

Nature Based Solutions make the provision of water and wastewater services more sustainable

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Irish Water
CIEEM Conference
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Common Blue Damselfly Dunhill ICW

Today's presentation

- Background
- IW's Biodiversity Action Plan
- NBS: Integrated Constructed Wetlands
- NBS: Sludge Drying Reed Bed
- NBS: Reedbed Polishing Filter
- NBS: IW Landscape Guidance
- NBS: Circular Model – food for thought
- NBS: Riparian Woodland Planting
- NBS: Native Woodland Planting
- NBS: Source to Tap
- Some Final Thoughts
- Questions



Bee Orchid Luimnagh WTP

Background:

- Earth is currently losing biodiversity at a rate only seen during mass extinction - WWF
- 91% of designated habitats is at inadequate or Bad Status
- 50% of habitats with a declining trend
- 65% of Important Bird Areas highly threatened



*"Making nature healthy again is key to our phy
is an ally in the fight against climate change
the heart of our growth strategy, the Europea
European recovery that gives more back to th*

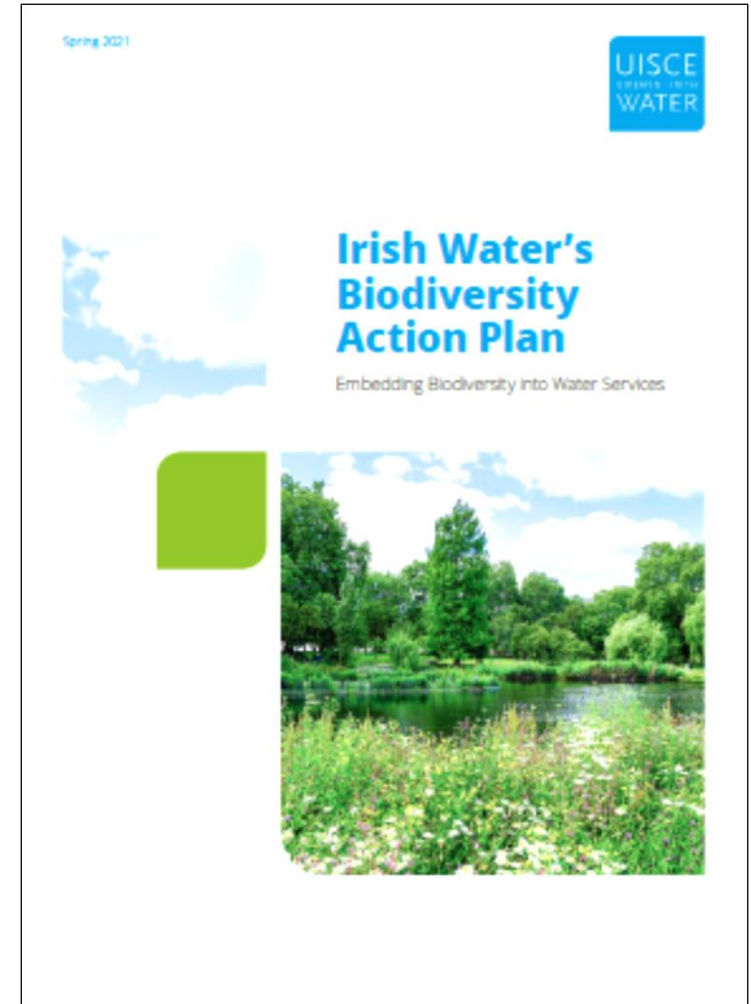
Ursula von der Leyen, President of the European Commission

Ireland's Vision for Biodiversity

That biodiversity and ecosystems in Ireland are conserved and restored, delivering benefits essential for all sectors of society and that Ireland contributes to efforts to halt the loss of biodiversity and the degradation of ecosystems in the EU and globally.

IW Biodiversity Action Plan: 7 Key Objectives

1. Biodiversity protection and enhancement measures for All IW Sites.
2. Raise awareness on biodiversity to Irish Water staff and Partners.
3. Ensure “no net loss” of biodiversity.
4. Partner in the All Ireland Pollinator Plan 2021-2025.
5. Promote Nature Based Solutions.
6. Management of Invasive Alien Species.
7. Collaborate and work with Key Internal and External Stakeholders.

