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Planning for Resilient Ecological Networks in Wales



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CIEEM 2019 Autumn
Conference
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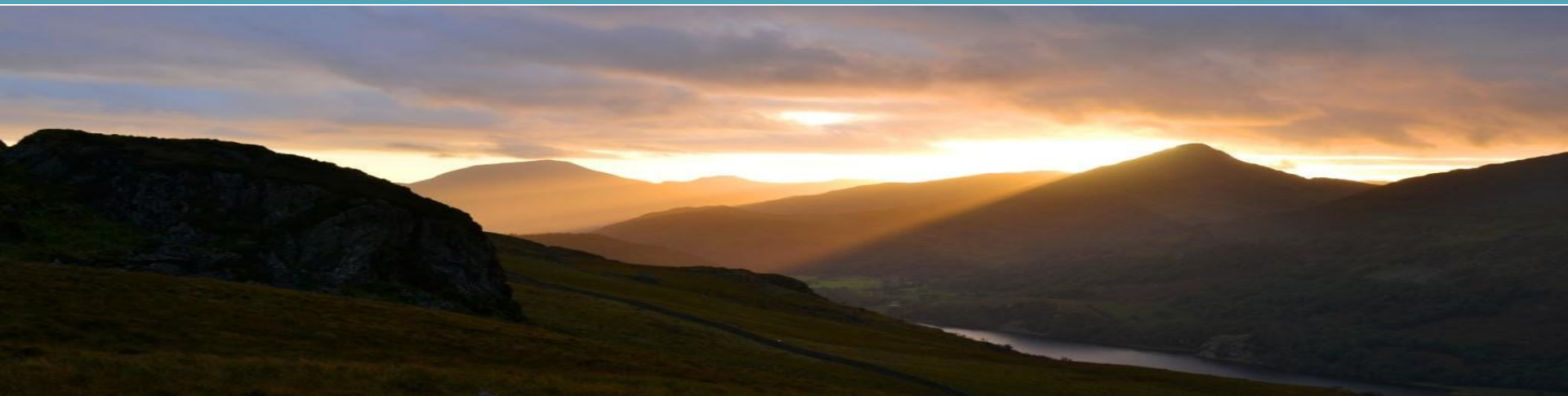
Presentation Overview

1. Ecosystem Resilience

- Legislation & policy
- Developing the approach in Wales

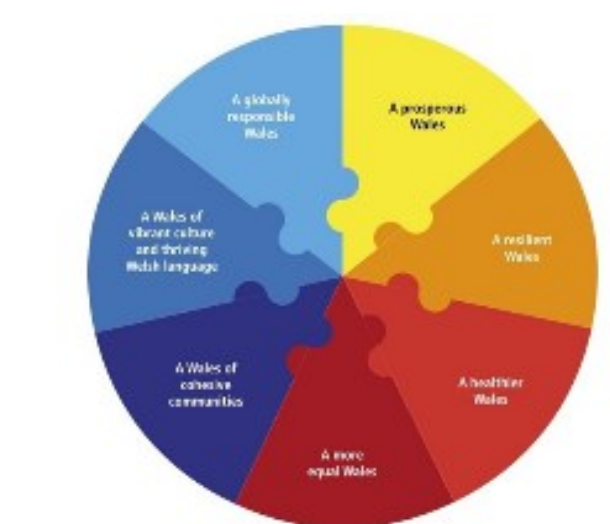
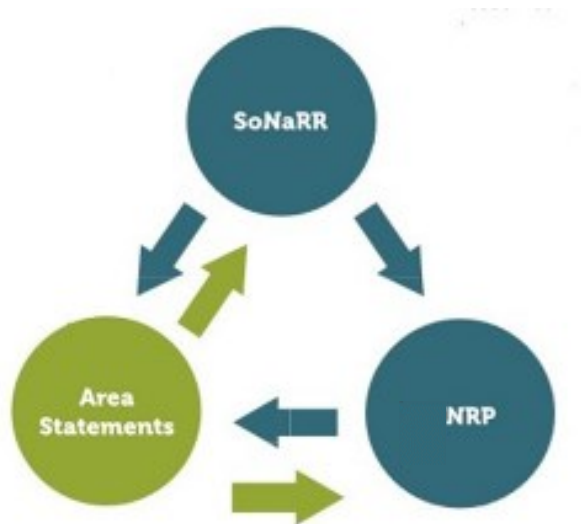
2. Resilient Ecological Networks

