Natural water retention measures (NWRM)

Efficiency assessment for water directives

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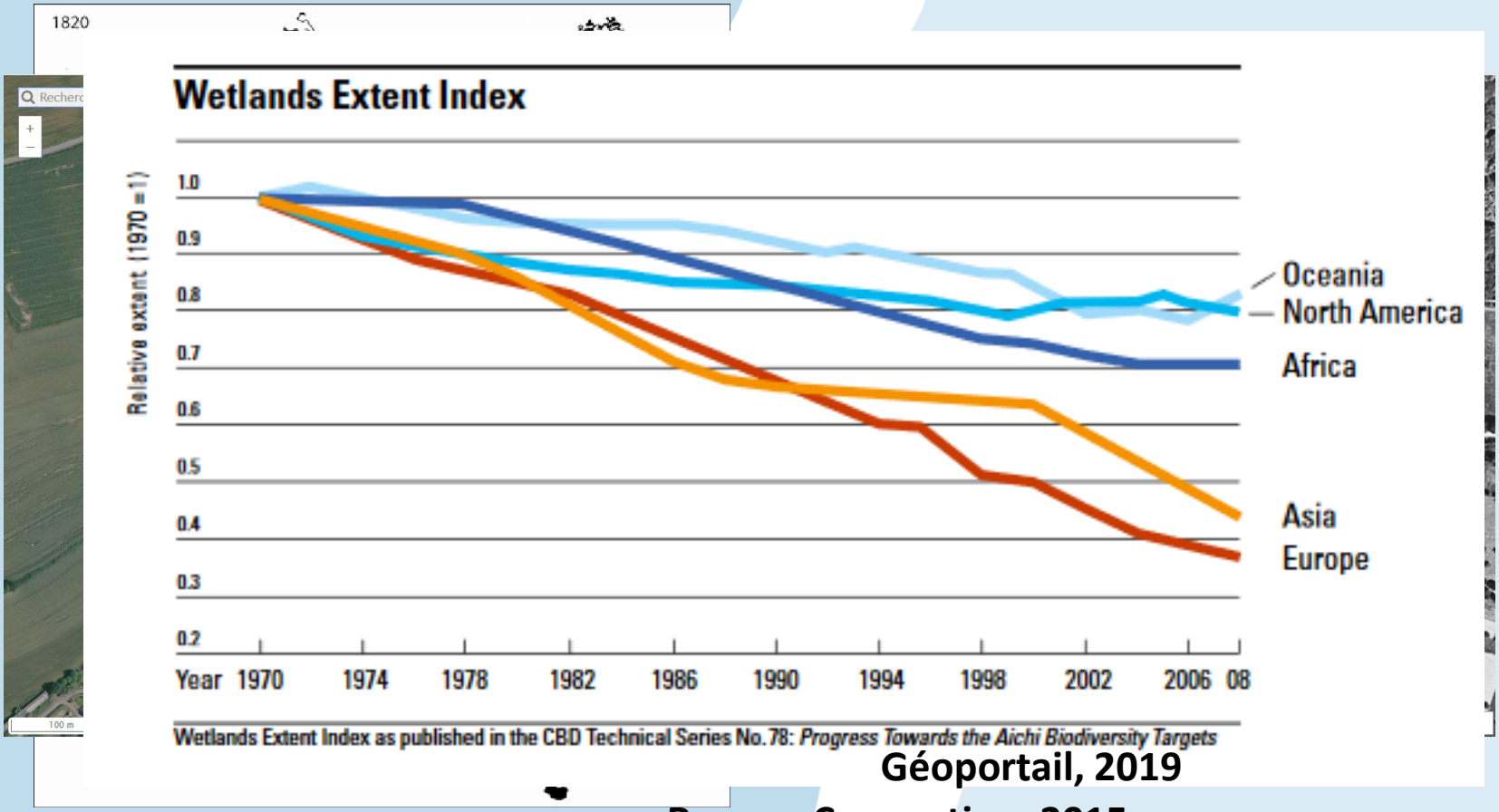
Introduction

- The water cycle has been accelerated:



Géoportail, 2019

Larsson, 2011 (after Wolf, 1956)

