

# Agriculture and the Environment



**Dr. Matt Crowe**  
**EPA**

- State of our environment report – overview and key messages
- Main findings about agriculture and the environment
- Key water and climate change issues in Ireland for agriculture
- Reimagining rural Ireland in a low carbon future

# SOE Report 2016 - What's covered?



## Chapter 1 Introduction



## Chapter 2 Air



## Chapter 3 Climate



## Chapter 4 Nature



## Chapter 5 Inland and Marine Waters



## Chapter 6 Waste



## Chapter 7 Land and Soil



## Chapter 9 Environment and the Economy: Overview



## Chapter 8 Environment, Health and Wellbeing



## Chapter 10 Environment and Transport



## Chapter 11 Environment and Energy



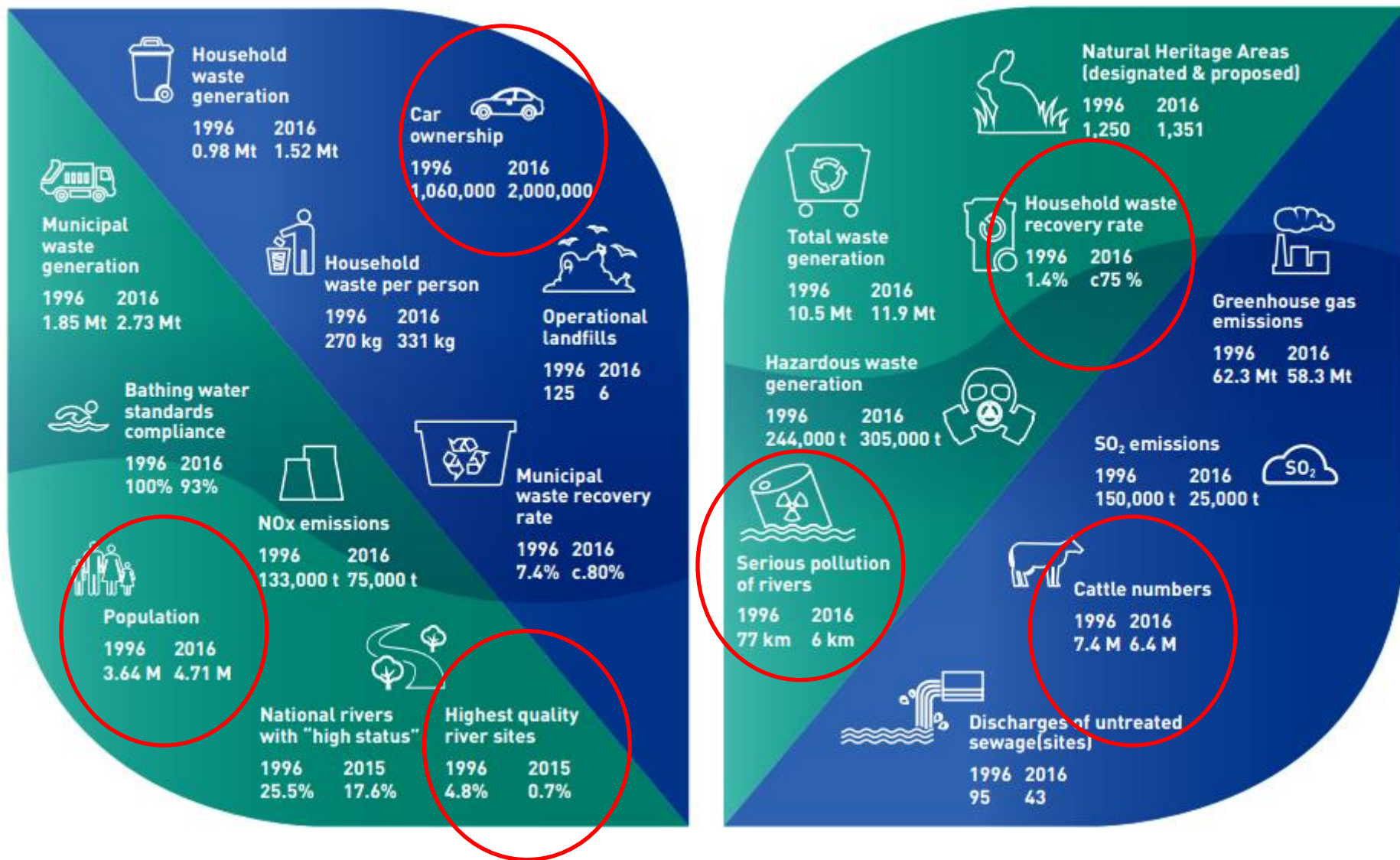
## Chapter 12 Environment and Agriculture



## Chapter 13 Environmental Challenges and Emerging Issues for Ireland



# Setting the scene - 20 years of SOE 1996-2016



- Climate change the defining environmental issue of our times
- Ireland's environment generally "good" - but serious underlying signals of concern
  - While the worst of the worst rivers have improved, we have lost the best of the best
  - Localised problems such as poor air quality and water pollution masked by national figures
  - Species such as the corncrake and curlew almost extinct in Ireland
- A good quality environment supports our health and well-being
- Environmental protection legislation keeps us safer and healthier and needs to be implemented

## SYSTEMIC MESSAGES



### *Environment and Health & Wellbeing*

Recognition of the benefits of a good quality environment to health and wellbeing.



### *Climate Change*

Accelerate mitigation actions to reduce greenhouse gas emissions and implement adaptation measures to increase our resilience in dealing with adverse climate impacts.



### *Implementation of Legislation*

Improve the tracking of plans and policies and the implementation and enforcement of environmental legislation to protect the environment.

## TOPIC MESSAGES



### *Restore & Protect Water Quality*

Implement measures that achieve ongoing improvements in the environmental status of water bodies from source to the sea.



