



**Montgomery and Brecon & Radnor Branches
Campaign for the Protection of Rural Wales**

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Dear Madam/Sir

Consultation on Nitrate Vulnerable Zones in Wales

We would like to preface our response to the consultation questions with an explanation of the urgent requirement to implement measures which will effectively ensure the protection of Welsh waters within Powys and which will incorporate a responsibility towards the Water Framework Directive including water bodies in England affected by their tributaries in Wales.

The intensive poultry industry in Powys:

Powys, like neighbouring Herefordshire, has seen an explosion of intensive poultry developments in recent years, such that there are now in the region of 150 separate farms in the county with intensive poultry units (IPUs). Of these approximately 120 are free range egg units, and most of the remainder broilers. At any time there are currently in the region of 5 million birds housed in these units in Powys. In terms of bird numbers approximately half are free range egg layers and half broilers. (Our data is obtained from Powys's planning data and can be seen in map form on <http://www.brecon-and-radnor-cprw.wales/>. We attach a pdf showing the map of IPUs in Powys built and in planning as at the end of October 2016. If anything, our data understates the position in that we have not in general been able to identify sheds built in the 1990s and early 2000s.)

Application of these numbers to the data given in the 'Best Available Techniques (BAT) Reference Document for the Intensive Rearing of Poultry or Pigs'¹ gives annual outputs of poultry manure in Powys of around **175,000 tonnes** containing approximately **1900 tonnes** of nitrogen. This a huge quantity of nutrient rich manure which must be stored, transported and spread appropriately (in a county of hilly landscapes, high rainfall and multiple small watercourses) if serious water pollution is to be prevented. IPUs also present other very significant pollution risks in the form of ammonia and dust deposition, run off from ranges, hard standing and roofs, dirty wash out water. Further non-nutrient pollution ensues from the detergents and chemicals used, which find their way into local water courses. The majority of individual IPUs fall below permitting thresholds and will not be subject to NRW pollution control measures. It is essential that *all* available measures are deployed effectively right across the intensive poultry industry to prevent harmful pollution. As the consultation paper points out, this is not only a requirement of the Water Framework Directive, but also of the Welsh Government's Environment and Future Generations Acts.

Planning applications for IPUs continue to be received and are rarely turned down. In the eleven months to end November 31 applications, for sheds to contain a total of approximately one million birds, were received. Poultry manure is classed by DEFRA as Hazardous Animal By Product [ABP] High Risk category 2. The major issue of correct

use and end destination of poultry manure/litter is rapidly becoming still more challenging and must be addressed without delay.

The consultation document recognises the challenges associated with manure production from the dairy industry but makes no mention of IPU in Powys, despite the fact that poultry manure is significantly richer in nutrients than dairy manure, with nitrogen (and phosphate – another major contributor to eutrophication) content around *five times that of dairy manure*ⁱⁱ. Has any study of manure storage practices in IPU taken place equivalent to that which has been carried out for dairy farms in south west Wales? If not, why not? Existing problems are amply illustrated in the Wye and Usk Foundation's (WUF) documents '*Poultry and Planning Aide Memoire March 2015*' and '*Response to the Assembly's Environment and Sustainability Committee's evidence session as part of a short inquiry into water quality in Wales*'. Voluntary adoption of best practices with regard to storage and use of manure is not happening sufficiently consistently in Wales, or Powys, to avoid pollution. Serious concerns about the proliferation of IPU were anticipated by WUF in their document '*Perfect Storm*' [Oct 2013] (attached) which was submitted to Herefordshire County Council. Herefordshire Council are now refusing permissions and recommending withdrawals for IPU planning applications.

NVZs are intended to be one of the principle tools for achieving the improvements in water quality as required by the Water Framework Directive. These improvements are not currently happening and the county has in fact seen deterioration of some waterbodies, for instance the River Ithon. It is not coincidence that the catchment of the River Ithon contains a high concentration of free range chicken sheds. Water quality data, where available, and residents' observations, testify that good practice techniques in relation to poultry manure are not employed consistently and pollution from intensive poultry units is a serious problem in the county. This is also a cross border issue and the failure to take appropriate measures within Powys has been remarked on within Herefordshire Councilⁱⁱⁱ where accumulated downstream pollution is affecting development plans.