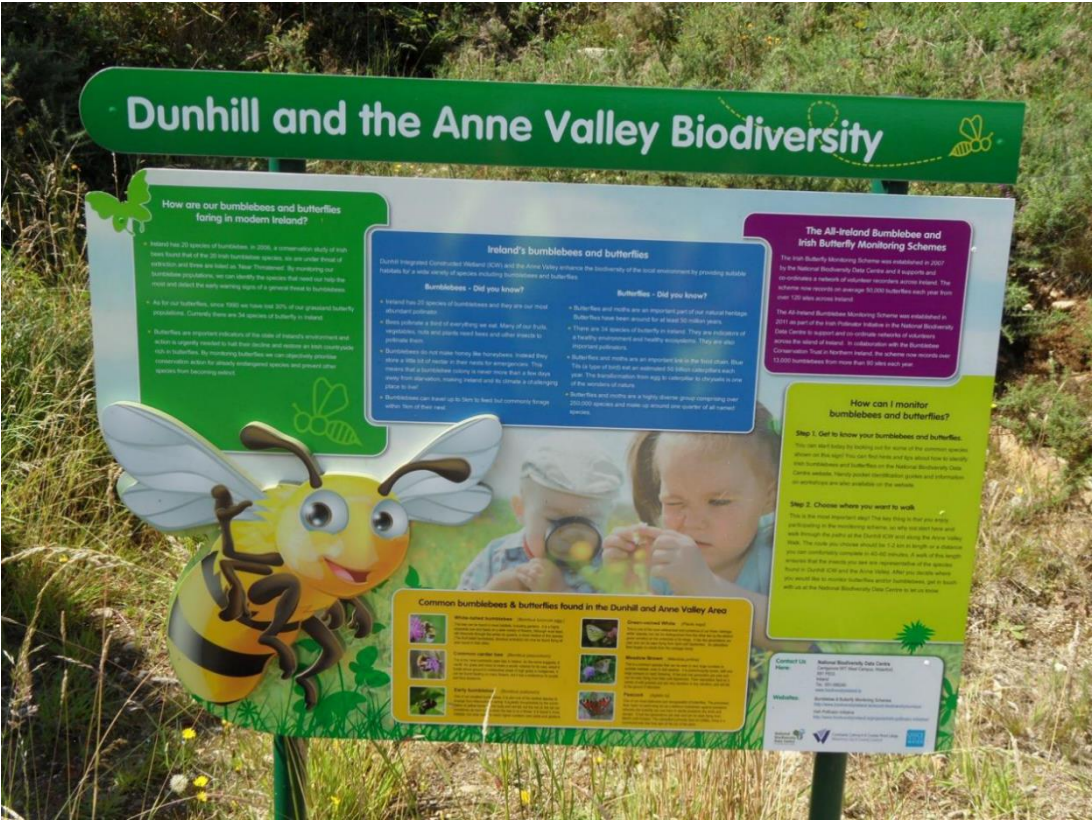


Nature Based Solutions: Integrated Constructed Wetlands



- Dunhill ICW provides wastewater treatment for village
- Has a primary settlement tank/pond at the start
- Effluent then flows into a series of ponds
- In the ponds the plants, bacteria and biofilm work together to treat the wastewater
- Low maintenance and operational costs
- Area: 20 – 40m²/PE

Nature Based Solutions: Dunhill ICW and Biodiversity



Dunhill ICW provides wastewater treatment for village and so much more.....

Blue Emperor Dragonfly



4 Spot Chaser Dragonfly

Nature Based Solutions: Integrated Constructed Wetlands



Layout of Lixnaw Integrated Constructed Wetlands (ICW) in County Kerry just finished construction

