National Hydrometric Monitoring Programme 2018-2021

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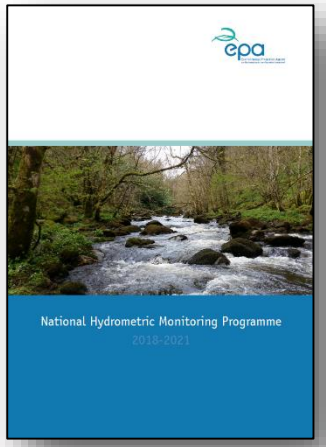
Why is the national hydrometric programme important?

National context

High flows



Low flows

Feedback to inform subsequent plan cycles

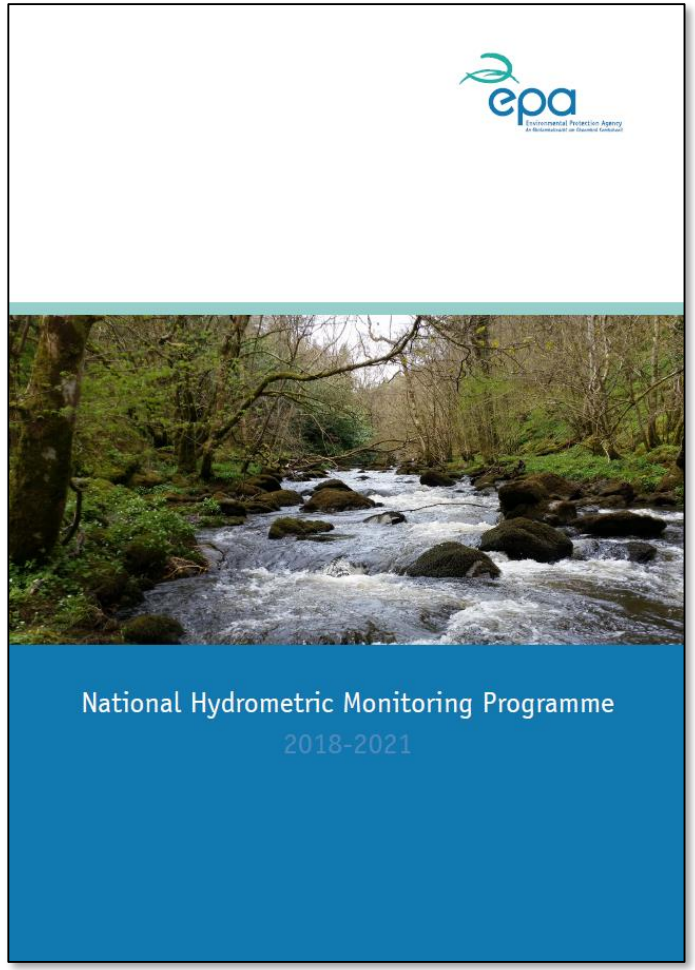
Local importance

Good quality hydrometric data required to;

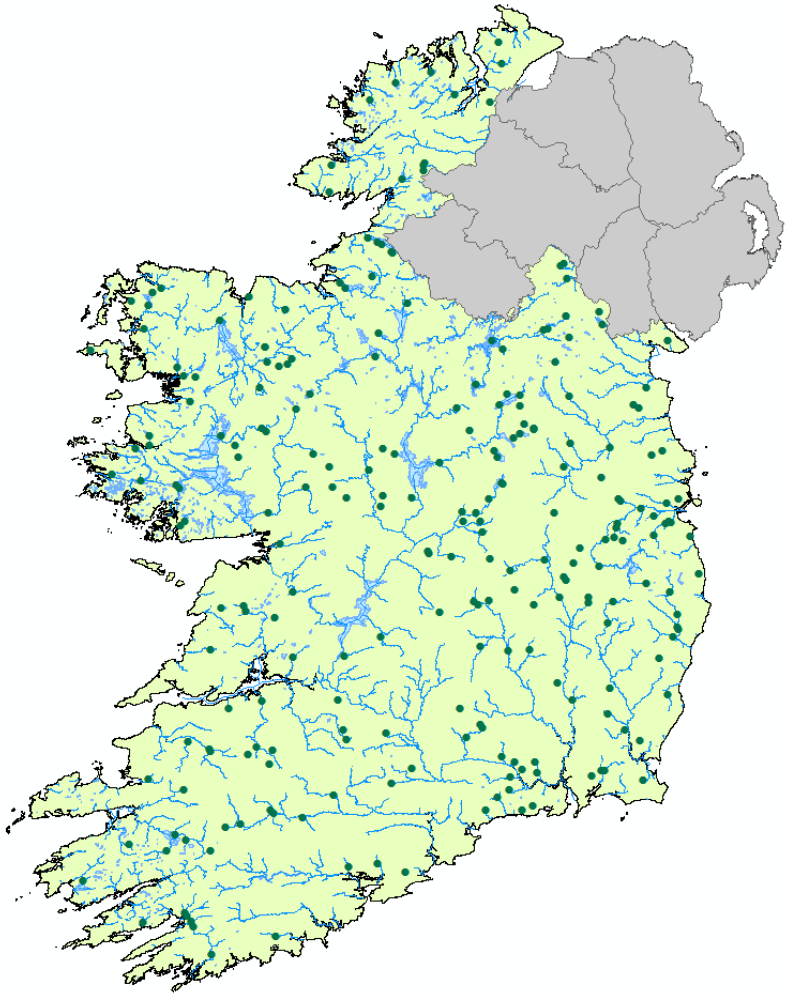
- Support assessment of regional and local environmental carrying capacity
- Assess suitability of industrial, hydroelectric and water resource developments
- Assess flood risk impact **Climate change** CFRAMs plans
- Fulfil local authority responsibilities in the implementation of WFD characterisation and status assessment

