

River Habitat Surveys (RHS) and Plant Community Surveys of the River Wye SAC (Wales) in 2024 and 2025

Report No: 967
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Crynodeb gweithredol

Cyfoeth Naturiol Cymru (CNC) sy'n gyfrifol am fonitro a rheoli'r amgylchedd dŵr croyw, gan gynnwys safleoedd gwarchoddedig a ddynodwyd o dan ddeddfwriaeth y DU ac Ewrop (SoDdGAau ac ACAau). Mae ACA Afon Gwy yn bwysig ar gyfer nifer o nodweddion gan gynnwys cynefin Ranunculion sy'n cael ei restru yn y Gyfarwyddeb Cynefinoedd fel Cynefin Atodiad 1: "Cyrsiau dŵr ar lefelau gwastad a mynyddig gyda llystyfiant *Ranunculion fluitantis* a *Callitriche-Batrachion*".

Mae'n ofynnol i CNC werthuso statws cadwraeth nodwedd cynefin afon Ranunculion gan ddefnyddio canllawiau Monitro Safonau Cyffredin (CSM) (JNCC, 2016). Asesir y nodwedd hon yn erbyn wyth priodoledd: llif, ansawdd dŵr, strwythur y cynefin, gwaddod mân, dangosyddion negyddol, casgliadau biolegol, dangosyddion nodweddion lleol unigryw ac aflonyddwch dynol uniongyrchol. Efallai bod gan bob nodwedd fwy nag un is-nodwedd, sy'n cyfrannu at asesiad cyffredinol o'r nodwedd fel un sydd mewn cyflwr ffafriol neu anffafriol.

Comisiynwyd Bywater Ecology gan CNC yn 2024 a 2025 i gynnal Arolwg Cynefinoedd Afon (RHS), arolygon Cam 1 symlach ac arolygon macroffytâu dyfrol LEAFPACS2 afonydd ar ACA Afon Gwy i gyfrannu at asesiad llawn o gyflwr y nodweddion. Bydd data ac asesiadau hefyd yn darparu gwybodaeth er mwyn cefnogi gwaith i reoli ac adfer safleoedd gwarchoddedig a chyflawni Cynlluniau Rheoli Basnau Afonydd.

Yn 2024, arolygwyd dau safle monitro ar hugain (22) yn nalgylch Afon Gwy. Effeithiodd glaw ar y rhaglen arolygu drwy gydol y cyfnod arolygu, felly ar un safle ar ddeg (11) cynigiwyd ailgynnal yr arolygon macroffytâu yn gynharach yn y tymor yn 2025, ac ar gyfer saith o'r safleoedd hyn, argymhellwyd ailadrodd arolygon yr RHS hefyd. Nid oedd angen ailadrodd yr Arolwg Cam 1 symlach ar y safleoedd hyn. Disgrifiwyd yr arolygon a gynhaliwyd yn 2024 mewn Adroddiad Tystiolaeth blaenorol (Bywater, 2024).

Yn 2025, ailadroddwyd yr arolygon macroffytâu ac RHS ar saith o safleoedd gwreiddiol 2024 a'r arolygon macroffytâu ar bedwar safle arall o 2024. Yn ogystal â hynny, dewiswyd chwe safle newydd ar gyfer yr RHS, Arolwg Cam 1 symlach ac arolwg macroffytâu dyfrol o restr o ddeuddeg safle posibl â blaenoriaeth a ddarparwyd gan CNC. Cynhaliwyd yr holl arolygon yn 2025 yn ystod amodau tywydd addas ac roeddent felly'n ddilys.

Mae'r adroddiad hwn yn rhoi trosolwg o'r holl arolygon macroffytâu ac RHS o'r 28 safle y penderfynwyd eu bod yn ddilys o 2024 a 2025. Disgrifir allbynnau a dadansoddiadau o'r arolygon ac mae'r adroddiad hwn yn disodli'r adroddiad uchod o 2024.

Prif allbynnau'r prosiect hwn yw copïau digidol o gofnodion maes gan gynnwys ffotograffau, manylion mynediad a pharcio, ynghyd â disgrifiad o bob safle.

Ym mhob un o'r safleoedd newydd cynhaliwyd yr arolygon canlynol:

- Arolygon Cynefin Afon (RHS), i asesu ansawdd y cynefin ffisegol, wedi'u cefnogi gan
- Arolwg Cam 1 wedi'i symleiddio, ac
- Arolygon planhigion dyfrol gan ddefnyddio dull afonydd LEAFPACS, ynghyd ag

- Arsylwadau maes o ansawdd cynefinoedd i gynorthwyo â'r gwaith o ddehongli'r data.

Nid yw CNC wedi cynnal dadansoddiad o'r data macroffytau a'r RHS fel rhan o asesiad cyflwr eto, ond o'r arolwg maes, mae patrwm clir yn dod i'r amlwg: ar y rhan fwyaf o safleoedd gwelir pwysau o amaethyddiaeth, gwaith addasu sianeli yn y gorffennol, a cholli llystyfiant glannau afon naturiol, yn enwedig yn y rhan ganol a'r rhan isaf. I'r gwrthwyneb, mae llednentydd y blaenddwyr yn cadw cymeriad naturiol i raddau helaeth gyda sianeli sy'n gyforiog o fryoffytau, coetir glannau afon cyfan, lefelau dibwys o algâu, ac ychydig iawn o waith addasu.

Canfyddiadau Allweddol o'r 28 Arolwg:

Ansawdd y Cynefin Ffisegol (RHS)

- Mae gwaith addasu sianeli o'r gorffennol yn gyffredin, yn enwedig ar hyd prif afon Gwy, leithon ac Irfon i lawr yr afon o'r dalgylch uchaf.
- Mae gan lawer o rannau canol ac isaf yr afonydd lannau trapesoid, rhannau hir wedi'u sythu, argloddiau wedi'u gosod yn ôl, a rhannau heb goed glannau afon aeddfed.
- Ar draws rhannau amaethyddol, mae'n gyffredin gweld ôl sathru gan dda byw ar lannau afonydd, sy'n cyfrannu at erydiad lleol ac at y silt sy'n mynd i mewn i'r afon.
- Mae'r sianeli yn rhan uchaf Gwy, rhan uchaf Marteg, rhan uchaf leithon a Nant Clywedog yn wedi'u cadw'n naturiol gan fwyaf (HMS 1–2) gyda choetir glannau afon cyfan.

Ansawdd Dŵr a Gwaddod Mân

- Cofnodwyd dyddodiad o silt mân ar sawl safle, yn aml yn gysylltiedig â sathru ar y glannau, dŵr ffo amaethyddol, neu ymyriadau rheoli i fyny'r afon.
- Roedd gweithfeydd trin carthffosiaeth ger rhai safleoedd, ac mae'n debyg bod y gollyngiad o'r rhain, ynghyd â dŵr ffo amaethyddol, wedi cyfrannu at fwy o orchudd algâu. Roedd algâu ffilamentog yn bresennol ar wahanol lefelau:
 - Uchel (20–50 %) ar sawl safle yn Gwy isaf (ee Y Clas-ar-Wy, Llansteffan, Bochrwyd, i lawr yr afon o'r Gelli).
 - Cymedrol (2–5%) ar rai safleoedd yng nghanol Gwy ac leithon.
 - Yn isel neu'n absennol yn y dalgylch uchaf.
- Ar sawl safle cofnodwyd dŵr lliw brown ond heb fod yn gymylog, sy'n arwydd bod mater organig toddedig o bosib wedi mynd i mewn i'r afon, yn enwedig ym mhrif afon Gwy.

Cymunedau Macroffyt

- Cofnodwyd crafanc y dŵr (*Ranunculus* spp.) ar chwech yn unig o'r 28 safle, yn aml ar ffurf clytiau bach neu ynysig wedi'u hamddiffyn rhag anifeiliaid sy'n pori neu lifoedd uchel.
- Fe'i gwelir amlaf yn: leithon (Diserth, Dolberthog) a Gwy (Heol Llanfair-ym-Muallt, Llanfair-ym-Muallt, Llansteffan, Bochrwyd).
- Roedd gwelyau *Ranunculus* helaeth, nodwedd wedi'i datgan yn yr ACA, yn absennol i raddau helaeth o rannau lle roedd y llif yn arafach - rhannau fu'n addas yn y gorffennol.

- Nid oedd unrhyw blanhigion fasgwlaidd tanddwr o gwbl ar amryw o safleoedd, gydag ond bryoffytau a phlanhigion ymylol yn codi o'r dŵr wedi'u cofnodi.

Naturioldeb Llystyfiant y Glannau (Cam 1 wedi'i symleiddio)

- Dim ond 6 o'r Unedau ACA a arolygwyd (allan o 15) a gyflawnodd darged y CSM ar gyfer naturioldeb llystyfiant y glannau, yn bennaf yn rhannau uchaf y dalgyrch sy'n llawn coetir.
- Yn aml, byddai unedau Gwy Ganol ac Isaf ac isafonydd yn methu eu targedau CSM oherwydd:
 - glaswelltir wedi'i wella/amwynder at ben y lan
 - dim lleiniau clustogi, neu leiniau clustogi cul
 - ymlediad trefol
 - meysydd carafanau, meysydd parcio, ffyrdd, a seilwaith ger y sianel.

Rhywogaethau estron goresgynnol.

- Jac y neidiwr i'w weld yn eang drwy'r holl ddalgyrch canol ac isaf, yn aml yn helaeth.
- Clymog Japan yn bresennol mewn amryw o safleoedd ar afon Gwy (e.e. Llansteffan, Y Clas-ar-Wy) ac ar hyd pob rhan o afon Irfon.
- Mae INNS yn parhau i fod yn absennol neu'n brin yn rhan uchaf Afon Gwy, rhan uchaf Afon Ieithon, a Nant Clywedog.

Mae tystiolaeth yr arolwg yn dangos patrwm daearyddol pendant:

- Y dalgyrch uchaf (ucheldir Gwy, rhan uchaf Ieithon, Nant Clywedog): sianeli naturiol yn bennaf, cymunedau bryoffytau amrywiol, ychydig iawn o waith addasu, ychydig iawn o algâu, strwythur coetir da ar lannau'r afon.
- Y dalgyrch canol (Rhaeadr i Lanfair-ym-Muallt a rhannau canol Ieithon/Irfon): gwaith addasu cynyddol, pwysau amaethyddol, sathru, algâu cymedrol, *Ranunculus* cyfyngedig.
- Y dalgyrch isaf (Y Clas-ar-Wy i Drefynwy): rhannau wedi'u haddasu'n helaeth, INNS helaeth, lefel uchel o algâu ffilamentog, mewnbynau silt, llai o facroffytau tanddwr, a cholli cynefin glannau afon naturiol yn eang.

Mae'r camau gweithredu a argymhellwyd i adfer y cyrsiau dŵr yn cynnwys creu ac ehangu lleiniau clustogi, amddiffyn pennau'r glannau rhag ymlediad trefol, addysgu am bwysigrwydd coridorau bywyd gwyllt ar afonydd a mynd i'r afael â phroblemau'n gysylltiedig â chynnydd cyflym yn llif y dŵr a llygredd silt, gyda'r bwriad o ganiatáu i grafanc y dŵr ailsefydlu.

Yn ogystal â hyn, argymhellir rheoli'r rhywogaethau estron goresgynnol, jac y neidiwr a chlymog Japan, lle maent yn bresennol o fewn y dalgyrch.

Executive summary

Natural Resources Wales (NRW) is responsible for the monitoring and management of the freshwater environment including protected sites designated under UK and European legislation (SSSIs and SACs). The River Wye SAC is important for several features including Ranunculion habitat listed in the Habitats Directive as the Annex 1 Habitat: “Water courses of plain to montane levels with the *Ranunculion fluitantis* and *Callitriche-Batrachion* vegetation”.

NRW is required to evaluate the conservation status of the Ranunculion river habitat feature using Common Standards Monitoring (CSM) guidance (JNCC, 2016). This feature is assessed against eight attributes; flow, water quality, habitat structure, fine sediment, negative indicators, biological assemblages, indicators of local distinctiveness and direct human disturbance. Each attribute may have more than one sub-attribute, which contribute to the overall assessment of the feature as being in Favourable condition or Unfavourable condition.

Bywater Ecology were commissioned in 2024 and 2025 by NRW to undertake River Habitat Survey (RHS), simplified Phase 1 and river LEAFPACS2 aquatic macrophyte surveys on the River Wye SAC to contribute towards a full condition assessment of features. Data and assessments will also provide information to support the management and restoration of protected sites and the delivery of River Basin Management Plans.

In 2024, twenty-two monitoring sites were surveyed in the River Wye catchment. The survey programme was impacted by rain throughout the survey period, therefore eleven sites were proposed for re-survey of the macrophyte surveys earlier in the season in 2025, and for seven of these sites, a repeat of the RHS surveys was also recommended. It was not necessary to repeat the simplified Phase 1 Survey at these sites. The surveys carried out in 2024 were described in a previous Evidence Report (Bywater, 2024).

In 2025, macrophyte and RHS surveys were repeated at seven of the original 2024 sites and macrophyte surveys at a further four of the 2024 sites. In addition, six new sites were selected for RHS, simplified Phase 1 Survey and aquatic macrophyte survey from a prioritised list of twelve potential sites supplied by NRW. All of the surveys in 2025 were carried out during suitable weather conditions and were therefore valid.

This report provides an overview of all of the macrophyte and RHS surveys from across the 28 sites determined to be valid from 2024 and 2025. Outputs and analysis of surveys are described and this report supersedes the aforementioned report from 2024.

The principal outputs of this project are digital copies of field records including photographs, access and parking, along with a description of each site.

At each of the new sites the following surveys were conducted:

- River Habitat Surveys (RHS), to assess the quality of physical habitat, supported by
- Simplified Phase 1 survey, and
- Aquatic plant surveys using the River LEAFPACS2 method, along with
- Field observations of habitat quality to assist with interpretation of the data.

Analysis of the macrophyte and RHS data as part of a condition assessment is yet to be conducted by NRW, but from the field survey, a clear pattern emerges: most sites show pressures from agriculture, historic channel modification, and loss of natural riparian vegetation, particularly in the middle and lower reaches. In contrast, the headwater tributaries retain a largely natural character with bryophyte-dominated channels, intact riparian woodland, negligible algae, and minimal modification

Key Findings from the 28 Surveys:

Physical Habitat Quality (RHS)

- Historic channel modification is widespread, especially along the main Wye, Ithon and Irfon downstream of the upper catchment.
- Many middle and lower river sections have trapezoidal banks, long straightened reaches, set-back embankments, and sections lacking mature riparian trees.
- Bank poaching from livestock is common across agricultural reaches, contributing to local erosion and silt input.
- The upper Wye, upper Marteg, upper Ithon and Clywedog Brook retain predominantly natural channels (HMS 1–2) with intact riparian woodland.

Water Quality and Fine Sediment

- Fine silt deposition was recorded at several sites, often associated with poaching, agricultural runoff, or upstream management interventions.
- There were sewage treatment works near some sites, and the discharge from these, along with agricultural run-off is likely to have contributed to increased algal cover. Filamentous algae was present at varying levels:
 - High (20–50 %) at several lower Wye sites (e.g. Glasbury, Llanstephan, Boughrood, d/s Hay).
 - Moderate (2–5 %) at some mid-Wye and Ithon sites.
 - Low or absent in the upper catchment.
- Several sites recorded brown-coloured but non-turbid water, indicating possible dissolved organic matter inputs, particularly on the main Wye.

Macrophyte Communities

- Water-crowfoot (*Ranunculus* spp.) was recorded at only six of the 28 sites, often as small or isolated patches protected from grazing or high flows.
- Most frequent at: Ithon (Disserth, Dolberthog) and Wye (Builth Rd, Builth Wells, Llanstephan, Boughrood).
- Extensive *Ranunculus* beds, a stated SAC feature, were largely absent from historically suitable lower-energy reaches.
- Several sites lacked submerged vascular plants entirely, recording only bryophytes and marginal emergent vegetation.

Bank Vegetation Naturalness (simplified Phase 1)

- Only 6 of the surveyed SAC Units (out of 15) achieved the CSM target for bank vegetation naturalness, mostly in upper-catchment woodland-dominated reaches.
- Middle and lower Wye and tributary units frequently failed their CSM targets due to:
 - improved/amenity grassland to the bank top
 - narrow or absent buffer strips

- urban encroachment
- caravan parks, car parks, roads, and infrastructure near the channel.

Invasive Non-Native Species (INNS)

- Himalayan balsam widespread throughout the middle and lower catchment, often extensive.
- Japanese knotweed present at multiple sites on the Wye (e.g. Llanstephan, Glasbury) and throughout the Irfon.
- INNS remain absent or rare in the upper Wye, upper Ithon, and Clywedog Brook.

The survey evidence indicates a strong geographical pattern:

- Upper catchment (upland Wye, upper Ithon, Clywedog Brook): predominantly natural channels, diverse bryophyte communities, minimal modification, minimal algae, good riparian woodland structure.
- Middle catchment (Rhayader to Builth and Ithon/Irfon middle reaches): increasing modification, agricultural pressure, poaching, moderate algae, limited Ranunculus.
- Lower catchment (Glasbury to Monmouth): heavily modified reaches, extensive INNS, high filamentous algae, silt inputs, reduced submerged macrophytes, and widespread loss of natural riparian habitat.

Recommendations made for actions to restore the watercourses include creating and expanding buffer zones, protecting bank tops from urban encroachment, education on the importance of wildlife river corridors and addressing the issues of high spate flows and silt pollution with a view to allowing water crowfoot to re-establish.

In addition, control of the invasive non-native species, Himalayan balsam and Japanese knotweed is recommended where they occur within the catchment.

Introduction

Natural Resources Wales is the largest Welsh Government Sponsored Body and is responsible for making sure that the environment and natural resources of Wales are sustainably maintained, sustainably enhanced and sustainably used, now and in the future. Responsibilities include the management and monitoring of the freshwater environment including protected sites designated under UK and European legislation (SSSIs and SACs) and environmental monitoring for the Water Framework and Nitrates Directives.

The River Wye is designated as a Special Area of Conservation (SAC) covering approximately 2,200 ha. The Annex I ranunculion habitat is listed as a primary reason for selection of this site as a SAC. The location of the River Wye is given in figures 1 and 2. It has a geologically mixed catchment, including shales and sandstones, and there is a clear transition between the upland reaches, with characteristic bryophyte-dominated vegetation, and the lower reaches, with extensive *Ranunculus* spp. beds. There is an exceptional range of aquatic flora in the catchment including river jelly lichen *Collema dichotomum*. The river channel is largely unmodified and includes a number of gorges and significant areas of associated woodland (CCW, 2008; JNCC, 2013).

In 2012, Harrison *et al* noted that the conservation status of the River Wye in relation to the Ranunculion habitats was unfavourable, resulting from reduced water quality in some tributaries of the Wye including parts of the Ithon and Llynfi sub-catchments, due mainly to diffuse pollution from agriculture. A further adverse factor noted was the over-abundance of invasive non-native species of bankside plant communities (CCW, 2008).

Bywater Ecology was appointed by NRW to undertake surveys to monitor the river habitat and aquatic macrophyte communities of the Wye catchment in 2024 and 2025. In August and September 2024 when these surveys were undertaken, there was significant rainfall and river levels were high at some sites. Repeat surveys were recommended for sites where flow rates were considered too high, and additional surveys were proposed at new sites for 2025. The results of the valid surveys undertaken in August-September 2024 and June-July 2025 are presented in this report.

Methods

Fieldwork

All survey fieldwork was undertaken by a team of two including an experienced macrophyte surveyor and a field assistant for health and safety reasons (working in or near water). The main surveyor had current River Habitat Survey (RHS) accreditation from the Environment Agency, was experienced in RHS survey work, was proficient with the LEAFPACS plant community survey and familiar with Phase 1 classification categories. The field programme was organized so as to minimise travel and other expenses.

Fieldwork was undertaken between 5 August 2024 and 28 September in 2024 and between 16th June 2025 and 9th July 2025, within the recognised macrophyte survey season (June-

September inclusive). Whilst May and June are considered the most suitable months for RHS, upland rivers with little or no emergent vegetation are suitable for surveying over a much longer season. If, for special reasons, surveys have to be carried out during non-optimal months, interpretation of the results will need to take full account of seasonal aquatic and bankside vegetation growth. Where possible, the surveys were undertaken at low flows when visibility through the water column was good and timed to avoid the periods during and immediately following inclement weather conditions such as heavy rain which can affect the quality of macrophyte and RHS data collected.

At each new site, parking, access and health and safety issues were recorded for inclusion in NRW's Survey Site Information database (SSID).

It was decided in agreement with the NRW project officer not to contact landowners in advance of survey unless requested to do so due to time constraints. Instead, a letter was provided by NRW to the contractor setting out an explanation of the survey work and project officer contact details to share with the landowner whilst out on site. Surveyors knocked on doors, put letters through letterboxes and on their car windscreens, and spoke to landowners on site where possible for permission to access the survey sites. There was a policy to stop work and leave if asked to do so.

Biosecurity

Disease and invasive non-native species can be spread by fish and other animals, people, vehicles and equipment. By using biosecurity measures, the risk of spreading non-native species and/or disease can be reduced. All work was undertaken in accordance with standard good practice and specific provisions with reporting of any records of invasive non-native species observed on each site, with suitable biosecurity in place to prevent the spread of crayfish plague (there were reports on the Irfon during the survey season) and of the more widespread invasive plants such as the water-thymes (*Elodea* spp.) and New Zealand pigmyweed (*Crassula helmsii*) at all sites.

Strict biosecurity measures of "Check, Clean, Dry" protocol when entering waterways was followed: check equipment and clothing for mud and debris, clean everything thoroughly, and dry items completely before entering other water bodies.

Sites were also surveyed in downstream order where possible to reduce the risk of spreading any diseases or non-native species upstream.

