

The Northern Ireland Freshwater Taskforce (FWTF) represents a range of organisations working together to ensure that Northern Ireland preserves and improves freshwater eco-systems by encouraging Government and wider society to adopt a sustainable and integrated approach to water management. Members of the FWTF include: Northern Ireland Environment Link, RSPB, Ulster Wildlife, the National Trust, Wildfowl and Wetlands Trust, Friends of the Earth, Ulster Angling Federation and The River Trusts.

In response to the consultation document the FWTF would like to make the following introductory comments:

- Agriculture remains the main contributor to water quality problems through nutrient enrichment, resulting in eutrophication causing accelerated growth of algae, excessive plant growth and damage to water quality;
- Nitrate levels in local rivers and lakes are generally low and excess phosphorous is the main cause of nutrient enrichment;
- 40 % of river water bodies across NI are considered to be of high or good trophic status. Phosphorus levels in the majority of river monitoring sites are at levels which indicate a risk of eutrophication;
- To date, we have been disappointed at the slow progress made in improving the health and use of our water environment. NI's rivers, lakes, wetlands and coasts are some of the best-loved parts of our country, and waterbodies often sit at the heart of the local community. Yet only 28% of our waterbodies are at good ecological status, much less than the European average of 40%;
- Nitrate pollution has well-documented risks to the health of future generations; the European Environment Agency costs this risk to the UK at €2.6bn annually;<sup>1</sup>
- While the Nitrates Directive aims to improve the use of nutrients on farms and so improve water quality, the FWTF believes that the NAP alone will not resolve the issue of our poor water quality;
- The FWTF are keen to support a programme of measures that seeks to minimise the financial burden imposed on farmers whilst securing good water quality and delivering biodiversity objectives;
- In our 2012 publication entitled [From Source to Sea – 10 Steps the Sustainable Water Use in Northern Ireland](#), we outline how our water environment can be improved by

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<sup>1</sup> European Environment Agency (2013) Late lessons from early warnings: science, precaution, innovation. EEA Report No 1/2013.

supporting farmers to prevent pollution and restore rivers and wetlands through advice, training and payments.

## **Additional Comments**

### **The Need for Synergy**

A report prepared for the European Commission (IEEP June 2012) stated that when examining the WFD, the Groundwater Directive; the UWWTD, the Nitrates Directive and the Floods Directive, overall: “Policies across the agriculture, water, energy and environment spheres are formulated without sufficient consideration of their interrelationship in any comprehensive manner, or their unintended consequences”. We support the conclusions of the Report that greater efforts are therefore required to ensure better coordination if we are to see improved water quality. We recommend therefore that the inter-departmental working group ensure greater synergy between departments and their responsibilities in order to deliver an effective sustainable water policy.

### **Environmental Damage**

As far as pressures on habitats and species are concerned, the FWTF believes that there are key messages that need to be addressed within the current revision of the NAP from the recent Article 17 Report on the Habitats Directive<sup>2</sup> across the UK, namely:

- Habitats and species are still being lost, primarily through agricultural intensification on the one hand, and abandonment on the other;
- Water pollution (eutrophication) is still a major factor in freshwater systems;
- Aerial deposition of Nitrogen is predicted to be a major factor in the future, with critical thresholds exceeded for many habitats across NI (one of the major sources in NI is from intensive livestock farming);
- Invasive species are a major problem in achieving the favourable condition of our protected sites, in Northern Ireland invasive species are now the leading cause for the unfavourable condition of our protected sites.

### **Nitrogen/ Ammonia Deposition**

According to a recent report for the European Parliament<sup>3</sup> the principal threats to air quality arising from agriculture are ammonia emissions, as well as methane and nitrous oxide emissions. Ammonia emissions arise primarily as a result of volatilisation from livestock excretions, from livestock housing, manure or slurry storage, excretions in grazed pastures or after manure spreading on land. Ammonia contributes to acidic deposition on soils and aquatic ecosystems, with detrimental impacts on plants, freshwater diversity, buildings and human health. Atmospheric nitrogen deposition continues to be a significant problem, with over 40 per

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<sup>2</sup> The condition of Northern Ireland's Areas of Special Scientific Interest: the Results of the First Condition Assessment Monitoring Cycle 2002-2008. A report by the Northern Ireland Environment Agency (2008), Research and Development Series No. 08/10