### *Nature & Wild Places*

Protect pristine and wild places that act as biodiversity hubs, contribute to health and wellbeing and provide sustainable tourism opportunities.



### *Sustainable Economic Activities*

Integrate resource efficiency and environmental sustainability ideas and performance accounting across all economic sectors.



### *Community Engagement*

Inform, engage and support communities in the protection and improvement of the environment.

**AGRICULTURE HAS A ROLE TO PLAY IN ALL OF THESE**

# Agriculture - Context Messages



## **Value of agriculture in Ireland**

Agriculture in Ireland is economically, socially and culturally important.

## **The Context of Irish Farming**

Irish farming practice is shaped by its biophysical and climate context.

## **Structure of Irish Farming**

140,000 farms of varying size manage 67% of all land in the country

## **Food Wise 2025**

This strategy for development and sustainable intensification in primary production and value added processing is a significant challenge for the sector as it has to be achieved without damaging the environment upon which it depends

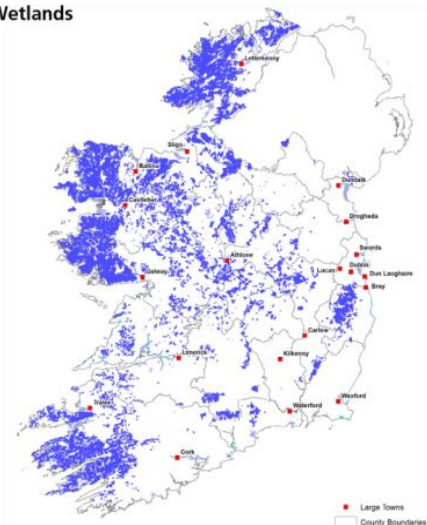


# SOE Reporting - Land

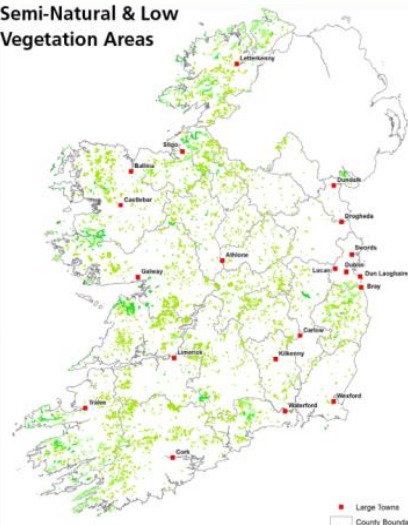


Figure 7.2. CORINE Landcover Maps (Source: EPA GIS stock)

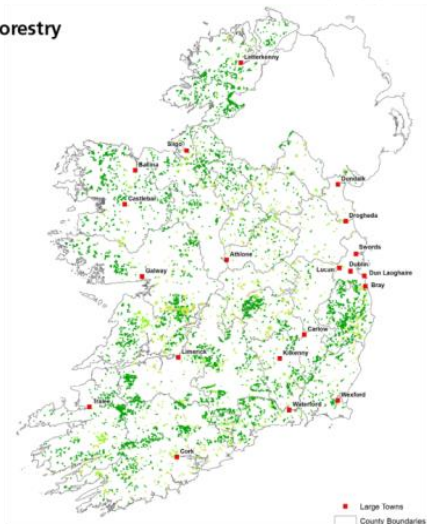
## Wetlands



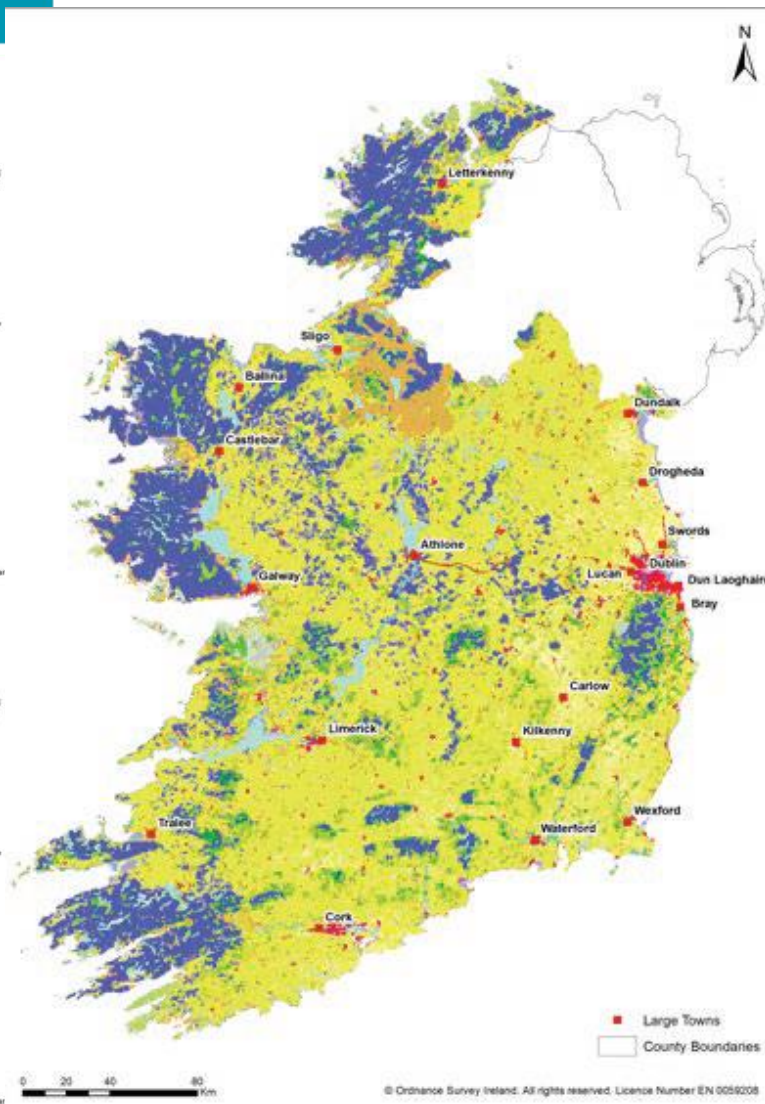
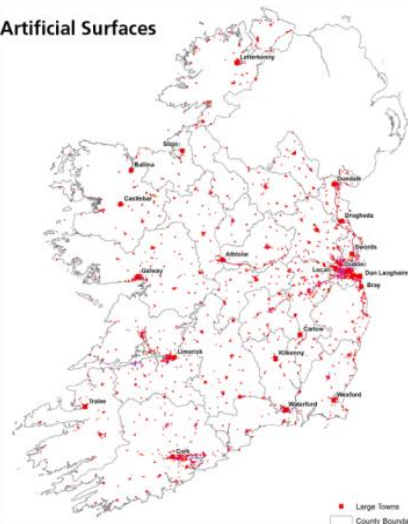
## Semi-Natural & Low Vegetation Areas



