	3	
8	3	3	3	
9	2	2	1	
10	2	2	2	
11	1	1	0	
12	0	0	0	
13	0	0	0	
Total	29	29	27	
	Total for Dul	as Brook (Builth Ro	ad) monitoring unit	73%

# 5.5. Clyro Brook

#### 5.5.1. Abundance

Clyro Brook is approximately 6.5 km in length and was divided into thirteen 500m stretches. Each stretch was sampled using the standard method and trapping. A total of 58 crayfish were caught in the middle section of Clyro Brook in 2016. Raw data can be found in Appendix E.

Table 13: Classification of population abundance – Clyro Brook.

		COMBINE	D 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	1	0.2	LOW
7	3	38	7.6	VERY HIGH
8	3.5	16	3.2	HIGH

9	4	3	0.6	LOW
10	4.5	0	0	Absent/undetected
11	5	8	0	Absent/undetected
12	5.5	0	0	Absent/undetected
13	6	0	0	Absent/undetected
Total		58		
		Classification for monito	MODERATE	

#### 5.5.2. Analysis of catch in Clyro Brook

A total of 58 crayfish (22 females, 25 males and 11 that were too small to be sure of their sex) were caught on Clyro Brook. Carapace lengths ranged between 11 and 41 mm. The figure below illustrates carapace length frequency.

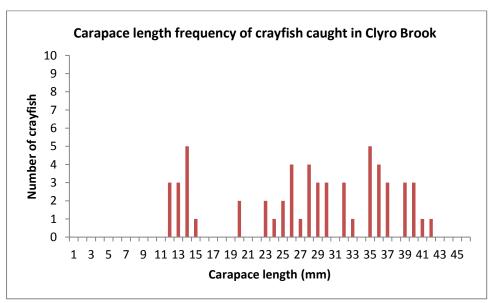


Figure 3: Summary of carapace length frequency of crayfish caught on Clyro Brook.

Table 14 shows analysis of other information gathered on examination of crayfish caught. Individual crayfish details can be found in Appendix I.

Table 14: Other information regarding crayfish population on Clyro Brook.

	Crayfish affected
Thelohania	3 (5%)
Damage	11 (19%)
Indication of females breeding (with glair)	0

#### 5.5.3. Habitat

Table 15. Summary of evaluation of crayfish habitats – Clyro Brook. See Section 4.1.2 for explanation of values.

Site	In margin	In mid channel	In banks	
Clyro Brook				
1	1	1	1	
2	1	1	1	
3	1	1	1	
4	1	1	1	
5	1	1	1	
6	2	2	2	
7	3	3	3	

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8	3	3	3		
9	3	3	3		
10	1	1	1		
11	0	0	0		
12	0	0	0		
13	0	0	0		
Total	17	17	17		
	Total for Clyro Brook Monitoring Unit				

# 5.6. Afon Llynfi5.6.1. Abundance

Afon Llynfi is approximately 8 km in length and was divided into sixteen 500m stretches. No crayfish were caught during the 2016 survey.

Table 16: Classification of population abundance – Afon Llvnfi.

		COMBIN	IED: STANDARD ANI	D TRAPPING
Site	Distance from	No of crayfish per	Average	Classification of
	confluence	site	abundance per	population abundance
	(km)		patch	
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	0	0	Absent/undetected
12	5.5	0	0	Absent/undetected
13	6	0	0	Absent/undetected
14	6.5	0	0	Absent/undetected
15	7	0	0	Absent/undetected
16	7.5	0	0	Absent/undetected
Total		0		
		Classification for mon	itoring unit	ABSENT/UNDETECTED

#### 5.6.2. Habitat

Table 17: Summary of evaluation of crayfish habitats - Afon Llynfi. See Section 4.1.2 for explanation of values.

Site	In margin	In mid channel	In banks	
Llynfi				
1	2	2	1	
2	2	2	1	
3	3	3	2	
4	3	3	3	
5	3	3	3	
6	3	3	3	
7	3	3	3	
8	3	3	3	

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9	3	3	3		
10	3	3	3		
11	3	3	3		
12	3	3	3		
13	1	1	1		
14	0	0	1		
15	1	1	1		
16	1	1	1		
Total	37	37	35		
	Total for Afon Llynfi monitoring unit				

#### 5.7. Afon Chwefru

Two 500m sections were surveyed on Afon Chwefru being the two sections where crayfish were implanted by Cynrig Fish Culture Unit in 2012-2014. No crayfish were found during the 2016 survey but there was good crayfish habitat throughout.

# 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) 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 2014-16 only considered six of the eight monitoring units and it has been assumed that there are no original white-clawed crayfish populations in the other two monitoring units (Afon Irfon and Duhonw).

#### **Attribute 1: Average number of crayfish**

The average crayfish per patch was greater than one (above the lower limit, see Table 1) in the Offeiriad and Sgithwen but in none of the other monitoring units (Table 18).

Table 18: Average crayfish per patch in each monitoring unit.

Monitoring unit	Total crayfish	Number of	Average crayfish
	caught	patches	per patch
Nant yr Offeiriad	122	80	1.5
Afon Edw	0	80	0
Sgithwen Brook	120	80	1.5
Dulas Brook (Builth	0	65	0
Road)			
Clyro Brook	58	65	0.9
Afon Llynfi	0	80	0
Afon Irfon	Not surveyed	Not surveyed	Assumed zero
Afon Duhonw	Not surveyed	Not surveyed	Assumed zero
OVERALL	300	610	0.49

Assuming there are no crayfish in the Irfon or Duhonw, the average would be 300 crayfish in 610 sites, which is 0.49 crayfish per site. This is less than the threshold of 1 and therefore this **Attribute has not been reached**.

#### **Attribute 2: Crayfish distribution**

Crayfish were found in three of the six monitoring units surveyed (Table 14) and it is assumed that there were no white-clawed crayfish the other two (Afon Irfon and Duhonw).

Table 19: Distribution and density of crayfish in monitoring units.

Monitoring unit	Classification				
Nant yr Offeiriad	Moderate				
Afon Edw	Absent/undetected				
Sgithwen Brook	Moderate				
Dulas Brook (Builth Road)	Absent/undetected				
Clyro Brook	Moderate				
Afon Llynfi	Absent/undetected				
Afon Irfon	Assumed absent/undetected				
Afon Duhonw	Assumed absent/undetected				

Crayfish are present in three of the eight monitoring units which is below the threshold of five and therefore this **Attribute has not been reached**.

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

No non-native crayfish were found in the survey and there was no evidence of plague although there may have been an outbreak in the Edw in 2006 (see Conclusion). Porcelain disease was found in less than 10% of the crayfish captured (the limit, see Table 1), thus this **Attribute has been met in the areas where crayfish were present**.

However, to attain a complete picture of the risks to white-clawed crayfish in the Wye SAC it is important to verify that no alien crayfish are present in any high risk areas, e.g. tributaries of Nant yr Offeiriad, Sgithwen Brook and Clyro Brook.

Table 20: Incidence of the lohania in crayfish from each monitoring unit.

Monitoring unit	Incidence of Thelohania				
Nant yr Offeiriad	6%				
Afon Edw	Not applicable because no crayfish				
Sgithwen Brook	4%				
Dulas Brook (Builth Road)	Not applicable because no crayfish				
Clyro Brook	5%				
Afon Llynfi	Not applicable because no crayfish				
Afon Irfon	Not applicable because not surveyed				
Afon Duhonw	Not applicable because not surveyed				

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

Suitable habitat was present in 76% of the areas surveyed which exceeds the lower limit of 60% for this **Attribute**, **which has therefore been met in this evaluation**.

Table 21: Percentage of suitable habitat

Monitoring unit	ln	In mid-	ln	Overall evaluation
	margins	channel	banks	
Nant yr Offeiriad	88%	92%	65%	81%
Afon Edw	94%	94%	94%	94%
Sgithwen Brook	100%	100%	81%	88%
Dulas Brook (Builth	74%	74%	69%	73%
Road)				
Clyro Brook	44%	44%	44%	44%
Afon Llynfi	77%	77%	73%	76%
Afon Irfon				Omitted from this evaluation but
				known to be good
Afon Duhonw				Omitted from this evaluation but
				known to be good
Suitable	habitat in ar	76%		

#### 7. Conclusion

Despite an abundance of excellent habitat throughout all the tributaries of the River Wye SAC, the feature was found to be in Unfavourable condition in 2003 and is somewhat worse now because previously important populations of white-clawed crayfish in Afon Edw and Dulas Brook (Builth Road) appear to have been lost.

As signal crayfish are spreading in the Wye catchment, there is a bleak prospect for the white-clawed crayfish and although a causal link for the decline of the natives has not been made with the expansion of signal crayfish in this survey, it is strongly suspected.

With regard to the individual monitoring units:

Nant yr Offeiriad was surveyed fully and yielded 1.5 crayfish per patch with low incidence of Thelohania (7%) and ample 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. For this reason investigation of the tributaries particularly in the lower reaches for the presence of signal crayfish is recommended for the completion of knowledge of crayfish distribution in the Nant yr Offeiriad.

**Afon Edw** yielded no crayfish although there was ample 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 complete the crayfish distribution picture, ascertain whether there are any signal crayfish in the catchment and perhaps shed light on the reason for the disappearance.

On **Sgithwen Brook** the average catch was 1.5 crayfish per patch, with low incidence of Thelohania (6%) and ample 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. For this reason investigation of the tributaries particularly in the lower reaches for the presence of signal crayfish is recommended for the completion of knowledge of distribution.

**Dulas Brook (Builth Road)** yielded no crayfish in 2014-15 but had shown good populations in the lower reaches in 2003. Although the habitat is not quite as good as the Afon Edw, Sgithwen Brook and Nant yr Offeiriad it is more than adequate to support white-clawed crayfish.

In **Clyro Brook** the average catch was 0.9 crayfish per patch, with low incidence of Thelohania (5%) and the overall habitat evaluation was 44% which is unusually low being only about half of that found in the other monitoring units of this SAC. This is because there is a 2km section (Sites 6-9) in the middle reaches of the river that is

excellent for crayfish yielding high catches similar to those in the good reaches of the Sgithwen and Offeiriad, but upstream (Sites 10-13) of this excellent area the Brook dries out in summer. Downstream of it the Brook enters the River Wye floodplain becoming much less steep and having virtually no fall over the 2.5km (Sites 1-5) leading to the confluence. Thus the Brook habitat upstream and downstream of the excellent middle section cannot support crayfish.

**Afon Llynfi** yielded no crayfish in 2016 although there was a population present at Site 11 in 2003 and populations have been reported in the River Ennig, one of its tributaries entering near Bronllys (Oliver Brown NRW, pers. comm.). Although the habitat is not as good as the best tributaries in the Wye (the Afon Edw, Nant yr Offeiriad and Sgithwen Brook), the mid sections of this monitoring unit (Sites 4 -12) offer very good habitat and could support a white clawed crayfish population. The monitoring unit as a whole is let down by less steep sections at the upstream (Sites 13-16) and downstream (sites 1-3) ends.

**Afon Irfon** was not surveyed because crayfish were not been found in this river in the 2003 SAC assessment, have not been found since the mid-1990s and it was not necessary to survey this river to reach a conclusive assessment of the SAC. There has however been an attempt to reinstate crayfish in the Irfon catchment by the introduction in 2013/14 of approximately 3000 fairly small crayfish into the Afon Chwefru tributary. Despite searching extensively for these in the area that they had been introduced, no crayfish were found.

**Afon Duhonw**, although it appears to have similar habitat to the very good crayfish rivers (Edw, Offeiriad and Sgithwen), was not surveyed because crayfish were not found in the 2003 SAC Assessment, have never been found in this river and it was not necessary to survey this river to reach a conclusive assessment of the SAC.

**Overall Assessment:** Based on the current 2014-16 survey, the assessment of attributes 1 to 5 for the River Wye SAC are summarised in Table 22.

Table 22: Overall Assessment of Attributes for River Wye SAC 2014-16.

Attribute	Conservation objective (when the feature is in favourable condition)	Result of Surveys	Assessment
1 (Overall number	Average number of crayfish	0.49 crayfish per	Favourable Condition
of crayfish)	recorded in each habitat	patch	not achieved
	patch greater than 1		
2 (Distribution of	Present in 5 of the 8	Present in 3 of the	Favourable Condition
A. pallipes	monitoring units	8 monitoring units	not achieved
throughout SAC)			
3 (Alien threat and	Absence of alien crayfish	No aliens, no	Favourable Condition
disease status)	and plague, and a <10%	plague and only 7% porcelain	achieved
	incidence of porcelain	disease	
	disease		

4 (Habitat quality)	Suitable habitat should be	Suitable habitat in	Favourable Condition
	present in 60% of the	76% of sampled	achieved
	sampled habitat patches	habitats	
5 (Water quality)	Water quality is at GQA	Not measured in	Not measured
	Biological Class A or B in 5	this survey	
	of the 8 monitoring units		
Overall			Favourable
			Conservation Status
			NOT ACHIEVED

The current survey shows that despite suitable habitat (Attribute 3), disease status and the absence of aliens (Attribute 4), **Favourable Conservation Status has not been achieved** because the density of crayfish throughout is not high enough (Attribute 1) and the distribution throughout the monitoring units is not sufficient (Attribute 2) for the River Wye SAC.

The 2003 survey had the same result, i.e. **Favourable Conservation Status was not achieved**, but the situation is now worse than in 2003 because crayfish have disappeared from the Edw, Dulas Brook (Builth Road) and Afon Llynfi and the downstream reaches of the Sgithwen Brook (Sites 2-5) and are less dense in all monitoring units surveyed except Clyro Brook, as summarised in Table 23.

Table 23: Comparison of crayfish numbers found in monitoring units in 2003 and 2014-16.

Monitoring unit	Crayfish found in 2003 survey	Crayfish found in 2014-16 survey
Nant yr Offeiriad	133	122
Afon Edw	94	0
Sgithwen Brook	190	120
Dulas Brook (Builth Road)	12	0
Clyro Brook	9	58
Afon Llynfi	11	0
Afon Irfon	0	Assumed 0
Afon Duhonw	0	Assumed 0

#### 8. Recommendations

Given the strength of the crayfish population, it is recommended that Clyro Brook which currently has no statutory protection is notified as part of the Wye SSSI and Wye SAC.

Verify the presence/absence of native and alien crayfish by targeted survey of tributaries of Afon Edw, Clyro Brook, Sgithwen Brook and Nant yr Offeiriad.

Complete the survey of the main River Wye, all the tributaries (not just the monitoring units) and sub-tributaries to assess native populations and possible distribution of signal crayfish. (Note: Signals appear to be spreading from Nant Bachawy but it is not known by how much e.g. they may have spread across the catchment boundary to the Edw catchment and be responsible for the decimation of white-clawed crayfish there.)

For completeness, one could verify the current status of native crayfish in the Afon Irfon plus tributaries, Afon Duhonw and other tributaries of monitoring units where crayfish have been reported e.g. Afon Ennig.

Investigate any other reports of crayfish in the Wye catchment.

# 9. Acknowledgements

We thank Natural Resources Wales for funding the three year survey and for providing the necessary licences to carry out the work.

#### 10. References

Peay, S. 2002. A standardised survey and monitoring protocol for the white-clawed crayfish *Austropotamobius pallipes* in the UK. Life in UK Rivers.

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Rogers, D. & Watson, E. 2016. Assessment of the condition of the white-clawed crayfish *Austropotamobius pallipes* in the River Wye Special Area of Conservation in 2014-15. NRW Evidence Report No: **153**, 120pp. Natural Resources Wales, Bangor.

# 11. Data Archive Appendix

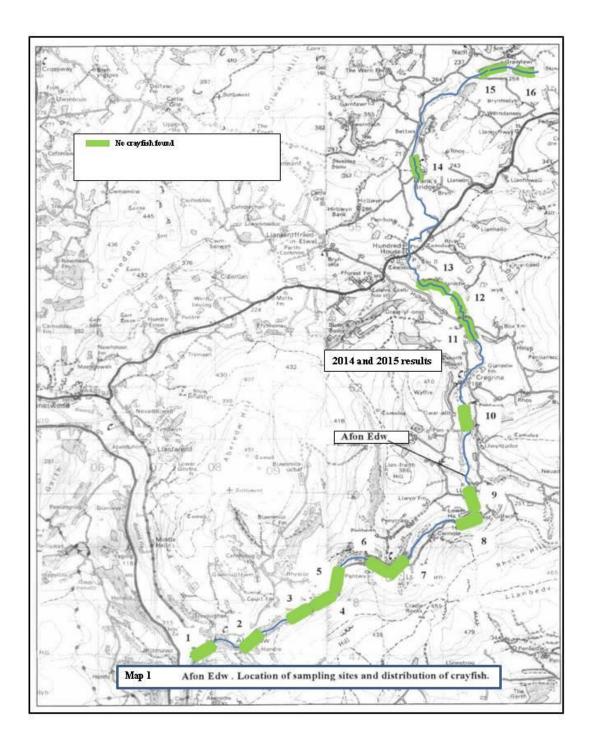
The data archive contains:

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

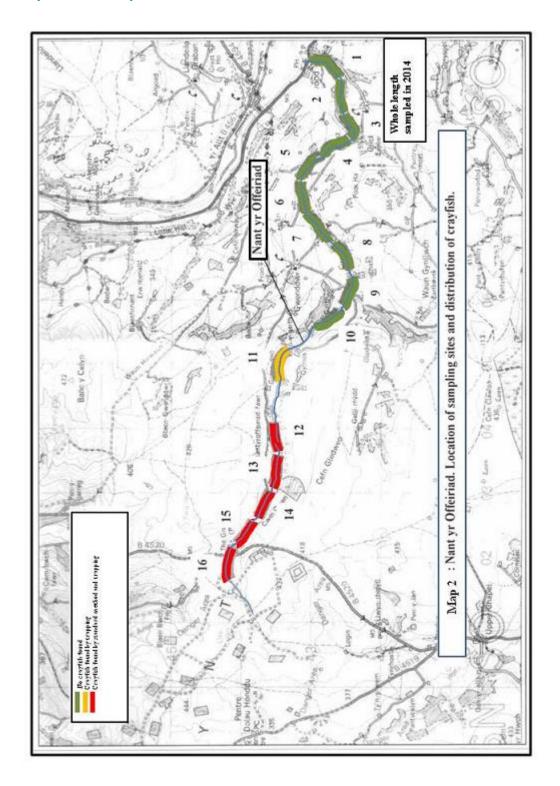
Metadata for this project is publicly accessible through Natural Resources Wales' Library Catalogue http://libcat.naturalresources.wales or http://catllyfr.cyfoethnaturiol.cymru by searching 'Dataset Titles'. The metadata is held as record no 116829.

# 11. Appendices

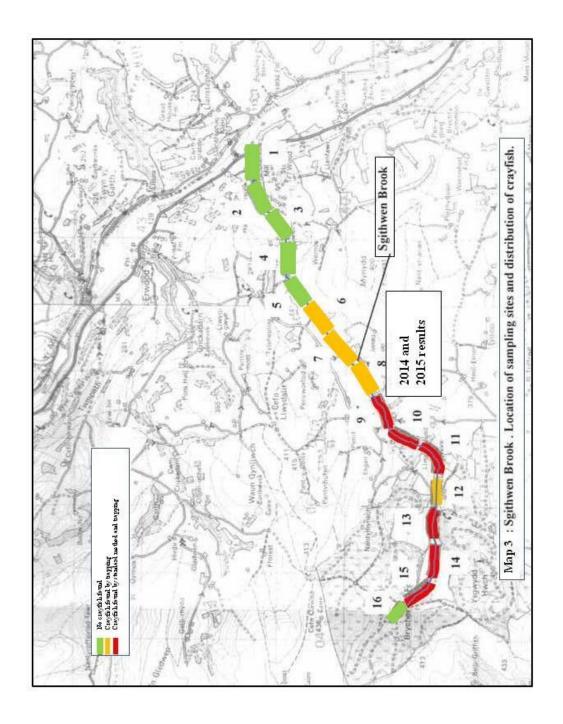
11.1. Appendix A: Location of sampling stations and distribution of white-clawed crayfish in the Afon Edw.



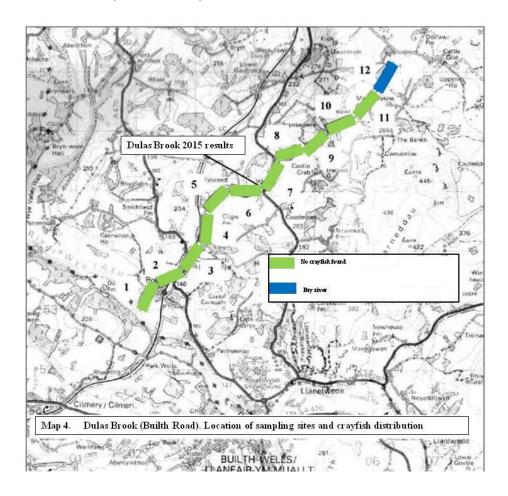
# 11.2. Appendix B: Location of sampling stations and distribution of white-clawed crayfish in Nant yr Offeiriad.



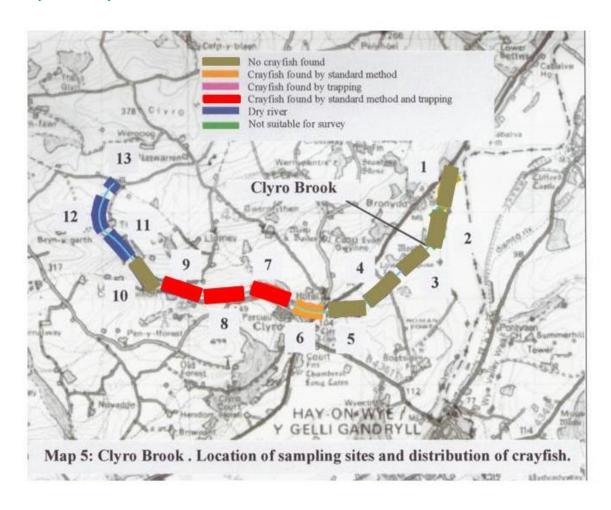
# 11.3. Appendix C: Location of sampling stations and distribution of white-clawed crayfish in Sgithwen Brook.



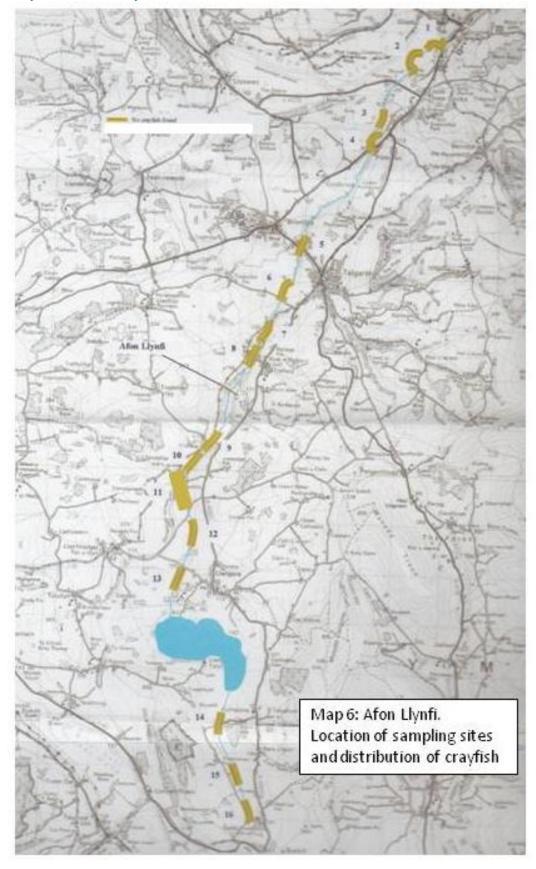
# 11.4. Appendix D: Location of sampling stations and distribution of white-clawed crayfish in Dulas Brook (Builth Road)



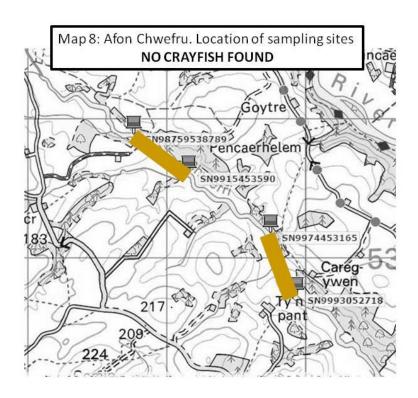
# 11.5. Appendix E: Location of sampling stations and distribution of white-clawed crayfish in Clyro Brook



11.6. Appendix F: Location of sampling stations and distribution of white-clawed crayfish in Afon Llynfi



### 11.7. Appendix G: Location of sampling stations in Afon Chwefru



# 11.8. Appendix H: Details of individual white-clawed crayfish records in Nant yr Offeiriad (in October 2014).

Site 11

#### **CRAYFISH RECORDING FORM**

Catchment	Wye		River			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 12

### **CRAYFISH RECORDING FORM**

Catchment	Wye		River	Offeiriad			Site reference 12		
Gatoriiriorit	,		111701	Onomaa			Sheet		
Date	10/10/2014		Surveyors	DR LW			no.	2	
Record no.	Species	Sex	Carapace length, mm	Damage	Disease	Breeding	Moult	Sub-site location ref.	Catch method
1	A.p	М	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	M	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	M	26				4
28	A.p	F	32		G		4
29	A.p	F	30		G		4
30	A.p	M	34				4
31	A.p	М	26				4
32	A.p	М	28				4

### Site 13

#### **CRAYFISH RECORDING FORM**

	CRAYFISH RECORDING FORM									
Catchment	   Wye		River	Offeiriad			Site reference	13		
Catominent	VVYC		TRIVOI	Oncinaa			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	<i>A.p</i>	F	34	Damago	Diocaso	G	modit	P1	1	
2	A.p	M	47					P1	1	
3	A.p	F	28			G		P1	1	
4	A.p	F	28			G		P2	1	
5	A.p	M	24	ML				P2	1	
6	A.p	M	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	M	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	
Data	10/10/2014		Curvovoro	PB 1111			Sheet	3a	
Date	10/10/2014		Surveyors	DR LW			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	nce 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

# 11.9. Appendix I: Details of individual white-clawed crayfish records in Sgithwen Brook (in October 2014 and September 2015)

#### Site 6

#### **CRAYFISH RECORDING FORM**

Catchment	Wye		River	Sgithwen			Site reference	6	
Date	02/09/2015		Surveyors	DR LW			Sheet no.	2015/1	
Record no.	Species	Sex	Carapace length, mm	Damage	Disease	Breeding	Moult	Sub-site location ref.	Catch method
1	A.p	М	18					P2	4
2	A.p	F	32					P2	4

#### Site 7

#### **CRAYFISH RECORDING FORM**

Catchment	Wye		River	Sgithwen			Site reference		
Date	02/09/2015		Surveyors	DR LW			Sheet no.	2015/2	
Record no.	Species	Sex	Carapace length, mm	Damage	Disease	Breeding	Moult	Sub-site location ref.	Catch method
1	A.p	F	29					P1	4
2	A.p	M	30	ML				P1	4
3	A.p	М	19					P1	4
4	A.p	F	23	OL				P1	4
5	A.p	М	32		PD			P1	4
6	A.p	F	30	MR				P1	4
7	A.p	F	33					P1	4
8	A.p	М	19					P3	4
9	A.p	F	28					P3	4
10	A.p	F	31					P3	4
11	A.p	М	35					P4	4
12	A.p	F	29					P5	4
13	A.p	F	29				AM	P5	4

#### Site 8

Catchment	Wye		River	Sgithwen			Site reference	8	
Date	03/09/2015		Surveyors	DR LW			Sheet no.	2015/3	
Record no.	Species	Sex	Carapace length, mm	Damage	Disease	Breeding	Moult	Sub-site location ref.	Catch method
1	A.p	М	42		PD			P1	4
2	A.p	F	33	MR				P1	4
3	A.p	F	36					P1	4

4	A.p	М	38			P2	4
5	A.p	F	17	MR		P2	4
6	A.p	F	44			P4	4
7	A.p	М	23	RL		P4	4

#### **CRAYFISH RECORDING FORM**

Catchment	Wye		River	Sgithwen			Site reference	9	9
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	Ар	М	30						4

#### Site 10

#### **CRAYFISH RECORDING FORM**

Catchment	Wye		River	Sgithwen			Site reference	1	0
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 | M | 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	Ар	F	36			G			4

#### Site 13

# **CRAYFISH RECORDING FORM**

Catchment	Wye		River				Site reference	13	
Date	15/10/2014		Surveyors	DR LW			Sheet 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

							Site		_
Catchment	Wye		River	Sgithwen			reference	14	
				<i></i>			Sheet		
Date	15/10/2014		Surveyors	DR LW			no.	Sg 6	
Record			Carapace length,					Sub-site location	Catch
no.	Species	Sex	mm	Damage	Disease	Breeding	Moult	ref.	method
1	Ар	F	22	2 dilliage	2.000.00	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	M	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	Ар	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	M	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			

Site 14

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	M	28						4

#### **CRAYFISH RECORDING FORM**

Catchment	Wye		River	Sgithwen			Site reference	15	
Date	15/10/2014		Surveyors	DR LW			Sheet no.	Sg 7	
Record no.	Species	Sex	Carapace length, mm	Damage	Disease	Breeding	Moult	Sub-site location ref.	Catch method
1	Ар	F	32			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	M	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

# 11.10. Appendix J: Details of individual white-clawed crayfish records in Clyro Brook (in August 2016)

# Site Clyro 6

#### **CRAYFISH RECORDING FORM**

Catchment	Wye		River	Clyro			Site reference		6
Date	26/08/2016		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 pallipes	F	34	RR	PD			P3	1

# Site Clyro 7

Catchment	Wye	River	Clyro	Site reference	7
Date	23/08/2016	Surveyors	DR LW	Sheet no.	1

			Carapace					Sub-site	
Record			length,					location	Catch
no.	Species	Sex	mm	Damage	Disease	Breeding	Moult	ref.	method
1	A.pallipes	F	35	MB				P1	1
2	A.pallipes	М	29					P1	1
3	A.pallipes		14					P1	1
4	A.pallipes		11					P1	1
5	A.pallipes		12					P1	1
6	A.pallipes		11					P1	1
7	A.pallipes		12					P1	1
8	A.pallipes	F	25					P1	1
9	A.pallipes	F	24					P1	4
10	A.pallipes	М	39					P1	4
11	A.pallipes	М	25	RL				P2	1
12	A.pallipes	F	38					P2	4
13	A.pallipes	F	34					P2	4
14	A.pallipes	М	34					P2	4
15	A.pallipes	М	34					P2	4
16	A.pallipes	М	32		Porcelain			P2	4
17	A.pallipes	F	38					P2	4
18	A.pallipes	F	36					P2	4
19	A.pallipes	F	25					P4	1
20	A.pallipes	М	26	RR				P4	1
21	A.pallipes	M	36					P4	1
22	A.pallipes	М	25					P4	4
23	A.pallipes	M	36					P4	4
24	A.pallipes	F	29					P4	4
25	A.pallipes	F	24					P5	1
26	A.pallipes	М	41					P5	1
27	A.pallipes	М	40					P5	1
28	A.pallipes	F	27	RL				P5	1
29	A.pallipes	F	29					P5	4
30	A.pallipes	F	35					P5	4
31	A.pallipes	F	28					P5	4
32	A.pallipes	М	19	ML				P5	4
33	A.pallipes	М	39					P5	4
34	A.pallipes	М	34					P5	1
35	A.pallipes	М	13					P5	1
36	A.pallipes	]	11					P5	1
37	A.pallipes	]	12					P5	1
38	A.pallipes	]	13					P5	1

# Site Clyro 8

		•	,,,,,,,,,,,			
Catchme					Site referenc	
nt	Wye	R	River	Clyro	е	8
	23/08/201	S	Surveyor		Sheet	
Date	6	S		DR LW	no.	1

Record no.	Species	Se x	Carapac e length, mm	Damag e	Disease	Breedin g	Moult	Sub- site locatio n ref.	Catch metho d
1	A.pallipes		13					P1	1
2	A.pallipes		13					P1	1
3	A.pallipes		13					P1	1
					Porcelai				
4	A.pallipes	F	31	MR	n			P1	4
5	A.pallipes	F	27	MR				P1	4
6	A.pallipes	М	27	RB				P1	4
7	A.pallipes	F	22					P1	4
8	A.pallipes	М	39					P2	4
9	A.pallipes	М	38	RL				P2	4
10	A.pallipes	М	27					P2	4
11	A.pallipes	F	19					P4	1
12	A.pallipes	F	28					P4	4
13	A.pallipes	М	31	-				P4	4
14	A.pallipes	F	23					P4	4
15	A.pallipes	М	35					P4	4
16	A.pallipes	М	22					P5	1

# Site Clyro 9

Catchme nt	Wye		River	Clyro			Site referenc e		9
Date	23/08/201		Surveyor s	DR LW			Sheet no.		1
Record no.	Species	Se x	Carapac e length, mm	Damag e	Diseas e	Breedin g	Moult	Sub- site locatio n ref.	Catch metho d
1	A.pallipes	F	35					P1	2
2	A.pallipes	М	31					P1	1
3	A.pallipes	М	28					P2	2

# 11.11. Appendix K: White-clawed crayfish habitat survey forms for Afon Edw, October 2014.and August/September 2015

2014.and Augusi	, oop 101.		YFISH H	ABITAT	SURVE	Y FORI	И			
Catalymant	Myro						Site (no.,			1
Catchment	Wye	Surveyor	River	Edw			name) Grid ref.			1
Date (dd/mm/yy)	27/08/2015	S Flow norm	DR, LW			Clarity,	(d/s end)	SO 0767 4	1694 	
Weather, good 1, mod 2, poor 3	1	1, low 2, fall 3, rise 4	2	Water temp. oC	13	good 1, mod 2, poor 3	1			
Photo ref. & Location	Edw01									
Site length (m)	100	Descript.								
Width channel (m)	6	features, landuse)	Wooded, a good and c	lose	Access fro	m road				
Survey method and a made	sample patc	h 1	sample pate	ch 2	sample pa	tch 3	sample pa	tch 4	sample pa	tch 5
Survey method, std 1, quad 2, net/kick 3, trap 4, view 5	1 &	4	1.8	<b>k</b> 4	1	& 4	1 8	<b>§</b> 4	1 8	<b>§</b> 4
Details (if not standard)										
Extent (I x w patch)	2x1		3x2		2x2		1x3		2x2	
Channel (1 margins, 2 mid, 3										
both, other specify)	1		2		3		2		2	
Depth (metres) Feature (1 marg. d'water, 2	0.2		0.4	-	0.2		0.5		0.4	
pool, 3 glide, 4 run, 5 riffle)	5		4		4		4		3	
Refuges in channel	tick all present	in patch, mair		ned in red						
cobble (6.5-15cm)			YES		YES		YES		YES	
cobble (15-25.6cm)			YES		YES		YES		YES	
boulder (25.6-40cm)			YES		YES	1	YES	1	YES	
boulder (>40cm) rubble (give size)	YES		YES		YES		YES		YES	
woody debris	YES		YES				YES			
other urban debris										
tree roots, fine	YES									
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)										
sand (<2mm) clay										
silt			YES							
Siltation none	YES		120				YES		YES	
low			YES		YES					
moderate										
high										
Refuges in bank none	YES		\/F0		YES		\/E0		YES	
cobble/boulder tree roots, large			YES		<del> </del>		YES			
vertical or undercut bank										
dry stone wall					<u> </u>					
other reinforced										
crayfish burrows										
Shading above	MOD		MOD		MOD		MOD		MOD	
Crayfish/10 refuges, or per unit (depending on method)	0		О		C		0		1	
Search time (Mins)	5		5		5		5		5	
Bullhead present?	YES		YES		YES		YES		YES	
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	Score 3 3 3 3 3 3	NOTES (surv	ey conditions, p	vatches etc.):	Stone load	n. Iviink spr	aint			
2, (E if >33% affected), aliens 3.  Total crayfish (by 1 method, note total(s) by other methods in notes if applicable)	0								-	