- Background and definitions
- Opportunities for development



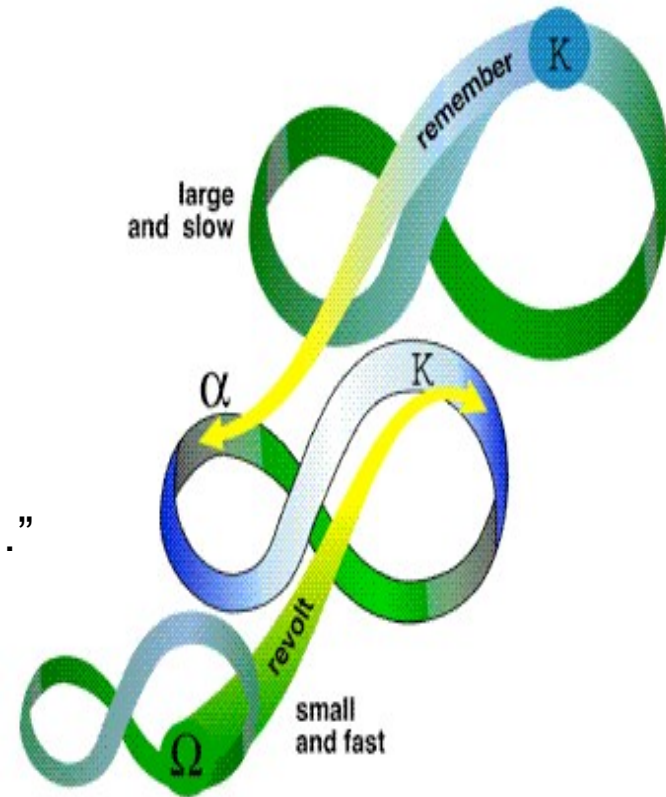
Ecosystem Resilience in Legislation

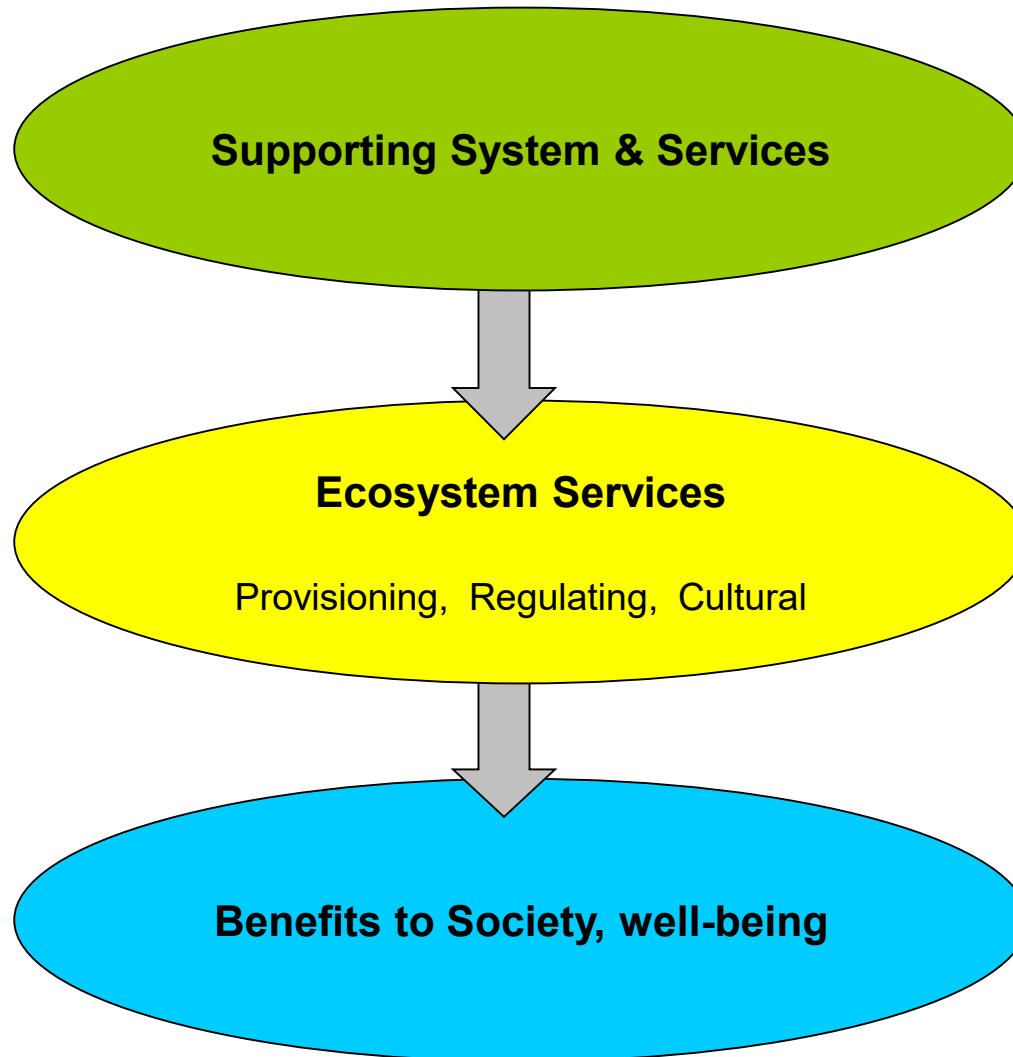
- **Environment (Wales) Act 2016**
Biodiversity and resilience of ecosystems duty: Public bodies should
*“seek to maintain and enhance biodiversity in the exercise of functions...
and in so doing promote the resilience of ecosystems”*.
- **Well-being of Future Generations (Wales) Act 2015**
“A resilient Wales” is one of seven goals.



