



# School of Environment, Natural Resources and Geography (SENRGy)

Bangor University

# Location



Bangor, NW Wales

University City with  
population of 17,500

In addition, 12,000 students



# SENRGy is part of the College of the Natural Sciences



School of Ocean Sciences



School of Biological Sciences



School of Environment, Natural Resources & Geography

# Our Environment



# The School



**Department of Forestry, 1904**



**School of Environment & Natural  
Resources, 2006**



**School of Agricultural & Forest  
Sciences, 1986**



**School of Environment, Natural  
Resources & Geography, 2009**

# About the school



**Conservation**



**Food security**



**Economy**



**Population & communities**



**Earth processes**



**Ecosystem services**

# A teaching & research partnership

- 350 undergraduates
- 40 masters students
- 65 research students
- 24 academic staff



# Our undergraduate degrees

## Environment

- BSc / MEnvSci Environmental Management
- BSc / MEnvSci Environmental Science

## Natural Resource Conservation and Management

- BSc Agriculture, Conservation and Environment
- BSc Applied Terrestrial and Marine Ecology
- BSc Environmental Conservation
- BSc Conservation and Forest Ecosystems
- BSc Forestry

## Geography

- BA/BSc Geography



# Our taught postgraduate degrees

- MSc Environmental Forestry
- MSc Agroforestry
- MSc Conservation and Land Management
- MSc Sustainable Tropical Forestry
- MSc Sustainable Forest and Nature Management
- MBA Environmental Management (with Bangor Business School)
- Distance Learning MSc (3) in Forestry, Tropical Forestry and Food Security in a Changing Environment (subject to validation)

# The SENRGy team



Nutrients, GHG



Soil, carbon,  
microorganisms



Phosphorus,  
water quality



Forestry,  
compost  
science



Agroforestry,  
ecosystem  
services



Livestock  
production  
& reduction,  
pathogens



GIS



Catchments,  
hydrology,  
tracing



Socio-  
economics



Soil erosion  
and  
conservation



Hydrological  
modelling



Climate  
change  
impacts



Crop  
genetics



Agronomy



LCA, Carbon  
footprinting



Modelling



Conservation and  
Bees



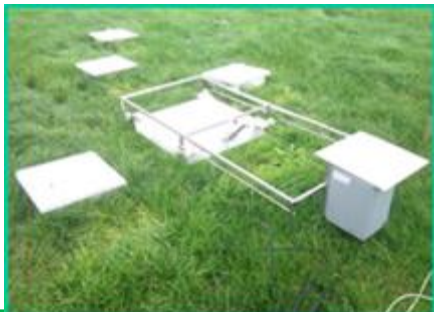
Mangrove  
function



Conservation  
Biology

# Research strengths: Production and Environment

- Livestock production
- Cropping and functional foods
- Manure management & nutrient utilisation
- Environmental pollution and mitigation (air, water)
- Soil science, nutrient and carbon cycling
- Whole system modelling (incl. LCA)