Nature Based Solutions: Sludge Drying Reed Beds

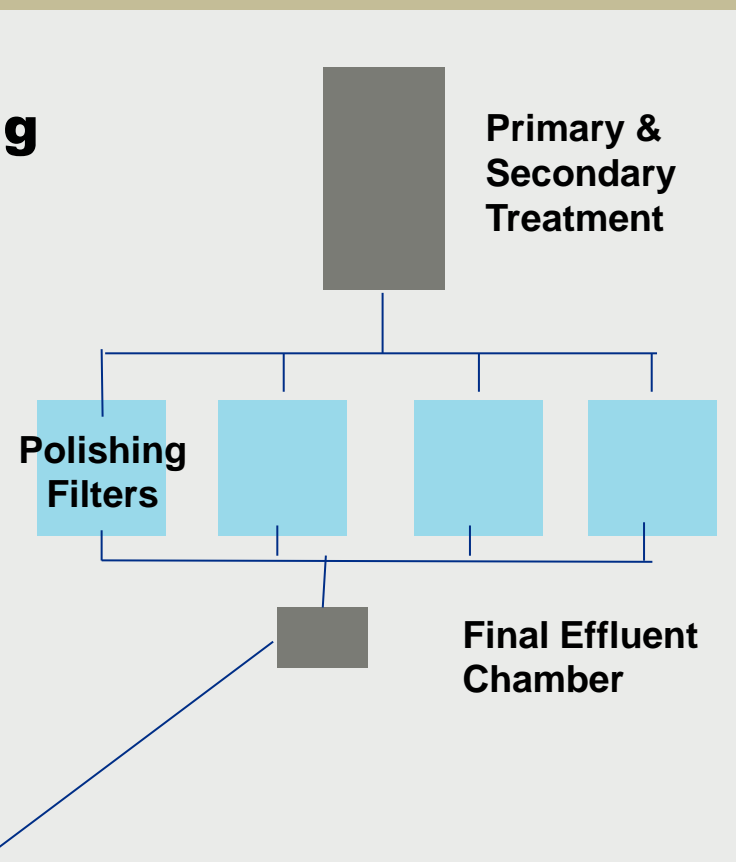


IW Capital Programmes and Carlow County Council are managing the delivery of Sludge Drying Reed Beds (SDRB) at 5No. sites in Co Carlow.



Nature Based Solutions: Reedbed Polishing Filter

Typical Layout for a
Wastewater Treatment Plant with a
**Reedbed Polishing
Filter** System



**New Inn WwTP and Reedbed,
Tipperary**

Nature Based Solutions: IW Landscape Guidance Document

Landscape Treatment Guidelines

Document No: IW-AMT-GL-009

Approved By: John Casey

Revision: 1.00

Effective Date: 09/10/2018

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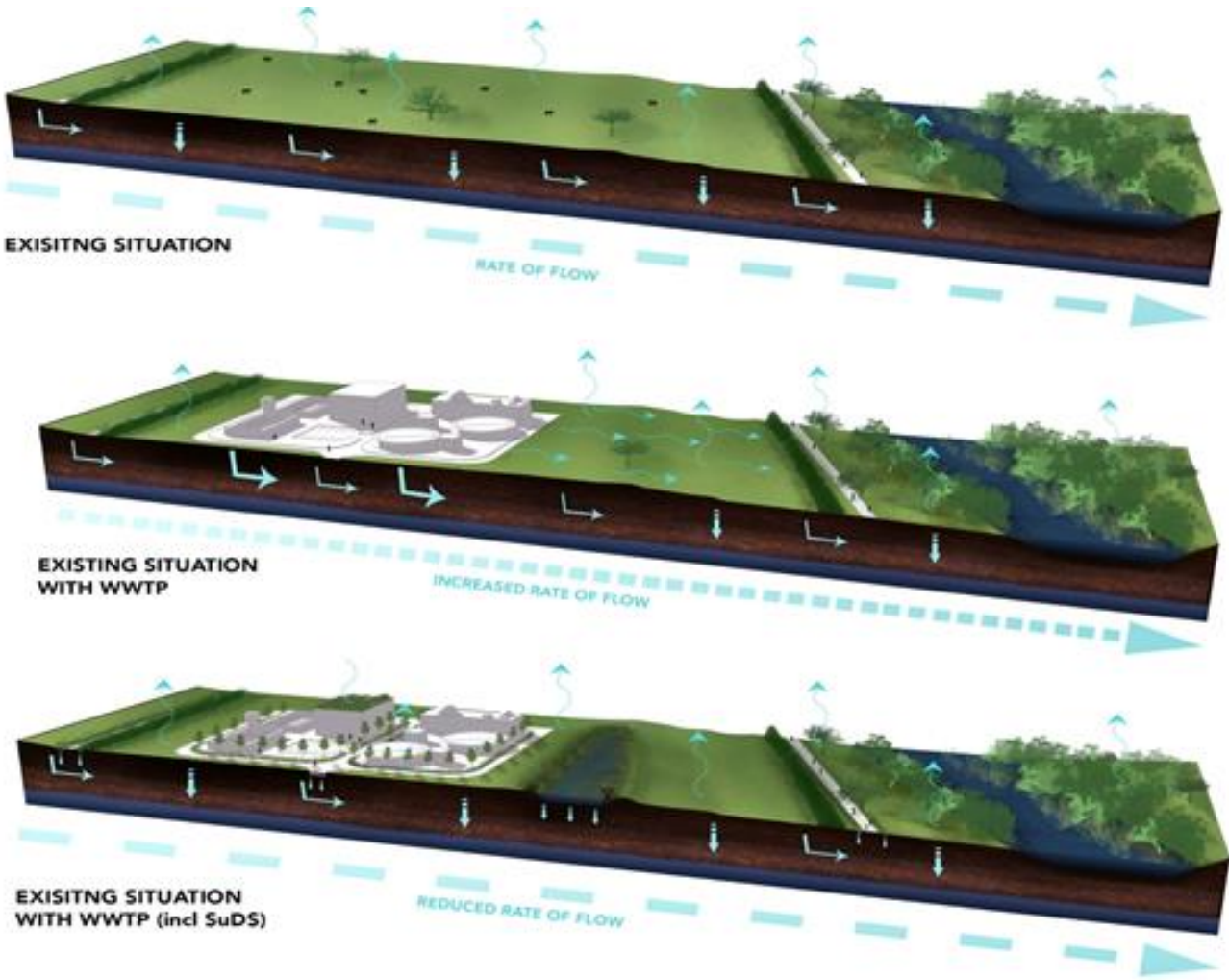
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Landscape Treatment Guidelines