What is the National Hydrometric Monitoring Programme 2018-2021?

- National programme of river flow and lake level measurement
- 229 LA/EPA river flow and 33 lake level monitoring stations
- Also incorporates 345 river flow and lake level stations operated by other organisations
- Sets out locations and rationale for all LA/EPA hydrometric stations
- Based on international review of best practice and review of national requirements
- Provides a framework for future network review and management
- Download: http://www.epa.ie/pubs/reports/water/flows/nationalhydrometricprogramme.html

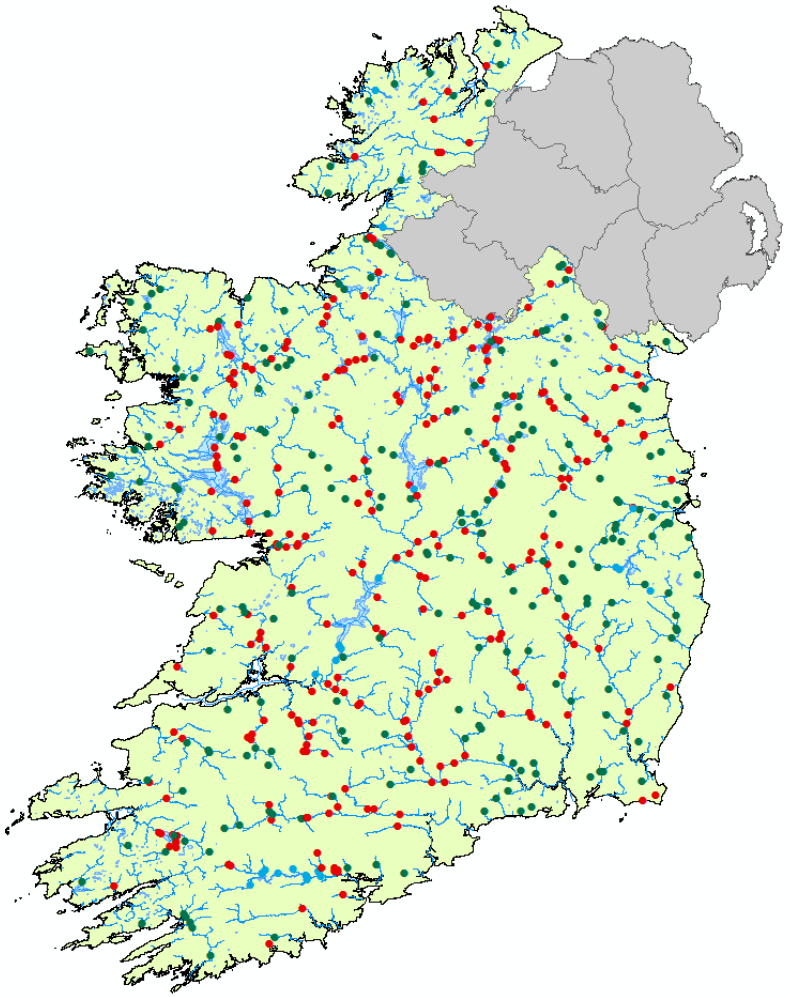


Network configuration



River flow and lake level stations

- EPA/LA
- ESB
- OPW



www.epa.ie/hydronet

