

Natural Resources Wales – Recommendation for Nitrate Vulnerable Zone designations.

The Nitrates Directive (91/676/EEC) is intended to protect waters against nitrate pollution from agricultural sources. Member States are required to identify waters that are or could become polluted by nitrates and to designate all land draining to them and contributing to the pollution as Nitrate Vulnerable Zones (NVZ). Farmers in designated areas must follow an Action Programme to reduce pollution from agricultural sources of nitrate. The criteria for identifying waters as polluted are established in the Directive, which also sets out monitoring requirements. NVZ designations must be reviewed at least every four years.

The Directive requires that at each NVZ review, changes and factors unforeseen at the previous review must be taken into account. The periodic nature of reviewing NVZs means that each review necessarily presents a 'snapshot' assessment of nitrate pollution up to the time of the review. The latest review was undertaken using data up to and including 2014.

Full description of the methods used for identifying Eutrophic Waters, Groundwaters and Surface waters for designation are given in the detailed methodologies that are available on request. These methods were developed under the guidance of a Review Group convened by Defra and the Welsh Government, which included representatives from the farming and water industries as well as independent academic experts. We also have Method Statements in addition to the methodologies detailing any changes to the existing methods as we have used all the most up to date evidence and systems available to us.

Eutrophic Freshwater Recommendations

The following lakes are being recommended for designation:-

- **Llyn Maelog, Anglesey**
- **Llyn yr Wyth Eidion, Anglesey**
- **Llyn Pencarreg, Carmarthenshire**

Water quality data was collated from 88 lakes and ecological data from 101 lakes throughout Wales using data from NRW and where available from third parties. Existing datasets were used, especially monitoring carried out for the Water Framework Directive and the Habitats Directive. This is believed to be the most comprehensive review of lake eutrophication in Wales to date. Although these gave good spatial coverage, sufficient data was not always available for all water bodies considered at risk of eutrophication.

The NVZ lakes eutrophication assessment provides a robust, evidence-based approach to the identification of lakes where eutrophication is considered a significant problem.

It is recommended that a case for designation under the provisions of the Nitrates Directive should be made for all the lakes listed above.

Eutrophic Marine Recommendations

The following eutrophic marine waterbodies is being recommended for designation:-

- **Milford Haven Inner Waterbody**

The eutrophication assessment carried out for Milford Haven provides a robust, evidence-based approach to the identification of marine waterbodies where eutrophication is considered a significant problem.

The Milford Haven waterway was first reviewed as a candidate Polluted Water in 2009. This review concluded that there was insufficient evidence to support a proposal for designation but it was recommended that monitoring should continue and its candidacy reviewed again when further evidence was available, which has been carried out as part of this review.

It is recommended that a case for designation under the provisions of the Nitrates Directive should be made for the catchment area for the Milford Haven Inner water body. This is supported by evidence as detailed in the full report. For the Outer water body there is also evidence to suggest the waters are hypereutrophic however some evidence does not support a case for designation.

It is recommended that monitoring for the Outer water body is continued and the outputs are reviewed at the next 4-yearly review, and that the Outer water body is not recommended for designation.

It is recommended that a case for designation under the provisions of the Nitrates Directive should be made for the catchment area for the Milford Haven Inner water body.

Groundwater Recommendation

The following Groundwater NVZ is being recommended for designation:-

- **Llanmiloe, Carmarthenshire**

Water quality data is consistently above the threshold demonstrating that water is polluted. Urban leaching is low, and given land use and local investigations agricultural is known to be main source of nitrate input to groundwater. Investigations have not revealed other local lines of evidence (point source pollution, unrepresentative data, denitrification or surface water quality as indicator) which would alter the overall risk score. The land has been identified as draining into polluted and this catchment area put forward for designation.

The Groundwater assessment for Llanmiloe provides a robust, evidence-based approach to the identification of a groundwater that is polluted and meets the requirement of the Nitrate directive.

It is recommended that a case for designation under the provisions of the Nitrates Directive should be made for the catchment area for Llanmiloe.

Surface water Recommendation

The following Surface waters NVZ are being recommended for designation:-

- **River Alyn (West of Wrexham) and Worthenbury Brook (east of Wrexham around Whitchurch)**
- **Deepford Brook, Pembrokeshire**

River Alyn and Worthenbury Brook are both existing designations. As part of this review, we assessed additional data and information that was not available as part of the last review. We recommend that the existing areas are extended slightly to include the areas which now meet the requirements of the directive and we recommend the amended areas for designation.

The Surface water assessment for provides a robust, evidence-based approach to the identification of surface waters that are polluted as established in the directive.

For both of these catchment area, monitoring data in combination with information on catchment land-use indicate that concentrations of nitrates in one or more rivers are exceeding the level set out

in the Nitrates Directive. Agricultural sources are making a significant contribution to the observed or expected concentration of nitrate. Hence the land draining to these rivers has been identified for designation as a Nitrate Vulnerable Zone.

It is recommended that a case for designation under the provisions of the Nitrates Directive should be made for the catchment area in Wrexham and Pembrokeshire.

Existing Nitrate Vulnerable Zone Designations

All four existing NVZs designated due to eutrophication (Bosherston Lakes, Hanmer Mere, Llangorse Lake and Llyn Coron) still meet the eutrophic lakes criteria and we would recommend that they continue to be designated. Very minor alterations have been made to the Bosherston and Hanmer Lake catchments. This is due to us using more up to date mapping systems.

We would also recommend that all existing Groundwater and Surface Water designations continue to be designated. As part of the review, we have assessed GW and SW data for all existing designated areas, and they all still meet the requirements for designation. No amendments have been made to any of the other existing designation catchments, accept the ones detailed above.