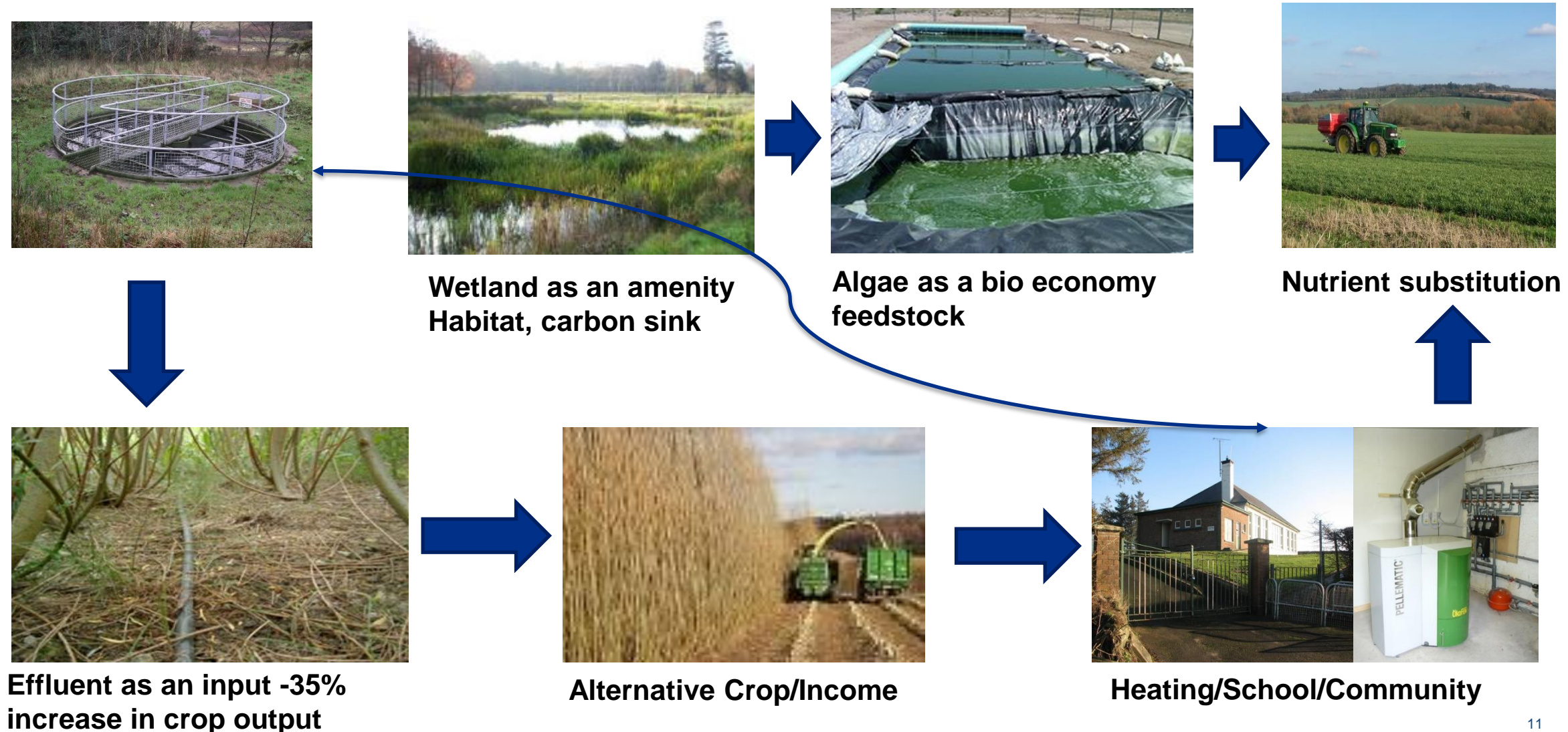
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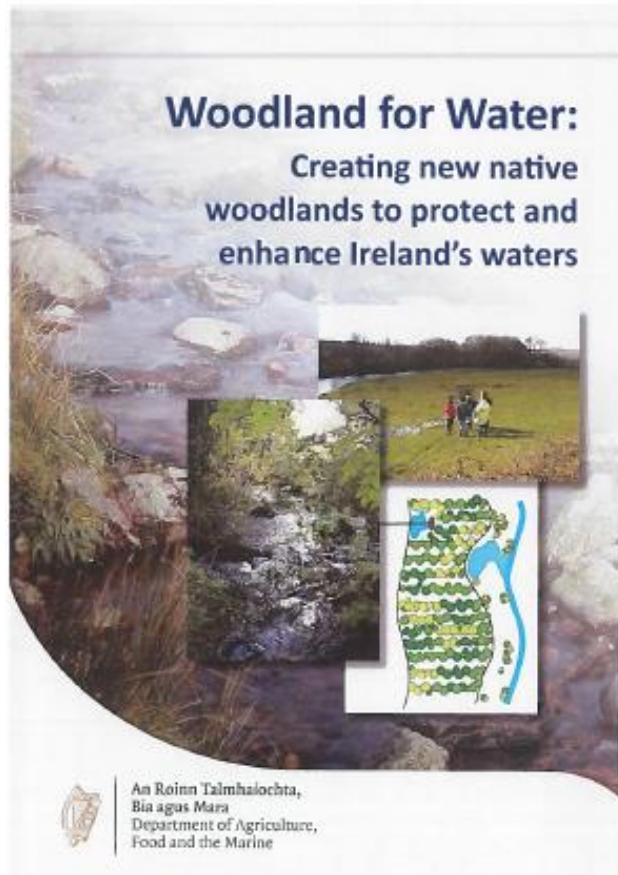
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Nature Based Solutions: Local Circular Model



