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Geological Survey**

NATURAL ENVIRONMENT RESEARCH COUNCIL

Geoscience for our changing Earth

An assessment of Pant-y-Llyn, Wales' only turlough and comparison to Irish sites

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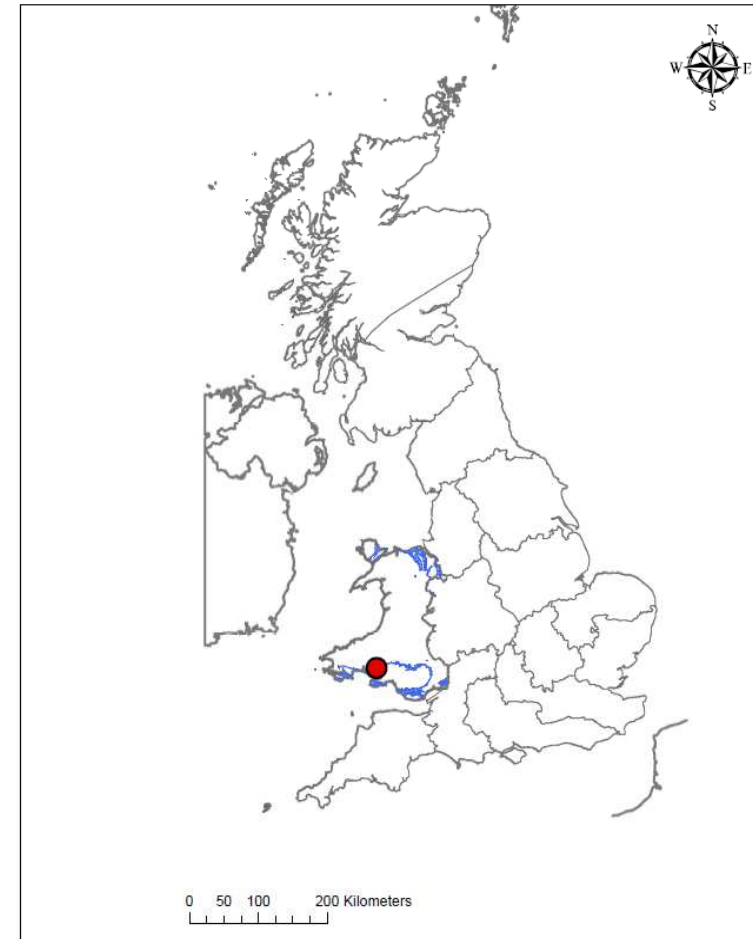
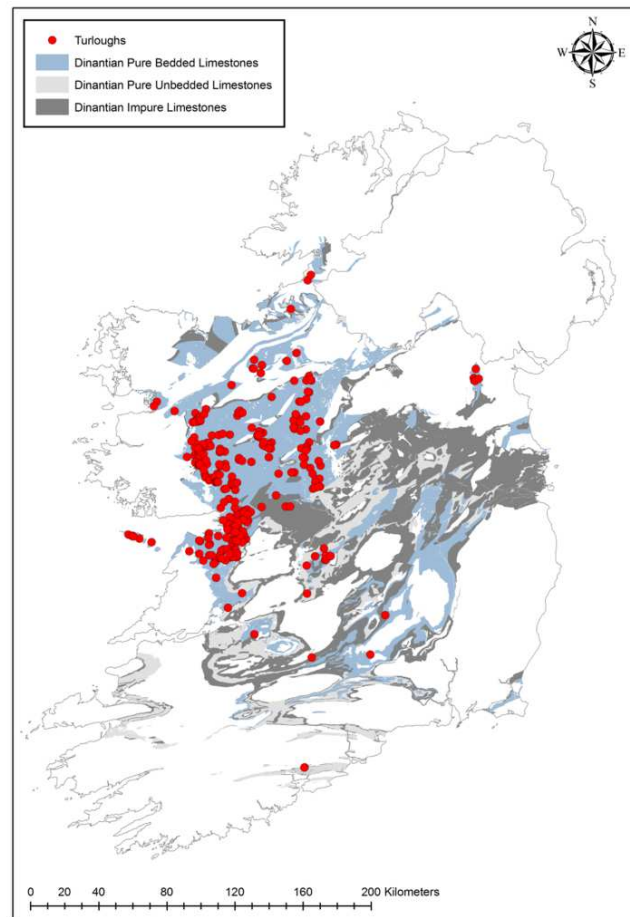


