

Natural Flood Management in Ireland & Woodlands

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Topics

- ▶ Flood works increasing
- ▶ Natural Flood Management
- ▶ Current Understanding
- ▶ Woodland's Role

Floods Increasing

Recent Floods

- ▶ November 2009: >1,600 Properties,
Insured Losses Circa €250m
- ▶ October 2011: Nearly 1,700 Properties,
Insured Losses Circa €130m
- ▶ Winter 2015/16: Over 500 Properties
(Appx. 2,000 Properties under Threat)

National Risk

Climate Change

- ▶ Sea Level Rise 190mm: 1901-2010
- ▶ Wetter Winters / Warmer Summers

Government Funding

- ▶ Allocation of near €1bn (NDP 2018-2027)
- ▶ Budget increasing from €50m/yr to €100m/yr

Major Flood Relief Schemes

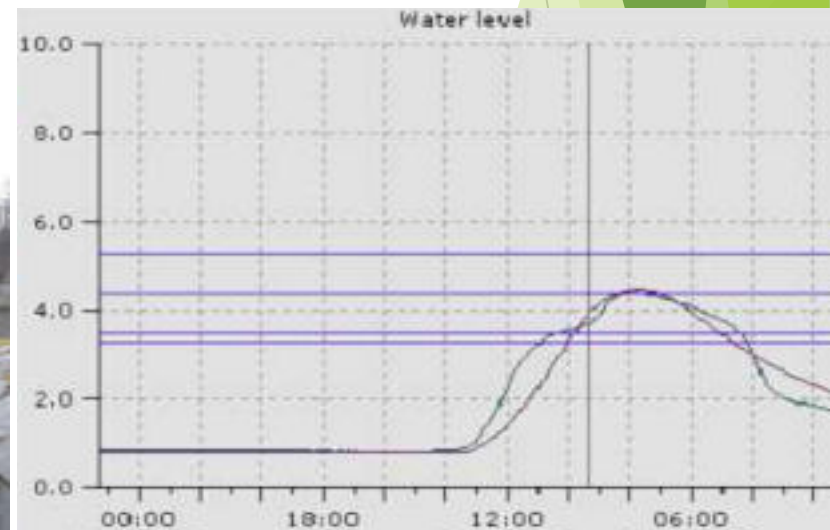
Structural designs

- ▶ Bridge widen
- ▶ Channel deepen
- ▶ Walls



Non-Structural designs

- ▶ Demountable Barriers
- ▶ Flood gates
- ▶ Flood forecasting



Natural Flood Management

What is it

- ▶ Reduce flooding by using more natural methods to store or slow down water
- ▶ Design to re-naturalise the catchment

What call it

- ▶ Natural Flood Management (NFM)
- ▶ Working with Natural Processes (WwNP)
- ▶ Natural Water Retention Measures (NWRM)