What is Ecosystem Resilience? Developing an approach for Wales

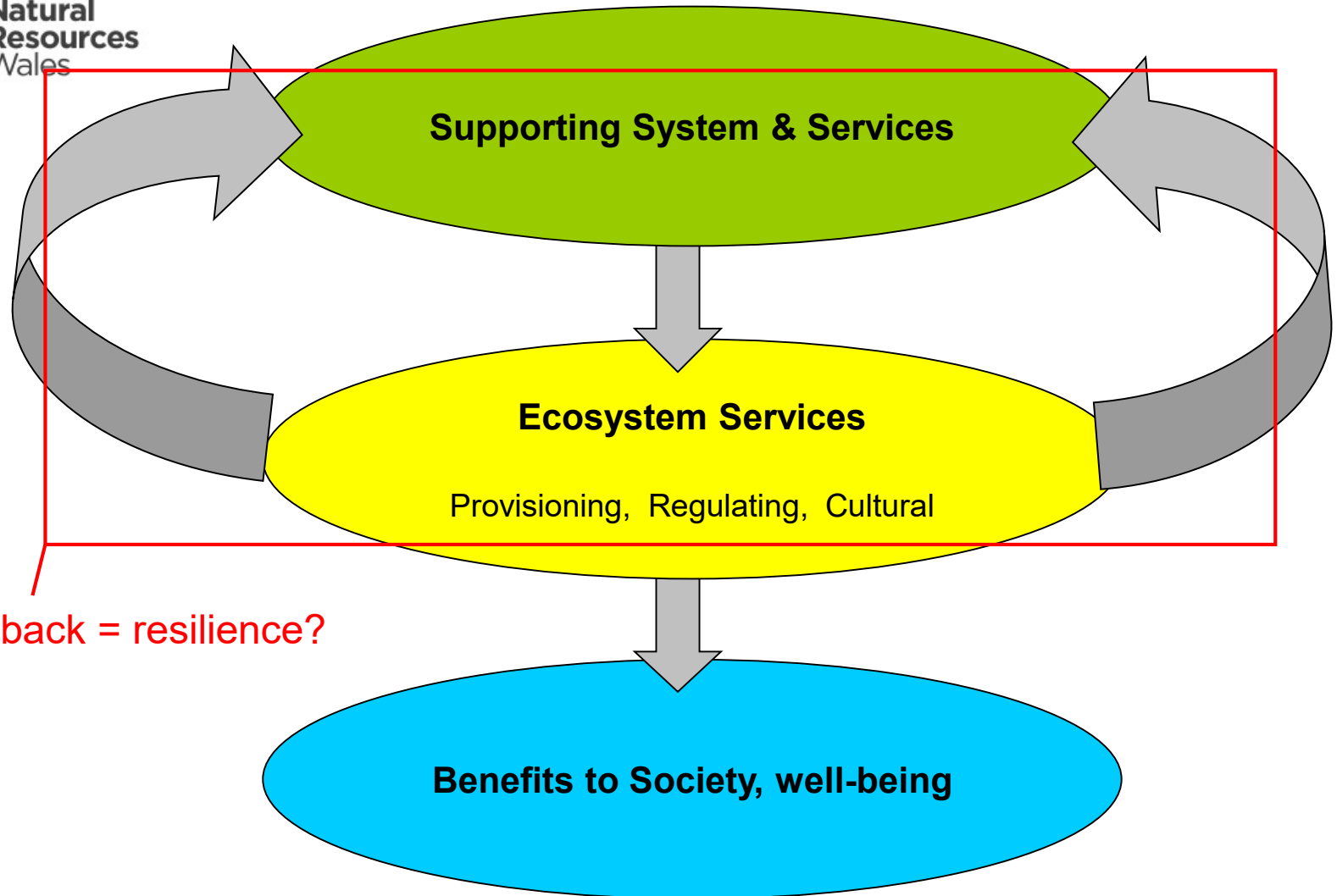
- Living Wales Programme (2012/13) - review of literature and applicability to Wales.
- Complex subject:
 - Resistance
 - Ability to recover
 - Speed of recovery
 - Adaptation
 - Thresholds and tipping points
 - Panarchy “adaptive cycles in a nested hierarchy...”
- A challenge to describe/measure even within a contained system, let alone at a Wales-level!
- But common theme – **ability to deal with disturbance**







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Feedback = resilience?

An Inclusive Definition of Ecosystem Resilience:

“The capacity of ecosystems to deal with disturbances, either by resisting them, recovering from them, or adapting to them, whilst retaining their ability to deliver services and benefits now and in the future”

SoNaRR, 2016



Ecosystem Resilience and the Environment (Wales) Act (2016)

- Acknowledges the complexity of the subject.
- A pragmatic approach with an emphasis on *building resilience*
- Use 5 environmental attributes to structure thinking.



Attributes for Building Resilience



Adaptability

What do we need to do to Build Ecosystem Resilience?

Diversity

- Maintain and enhance
- Increase structural
- Diversify production

Extent

- Maintain
- Increase

Resilient Ecological
Networks

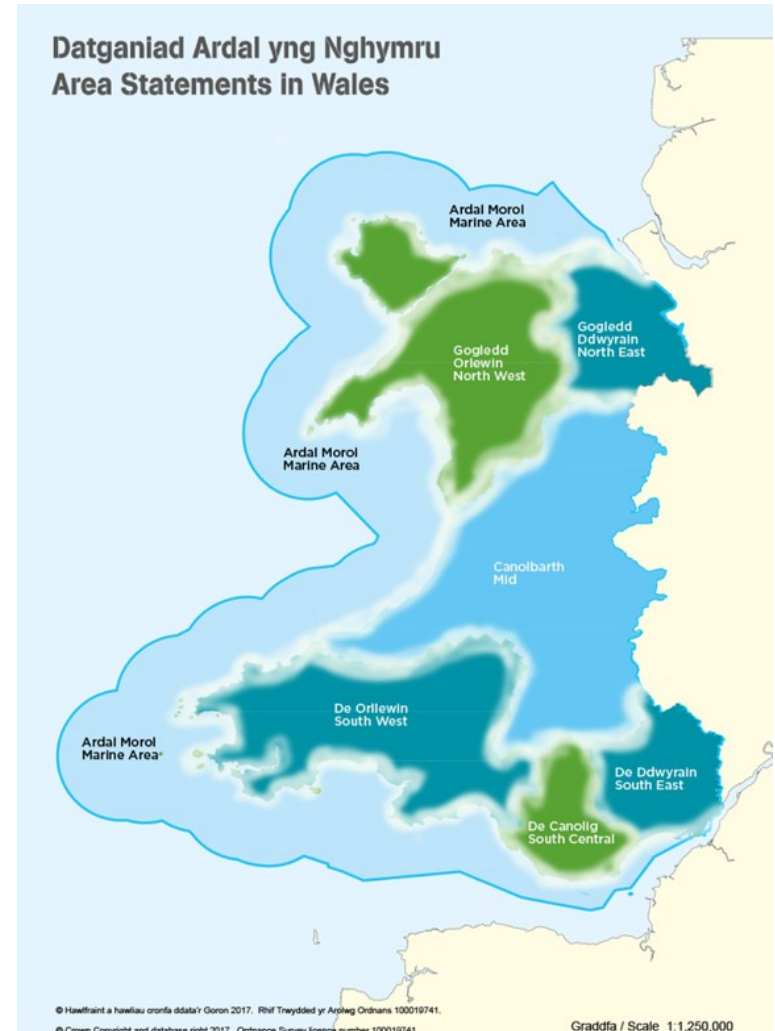
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Resilient Ecological Networks