A number of environmental organisations besides CPRW have become extremely concerned about the pollution impact of the concentration of intensive poultry units in the county. We are pursuing this issue with Natural Resources Wales but do not yet see adequate recognition of the problem. NRW's water status mapping is based on average readings without accounting for maxima, despite the pollutant impact of temporary spikes in nutrient levels in waterbodies, and so underrepresents the problems. The WUF water status mapping presents a more realistic picture of widespread waterbody failures in Powys. WUF have also reported algal blooms, an indication of eutrophication, in the upper reaches of the Wye.

We acknowledge that NVZs are perceived within the farming industry as undesirable, however their impact is only to enforce the observance of good practice by the industry. This has to be from all points of view a desirable outcome. The environment must be protected and the industry is not self-policing effectively. Most IPU fall below permitting thresholds and are not subject to permit pollution control measures while enforcement of conditions relating to manure storage and spreading by local authorities is almost impossible; NVZs are a necessary mechanism to achieve pollution protections. The consultation paper also points out that there are specific benefits to farmers from following Action Programme requirements, including potential economic gain.

Besides the environmental/ecological impacts of polluted waters there is also a very significant financial loss to society. Natural England have estimated the annual cost of agricultural diffuse pollution across the UK at £238 million^{iv}. There will also be local costs in the form of lost tourism income etc. In the end it is the environment and taxpayers who currently bear the cost of poor nutrient management practices. Nutrient pollution from LPAs should be avoidable if 1) LPAs approve only applications for IPU which are appropriately sited, and 2) farmers observe best practice.

DEFRA website^v sets out clearly the criteria employed to designate NVZs in England, where they occupy about 58% of land. In Wales the land area of NVZs is 2.4%, potentially to be increased to only 8%. Differences are to be expected in view of different land uses, but the land area discrepancy is so extreme that other factors must also come into play. A comparison of the modelling methodologies used in Wales and England shows that DEFRA's Surface Water methodology explicitly sets out that:

"Nitrate loss potential coefficients are assigned to each crop and livestock type and the model summarises these to predict a total annual loss from agricultural land, which can be split into losses of nitrogen and nitrates from:

- *fertiliser applications and losses due to other cropping practices on arable land*
- *manures from housed animals applied to arable and managed grassland*
- *excreta from grazing livestock to managed grassland and rough grazing land*

- *atmospheric deposition on arable land, managed grassland, rough grazing land, woodland and open water*

NEAP-N includes a water balance model and a leaching algorithm, which calculates the proportion of the potential loss that is actually leached."

From this it is clear that intensive farming is recognised as a relevant factor for modelling purposes in English methodology.

By comparison and in contrast, the Welsh methodology document is minimal and states only: "*Spatial variation in nitrate concentration was modelled as a function of a suite of potential explanatory variables representing nitrate losses from agriculture, urban areas, point source discharges, septic tanks and historic landfill sites.*" We are aware that the issue of environmental impacts of IPU's was given scant attention in the State of Natural Resources Report recently published, and it seems likely the issue has received too little recognition in the modelling process for designation of NVZs and risks underrepresented. NVZs are intended as a precautionary, preventative measure and should be designated where *risk of pollution* is high and not only where high levels of pollution are already evidenced.

The Northern Ireland Environment Agency has introduced 'Phosphorus Regulations' within their NVZ Action Programme in recognition of the high pollutant potential of phosphates. We believe that, particularly in areas with a high concentration of IPU's, such regulations are necessary here in Wales. We recommend the consideration of the addition of regulations along the lines of those set out in 'Nitrates Action Programme 2015-2018 and Phosphorus Regulations Guidance Booklet'^{vi}.

No regulation will achieve its ends unless there are adequate resources to support it. There will be funding requirements for grant aid for farmers, for education and training, for publicity, for staffing within LPAs etc. Welsh Government must demonstrate its serious intent by providing the funds required. These will be recouped in time in savings in water clean-up costs and reduced requirements for investigations of breaches and prosecution of pollution incidents. Effective regulation will also reduce the risk of infraction proceedings against Welsh Competent Authorities.

