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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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 cyflywr ffafriol ar gyfer y cimwch afon crafanc wen Austrotamobius pallipes. Arolygwyd Afon Edw, Nant yr Offeiriad, Nant Sgithwen, Nant Dulas (Builth Road), Nant Cleiro ac Afon Llynfi i asesu cyflywr poblogaetha a chynefin cimwydiaid afon. Mae dwy afon bellach (Afon Duhanw 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 cyflyredol a thwybiwyd 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 ochwilio â llaw a rhwydo. Yn ystod yr arolwg, canfuiwyd cimwydiaid 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 gyflywr). Er bod niferoedd cimwydiaid afon yn gymharol ganolol gadan 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 lleidaeniad fel sydd wedi digwydd yr Nant Sgithwen a Nant yr Offeiriad. Mewn gwirionedd, mae niferoedd a lleidaeniad wedi cynyddu yn Nant Cleiro. Mae’r diffyg cimwydiaid afon crafanc wen yn Afon Edw, mae’n dilyn manwolaethu yn 2006, yr ym cynyddu gan fod y ddwy frfordd hon wedi bod yn bwysig iawn ar gyfer yr hwyogaeth hon yr y gorffenol diweddar. Hefyd, roedd yn ymddangos fel nad oes unrhyw gimychiaid afon yn Nant Dulas (Builth Road) yn 2015 er gwaethaf y ffafri y ddwy afon hyn y ddyfryfodd yr hyn a chanfuwyd yr adolygiad o’r mesurau amddiffyn ar gyfer poblogaeth cymwydiaid afon crafanc wen mewn cyflywr ffafriol ac estron. Oherwydd pwysigrywdd Nant Cleiro ar gyfer cimwydiaid afon, argymhellir bod yr isafon hon yr ym cseal ei hysbysu fel rhan o SoDdGA Afon Gwy ac ACA Afon Gwy.

Gan ddefnydddio’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 (Nodwed 3) a diffyg cefyd ac absenoldeb hwyogaethau estron (Nodwed 4), nid yw dwysedd y cimwydiaid afon yn ddigon uchel (Nodwed 1) ac nid yw dosbarthiad drwy gydol yr unedau monitro yr uned o ddigonol (Nodwed 2) ar gyfer ACA Afon Gwy i gyflawni Statws Ffafriol.

Yn 2013-14, cyflywynodd Uned Magu Pysgod Cynrig Cyfathrebut Naturiol Cymru tua 3,000 o gimychiaid afon i Afon Chwefru, isafon o Afon Irfon. Fel rhan o’r gwaith cyflyredol, roedd arolwg ychwanegol o hyd 1km mewn ddyfryfodd yr hyn y safleoedd cyflywyno wedi’i gynnwys, ond ni chanfuwyd unrhyw gimychiaid afon.

Mae argymhellion yn cynnwys adolygiad o’r mesurau amddiffyn ar gyfer poblogaeth cymwydiaid afon crafanc wen mewn cyflywr ffafriol ac estron yr hyn haisafonydd. Oherwydd pwysigrywdd Nant Cleiro ar gyfer cimwydiaid afon, argymhellir bod yr isafon hon yr ym cseal ei hysbysu fel rhan o SoDdGA Afon Gwy ac ACA Afon Gwy.

[Mae’r adroddiad hwn yn darparu cyfuniad o ganlyniadau arlonyon cimwydiaid 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.

<table>
<thead>
<tr>
<th>Attribute No.</th>
<th>Conservation objective (when the feature is in favourable condition)</th>
<th>To maintain the white-clawed crayfish <em>Austropotamobius pallipes</em> in the River Wye SAC in favourable condition where:</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Lower limit</td>
<td>the average number of crayfish recorded in each habitat patch is:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>greater than 1</td>
</tr>
<tr>
<td>2</td>
<td>Lower limit</td>
<td>where:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>crayfish are present in 5 of the 8 monitoring units</td>
</tr>
<tr>
<td>3</td>
<td>Lower limit</td>
<td>and where:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>there is an absence of alien crayfish and plague, and a &lt;10% incidence of porcelain disease</td>
</tr>
<tr>
<td>4</td>
<td>Habitat quality</td>
<td>Suitable habitat should be present in 60% of the sampled habitat patches</td>
</tr>
<tr>
<td></td>
<td>Lower limit</td>
<td>and where:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>water quality is at GQA Biological Class A or B in 5 of the 8 monitoring units</td>
</tr>
<tr>
<td>5</td>
<td>Lower limit</td>
<td><strong>Definition of suitable white-clawed crayfish habitat</strong></td>
</tr>
<tr>
<td></td>
<td></td>
<td>River beds with cobble and boulders larger than 15cm along the longest axis, and with little or no siltation.</td>
</tr>
</tbody>
</table>

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 20m². 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).

<table>
<thead>
<tr>
<th>Average number of crayfish per site</th>
<th>Population abundance</th>
</tr>
</thead>
<tbody>
<tr>
<td>&gt;5</td>
<td>Very high</td>
</tr>
<tr>
<td>&gt;=3, &lt;=5</td>
<td>High</td>
</tr>
<tr>
<td>&gt;=1, &lt;3</td>
<td>Moderate</td>
</tr>
<tr>
<td>&gt;0, &lt;1</td>
<td>Low</td>
</tr>
<tr>
<td>0</td>
<td>Absent/undetected</td>
</tr>
</tbody>
</table>

- 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):

<table>
<thead>
<tr>
<th>Score</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>Not evident or only minimal potential for refuges</td>
</tr>
<tr>
<td>1</td>
<td>Present but localised or sparse, in less than a third of site</td>
</tr>
<tr>
<td>2</td>
<td>Frequent, covering more than a third of site, or frequent, but small patches</td>
</tr>
<tr>
<td>3</td>
<td>Abundant. Potential refuge habitat continuous, or semi-continuous, along more than two-thirds sample site</td>
</tr>
</tbody>
</table>

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

4.1.3. Water quality

Water quality data was not collected during this survey.

5. Results

The following sections of monitoring units (or tributaries) were surveyed 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.

<table>
<thead>
<tr>
<th>Site</th>
<th>Distance from confluence (km)</th>
<th>No of crayfish per site</th>
<th>Average abundance per patch</th>
<th>Classification of population abundance</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>Absent/undetected</td>
</tr>
<tr>
<td>2</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>Absent/undetected</td>
</tr>
<tr>
<td>3</td>
<td>2</td>
<td>0</td>
<td>0</td>
<td>Absent/undetected</td>
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<td>4</td>
<td>2.5</td>
<td>0</td>
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</tr>
<tr>
<td>15</td>
<td>16.5</td>
<td>0</td>
<td>0</td>
<td>Absent/undetected</td>
</tr>
<tr>
<td>16</td>
<td>17</td>
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</tr>
<tr>
<td>Total</td>
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<td>0</td>
<td>0</td>
<td>Classification for monitoring unit</td>
</tr>
</tbody>
</table>

5.1.2. Habitat

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

<table>
<thead>
<tr>
<th>Site</th>
<th>In margin</th>
<th>In mid channel</th>
<th>In banks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Edw</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
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<td>3</td>
<td>3</td>
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</tr>
<tr>
<td>2</td>
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<tr>
<td>3</td>
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</tr>
<tr>
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</tr>
<tr>
<td>5</td>
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<td>3</td>
</tr>
<tr>
<td>6</td>
<td>3</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>7</td>
<td>3</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>8</td>
<td>3</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>9</td>
<td>3</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>10</td>
<td>3</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>11</td>
<td>2</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>12</td>
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</tr>
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<td>2</td>
<td>2</td>
</tr>
<tr>
<td>14</td>
<td>3</td>
<td>3</td>
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</tr>
<tr>
<td>15</td>
<td>3</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>16</td>
<td>3</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>45</td>
<td>45</td>
</tr>
</tbody>
</table>

Total for Afon Edw 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.

<table>
<thead>
<tr>
<th>Site</th>
<th>Distance from confluence (km)</th>
<th>No of crayfish per site</th>
<th>Average abundance per patch</th>
<th>Classification of population abundance</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>Absent/undetected</td>
</tr>
<tr>
<td>2</td>
<td>0.5</td>
<td>0</td>
<td>0</td>
<td>Absent/undetected</td>
</tr>
<tr>
<td>3</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>Absent/undetected</td>
</tr>
<tr>
<td>4</td>
<td>1.5</td>
<td>0</td>
<td>0</td>
<td>Absent/undetected</td>
</tr>
<tr>
<td>5</td>
<td>2</td>
<td>0</td>
<td>0</td>
<td>Absent/undetected</td>
</tr>
<tr>
<td>6</td>
<td>2.5</td>
<td>0</td>
<td>0</td>
<td>Absent/undetected</td>
</tr>
<tr>
<td>7</td>
<td>3</td>
<td>0</td>
<td>0</td>
<td>Absent/undetected</td>
</tr>
<tr>
<td>8</td>
<td>3.5</td>
<td>0</td>
<td>0</td>
<td>Absent/undetected</td>
</tr>
<tr>
<td>9</td>
<td>4</td>
<td>0</td>
<td>0</td>
<td>Absent/undetected</td>
</tr>
<tr>
<td>10</td>
<td>4.5</td>
<td>0</td>
<td>0</td>
<td>Absent/undetected</td>
</tr>
<tr>
<td>11</td>
<td>5.5</td>
<td>8</td>
<td>1.6</td>
<td>Moderate</td>
</tr>
<tr>
<td>12</td>
<td>6.5</td>
<td>32</td>
<td>6.4</td>
<td>Very high</td>
</tr>
<tr>
<td>13</td>
<td>7</td>
<td>48</td>
<td>9.6</td>
<td>Very high</td>
</tr>
<tr>
<td>14</td>
<td>7.5</td>
<td>14</td>
<td>2.8</td>
<td>Moderate</td>
</tr>
<tr>
<td>15</td>
<td>8</td>
<td>12</td>
<td>2.4</td>
<td>Moderate</td>
</tr>
<tr>
<td>16</td>
<td>8.5</td>
<td>8</td>
<td>1.6</td>
<td>Moderate</td>
</tr>
<tr>
<td>Total</td>
<td>122</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Classification for monitoring 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.

<table>
<thead>
<tr>
<th>Percentage of crayfish affected</th>
<th>Percentage of crayfish affected</th>
</tr>
</thead>
<tbody>
<tr>
<td>Thelohania</td>
<td>Thelohania 8 (7%)</td>
</tr>
<tr>
<td>Damage</td>
<td>Damage 18 (15%)</td>
</tr>
<tr>
<td>Indication of females breeding (with glair)</td>
<td>Indication of females breeding (with glair) 39 (87%)</td>
</tr>
</tbody>
</table>

5.2.3. Habitat

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

<table>
<thead>
<tr>
<th>Site</th>
<th>In margin</th>
<th>In mid channel</th>
<th>In banks</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nant yr Offeiriad</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td>42</td>
</tr>
<tr>
<td>2</td>
<td>3</td>
<td>2</td>
<td>1</td>
<td>31</td>
</tr>
<tr>
<td>3</td>
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<td>1</td>
<td>22</td>
</tr>
<tr>
<td>4</td>
<td>3</td>
<td>3</td>
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<tr>
<td>5</td>
<td>3</td>
<td>3</td>
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<td>18</td>
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<tr>
<td>6</td>
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<td>3</td>
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<td>17</td>
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<tr>
<td>7</td>
<td>3</td>
<td>3</td>
<td>1</td>
<td>16</td>
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<tr>
<td>8</td>
<td>3</td>
<td>3</td>
<td>2</td>
<td>18</td>
</tr>
<tr>
<td>9</td>
<td>2</td>
<td>3</td>
<td>2</td>
<td>17</td>
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<td>10</td>
<td>3</td>
<td>3</td>
<td>3</td>
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<tr>
<td>11</td>
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<td>19</td>
</tr>
<tr>
<td>12</td>
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<td>2</td>
<td>18</td>
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<tr>
<td>13</td>
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<td>3</td>
<td>19</td>
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<td>14</td>
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<td>18</td>
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<tr>
<td>15</td>
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<td>16</td>
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<tr>
<td>16</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>16</td>
</tr>
<tr>
<td>Total</td>
<td>42</td>
<td>44</td>
<td>31</td>
<td>81%</td>
</tr>
</tbody>
</table>

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.

<table>
<thead>
<tr>
<th>Site</th>
<th>Distance from confluence (km)</th>
<th>No of crayfish per site</th>
<th>Average abundance per patch</th>
<th>Classification of population abundance</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>Absent/undetected</td>
</tr>
<tr>
<td>2</td>
<td>0.5</td>
<td>0</td>
<td>0</td>
<td>Absent/undetected</td>
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<tr>
<td>3</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>Absent/undetected</td>
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<tr>
<td>4</td>
<td>1.5</td>
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<td>Absent/undetected</td>
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<tr>
<td>5</td>
<td>2</td>
<td>0</td>
<td>0</td>
<td>Absent/undetected</td>
</tr>
<tr>
<td>6</td>
<td>2.5</td>
<td>2</td>
<td>0.4</td>
<td>Low</td>
</tr>
<tr>
<td>7</td>
<td>3</td>
<td>13</td>
<td>2.6</td>
<td>Moderate</td>
</tr>
<tr>
<td>8</td>
<td>3.5</td>
<td>7</td>
<td>1.4</td>
<td>Moderate</td>
</tr>
<tr>
<td>9</td>
<td>4</td>
<td>7</td>
<td>1.4</td>
<td>Moderate</td>
</tr>
<tr>
<td>10</td>
<td>4.5</td>
<td>4</td>
<td>0.8</td>
<td>Low</td>
</tr>
<tr>
<td>11</td>
<td>5</td>
<td>8</td>
<td>1.6</td>
<td>Moderate</td>
</tr>
<tr>
<td>12</td>
<td>5.5</td>
<td>2</td>
<td>0.4</td>
<td>Low</td>
</tr>
<tr>
<td>13</td>
<td>6</td>
<td>4</td>
<td>0.8</td>
<td>Low</td>
</tr>
<tr>
<td>14</td>
<td>6.5</td>
<td>54</td>
<td>10.8</td>
<td>Very high</td>
</tr>
<tr>
<td>15</td>
<td>7</td>
<td>19</td>
<td>3.8</td>
<td>High</td>
</tr>
<tr>
<td>16</td>
<td>7.5</td>
<td>0</td>
<td>0</td>
<td>Absent/undetected</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>120</td>
<td></td>
<td>Classification</td>
</tr>
</tbody>
</table>

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.](image-url)
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.

<table>
<thead>
<tr>
<th>Percentage of crayfish affected</th>
<th>[Thelohania]</th>
<th>[Damage]</th>
<th>[Indication of females breeding (with glair)]</th>
</tr>
</thead>
<tbody>
<tr>
<td>6 (5%)</td>
<td>14 (12%)</td>
<td>29 (69%)</td>
<td></td>
</tr>
</tbody>
</table>

5.3.3. Habitat

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

<table>
<thead>
<tr>
<th>Site</th>
<th>In margin</th>
<th>In mid channel</th>
<th>In banks</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sgithwen Brook</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td>3</td>
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<tr>
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<td>6</td>
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<tr>
<td>7</td>
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<td>3</td>
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<tr>
<td>8</td>
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</tr>
<tr>
<td>10</td>
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<td>11</td>
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</tr>
<tr>
<td>12</td>
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<td>13</td>
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<tr>
<td>16</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>Total</td>
<td>48</td>
<td>48</td>
<td>39</td>
<td>94%</td>
</tr>
</tbody>
</table>

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).

<table>
<thead>
<tr>
<th>Site</th>
<th>Distance from confluence (km)</th>
<th>No of crayfish per site</th>
<th>Average abundance per patch</th>
<th>Classification of population abundance</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>Absent/undetected</td>
</tr>
<tr>
<td>2</td>
<td>0.5</td>
<td>0</td>
<td>0</td>
<td>Absent/undetected</td>
</tr>
<tr>
<td>3</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>Absent/undetected</td>
</tr>
<tr>
<td>4</td>
<td>1.5</td>
<td>0</td>
<td>0</td>
<td>Absent/undetected</td>
</tr>
<tr>
<td>5</td>
<td>2</td>
<td>0</td>
<td>0</td>
<td>Absent/undetected</td>
</tr>
<tr>
<td>6</td>
<td>2.5</td>
<td>0</td>
<td>0</td>
<td>Absent/undetected</td>
</tr>
<tr>
<td>7</td>
<td>3</td>
<td>0</td>
<td>0</td>
<td>Absent/undetected</td>
</tr>
</tbody>
</table>
### 3.5.2. Habitat

Table 12: Summary of evaluation of crayfish habitats – Dulas Brook (Builth Road).

See Section 4.1.2 for explanation of values.

<table>
<thead>
<tr>
<th>Site</th>
<th>In margin</th>
<th>In mid channel</th>
<th>In banks</th>
<th>Classification for monitoring unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dulas Brook (Builth Road)</td>
<td>1</td>
<td>3</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td></td>
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</tr>
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<td>3</td>
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<tr>
<td></td>
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</tr>
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<td></td>
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</tr>
<tr>
<td></td>
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</tr>
<tr>
<td></td>
<td>10</td>
<td>2</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>11</td>
<td>1</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>12</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>13</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Total</td>
<td>29</td>
<td>29</td>
<td>27</td>
<td>73%</td>
</tr>
</tbody>
</table>

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.

<table>
<thead>
<tr>
<th>Site</th>
<th>Distance from confluence (km)</th>
<th>No of crayfish per site</th>
<th>Average abundance per patch</th>
<th>Classification of population abundance</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>Absent/undetected</td>
</tr>
<tr>
<td>2</td>
<td>0.5</td>
<td>0</td>
<td>0</td>
<td>Absent/undetected</td>
</tr>
<tr>
<td>3</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>Absent/undetected</td>
</tr>
<tr>
<td>4</td>
<td>1.5</td>
<td>0</td>
<td>0</td>
<td>Absent/undetected</td>
</tr>
<tr>
<td>5</td>
<td>2</td>
<td>0</td>
<td>0</td>
<td>Absent/undetected</td>
</tr>
<tr>
<td>6</td>
<td>2.5</td>
<td>1</td>
<td>0.2</td>
<td>LOW</td>
</tr>
<tr>
<td>7</td>
<td>3</td>
<td>38</td>
<td>7.6</td>
<td>VERY HIGH</td>
</tr>
<tr>
<td>8</td>
<td>3.5</td>
<td>16</td>
<td>3.2</td>
<td>HIGH</td>
</tr>
</tbody>
</table>
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.

![Carapace length frequency of crayfish caught in Clyro Brook](image)

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.

<table>
<thead>
<tr>
<th>Crayfish affected</th>
<th>Crayfish affected</th>
</tr>
</thead>
<tbody>
<tr>
<td>Thelohania</td>
<td>3 (5%)</td>
</tr>
<tr>
<td>Damage</td>
<td>11 (19%)</td>
</tr>
<tr>
<td>Indication of females breeding (with glair)</td>
<td>0</td>
</tr>
</tbody>
</table>

5.5.3. Habitat

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

<table>
<thead>
<tr>
<th>Site</th>
<th>In margin</th>
<th>In mid channel</th>
<th>In banks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Clyro Brook</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>2</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>3</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>4</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>5</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>6</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>7</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
</tbody>
</table>

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5.6. Afon Llynfi

5.6.1. 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 Llynfi.

<table>
<thead>
<tr>
<th>Site</th>
<th>Distance from confluence (km)</th>
<th>No of crayfish per site</th>
<th>Average abundance per patch</th>
<th>Classification of population abundance</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>Absent/undetected</td>
</tr>
<tr>
<td>2</td>
<td>0.5</td>
<td>0</td>
<td>0</td>
<td>Absent/undetected</td>
</tr>
<tr>
<td>3</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>Absent/undetected</td>
</tr>
<tr>
<td>4</td>
<td>1.5</td>
<td>0</td>
<td>0</td>
<td>Absent/undetected</td>
</tr>
<tr>
<td>5</td>
<td>2</td>
<td>0</td>
<td>0</td>
<td>Absent/undetected</td>
</tr>
<tr>
<td>6</td>
<td>2.5</td>
<td>0</td>
<td>0</td>
<td>Absent/undetected</td>
</tr>
<tr>
<td>7</td>
<td>3</td>
<td>0</td>
<td>0</td>
<td>Absent/undetected</td>
</tr>
<tr>
<td>8</td>
<td>3.5</td>
<td>0</td>
<td>0</td>
<td>Absent/undetected</td>
</tr>
<tr>
<td>9</td>
<td>4</td>
<td>0</td>
<td>0</td>
<td>Absent/undetected</td>
</tr>
<tr>
<td>10</td>
<td>4.5</td>
<td>0</td>
<td>0</td>
<td>Absent/undetected</td>
</tr>
<tr>
<td>11</td>
<td>5</td>
<td>0</td>
<td>0</td>
<td>Absent/undetected</td>
</tr>
<tr>
<td>12</td>
<td>5.5</td>
<td>0</td>
<td>0</td>
<td>Absent/undetected</td>
</tr>
<tr>
<td>13</td>
<td>6</td>
<td>0</td>
<td>0</td>
<td>Absent/undetected</td>
</tr>
<tr>
<td>14</td>
<td>6.5</td>
<td>0</td>
<td>0</td>
<td>Absent/undetected</td>
</tr>
<tr>
<td>15</td>
<td>7</td>
<td>0</td>
<td>0</td>
<td>Absent/undetected</td>
</tr>
<tr>
<td>16</td>
<td>7.5</td>
<td>0</td>
<td>0</td>
<td>Absent/undetected</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td></td>
<td>0</td>
<td>Absent/undetected</td>
</tr>
</tbody>
</table>

Classification for monitoring 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.

<table>
<thead>
<tr>
<th>Llynfi</th>
<th>In margin</th>
<th>In mid channel</th>
<th>In banks</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>2</td>
<td>2</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>3</td>
<td>3</td>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td>4</td>
<td>3</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>5</td>
<td>3</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>6</td>
<td>3</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>7</td>
<td>3</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>8</td>
<td>3</td>
<td>3</td>
<td>3</td>
</tr>
</tbody>
</table>

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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.

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

<table>
<thead>
<tr>
<th>Monitoring unit</th>
<th>Classification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nant yr Offeiriad</td>
<td>Moderate</td>
</tr>
<tr>
<td>Afon Edw</td>
<td>Absent/undetected</td>
</tr>
<tr>
<td>Sgithwen Brook</td>
<td>Moderate</td>
</tr>
<tr>
<td>Dulas Brook (Builth Road)</td>
<td>Absent/undetected</td>
</tr>
<tr>
<td>Clyro Brook</td>
<td>Moderate</td>
</tr>
<tr>
<td>Afon Llynfi</td>
<td>Absent/undetected</td>
</tr>
<tr>
<td>Afon Irfon</td>
<td>Assumed absent/undetected</td>
</tr>
<tr>
<td>Afon Duhonw</td>
<td>Assumed absent/undetected</td>
</tr>
</tbody>
</table>

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 thelohania in crayfish from each monitoring unit.

<table>
<thead>
<tr>
<th>Monitoring unit</th>
<th>Incidence of Thelohania</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nant yr Offeiriad</td>
<td>6%</td>
</tr>
<tr>
<td>Afon Edw</td>
<td>Not applicable because no crayfish</td>
</tr>
<tr>
<td>Sgithwen Brook</td>
<td>4%</td>
</tr>
<tr>
<td>Dulas Brook (Builth Road)</td>
<td>Not applicable because no crayfish</td>
</tr>
<tr>
<td>Clyro Brook</td>
<td>5%</td>
</tr>
<tr>
<td>Afon Llynfi</td>
<td>Not applicable because no crayfish</td>
</tr>
<tr>
<td>Afon Irfon</td>
<td>Not applicable because not surveyed</td>
</tr>
<tr>
<td>Afon Duhonw</td>
<td>Not applicable because not surveyed</td>
</tr>
</tbody>
</table>
**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**

<table>
<thead>
<tr>
<th>Monitoring unit</th>
<th>In margins</th>
<th>In mid-channel</th>
<th>In banks</th>
<th>Overall evaluation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nant yr Offeiriad</td>
<td>88%</td>
<td>92%</td>
<td>65%</td>
<td>81%</td>
</tr>
<tr>
<td>Afon Edw</td>
<td>94%</td>
<td>94%</td>
<td>94%</td>
<td>94%</td>
</tr>
<tr>
<td>Sgithwen Brook</td>
<td>100%</td>
<td>100%</td>
<td>81%</td>
<td>88%</td>
</tr>
<tr>
<td>Dulas Brook (Builth Road)</td>
<td>74%</td>
<td>74%</td>
<td>69%</td>
<td>73%</td>
</tr>
<tr>
<td>Clyro Brook</td>
<td>44%</td>
<td>44%</td>
<td>44%</td>
<td>44%</td>
</tr>
<tr>
<td>Afon Llynfi</td>
<td>77%</td>
<td>77%</td>
<td>73%</td>
<td>76%</td>
</tr>
<tr>
<td>Afon Lfon</td>
<td></td>
<td></td>
<td></td>
<td>Omitted from this evaluation but known to be good</td>
</tr>
<tr>
<td>Afon Duhonw</td>
<td></td>
<td></td>
<td></td>
<td>Omitted from this evaluation but known to be good</td>
</tr>
<tr>
<td>Suitable habitat in area surveyed</td>
<td></td>
<td></td>
<td></td>
<td>76%</td>
</tr>
</tbody>
</table>

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.

<table>
<thead>
<tr>
<th>Attribute</th>
<th>Conservation objective (when the feature is in favourable condition)</th>
<th>Result of Surveys</th>
<th>Assessment</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 (Overall number of crayfish)</td>
<td>Average number of crayfish recorded in each habitat patch greater than 1</td>
<td>0.49 crayfish per patch</td>
<td>Favourable Condition not achieved</td>
</tr>
<tr>
<td>2 (Distribution of <em>A. pallipes</em> throughout SAC)</td>
<td>Present in 5 of the 8 monitoring units</td>
<td>Present in 3 of the 8 monitoring units</td>
<td>Favourable Condition not achieved</td>
</tr>
<tr>
<td>3 (Alien threat and disease status)</td>
<td>Absence of alien crayfish and plague, and a &lt;10% incidence of porcelain disease</td>
<td>No aliens, no plague and only 7% porcelain disease</td>
<td>Favourable Condition achieved</td>
</tr>
</tbody>
</table>
4 (Habitat quality) | Suitable habitat should be present in 60% of the sampled habitat patches | Suitable habitat in 76% of sampled habitats | Favourable Condition achieved
---|---|---|---
5 (Water quality) | Water quality is at GQA Biological Class A or B in 5 of the 8 monitoring units | Not measured in this survey | Not measured

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.

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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


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://cattyfr.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

Map 5: Clyro Brook. Location of sampling sites and distribution of crayfish.
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).

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

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| Date       | 16/10/2014 | Surveyors | DR LW | Sheet no. | Sg 4 |

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

Site Clyro 6

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Site Clyro 7

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Site Clyro 8

**CRAYFISH RECORDING FORM**

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Site Clyro 9

**CRAYFISH RECORDING FORM**

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

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<td>DR, LW</td>
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<td>Weather, good 1, mod 2, poor 3</td>
<td>Flow norm 1, low 2, fall 3, rise 4</td>
<td>Water temp, oC</td>
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<td>Photo ref. &amp; Location</td>
<td>Edw01</td>
<td>Grid ref. (d/s end)</td>
<td>SO 0767 4694</td>
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| Site length (m) | 100 |
| Width channel (m) | Descript. (channel features, landuse) | Edw01 |

| 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 (l x w patch) | 2x1 | 3x2 | 2x2 | 1x3 | 2x2 |
| Channel (1 margins, 2 mid, 3 both, other specify) | 1 | 2 | 3 | 2 | 2 |
| Depth (metres) | 0.2 | 0.4 | 0.2 | 0.5 | 0.4 |
| Feature | 1 marg. dweller, 2 pebble (<6.5cm), gravel (<1.6cm), sand (<2mm), clay, silt | 5 | 4 | 4 | 4 | 3 |

| Refuges in channel | 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. | YES | YES | YES | YES | YES |
| | YES | YES | YES | YES | YES | YES |

| Main substrate beneath | bedrock, cobble (6.5-15cm), gravel (<1.6cm), sand (<2mm), clay, silt | YES | YES | YES | YES | YES |
| | YES | YES | YES | YES | YES | YES |

| 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 | YES | YES | YES | YES |

| Shading above | MOD | MOD | MOD | MOD | MOD |
| Crayfish/10 refuges, or per unit (depending on method) | 0 | 0 | 0 | 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.) | Score | Notes (survey conditions, patches etc.) | Stone loach, Mink spraint |
| in margins | 3 |
| in mid channel | 3 |
| in banks | 3 |
| surveyability | 3 |

<p>| Problems | pollution 1, erosion 2, (if &gt;33% affected), aliens 3. |
| Total crayfish (by 1 method, note total(s) by other methods in notes if applicable) | 0 |</p>
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<td>Photo ref. &amp; Location</td>
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<tr>
<td>Refuges in bank</td>
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<td>YES</td>
<td>YES</td>
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<tr>
<td></td>
<td>cobble/boulder</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
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<tr>
<td></td>
<td>tree roots, large</td>
<td>YES</td>
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<td>YES</td>
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<td></td>
<td>vertical or undercut bank</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
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<td>dry stone wall</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
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<td></td>
<td>other reinforced crayfish burrows</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
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<tr>
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<td>in mid channel</td>
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Notes (survey conditions, patches etc.): Stone loach. Mink spraint.
### Table: Site Survey Data

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<tr>
<th>Catchment River</th>
<th>Site (no., name)</th>
<th>Date (dd/mm/yy)</th>
<th>Surveyors</th>
<th>Grid ref. (d/s end)</th>
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<th>Flow, norm 1, low 2, fall 3, rise 4</th>
<th>Water temp, oC</th>
<th>Clarity, good 1, mod 2, poor 3</th>
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<td>Edw</td>
<td>23/08/2003</td>
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<td>Edw03</td>
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<th>Site length (m)</th>
<th>Width channel (m)</th>
<th>Survey method, std 1, quad 2, net/kick 3, trap 4, view 5</th>
<th>Details (if not standard)</th>
<th>Extent (J x k patch)</th>
<th>Channel (1 margin, 2 mid, 3 other, specify)</th>
<th>Flow (samples)</th>
<th>Water temp (oC)</th>
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<th>Extent (J x k patch)</th>
<th>Channel (1 margin, 2 mid, 3 other, specify)</th>
<th>Flow (samples)</th>
<th>Water temp (oC)</th>
<th>Clarity (good, mod, poor)</th>
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<tbody>
<tr>
<td>cobble (6.5-15cm)</td>
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<th>Main substrate beneath</th>
<th>Width (m)</th>
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<th>Channel (1 margin, 2 mid, 3 other, specify)</th>
<th>Flow (samples)</th>
<th>Water temp (oC)</th>
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<td>bedrock</td>
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<th>Siltation</th>
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<th>Channel (1 margin, 2 mid, 3 other, specify)</th>
<th>Flow (samples)</th>
<th>Water temp (oC)</th>
<th>Clarity (good, mod, poor)</th>
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<tbody>
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<th>Shading above</th>
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<th>Channel (1 margin, 2 mid, 3 other, specify)</th>
<th>Flow (samples)</th>
<th>Water temp (oC)</th>
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<table>
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<tr>
<th>Crayfish/10 refuges, or per unit</th>
<th>Width (m)</th>
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<th>Extent (J x k patch)</th>
<th>Channel (1 margin, 2 mid, 3 other, specify)</th>
<th>Flow (samples)</th>
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<tr>
<td>Bullhead present?</td>
<td>Width (m)</td>
<td>Survey method, std 1, quad 2, net/kick 3, trap 4, view 5</td>
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<td>Channel (1 margin, 2 mid, 3 other, specify)</td>
<td>Flow (samples)</td>
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<td>Evaluation crayfish habitat score</td>
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<td>Channel (1 margin, 2 mid, 3 other, specify)</td>
<td>Flow (samples)</td>
<td>Water temp (oC)</td>
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<tr>
<td>Problems</td>
<td>Width (m)</td>
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<td>Channel (1 margin, 2 mid, 3 other, specify)</td>
<td>Flow (samples)</td>
<td>Water temp (oC)</td>
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<td>Pollution</td>
<td>Width (m)</td>
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<td>Flow (samples)</td>
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<td>Erosion</td>
<td>Width (m)</td>
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<td>Channel (1 margin, 2 mid, 3 other, specify)</td>
<td>Flow (samples)</td>
<td>Water temp (oC)</td>
<td>Clarity (good, mod, poor)</td>
<td>Grid ref. SO 0930 4767</td>
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<tr>
<td>Aliens</td>
<td>Width (m)</td>
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<td>Channel (1 margin, 2 mid, 3 other, specify)</td>
<td>Flow (samples)</td>
<td>Water temp (oC)</td>
<td>Clarity (good, mod, poor)</td>
<td>Grid ref. SO 0930 4767</td>
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**Notes:** (survey conditions, patches etc.) Stone loach

**Descript. (channel features, landuse):** Grazing and woodland. Good access

**Edw03**
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<td>DR LW</td>
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<td>Clarity, good 1, mod 2, poor 3</td>
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<td>Photo ref. &amp; Location</td>
<td>Immediately downstream of first 100m</td>
</tr>
<tr>
<td>Site length (m)</td>
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<td>Width channel (m)</td>
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<tr>
<td>Details (if not standard)</td>
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<td>Extent (l x w patch)</td>
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<td>Depth (metres)</td>
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<td>Refuges in channel</td>
<td>cobble (6.5-15cm) YES YES YES YES YES</td>
</tr>
<tr>
<td></td>
<td>cobble (15-25.6cm) YES YES YES YES YES</td>
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<tr>
<td></td>
<td>boulder (25.6-40cm) YES YES YES YES YES</td>
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<td>boulder (&gt;40cm) YES YES YES YES YES</td>
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<td>rubble (give size) YES YES YES YES YES</td>
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<tr>
<td></td>
<td>woody debris YES YES YES YES YES</td>
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<tr>
<td></td>
<td>other urban debris NO NO NO NO NO</td>
</tr>
<tr>
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<td>tree roots, fine NO NO NO NO NO</td>
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<tr>
<td></td>
<td>moss NO NO NO NO NO</td>
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<tr>
<td></td>
<td>filamentous algae NO NO NO NO NO</td>
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<tr>
<td></td>
<td>other submerged veg. NO NO NO NO NO</td>
</tr>
<tr>
<td></td>
<td>emergents NO NO NO NO NO</td>
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<tr>
<td>Main substrate beneath</td>
<td>bedrock YES YES YES YES YES</td>
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<tr>
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<td>cobble (6.5-15cm) YES YES YES YES YES</td>
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<tr>
<td></td>
<td>pebble (&lt;6.5cm) YES YES YES YES YES</td>
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<tr>
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<td>moderate YES YES YES YES</td>
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<td>Refuges in bank</td>
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<td>cobble/boulder YES YES YES YES YES</td>
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<td>tree roots, large YES YES YES YES YES</td>
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<td>vertical or undercut bank YES YES YES YES YES</td>
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<td>dry stone wall YES YES YES YES YES</td>
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<td>other reinforced YES YES YES YES YES</td>
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<td>Evaluation crayfish habitat for whole site (p none, 1 pres, 2 freq, 3 abund.)</td>
<td>Score</td>
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<td>in mid channel 3</td>
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<td>surveyability 3</td>
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<tr>
<td>Problems pollution 1, erosion 2, (E if &gt;33% affected), aliens 3.</td>
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<tr>
<td>Total crayfish (by 1 method, note totals by other methods in notes if applicable)</td>
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## CRAYFISH HABITAT SURVEY FORM

**Catchment River Site (no., name)**

<table>
<thead>
<tr>
<th>Date (dd/mm/yy)</th>
<th>Surveyor</th>
<th>Grid ref. (d/s end)</th>
<th>Weather, good 1, mod 2, poor 3</th>
<th>Water temp. oC</th>
<th>Clarity, good 1, mod 2, poor 3</th>
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<td>28/08/2015</td>
<td>DR LW</td>
<td>SO 1012 4813</td>
<td>Good 1, mod 2, poor 3</td>
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**Site length (m)**
- 100

**Width channel (m)**
- 9

**Photo ref. & Location**
- Immediately downstream of first 100m

**Survey method**
- std 1, quad 2, net/kick 3, trap 4, view 5

**Survey method details**

**Survey method, std 1, quad 2, net/kick 3, trap 4, view 5**
- sample patch 1
- sample patch 2
- sample patch 3
- sample patch 4
- sample patch 5

**Details (if not standard)**

**Extent (l x w patch)**
- 2x2
- 2x2
- 3x2
- 4x1
- 2x2

**Channel (1 margins, 2 mid, 3 both, other specify)**
- 3
- 3
- 3
- 1
- 2

**Depth (metres)**
- 0.2
- 0.3
- 0.2
- 0.2
- 0.3

**Feature (1 marg. d’water, 2 pool, 3 glide, 4 run, 5 riffle)**
- 4
- 5
- 4
- 4
- 5

**Refuges in channel**
- cobble (6.5-15cm)
- cobble (15-25.6cm)
- 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

**Situation**
- none
- low
- moderate
- high

**Siltation**
- 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**
- MOD
- LIGHT
- LIGHT
- LIGHT
- NONE

**Bullhead present?**
- YES

**Evaluation of crayfish habitat for whole site**

<table>
<thead>
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<th>Score</th>
<th>Notes (survey conditions, patches etc.)</th>
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<td>2</td>
<td>Stone loach, kingfisher</td>
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**Problems**
- pollution 1, erosion
- (if >33% affected), aliens 3.

**Total crayfish**
- 0
### CRAYFISH HABITAT SURVEY FORM

<table>
<thead>
<tr>
<th>Descript. (channel features, landuse)</th>
<th>Notes (survey conditions, patches etc.)</th>
<th>Stone loach</th>
</tr>
</thead>
</table>

#### Survey method, std 1, quad 2, net/kick 3, trap 4, view 5

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<thead>
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<th>2x3</th>
<th>1x3</th>
<th>2x2</th>
<th>3x2</th>
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#### Channel (1 margins, 2 mid, 3 both, other specify)

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<th>Depth (metres)</th>
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<th>0.3</th>
<th>0.3</th>
<th>0.3</th>
<th>0.2</th>
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#### Refuges in channel

- cobble (6.5-15cm): YES
- cobble (15-25.6cm): YES
- boulder (25.6-40cm): YES
- boulder (>40cm): YES
- rubble (give size): YES
- woody debris: YES
- other urban debris: YES
- tree roots, fine: YES
- moss: YES
- filamentous algae: YES
- other submerged veg.: YES
- emergents: YES

#### Main substrate beneath

- bedrock: YES
- cobble (6.5-15cm): YES
- pebble (<6.5cm): YES
- gravel (<1.6cm): YES
- sand (<2mm): YES
- clay: YES
- silt: YES

#### Siltation

- none: YES
- low: YES
- moderate: YES
- high: YES

#### Refuges in bank

- none: YES
- cobble/boulder: YES
- tree roots, large: YES
- vertical or undercut bank: YES
- dry stone wall: YES
- other reinforced: YES
- crayfish burrows: YES

#### Shading above

- MOD: LIGHT
- MOD: LIGHT
- MOD: LIGHT

#### Crayfish/10 refuges, or per unit (depending on method)

<table>
<thead>
<tr>
<th>Search time (Mins)</th>
<th>5</th>
<th>10</th>
<th>5</th>
<th>10</th>
<th>10</th>
</tr>
</thead>
</table>

#### Bullhead present

- YES

#### Evaluation crayfish habitat for whole site (0 none, 1 pres., 2 freq., 3 abund.)

<table>
<thead>
<tr>
<th>Score</th>
<th>Notes (survey conditions, patches etc.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td>Stone loach</td>
</tr>
</tbody>
</table>

#### Problems

- pollution 1, erosion 2, E if >50% affected, aliens 3.

#### Total crayfish by 1 method

<table>
<thead>
<tr>
<th>0</th>
</tr>
</thead>
</table>
## CRAYFISH HABITAT SURVEY FORM

<table>
<thead>
<tr>
<th>Catchment</th>
<th>Wye</th>
<th>River</th>
<th>Edw</th>
<th>Site (no., name)</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Date (dd/mm/yy)</td>
<td>28/08/2015</td>
<td>Surveyor</td>
<td>DR LW</td>
<td>Grid ref. (d/s end)</td>
<td>SO 1113 4861</td>
</tr>
<tr>
<td>Weather, good 1, mod 2, poor 3</td>
<td>1</td>
<td>Flow, norm 1, low 2, fall 3, rise 4</td>
<td>Water temp. oC</td>
<td>Good 1, mod 2, poor 3</td>
<td>1</td>
</tr>
<tr>
<td>Photo ref. &amp; Location</td>
<td>Edw07</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Site length (m)</td>
<td>100</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Width channel (m)</td>
<td>8</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Survey method
- std 1, quad 2, net/kick 3, trap 4, view 5

### Details
- Extent (l x w patch) 1 & 4, 1 & 4, 1 & 4, 1 & 4, 1 & 4
- Channel (1 margins, 2 mid, 3 both, other specify) 3
- Depth (metres) 0.3, 0.3, 0.4, 0.3, 0.2, 0.2
- Feature (1 marg. water, 2 pool, 3 glide, 4 run, 5 riffle) 5

### Refuges in channel
- 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 YES, YES, YES, YES, YES
- other urban debris YES, YES, YES, YES, YES
- tree roots, fine moss YES, YES, YES, YES, YES
- filamentous algae YES, YES, YES, YES, YES
- other submerged veg. YES, YES, YES, YES, YES

### Main substrate beneath
- bedrock YES, YES, YES, YES, YES
- cobble (6.5-15cm) YES, YES, YES, YES, YES
- pebble (-6.5cm) YES, YES, YES, YES, YES
- gravel (<1.6cm) YES, YES, YES, YES, YES
- sand (<2mm) YES, YES, YES, YES, YES
- clay silt YES, YES, YES, YES, YES

### Siltation
- none YES, YES, YES, YES, YES
- low moderate YES, YES, YES, YES, YES
- high YES, YES, YES, YES, YES

### Refuges in bank
- none YES, YES, YES, YES, YES
- 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 YES, YES, YES, YES, YES
- other reinforced crayfish burrows YES, YES, YES, YES, YES

### Shading above
- LIGHT 15, 5, 10, 10, 10
- MOD 0, 0, 0, 0, 0
- MOD 10, 10, 10, 10, 10
- LIGHT 0, 0, 0, 0, 0

### Bullhead present?
- YES Y

### Evaluation crayfish habitat for whole site
- Score Notes (survey conditions, patches etc.)
- Stone loach

### Problems
- pollution 1, erosion 2, (E if >33% affected), aliens 3.

### Total crayfish (by 1 method, note totals by other methods in notes if applicable)
- 0
<table>
<thead>
<tr>
<th>Catchment</th>
<th>Edw</th>
<th>River</th>
<th>Site (no., name)</th>
<th>Date (dd/mm/yy)</th>
<th>Surveyor(s)</th>
<th>Grid ref. (d/s end)</th>
<th>Weather</th>
<th>Water temp.</th>
<th>Clarity</th>
<th>Photo ref. &amp; Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>Edw08</td>
<td></td>
<td></td>
<td></td>
<td>28/08/2015</td>
<td>DR LW</td>
<td>SO 1229 4948</td>
<td>good</td>
<td>13</td>
<td>good</td>
<td>Edw08</td>
</tr>
</tbody>
</table>

**Site length (m):** 100

**Width channel (m):** 7

**Survey method, std 1, quad 2, net/kick 3, trap 4, view 5:**

- **Sample patch 1:**
  - Extent (l x w patch): 3x1
  - Channel (1 margins, 2 mid, 3 both, other specify): 1
  - Depth (metres): 0.2
  - Habitat: 4
  - Refuges in channel (tick all present in patch, main type(s) searched in red):
    - Cobble (6.5-15cm): YES
    - Cobble (15.6-25.6cm): YES
    - Boulder (25.6-40cm): YES
    - Boulder (>40cm): YES
    - Rubble (give size): YES
    - Woody debris: YES
    - Other urban debris: YES
    - Tree roots, fine: YES
    - Moss: YES
    - Filamentous algae: YES
    - Other submerged veg.: YES
    - Emergents: YES
  - Main substrate beneath:
    - Bedrock: YES
    - Cobble (6.5-15cm): YES
    - Pebble (<6.5cm): YES
    - Gravel (<1.6cm): YES
    - Sand (<2mm): YES
    - Clay: YES
    - Silt: YES
  - Siltation:
    - None: YES
    - Low: YES
    - Moderate: YES
    - High: YES
  - Refuges in bank:
    - Cobble/boulder: YES
    - Tree roots, large: YES
    - Vertical or undercut bank: YES
    - Other reinforced crayfish burrows: YES
  - Shading above:
    - LIGHT: YES
    - MOD: YES
    - LW: YES
  - Search time (Mins):
    - Sample patch 1: 15
  - Bullhead present?: YES
  - Evaluation crayfish habitat for whole site (0 none, 1 pres., 2 freq., 3 abund.): Score
  - Notes: (survey conditions, patches etc.)