Limitations

High flows were experienced throughout a lot of the survey season in 2024 and in the first survey week in June 2025 and these flow conditions could have affected the plant community composition. They would certainly have impacted the survey accuracy where flows were fast, water levels were high and the water was turbid. For this reason, surveys were delayed until conditions had improved and were suitable for the scheduled surveys or were repeated in 2025. At some sites however, for example the River Wye at Glasbury, it was not possible to see all submerged plants due to naturally deep water.

River Habitat Survey (RHS)

RHS is a standard methodology for hydromorphological assessment under the Water Framework Directive (WFD) and feature condition assessment under the Habitats Directive that is widely used in the UK and across Europe (Raven et al. 1997). RHS has been applied to more than 25,000 sites in the UK since 1994. The RHS method was developed in the 1990s by the then National Rivers Authority for England and Wales.

The RHS system for assessing the character and habitat quality of rivers based on their physical structure has four distinct components: (i) a standard field survey method; (ii) a computer database, for entering results from survey sites and comparing them with information from other sites; (iii) a suite of methods for assessing habitat quality; and (iv) a system for describing the extent of artificial channel modification. The RHS field method is a systematic collection of data associated with the physical structure of watercourses and surveys should be carried out between April to September.

The RHS field survey is carried out along a standard 500 m length of river channel. The survey is conducted in two sections: 'spot-checks' and 'sweep-up'. The spot-checks are a series of ten 1 m wide transects across the channel at 50m intervals, where bank and channel physical structure, as well as man-made modifications, land use and vegetation structure are recorded in a replicable manner. The 'sweep-up' section, is used to note other habitat components like trees and associated features, flow features, and bank structure. In addition, background map-based information on altitude, slope, distance from source, height of source, solid and drift geology, flow category and water quality class are also collected. For each RHS survey it is mandatory to have at least two photos that illustrate the general character of the site and additional photos of all channel modifications, major structures, and special features.

RHS surveys were recorded on a Samsung tablet using the mobile RHS app. developed by Riverdene Consultancy (https://www.riverhabitatsurvey.org/sdm_downloads/rhs-mobile-android-app/).

Habitat quality indices were calculated using the RHS toolbox (Riverdene Consultancy, 2021). The Habitat Modification Score (HMS) quantifies the extent, potential impact and persistence of engineering structures. The score is classified into five HMS categories using set boundaries, where 1 is semi-natural and 5 is severely modified. The other indices, calculated by the RHS toolbox, are not provided in this report, as they will not be directly used as part of the Condition Assessment.

Simplified Phase 1

Phase 1 Habitat Survey is a standardised system for classifying and mapping wildlife habitats in the UK. A simplified version of Phase 1 has been devised for use with RHS to assess bank vegetation naturalness, as set out in the JNCC Common Standards Monitoring (CSM) Guidance for Rivers (2016). The methods were largely developed by the Joint Nature Conservancy Council (JNCC).

Each RHS spot-check site is surveyed with respect to the broad habitat categories listed in the CSM Guidelines (2016). The vegetation types are recorded of the bank face and bank top, in the 10 m wide transect of the river banks, as an added module to standard RHS. Surveys result in 20 separate records for each RHS spot-check site – the left and right

bank faces and bank tops of the 10 spot-check transects. Points are assigned to vegetation types and a SERCON (System for Evaluating Rivers for Conservation) score (Boon et al., 1996) is calculated according to the presence of one of the semi-natural vegetation types. This is recorded as a SERCON score, for each SAC Unit (or Evaluated Corridor Section (ECS)) in the results tables. The results for each SAC Unit were calculated and assessed against the targets for bank vegetation naturalness, according to the CSM guidance document (JNCC, 2016). The Bank Vegetation Naturalness was the only Habitat Structure attribute that was assessed against the CSM targets in this report, as the other Habitat Structure attributes will be assessed by NRW, as part of a future Condition Assessment, at a later date.

The simplified Phase 1 Habitat Survey were recorded on field sheets printed from the downloaded from the CSM guidance document (JNCC, 2016).

River LEAFPACS2 surveys

The macrophyte plant community was surveyed using the river LEAFPACS2 methodology (WFD-UTAG, 2014), a standardised method where aquatic plant data are sampled from 100 m river sections. Macrophytes are larger plants of fresh water which are easily seen with the naked eye, including all vascular plants, bryophytes, stoneworts (Characeae) and macro-algal growths. Species were recorded according to the river LEAFPACS2 species list, with voucher specimens taken where necessary to confirm identification. Each species recorded was assigned a cover score for the 100 m according to a nine point scale used in the MTR method (Holmes et al., 1999). Specimens of species which require microscopic examination for definitive identification, such as *Callitriche* and bryophytes were collected for more detailed examination where necessary.

Physical features of the 100 m section were recorded using the standard river LEAFPACS2 form. At the mid-point of each 100 m survey section two photographs were taken, one looking upstream and one downstream, and an additional photograph across the channel. The 10 figure National Grid Reference (NGR) was recorded. Additional ad hoc observations relating to condition were also recorded at each monitoring site.

The LEAFPACS2 river macrophyte field survey was recorded using the standard field sheets which included site detail categories, a macrophyte species recording list and a map template on which to draw the 100 m survey length. Bryophyte samples were collected, dried, packed in specially made envelopes and sent to an expert in bryophytes, Sharon Pilkington of Vegetation Survey and Assessment, for identification and confirmation of species as required. Specialist aquatic macrophyte forums and staff at NRW were consulted for confirmation of species of higher plants.

This data will be assessed by NRW against four metrics: i) River Macrophyte Nutrient Index, which provides an index of eutrophication; ii) Number of Macrophyte Taxa; iii) Number of Functional Groups, which assesses the structural diversity of the plant community; and iv) Filamentous algal cover. These metrics will then be combined to give an overall Ecological Quality Ratio (EQR) for the monitoring point. EQRs from several monitoring points will then be combined to give an assessment of ecological status for macrophytes across the SAC Unit.

Results

Sites

In 2024, the survey programme was impacted by rain throughout the survey period. Whilst every effort was taken to schedule surveys to avoid times of rain subsequent high flows, the late appointment of the project and limited survey season meant that this was not always possible. Whilst all sites were affected by high flows, most were deemed to be suitable for survey and only impacted within acceptable levels.

In 2025, an additional six sites were surveyed along with re-surveying eleven sites that were impacted by rain in 2024.

These six new sites were selected for RHS, simplified Phase 1 and aquatic macrophyte survey from a list of twelve potential sites supplied in order of priority by NRW. When it was not possible to survey a site due to access or other issues, an alternative list was selected from the list in order of the priority given.

Each site has a Macrophyte Site Number, a Macrophyte Survey Number, an RHS Site Number and an RHS Site Reference. The RHS Site Number was used for the simplified Phase 1 surveys.

The complete list of the sites surveyed in 2024 and 2025, where the data collected was deemed acceptable for use in a future condition assessment, is presented in table 1 below.

Table 1. A complete list of the 28 sites surveyed in 2024 and 2025, where the data collected was deemed acceptable for use in a future condition assessment

Location number	Location	Macrophyte site number	Macrophyte survey ID	Macrophyte survey date	RHS site number	RHS survey ID	RHS survey date	SAC unit number (ECS) & waterbody ID	NGR
1	Wye, Llangurig	EFMI223	EF24NORM045	05/08/2024	SHMI34	EF24NORH035	05/08/2024	7731 GB109055042320	SN9045479794
2	Wye, u/s Marteg	45263	EF24NORM034	28/09/2024	H10273	EF24NORH024	28/09/2024	7731 GB109055042320	SN9515071550
3	Nant y Dernol, u/s confl Wye	45675	EF24NORM023	06/08/2024	SHMI20	EF24NORH013	06/08/2024	7674 GB109055042320	SN9182274529
4	Bidno, Bidno Mill	EFMI231	EF24NORM044	06/08/2024	SHMI33	EF24NORH034	06/08/2024	7768 GB109055042340	SN8918680712
5	Wye, Rhayader	EFMI215	EF24NORM035	07/08/2024	H10276	EF24NORH025	07/08/2024	7732 GB109055042280	SN9762867481
6	Wye Llanwrthwl	EFMI214	EF25NORM047	25/06/2025	SHMI28	SH25NORH025	25/06/2025	7733 GB109055042250	SN9767563920
7	Wye, Treflyn	EFMI225	EF24NORM047	07/08/2024	SHMI36	EF24NORH037	07/08/2024	7733 GB109055042250	SN9913562821
8	Ithon Llanbadarn	EFMI265	EF25NORM045	18/06/2025	SHMI50	SH25NORH023	18/06/2025	7755 GB109055042140	SO0956076958

Location number	Location	Macrophyte site number	Macrophyte survey ID	Macrophyte survey date	RHS site number	RHS survey ID	RHS survey date	SAC unit number (ECS) & waterbody ID	NGR
9	Ithon Llanbister	EFMI264	EF25NORM044	24/06/2025	SHMI49	SH25NORH022	24/06/2025	7755 GB109055042140	SO1007871239
10	Ithon, Dissersh	EFMI205	EF24NORM024	19/08/2024	SHMI21	EF24NORH014	19/08/2024	7757 GB109055042270	SO0336558435
11	Ithon, d/s A485 road bridge	EFMI218	EF24NORM038	18/08/2024	SHMI30	EF24NORH028	18/08/2024	7757 GB109055042270	SO1050968204
12	Ithon, Dolberthog	45670	EF24NORM025	19/08/2024	SHMI22	EF24NORH015	19/08/2024	7757 GB109055042270	SO0460060400
13	Ithon Trelowgoed	EFMI261	EF25NORM042	18/06/2025	SHMI46	SH25NORH020	18/06/2025	7757 GB109055042270	SO0885463610
14	Clywedog Brynlllygoed	EFMI226	EF25NORM061	24/06/2025	SHMI37	SH25NORH039	24/06/2025	7760 GB109055042070	SO0818967209
15	Wye confl Ithon	EFMI216	EF25NORM058	25/06/2025	H3260	SH25NORH036	25/06/2025	7728 GB109055037150	SO0110055900
16	Wye, Builth Rd	EFMI206	EF25NORM053	27/06/2025	SHMI23	EF24NORH016	20/08/2024	7728 GB109055037150	SO0182553453
17	Irfon Llangammarch	EFMI228	EF25NORM062	26/06/2025	H885	SH25NORH040	26/06/2025	7743 GB109055037090	SN9422847632

Location number	Location	Macrophyte site number	Macrophyte survey ID	Macrophyte survey date	RHS site number	RHS survey ID	RHS survey date	SAC unit number (ECS) & waterbody ID	NGR
18	Irfon Halfrena	EFMI221	EF25NORM060	26/06/2025	H21570	SH25NORH038	26/06/2025	7743 GB109055037090	SN9795049195
19	Irfon, Caer Beris Builth Wells	EFMI207	EF25NORM054	26/06/2025	H12353	EF24NORH017	04/09/2024	7743 GB109055037090	SO0309250698
20	Dulas Brook, Cwmbach Llechryd	EFMI227	EF24NORM049	20/08/2024	SHMI38	EF24NORH039	20/08/2024	7734 GB109055037160	SO0313054121
21	Edw, Cregrina	EFMI230	EF24NORM052	21/08/2024	SHMI39	EF24NORH042	21/08/2024	7737 GB109055037130	SO1248252989
22	Wye, Builth Wells	45260	EF25NORM052	27/06/2025	H12354	EF24NORH029	21/08/2024	7729 GB109055037115	SO0450051500
23	Wye, Erwood	EFMI219	EF25NORM059	17/06/2025	H10295	EF24NORH030	05/09/2024	7729 GB109055037115	SO0980043300
24	Wye Llanstephan	EFMI263	EF25NORM050	09/07/2025	SHMI48	SH25NORH028	09/07/2025	7729 GB109055037115	SO1188641144
25	Wye Boughrood	EFMI209	EF25NORM055	09/07/2025	SHMI24	SH25NORH033	09/07/2025	7729 GB109055037115	SO1373238569
26	Wye Glasbury	EFMI210	EF25NORM056	08/07/2025	H23245	SH25NORH034	08/07/2025	7729 GB109055037115	SO1730139118

Location number	Location	Macrophyte site number	Macrophyte survey ID	Macrophyte survey date	RHS site number	RHS survey ID	RHS survey date	SAC unit number (ECS) & waterbody ID	NGR
27	Wye d/s Hay	EFMI213	EF25NORM057	08/07/2025	H4960	SH25NORH035	08/07/2025	1801 GB109055037116	SO2300043000
28	Wye Monmouth	92796	EF25NORM040	19/06/2025	SHMI27	SH25NORH018	19/06/2025	1802 GB109055037111	SO5108412342

A list of potential new sites that were not surveyed in 2025, along with the grid reference of each site and the reason for not surveying is presented in table 2 below.

Table 2. New survey sites not surveyed in 2025

Location	Macrophyte site number	Macrophyte survey ID	RHS site number	RHS survey ID	NGR	Reason for not surveying site
Wye Hadnock	EFMI212	EF25NORM041	SHMI25	SH25NORH019	SO5325015467	No suitable launch craft for macrophyte survey
Ithon Brynthomas	EFMI262	EF25NORM043	SHMI47	SH25NORH021	SO1099462151	Cattle at site
Wye Builth	EFMI229	EF25NORM046	H10290	SH25NORH024	SO0635451275	Cattle at site
Wye u/s Hay	EFMI211	EF25NORM048	H11407	SH25NORH026	SO1987341987	Cattle at site
Clywedog Brook Crossgates	EFMI260	EF25NORM049	SHMI45	SH25NORH027	SO0792664927	Too far from other sites on survey visit.
Aran	45396	EF25NORM051	SHMI51	SH25NORH029	SO1165665531	Not needed

One site on the lower Wye at Hadnock was not possible to survey in 2025 due to high flows making access unsafe as these surveys required the use of a boat.

The locations of the 28 completed 2024 and 2025 survey sites is presented in figure 1 and figure 2 with the sites labelled by the Location Number.

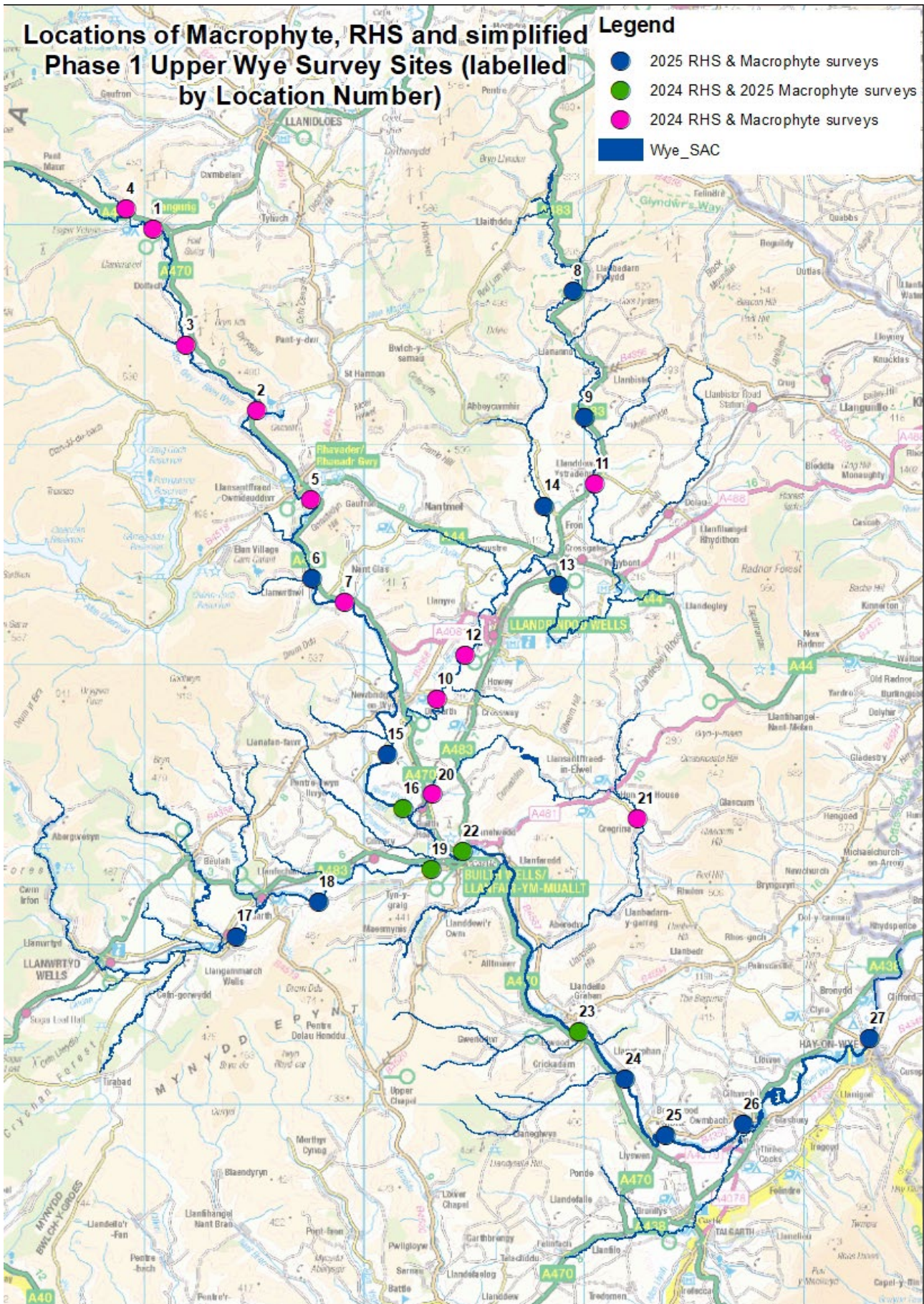


Figure 1. Location of Macrophyte, RHS and simplified Phase 1 Upper Wye Survey Sites

The site access data were supplied to NRW as Appendix 1 in separate excel spreadsheets, Appendix 1 Wye Macrophyte SIDD Data 2024_Bywater Ecology and Appendix 1 Wye Macrophyte SIDD Data 2025_Bywater Ecology.

The RHS, Phase I Habitat Survey, and plant community data was entered into excel spreadsheet templates as provided by NRW or downloaded from the CSM guidance for rivers link and supplied as separate appendices via sharefile. These are;

Appendix 2. Wye New RHS Site Data 2024 and 2025 Bywater Ecology

Appendix 3. Wye Simplified Phase 1 Data 2024 and 2025_Bywater Ecology

Appendix 4. Wye Macrophyte Site Data 2024 and 2025_Bywater Ecology

The RHS photos were saved in zip files, one for each site and shared in a folder as;

Appendix 5. Wye RHS Photos 2024 and 2025_Bywater Ecology

The RHS forms were printed as PDFs and shared in a folder labelled

Appendix 6. Wye RHS Survey Forms 2024 and 2025_Bywater Ecology

The Macrophyte survey sketch maps were saved in a zip file and shared as;

Appendix 7. Wye Macrophyte Survey Sketch Maps 2024 and 2025_Bywater Ecology

The Macrophyte survey photos were saved in zip file as;

Appendix 8. Wye Macrophyte Survey Photos 2024 and 2025_Bywater Ecology.

The Habitat Modification Score and Class for the 28 site surveys, were calculated using the RHS toolbox, and are presented in Table 3 and Figures 3 and 4 with descriptions in Table 4.

HMS scores generally tend to be better in rural areas such as Llanstephan (which was the only site in HMS class 1, 'semi natural') and worse in towns and built up areas including Glasbury on the main Wye (HMS Class 5, 'Severely modified').

Overall, 54 % of sites (15 sites) have a HMS score of 2 (predominantly unmodified) or better, and 35.5 % of sites (10 sites) have HMS scores of 3. Only one site surveyed, representing 3.5 %, was in the HMS class 4 (significantly modified) and two sites surveyed, representing 7 %, were in the HMS class 5 (severely modified). Whilst this does show that large stretches of the River Wye in Wales are still relatively unmodified and resilient to pressures, the combined results from 2024 and 2025 demonstrate that the majority of the sampled stretches are in need of habitat improvement and restoration. Rehabilitation and restoration effort should generally be targeted at the more modified stretches of river with the less modified stretches being protected and enhanced.

