

Habitats Directive

River Tywi

What's happening?

Laws have been introduced under the Habitats Directive to safeguard Europe's most endangered plants, animals and habitats.

As part of this, the Environment Agency has to review all the existing consents that we regulate to ensure there are no adverse effects on the nature conservation interests of designated sites such as Special Areas of Conservation (SAC) and Special Protection Areas (SPA).

We are using a staged approach to do this:

- Stages One and Two – listed all consents and looked at those with the potential to have a significant effect.
- Stage Three – looked in detail at whether they have an adverse effect on special sites;
- Stage Four - those consents with no adverse effect will stand, those that do have been examined further to see what can be done about it.

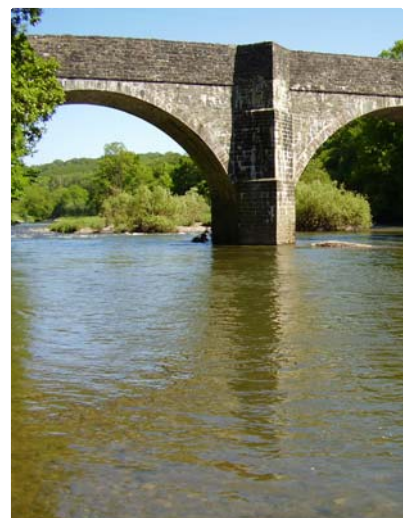
Location



About this site

The River Tywi SAC extends from Llandovery to just downstream of Carmarthen, where it meets the Carmarthen Bay and Estuaries SAC. It is an actively eroding river, meandering across a wide floodplain. There are extensive shingle banks that are important for birds and invertebrates. The Tywi is of international interest for its fish species, which include shad, lamprey and bullhead.

The river is one the best in Wales for otters, with generally good water quality and ample supply of fish. Otters live and breed along the Tywi and its tributaries.



Research

We carried out a lot of research as part of this work to improve our understanding about the site.

- We developed water quality models to help us understand the effects of nutrients from water discharges.
- We studied how various abstraction and flows affect the water depth, water velocity and the wetted edge of the river through hydraulic modelling.
- We developed air quality models and undertook monitoring to help us understand the effects of air-borne pollutants.
- We carried out otter surveys from 2001 to 2005.
- We investigated the impact of temperatures on shad distribution within the Tywi.
- We monitored adult shoal monitoring using hydro-acoustic and video survey techniques.
- We assessed the impacts of waste licences on the Tywi.

Shad



The River Tywi is the only river in West Wales to support a spawning population of twaite shad. It also supports a small number of the rare allis shad. The two species look very similar and both have distinctive large circular scales. They have streamlined bodies and rarely exceed 40cm in length.

Shad are migratory and return to the Tywi to spawn after maturing in the in-shore waters of Carmarthen Bay.

Llyn Brienne

Llyn Brienne is a large reservoir located near to the headwaters of the Tywi in Mid-Wales. The water discharged from the reservoir tends to be very cold and can impact upon fish spawning grounds further downstream. Shad are particularly affected by the cold water as they require warmer temperatures (above 15°C) for spawning and egg development.

As part of the Review of Consents, we have altered the consent for releasing water from Llyn Brienne. We anticipate that engineering of the reservoir will allow water to be drawn from the warmer parts of the reservoir closer to the surface. This will result in the water released into the river being closer to natural temperatures. We hope that shad reproduction will be more successful, allowing both species to flourish in the Tywi.



Impacts

Our assessments showed that five discharges to water, four water abstractions and two air quality permissions had the potential to affect species and habitats of the SAC.

Discharges from waste water treatment works can lead to increased levels of nutrients in the water, particularly phosphorus.

We found that some of the water abstractions reduce the river flows and impact on available spawning habitat at the edge of the river. We found that several of these abstractions posed a further risk to fish as they do not have suitable screening. This can prevent juvenile fish being sucked into the abstraction with the water, which often results in their deaths.

Long-range air-borne pollutants are likely to be causing acidification problems in the upper catchment of the Tywi. Acidic waters are a problem for fish, aquatic plants and species that rely on them, like birds and otters.

What will change?

We investigated different options for changes to the abstraction licences, discharge consents and air quality permissions that could potentially have an effect on the SAC.

We will revise the discharge consents through a scheme called AMP4, to ensure they do not impact on the SAC.