**Problems:**
- Pollution 1, erosion 2, (if >33% affected), alien 3.

**Total crayfish (by 1 method, note total(s) by other methods in notes if applicable):** 0

**Crustacea:**
- Stone loach, kingfisher

---

**Descript. (channel features, landuse):**
- Good access. Grazing and woodland
- Notes: (survey conditions, patches etc.)

---

**CRAYFISH HABITAT SURVEY FORM**
<table>
<thead>
<tr>
<th>Catchment</th>
<th>Wye</th>
<th>River</th>
<th>Edw</th>
<th>Site (no., name)</th>
<th>( U )</th>
</tr>
</thead>
<tbody>
<tr>
<td>Date (dd/mm/yy)</td>
<td>29/08/2015</td>
<td>Surveyor s</td>
<td>DR LW</td>
<td>Weather,  good 1, mod 2, poor 3</td>
<td>1</td>
</tr>
<tr>
<td>Site length (m)</td>
<td>100</td>
<td>Grid ref. (d/s end)</td>
<td>SO 1260 4969</td>
<td>Water temp. ( ^\circ \mathrm{C} )</td>
<td>13</td>
</tr>
<tr>
<td>Photo ref. &amp; Location</td>
<td>Edw09</td>
<td>Clarity,  good 1, mod 2, poor 3</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Flow norm</td>
<td>1</td>
<td>Water temp. ( ^\circ \mathrm{C} )</td>
<td>10</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Photo ref. &amp; Location</td>
<td>Edw09</td>
<td>Clarity,  good 1, mod 2, poor 3</td>
<td>1</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Survey Method
- std 1, quad 2, net/kick 3, trap 4, view 5

### Details (if not standard)
- Extent (l x w patch) | 3x1
- Channel (1 margins, 2 mid, 3 both, other specify) | 1
- Depth (metres) | 0.2
- Habitat (1 marg, channel, 2 mid, 3 both, 4 rip, 5 rif, 6 other) | 3

### Refuges in Channel

- cobble (6.5-15cm) | YES
- cobble (15-25.6cm) | YES
- boulder (25.6-40cm) | YES
- boulder (>40cm) | YES
- rubble (give size) | YES
- woody debris | YES
- other urban debris | YES
- tree roots, fine moss | YES
- filamentous algae | YES
- other submerged veg. | YES
- emergents | YES

### Main Substrate Beneath

- bedrock | YES
- cobble (6.5-15cm) | YES
- pebble (<6.5cm) | YES
- gravel (<1.6cm) | YES
- sand (<2mm) | YES
- clay | YES
- silt | YES

### Siltation

- low | YES
- moderate | YES
- high | YES

### Refuges in Bank

- none | YES
- cobble/boulder | YES
- tree roots, large | YES
- vertical or undercut bank | YES
- dry stone wall | YES
- other reinforced crayfish burrows | YES

### Shading Above

- none | NONE
- MOD | NONE
- other | NONE

### Crayfish 10 refuges, or per unit (depending on method)

<table>
<thead>
<tr>
<th>sample patch 1</th>
<th>sample patch 2</th>
<th>sample patch 3</th>
<th>sample patch 4</th>
<th>sample patch 5</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 &amp; 4</td>
<td>1 &amp; 4</td>
<td>1 &amp; 4</td>
<td>1 &amp; 4</td>
<td>1 &amp; 4</td>
</tr>
</tbody>
</table>

### Search Time (Mins)

- 5
- 10
- 10
- 10
- 5

### Evaluation crayfish habitat for whole site (in margins, in mid channel, in banks, surveyability)

<table>
<thead>
<tr>
<th>Score</th>
<th>Notes (survey conditions, patches etc.)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Stone loach, heron</td>
</tr>
</tbody>
</table>

### Problems

- pollution 1, erosion 2 (if 33% affected), aliens 3

### Total crayfish (by 1 method, note totals by other methods in notes if applicable)

- 0

---

**Descript.**

Difficult access, steep bank and fences. Grazing and woodland
## CRAYFISH HABITAT SURVEY FORM

<table>
<thead>
<tr>
<th>Catchment</th>
<th>Wye</th>
<th>River</th>
<th>Edw</th>
<th>Site (no., name)</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Date (dd/mm/yyyy)</td>
<td>29/08/2015</td>
<td>Surveyor</td>
<td>DR LW</td>
<td>Grid ref. (d/s end)</td>
<td>SO 1248 5118</td>
</tr>
<tr>
<td>Weather, good 1, mod 2, poor 3</td>
<td></td>
<td>Flow norm 1, low 2, fall 3, rise 4</td>
<td>Water temp. oC 13</td>
<td>Clarity good 1, mod 2, poor 3</td>
<td>1</td>
</tr>
<tr>
<td>Photo ref. &amp; Location</td>
<td>Edw10</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Site length (m)</td>
<td>100</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Width channel (m)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Site length

- Descript. (channel features, landscape)

### Site length

- Land use - cattle grazing. Cattle poaching immediately downstream of site. Access down very steep field.

### Refuges in channel

<table>
<thead>
<tr>
<th>Refuges in channel</th>
<th>sample patch 1</th>
<th>sample patch 2</th>
<th>sample patch 3</th>
<th>sample patch 4</th>
<th>sample patch 5</th>
</tr>
</thead>
<tbody>
<tr>
<td>cobble (6.5-15cm)</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>cobble (15-25.6cm)</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>boulder (25.6-40cm)</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>boulder (&gt;40cm)</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>rubble (give size)</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>other urban debris</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>tree roots, fine moss</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>filamentous algae other submerged veg.</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
</tbody>
</table>

### Main substrate beneath

- bedrock
- cobble (6.5-15cm)
- pebble (<6.5cm)
- gravel (<1.6cm)
- sand (<2mm)
- 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

<table>
<thead>
<tr>
<th>Shading above</th>
<th>MOD</th>
<th>HEAVY</th>
<th>MOD</th>
<th>MOD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Crayfish (10 refuges, or per unit (depending on method))</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Search time (Mins)</td>
<td>5</td>
<td>10</td>
<td>10</td>
<td>15</td>
</tr>
<tr>
<td>Bullhead present?</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
</tbody>
</table>

### Evaluation crayfish habitat for whole site

<table>
<thead>
<tr>
<th>Evaluation crayfish habitat for whole site (a none, 1 prea, 2 freq, 3 abund.)</th>
<th>Score</th>
<th>Notes (survey conditions, patches etc.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>in margins in margins in mid channel in banks surveyability</td>
<td>3</td>
<td>Stone loach</td>
</tr>
<tr>
<td>Total crayfish (by 1 method, note totals by other methods in notes if applicable)</td>
<td>0</td>
<td></td>
</tr>
</tbody>
</table>
### CRAYFISH HABITAT SURVEY FORM

<table>
<thead>
<tr>
<th>Catchment</th>
<th>Wye</th>
<th>River</th>
<th>Edw</th>
<th>Site (no., name)</th>
<th>11</th>
</tr>
</thead>
<tbody>
<tr>
<td>Date (dd/mm/yy)</td>
<td>14/10/2014</td>
<td>Surveyors</td>
<td>DR LW</td>
<td>Grid ref.</td>
<td>SO 12602 52787</td>
</tr>
<tr>
<td>Weather, good 1, mod 2, poor 3</td>
<td>2</td>
<td>Flow norm 1, low 2, fall 3, rise 4</td>
<td>4</td>
<td>Start and finish time</td>
<td>1500-1700</td>
</tr>
<tr>
<td>Photo ref. &amp; Location</td>
<td>At 300m</td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Site length (m)</td>
<td>400</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Width channel (m)</td>
<td>5</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Survey method, std 1, quad 2, net/kick 3, trap 4, view 5</th>
<th>1 &amp; 4</th>
<th>1 &amp; 4</th>
<th>1 &amp; 4</th>
<th>1 &amp; 4</th>
<th>1 &amp; 4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Details (if not standard)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Extent (l x w patch)</td>
<td>5x1</td>
<td>3x1</td>
<td>5x1</td>
<td>2x2</td>
<td>4x1</td>
</tr>
<tr>
<td>Channel (1 margins, 2 mid, 3 both, other specify)</td>
<td>3</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td>Depth (metres)</td>
<td>0.3</td>
<td>0.2</td>
<td>0.3</td>
<td>0.3</td>
<td>0.2</td>
</tr>
<tr>
<td>Feature (1 marg. d'water, 2 pool, 3 glide, 4 run, 5 riffle)</td>
<td>3</td>
<td>4</td>
<td>3</td>
<td>4</td>
<td>4</td>
</tr>
</tbody>
</table>

#### Refuges in channel

- tick all present in patch, main type(s) searched in red

- **cobbles (6.5-15cm)**
  - YES

- **cobbles (15-25.6cm)**
  - YES

- **boulders (25.6-40cm)**
  - YES

- **boulders (>40cm)**
  - YES

- **rubble (give size)**
  - YES

- **woody debris**
  - YES

- **other urban debris**
  - YES

- **tree roots, fine moss**
  - YES

- **filamentous algae**
  - YES

- **other submerged veg. emergents**
  - YES

#### Main substrate beneath

- **bedrock**
  - YES

---

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<table>
<thead>
<tr>
<th>cobble (6.5-15cm)</th>
<th>pebble (&lt;6.5cm)</th>
<th>gravel (&lt;1.6cm)</th>
<th>sand (&lt;2mm)</th>
<th>clay</th>
<th>silt</th>
<th>YES</th>
<th>YES</th>
<th>YES</th>
<th>YES</th>
<th>YES</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Siltation</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Refuges in bank</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>cobble/boulder</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>tree roots, large</td>
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<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>vertical or</td>
<td></td>
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<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>undercut bank</td>
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<td>pollution 1,</td>
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<tr>
<td>erosion 2, (E if &gt;33% affected), aliens 3.</td>
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<tr>
<td>Total crayfish (by 1 method, note total(s) by other methods in notes if applicable)</td>
<td>0</td>
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</table>
### CRAYFISH HABITAT SURVEY FORM

<table>
<thead>
<tr>
<th>Catchment</th>
<th>Wye</th>
<th>River</th>
<th>Edw</th>
<th>Site (no., name)</th>
<th>12</th>
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</table>

<table>
<thead>
<tr>
<th>Date (dd/mm/yy)</th>
<th>14/10/2014</th>
<th>Surveyors</th>
<th>DR LW</th>
<th>Grid ref.</th>
<th>SO 12384 53394</th>
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</thead>
</table>

<table>
<thead>
<tr>
<th>Weather, good 1, mod 2, poor 3</th>
<th>Flow norm 1, low 2, fall 3, rise 4</th>
<th>Start and finish time</th>
<th>1300-1500</th>
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</thead>
<tbody>
<tr>
<td>2</td>
<td>4</td>
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</table>

<table>
<thead>
<tr>
<th>Photo ref. &amp; Location</th>
<th>In first 100m</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Site length (m)</th>
<th>400</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Width channel (m)</th>
<th>Descript. (channel features, landuse)</th>
<th>Series of pools with slow flowing glides</th>
</tr>
</thead>
<tbody>
<tr>
<td>5</td>
<td></td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Sample patch 1</th>
<th>Sample patch 2</th>
<th>Sample patch 3</th>
<th>Sample patch 4</th>
<th>Sample patch 5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Survey method, std 1, quad 2, net/kick 3, trap 4, view 5</td>
<td>1 &amp; 4</td>
<td>1 &amp; 4</td>
<td>1 &amp; 4</td>
<td>1 &amp; 4</td>
</tr>
<tr>
<td>Details (if not standard)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Extent (l x w patch)</td>
<td>2x1</td>
<td>3x1</td>
<td>3x2</td>
<td>3x1</td>
</tr>
<tr>
<td>Channel (1 margins, 2 mid, 3 both, other specify)</td>
<td>1</td>
<td>1</td>
<td>3</td>
<td>1</td>
</tr>
<tr>
<td>Depth (metres)</td>
<td>0.2</td>
<td>0.2</td>
<td>0.3</td>
<td>0.2</td>
</tr>
<tr>
<td>Feature (1 marg. d'water, 2 pool, 3 glide, 4 run, 5 riffle)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>3</td>
<td>2</td>
<td>3</td>
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</table>

<table>
<thead>
<tr>
<th>Refuges in channel</th>
<th>tick all present in patch, main type(s) searched in red</th>
</tr>
</thead>
<tbody>
<tr>
<td>cobble (6.5-15cm)</td>
<td>YES</td>
</tr>
<tr>
<td>cobble (15-25.6cm)</td>
<td>YES</td>
</tr>
<tr>
<td>boulder (25.6-40cm)</td>
<td>YES</td>
</tr>
<tr>
<td>boulder (&gt;40cm)</td>
<td>YES</td>
</tr>
<tr>
<td>rubble (give size)</td>
<td>YES</td>
</tr>
<tr>
<td>woody debris</td>
<td>YES</td>
</tr>
<tr>
<td>other urban debris</td>
<td>YES</td>
</tr>
<tr>
<td>tree roots, fine moss</td>
<td>YES</td>
</tr>
<tr>
<td>filamentous algae</td>
<td>YES</td>
</tr>
<tr>
<td>other submerged veg. emergents</td>
<td>YES</td>
</tr>
</tbody>
</table>

| Main substrate beneath | |
|------------------------|-----------------
| bedrock | YES |
| cobble (6.5-15cm) | YES |

---

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<table>
<thead>
<tr>
<th>Category</th>
<th>Description</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Evaluation</td>
<td>crayfish habitat for whole site</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(0 none, 1 pres., 2 freq., 3 abund.)</td>
<td></td>
</tr>
<tr>
<td>in margins</td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>in mid channel</td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>in banks</td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>surveyability</td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>Problems</td>
<td>pollution 1, erosion 2, (E if &gt;33% affected), aliens 3</td>
<td></td>
</tr>
<tr>
<td>Total crayfish (by 1 method, note total(s) by other methods in notes if applicable)</td>
<td></td>
<td>0</td>
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</table>

Notes (survey conditions, patches etc.):
<table>
<thead>
<tr>
<th>Catchment</th>
<th>River</th>
<th>Edw</th>
<th>Site (no., name)</th>
<th>13</th>
</tr>
</thead>
<tbody>
<tr>
<td>Date (dd/mm/yy)</td>
<td>Surveyors</td>
<td>Flow, norm 1, low 2, fall 3, rise 4</td>
<td>Grid ref.</td>
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<td>14/10/2014</td>
<td>DR, LW</td>
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<td>Start and finish time</td>
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<tr>
<td>Weather, good 1, mod 2, poor 3</td>
<td>2</td>
<td>4</td>
<td></td>
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<tr>
<td>Photo ref. &amp; Location</td>
<td>In first 100m.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Site length (m)</td>
<td>400</td>
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<tr>
<td>Width channel (m)</td>
<td>4</td>
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<tr>
<td>Land use - grazing with stock access.</td>
<td></td>
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<tr>
<td>Site length (m)</td>
<td>400</td>
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<tr>
<td>Width channel (m)</td>
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<tr>
<td>Sample patch 1</td>
<td>sample patch 2</td>
<td>sample patch 3</td>
<td>sample patch 4</td>
<td>sample patch 5</td>
</tr>
<tr>
<td>Survey method, std 1, quad 2, net/kick 3, trap 4, view 5</td>
<td>1 &amp; 4</td>
<td>1 &amp; 4</td>
<td>1 &amp; 4</td>
<td>1 &amp; 4</td>
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<tr>
<td>Details (if not standard)</td>
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<tr>
<td>cobble (15-25.6cm)</td>
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<tr>
<td>boulder (25.6-40cm)</td>
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<td>boulder (&gt;40cm)</td>
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<td>YES</td>
<td>YES</td>
<td>YES</td>
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<tr>
<td>rubble (give size)</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>woody debris</td>
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<tr>
<td>other urban debris</td>
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<td></td>
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<tr>
<td>tree roots, fine</td>
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<tr>
<td>moss</td>
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<td>filamentous algae</td>
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<tr>
<td>other submerged veg.</td>
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<tr>
<td>emergents</td>
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<tr>
<td>Main substrate beneath</td>
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<tr>
<td>bedrock</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
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<tr>
<td>cobble (6.5-15cm)</td>
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<table>
<thead>
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<th>Material</th>
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<tbody>
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<td>sand (&lt;2mm)</td>
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<tr>
<td>clay</td>
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<td>moderate</td>
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<td>high</td>
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<tbody>
<tr>
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<td></td>
</tr>
<tr>
<td>cobble/boulder</td>
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<td></td>
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<tr>
<td>tree roots, large vertical or undercut bank</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
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<tr>
<td>dry stone wall</td>
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<tr>
<td>other reinforced</td>
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</tr>
<tr>
<td>crayfish burrows</td>
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<table>
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<tr>
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<th>MOD</th>
<th>MOD</th>
<th>LIGHT</th>
<th>LIGHT</th>
<th>MOD</th>
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</thead>
</table>

| Crayfish by trap |   |   |   |   |
| Crayfish manually |   |   |   |   |

| Total crayfish caught |   |   |   |   |

<table>
<thead>
<tr>
<th>Evaluation crayfish habitat for whole site (0 none, 1 pres., 2 freq., 3 abund.)</th>
<th>Score</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>in margins</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>in mid channel</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>in banks</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>surveyability</td>
<td>2</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Problems</th>
<th>pollution 1, erosion 2, (E if &gt;33% affected), aliens 3.</th>
<th></th>
</tr>
</thead>
</table>

| Total crayfish (by 1 method, note total(s) by other methods in notes if applicable) | 0 |

Notes (survey conditions, patches etc.):
## CRAYFISH HABITAT SURVEY FORM

<table>
<thead>
<tr>
<th>Catchment</th>
<th>Wye</th>
<th>River</th>
<th>Edw</th>
<th>Site (no., name)</th>
<th>14</th>
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<td>DR LW</td>
<td>Grid ref.</td>
<td>SO 11549 55871</td>
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<td>Flow norm 1, low 2, fall 3, rise 4</td>
<td>4</td>
<td>Start and finish time</td>
<td>0900-1100</td>
</tr>
<tr>
<td>Photo ref. &amp; Location</td>
<td>In first 100m</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Site length (m)</td>
<td>100</td>
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<tr>
<td>Width channel (m)</td>
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<td></td>
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<tr>
<td>Descript. (channel features, landuse)</td>
<td>Land use - Agriculture with occasional stock access to water. Good access from road bridge</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Sample patch 1</th>
<th>Sample patch 2</th>
<th>Sample patch 3</th>
<th>Sample patch 4</th>
<th>Sample patch 5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Survey method, std 1, quad 2, net/kick 3, trap 4, view 5</td>
<td>1 &amp; 4</td>
<td>1 &amp; 4</td>
<td>1 &amp; 4</td>
<td>1 &amp; 4</td>
</tr>
<tr>
<td>Details (if not standard)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Extent (l x w patch)</td>
<td>3x2</td>
<td>3x2</td>
<td>3x2</td>
<td>4x2</td>
</tr>
<tr>
<td>Channel (1 margins, 2 mid, 3 both, other specify)</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>Depth (metres)</td>
<td>0.2</td>
<td>0.2</td>
<td>0.3</td>
<td>0.2</td>
</tr>
<tr>
<td>Feature (1 marg. d'water, 2 pool, 3 glide, 4 run, 5 rifle)</td>
<td>3</td>
<td>3</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Refuges in channel</td>
<td>tick all present in patch, main type(s) searched in red</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>cobble (6.5-15cm)</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>cobble (15-25.6cm)</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>boulder (25.6-40cm)</td>
<td></td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>boulder (&gt;40cm)</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>rubble (give size)</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>woody debris</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>other urban debris</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>tree roots, fine</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>moss</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>filamentous algae</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>other submerged veg.</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>emergents</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Main substrate beneath</th>
</tr>
</thead>
<tbody>
<tr>
<td>bedrock</td>
</tr>
<tr>
<td>cobble (6.5-15cm)</td>
</tr>
<tr>
<td>Material</td>
</tr>
<tr>
<td>-------------------</td>
</tr>
<tr>
<td>Pebble</td>
</tr>
<tr>
<td>Gravel</td>
</tr>
<tr>
<td>Sand</td>
</tr>
<tr>
<td>Clay</td>
</tr>
<tr>
<td>Silt</td>
</tr>
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</table>

<table>
<thead>
<tr>
<th>Siltation</th>
<th>none</th>
<th>low</th>
<th>moderate</th>
<th>YES</th>
<th>YES</th>
<th>YES</th>
<th>YES</th>
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</thead>
</table>

<table>
<thead>
<tr>
<th>Refuges in bank</th>
<th>none</th>
<th>cobble/boulder</th>
<th>YES</th>
<th>YES</th>
<th>YES</th>
<th>YES</th>
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</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>tree roots, large</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>vertical or undercut bank</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>dry stone wall</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>other reinforced</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>crayfish burrows</td>
<td></td>
<td></td>
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<td></td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Shading above</th>
<th>MOD</th>
<th>MOD</th>
<th>HEAVY</th>
<th>HEAVY</th>
<th>HEAVY</th>
<th>HEAVY</th>
</tr>
</thead>
<tbody>
<tr>
<td>Crayfish manually</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Crayfish by trap</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Total crayfish caught</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Evaluation crayfish habitat for whole site (0 none, 1 pres., 2 freq., 3 abund.)</td>
<td>3</td>
</tr>
<tr>
<td>in margins</td>
<td>3</td>
</tr>
<tr>
<td>in mid channel</td>
<td>3</td>
</tr>
<tr>
<td>in banks</td>
<td>3</td>
</tr>
<tr>
<td>surveyability</td>
<td>3</td>
</tr>
<tr>
<td>Problems</td>
<td>pollution 1, erosion 2. (E if &gt;33% affected), aliens 3.</td>
</tr>
<tr>
<td>Total crayfish (by 1 method, note total(s) by other methods in notes if applicable)</td>
<td>0</td>
</tr>
</tbody>
</table>

Notes (survey conditions, patches etc.): Approximately 6 years ago local resident reported crayfish mortality. Only dead crayfish found; no moribund. Wye and Usk Foundation informed but no cause identified.
## CRAYFISH HABITAT SURVEY FORM

<table>
<thead>
<tr>
<th>Catchment</th>
<th>Wye</th>
<th>River Edw</th>
<th>Site (no., name)</th>
<th>15</th>
</tr>
</thead>
<tbody>
<tr>
<td>Date (dd/mm/yy)</td>
<td>13/10/2014</td>
<td>Surveys DR LW</td>
<td>Grid ref. SO 12632 57817</td>
<td></td>
</tr>
<tr>
<td>Weather, good 1, mod 2, poor 3</td>
<td>Flow norm 1, low 2, fall 3, rise 4</td>
<td>1</td>
<td>Start and finish time 1500-1700</td>
<td></td>
</tr>
<tr>
<td>Photo ref. &amp; Location</td>
<td>In first 100m</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Site length (m)</td>
<td>100</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Width channel (m)</td>
<td>2.5</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Descript. (channel features, landuse)</td>
<td>Land use - grazing. Very heavy stock access in areas. Areas of deep pools and small stony riffles. Some mud banks with possible crayfish burrows.</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Survey method, std 1, quad 2, net/kick 3, trap 4, view 5

<table>
<thead>
<tr>
<th>sample patch 1</th>
<th>sample patch 2</th>
<th>sample patch 3</th>
<th>sample patch 4</th>
<th>sample patch 5</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 &amp; 4</td>
<td>1 &amp; 4</td>
<td>1 &amp; 4</td>
<td>1 &amp; 4</td>
<td>1 &amp; 4</td>
</tr>
</tbody>
</table>

### Details (if not standard)

<table>
<thead>
<tr>
<th>Extent (l x w patch)</th>
<th>5x1</th>
<th>3x2</th>
<th>4x2</th>
<th>6x2</th>
<th>3x2</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Channel (1 margins, 2 mid, 3 both, other specify)</th>
<th>1</th>
<th>3</th>
<th>3</th>
<th>3</th>
<th>3</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Depth (metres)</th>
<th>0.3</th>
<th>0.3</th>
<th>0.3</th>
<th>0.2</th>
<th>0.4</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Feature (1 marg. d’water, 2 pool, 3 glide, 4 run, 5 riffle)</th>
<th>4</th>
<th>3</th>
<th>3</th>
<th>3</th>
<th>3</th>
</tr>
</thead>
</table>

### Refuges in channel

- tick all present in patch, main type(s) searched in red

<table>
<thead>
<tr>
<th>cobble (6.5-15cm)</th>
<th>cobble (15-25.6cm)</th>
<th>boulder (25.6-40cm)</th>
<th>boulder (&gt;40cm)</th>
<th>rubble (give size)</th>
<th>woody debris</th>
<th>other urban debris</th>
<th>tree roots, fine</th>
<th>moss</th>
<th>filamentous algae</th>
<th>other submerged veg.</th>
<th>emergents</th>
</tr>
</thead>
<tbody>
<tr>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td></td>
<td>YES</td>
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<tr>
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<td>YES</td>
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<td>YES</td>
<td>YES</td>
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<tr>
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<td>YES</td>
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<td>YES</td>
<td>YES</td>
<td></td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
</tbody>
</table>

### Main substrate beneath

<table>
<thead>
<tr>
<th>bedrock</th>
<th>cobble (6.5-15cm)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
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<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>pebble (&lt;6.5cm)</td>
<td>gravel (&lt;1.6cm)</td>
</tr>
<tr>
<td>-----------------</td>
<td>-----------------</td>
</tr>
<tr>
<td>Siltation</td>
<td></td>
</tr>
<tr>
<td>none</td>
<td></td>
</tr>
<tr>
<td>low</td>
<td></td>
</tr>
<tr>
<td>moderate</td>
<td></td>
</tr>
<tr>
<td>high</td>
<td></td>
</tr>
<tr>
<td>Refuges in bank</td>
<td></td>
</tr>
<tr>
<td>none</td>
<td></td>
</tr>
<tr>
<td>cobble/boulder</td>
<td></td>
</tr>
<tr>
<td>tree roots, large</td>
<td></td>
</tr>
<tr>
<td>vertical or undercut bank</td>
<td></td>
</tr>
<tr>
<td>dry stone wall</td>
<td></td>
</tr>
<tr>
<td>other reinforced</td>
<td></td>
</tr>
<tr>
<td>crayfish burrows</td>
<td></td>
</tr>
<tr>
<td>Shading above</td>
<td></td>
</tr>
<tr>
<td>Crayfish manually</td>
<td></td>
</tr>
<tr>
<td>Crayfish by trap</td>
<td></td>
</tr>
<tr>
<td>Total crayfish caught</td>
<td></td>
</tr>
</tbody>
</table>

Evaluation crayfish habitat for whole site (0 none, 1 pres., 2 freq., 3 abund.)

<table>
<thead>
<tr>
<th>Score</th>
<th>Notes (survey conditions, patches etc.):</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td></td>
</tr>
</tbody>
</table>

in margins
in mid channel
in banks
surveyability

Problems pollution 1, erosion 2, (E if >33% affected), aliens 3.

Total crayfish (by 1 method, note total(s) by other methods in notes if applicable)

0
## CRAYFISH HABITAT SURVEY FORM

<table>
<thead>
<tr>
<th>Catchment</th>
<th>River</th>
<th>Edw</th>
<th>Site (no., name)</th>
<th>Grid ref.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wye</td>
<td></td>
<td></td>
<td>16</td>
<td>SO 13203 57976</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Date (dd/mm/yy)</th>
<th>Surveyors</th>
<th>Weather, good 1, mod 2, poor 3</th>
<th>Grid ref.</th>
<th>Grid ref.</th>
</tr>
</thead>
<tbody>
<tr>
<td>13/10/2014</td>
<td>DR LW</td>
<td>Flow norm 1, low 2, fall 3, rise 4</td>
<td>SO 13203 57976</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Photo ref. &amp; Location</th>
<th>Start and finish time</th>
</tr>
</thead>
<tbody>
<tr>
<td>In first 100m</td>
<td>1300-1500</td>
</tr>
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<table>
<thead>
<tr>
<th>Site length (m)</th>
<th>Width channel (m)</th>
<th>Descript. (channel features, landuse)</th>
</tr>
</thead>
<tbody>
<tr>
<td>100</td>
<td>3</td>
<td>Land use grazing and woodland. Highly agricultural area.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Survey method, std 1, quad 2, net/kick 3, trap 4, view 5</th>
<th>Details (if not standard)</th>
<th>Extent (l x w patch)</th>
<th>Channel (1 margins, 2 mid, 3 both, other specify)</th>
<th>Depth (metres)</th>
<th>Feature (1 marg. d'water, 2 pool, 3 glide, 4 run, 5 riffle)</th>
<th>Refuges in channel</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 &amp; 4</td>
<td></td>
<td>3x1</td>
<td>1</td>
<td>2</td>
<td>0.2</td>
<td>tick all present in patch, main type(s) searched in red</td>
</tr>
<tr>
<td>sample patch 1</td>
<td>sample patch 2</td>
<td>sample patch 3</td>
<td>sample patch 4</td>
<td>sample patch 5</td>
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<tr>
<td>4</td>
<td>3</td>
<td>5</td>
<td>2</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Refuges in channel

- **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**
  - YES
  - YES
  - YES
  - YES
  - YES

- **other urban debris**
  - YES
  - YES
  - YES
  - YES
  - YES

- **tree roots, fine**
  - YES
  - YES
  - YES
  - YES

- **moss**
  - YES
  - YES
  - YES
  - YES

- **filamentous algae**
  - YES
  - YES
  - YES
  - YES

- **other submerged veg.**
  - YES
  - YES
  - YES

- **emergents**
  - YES
  - YES
  - YES
  - YES

### Main substrate beneath

- **bedrock**
  - YES
  - YES
  - YES

- **cobble (6.5-15cm)**
  - YES
  - YES
  - YES
  - YES
  - YES
<table>
<thead>
<tr>
<th>pebble (&lt;6.5cm)</th>
<th>gravel (&lt;1.6cm)</th>
<th>sand (&lt;2mm)</th>
<th>clay</th>
<th>silt</th>
<th>YES</th>
<th>YES</th>
<th>YES</th>
<th>YES</th>
</tr>
</thead>
<tbody>
<tr>
<td>Siltation</td>
<td></td>
<td></td>
<td>low</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td></td>
<td></td>
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<td>YES</td>
</tr>
<tr>
<td></td>
<td></td>
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<td>high</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>Refuges in bank</td>
<td>none</td>
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<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td></td>
<td>cobble/boulder</td>
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<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td></td>
<td>tree roots, large vertical or undercut bank</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td></td>
<td>dry stone wall</td>
<td></td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td></td>
<td>other reinforced crayfish burrows</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
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</tr>
<tr>
<td>Shading above</td>
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<td>HEAVY</td>
<td>MOD</td>
<td>MOD</td>
<td>MOD</td>
<td>MOD</td>
<td>MOD</td>
<td>MOD</td>
</tr>
<tr>
<td>Crayfish manually</td>
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<td>Crayfish by trap</td>
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<td></td>
</tr>
<tr>
<td>Total crayfish caught</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Evaluation crayfish habitat for whole site (0 none, 1 pres., 2 freq., 3 abund.)</td>
<td></td>
<td>Score</td>
<td></td>
<td>3</td>
<td></td>
<td>3</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>in margins</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>in mid channel</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>in banks</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
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</tr>
<tr>
<td>surveyability</td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Problems pollution 1, erosion 2, (E if &gt;33% affected), aliens 3.</td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
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<tr>
<td>Total crayfish (by 1 method, note total(s) by other methods in notes if applicable)</td>
<td></td>
<td>0</td>
<td></td>
<td>0</td>
<td></td>
<td>0</td>
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</tr>
</tbody>
</table>
### CRAYFISH HABITAT SURVEY FORM

<table>
<thead>
<tr>
<th>Catchment</th>
<th>Wye</th>
<th>River</th>
<th>Offeiriad</th>
<th>Site (no., name)</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Date (dd/mm/yy)</td>
<td>13/10/2014</td>
<td>Surveyors</td>
<td>DR LW</td>
<td>Grid ref. (d/s end)</td>
<td>SO 09650 43123</td>
</tr>
<tr>
<td>Weather, good 1, mod 2, poor 3</td>
<td>Flow norm 1, low 2, fall 3, rise 4</td>
<td>1</td>
<td>1</td>
<td>Start and finish time</td>
<td>1100-1300</td>
</tr>
<tr>
<td>Photo ref. &amp; Location</td>
<td>view upstream from roadbridge</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Site length (m)</td>
<td>100</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Width channel (m)</td>
<td>5</td>
<td>Access good through garden. Land use - woodland and urban. Otters known to be in area. Good habitat present.</td>
<td></td>
<td></td>
<td></td>
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</table>

<table>
<thead>
<tr>
<th>Survey method, std 1, quad 2, net/kick 3, trap 4, view 5</th>
<th>sample patch 1</th>
<th>sample patch 2</th>
<th>sample patch 3</th>
<th>sample patch 4</th>
<th>sample patch 5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Details (if not standard)</td>
<td>1 &amp; 4</td>
<td>1 &amp; 4</td>
<td>1 &amp; 4</td>
<td>1 &amp; 4</td>
<td>1 &amp; 4</td>
</tr>
<tr>
<td>Extent (l x w patch)</td>
<td>1x3</td>
<td>2x2</td>
<td>2x2</td>
<td>3x1</td>
<td>3x2</td>
</tr>
<tr>
<td>Channel (1 margins, 2 mid, 3 both, other specify)</td>
<td>3</td>
<td>2</td>
<td>3</td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td>Depth (metres)</td>
<td>0.3</td>
<td>0.4</td>
<td>0.2</td>
<td>0.1</td>
<td>0.3</td>
</tr>
<tr>
<td>Feature (1 marg. d'water, 2 pool, 3 glide, 4 run, 5 rifle)</td>
<td>1</td>
<td>3</td>
<td>4</td>
<td>4</td>
<td>3</td>
</tr>
</tbody>
</table>

#### Refuges in channel
- **cobble (6.5-15cm)**: YES
- **cobble (15-25.6cm)**: YES
- **boulder (25.6-40cm)**: YES
- **boulder (>40cm)**: YES
- **rubble (give size)**: YES
- **woody debris**: YES
- **other urban debris**: YES
- **tree roots, fine moss**: YES
- **filamentous algae**: YES
- **other submerged veg. emergents**: YES

#### Main substrate beneath
- **bedrock**
- **cobble (6.5-15cm)**: YES
<table>
<thead>
<tr>
<th>pebble (&lt;6.5cm)</th>
<th>gravel (&lt;1.6cm)</th>
<th>sand (&lt;2mm)</th>
<th>clay</th>
<th>silt</th>
</tr>
</thead>
<tbody>
<tr>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Siltation</th>
<th>none</th>
<th>low</th>
<th>moderate</th>
<th>high</th>
</tr>
</thead>
<tbody>
<tr>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Refuges in bank</th>
<th>none</th>
<th>cobble/boulder</th>
<th>tree roots, large vertical or undercut bank</th>
<th>dry stone wall</th>
<th>other reinforced</th>
<th>crayfish burrows</th>
</tr>
</thead>
<tbody>
<tr>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
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</table>

<table>
<thead>
<tr>
<th>Shading above</th>
<th>MOD</th>
<th>MOD</th>
<th>MOD</th>
<th>MOD</th>
<th>MOD</th>
<th>MOD</th>
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</table>

<table>
<thead>
<tr>
<th>Crayfish manually</th>
<th>Crayfish by trap</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
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</table>

<table>
<thead>
<tr>
<th>Total crayfish caught</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Evaluation crayfish habitat for whole site (0 none, 1 pres., 2 freq., 3 abund.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Score</td>
</tr>
<tr>
<td>in margins</td>
</tr>
<tr>
<td>in mid channel</td>
</tr>
<tr>
<td>in banks</td>
</tr>
<tr>
<td>surveyability</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Problems pollution 1, erosion 2, (E if &gt;33% affected), aliens 3.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total crayfish (by 1 method, note total(s) by other methods in notes if applicable)</td>
</tr>
</tbody>
</table>

Notes (survey conditions, patches etc.): 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
## CRAYFISH HABITAT SURVEY FORM

<table>
<thead>
<tr>
<th>Catchment</th>
<th>Wye</th>
<th>River</th>
<th>Offeiriad</th>
<th>Site (no., name)</th>
<th>2</th>
</tr>
</thead>
<tbody>
<tr>
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<td>13/10/2014</td>
<td>Surveyors</td>
<td>DR LW</td>
<td>Grid ref.</td>
<td>SO 09542 42629</td>
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<td>Weather, good 1, mod 2, poor 3</td>
<td>Flow norm 1, low 2, fall 3, rise 4</td>
<td>Grid ref.</td>
<td></td>
<td>Start and finish time</td>
<td>0900-1100</td>
</tr>
<tr>
<td>Photo ref. &amp; Location</td>
<td>Mid Point at footbridge</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Site length (m)</td>
<td>100</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Width channel (m)</td>
<td>6</td>
<td>Descript.</td>
<td>(channel features, landuse)</td>
<td>Access down very steep woodland footpath. Landuse - woodland. Series of riffles and pools, some very deep. Excellent habitat throughout.</td>
<td></td>
</tr>
<tr>
<td>Survey method, std 1, quad 2, net/kick 3, trap 4, view 5</td>
<td>1 &amp; 4</td>
<td>1 &amp; 4</td>
<td>1 &amp; 4</td>
<td>1 &amp; 4</td>
<td>1 &amp; 4</td>
</tr>
<tr>
<td>Details (if not standard)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Extent (l x w patch)</td>
<td>1x6</td>
<td>3x3</td>
<td>6x1</td>
<td>5x2</td>
<td>3x2</td>
</tr>
<tr>
<td>Channel (1 margins, 2 mid, 3 both, other specify)</td>
<td>3</td>
<td>2</td>
<td>1</td>
<td>3</td>
<td>3</td>
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<tr>
<td>Depth (metres)</td>
<td>0.3</td>
<td>0.2</td>
<td>0.2</td>
<td>0.3</td>
<td>0.3</td>
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<tr>
<td>Feature (1 marg. d’water, 2 pool, 3 glide, 4 run, 5 rifle)</td>
<td>4</td>
<td>5</td>
<td>2</td>
<td>3</td>
<td>3</td>
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<tr>
<td>Refuges in channel</td>
<td>tick all present in patch, main type(s) searched in red</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>cobble (6.5-15cm)</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>cobble (15-25.6cm)</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>boulder (25.6-40cm)</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>boulder (&gt;40cm)</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>rubble (give size)</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>woody debris</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>tree roots, fine moss</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>filamentous algae</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>other submerged veg.</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
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<tr>
<td>emergents</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>Main substrate beneath</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>bedrock</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>cobble (6.5-15cm)</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>pebble (&lt;6.5cm)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>gravel (&lt;1.6cm)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>sand (&lt;2mm)</td>
<td>clay</td>
<td>silt</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>------------</td>
<td>------</td>
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<td></td>
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</tbody>
</table>

**Siltation**

<table>
<thead>
<tr>
<th>none</th>
<th>low</th>
<th>moderate</th>
<th>high</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
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</tbody>
</table>

**Refuges in bank**

<table>
<thead>
<tr>
<th>none</th>
<th>cobble/boulder</th>
<th>tree roots, large vertical or undercut bank</th>
<th>dry stone wall</th>
<th>other reinforced</th>
<th>crayfish burrows</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>YES</td>
<td>YES</td>
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</tbody>
</table>

**Shading above**

<table>
<thead>
<tr>
<th>HEAVY</th>
<th>HEAVY</th>
<th>HEAVY</th>
<th>HEAVY</th>
<th>HEAVY</th>
</tr>
</thead>
</table>

**Crayfish manually**

**Crayfish by trap**

**Total crayfish caught**

**Evaluation crayfish habitat for whole site**

<table>
<thead>
<tr>
<th>in margins</th>
<th>in mid channel</th>
<th>in banks</th>
<th>surveyability</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>2</td>
<td>1</td>
<td>2</td>
</tr>
</tbody>
</table>

**Notes (survey conditions, patches etc.):**

- in margins
- in mid channel
- in banks
- surveyability

**Problems pollution 1, erosion 2, (E if >33% affected), aliens 3.**

**Total crayfish (by 1 method, note total(s) by other methods in notes if applicable)**

| 0 |
## CRAYFISH HABITAT SURVEY FORM

<table>
<thead>
<tr>
<th>Catchment</th>
<th>Wye</th>
<th>River</th>
<th>Offeiriad</th>
<th>Site (no., name)</th>
<th>3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Date (dd/mm/yy)</td>
<td>12/10/2014</td>
<td>Surveyors</td>
<td>DR LW</td>
<td>Grid ref.</td>
<td>SO 08926 42561</td>
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<td>Weather, good 1, mod 2, poor 3</td>
<td>Flow norm 1, low 2, fall 3, rise 4</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Photo ref. &amp; Location</td>
<td>In 1st 100m</td>
<td>Site length (m)</td>
<td>100</td>
<td>Descript. (channel features, landuse)</td>
<td>Access very difficult across field and down very steep woodland bank. Excellent surveyability once there. Good habitat.</td>
</tr>
<tr>
<td>Width channel (m)</td>
<td>7</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Survey method, std 1, quad 2, net/kick 3, trap 4, view 5</td>
<td>1 &amp; 4</td>
<td>1 &amp; 4</td>
<td>1 &amp; 4</td>
<td>1 &amp; 4</td>
<td>1 &amp; 4</td>
</tr>
<tr>
<td>Details (if not standard)</td>
<td></td>
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</tr>
<tr>
<td>Extent (l x w patch)</td>
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<td>8x1</td>
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<td>5x2</td>
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<td>3</td>
<td>2</td>
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</tr>
<tr>
<td>Depth (metres)</td>
<td>0.3</td>
<td>0.3</td>
<td>0.1</td>
<td>0.2</td>
<td>0.3</td>
</tr>
<tr>
<td>Feature (1 marg d'water, 2 pool, 3 glide, 4 run, 5 riffle)</td>
<td>4</td>
<td>4</td>
<td>4</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Refuges in channel</td>
<td>tick all present in patch, main type(s) searched in red</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>cobble (6.5-15cm)</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
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<tr>
<td>cobble (15-25.6cm)</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>boulder (25.6-40cm)</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>boulder (&gt;40cm)</td>
<td>YES</td>
<td>YES</td>
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<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>rubble (give size)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>woody debris</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>other urban debris</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
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<td></td>
</tr>
<tr>
<td>other submerged veg.</td>
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<tr>
<td>----------------------</td>
<td>------------------</td>
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</tr>
<tr>
<td>emergents</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Main substrate beneath</strong></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>bedrock</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>cobble (6.5-15cm)</td>
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<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>pebble (&lt;6.5cm)</td>
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<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>gravel (&lt;1.6cm)</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>sand (&lt;2mm)</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>clay silt</td>
<td></td>
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</table>