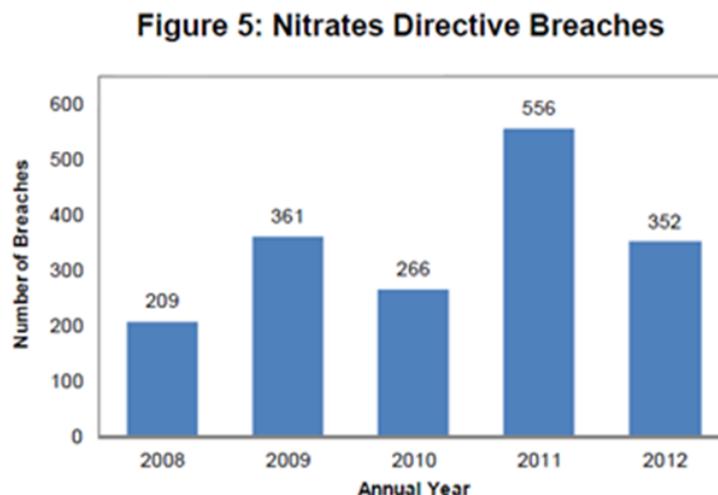
<sup>3</sup> What Tools For The European Agricultural Policy To Encourage The Provision Of Public Goods? (2011)

cent of terrestrial and freshwater ecosystems currently subject to atmospheric nitrogen deposition beyond their critical loads (European Environment Agency, 2010<sup>4</sup>). The EEA believe that further reductions are needed to avoid the harmful acidic deposition and eutrophication that continue to be problematic across the EU. Given the findings of these European reports as well as the conclusions of the Northern Ireland Article 17 Report that ammonia and ammonia deposition is having a significant negative impact upon our habitats, we welcome measures to address nitrogen and ammonia deposition within the revised regulations including:

- Raising industry awareness of the issue of ammonia emissions and abatement measures;
- Use of low emission spreading equipment should continue to be promoted by DARD through the Manure Efficiency Technology Scheme (METS) and consideration being given to targeting of support in areas around designated sites sensitive to ammonia;
- Promotion of retro fitting covers on existing outdoor manure storage;
- Any slurry storage tank constructed, substantially enlarged or substantially reconstructed after 31st December 2016, which is not contained within or underneath a roofed building, shall be covered in a manner which minimises emissions of odour and ammonia.

### Nitrates Directive Compliance and Climate Change

Figure 5 of the DOE Compliance And Enforcement Statistics 2012/13 Annual Report (see below) states that breaches of the Nitrate Directive peaked at 556 in 2011, due to a particular combination of weather events that year, but have since fallen by over a third (37%) to 352 in 2012. We believe however that the weather in 2011 cannot be regarded merely as a one-off event.



Given the Met Office's climate change scenarios projecting that in Northern Ireland we will experience higher temperatures in summer and winter, increased winter rainfall, a decrease in summer rainfall and more heavy rainfall days (i.e. >25 mm/day), we believe that the increasing

<sup>4</sup> The European Environment – State and Outlook 2010: Synthesis (EEA 2010)

risk posed by climate change has been underplayed within the document. Potential water quality implications include:

- Higher rainfall/ more intense episodes may increase loads of diffuse pollutants from urban and rural areas;
- Periods of lower summer flow - some discharges may no longer be adequately diluted;
- Enhanced algal and plant growth due to increased temperature and increased nutrient run-off will exacerbate effects of eutrophication.

### **Field Storage of Poultry Litter**

In our response to the previous NAP consultation (August 2010) the FWTF supported the proposal to end the practice of field storage of poultry litter. We shared the Commission's concern that the storage of poultry litter in fields provides a concentrated source of nutrients which are prone to leaching and thus present a significant risk to water quality. We are concerned however that the agriculture industry has not yet progressed a solution for poultry litter. The proposal to cover field litter with a plastic membrane is not always practicable or suitable. The continued failure to develop a solution to the problem of poultry litter is therefore likely to result in significant fines from the European Union to the Northern Ireland Executive (which would ultimately come from the public purse) as well as heavy environmental price through damage caused to local water quality from enriched phosphorous status of local soils.

### **Going For Growth Strategy and the NAP**

The FWTF have previously raised environmental concerns regarding the Northern Ireland Agri-food Industry's plans to grow the value of the sector from £5bn to £7bn by 2020. We too share the European Commission's concerns about possible environmental impacts of expansion in some agricultural sectors, particularly in relation to manure management, nutrient loading on farms and protection of the improvements in water quality. We note for example the industry's request that *financing and planning permission are needed for construction of around 350 poultry houses over an 18 month period to assist the sector meet market growth and the targets in the Strategic Action Plan*. We are disappointed therefore that in response to these concerns the Departments will only include a 'reference to the Going for Growth Strategy within the new NAP' and state that, *'if potential environmental impacts from the Going for Growth strategy are identified which would lead to consequences for the implementation of NAP, or threats to improvements in water quality, amendments to the 2015-2018 NAP may be required, in order to mitigate against such impacts'*. We believe that these measures should be identified, consulted upon and considered for inclusion within the new NAP as soon as possible in order that they can be fully operational from 2015 and that prevention of further decline in water quality is paramount rather than the reactive approach suggested.