Roles and responsibilities

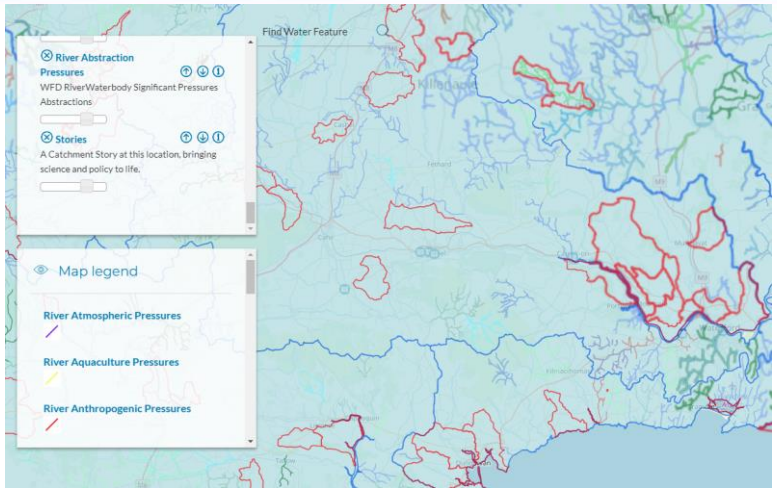
- Section 64 EPA Act
- Roles and responsibilities unchanged by Water Services Acts
- EPA responsible for assessment of water volumes in rivers, lakes and groundwaters in the state
- EPA obliged to produce national plan and carry out monitoring
- Local authorities obliged to provide and maintain monitoring sites
- Monitoring undertaken by other public bodies incorporated into the plan

National hydrometric coordination

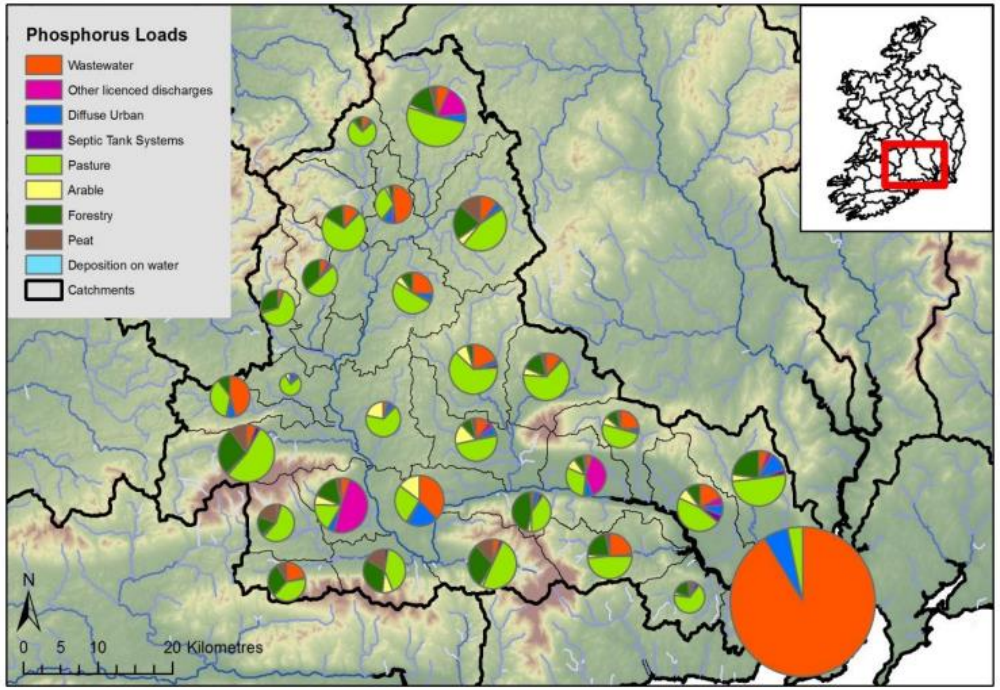
- Nationally though the National Hydrometric Working Group
- Also liaise operationally with local authorities
- Internally with EPA licencing and enforcement, catchments unit and research projects