Consultation questions

1. **Do you prefer Option 1 (continuing with discrete NVZ designations), or Option 2 (applying the Action Programme to a 'Whole Wales' NVZ designation)?** In the opinion of CPRW Powys branches the particular challenges presented by the current size of the poultry industry in Powys and its rapid growth must be recognised, *now*, in this current review of NVZs. Designation in four years' time will be too late to prevent avoidable water pollution. A 'whole territory' designation, as deployed in Northern Ireland and many European countries, would be even-handed, provide clarity for the farming industry and avoid competitive disadvantage to some farmers, would recognise the Wales-wide trend towards intensification of livestock farming and would permit an integrated approach to pollution control.

It is worth noting that in the summer of 2016, the European Commission was pressuring DEFRA for substantial expansion of NVZs.

Alternatively, the county's issues could be addressed by the designation of *all* Powys farmland. Nothing less will be effective since many farms already have insufficient land to use all their own poultry manure and are exporting it around the county and out of county. To designate only those farms currently hosting IPU's is to ignore the exports of manure and the considerable expansion of the industry which can, on current trends, be expected over the next four years. The 'national baseline standards' currently operating outside NVZs have notably failed to protect water quality and a different approach urgently has to be adopted.

2. **Do you agree with the proposal to charge a refundable fee of £250 per appeal?** CPRW supports a fee for appeals to discourage those without merit. It may be appropriate to consider a sliding scale based on farm size.

3. **Do you think cover crops should be included in the Action Programme?** Yes, soil erosion is another significant means by which nutrients are carried into waterbodies. Soil deposits in waters will have both chemical and ecological impacts. Loss of topsoil, a non-renewable natural resource, from farmland is also a critical issue, as recently highlighted in a BBC Countryfile investigation focussed on the Severn River catchment. WUF report that the problem of soil erosion is more acute in the east of the country. However risk of soil erosion can be exacerbated by the planting of inappropriate crops and this needs to be set out within the Action Programme.

The Action Programme must also address issues around the disposal of digestate from anaerobic digesters. These are likely to increase in number with the expansion of intensive farming, and here in Powys very serious pollution problems have already been encountered resulting from digestate disposal overloading farmland. This is also recommended in EU guidance^{vii}

4. **If so, have we identified the correct circumstances for their use?** See 3 above.
5. **Are the suggested dates appropriate? If not, what dates would you suggest?** No comment
6. **What actions do you consider should be defined to show compliance?** If the measures are to be effective Government must adequately fund and resource NRW to hold regular advisory meetings, and carry out consistent farm advice and short notice and scientific monitoring visits.
7. **Do you think the existing rules on the storage of solid livestock manures sufficient to reduce the risk of pollution?** Regulation needs to be appropriate *and followed* to be effective – see 6 above. At present long term field heaps of manure, including poultry manure, uncovered, and with the potential for run off into watercourses are a not infrequent sight in Radnorshire. Voluntary codes of good practice are not consistently being followed; the regulatory force of the NVZ Action Programme is required to prevent pollution.

We note that existing rules recommend maximum in field storage time of one year. In Northern Ireland the maximum in field storage time is 120 days, and field storage of poultry manure is subject to authorisation by NIEA^{viii}. There is also a prohibition of field storage of any manure within 250m of a borehole used for public water supply or on land which is waterlogged, flooded or likely to flood.

8. **If not, what additional rules do you think should be established?** See question 7 above. It appears that further precautionary rules should be considered for adoption to protect water quality. Concrete holding bays for the containment of manure would reduce [but not eliminate] the potential for nutrient leaching into surrounding ground and into water courses.
9. **Should there be a closed period for farmyard manure?** If the scientific evidence is pointing to a pollution risk which such a measure would help prevent, yes.
10. **If so, have we identified the correct circumstances in which a closed period should apply?** We would like to see an explanation of the reasons for the discrepancy between the closed period suggested 1 August and 30th September and that in force in Northern Ireland i.e. 31 October to 31 January.
11. **Should the closed period apply to all other organic fertilisers?** Organic manures high in readily available nitrogen are already subject to winter closed periods. Farmers should not be placed in a position where appropriate use of organic manures is made unreasonably difficult. See question 10 above.
12. **Do you agree with increases to the nitrogen efficiency standard values used in Nmax or should they remain the same?** Nitrogen efficiency standard values must be based on best available evidence to reduce nutrient pollution and encourage farm efficiency and best practice.

