

ERAMMP: Monitoring of small water features in Wales as part of an integration monitoring programme

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Codi hyder yn sail
tystiolaeth ni
Building confidence in our
evidence base



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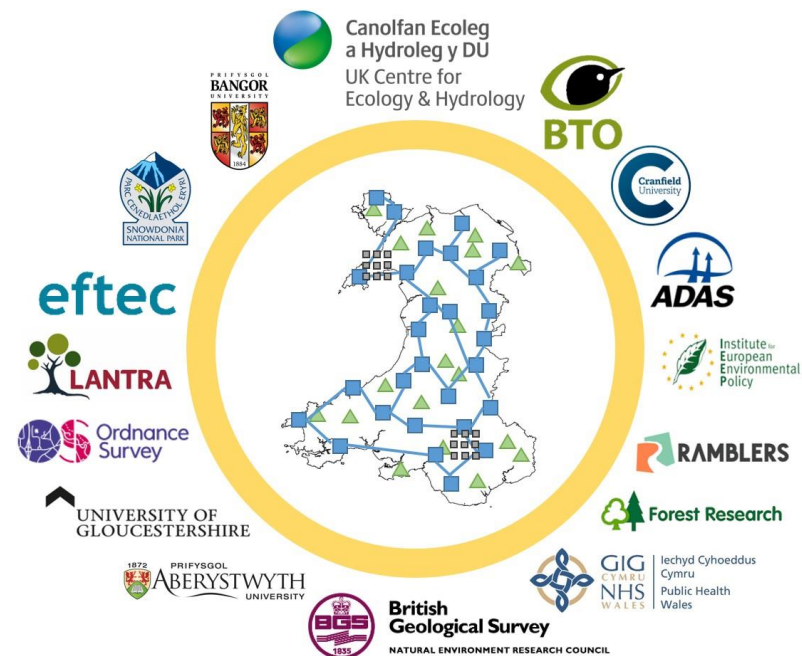
ERAMMP: Delivery through a 20 year community partnership

Objectives: To provide ongoing evidence and support for a wide range of evidence and modelling requirements

Who: 17 partners to ensure capability to cover agriculture, forestry, tourism, air, soil, water, climate, biodiversity, public health and well-being, economics and more....

What: A new 10 year programme building on the last 10 years of collaboration (2012 – 2022 GMEP & ERAMMP; 2023 – 2033 ERAMMP(cont))

Funding: Welsh Gov, with the programme led by UKCEH and past co-funding



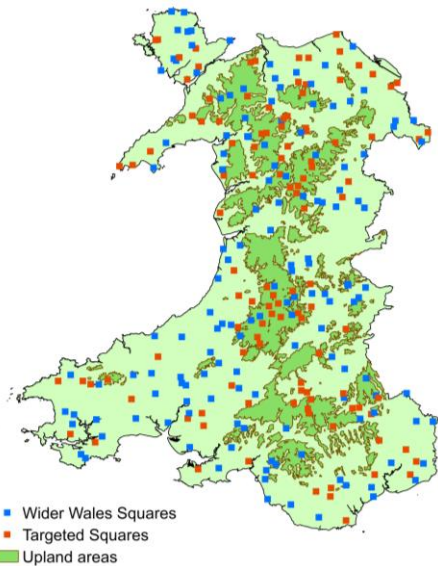
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ERAMMP activities