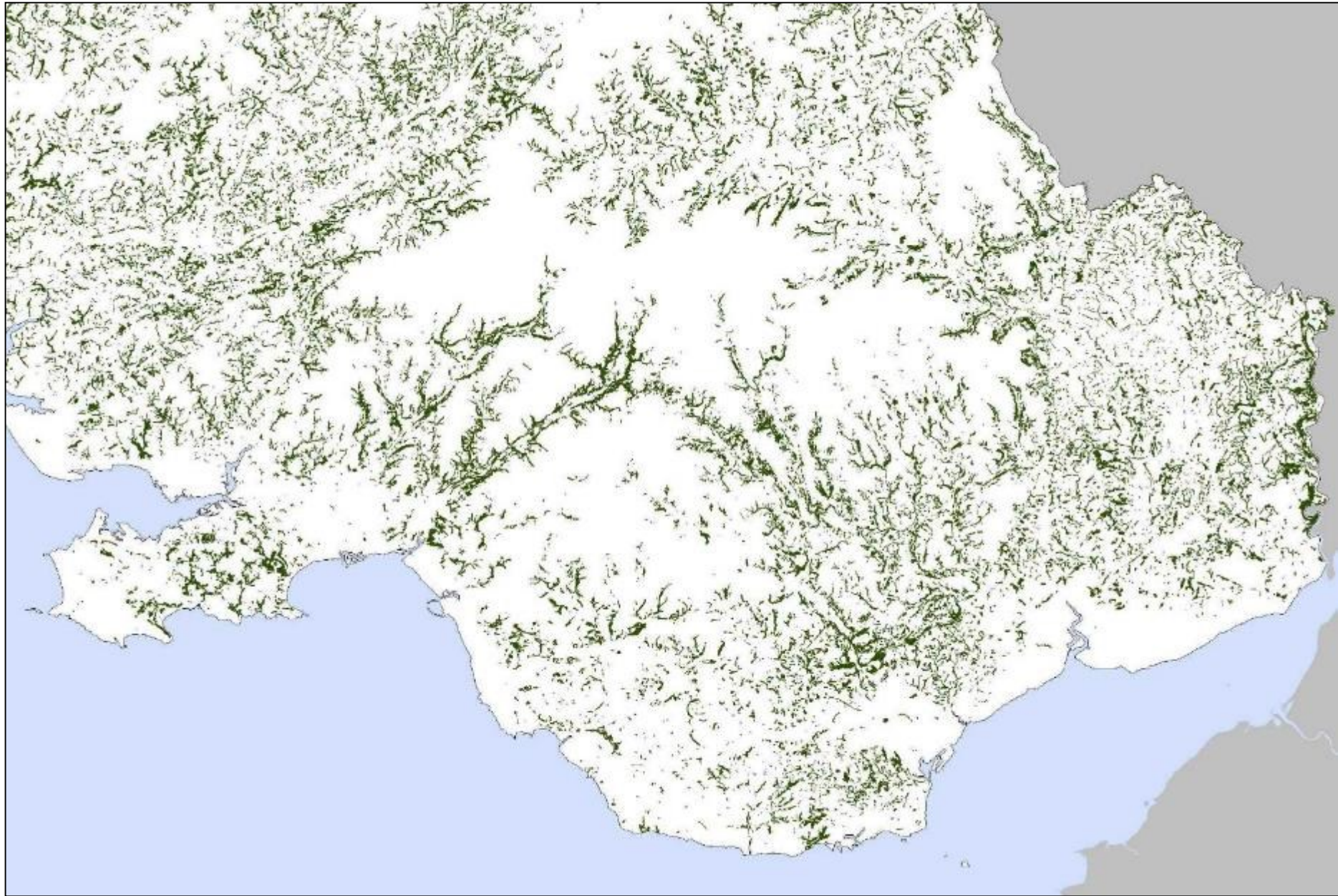
- *“Do England’s wildlife sites comprise a coherent and resilient ecological network?”* Lawton et al. 2010.
- Wales’ Natural Resources Policy (WG, 2017):
 - *“proactively develop resilient ecological networks....”*
- Wales’ Nature Recovery Action Plan (2019 refresh) key theme:
 - *“Maintaining and Enhancing Resilient Ecological Networks”*
- WG definition: *“Networks of habitat in good ecological condition joining up designated sites and other biodiversity hotspots to provide maximum benefit for biodiversity and our well-being.”*