		CRA	FISH H	ABITAT	SURVE	Y FORI	М			
Ontologous	10/		D'	F.1			Site (no.,			0
Catchment	Wye	Surveyor	River	Edw			name) Grid ref.			2
Date (dd/mm/yy)	27/08/2015	S Flow norm	DR, LW			Clarity,	(d/s end)	SO 0847 4	712	
Weather, good 1, mod 2, poor 3	1	1, low 2, fall 3, rise 4	2	Water temp. oC	13	good 1, mod 2, poor 3	1			
Photo ref. &							No.		111	Wes
Location Site length (m)	Edw02, Roa	d bridge at  Descript.						( ) 4 ( a ) ( ) ( ) ( ) ( ) ( ) ( ) ( ) ( ) (		
		(channel features,	Good acces grazing; dis							
Width channel (m)		landuse)	Large areas						-2	
Survey method, std 1, quad	sample patc	h 1	sample pate	ch 2	sample pa	tch 3	sample par	tch 4	sample pa	tch 5
2, net/kick 3, trap 4, view 5	1 &	4	1 8	k 4	1 8	<u> </u>	1 8	<b>§</b> 4	1	& 4
Details (if not standard)										,
Extent (I x w patch)	5x1		3x1		2x2		2x2		3x1	
Channel (1 margins, 2 mid, 3 both, other specify)	1		1		2		2		1	
	0.3		0.2		0.2		0.2		0.2	
Depth (metres) Feature (1 marg. d'water, 2										
pool, 3 glide, 4 run, 5 riffle)	3		4		5		4		4	
Refuges in channel cobble (6.5-15cm)	tick all present	in patch, mair	YES	ned in red	YES		YES		YES	
cobble (15-25.6cm)			YES		YES		YES		YES	
boulder (25.6-40cm)			YES		YES		YES		YES	
boulder (>40cm)	YES		YES		YES		YES		YES	
rubble (give size)	YES						YES			
woody debris										
other urban debris										
tree roots, fine										
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)										
sand (<2mm)										
clay										
silt										
Siltation none										
	YES		YES		YES		YES		YES	
moderate high			1		1					
Refuges in bank none			1		1					
cobble/boulder	YES				YES				YES	
tree roots, large			YES				YES			
vertical or undercut bank										
dry stone wall	\(=0									
other reinforced cravfish burrows	YES									
Shading above	LIGHT		LIGHT		LIGHT		LIGHT		LIGHT	
Crayfish/10 refuges, or per										
unit (depending on method)	0		0		0		0		0	
Search time (Mins) Bullhead present?	5		YES		5		YES 10		5	
Evaluation crayfish		Notes (sur	ey conditions, p	natches etc.).	Stone loach	n Mink snr				
habitat for whole site (0 none, 1 pres., 2 freq., 3 abund.) in margins in mid channel in banks surveyability	Score 3 3 3 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									

0.11			D:				Site (no.,			0
Catchment	Wye	Surveyor	River	Edw			name) Grid ref.			3
Date (dd/mm/yy)	23/08/2003	S	DR, LW			Olit :	(d/s end)	SO 0930 4	767	
Weather, good 1, mod 2, poor 3	1	Flow norm 1, low 2, fall 3, rise 4	2	Water temp. oC	13	Clarity, good 1, mod 2, poor 3	1			
Photo ref. &						•			485	
Location	Edw03									
								The second		
Site length (m)	100						1000			And the
One length (m)	100						4		M Section	
		Descript.					-			
		(channel						- Gunda	-5-380	
Width channel (m)	8	features, landuse)	Grazing and	d woodlond	Good acc	000	- Total	-		
Width Chariner (III)	sample patc	•	sample pate		sample pa		sample pat	tch 4	sample pat	ch 5
Survey method, std 1, quad										
2, net/kick 3, trap 4, view 5	1 &	4	1 8	k 4	1 8	<b>§</b> 4	1 &	<u> </u>	1 8	<b>k</b> 4
Details (if not standard)										
Extent (I x w patch)	2x2		2X2		3X1		3x3		2x5	
Channel (1 margins, 2 mid, 3 both, other specify)	3		3		1		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)	4		4		4		5		4	
Refuges in channel		in patch, mair	type(s) search	ned in red	VEC		VEC		VEC	
cobble (6.5-15cm) cobble (15-25.6cm)	YES YES		YES YES		YES 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)										
sand (<2mm)										
clay										
silt	\/=0		\/=0		\ (E.O.				\/=0	
Siltation none low	YES		YES		YES		YES		YES	
moderate							120			
high										
Refuges in bank none	YES		YES							
cobble/boulder							YES			
tree roots, large					YES				YES	
vertical or undercut bank										
dry stone wall other reinforced										
crayfish burrows										
Shading above	LIGHT		LIGHT		LIGHT		NIL		LIGHT	
Crayfish/10 refuges, or per unit (depending on method)	0		0		0		0		0	
Search time (Mins)	5		10		9		8		5	
Bullhead present?	YES		YES		YES		YES		YES	
Evaluation crayfish		Notes (surv	ey conditions, p	atches etc.):					-	
habitat for whole site (0										
none, 1 pres., 2 freq., 3 abund.)	Score									
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									

	CRA	YFISH H	ABITAT	SURVE	Y FORI	И			
Catchment	Wye	River	Edw			Site (no., name)	4		
	Surveyor		LUW			Grid ref.		0.0000.479	2
Date (dd/mm/yy)	27/08/2015 s Flow norm		\\\ - t =		Clarity,	(d/s end)	- 51	O 0960 478	3
Weather, good 1, mod 2, poor 3	1, low 2, fall 1 3, rise 4		Water temp. oC	13	good 1, mod 2, poor 3	1			
Photo ref. &	Income di atale, dan matura	on of first 10	0			TOWN.			
Site length (m)	100  Descript. (channel features.)	am or mist to	<u>om</u>						
Width channel (m)	9 landuse)	Good acces				9	1	7	
Survey method, std 1, quad	sample patch 1	sample pate	ch 2	sample par	tch 3	sample pato	h 4	sample pat	ch 5
2, net/kick 3, trap 4, view 5	1 & 4	1.8	<u> </u>	1.8	<u> </u>	1 &	4	1 8	. 4
Details (if not standard)									
Extent (I x w patch) Channel (1 margins, 2 mid, 3	4x1	4x3		2x2		5x2		3x3	
both, other specify)	1	3		1		1		3	
Depth (metres) Feature (1 marg. d'water, 2	0.2	0.2	!	0.2		0.2		0.3	
pool, 3 glide, 4 run, 5 riffle)	4	3	i <u> </u>	5		3		3	
Refuges in channel	tick all present in patch, ma		ned in red	\/E0		\/E0		\/50	
cobble (6.5-15cm) cobble (15-25.6cm)		YES YES		YES YES		YES YES		YES YES	
boulder (25.6-40cm)		YES		YES		YES		YES	
boulder (>40cm)		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									
bedrock	YES	YES		YES		YES		YES	
cobble (6.5-15cm)									
pebble (<6.5cm)									
gravel (<1.6cm)									
sand (<2mm)									
clay									
Siltation none	YES			YES				YES	
low	120	YES		1.20		YES		ILO	
moderate									
high									
Refuges in bank none	\	\	_			\			
cobble/boulder		YES		YES		YES		YES	
tree roots, large	150	1		<del>                                     </del>		-			
vertical or undercut bank		1	-	-		-			
dry stone wall other reinforced									
crayfish burrows									
Shading above	HEAVY	MOD		HEAVY		MOD		HEAVY	
Crayfish/10 refuges, or per unit (depending on method)	0	0				0		0	
Search time (Mins)	15	5		10		10		10	
Bullhead present?	10	YES		10		10		YES	
Evaluation crayfish	Notes (sur	vey conditions, p	oatches etc.)S	tone loach, He	ron	·		•	
habitat for whole site (0 none, 1 pres., 2 freq., 3 abund.) in margins in mid channel in banks surveyability  Problems pollution 1, erosion	Score 3 3 3 3 3								
2, (E if >33% affected), aliens 3.  Total crayfish (by 1 method, note total(s) by other methods in									
notes if applicable)	0								

		CRAY	/FISH H	АВІТАТ	SURVE	Y FORI	VI			
Ontobases	14/		Di-	E.L.			Site (no.,			,
Catchment	Wye	Surveyor	River	Edw			name) Grid ref.			5
Date (dd/mm/yy)	28/08/2015		DR LW			O1 1:	(d/s end)	SO 1012 4	813	
Weather, good 1, mod 2, poor 3	1	Flow norm 1, low 2, fall 3, rise 4	2	Water temp. oC	13	Clarity, good 1, mod 2, poor 3	1			
Photo ref. &						7				-9-6
Location	Immediately	downstrea	am of first 10	00m				14.		
Otto Israella (as)	400									
Site length (m)	100	Descript.								
Width channel (m)		features, landuse)	General Pu					200		
Survey method, std 1, quad	sample patc	h 1	sample pate	ch 2	sample pat	tch 3	sample pa	tch 4	sample pa	atch 5
2, net/kick 3, trap 4, view 5	1 &	4	1 8	<u> </u>	1 8	<u> 4</u>	1 8	§ 4	1	& 4
Details (if not standard)										
Extent (I x w patch)  Channel (1 margins, 2 mid, 3 both, other specify)	2x2 3		2x2		3x2 3		4x1 1		2X2	
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)  Refuges in channel	4 tick all present	in natch mai	5 type(s) search		4		4			)
cobble (6.5-15cm)		ııı patcn, mair	YES	nea in rea	YES		YES		YES	
cobble (15-25.6cm)			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										
Main substrate beneath										
bedrock	YES		YES		YES		YES		YES	
cobble (6.5-15cm)										
pebble (<6.5cm)										
gravel (<1.6cm) sand (<2mm)										
sand (<2mm)										
silt										
Siltation none	YES				YES		YES		YES	
low			YES							
moderate										
high				1	VEC				VEO	
Refuges in bank none cobble/boulder	YES		YES	1	YES		YES		YES	
tree roots, large	IES		IES				IES			
vertical or undercut bank										
dry stone wall										
other reinforced										
crayfish burrows										
Shading above	MOD		LIGHT		LIGHT		LIGHT		NONE	
Crayfish/10 refuges, or per unit (depending on method)	0		0		0		0		(	
Search time (Mins)	10		5		10		15		5	
Bullhead present?	.0		YES				YES			
Evaluation crayfish		Notes (surv	ey conditions, p	patches etc.):	Stone loach	, kingfishei	1			
habitat for whole site (0										
none, 1 pres., 2 freq., 3 abund.)	Score									
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						-			

		CRAY	YFISH HA	ABITAT	SURVE	Y FORI	М			
Catchment	Wye		River	Edw			Site (no., name)			6
	28/08/2015	Surveyor		LUW			Grid ref.	SO 1056 /	1005	0
Date (dd/mm/yy)		Flow norm	DR LW	Motor		Clarity,	(d/s end)	SO 1056 4	1000	
Weather, good 1, mod 2, poor 3	1	1, low 2, fall 3, rise 4	2	Water temp. oC	13	good 1, mod 2, poor 3	1			
Photo ref. & Location	Edw05								A	7,1
Location	Edwos							Contract of		
									( ) ( )	200
Site length (m)	100									A TOP
Site lerigiri (III)	100									
		Descript.						Jan Taril		* 2
		(channel features,						Carlos Parish		
Width channel (m)	sample patc	landuse)	Good acces		and woodl		sample pa	tch 4	sample par	tch 5
Survey method, std 1, quad 2, net/kick 3, trap 4, view 5	1 &									R 4
Details (if not standard)	1 &	4	1.8	x 4	1 .	& 4	1 (	<u> </u>	10	X 4
Extent (I x w patch)	1x1		2x3		1x3		2x2		3x2	
Channel (1 margins, 2 mid, 3 both, other specify)	1		3		3		3		2	
Depth (metres)	0.2		0.3		0.3		0.3		0.2	
Feature (1 marg. d'water, 2 pool, 3 glide, 4 run, 5 riffle)	3		4		3		4		4	
Refuges in channel	tick all present	in patch, mair	_		3		4		4	
cobble (6.5-15cm)			YES		YES		YES		YES	
cobble (15-25.6cm) boulder (25.6-40cm)			YES YES		YES YES		YES YES		YES YES	
boulder (>40cm)			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										
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	
moderate					120		120			
high Refuges in bank none									YES	
cobble/boulder	YES		YES		YES		YES		123	
tree roots, large					YES					
vertical or undercut bank dry stone wall					-	-				
other reinforced										
crayfish burrows Shading above	MOD		LIGHT		MOD		LIGHT		MOD	
Crayfish/10 refuges, or per										
unit (depending on method) Search time (Mins)	5		10		5		10		0 10	
Bullhead present?	YES				YES					
Evaluation crayfish habitat for whole site (0		Notes (surv	ey conditions, p	oatches etc.):	Stone loach	1				
none, 1 pres., 2 freq., 3	Soora									
abund.) in margins	Score 3									
in mid channel	3									
in banks 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									

		CRAY	/FISH H	АВІТАТ	SURVE	Y FORI	M			
0.11			D:	<u></u>			Site (no.,			_
Catchment	Wye	Surveyor	River	Edw			name) Grid ref.			7
Date (dd/mm/yy)	28/08/2015		DR LW				(d/s end)	SO 1113 4	861	
Weather, good 1, mod 2, poor 3	1	Flow norm 1, low 2, fall 3, rise 4	,	Water temp. oC	14	Clarity, good 1, mod 2, poor 3	1			
Photo ref. &		,	_	1011101		_, рос. о			SHE HELD	
Location	Edw07									
Site length (m)	100									
		Descript. (channel features,								
Width channel (m)	sample patc	landuse)	Good acce		and woodla		sample pa	toh 4	sample pa	tch 5
Survey method, std 1, quad										
2, net/kick 3, trap 4, view 5  Details (if not standard)	1 &	4	1 8	<u> </u>	1 8	<b>&amp;</b> 4	1 6	<b>&amp;</b> 4	1	& 4
Extent (I x w patch)	4x4		2x2		3x2		3x3		4x1	
Channel (1 margins, 2 mid, 3 both, other specify)	3		3		2		3		1	
Depth (metres)	0.3		0.3		0.4		0.3		0.2	2
Feature (1 marg. d'water, 2 pool, 3 glide, 4 run, 5 riffle)	5		5		4		3		5	5
Refuges in channel	tick all present	in patch, mair		-						
cobble (6.5-15cm)	YES		YES		YES		YES		YES	
cobble (15-25.6cm)			YES		YES		YES		YES	
boulder (25.6-40cm)			YES		YES		YES		YES	
boulder (>40cm)	YES		YES		YES		YES		YES	
rubble (give size) woody debris										
other urban debris										
tree roots, fine			YES						YES	
moss										
filamentous algae										
other submerged veg.										
emergents  Main substrate beneath										
bedrock	VES		YES		YES		YES		YES	
cobble (6.5-15cm)	ILO		ILO		ILO		ILO		ILO	
pebble (<6.5cm)										
gravel (<1.6cm)										
sand (<2mm)										
clay										
Siltation none	VEC		YES		YES		YES			
low	YES		ILS		ILS		ILO		YES	
moderate										
high										
Refuges in bank none										
cobble/boulder	YES		YES	-	YES		YES		YES	
tree roots, large				-			1		YES	1
vertical or undercut bank			]							
dry stone wall other reinforced										
crayfish burrows										
Shading above	LIGHT		MOD		MOD		MOD		LIGHT	
Crayfish/10 refuges, or per										
unit (depending on method) Search time (Mins)	0 15		5		10		10		10	
Bullhead present?	15		YES		10		10		YES	
Evaluation crayfish		Notes (surv	ey conditions, p	oatches etc.):	Stone loach	· !				
habitat for whole site (0 none, 1 pres., 2 freq., 3	Sooro									
abund.) in margins	Score 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									

		CRAY	YFISH HA	ABITAT	SURVE	Y FORI	М			
Catchment	Wyo		Divor	Edw			Site (no.,			0
	Wye	Surveyor	River	Edw			name) Grid ref.			8
Date (dd/mm/yy)	28/08/2015	Flow norm	DR LW			Clarity,	(d/s end)	SO 1229 4	948	
Weather, good 1, mod 2, poor 3	1	1, low 2, fall 3, rise 4		Water temp. oC	13	good 1, mod 2, poor 3	1			
Photo ref. &	E400									A STATE OF
Location Site length (m)	Edw08	Descript.								
\\/:\	_	features,	C							
Width channel (m)	sample patc	landuse) h 1	Good acces		sample pat		sample par	tch 4	sample pa	atch 5
Survey method, std 1, quad 2, net/kick 3, trap 4, view 5	1 &		1 8			<u> </u>		§ 4		& 4
Details (if not standard)	1 00	4	10	( 4	1 0	x +	1 0	x <del>4</del>		α 4
Extent (I x w patch)	3x1		2x3		4x1		3x2		3x3	3
Channel (1 margins, 2 mid, 3										
both, other specify)	1		3		1		3		3	
Depth (metres) Feature (1 marg. d'water, 2	0.2		0.3		0.2		0.3		0.3	3
pool, 3 glide, 4 run, 5 riffle)	4		3		5		4			5
Refuges in channel cobble (6.5-15cm)	tick all present	in patch, mair	YES	ed in red	YES		YES		YES	
cobble (0.5-15cm)			YES		YES		YES		YES	
boulder (25.6-40cm)			YES		YES		YES		YES	
boulder (>40cm)			YES		YES		YES		YES	
rubble (give size)	_									
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)										
sand (<2mm)										
clay silt										
Siltation none	YES		YES		YES		YES		YES	
low										
moderate										
high										
Refuges in bank none	VEO		YES		VEO		VEO		VEO	
cobble/boulder tree roots, large					YES		YES		YES	
, 0	, LO									
vertical or undercut bank dry stone wall										
other reinforced										
crayfish burrows										
Shading above	LIGHT		LIGHT		MOD		LIGHT		LIGHT	
Crayfish/10 refuges, or per unit (depending on method)	0		0		0		0		(	
Search time (Mins)	15		5		15		5		5	
Bullhead present?	YES				YES		YES		,	
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 3 3 3	Notes (surv	ey conditions, p	atches etc.):	Stone loach	, kingfishei				
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									

		CRAY	/FISH H	ABITAT	SURVE	Y FORI	М			
Catalymont	Myro		Divor	Edw			Site (no.,			9
Catchment	Wye	Surveyor	River	Edw			name) Grid ref.			9
Date (dd/mm/yy)	29/08/2015		DR LW			Clarit	(d/s end)	SO 1260 4	4969	
Weather, good 1, mod 2, poor 3	1	Flow norm 1, low 2, fall 3, rise 4		Water temp. oC		Clarity, good 1, mod 2, poor 3	1			
Photo ref. &							1.51		No. of the	Mary Carlo
Location	Edw09									
Site length (m)	100									
Site religit (III)	100	Descript.	Difficult acc	ress steen	hank and fe	ences				
Width channel (m)	5	features, landuse)	Grazing and			511000.				
Cum as a months and	sample patc	h 1	sample pato	h 2	sample pat	ch 3	sample pa	tch 4	sample pa	tch 5
Survey method, std 1, quad 2, net/kick 3, trap 4, view 5	1 &	. 4	1 8	4	1.8	k 4	1 8	<b>§</b> 4	1	& 4
Details (if not standard)										
Extent (I x w patch) Channel (1 margins, 2 mid, 3	3x1		3x1		2x2		2x2		4x1	
both, other specify)	0.2		1		2		2		1	
Depth (metres) Feature (1 marg. d'water, 2	0.2		0.2		0.3		0.2		0.2	
pool, 3 glide, 4 run, 5 riffle)	3		3		4		3		3	
Refuges in channel		in patch, mair	type(s) search	ed in red	VEC		VEC		VEO	
cobble (6.5-15cm) cobble (15-25.6cm)			YES YES		YES YES		YES YES		YES YES	
boulder (25.6-40cm)			YES		YES		YES		YES	
boulder (>40cm)			YES		YES		YES		YES	
rubble (give size)	.20		.20						. 20	
woody debris	YES		YES							
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)										
sand (<2mm)										
clay silt										
Ciltation none										
	YES		YES		YES		YES		YES	
moderate										
high										
Refuges in bank none	YES		YES		YES		YES		YES	
cobble/boulder									<u> </u>	
tree roots, large									1	
vertical or undercut bank							1			
dry stone wall other reinforced										
crayfish burrows										
Shading above	NONE		NONE		MOD		NONE		NONE	
Crayfish/10 refuges, or per										
unit (depending on method) Search time (Mins)	5		0 10		0 10		10		5	
Bullhead present?			10		10		10		YES	
Evaluation crayfish		Notes (surv	ey conditions, p	atches etc.):	Stone loach	, heron	1	l	10	
habitat for whole site (0 none, 1 pres., 2 freq., 3 abund.)	Score	·								
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			-				-		

	CRA	YFISH H	ABITAT	SURVEY I	FORM		
Catalymant	Mara	Divor	Га		Site (no.	,	10
Catchment	Wye	River	Edw		name) Grid ref.		10
Date (dd/mm/yy)	29/08/2015 s	DR LW			(d/s end)	SO 1248 5118	3
Weather, good 1, mod 2, poor 3	Flow norm 1, low 2, fall 1 3, rise 4		Water temp. oC		rity, d 1, mod oor 3	1	
Photo ref. &			Tompro o o		<b>然</b> 态学		100
Location	Edw10				W. W. S.		40
Site length (m)	100					' <b>.</b>	
Width abannal (m)	Descript. (channel features,	immediately	downstrea	ng. Cattle poacl am of site. Acce	~		
Width channel (m)	6 landuse) sample patch 1	down very s		sample patch 3	3 sample p	oatch 4 sar	nple patch 5
Survey method, std 1, quad							
2, net/kick 3, trap 4, view 5	1 & 4	1 8	k 4	1 & 4	1	1 & 4	1 & 4
Details (if not standard)							
Extent (I x w patch)	2x1	3x3		4x1	2>	6	1x4
Channel (1 margins, 2 mid, 3 both, other specify)	1	3		1		3	3
Depth (metres) Feature (1 marg. d'water, 2	0.3	0.4		0.2	0.2	C	0.3
pool, 3 glide, 4 run, 5 riffle)	2	3		2		4	3
Refuges in channel	tick all present in patch, mai		ned in red				
cobble (6.5-15cm)		YES		YES	YES	YE	
cobble (15-25.6cm)		YES		YES	YES	YE	
boulder (25.6-40cm)		YES		YES	YES	YE	
boulder (>40cm)	YES	YES		YES	YES	YE	S
rubble (give size)	\/T0			\(\(\tau\)			
woody debris				YES			
other urban debris							
tree roots, fine		VEC			\/F0		
moss		YES		VEC	YES	VE	0
filamentous algae other submerged veg.	TES	YES		YES	YES	YE	3
emergents							
Main substrate beneath							
bedrock	YES	YES		YES	YES	YE	S
cobble (6.5-15cm)							-
pebble (<6.5cm)							
gravel (<1.6cm)							
sand (<2mm)							
clay							
silt							
Siltation none							
	YES	YES		YES	YES	YE	S
moderate							
high					),/50		
Refuges in bank none	VEC	VEC		VEC	YES	\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	0
cobble/boulder		YES		YES		YE	
tree roots, large		YES				YE	0
vertical or undercut bank							
dry stone wall							
other reinforced		<del>                                     </del>					
crayfish burrows	MOD	HEAVY		MOD	MOD	MC	)D
Shading above Crayfish/10 refuges, or per	IVIOD	I IEAV I		IVIOD	IVIOD	IVIC	טי
unit (depending on method)	0	0		0		0	0
Search time (Mins)	5	10		10	1	5	5
Bullhead present?	YES	YES				YE	S
Evaluation crayfish habitat for whole site (0 none, 1 pres., 2 freq., 3 abund.)	Score	ey conditions, p	patches etc.):	Stone loach			
in margins	3						
in mid channel	3						
in banks	3						
surveyability	3						
Total crayfish (by 1 method, note total(s) by other methods in notes if applicable)	0						

Catchment	Wye		River	Edw			Site (no., name)		11	
		_					,			
Date (dd/mm/yy)	14/10/2014	Surveyors	DR LW				Grid ref.	SO 12602 52	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. &						i		2		
Location	At 300m							7	- 中華学生	
Site length (m)	400									
Width channel (m)	5	Descript. (channel features, landuse)						Town of the second		
Company and the aid	sample patch 1		sample pat	tch 2	sample pat	tch 3	sample patch	4	sample patch	n 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)	5x1		3x1		5x1		2x2		4x1	
Channel (1 margins, 2 mid, 3 both, other	500									
specify)	3		1		1		1		3	
Depth (metres) 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		4		4	
riffle) Refuges in	3		I		3		4		4	
channel	tick all present in p	patch, main type(s		in red	\/F0		VE0.		VEO	
cobble (6.5-15cm) cobble (15-	YES		YES		YES		YES		YES	
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		YES		YES		YES	
woody debris other urban debris									YES	
tree roots, fine									120	
moss										
filamentous algae										
other submerged veg.										
emergents										
Main substrate beneath					1					
bedrock	1								-	

cobble (6.5-15cm)						
pebble (<6.5cm)						
gravel (<1.6cm)						
sand (<2mm)						
clay						
silt	YES		YES	YES	YES	YES
Siltation none						
low						
	VEC		YES	VEC	VEC	VEC
moderate	YES		YES	YES	YES	YES
high Refuges in bank						
none						
cobble/boulder			YES	YES	YES	
tree roots, large	YES		YES			YES
vertical or						, = 9
undercut bank						
dry stone wall						
other reinforced						
crayfish burrows						
Shading above	MOD		MOD	MOD	MOD	MOD
Crayfish manually						
Crayfish by trap						
Total crayfish caught						
Evaluation		Notes (survey o	conditions, patche	es etc.):		
crayfish habitat						
for whole site (0 none, 1 pres., 2						
freq., 3 abund.)	Score					
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					

Date (add/mm/yy)							Site (no.,		
Vestinary good 1, mod 2, poor 3	Catchment	Wye		River	Edw		name)		12
Weather, good 1, 2   low 2, fall 3,   rise 4	Date (dd/mm/yy)	14/10/2014	Surveyors	DR LW			Grid ref.	SO 12384 5	3394
Site length (m)		2	low 2, fall 3,	4					1300-1500
Site length (m)	Photo ref. &								
Descript. (channel (m)   S   Series of pools with slow flowing glides   Series of pools with slow flowing   S	Location	In first 100m					<b>国家总统</b>	1 47 5	11.2
Channel   Chan	Site length (m)	400							
Survey method, std 1, quad 2, net/kick 3, trap 4, view 5	Width channel (m)	5	(channel features,		ols wit	th slow flowing			
std 1, quad 2, netkick 3, trap 4, view 5  1 8 4  1		sample patch 1		sample pato	h 2	sample patch 3	sample patch 4	l .	sample patch 5
Standard	std 1, quad 2, net/kick 3, trap 4, view 5	1 &	4	1 & 4		1 & 4	1 &	4	1 & 4
Extent (1 x w patch)   2x1									
Channel (1 margins, 2 mid, 3 both, other specify)		2x1		3 <sub>Y</sub> 1		3x2	3v1		2x1
Depth (metres)   Dept	Channel (1 margins, 2 mid, 3 both, other	EAT					- CAT		
Feature (1 marg, dwater, 2 pool, 3 glide, 4 run, 5 riffle)	specify)	1		1		3	1		1
Sefuges in channel   Cobble (6.5-15cm)		0.2		0.2		0.3	0.2		0.2
Refuges in channel         tick all present in patch, main type(s) searched in red           cobble (6.5-15cm) cobble (15- 25.6cm) boulder (25.6-40cm) boulder (>40cm) rubble (give size) woody debris other urban debris tree roots, fine moss         YES	d'water, 2 pool, 3								
tick all present in patch, main type(s) searched in red  cobble (6.5-15cm)     cobble (15-         25.6cm)     boulder (25.6-         40cm)     boulder (>40cm)     boulder (>40cm)     rubble (give size)     woody debris     tree roots, fine     moss filamentous algae other submerged veg.     emergents  Main substrate beneath     bedrock      YES     YES  YES	riffle)	3		3		2	3		3
Cobble (15-   25.6cm)		tick all present in	patch, main type	(s) searched i	n red				
25.6cm) boulder (25.6-40cm) boulder (>40cm) boulder (>40cm) boulder (>40cm) boulder (>40cm) rubble (give size) woody debris tree roots, fine moss filamentous algae other submerged veg. emergents		YES		YES		YES	YES		YES
VES	25.6cm)	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  bedrock YES  YES  YES  YES  YES  YES  YES  YES		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		YES
other urban debris tree roots, fine moss filamentous algae other submerged veg. emergents  Main substrate beneath bedrock YES YES YES YES YES YES YES YES  YES		\/				\/F0			
tree roots, fine moss filamentous algae other submerged veg. emergents  Main substrate beneath  bedrock  YES  YES  YES  YES  YES  YES  YES  YE	· ·	YES				YES			
filamentous algae other submerged veg. emergents  Main substrate beneath  bedrock  YES  YES   Main substrate YES		YES		YES		YES	YES		YES
filamentous algae other submerged veg. emergents  Main substrate beneath  bedrock  YES  YES  YES				. = 5		.==	.=-		
veg. emergents  Main substrate beneath  bedrock  YES  YES  YES	filamentous algae								
Main substrate beneath  bedrock YES YES									
	Main substrate								
cobble (6.5-15cm)	bedrock	YES	_	YES					
	cobble (6.5-15cm)								

		ī	Í	1	ı
					YES
			YES	YES	
YES		YES	YES	YES	YES
		YES		YES	
		YES			YES
YES			YES		
LIGHT		LIGHT	HEAVY	HEAVY	MOD
	NI=1== /=				
	Notes (survey	conditions, pater	nes etc.):		
Score					
2					
2					
2					
2	1				
	1				
	YES  LIGHT  Score  2 2	YES  LIGHT  Notes (survey)  Score  2 2 2 2	YES YES  YES  VES  VES  Notes (survey conditions, patch  Score  2 2 2 2 2	YES YES YES  YES  YES  VES  Notes (survey conditions, patches etc.):	YES YES YES YES  YES YES YES  YES YES  YES

Catchment	Wye		River	Edw			Site (no., name)		13	
Date (dd/mm/yy)	14/10/2014	Surveyors	DR, LW				Grid ref.	SO 12047 5	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. &								1		101
Location	In first 100m.						West of Fig.			
Site length (m)  Width channel (m)	400	Descript. (channel features, landuse)	Land use - access.							
	sample patch 1		sample pat	tch 2	sample pat	tch 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) Channel (1	5x1		7x1		2x2		2x2		5x1	
margins, 2 mid, 3 both, other specify)	1		1		3		2		1	
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)	4		4		5		4		3	
Refuges in channel	tick all present in	patch, ain type(s	l	n red						
cobble (6.5-15cm)	YES	p	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			
cobble (6.5-15cm)								· · · · · · · · · · · · · · · · · · ·		

	Ī	I		I	1	I .
pebble (<6.5cm)						
gravel (<1.6cm)						
sand (<2mm)	YES					YES
clay						
silt						
Siltation						
none						
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 crayfish habitat		Notes (survey c	onditions, patc	hes etc.):		
for whole site (0						
none, 1 pres., 2						
freq., 3 abund.)	Score					
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					

						Site (no.,		
Catchment	Wye		River	Edw		name)		14
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. &						N. STATE	E CONTRACTOR	
Location	In first 100m							
Site length (m)  Width channel (m)	100	Descript. (channel features, landuse)		stock	ulture with access to water. m road bridge			
	sample patch 1	·	sample pa		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 patch)	3x2		3x2		3x2	4x2		4x2
Channel (1 margins, 2 mid, 3 both, other	OXL				ONE			-7/12
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 channel	tick all present in	patch,main type(s	s) searched i	n red				<del>,</del>
cobble (6.5-15cm)	YES		YES		YES	YES		YES
cobble (15- 25.6cm) boulder (25.6-	YES		YES		YES	YES		YES
40cm)	YES		YES		YES	YES		YES
boulder (>40cm)			YES					
rubble (give size)	YES		YES					
woody debris other urban debris	169		150					
tree roots, fine	YES		YES		YES	YES		YES
moss								
filamentous algae other submerged veg.								
emergents Main substrate beneath								
bedrock								
cobble (6.5-15cm)						YES		

( )	I		I	1	I	1
pebble (<6.5cm)						
gravel (<1.6cm)	YES		YES			
sand (<2mm)						
clay						
silt				YES		YES
Siltation						
none						
low	YES		YES	YES	YES	YES
moderate						
high						
Refuges in bank none	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		Notes (survey o	anditions natabox	oto ): Approximate	ely 6 years ago local resident r	apartad aroufish martality
Evaluation crayfish habitat		Only dead cray	fish found; no mori	bund. Wye and Us	sk Foundation informed but no	cause identified.
for whole site (0		,	,	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,		
none, 1 pres., 2						
freq., 3 abund.)	Score					
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					

Catalomant	10/1/0		River	Edw			Site (no.,		45	
Catchment	Wye		Rivei		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. &								St. W	在 中 中	<b>美国教育</b>
Location	In first 100m						1 1/2	10.0		
Site length (m)	100	Descript. (channel features,	Land use - q stock access deep pools a Some mud	ss in are and sma anks w	eas. Areas of all stony riffle	f				
Width channel (m)	2.5 sample patch 1	landuse)	crayfish burr sample patcl		sample pate	ch 2	sample patch 4	SHIP AND PROPERTY.	sample patch	5
Survey method, std 1, quad 2, net/kick 3, trap 4, view 5	1 &	. 4	1 & 4	112	1 & 4		1 &		1 & 4	
Details (if not standard)										
Extent (I x w patch)	5x1		3x2		4x2		6x2		3x2	
Channel (1 margins, 2 mid, 3 both, other							_			
specify)	1		3		3		3		3	
Depth (metres) Feature (1 marg. d'water, 2 pool, 3	0.3		0.3		0.3	0.3 0.2		0.4		
glide, 4 run, 5 riffle)	4		3		3		3		3	
Refuges in channel	tick all present in	patch, main type	e(s) searched in	n red						
cobble (6.5-15cm)	YES	•	YES		YES		YES		YES	
cobble (15- 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)										
woody debris other urban debris				+						
tree roots, fine	YES		YES	+	YES		YES			
moss	120		120				120			
filamentous algae other submerged										
veg. emergents Main substrate										
beneath				T						
bedrock cobble (6.5-15cm)										
(0.5° 15011)			<u> </u>	1					D (0	

	I			I	I	I
pebble (<6.5cm)						
gravel (<1.6cm)						
sand (<2mm)						
clay						
silt	YES		YES	YES	YES	YES
Siltation						
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		Notes (survey co	onditions, patches	etc.):		
crayfish habitat						
for whole site (0 none, 1 pres., 2						
freq., 3 abund.)	Score					
in margins	3					
in mid channel	3					
in banks	3					
Problems	3					
pollution 1,						
erosion 2, (E if						
>33% arrected),						
Total crayfish (by						
1 method, note						
total(s) by other						
if applicable)	0					
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	3					

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. &							No.	
Location	In first 100m							A STATE OF THE STA
Site length (m)	100	Descript. (channel features,	Land use gra	azing a	and woodland.			
Width channel (m)	3	landuse)	Highly agricu	Itural	area.	No. of the same		Service Committee
O at the ad	sample patch 1		sample patch	n 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) 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) Refuges in channel	4 tick all present in	notab main tuno	3	o rod	3	5		2
cobble (6.5-15cm)	YES	paton, main type	YES	Tica	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 filamentaria algae								
filamentous algae other submerged veg.								
emergents Main substrate								
beneath								1
bedrock cobble (6.5-15cm)								
CODDIE (6.5-15CIII)	L		I		1			

	1		1	1	1	ı
pebble (<6.5cm)						
gravel (<1.6cm)					YES	
sand (<2mm)						
clay	YES		YES	YES		YES
silt	-			-		-
Siltation						
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			1.00			1-2
undercut bank						
dry stone wall						
other reinforced						
crayfish burrows						
Shading above	HEAVY		HEAVY	MOD	MOD	MOD
Crayfish manually						
Crayfish by trap						
Total crayfish						
caught		Notes (sum es)	aanditiana natah	aa ata \.\/ariabla r	actobac with lota of falls	n trees. Deep stone layer to reach
Evaluation crayfish habitat for whole site (0 none, 1 pres., 2		substrate.	conditions, pater	es etc.). Valiable p	datches with lots of faller	it trees. Deep storie layer to reach
freq., 3 abund.)	Score					
in margins	3					
in mid channel	3					
in banks	3	1				
surveyability	3	1				
Problems	J					
pollution 1,						
erosion 2, (E if						
>33% affected), aliens 3.						
Total crayfish (by		1				
1 method, note						
total(s) by other						
methods in notes if applicable)	0					
п аррпсавіс)		l .				

