

May 2018

Northern Ireland's Dirty Secret

Northern Ireland is facing a crisis.

The impacts are degraded ecosystems, polluted air, soils and water, in addition to a major risk to human health. The source of this crisis is what scientists call the nitrogen cascade. We are drowning in slurry and other pollution. The recent expansion of factory farms has made a bad situation a lot worse.

Responsibility for the recent crisis lies with the Going for Growth agri-business strategy. The Going for Growth target to increase the breeding sow herd is equivalent to setting a target to spread the untreated sewage from an additional 12 million adult people per year. The civil servants failed to carry out a Strategic Environmental Assessment when these risks could have been predicted. The interests of facilitating mega corporations such as Moy Park was deemed by our political culture to be more important than the rule of law or protecting the land, air and water on which we depend.



The planning system has failed to deal with the complexity and the volume of applications for factory farms. Furthermore, the problem with nitrates is not an isolated issue, but should be seen in the context of wider regulatory failures in Northern Ireland's environmental governance, especially the lack of an independent regulator. The general regulatory failure is compounded by the Memorandum of Understanding between the regulator and the Ulster Farmers' Union, which is emerging into a de facto licence to self regulate.

A responsible state when presented with the evidence and clear legal principles would at the very least declare an immediate moratorium to any new intensive factory farms.

The problem with ammonia

Pollution from ammonia (NH₃) has become a major problem in Northern Ireland.

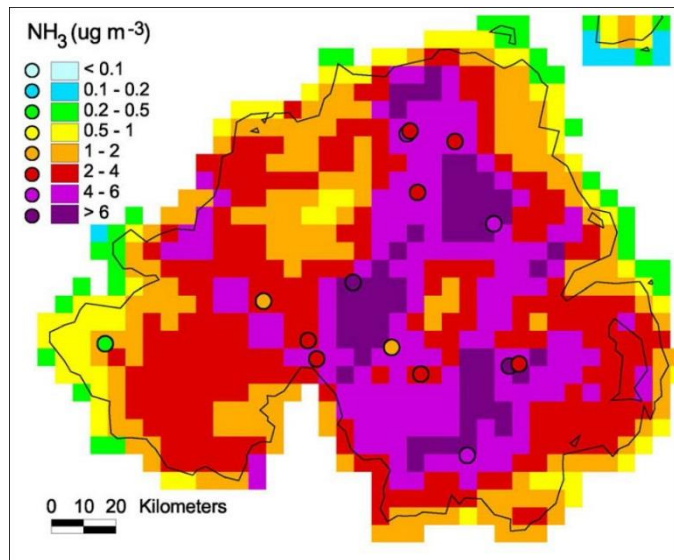
Critical levels of ammonia, at which ecological damage occurs, have been exceeded at the majority of Northern Ireland's protected Habitats:

- 98% of Special Areas of Conservation
- 90% of protected Habitats
- 83% of Special Protection Areas

In 2015, 47% of rivers across Northern Ireland did not achieve good water quality status, indicating the rivers are eutrophic (nutrient enrichment). Furthermore, 34% failed water quality standards under the Water Framework Directive for phosphates, indicative of nutrient enrichment.

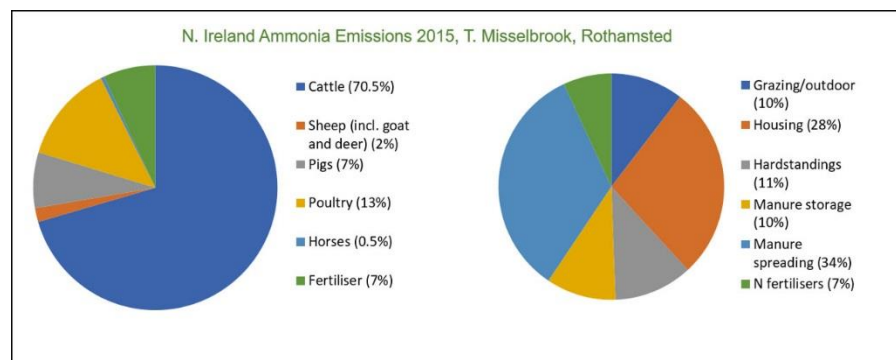
In 2015, 77% of lakes in Northern Ireland did not achieve good water quality status, and 19% were hyper-eutrophic. In addition, 57% of lakes failed water quality standards for phosphates under the Water Framework Directive.

Since 2005, 85% of Northern Ireland's total land drainage catchments have been designated as sensitive to eutrophication under the Urban Waste Water Treatment Directive, and the whole country was declared a Nitrates Vulnerable Zone under the Nitrates Directive.



The source of the problem

Ammonia is a product of many natural and industrial processes. In 2015, 91% of Ammonia emissions in Northern Ireland were from agriculture. Agricultural sources include animal manures, as well as chemical fertilisers.



Emissions trends

Ammonia emissions from agriculture in Northern Ireland have increased by 9% since 2010.

Northern Ireland's ammonia emissions accounted for 12% of the total UK ammonia emissions. Given that it has just 3% of the UK population and only 6% of the UK land area, Northern Ireland's emissions are disproportionately high.

The 2017 Agriculture Census for Northern Ireland shows that animal numbers have increased since 2010:

- Breeding sows increased by 24% to 47,900;
- Broiler chickens up by 41% to 16.8 million;
- Laying hens up by 89% to 3.9 million; and
- Cattle up by 4% to 1.7 million.