## Forestry



## Artificial Surfaces





# We all have our own story



http://www.hommestylor.com/how-to-wear-wellington-boots-mens-fashion-blog/

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MENS FASHION GROOMING EVENTS ABOUT CONTACT

## Boots

BY ARTHUR CHAN

- MENS FASHION & STYLE, MENSWEAR BASICS, SHOES • SHARE

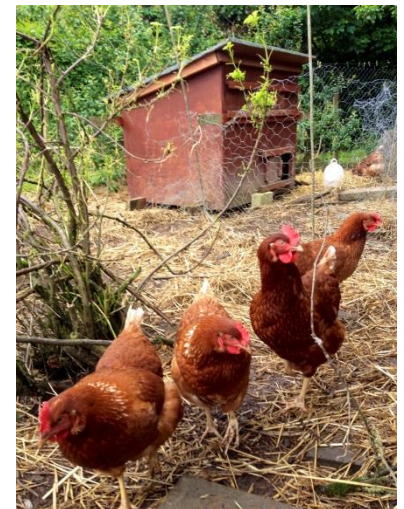
A photograph of a person's legs from the knees down, wearing green Wellington boots. The person is standing on a light-colored surface, possibly a beach or a path, with a blurred background of water and trees. The boots are dark green with a lighter green stripe on the side. The person is wearing dark shorts or trousers.

http://www.hommestylor.com/how-to-wear-wellington-boots-mens-fashion-blog/

Men's Fashio... Local Disk (C:) NOTES 2017.... Inbox - m.cro... SOER Present... Water JPI - M... Presentatio... Microsoft Exc...

17:39 06/02/2017

# Wexford – 20 years a growing





# Agriculture - Current Trends and Pressures



**Agriculture places a series of pressures on the natural environment.**

## **Greenhouse Gases and Agriculture**

In Ireland, agriculture accounts for 32% of all greenhouse gas emissions to air.

## **Ammonia and Other Emissions to Air and Agriculture**

In Ireland agriculture accounts for nearly all ammonia emissions to air.

## **Biodiversity and Agriculture**

Changes in agricultural practice remain one of the threats to both habitats and species and the trend in biodiversity loss in protected areas has not been halted.

## **Water Quality and Agriculture**

Loss of nutrients to waters from agriculture is a significant pressure on water quality in Ireland.

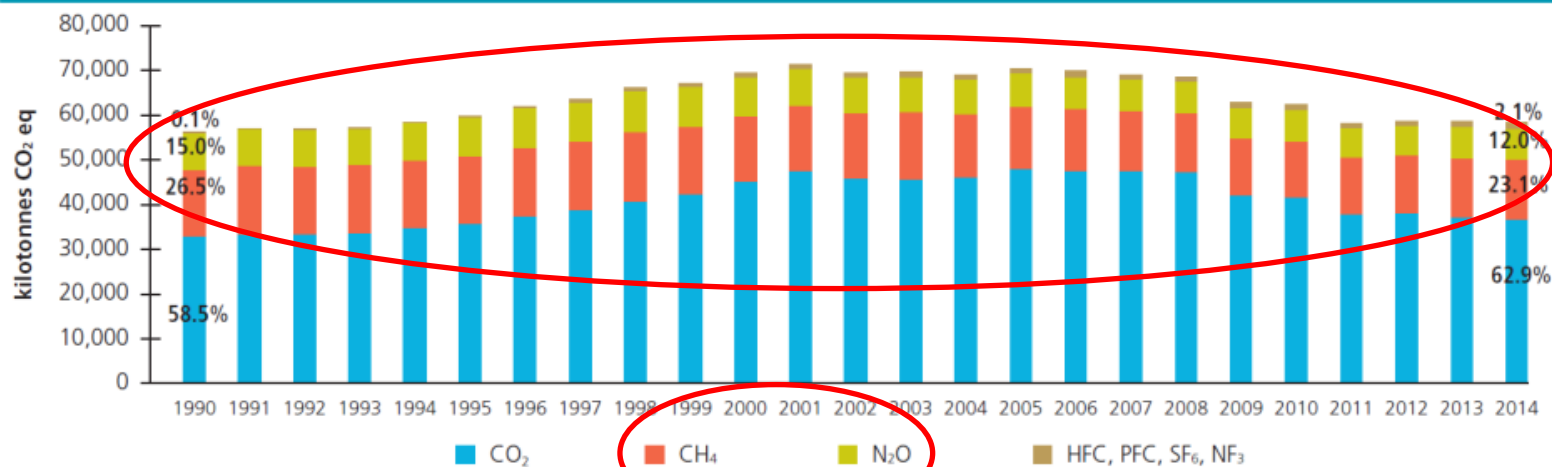
## **Drinking Water and Agriculture**

Protecting drinking water sources from diffuse pollution by *Cryptosporidium* and the pesticide MCPA are key issues for drinking water quality.