National Hydrometric Working Group

Supporting WFD characterisation & status assessment

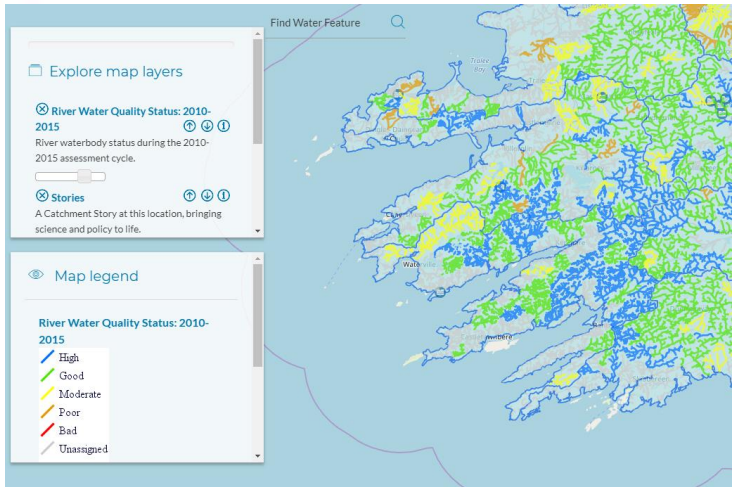


Significant pressure characterisation, www.catchments.ie



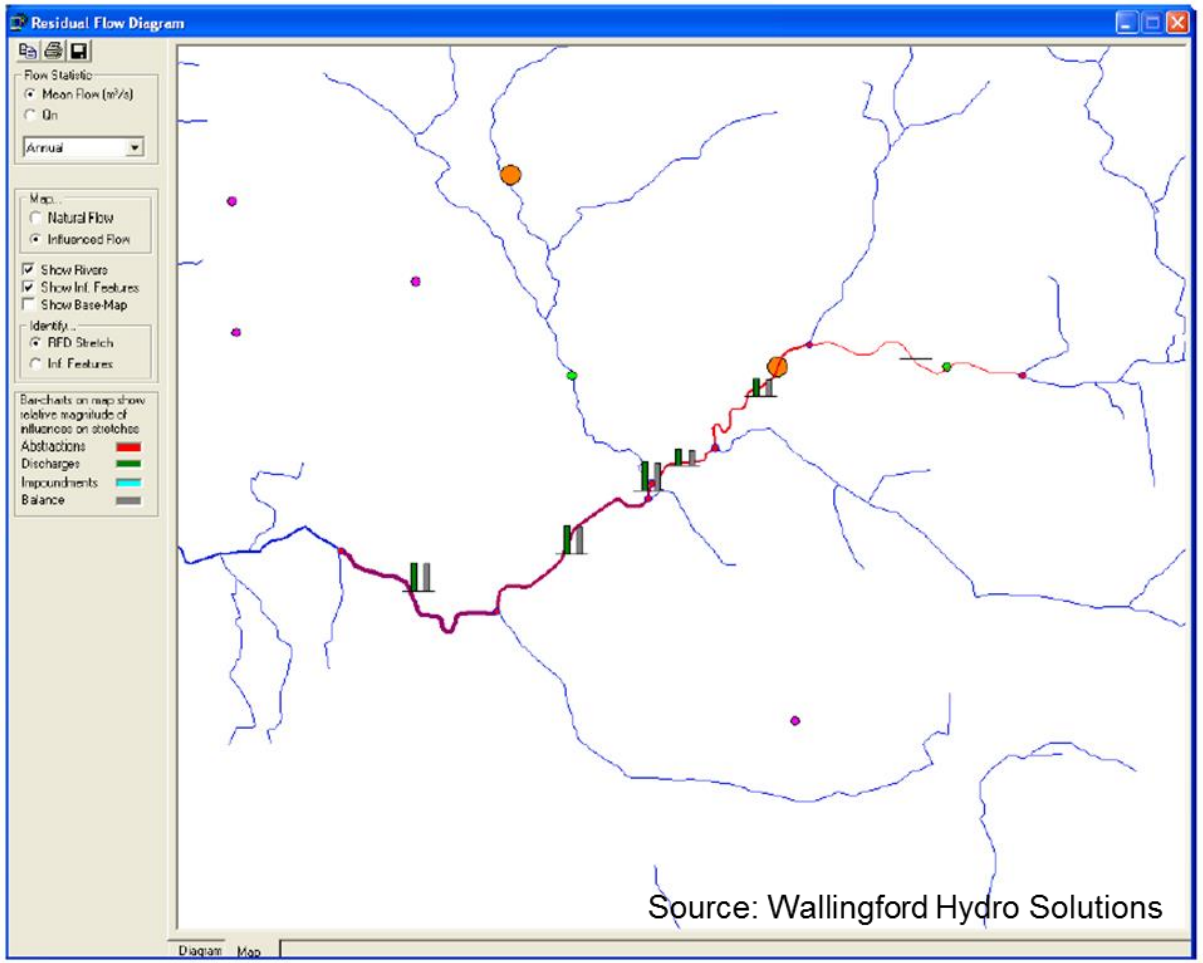
Source Load Apportionment modelling

Mockler, Eva M., "Development of a Nutrient Load Apportionment Modelling Toolbox" (2016). International Congress on Environmental Modelling and Software.