Developing Resilient Ecological Networks

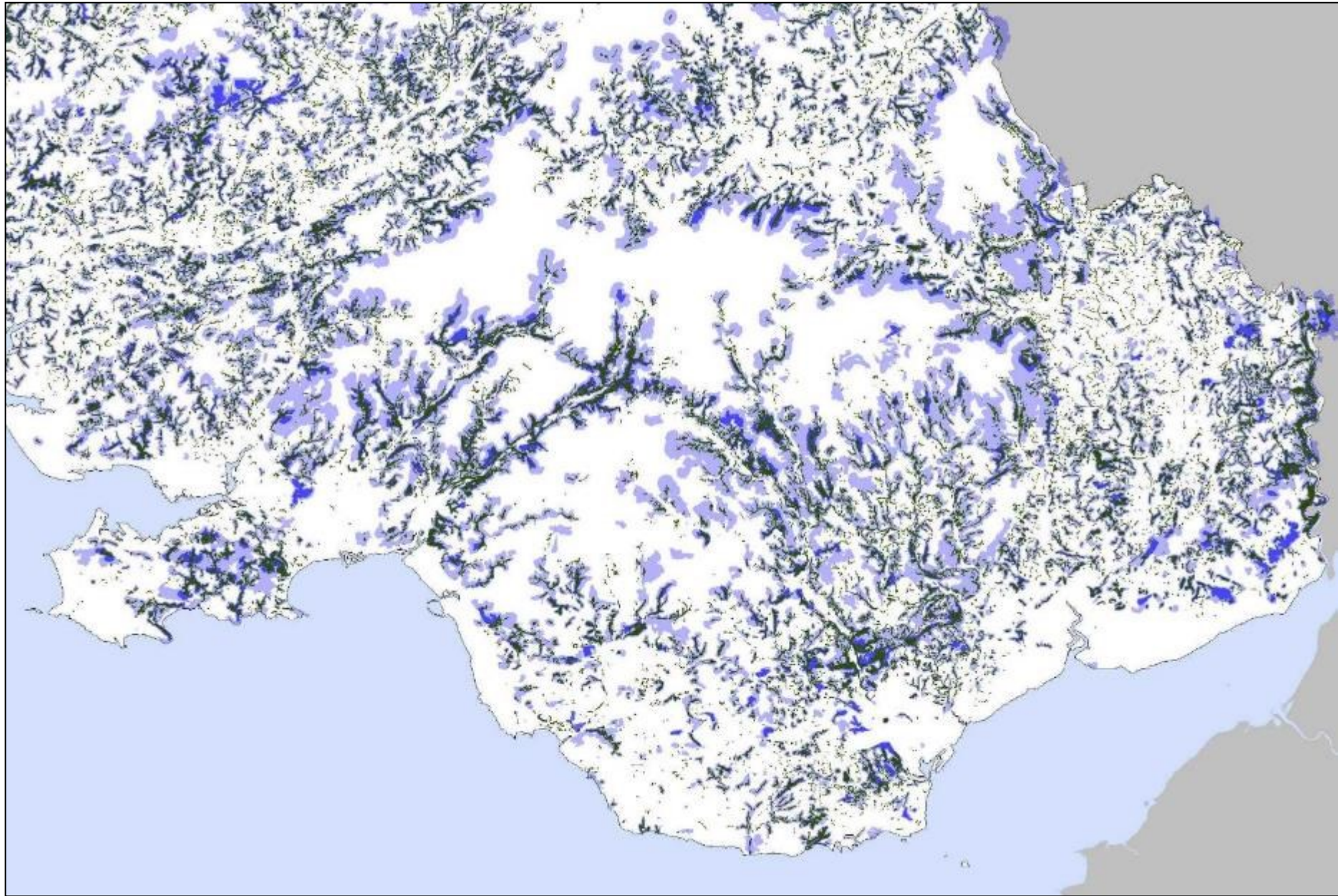
- Strong spatial element, e.g:
 - Distribution of Protected Areas
 - Habitat network modelling.
 - Habitat restoration priority areas.
 - Catchments.
 - Spatially defined partner projects.
- Opportunity mapping for ecosystem services.
- Area Statements.
- Delivery across many mechanisms.
 - Planning processes, net biodiversity benefit
 - Agri-schemes post EU Exit.



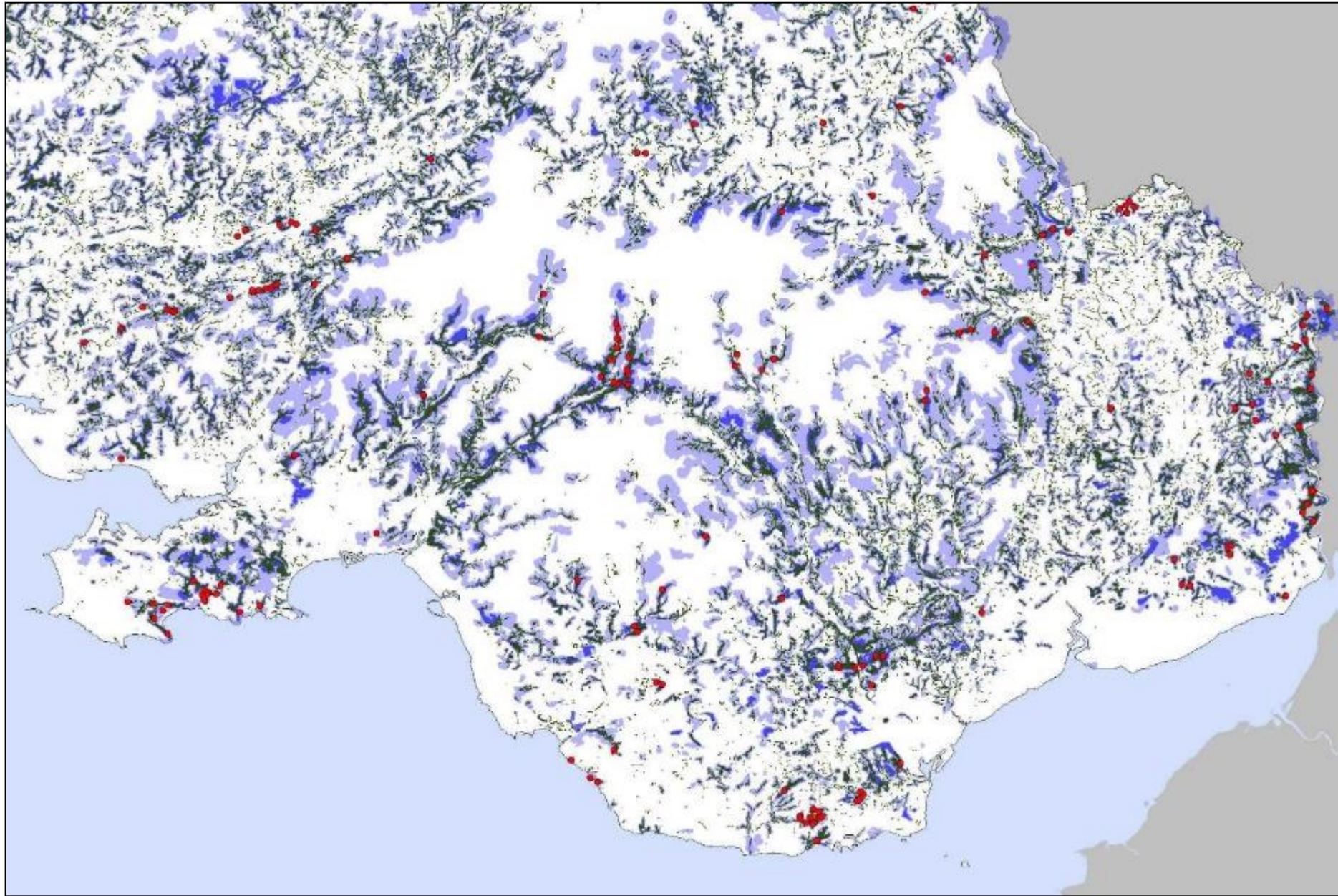
Towards a *Resilient Ecological Network* for Woodland



