

Irish Freshwater Resources

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Questions

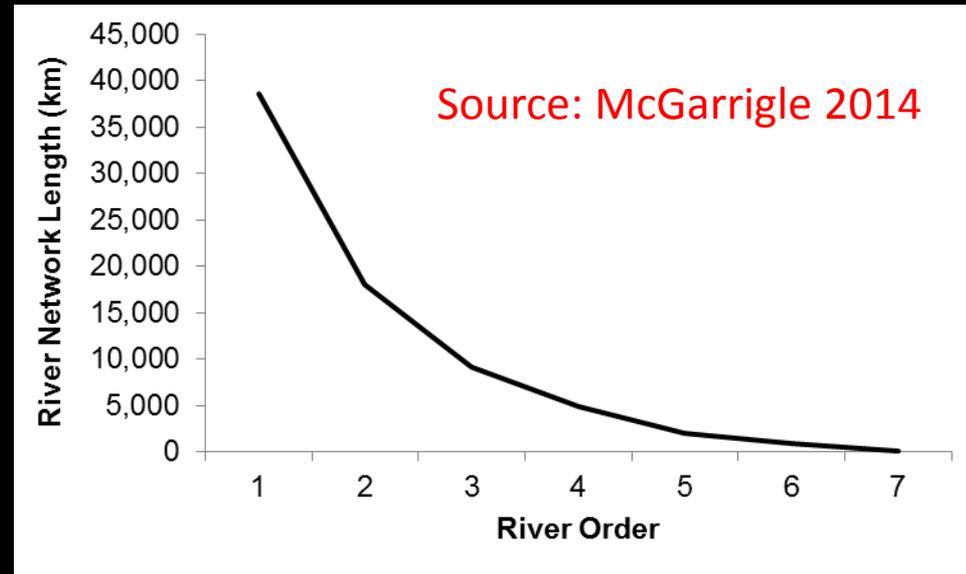
- What are our freshwater resources in Ireland?
- What Ecosystem service are derived from freshwaters?
- Data availability?
- Stakeholders?

Rivers & streams

~ 77% or > 56,000 km of lotic network is small streams in Ireland

Large rivers make up < 10% of the Irish riverine resource

Small streams dominate the landscape



Order	Length (km)	Total Length (%)	Cumulative Length (%)
1	38,623	52.2	52.2
2	18,120	24.5	76.7
3	9,227	12.5	89.1
4	4,909	6.6	95.8
5	2,080	2.8	98.6
6	973	1.3	99.9
7	73	0.1	100.0
Total	74,005	100	

Lakes

66% of Irish lakes are < 1 ha in size

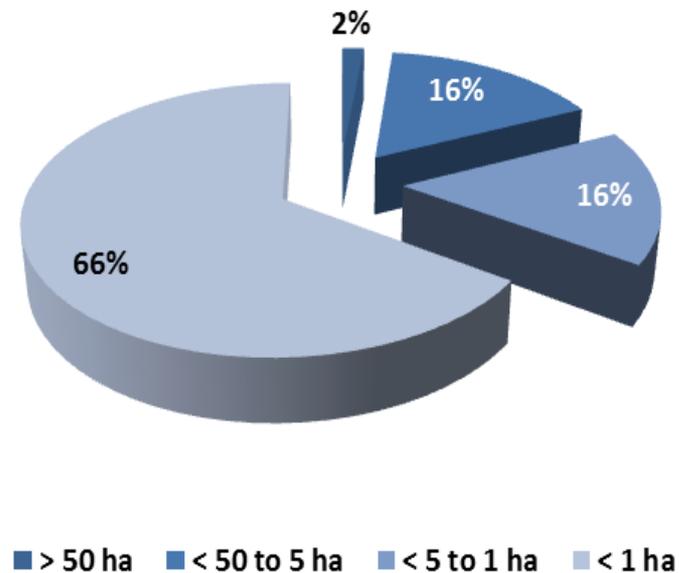


However:

< 2% has more than 80% of the total lake surface area

Lakes in Ireland

Source:
McGarrigle 2014

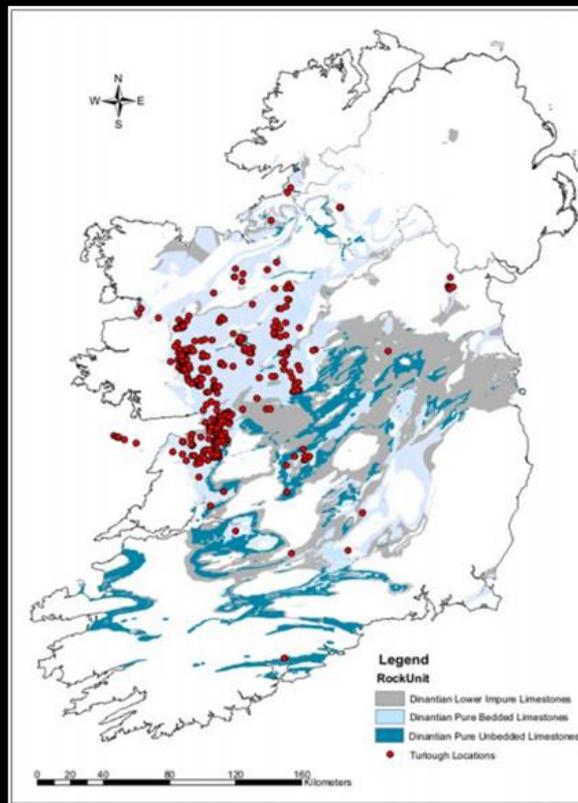


Wetlands

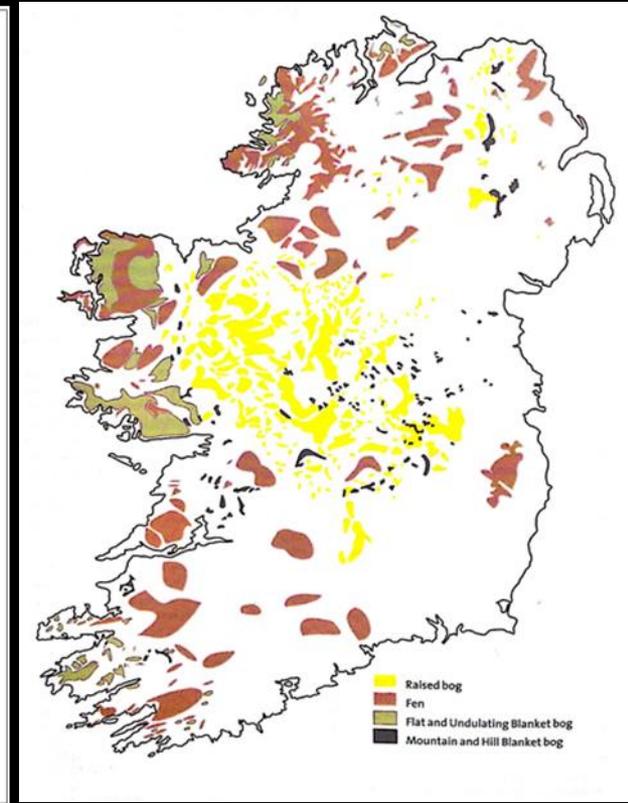


58 Ramsar sites, many of them freshwater habitats or reliant on freshwaters

But 1000s more throughout the country



Irish Turloughs Source: GSI & Sheehy Skeffington et al. 2006



Irish Peatlands Source: Doyle and Ó Críodáin 2003.

Three major wetland types are generally recognised for freshwaters:

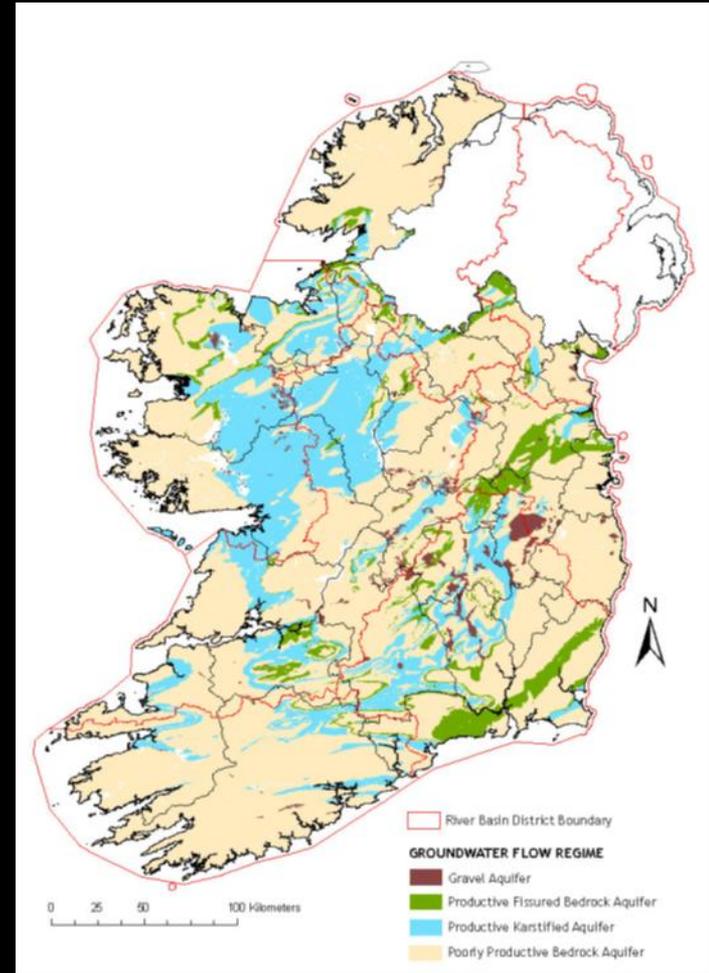
lacustrine - wetlands associated with lakes

riverine - wetlands along rivers and streams

palustrine - meaning “marshy” – wet grassland, marshes, swamps and bogs

Groundwater

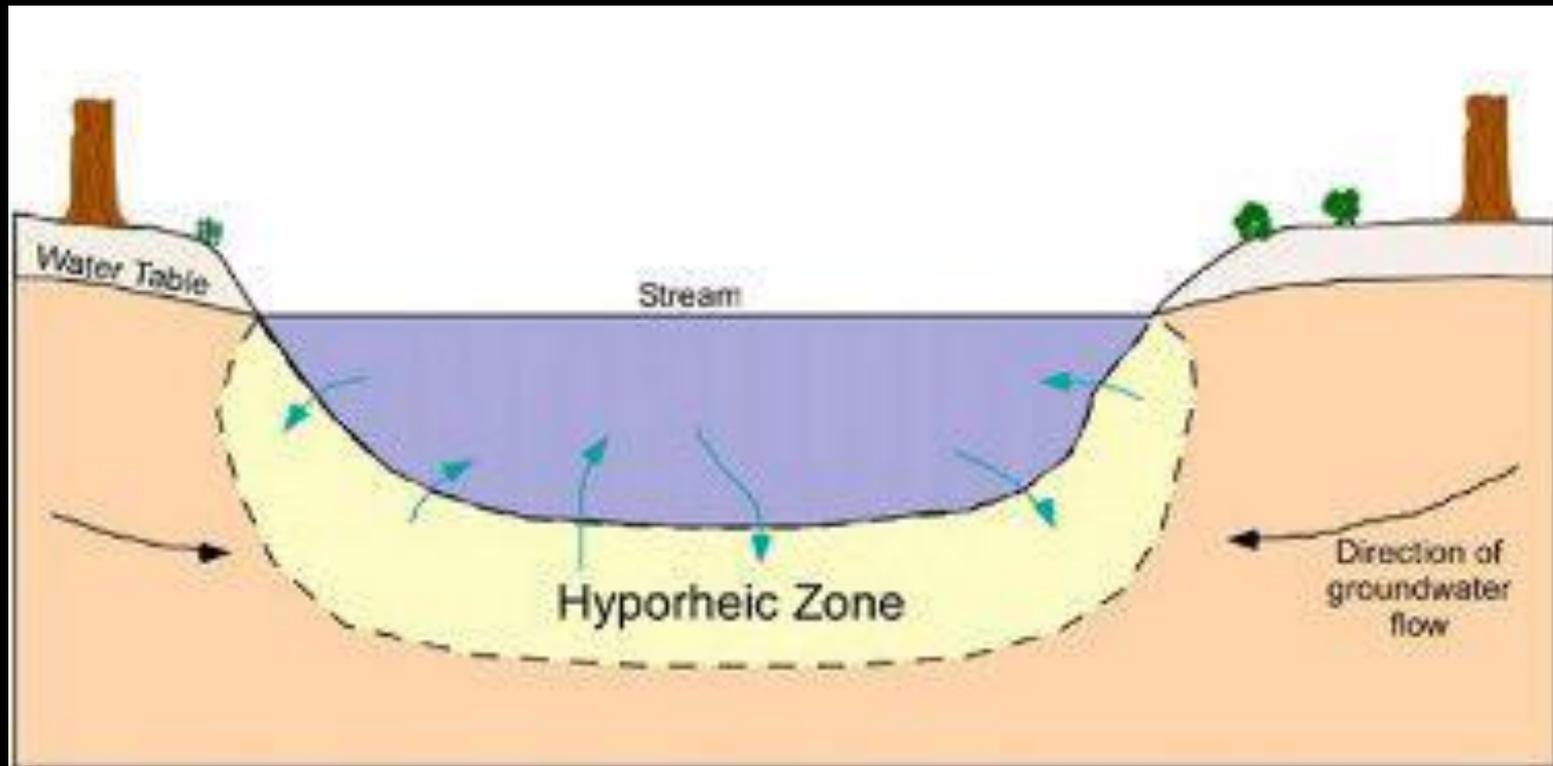
Extensive groundwater sources in Ireland