13. **What concerns or benefits do you think increasing the values may raise?** The consultation paper suggests the increased values could cause confusion. This can be avoided by readily available and clear guidance and appropriate publicity.
14. **If you think the values should be increased, what values should be used?** See question 12 above – values must be based on best scientific evidence.
15. **Do you think that the manure values of Schedules 1 and 3 should be updated, where there is sufficient evidence to support that change?** Yes, if the evidence supports updated values. Regulations to reduce pollution cannot be optimally effective if based on incorrect and out of date information.
16. **Do you agree that the current rules on slopes sufficiently address the risks of pollution?** We note that regulations in Northern Ireland have recently introduced restrictions on the spreading of manures and fertilisers close to water bodies on slopes of incline exceeding 15% or 12% depending on land use. Similar restrictions should be considered.
17. **If not, why not and what rules do you think should be implemented to address the risk?** See question 16 above.
18. **Do you agree with the proposal to clarify the wording of the regulations?** Yes
19. **Do you agree with the adoption of a whole farm limit?** Regulation should avoid unnecessary complication if it is to be understood and followed. We believe that the quantities of high nutrient manure which are generated and used within Powys make it necessary to designate all farmland in Powys. If this is done, part-farm designations will not arise.
20. **If you do, have we identified the correct method of establishing the limit?** The suggested approach appears logical.
21. **If you do not agree, do you think an alternative approach should be taken?** See question 20 above.
22. **Do you agree with the proportional approach described for calculating slurry storage?** Again, this approach seems logical.
23. **If not, how do you propose the rules should be clarified?** See question 22 above.
24. **How do you think the proposed Action Programme changes will impact on the practical management of typical farm enterprises in the new or existing zones?** As we are recommending widespread expansion of NVZs across, minimally, Powys, we acknowledge that this will have both impact and cost for farmers. For that reason, to prevent hardship or competitive disadvantage to Welsh farmers, Welsh Government should accompany new designations with availability of grant funding for capital works required for compliance, and a suitable phase in period. Grant funding schemes in 2011 differentiated between young farmers, who received higher percentage and total funding, and established farmers, and this arrangement could be replicated.
25. **In the future, how should natural resource planning and management be considered as an alternative and complementary solution to tackling nitrate pollution? [Note that we have amended this question to the wording shown in the consultation document.]** This is clearly a large topic suitable for a separate consultation. But specifically in relation to IPUs, while NVZs and the associated regulations are currently the best tools to address nutrient overloading in water courses and nitrate pollution, NVZ regulations can only partially address the pollution potential. There are three principle water pollution issues arising with IPUS:
- Storage and use of manure – addressed in this paper;
 - Siting of ranges for free range developments and drainage from those areas;
 - Shed washing and run off from roofs and hard standing.

Manure management is so central to prevention of water pollution that CPRW Powys branches believe that it is inappropriate to consider alternatives to NVZ designation for the achievement of pollution control, and more appropriate to consider what other measures are required in addition to NVZs.

CPRW Powys branches believe that to address these the following measures are required:

- Appropriate guidance for and training of LPA and NRW Development Management officers such that the potential for pollution arising from poorly sited or poorly designed polluting developments, in particular intensive livestock units, is properly understood;
- Training of Environmental Health officers as to their role in the protection of private water supplies in relation to IPU;
- Default Environmental Information Assessment status for all IPU applications;
- Funding and training for LPA Development Management to enable monitoring of pollution prevention planning conditions;
- Clear definition of the respective responsibilities of LPAs and NRW in relation to both the scrutiny of IPU planning applications and the monitoring of existing IPUs, and clear consultee advice from NRW to LPAs in relation to IPU planning applications;
- Adequate funding for LPAs to employ the necessary in-house expertise e.g. qualified ecologists;
- Training of Development Management officers in the implications of the ecosystems duties of the Environment Act (Wales) on their function.
- Integration of Water Framework Directive objectives into the working practices of LPAs, in particular within the Development Management function.