Table 3 RHS Habitat Modification Score and Class for the 28 River Wye (SAC) sites, surveyed in 2024 and 2025

Location no	RHS site numbers	Watercourse	Location	HMS	HMS class
1	SHMI34	Wye (Wales)	Llangurig	138	2
2	H10273	Wye (Wales)	u/s Marteg	120	2
3	SHMI20	Nant Y Dernal	Upstream Conf Wye	288	3
4	SHMI33	Bidno	Bidno Mill	480	3
5	H10276	Wye (Wales)	Rhayader	684	4
6	SHMI28	Wye	Llanwrthwl	390	3
7	SHMI36	Wye (Wales)	Treflyn	20	2
8	SHMI50	Ithon	Llanbadarn	160	2
9	SHMI49	Ithon	Llanbister	490	3
10	SHMI21	Ithon	Disserth	420	3
11	SHMI30	Ithon	d/s A485 road bridge	1620	5
12	SHMI22	Ithon	Dolberthog	120	2
13	SHMI46	Ithon	Trelowgoed	60	2
14	SHMI37	Clywedog Brook	Brynlllygoed	130	2
15	H3260	Wye	confl Ithon	250	3
16	SHMI23	Wye (Wales)	Builth Rd	370	3
17	H885	Irfon	Llangammarch	100	2
18	H21570	Irfon	Halfrena	50	2
19	H12353	Irfon	Caer Beris Builth Wells	70	2
20	SHMI38	Dulas Brook	Cwmbach Llechrhyd	300	3
21	SHMI39	Edw	Cregrina	180	2
22	H12354	Wye (Wales)	Builth Wells	484	3
23	H10295	Wye (Wales)	Erwood	100	2
24	SHMI48	Wye	Llanstephan	10	1
25	SHMI24	Wye	Boughrood	70	2
26	H23245	Wye	Glasbury	2014	5
27	H4960	Wye	d/s Hay	134	2
28	SHMI27	Wye	Monmouth	200	3

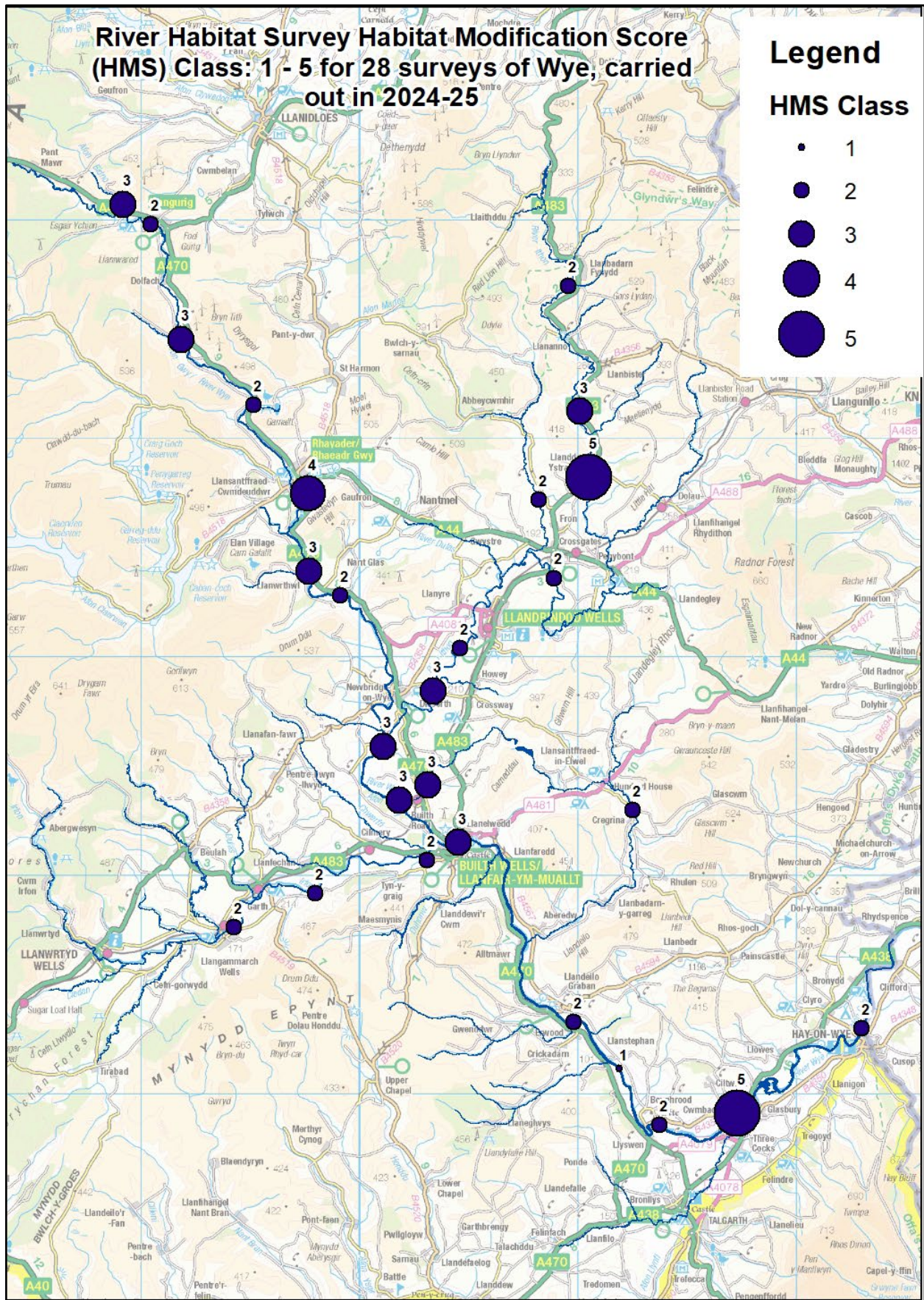


Figure 3. Habitat Modification Score (HMS) Class Upper Wye Survey Sites. Scores: 1 (semi-natural) to 5 (severely modified).

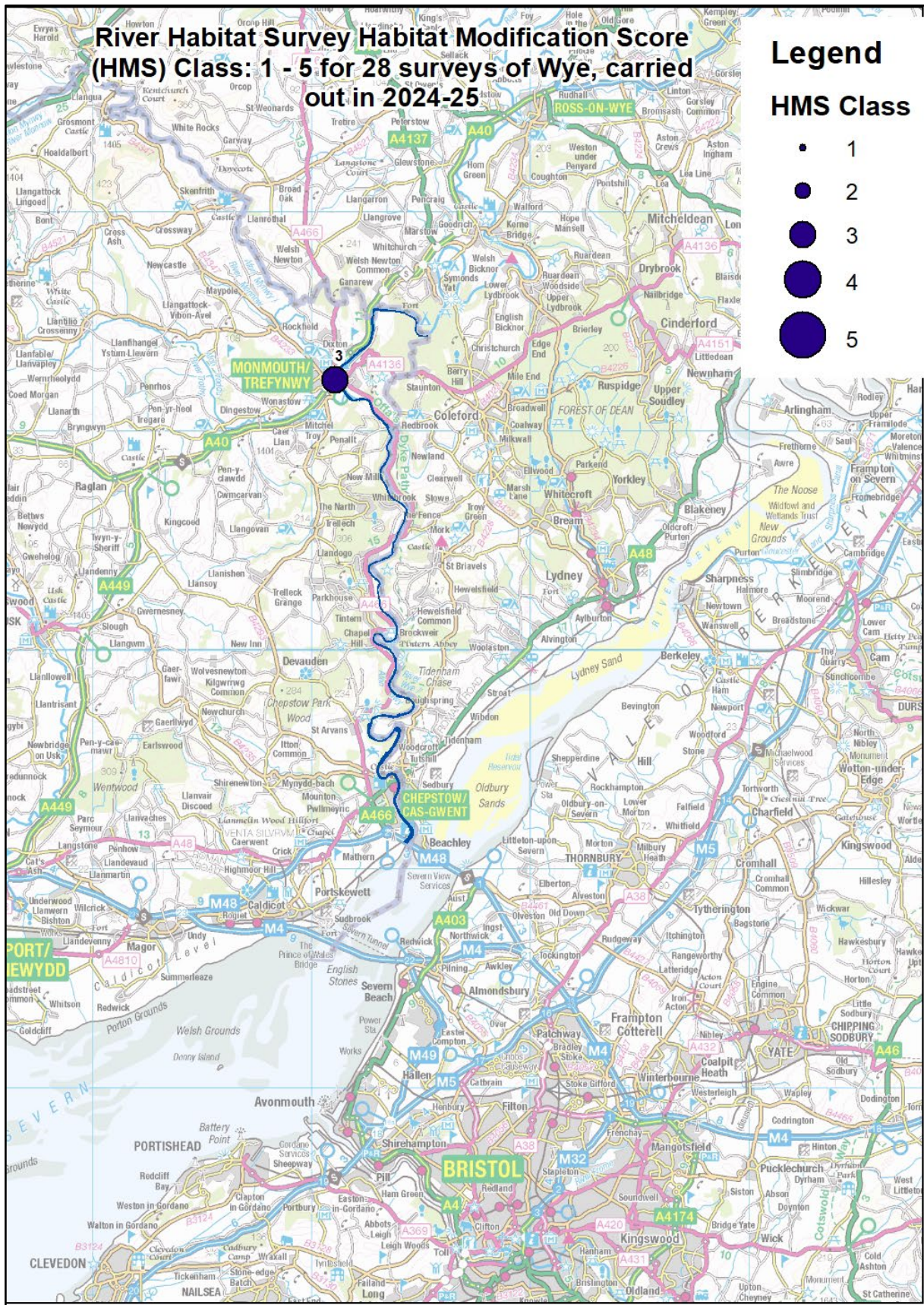


Figure 4. Habitat Modification Score (HMS) Class Lower Wye Survey Site. Scores: 1 (semi-natural) to 5 (severely modified).

Table 4. Description of RHS index: Habitat Modification Score and Class

RHS index	Range	Description
Habitat Modification Score (HMS)	0 to 6000+	Quantifies the extent, potential impact and persistence of engineering structures
HMS class	1 (semi-natural) to 5 (severely modified)	Classification of HMS score into 5 categories using set boundaries

Table 5 shows that only six of the 15 surveyed SAC Units achieved the target for bank vegetation naturalness. They were mostly in upper-catchment woodland-dominated reaches. The middle and lower Wye and tributary units frequently failed ECS targets due to improved / amenity grassland to the bank top; narrow or absent buffer strips; urban encroachment, caravan parks, car parks, roads, and infrastructure near the channel.

Table 5. Results of the Habitat Structure - Bank Vegetation Naturalness attribute by ECS / SAC Unit

Evaluated Corridor Section (ECS) / SAC Unit	RHS site numbers	Mean score	Pass (Yes / No)
Wye - conf Afon Bidno to conf Afon Marteg SAC Unit 7731	SHMI34; H10273	5	Yes
Nant y Derno SAC Unit 7674	SHMI20	4	Yes
Afon Bidno - source to conf R Wye SAC Unit 7768	SHMI33	3	No
Wye - conf Afon Marteg to conf Afon Elan SAC Unit 7732	H10276	2	No
Wye - conf Afon Elan to conf R Ithon SAC Unit 7733	SHMI28; SHMI36	4	Yes
Ithon - conf Gwenlas Bk to conf Camddwr Bk SAC Unit 7755	SHMI50; SHMI49	2	No
Ithon - conf Camddwr Bk to conf R Wye SAC Unit 7757	SHMI21; SHMI30; SHMI22; SHMI46	3	No
Clywedog Bk - conf Bachell Bk to conf R Ithon SAC Unit 7760	SHMI37	5	Yes
Wye - conf R Ithon to conf R Irfon SAC Unit 7728	H3260; SHMI23	3	No
Irfon - conf Cledan to conf R Wye SAC Unit 7743	H885; H21570; H12353	3	No
Builth Dulas Bk - source to conf R Wye SAC Unit 7734	SHMI38	3	No
Edw - conf Camnant Bk to conf Clas Bk SAC Unit 7737	SHMI39	4	Yes
Wye - conf R Irfon to Scithwen Bk SAC Unit 7729	H12354; H10295; SHMI48; SHMI24; H23245	3	No
Wye - Scithwen Bk to Bredwardine Br (Wales) SAC Unit 1801	H4960	3	No
Wye - conf Walford Bk to Bigsweir Br SAC Unit 1802	SHMI27	2	No

The presence of Invasive Non-Native Plants recorded in the RHS are summarized, in table 6 as none, present or extensive (i.e. occurring in more than a third of the bank) at each site. Invasives are distributed throughout the survey sites with Himalayan balsam present at 54 % of sites and extensive at 14 % of sites. Japanese knotweed was present at 21 % of sites, and no sites had Japanese knotweed occurring in more than a third of the bank (extensive). Both of these invasive plants were found in the main River Wye and the Irfon, and Himalayan balsam, but not Japanese knotweed, was recorded in the Ithon. Hogweed was not recorded at any of the sites.

Table 6. Invasive Non-Native Plants recorded in the Wye catchment in 2024 and 2025

Location no	Site	NGR	Watercourse & WFD waterbody ID	Location	Hogweed	Himalayan Balsam	Japanese Knotweed
1	SHMI34	SN9045479794	Wye (Wales) GB109055042320	Llangurig	None	None	None
2	H10273	SN9515071550	Wye (Wales) GB109055042320	U/S Marteg	None	None	None
3	SHMI20	SN9182274529	Nant y Dernol GB109055042320	Upstream Conf Wye	None	None	None
4	SHMI33	SN8918680712	Bidno GB109055042340	Bidno Mill	None	None	None
5	H10276	SN9762867481	Wye (Wales) GB109055042280	Rhayader	None	None	None
6	SHMI28	SN9767563920	Wye GB109055042250	Llanwrthwl	None	None	None
7	SHMI36	SN9913562821	Wye (Wales) GB109055042250	Treflyn	None	Extensive	None
8	SHMI50	SO0956076958	Ithon GB109055042140	Llanbadarn	None	None	None
9	SHMI49	SO1007871239	Ithon GB109055042140	Llanbister	None	Present	None
10	SHMI21	SO0336558435	Ithon GB109055042270	Disserth	None	Present	None
11	SHMI30	SO1050968204	Ithon GB109055042270	D/S A485 road bridge	None	Present	None
12	SHMI22	SO0460060400	Ithon GB109055042270	Dolberthog	None	Extensive	None
13	SHMI46	SO0888563610	Ithon GB109055042270	Trelowgoed	None	Present	None
14	SHMI37	SO0818967209	Clywedog Brook GB109055042070	Brynlllygoed	None	None	None
15	H3260	SO0110055900	Wye GB109055037150	confl Ithon	None	Present	None
16	SHMI23	SO0182553453	Wye (Wales) GB109055037150	Builth Rd	None	Present	None
17	H885	SN9422847632	Irfon GB109055037090	Llangammarch	None	Present	Present
18	H21570	SN9795049195	Irfon GB109055037090	Halfrena	None	Present	Present

Location no	Site	NGR	Watercourse & WFD waterbody ID	Location	Hogweed	Himalayan Balsam	Japanese Knotweed
19	H12353	SO0309250698	Irfon GB109055037090	Caer Beris Builth Wells	None	Present	Present
20	SHMI38	SO0313054121	Dulas Brook GB109055037160	Cwmbach Llechrhyd	None	None	None
21	SHMI39	SO1248252989	Edw GB109055037130	Cregrina	None	Present	None
22	H12354	SO0450051500	Wye (Wales) GB109055037115	Builth Wells	None	Present	None
23	H10295	SO0980043300	Wye (Wales) GB109055037115	Erwood	None	Present	Present
24	SHMI48	SO1188641144	Wye GB109055037115	Llanstephan	None	Extensive	Present
25	SHMI24	SO1373238569	Wye GB109055037115	Boughrood	None	Present	Present
26	H23245	SO1730139118	Wye GB109055037115	Glasbury	None	Present	None
27	H4960	SO2300043000	Wye GB109055037116	d/s Hay	None	Extensive	None
28	SHMI27	SO5108412342	Wye GB109055037111	Monmouth	None	Present	None

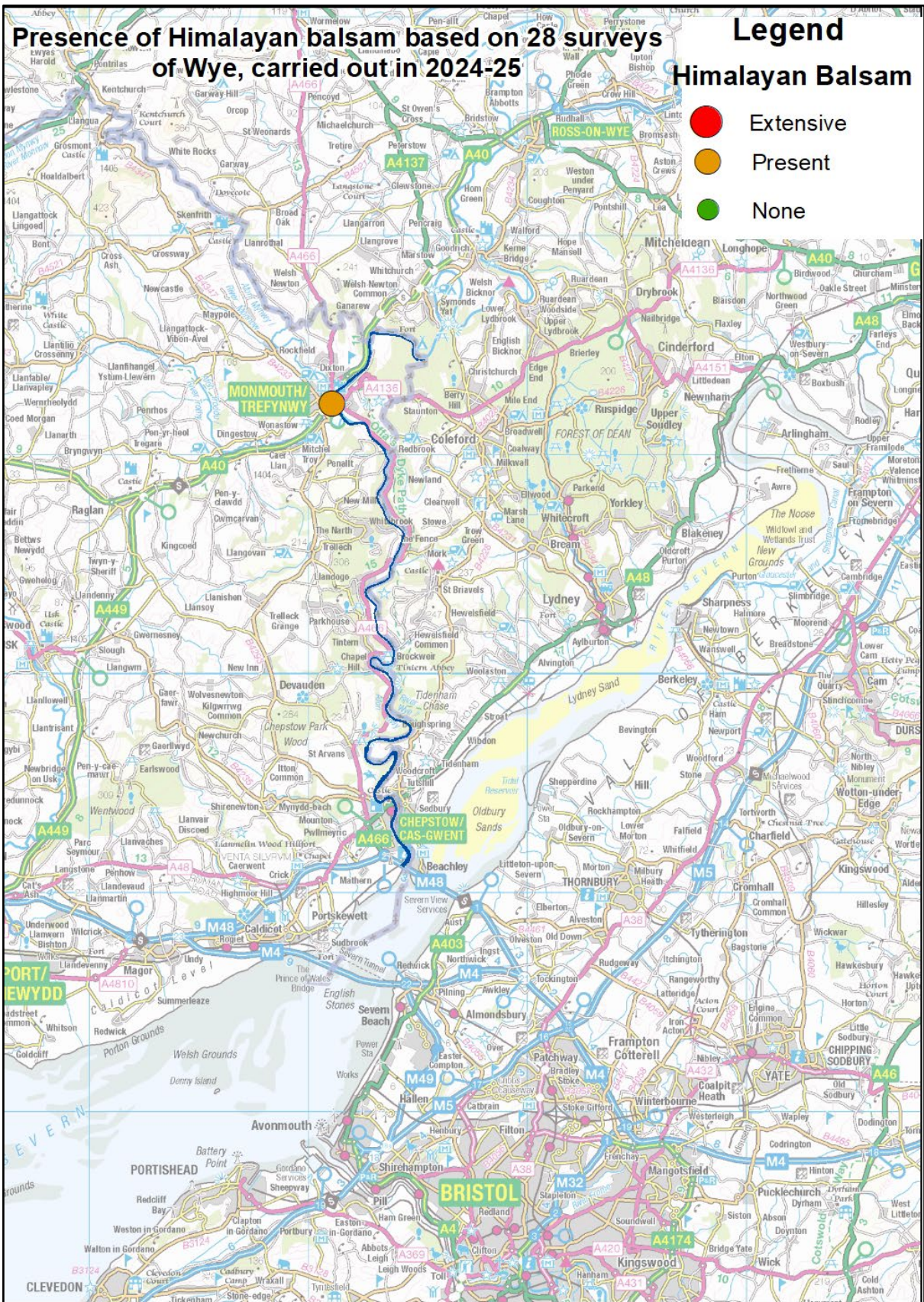


Figure 6. Presence of Himalayan balsam in Lower Wye Survey Site



Figure 8. Presence of Japanese knotweed in Lower Wye Survey Site

Table 6 presents the results of classification of the 2024 and 2025 macrophyte surveys for each survey location, together with the confidence given to the class assigned. The results are also shown in figures 9 and 10. The Upper Wye and most of the tributaries are classed as Good or High Ecological Status, where as the lower Wye, south of Buillth Wells, and the lower Ithon are Moderate Ecological Status. Further assessment is required by NRW in order to carry out the full Condition Assessment of the River Wye SAC for this attribute per waterbody.

Table 7. The results of classification of 2024 and 2025 survey data against LEAFPACS criteria
***Bad/Poor/Moderate/Good/High = confidence given to the class assigned**

Location No.	Code	EQR	Class	Bad	Poor	Moderate	Good	High
1	EFMI223 EF24NORM045	0.736	Good	0	0	2	86.12	11.88
2	45263 EF24NORM034	0.846	High	0	0	0.01	17.43	82.56
3	45675 EF24NORM023	0.793	Good	0	0	0.14	55.35	44.51
4	EFMI231 EF24NORM044	0.725	Good	0	0	3.08	88.47	8.45
5	EFMI215 EF24NORM035	1.000	High	0	0	0	0	100
6	EFMI214 EF25NORM047	0.864	High	0	0	0	9.37	90.63
7	EFMI225 EF24NORM047	0.878	High	0	0	0	5.50	94.0
8	EFMI265 EF25NORM045	0.624	Good	0	0.14	36.88	62.78	0.20
9	EFMI264 EF25NORM044	0.818	High	0	0	0.03	36.09	63.87
10	EFMI205 EF24NORM024	0.578	Moderate	0	1.04	60.27	38.67	0.03
11	EFMI218 EF24NORM038	0.380	Poor	0.84	58.26	40.07	0.83	0
12	45670 EF24NORM025	0.539	Moderate	0	3.93	74.29	21.77	0.01
13	EFMI261 EF25NORM042	0.685	Good	0	0	10.93	86.93	2.14
14	EFMI226 EF25NORM061	0.669	Good	0	0.01	16.27	82.55	1.17
15	EFMI216 EF25NORM058	0.476	Moderate	0.01	17.87	75.34	6.78	0
16	EFMI206 EF25NORM053	0.717	Good	0	0	4.06	89.33	6.60
17	EFMI228 EF25NORM062	0.822	High	0	0	0.03	33.18	66.79
18	EFMI221 EF25NORM060	0.890	High	0	0	0	3.34	96.66
19	EFMI207 EF25NORM054	0.926	High	0	0	0	0.75	99.25
20	EFMI227 EF24NORM049	0.709	Good	0	0	5.35	89.61	5.04

Location No.	Code	EQR	Class	Bad	Poor	Moderate	Good	High
21	EFMI230 EF24NORM052	0.718	Good	0	0	4.01	89.31	6.68
22	45260 EF25NORM052	0.596	Moderate	0	0.50	51.39	48.05	0.06
23	EFMI219 EF25NORM059	0.571	Moderate	0	0.34	63.30	35.34	0.02
24	EFMI263 EF25NORM050	0.512	Moderate	0	8.17	78.15	13.68	0
25	EFMI209 EF25NORM055	0.509	Moderate	0	8.92	78.27	12.81	0
26	EFMI210 EF25NORM056	0.425	Moderate	0.11	38.3 1	59.28	2.30	0
27	EFMI213 EF25NORM057	0.586	Moderate	0	0.76	56.47	42.73	0.04
28	92796 EF25NORM040	0.662	Good	0	0.02	18.69	80.38	0.92



Figure 10. Results of the classification of the LEAFPACS data for the Lower Wye survey sites

Site Descriptions

1. Wye, Llangurig

Location: [Wye, Llangurig](#)

SAC Unit Number: 7731

Waterbody ID: GB109055042320

NGR: SN9045479794

Macrophyte Site Number: EFMI223

Macrophyte Survey Number: EF24NORM045

Macrophyte Survey Date: 05/08/2024

RHS Site Number: SHMI34

RHS Survey ID: EF24NORH035

RHS Survey Date: 05/08/2024

Simplified Phase 1 Survey Date: 05/08/2024

This was the furthest upstream of the monitoring sites on the River Wye with the midpoint located approximately 300 m upstream of the road bridge at grid reference SN9045479794 immediately southwest of Llangurig. Photographs taken at the midpoint facing across the channel, upstream and downstream are presented in figures 11, 12 and 13 respectively. This site is in the upland reaches of the river, which has characteristic bryophyte-dominated vegetation.