<table>
<thead>
<tr>
<th><strong>Siltation</strong></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
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<td>YES</td>
<td>YES</td>
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</tr>
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<td></td>
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<td></td>
</tr>
<tr>
<td>high</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Refuges in bank</strong></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>none</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>cobble/boulder</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>tree roots, large</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>vertical or undercut bank</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>dry stone wall</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>other reinforced</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>crayfish burrows</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Shading above</strong></th>
<th>HEAVY</th>
<th>HEAVY</th>
<th>HEAVY</th>
<th>HEAVY</th>
<th>HEAVY</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th><strong>Crayfish by trap</strong></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Total crayfish caught</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Evaluation crayfish habitat for whole site</strong></th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>(0 none, 1 pres., 2 freq., 3 abund.) in margins</td>
<td>2</td>
</tr>
<tr>
<td>in mid channel</td>
<td>2</td>
</tr>
<tr>
<td>in banks</td>
<td>1</td>
</tr>
<tr>
<td>surveyability</td>
<td>3</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Problems</strong></th>
<th>pollution</th>
<th>erosion</th>
<th>aliens</th>
</tr>
</thead>
<tbody>
<tr>
<td>1, erosion 2. (E if &gt;33% affected), aliens 3.</td>
<td>0</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Total crayfish (by 1 method, note total(s) by other methods in notes if applicable)</strong></th>
<th>0</th>
</tr>
</thead>
</table>
### CRAYFISH HABITAT SURVEY FORM

<table>
<thead>
<tr>
<th>Catchment</th>
<th>Wye</th>
<th>River</th>
<th>Offeiriad</th>
<th>Site (no., name)</th>
<th>4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Date (dd/mm/yy)</td>
<td>12/10/2014</td>
<td>Surveyors</td>
<td>DR LW</td>
<td>Grid ref.</td>
<td>SO 08596 42386</td>
</tr>
<tr>
<td>Weather, good 1, mod 2, poor 3</td>
<td>Flow norm 1, low 2, fall 3, rise 4</td>
<td>1</td>
<td>1</td>
<td>Start and finish time</td>
<td>1300-1500</td>
</tr>
<tr>
<td>Photo ref. &amp; Location</td>
<td>In 1st 100m</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Site length (m)</td>
<td>100</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Width channel (m)</td>
<td>7</td>
<td>Descript. (channel features, landuse)</td>
<td>Access down very steep wooded banks. Land use - woodland and grazing. Looks good habitat throughout.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Sample patch 1</th>
<th>Sample patch 2</th>
<th>Sample patch 3</th>
<th>Sample patch 4</th>
<th>Sample patch 5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Survey method, std 1, quad 2, net/kick 3, trap 4, view 5</td>
<td>1 &amp; 4</td>
<td>1 &amp; 4</td>
<td>1 &amp; 4</td>
<td>1 &amp; 4</td>
</tr>
<tr>
<td>Details (if not standard)</td>
<td>Extent (l x w patch)</td>
<td>1x7</td>
<td>3x3</td>
<td>6x1</td>
</tr>
<tr>
<td>Channel (1 margins, 2 mid, 3 both, other specify)</td>
<td>3</td>
<td>2</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Depth (metres)</td>
<td>0.3</td>
<td>0.3</td>
<td>0.1</td>
<td>0.3</td>
</tr>
<tr>
<td>Feature (1 marg. d’water, 2 pool, 3 glide, 4 run, 5 rifle)</td>
<td>4</td>
<td>5</td>
<td>4</td>
<td>3</td>
</tr>
</tbody>
</table>

#### Refuges in channel
- tick all present in patch, main type(s) searched in red
  - cobble (6.5-15cm)
  - YES
  - YES
  - YES
  - YES
  - YES
  - YES
  - cobble (15-25.6cm)
  - YES
  - YES
  - YES
  - YES
  - YES
  - YES
  - boulder (25.6-40cm)
  - YES
  - YES
  - YES
  - YES
  - YES
  - YES
  - boulder (>40cm)
  - YES
  - YES
  - YES
  - YES
  - YES
  - YES
  - rubble (give size)
  - YES
  - YES
  - YES
  - YES
  - YES
  - YES
  - woody debris
  - YES
  - YES
  - YES
  - YES
  - YES
  - YES
  - tree roots, fine moss
  - YES
  - YES
  - YES
  - YES
  - YES
  - YES
  - filamentous algae
  - YES
  - YES
  - YES
  - YES
  - YES
  - YES
  - other submerged veg.
  - YES
  - YES
  - YES
  - YES
  - YES
  - YES
  - emergents

#### Main substrate beneath
- bedrock
- YES
- YES
- YES
- YES
- YES
- cobble (6.5-15cm)
- YES
- YES
- YES
- YES
- YES
- pebble (<6.5cm)
- gravel (<1.6cm)
<table>
<thead>
<tr>
<th>Sand (≤2mm)</th>
<th>Clay</th>
<th>Silt</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Siltation</th>
<th>None</th>
<th>Low</th>
<th>Moderate</th>
<th>High</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Refuges in Bank</th>
<th>None</th>
<th>Cobble/Boulder</th>
<th>Tree Roots, Large Vertical or Undercut Bank</th>
<th>Dry Stone Wall</th>
<th>Other Reinforced</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Shading Above</th>
<th>Heavy</th>
<th>Heavy</th>
<th>Heavy</th>
<th>Heavy</th>
<th>Heavy</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Crayfish Manually</th>
<th>Crayfish by Trap</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Total Crayfish Caught</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Evaluation Crayfish Habitat for Whole Site (0 None, 1 Pres., 2 Freq., 3 Abund.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>in margins</td>
</tr>
<tr>
<td>in mid channel</td>
</tr>
<tr>
<td>in banks</td>
</tr>
<tr>
<td>surveyability</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
</tr>
<tr>
<td>3</td>
</tr>
<tr>
<td>0</td>
</tr>
<tr>
<td>2</td>
</tr>
</tbody>
</table>

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

Notes (survey conditions, patches etc.):

- 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
**CRAYFISH HABITAT SURVEY FORM**

<table>
<thead>
<tr>
<th>Catchment</th>
<th>Wye</th>
<th>River</th>
<th>Offeiriad</th>
<th>Site (no., name)</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Date (dd/mm/yy)</td>
<td>12/10/2014</td>
<td>Surveyors</td>
<td>DR LW</td>
<td>Grid ref.</td>
<td>SO 08224 42923</td>
</tr>
<tr>
<td>Weather, good 1, mod 2, poor 3</td>
<td>1</td>
<td>Flow norm 1, low 2, fall 3, rise 4</td>
<td>1</td>
<td>Start and finish time</td>
<td>1100 - 1300</td>
</tr>
<tr>
<td>Photo ref. &amp; Location</td>
<td></td>
<td></td>
<td></td>
<td>Upstream end</td>
<td></td>
</tr>
<tr>
<td>Site length (m)</td>
<td>100</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Width channel (m)</td>
<td>6</td>
<td>Descript. (channel features, landuse)</td>
<td>Access good across fields. Land use grazing and woodland. Stock access to river.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Survey method, std 1, quad 2, net/kick 3, trap 4, view 5</th>
<th>sample patch 1</th>
<th>sample patch 2</th>
<th>sample patch 3</th>
<th>sample patch 4</th>
<th>sample patch 5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Details (if not standard)</td>
<td>1 &amp; 4</td>
<td>1 &amp; 4</td>
<td>1 &amp; 4</td>
<td>1 &amp; 4</td>
<td>1 &amp; 4</td>
</tr>
<tr>
<td>Extent (l x w patch)</td>
<td>3x2</td>
<td>1x5</td>
<td>5x1</td>
<td>1x6</td>
<td>3x3</td>
</tr>
<tr>
<td>Channel (1 margins, 2 mid, 3 both, other specify)</td>
<td>1</td>
<td>3</td>
<td>1</td>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td>Depth (metres)</td>
<td>0.2</td>
<td>0.2</td>
<td>0.1</td>
<td>0.3</td>
<td>0.2</td>
</tr>
<tr>
<td>Feature (1 marg. d'water, 2 pool, 3 glide, 4 run, 5 riffle)</td>
<td>2</td>
<td>5</td>
<td>4</td>
<td>4</td>
<td>4</td>
</tr>
</tbody>
</table>

**Refuges in channel**

- 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 | YES | YES | YES | YES |
- other urban debris | YES | YES | YES | YES | YES |
- tree roots, fine moss | YES | YES | YES | YES | YES |
- filamentous algae | YES | YES | YES | YES | YES |
- other submerged veg. emergents | YES | YES | YES | YES | YES |

**Main substrate beneath**

- bedrock | YES | YES | YES | YES | YES |
- cobble (6.5-15cm) | YES | YES | YES | YES | YES |
- pebble (<6.5cm) | YES | YES | YES | YES |
- gravel (<1.6cm) | YES | YES | YES | YES | YES |
<table>
<thead>
<tr>
<th>sand (&lt;2mm)</th>
<th>clay</th>
<th>silt</th>
</tr>
</thead>
<tbody>
<tr>
<td>Siltation none</td>
<td>low</td>
<td>YES</td>
</tr>
<tr>
<td>low</td>
<td>moderate</td>
<td>high</td>
</tr>
<tr>
<td>Refuges in bank none</td>
<td>low</td>
<td>YES</td>
</tr>
<tr>
<td>low</td>
<td>moderate</td>
<td>high</td>
</tr>
<tr>
<td>cobble/boulder</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>tree roots, large vertical or undercut bank</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>dry stone wall</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>other reinforced</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>crayfish burrows</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>Shading above</td>
<td>MOD</td>
<td>HEAVY</td>
</tr>
<tr>
<td>Crayfish manually</td>
<td>Crayfish by trap</td>
<td></td>
</tr>
<tr>
<td>Total crayfish caught</td>
<td>Score</td>
<td>Notes (survey conditions, patches etc.):</td>
</tr>
<tr>
<td>Evaluation crayfish habitat for whole site (0 none, 1 pres., 2 freq., 3 abund.)</td>
<td>in margins</td>
<td>3</td>
</tr>
<tr>
<td>in mid channel</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>in banks</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>surveyability</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Problems pollution 1, erosion 2, (E if &gt;33% affected), aliens 3</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>Total crayfish (by 1 method, note total(s) by other methods in notes if applicable)</td>
<td>0</td>
<td></td>
</tr>
</tbody>
</table>
## CRAYFISH HABITAT SURVEY FORM

<table>
<thead>
<tr>
<th>Catchment</th>
<th>Wye</th>
<th>River</th>
<th>Offeiriad</th>
<th>Site (no., name)</th>
<th>6</th>
</tr>
</thead>
<tbody>
<tr>
<td>Date (dd/mm/yy)</td>
<td>12/10/2014</td>
<td>Surveyors</td>
<td>DR LW</td>
<td>Grid ref.</td>
<td>SO07681 43093</td>
</tr>
<tr>
<td>Weather, good 1, mod 2, poor 3</td>
<td>1</td>
<td>Flow norm 1, low 2, fall 3, rise 4</td>
<td>1</td>
<td>Start and finish time</td>
<td>0900-1100</td>
</tr>
<tr>
<td>Photo ref. &amp; Location</td>
<td>In 1st 100m</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Site length (m)</td>
<td>100</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Width channel (m)</td>
<td>4</td>
<td>Descript. (channel features, landuse)</td>
<td>Access good via road bridge. Landuse grazing for sheep. Shaded on one side open to stock on other side.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Survey method, std 1, quad 2, net/kick 3, trap 4, view 5</td>
<td>1 &amp; 4</td>
<td>1 &amp; 4</td>
<td>1 &amp; 4</td>
<td>1 &amp; 4</td>
<td>1 &amp; 4</td>
</tr>
<tr>
<td>Details (if not standard)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Extent (l x w patch)</td>
<td>2x2</td>
<td>4x2</td>
<td>4x2</td>
<td>2x2</td>
<td>5x1</td>
</tr>
<tr>
<td>Channel (1 margins, 2 mid, 3 both, other specify)</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Depth (metres)</td>
<td>0.2</td>
<td>0.3</td>
<td>0.2</td>
<td>0.2</td>
<td>0.3</td>
</tr>
<tr>
<td>Feature (1 marg. d’water, 2 pool, 3 glide, 4 run, 5 rifle)</td>
<td>4</td>
<td>4</td>
<td>4</td>
<td>4</td>
<td>4</td>
</tr>
</tbody>
</table>

### Refuges in channel

| cobble (6.5-15cm) | YES | YES | YES | YES | YES |
| cobble (15-25cm) | 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 | YES | YES | YES | YES | YES |
| other urban debris | YES | YES | YES | YES | YES |
| tree roots, fine moss | YES | YES | YES | YES | YES |
| filamentous algae | YES | YES | YES | YES | YES |
| other submerged veg. | YES | YES | YES | YES | YES |
| emergents | YES | YES | YES | YES | YES |

### Main substrate beneath

<p>| bedrock | cobble (6.5-15cm) | pebble (&lt;6.5cm) | gravel (&lt;1.6cm) |
| YES | YES | YES | YES | YES |</p>
<table>
<thead>
<tr>
<th>sand (&lt;2mm)</th>
<th>clay</th>
<th>silt</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Siltation</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>none</td>
<td></td>
<td></td>
</tr>
<tr>
<td>low</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>moderate</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>high</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td><strong>Refuges in bank</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>none</td>
<td></td>
<td></td>
</tr>
<tr>
<td>cobble/boulder</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>tree roots, large vertical or undercut bank</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>dry stone wall</td>
<td></td>
<td></td>
</tr>
<tr>
<td>other reinforced crayfish burrows</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Shading above</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MOD</td>
<td>MOD</td>
<td>HEAVY</td>
</tr>
<tr>
<td><strong>Crayfish manually</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Crayfish by trap</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Total crayfish caught</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Evaluation crayfish habitat for whole site</strong></td>
<td>Score</td>
<td></td>
</tr>
<tr>
<td>(0 none, 1 pres., 2 freq., 3 abund.)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>in margins</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>in mid channel</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>in banks</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>surveyability</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Problems pollution 1, erosion 2, (E if &gt;33% affected), aliens 3.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total crayfish (by 1 method, note total(s) by other methods in notes if applicable)</td>
<td>0</td>
<td></td>
</tr>
</tbody>
</table>
### CRAYFISH HABITAT SURVEY FORM

<table>
<thead>
<tr>
<th>Catchment</th>
<th>River</th>
<th>Offeiriad</th>
<th>Site (no., name)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wye</td>
<td></td>
<td></td>
<td>7</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Date (dd/mm/yy)</th>
<th>Surveyors</th>
<th>Grid ref.</th>
</tr>
</thead>
<tbody>
<tr>
<td>11/10/2014</td>
<td>DR LW</td>
<td>SO 07277 42979</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Weather, good 1, mod 2, poor 3</th>
<th>Flow norm 1, low 2, fall 3, rise 4</th>
<th>Start and finish time</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>1</td>
<td>1500-1700</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Photo ref. &amp; Location</th>
<th>Upstream end</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Site length (m)</th>
<th>100</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Width channel (m)</th>
<th>5</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Descript. (channel features, landuse)</th>
<th>Access from roadbridge. Land use - woodland. Series of riffles, waterfalls and pools - some very deep.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>sample patch 1</th>
<th>sample patch 2</th>
<th>sample patch 3</th>
<th>sample patch 4</th>
<th>sample patch 5</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 &amp; 4</td>
<td>1 &amp; 4</td>
<td>1 &amp; 4</td>
<td>1 &amp; 4</td>
<td>1 &amp; 4</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Details (if not standard)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Extent (l x w patch)</th>
<th>2x5</th>
<th>2x5</th>
<th>5x3</th>
<th>4x3</th>
<th>4x3</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Channel (1 margins, 2 mid, 3 both, other specify)</th>
<th>2</th>
<th>2</th>
<th>3</th>
<th>1</th>
<th>1</th>
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</table>

<table>
<thead>
<tr>
<th>Depth (metres)</th>
<th>0.3</th>
<th>0.3</th>
<th>0.2</th>
<th>0.2</th>
<th>0.2</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Feature (1 marg. d'water, 2 pool, 3 glide, 4 run, 5 riffle)</th>
<th>4</th>
<th>4</th>
<th>3</th>
<th>4</th>
<th>4</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Refuges in channel</th>
<th>tick all present in patch, main type(s) searched in red</th>
</tr>
</thead>
<tbody>
<tr>
<td>cobble (6.5-15cm)</td>
<td>YES</td>
</tr>
<tr>
<td>cobble (15-25.6cm)</td>
<td>YES</td>
</tr>
<tr>
<td>cobble (25.6-40cm)</td>
<td>YES</td>
</tr>
<tr>
<td>cobble (&gt;40cm)</td>
<td>YES</td>
</tr>
<tr>
<td>pebble (&lt;6.5cm)</td>
<td>YES</td>
</tr>
<tr>
<td>gravel (&lt;1.6cm)</td>
<td>YES</td>
</tr>
<tr>
<td>other urban debris</td>
<td>YES</td>
</tr>
<tr>
<td>tree roots, fine moss</td>
<td></td>
</tr>
<tr>
<td>filamentous algae</td>
<td></td>
</tr>
<tr>
<td>other submerged veg.</td>
<td></td>
</tr>
<tr>
<td>emergents</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Main substrate beneath</th>
<th>tick all present in patch, main type(s) searched in red</th>
</tr>
</thead>
<tbody>
<tr>
<td>bedrock</td>
<td></td>
</tr>
<tr>
<td>cobble (6.5-15cm)</td>
<td>YES</td>
</tr>
<tr>
<td>pebble (&lt;6.5cm)</td>
<td>YES</td>
</tr>
<tr>
<td>gravel (&lt;1.6cm)</td>
<td>YES</td>
</tr>
<tr>
<td>Sand (&lt;2mm)</td>
<td>Clay</td>
</tr>
<tr>
<td>------------</td>
<td>------</td>
</tr>
<tr>
<td>low</td>
<td></td>
</tr>
<tr>
<td>moderate</td>
<td></td>
</tr>
<tr>
<td>high</td>
<td></td>
</tr>
<tr>
<td>Refuges in bank</td>
<td></td>
</tr>
<tr>
<td>cobble/boulder</td>
<td></td>
</tr>
<tr>
<td>tree roots, large</td>
<td></td>
</tr>
<tr>
<td>vertical or undercut</td>
<td></td>
</tr>
<tr>
<td>bank</td>
<td></td>
</tr>
<tr>
<td>dry stone wall</td>
<td></td>
</tr>
<tr>
<td>other reinforced</td>
<td></td>
</tr>
<tr>
<td>crayfish burrows</td>
<td></td>
</tr>
<tr>
<td>Shading above</td>
<td>MOD</td>
</tr>
<tr>
<td>Crayfish manually</td>
<td></td>
</tr>
<tr>
<td>Crayfish by trap</td>
<td></td>
</tr>
<tr>
<td>Total crayfish caught</td>
<td></td>
</tr>
</tbody>
</table>

**Evaluation crayfish habitat for whole site**

<table>
<thead>
<tr>
<th>Score</th>
<th>in margins</th>
<th>3</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>in mid channel</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>in banks</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>surveyability</td>
<td>3</td>
</tr>
<tr>
<td>Problems pollution 1, erosion 2, (E if &gt;33% affected), aliens 3.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total crayfish (by 1 method, note total(s) by other methods in notes if applicable)</td>
<td>0</td>
<td></td>
</tr>
</tbody>
</table>
## CRAYFISH HABITAT SURVEY FORM

<table>
<thead>
<tr>
<th>Catchment</th>
<th>Wye</th>
<th>River</th>
<th>Offeiriad</th>
<th>Site (no., name)</th>
<th>8</th>
</tr>
</thead>
<tbody>
<tr>
<td>Date (dd/mm/yy)</td>
<td>11/10/2014</td>
<td>Surveyors</td>
<td>DR LW</td>
<td>Grid ref.</td>
<td>SO 06933 42733</td>
</tr>
<tr>
<td>Weather, good 1, mod 2, poor 3</td>
<td>Flow norm 1, low 2, fall 3, rise 4</td>
<td>1 &amp; 4</td>
<td>Start and finish time</td>
<td>1300-1500</td>
<td></td>
</tr>
<tr>
<td>Photo ref. &amp; Location</td>
<td>Downstream end</td>
<td>100</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Site length (m)</td>
<td>100</td>
<td>Access from road bridge. Land use - grazing and woodland. Good habitat throughout.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Width channel (m)</td>
<td>5</td>
<td>Descrip. (channel features, landuse)</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Survey method, std 1, quad 2, net/kick 3, trap 4, view 5**

<table>
<thead>
<tr>
<th>sample patch 1</th>
<th>sample patch 2</th>
<th>sample patch 3</th>
<th>sample patch 4</th>
<th>sample patch 5</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 &amp; 4</td>
<td>1 &amp; 4</td>
<td>1 &amp; 4</td>
<td>1 &amp; 4</td>
<td>1 &amp; 4</td>
</tr>
</tbody>
</table>

**Details (if not standard)**

<table>
<thead>
<tr>
<th>Extent (l x w patch)</th>
<th>3x3</th>
<th>2x4</th>
<th>3x4</th>
<th>2x3</th>
<th>3x2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Channel (1 margins, 2 mid, 3 both, other specify)</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Depth (metres)</td>
<td>0.2</td>
<td>0.2</td>
<td>0.2</td>
<td>0.3</td>
<td>0.3</td>
</tr>
<tr>
<td>Feature (1 marg. d'water, 2 pool, 3 glide, 4 run, 5 riffle)</td>
<td>4</td>
<td>5</td>
<td>5</td>
<td>4</td>
<td>4</td>
</tr>
</tbody>
</table>

**Refuges in channel**

<table>
<thead>
<tr>
<th></th>
<th>sample patch 1</th>
<th>sample patch 2</th>
<th>sample patch 3</th>
<th>sample patch 4</th>
<th>sample patch 5</th>
</tr>
</thead>
<tbody>
<tr>
<td>cobble (6.5-15cm)</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>cobble (15-25.6cm)</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>boulder (25.6-40cm)</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>boulder (&gt;40cm)</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>rubble (give size)</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>woody debris</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>other urban debris</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>tree roots, fine moss</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>filamentous algae</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>other submerged veg. emergents</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
</tbody>
</table>

**Main substrate beneath**

<table>
<thead>
<tr>
<th></th>
<th>sample patch 1</th>
<th>sample patch 2</th>
<th>sample patch 3</th>
<th>sample patch 4</th>
<th>sample patch 5</th>
</tr>
</thead>
<tbody>
<tr>
<td>bedrock</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>cobble (6.5-15cm)</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>pebble (&lt;6.5cm)</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>gravel (&lt;1.6cm)</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>Sand (&lt;2mm)</td>
<td>Clay</td>
<td>Silt</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>------------</td>
<td>------</td>
<td>------</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Siltation</td>
<td>none</td>
<td>low</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td></td>
<td></td>
<td>moderate</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td></td>
<td></td>
<td>high</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Refuges in bank</td>
<td>none</td>
<td>cobble/boulder</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td></td>
<td></td>
<td>tree roots, large vertical or undercut bank</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td></td>
<td></td>
<td>dry stone wall</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>other reinforced</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>crayfish burrows</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Shading above</td>
<td>HEAVY</td>
<td>HEAVY</td>
<td>HEAVY</td>
<td>HEAVY</td>
<td>HEAVY</td>
</tr>
<tr>
<td>Crayfish manually caught</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Crayfish by trap</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total crayfish caught</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Evaluation crayfish habitat for whole site (0 none, 1 pres., 2 freq., 3 abund.)</td>
<td>Score</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>in margins</td>
<td>3</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>in mid channel</td>
<td>3</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>in banks</td>
<td>2</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>surveyability</td>
<td>3</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Problems pollution 1, erosion 2, (E if &gt;33% affected), aliens 3.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total crayfish (by 1 method, note total(s) by other methods in notes if applicable)</td>
<td>0</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
## CRAYFISH HABITAT SURVEY FORM

<table>
<thead>
<tr>
<th>Catchment</th>
<th>Wye</th>
<th>River</th>
<th>Offeiriad</th>
<th>Site (no., name)</th>
<th>9</th>
</tr>
</thead>
<tbody>
<tr>
<td>Date (dd/mm/yy)</td>
<td>11/10/2014</td>
<td>Surveyors</td>
<td>DR LW</td>
<td>Grid ref.</td>
<td>SO06264 42414</td>
</tr>
<tr>
<td>Weather, good 1, mod 2, poor 3</td>
<td>1</td>
<td>Flow norm 1, low 2, fall 3, rise 4</td>
<td>1</td>
<td>Start and finish time</td>
<td>1100 - 1300</td>
</tr>
<tr>
<td>Photo ref. &amp; Location</td>
<td>Mid point</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Site length (m)</td>
<td>100</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Width channel (m)</td>
<td>4</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Descript. (channel features, landuse)</td>
<td>Access good via road bridge. Fully shaded on left bank with some erosion. Right side field with occasional shading. Land use - grazing. Good habitat throughout.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Survey method, std 1, quad 2, net/kick 3, trap 4, view 5</td>
<td>1 &amp; 4</td>
<td>1 &amp; 4</td>
<td>1 &amp; 4</td>
<td>1 &amp; 4</td>
<td>1 &amp; 4</td>
</tr>
<tr>
<td>Details (if not standard)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Extent (l x w patch)</td>
<td>2x3</td>
<td>2x4</td>
<td>2x4</td>
<td>3x1</td>
<td>3x3</td>
</tr>
<tr>
<td>Channel (1 margins, 2 mid, 3 both, other specify)</td>
<td>2</td>
<td>2</td>
<td>3</td>
<td>3</td>
<td>1</td>
</tr>
<tr>
<td>Depth (metres)</td>
<td>0.3</td>
<td>0.2</td>
<td>0.3</td>
<td>0.3</td>
<td>0.2</td>
</tr>
<tr>
<td>Feature (1 marg. d’water, 2 pool, 3 glide, 4 run, 5 riffle)</td>
<td>4</td>
<td>4</td>
<td>4</td>
<td>4</td>
<td>5</td>
</tr>
</tbody>
</table>

### Refuges in channel

- 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 YES YES YES YES YES
- other urban debris YES YES YES YES YES
- tree roots, fine moss YES YES YES YES YES
- filamentous algae YES YES YES YES YES
- other submerged veg. YES YES YES YES YES
- emergents YES YES YES YES YES

### Main substrate beneath

- bedrock YES YES YES YES YES
- cobble (6.5-15cm) YES YES YES YES YES
- pebble (<6.5cm) YES YES YES YES YES
- gravel (<1.6cm) YES YES YES YES YES
<table>
<thead>
<tr>
<th>sand (&lt;2mm)</th>
<th>clay</th>
<th>silt</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Siltation</strong></td>
<td>none</td>
<td>low</td>
</tr>
<tr>
<td>none</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>low</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>moderate</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>high</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td><strong>Refuges in bank</strong></td>
<td>none</td>
<td>cobble/boulder</td>
</tr>
<tr>
<td>none</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>cobble/boulder</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>tree roots, large</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>vertical or undercut bank</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>dry stone wall</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>other reinforced</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>crayfish burrows</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td><strong>Shading above</strong></td>
<td>MOD</td>
<td>HEAVY</td>
</tr>
<tr>
<td><strong>Crayfish manually</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Crayfish by trap</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Total crayfish caught</strong></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Evaluation crayfish habitat for whole site (0 none, 1 pres., 2 freq., 3 abund.)</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>in margins</td>
<td>2</td>
</tr>
<tr>
<td>in mid channel</td>
<td>3</td>
</tr>
<tr>
<td>in banks</td>
<td>2</td>
</tr>
<tr>
<td>surveyability</td>
<td>3</td>
</tr>
<tr>
<td>Problems pollution 1, erosion 2, (E if &gt;33% affected), aliens 3.</td>
<td>2</td>
</tr>
<tr>
<td>Total crayfish (by 1 method, note total(s) by other methods in notes if applicable)</td>
<td>0</td>
</tr>
</tbody>
</table>
## CRAYFISH HABITAT SURVEY FORM

<table>
<thead>
<tr>
<th>Catchment</th>
<th>Wye</th>
<th>River</th>
<th>Offeiriad</th>
<th>Site (no., name)</th>
<th>10</th>
</tr>
</thead>
</table>

| Date (dd/mm/yy) | 11/10/2014 | Surveyors | DR LW | Grid ref. | SO 05861 42621 |

| Weather, good 1, mod 2, poor 3 | Flow norm 1, low 2, fall 3, rise 4 | 1 | 1 | Start and finish time | 0900-1100 |

<table>
<thead>
<tr>
<th>Photo ref. &amp; Location</th>
<th>In 1st 100m</th>
</tr>
</thead>
</table>

| Site length (m) | 100 |

| Width channel (m) | 3 |

| Descript. (channel features, landuse) | Access down steep wooded banks. Heavily wooded with many large tree roots. Land use - grazing, stock access to river. |

<table>
<thead>
<tr>
<th>sample patch 1</th>
<th>sample patch 2</th>
<th>sample patch 3</th>
<th>sample patch 4</th>
<th>sample patch 5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Survey method, std 1, quad 2, net/kick 3, trap 4, view 5</td>
<td>1 &amp; 4</td>
<td>1 &amp; 4</td>
<td>1 &amp; 4</td>
<td>1 &amp; 4</td>
</tr>
<tr>
<td>Details (if not standard)</td>
<td>3x3</td>
<td>3x3</td>
<td>4x2</td>
<td>3x3</td>
</tr>
<tr>
<td>Extent (l x w patch)</td>
<td>3x3</td>
<td>3x3</td>
<td>4x2</td>
<td>3x3</td>
</tr>
<tr>
<td>Channel (1 margins, 2 mid, 3 both, other specify)</td>
<td>2</td>
<td>2</td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td>Depth (metres)</td>
<td>0.4</td>
<td>0.4</td>
<td>0.2</td>
<td>0.25</td>
</tr>
<tr>
<td>Feature (1 marg. d’water, 2 pool, 3 glide, 4 run, 5 riffle)</td>
<td>3</td>
<td>4</td>
<td>4</td>
<td>3</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Refuges in channel</th>
<th>tick all present in patch, main type(s) searched in red</th>
</tr>
</thead>
<tbody>
<tr>
<td>cobble (6.5-15cm)</td>
<td>YES</td>
</tr>
<tr>
<td>cobble (15-25.6cm)</td>
<td>YES</td>
</tr>
<tr>
<td>boulder (25.6-40cm)</td>
<td>YES</td>
</tr>
<tr>
<td>boulder (&gt;40cm)</td>
<td>YES</td>
</tr>
<tr>
<td>rubble (give size)</td>
<td>YES</td>
</tr>
<tr>
<td>woody debris</td>
<td>YES</td>
</tr>
<tr>
<td>other urban debris</td>
<td>YES</td>
</tr>
<tr>
<td>tree roots, fine moss</td>
<td>YES</td>
</tr>
<tr>
<td>filamentous algae</td>
<td>YES</td>
</tr>
<tr>
<td>other submerged veg. emergents</td>
<td>YES</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Main substrate beneath</th>
<th>bedrock</th>
<th>cobble (6.5-15cm)</th>
<th>pebble (&lt;6.5cm)</th>
<th>gravel (&lt;1.6cm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>Sand (&lt;2mm)</td>
<td>Clay</td>
<td>Silt</td>
<td></td>
<td></td>
</tr>
<tr>
<td>-------------</td>
<td>------</td>
<td>------</td>
<td></td>
<td></td>
</tr>
<tr>
<td>low</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>moderate</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>high</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
</tbody>
</table>

| Siltation none | YES | YES | YES | YES | YES |

<table>
<thead>
<tr>
<th>Refuges in bank</th>
<th>None</th>
<th>YES</th>
<th>YES</th>
<th>YES</th>
<th>YES</th>
</tr>
</thead>
<tbody>
<tr>
<td>cobble/boulder</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>tree roots, large vertical or undercut bank</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>dry stone wall</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>other reinforced</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>crayfish burrows</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
</tbody>
</table>

| Shading above | HEAVY | HEAVY | HEAVY | HEAVY | HEAVY |

| Crayfish manually caught | |
| Crayfish by trap | |

| Total crayfish caught | |

<table>
<thead>
<tr>
<th>Evaluation crayfish habitat for whole site (0 none, 1 pres., 2 freq., 3 abund.)</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>in margins</td>
<td>3</td>
</tr>
<tr>
<td>in mid channel</td>
<td>3</td>
</tr>
<tr>
<td>in banks</td>
<td>3</td>
</tr>
<tr>
<td>surveyability</td>
<td>3</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Problems pollution 1, erosion 2, (E if &gt;33% affected), aliens 3.</th>
</tr>
</thead>
</table>

| Total crayfish (by 1 method, note total(s) by other methods in notes if applicable) | 0     |

Patch 1, downstream end of site was on bedrock with fewer refuges. Patch 2 like Site 9.
## CRAYFISH HABITAT SURVEY FORM

<table>
<thead>
<tr>
<th>Catchment</th>
<th>River</th>
<th>Offeiriad</th>
<th>Site (no., name)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wye</td>
<td></td>
<td></td>
<td>11</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Date (dd/mm/yy)</th>
<th>Surveyors</th>
<th>Grid ref.</th>
</tr>
</thead>
<tbody>
<tr>
<td>10/10/2014</td>
<td>DR LW</td>
<td>SO 05269 43142</td>
</tr>
</tbody>
</table>

### Weather, Flow, Grid ref.
- good 1, mod 2, poor 3
- Flow norm 1, low 2, fall 3, rise 4
- Grid ref. SO 05269 43142
- Start and finish time 1500 - 1700

### Photo ref. & Location
- Downstream end

### Site size
- Site length (m) 100
- Width channel (m) 3

### Description
- Access through farmyard. Land use grazing adjacent to farmyard. Site just upstream of farmyard.

### Sample Patch

<table>
<thead>
<tr>
<th>Sample</th>
<th>Patch 1</th>
<th>Patch 2</th>
<th>Patch 3</th>
<th>Patch 4</th>
<th>Patch 5</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1 &amp; 4</td>
<td>1 &amp; 4</td>
<td>1 &amp; 4</td>
<td>1 &amp; 4</td>
<td>1 &amp; 4</td>
</tr>
</tbody>
</table>

### Survey method
- std 1, quad 2, net/kick 3, trap 4, view 5

### Extent (l x w patch)
- 4x3, 3x3, 4x3, 4x3, 4x3

### Channel (mid, 3 both, other
specify)
- 3, 2, 3, 2, 3

### Depth (metres)
- 0.3, 0.3, 0.3, 0.3, 0.3

### Feature (d'water, 2 pool, 3 glide, 4 run, 5 riffle)
- 4, 4, 5, 4, 4

### Refuges in channel
- 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

- tick all present in patch, main type(s) searched in red

### Main substrate beneath
- bedrock
- cobble (6.5-15cm)
- pebble (<6.5cm)
- gravel (<1.6cm)

- YES YES YES YES YES
- YES YES YES YES YES
- YES YES YES YES YES
- YES YES YES YES YES
- YES YES YES YES YES

---

[www.naturalresourceswales.gov.uk](http://www.naturalresourceswales.gov.uk)  Page 84
<table>
<thead>
<tr>
<th>sand (&lt;2mm)</th>
<th>clay</th>
<th>silt</th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
</table>
| Siltation | none | low | YES | YES | YES | YES
|            | moderate |      | YES | YES | YES | YES |
|            | high     |      | YES | YES | YES | YES |
| 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 | YES | YES | YES | YES | YES |
|            | other reinforced | YES | YES | YES | YES | YES |
|            | crayfish burrows | YES | YES | YES | YES | YES |
| Shading above | MOD | LIGHT | MOD | MOD | MOD | MOD |
| Crayfish manually |  |  |  |  |  |  |
| Crayfish by trap |  |  |  |  |  |  |
| Total crayfish caught | 8 |  |  |  |  |  |

### Evaluation crayfish habitat for whole site
(0 none, 1 pres., 2 freq., 3 abund.)

<table>
<thead>
<tr>
<th>Score</th>
<th>Notes (survey conditions, patches etc.):</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td>in margins</td>
</tr>
<tr>
<td>3</td>
<td>in mid channel</td>
</tr>
<tr>
<td>3</td>
<td>in banks</td>
</tr>
<tr>
<td>3</td>
<td>surveyability</td>
</tr>
</tbody>
</table>

### 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
## CRAYFISH HABITAT SURVEY FORM

<table>
<thead>
<tr>
<th>Catchment</th>
<th>Wye</th>
<th>River</th>
<th>Offeiriad</th>
<th>Site (no., name)</th>
<th>12</th>
</tr>
</thead>
<tbody>
<tr>
<td>Date (dd/mm/yy)</td>
<td>10/10/2014</td>
<td>Surveyors</td>
<td>DR LW</td>
<td>Grid ref.</td>
<td>SO 04635 43457</td>
</tr>
<tr>
<td>Weather, good 1, mod 2, poor 3</td>
<td>1</td>
<td>Flow norm 1, low 2, fall 3, rise 4</td>
<td>1</td>
<td>Start and finish time</td>
<td>1300-1500</td>
</tr>
<tr>
<td>Photo ref. &amp; Location</td>
<td>In 1st 100m</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Site length (m)</td>
<td>100</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Width channel (m)</td>
<td>3</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sample patch 1</td>
<td>1 &amp; 4</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sample patch 2</td>
<td>1 &amp; 4</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sample patch 3</td>
<td>1 &amp; 4</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sample patch 4</td>
<td>1 &amp; 4</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sample patch 5</td>
<td>1 &amp; 4</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Survey method, std 1, quad 2, net/kick 3, trap 4, view 5</td>
<td>Details (if not standard)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Extent (l x w patch)</td>
<td>3x2</td>
<td>2x2</td>
<td>3x1</td>
<td>5x2</td>
<td>3x3</td>
</tr>
<tr>
<td>Channel (1 margins, 2 mid, 3 both, other specify)</td>
<td>3</td>
<td>3</td>
<td>1</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Depth (metres)</td>
<td>0.4</td>
<td>0.3</td>
<td>0.3</td>
<td>0.2</td>
<td>0.3</td>
</tr>
<tr>
<td>Feature (1 marg. d’water, 2 pool, 3 glide, 4 run, 5 riffle)</td>
<td>5</td>
<td>4</td>
<td>4</td>
<td>5</td>
<td>5</td>
</tr>
<tr>
<td>Refuges in channel</td>
<td>tick all present in patch, main type(s) searched in red</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>cobble (6.5-15cm)</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>cobble (15-25.6cm)</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>boulder (25.6-40cm)</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>boulder (&gt;40cm)</td>
<td></td>
<td></td>
<td>YES</td>
<td></td>
<td></td>
</tr>
<tr>
<td>rubble (give size)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>woody debris</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>other urban debris</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>tree roots, fine moss</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>filamentous algae</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>other submerged veg. emergents</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Main substrate beneath</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>bedrock</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>cobble (6.5-15cm)</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>pebble (&lt;6.5cm)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>gravel (&lt;1.6cm)</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>sand (&lt;2mm)</td>
<td>clay</td>
<td>silt</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>------------</td>
<td>-----</td>
<td>-----</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Situation**

| none | low | moderate | high |  |  |
|------|-----|----------|------|  |  |
| YES  | YES | YES      | YES  |  |  |

**Refuges in bank**

| none | cobble/boulder | tree roots, large vertical or undercut bank | dry stone wall | other reinforced | crayfish burrows |  |  |
|------|---------------|-------------------------------------------|---------------|-----------------|-----------------|  |  |
| YES  | YES           | YES                                       | YES           |                 |                 |  |  |

**Shading above**

| HEAVY | MOD | MOD | MOD | MOD |  |
|-------|-----|-----|-----|-----|  |

**Crayfish manually**

<table>
<thead>
<tr>
<th>1</th>
<th>3</th>
<th>4</th>
<th>2</th>
<th></th>
</tr>
</thead>
</table>

**Crayfish by trap**

<table>
<thead>
<tr>
<th>22</th>
<th></th>
</tr>
</thead>
</table>

**Total crayfish caught**

<table>
<thead>
<tr>
<th>32</th>
<th></th>
</tr>
</thead>
</table>

**Evaluation crayfish habitat for whole site (0 none, 1 pres., 2 freq., 3 abund.)**

| Score | Patch 1 - earth banks on right side |  |
|-------|------------------------------------|  |
| 3     | in margins                          |  |
| 3     | in mid channel                      |  |
| 2     | in banks                            |  |
| 3     | surveyability                       |  |

**Problems**

| pollution 1, erosion 2, (E if >33% affected), aliens 3. |  |
|-----------------------------------------------------------|  |

**Total crayfish (by 1 method, note total(s) by other methods in notes if applicable)**

<table>
<thead>
<tr>
<th>32</th>
<th></th>
</tr>
</thead>
</table>
CRAYFISH HABITAT SURVEY FORM

<table>
<thead>
<tr>
<th>Catchment</th>
<th>Wye</th>
<th>River</th>
<th>Offeiriad</th>
<th>Site (no., name)</th>
<th>13</th>
</tr>
</thead>
<tbody>
<tr>
<td>Date (dd/mm/yy)</td>
<td>10/10/2014</td>
<td>Surveyors</td>
<td>DR LW</td>
<td>Grid ref.</td>
<td>SO 03771 43539</td>
</tr>
<tr>
<td>Weather, good 1, mod 2, poor 3</td>
<td>Flow norm 1, low 2, fall 3, rise 4</td>
<td>Grid ref.</td>
<td>SO 03771 43539</td>
<td>Start and finish time</td>
<td>1100-1300</td>
</tr>
<tr>
<td>Photo ref. &amp; Location</td>
<td>In 1st 100m</td>
<td>Grid ref.</td>
<td>SO 03771 43539</td>
<td>Start and finish time</td>
<td>1100-1300</td>
</tr>
<tr>
<td>Site length (m)</td>
<td>100</td>
<td>Grid ref.</td>
<td>SO 03771 43539</td>
<td>Start and finish time</td>
<td>1100-1300</td>
</tr>
<tr>
<td>Width channel (m)</td>
<td>3</td>
<td>Descript. (channel features, landuse)</td>
<td>Access down moderately steep wooded bank. Land use woodland and grazing with limited stock access to water. Appears to be excellent habitat.</td>
<td>Grid ref.</td>
<td>SO 03771 43539</td>
</tr>
<tr>
<td>sample patch 1</td>
<td>sample patch 2</td>
<td>sample patch 3</td>
<td>sample patch 4</td>
<td>sample patch 5</td>
<td></td>
</tr>
<tr>
<td>Survey method, std 1, quad 2, net/kick 3, trap 4, view 5</td>
<td>1 &amp; 4</td>
<td>1 &amp; 4</td>
<td>1 &amp; 4</td>
<td>1 &amp; 4</td>
<td>1 &amp; 4</td>
</tr>
<tr>
<td>Details (if not standard)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Extent (l x w patch)</td>
<td>3x3</td>
<td>2x3</td>
<td>3x3</td>
<td>3x3</td>
<td>3x2</td>
</tr>
<tr>
<td>Channel (1 margins, 2 mid, 3 both, other specify)</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>Depth (metres)</td>
<td>0.3</td>
<td>0.3</td>
<td>0.2</td>
<td>0.2</td>
<td>0.2</td>
</tr>
<tr>
<td>Feature (1 marg. d’water, 2 pool, 3 glide, 4 run, 5 riffle)</td>
<td>3</td>
<td>4</td>
<td>4</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Refuges in channel</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>cobble (6.5-15cm)</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>cobble (15-25.6cm)</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>boulder (25.6-40cm)</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>boulder (&gt;40cm)</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>rubble (give size)</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>woody debris</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>other urban debris</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>tree roots, fine moss</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>filamentous algae</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>other submerged veg.</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>emergents</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>Main substrate beneath</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>bedrock</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>cobble (6.5-15cm)</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>pebble (&lt;6.5cm)</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>gravel (&lt;1.6cm)</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>Sand (&lt;2mm)</td>
<td>Clay</td>
<td>Silt</td>
<td>Siltation</td>
<td>Low</td>
<td>Moderate</td>
</tr>
<tr>
<td>------------</td>
<td>------</td>
<td>------</td>
<td>-----------</td>
<td>-----</td>
<td>----------</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>none</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>low</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Evaluation crayfish habitat for whole site (0 none, 1 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) by other methods in notes if applicable):**
- Patch 1 & 2 had earth banks with no crayfish burrows. An otter holt has recently been installed and it is believed that otters have started to use it. Photo of crayfish found at this site.
## CRAYFISH HABITAT SURVEY FORM