# SOE Reporting - Climate



Figure 3.4 Greenhouse Gas Emissions by Gas 1990-2014 (Source: EPA, 2016a)



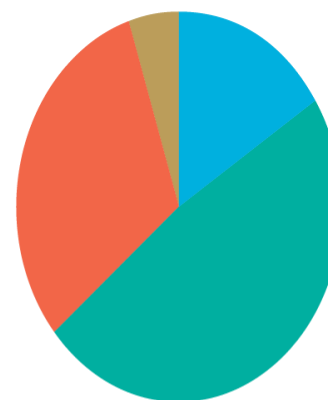
**Figure 4.2** Overall Assessment Results for the Status and Trends in Habitats Protected Under the EU Habitats Directive in Ireland 2007-2013 (Source: NPWS)

## Status



■ Favourable **9%**  
■ Inadequate **50%**  
■ Bad **41%**

## Trends



■ Improving **16%**  
■ Stable **48%**  
■ Declining **31%**  
■ Unknown **5%**

LAND USE PRACTICES CAN HAVE A MAJOR IMPACT ON NATURE

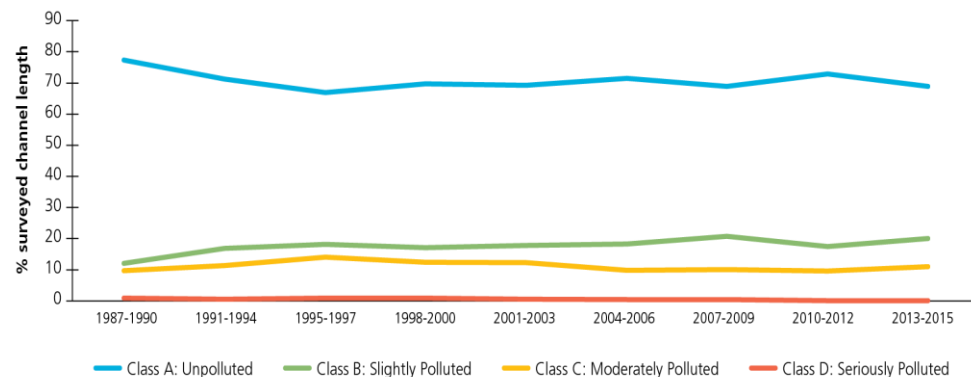
WE RISK BITING OFF THE HAND THAT FEEDS US



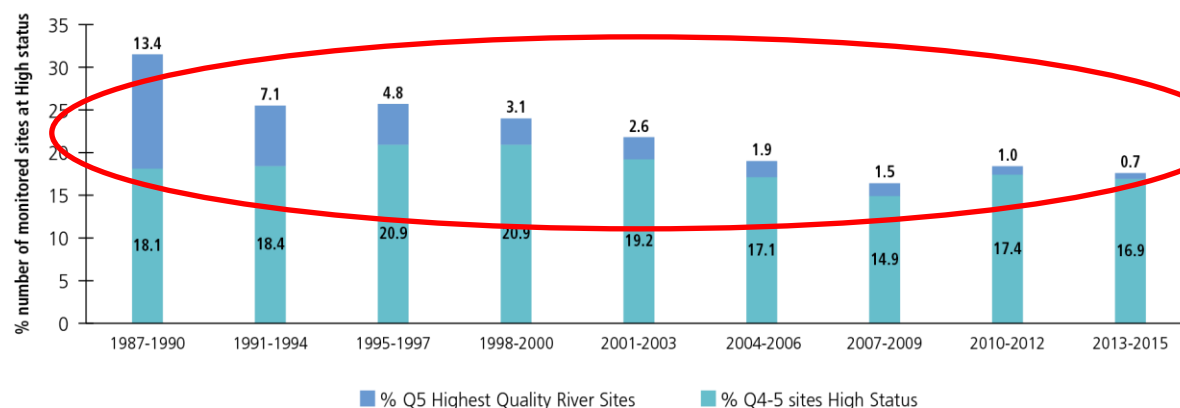
# SOE Reporting - Water



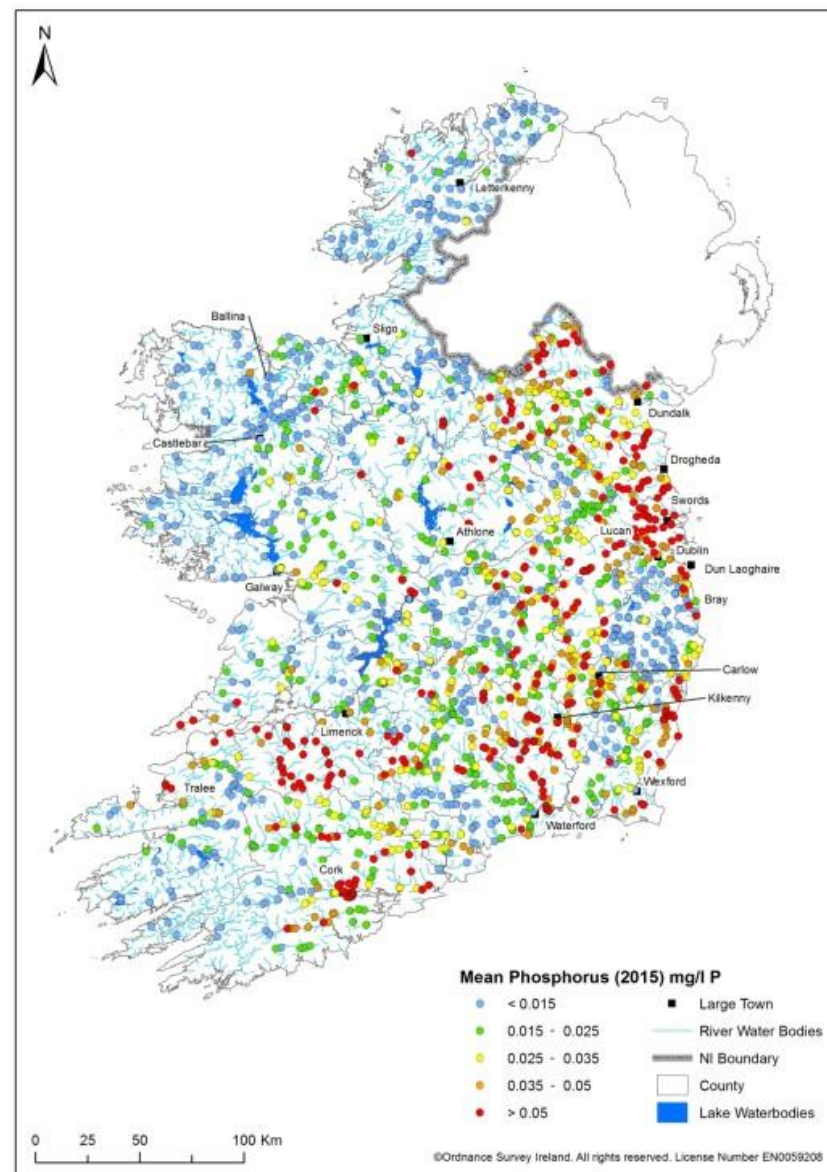
**Figure 5.4** Trends in the 13,300km Baseline for Rivers Nationally in the Four EPA Biological Quality Classes Based on the Macroinvertebrate Q Value Method Results (Source: EPA, 2016a)