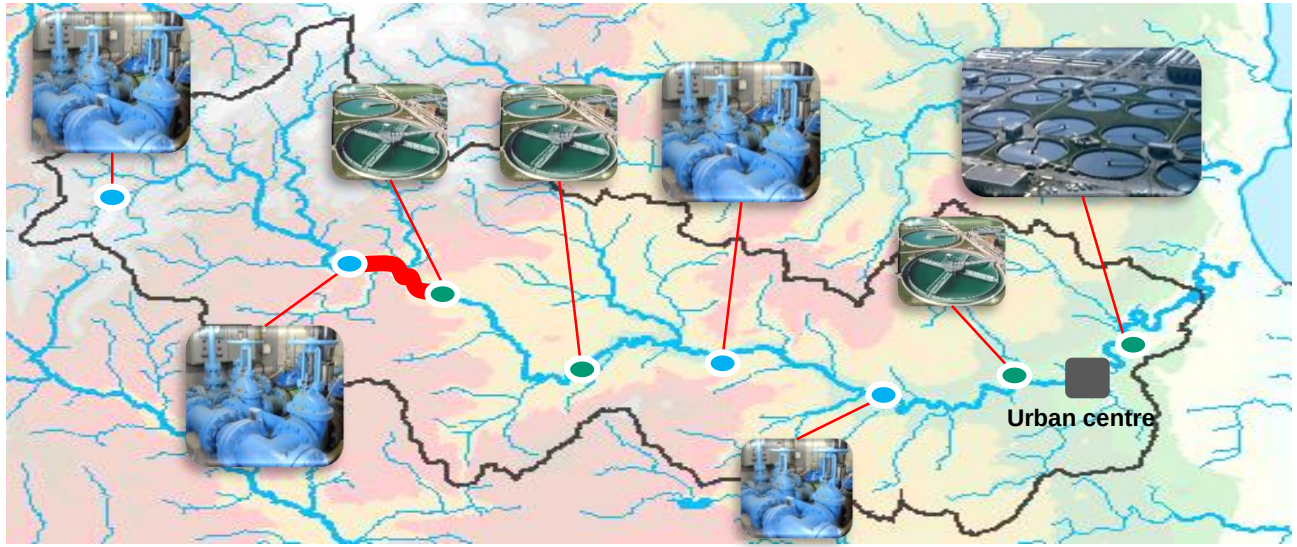
Status 2010-2015, www.catchments.ie

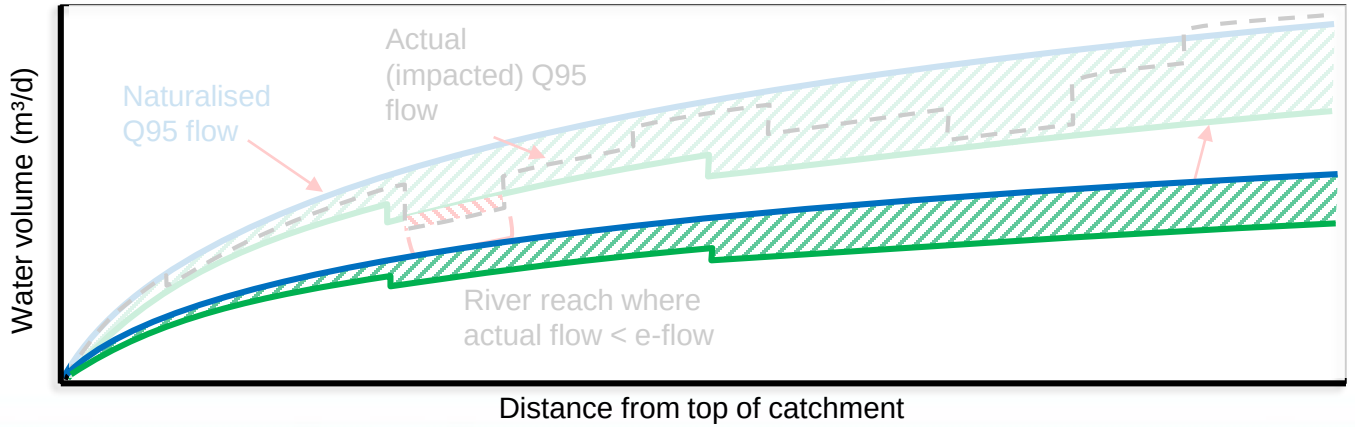
Environmental Flows - National hydrological model