Groundwater (Simplified) Source: GSI

Hyporheic Zone

Water – terrestrial interface

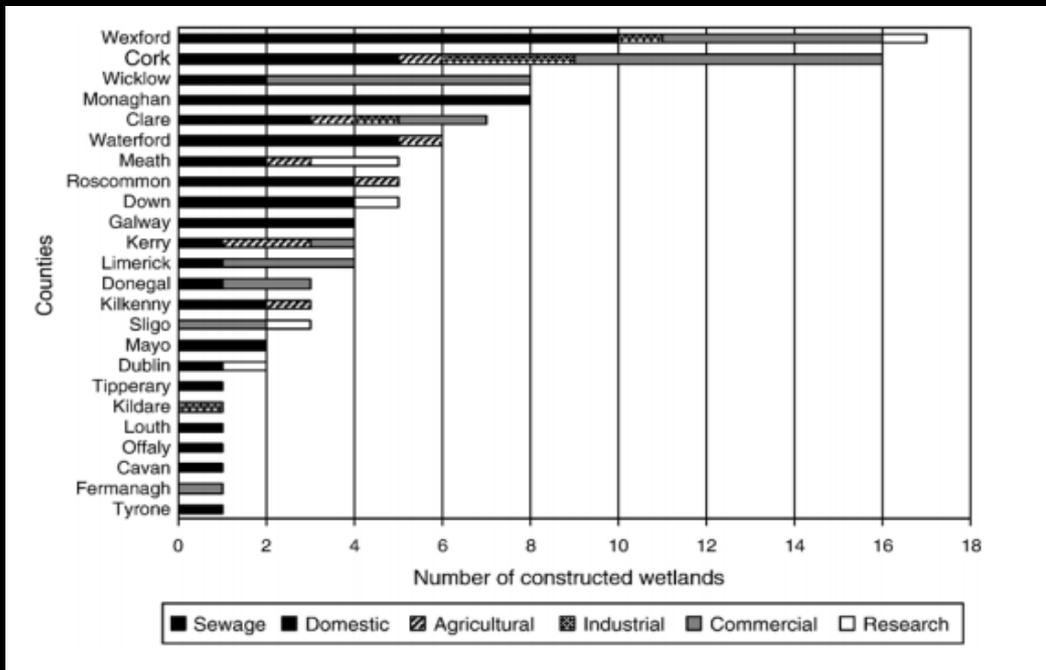


Man-made waterbodies

Canals

Constructed wetlands

Etc.