<table>
<thead>
<tr>
<th>Catchment</th>
<th>Wye</th>
<th>River</th>
<th>Offeiriad</th>
<th>Site (no., name)</th>
<th>14</th>
</tr>
</thead>
<tbody>
<tr>
<td>Date (dd/mm/yy)</td>
<td>10/10/2014</td>
<td>Surveyors</td>
<td>DR LW</td>
<td>Grid ref.</td>
<td>SO 03000 43674</td>
</tr>
<tr>
<td>Weather, good 1, mod 2, poor 3</td>
<td>Flow norm 1, low 2, fall 3, rise 4</td>
<td>1</td>
<td>Start and finish time</td>
<td>0900-1100</td>
<td></td>
</tr>
<tr>
<td>Photo ref. &amp; Location</td>
<td>Access over moorland. Land use moorland grazing and woodland. Stock access throughout</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Site length (m)</td>
<td>100</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Width channel (m)</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Sample patch 1</th>
<th>Sample patch 2</th>
<th>Sample patch 3</th>
<th>Sample patch 4</th>
<th>Sample patch 5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Survey method, std 1, quad 2, net/kick 3, trap 4, view 5</td>
<td>1 &amp; 4</td>
<td>1 &amp; 4</td>
<td>1 &amp; 4</td>
<td>1 &amp; 4</td>
</tr>
<tr>
<td>Extent (l x w patch)</td>
<td>6x1</td>
<td>4x1</td>
<td>5x1</td>
<td>6x1</td>
</tr>
<tr>
<td>Channel (1 margins, 2 mid, 3 both, other specify)</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>Depth (metres)</td>
<td>0.1</td>
<td>0.2</td>
<td>0.2</td>
<td>0.2</td>
</tr>
<tr>
<td>Feature (1 marg. d'water, 2 pool, 3 glide, 4 run, 5 riffle)</td>
<td>5</td>
<td>4</td>
<td>4</td>
<td>4</td>
</tr>
</tbody>
</table>

### Refuges in channel
- 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

**Tick all present in patch, main types searched in red**

### Main substrate beneath
- bedrock
- cobble (6.5-15cm)
- pebble (<6.5cm)
- gravel (<1.6cm)

---

[www.naturalresourceswales.gov.uk](http://www.naturalresourceswales.gov.uk)
<table>
<thead>
<tr>
<th>Sand (&lt;2mm)</th>
<th>Clay</th>
<th>Silt</th>
<th>Siltation</th>
<th>Refuges in Bank</th>
<th>Shading above</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>none</td>
<td>none</td>
<td>none</td>
</tr>
<tr>
<td>low</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>moderate</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>high</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>cobble/boulder</td>
<td></td>
<td></td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>tree roots, large vertical or undercut bank</td>
<td></td>
<td></td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>dry stone wall</td>
<td></td>
<td></td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>other reinforced</td>
<td></td>
<td></td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>crayfish burrows</td>
<td></td>
<td></td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>Shading above</td>
<td>NONE</td>
<td>NONE</td>
<td>NONE</td>
<td>NONE</td>
<td>NONE</td>
</tr>
<tr>
<td>Crayfish manually</td>
<td>4</td>
<td>2</td>
<td>1</td>
<td>7</td>
<td></td>
</tr>
<tr>
<td>Crayfish by trap</td>
<td>7</td>
<td>14</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total crayfish caught</td>
<td>14</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Evaluation crayfish habitat for whole site**

<table>
<thead>
<tr>
<th>Score</th>
<th>Notes (survey conditions, patches etc.):</th>
</tr>
</thead>
<tbody>
<tr>
<td>in margins</td>
<td>2</td>
</tr>
<tr>
<td>in mid channel</td>
<td>3</td>
</tr>
<tr>
<td>in banks</td>
<td>3</td>
</tr>
<tr>
<td>surveyability</td>
<td>2</td>
</tr>
</tbody>
</table>

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
### CRAYFISH HABITAT SURVEY FORM

<table>
<thead>
<tr>
<th>Catchment</th>
<th>Wye</th>
<th>River</th>
<th>Offeiriad</th>
<th>Site (no., name)</th>
<th>15</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Date (dd/mm/yy)</strong></td>
<td>09/10/2014</td>
<td><strong>Surveyors</strong></td>
<td>DR LW</td>
<td><strong>Grid ref.</strong></td>
<td>SO 02620 43857</td>
</tr>
<tr>
<td>Weather, good 1, mod 2, poor 3</td>
<td>Flow norm 1, low 2, fall 3, rise 4</td>
<td>1</td>
<td>1</td>
<td><strong>Start and finish time</strong></td>
<td>1100-1300</td>
</tr>
<tr>
<td>Photo ref. &amp; Location</td>
<td>In 1st 100m</td>
<td>400m</td>
<td><strong>Descrip.</strong> (channel features, landuse)</td>
<td>Access good walking from road. Low water. Very few large boulders/stones.</td>
<td></td>
</tr>
<tr>
<td>Site length (m)</td>
<td>400m</td>
<td><strong>Width channel (m)</strong></td>
<td>1</td>
<td><strong>Survey method, std 1, quad 2, net/kick 3, trap 4, view 5</strong></td>
<td>1 &amp; 4</td>
</tr>
<tr>
<td>Survey method, std 1, quad 2, net/kick 3, trap 4, view 5</td>
<td>1 &amp; 4</td>
<td>1 &amp; 4</td>
<td>1 &amp; 4</td>
<td>1 &amp; 4</td>
<td>1 &amp; 4</td>
</tr>
<tr>
<td>Extent (l x w patch)</td>
<td>3x1</td>
<td>4x1</td>
<td>5x1</td>
<td>5x1</td>
<td>7x1</td>
</tr>
<tr>
<td>Channel (1 margins, 2 mid, 3 both, other specify)</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>Depth (metres)</td>
<td>0.2</td>
<td>0.2</td>
<td>0.2</td>
<td>0.2</td>
<td>0.2</td>
</tr>
<tr>
<td>Feature (1 marg. d’water, 2 pool, 3 glide, 4 run, 5 rifle)</td>
<td>4</td>
<td>4</td>
<td>4</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td><strong>Refuges in channel</strong></td>
<td><strong>tick all present in patch, ring main type(s) searched in red</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>cobble (6.5-15cm)</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>cobble (15-25.6cm)</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>boulder (25.6-40cm)</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>boulder (&gt;40cm)</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>rubble (give size)</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>woody debris</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>other urban debris</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>tree roots, fine moss</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>filamentous algae</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>other submerged veg. emergents</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td><strong>Main substrate beneath</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>bedrock</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>cobble (6.5-15cm)</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>pebble (&lt;6.5cm)</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>gravel (&lt;1.6cm)</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>Sand (&lt;2mm)</td>
<td>Clay</td>
<td>Silt</td>
<td>Siltation</td>
<td>Low</td>
<td>Moderate</td>
</tr>
<tr>
<td>------------</td>
<td>------</td>
<td>------</td>
<td>------------</td>
<td>-----</td>
<td>----------</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>none</td>
<td>YES</td>
<td>YES</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Refuges in bank</th>
<th>Cobble/boulder</th>
<th>Tree roots, large vertical or undercut bank</th>
<th>Dry stone wall</th>
<th>Other reinforced</th>
<th>Crayfish burrows</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Shading above</th>
<th>NONE</th>
<th>NONE</th>
<th>NONE</th>
<th>NONE</th>
<th>NONE</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Crayfish manually</th>
<th>Crayfish by trap</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>9</td>
</tr>
</tbody>
</table>

| Total crayfish caught | 12 |

### Evaluation crayfish habitat for whole site

<table>
<thead>
<tr>
<th>Score</th>
<th>Notes (survey conditions, patches etc.):</th>
</tr>
</thead>
<tbody>
<tr>
<td>in margins</td>
<td>2</td>
</tr>
<tr>
<td>in mid channel</td>
<td>2</td>
</tr>
<tr>
<td>in banks</td>
<td>2</td>
</tr>
<tr>
<td>surveyability</td>
<td>2</td>
</tr>
</tbody>
</table>

| 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 |

---

**Total crayfish (by 1 method, note total(s) by other methods in notes if applicable):**

12 crayfish were caught in total.
**Crayfish Habitat Survey Form**

<table>
<thead>
<tr>
<th>Catchment</th>
<th>Wye</th>
<th>River</th>
<th>Offeiriad</th>
<th>Site (no., name)</th>
<th>16</th>
</tr>
</thead>
<tbody>
<tr>
<td>Date (dd/mm/yy)</td>
<td>09/10/2014</td>
<td>Surveyors</td>
<td>DR LW</td>
<td>Grid ref.</td>
<td>SO 02021 44210</td>
</tr>
<tr>
<td>Weather, good 1, mod 2, poor 3</td>
<td>1</td>
<td>Flow norm 1, low 2, fall 3, rise 4</td>
<td>1</td>
<td>1</td>
<td>Start and finish time</td>
</tr>
<tr>
<td>Photo ref. &amp; Location</td>
<td>In 1st 100m</td>
<td>Grid ref.</td>
<td>SO 02021 44210</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

| Site length (m) | 400 |
| Width channel (m) | 0.5 |

Descript. (channel features, landuse)
Access good walking from road. Very few large boulders/stones.

**Survey method, std 1, quad 2, net/kick 3, trap 4, view 5**

<table>
<thead>
<tr>
<th>sample patch 1</th>
<th>sample patch 2</th>
<th>sample patch 3</th>
<th>sample patch 4</th>
<th>sample patch 5</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 &amp; 4</td>
<td>1 &amp; 4</td>
<td>1 &amp; 4</td>
<td>1 &amp; 4</td>
<td>1 &amp; 4</td>
</tr>
</tbody>
</table>

**Details (if not standard)**

| Extent (l x w patch) | 4x0.5 | 4x0.5 | 5x0.5 | 5x0.5 | 5x0.5 |
| Channel (1 margins, 2 mid, 3 both, other specify) | 3 | 3 | 3 | 3 | 3 |
| Depth (metres) | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 |
| Feature (1 marg. d’water, 2 pool, 3 glide, 4 run, 5 rifle) | 4 | 4 | 4 | 4 | 4 |

**Refuges in channel**
tick all present in patch, ring main type(s) searched

| cobble (6.5-15cm) | YES | YES | YES | YES | YES |
| 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 | YES | YES | YES | YES | YES |
| other urban debris | YES | YES | YES | YES | YES |
| tree roots, fine moss | YES | YES | YES | YES | YES |
| filamentous algae | YES | YES | YES | YES | YES |
| other submerged veg. emergents | YES | YES | YES | YES | YES |

**Main substrate beneath**

<p>| bedrock | YES | YES | YES | YES | YES |
| cobble (6.5-15cm) | YES | YES | YES | YES | YES |
| pebble (&lt;6.5cm) | YES | YES | YES | YES | YES |
| gravel (&lt;1.6cm) | YES | YES | YES | YES | YES |</p>
<table>
<thead>
<tr>
<th>sand (&lt;2mm)</th>
<th>clay</th>
<th>silt</th>
<th>Siltation</th>
<th>low</th>
<th>moderate</th>
<th>high</th>
<th>Refuges in bank</th>
<th>none</th>
<th>cobble/boulder</th>
<th>YES</th>
<th>YES</th>
<th>YES</th>
<th>YES</th>
<th>YES</th>
<th>YES</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>tree roots, large vertical or undercut bank</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>dry stone wall</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td></td>
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</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>other reinforced</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td></td>
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</tr>
<tr>
<td></td>
<td></td>
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<td></td>
<td></td>
<td>crayfish burrows</td>
<td>YES</td>
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<td>YES</td>
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<td></td>
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<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Crayfish manually</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>7</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Crayfish by trap</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>7</td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total crayfish caught</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Evaluation crayfish habitat for whole site (0 none, 1 pres., 2 freq., 3 abund.)</th>
<th>Score</th>
<th>Notes (survey conditions, patches etc.):</th>
</tr>
</thead>
<tbody>
<tr>
<td>in margins</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>in mid channel</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>in banks</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>surveyability</td>
<td>2</td>
<td></td>
</tr>
</tbody>
</table>

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 |
### CRAYFISH HABITAT SURVEY FORM

<table>
<thead>
<tr>
<th>Catchment</th>
<th>Wye</th>
<th>River</th>
<th>Sgithwen Site (no., name)</th>
<th>1</th>
</tr>
</thead>
<tbody>
<tr>
<td>Date (dd/mm/yyyy)</td>
<td>01/09/2015</td>
<td>Surveyor</td>
<td>DR LW</td>
<td>grid ref. (d/s end) SO 1136 4147</td>
</tr>
<tr>
<td>Weather, good 1, mod 2, poor 3</td>
<td>1 &amp; 4</td>
<td>Water temp. ºC</td>
<td>12</td>
<td>Clarity, good 1, mod 2, poor 3</td>
</tr>
<tr>
<td>Photos ref. &amp; Location</td>
<td>Sg01</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Site length (m)</td>
<td>100</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Width channel (m)</td>
<td>6</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Survey method, std 1, quad 2, net/kick 3, trap 4, view 5</td>
<td>1 &amp; 4</td>
<td>sample patch 1</td>
<td>1 &amp; 4</td>
<td></td>
</tr>
<tr>
<td>Details (if not standard)</td>
<td>Extent (l x w patch)</td>
<td>1x6</td>
<td>2x6</td>
<td>5x1</td>
</tr>
<tr>
<td>Channel (1 margins, 2 mid, 3 both, other specify)</td>
<td>3</td>
<td>3</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Depth (metres)</td>
<td>0.3</td>
<td>0.2</td>
<td>0.1</td>
<td>0.3</td>
</tr>
<tr>
<td>Feature (1 marg. d'water, 2 pool, 3 glide, 4 run, 5 riffle)</td>
<td>5</td>
<td>5</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>Refuges in channel</td>
<td>cobble (6.5-15cm)</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>boulder (15-60cm)</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>boulder (&gt;60cm)</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>rubble (give size)</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>woody debris</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>other urban debris</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>tree roots, fine</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>moss</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>filamentous algae</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>other submerged veg.</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>Emergents</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>Main substrate beneath</td>
<td>bedrock</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>cobble (6.5-15cm)</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>pebble (&lt;6.5cm)</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>gravel (&lt;1.6cm)</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>sand (&lt;2mm)</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>clay</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>Silt</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>Refuges in bank</td>
<td>cobble/boulder</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>tree roots, large</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>vertical or undercut bank</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>dry stone wall</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>other reinforced crayfish burrows</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>Shading above</td>
<td>HEAVY</td>
<td>HEAVY</td>
<td>HEAVY</td>
<td>HEAVY</td>
</tr>
<tr>
<td>Cover, refuges, or per unit (depending on method)</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Search time (Mins)</td>
<td>10</td>
<td>10</td>
<td>10</td>
<td>5</td>
</tr>
<tr>
<td>Bullhead present?</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>Evaluation crayfish habitat for whole site (p none, 1 pres., 2 freq., 3 abundant)</td>
<td>Score</td>
<td>Notes (survey conditions, patches etc.)</td>
<td>Salmonids present throughout</td>
<td></td>
</tr>
<tr>
<td>in margins</td>
<td>3</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>in mid channel</td>
<td>3</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>in banks</td>
<td>3</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>surveyability</td>
<td>3</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Problems</td>
<td>pollution 1, erosion 2, (E if &gt;30% affected), aliens 3</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total crayfish (all methods)</td>
<td>0</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
## CRAYFISH HABITAT SURVEY FORM

<table>
<thead>
<tr>
<th>Catchment</th>
<th>Wye</th>
<th>River</th>
<th>Site (no., name)</th>
<th>Date (dd/mm/yy)</th>
<th>Weather, good 1, mod 2, poor 3</th>
<th>Photo ref. &amp; Location</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>01/09/2015</td>
<td></td>
<td>Sg02</td>
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</tbody>
</table>

**Grid ref. (d/s end)**

<table>
<thead>
<tr>
<th>Weather, good 1, mod 2, poor 3</th>
<th>2</th>
<th>1</th>
<th>3</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Flow, norm 1, low 2, fall 3</strong></td>
<td>2</td>
<td>1</td>
<td>4</td>
</tr>
<tr>
<td><strong>Water temp. oC</strong></td>
<td>2</td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td><strong>Clarity, good 1, mod 2, poor 3</strong></td>
<td>2</td>
<td>1</td>
<td>3</td>
</tr>
</tbody>
</table>

**Site length (m)**

<table>
<thead>
<tr>
<th>Site length (m)</th>
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</thead>
</table>

**Width channel (m)**

<table>
<thead>
<tr>
<th>Site length (m)</th>
<th>100</th>
</tr>
</thead>
</table>

**Survey method, std 1, quad 2, net/kick 3, trap 4, view 5**

<table>
<thead>
<tr>
<th>Survey method, std 1, quad 2, net/kick 3, trap 4, view 5</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Details (if not standard)</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Extent (m x m)**

<table>
<thead>
<tr>
<th>Extent (m x m)</th>
<th>3x2</th>
<th>4x3</th>
<th>3x4</th>
<th>6x4</th>
<th>2x2</th>
</tr>
</thead>
</table>

**Channel (1 margins, 2 mid, 3 both, other specify)**

<table>
<thead>
<tr>
<th>Channel (1 margins, 2 mid, 3 both, other specify)</th>
<th>3</th>
<th>1</th>
<th>3</th>
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</thead>
</table>

**Depth (metres)**

<table>
<thead>
<tr>
<th>Depth (metres)</th>
<th>0.1</th>
<th>0.3</th>
<th>0.2</th>
<th>0.3</th>
<th>0.1</th>
</tr>
</thead>
</table>

**Survey method, std 1, quad 2, net/kick 3, trap 4, view 5**

<table>
<thead>
<tr>
<th>Extent (m x m)</th>
<th>3x2</th>
<th>4x3</th>
<th>3x4</th>
<th>6x4</th>
<th>2x2</th>
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</table>

**Samples (if not standard)**

<table>
<thead>
<tr>
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</table>

**Refuges in channel**

<table>
<thead>
<tr>
<th>Refuges in channel</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>cobble (6.5-15cm)</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>cobble (15-25.6cm)</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>boulder (&gt;40cm)</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>rubble (give size)</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>woody debris</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>other urban debris</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>tree roots, fine</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>moss</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>filamentous algae</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>other submerged veg.</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>emergents</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
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</tbody>
</table>

**Refuges in bank**

<table>
<thead>
<tr>
<th>Refuges in bank</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
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<tbody>
<tr>
<td>cobble/boulder</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>tree roots, large</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>vertical or undercut bank</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>other reinforced crayfish burrows</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
</tbody>
</table>

**Shading above**

<table>
<thead>
<tr>
<th>Shading above</th>
<th>HEAVY</th>
<th>MOD</th>
<th>HEAVY</th>
<th>MOD</th>
<th>HEAVY</th>
</tr>
</thead>
<tbody>
<tr>
<td>Crayfish</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Search time (Mins)</td>
<td>5</td>
<td>15</td>
<td>5</td>
<td>15</td>
<td>5</td>
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<tr>
<td>Bullhead present?</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
</tbody>
</table>

**Evaluation crayfish habitat for whole site (a name, pres. 1, freq. 2, absent 3)**

<table>
<thead>
<tr>
<th>Evaluation crayfish habitat for whole site (a name, pres. 1, freq. 2, absent 3)</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>in margins</td>
<td>3</td>
</tr>
<tr>
<td>in mid channel</td>
<td>3</td>
</tr>
<tr>
<td>in banks</td>
<td>3</td>
</tr>
</tbody>
</table>

**Problems**

<table>
<thead>
<tr>
<th>Problems</th>
<th>1</th>
<th>2</th>
</tr>
</thead>
<tbody>
<tr>
<td>pollution</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>alien</td>
<td>YES</td>
<td>YES</td>
</tr>
</tbody>
</table>

**Total crayfish (all methods)**

| Total crayfish (all methods) | 0 |

**Notes** (survey conditions, patches etc.)

- Derelict fish pass
- Wye Sgithwen
- SO 1102 4140
**Crayfish Habitat Survey Form**

<table>
<thead>
<tr>
<th>Catchment</th>
<th>Wye</th>
<th>River</th>
<th>Sgithwen</th>
<th>Site (no., name)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Date (dd/mm/yy)</td>
<td>01/09/2015</td>
<td>Surveyor</td>
<td>DR LW</td>
<td>Grid ref. (d/s end) SO 1054 4135</td>
</tr>
<tr>
<td>Weather, good 1, mod 2, poor 3</td>
<td>2</td>
<td>Flow</td>
<td>norm 1, low 2, fall 3, rise 4</td>
<td>Water temp. oC 12</td>
</tr>
<tr>
<td>Photo ref. &amp; Location</td>
<td>Sg03</td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Site length (m)</td>
<td>100</td>
<td>Width channel (m)</td>
<td>5</td>
<td>Descrip. channel features, underwater</td>
</tr>
</tbody>
</table>

**Survey Method:**
- std 1, quad 2, net/trap 3, view 4

**Details:**
- Extent (l x w patch) | 5x2 | 4x1 | 3x1 | 4x2 | 6x2 |
- 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 |
- Feature (1 marginal, 2 pool, 3 glide, 4 run, 5 riffle) | 3 | 4 | 5 | 4 | 5 |

**Refuges in Channel**
- cobble (6.5-15cm) YES YES YES YES YES
- cobble (15.6-25cm) YES YES YES YES YES
- boulder (>40cm) YES YES YES YES YES
- rubble (give size) YES YES YES YES YES
- woody debris YES YES YES YES YES
- other urban debris YES YES YES YES YES
- tree roots, fine moss YES YES YES YES YES
- filamentous algae YES YES YES YES YES
- other submerged veg. YES YES YES YES YES
- emergents YES YES YES YES YES

**Main Substrate Beneath**
- bedrock YES YES YES YES YES
- cobble (6.5-15cm) YES YES YES YES YES
- pebble (<6.5cm) YES YES YES YES YES
- gravel (<1.6cm) YES YES YES YES YES
- sand (<2mm) YES YES YES YES YES
- clay YES YES YES YES YES

**Situation**
- none YES YES YES YES YES
- low YES YES YES YES YES
- moderate YES YES YES YES YES
- high YES YES YES YES YES

**Refuges in Bank**
- none YES YES
- cobble/boulder YES YES
- tree roots, large YES YES
- vertical or undercut bank YES YES
- dry stone wall YES YES
- other reinforced YES YES
- crayfish burrows YES YES

**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 5 10 5

**Bullhead Present?**
- YES YES

**Evaluation Crayfish Habitat for Whole Site**
- Score Notes (survey conditions, patches etc.)
  - 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)**
- 0

- All patches exhibit excellent habitat
<table>
<thead>
<tr>
<th>Catchment</th>
<th>Wye</th>
<th>River Sgithwen</th>
<th>Site (no., name)</th>
</tr>
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<tbody>
<tr>
<td>Date (dd/mm/yy)</td>
<td>02/09/2015</td>
<td>Surveyor DR LW</td>
<td>Grid ref. SO 1016 4091</td>
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<tr>
<td>Weather, good 1, mod 2, poor 3</td>
<td>Flow norm 1, low 2, fall 3, rise 4</td>
<td>Water temp. 0°C 2, good 1, mod 3, poor 3</td>
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<td>Site length (m)</td>
<td>100</td>
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<td></td>
</tr>
<tr>
<td>Width channel (m)</td>
<td>5</td>
<td>Urban and wooded. Riffle upstream of waterfalls. Access good via road to house</td>
<td></td>
</tr>
<tr>
<td>Survey method, std 1, quad 2, net/kick 3, trap 4, view 5</td>
<td>Details (if not standard)</td>
<td>Extent (l x w patch)</td>
<td>3x1</td>
</tr>
<tr>
<td>Channel (1 margins, 2 mid, 3 both, other specify)</td>
<td>3</td>
<td>3</td>
<td>1</td>
</tr>
<tr>
<td>Depth (metres)</td>
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<td>0.3</td>
<td>0.2</td>
</tr>
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<td>Habitat (1 marg. weather, 2 flow, 3 grad. 4 run, 5 riffle)</td>
<td>4</td>
<td>3</td>
<td>5</td>
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<tr>
<td>Refuges in channel</td>
<td>ick all present in patch, main type(s) searched in red</td>
<td>yes</td>
<td>yes</td>
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<tr>
<td>cobble (6.5-15cm)</td>
<td>yes</td>
<td>yes</td>
<td>yes</td>
</tr>
<tr>
<td>cobble (15-25.6cm)</td>
<td>yes</td>
<td>yes</td>
<td>yes</td>
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<tr>
<td>boulder (25.6-40cm)</td>
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<td>yes</td>
<td>yes</td>
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<tr>
<td>boulder (&gt;40cm)</td>
<td>yes</td>
<td>yes</td>
<td>yes</td>
</tr>
<tr>
<td>rubble (give size)</td>
<td>yes</td>
<td>yes</td>
<td>yes</td>
</tr>
<tr>
<td>woody debris</td>
<td>yes</td>
<td>yes</td>
<td>yes</td>
</tr>
<tr>
<td>other urban debris</td>
<td>yes</td>
<td>yes</td>
<td>yes</td>
</tr>
<tr>
<td>tree roots, fine</td>
<td>yes</td>
<td>yes</td>
<td>yes</td>
</tr>
<tr>
<td>moss</td>
<td>yes</td>
<td>yes</td>
<td>yes</td>
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<tr>
<td>filamentous algae</td>
<td>yes</td>
<td>yes</td>
<td>yes</td>
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<tr>
<td>other submerged veg.</td>
<td>yes</td>
<td>yes</td>
<td>yes</td>
</tr>
<tr>
<td>emergents</td>
<td>yes</td>
<td>yes</td>
<td>yes</td>
</tr>
<tr>
<td>Main substrate beneath</td>
<td>yes</td>
<td>yes</td>
<td>yes</td>
</tr>
<tr>
<td>bedrock</td>
<td>yes</td>
<td>yes</td>
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<tr>
<td>cobble (6.5-15cm)</td>
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<td>yes</td>
<td>yes</td>
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<tr>
<td>pebble (&gt;5.5cm)</td>
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<td>yes</td>
<td>yes</td>
</tr>
<tr>
<td>gravel (&lt;1.6cm)</td>
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<td>yes</td>
<td>yes</td>
</tr>
<tr>
<td>sand (&lt;2mm)</td>
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<td>yes</td>
<td>yes</td>
</tr>
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<td>silt</td>
<td>yes</td>
<td>yes</td>
<td>yes</td>
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<tr>
<td>Siltation</td>
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</tr>
<tr>
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<td>high</td>
<td>yes</td>
<td>yes</td>
</tr>
<tr>
<td>Refuges in bank</td>
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<td>yes</td>
<td>yes</td>
</tr>
<tr>
<td>cobble/boulder</td>
<td>yes</td>
<td>yes</td>
<td>yes</td>
</tr>
<tr>
<td>tree roots, large</td>
<td>yes</td>
<td>yes</td>
<td>yes</td>
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<tr>
<td>vertical or undercut bank</td>
<td>yes</td>
<td>yes</td>
<td>yes</td>
</tr>
<tr>
<td>dry stone wall</td>
<td>yes</td>
<td>yes</td>
<td>yes</td>
</tr>
<tr>
<td>other reinforced</td>
<td>yes</td>
<td>yes</td>
<td>yes</td>
</tr>
<tr>
<td>crayfish burrows</td>
<td>yes</td>
<td>yes</td>
<td>yes</td>
</tr>
<tr>
<td>Shading above</td>
<td>HEAVY</td>
<td>HEAVY</td>
<td>HEAVY</td>
</tr>
<tr>
<td>Crayfish /10 refuges, or per</td>
<td>0</td>
<td>0</td>
<td>0</td>
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<tr>
<td>unit (depending on method)</td>
<td>Search time (Mins)</td>
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<td>5</td>
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<tr>
<td>Bullhead present?</td>
<td>yes</td>
<td>yes</td>
<td>yes</td>
</tr>
<tr>
<td>Evaluation crayfish habitat for whole site</td>
<td>Score</td>
<td>Notes (survey conditions, patches etc.):</td>
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<tr>
<td>(0 none, 1 pres., 2 freq., 3 abounds)</td>
<td>in margins</td>
<td>3</td>
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<tr>
<td>in mid channel</td>
<td>3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>in banks</td>
<td>3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>surveyability</td>
<td>3</td>
<td></td>
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<tr>
<td>Problems pollution 1, erosion 2, (E if &gt;50% affected), aliens 3.</td>
<td>Total crayfish (all methods)</td>
<td>0</td>
<td></td>
</tr>
</tbody>
</table>
**CRAYFISH HABITAT SURVEY FORM**

| Catchment | Wye | River | Site (no., name) | Date (dd/mm/yy) | Surveyor | Grid ref. | Weather, good 1, mod 2, poor 3 | Photo ref. & Location | Site length (m) | Width channel (m) | Survey method, std 1, quad 2, net/kick 3, trap 4, view 5 | Details (if not standard) | Extent (l 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 | Main substrate beneath | Siltation | Refuges in bank | Shading above | Crayfish present? | Evaluation crayfish habitat for whole site (0 none, 1 pres., 2 freq., 3 abud.) | Notes (survey conditions, patches etc.) | Problems | Total crayfish (all methods) |
|-----------|-----|-------|-----------------|----------------|-----------|---------|-------------------------------|---------------------|----------------|-----------------|-----------------------------------------------|-----------------------------|---------------------|-----------------------------------------------|----------------|---------------------------------|-------------------|---------------------|----------------|-------------------|-----------------------|---------------------|-----------------------|
| Catchment | Wye | River | Site (no., name) | Date (dd/mm/yy) | Surveyor | Grid ref. | Weather, good 1, mod 2, poor 3 | Photo ref. & Location | Site length (m) | Width channel (m) | Survey method, std 1, quad 2, net/kick 3, trap 4, view 5 | Details (if not standard) | Extent (l 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 | Main substrate beneath | Siltation | Refuges in bank | Shading above | Crayfish present? | Evaluation crayfish habitat for whole site (0 none, 1 pres., 2 freq., 3 abud.) | Notes (survey conditions, patches etc.) | Problems | Total crayfish (all methods) |
| Wye       |    |       | Wye Sgithwén    | 02/09/2015     | DR LW    | SO 0948 4084 | 1, low 2, fall 3, rise 4 | Sg05                | 100              | 6                | 1 & 4, 1 & 4, 1 & 4, 1 & 4, 1 & 4, 1 & 4        | 2x2, 3x2, 3x1, 2x2, 5x2        | 1 & 4, 1 & 4, 1 & 4, 1 & 4, 1 & 4, 1 & 4        | 0.4                | 0.2                | 0.3                | 0.2                | 0.3                | 2                  | 4                  | 2                  | 4                  | 2                  | 5                  | 10                 | 5                  | 5                  | 10                 | 10                 | 0                  |
| Wye       |    |       | Wye Sgithwén    | 02/09/2015     | DR LW    | SO 0948 4084 | 1, low 2, fall 3, rise 4 | Sg05                | 100              | 6                | 1 & 4, 1 & 4, 1 & 4, 1 & 4, 1 & 4        | 2x2, 3x2, 3x1, 2x2, 5x2        | 1 & 4, 1 & 4, 1 & 4, 1 & 4, 1 & 4        | 0.4                | 0.2                | 0.3                | 0.2                | 0.3                | 2                  | 4                  | 2                  | 4                  | 2                  | 5                  | 10                 | 5                  | 5                  | 10                 | 10                 | 0                  |

Additional notes:
- Woodland adjacent to river then grazing.
- Access from roadbridge.
- Surveyor: DR LW
- Grid ref.: SO 0948 4084
<table>
<thead>
<tr>
<th>Catchment</th>
<th>Wye</th>
<th>River</th>
<th>Sgithwen</th>
<th>Site (no., name)</th>
<th>6</th>
</tr>
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</table>

<table>
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<th>Date (dd/mm/yy)</th>
<th>02/09/2015</th>
<th>Surveyor(s)</th>
<th>DR LW</th>
<th>Grid ref. (d/s end)</th>
<th>SO 0902 4048</th>
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| Weather, good 1, mod 2, poor 3 | Flood, norm 1, low 2, fast 4 | Water temp, oC | 12 | Clarity, good 1, mod 2, poor 3 | 1 |

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<th>Site length (m)</th>
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<table>
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<th>Width channel (m)</th>
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<table>
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<th>Survey method, std 1, quad 2, net/kick 3, trap 4, view 5</th>
<th>Details (if not standard)</th>
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<tr>
<td>sample patch 1</td>
<td>sample patch 2</td>
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<table>
<thead>
<tr>
<th>Extent (l x w patch)</th>
<th>4x1</th>
<th>4x1</th>
<th>2x2</th>
<th>2x2</th>
<th>4x2</th>
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<table>
<thead>
<tr>
<th>Channel features, (landuse)</th>
<th>1 &amp; 4</th>
<th>1 &amp; 4</th>
<th>1 &amp; 4</th>
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</table>

<table>
<thead>
<tr>
<th>Refuges in channel</th>
<th>cobble (6.5-15cm)</th>
<th>YES</th>
<th>YES</th>
<th>YES</th>
<th>YES</th>
<th>YES</th>
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<tbody>
<tr>
<td></td>
<td>cobble (15-25.6cm)</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td></td>
<td>boulder (25.6-40cm)</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td></td>
<td>boulder (&gt;40cm)</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td></td>
<td>rubble (give size)</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td></td>
<td>woody debris</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td></td>
<td>other urban debris</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td></td>
<td>tree roots, fine</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
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<tr>
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<td>YES</td>
<td>YES</td>
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<td>filamentous algae</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
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<td></td>
<td>other submerged veg.</td>
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<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
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<td>YES</td>
<td>YES</td>
<td>YES</td>
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<table>
<thead>
<tr>
<th>Main substrate beneath</th>
<th>bedrock</th>
<th>YES</th>
<th>YES</th>
<th>YES</th>
<th>YES</th>
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<td>cobble (6.5-15cm)</td>
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<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td></td>
<td>pebble (&lt;6.5cm)</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
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<td>gravel (&lt;1.6cm)</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
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<td>sand (&lt;2mm)</td>
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<td>YES</td>
<td>YES</td>
<td>YES</td>
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<td>silt</td>
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<td>clay</td>
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| Siltation | none | low | moderate | high | YES | YES | YES | YES | YES |

<table>
<thead>
<tr>
<th>Refuges in bank</th>
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<th>YES</th>
<th>YES</th>
<th>YES</th>
<th>YES</th>
<th>YES</th>
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<tbody>
<tr>
<td></td>
<td>cobble/boulder</td>
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<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td></td>
<td>tree roots, large</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td></td>
<td>vertical or undercut bank</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td></td>
<td>dry stone wall</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td></td>
<td>other reinforced crayfish burrows</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
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<thead>
<tr>
<th>Shading above</th>
<th>HEAVY</th>
<th>HEAVY</th>
<th>HEAVY</th>
<th>HEAVY</th>
<th>HEAVY</th>
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<table>
<thead>
<tr>
<th>Crayfish (no refuges, or per unit (depending on method)</th>
<th>0</th>
<th>2</th>
<th>0</th>
<th>0</th>
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<tr>
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<th>10</th>
<th>5</th>
<th>10</th>
<th>5</th>
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<table>
<thead>
<tr>
<th>Bullhead present?</th>
<th>YES</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Evaluation crayfish habitat for whole site (i.e., name, 1 pres., 2 freq., 3 absents)</th>
<th>Score</th>
<th>Notes (survey conditions, patches etc.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>in margins</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>in mid channel</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>in banks</td>
<td>3</td>
<td></td>
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<table>
<thead>
<tr>
<th>Problems</th>
<th>pollution 1, erosion 2, if &gt;33% affected, alien 3.</th>
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| Total crayfish (all methods) | 2 |

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<table>
<thead>
<tr>
<th>Catchment</th>
<th>Wye</th>
<th>River</th>
<th>Site (no., name)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Date (dd/mm/yy)</td>
<td>02/09/2015</td>
<td>Surveyor</td>
<td>DR LW</td>
</tr>
<tr>
<td>Weather, good 1, mod 2, poor 3</td>
<td>Flow, norm 1, low 2, fall 3, rise 4</td>
<td>Water temp. 6C</td>
<td>Clarify, good 1, mod 2, poor 3</td>
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<td>Photo ref. &amp; Location</td>
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<tr>
<td>Width channel (m)</td>
<td>3</td>
<td>Wooded banks with surrounding grazing. Access good via road bridge.</td>
<td></td>
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<td>Survey method, std 1, quad 2, net/kick 3, trap 4, view 5</td>
<td>Survey details (if not standard)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Extent (l x w patch)</td>
<td>3x2</td>
<td>3x4</td>
<td>5x1</td>
</tr>
<tr>
<td>Channel (1 margins, 2 mid, 3 both, other specify)</td>
<td>2</td>
<td>3</td>
<td>1</td>
</tr>
<tr>
<td>Depth (metres)</td>
<td>0.2</td>
<td>0.3</td>
<td>0.2</td>
</tr>
<tr>
<td>Feature (1 marg. water, 2 pool, 3 glide, 4 run, 5 riffle)</td>
<td>3</td>
<td>4</td>
<td>3</td>
</tr>
<tr>
<td>Refuges in channel (tick all present in patch, main type(s) searched in red)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>cobble (6.5-15cm)</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>cobble (15.6-25.6cm)</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>boulder (25.6-40cm)</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>boulder (&gt;40cm)</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>rubble (give size)</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>woody debris</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>other urban debris</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>tree roots, line</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>moss</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>filamentous algae</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>other submerged veg. emergents</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>Main substrate beneath</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>bedrock</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>cobble (6.5-15cm)</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>pebble (&lt;6.5cm)</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>gravel (&lt;1.6cm)</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>sand (&lt;2mm)</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>clay silt</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>Situation</td>
<td>low</td>
<td>moderate</td>
<td>high</td>
</tr>
<tr>
<td>Refuges in bank none</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>cobbles/boulder</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>tree roots, large</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>vertical or undercut bank</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>dry stone wall</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>other reinforced</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>crayfish burrows</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>Shading above</td>
<td>HEAVY</td>
<td>HEAVY</td>
<td>HEAVY</td>
</tr>
<tr>
<td>Crayfish habitat for whole site in margins</td>
<td>7</td>
<td>0</td>
<td>3</td>
</tr>
<tr>
<td>Search time (Mins)</td>
<td>10</td>
<td>5</td>
<td>10</td>
</tr>
<tr>
<td>Bullhead present?</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>Evaluation crayfish habitat for whole site in margins, 2 freq., 3 abundant</td>
<td>Score</td>
<td>Notes (survey conditions, patches etc.)</td>
<td></td>
</tr>
<tr>
<td>Problems pollution 1, erosion 2, (E if &gt;33% affected), aliens 3.</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>Total crayfish (all methods)</td>
<td>13</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Wye Sgithwen SO 0861 4025
Wooded banks with surrounding grazing. Access good via road bridge.
<table>
<thead>
<tr>
<th>Catchment</th>
<th>Wye</th>
<th>River</th>
<th>Spithwen</th>
<th>Date (dd/mm/yy)</th>
<th>Surveyor</th>
<th>Weather, 1, mod 2, poor 3</th>
<th>Water temp. °C</th>
<th>Clarity, 1, mod 2, poor 3</th>
<th>Grid ref. (d/s end)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>03/09/2015</td>
<td>DR LW</td>
<td>1, low 2, fall 3</td>
<td>12</td>
<td>1</td>
<td>SO 0823 3995</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Photo ref. &amp; Location</th>
<th>Sg08</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Site length (m)</th>
<th>100</th>
</tr>
</thead>
</table>

| Width channel (m) | 4 |

<table>
<thead>
<tr>
<th>Survey method, std 1, quad 2, net/kick 3, trap 4, view 5</th>
<th>sample patch 1</th>
<th>sample patch 2</th>
<th>sample patch 3</th>
<th>sample patch 4</th>
<th>sample patch 5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Descript. (channel features, landuse)</td>
<td>1 &amp; 4</td>
<td>1 &amp; 4</td>
<td>1 &amp; 4</td>
<td>1 &amp; 4</td>
<td>1 &amp; 4</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Details (if not standard)</th>
<th>Extent (l x w patch)</th>
<th>Channel (1 margins, 2 mid, 3 both, other specify)</th>
<th>Depth (metres)</th>
<th>Feature (1 marg. water, 2 pool, 3 glide, 4 run, 5 riffle)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2x2</td>
<td>3</td>
<td>0.2</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>2x4</td>
<td>3</td>
<td>0.2</td>
<td>5</td>
</tr>
<tr>
<td></td>
<td>3x2</td>
<td>3</td>
<td>0.2</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>5x1</td>
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<tr>
<td></td>
<td>2x2</td>
<td>2</td>
<td>0.3</td>
<td>3</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Refuges in channel</th>
<th>cobble (6.5-15cm)</th>
<th>YES</th>
<th>YES</th>
<th>YES</th>
<th>YES</th>
<th>YES</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>pebble (&lt;6.5cm)</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td></td>
<td>gravel (&lt;1.6cm)</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td></td>
<td>sand (&lt;2mm)</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td></td>
<td>clay silt</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Main substrate beneath</th>
<th>bedrock</th>
<th>YES</th>
<th>YES</th>
<th>YES</th>
<th>YES</th>
<th>YES</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>pebble (6.5-15cm)</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td></td>
<td>gravel (&lt;1.6cm)</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td></td>
<td>sand (&lt;2mm)</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td></td>
<td>clay silt</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Siltation</th>
<th>none</th>
<th>YES</th>
<th>YES</th>
<th>YES</th>
<th>YES</th>
<th>YES</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>low</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td></td>
<td>high</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Refuges in bank</th>
<th>cobble/boulder</th>
<th>YES</th>
<th>YES</th>
<th>YES</th>
<th>YES</th>
<th>YES</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>tree roots, large</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td></td>
<td>vertical or undercut bank</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td></td>
<td>dry stone wall</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td></td>
<td>other reinforced crayfish burrows</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Shading above</th>
<th>HEAVY</th>
<th>HEAVY</th>
<th>HEAVY</th>
<th>HEAVY</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Crayfish/10 refuges, or per unit (depending on method)</th>
<th>3</th>
<th>2</th>
<th>0</th>
<th>2</th>
<th>0</th>
</tr>
</thead>
<tbody>
<tr>
<td>Search time (Mins)</td>
<td>5</td>
<td>10</td>
<td>5</td>
<td>5</td>
<td>5</td>
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</table>

