

Towards standardised monitoring of the condition of Welsh peatlands and a coordinated network of peatland research sites in Wales

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The Welsh Government are currently funding an initiative to support the sustainable management of Welsh peatlands. As part of this initiative standardised peatland monitoring protocols are being developed and a network of peatland research sites identified to more efficiently and effectively improve our evidence base. This includes:

National scale monitoring protocol - links remote-sensing data (Sentinel) with simple, standardised, ground-truthing to more widely and consistently evidence changes peatland condition across Wales.

Site scale monitoring protocol – initially focuses on biodiversity, hydrology and carbon, standardised monitoring protocols that include options for different budgets/resources. This site-level evidence will also be used to inform national scale analyses and interpretation.

Welsh Peatland Observatory Network – identification and specification of a national network of peatland research sites covering priority typologies to focus available research resources and efforts.



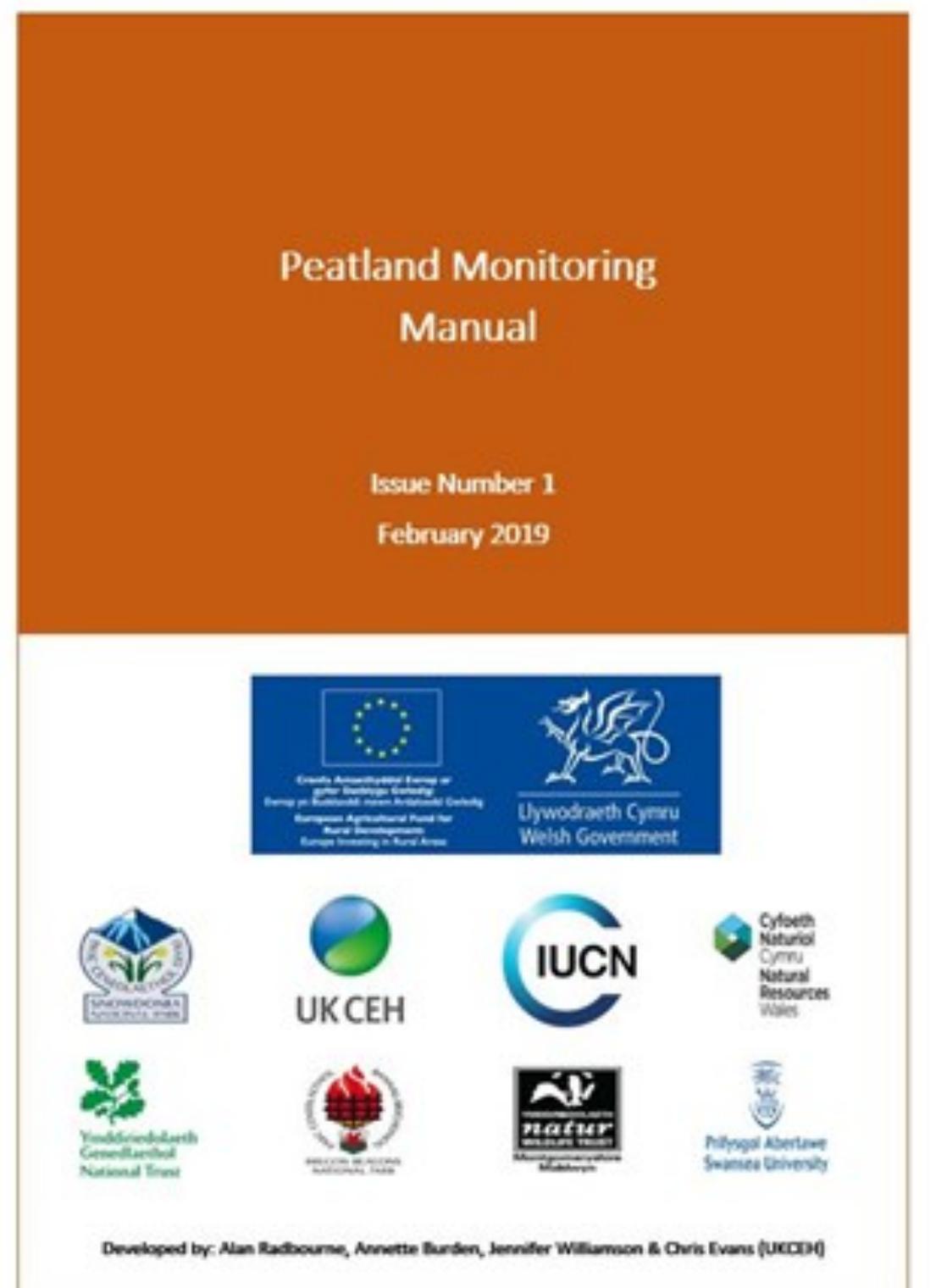
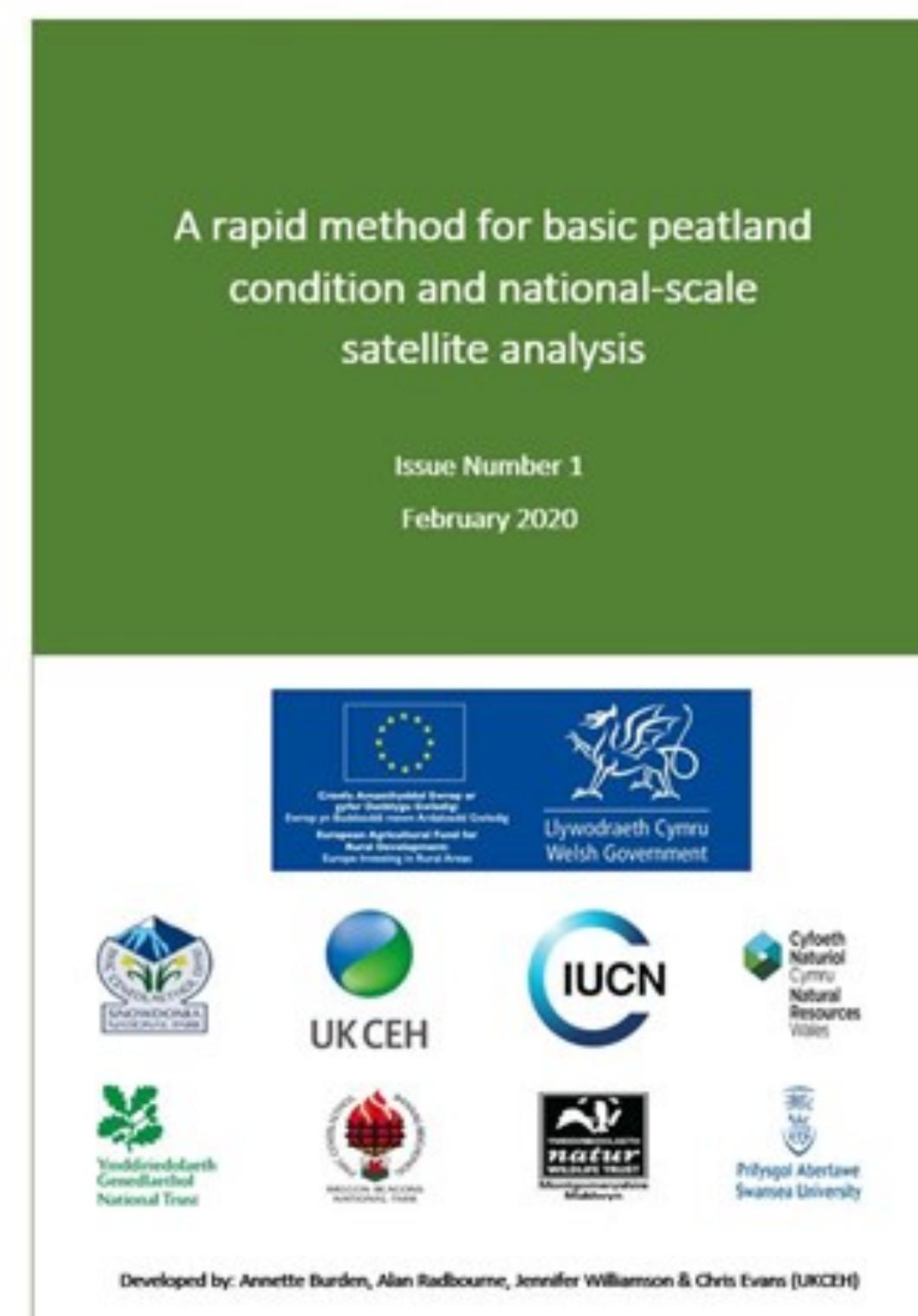
Monitoring Welsh peatlands