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

		CRAYFIS	SH HABITAT	SURVEY FORM		
Catalanant	10/1-10		Diver	Official d	Site (no.,	_
Catchment	Wye		River	Offeiriad	name) Grid ref.	1
Data (dd/mm/u)	13/10/2014	Cumiouono	DD IW		(d/s	SO 09650 43123
Date (dd/mm/yy)	13/10/2014	Surveyors Flow norm	DR LW		end)	Start Start
		1, low 2,				and
Weather, good 1, mod 2, poor 3	1	fall 3, rise	1			finish time 1100-1300
Photo ref. &			·			1100 1000
Location	view upstream	from roadbrid	lae			
Site length (m)	100					
Width channel (m)	5	Descript. (channel features, landuse)	Land use - v urban. Otter	d through garden. woodland and rs known to be in I habitat present.	Mas.	A A
	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)	1x3		2x2	2x2	3x1	3x2
Channel (1 margins, 2 mid, 3 both, other specify)	3		2	3	1	3
Depth (metres)	0.3		0.4	0.2	0.1	0.3
Feature (1 marg. d'water, 2 pool, 3 glide, 4 run, 5 riffle)	1		3	4	4	3
Refuges in channel	tick all present	in patch, mair	n type(s) sear	ched in 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)	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 beneath						
bedrock						YES
cobble (6.5-15cm)						
(0.0 10011)	l		1			l .

pebble (<6.5cm)						
gravel (<1.6cm)	YES		YES	YES	YES	
sand (<2mm)						
clay						
silt						
Siltation						
none	YES		YES	YES	YES	YES
low	11.3		ILO	TLS	1123	ILS
moderate						
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 Total crayfish						
caught						
Evaluation crayfish		Notes (surv	ey conditions,	patches etc.):		
habitat for whole site (0 none, 1	Score					
pres., 2 freq., 3						
abund.)						
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)	0					
by other methods in notes if applicable)						
notes if applicable)						

Catchment	Wye		River	Offeiria	ad	Site (no., name)	2	
Data (dd/mm/m)	13/10/2014	Curvovoro	DR LW		Grid ref.	SO 0954	2 42620	
Date (dd/mm/yy)  Weather, good 1, mod 2, poor 3	13/10/2014	Flow norm 1, low 2, fall 3, rise 4	DR LW			Gild fei.	Start and finish time	0900-1100
Photo ref. &								AS A L
Location	Mid Point at footbridge							
Site length (m)	100							
Width channel (m)	6	Descript. (channel features, landuse)	Access down very steep woodland footpath. Landuse - woodland. Series of riffles and pools, some very deep. Excellent habitat throughout.					
	sample patch 1		sample patch 2		ample atch 3	sample patch 4		sample patch 5
Survey method, std 1, quad 2, net/kick 3, trap 4, view 5 Details (if not standard)	1 &	4	1 & 4		1 & 4	1 &	4	1 & 4
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 in	patch, n	main type(s) se	earched in re	d	
cobble (6.5-15cm)	YES		YES		ΈS	YES		YES
cobble (15-25.6cm)	YES		YES		ΈS	YES		YES
boulder (25.6-40cm)	YES		YES		ES	YES		YES
boulder (>40cm)	YES		YES		ES	YES		YES
rubble (give size)	YES		YES		ES	YES		YES
woody debris								
other urban debris								
tree roots, fine								
moss								
filamentous algae								
other submerged veg.								
emergents								
Main substrate beneath						_		
bedrock	YES		YES	Y	ΈS	YES		YES
cobble (6.5-15cm)								
pebble (<6.5cm)								
gravel (<1.6cm)								

sand (<2mm)						
clay						
silt						
Siltation						
none	\( = 0		\/=0	\/=0	\/=0	\/T0
low	YES		YES	YES	YES	YES
moderate						
high						
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
Crayfish manually						
Crayfish by trap Total crayfish						
caught						
		Notes (surve	ey conditions, par	tches etc.):		
Evaluation crayfish	Score					
habitat for whole site (0 none, 1 pres., 2	Score					
freq., 3 abund.)						
in margins	3					
in mid channel	2					
in banks	1					
surveyability	2					
Droblems pollution 1						
Problems pollution 1, erosion 2, (E if >33%						
affected), aliens 3.						
Total crayfish (by 1 method, note total(s)						
by other methods in	0					
notes if applicable)						

Catchment	Wye		River	Of	feiriad	Site (no., name)	3	
Date (dd/mm/yy)	12/10/2014	Surveyors	DR LW			Grid ref.	SO 08	926 42561
Weather, good 1, mod 2, poor 3	1	Flow norm 1, low 2, fall 3, rise 4	1			101.	Start and finish time	1500-1700
Photo ref. &								
Location  Site length (m)	In 1st 100m 100		Access v					
Width channel (m)	7	Descript. (channel features, landuse)	across fictorial very steed bank. Ex surveyab there.Go	p w celle	ent once			
	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 8	. 4	1 & 4		1 & 4	1 &	4	1 & 4
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,	main type(s)	searched in 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 other urban debris								
tree roots, fine								
moss filamentous algae								

other submerged					
veg.					
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					
high					
Refuges in bank	YES	YES	YES	YES	YES
none		1	+	+	
cobble/boulder		T			
tree roots, large					
vertical or					
undercut bank					
dry stone wall					
other reinforced					
crayfish burrows				LIE AN AV	115 4) ///
Shading above Crayfish	HEAVY	HEAVY	HEAVY	HEAVY	HEAVY
manually					
Crayfish by trap					
Total crayfish					
caught					
Evaluation					
crayfish habitat					
for whole site (0	Score				
none, 1 pres., 2 freq., 3 abund.)					
	2				
in margins in mid channel	2				
in mid channel	1				
	3				
surveyability Problems pollution	3				
1, erosion 2, (E if					
>33% affected),					
aliens 3.  Total crayfish (by					
1 method, note					
total(s) by other	0				
methods in notes if applicable)					
applicable)					

		ONATIO	H HABITAT SU	INVETTORM		1
Catchment	Wye		River C	ffeiriad	Site (no., name)	4
Date (dd/mm/yy)  Weather, good 1, mod	12/10/2014	Surveyors Flow norm 1, low 2, fall 3, rise	DR LW			SO 08596 42386 Start and finish
2, poor 3	1	4	1			time 1300-1500
Photo ref. &					<b>电影</b>	- F45
Location	In 1st 100m					
Site length (m)	100					
Width channel (m)	7	Descript. (channel features, landuse)	Access down wooded banks woodland and good habitat t	s. Land use - grazing. Looks		
	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)	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 glide, 4 run, 5 riffle)	4		5	4	3	4
Refuges in channel		tick	all present in pa	tch, main type(s) s	earched in 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						
other urban debris						
tree roots, fine						
moss						
filamentous algae						
other submerged veg.						
emergents  Main substrate beneath			<u> </u>		1	
bedrock	V=0		\/=a	\/=-	\	1.7-5
cobble (6.5-15cm)	YES		YES	YES	YES	YES
pebble (<6.5cm)						
gravel (<1.6cm)					_	

sand (<2mm)						
clay						
silt						
Siltation						
none	\( (= 0		\/=0	\/=0	\/=0	\/F0
low	YES		YES	YES	YES	YES
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 Total crayfish						
caught						
		Notes (surve	y 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	0					
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	Offe	iriad	Site (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. &						WHAT IN LA	No.	
Location	Upstream end					1 × 1	10.0	<b>基本</b>
Site length (m)	100							
Width channel (m)	6	Descript. (channel features, landuse)	Access goo Land use g woodland. river.	razing	g and			
	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)	3x2		1x5		5x1	1x6		3x3
Channel (1 margins, 2 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	, 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 YES		YES YES
boulder (>40cm) rubble (give size)	YES		YES		YES	123		123
woody debris								
other urban debris								
tree roots, fine								
moss								
filamentous algae								
other submerged veg.								
emergents								
Main substrate beneath								
bedrock								
cobble (6.5-15cm)								
pebble (<6.5cm)	\( (50)		\/F0		VE0	\/50		\/F0
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 vertical or undercut bank						
dry stone wall						
other reinforced						
crayfish burrows						
Shading above	MOD		HEAVY	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	Notes (surve	ey conditions, pa	atches etc.):		
in margins	3					
in mid channel	3					
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 applicable)	0					

		<b></b>	T HABITAT 30				
Catchment	Wye		River C	ffeiriad	Site (no., name)	6	
_ , ,,,,							
Date (dd/mm/yy)	12/10/2014	Surveyors	DR LW		Grid ref.	SO07681 4	43093
		Flow norm				and	
Weather, good 1, mod 2, poor 3	1	1, low 2, fall 3, rise 4	1			finish time (	900-1100
Photo ref. &	<u>'</u>	1all 5, 1156 4	'		- 11 - 15 - 15 - 15 - 15 - 15 - 15 - 15	unie (	J900-1100
Location	In 1st 100m					1	
Location	111 131 100111				60,400	A SANSA	and the constitution
	100					Same of	A STORES
					些文章	71	100
Site length (m)					Service of the servic		
					Factor a		A STATE OF
Width channel (m)	4	Descript.	Access anod	via road bridge.			
Width Chamici (m)		(channel	Landuse graz	ing for sheep.			
		features, landuse)	Shaded on or stock on other	e side open to			
	sample	703000)	sample	sample	sample	ç	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 &	4	1 & 4
Details (if not					1		
standard)							
Extent (I x w patch)	2x2		4x2	4x2	2x2		5x1
Channel (1 margins, 2 mid, 3 both, other	2		2	2	1		2
specify)	2		2	2	'		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
		tick :	l all present in pa	tch, main type(s) s	earched in re	- L	
Refuges in channel	YES	uoix c	YES	YES	YES		/ES
cobble (6.5-15cm)	YES		YES	YES	YES		/ES
cobble (15-25.6cm)	YES		YES	YES	YES		/ES
boulder (25.6-40cm)	YES		YES	YES	YES		/ES
boulder (>40cm)	123		123	123	11.5		120
rubble (give size) woody debris							
other urban debris							
	YES						
tree roots, fine							
moss							
filamentous algae							
other submerged veg.							
emergents  Main substrate			<u> </u>	1			
beneath			T		1	<u> </u>	
bedrock					1		
cobble (6.5-15cm)	YES		YES	YES	YES	)	/ES
pebble (<6.5cm)							
gravel (<1.6cm)							

sand (<2mm)					
clay					
silt					
Siltation					
none .	YES	YES	YES	YES	YES
low	TES	163	TES	TES	TES
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.					
Total crayfish (by 1 method, note total(s) by other methods in notes if applicable)	0				

		OKATTIOI	INADITAL	301X ¥	O				
Catchment	Wye		River	Offe	eiriad		Site (no., name)	7	
Date (dd/mm/yy)	11/10/2014	Surveyors	DR LW				Grid ref.		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						A COL	1 LEN	A STATE OF THE STA
Site length (m)	100								
Width channel (m)	5	Descript. (channel features, landuse)	use - wood	dland. erfalls	and pools -			7	£2.
	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) Channel (1 margins, 2	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	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	YES						YES		
other urban debris									
tree roots, fine									
moss									
filamentous algae									
other submerged veg.									
emergents									
Main substrate beneath							Ι		I
bedrock	\		\/=0		\/=C		\		V=0
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
	120	120	120	120	120
moderate					
Refuges in bank					
none					YES
cobble/boulder	YES		1		
tree roots, large		YES	YES	YES	
vertical or undercut					
bank					
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.)	Score				
in margins	3				
in mid channel	3				
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 applicable)	0				

Catchment	Wye		River	Offe	eiriad	Site (no., name)	8	
Data (dd/mm/m)	11/10/2014	Curvoyere	DR LW			Grid ref.	SO 060	33 42733
Date (dd/mm/yy)	11/10/2014	Surveyors Flow norm	DK LW			Gild lei.	Start	33 42733
Weather, good 1, mod 2, poor 3	1	1, low 2, fall 3, rise 4	1				and finish time	1300-1500
Photo ref. &	Downstream e	nd				Commence of	10000	
Location						<b>美国基础</b>		100
Site length (m)	100							
Width channel (m)	5	Descript. (channel features, landuse)		ng an	d bridge. Land d woodland. oughout.			are.
	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)						1		
Extent (I x w patch) Channel (1 margins, 2	3x3		2x4		3x4	2x3		3x2
mid, 3 both, other specify)	3		3		3	2		2
Depth (metres)	0.2		0.2		0.2	0.3		0.3
Feature (1 marg. d'water, 2 pool, 3 glide, 4 run, 5 riffle)	4		5		5	4		4
Refuges in channel		tick	all present in	ı patcl	h, main type(s) s	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)						1		
woody debris						YES		
other urban debris	V=0				\/=0	\/=c		
tree roots, fine	YES				YES	YES		
moss								
filamentous algae								
other submerged veg.								
emergents Main substrate						1		
beneath			T			T		<u> </u>
bedrock	YES		YES		YES	YES		YES
cobble (6.5-15cm)	IES		IES		IEO	150		IES
pebble (<6.5cm)						1		
gravel (<1.6cm)	l .							D 70

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					
dry stone wall					
other reinforced					
crayfish burrows					
Shading above	HEAVY	HEAVY	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				
in margins	3				
in mid channel	3				
in banks	2				
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				

			IIIADIIAI				Site		
Catchment	Wye		River	Offe	eiriad		(no., name)	9	
	,						,		
Date (dd/mm/yy)	11/10/2014	Surveyors	DR LW				Grid ref.		64 42414
		Flow norm 1, low 2,						Start and	
Weather, good 1, mod		fall 3, rise						finish	
2, poor 3	1	4	1					time	1100 - 1300
Photo ref. &									
Location	Mid point						Park		A STATE OF THE PARTY OF THE PAR
								- A	
	100						1	200	
	100							964	and the same
Site length (m)									47
One longer (m)									Se Tree
					road bridge left bank wit				120
Width channel (m)	4	Descript.	some eros	on. R	ight side field	d		100	
, ,		(channel	with occas	onal	shading. Lan	nd			
		features, landuse)	throughout		Good habitat				
	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 &	4	1 & 4
Details (if not									
standard)									
Extent (I x w patch)	2x3		2x4		2x4		3x1		3x3
Channel (1 margins, 2									
mid, 3 both, other specify)	2		2		3		3		1
	0.3		0.2		0.3		0.3		0.2
Depth (metres) Feature (1 marg.	0.0		0.2		0.0		0.5		0.2
d'water, 2 pool, 3	4		4		4		4		5
glide, 4 run, 5 riffle)									
Refuges in channel		tick	all present in	patcl	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									YES
other urban debris									
tree roots, fine	YES								
moss									
filamentous algae									
other submerged veg.									
emergents									
Main substrate			ı		ı		1		ı
beneath							I		
bedrock	\/F0		\/F0		\/F0		\/F6		\/F0
cobble (6.5-15cm)	YES		YES		YES		YES		YES
pebble (<6.5cm)									
gravel (<1.6cm)	l								

\ ( O\)					
sand (<2mm)					
clay					
Siltation					
none					
low	YES	YES	YES	YES	YES
moderate					
high					
Refuges in bank					
cobble/boulder	YES	YES	YES	YES	YES
tree roots, large	YES	YES	YES	YES	YES
vertical or undercut					
dry stone wall					
other reinforced					
crayfish burrows					
Shading above	MOD	HEAVY	HEAVY	MOD	HEAVY
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.	2				
Total crayfish (by 1 method, note total(s) by other methods in notes if applicable)	0				

Catchment	Wye		River		eiriad	Site (no., name)	10
Date (dd/mm/yy)	11/10/2014	Surveyors Flow norm	DR LW			Grid ref.	SO 05861 42621 Start
		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							<b>创始</b> 为意思
Site length (m)	100						
Width channel (m)	3	Descript. (channel features, landuse)	banks. Hea	avily v e tree	eep wooded wooded with roots. Land use access to river.		ACCEPTANT OF THE PARTY OF THE P
	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)	3x3		3x3		4x2	3x3	3x3
Channel (1 margins, 2 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. d'water, 2 pool, 3 glide, 4 run, 5 riffle)	3		4		4	3	4
Refuges in channel		tick	all present in	patc	h, main type(s)	searched 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						
rubble (give size)	\/F0				\/F0		
woody debris	YES				YES		
other urban debris			VE0				
tree roots, fine			YES				
moss							
filamentous algae							
other submerged veg.							
emergents  Main substrate					1		
beneath			1		1		
bedrock	YES						
cobble (6.5-15cm)			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						
cobble/boulder	YES			YES	YES	YES
tree roots, large			YES	YES	YES	YES
vertical or undercut bank						
dry stone wall						
other reinforced						
crayfish burrows						
Shading above	HEAVY		HEAVY	HEAVY	HEAVY	HEAVY
Crayfish manually						
Crayfish by trap Total crayfish						
caught						
			vnstream end of	site was on bedi	rock with fewer refug	ges. Patch 2 like Site
Evaluation crayfish habitat for whole site (0 none, 1 pres., 2 freq., 3 abund.)	Score	9.				
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					

		OKATTIOI	INADIIAI	30111	LITORW		Site		
Catchment	Wye		River	Offe	eiriad		(no., name)	11	
Date (dd/mm/yy)	10/10/2014	Surveyors	DR LW				Grid ref.		69 43142
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. &								To be worked to	T market said
Location	Downstream e	nd					THE ENGLISH		
Site length (m)	100								
Width channel (m)	3	Descript. (channel features, landuse)	use grazin	g adja	farmyard. La acent to ust upstream		4 7 7 2 1 3		
	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) 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.									
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						
low	YES		YES	YES	YES	YES
moderate						
high						
Refuges in bank 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		
		Notes (surve	y conditions, pate	ches 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	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)	8					

					ETFURIN				
Catchment	Wye		River	Offe	iriad		Site (no., name)	12	
Date (dd/mm/yy)	10/10/2014	Surveyors	DR LW				Grid ref.		35 43457
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. &							100		50.
	In 1st 100m						- CALLER		
Site length (m)	100	Descript							
Width channel (m)	3	Descript. (channel features, landuse)	Good acce Land use - woodland		ross steep fi ng and	ield.			
	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) Channel (1 margins, 2	3x2		2x2		3x1		5x2		3x3
mid, 3 both, other specify)	3		3		1		1		2
Depth (metres) Feature (1 marg.	0.4		0.3		0.3		0.2		0.3
d'water, 2 pool, 3 glide, 4 run, 5 riffle)	5		4		4		5		5
Refuges in channel		tick a	all present in	patch	n, main type(	(s) sea	arched in re	d	
_	YES		YES		YES		YES		YES
	YES		YES		YES		YES		YES
000010 (10 20100111)	YES		YES		YES		YES		YES
boulder (>40cm)					YES				
rubble (give size)									
woody debris									
other urban debris									
	YES		YES		YES		YES		YES
moss									
filamentous algae									
other submerged veg.									
emergents  Main substrate									
beneath						-			
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
tree roots, large						
vertical or undercut bank	YES		YES			
dry stone wall						
other reinforced						
crayfish burrows						
Shading above	HEAVY		MOD	MOD	MOD	MOD
Crayfish manually	1		3	4	2	
Crayfish by trap				22		
Total crayfish caught				32		
Evaluation crayfish habitat for whole site (0 none, 1 pres., 2 freq., 3 abund.)	Score	Patch 1 - ear	th banks on right	side		
in margins	3					
in mid channel	3					
in banks	2					
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)	32					

Catchment	Wye		River	Offeiriad		Site (no., name)	13		
Date (dd/mm/yy)	10/10/2014	Surveyors	DR LW			Grid ref.	SO 037	71 43539	
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. &						I			
Location	In 1st 100m					1	Service of the servic	1 N. C.	
Site length (m)	100								
Width channel (m)	3	Descript. (channel features, landuse)	wooded bar woodland a limited stock	n moderately and use and grazing with access to was excellent had	h iter.				
	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)	3x3		2x3	3x	3	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 p	oatch, main ty	pe(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)	VE0					VEC		VE0	
woody debris	YES					YES		YES	
other urban debris	VEC		VEC	VEC		VEC			
tree roots, fine	YES		YES	YES		YES			
moss									
filamentous algae									
other submerged veg.									
emergents  Main substrate									
beneath									
bedrock									
cobble (6.5-15cm)									
pebble (<6.5cm)									
gravel (<1.6cm)	YES		YES	YES		YES		YES Page 88	

sand (<2mm)					
clay					
silt					
Siltation					
none .	YES	YES	YES	YES	YES
low	YES	YES	YES	YES	YES
moderate					
high					
Refuges in bank none		 YES			
cobble/boulder					
tree roots, large	YES		YES	YES	YES
vertical or undercut bank					
dry stone wall					
other reinforced					
crayfish burrows					
Shading above	HEAVY	HEAVY	HEAVY	MOD	HEAVY
Snauling above		1127001	1127171	IIIOD	112711
Crayfish manually	3	10	12	1	4
Crayfish by trap			18		
Total crayfish caught			48		
Evaluation crayfish habitat for whole site (0 none, 1 pres., 2 freq., 3 abund.)	Score			rrows. An otter holt ha d to use it. Photo of c	
in margins	3	100		A CONTRACTOR OF THE PARTY OF TH	
in mid channel	3		1600		
in banks	3				4
surveyability	3	4/40/			3
Problems pollution 1, erosion 2, (E if >33% affected), aliens 3.  Total crayfish (by 1 method, note total(s)	48				
by other methods in notes if applicable)	_				ď

						Site (no.,		
Catchment	Wye		River	Offe	eiriad	name)	14	
Date (dd/mm/yy)	10/10/2014	Surveyors	DR LW			Grid ref.	SO 030	00 43674
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. &								
Location		In 1	st 100m				S. W. AN	经营业的
Site length (m)	100			and gr Stock				
Width channel (m)	1	Descript. (channel features, landuse)						
	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)	6x1		4x1		5x1	6x1		6x1
Channel (1 margins, 2 mid, 3 both, other specify)	3		3		3	3		3
Depth (metres)	0.1		0.2		0.2	0.2		0.2
Feature (1 marg. d'water, 2 pool, 3 glide, 4 run, 5 riffle)	5		4 4		4		4	
Refuges in channel		tick	all present ir	n patc	h, main types s	earched in red	Ł	
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					
rubble (give size)						\/=0		
woody debris						YES		
other urban debris								
tree roots, fine								
moss								
filamentous algae								
other submerged veg.	YES		YES		YES	YES		YES
emergents  Main substrate								
beneath								
bedrock								
cobble (6.5-15cm)								
pebble (<6.5cm)								
gravel (<1.6cm)	YES		YES		YES	YES		YES Page 00

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
Crayfish manually			4	2	1	
Crayfish by trap				7		
Total crayfish caught				14		
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	3					
in banks	3					
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)	14					

Octoberrant	10/	OKATTIO				Site (no.,	45	
Catchment	Wye		River	Offe	eiriad	name)	15	
Date (dd/mm/yy)	09/10/2014	Surveyors	DR LW			Grid ref.		20 43857
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. &						1 3/10	10000	2.120
Location	In 1st 100m						4 1	
Site length (m)	400m							
							A Property	
Width channel (m)	1	Descript. (channel features, landuse)	Access go Low water boulders/s	Ver				
	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)	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 glide, 4 run, 5 riffle)	4		4		4	4		4
Refuges in channel		tick all	present in pa	atch,	ring main type(s	searched in	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					
boulder (>40cm)								
rubble (give size)								
woody debris								
other urban debris								
tree roots, fine								
moss								
filamentous algae	YES		YES		YES	YES		YES
other submerged veg.	11.5		ILS		ILO	ILO		ILS
emergents Main substrate			1		l	1		l
beneath					Ι			<u> </u>
bedrock								
cobble (6.5-15cm)								
pebble (<6.5cm)	YES		YES		YES	YES		YES
gravel (<1.6cm)	ILO		ILO		ILO	IES		ILO

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
Crayfish manually					2	1
Crayfish by trap				9		
Total crayfish caught				12		
Evaluation crayfish habitat for whole site (0 none, 1 pres., 2 freq., 3 abund.)	Score	Notes (surve	y conditions, pa	tches 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)	12					

		ORATIO	I HADIIAI	00111	LITORIN		Site		
							(no.,		
Catchment	Wye		River	Offe	eiriad		name)	16	
Date (dd/mm/yy)	09/10/2014	Surveyors	DR LW				Grid ref.		21 44210
Weather, good 1, mod		Flow norm 1, low 2,						Start and finish	
2, poor 3	1	fall 3, rise 4	1					time	0900-1100
Photo ref. &								1 6 6 6	5000 A MARINE
Location	In 1st 100m							100	
								W 10	NAME OF THE PARTY
	400						<b>医</b> 阿罗塞曼	er in Sa	100
	400								
Site length (m)									
, , , , , , , , , , , , , , , , , , ,									1 3 Sept. 19
							College.	Ass. A pos	
Width channel (m)	0.5	Descript.							
		(channel features,	Access go	od wa	alking from re	oad.			
		landuse)			oulders/stor				
	sample		sample		sample		sample		sample
Our and the death of the	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	. 18		4	1 & 4
Details (if not standard)									
	4x0.5		4x0.5		5x0.5		5x0.5		5x0.5
Extent (I x w patch) Channel (1 margins, 2	470.0		470.0		0X0.0		0.00.0		3.0.3
mid, 3 both, other	3		3		3		3		3
specify)									
Depth (metres)	0.2		0.2		0.2		0.2		0.2
Feature (1 marg.	4		4		4		4		
d'water, 2 pool, 3 glide, 4 run, 5 riffle)	4		4		4		4		4
Refuges in channel		tick	all present i	n pato	h, ring main	type	(s) searched	I	
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									
other urban debris									
tree roots, fine									
moss									
filamentous algae									
other submerged veg.	YES		YES		YES		YES		YES
emergents	YES		YES		YES		YES		YES
Main substrate									
beneath							<u> </u>		
bedrock									
cobble (6.5-15cm)									
pebble (<6.5cm)	YES		YES		YES		YES		YES
gravel (<1.6cm)	1.20		120		1.50		1 120		1.20

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
Crayfish manually				1		
Crayfish by trap				7		
Total crayfish caught				8		
,		Notes (surve	y conditions, patc	hes etc.):		
Evaluation crayfish habitat for whole site (0 none, 1 pres., 2 freq., 3 abund.)	Score					
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)	8					

## 11.13. Appendix M: White-clawed crayfish habitat survey forms for Sgithwen Brook, October 2014 and September 2015

October 2014	and oc	•	YFISH H		SURVE	Y FORI	И			
		OILA		ABITAT	SOILVE		Site (no.,			
Catchment	Wye	Surveyor	River	Sgithwen			name) Grid ref.			1
Date (dd/mm/yy)	01/09/2015		DR LW				(d/s end)	SO 1136 4	147	
Weather, good 1, mod 2, poor	4.0			Water	40	Clarity, good 1, mod	_			
Photo ref. &	1 &	4	1	temp. oC	12	2, poor 3				To the last
Location	Sg01									
Site length (m)		Descript. (channel features,		lens, grazin d walls. Acc						
Width channel (m)	sample patch	landuse)	footpath sample pate	ch 2	sample pat	rch 3	sample pa	tch 4	sample pat	ch 5
Survey method, std 1, quad										
2, net/kick 3, trap 4, view 5  Details (if not standard)	1 &	4	1 8	<u> </u>	1 8	<u> </u>	1 8	<b>§</b> 4	1 8	4
,	1x6		2x6		5x1		3x3		3x2	
Extent (I x w patch) Channel (1 margins, 2 mid, 3					IXC		3X3			
both, other specify)	3		3	8	1		2		2	
Depth (metres)	0.3		0.2	2	0.1		0.3		0.3	
Feature (1 marg. d'water, 2 pool, 3 glide, 4 run, 5 riffle)	5		5	<u>i</u>	4		4		4	
Refuges in channel	tick all present i	n patch, mair	n type(s) search							
cobble (6.5-15cm)			YES		YES		YES		YES	
cobble (15-25.6cm) boulder (25.6-40cm)			YES		YES		YES		YES	
boulder (25.6-40cm) boulder (>40cm)	YES YES		YES YES		YES YES		YES YES		YES YES	
rubble (give size)	11.5		11.5		ILO		ILO		ILO	
woody debris										
other urban debris										
tree roots, fine										
moss filomentous algos										
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)										
sand (<2mm)										
clay										
silt	VEO.		VE0		VE0		VE0		VE0	
Siltation none low	YES		YES		YES		YES		YES	
moderate										
high										
Refuges in bank none										
cobble/boulder tree roots, large	YES		YES		YES		YES		YES	
vertical or undercut bank										
vertical or undercut bank dry stone wall							<u> </u>			
other reinforced										
crayfish burrows										
Shading above Crayfish/10 refuges, or per	HEAVY		HEAVY		HEAVY		HEAVY		HEAVY	
unit (depending on method)	0		0		0		0		0	
Search time (Mins)	10		10		10		5		5	
Bullhead present?	YES	NI-1	YES	<u> </u>			L			
Evaluation crayfish habitat for whole site (0 none, 1 pres., 2 freq., 3 abund.) in margins in mid channel	Score 3	INOTES (surv	ey conditions, p	patches etc.):X	saimonios p	oresent inco	ugnout			
in banks	3									
surveyability	3									
Problems pollution 1, erosion 2, (E if >33% affected), aliens 3.										
Total crayfish (all methods)	0			-						

		CRAY	/FISH H	ABITAT	SURVE	Y FORI	И			
			-				Site (no.,			
Catchment	Wye	Surveyor	River	Sgithwen			name) Grid ref.			2
Date (dd/mm/yy)	01/09/2015		DR LW			01 '	(d/s end)	SO 1102 4	140	
Weather, good 1, mod 2, poor 3	2	Flow norm 1, low 2, fall 3, rise 4	1	Water temp. oC	12	Clarity, good 1, mod 2, poor 3	1			
Photo ref. &			-				1	- 3		
Location Site length (m)	Sg02									
Mildle shows all (m)		Descript. (channel features,	Wooded ar	0						
Width channel (m)	sample patc	landuse) h 1	good sample pate	ch 2	sample pat	tch 3	sample pa	tch 4	sample pa	atch 5
Survey method, std 1, quad										
2, net/kick 3, trap 4, view 5  Details (if not standard)	1 &	4	1 8	<u> </u>	1.8	<u> </u>	1 8	<u> </u>	1	& 4
	3x2		4x1		250		6x1		2x2	,
Extent (I x w patch) Channel (1 margins, 2 mid, 3					3x3					
both, other specify)	3		1		3		1		3	3
Depth (metres)	0.1		0.3		0.2		0.3		0.1	
Feature (1 marg. d'water, 2 pool, 3 glide, 4 run, 5 riffle)	5		2		5		2		5	5
Refuges in channel	tick all present	in patch, mair	type(s) search							
cobble (6.5-15cm)	YES		YES		YES		YES		YES	
cobble (15-25.6cm) boulder (25.6-40cm)			YES YES		YES 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										
bedrock cobble (6.5-15cm)	YES		YES		YES		YES		YES	
pebble (<6.5cm)										
gravel (<1.6cm)										
sand (<2mm)										
clay										
Siltation none	YES		YES		YES		YES		YES	
low	ILO		123		ILO		1123		ILO	
moderate										
high										
Refuges in bank none	VES		YES		VEC		YES		VES	
cobble/boulder tree roots, large	IEO				YES				YES	
vertical or undercut bank										
dry stone wall										
other reinforced										
crayfish burrows	LIE AVAZ		MOD		LIE AV OZ		MOD		LIENY	
Shading above Crayfish/10 refuges, or per	HEAVY		MOD		HEAVY		MOD		HEAVY	
unit (depending on method)	0		0		0		0		C	
Search time (Mins)	YES 5		15		YES 5		15		YES 5	5
Bullhead present?  Evaluation crayfish	150	Notes (sup	ey conditions, p	natches etc \-I		pass	l		IES	1
habitat for whole site (0 none, 1 pres., 2 freq., 3 abund.) in margins in mid channel in banks surveyability	Score 3 3 3 3 3									
Problems pollution 1, erosion 2, (E if >33% affected), aliens 3.  Total crayfish (all methods)	0									

		CRAY	/FISH H	АВІТАТ	SURVE	Y FORI	И			
0-1-11	144		Divers	O mithe common			Site (no.,			0
Catchment	Wye	Surveyor	River	Sgithwen	1		name) Grid ref.			3
Date (dd/mm/yy)	01/09/2015	s	DR LW				(d/s end)	SO 1054 4	135	
Weather, good 1, mod 2, poor	,	Flow norm 1, low 2, fall 3, rise 4	1	Water temp. oC	12	Clarity, good 1, mod 2, poor 3	1			
Photo ref. &		3, 115E 4		temp. 00	12	Ζ, μουί 3		MARIAN	6	
Location	Sg03								100	
	400									
Site length (m)	100	Descript. (channel features,	Wooded/ur	ban. Riffle.	pools bedro	ock and		7		·/#**
Width channel (m)	5	landuse)	waterfalls. A		•					
Survey method, std 1, quad	sample patc	h 1	sample pate	ch 2	sample pa	tch 3	sample pa	tch 4	sample pa	atch 5
2, net/kick 3, trap 4, view 5	1 &	4	1 8	<b>§</b> 4	1 8	<b>§</b> 4	1 8	<b>§</b> 4	1	& 4
Details (if not standard)										
Extent (I x w patch)	5x2		4x1		3x1		4x2		6x2	2
Channel (1 margins, 2 mid, 3 both, other specify)	3		1		1		3		2	
Depth (metres)	0.4		0.2		0.2		0.2		0.3	3
Feature (1 marg. d'water, 2	3		4		5		4		5	
pool, 3 glide, 4 run, 5 riffle)  Refuges in channel	tick all present	in patch mair			. 5		4			,
cobble (6.5-15cm)		paton, mall	YES	.sa m rou	YES		YES		YES	
cobble (15-25.6cm)			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	
other urban debris tree roots, fine			YES						YES	
moss			ILO						ILS	
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)										
sand (<2mm)										
clay										
silt										
Siltation none	YES		YES		YES		YES		YES	
low										
moderate high	<b></b>			-						-
Refuges in bank none	YES			+					YES	
cobble/boulder										
tree roots, large					YES				_	
vertical or undercut bank							<u> </u>			
dry stone wall										
other reinforced										
crayfish burrows	LIEANO.		LIE AVO.	-	LIEAVO		LIE AVC		LIE AVC	
Shading above Crayfish/10 refuges, or per	HEAVY		HEAVY		HEAVY		HEAVY		HEAVY	
unit (depending on method)	0		0		0		0		(	)
Search time (Mins)	5		10		5		10			5
Bullhead present?		N1-4		<u> </u>	YES	. 4. 9. 24	YES			
Evaluation crayfish habitat for whole site (0 none, 1 pres., 2 freq., 3 abund.) in margins in mid channel	Score 3	Notes (surv	ey conditions, p	oatches etc.):/	All Paches (	exnibit exce	ellent habita	ı		
in mid channel in banks	3									
surveyability	3									
Problems pollution 1, erosion	3									
2, (E if >33% affected), aliens 3.										
Total crayfish (all methods)	0									