The FWTF would welcome further clarification around what is meant by the term 'basic level of protection' within the 'Purpose of Regulations' (P39 of the consultation document) where it states: *These Regulations give effect to a Nitrates Action Programme for Northern Ireland, in*

*accordance with Article 5 of Council Directive 91/676/EEC(10) of 12 December 1991 concerning the protection of waters against pollution caused by nitrates from agricultural sources. The measures in these regulations provide a basic level of protection against possible adverse impacts to waters arising from the proposed agricultural expansion under the “Going for Growth” plan. We would like to know the rationale behind the Departments opinion that this level of protection is adequate.*

### **Training and Advice**

We believe that DARD should utilise the expertise within NIEA and environmental NGOs to design and deliver training in relation to managing farm nutrients. Central to this would be the eNGOs’ ability to enthuse and inspire farmers and landowners. In doing so DARD could ensure that all farmers fully understand what is required to achieve better compliance with the Nitrates Directive. We believe that training on the requirements of the Directive should be made available to all SFP recipients as well to all new entrants to the agricultural industry. In doing so we can ensure better environmental outcomes are achieved for the investment of public money. The FWTF notes the inclusion of funding for the provision of training within the proposed 2015-2020 rural development programme (RDP). It is imperative that this training is targeted to the right places where the need is most. DARD, NIEA and the NGO community must work together in prioritising areas in most need. Some of these areas could be in pollution hotspots, which would be a proactive way of addressing the problem.

### **CAP Reform and Water Quality**

The FWTF notes the publication of a recent report published by the European Court of Auditors (ECA) in May 2014<sup>5</sup> which reveals that the EU has been only partially successful in integrating water policy goals into CAP. The audit highlighted weaknesses in the two instruments currently used to integrate water concerns into the CAP (namely cross-compliance and rural development) and pointed out delays and weaknesses in the implementation of the Water Framework Directive. While there has been progress, the Commission and Member States need to better integrate water policy concerns with the common agricultural policy to ensure long-term sustainable water use. The EU auditors found that cross-compliance and rural development funding have thus far had a positive impact in supporting the policy objectives to improve water quantity and quality, ‘but these instruments are limited, relative to the policy ambitions set for the CAP, and the even more ambitious goals set by the CAP regulations for the 2014-2020 period’. The Report concludes that *‘these instruments have the potential to contribute to sustainable agriculture by encouraging good farming practices, promoting compliance of farming activities with environmental legislation, such as the Nitrates Directive, and providing incentives for environmentally beneficial public goods and services’*. The FWTF believe that it is imperative that these concerns over water quality are addressed now through the design of the new NAP regulations, new Cross-Compliance requirements for Northern Ireland and the provision of adequate rural development funding under Pillar 2 of the CAP. It is

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<sup>5</sup> Special Report 2014 No.4: Integration of EU water policy objectives with the CAP: a partial success

imperative that such funds are targeted to ensure funding is directed to where the need is greatest.

### **Buffer strips**

It is clear that current measures are failing to protect watercourses, as only 28% of NIs water bodies are achieving Water Framework Directive compliance. NIEA statistics show that the majority of water bodies failing are because of diffuse pollution from agriculture. Although agriculture is contributing in part to the problem, it can also be the solution. Within the current GAEC 19 in England, farmers are strongly encouraged to implement 6m buffer strips next to vulnerable water courses. This is in line with evidence that 2m buffer strips are not sufficient to intercept pollutants<sup>6</sup>. Buffer strips can contribute to other ecosystem services, many of which benefit the farmer directly, including carbon sequestration, soil formation and natural pest control. We believe therefore that consideration should be given to increasing the buffer strip to beyond the current proposed two metre threshold. We therefore believe that consideration should be given to increasing the width of buffer strips in line with the best available evidence. The FWTF also believes there is justification to include buffer strips as eligible under Single Farm Payment (SFP) regulations. At present, many farmers neglect to implement adequate buffer strips as they are afraid of the SFP being removed. This, we believe, is a disincentive for effective environmental resource protection. We would ask DARD in particular to investigate this option with the European Commission.