<table>
<thead>
<tr>
<th>Bullhead present?</th>
<th>YES</th>
<th>YES</th>
<th>YES</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Evaluation crayfish habitat for whole site</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>(0 none, 1 pres., 2 freq., 3 abund.)</td>
<td></td>
</tr>
<tr>
<td>in margins</td>
<td>3</td>
</tr>
<tr>
<td>in mid channel</td>
<td>3</td>
</tr>
<tr>
<td>in banks</td>
<td>3</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Problems</th>
<th>pollution 1, erosion 2, (E if &gt;33% affected), aliens 3, surveyability 3</th>
</tr>
</thead>
</table>

| Total crayfish (all methods) | 7 |
**CRAYFISH HABITAT SURVEY FORM**

<table>
<thead>
<tr>
<th>Catchment</th>
<th>Wye</th>
<th>River</th>
<th>Sgithwen</th>
<th>Site (no., name)</th>
<th>9</th>
</tr>
</thead>
<tbody>
<tr>
<td>Date (dd/mm/yy)</td>
<td>16/10/2014</td>
<td>Surveyors</td>
<td>DR LW</td>
<td>Grid ref.</td>
<td>SO 08312 40030</td>
</tr>
<tr>
<td>Weather, good 1, mod 2, poor 3</td>
<td>1</td>
<td>Flow</td>
<td>norm 1, low 2, fall 3, rise 4</td>
<td>1</td>
<td>Start and finish time</td>
</tr>
<tr>
<td>Photo ref. &amp; Location</td>
<td>Immediately downstream of 1st 100m</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Site length (m)</td>
<td>100</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Width channel (m)</td>
<td>4</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Descript. (channel features, landuse)</td>
<td>Land use - woodland, grazing. Access - roadbridge at downstream end. Series of bedrock waterfalls, pools and stoney areas.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Survey method, std 1, quad 2, net/kick 3, trap 4, view 5</th>
<th>sample patch 1</th>
<th>sample patch 2</th>
<th>sample patch 3</th>
<th>sample patch 4</th>
<th>sample patch 5</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 &amp; 4</td>
<td>1 &amp; 4</td>
<td>1 &amp; 4</td>
<td>1 &amp; 4</td>
<td>1 &amp; 4</td>
<td></td>
</tr>
<tr>
<td>Details (if not standard)</td>
<td>Extent (l x w patch)</td>
<td>3x2</td>
<td>6x1</td>
<td>6x1</td>
<td>6x1</td>
</tr>
<tr>
<td>Channel (1 margins, 2 mid, 3 both, other specify)</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>Depth (metres)</td>
<td>0.2</td>
<td>0.2</td>
<td>0.3</td>
<td>0.2</td>
<td>0.3</td>
</tr>
<tr>
<td>Feature (1 marg, d'water, 2 pool, 3 glide, 4 run, 5 riffle)</td>
<td>4</td>
<td>4</td>
<td>4</td>
<td>4</td>
<td>4</td>
</tr>
</tbody>
</table>

**Refuges in channel**

<table>
<thead>
<tr>
<th>cobble (6.5-15cm)</th>
<th>YES</th>
<th>YES</th>
<th>YES</th>
<th>YES</th>
<th>YES</th>
</tr>
</thead>
<tbody>
<tr>
<td>cobble (15-25.6cm)</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>boulder (25.6-40cm)</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>boulder (&gt;40cm)</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>rubble (give size)</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>woody debris</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>other urban debris</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>tree roots, fine moss</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>YES</td>
</tr>
<tr>
<td>filamentous algae</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>other submerged veg.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>emergents</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Main substrate beneath**

<table>
<thead>
<tr>
<th>bedrock</th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
</table>

---

---
<table>
<thead>
<tr>
<th>cobble (6.5-15cm)</th>
<th>pebble (&lt;6.5cm)</th>
<th>gravel (&lt;1.6cm)</th>
<th>sand (&lt;2mm)</th>
<th>clay</th>
<th>silt</th>
</tr>
</thead>
<tbody>
<tr>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>Siltation</td>
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<td>none</td>
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<tr>
<td>moderate</td>
<td>high</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>Refuges in bank</td>
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<td></td>
<td></td>
</tr>
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<td>none</td>
<td>YES</td>
<td>YES</td>
<td></td>
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<td></td>
</tr>
<tr>
<td>cobble/boulder</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>tree roots, large</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>vertical or undercut bank</td>
<td></td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>dry stone wall</td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>other reinforced</td>
<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>crayfish burrows</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Shading above</td>
<td>LIGHT</td>
<td>LIGHT</td>
<td>LIGHT</td>
<td>LIGHT</td>
<td>LIGHT</td>
</tr>
<tr>
<td>Crayfish manually</td>
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</tr>
<tr>
<td>Crayfish by trap</td>
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</tr>
<tr>
<td>Total crayfish caught</td>
<td>4</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Evaluation crayfish habitat for whole site (0 none, 1 pres., 2 freq., 3 abund.)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>in margins</td>
<td>3</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>in mid channel</td>
<td>3</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>in banks</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>surveyability</td>
<td>3</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Problems pollution 1, erosion 2, (E if &gt;33% affected), aliens 3.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total crayfish (by 1 method, note total(s) by other methods in notes if applicable)</td>
<td>7</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Notes (survey conditions, patches etc.): Stock access throughout.
### CRAYFISH HABITAT SURVEY FORM

<table>
<thead>
<tr>
<th>Catchment</th>
<th>River</th>
<th>Site (no., name)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wye</td>
<td>Sgithwen</td>
<td>10</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Date (dd/mm/yy)</th>
<th>Surveyors</th>
<th>Grid ref.</th>
</tr>
</thead>
<tbody>
<tr>
<td>16/10/2014</td>
<td>DR LW</td>
<td>SO 07659 39571</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Weather, good 1, mod 2, poor 3</th>
<th>Flow norm 1, low 2, fall 3, rise 4</th>
<th>Start and finish time</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>1</td>
<td>1300-1500</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Photo ref. &amp; Location</th>
<th>400m mark</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Site length (m)</th>
<th>Width channel (m)</th>
</tr>
</thead>
<tbody>
<tr>
<td>100</td>
<td>3</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Descript. (channel features, landuse)</th>
<th>Land use - agricultural. Easy access via road bridge</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Survey method, std 1, quad 2, net/kick 3, trap 4, view 5</th>
<th>1 &amp; 4</th>
<th>1 &amp; 4</th>
<th>1 &amp; 4</th>
<th>1 &amp; 4</th>
<th>1 &amp; 4</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Details (if not standard)</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Extent (l x w patch)</th>
<th>5x1</th>
<th>7x2</th>
<th>7x2</th>
<th>5x2</th>
<th>7x1</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Channel (1 margins, 2 mid, 3 both, other specify)</th>
<th>1</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>3</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Depth (metres)</th>
<th>0.4</th>
<th>0.2</th>
<th>0.3</th>
<th>0.3</th>
<th>0.3</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Feature (1 marg. d’water, 2 pool, 3 glide, 4 run, 5 riffle)</th>
<th>4</th>
<th>4</th>
<th>5</th>
<th>5</th>
<th>4</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Refuges in channel tick all present in patch.main type(s) searched in red</th>
</tr>
</thead>
<tbody>
<tr>
<td>cobble (6.5-15cm)</td>
</tr>
<tr>
<td>cobble (15-25.6cm)</td>
</tr>
<tr>
<td>boulder (25.6-40cm)</td>
</tr>
<tr>
<td>boulder (&gt;40cm)</td>
</tr>
<tr>
<td>rubble (give size)</td>
</tr>
<tr>
<td>woody debris</td>
</tr>
<tr>
<td>other urban debris</td>
</tr>
<tr>
<td>tree roots, fine moss</td>
</tr>
<tr>
<td>filamentous algae</td>
</tr>
<tr>
<td>other submerged veg.</td>
</tr>
<tr>
<td>emergents</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Main substrate beneath</th>
</tr>
</thead>
</table>

| bedrock | YES | YES | YES | YES | YES |

<p>| cobble (6.5-15cm) | YES | YES | YES | YES | YES |</p>
<table>
<thead>
<tr>
<th>pebble (&lt;6.5cm)</th>
<th>gravel (&lt;1.6cm)</th>
<th>sand (&lt;2mm)</th>
<th>clay</th>
<th>silt</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Siltation</th>
</tr>
</thead>
<tbody>
<tr>
<td>none</td>
</tr>
<tr>
<td>low</td>
</tr>
<tr>
<td>moderate</td>
</tr>
<tr>
<td>high</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Refuges in bank</th>
</tr>
</thead>
<tbody>
<tr>
<td>none</td>
</tr>
<tr>
<td>cobble/boulder</td>
</tr>
<tr>
<td>tree roots, large vertical or undercut bank</td>
</tr>
<tr>
<td>dry stone wall</td>
</tr>
<tr>
<td>other reinforced crayfish burrows</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Shading above</th>
</tr>
</thead>
<tbody>
<tr>
<td>MOD</td>
</tr>
<tr>
<td>HEAVY</td>
</tr>
<tr>
<td>MOD</td>
</tr>
<tr>
<td>HEAVY</td>
</tr>
<tr>
<td>HEAVY</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Crayfish manually</th>
<th>0</th>
<th>0</th>
<th>1</th>
<th>0</th>
<th>0</th>
</tr>
</thead>
<tbody>
<tr>
<td>Crayfish by trap</td>
<td>3</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

| Total crayfish caught | 4 |

**Evaluation crayfish habitat for whole site (0 none, 1 pres., 2 freq., 3 abund.)**

<table>
<thead>
<tr>
<th>Score</th>
<th>Notes (survey conditions, patches etc.): Excellent habitat throughout</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td></td>
</tr>
</tbody>
</table>

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
# CRAYFISH HABITAT SURVEY FORM

<table>
<thead>
<tr>
<th>Catchment</th>
<th>Wye</th>
<th>River</th>
<th>Spithwen</th>
<th>Site (no., name)</th>
<th>11</th>
</tr>
</thead>
<tbody>
<tr>
<td>Date (dd/mm/yy)</td>
<td>16/10/2014</td>
<td>Surveyors</td>
<td>DR LW</td>
<td>Grid ref.</td>
<td>SO 06970 39107</td>
</tr>
<tr>
<td>Weather, good 1, mod 2, poor 3</td>
<td></td>
<td>Flow norm 1, low 2, fall 3, rise 4</td>
<td></td>
<td>Start and finish time</td>
<td>1100-1300</td>
</tr>
<tr>
<td>Photo ref. &amp; Location</td>
<td>In 1st 100m</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Site length (m)</td>
<td>100</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Width channel (m)</td>
<td>2.5</td>
<td>Descript. (channel features, landuse)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Land use - woodland. Access from roadbridge in Site 10</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Survey method, std 1, quad 2, net/kick 3, trap 4, view 5</th>
<th>sample patch 1</th>
<th>sample patch 2</th>
<th>sample patch 3</th>
<th>sample patch 4</th>
<th>sample patch 5</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 &amp; 4</td>
<td>1 &amp; 4</td>
<td>1 &amp; 4</td>
<td>1 &amp; 4</td>
<td>1 &amp; 4</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Extent (l x w patch)</th>
<th>2x2</th>
<th>4x2</th>
<th>3x2</th>
<th>8x1</th>
<th>10x1</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Channel (1 margins, 2 mid, 3 both, other specify)</th>
<th>1</th>
<th>1</th>
<th>2</th>
<th>2</th>
<th>3</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Depth (metres)</th>
<th>0.2</th>
<th>0.2</th>
<th>0.2</th>
<th>0.3</th>
<th>0.2</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Feature (1 marg. d'water, 2 pool, 3 glide, 4 run, 5 riffle)</th>
<th>5</th>
<th>4</th>
<th>4</th>
<th>5</th>
<th>5</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Refuges in channel</th>
<th>tick all present in patch, main type(s) searched in red</th>
</tr>
</thead>
<tbody>
<tr>
<td>cobble (6.5-15cm)</td>
<td>YES</td>
</tr>
<tr>
<td>cobble (15-25.6cm)</td>
<td>YES</td>
</tr>
<tr>
<td>boulder (25.6-40cm)</td>
<td>YES</td>
</tr>
<tr>
<td>boulder (&gt;40cm)</td>
<td>YES</td>
</tr>
<tr>
<td>rubble (give size)</td>
<td>YES</td>
</tr>
<tr>
<td>woody debris</td>
<td>YES</td>
</tr>
<tr>
<td>other urban debris</td>
<td></td>
</tr>
<tr>
<td>tree roots, fine moss</td>
<td></td>
</tr>
<tr>
<td>filamentous algae</td>
<td></td>
</tr>
<tr>
<td>other submerged veg.</td>
<td></td>
</tr>
<tr>
<td>emergents</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Main substrate beneath</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>bedrock</td>
<td>YES</td>
</tr>
<tr>
<td>cobble (6.5-15cm)</td>
<td>YES</td>
</tr>
<tr>
<td>Pebble (&lt;6.5cm)</td>
<td>Gravel (&lt;1.6cm)</td>
</tr>
<tr>
<td>----------------</td>
<td>-----------------</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Notes (survey conditions, patches etc.): Excellent habitat

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
CRAYFISH HABITAT SURVEY FORM

<table>
<thead>
<tr>
<th>Catchment</th>
<th>Wye</th>
<th>River</th>
<th>Spithwen</th>
<th>Site (no., name)</th>
<th>12</th>
</tr>
</thead>
<tbody>
<tr>
<td>Date (dd/mm/yy)</td>
<td>16/10/2014</td>
<td>Surveyors</td>
<td>DR LW</td>
<td>Grid ref.</td>
<td>SO 06541 38597</td>
</tr>
<tr>
<td>Weather, good 1, mod 2, poor 3</td>
<td>Flow norm</td>
<td>1</td>
<td>1, low 2, fall 3, rise 4</td>
<td>1</td>
<td>Start and finish time</td>
</tr>
<tr>
<td>Photo ref. &amp; Location</td>
<td>Mid point of site</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Site length (m)</td>
<td>100</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Width channel (m)</td>
<td>3</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Descript. (channel features, landuse)</td>
<td>Land use - woodland and village. Access via roadbridge.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Survey method, std 1, quad 2, net/kick 3, trap 4, view 5</th>
<th>sample patch 1</th>
<th>sample patch 2</th>
<th>sample patch 3</th>
<th>sample patch 4</th>
<th>sample patch 5</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 &amp; 4</td>
<td>1 &amp; 4</td>
<td>1 &amp; 4</td>
<td>1 &amp; 4</td>
<td>1 &amp; 4</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Details (if not standard)</th>
<th>Extent (l x w patch)</th>
<th>3x2</th>
<th>4x2</th>
<th>6x2</th>
<th>5x1</th>
<th>3x1</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Channel (1 margins, 2 mid, 3 both, other specify)</th>
<th>2</th>
<th>1</th>
<th>3</th>
<th>1</th>
<th>3</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Depth (metres)</th>
<th>0.2</th>
<th>0.2</th>
<th>0.2</th>
<th>0.2</th>
<th>0.2</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Feature (1 marg. d'water, 2 pool, 3 glide, 4 run, 5 rifle)</th>
<th>4</th>
<th>4</th>
<th>4</th>
<th>4</th>
<th>4</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Refuges in channel</th>
<th>tick all present in patch, main type(s) searched in red</th>
</tr>
</thead>
<tbody>
<tr>
<td>cobble (6.5-15cm)</td>
<td>YES</td>
</tr>
<tr>
<td>cobble (15-25.6cm)</td>
<td>YES</td>
</tr>
<tr>
<td>boulder (25.6-40cm)</td>
<td>YES</td>
</tr>
<tr>
<td>boulder (&gt;40cm)</td>
<td>YES</td>
</tr>
<tr>
<td>rubble (give size)</td>
<td>YES</td>
</tr>
<tr>
<td>woody debris</td>
<td>YES</td>
</tr>
<tr>
<td>tree roots, fine</td>
<td>YES</td>
</tr>
<tr>
<td>moss</td>
<td>YES</td>
</tr>
<tr>
<td>filamentous algae</td>
<td>YES</td>
</tr>
<tr>
<td>other submerged veg.</td>
<td>YES</td>
</tr>
<tr>
<td>emergents</td>
<td>YES</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Main substrate beneath</th>
<th>bedrock</th>
<th>cobble (6.5-15cm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>Pebble (&lt;6.5cm)</td>
<td>Gravel (&lt;1.6cm)</td>
<td>Sand (&lt;2mm)</td>
</tr>
<tr>
<td>-----------------</td>
<td>-----------------</td>
<td>-------------</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Siltation</th>
<th>None</th>
<th>Low</th>
<th>Moderate</th>
<th>High</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Refuges in bank</th>
<th>None</th>
<th>Cobble/boulder</th>
<th>Tree roots, large vertical or undercut bank</th>
<th>Dry stone wall</th>
<th>Other reinforced crayfish burrows</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>YES</td>
<td>YES</td>
<td>YE3</td>
<td>YES</td>
</tr>
</tbody>
</table>

| Shading above   | HEAVY           | HEAVY         | HEAVY                                        | HEAVY         | HEAVY                            |

<table>
<thead>
<tr>
<th>Crayfish manually</th>
<th>Crayfish by trap</th>
<th>Total crayfish caught</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Evaluation crayfish habitat for whole site (0 none, 1 pres., 2 freq., 3 abund.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Score</td>
</tr>
<tr>
<td>in margins</td>
</tr>
<tr>
<td>in mid channel</td>
</tr>
<tr>
<td>in banks</td>
</tr>
<tr>
<td>surveyability</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Problems pollution, erosion, aliens</th>
</tr>
</thead>
<tbody>
<tr>
<td>污染1, 蚯2. (E if &gt;33% affected), aliens 3.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Total crayfish (by 1 method, note total(s) by other methods in notes if applicable)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
</tr>
</tbody>
</table>

Notes (survey conditions, patches etc.):
## CRAYFISH HABITAT SURVEY FORM

<table>
<thead>
<tr>
<th>Catchment</th>
<th>River</th>
<th>Site (no., name)</th>
<th>Grid ref.</th>
<th>Date (dd/mm/yy)</th>
<th>Surveyors</th>
<th>Weather, good 1, mod 2, poor 3</th>
<th>Flow norm</th>
<th>Start and finish time</th>
<th>Grid ref.</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wye</td>
<td>Sgithwen</td>
<td>13</td>
<td>SO 06010 38645</td>
<td>15/10/2014</td>
<td>DR LW</td>
<td>1, low 2, fall 3, rise 4</td>
<td>1</td>
<td>1500-1700</td>
<td></td>
<td>Towards upstream end of site</td>
</tr>
</tbody>
</table>

- **Site length (m)**: 100
- **Width channel (m)**: 1.5

### Descript.
- **Land use**: Grazing, total stock access. Easy access across field.

### Sample Patch

<table>
<thead>
<tr>
<th>Patch</th>
<th>Extent (l x w patch)</th>
<th>Channel</th>
<th>Feature</th>
<th>Refuges in channel</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>6x1</td>
<td>3</td>
<td>4</td>
<td>Cobble (6.5-15cm)</td>
</tr>
<tr>
<td></td>
<td>6x1</td>
<td>3</td>
<td>4</td>
<td>Cobble (15-25.6cm)</td>
</tr>
<tr>
<td></td>
<td>6x1</td>
<td>3</td>
<td>4</td>
<td>Boulder (25.6-40cm)</td>
</tr>
<tr>
<td></td>
<td>6x1</td>
<td>3</td>
<td>4</td>
<td>Rubble (give size)</td>
</tr>
<tr>
<td></td>
<td>6x1</td>
<td>3</td>
<td>4</td>
<td>Woody debris</td>
</tr>
<tr>
<td></td>
<td>6x1</td>
<td>3</td>
<td>4</td>
<td>Other urban debris</td>
</tr>
<tr>
<td></td>
<td>6x1</td>
<td>3</td>
<td>4</td>
<td>Tree roots, fine moss</td>
</tr>
<tr>
<td></td>
<td>6x1</td>
<td>3</td>
<td>4</td>
<td>Filamentous algae</td>
</tr>
<tr>
<td></td>
<td>6x1</td>
<td>3</td>
<td>4</td>
<td>Other submerged veg.</td>
</tr>
<tr>
<td></td>
<td>6x1</td>
<td>3</td>
<td>4</td>
<td>Emergents</td>
</tr>
</tbody>
</table>

- **Survey method**: std 1, quad 2, net/kick 3, trap 4, view 5
- **Details (if not standard)**
- **Extent (l x w patch)**
- **Channel (1 margins, 2 mid, 3 both, other specify)**
- **Feature (1 marg, d'water, 2 pool, 3 glide, 4 run, 5 riffle)**
- **Depth (metres)**

### Refuges in channel
- **Cobble (6.5-15cm)**: YES
- **Cobble (15-25.6cm)**: YES
- **Boulder (25.6-40cm)**: YES
- **Rubble (give size)**: YES
- **Woody debris**: YES
- **Other urban debris**: YES
- **Tree roots, fine moss**: YES
- **Filamentous algae**: YES
- **Other submerged veg.**: YES
- **Emergents**: YES

### Main substrate beneath
- **Bedrock**: NO
- **Cobble (6.5-15cm)**: NO
<table>
<thead>
<tr>
<th>Material</th>
<th>pebble (&lt;6.5cm)</th>
<th>gravel (&lt;1.6cm)</th>
<th>sand (&lt;2mm)</th>
<th>clay</th>
<th>silt</th>
<th>YES</th>
<th>YES</th>
<th>YES</th>
<th>YES</th>
<th>YES</th>
</tr>
</thead>
<tbody>
<tr>
<td>Siltation</td>
<td>none</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td></td>
<td>low</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td></td>
<td>moderate</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td></td>
<td>high</td>
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<td>YES</td>
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<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>Refuges in bank</td>
<td>none</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td></td>
<td>cobble/boulder</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td></td>
<td>tree roots, large vertical or undercut bank</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td></td>
<td>dry stone wall</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td></td>
<td>other reinforced crayfish burrows</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>Shading above</td>
<td>NONE</td>
<td>NONE</td>
<td>NONE</td>
<td>NONE</td>
<td>NONE</td>
<td>NONE</td>
<td>NONE</td>
<td>NONE</td>
<td>NONE</td>
<td>NONE</td>
</tr>
<tr>
<td>Crayfish manually</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Crayfish by trap</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total crayfish caught</td>
<td>3</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Evaluation crayfish habitat for whole site (0 none, 1 pres., 2 freq., 3 abund.)</td>
<td>Score</td>
<td>3</td>
<td>3</td>
<td>2</td>
<td>1</td>
<td>4</td>
<td>Notes (survey conditions, patches etc.): Site is mostly a straight channel except for the most upstream end where there is more diversity of habitat</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>in margins</td>
<td>3</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>in mid channel</td>
<td>3</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>in banks</td>
<td>2</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>surveyability</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Problems pollution 1, erosion 2, (E if &gt;33% affected), aliens 3.</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total crayfish (by 1 method, note total(s) by other methods in notes if applicable)</td>
<td>4</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
# CRAYFISH HABITAT SURVEY FORM

<table>
<thead>
<tr>
<th>Catchment</th>
<th>Wye</th>
<th>River</th>
<th>Sgithwen</th>
<th>Site (no., name)</th>
<th>14</th>
</tr>
</thead>
<tbody>
<tr>
<td>Date (dd/mm/yy)</td>
<td>15/10/2014</td>
<td>Surveyors</td>
<td>DR LW</td>
<td>Grid ref.</td>
<td>SO 05720 38718</td>
</tr>
<tr>
<td>Weather, good 1, mod 2, poor 3</td>
<td>Flow norm 1, low 2, fall 3, rise 4</td>
<td>1</td>
<td></td>
<td>Start and finish time</td>
<td>1300-1500</td>
</tr>
<tr>
<td>Photo ref. &amp; Location</td>
<td>At 100 m between patches 1 and 2</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

| Site length (m) | 100 |
| Width channel (m) | 1.5 - 2.5 |

<table>
<thead>
<tr>
<th>Survey method, std 1, quad 2, net/kick 3, trap 4, view 5</th>
<th>sample patch 1</th>
<th>sample patch 2</th>
<th>sample patch 3</th>
<th>sample patch 4</th>
<th>sample patch 5</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 &amp; 4</td>
<td>1 &amp; 4</td>
<td>1 &amp; 4</td>
<td>1 &amp; 4</td>
<td>1 &amp; 4</td>
<td>1 &amp; 4</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Details (if not standard)</th>
<th>Extent (l x w patch)</th>
<th>Channel (1 margins, 2 mid, 3 both, other specify)</th>
<th>Depth (metres)</th>
<th>Feature (1 marg, d'water, 2 pool, 3 glide, 4 run, 5 riffle)</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>6x4</td>
<td>8x2</td>
<td>5x1</td>
<td>5x1</td>
<td>5x1</td>
<td>5x1</td>
</tr>
<tr>
<td>3</td>
<td>2</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>0.3</td>
<td>0.3</td>
<td>0.3</td>
<td>0.3</td>
<td>0.2</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Refuges in channel</th>
<th>tick all present in patch, main type(s) searched in red</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>cobble (6.5-15cm)</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>cobble (15-25.6cm)</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>boulder (25.6-40cm)</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>boulder (&gt;40cm)</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>rubble (give size)</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>woody debris</td>
<td>YES</td>
<td></td>
</tr>
<tr>
<td>other urban debris</td>
<td></td>
<td></td>
</tr>
<tr>
<td>tree roots, fine</td>
<td></td>
<td></td>
</tr>
<tr>
<td>moss</td>
<td></td>
<td></td>
</tr>
<tr>
<td>filamentous algae</td>
<td></td>
<td></td>
</tr>
<tr>
<td>other submerged</td>
<td></td>
<td></td>
</tr>
<tr>
<td>veg.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>emergents</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Main substrate beneath</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>bedrock</td>
<td></td>
</tr>
<tr>
<td>cobble (6.5-15cm)</td>
<td></td>
</tr>
<tr>
<td>pebble (&lt;6.5cm)</td>
<td>gravel (&lt;1.6cm)</td>
</tr>
<tr>
<td>-----------------</td>
<td>-----------------</td>
</tr>
<tr>
<td><strong>Siltation</strong></td>
<td></td>
</tr>
<tr>
<td>none</td>
<td></td>
</tr>
<tr>
<td>low</td>
<td></td>
</tr>
<tr>
<td>moderate</td>
<td></td>
</tr>
<tr>
<td>high</td>
<td></td>
</tr>
<tr>
<td><strong>Refuges in bank</strong></td>
<td></td>
</tr>
<tr>
<td>none</td>
<td></td>
</tr>
<tr>
<td>cobble/boulder</td>
<td></td>
</tr>
<tr>
<td>tree roots, large</td>
<td></td>
</tr>
<tr>
<td>vertical or undercut bank</td>
<td></td>
</tr>
<tr>
<td>dry stone wall</td>
<td></td>
</tr>
<tr>
<td>other reinforced</td>
<td></td>
</tr>
<tr>
<td>crayfish burrows</td>
<td></td>
</tr>
<tr>
<td><strong>Shading above</strong></td>
<td></td>
</tr>
<tr>
<td>Crayfish manually</td>
<td></td>
</tr>
<tr>
<td>Crayfish by trap</td>
<td></td>
</tr>
<tr>
<td><strong>Total crayfish caught</strong></td>
<td></td>
</tr>
</tbody>
</table>

**Notes (survey conditions, patches etc.):** Good habitat throughout. Six crayfish seen walking across riverbed from Irish bridge (in photo). Also reports of largest crayfish ever seen in this area by local farmers.
**Crayfish Habitat Survey Form**

<table>
<thead>
<tr>
<th>Catchment</th>
<th>Wye</th>
<th>River</th>
<th>Sgithwen</th>
<th>Site (no., name)</th>
<th>15</th>
</tr>
</thead>
<tbody>
<tr>
<td>Date (dd/mm/yy)</td>
<td>15/10/2014</td>
<td>Surveyors</td>
<td>DR LW</td>
<td>Grid ref.</td>
<td>SO 05116 38682</td>
</tr>
<tr>
<td>Weather, good 1, mod 2, poor 3</td>
<td>1</td>
<td>Flow norm 1, low 2, fall 3, rise 4</td>
<td>1</td>
<td>Start and finish time</td>
<td>1100-1300</td>
</tr>
<tr>
<td>Photo ref. &amp; Location</td>
<td>In 1st 100m</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Site length (m)</td>
<td>100</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Width channel (m)</td>
<td>1.5 - 3</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Description (channel features, landuse)</td>
<td>Land use - woodland and grazing. Easy access across field. Good habitat throughout.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Sample patch 1</th>
<th>Sample patch 2</th>
<th>Sample patch 3</th>
<th>Sample patch 4</th>
<th>Sample patch 5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Survey method, std 1, quad 2, net/kick 3, trap 4, view 5</td>
<td>1 &amp; 4</td>
<td>1 &amp; 4</td>
<td>1 &amp; 4</td>
<td>1 &amp; 4</td>
</tr>
<tr>
<td>Details (if not standard)</td>
<td>Extent (l x w patch)</td>
<td>3x2</td>
<td>3x2</td>
<td>4x3</td>
</tr>
<tr>
<td>Channel (1 margins, 2 mid, 3 both, other specify)</td>
<td>3</td>
<td>3</td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td>Depth (metres)</td>
<td>0.2</td>
<td>0.2</td>
<td>0.3</td>
<td>0.2</td>
</tr>
<tr>
<td>Feature (1 marg., d’water, 2 pool, 3 glide, 4 run, 5 rifle)</td>
<td>5</td>
<td>5</td>
<td>2</td>
<td>3</td>
</tr>
</tbody>
</table>

**Refuges in channel**
- **Tick all present in patch, main type(s) searched in red**
- **YES**

<p>| 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 (&gt;40cm) | YES | YES | YES | YES | YES |
| Rubble (give size) | YES | YES | YES | YES | YES |
| Woody debris | YES | YES | YES | YES | YES |
| Other urban debris | YES | YES | YES | YES | YES |
| Tree roots, fine | YES | YES | YES | YES | YES |
| Moss | YES | YES | YES | YES | YES |
| Filamentous algae | YES | YES | YES | YES | YES |
| Other submerged veg. | YES | YES | YES | YES | YES |
| <strong>Emergents</strong> | YES | YES | YES | YES | YES |
| <strong>Main substrate beneath</strong> | bedrock | | | | |
| Cobble (6.5-15cm) | | | | | |</p>
<table>
<thead>
<tr>
<th>pebble (&lt;6.5cm)</th>
<th>gravel (&lt;1.6cm)</th>
<th>sand (&lt;2mm)</th>
<th>clay</th>
<th>silt</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Siltation</th>
<th>none</th>
<th>low</th>
<th>moderate</th>
<th>high</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Refuges in bank</th>
<th>none</th>
<th>cobble/boulder</th>
<th>tree roots, large vertical or undercut bank</th>
<th>dry stone wall</th>
<th>other reinforced crayfish burrows</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
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</table>

<table>
<thead>
<tr>
<th>Shading above</th>
<th>LOW</th>
<th>MOD</th>
<th>HEAVY</th>
<th>HEAVY</th>
<th>LOW</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Crayfish manually</td>
<td>3</td>
<td>2</td>
<td>2</td>
<td>12</td>
<td>19</td>
<td></td>
</tr>
<tr>
<td>Crayfish by trap</td>
<td>19</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Notes (survey conditions, patches etc.):**

- in margins: 3
- in mid channel: 3
- in banks: 2
- surveyability: 3

**Evaluation**

**Crayfish habitat for whole site (0 none, 1 pres., 2 freq., 3 abund.)**

<table>
<thead>
<tr>
<th>Score</th>
<th>Notes (survey conditions, patches etc.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td></td>
</tr>
</tbody>
</table>

**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
## CRAYFISH HABITAT SURVEY FORM

<table>
<thead>
<tr>
<th>Catchment</th>
<th>River</th>
<th>Site (no., name)</th>
<th>Wye</th>
<th>Sgithwen</th>
<th>16</th>
</tr>
</thead>
<tbody>
<tr>
<td>Date (dd/mm/yy)</td>
<td>Surveyors</td>
<td>Grid ref.</td>
<td>15/10/2014</td>
<td>DR LW</td>
<td>SO 04620 39077</td>
</tr>
<tr>
<td>Weather, good 1, &amp; poor 3</td>
<td>Flow norm 1, low 2, fall 3, &amp; rise 4</td>
<td>Start and finish time</td>
<td>1</td>
<td>1</td>
<td>0900-1100</td>
</tr>
<tr>
<td>Weather, good 1, &amp; poor 3</td>
<td>Flow norm 1, low 2, fall 3, &amp; rise 4</td>
<td>Start and finish time</td>
<td>1</td>
<td>1</td>
<td>0900-1100</td>
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<td>Photo ref. &amp; Location</td>
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<tr>
<td>Site length (m)</td>
<td>100</td>
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<tr>
<td>Width channel (m)</td>
<td>1.5</td>
<td>Land use - forestry plus forestry store. Small stream channel with adjacent pond.</td>
<td></td>
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<tr>
<td>Site length (m)</td>
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<tr>
<td>Width channel (m)</td>
<td>1.5</td>
<td>Land use - forestry plus forestry store. Small stream channel with adjacent pond.</td>
<td></td>
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<tr>
<td>Survey method, std 1, quad 2, net/kick 3, trap 4, view 5</td>
<td>1 &amp; 4</td>
<td>1 &amp; 4</td>
<td>1 &amp; 4</td>
<td>1 &amp; 4</td>
<td>1 &amp; 4</td>
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<tr>
<td>Details (if not standard)</td>
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<tr>
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<td>8x1</td>
<td>8x1</td>
<td>8x1</td>
<td>8x1</td>
<td>8x1</td>
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<tr>
<td>Channel (1 margins, 2 mid, 3 both, other specify)</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td>3</td>
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<tr>
<td>Depth (metres)</td>
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<td>0.2</td>
<td>0.2</td>
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<td>0.2</td>
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<td>Feature (1 marg. d'water, 2 pool, 3 glide, 4 run, 5 riffle)</td>
<td>5</td>
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<td>Refuges in channel</td>
<td>tick all present in patch, main type(s) searched in red</td>
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<tr>
<td>cobble (6.5-15cm)</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
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<tr>
<td>cobble (15-25.6cm)</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
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<td>cobble (25.6-40cm)</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
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<tr>
<td>cobble (&gt;40cm)</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
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<tr>
<td>rubble (give size)</td>
<td></td>
<td></td>
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<td></td>
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</tr>
<tr>
<td>woody debris</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>other urban debris</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>tree roots, fine</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>moss</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>filamentous algae</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>other submerged veg.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>emergents</td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Main substrate beneath</td>
<td>CONCRETE</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>bedrock</td>
<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>cobble (6.5-15cm)</td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Pebble (&lt;6.5 cm)</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td></td>
</tr>
<tr>
<td>------------------</td>
<td>-----</td>
<td>-----</td>
<td>-----</td>
<td>-----</td>
<td></td>
</tr>
<tr>
<td>Gravel (&lt;1.6 cm)</td>
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<tr>
<td>Sand (&lt;2 mm)</td>
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<td></td>
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</tr>
<tr>
<td>Clay</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Silt</td>
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<table>
<thead>
<tr>
<th>Siltation</th>
<th>none</th>
<th>low</th>
<th>moderate</th>
<th>high</th>
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<tbody>
<tr>
<td></td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
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<table>
<thead>
<tr>
<th>Refuges in bank</th>
<th>none</th>
<th>cobble/boulder</th>
<th>tree roots, large vertical wall</th>
<th>undercut bank</th>
<th>dry stone wall</th>
<th>other reinforced crayfish burrows</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td></td>
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<table>
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<tr>
<th>Shading above</th>
<th>MOD</th>
<th>MOD</th>
<th>MOD</th>
<th>MOD</th>
<th>MOD</th>
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<table>
<thead>
<tr>
<th>Total crayfish caught</th>
<th>Evaluation crayfish habitat for whole site (0 none, 1 pres., 2 freq., 3 abund.)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Score</td>
</tr>
<tr>
<td>in margins</td>
<td>3</td>
</tr>
<tr>
<td>in mid channel</td>
<td>3</td>
</tr>
<tr>
<td>in banks</td>
<td>1</td>
</tr>
<tr>
<td>Surveyability</td>
<td>3</td>
</tr>
</tbody>
</table>

Notes (survey conditions, patches etc.): Patch 4 - river piped under track, contains boulders and cobbles. Photos of river upstream and downstream of piped section.
### CRAYFISH HABITAT SURVEY FORM

<table>
<thead>
<tr>
<th>Catchment</th>
<th>Wye River</th>
<th>Dulas Brook (Buith Road)</th>
<th>Site (no., name)</th>
<th>1</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Date (dd/mm/yy)</th>
<th>29/09/2015</th>
<th>Surveyor</th>
<th>DR LW</th>
<th>Grid ref. (d/s end)</th>
<th>SO 0210 5300</th>
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</table>

<table>
<thead>
<tr>
<th>Weather, good 1, mod 2, poor 3</th>
<th>Flow: 1. low, 2. fall</th>
<th>Water temp. oC</th>
<th>2</th>
<th>Clarity, good 1, mod 2, poor 3</th>
<th>1</th>
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</thead>
</table>

<table>
<thead>
<tr>
<th>Photo ref. &amp; Location</th>
<th>Dulas01</th>
<th>Grazing and urban. Adjacent sewage works Access good.</th>
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<table>
<thead>
<tr>
<th>Site length (m)</th>
<th>500</th>
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<table>
<thead>
<tr>
<th>Width channel (m)</th>
<th>5</th>
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<table>
<thead>
<tr>
<th>Survey method, std 1, quad 2, methods 3, line 4, view 5</th>
<th>sample patch 1</th>
<th>sample patch 2</th>
<th>sample patch 3</th>
<th>sample patch 4</th>
<th>sample patch 5</th>
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</thead>
<tbody>
<tr>
<td>Details (if not standard)</td>
<td>1 &amp; 4</td>
<td>1 &amp; 4</td>
<td>1 &amp; 4</td>
<td>1 &amp; 4</td>
<td>1 &amp; 4</td>
</tr>
<tr>
<td>Extent x (if patch)</td>
<td>5x1</td>
<td>5x1</td>
<td>4x2</td>
<td>5x1</td>
<td>5x2</td>
</tr>
<tr>
<td>Channel (1 margins, 2 mid, 3 both, other specify)</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
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<tr>
<td>Depth (metres)</td>
<td>0.2</td>
<td>0.2</td>
<td>0.3</td>
<td>0.2</td>
<td>0.3</td>
</tr>
<tr>
<td>Water ref. &amp; (1 ramp, water, 2 pool, 3 glide, 4 run, 5 riffle)</td>
<td>5</td>
<td>5</td>
<td>4</td>
<td>5</td>
<td>4</td>
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</table>

<table>
<thead>
<tr>
<th>Refuges in channel (incl. all present in patch, main type(s) searched in red)</th>
<th>cobble (6.5-15cm)</th>
<th>YES</th>
<th>YES</th>
<th>YES</th>
<th>YES</th>
</tr>
</thead>
<tbody>
<tr>
<td>boulder (15-25.6cm)</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>boulder (&gt;40cm)</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>rubber (give size)</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>woody debris</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>other urban debris</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>tree roots, fine</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>moss</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>filamentous algae</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>other submerged veg emergents</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
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<table>
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<tr>
<th>Main substrate beneath (incl. all present in patch, main type(s) searched in red)</th>
<th>bedrock</th>
<th>YES</th>
<th>YES</th>
<th>YES</th>
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<tr>
<td>cobble (6.5-15cm)</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
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<tr>
<td>pebble (&lt;6.5cm)</td>
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<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
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<tr>
<td>gravel (&lt;1.6cm)</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>sand (&lt;2mm)</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>clay shell</td>
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<td>YES</td>
<td>YES</td>
<td>YES</td>
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<table>
<thead>
<tr>
<th>Siltation</th>
<th>none</th>
<th>low</th>
<th>moderate</th>
<th>high</th>
</tr>
</thead>
<tbody>
<tr>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
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</table>

<table>
<thead>
<tr>
<th>Refuges in bank (incl. all present in patch, main type(s) searched in red)</th>
<th>none</th>
<th>yes</th>
<th>YES</th>
<th>YES</th>
<th>YES</th>
</tr>
</thead>
<tbody>
<tr>
<td>cobble/boulder</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>tree roots, large</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>vertical or undercut bank</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>dry stone wall</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>other reinforced</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
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<tr>
<td>crayfish burrows</td>
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<td>YES</td>
<td>YES</td>
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<th>Crayfish/10 refuges, or per unit (depending on method)</th>
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<tr>
<td>Search time (Mins)</td>
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<td>5</td>
<td>10</td>
<td>10</td>
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<tr>
<th>Bullhead present</th>
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<th>YES</th>
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<tr>
<th>Evaluation crayfish habitat for whole site (incl. all present in patch, main type(s) searched in red)</th>
<th>Score</th>
<th>10065 (survey conditions, patches etc.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>in margins</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>in mid channel</td>
<td>3</td>
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<td>in banks</td>
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<tr>
<td>surveyability</td>
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<table>
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<tr>
<th>Problems</th>
<th>pollution 1, erosion 2,</th>
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<th>YES</th>
<th>YES</th>
<th>YES</th>
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<tbody>
<tr>
<td>2. (if &gt;33% affected), alien 3.</td>
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| Total crayfish (by 1 method, note total(s) by other methods in notes if applicable) | 0 | | | | |

---

<table>
<thead>
<tr>
<th>Catchment</th>
<th>Wye</th>
<th>River</th>
<th>Dulas Brook (Buith Road)</th>
<th>Site (no., name)</th>
<th>2</th>
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<tr>
<td>Date (dd/mm/yy)</td>
<td>29/08/2015</td>
<td>Dr LW</td>
<td>Grid ref. (d/s end)</td>
<td>SO 0234 5335</td>
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<td>Weather, good</td>
<td>1</td>
<td>mod</td>
<td>2</td>
<td>poor</td>
<td>3</td>
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<td>Photo ref. &amp; Location</td>
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<td>Site length (m)</td>
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<tr>
<td>Width channel (m)</td>
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<td>Survey method, std</td>
<td>1, quad</td>
<td>2, net/kick</td>
<td>3, trap</td>
<td>4, view</td>
<td>5</td>
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<td>Details (if not standard)</td>
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<tr>
<td>Extent (l x w patch)</td>
<td>5x1</td>
<td>5x1</td>
<td>4x3</td>
<td>4x1</td>
<td>3x2</td>
</tr>
<tr>
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<td>1</td>
<td>1</td>
<td>3</td>
<td>1</td>
<td>3</td>
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<tr>
<td>Depth (metres)</td>
<td>0.2</td>
<td>0.3</td>
<td>0.4</td>
<td>0.3</td>
<td>0.2</td>
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<tr>
<td>Feature (1 marg. water, 2 pool, 3 glide, 4 run, 5 riffle)</td>
<td>3</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>4</td>
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<tr>
<td>Refuges in channel</td>
<td></td>
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<tr>
<td>cobble (6.5-15cm)</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
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<tr>
<td>cobble (15-25.6cm)</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
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<tr>
<td>boulder (25.6-40cm)</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
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</tr>
<tr>
<td>boulder (&gt;40cm)</td>
<td>YES</td>
<td>YES</td>
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<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>rubble (give size)</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>woody debris</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>other urban debris</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>tree roots, fine</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>moss</td>
<td>YES</td>
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<tr>
<td>filamentous algae</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>other submerged veg.</td>
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<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
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<tr>
<td>Main substrate beneath</td>
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<td>bedrock</td>
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<tr>
<td>cobble (6.5-15cm)</td>
<td>YES</td>
<td>YES</td>
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<td>pebble (&lt;6.5cm)</td>
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<td>moderate</td>
<td>high</td>
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<tr>
<td>Refuges in bank</td>
<td>none</td>
<td>none</td>
<td>none</td>
<td>none</td>
<td>none</td>
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<tr>
<td>cobble/boulder</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>tree roots, large</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>vertical or undercut bank</td>
<td>YES</td>
<td>YES</td>
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<td>YES</td>
<td>YES</td>
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<tr>
<td>dry stone wall</td>
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<tr>
<td>other reinforced</td>
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<td>YES</td>
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<tr>
<td>crayfish burrows</td>
<td>YES</td>
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<td>YES</td>
<td>YES</td>
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<tr>
<td>Shading above</td>
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<td>HEAVY</td>
<td>HEAVY</td>
<td>MOD</td>
<td>HEAVY</td>
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<td>Bullhead present?</td>
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<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
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<tr>
<td>Evaluation crayfish habitat for whole site (0 none, 1 pres., 2 freq., 3 abund.)</td>
<td>Score</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td>3</td>
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<tr>
<td>in margins</td>
<td>3</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>in mid channel</td>
<td>3</td>
<td></td>
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<td></td>
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</tr>
<tr>
<td>in banks</td>
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<td></td>
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<tr>
<td>surveyability</td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Problems pollution, erosion</td>
<td>1,</td>
<td>2,</td>
<td>(E if &gt;33% affected), aliens</td>
<td>3,</td>
<td></td>
</tr>
<tr>
<td>Total crayfish (by 1 method, note total(s) by other methods in notes if applicable)</td>
<td>0</td>
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</tr>
</tbody>
</table>