		CRAY	/FISH H/	ABITAT	SURVE	Y FORI	И			
Catchment	Wye		River	Sgithwen			Site (no., name)			4
Date (dd/mm/yy)	02/09/2015	Surveyor	DR LW	Ogianwon			Grid ref. (d/s end)	SO 1016 4	1091	
Weather, good 1, mod 2, poor 3		Flow norm 1, low 2, fall 3, rise 4		Water temp. oC	12	Clarity, good 1, mod 2, poor 3	1			
Photo ref. &	0-04							1		
Site length (m)	100	Descript. (channel features,	Urban and							
Width channel (m)	sample patc	landuse) h 1	waterfalls. A		d via road to sample pat		sample pa	tch 4	sample par	rch 5
Survey method, std 1, quad 2, net/kick 3, trap 4, view 5	1 &		1.8		1.8			§ 4		& 4
Details (if not standard)	1 00	4	1 0	<del>. 4</del>	1 0	4	1 0	x 4	10	x 4
Extent (I x w patch)	3x1		2x3		4x1		4x1		6x1	
Channel (1 margins, 2 mid, 3 both, other specify)	3		3		1		1		3	
Depth (metres)	0.2		0.3		0.2		0.2		0.4	
Feature (1 marg. d'water, 2 pool, 3 glide, 4 run, 5 riffle)	4		3		5		2		4	
Refuges in channel	tick all present	in patch, mair	_		5				4	
cobble (6.5-15cm)			YES		YES		YES		YES	
cobble (15-25.6cm)			YES		YES		YES		YES	
boulder (25.6-40cm) boulder (>40cm)			YES YES		YES YES		YES YES		YES YES	
rubble (give size)			TES		ILO		TES		TES	
woody debris					YES				YES	
other urban debris										
tree roots, fine			YES		YES				YES	
moss filamentous algae										
other submerged veg.										
emergents										
Main substrate beneath	VE0		VEO		VEO		VEO		VEO	
bedrock cobble (6.5-15cm)	YES		YES		YES		YES		YES	
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		YES		YES		YES	
tree roots, large					YES				YES	
vertical or undercut bank										
dry stone wall										
other reinforced crayfish burrows			<u> </u>				<u> </u>		<u> </u>	
Shading above	HEAVY		HEAVY		HEAVY		HEAVY		HEAVY	
Crayfish/10 refuges, or per unit (depending on method)	0		0		0		0		0	
Search time (Mins)	5		5		5		10		15	
Bullhead present?			YES		YES				YES	
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 3 3 3 3	NOTES (surv	ey conditions, p	vatches etc.):						
Total crayfish (all methods)	0									

		CRAY	/FISH H	ABITAT	SURVE	Y FORI	И			
Catchment	Wye		River	Sgithwen			Site (no., name)			5
Date (dd/mm/yy)	02/09/2015	Surveyor	DR LW	Ogianwon			Grid ref.	SO 0948 4	084	
Weather, good 1, mod 2, poor		Flow norm 1, low 2, fall		Water		Clarity, good 1, mod	(ws end)	30 0948 4	-004	
3 Photo ref. &	1	3, rise 4	2	temp. oC	12	2, poor 3	1			
Location	Sg05						THE STATE OF			
Site length (m)	100	Descript. (channel features,	Woodlanda	•		azing.			P	
Width channel (m)		landuse)	Access from			inh O	a a man la mar	ala 4	e e man la mar	ala C
Survey method, std 1, quad	sample patch		sample pate		sample pat		sample pat		sample par	
2, net/kick 3, trap 4, view 5	1 &	4	1 8	k 4	1.8	k 4	1 8	k 4	1 8	<u> </u>
Details (if not standard)										
Extent (I x w patch) Channel (1 margins, 2 mid, 3	2x2		3x2		3x1		2x2		5x2	
both, other specify)	3		3		1		2		3	
Depth (metres)	0.4		0.2		0.3		0.2		0.3	
Feature (1 marg. d'water, 2 pool, 3 glide, 4 run, 5 riffle)	5		4		2		4		4	
Refuges in channel	tick all present i	n patch, mair					- 4		- 4	
cobble (6.5-15cm)	YES		YES		YES		YES		YES	
cobble (15-25.6cm)			YES		YES		YES		YES	
boulder (25.6-40cm) boulder (>40cm)			YES YES		YES YES		YES YES		YES YES	
rubble (give size)	TES		TES		TES		TES		TES	
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)										
sand (<2mm)										
clay										
silt			\ <del></del>		\ <del></del>		=0			
Siltation none low	YES		YES		YES		YES		YES	
moderate										
high										
Refuges in bank none	YES		\/EC		VEC		YES		YES	
cobble/boulder tree roots, large			YES YES		YES				YES	
vertical or undercut bank			123						ILO	
vertical or undercut bank dry stone wall										
other reinforced										
crayfish burrows						_				_
Shading above Crayfish/10 refuges, or per	HEAVY		HEAVY		HEAVY		HEAVY		HEAVY	
unit (depending on method)	0		0		0		0		0	
Search time (Mins)	10		5		5		10		10	
Bullhead present?  Evaluation crayfish		Notes :	YES ey conditions, p		YES		YES			
habitat for whole site (o none, 1 pres., 2 freq., 3 abund.) in margins in mid channel in banks surveyability	Score 3 3 3 3	TOO Sulv	ey conditions, p	atories etc.).						
Problems pollution 1, erosion 2, (E if >33% affected), aliens 3.  Total crayfish (all methods)	0									

		CRA	YFISH H	ABITAT	SURVE	Y FORI	И			
Catchment	Wye		River	Sgithwen			Site (no., name)			6
	,	Surveyor		OgitiiWeii			Grid ref.	00 0000 4	0.40	0
Date (dd/mm/yy)	02/09/2015	Flow norm	DR LW			Clarity,	(d/s end)	SO 0902 4	.048	
Weather, good 1, mod 2, poor 3	1	1, low 2, fall 3, rise 4	2	Water temp. oC	12	good 1, mod 2, poor 3	1			
Photo ref. &	C-0C						6	*		一個才
Location	Sg06									
							NA.			DESTRUCTION OF THE PARTY OF THE
Site length (m)	100		1 8	. 4	1.8	<b>.</b> 4				
g ()				· ·				7		4
		Descript.							10	7,47
Width channel (m)	5	features,	1 8		1.8	2.4				
	sample patc		sample pate		sample pat		sample pa	tch 4	sample pa	tch 5
Survey method, std 1, quad 2, net/kick 3, trap 4, view 5	1 &	4	1.8	k 4	1.8	k 4	1 8	<b>§</b> 4	1 (	& 4
Details (if not standard)										,
Extent (I x w patch) Channel (1 margins, 2 mid, 3	4x1		4x1		2x2		2x2		4x2	
both, other specify)	1		1		2		2		3	
Depth (metres) Feature (1 marg. d'water, 2	0.2		0.2		0.4		0.3		0.2	
pool, 3 glide, 4 run, 5 riffle)	3		3		4		2		5	
Refuges in channel cobble (6.5-15cm)	tick all present YES	in patch,main	type(s) search	ed in red	YES		YES		YES	
cobble (15-25.6cm)	YES		YES		YES		YES		YES	
boulder (25.6-40cm) boulder (>40cm)	YES		YES		YES		YES		YES	
rubble (give size)	\/F0		\/E0		\/E0		\/E0		\/E0	
woody debris other urban debris	YES		YES		YES		YES		YES	
tree roots, fine										
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										
Siltation none	YES		YES		YES		YES		YES	
low	TLO		ILO		TLO		TLO		TLO	
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 Crayfish/10 refuges, or per	HEAVY		HEAVY		HEAVY		HEAVY		HEAVY	
unit (depending on method) Search time (Mins)	0 10		10		<u>0</u>		0 10		0	
Bullhead present?	10		YES		5		10		5	
Evaluation crayfish habitat for whole site (0		Notes (surv	ey conditions, p	patches etc.):						
none, 1 pres., 2 freq., 3										
abund.) in margins	Score 3									
in mid channel	3									
in banks surveyability	3									
Problems pollution 1, erosion										
2, (E if >33% affected), aliens 3.										
Total crayfish (all methods)	2									

CRAYFISH HABITAT SURVEY FORM											
Catalyment	Myro		Divor	Caithuan			Site (no.,			7	
Catchment	Wye	Surveyor	River	Sgithwen			name) Grid ref.			7	
Date (dd/mm/yy)	02/09/2015		DR LW			Olit :	(d/s end)	SO 0861 4	025		
Weather, good 1, mod 2, poor 3	1	Flow norm 1, low 2, fall 3, rise 4	2	Water temp. oC	12	Clarity, good 1, mod 2, poor 3	1				
Photo ref. &	_					·	1 114		1	A 12	
Location	Sg07								3 11		
Site length (m)	100								W.		
		Descript. (channel features,	Wooded ba	ınks with su	rrounding c	ırazing.					
Width channel (m)		landuse)	Access goo	d via road	bridge.					And The	
Survey method, std 1, quad	sample patc	h 1	sample pato	ch 2	sample pat	ch 3	sample pat	tch 4	sample pa	tch 5	
2, net/kick 3, trap 4, view 5	1 &	4	1 8	k 4	1 8	k 4	1 8	<b>§</b> 4	1 8	<b>§</b> 4	
Details (if not standard)											
Extent (I x w patch)	3x2		3x4		5x1		4x3		5x1		
Channel (1 margins, 2 mid, 3 both, other specify)	2		3		1		3		1		
Depth (metres)	0.2		0.3		0.2		0.3		0.2		
Feature (1 marg. d'water, 2											
pool, 3 glide, 4 run, 5 riffle)  Refuges in channel	3	la a a la	4		3		5		4		
cobble (6.5-15cm)	tick all present YES	in patch, mair	YES	ned in red	YES		YES		YES		
cobble (0.3-13cm)			YES		YES		YES		YES		
boulder (25.6-40cm)			YES		YES		YES		YES		
boulder (>40cm)			120		YES		120		YES		
rubble (give size)											
woody debris	YES				YES						
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)											
sand (<2mm)											
clay silt											
Siltation none	YES		YES		YES		YES		YES		
low											
moderate											
high											
Refuges in bank none	VEC		VEC		VEC		VEC		VEC		
cobble/boulder tree roots, large	YES		YES YES		YES YES		YES		YES		
, 0											
vertical or undercut bank dry stone wall											
other reinforced											
crayfish burrows											
Shading above	HEAVY		HEAVY		HEAVY		HEAVY		HEAVY		
Crayfish/10 refuges, or per unit (depending on method)	7		0		3		1		2		
Search time (Mins)	10		5		10		10		10		
Bullhead present?			YES		YES				YES		
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	Notes (surv	ey conditions, p	eatches etc.):[	Disintegratir	ng spraint o	of mink or o	tter under r	oad bridge	S	
surveyability  Problems pollution 1, erosion	3										
2, (E if >33% affected), aliens 3.											
Total crayfish (all methods)	13										

		CRAY	FISH H	ABITAT	SURVE	Y FORI	И			
Catchment	Wye		River	Sgithwen			Site (no., name)			8
Catchinent	,	Surveyor		Sgirriweri			Grid ref.			0
Date (dd/mm/yy)	03/09/2015	S Flow norm	DR LW			Clarity,	(d/s end)	SO 0823 3	995	
Weather, good 1, mod 2, poor 3		1, low 2, fall 3, rise 4	2	Water temp. oC	12	good 1, mod 2, poor 3	1			
Photo ref. &							多种人		THE STATE OF	HELL
Site length (m)  Width channel (m)		Descript. (channel features, landuse)	Grazing with		ooded bank	s. Access				
` '	sample patc		sample pate		sample pat	ch 3	sample par	tch 4	sample par	tch 5
Survey method, std 1, quad 2, net/kick 3, trap 4, view 5	1 &	4	1 8	4	1 8		1.5	§ 4	1.5	§ 4
Details (if not standard)	1 00	•	10	- 1	1 0		1.0	<u> </u>	1 (	o !
Extent (I x w patch)	2x2		2x4		3x2		5x1		2x2	
Channel (1 margins, 2 mid, 3							JAI			
both, other specify)	3		3		3		1		2	
Depth (metres)	0.2		0.2		0.2		0.2		0.3	
Feature (1 marg. d'water, 2 pool, 3 glide, 4 run, 5 riffle)	4		5		4		3		3	
Refuges in channel	tick all present	in patch,main								
cobble (6.5-15cm)		_	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)	VEO.						VEO		VEO	
woody debris other urban debris	YES						YES		YES	
	YES						YES			
moss	11.0						120			
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)										
sand (<2mm)										
clay										
silt										
Siltation none	YES		YES		YES		YES		YES	
low										
moderate high										
Refuges in bank none										
cobble/boulder	YES		YES		YES		YES			
tree roots, large							YES		YES	
vertical or undercut bank										
dry stone wall										
other reinforced										
crayfish burrows	LIE ALOC		LIE () O :						115000	
Shading above Crayfish/10 refuges, or per	HEAVY		HEAVY		HEAVY		HEAVY		HEAVY	
unit (depending on method)	3		2		0		2		0	
Search time (Mins)	5		10		5		5		5	
Bullhead present?	YES		YES						YES	
Evaluation crayfish		Notes (surv	ey conditions, p	atches etc.):	Mink spriant	containing	crayfish re	emains pres	sent throug	hout.
habitat for whole site (0 none, 1 pres., 2 freq., 3										
abund.)	Score									
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 (all methods)	7									
·	_				_			_		_

Catchment	Wye		River	Sgith	wen	Site (no., name)		9
Data (dd/mm/n)	16/10/2014	Cumiavana	DD LW			Crid rot	SO 09313 4	0020
Date (dd/mm/yy)	16/10/2014	Surveyors Flow norm 1,	DR LW			Grid ref.	SO 08312 4	0030
Weather, good 1, mod 2, poor 3	1	low 2, fall 3, rise 4	1				Start and finish time	1500-1700
Photo ref. &						2 11	STAN THE	
Location City (a)	Immediately down	nstream of 1st 10	OM					
Site length (m)  Width channel (m)	100	Descript. (channel features, landuse)	Land use - w Access - roa downstream bedrock wate stoney areas	idbridge end. S erfalls,	e at series of			
	sample patch 1		sample patch	h 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)	3x2		6x1		6x1	6x1		6x1
Channel (1 margins, 2 mid, 3 both, other								
specify)	3		3		3	3		3
Depth (metres) Feature (1 marg.	0.2		0.2		0.3	0.2		0.3
d'water, 2 pool, 3 glide, 4 run, 5 riffle)	4		4		4	4		4
Refuges in channel	tick all present in	patch, main type	(s) searched in	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								
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	YES		YES	YES	YES	YES
	TES		163	TES	TEO	150
moderate						
Refuges in bank none			YES		YES	
cobble/boulder			ILO		TLS	
tree roots, large	YES			YES		YES
vertical or undercut bank	120			120		120
dry stone wall						
other reinforced						
crayfish burrows						
				LIGHT	LIGHT	LIGHT
Shading above	LIGHT		LIGHT	LIGHT	LIGITI	LIGITI
Shading above Crayfish manually	LIGHT 0		LIGHT 0	0	0	3
Crayfish manually Crayfish by trap						
Crayfish manually			0	0 4 7	0	
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		0 4 7	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	Score 3	Notes (survey o	0	0 4 7	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	Score 3	Notes (survey o	0	0 4 7	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	Score 3 3 1	Notes (survey o	0	0 4 7	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	Score 3	Notes (survey o	0	0 4 7	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,	Score 3 3 1	Notes (survey o	0	0 4 7	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	Score 3 3 1	Notes (survey o	0	0 4 7	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,	Score 3 3 1	Notes (survey o	0	0 4 7	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	Score 3 3 1	Notes (survey o	0	0 4 7	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	Score 3 3 1	Notes (survey o	0	0 4 7	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	Score 3 3 1	Notes (survey o	0	0 4 7	0	

Catchment	Wye		River	Sgit	hwen		Site (no., name)		10
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. &	l						3.4		
Location  Site length (m)	400m mark								
Width channel (m)	3	Descript. (channel features, landuse)	Land use - a	oad br	ridge		1		
0 11 1	sample patch 1		sample patcl	h 2	sample pa	tch 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)	5x1		7x2		7x2		5x2		7x1
Channel (1 margins, 2 mid, 3 both, other									
specify)	1		1		2		3		3
Depth (metres) Feature (1 marg.	0.4		0.2		0.3		0.3		0.3
d'water, 2 pool, 3 glide, 4 run, 5 riffle)	4		4		5		5		4
Refuges in channel	tick all present in	notch main type	•	n rad			<u> </u>		T
cobble (6.5-15cm)	YES	pateri,mairi type	YES	irreu	YES		YES		YES
cobble (15- 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)	VEO		VEC		\/F0		\/F0		VEO
woody debris other urban debris	YES		YES		YES		YES		YES
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
	naturalracou	1	vanle		<u>, </u>		1 -==		Dago 106

pebble (<6.5cm)				Í		
gravel (<1.6cm)	_					
sand (<2mm)						
clay						
Siltation silt						
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	YES	YES	YES
vertical or undercut bank			YES		YES	
			TES		153	
dry stone wall other reinforced						
crayfish burrows	MOD		HEAVY	MOD	HEAVY	LIE AN OZ
Shading above	I I\/I( )I )			1 1\/1( )1 )	I HEAVY	HEAVY
	WOB		TILAVI	WOD	1	
Crayfish manually	0		0	1	0	0
Crayfish manually Crayfish by trap						
Crayfish manually Crayfish by trap Total crayfish				1 3		
Crayfish manually Crayfish by trap Total crayfish caught		Notes (survey		1 3 4	0	
Crayfish manually Crayfish by trap Total crayfish		Notes (survey	0	1 3 4	0	
Crayfish manually Crayfish by trap Total crayfish caught  Evaluation crayfish habitat for whole site (0		Notes (survey	0	1 3 4	0	
Crayfish manually Crayfish by trap Total crayfish caught  Evaluation crayfish habitat for whole site (0 none, 1 pres., 2	0	Notes (survey	0	1 3 4	0	
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	0	1 3 4	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	Score 3	Notes (survey	0	1 3 4	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	Score 3	Notes (survey	0	1 3 4	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	Score 3 3 3	Notes (survey	0	1 3 4	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	Score 3	Notes (survey	0	1 3 4	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,	Score 3 3 3	Notes (survey	0	1 3 4	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	Score 3 3 3	Notes (survey	0	1 3 4	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.	Score 3 3 3	Notes (survey	0	1 3 4	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	Score 3 3 3	Notes (survey	0	1 3 4	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	Score 3 3 3	Notes (survey	0	1 3 4	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	Score 3 3 3	Notes (survey	0	1 3 4	0	

Catchment	Wye		River	Sgitl	hwen	Site (no., name)		11
Date (dd/mm/yy)	16/10/2014	Surveyors	DR LW			Grid ref.	SO 06970 3	9107
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. &	1							
Location	In 1st 100m		T				<b>一种</b>	
Site length (m)	100	Descript.						
		(channel features,	Landuna	,oodlo	nd. Access from			
Width channel (m)	2.5	landuse)	roadbridge ir					A COMPANY OF THE PARTY OF THE P
	sample patch 1		sample patcl	h 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		3x2	8x1		10x1
Channel (1 margins, 2 mid, 3 both, other	,							
specify)	1		1		2	2		3
Depth (metres) Feature (1 marg.	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	tick all present in	natch main type		n rad	· ·			,
cobble (6.5-15cm)	YES	patori,mairi type	YES	TTEU	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 moss								
filamentous algae								
other submerged veg.								
emergents  Main substrate beneath								
bedrock								
cobble (6.5-15cm)	YES		YES		YES	YES		YES

pebble (<6.5cm)				1	Ì	1
gravel (<1.6cm)						
sand (<2mm)						
clay						
silt						
Siltation none						
low	YES		YES	YES	YES	YES
moderate	123		123		123	123
high Refuges in bank						
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 by trap				5		
Total crayfish caught				8		
Evaluation		Notes (survey	conditions, patches		habitat	
crayfish habitat		, ,	<i>,</i> ,	,		
for whole site (0						
none, 1 pres., 2						
	Coore					
freq., 3 abund.)	Score					
in margins	3					
in margins in mid channel	3					
in margins in mid channel in banks	3 3 2					
in margins in mid channel in banks surveyability	3					
in margins in mid channel in banks surveyability Problems	3 3 2					
in margins in mid channel in banks surveyability	3 3 2					
in margins in mid channel in banks surveyability Problems pollution 1, erosion 2, (E if >33% affected),	3 3 2					
in margins in mid channel in banks surveyability Problems pollution 1, erosion 2, (E if >33% affected), aliens 3.	3 3 2					
in margins in mid channel in banks surveyability Problems pollution 1, erosion 2, (E if >33% affected), aliens 3. Total crayfish (by	3 3 2					
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	3 3 2					
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	3 3 2					

						Site (no.,			
Catchment	Wye		River	Sgit	hwen	name)		12	
Date (dd/mm/yy)	16/10/2014	Surveyors	DR LW			Grid ref.	SO 06541 3	8597	
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. &								and Market	
Location	Mid point of site	1					TO SER		
Site length (m)  Width channel (m)	100	Descript. (channel features, landuse)	Land use - w Access via r		ınd and village. dge.				
	sample patch 1		sample patc	h 2	sample patch 3	3 sample patch	4	sample pate	ch 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) Channel (1	3x2		4x2		6x2	5x1		3>	<b>α</b> 1
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	patch,main type	ı	n 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)								<u> </u>	
woody debris	YES		YES		YES	YES		YES	
other urban debris	YES		YES		YES	YES		YES	
tree roots, fine moss	ILO		ILO		ILO	ILO		ILO	
filamentous algae									
other submerged veg.									
emergents Main substrate beneath									
beneath	YES		YES		YES	YES		YES	
cobble (6.5-15cm)	1.20		1.50			120		1.20	
232210 (0.0 10011)			I		1	1		L	

111 ( 0.5 )				1		1
pebble (<6.5cm)						
gravel (<1.6cm)					_	
sand (<2mm)						
clay						
silt						
Siltation	YES		YES	YES	YES	YES
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	VEC					
	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 2	0	0
manually Crayfish by trap Total crayfish	0		0		0	0
manually Crayfish by trap Total crayfish caught	0	Notes (survey	0 conditions, patches	2	0	0
manually Crayfish by trap Total crayfish caught Evaluation crayfish habitat	0	Notes (survey	-	2	0	0
manually Crayfish by trap Total crayfish caught Evaluation crayfish habitat for whole site (0	0	Notes (survey	-	2	0	0
manually Crayfish by trap Total crayfish caught  Evaluation crayfish habitat for whole site (0 none, 1 pres., 2		Notes (survey	-	2	0	0
manually Crayfish by trap Total crayfish caught  Evaluation crayfish habitat for whole site (0 none, 1 pres., 2 freq., 3 abund.)	Score	Notes (survey	-	2	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	Score 3	Notes (survey	-	2	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	Score 3	Notes (survey	-	2	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	Score 3 3 1	Notes (survey	-	2	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	Score 3	Notes (survey	-	2	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	Score 3 3 1	Notes (survey	-	2	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	Score 3 3 1	Notes (survey	-	2	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),	Score 3 3 1	Notes (survey	-	2	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), aliens 3. Total crayfish (by	Score 3 3 1	Notes (survey	-	2	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), aliens 3. Total crayfish (by 1 method, note	Score 3 3 1	Notes (survey	-	2	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), aliens 3. Total crayfish (by 1 method, note total(s) by other	Score 3 3 1	Notes (survey	-	2	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), aliens 3. Total crayfish (by 1 method, note	Score 3 3 1	Notes (survey	-	2	0	0

Catchment	Wye		River	Sgith			Site (no., name)		13	
Date (dd/mm/yy)	15/10/2014	Surveyors	DR LW				Grid ref.	SO 06010 3	8645	
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	Towards upstrea	m end of site						-		
Site length (m)  Width channel (m)	100	Descript. (channel features, landuse)	Land use - g access. Eas	razing,	total stock ss across field	d.				
	sample patch 1	,	sample patcl		sample par		sample patch	4	sample patcl	h 5
Survey method, std 1, quad 2, net/kick 3, trap 4, view 5 Details (if not	1 &	4	1 & 4		1 & 4		1 8		1 8	
standard)										
Extent (I x w patch) Channel (1	6x1		6x1		6x1		6x1		6x1	
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 in	natch main typ		in red			<u>.                                    </u>			
cobble (6.5-15cm)	YES	r patori, mair typ	YES	iii iou	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 filamentaria algae										
filamentous algae other submerged										
emergents										
Main substrate beneath										
bedrock										
cobble (6.5-15cm)										

pebble (<6.5cm)			1			
gravel (<1.6cm)	YES		YES	YES	YES	YES
sand (<2mm)						1.25
clay						
silt						
Siltation						
none	YES		YES	YES	YES	YES
low						
moderate						
high						
Refuges in bank none						
cobble/boulder	YES		YES	YES	YES	YES
tree roots, large						
vertical or undercut bank	YES		YES	YES	YES	YES
dry stone wall	120		120	120	120	120
other reinforced						
crayfish burrows						
Shading above	NONE		NONE	NONE	NONE	NONE
Crayfish	HOHE		THOTAL	HOHE	HONE	None
manually						1
Crayfish by trap				3		
Total crayfish				4		
caught		Notes (survey	conditions, patche	es etc.):Site is mo	stly a straight channel ex	cept for the most upstream end
Evaluation crayfish habitat		where there is	more diversity of	habitat	,	
for whole site (0						
none, 1 pres., 2 freq., 3 abund.)	Score					
in margins	3					
in mid channel	3					
in banks	2					
surveyability	1					
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)	4					

Catchment	Wye		River	Sgith	nwen	Site (no., name)		14	
Date (dd/mm/yy)	15/10/2014	Surveyors	DR LW			Grid ref.	SO 05720 387	18	
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. &									TO VIEW
Location	At 100 m between	n patches 1 and 2	2				THE SHALL		
Site length (m)	100						T		拔
Width channel (m)	1.5 - 2.5	Descript. (channel features, landuse)	Irish bridge	betwe	ord and grazing. en Patches 1 & roughout. Easy rmyard				
	sample patch 1		sample pate	ch 2	sample patch 3	sample patch	4 5	sample patch	5
Survey method, std 1, quad 2, net/kick 3, trap 4, view 5	1 &	4	1 & 4		1 & 4	1 8	<b>k</b> 4	1 &	4
Details (if not standard)									
Extent (I x w patch)	6x4		8x2		5x1	5x1		5x1	
Channel (1 margins, 2 mid, 3 both, other									
specify)	3		2		3	3		3	
Depth (metres)	0.3		0.3		0.3	0.3		0.2	
Feature (1 marg. d'water, 2 pool, 3 glide, 4 run, 5								4	
riffle) Refuges in	3		3		4	4		4	
channel	tick all present in	patch, main type	1	n red	VE0.	VEO		VE0	
cobble (6.5-15cm) cobble (15-	YES		YES		YES	YES		YES	
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) woody debris						YES			
other urban debris						1			
tree roots, fine									
moss									
filamentous algae									
other submerged veg.									
emergents  Main substrate beneath									
bedrock									
cobble (6.5-15cm)									

	1					1
pebble (<6.5cm)				\/=0	\/=0	\/=0
gravel (<1.6cm)				YES	YES	YES
sand (<2mm)						
clay						
silt	YES		YES			
Siltation				\/F0	\/F0	\/50
none .				YES	YES I	YES
low	-	_				
moderate	YES		YES			
high						
Refuges in bank none	YES		YES			
cobble/boulder			YES			
tree roots, large			YES	,		
vertical or						
undercut bank			YES		YES	YES
dry stone wall						
other reinforced						
crayfish burrows						YES
Shading above	NONE		NONE	NONE	MOD	MOD
Crayfish manually	6		7	2	1	1
Crayfish by trap			'	37	ı ı	l l
Total crayfish				- 31		
caught				54		
Evaluation		Notes (survey o	conditions, patches	etc ). Good habitat	throughout. Six crayfish seen	walking across riverbed
crayfish habitat		from Iriah hrida	(in photo) Alco ro	ports of largest or	ufich over seen in this eres h	local formers
		from Irish bridge	e (in photo). Also re	ports of largest cra	yfish ever seen in this area by	local farmers.
for whole site (0		from Irish bridge	e (in photo). Also re	ports of largest cra	yfish ever seen in this area by	local farmers.
	Score	from Irish bridge	e (in photo). Also re	ports of largest cra	yfish ever seen in this area by	local farmers.
for whole site (0 none, 1 pres., 2	Score 3	from Irish bridge	e (in photo). Also re	ports of largest cra	yfish ever seen in this area by	o local farmers.
for whole site (0 none, 1 pres., 2 freq., 3 abund.)	3	from Irish bridge	e (in photo). Also re	ports of largest cra	yfish ever seen in this area by	o local farmers.
for whole site (0 none, 1 pres., 2 freq., 3 abund.) in margins		from Irish bridge	e (in photo). Also re	ports of largest cra	yfish ever seen in this area by	o local farmers.
for whole site (0 none, 1 pres., 2 freq., 3 abund.) in margins in mid channel in banks	3 3 3	from Irish bridge	e (in photo). Also re	ports of largest cra	yfish ever seen in this area by	o local farmers.
for whole site (0 none, 1 pres., 2 freq., 3 abund.) in margins in mid channel in banks surveyability  Problems	3	from Irish bridge	e (in photo). Also re	ports of largest cra	yfish ever seen in this area by	o local farmers.
for whole site (0 none, 1 pres., 2 freq., 3 abund.) in margins in mid channel in banks surveyability Problems pollution 1,	3 3 3	from Irish bridge	e (in photo). Also re	ports of largest cra	yfish ever seen in this area by	o local farmers.
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	3 3 3	from Irish bridge	e (in photo). Also re	ports of largest cra	yfish ever seen in this area by	o local farmers.
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.	3 3 3	from Irish bridge	e (in photo). Also re	ports of largest cra	yfish ever seen in this area by	o local farmers.
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	3 3 3	from Irish bridge	e (in photo). Also re	ports of largest cra	yfish ever seen in this area by	o local farmers.
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	3 3 3	from Irish bridge	e (in photo). Also re	ports of largest cra	yfish ever seen in this area by	o local farmers.
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	3 3 3	from Irish bridge	e (in photo). Also re	ports of largest cra	yfish ever seen in this area by	o local farmers.

Catchment	Wye		River	Sgith			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	ı
Photo ref. &	1						100			10/
Location	In 1st 100m									
Site length (m)  Width channel (m)	100 1.5 - 3	Descript. (channel features, landuse)		ss acro	and and grazi oss field. Good it.					
	sample patch 1		sample pa	tch 2	sample pate	h 3	sample patch 4		sample pa	tch 5
Survey method, std 1, quad 2, net/kick 3, trap 4, view 5 Details (if not	1 &	4	1 & 4	1	1 & 4		1 &	4	1	& 4
standard)										
Extent (I x w patch) Channel (1	3x2		3x2		4x3		5x1		5x1	
margins, 2 mid, 3 both, other specify)	3		3		1		3		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		Ę	
Refuges in channel	tick all present in	patch.main type(		in 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							
other urban debris	YES		YES							
tree roots, fine moss	153		IES							
filamentous algae										
other submerged veg.										
emergents  Main substrate beneath										
bedrock										
cobble (6.5-15cm)										

pebble (<6.5cm)								
gravel (<1.6cm)	YES		YES		YES	YES		YES
sand (<2mm)					•			
clay								
silt								
Siltation								
none .	\( = 0		\/=0		\/=0	\/=0		\
low	YES		YES	<u> </u>	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 caught					19			
Evaluation crayfish habitat for whole site (0 none, 1 pres., 2 freq., 3 abund.)	Score	Notes (survey o	conditions, patch	ies e				
in margins	3							
in mid channel	3							
in banks	2							
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)	19							
п аррпсавіс)	19							

Catchment	Wye		River	Sgith	iwen		Site (no., name)		16	
Date (dd/mm/yy)	15/10/2014	Surveyors	DR LW				Grid ref.	SO 04620 3	9077	
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. &							Section.		di la	
Location	Pond								更 獲官 月	
Site length (m)  Width channel (m)	100	Descript. (channel features, landuse)	store. Sma adjacent p	all strea ond.	ry plus fores m channel v	with				
	sample patch 1		sample pa	tch 2	sample pa	tch 3	sample patch	4	sample patcl	h 5
Survey method, std 1, quad 2, net/kick 3, trap 4, view 5 Details (if not	1 &	4	1 & 4	ļ	1 & 4		1 &	. 4	1 8	k 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 channel		notch main typo/	I	in rad	1 4		<u> </u>		1 3	
cobble (6.5-15cm)	tick all present in YES	paten, main type(s	YES	in rea	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							CONCRETE			
bedrock										
cobble (6.5-15cm)										

pebble (<6.5cm)	YES		YES	YES			YES
gravel (<1.6cm)							
sand (<2mm)							
clay							
•							
Siltation silt				1			
none	YES		YES	YES	YES		YES
low							
moderate							
high							
Refuges in bank	YES				YES		YES
cobble/boulder							
tree roots, large							
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		Notes (sum es)	anditions notaboo	oto \.Dotob 4	river piped upe	lar tradic contains b	oulders and cobbles.
Evaluation crayfish habitat		Photos of river	upstream and dow	nstream of pip	ed section.	er track, contains b	oulders and copples.
for whole site (0		NAME OF TAXABLE PARTY.	NAME AND DESCRIPTIONS		MATERIAL SERVICES	CONTRACTOR A NOTICE OF	CT PARK A SATISFIES OF SAMESTIC
none, 1 pres., 2		SECTION AND ADDRESS OF THE PERSON AND ADDRES		三世和這種的			
freq., 3 abund.)	Score	3	6	THE REAL PROPERTY.	100		
in margins	3				1	A STATE OF	A PROPERTY OF THE PARTY OF THE
in mid channel	3	-				THE PARTY OF	A CONTRACTOR OF THE PARTY OF TH
in banks	1					7	
surveyability	3	A SA SA	W.	THE GOLD			
Problems		DE LA CASA		<b>一小红洲</b>			题 法国家活
pollution 1,				- A	100 E		
erosion 2, (E if >33% affected),		100		10000000000000000000000000000000000000			
aliens 3.		No.					THE SECOND SECOND
Total crayfish (by				Mary and Street		ACCUMENTATION OF	A SHOW THE RESERVE AND THE PERSON
1 method, note							
total(s) by other methods in notes							
if applicable)	0						
п аррисавіе)	ı	I					