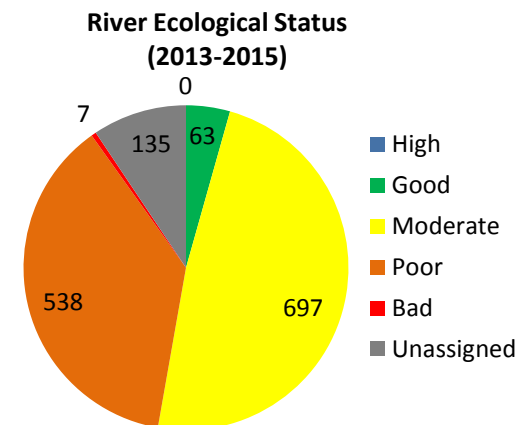
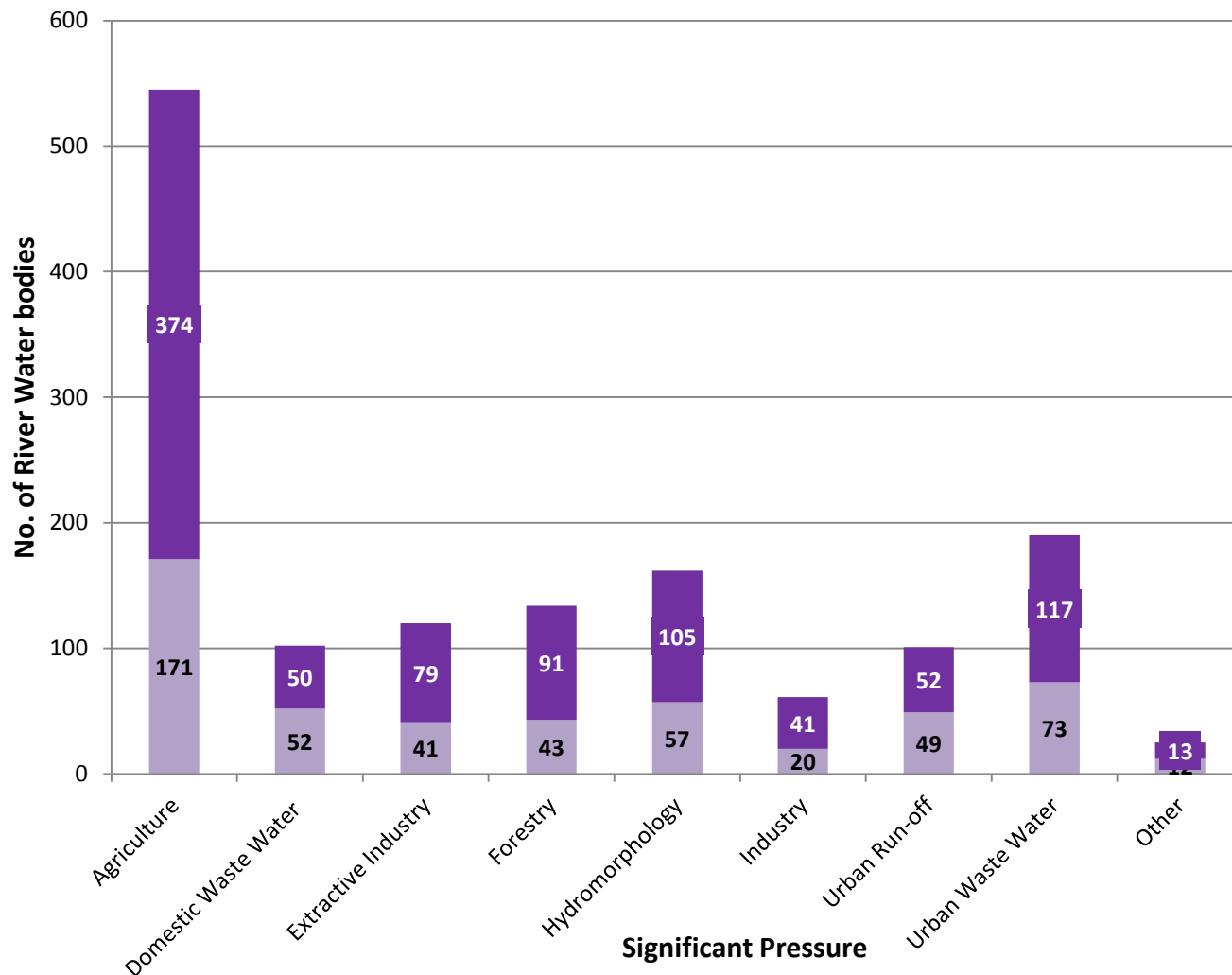
**Figure 5.5** Long Term Trends (1987-2015) in the Percentage Number of High Ecological Quality (Macroinvertebrate) River Sites (Q5 and Q4-5) in Each Survey Period (Source: EPA, 2016a)