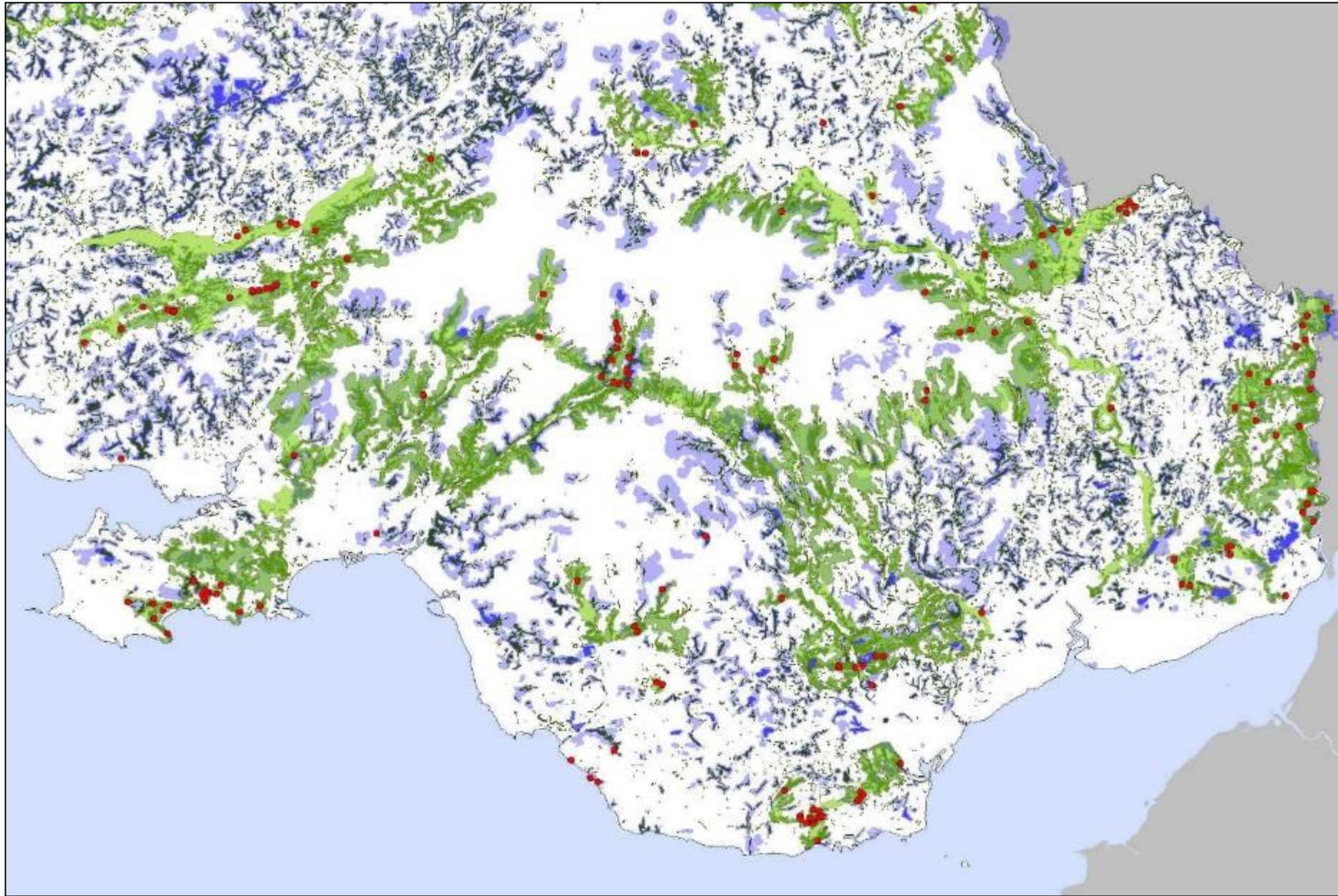
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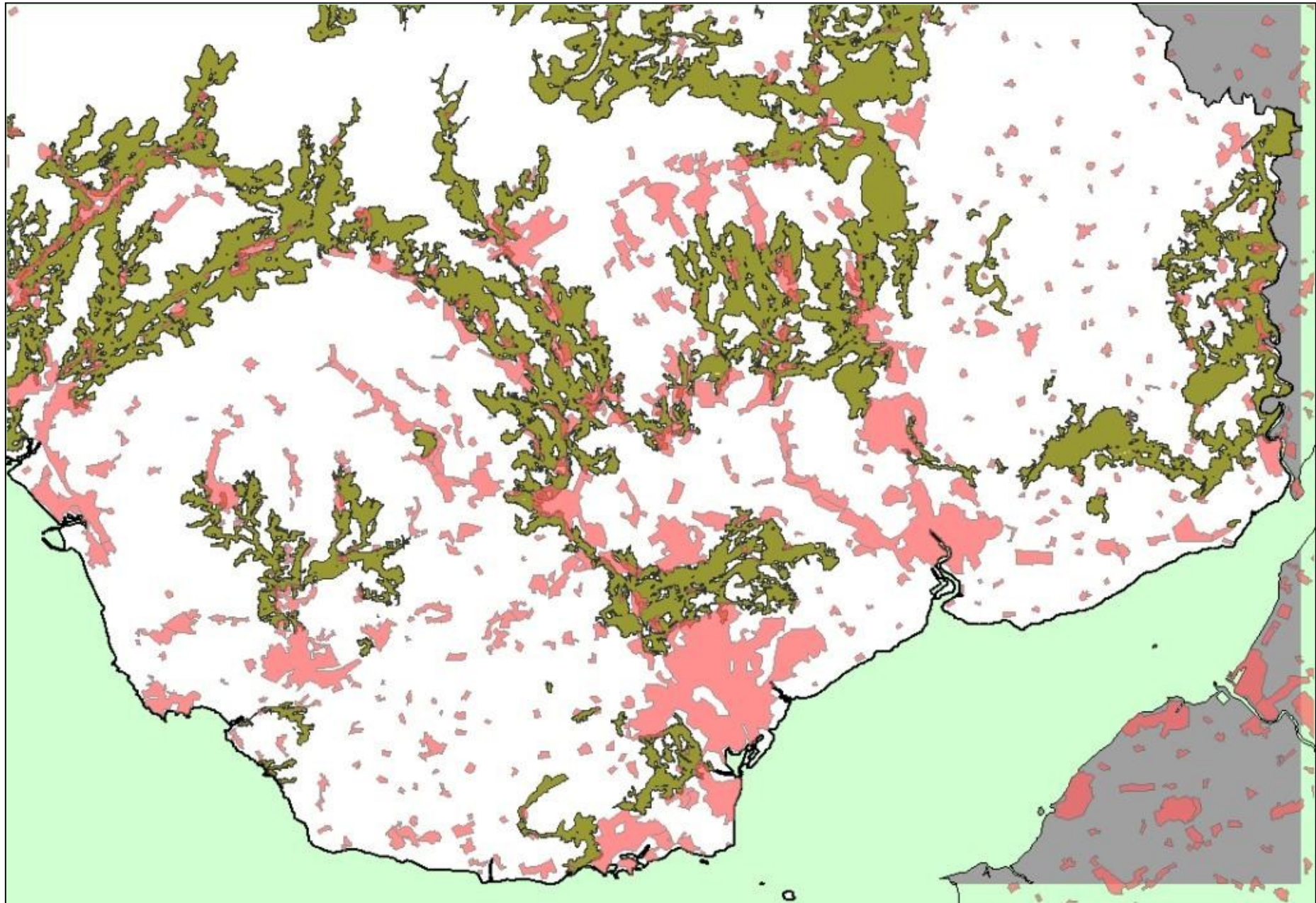
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