## 11.14. Appendix N: White-clawed crayfish habitat survey forms for Dulas Brook (Builth Road) September 2015

(Builli Roau)			FISH HA	ABITAT	SURVE	Y FORI	И			
							Site (no.,			
Catchment	Wye	Surveyor	River	Dulas Bro	ok (Buith R	oad)	name) Grid ref.			1
Date (dd/mm/yy)	29/09/2015	s	DR LW				(d/s end)	SO 0210 5	300	
Weather, good 1, mod 2, poor		Flow norm 1, low 2, fall		Water		Clarity, good 1, mod				
3	1	3, rise 4	2	temp. oC	12	2, poor 3	1			
Photo ref. & Location	Dulas01							No.	1.4	C = 49
Location	Dulasor							E A	× 5	
									THE PARTY OF	and Solder Co
Site length (m)	500						n.e			
		D								
		Descript. (channel							College And	
Width channel (m)	5	features, landuse)	Grazing and Access goo		ljacent sew	age works		4.5	30	
,	sample patc		sample pato		sample pa	tch 3	sample pat	ch 4	sample pa	atch 5
Survey method, std 1, quad 2, net/kick 3, trap 4, view 5	1 &	. 4	1 8	. 4	1.	& 4	1 8	2. 1	1	& 4
Details (if not standard)						<u> </u>		• •	·	<u> </u>
Extent (I x w patch)	5x1		5x1		4x2		5x1		5x2	)
Channel (1 margins, 2 mid, 3										
both, other specify)	2		2		3		1		3	
Depth (metres) Feature (1 marg. d'water, 2	0.2		0.2		0.3		0.2		0.3	3
pool, 3 glide, 4 run, 5 riffle)	5		5		4		5		4	ı
Refuges in channel cobble (6.5-15cm)	tick all present YES	in patch, mair	type(s) search	ed in red	YES		YES		YES	
cobble (15-25.6cm)			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										
Main substrate beneath bedrock										
cobble (6.5-15cm)										
pebble (<6.5cm)									YES	
gravel (<1.6cm) sand (<2mm)	YES		YES		YES		YES			
clay										
silt										
Siltation none low	YES		YES		YES		YES		YES	
moderate			11.5						ILS	
high										
Refuges in bank none cobble/boulder	VEQ		YES		YES		YES		YES	
tree roots, large	123		1123		YES		110		YES	
vertical or undercut bank										
dry stone wall										
other reinforced crayfish burrows										
Shading above	MOD		HEAVY		MOD		HEAVY		MOD	
Crayfish/10 refuges, or per unit (depending on method)	0		0		0		0		(	1
Search time (Mins)	5		5		10		10		15	
Bullhead present?	YES				YES				YES	
Evaluation crayfish habitat for whole site (0		Notes (surv	ey conditions, p	atches etc.):						
none, 1 pres., 2 freq., 3										
abund.)	Score 3									
in margins 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										
note total(s) by other methods in notes if applicable)	0									

		CRAY	FISH HA	ABITAT	SURVE	Y FORI	И			
Catalmont	Wyo		Divor	Dulae Bro	ok (Buith B	22d)	Site (no.,			2
Catchment	Wye	Surveyor	River	Dulas Broo	ok (Buith Ro	oad)	name) Grid ref.			2
Date (dd/mm/yy)	29/08/2015	S Flow norm	DR LW			Clarity,	(d/s end)	SO 0234 5	335	
Weather, good 1, mod 2, poor 3		1, low 2, fall 3, rise 4	2	Water temp. oC	12	good 1, mod 2, poor 3	1			
Photo ref. &	D. I 00						3 (7)	1		
Site length (m)  Width channel (m)		Descript. (channel features, landuse)	Urban, foot dog walking grazing. Go	, footbridge	e, wooded b					
D	sample patc		sample pate		sample par	tch 3	sample par	tch 4	sample pat	ch 5
Survey method, std 1, quad 2, net/kick 3, trap 4, view 5	1 &	4	1 8	4	1 8	<b>k</b> 4	1 8	§ 4	1.8	k 4
Details (if not standard)										
Extent (I x w patch)	5x1		5x1		4x3		4x1		3x2	
Channel (1 margins, 2 mid, 3										
both, other specify)	1		1		3		1		3	
Depth (metres) Feature (1 marg. d'water, 2	0.2		0.3		0.4		0.3		0.2	
pool, 3 glide, 4 run, 5 riffle)	3		2		3		4		4	
Refuges in channel	tick all present	in patch, mair		ed in red	\/EC		\/F0		\/FC	
cobble (6.5-15cm)			YES		YES		YES		YES	
cobble (15-25.6cm)			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	
other urban debris	YES		YES						YES	
tree roots, fine										
moss										
filamentous algae										
other submerged veg.										
emergents										
Main substrate beneath										
bedrock										
cobble (6.5-15cm)										
pebble (<6.5cm)					YES					
gravel (<1.6cm)	YES		YES				YES		YES	
sand (<2mm)										
clay										
silt										
Siltation none	YES		YES				YES		YES	
low					YES					
moderate high										
Refuges in bank none										
cobble/boulder										
tree roots, large	YES		YES				YES		YES	
vertical or undercut bank										
dry stone wall										
other reinforced										
crayfish burrows										
Shading above	HEAVY		HEAVY		HEAVY		MOD		HEAVY	
Crayfish/10 refuges, or per										
unit (depending on method)	0		0		0		0		0	
Search time (Mins)	15		10		5		5		5	
Bullhead present?					YES		YES			
Evaluation crayfish		Notes (surv	ey conditions, p	atches etc.):L	arge bould	ers obscur	e water flov	at some p	oints.	
habitat for whole site (0										
none, 1 pres., 2 freq., 3 abund.)	Score									
in margins	Score 3									
in margins in mid channel	3									
in mid channel in banks	3									
	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									
·										

		CRAY	FISH HA	ABITAT	SURVE	Y FORI	И			
Catchment	Wye		River	Dulas Broo	ok (Buith R	nad)	Site (no., name)			3
	,	Surveyor		Duids Bro	ok (Balai ik	Jau'j	Grid ref.	00 0070 5	2050	
Date (dd/mm/yy)	30/08/2015	Flow norm	DR LW			Clarity,	(d/s end)	SO 0270 5	356	
Weather, good 1, mod 2, poor 3	1	1, low 2, fall 3, rise 4	1	Water temp. oC	12	good 1, mod 2, poor 3	1			
Photo ref. &							1	1	C P	
Location Site length (m)	Dulas03							1/		
Width channel (m)	4	Descript. (channel features, landuse)	Wooded, baroadbridger access.	_	•	Good				
	sample patc	,	sample pato	h 2	sample pa	tch 3	sample pat	tch 4	sample par	tch 5
Survey method, std 1, quad 2, net/kick 3, trap 4, view 5	1 &	4	1 8			§ 4	1 8	3 4	1.5	<b>k</b> 4
Details (if not standard)	1 00		. 10		1.0	<u> </u>	1 0	<u> </u>	1 (	n !
Extent (I x w patch)	1x3		4x1		3x2		2x2		4x2	
Channel (1 margins, 2 mid, 3					-					
both, other specify)	3		1		1		2		2	
Depth (metres) Feature (1 marg. d'water, 2	0.2		0.2		0.2		0.2		0.2	
pool, 3 glide, 4 run, 5 riffle)	5		5		4		4		4	
Refuges in channel		in patch, mair	type(s) search	ed in red						
cobble (6.5-15cm)			YES		YES		YES		YES	
cobble (15-25.6cm)			YES		YES		YES		YES	
boulder (25.6-40cm)			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										
Main substrate beneath										
bedrock cobble (6.5-15cm)										
pebble (<6.5cm)										
gravel (<1.6cm)	YES		YES		YES		YES		YES	
sand (<2mm)	_				_					
clay										
silt					_		_			
Siltation none	YES		YES		YES		YES		YES	
low moderate										
high										
Refuges in bank none										
cobble/boulder	YES		YES		YES		YES		YES	
tree roots, large	YES		YES		YES					
vertical or undercut bank										
dry stone wall										
other reinforced										
crayfish burrows Shading above	MOD		LIGHT		LIGHT		NONE		NONE	
Crayfish/10 refuges, or per	IVIOD		LIGITI		LIGITI		INOINE		INOINE	
unit (depending on method)	0		0		0		0		0	
Search time (Mins)	5		5		15		5		5	
Bullhead present?  Evaluation crayfish	YES	Notes (	YES ey conditions, p	otobes si: \:			YES		YES	
habitat for whole site (0 none, 1 pres., 2 freq., 3 abund.) in margins in mid channel in banks surveyability  Problems pollution 1, erosion	Score 3 3 3 3 3		,	,						
2, (E if >33% affected), aliens 3.  Total crayfish (by 1 method, note total(s) by other methods in notes if applicable)	0									

		CRAY	FISH H	ABITAT	SURVE	Y FORI	И			
Ontobassant	10/		Divers	Dulas Bas	-L (D. dil- D	D	Site (no.,			4
Catchment	Wye	Surveyor	River	Dulas Broo	ok (Buith Ro	oad)	name) Grid ref.			4
Date (dd/mm/yy)	30/08/2015	S Flow norm	DR LW			Clarity,	(d/s end)	SO 0293 5	391	
Weather, good 1, mod 2, poor 3		1, low 2, fall 3, rise 4	1	Water temp. oC	12	good 1, mod 2, poor 3	1			
Photo ref. &	Dulas 04								VE I	
Site length (m)  Width channel (m)	,	Descript. (channel features, landuse)	Urban, woo	_	-					
	sample patch		sample pate		sample pa		sample pat	ch 4	sample pa	tch 5
Survey method, std 1, quad 2, net/kick 3, trap 4, view 5	1 &	4	1 8	k 4	1 8	<b>&amp;</b> 4	1 8	<b>4</b>	1 8	<b>š</b> 4
Details (if not standard)										
Extent (I x w patch)	2x2		3x1		3x2		4x1		6x1	
Channel (1 margins, 2 mid, 3 both, other specify)	3		1		2		1		1	
Depth (metres)	0.4		0.2		0.3		0.2		0.2	
Feature (1 marg. d'water, 2										
pool, 3 glide, 4 run, 5 riffle)  Refuges in channel	tick all present in	n natch main	type(s) search		4		3		4	
cobble (6.5-15cm)		n paten,main	YES	ea iii iea	YES		YES		YES	
cobble (15-25.6cm)			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		YES	
moss							TES		TES	
filamentous algae										
other submerged veg.										
emergents										
Main substrate beneath										
bedrock										
cobble (6.5-15cm)										
pebble (<6.5cm) gravel (<1.6cm)	YES		YES		YES		YES		YES	
sand (<2mm)	TEO		120		120		120		120	
clay										
silt										
Siltation none							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										
dry stone wall		·								
other reinforced										
crayfish burrows	HEAVY		HEVIV		HEMM		HEMM		HEAVY	
Shading above Crayfish/10 refuges, or per	I IEAV Y		HEAVY		HEAVY		HEAVY		I V A J	
unit (depending on method)	0		0		0		0		0	
Search time (Mins)	10		10		10		10		10	
Bullhead present?  Evaluation crayfish		Natas /	ey conditions, p						YES	
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 3 3 3 3 3		,	,						
Total crayfish (by 1 method, note total(s) by other methods in notes if applicable)	0									

		CRA	FISH HA	ABITAT	SURVE	Y FORI	М			
Catalyment	Myro		Divor	Dulas Pro	ok (Duith D	ood)	Site (no.,			5
Catchment	Wye	Surveyor	River	Dulas Bro	ok (Buith R	oad)	name) Grid ref.			5
Date (dd/mm/yy)	30/08/2015	S Flow norm	DR LW			Clarity,	(d/s end)	SO 0314 5	439	
Weather, good 1, mod 2, poor 3	1	1, low 2, fall 3, rise 4	1	Water temp. oC	12	good 1, mod 2, poor 3	1			
Photo ref. &	Dules05								D	1 1
Location  Site length (m)  Width channel (m)	100	Descript. (channel features, landuse)	Woodland, some stock							
	sample patc		sample pato		sample pa		sample par	tch 4	sample pa	tch 5
Survey method, std 1, quad 2, net/kick 3, trap 4, view 5	1 &		1 8			§ 4		§ 4		& 4
Details (if not standard)	1 00	7	10	(		<del>, ,</del>	10	x <del>-</del>		х <del>т</del>
Extent (I x w patch)	2x2		2x3		6x1		3x2		3x2	
Channel (1 margins, 2 mid, 3										
both, other specify)	2		2		1		3		2	
Depth (metres) Feature (1 marg. d'water, 2	0.2		0.2		0.2		0.2		0.2	
pool, 3 glide, 4 run, 5 riffle)	5		5	<u> </u>	4		4		5	
Refuges in channel cobble (6.5-15cm)	tick all present	in patch, mair	YES	ed in red	YES		YES		YES	
cobble (0.3-13cm)			YES		YES		YES		YES	
boulder (25.6-40cm)			YES		YES		YES		YES	
boulder (>40cm)			YES		YES		YES		YES	
rubble (give size)										
woody debris	YES									
other urban debris										
tree roots, fine					YES					
moss filamentous algae										
filamentous algae other submerged veg.										
emergents										
Main substrate beneath										
bedrock										
cobble (6.5-15cm)										
pebble (<6.5cm)							\ <del></del>			
gravel (<1.6cm) sand (<2mm)	YES		YES		YES		YES		YES	
sand (<2mm)										
silt										
Siltation none	YES		YES		YES		YES		YES	
low										
moderate										
high										
Refuges in bank none cobble/boulder	VES		YES		YES		YES		YES	
tree roots, large			YES		YES		123		YES	
vertical or undercut bank										
dry stone wall										
other reinforced										
crayfish burrows										
Shading above	HEAVY		HEAVY		HEAVY		HEAVY		HEAVY	
Crayfish/10 refuges, or per unit (depending on method)	0		0		0		0		0	
Search time (Mins)	5		5		10		5		5	
Bullhead present?	YES		YES				YES		YES	
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,	Score 3 3 3 3 3 3 3	Notes (surv	ey conditions, p	atches etc.).						
note total(s) by other methods in notes if applicable)	0									

		CRAY	FISH H	ABITAT	SURVE	Y FORI	M			
							Site (no.,			
Catchment	Wye	Surveyor	River	Dulas Broo	ok (Buith R	oad)	name) Grid ref.			6
Date (dd/mm/yy)	30/08/2015	s	DR LW				(d/s end)	SO 0353 5	500	
Weather, good 1, mod 2, poor	1	Flow norm 1, low 2, fall 3, rise 4	1	Water temp. oC	12	Clarity, good 1, mod 2, poor 3	1			
Photo ref. &		0, 1130 4		temp. 00	12	2, poor o	North Land	7		
Location	Dulas06						EARS I			
Site length (m)	100									
		Descript. (channel features.	Woodland s				e. Sant		e i	
Width channel (m)	3	landuse)	point. Good				100	त्रक्री ह		Ag .
Survey method, std 1, quad	sample patc	h 1	sample pato	ch 2	sample pa	tch 3	sample pat	tch 4	sample pa	tch 5
2, net/kick 3, trap 4, view 5	1 &	4	1 8	k 4	1 8	<b>§</b> 4	1 8	§ 4	1 8	<b>&amp;</b> 4
Details (if not standard)										
Extent (I x w patch)	5x1		4x1		4x1		3x2		3x2	
Channel (1 margins, 2 mid, 3 both, other specify)	1		1		1		2		3	
Depth (metres) Feature (1 marg. d'water, 2	0.3		0.2		0.3		0.3		0.3	
pool, 3 glide, 4 run, 5 riffle)	3		2		4		3		3	
Refuges in channel	tick all present	in patch, mair		ned in red	VEC		VEC		VEC	
cobble (6.5-15cm) cobble (15-25.6cm)			YES YES		YES YES		YES YES		YES YES	
boulder (25.6-40cm)			YES		YES		YES		YES	
boulder (>40cm)	YES		YES		YES		YES		YES	
rubble (give size)										
woody debris	YES				YES					
other urban debris	VEC				YES					
tree roots, fine moss	TES				TES					
filamentous algae										
other submerged veg.										
emergents										
Main substrate beneath bedrock										
cobble (6.5-15cm)										
pebble (<6.5cm)										
gravel (<1.6cm)	YES									
sand (<2mm)			YES		YES		YES		YES	
clay silt										
Siltation none										
	YES		YES		YES		YES		YES	
moderate										
high										
Refuges in bank none cobble/boulder	YES		YES		YES		YES		YES	
tree roots, large			. 20		, 20		YES			
vertical or undercut bank			YES							
dry stone wall										
other reinforced										
crayfish burrows			HEWA!		LEWY.		HEALO?		LIEANA/	
Shading above Crayfish/10 refuges, or per	HEAVY		HEAVY		HEAVY		HEAVY		HEAVY	
unit (depending on method)	0		0		0		0		0	
Search time (Mins)	10		5		10		5		10	
Bullhead present?  Evaluation crayfish	YES	Notes (sun	ey conditions, p	atches etc \*	<u> </u>		ı			
habitat for whole site (0 none, 1 pres., 2 freq., 3 abund.) in margins in mid channel in banks surveyability	Score 3 3 3 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									

		CRAY	YFISH H	ABITAT	SURVE	Y FORI	М			
0.11	147		D:				Site (no.,			_
Catchment	Wye	Surveyor	River	Dulas Bro	ok (Buith Ro	oad)	name) Grid ref.			7
Date (dd/mm/yy)	31/08/2015	S Flow norm	DR LW			Clarity,	(d/s end)	SO 0412 5	508	
Weather, good 1, mod 2, poor 3		1, low 2, fall 3, rise 4	2	Water temp. oC	12	good 1, mod 2, poor 3	1			
Photo ref. &	D 1 07						1			
Site length (m)  Width channel (m)		Descript. (channel features, landuse)	Gardens ro	•	ack of outb	uildings.				
	sample patch		sample pate		sample par	tch 3	sample pa	tch 4	sample pa	tch 5
Survey method, std 1, quad 2, net/kick 3, trap 4, view 5	1 &	4	1 8	<u> 4</u>	1 8	<u>k</u> 4	1 8	<b>§</b> 4	1 (	& 4
Details (if not standard)										
Extent (I x w patch)  Channel (1 margins, 2 mid, 3 both, other specify)	5x2 2		5x2		3x1 1		2x2 2		2x3 3	
Depth (metres)	0.1		0.1		0.2		0.2		0.2	
Feature (1 marg. d'water, 2 pool, 3 glide, 4 run, 5 riffle)	5		5		4		5		5	
Refuges in channel	tick all present i	n patch, mair								
cobble (6.5-15cm)			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	YES		YES							
tree roots, fine			_							
moss										
filamentous algae										
other submerged veg.										
emergents										
Main substrate beneath bedrock										
cobble (6.5-15cm)										
pebble (<6.5cm)	YES		YES		YES		YES		YES	
gravel (<1.6cm)									0	
sand (<2mm)										
clay										
silt	\/E0		\/F0		VE0		VE0		\/E0	
Siltation none low	YES		YES	1	YES		YES		YES	
moderate				1						
high										
Refuges in bank none	YES		YES							
cobble/boulder							YES		YES	
tree roots, large										
vertical or undercut bank							YES		YES	
dry stone wall										
other reinforced crayfish burrows									1	
Shading above	HEAVY		HEAVY		HEAVY		HEAVY		HEAVY	
Crayfish/10 refuges, or per										
unit (depending on method)	0		0		0		0		0	
Search time (Mins) Bullhead present?	15		15		5		5		5	
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	Score 3 3 3 3 3 3	Notes (surv	ey conditions, p	patches etc.):	Disintegrati	ng otter or	mink sprair	nt		
2, (E if >33% affected), aliens 3.  Total crayfish (by 1 method, note total(s) by other methods in notes if applicable)	0									

		CRAY	FISH H	ABITAT	SURVE	Y FORI	М			
Ontobassant	10/		Divers	Dulas Das	- I. (D. dd. D	D	Site (no.,			
Catchment	Wye	Surveyor	River	Dulas Bro	ok (Buith R	oad)	name) Grid ref.			8
Date (dd/mm/yy)	31/08/2015	S Flow norm	DR LW			Clarity,	(d/s end)	SO 0441 5	562	
Weather, good 1, mod 2, poor 3		1, low 2, fall 3, rise 4	2	Water temp. oC	12	good 1, mod 2, poor 3	1			
Photo ref. &	D 1 00						图》人		THE	
Location Site length (m)	Dulas08 100	Descript.								
Width channel (m)		features, landuse)	Grazing, ex	posed bank	s. Good ac	cess		的思う	200	
Purvoy method	sample patcl	h 1	sample pate	ch 2	sample pa	tch 3	sample pat	tch 4	sample pa	atch 5
Survey method, std 1, quad 2, net/kick 3, trap 4, view 5	1 &	4	1.8	<b>k</b> 4	1 8	<b>§</b> 4	1.8	<u> </u>	1	& 4
Details (if not standard)										
Extent (I x w patch)	5x1		5x1		3x1		3x1		3x′	
Channel (1 margins, 2 mid, 3 both, other specify)	3		3		3		3		3	3
Depth (metres)	0.2		0.2		0.2		0.2		0.3	
Feature (1 marg. d'water, 2										
pool, 3 glide, 4 run, 5 riffle)  Refuges in channel	tick all present	in natch mail	5 type(s) search		4		3		ţ	
cobble (6.5-15cm)		in paten, maii	YES	led in red	YES		YES		YES	
cobble (15-25.6cm)			YES		YES		YES		YES	
boulder (25.6-40cm)	YES		YES		YES		YES		YES	
boulder (>40cm)										
rubble (give size)	\ <del></del>									
woody debris other urban debris	YES									
tree roots, fine										
moss										
filamentous algae										
other submerged veg.										
emergents										
Main substrate beneath bedrock										
cobble (6.5-15cm)										
pebble (<6.5cm)										
gravel (<1.6cm)	YES		YES		YES		YES		YES	
sand (<2mm)										
clay										
Siltation none	YES		YES		YES		YES		YES	
low	IES		TES		IES		ILS		ILO	
moderate										
high										
Refuges in bank none										
cobble/boulder tree roots, large	VES		YES YES				YES YES		YES	
, 0	IEO		IEO				IEO			
vertical or undercut bank dry stone wall			1							
other reinforced										
crayfish burrows										
Shading above	MOD		MOD		MOD		MOD		MOD	
Crayfish/10 refuges, or per unit (depending on method)	0		0		0		0		(	
Search time (Mins)	10		10		5		5		10	
Bullhead present?										
Evaluation crayfish habitat for whole site (0		Notes (surv	ey conditions, p	patches etc.):	Stock acces	ss is major	influence			
none, 1 pres., 2 freq., 3										
abund.)	Score									
in margins in mid channel	3									
in mid channel in banks	3									
surveyability	3									
Problems pollution 1, erosion										
<ol> <li>(E if &gt;33% affected), aliens 3.</li> <li>Total crayfish (by 1 method,</li> </ol>										
note total(s) by other methods in notes if applicable)	0									

		CRA	FISH HA	ABITAT	SURVE	Y FORI	М			
Catchment	Wye		River	Dulas Bro	ok (Buith R	nad)	Site (no., name)			9
	31/08/2015	Surveyor	DR LW	Duias Bro	JK (Dalat IV	oau)	Grid ref.	SO 0497 F		
Date (dd/mm/yy)	31/00/2015	Flow norm		Water		Clarity,	(d/s end)	SO 0487 5	0076	
Weather, good 1, mod 2, poor 3	1	1, low 2, fall 3, rise 4	2	temp. oC	12	good 1, mod 2, poor 3	1			
Photo ref. & Location	Dulas09									XX
Location	Dulasus							2		
										J. March
Site length (m)	100								- 100	(i
<b>3</b>										
		Descript.						7		-3
Width channel (m)	2	features, landuse)	Grazing , he erosion. Go		access, ba	nk				1 1
	sample pato		sample pato		sample pa	tch 3	sample pa	tch 4	sample p	atch 5
Survey method, std 1, quad 2, net/kick 3, trap 4, view 5	1 8	4	1 8	4	1 8	<b>§</b> 4	1 8	<b>§</b> 4	1	& 4
Details (if not standard)				ı		1				
Extent (I x w patch) Channel (1 margins, 2 mid, 3	3x1		4x1		2x3		2x2		3x	2
both, other specify)	3		3		3		2		;	3
Depth (metres) Feature (1 marg. d'water, 2	0.2		0.2		0.2		0.2		0.:	2
pool, 3 glide, 4 run, 5 riffle)	5		4		4		4			5
Refuges in channel cobble (6.5-15cm)		in patch, mair	type(s) search	ed in red	YES		YES		YES	
cobble (15-25.6cm)			YES		YES		YES		YES	
boulder (25.6-40cm)	YES		YES		YES		YES		YES	
boulder (>40cm)										
rubble (give size) woody debris			YES		YES					
other urban debris			ILO		ILO					
tree roots, fine			YES				YES			
moss										
filamentous algae other submerged veg.										
emergents										
Main substrate beneath										
bedrock cobble (6.5-15cm)										
pebble (<6.5cm)										
gravel (<1.6cm)										
sand (<2mm)	YES		YES		YES		YES		YES	
silt	TES		TES		TES		163		IES	
Siltation none	VEC		VEC		VEC		VEC		VEC	
moderate	YES		YES		YES		YES		YES	
high										
Refuges in bank none cobble/boulder	YES		YES		YES		YES		YES	
tree roots, large										
vertical or undercut bank			_							
dry stone wall										
other reinforced										
crayfish burrows Shading above	MOD		MOD		MOD		MOD		MOD	
Crayfish/10 refuges, or per										
unit (depending on method) Search time (Mins)	0 10		10		5		5			5
Bullhead present?	10		10						,	
Evaluation crayfish		Notes (surv	ey conditions, p	atches etc.):	•				•	·
habitat for whole site (0 none, 1 pres., 2 freq., 3										
abund.)	Score									
in margins	2									
in mid channel	1									
in banks surveyability	2									
Problems pollution 1, erosion 2, (E if >33% affected), aliens 3.	2									
Total crayfish (by 1 method,										
note total(s) by other methods in notes if applicable)	0									
посоз п аррпоаме)	U									

		CRA	/FISH H/	ABITAT	SURVE	Y FORI	И			
Catalymout	10/110		Diver	Dulas Dra	ale (Deside D		Site (no.,			10
Catchment		Surveyor	River	Duias Bro	ok (Buith R	oad)	name) Grid ref.			10
Date (dd/mm/yy)	31/08/2015	S Flow norm	DR LW			Clarity,	(d/s end)	SO 0530 5	610	
Weather, good 1, mod 2, poor 3		1, low 2, fall 3, rise 4	2	Water temp. oC	12	good 1, mod 2, poor 3	1			
Photo ref. &	Ded40							W		
Location Site length (m)	Dulas10 100	Descript. (channel features,								
Width channel (m)		landuse)	Land use: 0			toh 2	sample not	ob 4	acomple no	tob E
Survey method, std 1, quad	sample patcl		sample pate		sample pa		sample pat		sample pa	
2, net/kick 3, trap 4, view 5	1 &	4	1.8	k 4	1 8	& 4	1 8	k 4	1	& 4
Details (if not standard)	0.0		0.0							
Extent (I x w patch) Channel (1 margins, 2 mid, 3	3x2		3x2		5x2		5x2		5x3	
both, other specify)	3		3		3		3		3	
Depth (metres) Feature (1 marg. d'water, 2	0.2		0.2		0.2		0.2		0.2	!
pool, 3 glide, 4 run, 5 riffle)	4		4		4		4		4	
Refuges in channel	tick all present	in patch, mair		ned IN RED						
cobble (6.5-15cm)			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. emergents										
Main substrate beneath										
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 Refuges in bank none										
cobble/boulder										
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		MOD		MOD		HEAVY		MOD	
Crayfish/10 refuges, or per	IVIOD		IVIOD		IVIOD		IILAVI		IVIOD	
unit (depending on method)	0		0		0		0		0	
Search time (Mins)	10		5		5		10		10	1
Bullhead present?  Evaluation crayfish		Notes (sun	ey conditions, p	vatches etc.):	I Entrance to	motocross	site			
habitat for whole site (0 none, 1 pres., 2 freq., 3 abund.) in margins in mid channel in banks surveyability	Score 2 2 2 2 2 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				-				-	

		CRA	FISH HA	BITAT	SURVE	Y FORI	VI			
Ontohoront	10/		Discour.	Dules Bee	-L (D. St. D.	D	Site (no.,			4.4
Catchment	Wye	Surveyor	River	Dulas Broo	ok (Buith R	oad)	name) Grid ref.			11
Date (dd/mm/yy)	09/09/2015	S Flow norm	DR LW			Clarity,	(d/s end)	SO 0573 5	630	
Weather, good 1, mod 2, poor 3	1	1, low 2, fall 3, rise 4	1	Water temp. oC	12	good 1, mod 2, poor 3	1			
Photo ref. &							and a		T	W 10
Location Site length (m)	Dulas11									
Width channel (m)	2	Descript. (channel features,	Matagraga	maior arasi	on Cood o					
	sample patc	landuse) h 1	Motocross, sample pate		sample pa		sample par	tch 4	sample pa	tch 5
Survey method, std 1, quad 2, net/kick 3, trap 4, view 5	1 &	4	1 8	4	1 8	§ 4	1 8	<b>&amp;</b> 4	1 8	& 4
Details (if not standard)		•								<u> </u>
Extent (I x w patch)	3x2		5x2		2x2		4x2		3x2	
Channel (1 margins, 2 mid, 3			2							
both, other specify)	3				3		0.2		3	
Depth (metres) Feature (1 marg. d'water, 2	0.2		0.2		0.2		0.2		0.2	
pool, 3 glide, 4 run, 5 riffle)  Refuges in channel	tick all propert	in notes	3	od in	4		4		4	
cobble (6.5-15cm)	tick all present YES	in patch, mair	YES	ea in rea	YES		YES		YES	
cobble (15-25.6cm)			YES		YES		YES		YES	
boulder (25.6-40cm)	YES		YES		YES		YES		YES	
boulder (>40cm)										
rubble (give size) woody debris			YES							
other urban debris			ILO							
tree roots, fine										
moss										
filamentous algae										
other submerged veg.										
emergents  Main substrate beneath										
bedrock					YES		YES		YES	
cobble (6.5-15cm)										
pebble (<6.5cm)										
gravel (<1.6cm) sand (<2mm)										
clay										
	YES		YES							
Siltation none										
low moderate	VES		YES		YES		YES		YES	
high	120		120		, LO		120			
Refuges in bank none	YES				YES		YES			
cobble/boulder										
tree roots, large			YES						YES	
vertical or undercut bank										
dry stone wall other reinforced										
crayfish burrows										
Shading above	HEAVY		HEAVY		HEAVY	_	HEAVY		HEAVY	
Crayfish/10 refuges, or per unit (depending on method)	0		0		0		0		0	
Search time (Mins)	10		5		10		5		5	
Bullhead present? Evaluation crayfish						ļ <u>.</u>				
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 1 1 0 3 3	Notes (surv	ey conditions, p	atories etc.).	Erosion on	balks and	11000.1033	Site. Hibua	агу наз до	od Habitat
Total crayfish (by 1 method, note total(s) by other methods in notes if applicable)	0									

		CRAY	FISH H	ABITAT	SURVE	Y FORI	И			
Catchment	Wye		River	Dulas Brog	sk /Duith D	oad)	Site (no., name)			12
Calcriment	vvye	Surveyor	Rivei	Dulas Broo	K (Buiti K	uau)	Grid ref.			12
Date (dd/mm/yy)	01/09/2015		DR LW			Clarity	(d/s end)	SO 0604 5	5673	
Weather, good 1, mod 2, poor 3		Flow norm 1, low 2, fall 3, rise 4		Water temp. oC		Clarity, good 1, mod 2, poor 3				
Photo ref. &		.,		10		, , ,				
Location										
Site length (m)										
- · · · · · · · · · · · · · · · · · · ·										
		Descript.	Whole 500r	m unsuitable	due to sm	nall flow				
		(channel features,	Main flow a							
Width channel (m)		landuse)	arising from							
Survey method, std 1, quad	sample pato	h 1	sample pate	ch 2	sample pa	tch 3	sample par	tch 4	sample pa	tch 5
2, net/kick 3, trap 4, view 5									ļ	
Details (if not standard)				1		1				
Extent (I x w patch)									ļ	
Channel (1 margins, 2 mid, 3 both, other specify)										
Depth (metres)										
Feature (1 marg. d'water, 2 pool, 3 glide, 4 run, 5 riffle)										
Refuges in channel	tick all present	in patch, ring	main type(s) se	earched						
cobble (6.5-15cm)	, , , , , , , , , , , , , , , , , , ,									
cobble (15-25.6cm)										
boulder (25.6-40cm) boulder (>40cm)										
rubble (give size)										
woody debris										
other urban debris										
tree roots, fine moss										
filamentous algae										
other submerged veg.										
emergents										
Main substrate beneath bedrock										
cobble (6.5-15cm)										
pebble (<6.5cm)										
gravel (<1.6cm) sand (<2mm)										
clay										
silt										
Siltation none low										
moderate										
high										
Refuges in bank none										
cobble/boulder tree roots, large									<del>                                     </del>	
vertical or undercut bank										
dry stone wall										
other reinforced										
crayfish burrows Shading above										
Crayfish/10 refuges, or per									<u> </u>	
unit (depending on method)										
Search time (Mins) Bullhead present?										
Evaluation crayfish		Notes (surv	ey conditions, p	atches etc.):						
habitat for whole site (0										
none, 1 pres., 2 freq., 3 abund.)	Score									
in margins	0									
in mid channel in banks	0									
surveyability	0									
	Ť									
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)										

Catchme				SH HAE			Site (no.,			
nt Date (dd/mm/y	Wye	Surveyor	River	Dulas Bro	ok (Buith R	oad)	name) Grid ref.			13
y) Weather,	01/09/2015	Flow norm	DR LW	Water		Clarity,	(d/s end)			
good 1, mod 2, poor 3 Photo ref. &		1, low 2, fall 3, rise 4		temp. oC		good 1, mod 2, poor 3				
Location		Descript.								
length (m) Width cha	nnel (m) sample patc	(channel features, landuse)	Whole 500 dry riverbe sample pa	om unsuitab ed tch 2	ole for surve		sample pa	tch 4	sample pat	rch 5
Survey method, std 1, quad 2, net/kick 3, trap 4, view 5	sample pate		sample pa	ien z	sample pa	en 3	sample pa	en 4	sample pai	en s
standard) Extent (( x										
w patch) Channel (1 margins, 2 mid, 3 both, other specify)										
Depth (metres) Feature (1										
marg. d'water, 2 pool, 3 glide, 4 run, 5 riffle) Refuges										
in channel cobble	tick all present	in patch, ring	main type(s) :	earched						
(6.5- 15cm) cobble										
(15- 25.6cm) boulder										
(25.6- 40cm) boulder										
(>40cm) rubble (give										
size) woody debris other										
urban debris										
tree roots, fine moss filamento										
us algae other submerge d veg. emergent										
Main substrat e beneath										
bedrock cobble (6.5- 15cm) pebble										
(<6.5cm) gravel (<1.6cm)										
sand (<2mm) clay										
Siltation none										
low moderate high										
Refuges in bank none cobble/bo ulder										
tree roots, large										
vertical or undercut bank dry stone										
wall other reinforce d crayfish										
Shading above Crayfish/										
10 refuges, or per unit (depending on method) Search										
time (Mins) Bullhead										
present? Evaluatio		Notes (surv	ey conditions,	patches etc.)	<u> </u>					
n crayfish habitat for whole site (0 none, 1 pres., 2 freq., 3	Score									
in margins in mid channel in banks surveyabil	0	1								
Problems pollution 1, erosion 2, (E if >33% affected), aliens 3.	0									
Total crayfish (by 1 method, note total(s) by other methods in notes if										
applicable)		L								

