**Briefing for the Welsh elections 2021 on intensive chicken farms in Wales**
**Campaign Aim:** to halt the approval of large-scale intensive farming units

**Executive summary:**
The intensive farming of chickens is widespread in Wales. In Powys alone, there are an estimated 10 million farmed chickens, of which 3 million are kept indoors. Powys Council has approved all but one of 156 indoors poultry units planning applications in the last five years.
Intensive poultry farming is damaging the environment in Wales and beyond, through water, air and land pollution, impacts on biodiversity, habitats and ecosystems and the production of greenhouse gases.
Several environmental organisations in Wales have called for a moratorium on new intensive poultry units in Powys. Animal Aid now calls for a halt throughout the whole of Wales.

**Proliferation of intensive chicken farms**
It is estimated that 10 million chickens are currently being farmed in Powys alone, on 200 farms. [1]
Compassion in World Farming estimates that around 3 million meat (broiler) chickens currently farmed in Powys are reared indoors, "confined inside, restricted in their ability to express their natural behaviours". [2]
As of November 2020, 6 farms in Powys each house, or have consent for, over 200,000 birds. [3] In total Powys Council has approved 156 intensive poultry units (IPUs) in the last five years. [4] In what has been described as a planning frenzy, of these 156 applications, only one was rejected. [5] Seen as the poultry capital of Wales, intensive farming in Powys has increased by almost 100% since 2011.[6]

However, this issue is not just about Powys. Intensive poultry farms have also been approved in Carmarthenshire, Ceredigion, Conwy, Denbighshire, Gwynedd, Monmouthshire, Wrexham and even in Snowdonia National Park. [7] The negative impacts of intensive chicken farms are mostly cumulative and take effect far beyond farm boundaries or local areas. The responsibility to take action lies with the Welsh Government.

**Environmental impacts**
Intensive poultry farming is having a significant environmental impact in Wales. This includes pollution of water, air and land, impacts on biodiversity, habitats and ecosystems, and the generation of greenhouse gases contributing to climate change.

Compared to livestock manure at the same dry matter (i.e. 25%), poultry manure has almost double the nitrogen, three times the phosphate and double the sulphur and magnesium content.[8]

Water pollution: phosphate and nitrates
Nitrate pollution and phosphate pollution are two major sources of diffuse pollution affecting freshwaters in Wales. Poultry litter is a major source for both. [9] Due to its ecological importance, the River Wye is designated as a Special Area of Conservation (SAC). However, over 60% of the river and its catchments are failing to meet acceptable phosphate levels. [10] A large proportion of intensive chicken farms, producing an estimated 10 million birds, which have been approved by Powys County Council, are in the Wye catchment area, sometimes very close to watercourses. [11] Intensive poultry farms situated elsewhere around Wales will be having pollution impacts on other watercourses.

Excess nitrogen from agricultural sources is one of the main causes of water pollution. This is mostly caused by run-off from the application of fertiliser and manure, and the leaching into ground and surface water arising from the storage of manure. The high nitrogen content of poultry manure makes it especially polluting.

It is widely acknowledged that water pollution as a result of farming is a major problem in Wales. In January 2021, Lesley Griffiths, Minister for Environment, Energy and Rural Affairs, announced new agriculture

pollution regulations. These include a Wales-wide Nitrate Vulnerable Zone (NVZ). The Minister's statement acknowledges "the cumulative effect of diffuse pollution" on Welsh rivers, and the proposals attempt to address "the unacceptable pollution of watercourses" [12]

Ammonia

Agriculture is the dominant source of ammonia, accounting for 87% of UK emissions in 2018. Ammonia emissions from poultry continue to rise, and have increased every year since 2012. [13] We share the concerns expressed by Wales Environment Link that the current proliferation in the intensive poultry units are contributing to the continuing high levels of ammonia and phosphate emissions. [14] A proposal by Frochas Farm, Powys (recently rejected, but open to appeal) was for an industrial-scale poultry unit less than one mile from Welshpool High Street. The proposed unit would intensively farm one million chickens per year, emitting over 12 tonnes of ammonia. [15]

Environmental impacts of ammonia

Ammonia pollution takes effect through soil, air and water. Impacts on biodiversity occur through four main mechanisms: eutrophication, acidification, direct toxicity and indirect effects. [16] (p9) Mosses and lichens are particularly sensitive to ammonia pollution. [17] Ammonia causes increased pH levels in bark. High levels of ammonia have led to the complete disappearance of acid- preferring lichens in the Netherlands. [18]
According to a recent review study: “A major impact of ammonia pollution on biodiversity is the effect of nitrogen accumulation on species diversity and composition within affected habitats. Common, fast-growing species adapted to high nutrient availability thrive in a nitrogen-rich environment and out-compete species which are more sensitive, smaller or rarer.” [19] Ammonia emissions can also affect animal and insect species indirectly through wider changes to plant species composition, soil and water acidification, and cumulative toxicity. [20] Impacts can be felt in woodlands, grasslands and bogs, upon insect, bee and butterfly species, birds such as the red-backed shrike, and ecosystem complexity.[21]