Ramsar Convention, 2015

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Introduction

- Faster water has multiple consequences
- Restoring (or creating) the natural water retention processes in catchments should have multiple benefits:
  - GW recharge
  - Increased low flow
  - More habitats
  - Water purification
  - Lower flow and runoff during strong events

⇨ **Natural Water Retention Measures** (NWRM) for WFD, FD, Nature directives, …

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Global framework

- Gathers already existing concepts
- 2012 (EC): A blueprint to safeguard Europe's water resources
  - Recognises the role of NWRM
- 2013 (EC): Green Infrastructure – Enhancing Europe's natural capital
- 2014 (EC): EU policy document on NWRM
- 2013-2015 (OIEau *et al.*): pilot project on NWRM
  - Catalogue of measures
  - 125 case studies
  - Practical guide
  - ⇨ nwrm.eu

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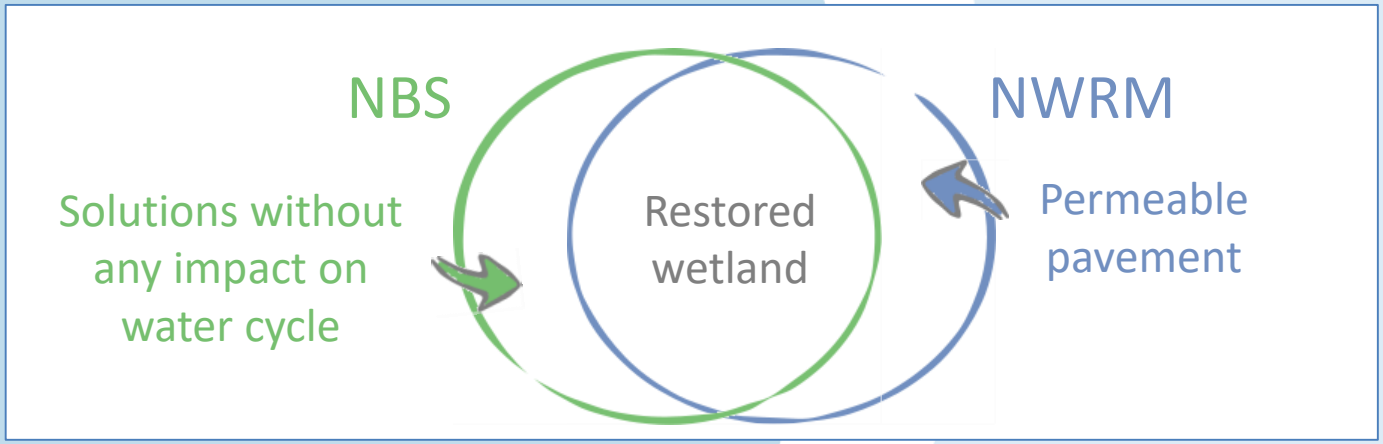
Definition of NWRM

- Multi-functional measures
- Enhance and preserve the water retention capacity of aquifers, soils, and ecosystems
- […] using natural means and processes
- Difference with Nature based solutions?