## 11.15. Appendix O: White-clawed crayfish habitat survey forms for Clyro Brook August 2016

		CRA	/FISH H/	ABITAT	SURVE	Y FORI	1			
0.11							Site (no.,			
Catchment	Wye	Surveyor	River	Clyro			name) Grid ref.			1
Date (dd/mm/yy)	24/08/2016		DR LW			Ol:'t-	(d/s end)	SO 232 45	4	
Weather, good 1, mod 2, poor		Flow norm 1, low 2, fall		Water		Clarity, good 1, mod				
Photo ref. &	1	3, rise 4	2	temp. oC	12	2, poor 3	1			4 Family Control
Location	Near conflue	ence					77		d30/1	
Site length (m)	300		Massive am	nounts of ba	ılsam. Ditch	ı like at				
		Descript. (channel features,	confluence Mud over a often not vis	nkle level bu sible underr	ut variety of	stones				
Width channel (m)		landuse)	poaching th			tab 0	econic not	ah 4	annula na	tole E
Survey method, std 1, quad	sample patc	n I	sample pate	in Z	sample pa	ich 3	sample pat	Cn 4	sample pa	เตาอ
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 mid, 3	4x1		5x4		4x1		2x2		2x1	
both, other specify)	3		3		3		3		3	
Depth (metres)	0.2		0.3		0.3		0.2		0.2	
Feature (1 marg. d'water, 2 pool, 3 glide, 4 run, 5 riffle)	3		3		3		2		3	
Refuges in channel	tick all present	in patch, mair			J 3				3	
cobble (6.5-15cm)										
cobble (15-25.6cm)			YES		YES		YES		YES	
boulder (25.6-40cm) boulder (>40cm)	YES		YES		YES		YES YES		YES	
rubble (give size)							TLO			
woody debris			YES						YES	
other urban debris										
tree roots, fine moss	YES		YES		YES				YES	
filamentous algae										
other submerged veg.										
emergents										
Main substrate beneath bedrock										
cobble (6.5-15cm)										
pebble (<6.5cm)										
gravel (<1.6cm)										
sand (<2mm) clay	YES		YES		YES		YES		YES	
silt	120		120		120		120		120	
Siltation none										
low										
moderate high	YES		YES		YES		YES		YES	
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/10 refuges, or per unit (depending on method)	0		0		0		0		0	
Search time (Mins)	5		10		8		12		6	
Bullhead present?  Evaluation crayfish	YES	Natas :	YES		YES		YES		YES	
habitat for whole site (0 none, 1 pres., 2 freq., 3 abund.) in margins	Score 1		ey conditions, p le patches to		Jiiiicuit to					
in mid channel	1									
in banks surveyability	1									
Sui veyability	1									
Problems pollution 1, erosion 2, (E if >33% affected), aliens 3.	Silt deposition									
Total crayfish	0									

		CRA	YFISH HA	ABITAT	SURVE	Y FORI	И			
Catabasant	10/		Diver	Chura			Site (no.,			2
Catchment	Wye	Surveyor	River	Clyro			name) Grid ref.			2
Date (dd/mm/yy)	24/08/2016	S Flow norm	DR LW			Clarity,	(d/s end)	SO 229 45	51	
Weather, good 1, mod 2, poor 3	1	1, low 2, fall 3, rise 4	2	Water temp. oC	12	good 1, mod 2, poor 3	2			
Photo ref. &							1			1/2
Site length (m)  Width channel (m)	500	Descript. (channel features, landuse)	m of 1st 100  Landuse, a within thick access.	gricultural.						
	sample patc		sample pate	ch 2	sample pa	tch 3	sample pat	tch 4	sample pa	tch 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)	3x1		2x1		4x1		3x1		4x1	
Channel (1 margins, 2 mid, 3 both, other specify)	3		3		3		3		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)  Refuges in channel	4 tick all present	in natch ring	main type(s) se		4		4		4	
cobble (6.5-15cm)		in paten, mig	YES	Jaronea	YES		YES		YES	
cobble (15-25.6cm)			YES		YES		YES		YES	
boulder (25.6-40cm)	YES		YES		YES		YES		YES	
boulder (>40cm)			YES				YES			
rubble (give size)										
woody debris other urban debris										
tree roots, fine										
moss										
filamentous algae										
other submerged veg.										
emergents										
Main substrate beneath										
bedrock cobble (6.5-15cm)										
pebble (<6.5cm)										
gravel (<1.6cm)										
sand (<2mm)										
clay	YES		YES		YES		YES		YES	
Siltation										
Siltation none low										
moderate										
	YES		YES		YES		YES		YES	
Refuges in bank none	YES		YES		YES		YES		YES	
cobble/boulder										
tree roots, large										
vertical or undercut bank										
dry stone wall other reinforced										
other reinforced crayfish burrows										
Shading above	HEAVY		HEAVY		HEAVY		HEAVY		HEAVY	
Crayfish/10 refuges, or per										
unit (depending on method)	<u>0</u>		0 8		0		6		6	
Search time (Mins) Bullhead present?	YES		8		YES		YES		6	
Evaluation crayfish habitat for whole site (0 none, 1 pres., 2 freq., 3 abund.) in margins in mid channel in banks surveyability	Score 1 1 1 1 1 1		ey conditions, per through c		Difficult to					
Problems pollution 1, erosion 2, (E if >33% affected), aliens 3.  Total crayfish	1 & 2									

		CRAY	/FISH H	ABITAT	SURVE	Y FORI	M			
Ontobassast	<b>NA</b> /		D'	01			Site (no.,			0
Catchment	Wye	Surveyor	River	Clyro			name) Grid ref.			3
Date (dd/mm/yy)	24/08/2016		DR LW			Olit	(d/s end)	SO 228 44	6	
Weather, good 1, mod 2, poor 3		Flow norm 1, low 2, fall 3, rise 4	2	Water temp. oC	12	Clarity, good 1, mod 2, poor 3	1			
Photo ref. &										er de
Location	Typical streto	ch in middl	e of site							
Site length (m)  Width channel (m)	i	Descript. (channel features, landuse)	occasional	alder, willow stock scces cattle and sh	, hazel, ash ss. Heavy a	with				
	sample patch		sample pate		sample pat	tch 3	sample pa	tch 4	sample pa	tch 5
Survey method, std 1, quad 2, net/kick 3, trap 4, view 5	1 & 4		1		1		1 & 4		1 & 4	
Details (if not standard)	1 03 4			I	'		144	I.	144	1
Extent (I x w patch) Channel (1 margins, 2 mid, 3	3x1		4x1		3x1		3x1		5x1	
both, other specify)	3		3		3		3		3	3
Depth (metres)	0.2		0.1		0.1		0.2		0.2	
Feature (1 marg. d'water, 2 pool, 3 glide, 4 run, 5 riffle)	4		4		5		4		4	
Refuges in channel	tick all present i	n patch, ring			. 5		4		4	
cobble (6.5-15cm)	_	1 / 3	YES		YES		YES		YES	
cobble (15-25.6cm)	_		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	YES		YES		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	VEC		VEC		VEC		VEC		VEC	
moderate	YES		YES		YES		YES		YES	
high										
Refuges in bank none										
cobble/boulder tree roots, large	VES		YES		YES		YES		YES	
-	IEO		IES		IES		IES		IES	
vertical or undercut bank dry stone wall										
other reinforced										
crayfish burrows										
Shading above Crayfish/10 refuges, or per	HEAVY		HEAVY		HEAVY		HEAVY		HEAVY	
unit (depending on method)	0		0		0		0		C	
Search time (Mins)	12		6		10		8		10	
Bullhead present?		Nlate -	L	<u> </u>	):#: a li . t					
Evaluation crayfish habitat for whole site (0 none, 1 pres., 2 freq., 3 abund.) in margins in mid channel in banks	Score 1 1 1 1		ey conditions, per through c		DITTICUIT TO					
surveyability	1									
Problems pollution 1, erosion 2, (E if >33% affected), aliens 3.										
Total crayfish	0						-	_		

		CRAY	FISH H	ABITAT	SURVE	Y FORI	И			
Catchment	Wye		River	Clyro			Site (no., name)			4
Date (dd/mm/yy)	24/08/2016	Surveyor	DR LW				Grid ref. (d/s end)	SO 224 443	}	
· · · · · · · · · · · · · · · · · · ·	2-1/00/2010	Flow norm	DICEVV	Water		Clarity,		00 224 440	,	
Weather, good 1, mod 2, poor 3	1	1, low 2, fall 3, rise 4	2	temp. oC	12	good 1, mod 2, poor 3	1			
Photo ref. &	At roadbride	10								
Location	At roadbridg	e					*			
								ANTAR S	300	
Site length (m)	500							THE R	EU.	A PARK
Site length (III)	300						A CHOO	<b>双端</b>		35
		Descript.	Low slow flo	wina. deep	pool after		130	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	976 V	SA ENGO
		(channel features,	roadbridge.	Increased	siltation ma	ybe by				100
Width channel (m)	sample patc	landuse) h 1	sewage wor		m sample pat	tch 3	sample pat	rch 4	sample pa	tch 5
Survey method, std 1, quad 2, net/kick 3, trap 4, view 5	1 & 4		1 & 4	11 2	1 & 4	ich 5	1 & 4		1 & 4	itori 5
Details (if not standard)	1 0. 4		1 0. 4		1 & 4		1 0.4		10.4	
Extent (I x w patch)	4x2		4x2		5x1		5x1	4	4x1	
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)  Refuges in channel	tick all present	in patch, ring	main type(s) se		4		4		4	
cobble (6.5-15cm)	YES		YES		YES		YES	,	YES	
cobble (15-25.6cm)			YES		YES		YES		YES	
boulder (25.6-40cm)			YES		YES		YES	,	YES	
boulder (>40cm)	YES		YES							
rubble (give size)										
woody debris other urban debris										
tree roots, fine										
moss										
filamentous algae										
other submerged veg.	YES		YES							
emergents										
Main substrate beneath										
bedrock cobble (6.5-15cm)					YES					
pebble (<6.5cm)					ILO					
gravel (<1.6cm)	YES		YES				YES	,	YES	
sand (<2mm)										
clay										
silt										
Siltation none										
low moderate	YES		YES		YES		YES	,	YES	
high										
Refuges in bank none										
cobble/boulder										
tree roots, large										
vertical or undercut bank	YES		YES							
dry stone wall										
other reinforced crayfish burrows										
Shading above	MOD		MOD		HEAVY		HEAVY		HEAVY	
Crayfish/10 refuges, or per							۱ ۷ 1		۱ ۷ 1	
unit (depending on method)										
Search time (Mins)										
Bullhead present?  Evaluation crayfish		Notes (au-	ey conditions, p	atches etc.)*	Difficult to	access rive	r through a	anony evec	nt at road	and field
habitat for whole site (0		gates	ey conditions, p	atches etc.).	Difficult to a	access rive	i iiiougii c	anopy excep	ol al Iuau	and neid
none, 1 pres., 2 freq., 3		gaics								
abund.)	Score									
in margins	1									
in mid channel	1									
in banks surveyability	1									
Sui vey ability	1									
Problems pollution 1, erosion										
2, (E if >33% affected), aliens 3.	1 sewage?									
Total crayfish	0									

		CRAY	YFISH H	ABITAT	SURVE	Y FORI	И			
Catalment	Myro		Divor	Chro			Site (no.,			5
Catchment	Wye	Surveyor	River	Clyro			name) Grid ref.			5
Date (dd/mm/yy)	23/08/2016		DR LW			Clarity	(d/s end)	SO 220 43	39	
Weather, good 1, mod 2, poor 3	1	Flow norm 1, low 2, fall 3, rise 4		Water temp. oC	12	Clarity, good 1, mod 2, poor 3	1			
Photo ref. &				, ,						Sel-
Location	At sewage v	vorks disch	arge						44	
Site length (m)	500									
MC HI I I I I		Descript. (channel features,	Privately de large pond to the river	and sewage upstream o	e works disc f it. Sites 1	charging				
Width channel (m)	sample pate	landuse)	the flood pla sample pate		sample pa	tch 3	sample pa	tch 4	sample pa	tch 5
Survey method, std 1, quad				2				OII T		0.10
2, net/kick 3, trap 4, view 5  Details (if not standard)	1 & 4		1 & 4		1 & 4		1 & 4		1 & 4	
Extent (I x w patch)	4x1		4x1		2x1		2x1		5x1	
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)  Refuges in channel	tick all present	in natch ring	main type(s) se		3		3		3	
cobble (6.5-15cm)		in paten, ning	YES	archeu	YES		YES		YES	
cobble (15-25.6cm)			YES		YES		YES		YES	
boulder (25.6-40cm)			YES		YES		YES		YES	
boulder (>40cm)					YES					
rubble (give size)										
woody debris										
other urban debris										
tree roots, fine	YES				YES		YES			
moss										
filamentous algae										
other submerged veg.										
emergents										
Main substrate beneath										
bedrock										
cobble (6.5-15cm)	\/E0		\/F0		VE0		VE0		\( \( \)	
pebble (<6.5cm)	YES		YES		YES		YES		YES	
gravel (<1.6cm) sand (<2mm)										
sanu ( <zmin) clay</zmin) 										
silt										
Siltation none										
low										
moderate	YES		YES		YES		YES		YES	
high										
Refuges in bank none										
cobble/boulder			YES							
tree roots, large	YES		YES				YES		YES	
vertical or undercut bank										
dry stone wall										
other reinforced									1	
crayfish burrows	LIE 43 0 4		LIFALO		1.15 41.07		L IE A : 0 /		LIE ALO.	
Shading above Crayfish/10 refuges, or per	HEAVY		HEAVY		HEAVY		HEAVY		HEAVY	
unit (depending on method)	0		0		0		0		0	
Search time (Mins)	6		8		10		6		14	
Evaluation crayfish habitat for whole site (o none, 1 pres., 2 freq., 3 abund.) in margins in mid channel in banks surveyability	Score 1 1 1 1 1	Notes (surv	ey conditions, p	atches etc.):[	Difficult to a	ccess rive	through ca	anopy		
Problems pollution 1, erosion 2, (E if >33% affected), aliens 3.	1 sewage?									
Total crayfish	0									

		CRAY	/FISH H/	ABITAT	SURVE	Y FORI	VI			
							Site (no.,			
Catchment	Wye	Surveyor	River	Clyro			name) Grid ref.			6
Date (dd/mm/yy)	23/08/2016		DR LW			0	(d/s end)	SO 216 43	39	
Weather, good 1, mod 2, poor 3		Flow norm 1, low 2, fall 3, rise 4	2	Water temp. oC	13	Clarity, good 1, mod 2, poor 3	1			
Photo ref. &								A III		
Location  City Issath (12)	Roadbridge	in village							4	4
Site length (m)	100	Descript. (channel features,	Land use -		oridges and	d urban.	4			
Width channel (m)	sample patc	landuse)	Appears go		sample pa	tch 3	sample pa	tch 4	sample pa	tch 5
Survey method, std 1, quad				J.1 Z				WII -T		
2, net/kick 3, trap 4, view 5	1 & 4		1 & 4	<u> </u>	1 & 4		1 & 4		1 & 4	
Details (if not standard)										
Extent (I x w patch) Channel (1 margins, 2 mid, 3	3x2 3		3x3 3		5x1		2x2 3		3x4 3	
both, other specify)										
Depth (metres) Feature (1 marg. d'water, 2	0.2		0.3		0.2		0.2		0.3	
pool, 3 glide, 4 run, 5 riffle)	5		5		3		3		4	
Refuges in channel cobble (6.5-15cm)	tick all present YES	in patch, mair		ned in red	YES		YES		YES	
cobble (5.5-15cm)			YES YES		YES		YES		YES	
boulder (25.6-40cm)			YES		YES		YES		YES	
boulder (>40cm)			YES		YES		YES		YES	
rubble (give size)	YES		YES		YES		YES		YES	
woody debris			YES		YES		120		YES	
other urban debris	120		120		YES		YES		120	
tree roots, fine	YES		YES						YES	
moss										
filamentous algae										
other submerged veg.										
emergents	YES		YES		YES		YES		YES	
Main substrate beneath										
bedrock										
cobble (6.5-15cm)										
pebble (<6.5cm)	YES		YES							
gravel (<1.6cm)							YES		YES	
sand (<2mm)					YES					
clay										
Siltation none	VEC		VEC		YES		VEC		VEC	
Siltation none low	YES		YES		TES		YES		YES	
moderate				-						
high							t			
Refuges in bank none							YES			
cobble/boulder							T -		YES	
tree roots, large					YES					
vertical or undercut bank	YES				YES					
dry stone wall										
other reinforced										
crayfish burrows										
Shading above	MODERATE		HEAVY		HEAVY		LIGHT		NONE	
Crayfish/10 refuges, or per unit (depending on method)	0		0		1		0		_	
Search time (Mins)	12		6		11		12		5	
Bullhead present?	12		0		''		12		3	
Evaluation crayfish		Notes (surv	ey conditions, p	patches etc.):F	21 - manv i	red roots	ı		ı	
habitat for whole site (0		( 1	,	/						
none, 1 pres., 2 freq., 3										
abund.)	Score									
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	1 1									

		CRA	YFISH H	ABITAT	SURVE	Y FORI	И			
			D:	01			Site (no.,			_
Catchment	Wye	Surveyor	River	Clyro			name) Grid ref.			7
Date (dd/mm/yy)	23/08/2016		DR LW				(d/s end)	SO 211 44	0	
Weather, good 1, mod 2, poor 3	1	Flow norm 1, low 2, fall 3, rise 4		Water temp. oC	13	Clarity, good 1, mod 2, poor 3	1			
Photo ref. &										4
Location	Footpath bri	dge								
Site length (m)	100									
Gio longa. (m)	100	Descript.	Land use -							
Width channel (m)	3	features, landuse)	remaining (	•	•	po. poolo			March 18	
	sample pato		sample pate		sample par	tch 3	sample pa	tch 4	sample par	tch 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)	5x2		5x2		8x2		5x1		4x1	
Channel (1 margins, 2 mid, 3 both, other specify)	3		3		3		3		3	
Depth (metres)	0.2		0.2		0.2		0.4		0.2	
Feature (1 marg. d'water, 2 pool, 3 glide, 4 run, 5 riffle)	5		5		4		2		3	
Refuges in channel	tick all present	in patch, mair		-	4				3	
cobble (6.5-15cm)		,,	YES		YES		YES		YES	
cobble (15-25.6cm)			YES		YES		YES		YES	
boulder (25.6-40cm)			YES		YES		YES		YES	
boulder (>40cm)	YES		YES		YES		YES		YES	
rubble (give size) woody debris							YES			
other urban debris							TES			
tree roots, fine										
moss							YES			
filamentous algae	YES									
other submerged veg.										
emergents										
Main substrate beneath bedrock	VES		YES		YES		YES		YES	
cobble (6.5-15cm)	120		120		120		120		120	
pebble (<6.5cm)										
gravel (<1.6cm)										
sand (<2mm)										
clay										
Siltation none	YES		YES		YES		YES		YES	
low									>	
moderate										
high										
Refuges in bank none					YES					
cobble/boulder tree roots, large										
vertical or undercut bank			YES				YES		YES	
dry stone wall			IES	-			IES		IES	
other reinforced							YES		YES	
crayfish burrows										
Shading above	HEAVY		HEAVY		HEAVY		HEAVY		HEAVY	
Crayfish/10 refuges, or per unit (depending on method)	10		8		0		6		14	
Search time (Mins)	10		6	-	6		10		10	
Bullhead present?									-	
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 3 3 3		ey conditions, p Banks very u		•	_		at in cracks	s and crew	ces in the
Problems pollution 1, erosion 2, (E if >33% affected), aliens 3.  Total crayfish	38									

Weither, good 1, mod 2, good 1, mod 2, good 1, mod 3, good 1, mod 3, good 1, mod 4, good 1, good			CRAY	/FISH HA	ABITAT	SURVE	Y FORI	И			
Date (dammiyy) 2308/2016 B DR LW Weather, good 1, mod 2, poor 1 PDW room Ploor ref. & Location Typical section in 1st 100m  Descript. Stem length (m) 100											
Water (	Catchment	Wye	Surveyor	River	Clyro						8
Weather your Jin and 2 peer 2 has 4 years 2 percent in the second of the	Date (dd/mm/yy)	23/08/2016		DR LW			OI ''	(d/s end)	SO 206 44	11	
Descript	Weather, good 1, mod 2, poor 3	1	1, low 2, fall	2		12	good 1, mod	1			
Descript											
Witch channel (m) 3 lluviuse   Land use - woodland. Good habitat   Sample patch 1   Sample patch 2   Sample patch 3   Sample patch 4   Sample patch 5   Sample patch 6   Sample	Site length (m)		Descript.	00m							
Survey method, sit 1, quade   1.8.4	Width channel (m)	3	features, landuse)	Land use -	woodland.	Good habita	at	1	TP N		1
2, enthick 3, true 4, www.s   1.8.4	Survey method and 1 guard	sample patc	h 1	sample pato	h 2	sample par	tch 3	sample pa	tch 4	sample pa	tch 5
Extent ( x w patch)   Sx2	2, net/kick 3, trap 4, view 5	1 & 4		1 & 4		1 & 4		1 & 4		1 & 4	
Channel (1 margins, 2 mid. 3   3   2   2   3   3   2   2   3   3	Details (if not standard)										
Doth (Interespective)   3	Extent (I x w patch)	5x2		4x2		4x2		5x2		3x2	
Depth (meters)   Dept	Channel (1 margins, 2 mid, 3 both, other specify)	3		2		2		3		2	
Febiture (1 many dwater, 2	Depth (metres)										
Refuges in channel  cobble (6.6-15cm)  cobble (6.6-15cm)  cobble (16-25,6cm)  boulder (25,6-40cm)  boulder (25,6-40cm)  boulder (25,6-40cm)  rubble (give size)  woody debris  tree roots, fine  moss  filamentous algae  other submerged veg.  emergents  Main substrate beneath  bedrock YES  VES  VES  VES  VES  VES  VES  VES	Feature (1 marg. d'water, 2			-							
cobble (6.5-15cm) YES			in patch. mair			3		3		4	
boulder (24,6:40cm) YES			, , , , , , , , , , , , , , , , , , ,			YES		YES		YES	
rubble (give size) rubble (give size) woody debris yes woody debris yes woody debris yes woody debris yes				YES		YES		YES			
rubble (give size) woody debris other urban debris tree roots, fine moss filamentous algae other submerged veg emergents which is a substrate beneath bedrock YES YES YES YES YES YES YES ON STAND AND AND AND AND AND AND AND AND AND	,										
woody debris other urban debris other urban debris tree roots, fine moss filamentous algae other submerged veg. emergents with the property of the submerged veg. emergents with the	, ,	YES		YES		YES		YES		YES	
other urban debris tree roots, fine moss filamentous algae other submerged veg. emergents hedrock cobble (6.5-15cm) pebble (-6.5cm) pebble (-6		YES		YES		YES		YES		YES	
filamentous algae other submerged veg. emergents  Main substrate beneath bedrock Cobble (6.5-15cm) pebble (-6.5cm) pebble (-6.5cm) gravel (<1.6cm) sand (<2mm) clay sitt  Siltation none low moderate high dry stone wall other reinforced cray/fish burrows  Refuges in bank none YES YES YES YES YES YES YES YES YES Siltation none cobble/houlder tree roots, large wertical or undercut bank dry stone wall other reinforced cray/fish burrows  Shading above HEAVY	· ·	120		120		120		120		120	
filamentous algae other submerged veg. emergents  Main substrate beneath bedrock YES YES YES YES YES YES YES Ocobble (6.5-15cm) pebble (-6.5-m) gravel (-1.6cm) sand (-2mm) clay silt  Siltation none YES											
other submerged veg. emergents  Main substrate beneath bedrock YES YES YES YES YES  cobble (6.5-15cm) pebble (-6.5cm) gravel (-1.6cm) sand (-2mm) clay silt  Siltation none low moderate high  Refuges in bank none cobble/boulder tree roots, large vertical or undercut bank dry stone wall other reinforced crayfish burrows  Shading above Trayfish/foretuges, or per unit (depending omethod) Search time (mins) Bullhead present?  Evaluation crayfish habitat for whole site (o none, 1 pres., 2 freq., 3 abund.) in margins i											
Main substrate breath bedrock YES YES YES YES YES YES YES YES Oxide (6.5-15cm) pebble (6.5-15cm) pebble (-6.5cm) gravel (-1.6cm) sand (-2mm) sand (-2m	•										
Main substrate beneath bedrock VES YES YES YES YES YES SOBIOL (6.5-15cm) pebble (-6.5-5cm) pebble (-6.5-5cm) gravel (<1.6cm) sand (<2mm) s											
bedrock cobble (6.5-fisch) pebble (-6.5cm) gravel (<1.6cm) sand (<2mm) clay silt silt yes	· ·										
pebble (-6.5cm) gravel (-1.6cm) sand (-2mm) clay sit  Siltation none YES YES YES YES YES YES  Note The Property of the Propert		YES		YES		YES		YES		YES	
gravel (<1.6cm) sand (<2mm) clay sit  Siltation none low moderate high Refuges in bank none cobble/boulder tree roots, large vertical or undercut bank dry stone wall other reinforced crayfish burrows Shading above Crayfish for etupes, or per unit (depending on method) Search time (mins) Salulhead present? Evaluation crayfish habitat for whole site (none, 1 pres., 2 freq., 3 abund.) In margins in mid channel in banks 3 surveyability  Problems pollution 1, erosion 2, (E if >33% affected), aliens 3.											
sand (<2mm) clay sitt  Siltation none low moderate high Refuges in bank none cobble/boulder tree roots, large vertical or undercut bank dry stone wall other reinforced crayfish burrows Shading above  HEAVY HEAV											
Sitation none YES YES YES YES YES YES YES ON THE STATE OF											
Siltation none low moderate high Refuges in bank none cobble/boulder tree roots, large vertical or undercut bank dry stone wall other reinforced crayfish burrows  Shading above Crayfish burrows  Shading above HEAVY HEAVY HEAVY HEAVY HEAVY HEAVY HEAVY Tog 10 5 10 5 10 5 10 5 10 5 10 5 10 5 10	, ,										
Comparison   Com	*										
Refuges in bank none cobble/boulder tree roots, large vertical or undercut bank dry stone wall other reinforced crayfish burrows  Shading above HEAVY HEAVY HEAVY HEAVY HEAVY HEAVY HEAVY HEAVY Search time (mins)  Search time (mins)  Sullhead present?  Evaluation crayfish habitat for whole site (anone, 1 pres., 2 freq., 3 abund.) in margins a surveyability  Problems pollution 1, erosion 2, (E if > 33% affected), aliens 3.	Siltation none	YES		YES		YES		YES		YES	
Refuges in bank none cobble/boulder tree roots, large vertical or undercut bank dry stone wall other reinforced crayfish burrows  Shading above HEAVY HEAVY HEAVY HEAVY HEAVY HEAVY HEAVY HEAVY Torgytish/10 refuges, or per unit (depending on method)  Search time (mins)  Builhead present?  Evaluation crayfish habitat for whole site (none, 1 pres, 2 freq., 3 abund.)  in margins in banks 3 in mid channel in margins in banks 3 surveyability  Problems pollution 1, erosion 2, (E if > 33% affected), aliens 3.											
Refuges in bank none cobble/boulder tree roots, large vertical or undercut bank dry stone wall other reinforced crayfish burrows  Shading above HEAVY Orayfish/10 retuges, or per unit (depending on method)  Search time (mins)  Bullhead present?  Evaluation crayfish habitat for whole site (none, 1 pres, 2 freq, 3 abund.)  in margins in mid channel in banks 3 surveyability  Problems pollution 1, erosion 2, (E if > 33% affected), aliens 3.											
tree roots, large  vertical or undercut bank dry stone wall other reinforced crayfish burrows  Shading above  Crayfish/10 refuges, or per unit (depending on method)  Search time (mins)  Evaluation crayfish habitat for whole site (o none, 1 pres., 2 freq., 3 abund.) in margins in mid channel in banks 3 in mid channel in banks 3 surveyability  3 results a feeted), aliens 3.	Refuges in bank none	YES		YES		YES		YES		YES	
vertical or undercut bank dry stone wall other reinforced crayfish burrows  Shading above HEAVY HEAVY HEAVY HEAVY HEAVY  Crayfish/10 refuges, or per unit (depending on method)  Search time (mins) 5 10 5 10 5  Bullhead present?  Evaluation crayfish habitat for whole site (one, 1 pres., 2 freq., 3 abund.)  in margins in mid channel in banks 3 surveyability  Problems pollution 1, erosion 2, (E if > 33% affected), aliens 3.	cobble/boulder										
dry stone wall other reinforced crayfish burrows  Shading above HEAVY HEAVY HEAVY HEAVY HEAVY HEAVY  Crayfish/10 refuges, or per unit (depending on method)  Search time (mins) 5 10 5 10 5 10 5 80 10 5 10 5 10 5 10 5											
other reinforced crayfish burrows  Shading above HEAVY HEAVY HEAVY HEAVY HEAVY  Crayfish/10 refuges, or per unit (depending on method)  Search time (mins)  Search time (mins)  Sullhead present?  Evaluation crayfish habitat for whole site (0 none, 1 pres, 2 freq., 3 abund.)  in margins  in mid channel  in banks  surveyability  Score  Telephore pollution 1, erosion  2, (E if > 33% affected), aliens 3.											
Crayfish burrows  Shading above  Crayfish/10 refuges, or per unit (depending on method)  Search time (mins)  Sullhead present?  Evaluation crayfish habitat for whole site (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.		<b></b>									-
Shading above Crayfish/10 refuges, or per unit (depending on method) 7 3 0 5 1 Search time (mins) 5 10 5 8ullhead present?  Evaluation crayfish habitat for whole site (one, 1 pres, 2 freq., 3 abund.) in margins in banks surveyability  Problems pollution 1, erosion 2, (E if >33% affected), aliens 3.											
unit (depending on method)  Search time (mins)  Bullhead present?  Evaluation crayfish habitat for whole site (o 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.	Shading above	HEAVY		HEAVY		HEAVY		HEAVY		HEAVY	
Search time (mins)  Bullhead present?  Evaluation crayfish habitat for whole site (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.		7		2						1	
Bullhead present?  Evaluation crayfish habitat for whole site (one, 1 pres, 2 freq., 3 abund.)  in margins in banks 3 surveyability  Problems pollution 1, erosion 2, (E if >33% affected), aliens 3.  Second in margins 3 surveyability  Second in banks 4 surveyability 3 su	Search time (mins)										
habitat for whole site (o none, 1 pres., 2 freq., 3 abund.) in margins in mid channel in banks surveyability  3  Problems pollution 1, erosion 2, (E if >33% affected), aliens 3.	Bullhead present?										
in banks 3 surveyability 3  Problems pollution 1, erosion 2, (E if >33% affected), aliens 3.	Evaluation crayfish habitat for whole site (0 none, 1 pres., 2 freq., 3 abund.) in margins						re adults, ti	ver did not	extend the	width of the	e riverbed
surveyability  3  Problems pollution 1, erosion 2, (E if >33% affected), aliens 3.	in mid channel							1	-		
Problems pollution 1, erosion 2, (E if >33% affected), aliens 3.	in banks							S. Carrie		100	
2, (E if >33% affected), aliens 3.	surveyability	3						124	18. 1		2/2
2, (E if >33% affected), aliens 3.	Problems pollution 1, erosion							100		- 12/-	7
Total crayfish 16	2, (E if >33% affected), aliens 3.							21		A LANG	1
Total crayfish 16								21			
	Total crayfish	16								11/2	Cont.

		CRAYE	FISH HA	BITAT	SURVE	Y FORI	И			
Catabasant	14/		N	Chara			Site (no.,			0
Catchment		urveyor	River	Clyro			name) Grid ref.			9
Date (dd/mm/yy)	22/08/2016 s	OW norm	R LW			Clarity,	(d/s end)	SO 202 44	0	
Weather, good 1, mod 2, poor 3	1,	low 2, fall rise 4	2	Water temp. oC	12	good 1, mod 2, poor 3	1			
Photo ref. & Location	Typical habitat	at downsti	ream end c	of site			-	and the same	1	The second second
Site length (m)	100 De (ct	escript.			d farmland.	Good				
Width channel (m)	3 lan	nduse) h		II flow betw		-1-0	The same		1 1137	tale 5
Survey method, std 1, quad	sample patch 1		ample patc	h 2	sample pat	ch 3	sample pa	tch 4	sample pa	tch 5
2, net/kick 3, trap 4, view 5  Details (if not standard)	1&4	1	&4		1&4		1&4		1&4	
	3x2	3	x4		2x4		2x2		5x2	
Extent (I x w patch) Channel (1 margins, 2 mid, 3										
both, other specify)	3		3		3		3		3	
Depth (metres) Feature (1 marg. d'water, 2	0.3		0.3		0.3		0.3		0.3	
pool, 3 glide, 4 run, 5 riffle)  Refuges in channel	2 tick all present in p	natch rice -	2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	arched	2		5		5	
cobble (6.5-15cm)	YES		ES	arched	YES		YES		YES	
cobble (15-25.6cm)	YES		ΈS		YES		YES		YES	
boulder (25.6-40cm)	YES		ES ES		YES YES		YES		YES	
boulder (>40cm) rubble (give size)		I	ES		TES					
woody debris							YES		YES	
other urban debris										
tree roots, fine										
moss filamentous algae										
other submerged veg.										
emergents										
Main substrate beneath bedrock	VES	V	ΈS		YES		YES		YES	
cobble (6.5-15cm)	IES	- 1	ES		IES		IES		IES	
pebble (<6.5cm)										
gravel (<1.6cm)										
sand (<2mm) clay										
silt										
Siltation none										
	YES	Y	ES		YES		YES		YES	
moderate high		-								
Refuges in bank none										
cobble/boulder			ES ES		YES		YES		YES	
tree roots, large			ES Es		YES		YES		YES	
vertical or undercut bank dry stone wall	150	- Y	ES		YES				YES	
other reinforced										
crayfish burrows	MOD		100		LIE 4) 2.1		LIEARS		1100	
Shading above Crayfish/10 refuges, or per	MOD	N	1OD		HEAVY		HEAVY		MOD	
unit (depending on method)	2		1		0		0		0	
Search time (Mins) Bullhead present?	8		12		8		12		9	
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	Score 3 3 3 3 3 3	otes (survey	conditions, pa	atches etc.):						
2, (E if >33% affected), aliens 3.  Total crayfish	3									
				_	_	_		_	_	

		CRAY	FISH H	ABITAT	SURVE	Y FORI	М			
Catchment	Wye		River	Clyro			Site (no., name)			10
	-	Surveyor		Ciyiu			Grid ref.			10
Date (dd/mm/yy)	22/08/2016	S Flow norm	DR, LW			Clarity,	(d/s end)	SO198442	!	
Weather, good 1, mod 2, poor 3	1	1, low 2, fall 3, rise 4	NONE	Water temp. oC		good 1, mod 2, poor 3				
Photo ref. &	,							4 12	1	
Location	one of many	dry section	ns					15/5	1	
										alla.
Site length (m)	500									
		Descript. (channel features,	Channel dry	/ in places	and in othe	r places		15 / 20 / 20 / 20 / 20 / 20 / 20 / 20 / 2		5.00
Width channel (m)	2	landuse)	has pools a	nd a little flo	OW.			10		
Survey method, std 1, quad	sample patc	h 1	sample pate	h 2	sample pa	tch 3	sample par	tch 4	sample pa	tch 5
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		2x1		2x1		2x1	
Channel (1 margins, 2 mid, 3 both, other specify)	3		3		3		3		3	
			0.1				0.1		0.1	
Depth (metres) Feature (1 marg. d'water, 2	0.1		0.1		0.1		0.1		0.1	
pool, 3 glide, 4 run, 5 riffle)	2		3		2		3		3	
Refuges in channel cobble (6.5-15cm)	tick all present YES	in patch, ring		arched	YES		YES		YES	
cobble (15-25.6cm)			YES YES		YES		YES		YES	
boulder (25.6-40cm)			YES		YES				YES	
boulder (>40cm)										
rubble (give size)										
woody debris other urban debris	Yes				Yes		Yes			
tree roots, fine										
moss	Yes		Yes							
filamentous algae										
other submerged veg.										
emergents  Main substrate beneath										
bedrock	Yes		Yes		Yes		Yes		Yes	
cobble (6.5-15cm)	. 00				. 55		. 55		. 00	
pebble (<6.5cm)										
gravel (<1.6cm)										
sand (<2mm) clay										
silt										
Siltation none										
low										
moderate										
high Refuges in bank none										
cobble/boulder										
tree roots, large										
vertical or undercut bank										
dry stone wall										
other reinforced crayfish burrows										
Shading above	MOD		MOD		MOD		MOD		MOD	
Crayfish/10 refuges, or per										
unit (depending on method) Search time (Mins)	5		5		5		5		5	
Bullhead present?	5		3		3		3		3	
Evaluation crayfish		Notes (surv	ey conditions, p	atches etc.):	Searched a	and trapped	pools		L	
habitat for whole site (0 none, 1 pres., 2 freq., 3 abund.)	Score									
in margins	1									
in mid channel	1									
in banks	1									
surveyability	3									
Problems pollution 1, erosion 2, (E if >33% affected), aliens 3.	drys out									
Total crayfish	0									