Biological Resources

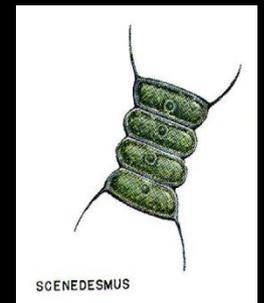
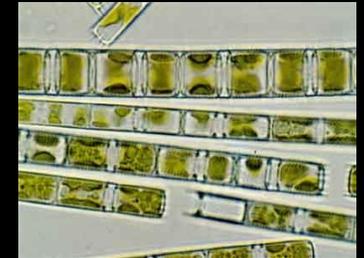
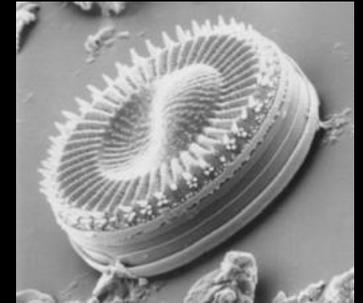
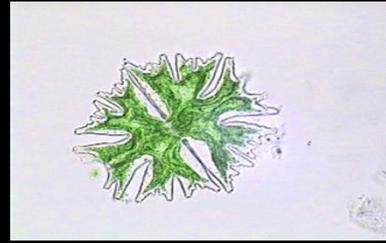
Freshwater Phytoplankton and Bacteria

Occur mostly in lakes

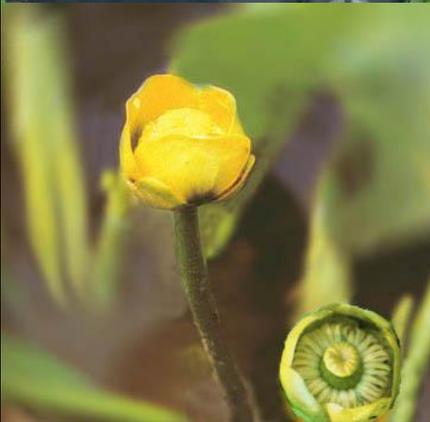
BUT not exclusively

Planktonic forms: 1000+ ???

True plankton: <500



Freshwater macrophytes



Charaphytes: 26 species

Pteridophytes: 5 species

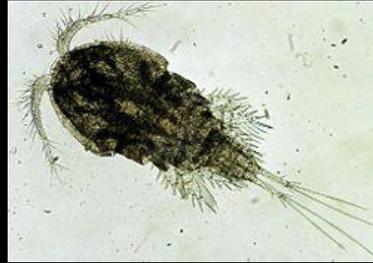
Mosses and Liverworts: 24 species

Angiosperms: 123 species:-

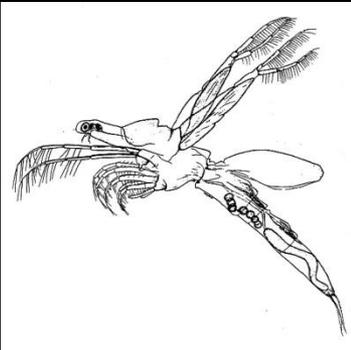
- 11 Floating-leaved forms,
- 8 Free Floating forms,
- 8 Isoetid forms,
- 45 Elodeid forms,
- 51 Emergent forms