# Agricultural Production



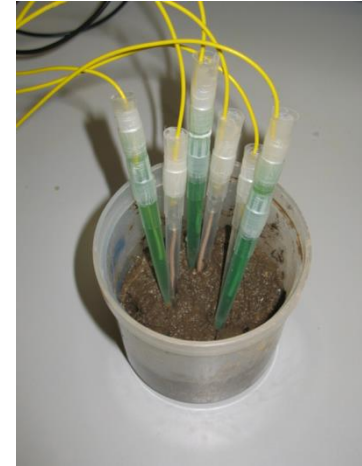
Producing lamb from different forages



Use of biochar and wood-ash as soil conditioners



Effect of sulphur supply on NUE of forage maize

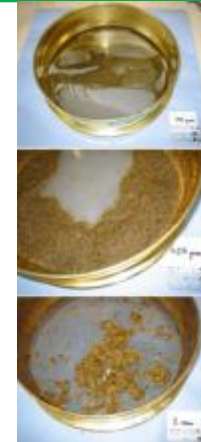


Development of soil nitrate sensors

# Environmental impacts of agriculture



Impact of prolonged flooding on soil quality



Fate of P in slurry particle fractions

150µm sieve

425µm sieve

2000µm sieve



Methane mitigation from slurry stores



Nitrous oxide emissions and mitigation

# Research Strengths: Food Safety & Pathogens in the Environment

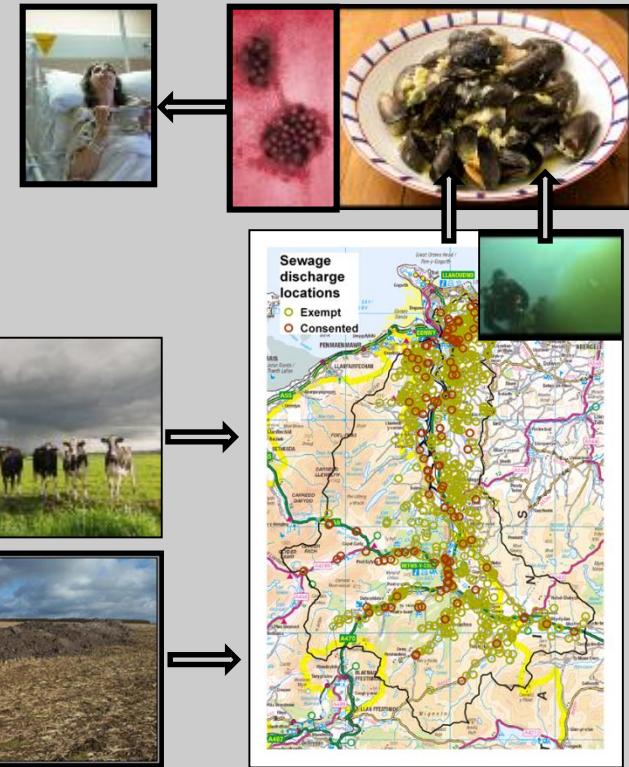
## Pathogens in the food-chain



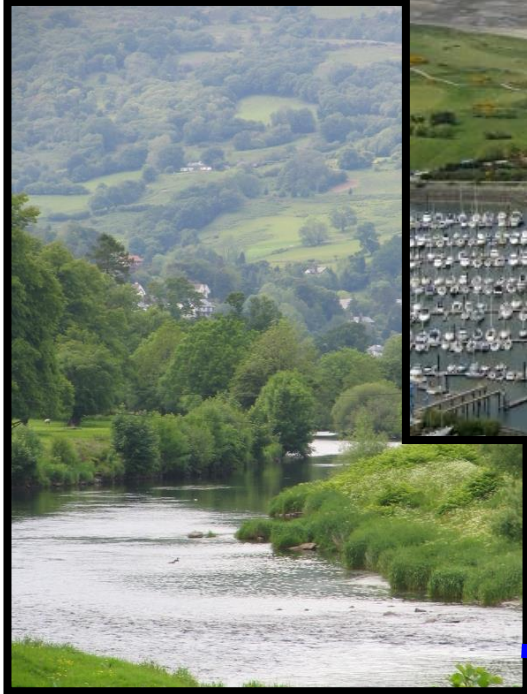
*E. coli* O157,  
*Salmonella*,  
*Campylobacter*



## Catchment to coast



# Catchment to coast approach



Approach not just for pathogens, but also nutrients

# Eliciting expert perceptions of the efficacy and practicality of pathogen control measures: *E. coli* O157 and human health



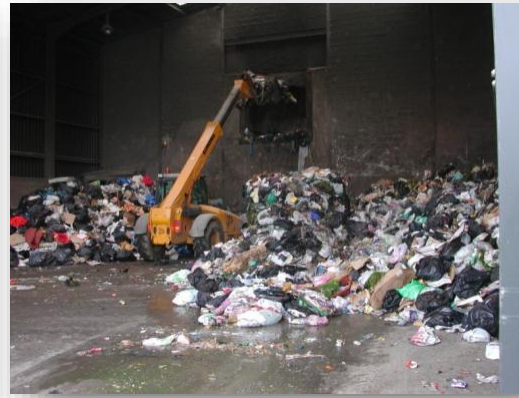
– ‘Reducing *Escherichia coli* O157 risk in communities’



# Soil and plant based strategies for achieving C neutrality in agriculture



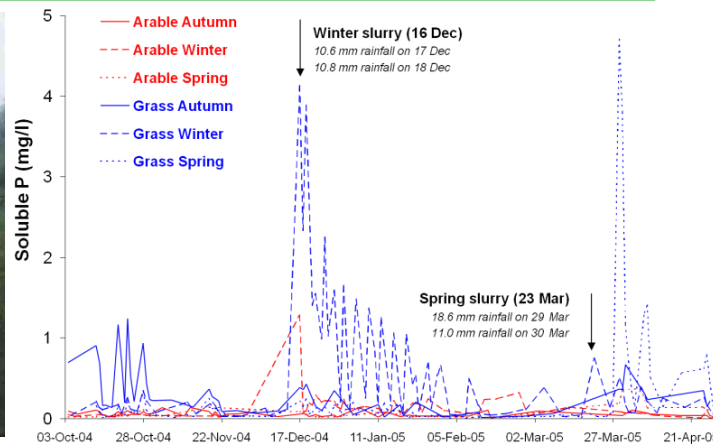
# Pollution and waste management



# Land use effects on water quality



Erosion and runoff deliver soil and nutrients



Nutrient recycling can impact on water quality directly



Sources of nutrients in catchments are complex: multiple sources deliver nutrients in different forms via different pathways and spatio-temporal patterns.



## Bioreduction of dead livestock



Day 0



Day 23



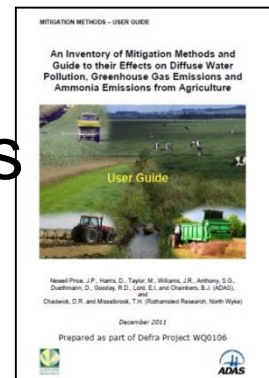
Day 93

# Policy and Industry needs

- Nutrient Management Guidelines



- Diffuse Pollution Mitigation Guidelines



- Policy and Practice Notes

- Food Safety Awareness in the Workplace



# Diolch yn fawr! Muchas gracias! Thanks!