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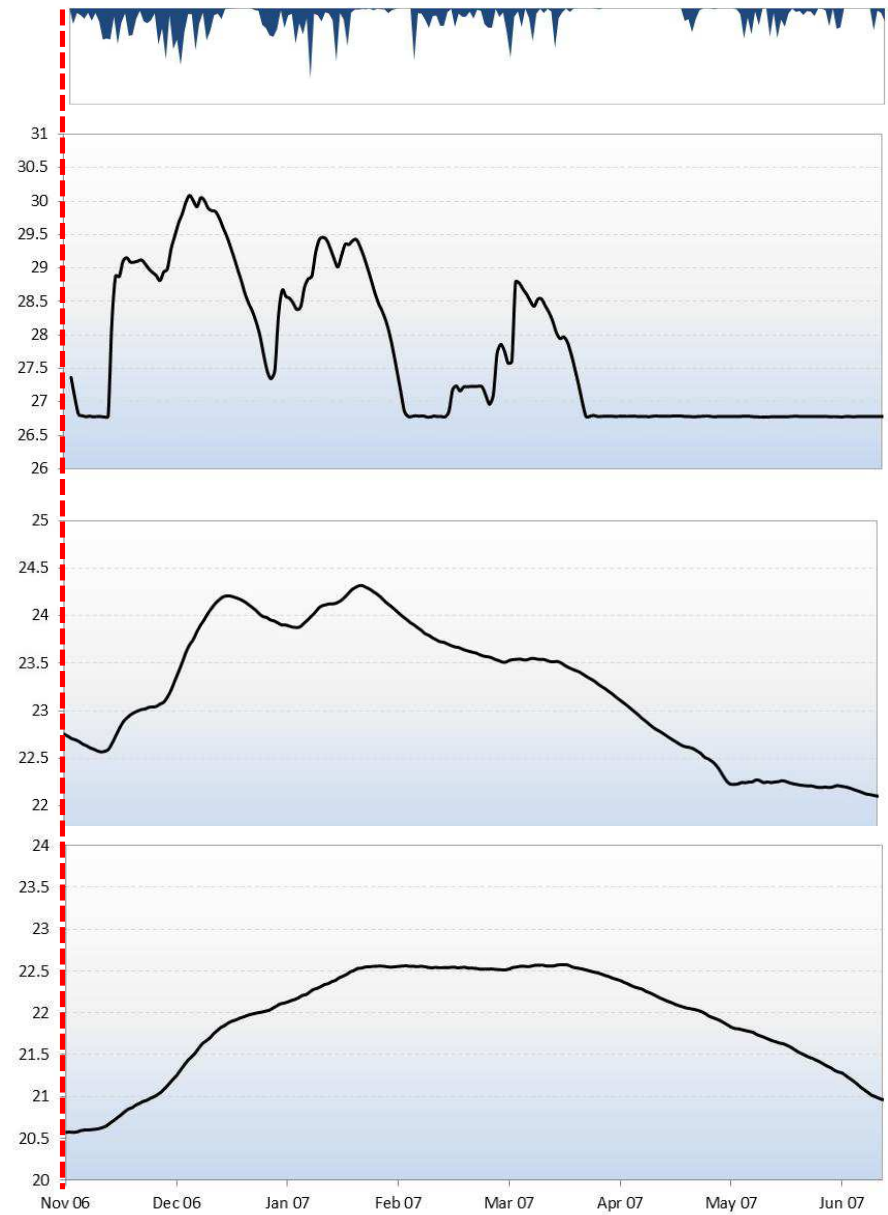
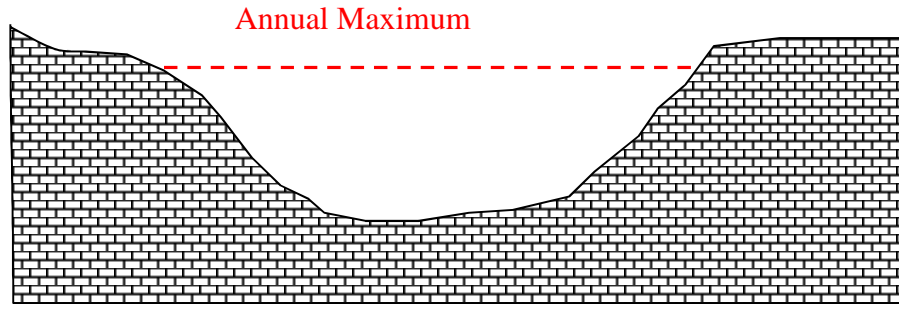
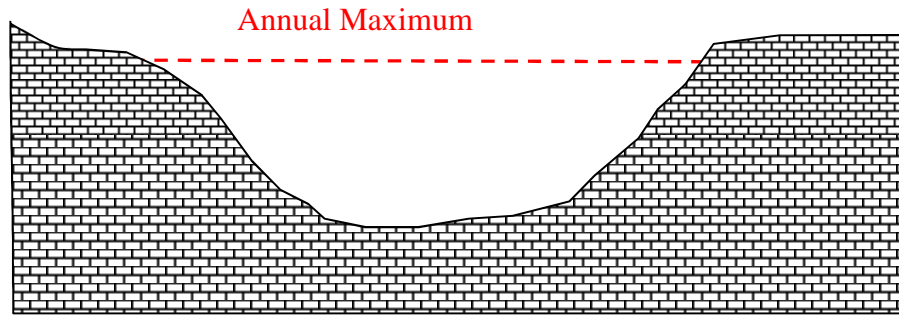
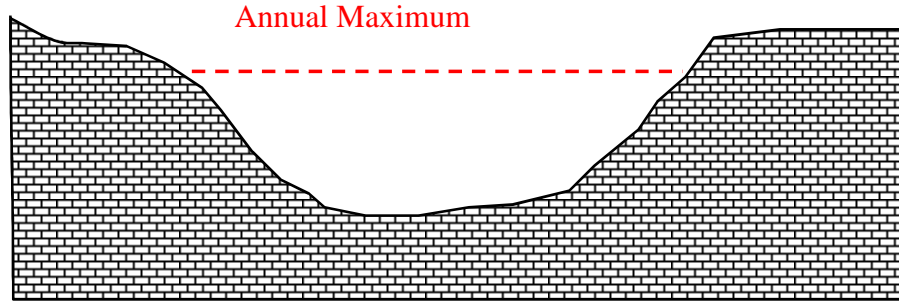