In the 100 m macrophyte survey length, the river channel was approximately 18 m wide at the midpoint with a predominantly cobble and gravel/pebble substrate. There was a large side bar along approximately half the right bank, extending halfway across the channel for most of the length, with the water only 4 m wide at the downstream end of the survey length. There was no obvious sediment on the riverbed and the water was clear. There was no shading of either bank. An embanked area noted in the 2012 macrophyte survey was no longer present due to erosion of the bank.

A riffle dominated the flow type, with 'run', some small pools and slack areas.

The macrophyte community was dominated by alternate water-milfoil (*Myriophyllum alterniflorum*) with broad leaved pondweed (*Potamogeton natans*) mixed in amongst this and in discrete patches, and several patches of water-starwort (*Callitriche sp.*).

There was a negligible cover, less than 0.1 %, of filamentous algae observed.

In the 500 m River Habitat Survey length, the predominant valley form was of a concave bowl with a distinct flat valley bottom. The land high above right bank at the upstream end had wetland rushes, meadowsweet etc growing so was recorded as marshy grassland. There was a fence along left bank top, with a hedge beyond that from the upstream limit to the midpoint. The 500m stretch was relatively unmodified and overall had a natural character typical of an upland river.

The whole channel had possibly been re-sectioned in the past as trees were absent for most of the survey length and the left bank was collapsing, but this was becoming naturalised, so natural bank was recorded in the spot checks. There was a small area of bank with a vegetated mid-bar/island feature attached to the bank at upstream end with water behind. The channel upstream of the midpoint was of low energy flow, with no trees and no boulders in the channel, so has probably

been over widened in the past. Historical modification and grazing are the main pressures across this stretch.

When including the historic re-sectioning in the RHS, the HMS class was 4, very modified. This does not reflect the character of the watercourse at this location, and as the re-sectioning was considered to be historic and the channel was becoming more naturalised, re-sectioning was not included in the spot checks, resulting in an HMS class of 2. This is consistent with the emphasis to record what you see using the RHS method.

In the simplified Phase 1 survey, the left bank of the survey length was dominated by upland species rich tall herbs including sneezewort, (*Achillea ptarmica*), common knapweed (*Centaurea nigra*) and tufted hairgrass (*Deschampsia cespitosa*), whilst the right bank was mainly grassland. The surrounding land was used for sheep grazing. The simplified Phase 1 Habitat Survey score for this site was 4, the second highest category. The mean Evaluated Corridor Section (ECS) Score for SAC Unit 7731 (including one other site at Wye u/s Marteg) was 5, the highest category. This unit therefore passed the target for bank vegetation naturalness.

It is recommended that fencing on the left bank is moved back from the bank top to allow colonisation of the banks by native flora where there has been historic re-sectioning and the bank is eroding, to create a buffer to disturbance and diffuse pollution.



Figure 11. Photo of Wye at Llangurig at the midpoint across the channel



Figure 12. Photo of Wye at Llangurig at the midpoint facing upstream



Figure 13. Photo of Wye at Llangurig at the midpoint facing downstream

2. Wye, u/s Marteg

Location: [Wye, u/s Marteg](#)

SAC Unit Number: 7731

Waterbody ID: GB109055042320

NGR: SN9515071550

Macrophyte Site Number: 45263

Macrophyte Survey Number: EF24NORM034

Macrophyte Survey Date: 28/09/2024

RHS Site Number: H10273

RHS Survey ID: EF24NORH024

RHS Survey Date: 28/09/2024

Simplified Phase 1 Survey Date: 28/09/2024

This site was located on the upper reaches of the River Wye which has characteristic bryophyte-dominated vegetation, with the midpoint at grid reference SN9515071550.

Photographs taken at the midpoint facing across the channel, upstream and downstream are presented in figures 14, 15 and 16 respectively.

The macrophyte monitoring site was within a deep gorge cut into bedrock. It was not chosen originally as it was unlikely to support a representative Ranunculion assemblage but was surveyed as a reserve site utilized to replace the downstream sites that were too dangerous to sample due to high flows. The water width was approximately 12 m wide and 0.4 m deep with a predominantly cobble and gravel/pebble substrate. Whilst there was some riffle, the main flow type was 'run' and some small pools and slack areas. Flows were high, and fast making survey difficult, but the water was clear. There were numerous exposed boulders with varying degrees of moss cover. Both banks were shaded with more dense shade on the right bank.

The macrophyte community was dominated by bryophytes with eight moss species recorded including greater water-moss (*Fontinalis antipyretica*) and alpine water-moss (*F. squamosa*) which dominated the aquatic flora. There was only one species of higher plant, reed canary grass (*Phalaris arundinacea*) recorded with low cover value. No filamentous algae were observed despite searching, but not all of the site was accessible due to high flows. This site is naturally unsuitable for Ranunculion vegetation as it is in a gorge.

In the 500 m RHS, there were no bank modifications observed except for some bank poaching on both banks. There was a track along right bank face at the midpoint, but this was not included as re-sectioning as it was high above the water. In the downstream half of the RHS, the A470 runs alongside the bank top, but there was a band of woodland dominant. Elsewhere, the A470 crosses part way up the bank, but was not recorded as re-sectioned as it was high above the water. There were no artificial features other than a minor bridge which was high above the water spanning the channel and the HMS class was 2.

Trees were continuous on both banks. The simplified Phase 1 Habitat Survey score for this site was 5, the highest category. The mean Evaluated Corridor Section (ECS) Score for SAC Unit 7731 (including one other site at Wye Llangurig) was 5, the highest category. This unit therefore passed the target for bank vegetation naturalness.

The surrounding land use is woodland and grazing on the right bank, and high moorland and woodland in Gilfach Nature Reserve on the left bank.



Figure 14. Photo of Wye, u/s of Marteg, at the midpoint across the channel



Figure 15. Photo of Wye, u/s of Marteg, at the midpoint facing upstream



Figure 16. Photo of Wye, u/s of Marteg, at the midpoint facing downstream

3. Nant y Dernol, upstream Confluence Wye

Location: [Nant y Dernol, u/s confl Wye](#)

SAC Unit Number: 7674

Waterbody ID: GB109055042320

NGR: SN9182274529

Macrophyte Site Number: 45675

Macrophyte Survey Number: EF24NORM023

Macrophyte Survey Date: 06/08/2024

RHS Site Number: SHMI20

RHS Survey ID: EF24NORH013

RHS Survey Date: 06/08/2024

Simplified Phase 1 Survey Date: 06/08/2024

At this site on the Nant y Dernol, a small, steep tributary of the River Wye, the original midpoint was located just upstream of the confluence with the Wye at grid reference SN9180374538. The watercourse flows through a wide valley with fields either side, becoming a deep gorge before its confluence with the Wye.

The macrophyte survey site was moved upstream but still within the 500 m RHS reach, with the midpoint at SN9180374538, as the original site proposed was inaccessible due to fencing, steep cliffs and eroding banks. Photographs taken across the channel, and at the midpoint facing upstream and downstream are presented in figures 17, 18 and 19 respectively.

The river channel was approximately 3m wide and consisted of a mixed cobble and gravel/pebble substrate, and sidebars were present along both banks. There were large, exposed boulders scattered across the channel.

The plant community was dominated by bryophytes including alpine water-moss (*Fontinalis squamosa*), flagellate feather-moss (*Hyocomium armoricum*) and yellow fringe-moss (*Racomitrium aciculare*).

Negligible cover of filamentous algae was observed (<1 %) Some siltation was seen associated with the ford.

In the 500 m River Habitat Survey length, the predominant valley form was a concave bowl with a distinct flat valley bottom. Given the mid-point grid ref supplied, the survey length would have extended beyond the confluence with River Wye, so the survey reach was moved upstream slightly with the midpoint at SN9182274529 with the downstream limit recorded at the confluence. The left bank had been reprofiled in places. Some of channel was inaccessible due to barbed wire fencing. The watercourse flowed in a gorge at points where the banks were high compared to width in places, but the channel substrate was bedrock so was not considered to be over-deepened. A minor ford and minor bridge with reinforcement crossed the channel, and embankment on the bank tops and set-back embankment were present, but there were no other artificial features noted, and the HMS class was 2.

In the simplified Phase 1, both banks of the survey length were dominated by broad leaved woodland with trees on the bank faces and bank tops. Good semi-improved grassland and poor grassland was also present on both banks. The surrounding land was used for sheep grazing. The Evaluated Corridor Section (ECS) Score 4, the second highest category, primarily because of the presence of trees, but elsewhere the habitat was poor.

This site was impacted by agricultural use with low quality grassland on the bank tops, and by urban encroachment with a road running alongside the left bank, and local residents creating parking spaces on the bank top and dumping garden waste in the river corridor. The original site midpoint had high banks that were eroding, possibly due to confinement of the channel within the banks.

Protection of the bank top vegetation is recommended where there is urban encroachment, with education of local residents to prevent unauthorised development and dumping of garden waste and enforcement where appropriate.



Figure 17. Photo of Nant y Dernol at the midpoint across the channel



Figure 18. Photo of Nant y Dernol at the midpoint facing upstream



Figure 19. Photo of Nant y Dernol at the midpoint facing downstream

4. Bidno, Bidno Mill

Location: [Bidno, Bidno Mill](#)

SAC Unit Number: 7768

Waterbody ID: GB109055042340

NGR: SN8918680712

Macrophyte Site Number: EFMI231

Macrophyte Survey Number: EF24NORM044

Macrophyte Survey Date: 06/08/2024

RHS Site Number: SHMI33

RHS Survey ID: EF24NORH034

RHS Survey Date: 06/08/2024

Simplified Phase 1 Survey Date: 06/08/2024

This site on the Bidno, a tributary of the upper River Wye, was on its lower reaches with the midpoint approximately 500 m upstream of the confluence with the River Wye, at Bidno Mill, (SN8918680712) to the west of Llangurig. The Bidno is in a quiet valley with steep hills on the left bank. The landscape is agricultural sheep pasture with patches of woodland and scattered farm buildings. Photographs taken at midpoint facing upstream and downstream are presented in figures 20 and 21 respectively.

In the 100 m macrophyte survey, bedrock formed a natural weir and deflector, and artificial reinforcement of the bank was present in the form of stone blocks on right where the road abuts the riverbank. At the midpoint, there was an eroding cliff on the right bank. The river channel was approximately 5 m wide, and the substrate was coarse cobble and gravel/pebble, with some boulder and bedrock. The habitat was predominantly riffle-run, with the occasional pool and the water was clear. Macrophyte communities were dominated by brook-moss (*Hygrohypnella*

ochracea) and alpine water-moss (*Fontinalis squamosa*) There were very few vascular plant species, each with low cover values.

There was less than 0.1 % cover of filamentous algae, and iron bacteria were observed in the downstream section of the survey (figure 22).

In the 500 m River Habitat Survey length, the predominant valley form was asymmetric floodplain with a distinct flat valley bottom. In the downstream section, there was historic re-sectioning noted with the right bank having a trapezoidal profile with no trees on the bank top for some of the length, and regularly spaced trees of similar species and size in the remaining. The left bank was steep and wooded in this location. The channel was deep compared to the width, but the bed was bedrock so had not been dredged. There were a number of 'kiddies weirs', where rocks had been placed across the channel, which had collapsed and were not holding the water back, so these were recorded as groynes. Further high flows would likely see these demolished and improve the habitat modification score, which was class 3, due to the presence of bridges and localised reinforced and re-sectioned banks.

In the simplified Phase 1, the score for this site was 3, as both banks of the survey length were dominated by good semi-improved grassland. The surrounding land was used for sheep grazing. As this site was the only survey in the SAC Unit 7768, the mean ECS Score was also 3, the middle category. This unit therefore failed the target for bank vegetation naturalness.

Reprofiling of previously re-sectioned banks to a more natural profile or allowing them to degrade where it is safe to do so, is recommended.



Figure 20. Photo of Afon Bidno at the midpoint facing upstream



Figure 21. Photo of Afon Bidno at the midpoint facing downstream



Figure 22. Photo of Afon Bidno of iron bacteria observed downstream

5. Wye, Rhayader

Location: [Wye, Rhayader](#)

SAC Unit Number: 7732

Waterbody ID: GB109055042280

NGR: SN9762867481

Macrophyte Site Number: EFMI215

Macrophyte Survey Number: EF24NORM035

Macrophyte Survey Date: 07/08/2024

RHS Site Number: H10276

RHS Survey ID: EF24NORH025

RHS Survey Date: 07/08/2024

Simplified Phase 1 Survey Date: 07/08/2024

The midpoint grid reference for this site on the River Wye was at SN9762867481. Photographs taken at the midpoint facing across the channel, upstream and downstream are presented in figures 23, 24 and 25 respectively.

The water was approximately 18 m wide at the midpoint of the macrophyte survey with a predominantly cobble and gravel/pebble substrate. There were large areas of exposed bedrock up and downstream of this, with an area of still water behind bedrock in the upstream section. There was a mix of dense, broken and no shade on both banks.

Whilst there was some riffle, the main flow type was 'run' and some small pools and slack areas. Whilst the water depth was mainly about 20 cm deep, the flow was very fast which made the survey difficult and means some submerged macrophytes and algae cover may have been missed.

The macrophyte community was dominated by bryophytes with eight moss species recorded including alpine water-moss (*Fontinalis squamosa*) which dominated the aquatic flora. Several species of higher plants were recorded with low cover values. There was 0.1 % cover of filamentous algae observed.

In the 500 m River Habitat Survey length, the upstream limit was inaccessible due to fencing and private gardens. Both banks had been re-sectioned in places and poaching was evident. There was some reinforcement of the banks associated with a concrete outfall and pipe/bridge abutments 30 m long on right bank and 15 m on left bank. A large amount of epiphytic algae cover was noted at several of the spot checks. This channel had areas of moss covered, exposed bedrock and fast flows, but the downstream section was more open with lower energy flows. The HMS class was 4 suggesting a highly modified site due to the bridge crossings, bank reinforcement and re-sectioning, outfalls and deflectors, but this was still a beautiful tree lined section of river with a recreational footpath along the left bank, despite the housing on the upper left bank, farm buildings on the right and a sewage treatment works downstream on the right bank.

In the simplified Phase 1 the score for this site was 2, as both banks were predominately improved and amenity grassland. The surrounding land was used for sheep grazing. As this site was the only survey in the SAC Unit 7732, the mean ECS Score was also 2, the second lowest category reflecting the poor quality of the bank top land use. This unit therefore failed the target for bank vegetation naturalness.

This site is therefore impacted by agricultural use, bank re-sectioning and reinforcement, possible sewage discharge resulting in epiphytic algae cover, and bank poaching. Reprofiling of previously re-sectioned banks to a more natural profile or allowing them to degrade where it is safe to do so, is recommended, along with fencing set back from the bank top to allow colonisation of the banks by native flora, creating a buffer to disturbance and diffuse pollution.



Figure 23. Photo of Wye, Rhayader, at the midpoint across the channel

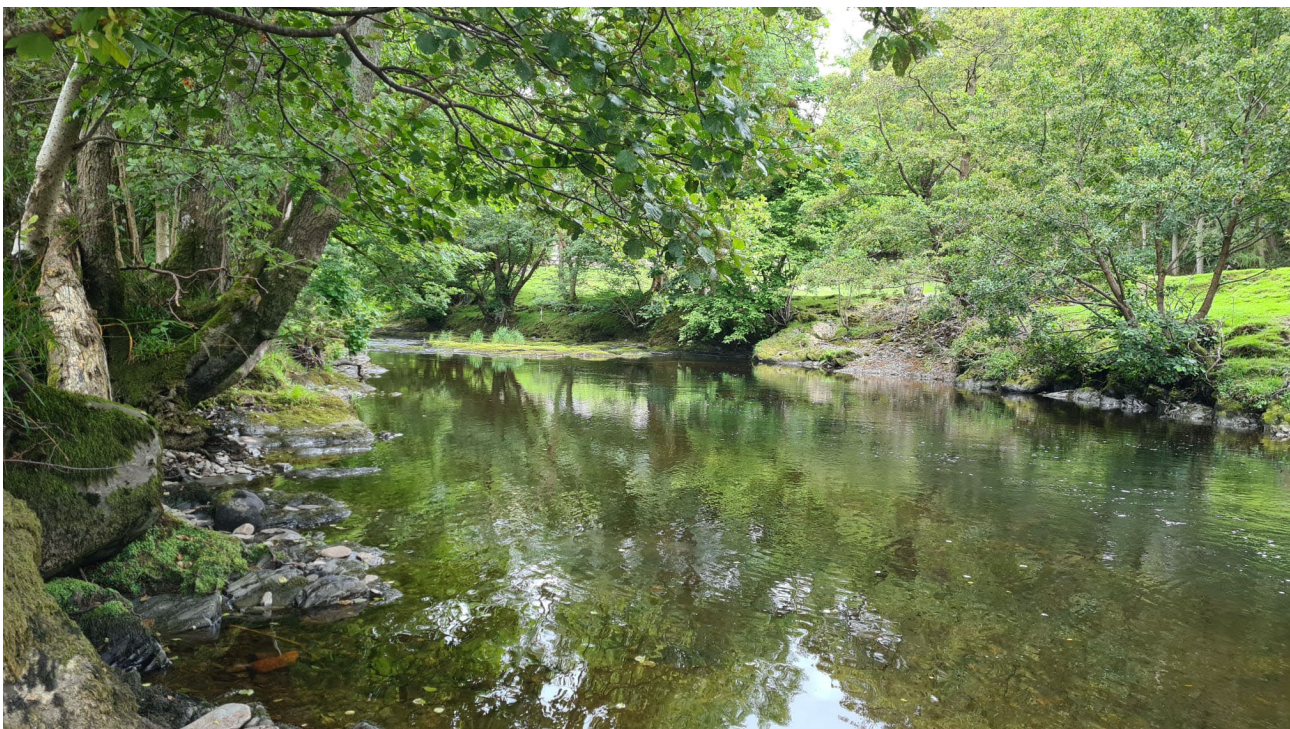


Figure 24. Photo of Wye, Rhayader, at the midpoint facing upstream



Figure 25. Photo of Wye, Rhayader, at the midpoint facing downstream

6. Wye, Llanwrthwl

Location: [Wye Llanwrthwl](#)

SAC Unit Number: 7733

Waterbody ID: GB109055042250

NGR: SN9767563920

Macrophyte Site Number: EFMI214

Macrophyte Survey Number: EF25NORM047

Macrophyte Survey Date: 25/06/2025

RHS Site Number: SHMI28

RHS Survey ID: SH25NORH025

RHS Survey Date: 25/06/2025

Simplified Phase 1 Survey Date: 25/06/2025

This site on the River Wye was approximately 65 m downstream of the road bridge to Llanwrthwl with the midpoint located at grid reference SN9767563920. This section of the Wye south of Rhayader has large sinuous curves flowing through a flat valley bottom with the A470 running alongside the left bank for much of the length. The channel is mostly tree lined with sheep grazing, hills, patches of woodland, and a caravan park in the landscape. Photographs taken at the midpoint facing across the channel, upstream and downstream are presented in figures 26, 27 and 28 respectively.

In the 100 m macrophyte survey length, the river channel was approximately 40 m wide at the midpoint with a predominantly boulder / cobble substrate with no bedrock. The right bank had large boulders at the base with grassy meadow beyond. There was no obvious sediment on the riverbed and the water was mostly clear but appeared cloudy in the deeper areas. There was

shading from trees on both banks but this didn't extend far into the channel. The flow type was predominantly 'run', a riffle and some slack areas.

The macrophyte community was dominated by greater water-moss (*Fontinalis antipyretica*) and alpine water-moss (*Fontinalis squamosa*) with all other species present covering less than 1 %. There were a couple of other bryophytes present including the pinnate scalewort (*Porella pinnata*). The true aquatic lichen (*Dermatocarpon luridum*) with thick, foliose, tongue-like lobes up to 1 cm wide, was found at this site. It typically grows in loose bundles on rocks and boulders in clean, usually fast-flowing rivers and stream (Davey, 2016). There was also a floating leaved water starwort species and three species of emergent marginal macrophytes, but there was a no filamentous algae recorded.

In the 500 m River Habitat Survey length, the predominant valley form was of a concave bowl without a distinct flat valley bottom. The right bank has been historically resectioned and there were steep banks that were collapsing upstream of the road bridge. There were no trees on the bank top downstream of the road bridge. Patches of bracken were present on the left bank. No submerged plants were seen other than mosses, and no filamentous algae was seen, but no invasive non-native species were recorded.

The HMS class was 3 due to the presence of some resectioned bank, a major bridge and some poaching on both banks. There were no other artificial features. There were riffles present and mid-channel features included exposed boulders which were extensive, vegetated boulders and vegetated mid-channel bars. Eroding cliffs were present on the right bank, and vegetated and unvegetated side bars were present.

The simplified Phase 1 Habitat Survey score was 5, the highest category due to the presence of broadleaved wood and good semi-improved grassland. There was also some sub-urban land use on the left bank and parkland / gardens on the right bank. The mean ECS Score for SAC Unit 7733 (including one other site at Wye Treflyn) was 4, the second highest category. This unit therefore passed the target for bank vegetation naturalness.