Date (defirmity)  22/03/216   FDW rows   DR LW  Weather, good 1, mord 2, poor   1, lines 4   2   lettino, QC   12   lettino, QC   13   lettino, QC   13   lettino, QC   14   lettino, QC   15   lettino, QC			CRA	/FISH H	ABITAT	SURVE	Y FORI	Л			
Date (addiminity)  22(03/2016)  Flow room  Ploor ref. & Control  Control  Site length (m)  100  Descript  Sample patch A  Amnest dry stream bod, too shallow for traps  Site length (m)  100  Descript  Sample patch A  Amnest dry stream bod, too shallow for traps  Sample patch A  Sample p	Catchment	Wve		River	Clvro						11
Weather, good 1, mod 2, poor 1 1, 1, wor 2, tal 2, leaves 2 1, 1, wor 2, tal 2, leaves 3 1, word of y stream bed, too shallow for traps 1, word of y stream bed, to shall the shallow for traps 1, word of y stream bed, the shallow for traps 1, word of y stream bed, the shallow for traps 1, word of y stream bed, the shallow for traps 1, word of y stream bed, the shallow for traps 1, word of y stream bed, the shallow for traps 1, word of y stream bed, the shallow for traps 1, word of y stream bed, the shall the shallow for traps 1, word of y stream bed,			•		0.9.0			Grid ref.	SO192445		
Photo ref & Location by pical reach with very low flow  Descript. Converse of the converse of			Flow norm 1, low 2, fall			12	good 1, mod	1			
Size length (m)  100  Descript, between the continues of					temp. 00	12	2, poor 0		<b>三种</b>	A Series	e de la companya della companya della companya de la companya della companya dell
Survey method, set 1, sand 2, and 2, natives, 1 and 1	Site length (m)	100	Descript. (channel features,								
Survey method, set 1, quad   1   1   1   1   1   1   1   1   1	Width channel (m)							sample pa	tch 4	sample pa	tch 5
Details if not standard)   State   S											
Channel (t magna, 2 msd, 3 bbth, offer speak)  Depth inverses)  Post of the magn cleaser, 2 bbth, offer speak of the country o											
both, other specify)  Depth Immers)  O, 1		3X1		3X1		3X1		3X1		3X1	
Feature (I marg dwater, 2 pool, 3 glide, after, 5 fetter)  Refuges in channel cobble (6.5-15cm)											
pool, 3 (lide, 4 m.n. 5 mile)  Refuges in Channel cobble (6.5-15cm) cobble (15-25 6cm) boulder (25-6-40cm) boulder (25-6-40cm) boulder (25-6-40cm) boulder (28-6-40cm) boulder (28-6-40cm) cobble (15-25 6cm) boulder (28-6-40cm) boulder (28-6-40cm) boulder (28-6-40cm) boulder (28-6-40cm) cobble (15-25 6cm) cobble (15-25 6cm) boulder (28-6-40cm) boulder (28-6-40cm) cobble (15-36-6cm) cobble (15-36-6cm) moss filamentous algae other submerged veg. cobble (6.5-15cm) gravel (21-6cm) sand (2-mm) clay silt substrate beneath bedrock cobble (6.5-15cm) gravel (21-6cm) sand (2-mm) clay silt substrate beneath bedrock cobble (6.5-15cm) gravel (21-6cm) sand (2-mm) clay silt substrate beneath low moderate high Refuges in bank none cobble/boulder tree roots, large vertical or undercut bank dry stone wall other reinforced cryfish flor stupes, or per unit depending bone Cryfish flor stupes, or per unit depending on memods Shadding shove Crayfish flor stupes, or per unit depending on memods Secret hims (Mins) Bullhead present? Evaluation crayfish habitat for whole site to none, 1 pres. 2 freq. 3 abund, 3 a	Depth (metres)	0.1		0.1		0.1		0.1		0.1	
Refuges in channel cobble (6.6-15cm) cobble (15-25.6cm) boulder (26-40cm) boulder (26-40cm) boulder (26-40cm) boulder (26-40cm) rubble (give size) woody debris other urban debris tree roots, fine moss filamentous algae other submerged veg, emergents bedrock cobble (6.5-15cm) pebble (6.5cm) grave (1-15cm) sand (-2mm) clay siti Siltation none low moderate high Refuges in bank none cobble boulder tree roots, large vertical or undercut bank dry stone wall other reinforced crayfish burrows Shading above Crayfish filt in slages, or pre unit tdepending on method) Search time (Mins) Ballmead present? Evaluation 1, erosion 2, (6 if 3-33% affected), sitem 3, a survey)  Troblems pollution 1, erosion 2, (6 if 3-33% affected), sitem 3, a survey)  Problems pollution 1, erosion 2, (6 if 3-33% affected), sitem 3, a survey)  Problems pollution 1, erosion 2, (6 if 3-33% affected), sitem 3, a survey.)		4		4		4		4		4	
cobble (15-25.6cm) boulder (240cm) rubble (give size) woody debris other urban debris the roots, fine moss filamentous algae other submerged veg energents  Main substrate beneath bedrock cobble (6.5-15cm) gravel (<1.5cm) gravel (<1.5cm) gravel (<1.5cm) gravel (<1.5cm) sand (<2mm) clay silt Siltation none low moderate high Refuges in bank none cobble/boulder tree roots, large vertical or undercut bank drive reinforced cray/fish burrows  Shading above Cray/fish/for mapse, or per unit (depending methol) Search time (Mins) Bullhead present?  Evaluation ray/fish habitat for whole site (o none, 1 pres., 2 fee, 3 abund.) In mair channel on mid channe		tick all present	in patch, ring							-	
boulder (2-56-40-cm) boulder (-40-cm) rubble (give stze) woody debris other urban debris free roots, fine moss filamentous algae other submerged veg emergents  Main substrate beneath bedrock cobble (6-5-15cm) pebble (-6.5cm) gravel (-1.6cm) sand (-2mm) sand	,										
boulder (-A/cm) rubble (give size) woody debris other urban debris tree roots, fine moss filamentous algae other submerged veg. emergents  Main substrate beneath bedrock cobble (6.5-15cm) pebble (-6.5cm) gravel (-1.5cm) gravel (-2.7cm) sand (-2.7cm) sit  Siltation none low moderate high Nefuges in bank none cobble/boulder tree roots, large vertical or undercut bank dry stone wall other reinforced cray/fish burrows  Shading above Cray/fish/fo renges, or per unit (depending on method) Search time (Mins) Builhead present?  Evaluation cray/fish habitat for whole site e none, 1 pres., 2 freq., 3 abund.) in margins in margins in margins in mid channel in mid	,										
other urban debris tree roots, fine moss filamentous algae other submerged veg. emergents  Main substrate beneath bedrock cobble (6.5-15cm) pebble (-6.5cm) gravel (-1.8cm) sand (-2mm) clay silt  Siltation none low moderate high Refuges in bank none cobble/boulder tree roots, large vertical or undercut bank dry stone wal other reinforced crayfish burrows  Shading above  Crayfish'refuges, or per unit (depending on method) Search time (Mins) Bullhead present? Evaluation crayfish habitat for whole site (none, 1 pres., 2 treq., 3 abund.) In margins in margins in mid charnel in banks 0 surveyability 3 Problems pollution 1, erosion 2, (Eif-33% affected), aliens 3.	,										
other urban debris tree roots, fine moss filamentuss algae other submerged veg. emergents  Main substrate beneath bedrock cobble (6.5-15cm) pebble (<6.5cm) gravel (<1.6cm) sand (<2mm) clay sit  Siltation none low moderate low moderate tree roots, large vertical or undercut bank dry stone wall other reinforced crayfish'n cetupes, or per unit depending on method) Search time (Mins) Bullhead present? Evaluation crayfish habitat for whole site (e none, 1 pres., 2 freq., 3 abund,) in mar gins in ma											
tree roots, fine moss filamentous algae other submerged veg. emergents	•										
filamentous algae other submerged veg. emergents  Main substrate beneath bedrock cobble (6.5-15cm) pebble (-6.5cm) gravel (-1.6cm) sand (<2mm) clay sit  Sitation none low moderate high Refuges in bank none cobble/boulder tree roots, large vertical or undercut bank dry stone wall other reinforced crayfish burrows  Shading above Crayfish for refuges, or per unit (depending method) Search time (Mins) Bullhead present? Evaluation crayfish habitat for whole site (o none, 1 pres., 2 freq., 3 abund.) in margins in margins in margins on method) Search time (Mins) Bullhead present? Evaluation crayfish habitat for whole site (o none, 1 pres., 2 freq., 3 abund.) in margins in margins on on the countries was found in the 2003 survey)  This site has been scored at zero because it probably dries out regularly (as was found in the 2003 survey)											
other submerged veg emergents  Main substrate beneath bedrock cobble (6.5-15cm) pebble (-6.5-5cm) gravel (-1.6cm) sand (-2.7mm) clay slit slit slit slit slit slit slit slit											
Main substrate beneath   bedrock   cobble (6.5-15cm)   pebble (-6.5cm)   gravel (-1.6cm)   sand (-2mm)   clay   silt											
Main substrate beneath bedrock cobble (6.5-15cm) pebble (<6.5cm) pebble (<6.5cm) gravel (<1.6cm) sand (<2mm) clay sit											
bedrock cobble (6.5-15cm) pebble (<6.5cm) gravel (<1.6cm) sand (<2mm) clay sitt sitting and sitting an											
cobble (6.5-15cm) pebble (<6.5cm) gravel (<1.6cm) sand (<2mm) clay sitt  Sitation none low moderate high  Refuges in bank none cobble/boulder tree roots, large vertical or undercut bank dry stone wall other reinforced crayfish burrows  Shading above  Crayfish/ro retuges, or per unit (depending on method) Search time (Mins) Bullhead present?  Evaluation crayfish habitat for whole site ( none, 1 pres, 2 freq, 3 abund,) in margins in mid channel in banks 0 sunveyability 3  Problems pollution 1, erosion 2. (E if >33% affected), aliens 3.											
gravel (<1.6cm) sand (<2mm) clay silt  Siltation none low moderate high Refuges in bank none cobble/boulder tree rooks, large vertical or undercut bank dry stone wall other reinforced crayfish burrows  Shading above Crayfish/10 refuges, or per unit (depending on method) Search time (Mins) Bullhead present? Evaluation crayfish habitat for whole site (o none, 1 pres, 2 freq, 3 abund.) in margins in margins in margins of the first or the search of the search of the search of the survey)  Score in margins of the first or the search of the search of the search of the survey)  Score Of the first or the search of the											
sand (<2mm) clay silt  Sitation none low moderate high  Refuges in bank none cobble/boulder tree roots, large vertical or undercut bank dry stone wall other reinforced crayfish burrows  Shading above Crayfish/10 refuges, or per unit (depending on method) Search time (Mins) Bullhead present?  Evaluation crayfish habitat for whole site (o none, 1 pres, 2 freq., 3 abund.) In margins In margins In mid channel In banks O surveyability 3  Problems pollution 1, erosion 2, (E if >33% affected), aliens 3.											
Clay silt  Siltation none low moderate high moderate high low mode	• ,										
Siltation none low moderate high moderate hi											
low moderate high Refuges in bank none cobble/boulder tree roots, large vertical or undercut bank dry stone wall other reinforced crayfish burrows  Shading above Crayfish/10 refuges, or per unit (depending on method) Search time (Mins) Bullhead present? Evaluation crayfish habitat for whole site (none, 1 pres., 2 freq., 3 abund.) in margins In margin	*										
Refuges in bank none cobble/boulder tree roots, large vertical or undercut bank dry stone wall other reinforced crayfish burrows  Shading above Crayfish/1o refuges, or per unit (depending on method) Search time (Mins) Bullhead present?  Evaluation crayfish habitat for whole site (o none, 1 pres, 2 freq, 3 abund.) in margins in mid channel in banks ourveyability  Problems pollution 1, erosion 2, (E if >33% affected), aliens 3.	Siltation none										
Refuges in bank none     cobble/boulder     tree roots, large  vertical or undercut bank     dry stone wall     other reinforced     crayfish burrows  Shading above  Crayfish'10 refuges, or per unit (depending on method) Search time (Mins) Bullhead present?  Evaluation crayfish habitat for whole site (o none, 1 pres, 2 freq., 3 abund.) in margins in mid channel in banks Surveyability  Score  This site has been scored at zero because it probably dries out regularly (as was found in the 2003 surveys)  Score  O Surveyability  3  Problems pollution 1, erosion 2, (E if > 33% affected), aliens 3.											
Refuges in bank none cobble/boulder tree roots, large vertical or undercut bank dry stone wall other reinforced crayfish burrows  Shading above Crayfish or euges, or per unit (depending on method)  Search time (Mins)  Bullhead present?  Evaluation crayfish habitat for whole site (none, 1 pres., 2 freq., 3 abund.)  in margins in margins in margins in margins or in mid channel in banks survey solitity  Problems pollution 1, erosion 2, (E if > 33% affected), aliens 3.											
tree roots, large vertical or undercut bank dry stone wall other reinforced crayfish burrows  Shading above Crayfish/10 refuges, or per unit (depending on method) Search time (Mins) Bullhead present? Evaluation crayfish habitat for whole site (o none, 1 pres, 2 freq., 3 abund.) in margins in panks ourveyability  3  Problems pollution 1, erosion 2, (E if >33% affected), aliens 3.											
vertical or undercut bank dry stone wall other reinforced crayfish burrows  Shading above Crayfish/10 retuges, or per unit (depending on method) Search time (Mins) Bullhead present?  Evaluation crayfish habitat for whole site (o none, 1 pres, 2 freq, 3 abund,) in margins in margins in margins in margins in banks surveyability  Score  This site has been scored at zero because it probably dries out regularly (as was found in the 2003 survey)  Score  O in banks o surveyability  3  Problems pollution 1, erosion 2, (E if > 33% affected), aliens 3.			•								
dry stone wall other reinforced crayfish burrows  Shading above Crayfish/10 refuges, or per unit (depending on method) Search time (Mins) Bullhead present?  Evaluation crayfish habitat for whole site (o none, 1 pres., 2 freq., 3 abund.) in margins in plants  O surveyability  3  Problems pollution 1, erosion 2, (E if >33% affected), aliens 3.											
other reinforced crayfish burrows  Shading above Crayfish/10 refuges, or per unit (depending on method) Search time (Mins)  Bullhead present?  Evaluation crayfish habitat for whole site (o none, 1 pres., 2 freq., 3 abund.) in margins in margins in banks Score in banks Surveyability  O  Problems pollution 1, erosion 2, (E if >33% affected), aliens 3.											
Crayfish burrows  Shading above Crayfish/10 refuges, or per unit (depending on method) Search time (Mins) Bullhead present?  Evaluation crayfish habitat for whole site (one, 1 pres, 2 freq., 3 abund.) in margins in margins in margins on banks ourveyability  Problems pollution 1, erosion 2, (E if >33% affected), aliens 3.	*										
Crayfish/10 refuges, or per unit (depending on method) Search time (Mins) Bullhead present?  Evaluation crayfish habitat for whole site (0 none, 1 pres, 2 freq, 3 abund.) In margins In margins In banks Surveyability  Problems pollution 1, erosion 2, (E if >33% affected), aliens 3	crayfish burrows										
unit (depending on method) Search time (Mins) Bullhead present?  Evaluation crayfish habitat for whole site (o none, 1 pres, 2 freq., 3 abund.) in margins in margins in margins in banks surveyability  Score in banks ourveyability  3  Problems pollution 1, erosion 2, (E if > 33% affected), aliens 3.	Shading above										
Bullhead present?  Evaluation crayfish habitat for whole site (one, 1 pres, 2 freq., 3 abund.)  in margins in banks 0 surveyability  Problems pollution 1, erosion 2, (E if >33% affected), aliens 3.											
Evaluation crayfish habitat for whole site (0 none, 1 pres, 2 freq., 3 abund.) in margins in banks surveyability  Problems pollution 1, erosion 2, (E if >33% affected), aliens 3.											
habitat for whole site (0 none, 1 pres., 2 freq., 3 abund.) in margins in margins in banks ourveyability  Problems pollution 1, erosion 2, (E if >33% affected), aliens 3.			This site !	ac boon acc	rod at zere	hooguse :t	probably 4	rios out ros	udorky (os ::	ne found :-	2002
Problems pollution 1, erosion 2, (E if >33% affected), aliens 3.	habitat for whole site (0 none, 1 pres., 2 freq., 3 abund.) in margins in mid channel in banks	0 0		as been soo	ieu al zeio	because it	probably u	nes out reg	ulai iy (as v	as louru II	Tule 2003
Total Grayiisii U	Problems pollution 1, erosion	0									

		CRAY	YFISH H	ABITAT	SURVE	Y FORI	И			
Catchment	Wye		River	Churo			Site (no., name)			12
		Surveyor		Clyro			Grid ref.			12
Date (dd/mm/yy)	22/03/2016	S Flow norm	DR, LW			Clarity,	(d/s end)	SO189449	)	
Weather, good 1, mod 2, poor 3	1	1, low 2, fall 3, rise 4	None	Water temp. oC	N/A	good 1, mod 2, poor 3				
Photo ref. &	tunical drug	ootion								A STATE OF
Location  Site length (m)  Width channel (m)	typical dry s	Descript. (channel features, landuse)	Dry stream	bed						
	sample pato		sample pate		sample pa	tch 3	sample pa	tch 4	sample par	tch 5
Survey method, std 1, quad 2, net/kick 3, trap 4, view 5										
Details (if not standard)		-		-						
Extent (I x w patch)										
Channel (1 margins, 2 mid, 3 both, other specify)										
Depth (metres)										
Feature (1 marg. d'water, 2 pool, 3 glide, 4 run, 5 riffle)										
Refuges in channel	tick all present	in patch, ring	main type(s) se	earched						
cobble (6.5-15cm)										
cobble (15-25.6cm) boulder (25.6-40cm)										
boulder (>40cm)										
rubble (give size)										
woody debris other urban debris										
tree roots, fine										
moss										
filamentous algae										
other submerged veg. emergents										
Main substrate beneath										
bedrock										
cobble (6.5-15cm) pebble (<6.5cm)										
gravel (<1.6cm)										
sand (<2mm)										
clay										
silt Siltation none										
low										
moderate										
high Refuges in bank none										
cobble/boulder										
tree roots, large										
vertical or undercut bank										
dry stone wall other reinforced										
crayfish burrows										
Shading above										
Crayfish/10 refuges, or per unit (depending on method)										
Search time (Mins)										
Bullhead present?  Evaluation crayfish		Notes (	ey conditions, p	notabos ete \:						
habitat for whole site (0 none, 1 pres., 2 freq., 3 abund.) in margins in mid channel in banks surveyability	Score		ey containent, p	3.00.00						
Problems pollution 1, erosion 2, (E if >33% affected), aliens 3.										
Total crayfish					-					

		CRAY	/FISH H	ABITAT	SURVE	Y FORI	М			
Ontohoront	14/		D'	01			Site (no.,			40
Catchment	Wye	Surveyor	River	Clyro			name) Grid ref.			13
Date (dd/mm/yy)	22/03/2016		DR, LW			Ol- iii	(d/s end)	SO192454		
Weather, good 1, mod 2, poor 3		Flow norm 1, low 2, fall 3, rise 4	None	Water temp. oC		Clarity, good 1, mod 2, poor 3				
Photo ref. &		•					1-11	a come	A STATE OF THE STA	
Location	Dry pond at	headwater								
Site length (m)										143
		Descript. (channel features,								
Width channel (m)		landuse)	Dry pond						erena	5.427000
Survey method, std 1, quad	sample patc	h 1	sample pate	ch 2	sample pa	tch 3	sample pa	tch 4	sample pat	tch 5
2, net/kick 3, trap 4, view 5										
Details (if not standard)										
Extent (I x w patch) Channel (1 margins, 2 mid, 3 both, other specify)										
Depth (metres)										
Feature (1 marg. d'water, 2 pool, 3 glide, 4 run, 5 riffle)										
Refuges in channel	tick all present	in patch, ring	main type(s) se	earched			1			
cobble (6.5-15cm)		,,g	.,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,							
cobble (15-25.6cm)										
boulder (25.6-40cm) boulder (>40cm)										
rubble (give size)										
woody debris										
other urban debris										
tree roots, fine										
moss filamentous algae										
other submerged veg.										
emergents										
Main substrate beneath bedrock										
cobble (6.5-15cm)										
pebble (<6.5cm)										
gravel (<1.6cm)										
sand (<2mm)										
clay silt										
Siltation none										
low										
moderate				-						
Refuges in bank none			<u> </u>				<u> </u>			
cobble/boulder										
tree roots, large										
vertical or undercut bank										
dry stone wall other reinforced										
other reinforced crayfish burrows										
Shading above										
Crayfish/10 refuges, or per unit (depending on method)										
Search time (Mins)										
Bullhead present?										
Evaluation crayfish		Notes (surv	ey conditions, p	oatches etc.):						
habitat for whole site (0 none, 1 pres., 2 freq., 3										
abund.)	Score									
in margins										
in mid channel in banks										
in banks surveyability										
Problems pollution 1, erosion 2, (E if >33% affected), aliens 3.										
Total crayfish										

## 11.16. Appendix P: White-clawed crayfish habitat survey forms for Afon Llynfi, September 2016

		CRAY	YFISH H	ABITAT	SURVE	Y FORI	И			
							Site (no.,			
Catchment	Wye	Surveyor	River	Llynfi			name) Grid ref.			1
Date (dd/mm/yy)	16/09/2016		DR LW				(d/s end)	SO 17858	38841	
\A/4b		Flow norm		Water		Clarity,				
Weather, good 1, mod 2, poor 3	1	1, low 2, fall 3, rise 4	1	temp. oC	12	good 1, mod 2, poor 3	1			
Photo ref. &		-,		10.1141.00		71	A	CATA		
Location	Typical stret	ch							1	100
Site length (m)	300									
		Descript. (channel features,	Land use - access. Ea eroded ban flow with oc	rth banks a ks in place:	nd mud sha s. Slow not	allows with noticable			¥.	*
Width channel (m)	sample patc	landuse)	pools.	rh 2	sample par	tch 3	sample pa	tch 4	sample pa	tch 5
Survey method, std 1, quad	sample paic	11 1		JII Z		UII 3		ICII 4		ICH 5
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)	4x1		2x3		3x3		4x3		4x1	
Channel (1 margins, 2 mid, 3 both, other specify)	1		2		3		3		1	
Depth (metres) Feature (1 marg. d'water, 2	0.5		0.7	-	0.4		0.5		1	
pool, 3 glide, 4 run, 5 riffle)	5		5		5		4		2	
Refuges in channel	tick all present	in patch,main		ed in red	VEC		VEC		VEC	
cobble (6.5-15cm)			YES		YES YES		YES		YES	
cobble (15-25.6cm) boulder (25.6-40cm)	YES YES		YES YES		YES		YES YES		YES YES	
boulder (>40cm)	150		TES		TES		160		169	
rubble (give size)										
woody debris			YES						YES	
other urban debris										
tree roots, fine										
moss										
filamentous algae										
other submerged veg.										
emergents  Main substrate beneath										
bedrock										
cobble (6.5-15cm)										
pebble (<6.5cm)										
gravel (<1.6cm)										
sand (<2mm)										
clay	YES		YES		YES		YES		YES	
Silt										
Siltation none	YES		YES		YES		YES		YES	
moderate			120		120		120		120	
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	light		light		NONE		light		heavy	
Crayfish/10 refuges, or per										
unit (depending on method)	0		0		0		0		0	
Search time (Mins) Bullhead present?	8		8		10		5		13	
Evaluation crayfish		Notes (sur	ey conditions, p	natches etc \-1	Heron seen	nhoto is	* *		- A411	
habitat for whole site (0			ey conditions, p f eroded bar			, prioto 15	1	1	151 1	
none, 1 pres., 2 freq., 3		champic U	. Ji odou Dai		-			1/		
abund.)	Score								1	*
in margins	2								- 44	
in mid channel	2							-	-	1
in banks	1 2									
surveyability	2									
Problems pollution 1, erosion 2, (E if >33% affected), aliens 3.								43		
Total crayfish (by 1 method, note total(s) by other methods in							Ero	oded sectio	n of bank	
notes if applicable)	0									

		CRAY	FISH H	ABITAT	SURVE	Y FORI	М			
Catchment	Wye		River	Llynfi			Site (no., name)			2
Date (dd/mm/yy)	16/09/2016	Surveyor	DR LW				Grid ref. (d/s end)	SO 17553	3881/	
	10/09/2010	Flow norm	DK LW	)A/-1		Clarity,		30 17333	30014	
Weather, good 1, mod 2, poor 3	1	1, low 2, fall 3, rise 4	1	Water temp. oC	12	good 1, mod 2, poor 3	1			
Photo ref. &								-		7.
Location	Immediately	downstrea	m of 1st 100	m						
Otto less othe (see)	000									
Site length (m)	300							1400		
		Descript.	Land use - throughout.							
		(channel features,	some erosio			•	N. 4.	1.0		
Width channel (m)	10 sample patc	landuse) h 1	(see photo) sample pato		sample pa	tch 3	sample par	rch 4	sample pa	tch 5
Survey method, std 1, quad				711 2		icii 5		011 4		1011 0
2, net/kick 3, trap 4, view 5  Details (if not standard)	1 & 4		1 & 4		1 & 4		1 & 4		1 & 4	
Extent (I x w patch)	4x2		4x2		5x4		3x3		3x2	
Channel (1 margins, 2 mid, 3 both, other specify)	1		3		3		3		1	
Depth (metres)	0.4		0.3		0.3		0.4		0.4	
Feature (1 marg. d'water, 2										
pool, 3 glide, 4 run, 5 riffle)  Refuges in channel	4 tick all present	in patch, mair	type(s) search		4		4		4	
cobble (6.5-15cm)	YES	, , , , , , , , , , , , , , , , , , ,	YES		YES		YES		YES	
cobble (15-25.6cm) boulder (25.6-40cm)	YES YES		YES YES		YES YES		YES YES		YES YES	
boulder (>40cm)	IES		TES		TES		123		ILO	
rubble (give size)										
woody debris other urban debris	YES						YES		YES	
tree roots, fine										
moss filamentous algae										
other submerged veg.										
emergents  Main substrate beneath										
bedrock										
cobble (6.5-15cm)										
pebble (<6.5cm) gravel (<1.6cm)										
sand (<2mm)	VEO		VEO		VE0		VEO		VEO	
clay silt	YES		YES		YES		YES		YES	
Siltation none	YES		YES		YES		YES		YES	
low moderate										
high										
Refuges in bank none cobble/boulder	YES		YES		YES		YES		YES	
tree roots, large	YES		YES		YES		YES		YES	
vertical or undercut bank										
dry stone wall other reinforced										
crayfish burrows										
Shading above Crayfish/10 refuges, or per	LIGHT		HEAVY		MOD		LIGHT		MOD	
unit (depending on method) Search time (Mins)	0		0		0		0 10		0	
Bullhead present?	10		6		10		10		10	
Evaluation crayfish		Notes (surv	ey conditions, p	atches etc.):						
habitat for whole site (0 none, 1 pres., 2 freq., 3										
abund.) in margins	Score 2									
in mid channel	2									
in banks	1									
surveyability	2									
Problems pollution 1, erosion	2									
<ol> <li>(E if &gt;33% affected), aliens 3.</li> <li>Total crayfish (by 1 method,</li> </ol>										
note total(s) by other methods in notes if applicable)	0									
посоо п аррисаріс)	0			-						

		CRAY	/FISH H	ABITAT	SURVE	Y FORI	И			
Catalyment	Muo		Divor	Llunfi			Site (no.,			2
Catchment		Surveyor	River	Llynfi			name) Grid ref.			3
Date (dd/mm/yy)	16/09/2016	S Flow norm	DR LW			Clarity,	(d/s end)	SO 16646	37100	
Weather, good 1, mod 2, poor 3		1, low 2, fall 3, rise 4	1	Water temp. oC	12	good 1, mod 2, poor 3	1			
Photo ref. &	Immediately	doumatroo	m of 1at 100	lm			1		10.	
Location Site length (m)		Descript. (channel features,	Land use -		grazing. Se	ries of				
Width channel (m)		landuse)	pools and r	iffles				1	20	
Survey method, std 1, quad	sample patch	า 1	sample pate	ch 2	sample pat	tch 3	sample par	tch 4	sample pa	tch 5
2, net/kick 3, trap 4, view 5	1 & 4		1 & 4		1 & 4		1 & 4		1 & 4	
Details (if not standard)				1						
Extent (I x w patch)  Channel (1 margins, 2 mid, 3 both, other specify)	4x1 1		4x1 1		3x2 3		7x2 3		4x1 1	
Depth (metres)	0.2		0.4		0.5		0.2		0.3	
Feature (1 marg. d'water, 2										
pool, 3 glide, 4 run, 5 riffle)  Refuges in channel	tick all present i	n natch mair	type(s) search		2		3		2	2
cobble (6.5-15cm)		ıı paton, malf	YES	iou iii led	YES		YES		YES	
cobble (15-25.6cm)	YES		YES		YES		YES		YES	
boulder (25.6-40cm)	YES		YES				YES		YES	
boulder (>40cm)										
rubble (give size) woody debris	YES				YES					
other urban debris	120				120					
tree roots, fine										
moss										
filamentous algae other submerged veg.										
emergents										
Main substrate beneath										
bedrock										
cobble (6.5-15cm)										
pebble (<6.5cm) gravel (<1.6cm)										
sand (<2mm)										
clay	YES		YES		YES		YES		YES	
silt	VE0		VE0		VEO		VEO		VEO	
Siltation none low	YES		YES		YES		YES		YES	
moderate										
high										
Refuges in bank none	VEC		VEC				VEC		VEC	
cobble/boulder tree roots, large	169		YES				YES		YES	
vertical or undercut bank										
dry stone wall										
other reinforced		-							-	
crayfish burrows Shading above	NONE		MOD	-	LICUT		MOD		LICHT	
Crayfish/10 refuges, or per	INCINE		MOD		LIGHT		IVIOD		LIGHT	
unit (depending on method)	0		0		0		0		C	
Search time (Mins) Bullhead present?	10		10		6		6		8	5
Evaluation crayfish		Notes (surve	y conditions, p	patches etc.):	l .		l		1	J
habitat for whole site (0 none, 1 pres., 2 freq., 3 abund.) in margins in mid channel in banks surveyability	Score 3 3 2 2 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									

		CRA	YFISH H	ABITAT	SURVE	Y FORI	И			
Catchment	Wye		River	Llynfi			Site (no., name)			4
		Surveyor		LIYIIII			Grid ref.			4
Date (dd/mm/yy)	16/09/2016	S Flow norm	DR LW			Clarity,	(d/s end)	SO 17553	38814	
Weather, good 1, mod 2, poor 3	1	1, low 2, fall 3, rise 4	1	Water temp. oC	12	good 1, mod 2, poor 3	1			
Photo ref. &										
Location	From roadb	ridge					A PARTY OF		A. Lect	
								1		
Site length (m)	100									
		Descript								
		Descript. (channel				ı		100	7119	4
Width channel (m)	5	features, landuse)	Land use - woodland. I							
	sample patc		sample pate		sample par		sample par	tch 4	sample pa	tch 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)	5x2		5x2	2	6x1		3x1		4x1	
Channel (1 margins, 2 mid, 3 both, other specify)	2		2		2		3		3	
Depth (metres)	0.2		0.2		0.2		0.2		0.2	
Feature (1 marg. d'water, 2	5		5.2				4			
pool, 3 glide, 4 run, 5 riffle)  Refuges in channel	tick all present	in patch, mair			5		4		5	
cobble (6.5-15cm)	YES	1	YES		YES		YES		YES	
cobble (15-25.6cm) boulder (25.6-40cm)	YES YES		YES YES		YES YES		YES YES		YES YES	
boulder (>40cm)	YES		YES		YES		YES		YES	
rubble (give size)										
woody debris other urban debris			YES		YES		YES		YES	
tree roots, fine	120		TEO		120		120		TLO	
moss										
filamentous algae other submerged veg.										
emergents										
Main substrate beneath bedrock										
cobble (6.5-15cm)										
pebble (<6.5cm)										
gravel (<1.6cm) sand (<2mm)	YES		YES		YES		YES		YES	
clay										
silt	\/E0		VE0		\/E0		\/E0		\/=0	
Siltation none low	YES		YES		YES		YES		YES	
moderate										
high Refuges in bank none									YES	
cobble/boulder	YES		YES		YES		YES		110	
tree roots, large										
vertical or undercut bank				-						
dry stone wall other reinforced			YES							
crayfish burrows										
Shading above Crayfish/10 refuges, or per	LIGHT		MOD		LIGHT		HEAVY		LIGHT	
unit (depending on method)	0		0		0		0		0	
Search time (Mins) Bullhead present?	8		7		8		5		6	
Evaluation crayfish		Notes (surv	ey conditions, p	oatches etc.):	Patch 3 und	ler road bri	dge. Fresh	otter sprain	nt containin	g fish
habitat for whole site (0 none, 1 pres., 2 freq., 3		bones but	no crayfish	remains an	d heron dro	ppings				
abund.)	Score									
in margins	3									
in mid channel 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									

	CR.	YFISH H	ABITAT	SURVE	Y FORI	M			
Catchment	Wye	River	Llunfi			Site (no., name)			5
	Surveyo	1	Llynfi			Grid ref.			5
Date (dd/mm/yy)	15/09/2016 s Flow nor	DR LW			Clarity,	(d/s end)	SO 15033	34706	
Weather, good 1, mod 2, poor 3	1, low 2, fa 1 3, rise 4	II	Water temp. oC	12	good 1, mod 2, poor 3	1			
Photo ref. & Location	Middle of site near ro	adbridge							
Site length (m)	100  Descript (channel features.	Land use -	recreation, ban. Looks						
Width channel (m)	10 landuse)		crayfish. Ot			3-14-3		1	
Survey method, std 1, quad	sample patch 1	sample pat	ch 2	sample par	tch 3	sample pa	tch 4	sample par	tch 5
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 mid, 3	5x1	4x2	2	4x1		4x3		3x3	
both, other specify)	1	1	I .	1		3		3	
Depth (metres)	0.3	0.4	1	0.4		0.3		0.3	
Feature (1 marg. d'water, 2 pool, 3 glide, 4 run, 5 riffle)	2	2	2	3		3		3	
Refuges in channel	tick all present in patch, m		hed in red	VE0		\/F0		\/E0	
cobble (6.5-15cm) cobble (15-25.6cm)		YES YES		YES YES		YES YES		YES YES	
boulder (25.6-40cm)		YES		YES		YES		YES	
boulder (>40cm)		YES		YES		YES		YES	
rubble (give size)									
woody debris									
other urban debris tree roots, fine									
moss									
filamentous algae									
other submerged veg.									
emergents  Main substrate beneath									
bedrock									
cobble (6.5-15cm)		YES		YES		YES		YES	
pebble (<6.5cm)									
gravel (<1.6cm)	YES		-			YES		YES	
sand (<2mm)	YES	YES		YES		YES		YES	
silt	ILO	TLO		ILO		TLO		TLO	
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		YES					
dry stone wall other reinforced		1				<u> </u>			
other reinforced crayfish burrows		+				<del>                                     </del>			
Shading above	LIGHT	LIGHT		HEAVY		MOD		LIGHT	
Crayfish/10 refuges, or per unit (depending on method)	0	(		0		0		0	
Search time (Mins)	10	_	9	6		8		11	
Bullhead present?		<u> </u>							
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,	Score 3 3 3 3 3 3	ney conditions,	patches etc.):	Photo of oth	ter pass un	der the roa	d bridge		
note total(s) by other methods in notes if applicable)	0								1000