Outcomes of standardised and co-ordinated monitoring

- Enable planning and implementation of consistent, robust assessments of the overall condition status of peatlands at a site level, including ongoing/ pre-/post-restoration monitoring
- Improve our understanding of the overall impacts of restoration on peatland condition and their services over longer (5+ years) timescales
- Contribute to national level reporting on the overall condition status and trends of peatlands (e.g. EU Article 17; Welsh Government Environment Act (2016): State of Natural Resources and emissions inventory reporting) - contributes to the existing national monitoring effort (notably Glastir Monitoring and Evaluation Programme) whilst developing an expanded evidence programme for Welsh peatlands

Aims of the monitoring guidance

- Step-by-step guidance for users to implement monitoring of a core set of indicators of peatland condition, on any habitat type
- Options for implementing more in-depth monitoring reflecting different resource requirements
- Provide a simple pathway towards well designed and targeted monitoring activities
- Defines realistic expectations on what can be achieved and anticipated outcomes the user should expect to see
- Practical information on the finance, time demands and timescales, and data quality for each method
- Guidance on data management, interpretation and reporting



Welsh Peatland Observatory Network

Overview of the Network

- Network of research and monitoring observatories across Welsh peatlands; encompasses:
 - Broad monitoring network using standardised monitoring methods across Welsh peatlands in collaboration with partners
 - Subset of research observatories to focus research resources to more efficiently and effectively build the peatland evidence base
 - Answer 'peatland' evidence gaps on Welsh peatlands
 - Act as reference sites or condition types to UK / international scale studies
 - near natural reference sites; e.g. fens
 - near natural blanket bog at 'Welsh' latitudes