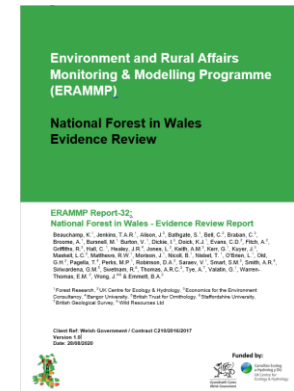
(1) Monitoring

Builds on the longest integrated national monitoring programme in the UK



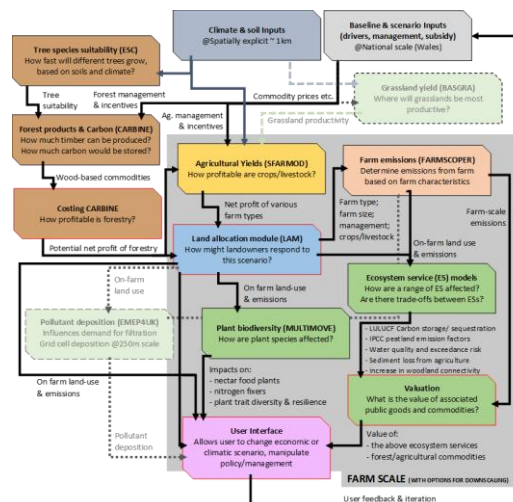
(2) Integrated Assessment / Evidence Packs

What do we know; what do we not know; trade-offs and co-benefits



(3) Modelling

..to help explore different policy options



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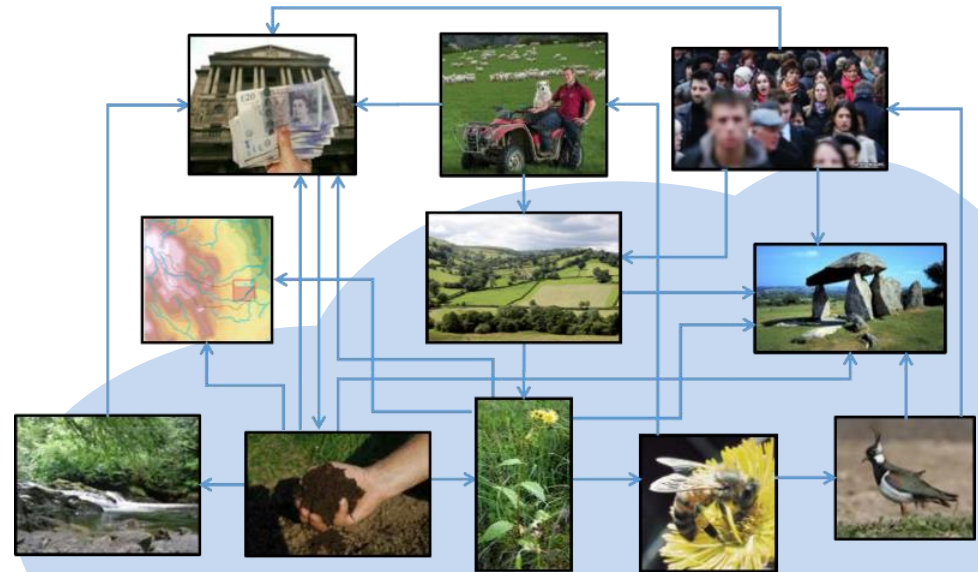


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ERAMMP Monitoring : Sampling design

- Nationally representative sample for robust reporting
- 1km survey squares stratified according to ITE land classes
- 1% of Wales surveyed (2% of designated land)
- Builds on UKCEH's Countryside Survey (1978 – present day)
- Primary uses are: national scale trends, impacts of Glastir and provides a baseline for many future policy initiatives



Blue indicates - captured in field survey.
Other outcomes through farmer surveys, modelling and economic analysis use different approaches



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Stream and Pond Condition Assessment

- GMEP and the ERAMMP carry out water quality assessments as part of the integrated monitoring across Wales
- The focus is on these water features as an important habitat for a wide range of characteristic species and important stepping stones across the landscape
- Data includes invertebrates, diatoms, plants, habitats, chemistry in headwater streams and ponds
- Tools & models are used to compare observed/expected monitoring scores