Air pollution caused by ammonia

Ammonia is a deadly air pollutant. Research shows that at least 3,000 premature deaths a year could be prevented if ammonia emissions were halved [22], although researchers believe the true figure is even higher. Once airborne, ammonia combines with other compounds to form tiny PM2.5 air pollutant particles.[23] PM2.5 particles are invisible to the naked eye and small enough to pass through the lungs, into the bloodstream, and into your organs. Exposure to PM2.5 can cause illnesses like asthma, COPD, coronary heart disease, stroke, and lung cancer. There is also evidence that links PM2.5 to low birth weight, diabetes and diseases such as Alzheimer’s and Parkinson’s.[24] The UK Government’s Clean Air Strategy 2019 identifies ammonia as one of five of the most damaging air pollutants and has adopted legally binding targets to reduce ammonia levels by 2030.[25]

In addition to ammonia, poultry dust is another airborne pollutant that is harmful to human health. Poultry dust is composed of faeces, chicken debris, mites, bacteria, fungal spores and veterinary medicines. [26]
It is particularly concerning that the true levels of ammonia emissions are often not presented in planning proposals. Documents assessing ammonia outputs submitted by applicants have been found to routinely lack a comprehensive assessment of ammonia emissions, frequently failing to include the high levels of ammonia and other pollutants from the manure spreading that will inevitably be required to dispose of poultry manure from poultry units. Meteorological data is also required to accurately show airborne ammonia dispersion, but applications have reportedly failed to fully take this into account. In general, applicant modelling has been treated as fact, rather than assessed critically in the planning decision process. [27] This is a problem for the proper assessment of all environmental and health impacts, but it particularly concerning for ammonia, given its lethal nature.

Some approved intensive poultry units have been built next to schools, in villages or near hospitals and other vital community facilities. This has resulted in children, older people and the vulnerable being exposed to the harmful pollutants emitted by poultry farms on a daily basis.[28]

Climate impacts – greenhouse gas emissions

Intensive poultry production emits significant levels of greenhouse gases, especially when practised on the scale currently seen in Wales. A major greenhouse gas caused by poultry production is nitrous oxide. Considered over a 100-year period, nitrous oxide has 298 times more impact per unit weight than carbon dioxide, and there are increasing concerns over its climate threat effects. [29] Agriculture is the major source of UK nitrous oxide emissions. Nitrous oxide from poultry production comes from the large amounts of poultry manure produced and its storage and spreading. Climate emissions from intensive poultry production also come from poultry feed, methane, and the heating and lighting of units and transportation. Permitting continued expansion of intensive poultry units is fundamentally incompatible with the Welsh Government's responsibilities and objectives to address the climate crisis. This will undermine the ability of Wales to make the emission reductions required to reach net-zero under the Paris Agreement.

Under-assessment and under-regulation of poultry farms below 40,000 birds

The negative environmental, climate and health impacts of poultry units in Wales are very likely to be higher than official assessments. This is because poultry farms housing less than 40,000 birds are not required to have an environmental permit and meet the regulations stipulated for larger farms. They are not required, for example, to follow the regulations on managing ammonia emissions. We would like to see regulations extended to poultry units farming less than 40,000 birds. Taken together with the problem of under-assessment of impacts in planning proposals, we are concerned that the true impacts of poultry farms are under-assessed, and they are under-regulated.

Cumulative effects

As has been documented [30] there has been an historic failure of statutory bodies in Wales, including Natural Resources Wales and Public Health Wales, to assess the cumulative negative environmental and health impacts arising from the high density of intensive poultry units. The Welsh Government must, as a matter of urgency, undertake comprehensive assessments of the human health and environmental impacts of intensive poultry units, taking full account of cumulative effects and the locations and density of current intensive poultry units across Wales. Given these cumulative environmental, climate and health impacts, continuing to permit any additional intensive poultry units would be reckless.

Time to halt approval of large-scale intensive chicken farm units in Wales

In 2020 the Campaign for the Protection of Rural Wales (CPRW) and a network of leading Welsh environmental NGOs called on the Welsh Government, National Resources Wales and Powys County Council to introduce a moratorium on all new intensive poultry units in Powys.[31] In its 2021 Manifesto, Wales Environment Link highlighted the need for public authorities to "properly take into account the cumulative impact of intensive farming, including poultry units, which are having an increasing detrimental impact on water and air quality." [32]

Powys is clearly the centre of intensive poultry production and its associated pollution in Wales. Indeed, Powys has one of the highest densities of intensive poultry units in Europe.[33] However, a moratorium applying only to Powys would simply transfer the problem to other parts of Wales.

To address the environmental, climate and health threats posed by intensive poultry production, the Welsh Government needs to halt permission for any new intensive chicken farms across Wales.