# SOE Reporting - Water – Regional Variation

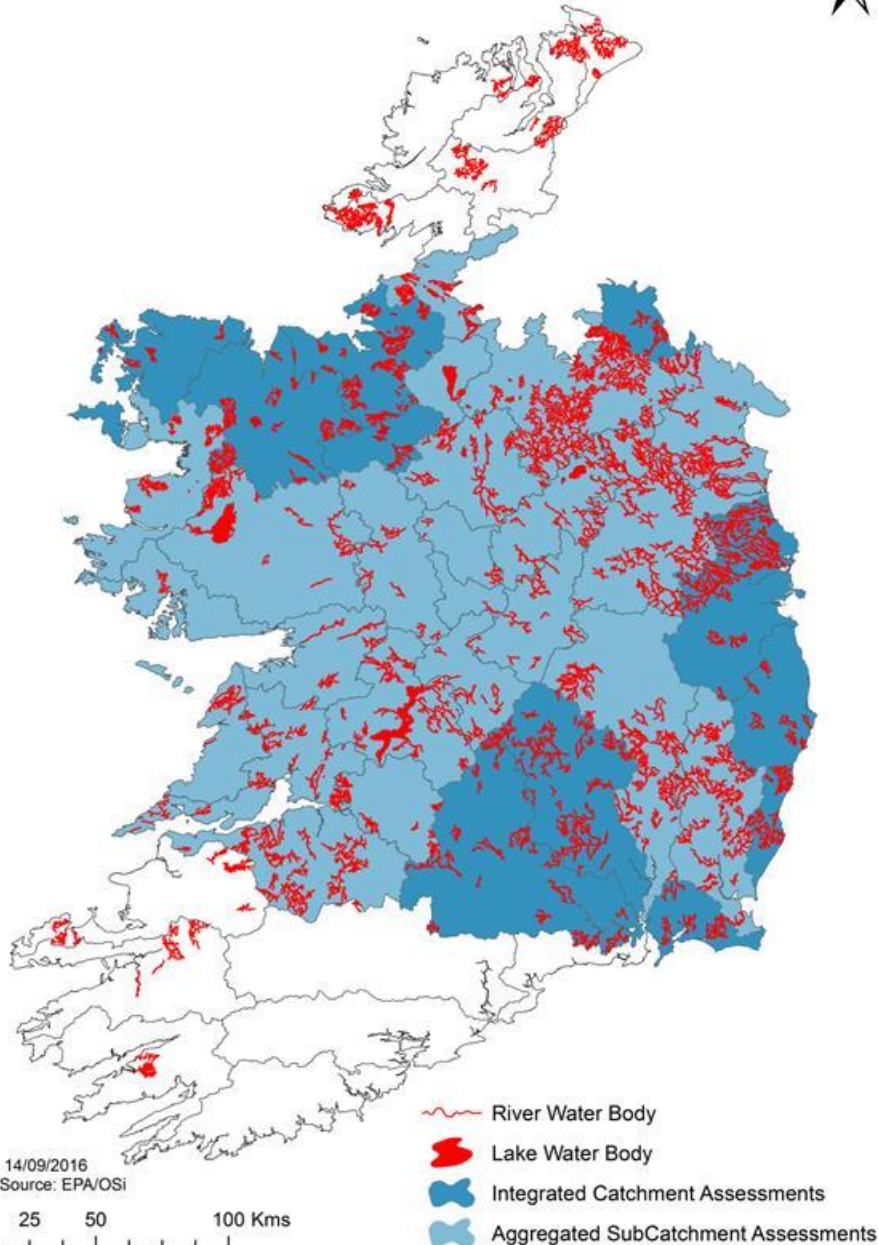


# Significant Pressures in River Water Bodies At Risk in 34 Catchments



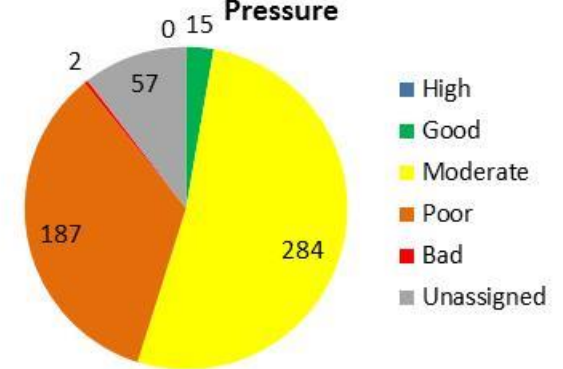
■ Aggregated Subcatchment Assessments  
■ Integrated Catchment Assessments