### **Improved land management**

Land management has lagged behind other sectors in reducing its pollution of watercourses. This must be addressed urgently, using the most effective and fair measures available. We believe this requires a careful combination of incentives and regulation, as the current approach has reached the limits of what it can do. There are dozens of designated wetlands and hundreds of water bodies being damaged by ongoing diffuse pollution that incentives have not managed to staunch. Being able to back these incentives and funding with a requirement to change polluting practices would allow statutory bodies to achieve much more. The FWTF notes the Catchment Sensitive Farming programme in other parts of the UK and would recommend a similar approach, starting with a pilot project, in NI. The Derg would be well placed to take forward this project as work there is already underway. This will allow the consistent and targeted use of specific measures, including changes to land management, enhanced use of precision application technology and well-placed treatment wetlands. The future agri-environment and land management programme must have WFD measures included, which will be funded appropriately, target to the right places and provide land managers with regular advisory/training support.

### **Wetland treatment systems**

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<sup>6</sup> See for example Rasmussen, J.J. et al. (2011). Buffer strip width and agricultural pesticide contamination in Danish lowland streams: Implications for stream and riparian management. *Ecological Engineering* 37: 1990-1997

There is evidence that wetland treatment systems can be used to significantly reduce a number of chemicals<sup>7, 8</sup>, nitrates<sup>9</sup>, phosphates and fine sediment<sup>10</sup>, and faecal pollutants<sup>11</sup> from entering water bodies. If well designed, there are also tangible benefits to biodiversity and assistance in delivering associated government targets (e.g. Biodiversity 2020). In addition there are other associated benefits such as amenity, education, well-being and recreational value. We strongly support the use of well-placed and maintained wetlands to improve water quality and provide connecting habitat for damaged waterbodies.

### **Integrated Constructed Wetlands**

The FWTF believe that DARD and DOE should facilitate the development of local integrated constructed wetlands projects at a catchment level in order to test their capacity to address many of the issues raised in this consultation. Benefits of ICWs include their capacity to:

- Treat and greatly improve the effluent quality of a wide range of point and diffuse sources of polluted water, through the removal of nutrients and other contaminants such as heavy metals, pathogens and harmful organic compounds, thus meeting both regulatory and ecological requirements;
- Impede water flow during high rainfall events, thereby reducing the potential impacts of flooding whilst also providing storage of water for use;
- Facilitate de-watering, composting (fungal and bacterial) and re-use of accumulated detritus and organic matter;
- Reuse intercepted water from different sources and at selected stages in the ICW treatment-train (whether; municipal, industrial or agricultural, etc.);
- Support biodiversity through the reanimation of habitat-infrastructure;
- Interface and facilitate other land uses; agricultural, forestry and fishing enterprises;
- Sustain long-term in situ sequestration of carbon-C, phosphorus-P and nitrogen-N;
- Advance education, amenity and recreation use.

The FWTF believes therefore that it is important that we investigate how this relatively low cost, low maintenance, yet environmentally friendly technology could help improve our local water quality and the objectives of the Nitrated Directive.

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<sup>7</sup> Di Luca, G. A., Maine, M. A., Mufarrege, M. M., Hadad, H. R., Sánchez, G. C., & Bonetto, C. A. (2011). Metal retention and distribution in the sediment of a constructed wetland for industrial wastewater treatment. *Ecological Engineering*, 37(9), 1267-1275.

<sup>8</sup> Gregoire, C., et al. (2009). Mitigation of Agricultural Nonpoint-Source Pesticide Pollution in Artificial Wetland Ecosystems—A Review. *Climate Change, Intercropping, Pest Control and Beneficial Microorganisms*, 293-338.

<sup>9</sup> Dunne, E. J., Culleton, N., O'Donovan, G., Harrington, R., & Olsen, A. E. (2005). An integrated constructed wetland to treat contaminants and nutrients from dairy farmyard dirty water. *Ecological Engineering*, 24(3), 219-232.

<sup>10</sup> Dunne, E. J., Culleton, N., O'Donovan, G., Harrington, R., & Olsen, A. E. (2005). An integrated constructed wetland to treat contaminants and nutrients from dairy farmyard dirty water. *Ecological Engineering*, 24(3), 219-232.

<sup>11</sup> Tanner, C. C., Clayton, J. S., & Upsdell, M. P. (1995). Effect of loading rate and planting on treatment of dairy farm wastewaters in constructed wetlands—I. Removal of oxygen demand, suspended solids and faecal coliforms. *Water Research*, 29(1), 17-26.

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