It is recommended that the bracken is controlled where it is dominating the bank flora downstream of the bridge.



Figure 26. Photo of Wye at Llanwrthwl at the midpoint across the channel



Figure 27. Photo of Wye at Llanwrthwl at the midpoint facing upstream



Figure 28. Photo of Wye at Llanwrthwl at the midpoint facing downstream

7. Wye, Treflyn

Location: [Wye, Treflyn](#)

SAC Unit Number: 7733

Waterbody ID: GB109055042250

NGR: SN9913562821

Macrophyte Site Number: EFMI225

Macrophyte Survey Number: EF24NORM047

Macrophyte Survey Date: 07/08/2024

RHS Site Number: SHMI36

RHS Survey ID: EF24NORH037

RHS Survey Date: 07/08/2024

Simplified Phase 1 Survey Date: 07/08/2024

The midpoint was located approximately 300 m upstream of Argoed Mill at grid reference SN9913562821 on the River Wye at Treflyn. This section of the Wye flows through a wide valley with a flat valley bottom with patches of woodland, and steep hills rising up. The channel is generally wide and tree-lined, with gravel deposits and exposed boulders. Photographs taken at the midpoint facing across the channel, upstream and downstream are presented in figures 29, 30 and 31 respectively.

At the macrophyte survey site the river channel was wide (just over 20 m), and shallow but fast flowing making access difficult. The water was brown in colour but not turbid. A large riffle occupied the mid-section of the survey length with exposed boulders and a run elsewhere. The channel substrate consisted predominantly of cobble and gravel/pebble. The banks were bordered by alder (*Alnus glutinosa*) on both sides. While the trees were set back from the water's edge on

the left bank due to a large gravel/pebble side bar so there was minimal in-channel shading, the trees on the right bank face shaded the entire margin of the channel.

There were numerous emergent macrophytes at low percentage cover values, mainly associated with the sidebars, but only included where they were deemed to be in the water for an appropriate proportion of the time. No submerged macrophytes were seen other than mosses, filamentous algae and epiphytic algae. The bryophytes were dominated by alpine water-moss (*Fontinalis squamosa*) and claw brook-moss (*Hygrohypnella ochracea*). There was approximately 1 % cover of filamentous algae observed in the monitoring site, but epiphytic algae cover was estimated to be approximately 5 %.

In the 500 m River Habitat Survey length, there was no reinforcement or re-sectioning of the banks observed, and no artificial features were present such as bridges, culverts or outfalls. There was poaching from livestock present on both banks, however. Bracken was growing throughout the woodland on left bank, in the downstream section, and bracken covered the right bank at a few spot checks. Where smooth flow was recorded, no channel features were seen and silt was depositing on cobbles, so the channel may have been historically re-sectioned. Epiphytes including filamentous algae was generally covering only a quarter of the area of each cobble where present on them, so was not considered to be extensive, but there was some enrichment of the water.

Himalayan balsam was extensive on both the bank face and the bank top in this survey, where INNS were not recorded at any other sites in the upper Wye catchment. The HMS was low being only 2, reflecting the lack of modification.

In the simplified Phase 1 the score for this site was 3, as both banks had trees on the bank faces and bank tops for much of the length so high scoring broad leaved woodland was the dominant habitat, but elsewhere was low scoring poor improved grassland or bracken. The surrounding land was used for sheep grazing. The mean ECS Score for SAC Unit 7733 (including one other site at Wye Llanwrthwl) was 4, the second highest category. This unit therefore passed the target for bank vegetation naturalness.

Control of invasive species, Himalayan balsam and bracken on the banks is recommended for this site, with possible water quality issues to investigate with epiphytic algal cover of rocks in the RHS survey, probably due to enrichment.



Figure 29. Photo of Wye, Treflyn, at the midpoint across the channel



Figure 30. Photo of Wye, Treflyn, at the midpoint facing upstream



Figure 31. Photo of Wye, Treflyn, at the midpoint facing downstream

8. Ithon, Llanbadarn

Location: [Ithon Llanbadarn](#)

SAC Unit Number: 7755

Waterbody ID: GB109055042140

NGR: SO0956076958

Macrophyte Site Number: EFMI265

Macrophyte Survey Number: EF25NORM045

Macrophyte Survey Date: 18/06/2025

RHS Site Number: SHMI50

RHS Survey ID: SH25NORH023

RHS Survey Date: 18/06/2025

Simplified Phase 1 Survey Date: 18/06/2025

This site on the Ithon was located approximately 1 km downstream of the road bridge at Llanbadarn Fynydd, with the midpoint at grid reference SO0956076958. This site is situated upstream of the sites at Trelowgoed and Llanbister, where the channel flows sinuously through a landscape of fields with patches of woodland, some farmsteads, with the A438 running alongside the left bank within the valley, sometimes in close proximity. Photographs taken at the midpoint facing across the channel, upstream and downstream are presented in figures 32, 33 and 34 respectively.

The river channel was approximately 8 m wide and shallow with the depth mostly less than 0.25 m in the 100 m macrophyte site. The substrate consisted predominantly of boulders / cobbles, with gravel / pebble and some sand / silt elsewhere. The habitat was riffle-run, with run dominant and some pools and the water was clear without any colouration. There was no shade on the left bank and only a small area of shade on the right bank. The absence of trees indicates historic re-

sectioning. Downstream of the midpoint, the left bank had a vertical eroding bank face with thistles and tall grass dominating the bank top and the right bank face consisted of bedrock with broad-leaved woodland.

Filamentous algae had a low coverage at 0.1 %, but fine silt was noted as covering the stones in a fine layer throughout most of the survey length. One bryophyte species was present, one floating leaved rooted starwort (*Callitriche stagnalis*) and nine emergent macrophytes including reed canary grass (*Phalaris arundinacea*) and hemlock water-dropwort (*Oenanthe crocata*) and the non-native invasive Himalayan balsam. No water-crowfoot (*Ranunculus sp.*) was recorded.

In the 500 m RHS survey length, there were depositional features such as side bars, vegetated side bars and point bars, and riffles and pools were present. A possible depositional feature at spot check 8 was not recorded as a berm because it was the same height as the right bank and it did not have a vertical edge. There was a side bar along the edge of this. The HMS class was 2, and the only artificial feature recorded was a minor bridge, and there was a small section of bank re-inforcement and several areas of bank poaching. Agriculture and historic re-sectioning were noted as impacting the site.

The surrounding land is used for grazing sheep, and the simplified Phase 1 score for this site was 2, as poor-semi-improved grassland was dominant. Low scoring tall ruderal vegetation was also present, as was higher scoring fern / non-ruderal vegetation. The mean ECS Score for SAC Unit 7755 (including one other site at Ithon Llanbister) was 2, the second lowest category. This unit therefore failed the target for bank vegetation naturalness. No non-native invasive species were recorded at this site.

Creation of a wider buffer strip along the bank top is recommended to enhance the quality of the channel and protect the water quality. This is one way the watercourse could be protected from siltation, but investigation may be needed to determining the source of the silt. Trees could be planted along sections where the banks have been historically resectioned, and the banks allowed to become more natural over time. More diverse flow could be created by installing deflectors in the long, straight, slow flowing sections.



Figure 32. Photo of Ithon, Llanbadarn, at the midpoint across the channel



Figure 33. Photo of Ithon, Llanbadarn, at the midpoint facing upstream



Figure 34. Photo of Ithon, Llanbadarn, at the midpoint facing downstream

9. Ithon, Llanbister

Location: [Ithon Llanbister](#)

SAC Unit Number: 7755

Waterbody ID: GB109055042140

NGR: SO1007871239

Macrophyte Site Number: EFMI264

Macrophyte Survey Number: EF25NORM044

Macrophyte Survey Date: 24/06/2025

RHS Site Number: SHMI49

RHS Survey ID: SH25NORH022

RHS Survey Date: 24/06/2025

Simplified Phase 1 Survey Date: 24/06/2025

The midpoint of this site on the Ithon was located approximately 3 km downstream of the town of Llanbister, at grid reference SO1007871239. This site is on the middle reaches of the Ithon, further downstream than the site at Llanbadarn. The channel twists and turns through a landscape of fields with patches of woodland and some farmsteads. The A483 runs within the valley to the left of the river channel facing downstream. Photographs taken at the midpoint facing across the channel, upstream and downstream are presented in figures 35, 36 and 37 respectively.

In the macrophyte site the river channel was approximately 8 m wide with a mean depth of 0.5 m. There was an island with a narrow channel flowing behind it. The substrate consisted predominantly of boulder / cobble with gravel / pebble and 5 % bedrock. The habitat was mainly run with some riffle and pools. There was little shading with most of the banks being devoid of trees. Fine silt was present on the channel bed in a thin layer.

Filamentous algae was not prevalent with only 0.1 % cover. The red thalloid algae (*Hildenbrandia rivularis*) was also present, and there were three species of bryophytes recorded. The submerged macrophytes, stream water-crowfoot (*Ranunculus penicillatus* subsp. *pseudofluitans*) and alternate water-milfoil (*Myriophyllum alterniflorum*) were both recorded within the main channel and in the narrow channel behind the island. There were seven species of emergent narrow-leaved reeds / grasses and five species of broad-leaved emergent (including Himalayan balsam) at low cover values.

In the RHS survey length, there were riffles and pools present, along with depositional features in the form of point bars, side bars and vegetated side bars, and eroding cliffs. The HMS class was 3, mainly due to the presence of a major bridge, some resectioning of the bed, some reinforcement of the banks and poaching of the banks. Impacts include agriculture and over widening. At one of the spot checks there was a large amount of filamentous algae in the slack water by the left bank. Himalayan balsam was present on the bank face and bracken was present on the right bank.

The surrounding land is used for grazing sheep, the dominance of poor semi-improved grassland and tall ruderal vegetation meant the simplified Phase 1 score was low, only 2, despite the presence of broad-leaved woodland and marshy grassland on the right bank. The mean ECS Score for SAC Unit 7755 (including one other site at Ithon Llanbadarn) was 2, the second lowest category. This unit therefore failed the target for bank vegetation naturalness.

Recommendations for this site include control of the Himalayan balsam and bracken, and management of silt input into the channel as this was depositing over the bed of the watercourse.



Figure 35. Photo of Ithon, Llanbister, at the midpoint across the channel



Figure 36. Photo of Ithon, Llanbister, at the midpoint facing upstream



Figure 37. Photo of Ithon, Llanbister, at the midpoint facing downstream

10. Ithon, Dissersh

Location: [Ithon, Dissersh](#)

SAC Unit Number: 7757

Waterbody ID: GB109055042270

NGR: SO0336558435

Macrophyte Site Number: EFM1205

Macrophyte Survey Number: EF24NORM024

Macrophyte Survey Date: 19/08/2024

RHS Site Number: SHMI21

RHS Survey ID: EF24NORH014

RHS Survey Date: 19/08/2024

Simplified Phase 1 Survey Date: 19/08/2024

The midpoint of this site on the Ithon was located at Dissersh Caravan Park, at grid reference SO0336558435. This site is also on the lower reaches of the Ithon, further downstream. The channel twists and turns through a landscape of fields with patches of woodland, a couple of caravan parks and steep wooded banks in places. The channel has cobbles and gravels deposited as side bars and exposed rocks. Photographs taken at the midpoint facing across the channel, upstream and downstream are presented in figures 38, 39 and 40 respectively.

In the macrophyte site the river channel was approximately 17 m wide with a mean depth of 0.1 m. The substrate consisted predominantly of boulder/cobble with gravel/pebble and 1 % bedrock. The habitat was mainly run with some riffle. There was semi continuous cover of trees with mainly dense cover on the right bank and continuous broken shade cover on the left bank.

The macrophyte cover consisted mainly of algae, including filamentous algae, a red thalloid algae (*Hildenbrandia rivularis*) and a stiff bristle-like alga (*Lemanea fluviatilis*), and bryophytes, and stream water-crowfoot (*Ranunculus penicillatus* subsp. *pseudofluitans*). There were some emergent reeds/herbs at low cover values and free-floating duckweed (*Lemna minor*) was also present. Filamentous algae covered approximately 15 % of the bed, mainly at the downstream end.

In the RHS survey length, the right bank was steep and wooded, and there was a caravan site along most of the left bank. Artificial features noted were a major bridge and a major deflector, but no artificial bank was noted other than poaching of both banks. Impacts include agriculture and the presence of the caravan site, with moving of the left bank noted as recent management. The caravan site manager informed us that there were otters along this section of bank but none were seen on this visit. Himalayan balsam was present on both the bank face and the bank top. The HMS class was 3, mainly due to the presence of the caravan park on its banks.

The surrounding land is used for grazing sheep, the presence of poor improved grassland and amenity and improved grassland meant the simplified Phase 1 score for this site was 3, a moderate score despite the presence of broad-leaved woodland on the right bank. The mean ECS Score for SAC Unit 7757 (including three other sites at Ithon d/s A485 road bridge, Ithon Dolberthog and Ithon Trelowgoed) was 3, the middle category. This unit therefore failed the target for bank vegetation naturalness.

Recommendations for this site include control of the Himalayan balsam and creation of a buffer strip within the caravan park where caravans and their decks are sited right up to the bank top in places. Control of the invasive Himalayan balsam is also recommended at this site.



Figure 38. Photo of Ithon, Disserth, at the midpoint across the channel



Figure 39. Photo of Ithon, Dissert, at the midpoint facing upstream



Figure 40. Photo of Ithon, Dissert, at the midpoint facing downstream

11. Ithon, d/s A485 road bridge

Location: [Ithon, d/s A485 road bridge](#)

SAC Unit Number: 7757

Waterbody ID: GB109055042270

NGR: SO1050968204

Macrophyte Site Number: EFMI218

Macrophyte Survey Number: EF24NORM038

Macrophyte Survey Date: 18/08/2024

RHS Site Number: SHMI30

RHS Survey ID: EF24NORH028

RHS Survey Date: 18/08/2024

Simplified Phase 1 Survey Date: 18/08/2024

The midpoint for this site in the Ithon was located approximately 135 m upstream of the A485 road bridge at grid reference SO1050968204. The Ithon is a major tributary of the Wye on its left bank. This site is in the middle reaches of the Ithon where there are large fields on rolling hills, with patches of woodland, some farmsteads and an area of urbanisation. Photographs taken at the midpoint facing across the channel, upstream and downstream are presented in figures 41, 42 and 43 respectively.

At the macrophyte survey site, the river channel was approximately 10 m wide and mostly shallow, with narrow side bars on both banks and a point bar on the right bank. The substrate consisted predominantly of cobble with gravel/pebble, with riffle-run habitats. The water was brown in colour but not turbid. There were signs of recent dredging of the channel with cobble/pebble/gravel piled up on the left bank face at the downstream end of the site.

There were no bryophytes and no submerged macrophytes seen at the site, possibly due to the recent disturbance. Filamentous algae were present over approximately 20 % of the site and epiphytic algae cover was extensive. As the survey was conducted in an impacted area following dredging, the results should be treated with caution as they are unlikely to be representative of the site as a whole.

There were trees shading the downstream section of the left bank and stands of emergent narrow leaved vegetation along the margins of the upstream section. On the right there were areas of slumped bank and patches of emergent reeds/herbs including common spike-rush (*Eleocharis palustris*), common reed canary grass (*Phalaris arundinacea*) and branched bur-reed (*Sparganium erectum*). The surrounding land was used for grazing sheep and cattle.

In the 500 m River Habitat Survey length, there was re-sectioning of the banks for most of the survey length, and some reinforcement associated with the road bridge. There was also a minor ford in the survey site. There was no poaching on either bank despite livestock being present, possibly due to the protection from woodland on the left bank and the presence of eroding vertical banks on the right, and a ford that would allow easier access for livestock. The right bank had clearly been modified in the past with a level bank top downstream of the bridge and no trees along the bank. However, it was eroding, and bare cliffs were present. Himalayan balsam was present on both the bank face and the bank top.

This site had an HMS class of 5, indicating a heavily modified site, mainly due to the re-sectioning at this site. Whilst this was mainly historic, and at other sites was not recorded as such due to the

channel recovering, there was evidence of recent dredging at this site, and the trapezoidal bank profile was not degenerating.

Low scoring poor semi-improved grassland dominated the simplified Phase 1 survey, but the site attained a moderate score of 3 thanks to the presence of high scoring woodland. The mean ECS Score for SAC Unit 7757 (including three other sites at Ithon Disserth, Ithon Dolberthog and Ithon Trelowgoed) was 3, the middle category. This unit therefore failed the target for bank vegetation naturalness.

Any unauthorised alterations to the watercourse should be investigated and remediation measures put in place. Reprofiling of previously re-sectioned banks to a more natural profile or allowing them to degrade where it is safe to do so, is recommended. Control of the invasive Himalayan balsam is also recommended, and whilst poaching was not a particular issue at this site, the vegetation was grazed up to the bank top so fencing set away from the bank top would allow creation of a buffer strip.



Figure 41. Photo of Ithon, d/s A485 road bridge, at the midpoint across the channel



Figure 42. Photo of Ithon, d/s A485 road bridge, at the midpoint facing upstream



Figure 43. Photo of Ithon, d/s A485 road bridge, at the midpoint facing downstream

12. Ithon, Dolberthog

Location: [Ithon, Dolberthog](#)
SAC Unit Number: 7757
Waterbody ID: GB109055042270
NGR: SO0460060400
Macrophyte Site Number: 45670
Macrophyte Survey Number: EF24NORM025
Macrophyte Survey Date: 19/08/2024
RHS Site Number: SHMI22
RHS Survey ID: EF24NORH015
RHS Survey Date: 19/08/2024
Simplified Phase 1 Survey Date: 19/08/2024

This site on the Ithon was located approximately 375 m downstream of a sewage treatment works at Dolberthog Farm, with the midpoint at grid reference SO0460060400. This site is in the lower reaches of the Ithon downstream of Llandrindod Wells where the channel twists and turns through a landscape of fields with patches of woodland, some farmsteads, and a sewage treatment works on the left bank. Photographs taken at the midpoint facing across the channel, upstream and downstream are presented in figures 44, 45 and 46 respectively.

The river channel was approximately 10 m wide with a mean depth of 0.5 m in the 100 m macrophyte site. The substrate consisted predominantly of bedrock, with gravel/pebble and cobble elsewhere. The habitat was riffle-run, with run dominant. There was semi continuous cover of trees with mainly dense cover on the right bank and half with dense cover on the left bank.

The macrophyte cover consisted mainly of algae, including filamentous algae, a red thalloid algae (*Hildenbrandia rivularis*) and a stiff bristle-like alga (*Lemanea fluviatilis*), and bryophytes, with only one small specimen of river water-crowfoot (*Ranunculus fluitans*), and some emergent reeds/herbs including reed canary grass (*Phalaris arundinacea*) and hemlock water-dropwort (*Oenanthe crocata*).

In the downstream section of the 500 m RHS survey length, the ground was very level with no trees on bank top and similarly aged alders along the bank face. This indicates that the bank was re-sectioned in past but the river bank has become naturalized, so was not recorded as re-sectioned in the survey. Himalayan balsam was present on the bank face and extensive on the bank top. The HMS class was 2, as no artificial features were recorded, but the channel was noted as having possibly been realigned and over deepened.

The surrounding land is used for grazing sheep, and whilst the presence of broad-leaved woodland meant the simplified Phase 1 score was 3, the middle category, the high scoring unimproved pasture recorded in the upstream section on the right bank was a narrow strip with improved grassland beyond the bank top. The mean ECS Score for SAC Unit 7757 (including three other sites at Ithon Disserth, Ithon d/s A485 road bridge and Ithon Trelowgoed) was 3, the middle category. This unit therefore failed the target for bank vegetation naturalness.

Creation of a wider buffer strip along the bank top is recommended to enhance the quality of the channel and protect the water quality. Control of the invasive Himalayan balsam is also recommended at this site.



Figure 44. Photo of Ithon, Dolberthog, at the midpoint across the channel



Figure 45. Photo of Ithon, Dolberthog, at the midpoint facing upstream



Figure 46. Photo of Ithon, Dolberthog, at the midpoint facing downstream

13. Ithon, Trelowgoed

Location: [Ithon Trelowgoed](#)

SAC Unit Number: 7757

Waterbody ID: GB109055042270

NGR: SO0885463610

Macrophyte Site Number: EFMI261

Macrophyte Survey Number: EF25NORM042

Macrophyte Survey Date: 18/06/2025

RHS Site Number: SHMSHMI46

RHS Survey ID: SH25NORH020

RHS Survey Date: 18/06/2025

Simplified Phase 1 Survey Date: 18/06/2025

The midpoint for this site in the Ithon was located to the south of Crossgates approximately 650 m downstream of the A483 road bridge at grid reference SO0885463610. The Ithon is a major tributary of the Wye on its left bank. This site is in the middle to lower reaches of the Ithon where there are large fields on rolling hills, with patches of woodland and some farmsteads. The surrounding land is used for grazing sheep and cattle. Photographs taken at the midpoint facing across the channel, upstream and downstream are presented in figures 47, 48 and 49 respectively.

At the macrophyte survey site, the river channel was approximately 16 m wide and mostly mainly 0.25 – 0.5 m deep, with mostly run habitats. Exposed bedrock was present at the mid point extending three quarters of the way across the channel from the right bank. There was slow flow upstream of this, with broken standing waves to the side and downstream, a deep pool beyond

this and then mainly smooth flow. The substrate consisted predominantly of cobble with some gravel/pebble. The water was an even mix of clear and cloudy where deeper.

Filamentous algae was present mostly in the pools within the bedrock. Elsewhere, a fine layer of silt coated boulders and cobbles with no filamentous algae. The red algae (*Hildenbrandia rivularis*) was present. There were five species of bryophyte of which the common long-beaked water feather-moss (*Rhynchostegium riparioides*) was dominant. Moss was mainly present around the areas of exposed bedrock, which is where most of the emergent macrophytes were recorded.