Notes (survey conditions, patches etc.): Large boulders obscure water flow at some points.
<table>
<thead>
<tr>
<th>Catchment</th>
<th>Wye</th>
<th>River</th>
<th>Dulas Brook (Builth Road)</th>
<th>Site (no., name)</th>
<th>3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Date (dd/mm/yy)</td>
<td>30/08/2015</td>
<td>Surveyor</td>
<td>DR LW</td>
<td>Grid ref. (d/s end)</td>
<td>SO 0270 5356</td>
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<tr>
<td>Weather, good 1, mod 2, poor 3</td>
<td>1</td>
<td>Flow norm</td>
<td>1</td>
<td>Water temp OC</td>
<td>12</td>
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<td>Photo ref. &amp; Location</td>
<td>Dulas03</td>
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<tr>
<td>Site length (m)</td>
<td>100</td>
<td>Descript. (channel features, questions)</td>
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<tr>
<td>Width channel (m)</td>
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<td>Wooded, back of old garage, road bridge/railway embankment. Good access.</td>
<td></td>
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<td></td>
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<td>Survey method, std 1, quad 2, net/kick 3, trap 4, view 5</td>
<td>sample patch 1</td>
<td>sample patch 2</td>
<td>sample patch 3</td>
<td>sample patch 4</td>
<td>sample patch 5</td>
</tr>
<tr>
<td>Details (if not standard)</td>
<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Extent (l x w patch)</td>
<td>1x3</td>
<td>4x1</td>
<td>3x2</td>
<td>2x2</td>
<td>4x2</td>
</tr>
<tr>
<td>Channel (1 margins, 2 mid, 3 both, other specify)</td>
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<td>1</td>
<td>2</td>
<td>2</td>
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<td>Depth (metres)</td>
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<td>0.2</td>
<td>0.2</td>
<td>0.2</td>
<td>0.2</td>
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<td>4</td>
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<td>Refuges in channel (tick all present in patch, main types) searched in red</td>
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<td></td>
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</tr>
<tr>
<td>cobble (6.5-15cm)</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
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<tr>
<td>cobble (15-25.6cm)</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
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<td>boulder (25.6-40cm)</td>
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<td>boulder (&gt;40cm)</td>
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<td>rubble (give size)</td>
<td>YES</td>
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<td>YES</td>
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<tr>
<td>woody debris</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
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<tr>
<td>other urban debris</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>tree roots, fine moss</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>filamentous algae</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
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<td>other submerged veg. emergents</td>
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<td>YES</td>
<td>YES</td>
<td>YES</td>
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<tr>
<td>Main substrate beneath (tick one)</td>
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</tr>
<tr>
<td>bedrock</td>
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<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
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<td>YES</td>
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<td>YES</td>
</tr>
<tr>
<td>sand (&lt;2mm)</td>
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<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>clay</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>Siltation</td>
<td>yes</td>
<td>yes</td>
<td>yes</td>
<td>yes</td>
<td>yes</td>
</tr>
<tr>
<td>none</td>
<td>low</td>
<td>moderate</td>
<td>high</td>
<td></td>
<td></td>
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<tr>
<td>Refuges in bank (tick one)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>cobble/boulder</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>tree roots, large</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>vertical or undercut bank</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>dry stone wall</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>other reinforced crayfish burrows</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>Shading above</td>
<td>MOD</td>
<td>LIGHT</td>
<td>LIGHT</td>
<td>NONE</td>
<td>NONE</td>
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<td>Crayfish/10 refuges, or per unit (depending on method)</td>
<td>0</td>
<td>0</td>
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<td>0</td>
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<tr>
<td>Search time (Mins)</td>
<td>5</td>
<td>5</td>
<td>15</td>
<td>5</td>
<td>5</td>
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<tr>
<td>Bullhead present?</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>Evaluation crayfish habitat for whole site (0 none, 1 pres., 2 freq., 3 abud.)</td>
<td>Score</td>
<td>Notes (survey conditions, patches etc.):</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>in margins</td>
<td>3</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>in mid channel</td>
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<td>in banks</td>
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<tr>
<td>surveyability</td>
<td>3</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Problems</td>
<td>pollution 1, erosion 2, (E if &gt;33% affected), aliens 3.</td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Total crayfish (by 1 method, note totals by other methods in notes if applicable)</td>
<td>0</td>
<td></td>
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### CRAYFISH HABITAT SURVEY FORM

<table>
<thead>
<tr>
<th>Catchment</th>
<th>Wye</th>
<th>River</th>
<th>Dulas Brook (Buith Road)</th>
<th>Site (no., name)</th>
<th>4</th>
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</thead>
<tbody>
<tr>
<td>Date (dd/mm/yy)</td>
<td>30/08/2015</td>
<td>Surveyor</td>
<td>DR LW</td>
<td>Grid ref. (d/s end)</td>
<td>Land ref. (site end) SO 0293 5391</td>
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<tr>
<td>Weather, good 1, mod 2, poor 3</td>
<td>Flow, norm 1, low 2, fail 3</td>
<td>Water temp, 12°C</td>
<td>Clarity, good 1, mod 2, poor 3</td>
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<td>Photo ref. &amp; Location</td>
<td>Dulas04</td>
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<tr>
<td>Site length (m)</td>
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<tr>
<td>Width channel (m)</td>
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</table>

<table>
<thead>
<tr>
<th>Survey method, std 1, quad 2, net/kick 3, trap 4, view 5</th>
<th>sample patch 1</th>
<th>sample patch 2</th>
<th>sample patch 3</th>
<th>sample patch 4</th>
<th>sample patch 5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Details (if not standard)</td>
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<td></td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Extent (l x w patch)</th>
<th>2x2</th>
<th>3x1</th>
<th>3x2</th>
<th>4x1</th>
<th>6x1</th>
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<tbody>
<tr>
<td>Channel (1 margins, 2 mid, 3 both, other specify)</td>
<td>3</td>
<td>1</td>
<td>2</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Depth (metres)</td>
<td>0.4</td>
<td>0.2</td>
<td>0.3</td>
<td>0.2</td>
<td>0.2</td>
</tr>
<tr>
<td>Habitat (1 marg, channel, 2 mid, 3 both, other specify)</td>
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<td>3</td>
<td>4</td>
<td>3</td>
<td>4</td>
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</table>

<table>
<thead>
<tr>
<th>Refuges in channel</th>
</tr>
</thead>
<tbody>
<tr>
<td>cobble (6.5-15cm)</td>
</tr>
<tr>
<td>cobble (15-25.6cm)</td>
</tr>
<tr>
<td>boulder (25.6-40cm)</td>
</tr>
<tr>
<td>other urban debris</td>
</tr>
<tr>
<td>tree roots, fine</td>
</tr>
<tr>
<td>moss</td>
</tr>
<tr>
<td>filamentous algae</td>
</tr>
<tr>
<td>other submerged veg.</td>
</tr>
<tr>
<td>emergents</td>
</tr>
<tr>
<td>Refuges in bank</td>
</tr>
<tr>
<td>cobble/boulder</td>
</tr>
<tr>
<td>tree roots, large</td>
</tr>
<tr>
<td>vertical or undercut bank</td>
</tr>
<tr>
<td>other reinforced crayfish burrows</td>
</tr>
<tr>
<td>Shading above</td>
</tr>
<tr>
<td>Crayfish/habitat (if not present or per unit (depending on method))</td>
</tr>
<tr>
<td>Search time (Mins)</td>
</tr>
<tr>
<td>Bullhead present?</td>
</tr>
</tbody>
</table>

**Notes**

- **Evaluation crayfish habitat for whole site (if not present, or per unit (depending on method))**
- **Score**
- **Problems**
- **Total crayfish by 1 method, note total(s) by other methods in notes if applicable**

**Urban, woodland, grazing, stock access. Access by walking from downstream.**
**CRAYFISH HABITAT SURVEY FORM**

<table>
<thead>
<tr>
<th>Catchment</th>
<th>Wye</th>
<th>Site (no., name)</th>
<th>Dulas Brook (Buith Road)</th>
<th>Site (no., name)</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Date (dd/mm/yy)</td>
<td>30/08/2015</td>
<td>Weather, good 1, mod 2, poor 3</td>
<td>Low norm 1, low 2, fall 3, rise 4</td>
<td>Water temp. oC</td>
<td>12</td>
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<td>Dulas05</td>
<td>Grid ref. (d/s end)</td>
<td>SO 0314 5439</td>
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<tr>
<td>Site length (m)</td>
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<td>Width channel (m)</td>
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<td></td>
<td></td>
</tr>
</tbody>
</table>

| Survey method, std 1, quad 2, net/kick 3, trap 4, view 5 | 1 & 4 | 1 & 4 | 1 & 4 | 1 & 4 | 1 & 4 |
| Extent (lxw patch) | 2x2 | 2x1 | 6x1 | 3x2 | 3x2 |
| Channel (1 margins, 2 mid, 3 both, other specify) | 2 | 2 | 1 | 3 | 2 |
| Depth (metres) | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 |

<table>
<thead>
<tr>
<th>Refuges in channel</th>
<th>cobble (6.5-15cm)</th>
<th>YES</th>
<th>YES</th>
<th>YES</th>
<th>YES</th>
<th>YES</th>
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<tbody>
<tr>
<td></td>
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<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td></td>
<td>boulder (25.6-40cm)</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td></td>
<td>boulder (&gt;40cm)</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td></td>
<td>rubble (give size)</td>
<td>YES</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>woody debris</td>
<td>YES</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>other urban debris</td>
<td>YES</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>tree roots, fine</td>
<td>YES</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
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<tr>
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<td>other submerged veg.</td>
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<th>Refuges in bank</th>
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<th>YES</th>
<th>YES</th>
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<tbody>
<tr>
<td></td>
<td>tree roots, large</td>
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<td>YES</td>
<td>YES</td>
<td>YES</td>
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<tr>
<td></td>
<td>vertical or undercut bank</td>
<td>YES</td>
<td>YES</td>
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<td>dry stone wall</td>
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<td>YES</td>
<td>YES</td>
<td>YES</td>
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<td></td>
<td>other reinforced crayfish burrows</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
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</table>

| Shading above | HEAVY | HEAVY | HEAVY | HEAVY | HEAVY |
| Search time (Mins) | 5 | 5 | 10 | 5 | 5 |
| Bullhead present? | YES | YES |

<table>
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<tr>
<th>Evaluation crayfish habitat for whole site</th>
<th>Score</th>
<th>Notes (survey conditions, patches etc.):</th>
</tr>
</thead>
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<tr>
<td>in margins</td>
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<tr>
<td>in mid channel</td>
<td>3</td>
<td></td>
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<tr>
<td>in banks</td>
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<table>
<thead>
<tr>
<th>Problems</th>
<th>Total crayfish</th>
<th>Total crayfish by other methods in notes (if applicable)</th>
</tr>
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<tr>
<td>pollution 1, erosion 2, (E if &gt;33% affected), alien 3.</td>
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<td>0</td>
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<td>Catchment</td>
<td>Wye</td>
<td>River</td>
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<tr>
<td>-----------------</td>
<td>-------------</td>
<td>---------</td>
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<td>Date (dd/mm/yy)</td>
<td>30/08/2015</td>
<td>surveryor</td>
</tr>
<tr>
<td>Weather,</td>
<td>good 1, med 2, poor 3</td>
<td>Photo ref. &amp; Location</td>
</tr>
<tr>
<td>Photo ref. &amp;</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Location</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Site length (m)</td>
<td>100</td>
<td>Width channel (m)</td>
</tr>
<tr>
<td>Survey method, std &amp; quad &amp; net/kick &amp; trap &amp; view</td>
<td>1 &amp; 4</td>
<td>sample patch 1</td>
</tr>
<tr>
<td>Survey method, std &amp; quad &amp; net/kick &amp; trap &amp; view</td>
<td>1 &amp; 4</td>
<td>sample patch 1</td>
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<td>Details (if not standard)</td>
<td>Extent (l x w patch)</td>
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<td>Channel (1 margins, 2 mid, 3 both, other specify)</td>
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<td>Depth (metres)</td>
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<tr>
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<td>Descript. (channel features, landuse)</td>
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<tr>
<td>cobble (6.5-15cm)</td>
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<td>YES</td>
</tr>
<tr>
<td>cobble (15-25.6cm)</td>
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<td>YES</td>
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<td>boulder (25.6-40cm)</td>
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<td>YES</td>
</tr>
<tr>
<td>boulder (&gt;40cm)</td>
<td>YES</td>
<td>YES</td>
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<tr>
<td>rubble (give size)</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>woody debris</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>other urban debris</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>tree roots, fine moss</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>filamental algae</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>other submerged veg.</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>Main substrate beneath</td>
<td>bedrock</td>
<td>YES</td>
</tr>
<tr>
<td>cobble (6.5-15cm)</td>
<td>YES</td>
<td>YES</td>
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<tr>
<td>pebble (&lt;6.5cm)</td>
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<td>gravel (&lt;1.6cm)</td>
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<td>sand (&lt;2mm)</td>
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<td>YES</td>
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<td>moderate</td>
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<td>YES</td>
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<td>high</td>
<td>YES</td>
<td>YES</td>
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<tr>
<td>Refuges in bank</td>
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<td>YES</td>
</tr>
<tr>
<td>cobble/boulder</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>tree roots, large vertical or undercut bank</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>dry stone wall</td>
<td>YES</td>
<td>YES</td>
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<tr>
<td>other reinforced</td>
<td>YES</td>
<td>YES</td>
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<tr>
<td>crayfish burrows</td>
<td>YES</td>
<td>YES</td>
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<tr>
<td>Shading above</td>
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<td>HEAVY</td>
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<tr>
<td>CRAYFISH HABITAT SURVEY FORM</td>
<td>Notes</td>
<td>survey conditions, patches etc.)</td>
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<tr>
<td>Crayfish</td>
<td>10 refuges, or per unit (depending on method)</td>
<td>0</td>
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<td>Search time (Mins)</td>
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<td>5</td>
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<tr>
<td>Bullhead present</td>
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<td>Evaluation crayfish habitat for whole site</td>
<td>Score</td>
<td>Notes</td>
</tr>
<tr>
<td>in margins</td>
<td>3</td>
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<tr>
<td>in mid channel</td>
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<tr>
<td>in banks</td>
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<tr>
<td>surveyability</td>
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</tr>
<tr>
<td>Problems</td>
<td>pollution 1, erosion 2. (If &gt;33% affected), aliens 3.</td>
<td>Total crayfish by 1 method (note totals by other methods in notes if applicable)</td>
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</table>
## CRAYFISH HABITAT SURVEY FORM

<table>
<thead>
<tr>
<th>Catchment</th>
<th>River</th>
<th>Dulas Brook (Builth Road)</th>
<th>Site (no., name)</th>
<th></th>
<th></th>
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<tbody>
<tr>
<td>Date (dd/mm/yy)</td>
<td>31/08/2015</td>
<td>Surveyor</td>
<td>DR LW</td>
<td></td>
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<tr>
<td>Weather, good 1, mod 2, poor 3</td>
<td>Flow norm 1, low 2, fall 3, rise 4</td>
<td>Water temp. 2</td>
<td>Clarity, good 1, mod 2, poor 3</td>
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<td>Photo ref. &amp; Location</td>
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<td>Descript: Gardens roadbridge, back of outbuildings. Access good.</td>
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<td>Survey method, std 1, quad 2, net/kick 3, trap 4, view 5</td>
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<td>sample patch 1</td>
<td>sample patch 2</td>
<td>sample patch 3</td>
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<td>Details (if not standard)</td>
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<td>extent 1 &amp; 4</td>
<td>extent 1 &amp; 4</td>
<td>extent 1 &amp; 4</td>
<td>extent 1 &amp; 4</td>
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<td>5</td>
<td>4</td>
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<td>Refuges in channel</td>
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<tr>
<td>cobble (6.5-15cm)</td>
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<td>YES</td>
<td>YES</td>
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<tr>
<td>cobble (15-25.6cm)</td>
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<td>YES</td>
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<td>YES</td>
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<tr>
<td>rubble (give size)</td>
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<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>woody debris</td>
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<td>YES</td>
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<td>YES</td>
<td>YES</td>
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<tr>
<td>other urban debris</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>tree roots, fine</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
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<tr>
<td>moss</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
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<tr>
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<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
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<tr>
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<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
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<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
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<tr>
<td>Refuges in bank</td>
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<td>YES</td>
<td>YES</td>
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<tr>
<td>cobble/boulder</td>
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<td>YES</td>
<td>YES</td>
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<td>YES</td>
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<td>YES</td>
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<td>YES</td>
<td>YES</td>
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<tr>
<td>other reinforced crayfish burrows</td>
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<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
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<td>in banks</td>
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<td>Problems</td>
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## CRAYFISH HABITAT SURVEY FORM

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<tr>
<th>Catchment</th>
<th>Wye</th>
<th>River</th>
<th>Dulas Brook (Buith Road)</th>
<th>Site (no., name)</th>
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<td>Grid ref. (d/s end)</td>
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<td>Water temp. oC</td>
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<td>clarity, good 1, mod 2, poor 3</td>
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<td>Photo ref. &amp; Location</td>
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<tr>
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<td>sample patch 2 &amp; 4</td>
<td>sample patch 3 &amp; 4</td>
<td>sample patch 4</td>
<td>sample patch 5</td>
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<td>Details (if not standard)</td>
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<td>3x1</td>
<td>3x1</td>
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<td>cobble (15-25.6cm)</td>
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<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
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<td>boulder (25.6-40cm)</td>
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<td>YES</td>
<td>YES</td>
<td>YES</td>
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<td>boulder (&gt;40cm)</td>
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<td>YES</td>
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<td>YES</td>
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<td>rubble (give size)</td>
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<td>YES</td>
<td>YES</td>
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<td>other urban debris</td>
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<td>YES</td>
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<td>tree roots, fine</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
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<td>moss</td>
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<td>filamentous algae</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td></td>
<td>other submerged veg.</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td></td>
<td>emergents</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>Main substrate beneath</td>
<td>bedrock</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
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<td>YES</td>
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<td>YES</td>
<td>YES</td>
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<td>YES</td>
<td>YES</td>
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<td>YES</td>
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<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td></td>
<td>low</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td></td>
<td>moderate</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td></td>
<td>high</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>Refuges in bank</td>
<td>none</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td></td>
<td>cobble/boulder</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td></td>
<td>tree roots, large</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td></td>
<td>vertical or undercut bank</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td></td>
<td>dry stone wall</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td></td>
<td>other reinforced</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td></td>
<td>crayfish burrows</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>Shading above</td>
<td>MOD</td>
<td>MOD</td>
<td>MOD</td>
<td>MOD</td>
<td>MOD</td>
</tr>
<tr>
<td>Crayfish/10 refuges, or per unit (depending on method)</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Search time (Mins)</td>
<td>10</td>
<td>10</td>
<td>5</td>
<td>5</td>
<td>10</td>
</tr>
<tr>
<td>Bullhead present?</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>Evaluation crayfish habitat for whole site (0 none, 1 pres., 2 freq., 3 above.)</td>
<td>Score</td>
<td>Notes (survey conditions, patches etc.) Stock access is major influence</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>in margins</td>
<td>3</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>in mid channel</td>
<td>3</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>in banks</td>
<td>3</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>surveyability</td>
<td>3</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Problems pollution 1, erosion 2, (if &gt;33% affected), alien 3.</td>
<td>4</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total crayfish by 1 method, note total(s) by other methods in notes if applicable</td>
<td>0</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
**CRAYFISH HABITAT SURVEY FORM**

<table>
<thead>
<tr>
<th>Catchment</th>
<th>Wye</th>
<th>River</th>
<th>Dulas Brook (Buith Road)</th>
<th>Site (no., name)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Date (dd/mm/yy)</td>
<td>31/08/2015</td>
<td>Surveyor</td>
<td>DR LW</td>
<td>Grid ref. (d/s end)</td>
</tr>
<tr>
<td>Weather, good 1, mod 2, poor 3</td>
<td>Flow norm 1, low 2, fall 3, rise 4</td>
<td>Water temp. oC</td>
<td>Clarity, good 1, mod 2, poor 3</td>
<td></td>
</tr>
<tr>
<td>Photo ref. &amp; Location</td>
<td>Dulas09</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Site length (m)</td>
<td>100</td>
<td>Width channel (m)</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>Survey method, std 1, quad 2, net/kick 3, trap 4, view 5</td>
<td>sample patch 1</td>
<td>sample patch 2</td>
<td>sample patch 3</td>
<td>sample patch 4</td>
</tr>
<tr>
<td>Details (if not standard)</td>
<td>Extent (l x w x patch)</td>
<td>Channel (1 margins, 2 mid, 3 both, other specify)</td>
<td>Depth (metres)</td>
<td>Feature (1 marg. wate, 2 mid, 3 side, 4 sur, 5 riffle)</td>
</tr>
<tr>
<td>Refuges in channel</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>Main substrate beneath</td>
<td>bedrock</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>Siltation</td>
<td>none</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>Refuges in bank</td>
<td>none</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>Refuges in channel</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>Refuges in bank</td>
<td>none</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>Shading above</td>
<td>MOD</td>
<td>MOD</td>
<td>MOD</td>
<td>MOD</td>
</tr>
<tr>
<td>Crabfish / bullhead present?</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Search time (Mins)</td>
<td>10</td>
<td>10</td>
<td>5</td>
<td>5</td>
</tr>
<tr>
<td>Bullhead present?</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
| Evaluation crayfish habitat for whole site | 0 | Notes (survey conditions, patches etc.):

<table>
<thead>
<tr>
<th>Score</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>eval</td>
<td></td>
</tr>
<tr>
<td>in margins</td>
<td>2</td>
</tr>
<tr>
<td>in mid channel</td>
<td>2</td>
</tr>
<tr>
<td>in banks</td>
<td>1</td>
</tr>
<tr>
<td>surveyability</td>
<td>2</td>
</tr>
<tr>
<td>Problems</td>
<td>pollution 1, erosion 2, other 3</td>
</tr>
<tr>
<td>Total crayfish</td>
<td>by 1 method, note total(s) by other methods in notes if applicable</td>
</tr>
</tbody>
</table>

---

**Wye**

- **River**: Dulas Brook (Buith Road)
- **Surveyor**: DR LW
- **Grid ref. (d/s end)**: SO 0487 5576
- **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
- **Survey method**: std 1, quad 2, net/kick 3, trap 4, view 5
- **Details (if not standard)**: Extent (l x w x patch) 3x1, Channel (1 margins, 2 mid, 3 both, other specify) 3, Depth (metres) 0.2
- **Survey conditions, patches etc.**: Grazing, heavy stock access, bank erosion.

---

**Catchment River Site (no., name)**: Wye Dulas Brook (Buith Road) 9
### CRAYFISH HABITAT SURVEY FORM

<table>
<thead>
<tr>
<th>Catchment</th>
<th>River</th>
<th>Site (no., name)</th>
<th>Date (dd/mm/yy)</th>
<th>Surveyor</th>
<th>Grid ref. (d/s end)</th>
<th>Weather, good 1, mod 2, poor 3</th>
<th>Water temp. oC</th>
<th>Clarity, good 1, mod 2, poor 3</th>
<th>Photo ref. &amp; Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wye</td>
<td>Dulas Brook (Builth Road)</td>
<td>31/08/2015</td>
<td>DR LW</td>
<td>SO 0530 5610</td>
<td>1</td>
<td>Water, norm 1, low 2, fall 3, high 4</td>
<td>12</td>
<td>1</td>
<td>Dulas10</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Site length (m)</th>
<th>Width channel (m)</th>
<th>Sample patch 1</th>
<th>Sample patch 2</th>
<th>Sample patch 3</th>
<th>Sample patch 4</th>
<th>Sample patch 5</th>
</tr>
</thead>
<tbody>
<tr>
<td>100</td>
<td>2</td>
<td>1 &amp; 4</td>
<td>1 &amp; 4</td>
<td>1 &amp; 4</td>
<td>1 &amp; 4</td>
<td>1 &amp; 4</td>
</tr>
</tbody>
</table>

#### Survey method, site, habitat
- std 1, quad 2, net/kick 3, trap 4, view 5

#### Extent (l x w l patch)
- 3x2

#### Details (if not standard)
- Channel (1 margins, 2 mid, 3 both, other specify)
- Depth (metres)
- Water temp. oC
- Clarity, good 1, mod 2, poor 3

#### Refuges in channel
- cobble (6.5-15cm)
- cobble (15-25.6cm)
- boulder (25.6-40cm)
- rubble (give size)
- woody debris
- other urban debris
- tree roots, fine
- moss
- filamentous algae
- other submerged veg.
- emergents
- bedrock
- pebble (<2mm)
- gravel (<1.6cm)
- sand (<2mm)
- clay silt

#### Silitation
- none
- low
- moderate
- high

#### Refuges in bank
- cobble/boulder
- tree roots, large
- vertical or undercut bank
- dry stone wall
- other reinforced
crayfish burrows

#### Shading above
- MOD
- HEAVY

#### Evaluation crayfish habitat for whole site (0 none, 1 pres., 2 freq., 3 abund.)
- Score
  - in margins
  - in mid channel
  - in banks
  - surveyability

#### Problems
- pollution 1, erosion 2, (if >33% affected), aliens 3.

#### Total crayfish by 1 method, note total(s) by other methods in notes if applicable

---

Notes: survey conditions, patches etc., entrance to motocross site
**CRAYFISH HABITAT SURVEY FORM**

<table>
<thead>
<tr>
<th>Catchment</th>
<th>Wye</th>
<th>River</th>
<th>Dulas Brook (Buith Road)</th>
<th>Site (no., name)</th>
<th>11</th>
</tr>
</thead>
</table>

**Surveyor**

<table>
<thead>
<tr>
<th>Date (dd/mm/yy)</th>
<th>Surveyor</th>
<th>Weather, good 1, mod 2, poor 3</th>
<th>Grid ref. (d/s end)</th>
<th>Flow, norm, 1, low 2, fall 3, rise 4</th>
<th>Water temp. oC</th>
<th>Clarity, good 1, mod 2, poor 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>09/09/2015</td>
<td>DR LW</td>
<td>1</td>
<td>SO 0573 5630</td>
<td>1</td>
<td>12</td>
<td>1</td>
</tr>
</tbody>
</table>

**Photo ref. & Location**

<table>
<thead>
<tr>
<th>Site length (m)</th>
<th>Width channel (m)</th>
<th>Descrip. (channel features, landmarks)</th>
</tr>
</thead>
<tbody>
<tr>
<td>100</td>
<td>2</td>
<td>Motocross, major erosion. Good access</td>
</tr>
</tbody>
</table>

**Survey method, std 1, quad 2, net/kick 3, trap 4, view 5**

<table>
<thead>
<tr>
<th>survey method</th>
<th>Extent (l x w patch)</th>
<th>Channel features, other specify</th>
<th>Depth (metres)</th>
<th>Feature (1 marg. d'water, 2 pool, 3 glide, 4 run, 5 riffle)</th>
<th>Refuges in bank</th>
<th>Refuges in channel</th>
<th>Refuges in bank</th>
<th>Refuges in channel</th>
<th>Refuges in bank</th>
<th>Refuges in channel</th>
<th>Refuges in bank</th>
<th>Refuges in channel</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>3x2</td>
<td>3</td>
<td>0.2</td>
<td>3</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td></td>
<td>5x2</td>
<td>2</td>
<td>0.2</td>
<td>2</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td></td>
<td>2x2</td>
<td>3</td>
<td>0.2</td>
<td>3</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td></td>
<td>4x2</td>
<td>2</td>
<td>0.2</td>
<td>3</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td></td>
<td>3x2</td>
<td>3</td>
<td>0.2</td>
<td>3</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
</tbody>
</table>

**Refuges in channel**

- cobble (6.5-15cm): YES
- cobble (15-25.6cm): YES
- boulder (25.6-40cm): YES
- rubble (give size): YES
- woody debris: YES
- other urban debris: YES
- tree roots, fine moss:
- filamentous algae:
- other submerged veg:
- emergents:

**Main substrate beneath**

- bedrock: YES
- pebble (<6.5cm): YES
- gravel (<1.6cm): YES
- sand (<2mm): YES
- clay:
- silt: YES

**Siltation**

- none:
- low:
- moderate:
- high:

**Shading above**

- HEAVY

**Crayfish (10 refuges, or per unit (depending on method))**

<table>
<thead>
<tr>
<th>Search time (Mins)</th>
<th>10</th>
<th>5</th>
<th>10</th>
<th>5</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bullhead present?</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

**Evaluation crayfish habitat for whole site (0 none, 1 pres., 2 freq., 3 abundant)**

<table>
<thead>
<tr>
<th>Notes (survey conditions, patches etc.)</th>
<th>Erosion on banks and motocross site. Tributary has good habitat</th>
</tr>
</thead>
<tbody>
<tr>
<td>in margins</td>
<td>Score</td>
</tr>
<tr>
<td>in mid channel</td>
<td>1</td>
</tr>
<tr>
<td>in banks</td>
<td>0</td>
</tr>
<tr>
<td>surveyability</td>
<td>3</td>
</tr>
</tbody>
</table>

**Problems**

- pollution 1, erosion 2, if >33% affected, aliens 3.

**Total crayfish by 1 method, note total(s) by other methods in notes if applicable**

| 0 |
## Wye Dulas Brook (Buith Road)

**Date (dd/mm/yy):** 01/09/2015

**Surveyors:** DR LW

**Grid ref. (d/s end):** SO 0604 5673

**Weather:**
- Good 1, Mod 2, Poor 3

**Water temp. (°C):**
- Good 1, Mod 2, Poor 3

**Clarity:**
- Good 1, Mod 2, Poor 3

**Flow:**
- Norm 1, Low 2, Fall 3, Rise 4

**Survey method:**
- Std 1, Quad 2, Net/Kick 3, Trap 4, View 5

**Refuges in channel**
- Cobble (6.5-15cm)
- Cobble (15-25.6cm)
- Boulder (25.6-40cm)
- Boulder (>40cm)
- Rubble (give size)
- Woody debris
- 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 habitat for whole site**

**Score**
- In margins: 0
- In mid channel: 0
- In banks: 0
- Surveyability: 0

**Problems:**
- Pollution 1, Erosion 2 (E if >33% affected), aliens 3

**Total crayfish**

**Notes (survey conditions, patches etc.):**

---

*Whole 500m unsuitable due to small flow. Main flow appears to come from tributaries arising from Maesgwynne.*
**Crayfish Habitat Survey Form**

<table>
<thead>
<tr>
<th>River</th>
<th>Dyfi</th>
<th>Date</th>
<th>01/09/2015</th>
<th>Surveyor</th>
<th>DR LW</th>
</tr>
</thead>
<tbody>
<tr>
<td>Grid ref. (d/s end)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Weather & Flow**

- **Flow rate**: High (800 cfs)
- **Temperature**: Warmer
- **Water clarity**: Good
- **Clarity**: Poor

**Flow & Water Temperature**

- **Flow**: Norm
- **Temperature**: 6°C

**Photo ref. & Location**

- **Site length (m)**: 1000
- **Width channel (m)**: 5

**Survey Method**

- **Survey method**: Table

**Survey Details**

- **Extent (l x w patch)**: Whole 500m unsuitable for survey due to dry riverbed
- **Channel (1 margins, 2 mid, 3 both, other specify)**: None
- **Depth (metres)**: 0
- **Feature (1 marg. d'water, 2 pool, 3 glide, 4 run, 5 riffle)**: None
- **Refuges in channel tick all present in patch, ring main type(s) searched**
  - Cobble (6.5-15cm)
  - Cobble (15-25.6cm)
  - Boulder (25.6-40cm)
  - Boulder (>40cm)
  - Rubble (give size)
  - Wood debris
  - Other

**Main Substrata beneath bedrock**

- **Main Substrata**: Table
- **Beneath bedrock**: Table

**Siltation**

- **Siltation**: None

**Shading**

- **Shading**: Above

**Evaluation of crayfish habitat for whole site or sample (1 = none, 2 = freq., 3 = abundant)**

- **Shade**: 0
- **Margin**: 0
- **Mid channel**: 0
- **Bank**: 0
- **Surveyability Problems**: Pollution 1, Erosion 2, Aliens 3

**Crayfish**

- **Total crayfish (by method, note total(s) by other methods in notes if applicable)**: 0

**Notes**

Whole 500m unsuitable for survey due to dry riverbed.
## CRAYFISH HABITAT SURVEY FORM

**Catchment**: Wye  
**River**: Clyro  
**Site (no., name)**: 1

<table>
<thead>
<tr>
<th>Date (dd/mm/yy)</th>
<th>24/08/2016</th>
</tr>
</thead>
<tbody>
<tr>
<td>Surveyor(s)</td>
<td>DR LW</td>
</tr>
<tr>
<td>Grid ref.</td>
<td>SO 232 454</td>
</tr>
</tbody>
</table>

**Weather, good 1, mod 2, poor 3**  
1  
**Water temp. **  
12  
**Clarity, good 1, mod 2, poor 3**  
1

**Photo ref. & Location**  
Near confluence

**Site length (m)**  
300

**Width channel (m)**  
2

**Survey method, std 1, quad 2, net/kick 3, trap 4, view 5**  
1 & 4  
1 & 4  
1 & 4  
1 & 4  
1 & 4

**Details**

<table>
<thead>
<tr>
<th>Habitat (x specie)</th>
<th>4x1</th>
<th>5x4</th>
<th>4x1</th>
<th>2x2</th>
<th>2x1</th>
</tr>
</thead>
</table>

**Channel (x height, 2 mid, 3 both, other specify)**  
3  
3  
3  
3  
3

**Depth (meters)**  
0.2  
0.3  
0.3  
0.2  
0.2

**Number (1 length, 2 short, 3 good, 3 grade, 4 ion, 5 riffle)**  
3  
3  
3  
2  
3

**Refuges in channel**

<table>
<thead>
<tr>
<th>Size (6.5-15cm)</th>
<th>6.5-15cm</th>
<th>15-25cm</th>
<th>25-60cm</th>
<th>&gt;60cm</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cobble</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>Boulder</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>Pebble</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>Gravel</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>Sand</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>Clay</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>Silt</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
</tbody>
</table>

**Refuges in bank**

<table>
<thead>
<tr>
<th>Type</th>
<th>6.5-15cm</th>
<th>15-25cm</th>
<th>25-60cm</th>
<th>&gt;60cm</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cobble/Boulder</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>Tree roots</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>Dry stone wall</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>Other reinforced</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
</tbody>
</table>

**Shading above**

<table>
<thead>
<tr>
<th>Type</th>
<th>HEAVY</th>
<th>HEAVY</th>
<th>HEAVY</th>
<th>HEAVY</th>
<th>HEAVY</th>
</tr>
</thead>
<tbody>
<tr>
<td>HEAVY</td>
<td>5</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>10</td>
<td>0</td>
<td>12</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

**Bullhead present?**

<table>
<thead>
<tr>
<th>Type</th>
<th>YES</th>
<th>YES</th>
<th>YES</th>
<th>YES</th>
<th>YES</th>
</tr>
</thead>
</table>

**Evaluation**

<table>
<thead>
<tr>
<th>Type</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>in margins</td>
<td>1</td>
</tr>
<tr>
<td>in mid channel</td>
<td>1</td>
</tr>
<tr>
<td>in banks</td>
<td>1</td>
</tr>
<tr>
<td>surveyability</td>
<td>1</td>
</tr>
</tbody>
</table>

**Problems**

<table>
<thead>
<tr>
<th>Type</th>
<th>1, erosion</th>
<th>2, 3 (33% affected), alien</th>
<th>Sediment</th>
</tr>
</thead>
</table>

**Total crayfish**

| Type | 0 |

---

**Notes**

- Survey conditions, patches etc. difficult to find suitable patches to survey
- Difficult to find suitable patches to survey
## CRAYFISH HABITAT SURVEY FORM

### Catchment River Site (no., name)
- River Wye
- Site (no., name) 2

### Date (dd/mm/yy)
- 24/08/2016

### Surveyor
- DR LW

### Grid ref. (d/s end)
- SO 229 451

### Weather
- Good 1, mod 2, poor 3
- Flow: norm 1, low 2, fast 3, rise 4
- Water temp: OC 12
- Clarity: good 1, mod 2, poor 3

### Photo ref. & Location
- Immediately downstream of 1st 100m

### Site length (m)
- 500

### Width channel (m)
- 3

### Survey method, site 1, quad 2, net/kick 3, trap 4, view 5
- 1 & 4

### Details (if not standard)

#### Extent (l x w patch)
- Sample patch 1: 1x1
- Sample patch 2: 1x1
- Sample patch 3: 1x1
- Sample patch 4: 1x1

#### Channel (1 margins, 2 mid, 3 both, other specify)
- Sample patch 1: 3
- Sample patch 2: 3
- Sample patch 3: 3
- Sample patch 4: 3

#### Depth (metres)
- 0.3

#### Refuges in channel (tick all present in patch, ring main type(s) searched)
- Yes
- 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

#### Refuges in bank (tick all present in patch, ring main type(s) searched)
- None
- Cobble/boulder
- Tree roots, large
- Vertical or undercut bank
- Other reinforced crayfish burrows

#### Main substrate beneath
- Bedrock
- Cobble (6.5-15cm)
- Pebble (>6.5cm)
- Gravel (<1.6cm)
- Sand (<2mm)
- Clay
- Silt

#### Silitation
- None
- Low
- Moderate
- High

#### Shading above
- HEAVY

#### Crayfish
- 0 (ticks refuges, or per unit (depending on method)

#### Search time (Mins)
- 6

#### Bullhead present?
- Yes

#### Evaluation crayfish habitat for whole site (0-3)
- Score
- Notes (survey conditions, patches etc.)

#### Problems
- Pollution 1, erosion 2, aliens 3

#### Total crayfish (10 per unit)
- 0

### Landuse, agricultural. River channelled within thick bushes with occasional stock access.
**CRAYFISH HABITAT SURVEY FORM**

<table>
<thead>
<tr>
<th>Catchment</th>
<th>Wye</th>
<th>River</th>
<th>Clyro</th>
<th>Site (no., name)</th>
<th>3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Date (dd/mm/yy)</td>
<td>24/08/2016</td>
<td>surveyor</td>
<td>DR LW</td>
<td>Grid ref. (d/s end.)</td>
<td>SO 228 446</td>
</tr>
<tr>
<td>Weather, good 1, mod 2, poor 3</td>
<td></td>
<td>Flow, norm 1, low 2, fall 3, rise 4.</td>
<td></td>
<td>Water,</td>
<td>good 1, mod 2, poor 3</td>
</tr>
<tr>
<td>Photo ref. &amp; Location</td>
<td>Typical stretch in middle of site</td>
<td>Clarity,</td>
<td></td>
<td>12</td>
<td>1</td>
</tr>
<tr>
<td>Site length (m)</td>
<td>500</td>
<td>Description channel features, landscape</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Width channel (m)</td>
<td>2</td>
<td>River enclosed by dense canopy of elder, hawthorn, alder, willow, hazel, ash with occasional stock access. Heavy agricultural land use - cattle and sheep grazing/poaching.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Survey method, site 1, quad 2, net/kick 3, trap 4, view 5</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Details (if not standard)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Extent (l x w patches)</td>
<td>3x1</td>
<td>4x1</td>
<td>3x1</td>
<td>3x1</td>
<td>5x1</td>
</tr>
<tr>
<td>Channel (1 margins, 2 mid, 3 both, other specify)</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>Depth (metres)</td>
<td>0.2</td>
<td>0.1</td>
<td>0.1</td>
<td>0.2</td>
<td>0.2</td>
</tr>
<tr>
<td>Feature (1 marg. stream, 2 pool, 3 glide, 4 run, 5 riffle)</td>
<td>4</td>
<td>4</td>
<td>5</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>Refuges in channel</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>cobble (6.5-15cm)</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>cobble (15-25.6cm)</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>boulder (25.6-40cm)</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>rubble (give size)</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>woody debris</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>other urban debris</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>tree roots, fine moss</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>filamentous algae</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>other submerged veg.</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>emergents</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>Main substrate beneath</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>bedrock</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>cobble (6.5-15cm)</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>pebble (+6.5cm)</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>gravel (+1.6cm)</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>sand (&lt;2mm)</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>clay</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>silt</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>Siltation</td>
<td>none low</td>
<td>moderate high</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>Refuge in bank</td>
<td>none cobble/boulder</td>
<td>tree roots, large</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>vertical or undercut bank</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>dry stone wall</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>other reinforced crayfish burrows</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>Shading above</td>
<td>HEAVY</td>
<td>HEAVY</td>
<td>HEAVY</td>
<td>HEAVY</td>
<td>HEAVY</td>
</tr>
<tr>
<td>Crayfish 10 refuges, or per unit (depending on method)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Search time (Mins)</td>
<td>12</td>
<td>6</td>
<td>10</td>
<td>8</td>
<td>10</td>
</tr>
<tr>
<td>Bullhead present?</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Evaluation crayfish habitat for whole site (0 none, 1 pres., 2 freq., 3 abundant)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>in margins</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>in mid channel</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>in banks</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Problems</td>
<td>pollution 1, erosion 2, (E if &gt;33% affected), aliens 3.</td>
<td>Notes (survey conditions, patches etc.)</td>
<td>Difficult to access river through canopy</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total crayfish</td>
<td>0</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Catchment</td>
<td>Wye</td>
<td>River</td>
<td>Clyro</td>
<td>Site (no., name)</td>
<td></td>
</tr>
<tr>
<td>-----------</td>
<td>-------</td>
<td>-------</td>
<td>-------</td>
<td>-----------------</td>
<td></td>
</tr>
<tr>
<td>Date (dd/mm/yy)</td>
<td>24/08/2016</td>
<td>Surveyor(s)</td>
<td>DR LW</td>
<td>Grid ref. (d/s end) SO 224 443</td>
<td></td>
</tr>
<tr>
<td>Weather, good 1, mod 2, poor 3</td>
<td>1</td>
<td>Flow, temp.</td>
<td>1, low 2, tail 3, rise 4</td>
<td>Water temp.</td>
<td>12</td>
</tr>
<tr>
<td>Photo ref. &amp; Location</td>
<td>At roadbridge</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Site length (m)</td>
<td>500</td>
<td>Width channel (m)</td>
<td>2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Site length (m)</td>
<td>500</td>
<td>Width channel (m)</td>
<td>2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Survey method, std 1, quad 2, net/kick 3, trap 4, view 5</td>
<td>1 &amp; 4</td>
<td>Details</td>
<td>1 &amp; 4</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Extent (l x w patch)</td>
<td>4x2</td>
<td>4x2</td>
<td>5x1</td>
<td>5x1</td>
<td>4x1</td>
</tr>
<tr>
<td>Channel (1 margins, 2 mid, 3 both, other specify)</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>Depth (metres)</td>
<td>0.2</td>
<td>0.2</td>
<td>0.2</td>
<td>0.2</td>
<td>0.2</td>
</tr>
<tr>
<td>Feature (1 marg. water, 2 pool, 3 glide, 4 run, 5 riffle)</td>
<td>3</td>
<td>3</td>
<td>4</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>Refuges in channel</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>Main substrate beneath</td>
<td>bedrock</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>Siltation</td>
<td>none</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>Refuges in bank</td>
<td>high</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>Shading above</td>
<td>MOD</td>
<td>MOD</td>
<td>HEAVY</td>
<td>HEAVY</td>
<td>HEAVY</td>
</tr>
<tr>
<td>Crayfish present?</td>
<td>Notes (survey conditions, patches etc.): Difficult to access river through canopy except at road and field gates</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Problems</td>
<td>pollution 1, erosion 2, if &gt;33% affected, aliens 3</td>
<td>1 sewage?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total crayfish</td>
<td>0</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Low slow flowing, deep pool after roadbridge. Increased siltation maybe by sewage works upstream.
### CRAYFISH HABITAT SURVEY FORM