Source: Wallingford Hydro Solutions

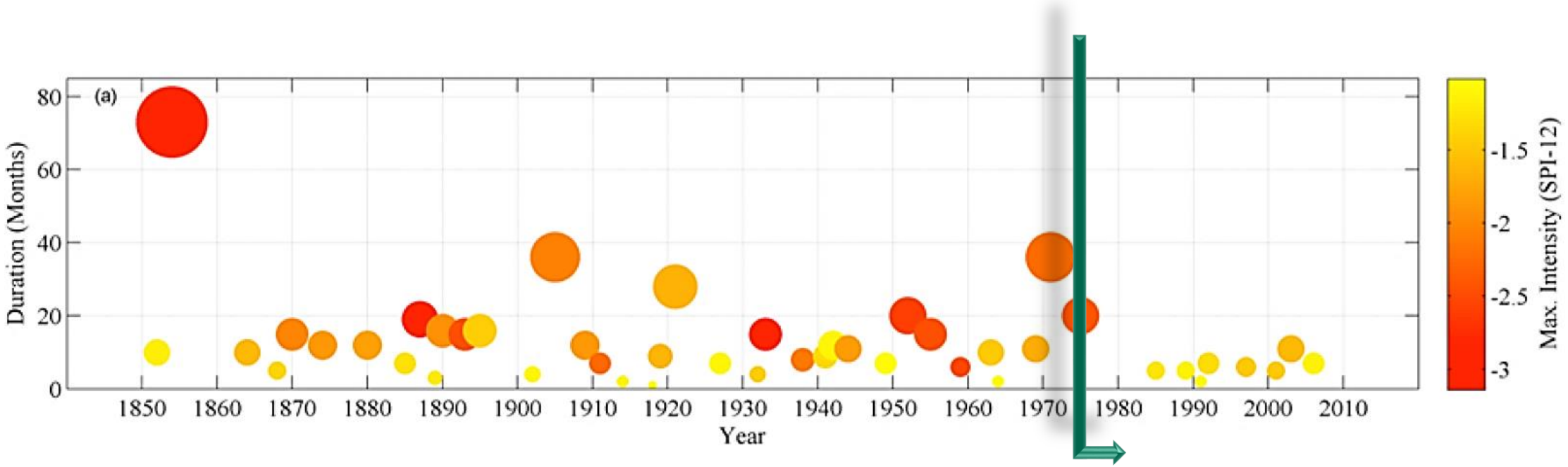
E-Flow example -cumulative flow impact assessment





Potential climate change impact - 40% reduction in available resource by 2060

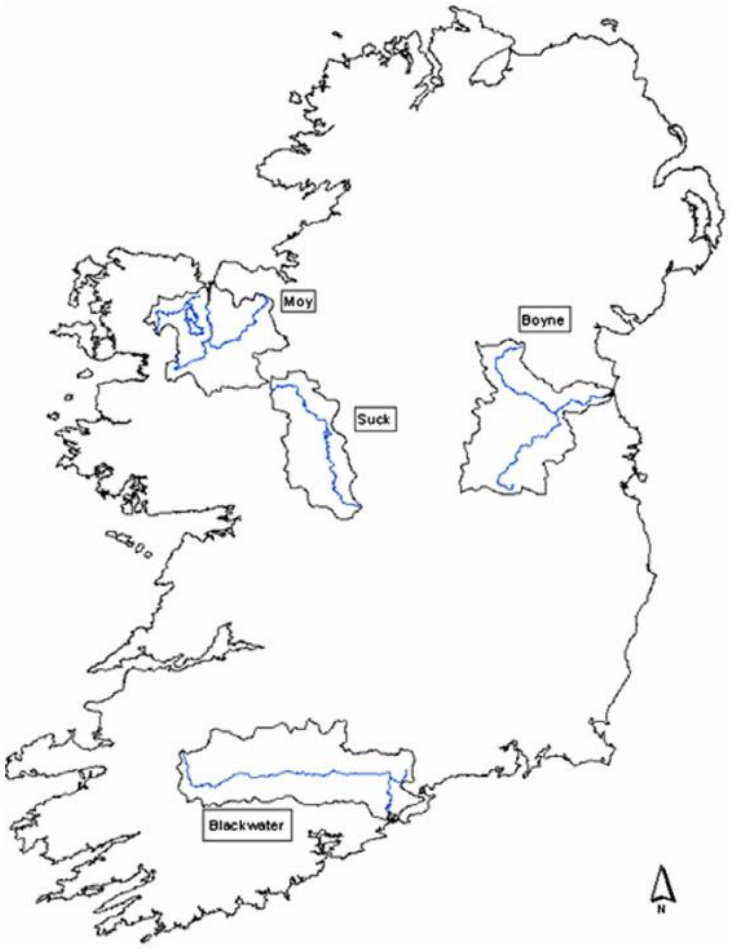
Representivity of existing hydrometric records