Nature Based Solutions: Riparian Woodland Planting



DAFM offers grants to plant trees which will aid in water protection

Lough Guitane WTP recently granted funding under Phase 1 to plant 18,500 native trees



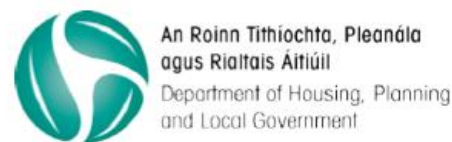
Nature Based Solutions: Native Woodland Planted to protect watercourses

- Increase in native woodland planting on third party lands.
- Upstream of IW Intakes
- Result in direct positive impact on water quality and therefore reduced treatment costs



Nature Based Solutions: Source to Tap

A project funded by



Project Partners



The 'Source to Tap' project is supported by the European Union's INTERREG VA Programme, managed by the Special EU Programmes Body (SEUPB).

Nature Based Solutions: Source to Tap



Best practice will help form a Sustainable Catchment Area Management Plan (known as a SCAMP), so that what is learnt, and is shown to work well, can be replicated in other drinking water source areas in the United Kingdom, Ireland and beyond.

<https://www.sourcetotap.eu>

Nature Based Solutions: Source to Tap – Peatlands for Water

💧 **What?** Reduce erosion, and prevent sediment run-off into rivers in the Erne and Derg Catchments.

💧 **How?** Restoration of previously afforested peat bog areas adjacent to watercourses on Forest Service NI land to provide buffer zones, cell bunds and peat dams preventing sediment run-off into rivers in the Erne and Derg Catchments.

💧 **Why?** To improve habitats and encourage growth of sphagnum, and improve water quality through reduced erosion and sediment run-off, which will contribute to improved WFD status.



Nature Based Solutions: Source to Tap – Forests for Water

💧 **What?** Trialling various nature based mitigation measures to reduce soil erosion and sediment run-off to our rivers and lakes from forestry activity

💧 **How?** Through the construction of settlement ponds/sediment traps of different sizes and filtering of the runoff from the forestry operation sites through various media – e.g. cover crops, peat/log dams, etc.

💧 **Why?** To reduce forestry impacts where there is a risk to drinking water sources.



Some Final Thoughts.....

- We should be utilising NBS more
 - Wastewater and rural communities
 - Water protection
- NBS are lower cost solutions
- Should we think more circular
- NBS provide wider benefits
 - Carbon sequestration
 - Low energy costs
 - Biodiversity
 - Social & amenity value



Glaslough ICW

Thank you
&
Questions?

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