## At Risk Water Bodies where Agriculture is a Significant Pressure

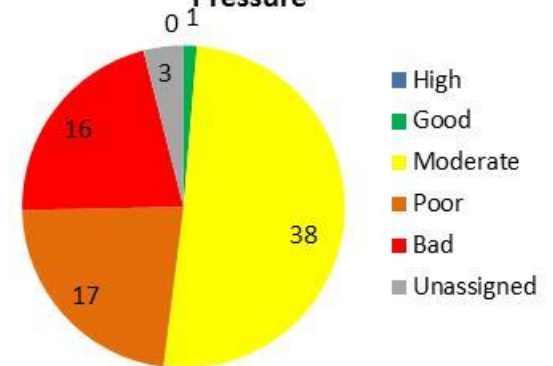


# Agriculture

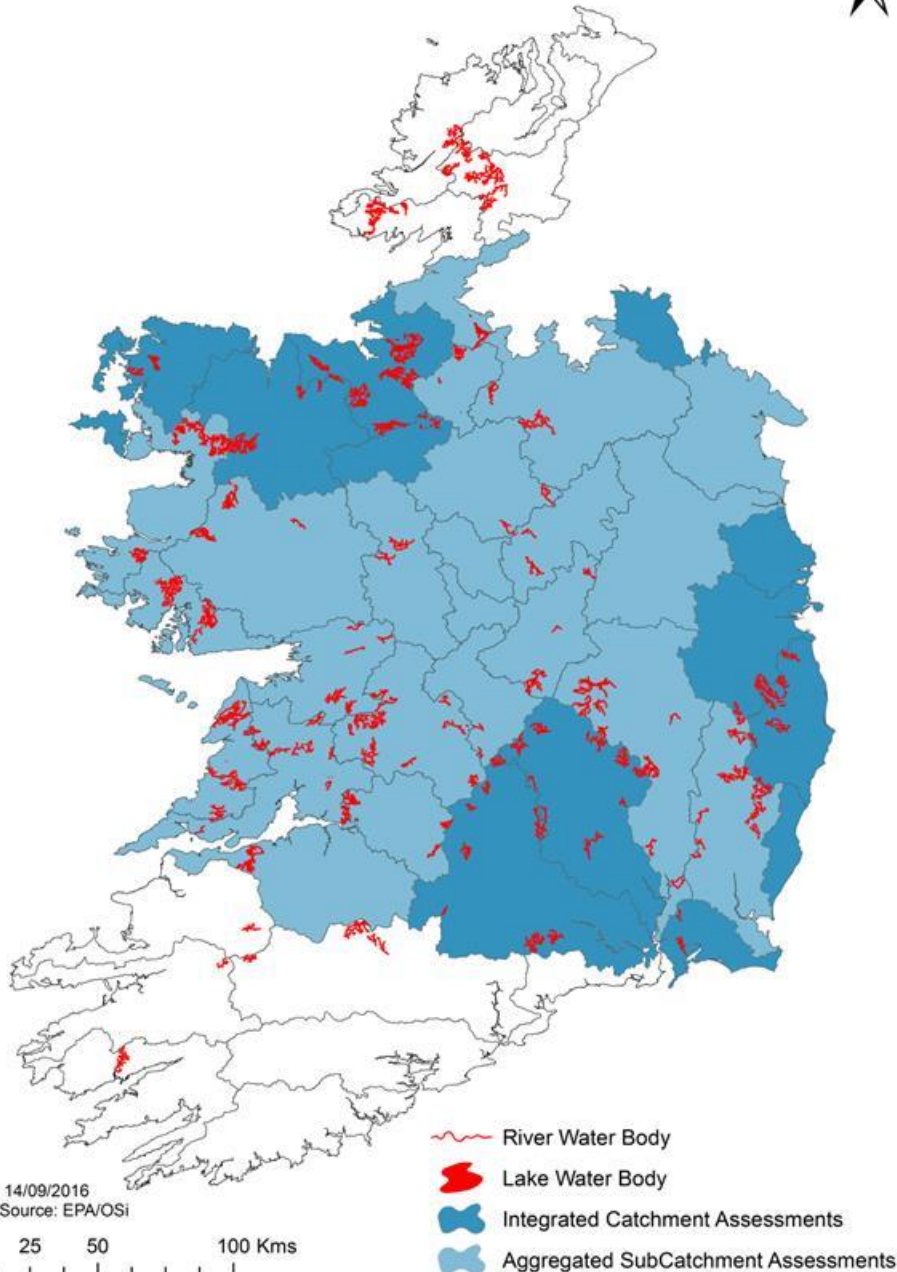
## River Ecological Status 2013-2015 where Agriculture is a Significant Pressure



## Lake Ecological Status 2013-2015 where Agriculture is a Significant Pressure

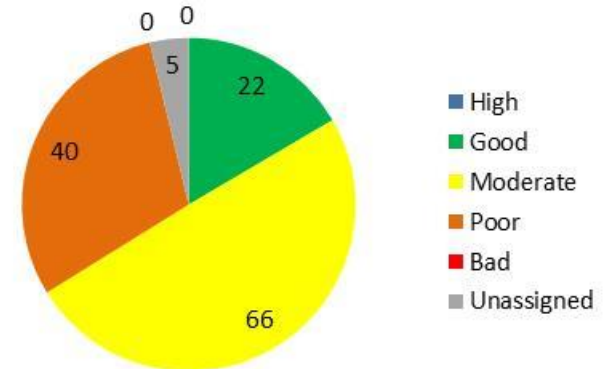


## At Risk Water Bodies where Forestry is a Significant Pressure

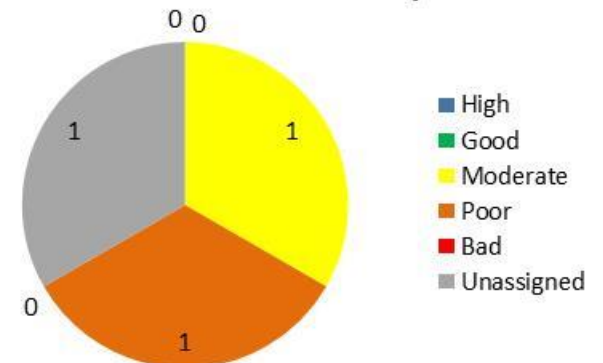


# Forestry

River Ecological Status (2013-2015) for water bodies At Risk from Forestry



Lake Ecological Status (2013-2015) for water bodies At Risk from Forestry





# Agriculture - What's Been Done



The pressures that agriculture places on the environment are well known and a variety of actions have been implemented at EU level, national policy level and locally to address them.