<table>
<thead>
<tr>
<th>Catchment</th>
<th>River</th>
<th>Site (no., name)</th>
<th>Date (dd/mm/yy)</th>
<th>Surveyor</th>
<th>Grid ref. (d/s end)</th>
<th>Weather, good 1, mod 2, poor 3, 12</th>
<th>Photo ref. &amp; Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wye</td>
<td>Clyro</td>
<td>Privately developed mill house with very large pond and sewage works discharging to the river upstream of it. Sites 1 to 5 are in the flood plain of the River Wye.</td>
<td>23/08/2016</td>
<td>DR LW</td>
<td>SO 220 439</td>
<td>good, 1, mod 2, poor 3</td>
<td>At sewage works discharge</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Descript. (channel features, landuse)</th>
<th>Notes (survey conditions, patches etc.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>PRIVATLY DEVELOPED MILL HOUSE WITH VERY LARGE POND AND SEWAGE WORKS DISCHARGING TO THE RIVER UPSTREAM OF IT. SITES 1 TO 5 ARE IN THE FLOOD PLAIN OF THE RIVER WYE.</td>
<td>DIFFICULT TO ACCESS RIVER THROUGH CANOPY</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Site length (m)</th>
<th>Width channel (m)</th>
<th>Sample patch 1</th>
<th>Sample patch 2</th>
<th>Sample patch 3</th>
<th>Sample patch 4</th>
<th>Sample patch 5</th>
</tr>
</thead>
<tbody>
<tr>
<td>500</td>
<td>1.5</td>
<td>1 &amp; 4</td>
<td>1 &amp; 4</td>
<td>1 &amp; 4</td>
<td>1 &amp; 4</td>
<td>1 &amp; 4</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Survey method, std 1, quad 2, net/kick 3, trap 4, view 5</th>
<th>Details (if not standard)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 &amp; 4 &amp; 1</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Extent (l x w patch)</th>
<th>Channel (1 margins, 2 mid, 3 both, other specify)</th>
<th>Depth (metres)</th>
<th>Initiation (1 marg. &amp; butcher, 2 good, 3 gill, 4 min, 5 riffle)</th>
<th>Refuges in channel</th>
</tr>
</thead>
<tbody>
<tr>
<td>4x1</td>
<td>3</td>
<td>0.2</td>
<td>3</td>
<td>cobble (6.5-15cm)</td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>0.2</td>
<td>3</td>
<td>cobble (15-25.6cm)</td>
</tr>
<tr>
<td></td>
<td>2x1</td>
<td>0.2</td>
<td>3</td>
<td>cobble (&gt;40cm)</td>
</tr>
<tr>
<td></td>
<td>2x1</td>
<td>0.2</td>
<td>3</td>
<td>rubber (give size)</td>
</tr>
<tr>
<td></td>
<td>5x1</td>
<td>0.2</td>
<td>3</td>
<td>woody debris</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>3</td>
<td>other urban debris</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>3</td>
<td>tree roots, fine</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>3</td>
<td>moss</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>3</td>
<td>filamentous algae</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>3</td>
<td>other submerged veg.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Main substrate beneath</th>
<th>Siltation</th>
</tr>
</thead>
<tbody>
<tr>
<td>bedrock</td>
<td>none</td>
</tr>
<tr>
<td>cobble (6.5-15cm)</td>
<td>low</td>
</tr>
<tr>
<td>cobble (15-25.6cm)</td>
<td>moderate</td>
</tr>
<tr>
<td>cobble (&gt;40cm)</td>
<td>high</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Refuges in bank</th>
<th>Bedrock, large tree roots, vertical or undercut bank, dry stone wall, other reinforced crayfish burrows</th>
</tr>
</thead>
<tbody>
<tr>
<td>none</td>
<td>Crayfish 10 refuge, 0 per unit (depending on method)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Refuges in channel</th>
<th>Main substrate beneath</th>
</tr>
</thead>
<tbody>
<tr>
<td>cobble (6.5-15cm)</td>
<td>bedrock</td>
</tr>
<tr>
<td>cobble (15-25.6cm)</td>
<td>cobble (6.5-15cm)</td>
</tr>
<tr>
<td>cobble (&gt;40cm)</td>
<td>cobble (6.5-15cm)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Shading above</th>
<th>Crayfish habitat for whole site (0 none, 1 pres., 2 freq., 3 abund.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>HEAVY</td>
<td>0</td>
</tr>
<tr>
<td>HEAVY</td>
<td>0</td>
</tr>
<tr>
<td>HEAVY</td>
<td>0</td>
</tr>
<tr>
<td>HEAVY</td>
<td>0</td>
</tr>
<tr>
<td>HEAVY</td>
<td>0</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Search time (Mins)</th>
<th>Crayfish (0 none, 1 pres., 2 freq., 3 abund.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>6</td>
<td>0</td>
</tr>
<tr>
<td>8</td>
<td>0</td>
</tr>
<tr>
<td>10</td>
<td>0</td>
</tr>
<tr>
<td>6</td>
<td>14</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Evaluation crayfish habitat for whole site</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>1</td>
<td>1</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Problems</th>
<th>Crayfish</th>
</tr>
</thead>
<tbody>
<tr>
<td>pollution, erosion</td>
<td>0</td>
</tr>
<tr>
<td>aliens</td>
<td>0</td>
</tr>
<tr>
<td>sewage</td>
<td>0</td>
</tr>
</tbody>
</table>

| Total crayfish | 0 |

www.naturalresourceswales.gov.uk
**Catchment Site (no., name)**

<table>
<thead>
<tr>
<th>Catchment</th>
<th>Wye</th>
<th>River</th>
<th>Clyro</th>
<th>Site (no., name)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Date (dd/mm/yy)</td>
<td>23/08/2016</td>
<td>Surveyor s</td>
<td>DR LW</td>
<td>Grid ref (d/s end) SO 216 439</td>
</tr>
<tr>
<td>Weather, good 1, mod 2, poor 3</td>
<td>1</td>
<td>Flow: norm. 1, low 2, fall 3, rise 4.</td>
<td>Water</td>
<td>Clarity, good 1, mod 2, poor 3</td>
</tr>
<tr>
<td>Photo ref. &amp; Location</td>
<td>Roadbridge in village</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Site length (m)</td>
<td>100</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Width channel (m)</td>
<td>3</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Survey method, std 1, quad 2, net/kick 3, trap 4, view 5</td>
<td>1 &amp; 4</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Details</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Extent (l x w = patch)</td>
<td>3x2</td>
<td>3x3</td>
<td>5x1</td>
<td>2x2</td>
</tr>
<tr>
<td>Channel (1 margins, 2 mid, 3 both, other specify)</td>
<td>3</td>
<td>3</td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td>Depth (metres)</td>
<td>0.2</td>
<td>0.3</td>
<td>0.2</td>
<td>0.2</td>
</tr>
<tr>
<td>Feature (1 marg. d'water, 2 pool, 3 glide, 4 run, 5 riffle)</td>
<td>5</td>
<td>5</td>
<td>5</td>
<td>5</td>
</tr>
<tr>
<td>Refuges in channel</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>cobble (6.5-15cm)</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>cobble (15-25.6cm)</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>boulder (25.6-40cm)</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>boulder (&gt;40cm)</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>rubble (give size)</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>woody debris</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>other urban debris</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>tree roots, fine moss</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>filamentous algae</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>emergents</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>Main substrate beneath</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>bedrock</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>cobble (6.5-15cm)</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>pebble (&lt;6.5cm)</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>gravel (&lt;.6cm)</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>sand (&lt;2mm)</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>clay</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Silt</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>Silitation</td>
<td>none</td>
<td>low</td>
<td>moderate</td>
<td>high</td>
</tr>
<tr>
<td>Refuges in bank</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>none</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>cobble/boulder tree roots, large</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>vertical or undercut bank dry stone wall</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>other reinforced crayfish burrows</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>Shading above</td>
<td>MODERATE</td>
<td>HEAVY</td>
<td>HEAVY</td>
<td>LIGHT</td>
</tr>
<tr>
<td>Crayfish:10 refuges, or per unit (depending on method)</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>Search time (Mins)</td>
<td>12</td>
<td>6</td>
<td>11</td>
<td>12</td>
</tr>
<tr>
<td>Bullhead present?</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Evaluation crayfish habitat for whole site</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>none, 1 pres., 2 freq., 3 abund.</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>in margins</td>
<td>2</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>in mid channel</td>
<td>2</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>in banks</td>
<td>2</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>surveyability</td>
<td>2</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Problems pollution 1, erosion 2, (E if &gt;33% affected), aliens 3.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total crayfish</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Notes (survey conditions, patches etc.):** P1 - many red roots

**Land use - main road bridges and urban. Appears good habitat.**

**Descript. Channel features, habitat:**

- Roadbridge in village
- Land use - main road bridges and urban.
## CRAYFISH HABITAT SURVEY FORM

<table>
<thead>
<tr>
<th>Catchment</th>
<th>River</th>
<th>Site (no., name)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wye</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Date (dd/mm/yy)</th>
<th>Surveyor</th>
<th>Grid ref. (d/s end)</th>
<th>Weather, good 1, mod 2, poor 3</th>
<th>Water temp. oC</th>
<th>Clarity, good 1, mod 2, poor 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>23/08/2016</td>
<td>DR LW</td>
<td>SO 211 440</td>
<td>1, low 2, tall 3</td>
<td>13</td>
<td>1</td>
</tr>
</tbody>
</table>

### Photo ref. & Location
- Footpath bridge

### Site length (m)
- 100

### Width channel (m)
- 3

### Survey details

#### Survey method, std 1, quad 2, net/kick 3, trap 4, view 5
- sample patch 1, sample patch 2, sample patch 3, sample patch 4, sample patch 5

#### Details (if not standard)

#### Extent (l x w patch)
- 5x2

#### Channel (1 margins, 2 mid, 3 both, other specify)
- 3

#### Depth (metres)
- 0.2

#### Habitat (1 marg.ч water, 2 pool, 3 glide, 4 run, 5 riffle)
- 5

### Refuges in channel

#### Cobble (6.5-15cm)
- YES

#### Cobble (15-25.6cm)
- YES

#### Boulder (25.6-40cm)
- YES

#### Rubble (give size)
- YES

#### Woody debris
- YES

#### Other urban debris
- YES

#### Tree roots, fine
- YES

#### Moss
- YES

#### Filamentous algae
- YES

#### Other submerged veg.
- YES

#### Emergents
- YES

### Main substrate beneath

#### Bedrock
- YES

#### Cobble (6.5-15cm)
- YES

#### Pebble (≤6.5cm)
- YES

#### Gravel (<1.6cm)
- YES

#### Sand (<2mm)
- YES

#### Clay
- YES

#### Silt
- YES

### Sedimentation

#### None
- YES

#### Low
- YES

#### Moderate
- YES

#### High
- YES

### Refuges in bank

#### None
- YES

#### Cobble/boulder
- YES

#### Tree roots, large
- YES

#### Vertical or undercut bank
- YES

#### Dry stone wall
- YES

#### Other reinforced
- YES

#### Crayfish burrows
- YES

### Shading above

#### Heavy
- YES

### Evaluating crayfish

#### Habitat for whole site (0 none, 1 pres., 2 freq., 3 abundant)
- Score

#### in margins
- 3

#### in mid channel
- 3

#### in banks
- 3

### Total crayfish
- 38

### Problems

#### Pollution 1, erosion 2, Other 3
- YES

### Total crayfish
- 38

---

**Notes:** Survey conditions, patches etc. Easy to search large areas. Habitat in cracks and crevices in the bedrock. Banks very undercut in places providing excellent habitat.
**General Information**

- **Date (dd/mm/yy):** 23/08/2016
- **Surveyor:** DR LW
- **Grid ref. (d/s end):** SO 206 441

**Environmental Conditions**

- **Weather:**
  - 1: good
  - 2: mod
  - 3: poor
- **Flow:**
  - norm: 1
  - low: 2
  - fall: 3
  - rise: 4
- **Water temp. oC:** 12
- **Clarity:**
  - 1: good
  - 2: mod
  - 3: poor

**Survey Variables**

- **Site length (m):** 100
- **Width channel (m):** 3

**Survey Method**

- **Survey method:**
  - std: 1
  - quad: 2
  - net/kick: 3
  - trap: 4
  - view: 5

**Survey Details**

- **Details** (if not standard):

**Refuges in Channel**

- **Refuges in channel**:
  - tick all present in patch, main types (s) searched in red
  - cobble (6.5-15cm): YES
  - cobble (15-25.5cm): YES
  - boulder (25.6-40cm): YES
  - boulder (>40cm): YES
  - rubble (give size): YES
  - woody debris: YES
  - moss: YES
  - filamentous algae: YES
  - other submerged veg. emergents: YES

**Main Substrate Beneath**

- **Main substrate beneath**:
  - bedrock: YES
  - cobble (6.5-15cm): YES
  - pebble (<6.5cm): YES
  - gravel (<1.6cm): YES
  - sand (<2mm): YES
  - silt: YES
  - clay: YES

**Siltation**

- **Siltation**:
  - none: YES
  - low: YES
  - moderate: YES
  - high: YES

**Refuges in Bank**

- **Refuges in bank**:
  - none: YES
  - cobble/boulder: YES
  - tree roots, large: YES
  - vertical or undercut bank: YES
  - dry stone wall: YES
  - other reinforced: YES
  - crayfish burrows: YES

**Shading**

- **Shading above**:
  - HEAVY

**Crayfish**

- **Crayfish (10 refuges, or per unit (depending on method))**
  - 7: 3
  - 10: 5

**Bulhead present?**

- **Bulhead present?**
  - 5: 5

**Evaluation Crayfish Habitat**

- **Evaluation crayfish habitat for whole site or name**: Score
  - in margins: 3
  - in mid channel: 3
  - in banks: 3
  - surveyability: 3

**Problems**

- **Problems**:
  - pollution: 1
  - erosion: 2
  - (if >33% affected): aliens: 3

**Total crayfish**

- **Total crayfish**: 16

---

**Descript. (channel features, landuse)**

- Many crayfish ranging from juveniles to mature adults, river did not extend the width of the riverbed so there were no refuges in bank.
## CRAYFISH HABITAT SURVEY FORM

<table>
<thead>
<tr>
<th>Catchment</th>
<th>Wye</th>
<th>River</th>
<th>Cyro</th>
<th>Site (no., name)</th>
<th>9</th>
</tr>
</thead>
<tbody>
<tr>
<td>Date (dd/mm/yy)</td>
<td>22/08/2016</td>
<td>Surveyor</td>
<td>DR LW</td>
<td>Grid ref (d/s end)</td>
<td>SO 202 440</td>
</tr>
<tr>
<td>Weather, good 1, mod 2, poor 3</td>
<td>Flow: num</td>
<td>1, low 2, fall 3, rise 4</td>
<td>Water temp, oC</td>
<td>Clarity, good 1, mod 2, poor 3</td>
<td>1</td>
</tr>
<tr>
<td>Photo ref. &amp; Location</td>
<td>Typical habitat at downstream end of site</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Site length (m)</td>
<td>100</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Width channel (m)</td>
<td>3</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Survey method, std 1, quad 2, net/kick 3, trap 4, view 5</td>
<td>1&amp;4</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Details (if not standard)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Extent (lxw patch)</td>
<td>3x2</td>
<td>3x4</td>
<td>2x4</td>
<td>2x2</td>
<td>5x2</td>
</tr>
<tr>
<td>Channel (1 margins, 2 mid, 3 both, other specify)</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Depth (metres)</td>
<td>0.3</td>
<td>0.3</td>
<td>0.3</td>
<td>0.3</td>
<td>0.3</td>
</tr>
<tr>
<td>Feature (1 marg. water, 2 pool, 3 glide, 4 run, 5 riffle)</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>5</td>
<td>5</td>
</tr>
<tr>
<td>Refuges in channel</td>
<td>tick all present in patch, ring main type(s) searched</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>cobble (6.5-15cm)</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>cobble (15-25.6cm)</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>boulder (25.6-40cm)</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>boulder (&gt;40cm)</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>rubble (give size)</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>woody debris</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>tree roots, fine</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>moss</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>filamentous algae</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>other submerged veg.</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>Emergents</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Main substrate beneath</td>
<td>bedrock</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>cobble (6.5-15cm)</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>pebble (&lt;6.5cm)</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>gravel (&lt;1.6cm)</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>sand (&lt;2mm)</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>clay</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>Silt</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>Siltation</td>
<td>none</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>low</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>moderate</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>high</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>Refuges in bank</td>
<td>none</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>cobble/boulder</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>tree roots, large</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>vertical or undercut bank</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>dry stone wall</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>other reinforced crayfish burrows</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>Shading above</td>
<td>MOD</td>
<td>MOD</td>
<td>HEAVY</td>
<td>HEAVY</td>
<td>MOD</td>
</tr>
<tr>
<td>Crayfish 10 refuges, or per unit (depending on method)</td>
<td>2</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Search time (Mins)</td>
<td>8</td>
<td>12</td>
<td>8</td>
<td>12</td>
<td>9</td>
</tr>
<tr>
<td>Bullhead present?</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Evaluation crayfish habitat for whole site (a none, 1 pres., 2 freq., 3 abund.)</td>
<td>Score</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>in margins</td>
<td>3</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>in mid channel</td>
<td>3</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>in banks</td>
<td>3</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>surveyability</td>
<td>3</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Problems</td>
<td>pollution 1, erosion 2, (E if &gt;33% affected), algae 3</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total crayfish</td>
<td>3</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
**CRAYFISH HABITAT SURVEY FORM**

<table>
<thead>
<tr>
<th>Catchment</th>
<th>Wye</th>
<th>River</th>
<th>Clyro</th>
<th>Site (no., name)</th>
<th>10</th>
</tr>
</thead>
<tbody>
<tr>
<td>Date (dd/mm/yy)</td>
<td>22/08/2016</td>
<td>Surveyor s</td>
<td>DR, LW</td>
<td>Grid ref. (d/s end)</td>
<td></td>
</tr>
<tr>
<td>Weather, good 1, mod 2, poor 3</td>
<td></td>
<td>Flow norm 1, low 2, fall 3, rise 4</td>
<td>Water temp. oC</td>
<td>Clarity, good 1, mod 2, poor 3</td>
<td></td>
</tr>
<tr>
<td>Photo ref. &amp; Location</td>
<td>one of many dry sections</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Site length (m)</td>
<td>500</td>
<td>Descript. channel features, endnotes</td>
<td>Channel dry in places and in other places has pools and a little flow.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Width channel (m)</td>
<td>2</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Survey method, std 1, quad 2, net/kick 3, trap 4, view 5</th>
<th>sample patch 1</th>
<th>sample patch 2</th>
<th>sample patch 3</th>
<th>sample patch 4</th>
<th>sample patch 5</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 &amp; 4</td>
<td>1 &amp; 4</td>
<td>1 &amp; 4</td>
<td>1 &amp; 4</td>
<td>1 &amp; 4</td>
<td></td>
</tr>
<tr>
<td>Details (if not standard)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Extent (l x w patch)</td>
<td>2x1</td>
<td>3x1</td>
<td>2x1</td>
<td>2x1</td>
<td>2x1</td>
</tr>
<tr>
<td>Channel (1 margins, 2 mid, 3 both, other specify)</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>Depth (metres)</td>
<td>0.1</td>
<td>0.1</td>
<td>0.1</td>
<td>0.1</td>
<td>0.1</td>
</tr>
<tr>
<td>Habitat (1 marg, dwlder, 2 good, 3 fair, 4 fair, 5 riffle)</td>
<td>2</td>
<td>3</td>
<td>2</td>
<td>3</td>
<td>3</td>
</tr>
</tbody>
</table>

**Refuges in channel**

- cobble (6.5-15cm): YES
- cobble (15-25.6cm): YES
- boulder (25.6-40cm): YES
- boulder (>40cm): YES
- rubble (give size): YES
- woody debris: YES
- other urban debris: YES
- tree roots, fine: YES
- moss: YES
- filamentous algae: YES
- other submerged veg.: YES

**Main substrate beneath**

- bedrock: Yes
- cobble (6.5-15cm): Yes
- pebble (<6.5cm): Yes
- gravel (<1.6cm): Yes
- sand (<2mm): Yes
- clay: Yes
- silt: Yes

**Siltation**

- none: Low
- low: Moderate
- high: High

**Refuges in bank**

- cobble/boulder: YES
- tree roots, large: YES
- vertical or undercut bank: YES
- other reinforced: YES
- crayfish burrows: YES

**Shading above**

- MOD: MOD: MOD: MOD: MOD: MOD

**Crayfish (10 refuges, or per unit (depending on method)**

- Search time (Mins): 5, 5, 5, 5, 5, 5

**Bullhead present?**

- NO: YES

**Evaluation crayfish habitat for whole site**

<table>
<thead>
<tr>
<th>Score</th>
<th>Notes (survey conditions, patches etc.)</th>
<th>Search and trapped pools</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Problems**

- pollution 1, erosion 2, (if >33% affected), alien 3, drys out 4

**Total crayfish**

- 0

---

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<table>
<thead>
<tr>
<th>Catchment</th>
<th>Wye</th>
<th>River</th>
<th>Clyro</th>
<th>Site (no., name)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Date (dd/mm/yy)</td>
<td>22/03/2016</td>
<td>Surveyor(s)</td>
<td>DR, LW</td>
<td>Grid ref. (d/s end) SO192445</td>
</tr>
<tr>
<td>Weather,</td>
<td>good 1, mod 2, poor 3</td>
<td>Flow norm 1, low 2, fall 3, rise 4</td>
<td>Water temp. oC 12</td>
<td>Clarity, good 1, mod 2, poor 3 1</td>
</tr>
<tr>
<td>Photo ref. &amp; Location</td>
<td>typical reach with very low flow</td>
<td>Sample patch 1</td>
<td>Sample patch 2</td>
<td>Sample patch 3</td>
</tr>
<tr>
<td>Site length (m)</td>
<td>100</td>
<td>Descrip. (channel features, landuse)</td>
<td>Almost dry stream bed, too shallow for traps</td>
<td></td>
</tr>
<tr>
<td>Width channel (m)</td>
<td>1</td>
<td>Extent (l x w x patch)</td>
<td>3X1</td>
<td></td>
</tr>
<tr>
<td>Survey method, std 1, quad 2, net/kick 3, trap 4, view 5</td>
<td>1</td>
<td>Channel</td>
<td>1 margins, 2 mid, 3 both, other specify</td>
<td></td>
</tr>
<tr>
<td>Extent (l x w x patch)</td>
<td>3X1</td>
<td>Depth (metres)</td>
<td>0.1</td>
<td></td>
</tr>
<tr>
<td>Channel</td>
<td>1 margins, 2 mid, 3 both, other specify</td>
<td>Depth (metres)</td>
<td>0.1</td>
<td></td>
</tr>
<tr>
<td>Refuges in channel</td>
<td>tick all present in patch, ring main type(s) searched</td>
<td>Refuges in channel</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>Main substrate beneath</td>
<td>bedrock</td>
<td>Refuges in channel</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>Refuges in bank</td>
<td>none</td>
<td>Refuges in channel</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>Shading above</td>
<td>Crayfish</td>
<td>Shading above</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>Bullhead present?</td>
<td>No</td>
<td>Shading above</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>Evaluation crayfish habitat for whole site</td>
<td>Score</td>
<td>Shading above</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>Problems</td>
<td>pollution 1, erosion 2, (if &gt;33% affected), aliens 3.</td>
<td>Shading above</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>Total crayfish</td>
<td>0</td>
<td>Shading above</td>
<td>4</td>
<td></td>
</tr>
</tbody>
</table>

This site has been scored at zero because it probably dries out regularly (as was found in the 2003 survey).
**Crayfish Habitat Survey Form**

<table>
<thead>
<tr>
<th>Catchment</th>
<th>Wye</th>
<th>River</th>
<th>Clyro</th>
<th>Site (no., name)</th>
<th>12</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Date (dd/mm/yy)</th>
<th>22/03/2016</th>
<th>Surveyor</th>
<th>DR, LW</th>
<th>Grid Ref.</th>
<th>SC189449</th>
</tr>
</thead>
<tbody>
<tr>
<td>Weather, good 1, mod 2, poor 3</td>
<td>None</td>
<td>Water temp, oC</td>
<td>N/A</td>
<td>Clarity, good 1, mod 2, poor 3</td>
<td></td>
</tr>
<tr>
<td>Photo ref. &amp; Location</td>
<td>typical dry section</td>
<td>Descript. (channel features, landuse)</td>
<td>Dry stream bed</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Site length (m)</td>
<td>sample patch 1</td>
<td>sample patch 2</td>
<td>sample patch 3</td>
<td>sample patch 4</td>
<td>sample patch 5</td>
</tr>
<tr>
<td>Width channel (m)</td>
<td>Survey method, std 1, quad 2, net/kick 3, trap 4, view 5</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Details (if not standard)</td>
<td>Extent if w patch</td>
<td>Channel (1 marg. 2 mid, 3 both, other specify)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Depth (metres)</td>
<td>Depth (metres)</td>
<td>Peat/mud (1 marg. channel, 2 post, 3 pile, 4 run, 5 riffle)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Refuges in channel</td>
<td>Tick all present in patch, ring main type(s) searched</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Main substrate beneath</td>
<td>Refuges in bank</td>
<td>none</td>
<td>cobble/boulder</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Siltation</td>
<td>low</td>
<td>moderate</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>high</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Shading above</td>
<td>Crayfish</td>
<td>10 refuges, or per unit (depending on method)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bullhead present?</td>
<td>Search time (Mins)</td>
<td>Evaluation crayfish habitat for whole site (0 none, 1 pres., 2 freq., 3 abundant)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Notes (survey conditions, patches etc.)</td>
<td>Problems</td>
<td>pollution 1, erosion 2, other 3</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total crayfish</td>
<td>Score</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
### CRAYFISH HABITAT SURVEY FORM

<table>
<thead>
<tr>
<th>Catchment</th>
<th>Wye</th>
<th>River</th>
<th>Clyro</th>
<th>Site (no., name)</th>
<th>13</th>
</tr>
</thead>
<tbody>
<tr>
<td>Date (dd/mm/yy)</td>
<td>22/03/2016</td>
<td>Surveyor</td>
<td>DR, LW</td>
<td>Grid ref.</td>
<td>(d/s end)</td>
</tr>
<tr>
<td>Weather, good 1, mod 2, poor 3</td>
<td>Rain 1, 2, fall 3</td>
<td>Water temp.</td>
<td>Clarity, good 1, mod 2, poor 3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Photo ref. &amp; Location</td>
<td>Dry pond at headwater</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Site length (m)</td>
<td>Descript. Channel features, bankside</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Width channel (m)</td>
<td>Dry pond</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Survey method:**
- std 1, quad 2, net/kick 3, trap 4, view 5

**Details (if not standard):**

**Extent (if x patches):**

**Channel (if margins, mid, both, other specify):**

**Depth (m):**

**Refuges in channel:** Kick all present in patch, ring main type(s) searched.
- 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 habitat for whole site (o 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:**

**Notes (survey conditions, patches etc.):**

**Dry pond at headwater**

**Descript. (channel features, bankside):**

- Dry pond
### CRAYFISH HABITAT SURVEY FORM

<table>
<thead>
<tr>
<th>Catchment</th>
<th>Wye</th>
<th>River</th>
<th>Llynfi</th>
<th>Site (no., name)</th>
<th>1</th>
</tr>
</thead>
<tbody>
<tr>
<td>Date (dd/mm/yy)</td>
<td>16/09/2016</td>
<td>Surveyor</td>
<td>DR LW</td>
<td>Grid ref.</td>
<td>SO 17858 38841</td>
</tr>
<tr>
<td>Weather, good 1, mod 2, poor 3</td>
<td>Flow norm 1, low 2, fall 3</td>
<td>Water temp. oC</td>
<td>12</td>
<td>Clarity, good 1, mod 2, poor 3</td>
<td>1</td>
</tr>
</tbody>
</table>

**Photo ref. & Location**: Typical stretch

**Site length (m)**: 300

**Width channel (m)**: Land use - grazing. Occasional heavy stock access. Earth banks and mud shallows with eroded banks in places. Slow not noticeable flow with occasional riffles (see photo) and pools.

<table>
<thead>
<tr>
<th>Sample patch</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Survey method, std 1, quad 2, net/kick 3, trap 4, view 5</td>
<td>1 &amp; 4</td>
<td>1 &amp; 4</td>
<td>1 &amp; 4</td>
<td>1 &amp; 4</td>
<td>1 &amp; 4</td>
</tr>
<tr>
<td>Details (if not standard)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Extent (lxw patch)</td>
<td>4x1</td>
<td>2x3</td>
<td>3x3</td>
<td>4x3</td>
<td>4x1</td>
</tr>
<tr>
<td>Channel (1 margin, 2 mid, 3 both, other specify)</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Depth (metres)</td>
<td>0.5</td>
<td>0.7</td>
<td>0.4</td>
<td>0.5</td>
<td>1</td>
</tr>
<tr>
<td>Refuges in channel (check all present in patch, main type(s) searched in red)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>cobble (6.5-15cm) yes</td>
<td>yes</td>
<td>yes</td>
<td>yes</td>
<td>yes</td>
<td>yes</td>
</tr>
<tr>
<td>cobble (15-25.6cm) yes</td>
<td>yes</td>
<td>yes</td>
<td>yes</td>
<td>yes</td>
<td>yes</td>
</tr>
<tr>
<td>boulder (25.6-40cm) yes</td>
<td>yes</td>
<td>yes</td>
<td>yes</td>
<td>yes</td>
<td>yes</td>
</tr>
<tr>
<td>boulder (&gt;40cm)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>rubble (give size)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>woody debris</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>other urban debris</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>tree roots, fine moss</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>filamentous algae</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>other submerged veg</td>
<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>emergents</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Main substrate beneath (check all present in patch, main type(s) searched in red, if not standard)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>cobble (6.5-15cm) yes</td>
<td>yes</td>
<td>yes</td>
<td>yes</td>
<td>yes</td>
<td>yes</td>
</tr>
<tr>
<td>cobble (15-25.6cm) yes</td>
<td>yes</td>
<td>yes</td>
<td>yes</td>
<td>yes</td>
<td>yes</td>
</tr>
<tr>
<td>cobble (25.6-40cm) yes</td>
<td>yes</td>
<td>yes</td>
<td>yes</td>
<td>yes</td>
<td>yes</td>
</tr>
<tr>
<td>cobble (&gt;40cm)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>pebble (&lt;6.5cm) yes</td>
<td>yes</td>
<td>yes</td>
<td>yes</td>
<td>yes</td>
<td>yes</td>
</tr>
<tr>
<td>gravel (&lt;1.6cm) yes</td>
<td>yes</td>
<td>yes</td>
<td>yes</td>
<td>yes</td>
<td>yes</td>
</tr>
<tr>
<td>sand (&lt;2mm) yes</td>
<td>yes</td>
<td>yes</td>
<td>yes</td>
<td>yes</td>
<td>yes</td>
</tr>
<tr>
<td>silt yes</td>
<td>yes</td>
<td>yes</td>
<td>yes</td>
<td>yes</td>
<td>yes</td>
</tr>
<tr>
<td>Siltation none</td>
<td>low</td>
<td>moderate</td>
<td>high</td>
<td></td>
<td></td>
</tr>
<tr>
<td>low yes</td>
<td>yes</td>
<td>yes</td>
<td>yes</td>
<td>yes</td>
<td>yes</td>
</tr>
<tr>
<td>moderate yes</td>
<td>yes</td>
<td>yes</td>
<td>yes</td>
<td>yes</td>
<td>yes</td>
</tr>
<tr>
<td>high yes</td>
<td>yes</td>
<td>yes</td>
<td>yes</td>
<td>yes</td>
<td>yes</td>
</tr>
<tr>
<td>Refuges in bank (check all present in patch, main type(s) searched in red)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>cobble/boulder yes</td>
<td>yes</td>
<td>yes</td>
<td>yes</td>
<td>yes</td>
<td>yes</td>
</tr>
<tr>
<td>tree roots, large</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>vertical or undercut bank</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>dry stone wall</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>other reinforced</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>crayfish burrows</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Shading above light</td>
<td>light</td>
<td>NONE</td>
<td>light</td>
<td>heavy</td>
<td></td>
</tr>
<tr>
<td>Shading crayfish: yes</td>
<td>no</td>
<td>no</td>
<td>yes</td>
<td>yes</td>
<td>yes</td>
</tr>
<tr>
<td>Search time (Mins)</td>
<td>8</td>
<td>8</td>
<td>10</td>
<td>5</td>
<td>13</td>
</tr>
<tr>
<td>Evaluation crayfish habitat for whole site (score)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Score</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Evaluation crayfish habitat for whole site (score)**

- **Notes**: (survey conditions, patches etc.) Heron seen, photo is example of eroded bank in Patch 5

- **Problems**: pollution 1, erosion 2, gillhead present 3

- **Total crayfish (by 1 method, note total(s) by other methods if applicable)**: 0

---

Eroded section of bank

**www.naturalresourceswales.gov.uk**
**Crayfish Habitat Survey Form**

<table>
<thead>
<tr>
<th>Catchment</th>
<th>River</th>
<th>Site (no., name)</th>
<th>Date (dd/mm/yy)</th>
<th>Surveyor(s)</th>
<th>Grid ref. (d/s end)</th>
<th>Weather, Flow norm, temp °C, Water clarity, Grid ref. (d/s end)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wye</td>
<td></td>
<td></td>
<td>16/09/2016</td>
<td>DR LW</td>
<td>SO 17553 38814</td>
<td>good 1, mod 2, poor 3</td>
</tr>
</tbody>
</table>

**Photo ref. & Location**: Immediately downstream of 1st 100m

**Site length (m)**: 300

**Width channel (m)**: 10

**Survey method, site 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 (l x w patch)**: 4x2, 4x2, 5x4, 3x3, 3x2

**Channel (1 margins, 2 mid, 3 both, other specify)**: 1, 3, 3, 3, 1

**Depth (meters)**: 0.4, 0.3, 0.3, 0.4, 0.4

**Feature (1 marg. theater, 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 red

<table>
<thead>
<tr>
<th>Feature</th>
<th>sample patch 1</th>
<th>sample patch 2</th>
<th>sample patch 3</th>
<th>sample patch 4</th>
<th>sample patch 5</th>
</tr>
</thead>
<tbody>
<tr>
<td>cobble (6.5-15cm)</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>cobble (15-25.6cm)</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>boulder (25.6-40cm)</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>boulder (&gt;40cm)</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>rubble (give size)</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>woody debris</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>other urban debris</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>tree roots, fine</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>moss</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>filamentous algae</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>other submerged veg.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>emergents</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Main substrate beneath bedrock**: clay, silt, sand, gravel, pebble, cobble

<table>
<thead>
<tr>
<th>Feature</th>
<th>sample patch 1</th>
<th>sample patch 2</th>
<th>sample patch 3</th>
<th>sample patch 4</th>
<th>sample patch 5</th>
</tr>
</thead>
<tbody>
<tr>
<td>bedrock</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>cobble (6.5-15cm)</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>cobble (15-25.6cm)</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>pebble (=6.5cm)</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>gravel (=1.6cm)</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>sand (=0mm)</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
</tbody>
</table>

**Siltation**: none, low, moderate, high

<table>
<thead>
<tr>
<th>Feature</th>
<th>sample patch 1</th>
<th>sample patch 2</th>
<th>sample patch 3</th>
<th>sample patch 4</th>
<th>sample patch 5</th>
</tr>
</thead>
<tbody>
<tr>
<td>none</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>low</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>moderate</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>high</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
</tbody>
</table>

**Refuges in bank**: none, cobble/boulder, tree roots, large vertical or undercut bank, dry stone wall, other reinforced crayfish burrows

<table>
<thead>
<tr>
<th>Feature</th>
<th>sample patch 1</th>
<th>sample patch 2</th>
<th>sample patch 3</th>
<th>sample patch 4</th>
<th>sample patch 5</th>
</tr>
</thead>
<tbody>
<tr>
<td>none</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>cobble/boulder</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>tree roots, large</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>vertical or undercut bank</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>dry stone wall</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>other reinforced crayfish burrows</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Shading above**: LIGHT, HEAVY, MOD, LIGHT, MOD

<table>
<thead>
<tr>
<th>Feature</th>
<th>sample patch 1</th>
<th>sample patch 2</th>
<th>sample patch 3</th>
<th>sample patch 4</th>
<th>sample patch 5</th>
</tr>
</thead>
<tbody>
<tr>
<td>LIGHT</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>HEAVY</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
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<tr>
<td>MOD</td>
<td>10</td>
<td>10</td>
<td>10</td>
<td>10</td>
<td>10</td>
</tr>
</tbody>
</table>

**Crayfish 10 refuges, or per unit (depending on method)**: 0, 0, 0, 0, 0

**Search time (Mins)**: 10, 6, 10, 10, 10

**Bullhead present?**

<table>
<thead>
<tr>
<th>Feature</th>
<th>sample patch 1</th>
<th>sample patch 2</th>
<th>sample patch 3</th>
<th>sample patch 4</th>
<th>sample patch 5</th>
</tr>
</thead>
<tbody>
<tr>
<td>none</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
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<tr>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
</tbody>
</table>

**Evaluation crayfish habitat for whole site (0 none, 1 pres., 2 freq., 3 abundant)**

<table>
<thead>
<tr>
<th>Feature</th>
<th>sample patch 1</th>
<th>sample patch 2</th>
<th>sample patch 3</th>
<th>sample patch 4</th>
<th>sample patch 5</th>
</tr>
</thead>
<tbody>
<tr>
<td>in margins</td>
<td>2</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>in mid channel</td>
<td>2</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>in banks</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>surveyability</td>
<td>2</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Problems**: pollution 1, erosion 2 (if >33% affected), algae 3

<table>
<thead>
<tr>
<th>Feature</th>
<th>sample patch 1</th>
<th>sample patch 2</th>
<th>sample patch 3</th>
<th>sample patch 4</th>
<th>sample patch 5</th>
</tr>
</thead>
<tbody>
<tr>
<td>pollution</td>
<td>2</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>erosion</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>algae</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Total crayfish**: 0

**Notes (survey conditions, patches etc.)**

Land use - grazing. Large stands of balsam throughout. Earth banks up to 2m high, some erosion. Some areas virtually no flow (see photo).
# CRAYFISH HABITAT SURVEY FORM

<table>
<thead>
<tr>
<th>Catchment</th>
<th>Wye</th>
<th>River</th>
<th>Llynfi</th>
<th>Site (no., name)</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Date (dd/mm/yy)</td>
<td>16/09/2016</td>
<td>Surveyor</td>
<td>DR LW</td>
<td>Grid ref. (d/s end)</td>
<td>SO 16646 37100</td>
</tr>
<tr>
<td>Weather, good 1, mod 2, poor 3</td>
<td>1</td>
<td>Flow</td>
<td>norm 1, low 2, fall 3, rise 4</td>
<td>Water</td>
<td>temp. oC</td>
</tr>
<tr>
<td>Photo ref. &amp; Location</td>
<td>Immediately downstream of 1st 100m</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Site length (m)</td>
<td>100</td>
<td>Descript. channel features, (landuse)</td>
<td>Land use - urban and grazing. Series of pools and riffles</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Width channel (m)</td>
<td>4</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Survey method, std 1, quad 2, net/kick 3, trap 4, view 5</td>
<td>1 &amp; 4, 1 &amp; 4, 1 &amp; 4, 1 &amp; 4, 1 &amp; 4</td>
<td>1 &amp; 4, 1 &amp; 4, 1 &amp; 4, 1 &amp; 4, 1 &amp; 4</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Details (if not standard)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Extent (l x w patch)</td>
<td>4x1, 4x1, 3x2, 7x2, 4x1</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Channel</td>
<td>1 margins, 2 mid, 3 both, other specify</td>
<td>1, 1, 3, 3, 1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Depth (metres)</td>
<td>0.2, 0.4, 0.5, 0.2, 0.3</td>
<td>4, 3, 2, 3, 2</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Feature (1 marg. d’water, 2 pool, 3 glide, 4 run, 5 riffle)</td>
<td>4, 3, 2, 3, 2</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Refuges in channel</td>
<td>tick all present in patch, main types searched in red</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>cobble (6.5-15cm)</td>
<td>YES, YES, YES, YES, YES</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>cobble (15-25.6cm)</td>
<td>YES, YES, YES, YES, YES</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>boulder (25.6-40cm)</td>
<td>YES, YES, YES, YES, YES</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>boulder (&gt;40cm)</td>
<td>YES, YES, YES, YES, YES</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>rubble (give size)</td>
<td>YES, YES, YES, YES, YES</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>woody debris</td>
<td>YES, YES, YES, YES, YES</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>other urban debris</td>
<td>YES, YES, YES, YES, YES</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>tree roots, fine</td>
<td>YES, YES, YES, YES, YES</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>moss</td>
<td>YES, YES, YES, YES, YES</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>filamentous algae</td>
<td>YES, YES, YES, YES, YES</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>other submerged veg.</td>
<td>YES, YES, YES, YES, YES</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>emergents</td>
<td>YES, YES, YES, YES, YES</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Main substrate beneath</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>bedrock</td>
<td>YES, YES, YES, YES, YES</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>cobble (6.5-15cm)</td>
<td>YES, YES, YES, YES, YES</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>pebble (&lt;6.5cm)</td>
<td>YES, YES, YES, YES, YES</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>gravel (&lt;1.6cm)</td>
<td>YES, YES, YES, YES, YES</td>
<td></td>
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<td></td>
<td></td>
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<tr>
<td>sand (&lt;2mm)</td>
<td>YES, YES, YES, YES, YES</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>clay</td>
<td>YES, YES, YES, YES, YES</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>silt</td>
<td>YES, YES, YES, YES, YES</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Siltation</td>
<td>none, low, moderate, high</td>
<td>YES, YES, YES, YES, YES</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Refuges in bank</td>
<td>none, cobble/boulder, tree roots, large</td>
<td>YES, YES, YES, YES, YES</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>vertical or undercut bank</td>
<td>YES, YES, YES, YES, YES</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>dry stone wall</td>
<td>YES, YES, YES, YES, YES</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>other reinforced</td>
<td>YES, YES, YES, YES, YES</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>crayfish burrows</td>
<td>YES, YES, YES, YES, YES</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Shading above</td>
<td>NONE, MOD, LIGHT</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Crayfish/10 refuges, or per unit (depending on method)</td>
<td>0, 0, 0, 0, 0</td>
<td>0</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Search time (Mins)</td>
<td>10, 10, 6, 6, 6</td>
<td>8</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bullhead present?</td>
<td>YES, YES, YES, YES, YES</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Evaluation crayfish habitat for whole site</td>
<td>0, none, 1 pres., 2 freq., 3 abund.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>in margins</td>
<td>3</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>in mid channel</td>
<td>3</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>in banks</td>
<td>2</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>surveyability</td>
<td>3</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Problems</td>
<td>pollution 1, erosion 2, (if &gt;33% affected), aliens 3.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total crayfish by 1 method, note total(s) by other methods in notes if applicable</td>
<td>0</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Notes (survey conditions, patches etc.):
## CRAYFISH HABITAT SURVEY FORM

