

**Environment Agency Wales**  
**Non-Technical Summary**  
**Pollution issues affecting the Nant Caeach, Nelson**

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Following a slurry pollution incident that occurred on Gelliargwellt Uchaf farm in 2009, and reports of sewage pollution entering the Nant Caeach outside houses in Nelson, the Environment Agency's Environmental Monitoring Analysis and Reporting Team carried out biological surveys (in August 2009 and September 2010), to determine the status and abundance of the macro-invertebrate fauna (small freshwater animal community).

The main stream affected by the slurry spill was a small un-named tributary which flows into the Nant Caeach. The Nant Caeach isn't a designated Water Framework Directive (WFD) waterbody in its own right but flows into the Taff Bargoed which is a designated waterbody (GB109057033140). The WFD data reveals that overall the Taff Bargoed has a poor status classification. This is primarily because it is a heavily modified waterbody with several barriers to migratory fish. The status for invertebrate populations and water chemistry at two sampling sites along the Taff Bargoed however is classified as good-high. This is evidence that there are some locations along the stretch of the river that have high ecological quality.

Biological surveys were carried out at several locations along the tributary and the Nant Caeach. The Bargoed Taf could not be sampled due to the high flows. The river flow type, clarity and substrate composition was also recorded at each site as was the presence of macrophytes, bryophytes, algae, sewage fungus and sewage litter.

The results from the August 2009 survey showed that the biological status of the small tributary and the Nant Caeach was poor, with widespread sewage fungus present. There was evidence to show that the macro-invertebrate community had already been degraded by long term, chronic, pollution, before the acute pollution from the slurry spill occurred.

The same locations were sampled in September 2010, with the aim of establishing whether there had been any improvement in the biological status of the watercourse since the slurry incident, and to try and locate where the other pollutions were entering the Nant Caeach. The biological quality status of the small un-named tributary generally remained poor, however it had slightly improved since the 2009 survey, indicating that there had been some recovery. Two areas were identified where sewage-like discharges were entering the Nant Caeach, and further investigative works are still currently ongoing to locate the sources. It is likely that they are the result of misconnected drains from properties within the Nelson area. It was also found

that one section of the Nant Caeach was completely dry, which again has a negative impact on the macro-invertebrate fauna.

In summary, results from both biological surveys showed that overall the biological quality of this small area of catchment is poor. Rarely did any site achieve moderate levels of macroinvertebrate biological quality. Even from the most upstream samples the biology was recorded as being poor. Unfortunately the diffuse nature of the channels and drains in the area makes tracking the exact source extremely difficult.

Work is continuing to address these all of these issues, the results of which will be reported in due course.

Photos of issues identified

**Fig 1. – Outfall discharging sewage-like grey water**



**Fig 2. – Sewage fungus seen downstream of Outfall**



**Fig 3. – Sewage discharge leaching from river bank.**





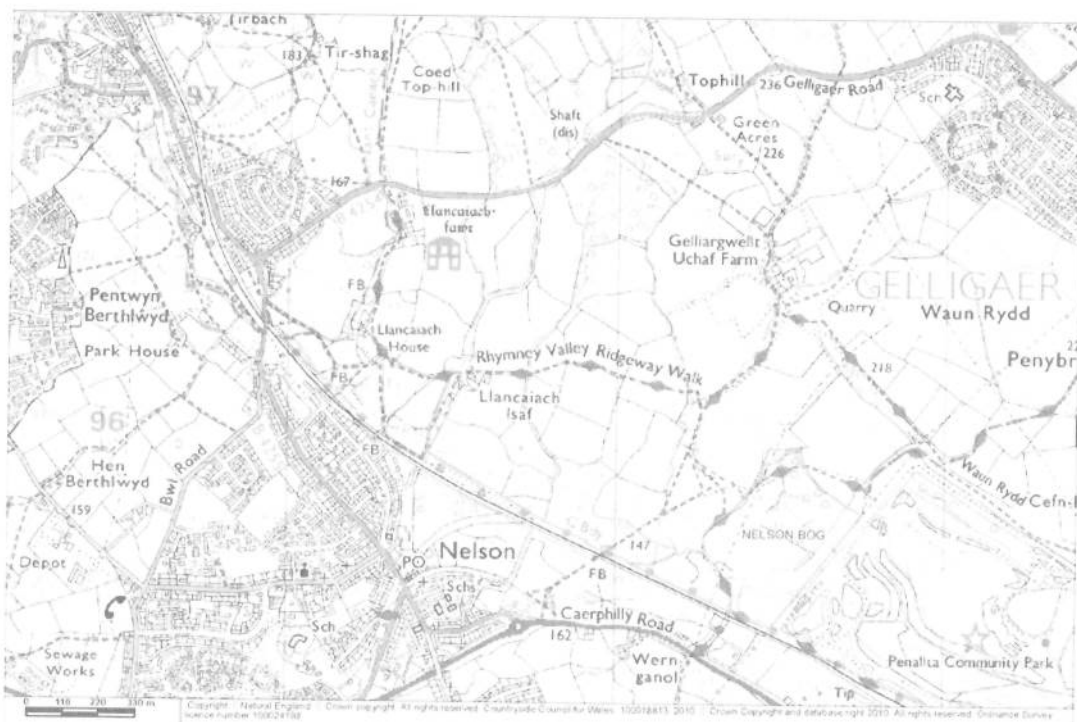
## Nelson Bog SSSI – Lowland Bog

The western section of the SSSI supports a lowland, rain-fed bog. The main feature of interest within this part of the site is the deep peat (in places more than 1m) and the bog vegetation that this peat supports. Hare's-tail Cottongrass (*Eriophorum vaginatum*) is frequent here with patchy Papillose Bog-moss (*Sphagnum papillosum*) and Deergrass *Trichophorum cespitosum*.

Lowland raised bogs have developed in areas such as valleys or other ground depressions. The natural poor drainage that can occur in these depressions leads to the area becoming water-logged and the lack of oxygen slows down the decomposition of plant materials. These conditions can eventually encourage the development of peat (partially decayed vegetation matter).

As plants grow on the surface of the bog they contribute to the continuing build up of peat, which over time lifts the surface above the surrounding area. This gives rise to the name 'raised bog', and as the surface of the bog is raised it becomes separated from the underlying water table. In this situation rainfall becomes its only source of water and nutrients. This leads to a wet area which is low in nutrients. These unusual conditions support a characteristic vegetation of such as bog mosses, sundews and cotton-grasses. Peat bogs can also provide a home to other wildlife, including birds and insects, that prefer the conditions found in this type of habitat.

The peat depth on Nelson Bog is generally at least one metre deep. This is regarded as "deep Peat" and it is relatively rare to find large areas of peat this deep in the lowlands. Please note that the SSSI is on private land.



Location map of Nelson Bog SSSI (green shaded area)

Notes written by Nick Hudson, CCW Conservation Officer, Monmouthshire and Eastern Valleys