There were nine species of emergent macrophytes including branched bur-reed (*Sparganium erectum*). The other species, including the non-native invasive Himalayan balsam, were 'toe in the water' type bankside plants.

In the 500 m River Habitat Survey length, there was some reinforcement of the right bank top and some embankment was noted. There was some poaching on both banks. Eroding and bare cliffs and sidebars were present but there were no point bars. Himalayan balsam was present on the bank face. Major impacts noted are agriculture, the presence of an old disused mill with a dry mill leat, the road running alongside the channel and silt pollution evidenced by silt deposited on the channel bed.

This site had an HMS class of 2 due to the presence of reinforcement of the bank top and embankment on the right bank and poaching of both banks. On a positive note, there were numerous animals noted including a kingfisher, and there were bird nesting holes present in the eroding cliffs.

Low scoring poor semi-improved grassland dominated the simplified Phase 1 survey, and the site only attained a score of 2 despite the presence of high scoring woodland. The mean ECS Score for SAC Unit 7757 (including three other sites at Ithon Disserth, Ithon d/s A485 road bridge and Ithon Dolberthog) was 3, the middle category. This unit therefore failed the target for bank vegetation naturalness.

Recommendations for this site are to limit silt pollution from upstream and increase the buffer strip between the river and agricultural land use. The landowners at the Mill have planted trees and allowed the understory to develop in a field along the right bank, and have trees in the meadow in the next field. This is a good example of buffering for the channel and should be retained. The flow in the straighter sections could be varied by installing deflectors, but there are already good depositional features along the survey length. Control of the invasive Himalayan balsam is also recommended.



Figure 47. Photo of Ithon, Trelowgoed, at the midpoint across the channel



Figure 48. Photo of Ithon, Trelowgoed, at the midpoint facing upstream

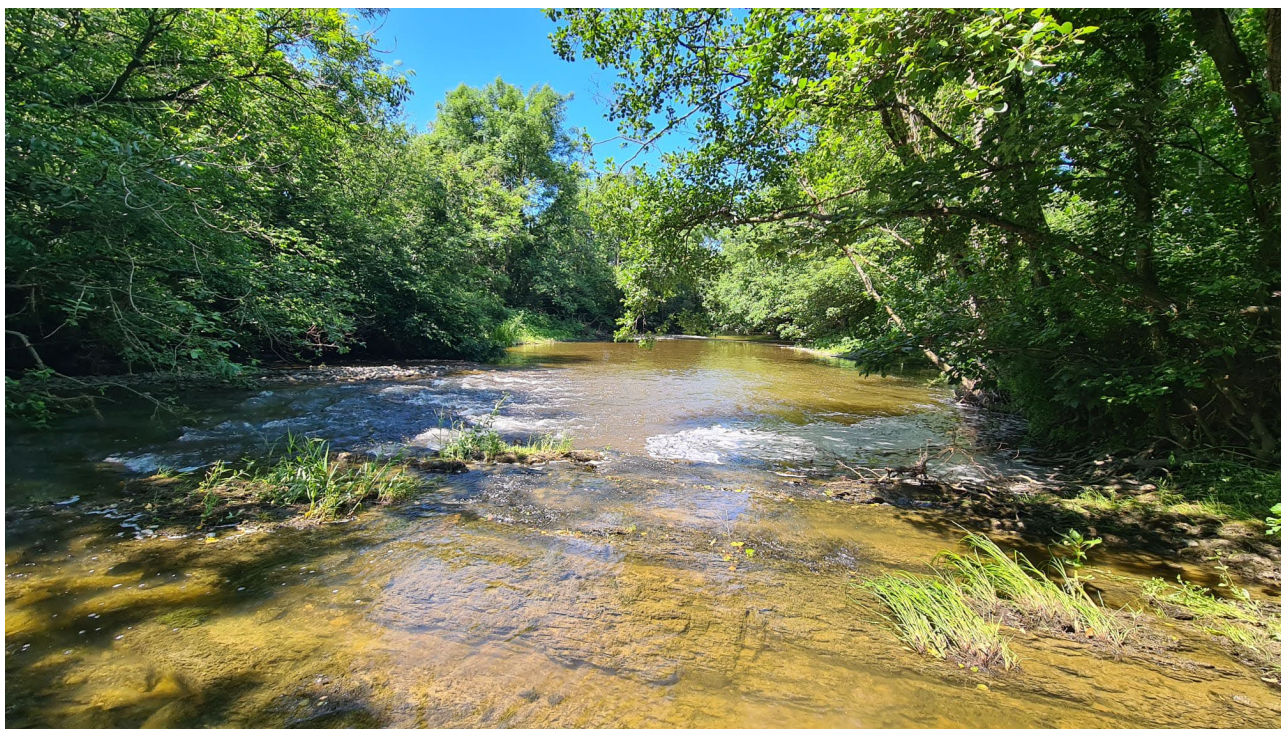


Figure 49. Photo of Ithon, Trelowgoed, at the midpoint facing downstream

14. Clywedog Brook, Brynlllygoed

Location: [Clywedog Brynlllygoed](#)

SAC Unit Number: 7760

Waterbody ID: GB109055042070

NGR: SO0818967209

Macrophyte Site Number: EFMI226

Macrophyte Survey Number: EF25NORM061

Macrophyte Survey Date: EF25NORM061

RHS Site Number: SHMI37

RHS Survey ID: SH25NORH039

RHS Survey Date: 24/06/2025

Simplified Phase 1 Survey Date: 27/09/2024

This site was located on the Clywedog Brook at SO0818967209. The brook is generally tree lined and flowing through a relatively shallow valley with hills covered in fields and patches of woodland to either side. There is a minor road aligned nearby to the east of the watercourse and a few farms scattered around. Photographs taken at the midpoint facing across the channel, upstream and downstream are presented in figures 50, 51 and 52 respectively.

The water was approximately 9 m wide in the 100 m macrophyte survey and mostly less than 25 cm deep, but with some deeper areas of up to a meter deep. The flow was mainly of a smooth flowing run type, with riffles and pools present. There was a sidebar at the downstream end. Both banks were shaded by trees. The majority of the substrate was bedrock, with pebble/gravel and boulders/cobbles and some sand and silt present. Moss was collected from marginal rocks and from the bed using a grapnel, but no other submerged macrophytes were seen. Only two species of emergent narrow leaved macrophytes was recorded with a low cover value, reed canary grass

(*Phalaris arundinacea*) and slender-tufted sedge (*Carex acuta*), and one emergent broad leaved plant, water pepper (*Persicaria hydropiper*), was also recorded. Amphibious plants present on the side bar were not considered to be inundated with water more than 85 % of the time so were not included in the macrophyte taxa list. No filamentous algae was observed despite searching specifically for it.

In the RHS, the left bank had no trees on the bank top and the profile was trapezoidal at the midpoint and upstream of that for 150 m, but mature trees were present on the bank face along with lots of young hazel trees. Trees mostly present on the bank faces in this survey length. This indicates that the bank had been modified, but as this was historic and the bank was becoming more naturalised, re-sectioning was not recorded. Poaching was present on both banks, but not extensive. There were two field drains emptying onto the right bank approximately 20 m from the water's edge creating wet marshy areas, and there was a minor bridge, but no other artificial features. At the downstream end of the survey, the river was fenced on both banks so was inaccessible. The HMS class was 2 due to the presence of a bridge and poaching of the banks. No non-native invasive plant species were recorded on the banks at this site.

In the Simplified Phase 1, the Evaluated Corridor Section (ECS) Score was 5, the highest category, primarily because of the presence of unimproved and good semi-improved pasture and trees. Both banks had continuous trees on the bank faces and/or bank tops. The surrounding land was used for sheep grazing. As this site was the only survey in the SAC Unit 7760, the mean ECS Score was also 5, the highest category. This unit therefore passed the target for bank vegetation naturalness.

Reprofiling of previously re-sectioned banks to a more natural profile, or allowing them to degrade where it is safe to do so, is recommended, along with movement of fencing away from the bank top in the downstream section of the RHS to allow a more natural vegetation to establish and create a buffer zone. Another recommendation would be to manage run-off within the catchment upstream to reduce peaks in flow which are likely to scour out the aquatic flora.



Figure 50. Photo of Clywedog, Brynlllygoed at the midpoint across the channel



Figure 51. Photo of Clywedog, Brynlllygoed at the midpoint facing upstream



Figure 52. Photo of Clywedog, Brynlllygoed at the midpoint facing downstream

15. Wye, confl Ithon

Location: [Wye confl Ithon](#)

SAC Unit Number: 7728

Waterbody ID: GB109055037150

NGR: SO0110055900

Macrophyte Site Number: EFMI216

Macrophyte Survey Number: EF25NORM058

Macrophyte Survey Date: 25/06/2025

RHS Site Number: H3260

RHS Survey ID: SH25NORH036

RHS Survey Date: 25/06/2025

Simplified Phase 1 Survey Date: 06/08/2024

The midpoint of this site on the Wye was approximately 500 m downstream of the confluence with the Ithon at grid reference SO0110055900. This is a fairly straight reach within a meandering sinuous section of the River Wye in a wide flat-bottomed valley with hills rising up beyond large fields on either side. The left bank is high, steep and wooded, and there are continuous trees along the right with arable land behind a footpath and narrow strip of hazel trees on the bank face. The surrounding land use was agricultural with crops and sheep grazing. Photographs taken at the midpoint facing across the channel, upstream and downstream are presented in figures 53, 54 and 55 respectively.

In the macrophyte survey, the river channel was approximately 35 m wide survey and mostly less than 25 cm deep, but with some deeper areas of up to a meter deep. Access was restricted in some areas due to the depth making wading unsafe. It was therefore difficult to assessment the submerge macrophytes in the centre of the channel.

The substrate was estimated to be 45 % bedrock in the 100 m macrophyte survey site, with a mix of mainly boulder/cobble and gravel/pebble elsewhere. The left bank was steep and tree covered and was completely shaded by trees with a mixture of broken and dense shade, whilst 20 % of the right bank was unshaded. There were vegetated sidebars on the right bank and there was a marginal strip of the emergent marginal plant reed canary grass (*Phalaris arundinacea*) along the left bank.

Submerged plant cover was difficult to ascertain in the centre of the channel due to the depth and the flow rate. Some filamentous algae was recorded at the upper end of the survey but no submerged macrophytes were seen other than one bryophyte (*Fontinalis squamosa*) and starwort (*Callitriche*). Ten species of emergent marginal macrophytes were present, some truly aquatic, and some amphibious species, and of these, reed canary grass (*Phalaris arundinacea*) was dominant.

In the 500 m RHS, there were no artificial features present, and the left bank was largely unmodified other than some localized re-sectioning but the right bank had extensive re-sectioning and some poaching. There was a vegetated sidebar along most of the right bank. The HMS class was 3 due to bank resectioning, embankments and poaching. The non-native invasive species Himalayan balsam was present on the bank face.

Despite the broadleaved woodland which scores highly present on the left bank, the SERCON score was only 3, the middle category of the simplified phase one habitat survey due to the dominance of poor semi-improved grassland on the right bank with arable land behind a footpath

and narrow strip of hazel trees on the bank face. The surrounding land use was agricultural with crops and sheep grazing. The mean ECS Score for SAC Unit 7728 (including one other site at Wye Built Rd) was 3, the middle category.

Recommendations for this site include control of the invasive Himalayan balsam and creation of a wider buffer strip along the bank top where appropriate.



Figure 53. Photo of Wye, confl Ithon, at the midpoint across the channel



Figure 54. Photo of Wye, confl Ithon, at the midpoint facing upstream



Figure 55. Photo of Wye, confl Ithon, at the midpoint facing downstream

16. Wye, Builth Rd

Location: [Wye, Builth Rd](#)

SAC Unit Number: 7728

Waterbody ID: GB109055037150

NGR: SO0182553453

Macrophyte Site Number: EFMI206

Macrophyte Survey Number: EF25NORM053

Macrophyte Survey Date: 27/06/2025

RHS Site Number: SHMI23

RHS Survey ID: EF24NORH016

RHS Survey Date: 20/08/2024

Simplified Phase 1 Survey Date: 20/08/2024

The midpoint of this site on the River Wye was approximately one kilometre upstream of a railway bridge at grid reference SO0182553453. This is a fairly straight low energy reach of the River Wye in a wide flat-bottomed valley, curving gently around Builth Road as it flows south west towards Builth Wells, with large fields on either side. Both banks are low with fairly continuous trees and patches of woodland, and the surrounding land was used for sheep grazing. Previously in 2024, the river was surveyed from the right bank, but access was not possible on this occasion so the river was surveyed from the left bank. Photographs taken at the midpoint facing across the channel, upstream and downstream are presented in figures 56, 57 and 58 respectively.

The water was approximately 50 m wide with an additional 15 m berm / sidebar within the channel which had a predominantly cobble and gravel/pebble substrate. The left bank had predominantly broken shade, whilst the right bank was mostly unshaded. The main flow type in the macrophyte 100 m survey was 'run' with slack areas. Whilst the water depth was mostly in the 0.25 – 0.5 m

depth category, it was lower than in 2024. The water was mostly clear but appeared cloudy in the deeper areas.

The macrophyte community included a few bryophytes, mainly alpine water-moss (*Fontinalis squamosa*) and greater water-moss (*F. antipyretica*), and the only other submerged macrophyte was stream water-crowfoot (*Ranunculus penicillatus* subsp. *pseudofluitans*). Several species of emergent reeds/herbs were recorded with low cover values from a band of marginals along the edge of the berm. There was 2 % cover of filamentous algae observed. The non-native invasive species Himalayan balsam was present in the survey.

In the 500 m River Habitat Survey length, 50 % or more of both banks had been re-sectioning and embankment was extensive on the left bank. At the midpoint, there was a berm along the right bank. Trees were fairly continuous on both bank faces except for the upstream section of the right bank where trees were regularly spaced on the bank top. Poaching was present on both banks. Both bank tops were predominately improved, and amenity grassland and the surrounding land was used for sheep grazing. Himalayan balsam was present on the bank face and the bank top. The HMS class was 3 due mainly to re-sectioning and embankment on part of the left bank. Historic re-sectioning on the right bank was not included as it was considered to be becoming naturalised.

The SERCON score was 3, the middle category of the simplified phase one habitat survey due to the dominance of improved and poor semi-improved grassland on both banks along with semi-natural woodland. The mean ECS Score for SAC Unit 7728 (including one other site at Wye confluence) was 3, the middle category.

This site is therefore impacted by agricultural use, historic bank re-sectioning and embankment. Recommendations at this site are to control the invasive Himalayan balsam and allow the re-sectioned banks to degenerate naturally, or reprofile to a more natural shape as appropriate. As mentioned at other sites, fencing should ideally be set back away from the bank top to allow more natural vegetation to create a buffer strip.



Figure 56. Photo of Wye, Builth Rd, at the midpoint across the channel.



Figure 57. Photo of Wye, Builth Rd, at the midpoint facing upstream.



Figure 58. Photo of Wye, Builth Rd, at the midpoint facing downstream

17. Irfon, Llangammarch

Location: [Irfon Llangammarch](#)

SAC Unit Number: 7743

Waterbody ID: GB109055037090

NGR: SN9422847632

Macrophyte Site Number: EFMI228

Macrophyte Survey Number: EF25NORM062

Macrophyte Survey Date: 26/06/2025

RHS Site Number: H885

RHS Survey ID: SH25NORH040

RHS Survey Date: 26/06/2025

Simplified Phase 1 Survey Date: 03/09/2024

This site midpoint was located on the River Irfon, approximately 800 m downstream of the Llangammarch Wells road-bridge, at grid reference SN9422847632. The Irfon is a major tributary of the River Wye flowing west to east in a wide, flat-bottomed valley with its confluence on the right bank. The watercourse is mostly tree lined with fields either side and patches of woodland, some on steep banks just downstream of this site, and the surrounding land was used for grazing sheep, with some wooded areas. Photographs taken at the midpoint facing across the channel, upstream and downstream are presented in figures 59, 60 and 61 respectively.

The channel in the 100 m macrophyte survey was approximately 18 m wide, and quite deep in places with high flows meaning not all areas were wadable, but the water was clear. The flow was mainly of a smooth flowing run type, with riffles, pools and slack areas present. Bedrock was present in the channel, which was also exposed at the margins. Both banks were heavily shaded by trees. The macrophyte community was dominated by bryophytes including the water mosses

Fontinalis antipyretica and *F. squamosa*, and three other species. A lichen, *Dermatocarpon luridum*, was also present.

Filamentous algae was present in 0.5 % of the monitoring site. One species of submerged fine leaved macrophyte, a starwort (*Callitriche* sp.), and a few emergent marginal plants were also present.

In the RHS, it was noted that the left bank was heavily poached and bare in places. The right bank had some reinforcement. The non-native invasive species Japanese Knotweed was present on the bank top and bank face, and another, Himalayan Balsam, was present on the bank face. Major impacts noted were agriculture and bank poaching.

The banks had been historically re-sectioned as they were trapezoidal in shape with no trees on bank top, but continuous trees along the bank faces. Where this was breaking down and becoming more natural in places, it was recorded as natural bank. The HMS class was 2 mainly due to the poaching and bank reinforcement, but inclusion of the historic resectioning would have resulted in a HMS of 3.

The surrounding land was used for grazing sheep, and low scoring poor semi-improved grassland dominated the simplified phase one survey bank, with some wooded areas and good semi-improved grassland on the right bank, so the score was 2, the second lowest for the simplified Phase 1 survey. The mean ECS Score for SAC Unit 7743 (including two other sites at Irfon Halfrena and Irfon Caer Beris Builth Wells) was 3, the middle category. This unit therefore failed the target for bank vegetation naturalness.

Recommendations for this site are to control the invasive species Japanese Knotweed and Himalayan balsam, and allow the historic re-sectioning to degrade and become more naturalised, a process which is already happening at this site. Fencing set away from the left bank top if possible is also recommended to protect the bank from the heavy poaching observed.



Figure 59. Photo of Irfon, Llangammarch, at the midpoint across the channel



Figure 60. Photo of Irfon, Llangammarch, at the midpoint facing upstream



Figure 61. Photo of Irfon, Llangammarch, at the midpoint facing downstream

18. Irfon, u/s Halfrena

Location: [Irfon Halfrena](#)

SAC Unit Number: 7743

Waterbody ID: GB109055037090

NGR: SN9795049195

Macrophyte Site Number: EFMI221

Macrophyte Survey Number: EF25NORM060

Macrophyte Survey Date: 26/06/2025

RHS Site Number: H21570

RHS Survey ID: SH25NORH038

RHS Survey Date: 26/06/2025

Simplified Phase 1 Survey Date: 04/09/2024

The midpoint of this site was located on the River Irfon, at grid reference SN9795049195, approximately 1.5 km from the Halfrena entering the Irfon on the left bank. This site is similar in character to the previous site at Llangammarch approximately 6 km upstream. The surrounding land was used for grazing sheep, and semi-improved grassland dominated landscape on the left bank, with broadleaved woodland dominating the right bank. The water was clear compared to the previous visit in 2024 when the water was brown making viewing the bed and submerged macrophytes difficult. Photographs taken at the midpoint facing across the channel, upstream and downstream are presented in figures 62, 63 and 64 respectively.

The channel in the 100 m macrophyte survey was approximately 20 m wide, with exposed bedrock along the both banks, this being wide along the right bank, and quite deep in places meaning not all areas were wadable. The flow was mainly a run type, with pools and slack areas but no riffles. The substrate was dominated by 80 % bedrock, with a mix of boulder/cobble, gravel/pebble and sand elsewhere. Both banks were heavily shaded by trees. The total macrophyte cover was 15 % of the monitoring site, of which filamentous algae was 0.1 %. The macrophyte community was dominated by bryophytes including *Rhynchostegium riparioides*. There were four species of emergent marginal macrophytes and one submerged species of starwort. The main cover of reed canary grass (*Phalaris arundinacea*) and hemlock water dropwort (*Oenanthe crocata*) on top of the bed rock shelves was not included in the total cover, as they were thought to be inundated by water less than 85 % of the time.

In the RHS, the banks were recorded as natural, not re-sectioned, although the left bank may have been reshaped in the past, but there was some poaching in places. No artificial features were present. The non-native invasive species Japanese Knotweed and Himalayan balsam, were present on the bank face. Agriculture was noted as a major impact. At spot check 9, fine sediment had deposited out of suspension over the bedrock, gravel and sand. Much of channel had shallow bedrock along left bank with a deep channel in the centre. The HMS class was 2, due to poaching of the banks.

The surrounding land was used for grazing sheep, and low scoring poor semi-improved grassland dominated the simplified phase one survey on the left bank, with broadleaved woodland dominating the right bank, so the score was 3, the middle category of the simplified Phase 1 survey. The mean ECS Score for SAC Unit 7743 (including two other sites at Irfon Llangammarch and Irfon Caer Beris Builth Wells) was 3, the middle category. This unit therefore failed the target for bank vegetation naturalness.

Recommendations for this site are to control the invasive species Japanese Knotweed and Himalayan balsam, and allow the historic re-sectioning to degrade and become more naturalised, a process which is already happening at this site. Fencing, set away from the bank tops if possible, is also recommended to protect the bank from the heavy poaching observed. In addition, management of run off into the catchment is recommended to reduce the sediment load in the watercourse.