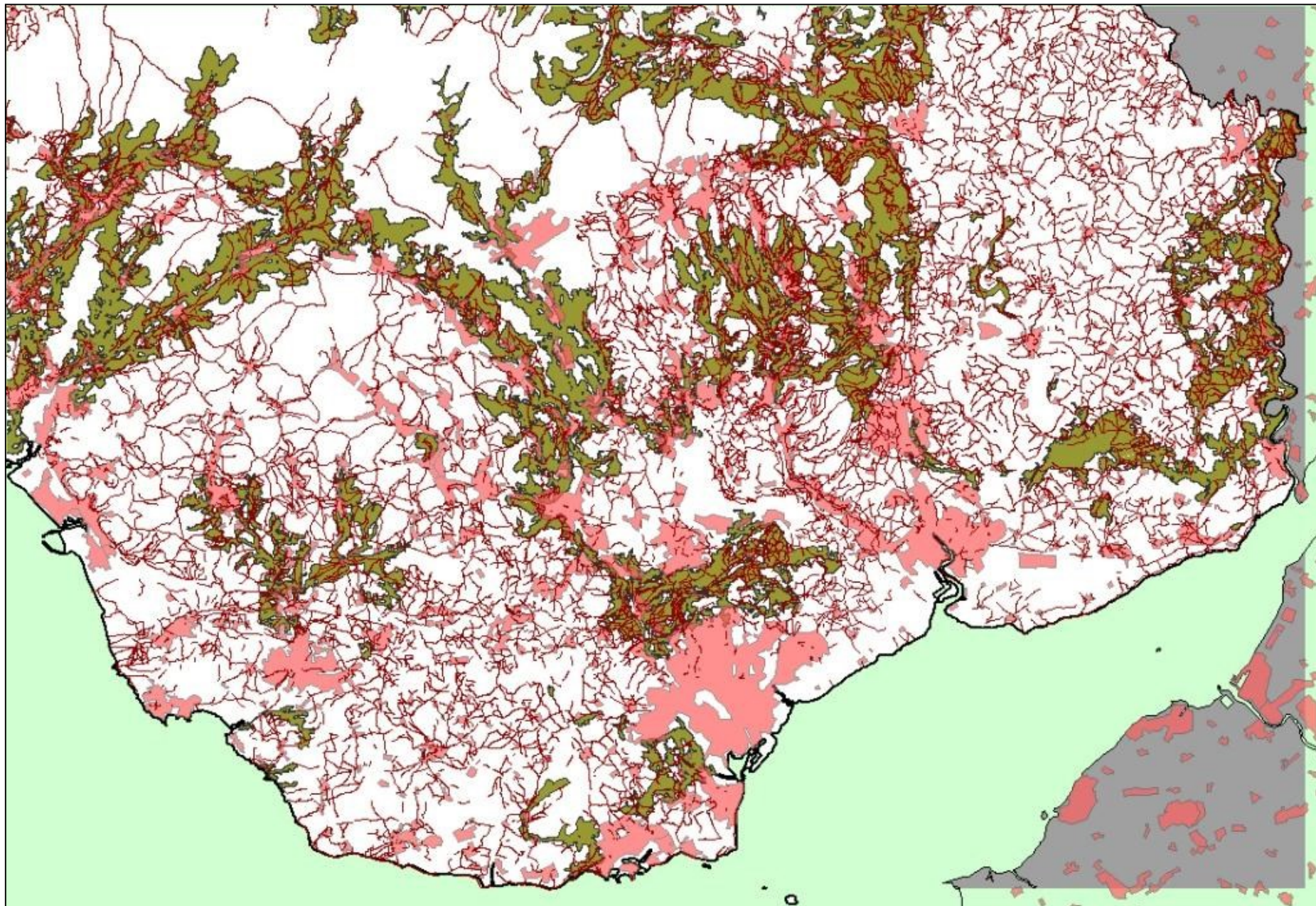
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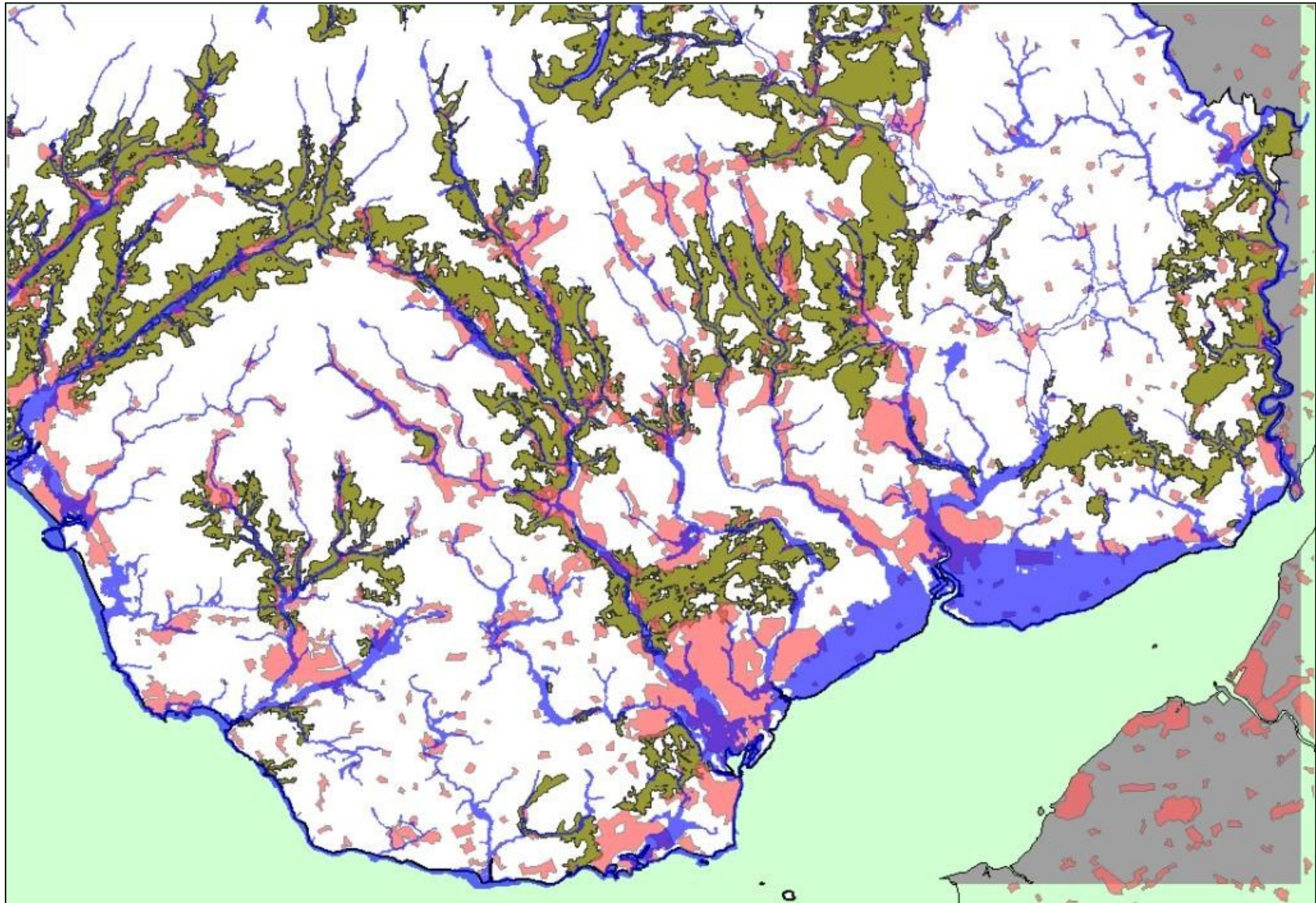
Urban Areas in a *Resilient Ecological Network* for Woodland



PROW in a *Resilient Ecological Network* for Woodland



Flooding and a *Resilient Ecological Network* for Woodland





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Diolch Thank you