We will also revise the abstraction licences, e.g. to prevent diurnal pumping at low flows, so that flows and the availability of habitat at the edge of the river are more consistent through the day. Abstraction licences with insufficient screening protection will have a condition placed on the licence to ensure proper screening is installed. Through doing so, the impact on migrating fish species will be minimised.

Air quality permissions will be assessed separately through a permitting process.

Conclusion

We are confident that the proposed modifications to the discharge consents and abstraction licences, along with changes to the way operators practise, will prevent further impact to the plants, animals and habitat which makes the River Tywi SAC so unique.

Further information can be found on our website
www.environment-agency.gov.uk

Guidance can be requested from enquiries@environment-agency.gov.uk



Y Gyfarwydddeb Cynefinoedd

Afon Tywi

Beth sy'n digwydd?

Mae'r Gyfarwydddeb Cynefinoedd wedi dwyn i fod gyfreithiau gwarchod y planhigion, yr anifeiliaid a'r cynefinoedd hynny yn Ewrop a fygythir fwyaf.

Yn rhan o hyn, rhaid i Asiantaeth yr Amgylchedd adolygu pob caniatâd presennol a reoleiddiwn, er mwyn sicrhau nad ydynt yn effeithio er gwaeth ar fuddiannau cadwraeth yr un Ardal Gadwraeth Arbennig (AGA), Ardal Warchodaeth Arbennig (AWA) nac unrhyw safleoedd dynodedig arall.

Mae sawl cam i hyn:

- Camau 1 a 2: rhestru pob caniatâd, ac edrychar y rhai a ddichon fod ag effaith sylweddol;
- Cam 3: edrych yn fanwl ar a ydynt yn effeithio er gwaeth ar safleoedd arbennig;
- Cam 4: bydd y caniatadau nad ydynt yn effeithio er gwaeth yn sefyll; archwiliasom y gweddill er mwyn gweld beth arall ellid ei wneud ynglŷn â hynny.

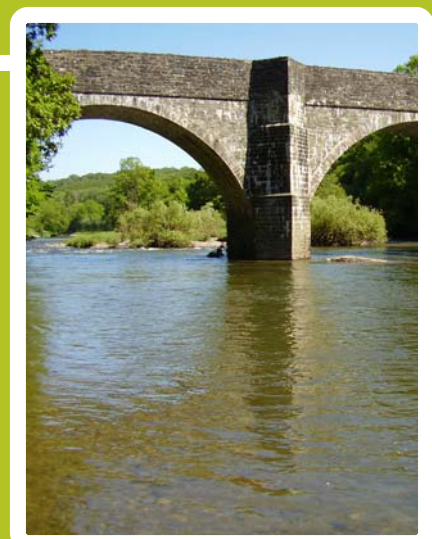
Lleoliad



Ynglŷn â'r safle hwn

Mae AGA Tywi'n ymestyn o Lanymddyfri i fan ychydig islaw Caerfyrddin, le'r ymuna ag AGA Bae Caerfyrddin a'i Haberoedd. Mae'n afon erydol, gan ymddolennu ledled gorlifdir eang. Ceir traethellau graeanog eang sy'n bwysig ar gyfer adar a thrychfilod. Mae Tywi o ddiddordeb rhyngwladol ar gyfrif ei rhywogaethau pysgod, gan gynnwys y wangen, y lamprai a'r grothell.

Dyma un o afonydd gorau Cymru ar gyfer dyfrgwn, gydag ansawdd dŵr cyffredinol dda, a digonedd o bysgod. Mae dyfrgwn yn byw ac yn epilio hyd Dywi a'i rhagafonydd.



Ymchwil

Ymchwiliasom lawer er mwyn gwella ein hamgyffrediad o'r safle.

- Darfu inni ddatblygu modelau ansawdd dŵr er mwyn ein helpu i ddeall effeithiau maetholion a gollyngiadau dŵr.
- Gwnaethom waith modelu hydrologig er mwyn astudio sut mae amryw dyniadau a llifoedd yn effeithio ar ddyfnder a chyflymder dŵr, ac ymyl gwlychedig yr afon.
- Datblygasom fodelau ansawdd awyr a bu inni arolygu er mwyn ein helpu i ddeall effeithiau llygryddion hedegog.
- Arolygasom ddyfrgwn o 2001 hyd 2005.
- Ymchwiliasom i effaith tymereddau ar ddsbarthiad gwangod yn Nhywi.
- Arolygasom heigio oedolion gan ddefnyddio technegau hydro-acwstig ac arolygu fideo.
- Asesasom effeithiau trwyddedau gwastraff ar Dywi.