Aims of the Network

- Broad aims for Welsh peatlands, to evidence:
 - Sustainable peatland management
 - Condition status and change
 - Ecosystem resilience and adaptation
 - Contribution of peatlands to well-being (of future generations)

Scientific scope of the network

- Informed by and evidence gap survey and prioritisation exercise;
- Initial focus:
 - Carbon
 - Water
 - Biodiversity

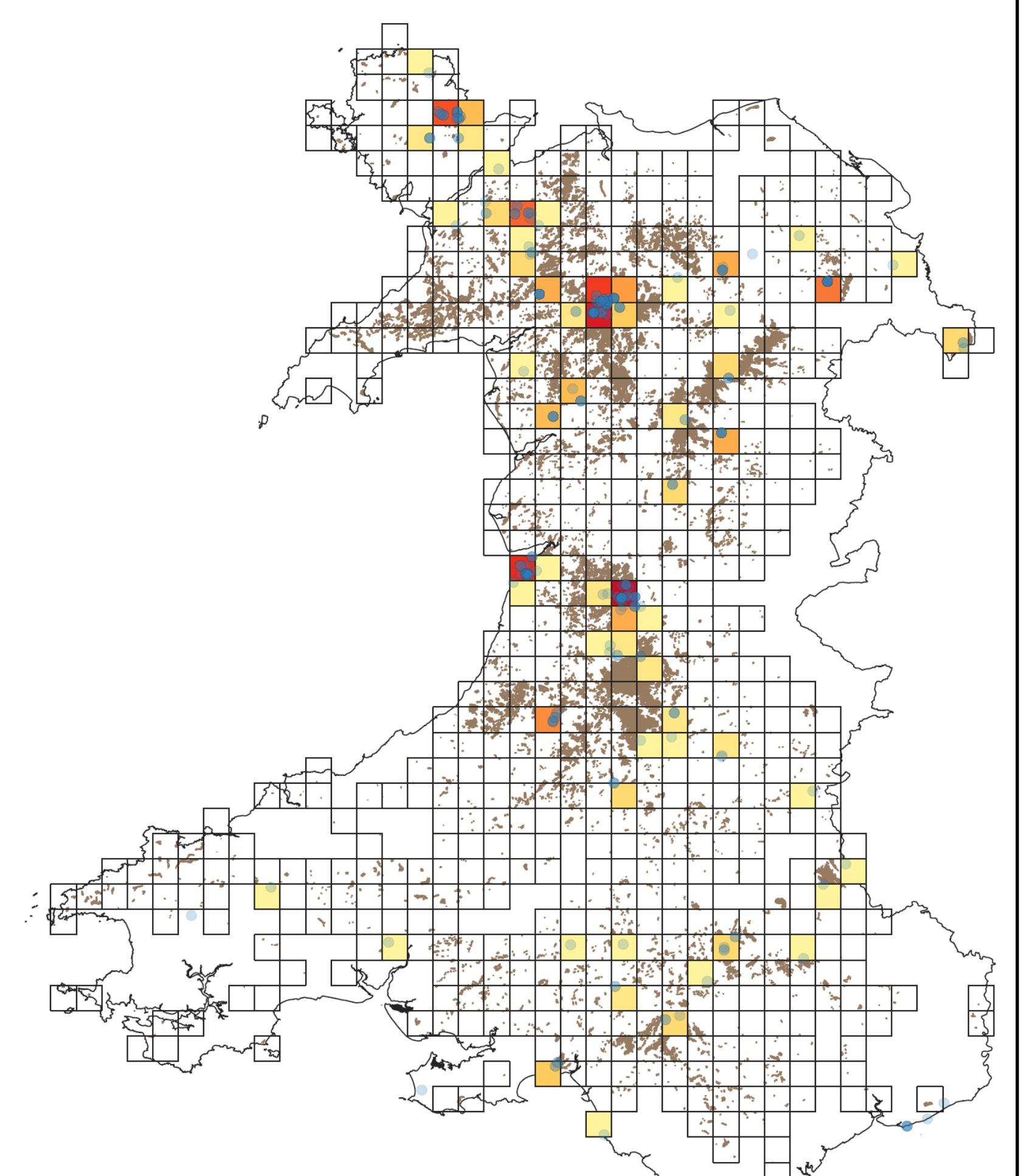
Peatland typologies to include:

- Lowland raised bog
 - Near natural bog
 - Agricultural grassland
- Blanket bog
 - Modified (semi-natural)
 - Molinia caerulea* dominated
 - Commercial afforestation
 - Transition mires and quaking bogs
 - Alkaline fens
 - Calcareous fens

Identifying observatories:

- Review of scientific literature to identify key research sites (who, what, where)
- Existing infrastructure and monitoring (e.g. ECBN, ECT etc)
- Represent drivers of change in peatland condition and environmental clines of significance

Right: Map showing locations of Welsh peatlands (brown) and locations of peatland research resulting in a peer-reviewed publication (blue dot). 'Hotspots' of research are identified within 5x5km² tiles from 'no research' (transparent) to 'most research' (red tiles).



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