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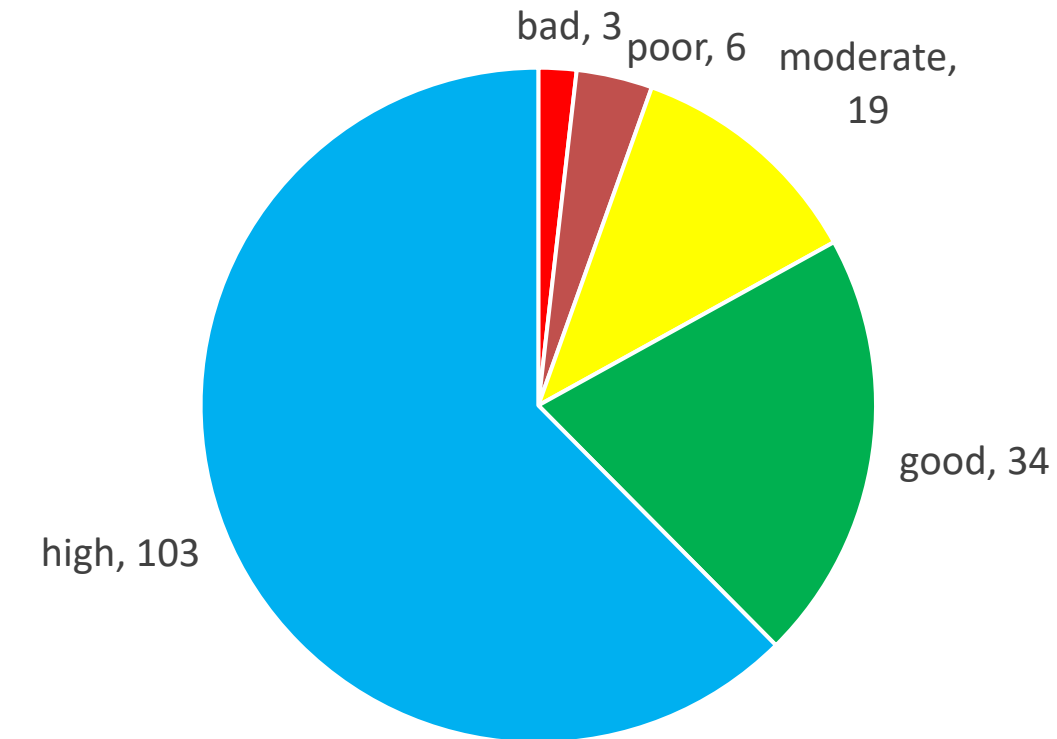


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Stream results: a) habitat condition assessed by macroinvertebrate data

There is between 9.5 to 16 thousand kilometres of headwater streams which are not assessed for WFD. They are a priority habitat for range of characteristic plants and animals.

- In 2014, macroinvertebrate data sampled in GMEP indicated nearly 83% of the headwater streams have good or high quality.
- Comparison with results from 2007 reported by Countryside Survey using the same methodology indicates an increase in biodiversity but a slight shift towards species more tolerant of degradation.