In the case of waste from IPUs, chicken manure is only one of the constituents of poultry litter, which also comprises ammonia saturated woodshavings or straw, feathers and even occasionally dead birds. Therefore weights/volumes of poultry litter waste from each IPU should be established, when assessing environmental impact of the spreading of this litter onto the land. This involves combining both the bedding and manure weights. This can easily be assessed with standard formulae derived from number of birds x quantity of food per bird and weight of bedding per bird.

“Manure quantity

Manure quantity and characteristics are influenced by the species, age, diet and health of the birds and by farm management practices. Estimates of the manure excreted by 1 000 birds per day (based on average daily live weights during the birds’ production cycle) are approximately 120 kg for layer chickens, 80 kg for meat chickens, 200 to 350 kg for turkeys (grower females and grower heavy males, respectively), and 150 kg for ducks (Collins et al., 1999; Williams, Barker and Sims, 1999). Extrapolations can be calculated to give general estimates for the number of birds in a given operation.

After excretion, the quantity of manure requiring management depends on factors such as water content, whether the manure is stored in a location where rainfall collects, or whether it is mixed with materials such as straw, wood shavings or rice hulls, as is typical in meat bird housing. Estimates of the litter produced by 1 000 meat birds produced for market range from 1.1 to 2.4 tonnes for chickens.”^{ix}

In practice these calculations or equivalents are not referred to by farmers or landowners, nor by NRW, so the quantities of manure/litter generated by IPUs are unknown and unaccounted for in planning and permitting processes, leading to confusion where the potential quantities of manure/litter generated by an IPU are of concern. This should be rectified and poultry litter calculations should be included within the Environmental Operational Permitting requirements. This necessary information may then be sensibly applied and incorporated within any NVZ assessment and subsequent requirements.

We would also suggest that Welsh Government should consider the incorporation into resource planning and management of the ‘polluter pays/provider gets’ principle^x. By this means, farmers are rewarded for the delivery of ecosystems services which go beyond the requirements of the farm business while also bearing the cost of ensuring that agricultural activities are not environmentally damaging.

26. We do not believe that this policy affects opportunities for people to use Welsh or treats the language less favourably than English, or that it could be reformulated or revised to have positive effects. If you disagree, we would welcome your comments on this issue. No comment.

ⁱ http://eippcb.jrc.ec.europa.eu/reference/BREF/IRPP_Final_Draft_082015_bw.pdf Table 3.3.7

ⁱⁱ Poultry and Planning- Prepared by the Wye and Usk Foundation March 2015.

ⁱⁱⁱ <http://councillors.herefordshire.gov.uk/documents/g5517/Printed%20minutes%20Tuesday%2026-Jan-2016%2010.00%20Audit%20and%20Governance%20Committee.pdf?T=1> Item 102

^{iv} publications.naturalengland.org.uk/file/4563209151315968

^v <https://www.gov.uk/government/publications/nitrate-vulnerable-zones-nvzs-2017-review-method-statements>

^{vi} <https://www.daera-ni.gov.uk/sites/default/files/publications/dard/nap-2015-2018-and-phosphorus-regulations-guidance-booklet-final-may-2016.pdf>

^{vii} <http://ec.europa.eu/environment/water/water-nitrates/studies.html>

^{viii} <https://www.daera-ni.gov.uk/publications/2015-2018-nitrates-action-programme-and-phosphorus-regulations-and-associated-documents>

^{ix} <http://www.fao.org/docrep/013/al718e/al718e00.pdf>

^x https://ec.europa.eu/agriculture/envir/cap_en

The Campaign for the Protection of Rural Wales (CPRW) established in 1928 is Wales' foremost countryside Charity. Through its work as an environmental watchdog it aims to secure the protection and improvement of the rural landscape, environment and the well-being of those living in the rural areas of Wales.

Yours sincerely,



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