Natural Water Retention Measures

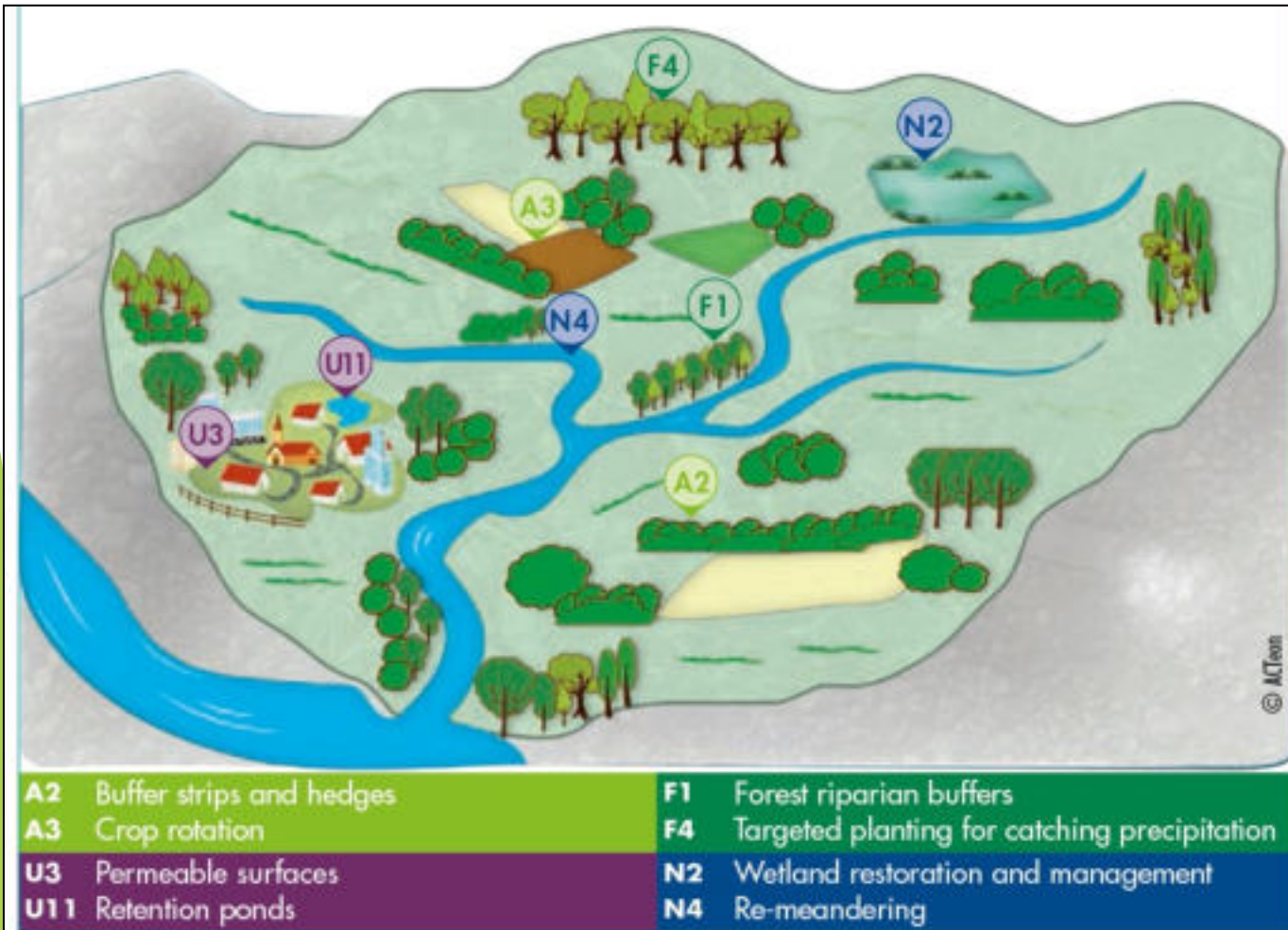
www.nwrm.eu



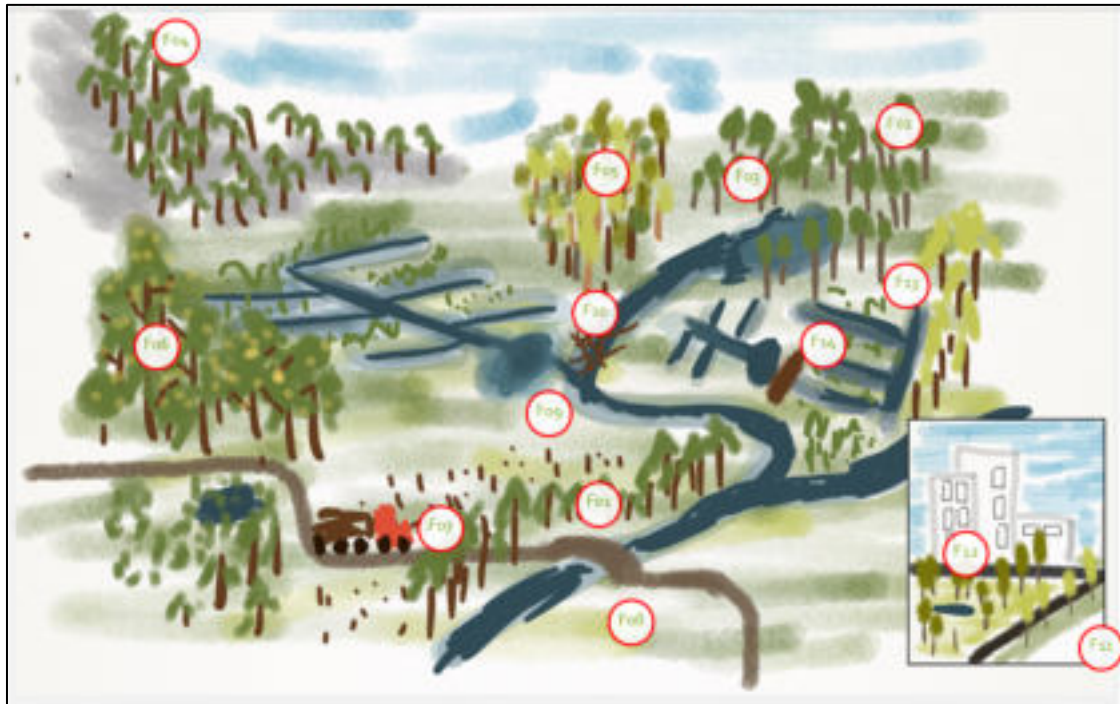
► Commission NWRM Guidance

Integrated thinking

- Flood fund
- Agri scheme
- Forest grant
- BnM restore
- LA planning



► Commission NWRM Guidance – Forestry Sector



F01	Forest riparian buffers
F02	Maintenance of forest cover in headwater areas
F03	Afforestation of reservoir catchments
F04	Targeted planting for 'catching' precipitation
F05	Land use conversion
F06	Continuous cover forestry
F07	'Water sensitive' driving
F08	Appropriate design of roads and stream crossings
F09	Sediment capture ponds
F10	Coarse woody debris
F11	Urban forest parks
F12	Trees in Urban areas
F13	Peak flow control structures
F14	Overland flow areas in peatland forests

Current Understanding

Cork Flood Defence options (www.lowerleefrs.ie)

- ▶ 5000 overland flow interventions
- ▶ 0.5 - 4.5% off 100year Flood
- ▶ City defences near same height
- ▶ Practicality - many landowners



Current Understanding

- ▶ People & Insurance seek 1:100 year flood protection
- ▶ NWRM limited reduction on large floods / large catchments (Lee 10 - 100 times scale of UK)
- ▶ Protection for large floods - walls, embankments, demountables, flood storage, by-pass channels
- ▶ Can reduce smaller floods / smaller catchments (10-20% for some small sub-catchments in Lee)