Figure 62. Photo of Irfon, u/s Halfrena, at the midpoint across the channel



Figure 63. Photo of Irfon, u/s Halfrena, at the midpoint facing upstream



Figure 64. Photo of Irfon, u/s Halfrena, at the midpoint facing downstream

19. Irfon, Caer Beris Builth Wells

Location: [Irfon, Caer Beris Builth Wells](#)

SAC Unit Number: 7743

Waterbody ID: GB109055037090

NGR: SO0309250698

Macrophyte Site Number: EFM1207

Macrophyte Survey Number: EF25NORM054

Macrophyte Survey Date: 26/06/2025

RHS Site Number: H12353

RHS Survey ID: EF24NORH017

RHS Survey Date: 04/09/2024

Simplified Phase 1 Survey Date: 04/09/2024

This site midpoint was located on the River Irfon, at Caer Beris to the west of Builth Wells, at grid reference SO0309250698. There were wooded areas on the banks with amenity grassland beyond this in addition to the urban encroachment of Builth Wells around this sinuous section in the lower reaches of the watercourse which had areas of exposed bedrock. Photographs taken at the midpoint facing across the channel, upstream and downstream are presented in figures 65, 66 and 67 respectively.

The channel in the 100 m macrophyte survey was approximately 35 m wide, and quite deep, mainly 0.25 – 0.5 m, with high flows meaning not all areas were wadable. The water was clear despite a brown tinge, and access was good for using a grapnel to survey deeper sections. There was exposed bedrock in the channel along the left bank for up to a third of the channel width. The substrate was dominated by bedrock, but covering less than half the channel, with a mix of boulder/cobble and gravel/pebble elsewhere. Both banks were heavily shaded by trees.

Filamentous algae was present in 0.1 % of the monitoring site and blue-green algal scum/pelts (Cyanophyta) were present. The macrophyte community was dominated by bryophytes with five species recorded. Reed canary grass (*Phalaris arundinacea*) was the dominant emergent macrophyte, which was also present on the exposed bedrock in the channel. A few other marginal species were present too, but no other submerged macrophytes were seen.

In the 500 m RHS, the banks were mainly recorded as natural, not re-sectioned, although the left bank may have been reshaped in the past, but there was some poaching in places and a small amount of re-sectioning and reinforcement at the downstream end resulted in an HMS class of 2, although no artificial features were present. The alien invasive species Japanese Knotweed and Himalayan balsam were present on the bank face. Agriculture was noted as a major impact.

Broadleaved woodland dominated both banks, so the score was 5, the highest category of the simplified Phase 1 survey. However, beyond this, both banks had amenity grassland in the upstream section of the survey, and there was suburban development on the right bank in the downstream section. However, the mean ECS Score for SAC Unit 7743 (including two other sites at Irfon Llangammarch and Irfon Halfrena) was 3, the middle category. This unit therefore failed the target for bank vegetation naturalness.

Recommendations for this site are to control the invasive species Japanese knotweed and Himalayan balsam.



Figure 65. Photo of Irfon, Caer Beris Builth Wells, at the midpoint across the channel



Figure 66. Photo of Irfon, Caer Beris Builth Wells, at the midpoint facing upstream



Figure 67. Photo of Irfon, Caer Beris Builth Wells, at the midpoint facing downstream

20. Dulas Brook, Cwmbach

Location: [Dulas Brook, Cwmbach Llechrhyd](#)

SAC Unit Number: 7734

Waterbody ID: GB109055037160

NGR: SO0313054121

Macrophyte Site Number: EFMI227

Macrophyte Survey Number: EF24NORM049

Macrophyte Survey Date: 20/08/2024

RHS Site Number: SHMI38

RHS Survey ID: EF24NORH039

RHS Survey Date: 20/08/2024

Simplified Phase 1 Survey Date: 20/08/2024

This site was located approximately 300 m upstream of Cwmbach Bridge on the Dulas Brook, a tributary of the River Wye, at grid reference SO0313254121. The brook is small with a boulder/cobble bed flowing mainly through woodland in this reach with tree lined banks where it flows through fields. There is a railway running alongside to the west of the brook and a few scattered farm buildings. Photographs taken at the midpoint facing across the channel, upstream and downstream are presented in figures 68, 69 and 70 respectively.

In the macrophyte survey 100 m, the watercourse was small, approximately 2.5 m wide and 0.1 m deep with a few deeper pools. The substrate was cobble with some gravel/pebble, dominated by riffle.

The banks had mainly broken shade with some dense shade from tree cover on the right bank but only 30 % broken and dense shade combined on the left bank. There was woody debris from tree cutting dumped in the channel at the midpoint of the survey. The surrounding land was used for pasture with some farm buildings.

Fine silt and diatoms were noted coating rocks and the channel bed in a fine layer so the form of the substrate could still be seen beneath. There were very little filamentous algae, some moss, but no higher plants in channel although some narrow leaved and broad leaved macrophytes were present on the sidebar and bank face. Six species of bryophyte were recorded and five types of algae including a red thalloid algae (*Hildenbrandia rivularis*).

In the RHS survey, artificial features included a minor bridge, a minor weir and a ford. There was some localized bank re-sectioning noted, an area of embankment, and poaching of the banks was recorded, with bare bank in places, but most of the bank was considered to be natural with various features including stable and eroding cliffs, sidebars and point bars. The HMS class was 3, mainly due to the artificial features recorded.

The surrounding land is used for agriculture, and the presence of poor improved grassland and some bracken meant the simplified Phase 1 score was 3, moderate, despite the presence of broad-leaved woodland. As this site was the only survey in the SAC Unit 7734, the mean ECS Score was also 3, the middle category. This unit therefore failed the target for bank vegetation naturalness.

Fencing in places, set away from the bank top to allow a natural strip of vegetation would reduce the bank poaching, and maybe also reduce the siltation seen in the channel.



Figure 68. Photo of Dulas Brook, Cwmbach, at the midpoint across the channel



Figure 69. Photo of Dulas Brook, Cwmbach, at the midpoint facing upstream



Figure 70. Photo of Dulas Brook, Cwmbach, at the midpoint facing downstream

21. Edw, Cregrina

Location: [Edw, Cregrina](#)

SAC Unit Number: 7737

Waterbody ID: GB109055037130

NGR: SO1248252989

Macrophyte Site Number: EFMI230

Macrophyte Survey Number: EF24NORM052

Macrophyte Survey Date: 21/08/2024

RHS Site Number: SHMI39

RHS Survey ID: EF24NORH042

RHS Survey Date: 21/08/2024

Simplified Phase 1 Survey Date: 21/08/2024

The proposed monitoring site midpoint was located approximately 200 m upstream of a road bridge at grid reference SO1248252989. This location was used as the midpoint for the RHS, but the macrophyte monitoring site was moved to the downstream end of the survey length to grid reference SO1245753167 because the site monitored in 2012 was fenced on both banks and had steep eroding cliffs, which combined with high flows meant access was not possible. The Edw is a small sinuous tree-lined watercourse in a field covered sloping valley with mountains further out either site. It flows into the Wye on the left bank. Photographs taken at the midpoint facing downstream, and from the road bridge facing upstream and downstream are presented in figures 71, 72 and 73 respectively.

In the 100 m macrophyte survey the river channel was approximately 5 m wide with an average depth of 0.5 m at the midpoint. The substrate consisted predominantly of boulders/cobbles with some gravel/pebble with riffle-run habitats and a pool associated with an eroding cliff on the right

bank. The banks were mostly unshaded with some broken and dense shading on the left, and 50 % broken and dense shading on the right. There was very little macrophyte cover, with low cover of 6 species of bryophytes including St Winifrid's moss liverwort (*Chiloscyphus polyanthos*), but no water crowfoot (*Ranunculus sp.*) or other submerged vascular plants. There were a few emergent tall grasses and herbs, mainly hemlock water-dropwort (*Oenanthe crocata*). There was a low cover of filamentous algae observed in the monitoring site, approximately 4 % and the red algae *Hildenbrandia rivularis* was present.

In the longer RHS reach, the banks were considered to be natural with the only re-sectioning associated with a minor road bridge which was the only artificial feature recorded. No poaching of the banks was observed, probably due to the fencing. The vegetation groups present were bryophytes, emergent broad-leaved herbs, emergent reeds/sedges/rushes, free floating and filamentous algae. Himalayan balsam was present on both the bank face and the bank top. The HMS class was 2 due to the presence of a road bridge with its associated bank reinforcement. Historic re-sectioning at the downstream end was considered to be re-naturalised.

In the simplified Phase 1, the Evaluated Corridor Section (ECS) Score was 4, the second highest category because of the presence of trees, and unimproved and semi-improved grassland, but there was also some poor semi-improved grassland. The surrounding land was used for sheep grazing. As this site was the only survey in the SAC Unit 7737, the mean ECS Score was also 4, the second highest category. This unit therefore passed the target for bank vegetation naturalness.

Whilst there is fencing at this site and consequently no bank poaching was present, creation of a wider river corridor by moving the fencing away from the bank top to allow ungrazed vegetation to grow would be considered beneficial.



Figure 71. Photo of Edw, Cregrina, at the midpoint facing downstream



Figure 72. Photo of Edw, Cregrina, from the road bridge facing upstream

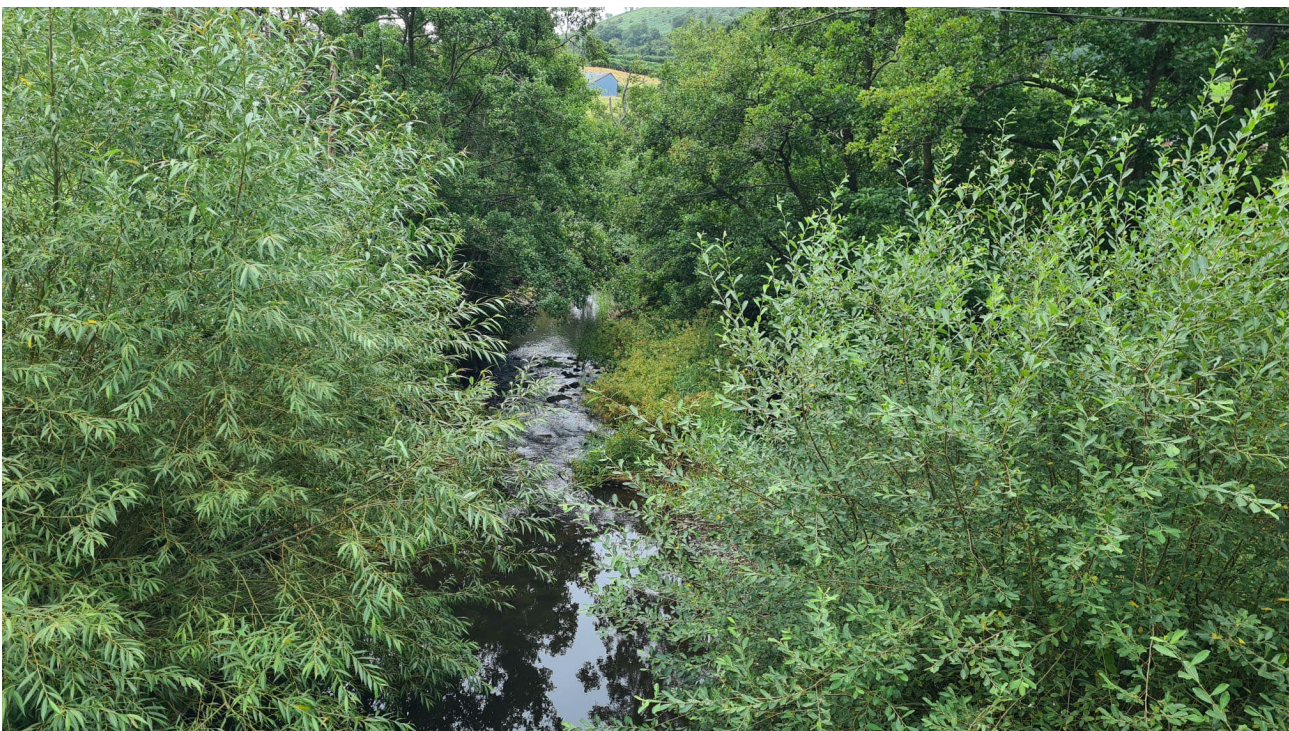


Figure 73. Photo of Edw, Cregrina, from the road bridge facing downstream

22. Wye, Builth Wells

Location: [Wye, Builth Wells](#)

SAC Unit Number: 7729

Waterbody ID: GB109055037115

NGR: SO0450051500

Macrophyte Site Number: 45260

Macrophyte Survey Number: EF25NORM052

Macrophyte Survey Date: 27/06/2025

RHS Site Number: H12354

RHS Survey ID: EF24NORH029

RHS Survey Date: 21/08/2024

Simplified Phase 1 Survey Date: 21/08/2024

The midpoint of this survey site was located approximately 450 m downstream of the A483 road bridge on the River Wye and 1.3 km downstream of the Irfon confluence, at grid reference SO0450051500. The Builth showground is to the north and Builth Wells is to the south west. This section of the River Wye in mid Wales appears to have been straightened. The surrounding land was used for sheep grazing, with a sewage treatment works on the right bank, and urban development including a road bridge just upstream. Photographs taken at the midpoint facing across the channel, upstream and downstream are presented in figures 74, 75 and 76 respectively.

The channel in the 100 m macrophyte survey was approximately 65 m wide with no trees shading the left bank but some broken shade on the right bank. The river bed was dominated by a cobble, gravel/pebble, the flow was mainly run habitat with riffle flow, and the water was clear with no turbidity or discolouration observed. There was a vegetated mid-bar in the channel from downstream of the midpoint to beyond the downstream limit. The water was mainly in the less than 0.25 m and 0.25 – 0.5 m depth categories, lower than when the site was visited in 2024, and most of the channel was wadable.

Filamentous algae was observed covering approximately 2 % of the channel, with two large patches observed, one at the upstream end near the left bank, and one in a shallow area adjacent to the mid bar. The red algae (*Hildenbrandia rivularis*) was present and there were a few species of bryophyte. A number of small stands of stream water-crowfoot (*Ranunculus penicillatus* subsp. *pseudofluitans*) were establishing throughout the survey area upstream of the mid bar. Nine species of emergent macrophyte were present along the left bank in a thin strip and there were a few patches on right bank. Himalayan balsam was present.

The channel was probably over widened but the bed was fairly natural, so it was not recorded as re-sectioned in the River Habitat Survey. Brown diatoms/algae were noted as covering most of channel, but there was very little filamentous algae or *Ranunculus* sp. seen throughout the 500 m length. Emergent reeds/grasses sedges were present all along the left bank in a thin strip and there were patches on right bank. There was ungrazed grass on the left bank face with tall herbs, and short grass on bank tops for most of survey length. Himalayan balsam was present on the bank face and the bank top at this site. The HMS class was 3 due mainly to historic realignment of the channel. The banks were considered to be becoming naturalised despite the presence of historic re-sectioning, and there were no artificial features or bank reinforcement recorded.

In the simplified Phase 1 the score for this site was 1, as the surrounding land was used for sheep grazing, with a sewage treatment works on the right bank, and urban development including a road bridge just upstream. The mean ECS Score for SAC Unit 7729 (including four other sites at Wye Erwood, Wye Llanstephan, Wye Boughrood and Wye Glasbury) was 3, the middle category. This unit therefore failed the target for bank vegetation naturalness.

Recommendations for this site are to control the invasive Himalayan balsam, and allow the historic resectioning to degrade and become more naturalised, or recreate a more varied bank profile as appropriate.



Figure 74. Photo of Wye, Builth Wells, at the midpoint across the channel



Figure 75. Photo of Wye, Builth Wells, at the midpoint facing upstream



Figure 76. Photo of Wye, Builth Wells, at the midpoint facing downstream

23. Wye, Erwood

Location: [Wye, Erwood](#)

SAC Unit Number: 7729

Waterbody ID: GB109055037115

NGR: SO0980043300

Macrophyte Site Number: EFMI219

Macrophyte Survey Number: EF25NORM059

Macrophyte Survey Date: 17/06/2025

RHS Site Number: H10295

RHS Survey ID: EF24NORH030

RHS Survey Date: 05/09/2024

Simplified Phase 1 Survey Date: 05/09/2024

The monitoring site midpoint was at Erwood on the River Wye, approximately 12 km downstream of Builth Wells at grid reference SO0980043300. This section of the River Wye lies in a valley with numerous small tributaries flowing down from the steep hills either side of the valley, including the Cletwr Brook which flows through a wooded valley and has its confluence at Erwood. Broadleaved woodland and grazing pasture were present along the banks. Beyond this, was agricultural use and suburban development, sometimes up to the edge of the bank top, on the right bank. Two photographs taken at the midpoint are presented in figures 77, 78, one of the areas behind the sidebar in figure 79, and photographs facing upstream and downstream are presented in figures 80 and 81 respectively.

In the 100 m macrophyte survey length, the river channel was approximately 30 m wide, with the depth mostly in the 0.25 - 0.5 m category. The water was mostly clear but appeared cloudy in the deeper areas. The left bank had a large cobble/gravel sidebar along the whole length and the bank was shaded whilst the right bank was steep and shaded. The substrate was predominantly boulder/cobble with gravel/pebble with cobble and sand. The habitat type was predominantly riffle-run and the dominant vegetation was alpine water-moss (*Fontinalis squamosa*), slender tufted-sedge (*Carex acuta*) and reed canary grass (*Phalaris arundinacea*). There were a couple of other bryophytes and several emergent marginal macrophytes present at low cover values, but there were no other submerged macrophytes recorded. There was a minimal amount of filamentous algae observed in the monitoring site at 0.5 % cover.

The land use on the left bank was grazing pasture, and on the right, a residential area in the upstream section, with pasture beyond and a small water treatment works downstream of the midpoint.

In the RHS, the banks were mainly recorded as natural, not re-sectioned, although the right bank may have been reshaped in the past because the mid-section appeared very straight, the trees were of a similar age and were regularly spaced. In the downstream section of the RHS survey, there was a massive shingle deposit along left bank with a low area between it and the bank that had a pool of water in which not connected at downstream end. The bank top was 1 m above the trees along the water's edge with no trees on the bank top in the upstream section, indicating that this section may have been re-sectioned. The bank has degraded since so it was not recorded as re-sectioned. There was some poaching in places and a small amount of re-sectioning noted at the downstream end. No artificial features were present, and the HMS class was 2.

Broadleaved woodland which scores highly and improved and amenity grassland which scores zero were present in roughly equal amounts, so the simplified Phase 1 score for this site was 3, the middle category of the simplified phase one habitat survey. However, beyond this, was agricultural use and there was suburban development, sometimes up to the edge of the bank top, on the right bank. The mean ECS Score for SAC Unit 7729 (including four other sites at Wye Built Wells, Wye Llanstephan, Wye Boughrood and Wye Glasbury) was 3, the middle category. This unit therefore failed the target for bank vegetation naturalness.

The non-native invasive species Japanese knotweed seen in 2024 was not recorded on this visit, but Himalayan balsam was present on the bank face. Agriculture and bank poaching were noted as major impacts.

Control of the invasive species Himalayan balsam is recommended at this site. It is also recommended that the historic resectioning is allowed to continue to degrade and become more naturalised, a process which is already happening at this site. Fencing, set away from the bank top if possible, is also recommended to protect the bank from the poaching observed.



Figure 77. Photo of Wye, Erwood, at the midpoint across the channel (1)



Figure 78. Photo of Wye, Erwood, at the midpoint across the channel (2)



Figure 79. Photo of Wye, Erwood, behind side bar at midpoint



Figure 80. Photo of Wye, Erwood, at the midpoint facing upstream



Figure 81. Photo of Wye, Erwood, at the midpoint facing downstream

24. Wye, Llanstephan

Location: [Wye Llanstephan](#)

SAC Unit Number: 7729

Waterbody ID: GB109055037115

NGR: SO1188641144

Macrophyte Site Number: EFMI263

Macrophyte Survey Number: EF25NORM050

Macrophyte Survey Date: 09/07/2025

RHS Site Number: SHMSHMI48

RHS Survey ID: SH25NORH028

RHS Survey Date: 09/07/2025

Simplified Phase 1 Survey Date: 09/07/2025

This site was located on the River Wye approximately halfway between the towns of Erwood and Boughrood, with the midpoint at grid reference SO1188641144. The channel is gently curving in this reach with some long straight sections, in a wide open valley with the A470 on the right bank, in close proximity in places. The river is mostly tree lined with fields either side and areas of woodland. Photographs taken at the midpoint facing across the channel, upstream and downstream are presented in figures 82, 83 and 84 respectively.

In the macrophyte monitoring site, the river channel was approximately 40 m wide, with approximately most of the depth in the less than 0.25 m category and the rest mostly 0.5 – 1 m with a pool of greater than 1 m. The water was clear but brown in colour making it difficult to see in the deeper areas, and the flow type was a mixture of run and slack flow with some pool but no riffle. The substrate was mainly boulder / cobble with some bedrock and gravel / pebble. There was 25 % cover of filamentous algae observed at the monitoring site where it covered the bed of the channel along the shallow margins. Three bryophyte species were recorded, including smaller lattice-moss (*Cinclidotus fontinaloides*). The true aquatic lichen (*Dermatocarpon luridum*) was also present. Twelve species of emergent marginal macrophytes were recorded including reed canary grass (*Phalaris arundinacea*) but none with high cover values. A small specimen of the river water-crowfoot (*Ranunculus fluitans*) was recorded at this site in a location hidden by boulders where it was protected from grazing by waterfowl. No other submerged macrophytes were recorded.

In the 500 m RHS, no artificial features were recorded in this survey but there was some poaching on the right bank and the HMS class was 1. There was a large point bar which was bordering on becoming vegetated indicating that this depositional feature had been present for some time. This was a low energy section of the river with no riffles or pools, so the channel has possibly been over widened in the past. Channel features included exposed boulders, exposed bedrock, unvegetated sidebars and eroding cliffs. The non-native invasive species Himalayan balsam was extensive on the bank face and present on the bank top. Japanese Knotweed was present on the bank face.

The simplified Phase 1 Habitat Survey score for this site was 5, the highest category due to the dominance of broadleaved woodland along the banks, despite the presence of improved and amenity grassland along the right bank in the downstream section. The mean ECS Score for SAC Unit 7729 (including four other sites at Wye Builth Wells, Wye Erwood, Wye Boughrood and Wye Glasbury) was 3, the middle category. This unit therefore failed the target for bank vegetation naturalness.