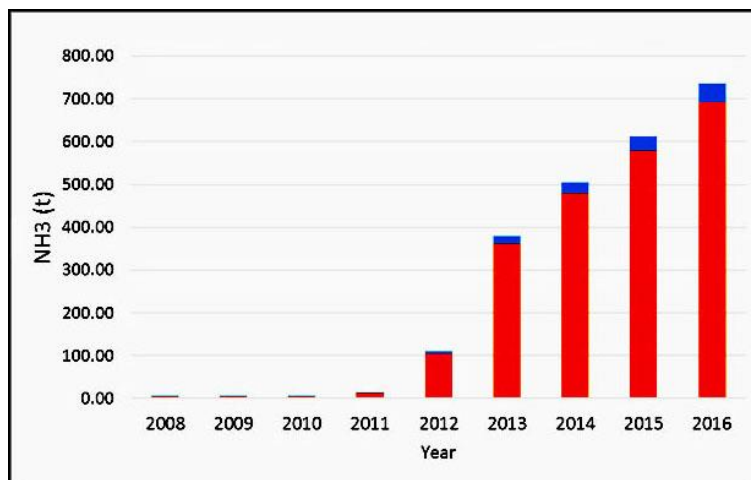
Based on the 2017 census, the total tonnage of animal waste is estimated to be over 33 million tonnes per year with 89% from cattle, 3% from pigs and 1.8% from poultry.

The nitrogen content of the 33 million tonnes of animal waste is estimated at 111,372 tonnes with 68% from cattle, 3.4% from pigs and 15% from poultry.

Since the 2010 Agriculture Census, the total nitrogen from animal waste has increased by 10,937 tonnes with 51% of the increase from poultry, 24% from pigs and 10.2% from cattle.

Ammonia emissions from Anaerobic Digestion

Ofgem have certified 57 Anaerobic Digestion (AD) plants in Northern Ireland with the majority operating just under 500kW at 485kW. Planning approval has been given for 179 AD plants. These AD plants typically can process up to 15,000 tonnes of animal waste per year. However, to produce methane gas to generate electricity, 15,000 Tonnes of grass or maize silage is mixed with the animal waste in the digester. Therefore, these 57 AD plants process over 1.7 million tonnes of feedstock per year and take 21,635 hectares of farmland out of food production.



The ammonia emissions from the storage of the feedstock, the anaerobic digestion process, the storage of the digestate, and the land spreading of the digestate are estimated at 1.4 million kilos of ammonia per year. As the ammonia emissions from animal waste have already been accounted for, the net additional ammonia emissions from AD is estimated at 696,740kg NH₃. This may not seem like much, but it takes very little ammonia to damage these fragile protected sites.

Regulation of ammonia emissions

Northern Ireland is breaching key national, European, and international regulatory obligations.

1. The National Emissions Ceiling Directive (2016) requires the UK to have a National Air Pollution Action Plan in place by 2019.
2. The UK is a signatory of the UN Gothenburg Protocol which set an ammonia reduction target of 8% for the UK by 2020 compared to 2005 levels and 16% by 2030 (UN Convention on Long-range Transboundary Air Pollution).
3. The Northern Ireland Environment Agency under the Pollution Prevention and Control (Industrial Emissions) Regulations require intensive pig and poultry farms over specified thresholds to apply for a permit (poultry: 40,000 bird places; pigs: 750 sows or 2,000 production pigs over 30kgs). The majority of pig and poultry units in Northern Ireland operate below the thresholds and are therefore not subject to an Ammonia Assessment. Cattle farms do not require a permit even though they are responsible for 70% of

ammonia emissions in Northern Ireland. They do have an obligation however to carry out cumulative assessments.

4. The NIEA under the Waste and Contaminated Land (NI) Order require Anaerobic Digestion plants to apply for a Waste Management License. However, an NIEA AD Quality Protocol exempts AD plants from requiring a WML so long as no controlled waste is being processed. Therefore, an Ammonia Assessment is not undertaken.
5. The Habitats Directive requires every public body to consider the implications of proposals on European designated sites and the cumulative, or in combination, impact on the sites with other plans and projects. The majority of intensive farming and AD plant planning approvals were exempted from a full Habitats Assessment and an Ammonia Assessment.
6. Environmental Impact Assessments are inevitably flawed because cumulative assessments are rarely carried out and baselines constantly shifting with many unassessed developments.
7. Cattle are not regulated under the IPPC permit scheme, even though 70% of manure comes from cattle. Increasing pig and poultry numbers are exacerbating a problem largely caused by an under-regulated cattle sector.

Regulation of farm pollution is inconsistent, laissez-faire, and subservient to the desires of powerful lobby groups that work for international agri-business. It is also economically and ecologically illiterate - soy grown in Brazil destroys rainforest to feed pigs and poultry in Northern Ireland that are then exported as far away as China. We get to keep the slurry and the pollution.

From Dirty Secret to Fresh Start

We are failing to assess adequately agricultural pollution. Cumulative assessments don't seem to be carried out, and no strategic assessment of Going for Growth was ever conducted.

What all this really means is that we have reached saturation point with effluent, slurry, and chronic air pollution. Politics and big business have colluded in a strategy of irresponsible self-harm. This is not just poisoning our own country but is adversely affecting our neighbours with pollution.

Given the scale and complexity of the ammonia problem, a **moratorium** on intensive livestock units is urgently needed. Such a moratorium would give breathing space to allow an independent scientific review and baseline survey to establish the scale of the problem, and the mitigation needed to deal with the crisis. Moreover it is irresponsible to further overload the critical thresholds at which damage occurs.

We also call on the European Commission to no longer reward this environmental crisis by granting yet another **derogation** to the Nitrates Directive.