<table>
<thead>
<tr>
<th>Catchment</th>
<th>Wye</th>
<th>River</th>
<th>Lynfi</th>
</tr>
</thead>
<tbody>
<tr>
<td>Date (dd/mm/yyyy)</td>
<td>16/09/2016</td>
<td>Surveyor</td>
<td>DR LW</td>
</tr>
<tr>
<td>Weather</td>
<td>good 1, mod 2, poor 3</td>
<td>Flow</td>
<td>num.</td>
</tr>
<tr>
<td>Clarity</td>
<td>good 1, mod 2, poor 3</td>
<td>Water temp.</td>
<td>oC</td>
</tr>
<tr>
<td>Grid ref. (d/s end)</td>
<td>SO 17553 38814</td>
<td>Grid ref.</td>
<td>end</td>
</tr>
<tr>
<td>Photo ref. &amp; Location</td>
<td>From roadbridge</td>
<td>Site length (m)</td>
<td>100</td>
</tr>
<tr>
<td>Width channel (m)</td>
<td>5</td>
<td>Land use - urban, agricultural and woodland. Easy access via road bridge</td>
<td></td>
</tr>
</tbody>
</table>

### Survey Method

<table>
<thead>
<tr>
<th>Method</th>
<th>std 1</th>
<th>quad 2</th>
<th>net/kick 3, trap 4, view 5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sample patch 1</td>
<td>1 &amp; 4</td>
<td>1 &amp; 4</td>
<td>1 &amp; 4</td>
</tr>
<tr>
<td>Sample patch 2</td>
<td>1 &amp; 4</td>
<td>1 &amp; 4</td>
<td>1 &amp; 4</td>
</tr>
<tr>
<td>Sample patch 3</td>
<td>1 &amp; 4</td>
<td>1 &amp; 4</td>
<td>1 &amp; 4</td>
</tr>
<tr>
<td>Sample patch 4</td>
<td>1 &amp; 4</td>
<td>1 &amp; 4</td>
<td>1 &amp; 4</td>
</tr>
<tr>
<td>Sample patch 5</td>
<td>1 &amp; 4</td>
<td>1 &amp; 4</td>
<td>1 &amp; 4</td>
</tr>
</tbody>
</table>

### Details

#### Extent (l x w patch)

<table>
<thead>
<tr>
<th>Sample patch 1</th>
<th>Sample patch 2</th>
<th>Sample patch 3</th>
<th>Sample patch 4</th>
<th>Sample patch 5</th>
</tr>
</thead>
<tbody>
<tr>
<td>5x2</td>
<td>5x2</td>
<td>6x1</td>
<td>3x1</td>
<td>4x1</td>
</tr>
</tbody>
</table>

#### Channel (1 margins, 2 mid, 3 both, other specify)

<table>
<thead>
<tr>
<th>Sample patch 1</th>
<th>Sample patch 2</th>
<th>Sample patch 3</th>
<th>Sample patch 4</th>
<th>Sample patch 5</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>2</td>
<td>2</td>
<td>3</td>
<td>3</td>
</tr>
</tbody>
</table>

#### Depth (metres)

<table>
<thead>
<tr>
<th>Sample patch 1</th>
<th>Sample patch 2</th>
<th>Sample patch 3</th>
<th>Sample patch 4</th>
<th>Sample patch 5</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.2</td>
<td>0.2</td>
<td>0.2</td>
<td>0.2</td>
<td>0.2</td>
</tr>
</tbody>
</table>

#### Refuges in channel

<table>
<thead>
<tr>
<th>Sample patch 1</th>
<th>Sample patch 2</th>
<th>Sample patch 3</th>
<th>Sample patch 4</th>
<th>Sample patch 5</th>
</tr>
</thead>
<tbody>
<tr>
<td>yes</td>
<td>yes</td>
<td>yes</td>
<td>yes</td>
<td>yes</td>
</tr>
</tbody>
</table>

#### Main substrate beneath

<table>
<thead>
<tr>
<th>Sample patch 1</th>
<th>Sample patch 2</th>
<th>Sample patch 3</th>
<th>Sample patch 4</th>
<th>Sample patch 5</th>
</tr>
</thead>
<tbody>
<tr>
<td>bedrock</td>
<td>cobble (6.5-15cm)</td>
<td>yes</td>
<td>yes</td>
<td>yes</td>
</tr>
<tr>
<td>cobble (15-25.6cm)</td>
<td>yes</td>
<td>yes</td>
<td>yes</td>
<td>yes</td>
</tr>
<tr>
<td>boulder (25.6-40cm)</td>
<td>yes</td>
<td>yes</td>
<td>yes</td>
<td>yes</td>
</tr>
<tr>
<td>boulder (&gt;40cm)</td>
<td>yes</td>
<td>yes</td>
<td>yes</td>
<td>yes</td>
</tr>
<tr>
<td>rubble (give size)</td>
<td>yes</td>
<td>yes</td>
<td>yes</td>
<td>yes</td>
</tr>
<tr>
<td>woody debris</td>
<td>yes</td>
<td>yes</td>
<td>yes</td>
<td>yes</td>
</tr>
<tr>
<td>other urban debris</td>
<td>yes</td>
<td>yes</td>
<td>yes</td>
<td>yes</td>
</tr>
<tr>
<td>tree roots, fine</td>
<td>yes</td>
<td>yes</td>
<td>yes</td>
<td>yes</td>
</tr>
<tr>
<td>moss</td>
<td>yes</td>
<td>yes</td>
<td>yes</td>
<td>yes</td>
</tr>
<tr>
<td>filamentous algae</td>
<td>yes</td>
<td>yes</td>
<td>yes</td>
<td>yes</td>
</tr>
<tr>
<td>other submerged veg</td>
<td>yes</td>
<td>yes</td>
<td>yes</td>
<td>yes</td>
</tr>
</tbody>
</table>

#### Siltation

<table>
<thead>
<tr>
<th>Sample patch 1</th>
<th>Sample patch 2</th>
<th>Sample patch 3</th>
<th>Sample patch 4</th>
<th>Sample patch 5</th>
</tr>
</thead>
<tbody>
<tr>
<td>none</td>
<td>low</td>
<td>moderate</td>
<td>high</td>
<td></td>
</tr>
</tbody>
</table>

#### Refuges in bank

<table>
<thead>
<tr>
<th>Sample patch 1</th>
<th>Sample patch 2</th>
<th>Sample patch 3</th>
<th>Sample patch 4</th>
<th>Sample patch 5</th>
</tr>
</thead>
<tbody>
<tr>
<td>cobble/boulder</td>
<td>yes</td>
<td>yes</td>
<td>yes</td>
<td>yes</td>
</tr>
<tr>
<td>tree roots, large</td>
<td>yes</td>
<td>yes</td>
<td>yes</td>
<td>yes</td>
</tr>
<tr>
<td>vertical or undercut bank</td>
<td>yes</td>
<td>yes</td>
<td>yes</td>
<td>yes</td>
</tr>
<tr>
<td>dry stone wall</td>
<td>yes</td>
<td>yes</td>
<td>yes</td>
<td>yes</td>
</tr>
<tr>
<td>other reinforced crayfish burrows</td>
<td>yes</td>
<td>yes</td>
<td>yes</td>
<td>yes</td>
</tr>
</tbody>
</table>

#### Shading above

<table>
<thead>
<tr>
<th>Sample patch 1</th>
<th>Sample patch 2</th>
<th>Sample patch 3</th>
<th>Sample patch 4</th>
<th>Sample patch 5</th>
</tr>
</thead>
<tbody>
<tr>
<td>light</td>
<td>mod</td>
<td>light</td>
<td>heavy</td>
<td>light</td>
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</tbody>
</table>

#### Crayfish/habitat

<table>
<thead>
<tr>
<th>Sample patch 1</th>
<th>Sample patch 2</th>
<th>Sample patch 3</th>
<th>Sample patch 4</th>
<th>Sample patch 5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Evaluation crayfish habitat for whole site</td>
<td>notes</td>
<td>survey conditions, patches etc.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(1 pres. at a time, 2 freq., 3 absent.)</td>
<td>notes</td>
<td>0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>in margins</td>
<td>notes</td>
<td>3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>in mid channel</td>
<td>notes</td>
<td>3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>in banks surveyability</td>
<td>notes</td>
<td>3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Score</td>
<td>notes</td>
<td>0</td>
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</tbody>
</table>

#### Problems

<table>
<thead>
<tr>
<th>Sample patch 1</th>
<th>Sample patch 2</th>
<th>Sample patch 3</th>
<th>Sample patch 4</th>
<th>Sample patch 5</th>
</tr>
</thead>
<tbody>
<tr>
<td>pollution</td>
<td>1, erosion</td>
<td>2, 3 if &gt;33% affected</td>
<td>alien 3</td>
<td>4</td>
</tr>
<tr>
<td>Total crayfish (by 1 method, note total(s) by other methods in notes if applicable)</td>
<td>notes</td>
<td>0</td>
<td>notes</td>
<td>notes</td>
</tr>
</tbody>
</table>
## CRAYFISH HABITAT SURVEY FORM

<table>
<thead>
<tr>
<th>Catchment</th>
<th>Wye</th>
<th>River</th>
<th>Llynfi</th>
<th>Site (no., name)</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Date (dd/mm/yy)</td>
<td>15/09/2016</td>
<td>Surveyor(s)</td>
<td>DR LW</td>
<td>Grid ref. (d/s end)</td>
<td>SO 15033 34706</td>
</tr>
<tr>
<td>Weather, good 1, mod 2, poor 3</td>
<td>1</td>
<td>Flow,Occurred 1, low, steep 2, rise 4</td>
<td>Water temp. 0°C</td>
<td>12</td>
<td>Clarity, good 1, mod 2, poor 3</td>
</tr>
<tr>
<td>Photo ref. &amp; Location</td>
<td>Middle of site near roadbridge</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Site length (m)</td>
<td>100</td>
<td>Width channel (m)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Survey method, std 1, quad 2, method 3, trap 4, view 5</td>
<td>1 &amp; 4</td>
<td>1 &amp; 4</td>
<td>1 &amp; 4</td>
<td>1 &amp; 4</td>
<td>1 &amp; 4</td>
</tr>
<tr>
<td>Details (if not standard)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Extent (l x w patch)</td>
<td>5x1</td>
<td>4x2</td>
<td>4x1</td>
<td>4x3</td>
<td>3x3</td>
</tr>
<tr>
<td>Channel (1 margins, 2 mid, 3 both, other specify)</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>Depth (metres)</td>
<td>0.3</td>
<td>0.4</td>
<td>0.4</td>
<td>0.3</td>
<td>0.3</td>
</tr>
<tr>
<td>Refuges in channel</td>
<td>Tick all present in patch, main type(s) searched in red</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>cobble (6.5-15cm)</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>cobble (15-25.6cm)</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>boulder (25.6-40cm)</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>boulder (&gt;40cm)</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>rubble (give size)</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>woody debris</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>other urban debris</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>tree roots, fine</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>root, fine</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>filamentous algae</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>other submerged veg.</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>emergents</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>Main substrate beneath</td>
<td>Tick all present in patch, main type(s) searched in red</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>bedrock</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>cobble (6.5-15cm)</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>pebble (&lt;6.5cm)</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>gravel (&lt;2mm)</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>sand (&lt;2mm)</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>clay</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>silt</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>Siltation</td>
<td>Tick all present in patch, main type(s) searched in red</td>
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<td></td>
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<tr>
<td>low</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>moderate</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>high</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>Refuges in bank</td>
<td>Tick all present in patch, main type(s) searched in red</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>none</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>cobble/boulder</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>tree roots, large</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>vertical or undercut bank</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>dry stone wall</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>other reinforced</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>crayfish burrows</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>Shading above</td>
<td>Tick all present in patch, main type(s) searched in red</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>LIGHT</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>HEAVY</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
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<tr>
<td>MOD</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
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</tr>
<tr>
<td>LIGHT</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>Crayfish habitat for whole site (if pres., 1 rare, 2 freq., 3 abund.)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>in margins</td>
<td>3</td>
<td>in mid channel</td>
<td>3</td>
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<td>3</td>
</tr>
<tr>
<td>surveyability</td>
<td>3</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Problems/questions (if present)</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>pollution</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>erosion</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>alien species</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td></td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>Total crayfish (by 1 method, note total(s) by other methods in notes if applicable)</td>
<td>0</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Notes:** (survey conditions, patches etc.): Photo of otter pass under the road bridge.

**Land use - recreation, campsite and walkers, urban. Looks like an excellent habitat for crayfish. Otter pass, see below.**

---

www.naturalresourceswales.gov.uk  Page 150
**Crayfish Habitat Survey Form**

<table>
<thead>
<tr>
<th>Catchment</th>
<th>Wye</th>
<th>River</th>
<th>Site (no., name)</th>
<th>Date (dd/mm/yy)</th>
<th>Surveyors</th>
<th>Grid ref. alts emb</th>
<th>Weather, 1, mod 2, poor 3</th>
<th>Water temp. ºC</th>
<th>Water clarity, 1, mod 2, poor 3</th>
<th>Photo ref. &amp; Location</th>
<th>Site length (m)</th>
<th>Width channel (m)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>15/09/2016</td>
<td>DR LW</td>
<td>SO 14824 32914</td>
<td>good 1, mod 2, poor 3</td>
<td>12</td>
<td>good 1, mod 2, poor 3</td>
<td>Downstream of roadbridge</td>
<td>100</td>
<td>3</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Survey method, std 1, quad 2, net/kick 3, trap 4, view 5</th>
<th>sample patch 1</th>
<th>sample patch 2</th>
<th>sample patch 3</th>
<th>sample patch 4</th>
<th>sample patch 5</th>
<th>Details (if not standard)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 &amp; 4</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1 &amp; 4</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1 &amp; 4</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>1 &amp; 4</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1 &amp; 4</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Extent (l x w patch)</th>
<th>2X1</th>
<th>5X1</th>
<th>3X3</th>
<th>4X2</th>
<th>4X2</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Channel (1 margins, 2 mid, 3 both, other specify)</th>
<th>1</th>
<th>1</th>
<th>3</th>
<th>3</th>
<th>3</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Depth (metres)</th>
<th>0.3</th>
<th>0.3</th>
<th>0.3</th>
<th>0.3</th>
<th>0.3</th>
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</thead>
</table>

<table>
<thead>
<tr>
<th>Habitat (1 margin, channel, 2 mid, 3 both, 4 margin, 5 riffle)</th>
<th>3</th>
<th>2</th>
<th>5</th>
<th>3</th>
<th>3</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Refuges in channel</th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>cobble (6.5-15cm)</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>cobble (15-25.6cm)</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>boulder (25.6-40cm)</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>boulder (&gt;40cm)</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>rubble (give size)</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>woody debris</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>other urban debris</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>tree roots, fine</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>moss</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>filamentous algae</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>other submerged veg.</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>emergents</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
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</table>

<table>
<thead>
<tr>
<th>Main substrate beneath</th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>bedrock</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>cobble (6.5-15cm)</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>pebble (&gt;1.6cm)</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>gravel (&gt;2mm)</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>sand (&lt;2mm)</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>clay</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>silt</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
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</table>

<table>
<thead>
<tr>
<th>Siltation</th>
<th>none</th>
<th>low</th>
<th>moderate</th>
<th>high</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>1</td>
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</tr>
<tr>
<td>2</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Refuges in bank</th>
<th>none</th>
<th>cobble/boulder</th>
<th>tree roots, large</th>
<th>vertical or undercut bank</th>
<th>dry stone wall</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Shading above</th>
<th>HEAVY</th>
<th>HEAVY</th>
<th>MOD</th>
<th>HEAVY</th>
<th>HEAVY</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Bullhead present?</th>
<th>None</th>
<th>yes, 1 pres., 2 freq., 3 abundant</th>
</tr>
</thead>
</table>
|                   | 0    | Score
| Evaluation crayfish habitat for whole site | Notes (survey conditions, patches etc.): |
| Score | 3 |

<table>
<thead>
<tr>
<th>Problems</th>
<th>pollution 1, erosion 2, (if &gt;33% affected), aliens 3</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Total crayfish by 1 method, male total(s) by other methods in notes if applicable</td>
</tr>
<tr>
<td></td>
<td>0</td>
</tr>
</tbody>
</table>

**Land use - grazing. Newly fenced alongside river, good crayfish habitat improved by fencing off.**
<table>
<thead>
<tr>
<th>Catchment</th>
<th>Wye</th>
<th>River</th>
<th>Lynfi</th>
<th>Site (no., name)</th>
<th>Grid ref. (d/s end) SO 14398 33041</th>
</tr>
</thead>
<tbody>
<tr>
<td>Date (dd/mm/yy)</td>
<td>15/09/2016</td>
<td>Surveyor</td>
<td>DR LW</td>
<td>Weather, good 1, mod 2, poor 3</td>
<td>Climate, good 1, mod 2, poor 3</td>
</tr>
<tr>
<td>Photo ref. &amp; Location</td>
<td>Immediately downstream of 1st 100m</td>
<td>Flow norm</td>
<td>1, low 2, fall 3, rise 4</td>
<td>Water temp. oC</td>
<td>12</td>
</tr>
<tr>
<td>Site length (m)</td>
<td>100</td>
<td>Width channel (m)</td>
<td>4</td>
<td>Land use - agricultural and private garden, habitat looks good for crayfish</td>
<td></td>
</tr>
<tr>
<td>Survey method, std 1, quad 2, net/kick 3, trap 4, view 5</td>
<td></td>
<td>Details (if not standard)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Extent (l x w patch)</td>
<td>1x4</td>
<td>Channel (1 margins, 2 mid, 3 both, other specify)</td>
<td>3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Depth (metres)</td>
<td>0.5</td>
<td></td>
<td>0.3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Refuges in channel</td>
<td>Dick all present in patch, main type(s) searched in red</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Main substrate beneath</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Refuges in bank</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Shading above</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Crayfish in habitat for whole site</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Problems</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Table: Crayfish Habitat Survey Form

<table>
<thead>
<tr>
<th>Sample Patch</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Survey Method</td>
<td>1 &amp; 4</td>
<td>1 &amp; 4</td>
<td>1 &amp; 4</td>
<td>1 &amp; 4</td>
<td>1 &amp; 4</td>
</tr>
<tr>
<td>Details (if not standard)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Extent (l x w patch)</td>
<td>1x4</td>
<td>3x2</td>
<td>4x1</td>
<td>5x2</td>
<td>4x2</td>
</tr>
<tr>
<td>Channel (1 margins, 2 mid, 3 both, other specify)</td>
<td>3</td>
<td>2</td>
<td>1</td>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td>Depth (metres)</td>
<td>0.3</td>
<td>0.3</td>
<td>0.3</td>
<td>0.3</td>
<td>0.2</td>
</tr>
<tr>
<td>Refuges in channel</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>Main substrate beneath</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>Shading above</td>
<td>MODERATE</td>
<td>HEAVY</td>
<td>HEAVY</td>
<td>HEAVY</td>
<td>HEAVY</td>
</tr>
<tr>
<td>Crayfish in habitat for whole site (0 none, 1 pres., 2 freq., 3 abund.)</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Search time (Mins)</td>
<td>10</td>
<td>10</td>
<td>10</td>
<td>10</td>
<td>10</td>
</tr>
<tr>
<td>Bulrush present?</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Notes (survey conditions, patches etc.):**

- Pollution 1, erosion 2, loss of 33% affected, aliens 3.
- Total crayfish by 1 method, note total(s) by other methods in notes if applicable.
<table>
<thead>
<tr>
<th>Catchment</th>
<th>Wye</th>
<th>River</th>
<th>Site (no., name)</th>
<th>8</th>
</tr>
</thead>
</table>
| Date (dd/mm/yy) | 15/09/2016 | Surveyor | DR LW | Grid ref.  
(d/s end) SO 14022 32206 |
| Weather, good 1, mod 2, poor 3 | 1 | Water | 1 | Grid ref.  
(d/s end) SO 14022 32206 |
| Photo ref. & Location | Near Bridge near Trefeca | Land use - woodland. River runs through steep valley. Slow flow. Earth banks. |
| Site length (m) | 100 | Descript. channel features, (landscape) |
| Width channel (m) | 4 | Water temp. °C | 12 | 1 |
| 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 (l x w patch) | 2x3 | 3x2 | 4x1 | 6X1 | 2x2 |
| Channel (1 margins, 2 mid, 3 both, other specify) | 3 | 3 | 1 | 1 | 3 |
| Depth (metres) | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 |
| Refuges in channel | | | | |
| 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 | YES | YES | YES | YES | YES |
| other urban debris | YES | YES | YES | YES | YES |
| tree roots, fine | YES | YES | YES | YES | YES |
| moss | YES | YES | YES | YES | YES |
| filamentous algae | YES | YES | YES | YES | YES |
| other submerged veg. | YES | YES | YES | YES | YES |
| Emergents | | | | |
| Main substrate beneath | | | | |
| bedrock | YES | YES | YES | YES | YES |
| cobble (6.5-15cm) | YES | YES | YES | YES | YES |
| pebble (<6.5cm) | YES | YES | YES | YES | YES |
| gravel (<1.6cm) | YES | YES | YES | YES | YES |
| sand (<2mm) | YES | YES | YES | YES | YES |
| clay | YES | YES | YES | YES | YES |
| Siltation | | | | |
| none | YES | YES | YES | YES | YES |
| low moderate | YES | YES | YES | YES | YES |
| high | YES | YES | YES | YES | YES |
| Refuges in bank | | | | |
| none | YES | YES | YES | YES | YES |
| 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 | YES | YES | YES | YES | YES |
| other reinforced | YES | YES | YES | YES | YES |
| crayfish burrows | YES | YES | YES | YES | YES |
| Shading above | MOD | HEAVY | MOD | MOD | HEAVY |
| Crayfish: refuges, or per 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 | | | | | |
| None, 1 pres., 2 freq., 3 abounds | Score | Notes (survey conditions, patches etc.): |
| 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 totals by other methods in notes if applicable | | | | | |
CRAYFISH HABITAT SURVEY FORM

<table>
<thead>
<tr>
<th>Catchment</th>
<th>Wye</th>
<th>River</th>
<th>Llynfi</th>
<th>Site (no., name)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Date (dd/mm/yyyy)</td>
<td>14/09/2016</td>
<td>Surveyor</td>
<td>DR LW</td>
<td>Grid ref. (d/s end) SO 13386 30702</td>
</tr>
<tr>
<td>Weather, good 1, mod 2, poor 3</td>
<td>1</td>
<td>Water temp. oC</td>
<td>12</td>
<td>Clarity, good 1, mod 2, poor 3</td>
</tr>
<tr>
<td>Photo ref. &amp; Location</td>
<td>Mid site</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Site length (m)</td>
<td>100</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Width channel (m)</td>
<td>4</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Sample patches:
- 1 & 4
- 1 & 4
- 1 & 4
- 1 & 4
- 1 & 4

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 (w x patch) 3x2, 4x2, 3x2, 5x1, 2x2
- Channel (1 margins, 2 mid, 3 both, other specify) 3, 2, 3, 1, 3
- Depth (m) 0.3, 0.3, 0.3, 0.3, 0.3
- Feature (1 marg. seaward, 2 mid, 3 sides, 4 surf, 5 riffle) 4, 2, 4, 4, 4

Refuges in channel:
- cobble (6.5-15cm) YES
- cobble (15-25.6cm) YES
- boulder (25.6-40cm) YES
- rubble (give size) YES
- woody debris YES
- other urban debris YES
- tree roots, fine moss YES
- filamentous algae YES
- other submerged veg, emergents YES

Main substrate beneath:
- bedrock cobble (6.5-15cm) YES
- pebble (<6.5cm) YES
- gravel (<1.6cm) YES
- sand (<2mm) YES
- clay silt YES

Siltation:
- none low
- moderate YES
- high YES

Refuges in bank:
- cobble/boulder tree roots, large YES
- vertical or undercut bank YES
- dry stone wall YES
- other reinforced YES
- crayfish burrows YES

Shading above:
- HEAVY HEAVY HEAVY HEAVY HEAVY

Crayfish 10 refuges, or per unit (depending on method) 0 0 0 0 0

Search time (Mins) 7 13 9 10 10

Eradicator present? YES

Evaluation crayfish habitat for whole site:
- 0 name, 1 pres., 2 freq., 3 above
- in margins 3
- in mid channel 3
- in banks 3
- surveyability 3

Problems:
- pollution 1, erosion 2, if 10-30% affected, aliens 3

Total crayfish by 1 method, note total(s) by other methods in notes if applicable 0

Land use - grazing, wooded banks with surround land flat. Area around bridge would be excellent habitat for crayfish.
**Crayfish Habitat Survey Form**

<table>
<thead>
<tr>
<th>Catchment</th>
<th>Wye</th>
<th>River</th>
<th>Lynfi</th>
<th>Site (no., name)</th>
<th>10</th>
</tr>
</thead>
<tbody>
<tr>
<td>Date (dd/mm/yy)</td>
<td>14/09/2016</td>
<td>Surveyor</td>
<td>DR LW</td>
<td>Grid ref.</td>
<td>SO 13001 30323</td>
</tr>
<tr>
<td>Weather</td>
<td>good 1, mod 2, poor 3</td>
<td>Flow norm</td>
<td>1</td>
<td>Water temp. oC</td>
<td>12</td>
</tr>
<tr>
<td>Photo ref. &amp; Location</td>
<td>Immediately downstream of 1st 100m</td>
<td>Site length (m)</td>
<td>100</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Width channel (m)</td>
<td>4</td>
<td>Land use - Woodland and grazing. Appears good habitat</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Survey method</td>
<td>std 1, quad 2, net/kick 3, trap 4, view 5</td>
<td>sample patch 1</td>
<td>1 &amp; 4</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Extent (l x w patch)</td>
<td>3x2</td>
<td>sample patch 2</td>
<td>2x2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Channel (1 margins, 2 mid, 3 both, other specify)</td>
<td>2</td>
<td>sample patch 3</td>
<td>3x2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Depth (metres)</td>
<td>0.3</td>
<td>sample patch 4</td>
<td>0.3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Habitat (1 marg, dealer, 2 pool, 3 glide, 4 run, 5 riffle)</td>
<td>5</td>
<td>sample patch 5</td>
<td>3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Refuges in channel</td>
<td>tick all present in patch, main type(s) searched in red</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>cobble (6.5-15cm)</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>cobble (15-25.6cm)</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>boulder (25.6-40cm)</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>boulder (&gt;40cm)</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>rubble (give size)</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>woody debris</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>other urban debris</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>tree roots, fine moss</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>filamentous algae</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>other submerged veg. emergents</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>Main substrate beneath</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>bedrock</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>cobble (6.5-15cm)</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>pebble (~6.5cm)</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>gravel (~1.6cm)</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>sand (&lt;2mm)</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>clay silt</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
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<td>Siltation</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>low</td>
<td>YES</td>
<td>YES</td>
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<td>YES</td>
<td>YES</td>
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<td>YES</td>
</tr>
<tr>
<td>high</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>Refuges in bank</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>none</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>cobble/boulder</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>tree roots, large vertical or undercut bank</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>dry stone wall</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>other reinforced crayfish burrows</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>Shading above</td>
<td>HEAVY</td>
<td>HEAVY</td>
<td>MOD</td>
<td>HEAVY</td>
<td>HEAVY</td>
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<tr>
<td>Crayfish 10 refuges, or per unit (depending on method)</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
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<tr>
<td>Search time (Mins)</td>
<td>7</td>
<td>10</td>
<td>12</td>
<td>6</td>
<td>10</td>
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<tr>
<td>Bullhead present?</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>Evaluation crayfish habitat for whole site (g none, 1 pres. 2 freq., 3 abund.)</td>
<td>Score</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>in margins</td>
<td>2</td>
<td></td>
<td></td>
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<tr>
<td>in mid channel</td>
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<td>in banks</td>
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<td>surveyability</td>
<td>3</td>
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</tr>
<tr>
<td>Problems</td>
<td>pollution 1, erosion 2, (E if &gt;33% affected), aliens 3,</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total crayfish (by 1 method, note total(s) by other methods in notes if applicable)</td>
<td>0</td>
<td></td>
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<td></td>
<td></td>
</tr>
</tbody>
</table>
## CRAYFISH HABITAT SURVEY FORM

<table>
<thead>
<tr>
<th>Catchment</th>
<th>Wye</th>
<th>River</th>
<th>Llynfi</th>
<th>Site (no., name)</th>
<th>11</th>
</tr>
</thead>
<tbody>
<tr>
<td>Date (dd/mm/yy)</td>
<td>14/09/2016</td>
<td>surveyor</td>
<td>DR LW</td>
<td>land ref.</td>
<td>SO 12683 29971</td>
</tr>
<tr>
<td>Weather, good 1, mod 2, poor 3</td>
<td>1</td>
<td>low 2, fall 4</td>
<td>1</td>
<td>Water temp. oC</td>
<td>12</td>
</tr>
<tr>
<td>Photo ref. &amp; Location</td>
<td>Footbridge near disused railway</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Site length (m)</td>
<td>100</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Width channel (m)</td>
<td>4.5</td>
<td>Descript.</td>
<td>channel features,</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Survey method, std 1, quad 2, net/kick 3, trap 4, view 5</td>
<td>1 &amp; 4</td>
<td>1 &amp; 4</td>
<td>1 &amp; 4</td>
<td>1 &amp; 4</td>
<td>1 &amp; 4</td>
</tr>
<tr>
<td>Extent (l x w patch)</td>
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<td>3x2</td>
<td>4x3</td>
</tr>
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<td>Channel (1 margins, 2 mid, 3 both, other specify)</td>
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<td>2</td>
<td>1</td>
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</tr>
<tr>
<td>Depth (metres)</td>
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<td>0.2</td>
<td>0.3</td>
<td>0.3</td>
<td>0.3</td>
</tr>
<tr>
<td>Fitness (1 marg. or channel, 2 mid, 3 glide, 4 run, 5 riffle)</td>
<td>5</td>
<td>4</td>
<td>2</td>
<td>2</td>
<td>4</td>
</tr>
<tr>
<td>Refuges in channel</td>
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<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
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<td>YES</td>
<td>YES</td>
<td>YES</td>
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<tr>
<td>cobble (15.25.6-15cm)</td>
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<td>YES</td>
<td>YES</td>
<td>YES</td>
<td></td>
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<tr>
<td>boulder (25.6-40cm)</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
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</tr>
<tr>
<td>boulder (&gt;40cm)</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td></td>
</tr>
<tr>
<td>rubble (give size)</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>woody debris</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td></td>
</tr>
<tr>
<td>other urban debris</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td></td>
</tr>
<tr>
<td>tree roots, fine moss</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
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<tr>
<td>filamentous algae</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td></td>
</tr>
<tr>
<td>other submerged veg. emergents</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td></td>
</tr>
<tr>
<td>Main substrate beneath</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>bedrock</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
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<td>cobble (6.5-15cm)</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
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<td>pebble (&lt;6.5cm)</td>
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<td>gravel (&lt;1.6cm)</td>
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<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td></td>
</tr>
<tr>
<td>clay silt</td>
<td>YES</td>
<td>YES</td>
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</tr>
<tr>
<td>Situation</td>
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<td>YES</td>
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</tr>
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<td>YES</td>
<td>YES</td>
<td>YES</td>
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</tr>
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<td>moderate</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
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<td>YES</td>
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<tr>
<td>high</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>Refuges in bank</td>
<td>none</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>cobble/boulder</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td></td>
</tr>
<tr>
<td>tree roots, large vertical or undercut bank</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td></td>
</tr>
<tr>
<td>dry stone wall</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td></td>
</tr>
<tr>
<td>other reinforced crayfish burrows</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td></td>
</tr>
<tr>
<td>Shading above</td>
<td>HEAVY</td>
<td>HEAVY</td>
<td>HEAVY</td>
<td>HEAVY</td>
<td>HEAVY</td>
</tr>
<tr>
<td>Crayfish/10 refuges, or per unit (depending on method)</td>
<td>0</td>
<td>0</td>
<td>0</td>
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<td>0</td>
</tr>
<tr>
<td>Search time (Mins)</td>
<td>10</td>
<td>10</td>
<td>8</td>
<td>8</td>
<td>10</td>
</tr>
<tr>
<td>Bullhead present?</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td></td>
</tr>
<tr>
<td>Evaluation crayfish habitat for whole site</td>
<td>Score</td>
<td>Notes (survey conditions, patches etc.: Good access from west bank via footpath)</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>in margins</td>
<td>2</td>
<td></td>
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</tr>
<tr>
<td>in mid channel</td>
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<td>in banks</td>
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<td></td>
<td></td>
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<tr>
<td>Problems</td>
<td>pollution 1, erosion 2, (if &gt;33% affected), aliens 3.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total crayfish (by 1 method, notes total(s) by other methods in notes if applicable)</td>
<td>0</td>
<td></td>
<td></td>
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</table>

Land use - woodland. River changes to bedrock riffles with steep banks on either side. Riffles, glides and pools in woodland. No intensive agriculture. Excellent habitat.
CRAYFISH HABITAT SURVEY FORM

<table>
<thead>
<tr>
<th>Catchment</th>
<th>Wye</th>
<th>River</th>
<th>Llynfi</th>
<th>Site (no., name)</th>
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<td>rubble (give size)</td>
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<td>vertical or undercut bank</td>
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<td>YES</td>
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<td>YES</td>
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<td>MOD</td>
<td>HEAVY</td>
<td>MOD</td>
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<td>Crayfish/10 refuges, or per unit (depending on method)</td>
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<td>12</td>
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<td>Bullhead present?</td>
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<td>Notes (survey conditions, patches etc.):</td>
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**CRAYFISH HABITAT SURVEY FORM**

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<th>River</th>
<th>Llynfi</th>
<th>Site (no., name)</th>
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<td>Land ref. (d/s end) SO 13082 27665</td>
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<td>MOD</td>
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### CRAYFISH HABITAT SURVEY FORM

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<td>Grid ref. (d/s end)</td>
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<td>1 &amp; 4</td>
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<td>cobbles/boulders</td>
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<td>YES</td>
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<td>HEAVY</td>
<td>MOD</td>
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<td>(if present, 1 pres., 2 freq., 3 abundant)</td>
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<td>in margins</td>
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<td>in banks</td>
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<td>2e</td>
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Land use - grazing. Evidence of heavy stock access. Eroded banks and river channel is silted up offering no crayfish refuges.

Near roadbridge.
CRAYFISH HABITAT SURVEY FORM

<table>
<thead>
<tr>
<th>Catchment</th>
<th>Wye</th>
<th>River</th>
<th>Llynfi</th>
<th>Site (no., name)</th>
<th>15</th>
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<tbody>
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<td>Date (dd/mm/yyyy)</td>
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<td>Surveyor</td>
<td>DR LW</td>
<td>Grid ref. end</td>
<td>SO 13899 24149</td>
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<tr>
<td>Weather, good 1, mod 2, poor 3</td>
<td>Flow: 1, low; 2, fall; 3, rise 4</td>
<td>Water temp: 1, good; 2, mod; 3, poor 4</td>
<td>Clarity: 1, good; 2, mod; 3, poor 4</td>
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<td>Photo ref. &amp; Location</td>
<td>At field boundary in first 100m</td>
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<tr>
<td>Site length (m)</td>
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<td>Width channel (m)</td>
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<tr>
<td>Survey method, std 1, quad 2, net/kick 3, trap 4, view 5</td>
<td>1 &amp; 4</td>
<td>1 &amp; 4</td>
<td>1 &amp; 4</td>
<td>1 &amp; 4</td>
<td>1 &amp; 4</td>
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<tr>
<td>Extent (l x w patch)</td>
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<td>7x1</td>
<td>3x1</td>
<td>9</td>
<td>7x1</td>
</tr>
<tr>
<td>Channel (l margins, 2 mid, 3 both, other specify)</td>
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<td>3</td>
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<td>Depth (metres)</td>
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<td>0.4</td>
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<td>0.1</td>
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<tr>
<td>Feature (d'water, pool, glide, run, riffle)</td>
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<td>5</td>
<td>2</td>
<td>4</td>
<td>5</td>
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<tr>
<td>Refuges in channel</td>
<td>tick all present in patch, ring main type(s) searched</td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Refuges in bank</td>
<td>none</td>
<td>low</td>
<td>moderate</td>
<td>high</td>
<td></td>
</tr>
<tr>
<td>Refuges in channel (not main)</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>Refuges in bank (not main)</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
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<tr>
<td>Main substrate beneath</td>
<td>bedrock</td>
<td>cobble (6.5-15cm)</td>
<td>cobble (15-25.6cm)</td>
<td>boulder (25.6-40cm)</td>
<td>boulder (&gt;40cm)</td>
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<tr>
<td>clay</td>
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<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
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<td>moderate</td>
<td>high</td>
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<td>Siltation (not main)</td>
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<td>MOD</td>
<td>MOD</td>
<td>MOD</td>
<td>MOD</td>
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<td>10</td>
<td>8</td>
<td>8</td>
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<td>Evaluation crayfish habitat for whole site (0 none, 1 pres. 2 freq., 3 above)</td>
<td>Score</td>
<td>Notes (survey conditions, patches etc.)</td>
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<tr>
<td>in margins</td>
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<td>in mid channel</td>
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<td>in banks</td>
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<td>surveyability</td>
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<tr>
<td>Problems - pollution 1, erosion 2, (if &gt;33% affected), aliens 3.</td>
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<tr>
<td>Total crayfish (by 1 method, note total(s) by other methods in notes if applicable)</td>
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<td>Catchment</td>
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<td>River</td>
<td>Llynfi</td>
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<td>Weather, good 1, mod 2, poor 3</td>
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<td>Water temp. oC</td>
<td>Clarity, good 1, mod 2, poor 3</td>
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<td>1 &amp; 4</td>
<td>1 &amp; 4</td>
<td>1 &amp; 4</td>
<td>1 &amp; 4</td>
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<td>Details (if not standard)</td>
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<td>7x1</td>
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<td>4x1</td>
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<td>5</td>
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</tr>
<tr>
<td>cobble/boulder</td>
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<tr>
<td>other reinforced crayfish burrows</td>
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<td>YES</td>
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<td>Refuges in bank</td>
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<td>vertical or undercut bank</td>
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<td>dry stone wall</td>
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<td>YES</td>
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<td>YES</td>
<td>YES</td>
<td>YES</td>
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</tr>
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<td>HEAVY</td>
<td>HEAVY</td>
<td>HEAVY</td>
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<td>Crayfish /100m2</td>
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<tr>
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<td>Score</td>
<td>Notes (survey conditions, patches etc.):</td>
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<td></td>
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<tr>
<td>Pollution 1, erosion 2, (E if &gt;33% affected), aliens 3.</td>
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<tr>
<td>Problems</td>
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<tr>
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### CRAYFISH HABITAT SURVEY FORM

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<th>Catchment</th>
<th>Wye</th>
<th>River</th>
<th>Chwefru</th>
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<td>Surveys</td>
<td>DR LW</td>
<td>Grid ref. (d/s end)</td>
<td>SN9875953879</td>
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<tr>
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<td>Flow norm 1, low 2, fall 3, rise 4</td>
<td>Water temp. oC</td>
<td>Clarity, good 1, mod 2, poor 3</td>
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<tr>
<td>Photo ref. &amp; Location</td>
<td>Typical stretch</td>
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<tr>
<td>Site length (m)</td>
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<td>Descript. (channel features, landuse)</td>
<td>Land use - grazing. Occasional stock access. Many excellent areas.</td>
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<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Survey methods**, std 1, quad 2, net/kick 3, trap 4, view 5 | 1 & 4 | sample patch 2 | sample patch 3 | sample patch 4 | sample patch 5 |

**Details (if not standard)**

**Extent** (l x w patch) | 5x1 | 4x2 | 1x5 | 4x1 | 5x2 |
**Channel** (1 margins, 2 mid, 3 both, other specify) | 1 | 3 | 3 | 1 | 3 |
**Depth** (metres) | 0.3 | 0.3 | 0.4 | 0.3 | 1 |

**Refuges in channel** (for all present in patch, main types 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
- filamentous algae
- other submerged veg.
- emergents

**Main substrate beneath**
- bedrock
- cobble (6.5-15cm)
- pebble (6-15cm)
- gravel (>1cm)
- sand (<2mm)
- clay
- silt

**Situation**
- 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
- HEAVY
- MOD

**Crayfish** (0 refuges, or per unit (depending on method))
- 0
- 0
- 0
- 0
- 0

**Bullhead present?**
- 12
- 8
- 10
- 12
- 13

**Evaluation crayfish habitat for whole site (0 none, 1 pres., 2 freq., 3 abund.)**
- in margins | 3 |
- in mid channel | 3 |
- in banks | 3 |

**Problems**
- pollution 1, erosion 2, aliens 3
- 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)
**Catchment River Site (no., name)**

<table>
<thead>
<tr>
<th>Catchment</th>
<th>Wye</th>
<th>River</th>
<th>Chewfu</th>
<th>Site (no., name)</th>
<th>2</th>
</tr>
</thead>
</table>

**Date (dd/mm/yy)** 22/08/2016

**Surveyors** DR LW

**Grid ref. (d/s end)** SN9993052/180

**SN9974453165**

**Weather, good 1, mod 2, poor 3**

<table>
<thead>
<tr>
<th>Photo ref. &amp; Location</th>
<th>Ford between fields either side of the river</th>
</tr>
</thead>
<tbody>
<tr>
<td>Date (dd/mm/yy)</td>
<td>22/08/2016</td>
</tr>
<tr>
<td>Surveyors</td>
<td>DR LW</td>
</tr>
<tr>
<td>Grid ref. (d/s end)</td>
<td>SN9993052/180</td>
</tr>
<tr>
<td>SN9974453165</td>
<td></td>
</tr>
<tr>
<td>Weather, good 1, mod 2, poor 3</td>
<td>-</td>
</tr>
</tbody>
</table>

**Grid ref. (d/s end)  SN9993052/180**

**SN9974453165**

**Flow norm. 1, low 2, fall 3, rise 4**

**Water temp. oC 1**

**Clarity, good 1, mod 2, poor 3 1**

**Photo ref. & Location** Ford between fields either side of the river

**Site length (m) 500**

**Width channel (m) 7**

**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

1 & 4

**Details (if not standard)**

**Extent (l x w patch)**

5x2

4x3

4x1

3x3

1x6

**Channel (1 margins, 2 mod, 3 both, other specify)**

3

3

3

1

3

**Depth (metres)**

0.3

0.3

0.3

0.4

0.4

**Feature (1 marg. d’water, 2 pool, 3 glide, 4 run, 5 riffle)**

4

4

4

3

4

**Refuges in channel**

**Refuges in bank**

**Siltation**

**Main substrate beneath**

**Refuges in bank**

**Shading above**

**Crayfish present?**

**Search time (Mins)**

10

6

10

10

10

**Evaluation crayfish habitat for whole site (0 none, 1 pres., 2 freq., 3 abound)**

<table>
<thead>
<tr>
<th>Name</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>in margins</td>
<td>3</td>
</tr>
<tr>
<td>in mid channel</td>
<td>3</td>
</tr>
<tr>
<td>in banks</td>
<td>3</td>
</tr>
<tr>
<td>surveyability</td>
<td>3</td>
</tr>
</tbody>
</table>

**Problems**

<table>
<thead>
<tr>
<th>Name</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>pollution 1, erosion 2, (E if &gt;33% affected), aliens 3</td>
<td></td>
</tr>
</tbody>
</table>

**Total crayfish (by 1 method, note total(s) by other methods in notes if applicable)**

0

**Notes (survey conditions, patches etc.):**

- Land use - grazing..Excellent areas where there is no stock access