## **Nitrates Action Programme**

Good agricultural practices for the protection of waters.

## **Origin Green**

National sustainability programme for farmers and processors.

## **Climate Action and Low Carbon Development Act 2015**

The vision is of climate resilience and carbon neutrality for the agriculture and land use sector

## **Common Agricultural Policy**

The reform of the “Common Agricultural Policy” provides the opportunity for a move towards better targeting of action in the right places to address the environmental pressures involved.

## **River Basin Management Plans and the Water Framework Directive**

A new catchment based approach aims to connect people and communities with their local stream, river, lake, spring or coastal water.

## **Industrial Emission Licences for Pig and Poultry Enterprises/Installations**

Significant improvements in production efficiency in the sector

# Agriculture - What's Been Done



## Smart Farming

[www.smartfarming.ie](http://www.smartfarming.ie)

Reducing costs and protecting the environment inside the farm gate through better resource management.

## Food Wise 2025

This strategy for development and sustainable intensification in primary production and value added processing is a significant challenge for the sector as it has to be achieved without damaging the environment upon which it depends.

## Research Responses

Significant investment in agriculture and agri-environmental research is improving the knowledge base to underpin environmental protection and sustainable environmental development of agriculture

## Innovation

There have been a number of positive innovations to support the sustainable development of the agricultural sector.

## National Dairy Sustainability Forum

Industry-led initiative to encourage good environmental practice and better nutrient management at farm and field level

**Ireland's environment plays a vital role in the quality of Ireland's agricultural produce and productivity. Recognising local and regional constraints and valuing the range of ecosystems service that agricultural land provides will be key to ensuring a balanced approach to the future development of Irish agriculture and rural communities.**

**Environmentally sustainable intensification of the agriculture sector will depend on a strong, reliable evidence base upon which all stakeholders involved in environmental protection and agriculture development and management can depend.**

**Adapting to and mitigating the impacts of climate change will be a key challenge for the Irish agricultural sector and the challenge of achieving GHG neutrality within the agriculture and land use sectors is profound.**



**Water pollution caused by the loss of nutrients and the loss of pesticides to waters from agricultural land are major concerns that need to addressed collectively by all environmental and agricultural stakeholders.**

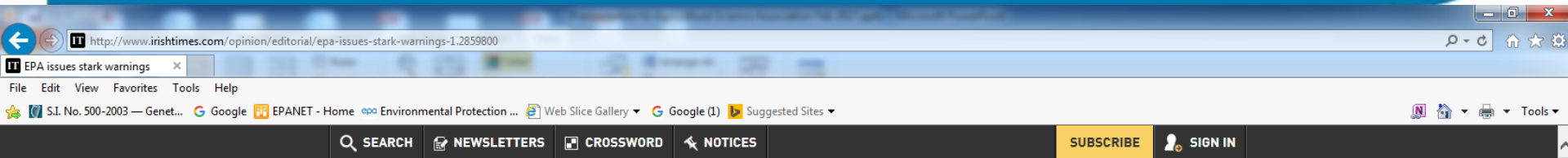
**Building trust between environmental and agricultural stakeholders is a major challenge that will need to be addressed to achieve meaningful engagement on achieving economic competitiveness and environmental sustainability.**

# Some key environmental issues in Ireland for agriculture



- Agriculture is a core part of what we are and what rural Ireland is – culturally, economically, socially, environmentally, and will continue to be
- Challenges in areas of water, climate, nature – the knowledge base is growing to help address these challenges – and understanding local and regional variation is key to addressing these challenges
- Working out an approach to carbon neutrality is neither easy nor straightforward and is a big challenge
- Foodwise Strategy, National River Basin Plan, National Mitigation and Adaptation Plans and other plans/strategies are setting the overall direction – they need to be ambitious in vision but evidence-based and realistic in planning and target setting.
- We need to start envisioning and reimagining Ireland in 2050. What will be the same, what will be different? Only 33 years away. The same period from 1984 to now!

# Irish Times Editorial Nov 8<sup>th</sup> 2016



## THE IRISH TIMES

Mon, Feb 6, 2017

Dublin 7°C

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### EPA issues stark warnings

Tue, Nov 8, 2016, 20:00 | Updated: Wed, Nov 9, 2016, 00:17

THE IRISH TIMES VIEW

2

‘Imagine an Ireland where we take great care of our natural environment and protect the water, air and land that supports a thriving economy and a healthy society. An Ireland free of litter. An Ireland where we all feel a sense of civic pride in our environment and appreciate its value to our economy, health and society. An Ireland where there is no waste, where everything we discard gets reused, recycled or recovered as part of a functioning circular economy. An Ireland, for example, where cars and buses run on renewable power, where every house and farm can be its own power plant, generating power through renewable sources and contributing excess power to a smart grid.’

This was the perhaps utopian vision of a low-carbon and highly resource-efficient future painted by Laura Burke, director general of the Environmental Protection Agency (EPA), to mark the publication of its latest assessment of the state of Ireland's environment. Defining climate change as the number one issue of our era, she declared that “the fossil age is over” in terms of large-

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# A Vision for 2050



‘Imagine an Ireland where we take great care of our natural environment and protect the water, air and land that supports a thriving economy and a healthy society. An Ireland free of litter. An Ireland where we all feel a sense of civic pride in our environment and appreciate its value to our economy, health and society. An Ireland where there is no waste, where everything we discard gets reused, recycled or recovered as part of a functioning circular economy. An Ireland, for example, where cars and buses run on renewable power, where every house and farm can be its own power plant, generating power through renewable sources and contributing excess power to a smart grid.’



Thank you



# Ireland's Environment An Assessment 2016