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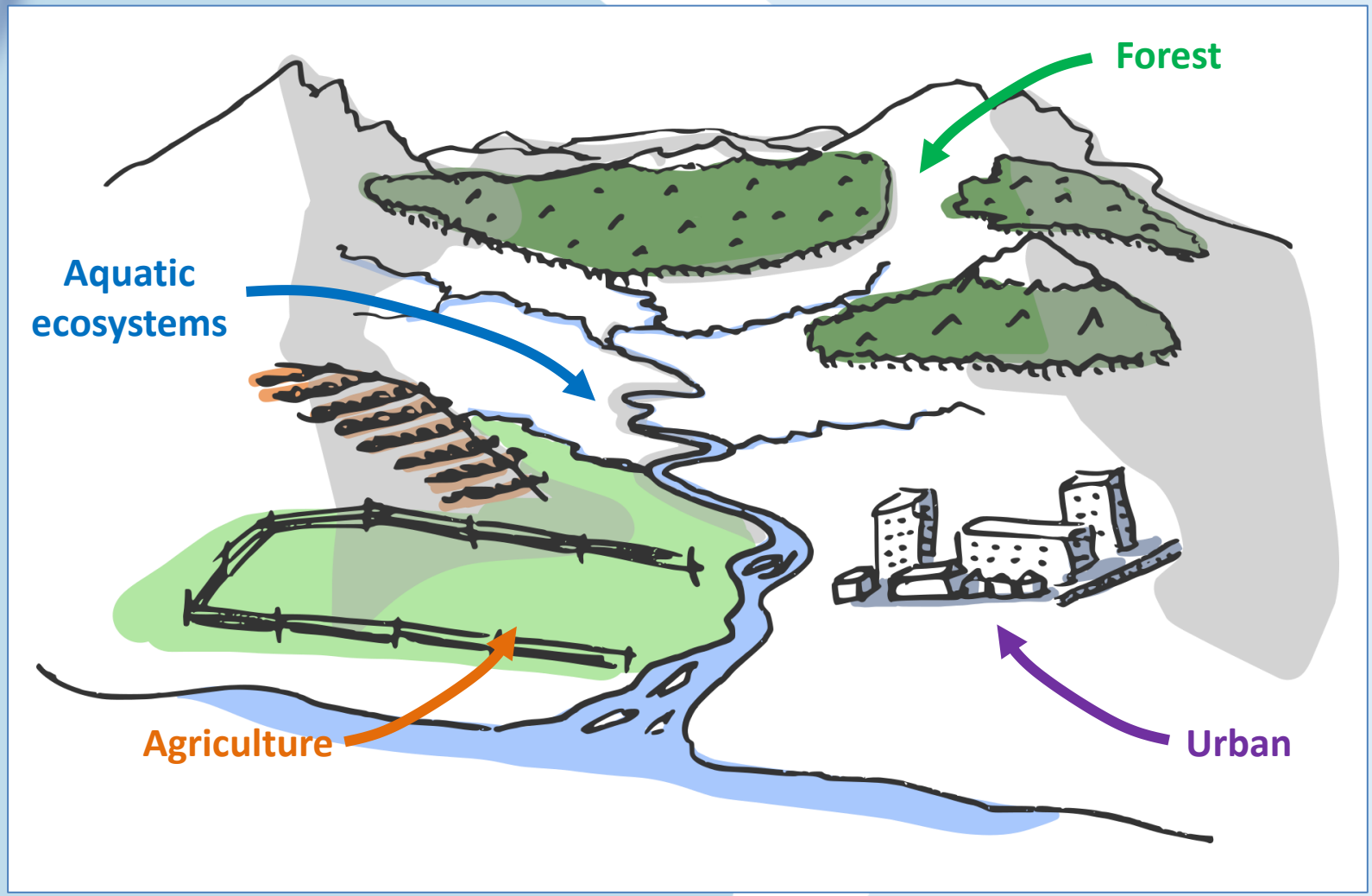
Implementing NWRM



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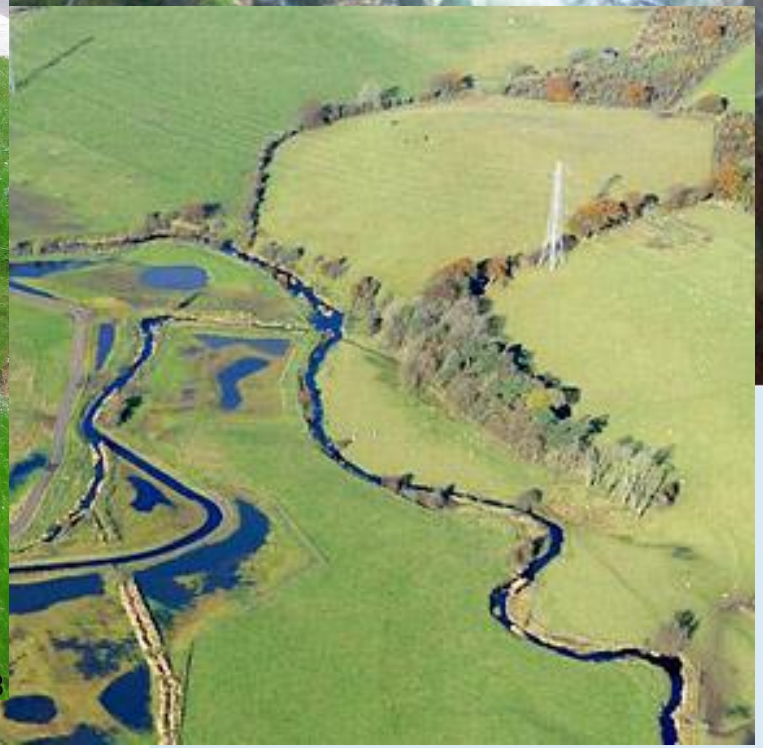
Examples