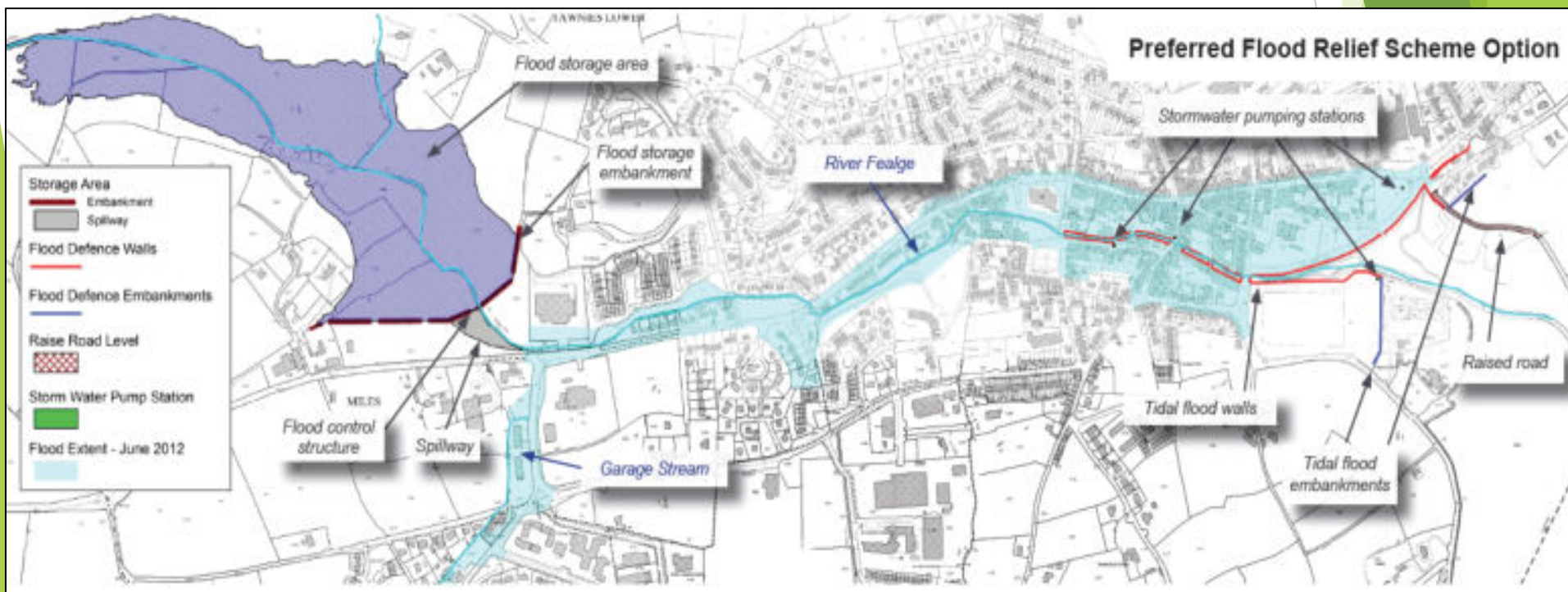
Future potential

- ▶ NFM can reduce the need for raising existing flood defences due to climate change effects
- ▶ Can buffer the catchment for communities to withstand more extreme events in the future
- ▶ Has a role in a wider catchment approach and compliment more traditional flood defences
- ▶ Can provide many additional benefits to environment and society

Future approach

Partial NWRM where feasible

- Flood Storage & Wall defences
- All new Projects consider



National - Implementing

Integrated Catchment Management

- ▶ Work group setting up under Water Framework Directive
- ▶ Multi Agency – Forest Service, EPA, Agri, Housing, OPW, IFI

Research

- ▶ EPA & OPW Research Project on Natural Water Retention (€500,00 STRIVE)
- ▶ PhD with Trinity College under Enterprise Partnership Scheme – focus on forestry


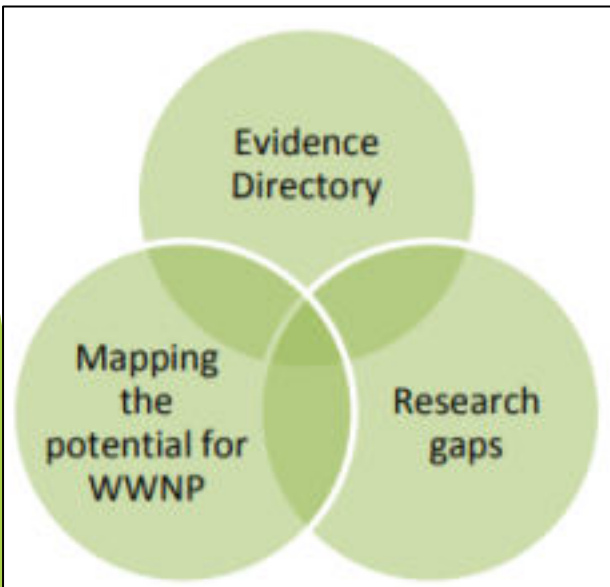
Many others

- ▶ Coillte – wetland restoration
- ▶ Bord Na Mona – bog rehabilitation
- ▶ Local Authorities – wetland park

Woodlands Role

UK now published:

- ▶ Working with Natural Processes – Evidence Directory
- ▶ Large central repository of information
- ▶ Gives latest understanding for woodlands



[Case Studies 24 to 30: Woodlands](#)

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Example – Pickering UK

- ▶ Flood Storage Bund (90% of design storage)
- ▶ 2 Timber Bunds / 167 Woody Debris dams
- ▶ 50Ha Woodland
- ▶ Small Catchment / 25yr Flood Design
- ▶ 2015 Flood – no houses flooded



Summary

- ▶ Flood protection works are increasing
- ▶ Natural Water Retention Measures guidance for woodlands
- ▶ Integrated Catchment Management & multiple benefit projects – the way forward
- ▶ UK evidence shows Woodland's have a role