Counts of stream sites in each ecological quality



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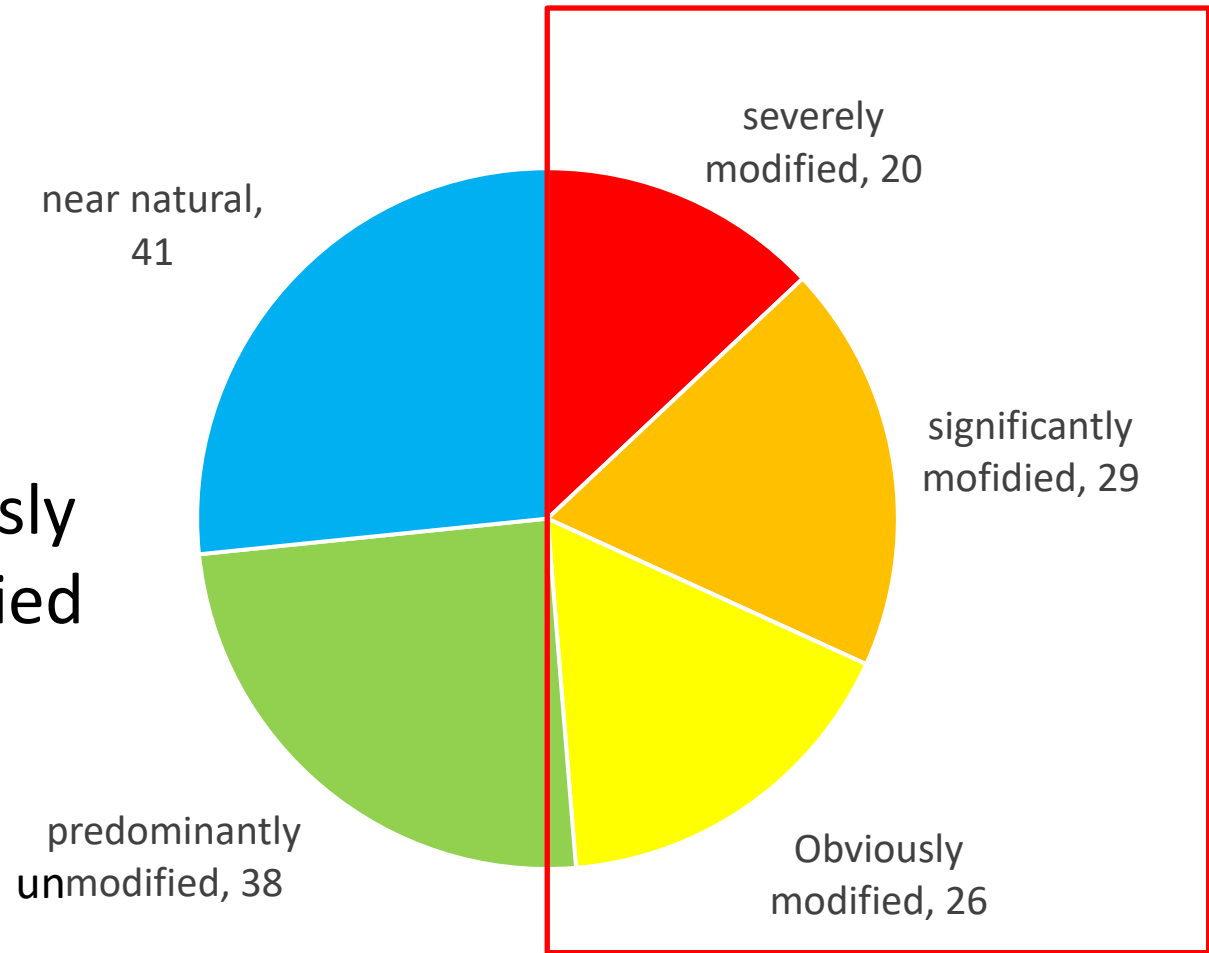
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b) habitat condition of headwater streams assessed by degree of anthropogenic modification

~ 50% of stream sites were obviously to severely modified



Counts of stream sites in each habitat class



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c) Headwater stream habitat condition assessed by degree of anthropogenic modification

Modification	Number of streams where observed	% of streams where observed	Notes
Poaching	91	55.5	Indicates free access to stream by livestock
Culverts	57	34.8	-
Bank modifications	54	32.9	Artificial materials, reinforcement, resectioning
Channel modifications	24	14.6	Artificial substrate, deepening, resectioning
Bridges	23	14	-
Fords	19	11.6	-
Weirs	15	9.1	-
Outfalls	9	5.5	Excludes field drains
Embankments	8	4.9	-

- Poaching, by which livestock are allowed to access streams, is the key cause of stream habitat modification and was observed in 55% of GMEP streams.
- This will increase the risk of potential transfer of pathogens to humans
- It also increases the risk of bank damage and associated sediment levels in streams (affects water quality and water flow)