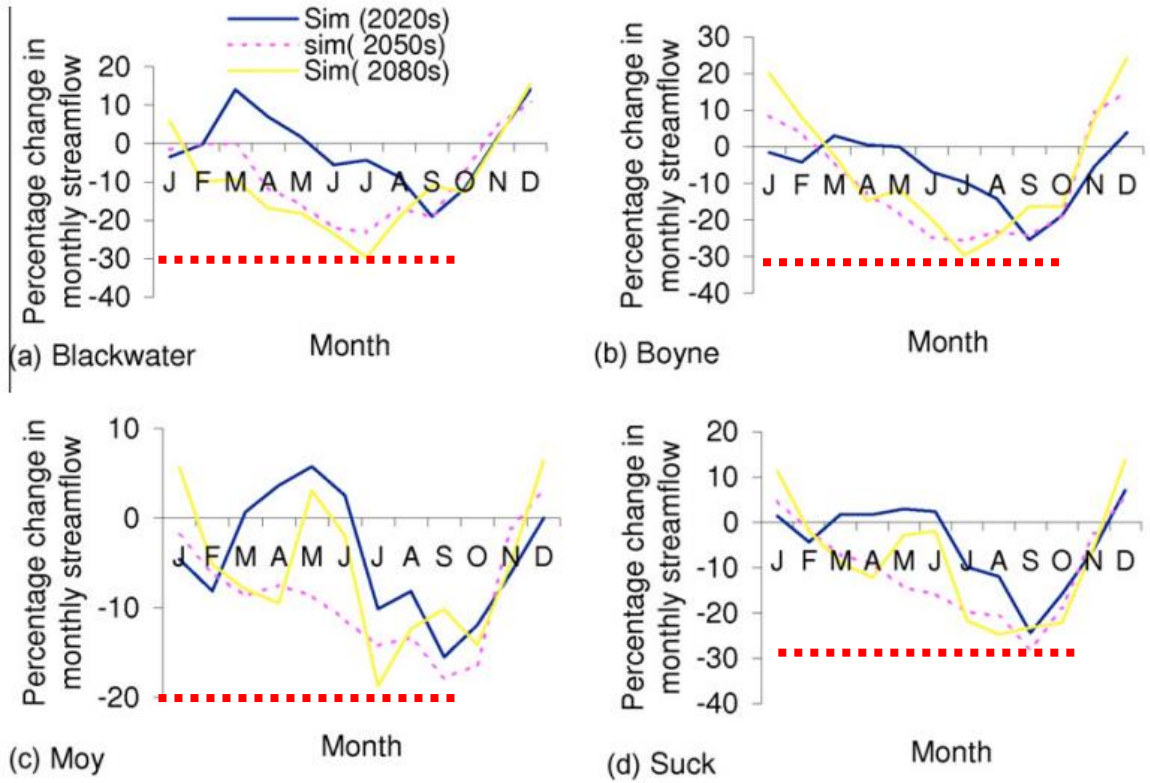


Start of EPA/LA hydrometric records

Noone S, et al 2017 (2017) 'A 250-year drought catalogue for the island of Ireland (1765-2015)'. *International Journal of Climatology*.