Recommendations at this site are to management of nutrient inputs which may be contributing to the high extent of filamentous algae cover at this site, and to control the invasive species Japanese Knotweed and Himalayan balsam. Increasing the buffer strip in this location to reduce management of the bank top is also recommended. As this section of the Wye has low energy flow, installation of features to diversify flow may be appropriate.



Figure 82. Photo of Wye, Llanstephan, at the midpoint across the channel



Figure 83. Photo of Wye, Llanstephan, at the midpoint facing upstream



Figure 84. Photo of Wye, Llanstephan, at the midpoint facing downstream

25. Wye, Boughrood

Location: [Wye Boughrood](#)

SAC Unit Number: 7729

Waterbody ID: GB109055037115

NGR: SO1373238569

Macrophyte Site Number: EFMI209

Macrophyte Survey Number: EF25NORM055

Macrophyte Survey Date: 09/07/2025

RHS Site Number: SHMI24

RHS Survey ID: SH25NORH033

RHS Survey Date: 09/07/2025

Simplified Phase 1 Survey Date: 24/09/2024

The midpoint of this site on the River Wye was located at Boughrood, approximately 8 km downstream from the site at Erwood at grid reference SO1373238569. The channel is sinuous in this reach, in a wide open valley with fields either side and small areas of urban habitation on either bank upstream. Photographs taken at the midpoint facing across the channel, upstream and downstream are presented in figures 85, 86 and 87 respectively.

In the macrophyte monitoring site, the river channel was approximately 75 m wide, with approximately half the depth in the less than 0.25 m category and the rest mostly 0.5 – 1 m with a pool of greater than 1 m. The water was brown in colour so in deeper sections the submerged plants could not be seen clearly but use of a grapnel did not yield any macrophytes.

The left bank had a high wooded bank with a footpath along the top, and a narrow shelf along the water margin along for most of the length with extensive shading whilst the right bank was lower

but also wooded with extensive shading. The substrate was mainly boulder/cobble with some bedrock and gravel / pebble. The habitat type was mainly run, and riffles and pools were also present. Four bryophyte species were recorded, including smaller lattice-moss (*Cinclidotus fontinaloides*) and (*Rhynchostegium riparioides*), and ten species of emergent marginal macrophytes were recorded including reed canary grass (*Phalaris arundinacea*) but none with high cover values. There was 20 % cover of filamentous algae observed in the monitoring site. A small specimen of the river water-crowfoot (*Ranunculus fluitans*) was recorded at this site in a location hidden by boulders where it was protected from grazing by waterfowl. No other submerged macrophytes were recorded.

In the 500 m RHS, broad leaved woodland was recorded at all but one spot check where scrub and bracken was recorded, but beyond this, was agricultural use with sheep grazing on improved grassland. No bank modifications other than some localized re-sectioning and a small amount of bank poaching, and no artificial features were recorded in this survey and the HMS class was 2. The non-native invasive species Japanese Knotweed and Himalayan balsam, were present on the bank face.

Broadleaved woodland which scores highly was recorded at all but one spot check of the RHS survey, where scrub and bracken was recorded, so the simplified Phase 1 score for this site was 5, the highest category of the simplified phase one habitat survey. However, beyond this, was agricultural use with sheep grazing on improved grassland. The mean ECS Score for SAC Unit 7729 (including four other sites at Wye Built Wells, Wye Erwood, Wye Llanstephan and Wye Glasbury) was 3, the middle category. This unit therefore failed the target for bank vegetation naturalness.

Control of the invasive species Japanese Knotweed and Himalayan balsam is recommended at this site, along with management of nutrient inputs which may be contributing to the high extent of filamentous algae cover at this site.



Figure 85. Photo of Wye, Boughrood, at the midpoint across the channel



Figure 86. Photo of Wye, Boughrood, at the midpoint facing upstream



Figure 87. Photo of Wye, Boughrood, at the midpoint facing downstream

26. Wye, Glasbury

Location: [Wye Glasbury](#)

SAC Unit Number: 7729

Waterbody ID: GB109055037115

NGR: SO1730139118

Macrophyte Site Number: EFMI210

Macrophyte Survey Number: EF25NORM056

Macrophyte Survey Date: 08/07/2025

RHS Site Number: H23245

RHS Survey ID: SH25NORH034

RHS Survey Date: 08/07/2025

Simplified Phase 1 Survey Date: 05/09/2024

This site midpoint was located at Glasbury, approximately 850 m upstream of the A438 road bridge, at grid reference SO1730139118. This site was 4 km downstream from the site at Boughrood, and the channel was sinuous in this reach, with fields either side and the town of Glasbury on both banks with a road bridge linking the two sides at the downstream end. The surrounding land was mainly improved grassland used for sheep grazing. Photographs taken facing across the channel, and at the midpoint facing upstream and downstream are presented in figures 88, 89 and 90 respectively.

The river channel was approximately 40 m wide and very deep in the macrophyte survey length. This meant that only a narrow strip near the left bank could be surveyed. Rip rap deflectors were present along the whole of the left bank at approximately 10 m intervals, some of which had deteriorated. The substrate was predominantly boulder/cobble, with run type habitat.

There was 20 % filamentous algae (*Cladophora sp.*) cover in the monitoring site. There were also Blue-green algal (Cyanophyta) pelts. One moss species, greater water-moss (*Fontinalis antipyretica*) and four emergent narrow leaved macrophytes including slender tufted-sedge (*Carex acuta*) and common spike-rush (*Eleocharis palustris*) were present at the site. No other submerged macrophytes were recorded.

In the RHS, the channel was noted to have been historically extensively realigned as the banks had a trapezoidal profile with no mature trees on the bank tops. However, as this was degrading, the banks were not recorded as re-sectioned in the spot checks. There were fifteen deflectors along the left bank which was on the outside bend of the river. These were made up of stones and gravel. There were extensive eroding cliffs on the left bank despite the numerous riprap deflectors, with burrows in the cliff face in one section. There was extensive bank poaching on the left bank, and sheep were present in a narrow field along the bank top for most of the survey length. There was a bar of shingle all along the right bank which was recorded as an extensive point bar as it was on the inside of a large bend in the river. The channel was wide and had low energy flow types so was recorded as re-sectioned throughout. There was also some set-back embankment present at the downstream end, presumably to protect the houses just downstream. There were no other artificial features present other than the deflectors. The HMS class was 5 mainly due to the numerous deflectors, but also because of bank re-sectioning and reinforcement, set-back embankments and poaching. It will take further time and/or restoration for the historic re-sectioning of the banks to become fully naturalised.

The surrounding land was used for sheep grazing and scored 0 in the simplified Phase 1 habitat survey, the land use being mainly in the improved and amenity grassland category. The mean ECS Score for SAC Unit 7729 (including four other sites at Wye Builtth Wells, Wye Erwood, Wye Llanstephan and Wye Boughrood) was 3, the middle category. This unit therefore failed the target for bank vegetation naturalness.

This site has been impacted by channel modification and loss of bank top habitat, so restoration of the habitat is recommended. Removing the sheep from the left bank top would also reduce the impact of poaching on the bank which is already eroding being sited on the outside of a large bend in the river. The extent of filamentous algae cover indicated enrichment at this site, so control of nutrient input upstream should be considered.



Figure 88. Photo of Wye, Glasbury, across the channel



Figure 89. Photo of Wye, Glasbury, at the midpoint facing upstream



Figure 90. Photo of Wye, Glasbury, at the midpoint facing downstream

27. Wye, d/s Hay

Location: [Wye d/s Hay](#)

SAC Unit Number: 1801

Waterbody ID: GB109055037116

NGR: SO2300043000

Macrophyte Site Number: EFMI213

Macrophyte Survey Number: EF25NORM040

Macrophyte Survey Date: 08/07/2025

RHS Site Number: H4960

RHS Survey ID: SH25NORH035

RHS Survey Date: 08/07/2025

Simplified Phase 1 Survey Date: 24/09/2024

The survey site midpoint was approximately 450 m downstream of Hay Bridge in Hay-on-Wye at grid reference SO2300043000. This site is in a wide open valley with fields on both sides and the town of Hay-on-Wye on the right bank. Broadleaved woodland was present on the left bank but semi-improved grassland dominated the land on the right bank and there was a carpark at the upstream limit. The surrounding land use was agricultural with sheep grazing on improved grassland. There was urban development 100 m from the water's edge on the right bank, and upstream of the survey site, and a small sewage treatment works downstream.

Photographs taken at the midpoint facing across the channel, upstream and downstream are presented in figures 91, 92 and 93 respectively.

The river channel was approximately 60 m wide and mostly less than 0.25 m deep, with the rest 0.25 – 0.5 m deep and a small amount of deeper water in the macrophyte survey 100 m length. The water was clear, and the flow type was mainly slack, with runs, riffles and pools. The substrate was estimated to be 50 % bedrock, 20 % boulder/cobble and 20 % gravel/pebble with some sand and silt. The left bank was steep and wooded so was mostly shaded by trees, whilst the right bank was lower and was mostly improved grassland along the bank top so was mostly unshaded. There was a large sidebar made up of gravel, pebble and cobble along half of the right bank. This was mainly colonized by terrestrial plants at the upstream end, with pools and aquatic / amphibious plants downstream.

Filamentous algae covered approximately 50 % of the stones along the margin of the right bank at the midpoint resulting in 5 % cover for the 100 m survey, the majority of the macrophyte cover recorded at this site. The rest of the total 8 % cover consisted mainly of emergent marginal macrophytes with nine species recorded, of which reed canary grass (*Phalaris arundinacea*) was the dominant species. Emergent narrow leaved vegetation present at back edge of the sidebars and on top of exposed bedrock was not included in cover value. There were also two species of moss, but there were no other submerged macrophytes recorded.

In the 500 m RHS, there were no bank modifications on the left bank other than some localized resectioning but the right bank was re-sectioned and had some reinforcement associated with a car park, and some poaching. Trees were present on the right bank face but there were none on the bank top. This suggests historic resectioning. The left bank material was recorded as not visible in places as it was obscured by the tree canopies and other vegetation. It is likely to be earth, but could have been bedrock as it was steep and high.

There was a sidebar along virtually the whole survey length on the right bank. The channel was gently curving so it could almost be considered to be a large point bar.

No artificial features were recorded in this survey and the HMS class was 2, mainly due to the localised bank reinforcement and re-sectioning, along with set-back embankments and bank poaching. The non-native invasive species Himalayan balsam was extensive along the bank face.

Despite the broadleaved woodland which scores highly present on the left bank, the score for SAC Unit 1801 was 3, the middle category of the simplified Phase 1 habitat survey, mainly due to the presence of poor semi-improved grassland on the right bank and the carpark at the upstream limit. The surrounding land use was agricultural with sheep grazing on improved grassland. There was urban development 100 m from the water's edge on the right bank, and upstream of the survey site, and a small sewage treatment works downstream. As this site was the only survey in the SAC Unit 1801, the mean ECS Score was also 2. This unit therefore failed the target for bank vegetation naturalness. This is a cross-border unit so assessment applies to the Welsh section only.

Control of the extensive invasive species of Himalayan balsam is recommended at this site. It is also recommended that the historic resectioning is allowed to continue to degrade and become more naturalised, a process which is already happening at this site.



Figure 91. Photo of Wye, d/s Hay, at the midpoint across the channel



Figure 92. Photo of Wye, d/s Hay, at the midpoint facing upstream



Figure 93. Photo of Wye, d/s Hay, at the midpoint facing downstream

28. Wye, Monmouth

Location: [Wye Monmouth](#)

SAC Unit Number: 1802

Waterbody ID: GB109055037111

NGR: SO5108412342

Macrophyte Site Number: 92796

Macrophyte Survey Number: EF25NORM040

Macrophyte Survey Date: 19/06/2025

RHS Site Number: SHMI27

RHS Survey ID: SH25NORH018

RHS Survey Date: 19/06/2025

Simplified Phase 1 Survey Date: 19/06/2025

The midpoint was located approximately 450 m downstream of the A466 road bridge at grid reference SO5108412342 on the River Wye at Monmouth. This section of the Wye flows through a wide valley with a flat valley bottom with patches of woodland, and steep hills rising up. The channel is generally wide and tree-lined, with gravel deposits and exposed boulders. Photographs taken at the midpoint facing across the channel, upstream and downstream are presented in figures 94, 95 and 96 respectively. The photos were taken a few days prior to the survey when the water was discoloured and flows were higher following rain.

At the macrophyte survey site, the river channel was approximately 50 m wide, and mostly 0.5 – 1 m deep. The water was cloudy but had cleared considerably and water levels were lower compared with five days earlier after rain when the water was brown and turbid. The flow was mainly run habitat with some slack areas. The channel substrate consisted predominantly of gravel / pebble with some boulder / cobble areas. There was minimal in-channel shading, with occasional clumps of trees.

There were seven marginal emergent macrophytes at low percentage cover values, including the invasive Himalayan balsam (*Impatiens glanulifera*). No submerged macrophytes were seen other than one moss, greater water-moss (*Fontinalis antipyretica*). There was approximately 0.1 % cover of filamentous algae observed in the monitoring site. A local fly-fisherman, who was stood in the channel at the time of the survey, said that he had seen a salmon that day, but he had not seen any water crowfoot at this site for some time, where it was once abundant.

In the 500 m River Habitat Survey length, there was some reinforcement of the right bank the upstream end and a small area of re-sectioning on the left bank observed. The only artificial feature noted was a minor deflector but there was also some bank poaching noted. For these reasons, the HMS was 3, reflecting the modifications. Smooth flow was extensive, so the channel may have been historically re-sectioned. There were depositional features in the survey including a mature island and vegetated mid-channel bar, and a long vegetated point bar. Several animals were recorded including a kingfisher, a heron and dragon / damselflies.

Himalayan balsam was present on both the bank face and the bank top in this survey, but no other INNS were recorded.

In the simplified Phase 1 Habitat Survey, the score was 2, which was low. This was due to the bank vegetation being low scoring tall ruderal vegetation at most locations, and several patches that were bare artificial substrate due to the presence of the A40 running along the bank top for part of the right bank. There was also high scoring woodland on the banks and there was some

scrub. The surrounding land was amenity grassland on the left bank and grazing grassland, woodland and suburban on the right. As this site was the only survey in the SAC Unit 1802, the mean ECS Score was also 2. This unit therefore failed the target for bank vegetation naturalness. This is a cross-border unit so assessment applies to the Welsh section only.

Control of the invasive Himalayan balsam is recommended for this site. The right bank was uniform so considered to be historically re-sectioned. Creating variety in this bank profile would improve the habitat quality. There are silt pollution issues to investigate with silt creating turbidity in the river at times of heavy rainfall, and means to control this should be investigated as it will undoubtedly have a detrimental effect on the submerged aquatic plants, including water crowfoot species. Controlling run-off by slowing the flow in the catchment upstream may also be of benefit to reduce the impact of fast flow events which may also have a negative effect on the water crowfoot by scouring it out. Adding deflectors may create varied flow that would allow it to re-establish.

Despite the presence of a sign saying that dogs were not allowed, there was poaching where dog walkers were allowing access to the river for their pets from an informal footpath at the top of the bank.



Figure 94. Photo of Wye, Monmouth, at the midpoint across the channel



Figure 95. Photo of Wye, Monmouth, at the midpoint facing upstream



Figure 96. Photo of Wye, Monmouth, at the midpoint facing downstream

Conclusions

Condition

Analysis of the macrophyte and RHS data is yet to be conducted by NRW, but from the field survey, it is apparent that the combined 2024 and 2025 survey evidence shows that much of the River Wye SAC is failing to support the full ecological character expected for its designated Ranunculion habitat, particularly in the middle and lower catchment. While the upper Wye and some tributary headwaters remain in better condition, the majority of surveyed reaches show signs of pressure from agriculture, historic channel modification, invasive species, and declining macrophyte quality.

On the JNCC website (<https://sac.jncc.gov.uk/site/UK0012642>), under the Annex I habitats that are a primary reason for selection of this site, it states that “the Wye, on the border of England and Wales, is a large river representative of sub-type 2. It has a geologically mixed catchment, including shales and sandstones, and there is a clear transition between the upland reaches, with characteristic bryophyte-dominated vegetation, and the lower reaches, with extensive *Ranunculus* beds. There is a varied water-crowfoot *Ranunculus* flora; stream water-crowfoot *R. penicillatus* ssp. *pseudofluitans* is abundant, with other *Ranunculus* species – including the uncommon river water-crowfoot *R. fluitans* – found locally. Other species characteristic of sub-type 2 include flowering-rush *Butomus umbellatus*, lesser water-parsnip *Berula erecta* and curled pondweed *Potamogeton crispus*. There is an exceptional range of aquatic flora in the catchment including river jelly-lichen *Collema dichotum*. The river channel is largely unmodified and includes some excellent gorges, as well as significant areas of associated woodland”. This applies to the whole of the Wye.

Across the 28 sites, channel modification and the loss of natural bank structure emerged as two of the most consistent pressures affecting the River Wye and its tributaries. More than half of the surveyed locations showed evidence of historic re-sectioning, straightening or embankment, often resulting in simplified channel forms. In many areas, riparian buffer strips were missing entirely, with livestock grazing extending right up to the bank top. This contributed to widespread bank poaching throughout agricultural sections of the catchment. Only a small number of upper-catchment sites retained consistently natural channel morphology, and these contrasts underline how much of the middle and lower river in Wales has been altered. The cumulative effect of these pressures is a reduction in habitat heterogeneity, fewer refuges for submerged plants, and increased delivery of fine sediments to the channel.

The condition of the macrophyte and algal communities reflects these physical pressures. Although the River Wye SAC is designated partly for its extensive water-crowfoot (*Ranunculus*) beds, the surveys show that *Ranunculus* was recorded at only six of the 28 sites and rarely in significant abundance. At many middle and lower Wye locations, filamentous algae and epiphytic growths were common, and in some cases extensive, with coverage reaching up to 50%. Fine sediment deposition was also widespread across both the Wye and its tributaries, particularly the Ithon, inhibiting the establishment of submerged macrophytes. Several reaches are now dominated primarily by bryophytes and emergent species rather than the characteristic suite of submerged plants. Collectively, these observations could indicate a reduction in the habitat conditions required for *Ranunculus*.

Indicators of water quality and sediment pressures were apparent at many survey sites. High levels of filamentous algae were recorded at several lower Wye sites, including Llanstephan, Boughrood, Glasbury and downstream of Hay-on-Wye. At the same time, a number of mainstem

locations exhibited persistent brown-coloured water, while silt deposition was clearly evident at sites on the Ithon, such as Llanbadarn, Llanbister and Trelowgoed, as well as at Monmouth. Episodic turbidity following rainfall was also reported, with particularly severe events observed at Monmouth shortly before the 2025 survey. These various pressures are likely linked to a combination of agricultural runoff, ongoing livestock poaching of banks, discharges from sewage treatment works, and high-flow spate events capable of remobilising stored sediment.

The distribution of invasive non-native species also followed a clear downstream pattern. Himalayan balsam is now widespread throughout the middle and lower Wye and is also present across the Irfon, reflecting its strong association with disturbed riparian corridors. Japanese knotweed was recorded at several lower Wye sites and at all surveyed sites on the Irfon. In contrast, the upper Wye, upper Ithon and the Clywedog Brook remain largely free of invasive species, highlighting an upstream area of comparatively intact ecological condition. Overall, the presence and spread of these invasive plants suggest they are spreading downstream with continued local expansion in areas where channel modification, open bank structure and reduced riparian resilience facilitate their establishment.

Recommendations

Recommendations for actions to restore the watercourses are included in the site descriptions and include siting / moving fencing away from the bank top to allow a more natural flora to develop creating a buffer zone and wildlife corridor, protecting bank tops from urban encroachment and informing local residents of the importance of the bank tops for river habitat quality.

In addition, the control of the invasive species, Himalayan balsam and Japanese knotweed, is recommended where they occur within the catchment.

At times of heavy rainfall, the River Wye and some tributaries become turbid with silt in suspension. Investigation in to means to control silt pollution is recommended as it will undoubtedly have a detrimental effect on the submerged aquatic plants, including water crowfoot species.

Controlling run-off by containing flow in the catchment upstream will also be of benefit to reduce the impact of fast flow events which may also have a negative effect on the water crowfoot by scouring it out. Adding deflectors would create varied flow that may allow submerged macrophytes to re-establish.

It should be noted that these recommendations are field observations and require further investigation to determine the cause and appropriate remediation of any issues raised.

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Appendices

Data Archive Appendix

Data outputs associated with this project are archived in NRW's Document Management System and Kieco on server-based storage at Natural Resources Wales.

The data archive contains:

- [A] The final report in Microsoft Word and Adobe PDF formats.
- [B] Appendix 1. Wye Macrophyte SIDD Data 2024 and 2025 in excel spreadsheets.
- [C] Appendix 2. Wye New RHS Site Data 2024 and 2025 in excel spreadsheets.
- [D] Appendix 3. Wye Simplified Phase 1 Data 2024 and 2025 in excel spreadsheet
- [E] Appendix 4. Wye Macrophyte Site Data 2024 and 2025 in excel spreadsheets
- [F] Appendix 5. Wye RHS Photos 2024 and 2025 in jpegs
- [G] Appendix 6. Wye RHS Survey Forms 2024 and 2025 in PDFs.
- [H] Appendix 7. Wye Macrophyte Survey Sketch Maps 2024 and 2025 in jpegs.
- [I] Appendix 8. Wye Macrophyte Survey Photos 2024 and 2025 in jpegs.

Metadata for this project is publicly accessible through Natural Resources Wales' Data Discovery Service <https://metadata.naturalresources.wales/geonetwork/srv> (English version) and <https://metadata.cyfoethnaturiol.cymru/geonetwork/cym/> (Welsh Version). The metadata is held as record no NRW_DS161491.

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