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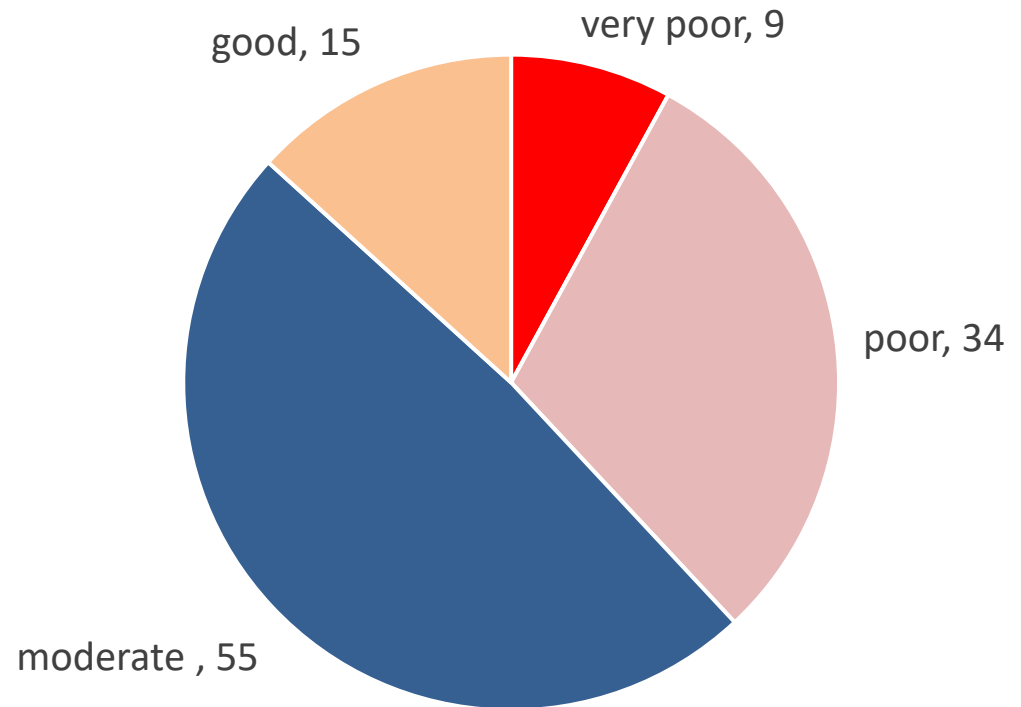


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Pond highlights: Condition assessed by habitat quality, plant & invertebrate diversity

Estimated to be 57,800 ponds (2.8/km²). Important refugia and stepping stones for dispersal but can accumulate nutrients, sediments and contaminants.

- Only 13% of ponds sampled by GMEP were judged to be in good ecological condition, with 38% in poor or very poor condition



Counts of ponds in each condition class



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Have ponds and streams improved over the last 10 years (2014 – 2022)?

Streams

27% streams are now pristine / semi-natural (+2% change)

but

53% streams are modified (+3% change)

Ponds

16% ponds are now in Good condition (+4% change)

but

40% more ponds are Poor or Very Poor (+2% change)

Headwater change	%
Less modified	27
More modified	12
No Change	62

Pond change	%
Improving	27
Declining	24
No change	49



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Summary

- Headwater streams are in overall high/good ecological condition but have low habitat quality due to modifications
- Ponds in general are not in good ecological condition
- First look at change data suggests the best are getting better but the degraded even worse. Most are stable.
- Many more metrics will be reported next year.
- What is our overall strategy?
 - to protect the best?
 - lift up the worst?
 - connect the best (30 by 30 Landscape Network)?



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Future plans – July 2024

- ERAMMP report of national trends and impacts of Glastir will be published in July 2024 covering:
 - woodland, biodiversity (plants, birds and pollinators), small water features, soil, historic environment features and PROW in July 2024. Baseline data from 2014 can be found here: <https://gmep.wales/resources>
- We intend to include an integrated assessment identifying contextual dependencies which constrain both current state and potential for change of these small water features
- All data and analyses will be made available to NRW for SoNaRR 2025



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