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NWRM and EU directives

- NWRM implementation require coordination
  - Between different administrative units
  - Between different types of stakeholders
  - Upstream-downstream
  - ⇨ The catchment scale
- Coordination between WFD and FD is the main window
  - NWRM as measures of the PoM, with positive contribution to flooding prevention

⚠ The interest of NWRM lies in the multiple benefits

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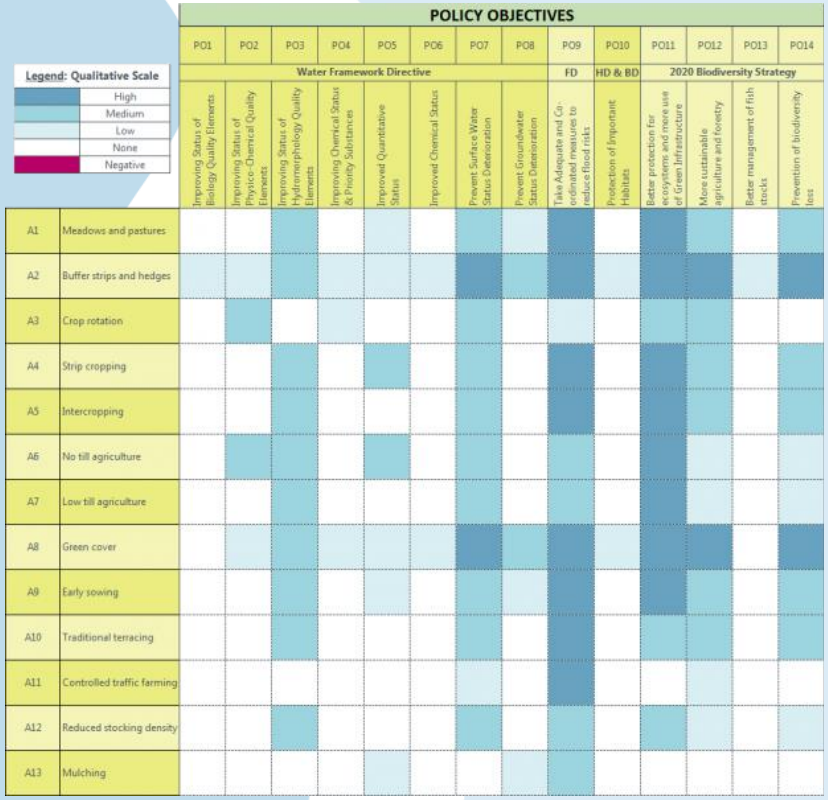
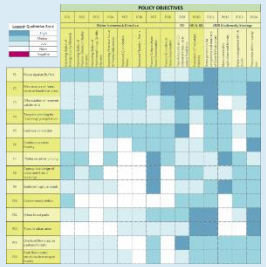
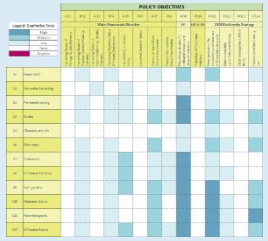
Efficiency

- Benefit tables
  - WFD
  - FD
  - HD & BD
  - 2020 Biodiversity strategy







http://nwrm.eu/catalogue-nwrm/benefit-tables

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Improve knowledge

- Efficiency assessment is essential to ease future implementations
- However, there is a general lack of assessment:
  - Evaluation may be too short (some effects require many years to be detected)
  - Evaluation may be too narrow (some co-benefits are neglected)
  - Evaluation may be too small (some effects only appear cumulatively at catchment scale)

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Thank you!

⇨ http://nwrm.eu/

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