1. BBC News, 16.07.2020. Environmental campaign calls for pause in Powys poultry farm approvals https://www.bbc.co.uk/news/uk-wales-53430926
2. Compassion In World Farming, Factory Farming Map. Map entry for Powys: 2,949,000 indoor-reared broiler chickens. https://www.ciwf.org.uk/factory-farm-map/#broiler/powys
3. Bleddfa Stud Farm, Cottage Farm, Dolau House, Domgay Hall, Dumbles Farm, Ystym Colwyn. https://www.brecon-and-radnor-cprw.wales/?page_id=44
4. Wales Environment Link, 2020. Environmental NGOs unite in call for a moratorium on intensive poultry units https://cprw.org.uk/cms-data/resources/A%20moratorium%20on%20intensive%20poultry%20units%20Final%20Sept%2020.docx.pdf
5. Ecotipus. CPRW Update: Powys County Council Poultry Planning Frenzy. http://ecotipus.co.uk/cprw-update-powys-county-council-poultry-planning-frenzy
6. Guardian, 07.04.2020. Life in the 'poultry capital' of Wales: enough is enough, say overwhelmed residents. https://www.theguardian.com/environment/2020/apr/07/life-in-the-poultry-capital-of-wales-enough-is-enough-say-overwhelmed-residents
7. Hereford Times,17.08.2020. Figures highlight extent of intensive poultry farms' growth. https://www.herefordtimes.com/news/18656628.figures-highlight-extent-poultry-farms-growth-powys/
8. Farming Connect/Cycwllt Ffermio, 2018. Poultry Manure Management [factsheet]. https://businesswales.gov.wales/farmingconnect/sites/farmingconnect/files/documents/cff_poultrymanureeng_1.pdf
9. Wales Environment Link, 2018. Restoring our Freshwaters: pollution from land management. p2. https://www.waleslink.org/sites/default/files/restoring_our_freshwaters_-_pollution_final_30_april.pdf
10. Natural Resources Wales, 17.12.20. NRW issues new advice to safeguard the River Wye Special Area of Conservation. https://naturalresources.wales/about-us/news-and-events/news/nrw-issues-new-advice-to-safeguard-the-river-wye-special-area-of-conservation

11. Wales Environment Link, 18.12.2020. Statement in response to Natural Resources Wales' new advice on the River Wye Special Area of Conservation (SAC) https://www.waleslink.org/sites/default/files/wel_statement_on_nrw_phosphate_in_river_wye_sac_final.pdf
12. Welsh Government, 27.01.2021. Written Statement: Control of Agricultural Pollution Regulations https://gov.wales/written-statement-control-agricultural-pollution-regulations
13. National Atmospheric Emissions Inventory. Pollution Information: Ammonia. https://naei.beis.gov.uk/overview/pollutants?pollutant_id=21
14. Wales Environment Link, 2018. op. cit.
15. Ecotipus, 2019. Open Letter: Intensive Poultry Units Pose Serious Public Health Risk http://ecotipus.co.uk/intensive-poultry-units-pose-serious-public-health-risk
16. Guthrie, S. et al., 2018. The impact of ammonia emissions from agriculture on biodiversity: An evidence synthesis. Royal Society and RAND Europe. Cambridge, UK. https://royalsociety.org/~/media/policy/projects/evidence-synthesis/Ammonia/Ammonia-report.pdf
17. Air Pollution Information System (APIS), Ammonia. http://www.apis.ac.uk/overview/pollutants/overview_nh3.htm
18. Air Pollution Information System (APIS), Impacts of air pollution on Lichens and Bryophytes (mosses and liverworts). http://www.apis.ac.uk/impacts-air-pollution-lichens-and-bryophytes-mosses-and-liverworts
19. Guthrie, 2018. op. cit. p7.
20. Guthrie, 2018. op. cit. p9.
21. Guthrie, 2018. op. cit. pp11-16.
22. Guardian, 13.06.2019. Dealing with ammonia is an urgent health problem – yet levels are still rising. https://www.theguardian.com/environment/2019/jun/13/ammonia-health-problem-rising-air-pollution;
23. Bureau of Investigative Journalism, 13.09.2019. Deadly gas: Cutting farm emissions in half could save 3,000 lives a year https://www.thebureauinvestigates.com/stories/2019-06-13/deadly-gas-ammonia-cutting-farm-emissions-could-save-3000-lives-a-year
24. British Lung Foundation. What is PM2.5? https://www.blf.org.uk/taskforce/data-tracker/air-quality/pm25
25. Defra, 2019. Clean Air Strategy 2019. https://www.gov.uk/government/publications/clean-air-strategy-2019/clean-air-strategy-2019-executive-summary
26. Ecotipus, 2019. op. cit.
27. Ecotipus, 2019. op. cit.
28. Ecotipus, 2019. op. cit.
29. Phys.org, 7.10.2020. Nitrous oxide emissions pose an increasing climate threat, study finds. https://phys.org/news/2020-10-nitrous-oxide-emissions-pose-climate.html
30. Ecotipus, 2019. op. cit.
31. Wales Environment Link, 2020. op. cit.
32. Wales Environment Link, 2021. Manifesto: May 2021. p4. https://www.waleslink.org/sites/default/files/manifesto_english_full_version.pdf
33. Ecotipus, 2019. op. cit.