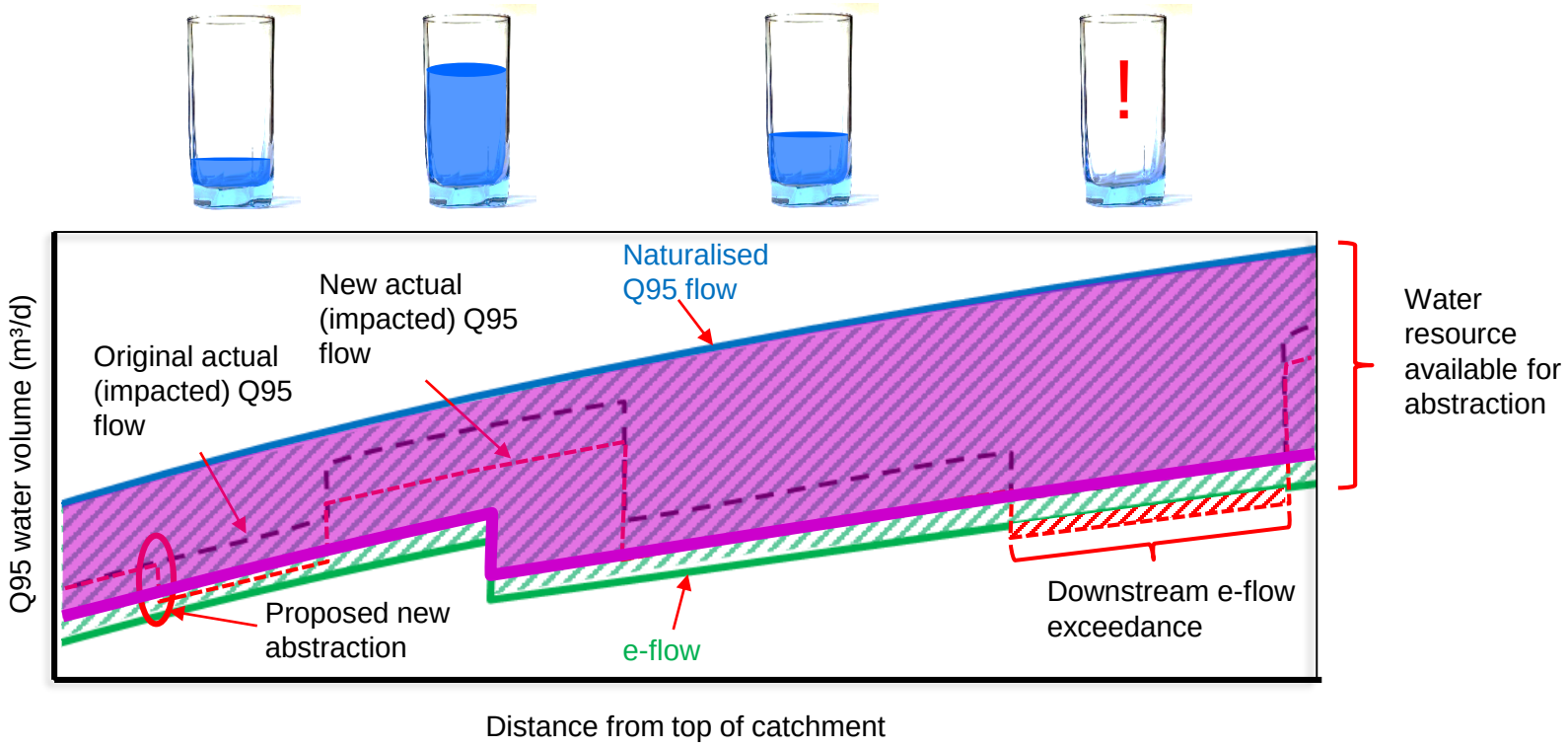
Climate change impact monitoring





Bastola S, Murphy C, Sweeney J. 2011 The role of hydrological modelling uncertainties in climate change impact assessments of Irish river catchments.

Water resources management example



Advantages of a representative hydrometric dataset

A robust, representative database facilitates;

- Confidence in loadings estimates and impacts
- Confidence in assessment of abstraction and discharge impacts
- Accurate water resource estimates
- Protection of designated areas
- Efficient regulation
- Measurement of actual climate change impacts on river flows and lake levels
- Effective national and local planning

This is a shared journey

- Partnership between EPA and local authorities
- Participation of local authority stakeholders is key
- As is national coordination through the National Hydrometric Working Group
- In stakeholders interests to support the programme
- Improved certainty facilitates efficient water resource management
- Long-term but vital investment
- Examine the monitoring in your area, and please contact us with questions, suggestions, comments.


Thank you