Gwangen



Tywi yw'r unig afon yng ngorllewin Cymru sydd â phoblogaeth siliol o wangod. Mae yno hefyd nifer fechan o'r herlyn prin. Ymddengys y ddwy rywogaeth yn debyg iawn i'w gilydd, ac y mae gan y ddwy gennau crynion mawr gwahaniaethol. Mae eu cyrff yn lliflinog, ac anaml y tyfant ragor na 40cm o hyd. Mae'r gwangod yn fudol, gan ddychwelyd i Dywi i silio wedi aeddfedu yn nyfroedd glannau Bae Caerfyrddin.

Llyn Brianne

Mae Llyn Brianne'n gronfa fawr ym mlaenau Tywi yng nghanolbarth Cymru. Mae'r dŵr a ollyngir o'r gronfa'n tueddu i fod yn oer iawn, a gall effeithio ar fannau silio pysgod ymhellach i lawr yr afon. Mae'n effeithio'n neilltuol ar y wangen, gan fod arnynt angen tymereddau uwch (uwchlaw 15°C) ar gyfer silio a datblygiad eu hwyau.

Yn rhan o'r Adolygiad Caniatadau, rydym, wedi newid caniatâd gollwng dŵr o Lyn Brianne.

Disgwyliwn y bydd peirianegu'r gronfa'n caniatáu tynnu dŵr o rannau cynhesach y gronfa yn agosach i'r wyneb. O ganlyniad, bydd y dŵr a ollyngir i'r afon yn agosach at dymereddau naturiol. Gobeithiwn y bydd silio'r herlyn a'r wangen yn fwy llwyddiannus, gan ganiatáu i'r ddwy rywogaeth ffynnu yn Nheifi.



Effeithiau

Dangosodd ein hasesiadau bod dichon i bum gollyngiad i ddŵr, pedwar tyniad dŵr a dau ganiatâd ansawdd awyr effeithio ar rywogaethau a chynefinoedd yr AGA.

Gall gollyngiadau o weithfeydd trin dŵr arwain at gynyddu lefelau maetholion yn y dŵr, yn enwedig ffosfforws.

Canfuom y gallai rhai o'r tyniadau dŵr ostwng llifoedd yr afon. Byddai dichon i hynny leihau cynefin silio pysgod ar ymyl yr afon. Canfuom fod sawl un o'r tyniadau hyn yn fygythiad ychwanegol i bysgod, gan nad oes sgriniau addas arnynt. Gall hyn arwain at sugno pysgod ifainc i'r tyniad gyda'r dŵr, sy'n aml yn eu lladd.

Mae'n debyg fod llygryddion hedegog o bell yn achosi trafferthion asideiddio ym mlaenau Tywi. Mae dyfroedd asidaidd yn broblem i bysgod, planhigion dyfrol a'r rhywogaethau sy'n dibynnu arnynt, megis adar a dyfrgwn.

Beth fydd yn newid?

Ymchwiliad i wahanol ddewisiadau newid trwyddedau tynnu, caniatadau gollwng a chaniatadau ansawdd awyr a ddichon effeithio ar yr AGA.

Newidiwn y caniatadau gollwng trwy gynllun o'r enw AMP4, er mwyn sicrhau nad effeithiant ar yr AGA.

Newidiwn drwyddedau tynnu hefyd: atal pwmpio yn ystod y dydd pan fo'r llif yn fychan, fel bo llifoedd ac argaeledd cynefinoedd ar ymyl yr afon yn fwy cyson gydol y diwrnod, e.e. Rhoddir amod ar drwyddedau tyniadau sydd â sgrinio annigonol er mwyn sicrhau gosod sgriniau priodol. Bydd hynny'n lleihau'r effaith ar bysgod mudol.

Asesir caniatadau ansawdd awyr ar wahân, trwy broses drwyddedu.

Casgliad

Rydym yn hyderus y bydd addasu caniatadau gollwng a thrwyddedau tynnu yn y modd arfaethedig, ynghyd â newid arferion gweithredwyr, yn atal rhagor o effeithio ar y planhigion, yr anifeiliaid a'r cynefin sy'n peri bod AGA Tywi mor unigryw.

Cewch ragor o wybodaeth ar ein gwefan
www.asiantaeth-amgylchedd.cymru.gov.uk

Gallwch ofyn i enquiries@environment-agency.gov.uk am arweiniad.