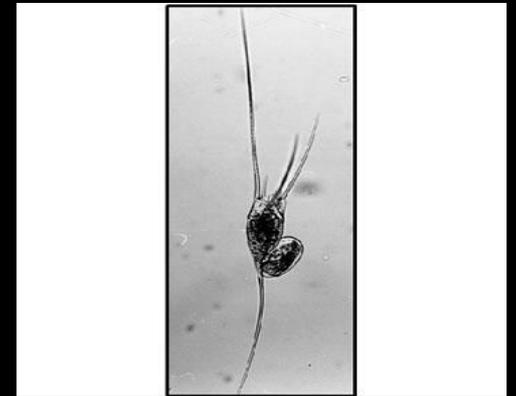
Freshwater Zooplankton



Rotifera: 45 species
Cladocera: 52 species
Copepoda: 30 species



Chydorids: 41 species
Ostracods: 59 species



Freshwater Invertebrates

~1900 aquatic invertebrates species in Ireland

- Ephemeroptera: 33
- Plecoptera: 19
- Trichoptera: 147
- Diptera : 929



A wide range of freshwater fish

29 Species

11 “native” species



Irish Amphibians

Three species of amphibian occur in Ireland

Rana temporaria

Common Frog
Very common



Bufo calamita

Natterjack toad
Limited distribution



Triturus vulgaris

Smooth newt
Widespread



Range of Aquatic Birds



Mammals

Otter



Mink



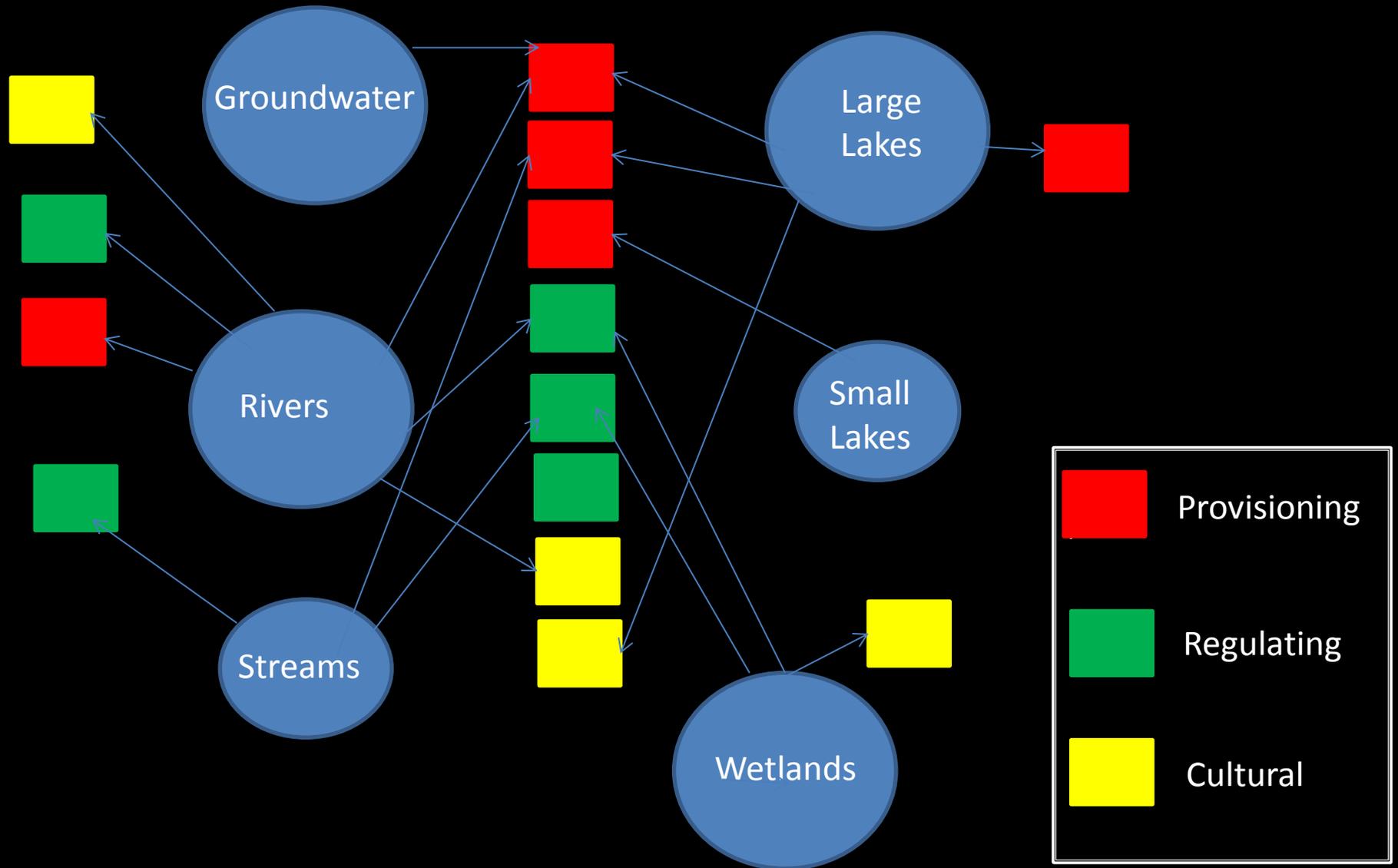
3 Service Categories to Consider

- Provisioning Services
- Regulating Services
- Cultural Services
 - Not considering 'Supporting Service' to ensure no double counting

ES unique to these resources

ES common to these resources

ES unique to this resource



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