		CRA	/FISH H	ABITAT	SURVE	Y FORI	М			
Catchment	Wye		River				Site (no., name)			6
Date (dd/mm/yy)	15/09/2016	Surveyor	DR LW				Grid ref. (d/s end)	SO 14824	32914	
Weather, good 1, mod 2, poor 3		Flow norm 1, low 2, fall 3, rise 4		Water temp. oC	12	Clarity, good 1, mod 2, poor 3				
Photo ref. &				,			The same	2		The same
Site length (m)	Downstream	Descript. (channel features,	Land use - river, good				j			
Width channel (m)	sample patc	landuse)	fencing off.	sh 2	sample par	ch 3	sample pa	tch 4	sample pa	tch 5
Survey method, std 1, quad 2, net/kick 3, trap 4, view 5		II I		/II Z		.011 3		ICH 4		ICH 5
Details (if not standard)	1 & 4		1 & 4		1 & 4		1 & 4		1 & 4	
Extent (I x w patch)	2X1		5X1		3X3		4X2		4X2	
Channel (1 margins, 2 mid, 3										
both, other specify)	0.3		1		3		0.3		3	
Depth (metres) Feature (1 marg. d'water, 2	0.3		0.3		0.3				0.3	
pool, 3 glide, 4 run, 5 riffle)  Refuges in channel	tick all propert	in notation	2		5		3		3	
cobble (6.5-15cm)	tick all present	in patch, maii	YES	iea in rea	YES		YES		YES	
cobble (15-25.6cm)			YES		YES		YES		YES	
boulder (25.6-40cm)			YES		YES		YES		YES	
boulder (>40cm) rubble (give size)			YES		YES		YES		YES	
woody debris					YES		YES		YES	
other urban debris										
tree roots, fine										
moss filamentous algae										
other submerged veg.										
emergents										
Main substrate beneath										
bedrock cobble (6.5-15cm)										
pebble (<6.5cm)										
gravel (<1.6cm)										
sand (<2mm)	YES		YES		YES		YES		YES	
silt			TES		ILS		IES		TES	
Siltation none										
	YES		YES		YES		YES		YES	
moderate high										
Refuges in bank none										
cobble/boulder			YES		YES		YES		YES	
tree roots, large										
vertical or undercut bank dry stone wall										
other reinforced										
crayfish burrows										
Shading above Crayfish/10 refuges, or per	HEAVY		HEAVY		MOD		HEAVY		HEAVY	
unit (depending on method)	0		0		0		0		0	
Search time (Mins)	5		8		10		6		10	
Bullhead present?  Evaluation crayfish		Notes (sup	ey conditions, p	atches etc.)*	<u> </u>		<u> </u>		<u> </u>	
habitat for whole site (o none, 1 pres., 2 freq., 3 abund.) in margins in mid channel in banks surveyability	Score 3 3 3 3 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									

		CRAY	YFISH HA	BITAT	SURVE	Y FORI	VI			
							Site (no.,			
Catchment	Wye	Surveyor	River	Llynfi			name) Grid ref.			7
Date (dd/mm/yy)	15/09/2016		DR LW				(d/s end)	SO 14398	33041	
Weather, good 1, mod 2, poor		Flow norm		Water		Clarity,				
3	1	1, low 2, fall 3, rise 4	1	temp. oC	12	good 1, mod 2, poor 3	1			
Photo ref. &								Alice on	-1	AL SE
Location	Immediately	downstrea	m of 1st 100	m						
										Stewart I
Site length (m)	100									14
									. 14	1.
		Descript.							10	
		(channel features,	Land use -	agricultural	and private	garden,			314	
Width channel (m)	4	landuse)	habitat looks	•		,		A 7, *		
Survey method, std 1, quad	sample patc	h 1	sample pato	h 2	sample par	tch 3	sample par	tch 4	sample pa	tch 5
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)	1x4		3x2		4x1		5x2		4x2	
Channel (1 margins, 2 mid, 3										
both, other specify)	3		2		1		3		2	
Depth (metres) Feature (1 marg. d'water, 2	0.3		0.3		0.3		0.3		0.2	
pool, 3 glide, 4 run, 5 riffle)	3		2		3		2		2	
Refuges in channel	_	in patch, mair	type(s) search	ed in red	VEC		LVEC.		VEC	
cobble (6.5-15cm) cobble (15-25.6cm)			YES YES		YES YES		YES YES		YES YES	
boulder (25.6-40cm)			YES		YES		YES		YES	
boulder (>40cm)			YES		YES		YES		YES	
rubble (give size)										
woody debris			YES		YES		YES		YES	
other urban debris tree roots, fine							YES		YES	
moss							120		ILO	
filamentous algae										
other submerged veg.	VEC									
emergents Main substrate beneath	YES									
bedrock										
cobble (6.5-15cm)										
pebble (<6.5cm) gravel (<1.6cm)										
sand (<2mm)										
, ,	YES		YES		YES		YES		YES	
silt										
Siltation none low	YES		YES		YES		YES		YES	
moderate			l 		1		l 			$\vdash$
high										
Refuges in bank none										
cobble/boulder tree roots, large					YES		YES		YES	-
vertical or undercut bank					YES		YES		YES	
dry stone wall										
other reinforced										
crayfish burrows	MODERATE		LIE AVA		LIEALO.		LIE AVO		LIEANO	
Shading above Crayfish/10 refuges, or per	MODERATE		HEAVY		HEAVY		HEAVY		HEAVY	
unit (depending on method)	0		0		0		0		0	
Search time (Mins) Bullhead present?	10		8		10		10		10	
Evaluation crayfish		Notes (surv	ey conditions, p	atches etc.):						ļ
habitat for whole site (0			-,··-··-, <sub>F</sub>	,-						
none, 1 pres., 2 freq., 3 abund.)	Score									
in margins	Score 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									

		CRAY	FISH H	ABITAT	SURVE	Y FORI	И			
Catchment	Wye		River				Site (no., name)			8
Date (dd/mm/yy)		urveyor	DR LW				Grid ref.	SO 14022	32206	
Weather, good 1, mod 2, poor 3	F 1	low norm low 2, fall rise 4		Water temp. oC	12	Clarity, good 1, mod 2, poor 3		00 11022	02200	
Photo ref. &				1011191 00		_, poor o				
Location Site length (m)	(0	ear Trefe	Land use -			-				
Width channel (m)		nduse)	steep valley sample pate		Earth ban		sample pa	tch 4	sample pat	ch 5
Survey method, std 1, quad 2, net/kick 3, trap 4, view 5	1 & 4		1 & 4	/11 <b>Z</b>	1 & 4	WIT O	1 & 4	WII T	1 & 4	0/10
Details (if not standard)	104		10.4		1 0.4		1 0 4		10.4	
Extent (I x w patch)	2x3		3x2		4x1		6X1		2x2	
Channel (1 margins, 2 mid, 3										
both, other specify)	3		3		1		1		3	
Depth (metres) Feature (1 marg. d'water, 2	0.3		0.3		0.3		0.3		0.3	
pool, 3 glide, 4 run, 5 riffle)	4		4		4		4		4	
Refuges in channel cobble (6.5-15cm)	tick all present in	patch, main	type(s) search	ned in red	YES		YES		YES	
cobble (0.3-13cm)			YES		YES		YES		YES	
boulder (25.6-40cm)			YES		YES		YES		YES	
boulder (>40cm)			YES		YES		YES		YES	
rubble (give size)										
woody debris										
other urban debris										
tree roots, fine										
moss filamentous algae										
other submerged veg.										
emergents										
Main substrate beneath										
bedrock										
cobble (6.5-15cm)										
pebble (<6.5cm)	1/50									
gravel (<1.6cm)	YES		YES		YES		YES		YES	
sand (<2mm) clay										
silt										
Siltation none	YES		YES		YES		YES		YES	
low										
moderate										
high										
Refuges in bank none cobble/boulder										
tree roots, large	_		YES		YES		YES		YES	
vertical or undercut bank			YES				YES		YES	
dry stone wall										
other reinforced										
crayfish burrows									=	
Shading above Crayfish/10 refuges, or per	MOD		HEAVY		MOD		MOD		HEAVY	
unit (depending on method)	0		0		0		0		0	
Search time (Mins)	6		12		8		8		12	
Bullhead present?										
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 3 3 3 3 3	otes (suive	ey conditions, p	vacories etc.).						
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									

CRAYFISH HABITAT SURVEY FORM										
Catchment	Wye		River	Llynfi			Site (no., name)			9
Date (dd/mm/yy)	14/09/2016	Surveyor	DR LW				Grid ref. (d/s end)	SO 13386	30702	
· · · · · · · · · · · · · · · · · · ·	11/00/2010	Flow norm	DICEVI	Water		Clarity,		00 10000	00702	
Weather, good 1, mod 2, poor 3	1	1, low 2, fall 3, rise 4	1	temp. oC	12	good 1, mod 2, poor 3	1			
Photo ref. & Location	Mid site									
Site length (m)	100							A		
Width channel (m)	4	Descript. (channel features, landuse)	Land use - surround land would be ex	nd flat. Area	a around br	idge				
	sample patc		sample pato		sample par		sample pat	tch 4	sample pa	tch 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		-		-		
Extent (I x w patch)	3x2		4X2		3x2		5x1		2x2	
Channel (1 margins, 2 mid, 3 both, other specify)	3		2		3		1		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		2		4		4		4	
Refuges in channel	tick all present	in patch, mair	type(s) search							
cobble (6.5-15cm)			YES		YES		YES		YES	
cobble (15-25.6cm)			YES		YES		YES		YES	
boulder (25.6-40cm) boulder (>40cm)			YES YES		YES YES		YES YES		YES YES	
rubble (give size)	TES		TES		TES		TES		TES	
woody debris	YES		YES						YES	
other urban debris										
tree roots, fine	YES		YES		YES		YES		YES	
moss filamentous algae	YES		YES		YES		YES		YES	
other submerged veg.							0		0	
emergents										
Main substrate beneath bedrock	VES		YES		YES		YES		YES	
cobble (6.5-15cm)	ILO		ILO		TLO		TES		TLO	
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										
tree roots, large	YES		YES		YES		YES		YES	
vertical or undercut bank	YES		YES		YES		YES		YES	
dry stone wall					YES					
other reinforced crayfish burrows										
Shading above	HEAVY		HEAVY		HEAVY		HEAVY		HEAVY	
Crayfish/10 refuges, or per										
unit (depending on method) Search time (Mins)	0 7		13		9		10		10	
Bullhead present?	,		10		YES		YES			
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 3 3 3	Notes (surv	ey conditions, p	eatches etc.):						
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									

		CRAY	/FISH H	ABITAT	SURVE	Y FORI	М			
Catalymont	Myro		Divor	Llunfi			Site (no.,			10
Catchment	Wye	Surveyor	River	Llynfi			name) Grid ref.			10
Date (dd/mm/yy)	14/09/2016	S Flow norm	DR LW			Clarity,	(d/s end)	SO 13001	30323	
Weather, good 1, mod 2, poor 3	1	1, low 2, fall 3, rise 4		Water temp. oC		good 1, mod 2, poor 3	1			
Photo ref. &										
Location	Immediately	downstrea	m of 1st 100	)m						
Site length (m)	100									
Site origin (iii)	100	Descript.	Land use -	Woodland :	and grazing	Appears				1
Width channel (m)	4	features, landuse)	good habita		ana grazing	. , фрос. о			The state of the s	
Survey method	sample patc	h 1	sample pate	ch 2	sample pat	ch 3	sample pa	tch 4	sample pa	tch 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)	3x2		2x2		2x2		3x2		3x2	
Channel (1 margins, 2 mid, 3 both, other specify)	2		3		3		2		3	
Depth (metres)	0.3		0.2		0.3		0.3		0.3	
Feature (1 marg. d'water, 2	5		5		2		2		3	
pool, 3 glide, 4 run, 5 riffle)  Refuges in channel	tick all present	in patch, mair		-					3	
cobble (6.5-15cm)		paron, man	YES	ou	YES		YES		YES	
cobble (15-25.6cm)			YES		YES		YES		YES	
boulder (25.6-40cm)	YES		YES		YES		YES		YES	
boulder (>40cm)	YES		YES		YES		YES		YES	
rubble (give size)	VEO				VEO				VEO	
woody debris other urban debris	YES				YES				YES	
tree roots, fine										
moss	YES		YES				YES		YES	
filamentous algae										
other submerged veg.										
emergents										
Main substrate beneath										
bedrock cobble (6.5-15cm)										
pebble (<6.5cm)										
gravel (<1.6cm)										
sand (<2mm)										
clay	YES		YES		YES		YES		YES	
silt										
Siltation none	YES		YES		YES		YES		YES	
low moderate										
high										
Refuges in bank none							YES			
cobble/boulder	YES		YES							
tree roots, large					YES					
vertical or undercut bank			YES						YES	
dry stone wall										
other reinforced crayfish burrows							1			
Shading above	HEAVY		HEAVY		MOD		HEAVY		HEAVY	
Crayfish/10 refuges, or per									. I⊑/\ V I	
unit (depending on method)	0		0		0		0		0	
Search time (Mins)	7		10		12		6		10 VES	
Bullhead present?  Evaluation crayfish		Notes (sun	ey conditions, p	natches etc \.	l .		I		YES	
habitat for whole site (0 none, 1 pres., 2 freq., 3 abund.) in margins in mid channel	Score 3		oy conditioner, p	aconoc cic.,						
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									
		·							-	

		CRA	YFISH HA	ABITAT	SURVE	Y FORI	М			
Catalanant	10/110		Diver	l boof:			Site (no.,			44
Catchment	Wye	Surveyor	River	Llynfi			name) Grid ref.			11
Date (dd/mm/yy)	14/09/2016	S Flow norm	DR LW			Clarity,	(d/s end)	SO 12683	29971	
Weather, good 1, mod 2, poor 3	1	1, low 2, fall 3, rise 4		Water temp. oC	12	good 1, mod 2, poor 3	1			
Photo ref. &							N. W.	150	MI	
Location	Footbridge r	near disuse	ed railway					Section of the latest		ALC: NO
Site length (m)	100									
		Descript. (channel features,	Land use - v bedrock riff side.Riffles,	les with s S glides and	teep banks pools in w	on either oodland ;				1
Width channel (m)		landuse)	No intensive					tale 4	15	tale F
Survey method, std 1, quad	sample patc	II I	sample pato	11 2	sample pa	ICH 3	sample pa	ICH 4	sample pa	ICH 5
2, net/kick 3, trap 4, view 5	1 & 4		1 & 4		1 & 4		1 & 4		1 & 4	
Details (if not standard)			<del>                                     </del>							
Extent (I x w patch) Channel (1 margins, 2 mid, 3	4x3		2x2		5x1		3x2		4x3	<u> </u>
both, other specify)	3		2		1		3		3	<u> </u>
Depth (metres)	0.3		0.2		0.3		0.3		0.3	
Feature (1 marg. d'water, 2										
pool, 3 glide, 4 run, 5 riffle)  Refuges in channel	5 tick all present	in natch mo	1 4 n type(s) search	ed in red	2		2		4	:
cobble (6.5-15cm)		in patch, mair	YES	ea in rea	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)							\ <del></del>			
woody debris					YES		YES			
other urban debris tree roots, fine										
moss										
filamentous algae										
other submerged veg.										
emergents										
Main substrate beneath	VEO		VEO		VEO		VEO		VEO	_
bedrock cobble (6.5-15cm)	YES		YES		YES		YES		YES	
pebble (<6.5cm)										
gravel (<1.6cm)										
sand (<2mm)										
clay										
Silt										
Siltation none	YES		YES		YES		YES		YES	
moderate	. = 0									
high										
Refuges in bank none										
cobble/boulder			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	HEAVY		HEAVY		HEAVY		HEAVY		HEAVY	
Crayfish/10 refuges, or per										
unit (depending on method) Search time (Mins)	0 10		10		8		8		0 10	
Bullhead present?	YES		YES		YES		°		YES	+
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 3 3 3 3	Notes (surv	ey conditions, p	atches etc.):	Good acce	ss from we	st bank via	footpath		
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									-

CRAYFISH HABITAT SURVEY FORM										
							Site (no.,			
Catchment	Wye	Surveyor	River	Llynfi			name) Grid ref.			12
Date (dd/mm/yy)	14/09/2016		DR LW				(d/s end)	SO 12868 2	9130	
Weather, good 1, mod 2, poor		Flow norm 1, low 2, fall		Water		Clarity, good 1, mod 2,				
3		3, rise 4	1	temp. oC	12	poor 3	1			
Photo ref. &	lanas adiatah u	da	of 1at 100					AL Die		
Location	Immediately	downstrea	m of 1st 100	m			115			
								7. 2. 0.		
								<b>小</b>		A 2016
Site length (m)	100									
								E.	-44	
		Descript.	Land use -	grazing wo	oded bank	s act as a				
		(channel features,	good buffer	-			- N.			
Width channel (m)		landuse)	bridge							
Survey method, std 1, quad	sample patc	h 1	sample pato	h 2	sample pa	tch 3	sample pat	ch 4 s	ample pa	ich 5
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)	6X2		5X2		4X2		4X2		2X2	
Channel (1 margins, 2 mid, 3	_				_				_	
both, other specify)	3		3		3		2	<del>                                     </del>	3	
Depth (metres) Feature (1 marg. d'water, 2	0.1		0.2		0.2		0.2		0.2	
pool, 3 glide, 4 run, 5 riffle)	5		4		4		4		4	
Refuges in channel		in patch, mair	type(s) search	ed in red	\=c					
cobble (6.5-15cm)			YES		YES		YES		/ES	
cobble (15-25.6cm) boulder (25.6-40cm)			YES YES		YES YES		YES		<u>′ES</u> ′ES	
boulder (>40cm)	153		150		TES		TES		ES ES	
rubble (give size)										
woody debris	YES		YES		YES		YES	Υ	⁄ES	
other urban debris										
tree roots, fine moss										
filamentous algae										
other submerged veg.										
emergents										
Main substrate beneath										
bedrock cobble (6.5-15cm)										
pebble (<6.5cm)										
gravel (<1.6cm)										
sand (<2mm)	VEO		VE0		VEO		VEO	\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	/E0	
silt	YES		YES		YES		YES	T	/ES	
Siltation none										
low	YES		YES		YES		YES	Y	⁄ES	
moderate										
high Refuges in bank none					YES		YES	<del>                                     </del>		
cobble/boulder					, LO		120			
tree roots, large					YES					
vertical or undercut bank										
dry stone wall										
other reinforced										
crayfish burrows Shading above	HEAVY		MOD		HEAVY		MOD	I.	ИOD	
Crayfish/10 refuges, or per								l l		
unit (depending on method) Search time (Mins)	10		0 8		12		0 12	<b>-</b>	10	
Bullhead present?	10		0		12		12	<del>   </del>	10	
Evaluation crayfish		Notes (surv	ey conditions, p	atches etc.):						
habitat for whole site (0										
none, 1 pres., 2 freq., 3 abund.)	Score									
in margins	3									
in mid channel	3									
in banks	3									
surveyability	3									
Problems pollution 1, erosion										
2, (E if >33% affected), aliens 3.	ļ									
Total crayfish (by 1 method,										
note total(s) by other methods in notes if applicable)	0									
		<u> </u>					-			

		CRAY	FISH H	ABITAT	SURVE	Y FORI	М			
Catchment	Wye		River	Llynfi			Site (no., name)			13
	-	Surveyor		LIYIIII			Grid ref.			13
Date (dd/mm/yy)	13/09/2016	Flow norm	DR LW			Clarity,	(d/s end)	SO 13082	27665	
Weather, good 1, mod 2, poor 3	1	1, low 2, fall 3, rise 4	1	Water temp. oC	12	good 1, mod 2, poor 3	1			
Photo ref. & Location	luot unotro	m of roadh	ridao				The same of the			
Site length (m)	Just upstrea	Descript. (channel features,	mage							
Width channel (m)		landuse)	Land use -			tah 3	gample par	ob 4	aample pe	tob E
Survey method, std 1, quad	sample patc	n I	sample pate	in Z	sample pa	ich 3	sample par	Cn 4	sample pa	ich 5
2, net/kick 3, trap 4, view 5	1 & 4		1 & 4		1 & 4		1 & 4		1 & 4	
Details (if not standard)	3x2		25/2		3x2		3x2		3x2	
Extent (I x w patch) Channel (1 margins, 2 mid, 3			2x2							
both, other specify)	3		3		3		3		3	
Depth (metres) Feature (1 marg. d'water, 2	0.2		0.2		0.2		0.2		0.2	
pool, 3 glide, 4 run, 5 riffle)	3		3		3		3		3	
Refuges in channel	tick all present	in patch, mair	type(s) search	ed in red						
cobble (6.5-15cm) cobble (15-25.6cm)	YES						YES		YES	
boulder (25.6-40cm)			YES		YES		YES		YES	
boulder (>40cm)										
rubble (give size)			YES		YES					
woody debris other urban debris	YES		YES		YES		YES		YES	
tree roots, fine	YES		YES		YES		YES		YES	
moss	_		_							
filamentous algae										
other submerged veg. emergents					1					
Main substrate beneath										
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	
Refuges in bank none										
cobble/boulder tree roots, large					<del>                                     </del>					
vertical or undercut bank										
dry stone wall										
other reinforced										
crayfish burrows	NONE		LIEANO		LIEALO		1400		LIE ALO	
Shading above Crayfish/10 refuges, or per	NONE		HEAVY		HEAVY		MOD		HEAVY	
unit (depending on method)	0		0		0		0		0	
Search time (Mins)	8		8		6		10		8	
Bullhead present?  Evaluation crayfish		Notes (supe	ey conditions, p	otoboo oto ):	Good acce	ee from ros	dhridae			
habitat for whole site (0 none, 1 pres., 2 freq., 3 abund.) in margins in mid channel in banks surveyability  Problems pollution 1, erosion	Score 1 1 1 1 1 3		,	,						
<ol> <li>(E if &gt;33% affected), aliens 3.</li> <li>Total crayfish (by 1 method, note total(s) by other methods in notes if applicable)</li> </ol>	0									

CRAYFISH HABITAT SURVEY FORM									
Catabasant	10/		Diver	l boof:			Site (no.,		4.4
Catchment	Wye	Surveyor	River	Llynfi			name) Grid ref.		14
Date (dd/mm/yy)	13/09/2016	S Flow norm	DR LW			Clarity,	(d/s end)	SO 13656 25068	
Weather, good 1, mod 2, poor 3	1	1, low 2, fall 3, rise 4	1	Water temp. oC	12	good 1, mod 2, poor 3	1		
Photo ref. &		.,		in the second		71		Alaca	
Location	Near roadbr	idge							Town .
								1	
Site length (m)	300								
		Descript. (channel features,	Land use - stock acces channel is s	s. Eroded	banks and i	river			
Width channel (m)		landuse)	refuges	-h 0		tah 2	agentle not	tab 4 sample no	tab C
Survey method, std 1, quad	sample patc	n 1	sample pate	n 2	sample pat	ich 3	sample pat		icn 5
2, net/kick 3, trap 4, view 5	1 & 4		1 & 4		1 & 4		1 & 4	1 & 4	
Details (if not standard)	F.A		0.4		0.4		40.4	4.4.4	
Extent (I x w patch) Channel (1 margins, 2 mid, 3	5x1		6x1		8x1		12x1	14x1	
both, other specify)	3		3		3		3		
Depth (metres) Feature (1 marg. d'water, 2	0.1		0.1		0.1		0.1	0.2	
pool, 3 glide, 4 run, 5 riffle)	3		3		3		2	4	
Refuges in channel	tick all present	in patch, ring	main type(s) se	arched	\ = 0			1/=0	
cobble (6.5-15cm) cobble (15-25.6cm)	VEC		YES		YES YES			YES	
boulder (25.6-40cm)	ILS				ILS			YES	
boulder (>40cm)									
rubble (give size)									
woody debris other urban debris	YES		YES		YES		YES	YES	
tree roots, fine									
moss									
filamentous algae									
other submerged veg.									
emergents Main substrate beneath									
bedrock									
cobble (6.5-15cm)									
pebble (<6.5cm)									
gravel (<1.6cm) sand (<2mm)									
clay									
· ·	YES		YES		YES		YES	YES	
Siltation none									
low moderate									
	YES		YES		YES		YES	YES	
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 Crayfish/10 refuges, or per	MOD		LIGHT		LIGHT		HEAVY	MOD	
unit (depending on method)	0		0		0		0	0	
Search time (Mins)	5		5		8		5	5	
Bullhead present?  Evaluation crayfish		Notes :							
habitat for whole site (0 none, 1 pres., 2 freq., 3 abund.) in margins	Score 0	Notes (surv	ey conditions, p	atches etc.):					
in mid channel	0								
in banks	1								
surveyability	3								
Problems pollution 1, erosion 2, (E if >33% affected), aliens 3.	2e								
Total crayfish (by 1 method, note total(s) by other methods in notes if applicable)	0								
								-	

CRAYFISH HABITAT SURVEY FORM										
Catchment	Wye		River	Llynfi			Site (no., name)			15
		Surveyor		Liyiiii			Grid ref.			15
Date (dd/mm/yy)	13/09/2016	S Flow norm	DR LW			Clarity,	(d/s end)	SO 13899	24149	
Weather, good 1, mod 2, poor 3	1	1, low 2, fall 3, rise 4	1	Water temp. oC	12	good 1, mod 2, poor 3	1			
Photo ref. &										AR.T
Location	At field bour	ndary in firs	st 100m					*7*		
									<b>NOTE:</b>	
								A. Landidon		
Site length (m)	100		l and was			!-				
			Land use -							
		Descript. (channel	zone of tree	s and bush	es on river	banks			4	W. 4
14. M. J.		features,	Some areas	•		d drains	100			
Width channel (m)	sample pato	landuse) h 1	entering rive		ut. sample pat	tch 3	sample par	tch 4	sample pa	atch 5
Survey method, std 1, quad										
2, net/kick 3, trap 4, view 5  Details (if not standard)	1 & 4		1 & 4		1 & 4		1 & 4		1 & 4	
,	11-4		7.4		25/4		9		7.4	
Extent (I x w patch) Channel (1 margins, 2 mid, 3	4x1		7x1		3x1		9		7x1	
both, other specify)	3		3		3		3		3	3
Depth (metres)	0.1		0.2		0.4		0.2		0.1	
Feature (1 marg. d'water, 2 pool, 3 glide, 4 run, 5 riffle)	4		5		2		4		5	;
Refuges in channel	·	in patch, ring	main type(s) se	arched						
cobble (6.5-15cm)							YES			
cobble (15-25.6cm) boulder (25.6-40cm)							YES			
boulder (>40cm)	YES									
rubble (give size)										
woody debris	YES		YES		YES		YES		YES	
other urban debris tree roots, fine	VES		YES		YES		YES		YES	
moss	IES		IES		TES		ILS		ILO	
filamentous algae										
other submerged veg.	VEO		VE0				VEO			
emergents  Main substrate beneath	YES		YES				YES			
bedrock										
cobble (6.5-15cm)										
pebble (<6.5cm) gravel (<1.6cm)										
sand (<2mm)										
clay										
	YES		YES		YES		YES		YES	
Siltation none low										
moderate										
	YES		YES		YES		YES		YES	
Refuges in bank none cobble/boulder										
tree roots, large	YES				YES					
vertical or undercut bank			YES		YES				YES	
dry stone wall										
other reinforced										
crayfish burrows Shading above	HEAVY		MOD		MOD		MOD		MOD	
Crayfish/10 refuges, or per										
unit (depending on method) Search time (Mins)	0 6		10		10		0		<u> </u>	
Bullhead present?	0		10		10		0			'
Evaluation crayfish		Notes (surv	ey conditions, p	atches etc.):						
habitat for whole site (0 none, 1 pres., 2 freq., 3										
abund.)	Score									
in margins	1									
in mid channel in banks	1									
surveyability	3									
	Ü									
Problems pollution 1, erosion										
<ol> <li>(E if &gt;33% affected), aliens 3.</li> <li>Total crayfish (by 1 method,</li> </ol>										
note total(s) by other methods in										
notes if applicable)	0									

		CRAY	/FISH H/	ABITAT	SURVE	Y FORI	М			
Catchment	Wye		River	Llynfi			Site (no., name)			16
		Surveyor					Grid ref.	SO 14270 :	22002	10
Date (dd/mm/yy)		Flow norm	DR LW	10/		Clarity,	(d/s end)	SO 14270 :	23082	
Weather, good 1, mod 2, poor 3		1, low 2, fall 3, rise 4	1	Water temp. oC	12	good 1, mod 2, poor 3	1			
Photo ref. &	A -dia - a -a -t - u - a -						and a	TO (194)		N. C.
Location Site length (m)		Descript. (channel features,	Land use - 0.5m beyor							
Width channel (m)	1	landuse)	under road			tob 2	gample not	tob 4	comple po	tob F
Survey method, std 1, quad	sample patch	n 1	sample pate	n 2	sample pa	icn 3	sample pat		sample pat	cn 5
2, net/kick 3, trap 4, view 5  Details (if not standard)	1 & 4		1 & 4		1 & 4		1 & 4		1 & 4	
Extent (I x w patch)	4x1		5x1		7x1		2x1		4x1	
Channel (1 margins, 2 mid, 3 both, other specify)	3		3		3		3		3	
Depth (metres)	0.1		0.1		0.2		0.1		0.1	
Feature (1 marg. d'water, 2 pool, 3 glide, 4 run, 5 riffle)	5		5		2		4		5	
Refuges in channel	tick all present i	in patch, ring		-					3	
cobble (6.5-15cm)	YES		YES		YES		YES		YES	
cobble (15-25.6cm) boulder (25.6-40cm)					YES					
boulder (>40cm)	YES									
rubble (give size) woody debris										
other urban debris										
tree roots, fine	YES				YES				YES	
moss filamentous algae										
other submerged veg.										
emergents	YES				YES					
Main substrate beneath bedrock										
cobble (6.5-15cm)										
pebble (<6.5cm) gravel (<1.6cm)	YES		YES		YES		YES		YES	
sand (<2mm)										
clay										
Siltation none										
	YES		YES		YES		YES		YES	
moderate										
high Refuges in bank none										
cobble/boulder			\/F0		\/F0		\/E0		·/=0	
tree roots, large			YES		YES		YES		YES	
vertical or undercut bank dry stone wall			YES		YES		YES		YES	
other reinforced										
crayfish burrows Shading above	HEAVY		HEAVY		HEAVY		HEAVY		HEAVY	
Crayfish/10 refuges, or per										
unit (depending on method) Search time (Mins)	10		0 8		10		6		<u>0</u> 8	
Bullhead present?	.5		Ĭ		.0		Ĭ		<u> </u>	
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 1 1 1 1 3	Notes (surv	ey conditions, p	atches etc.):						
Total crayfish (by 1 method, note total(s) by other methods in notes if applicable)	0									

## 11.17. Appendix Q: Crayfish Habitat Survey Forms for Afon Chwefru (Two forms) CRAYFISH HABITAT SURVEY FORM

CRAYFISH HABITAT SURVEY FORM								
Catchment	Wye	River Chwefru		Site (no., name)	1			
Date (dd/mm/yy)	22/08/2016 Surveyors			Grid ref. SN991545 (d/s end) SN987595				
	Flow norm	Water	Clarity,	(u/s enu) 514907595	3019			
Weather, good 1, mod 2, poor 3	1, low 2, fall 1 3, rise 4	1 temp. oC	good 1, mod 12 2, poor 3	1				
Photo ref. &	T ' I - ( 1 - 1				The state of the s			
Location	Typical stretch							
Site length (m)	500  Descript. (channel features,	Land use - grazing. Oc	casional stock access.					
Width channel (m)	7 landuse)	Many excellent areas.		MAINTAIN THE PARTY OF THE PARTY	Heriot (Harris Comments of the Arrange of the Arran			
Comment	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)	,   	1	1. ~ .	ı. <del></del> .	. ~ .			
		4.0	4.5		5.0			
Extent (I x w patch) Channel (1 margins, 2 mid, 3	5x1	4x2	1x5	4x1	5x2			
both, other specify)	1	3	3	1	3			
Depth (metres)	0.3	0.3	0.4	0.3	1			
Feature (1 marg. d'water, 2	0.3	0.3	U. <del>4</del>	0.3				
pool, 3 glide, 4 run, 5 riffle)	1	4	4	3	5			
Refuges in channel	tick all present in patch,main							
cobble (6.5-15cm)		YES	YES	YES	YES			
cobble (15-25.6cm)		YES	YES	YES	YES			
boulder (25.6-40cm) boulder (>40cm)	TES	YES	YES	YES	YES			
rubble (give size)					l			
woody debris	YES			YES				
other urban debris				. = -				
tree roots, fine								
moss								
filamentous algae								
other submerged veg.								
emergents								
Main substrate beneath	V50	lveo	lvc0	lveo	lvro I			
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			<u> </u>		<del> </del>			
cobble/boulder	,							
tree roots, large		YES	YES	YES	YES			
vertical or undercut bank		YES						
dry stone wall								
other reinforced								
crayfish burrows	MOD	MOD	MOD	LIEA) O/	MOD			
Shading above Crayfish/10 refuges, or per	MOD	MOD	MOD	HEAVY	MOD			
unit (depending on method)	0	0	0	0	0			
Search time (Mins)	12	8	10	12	13			
Bullhead present?								
Evaluation crayfish								
habitat for whole site (0 none, 1 pres., 2 freq., 3								
abund.)	Score							
in margins	3							
in mid channel	3							
in banks	3							
surveyability	3							
Drobleme - II ii								
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							

## **CRAYFISH HABITAT SURVEY FORM**

	<u> </u>				Site (no.,	
Catchment	Wye	River	Chwefru		name)	2
Data (dd/mm/n/n)	22/00/2016 Currier	DD LW			Grid ref.	SN9993052718 to
Date (dd/mm/yy)	22/08/2016 Surveyors Flow norm			Clarity,	(d/s end)	SN9974453165
Weather, good 1, mod 2, poor 3	1, low 2, fall 1 3, rise 4		Water temp. oC	good 1, mod 12 2, poor 3	1	
Photo ref. &	Fand batter of Galda at					
Site length (m)  Width channel (m)	500  Descript. (channel features, 7 landuse)		grazingExc	cellent areas where s		
Curvey method and a sund	sample patch 1	sample patc	h 2	sample patch 3	sample pat	tch 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)	5x2	4x3		4x1	3x3	1x6
Channel (1 margins, 2 mid, 3						
both, other specify)	3	3		1	3	
Depth (metres) Feature (1 marg. d'water, 2	0.3	0.3		0.3	0.4	
pool, 3 glide, 4 run, 5 riffle)  Refuges in channel	4 tick all present in patch, mai	n type(s) searche	nd in red	4	3	4
cobble (6.5-15cm)		YES	u III Ieu	YES	YES	
cobble (15-25.6cm)		YES		YES	YES	YES
boulder (25.6-40cm)				YES	YES	YES
boulder (>40cm)						
rubble (give size) woody debris		YES				
other urban debris		120				
tree roots, fine						
moss						
filamentous algae						
other submerged veg. emergents		1				
Main substrate beneath						
bedrock	YES	YES		YES	YES	YES
cobble (6.5-15cm)						
pebble (<6.5cm)						
gravel (<1.6cm) sand (<2mm)		-				
clay		ļ				
silt						
Siltation none	YES	YES		YES	YES	YES
low moderate						
high						
Refuges in bank none				I.		•
cobble/boulder		\/FC			\/EC	
tree roots, large		YES			YES	
vertical or undercut bank dry stone wall		YES		YES	YES	YES
other reinforced		+			1	
crayfish burrows						
Shading above Crayfish/10 refuges, or per	MOD	MOD		MOD	MOD	MOD
unit (depending on method)	0	0		0	0	0
Search time (Mins)	10	6		10	10	10
Bullhead present?			•			
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 3	vey conditions, pa	atches etc.).			
surveyability  Problems pollution 1, erosion 2, (E if >33% affected), aliens 3.	3					
Total crayfish (by 1 method, note total(s) by other methods in notes if applicable)	0					



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