“A topographic depression in karst which is intermittently inundated on an annual basis, mainly from groundwater, and which has a substrate and/or ecological communities characteristic of wetlands”

Tynan *et al* 2007



Turlough Hydrology



Diagrams: Owen Naughton

Ecological Conservation

Many floral and faunal species of national and international importance

Protected under EU legislation

- Habitats Directive – Priority Habitat
- Water Framework Directive





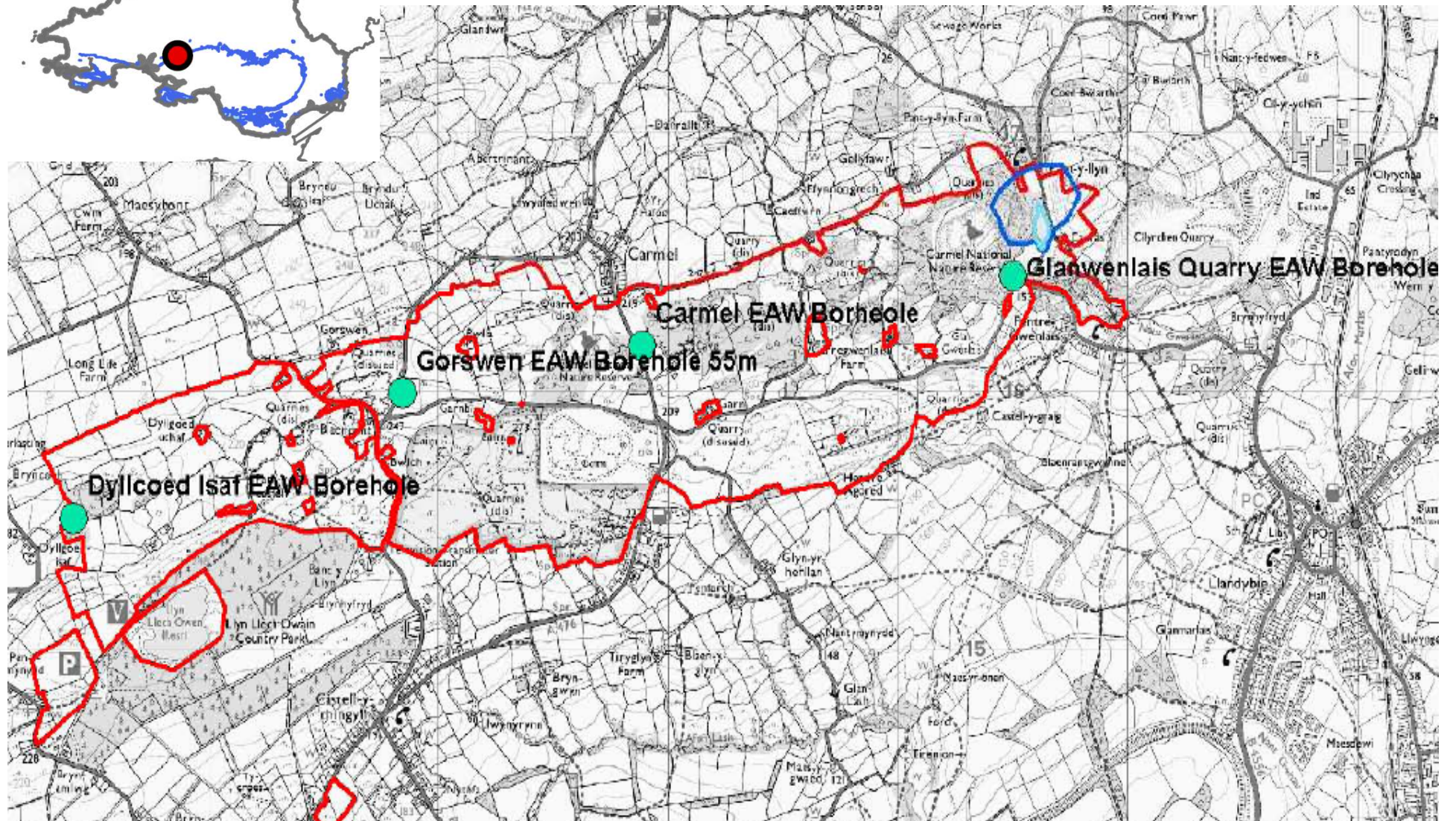
Blackrock Turlough, Co. Galway

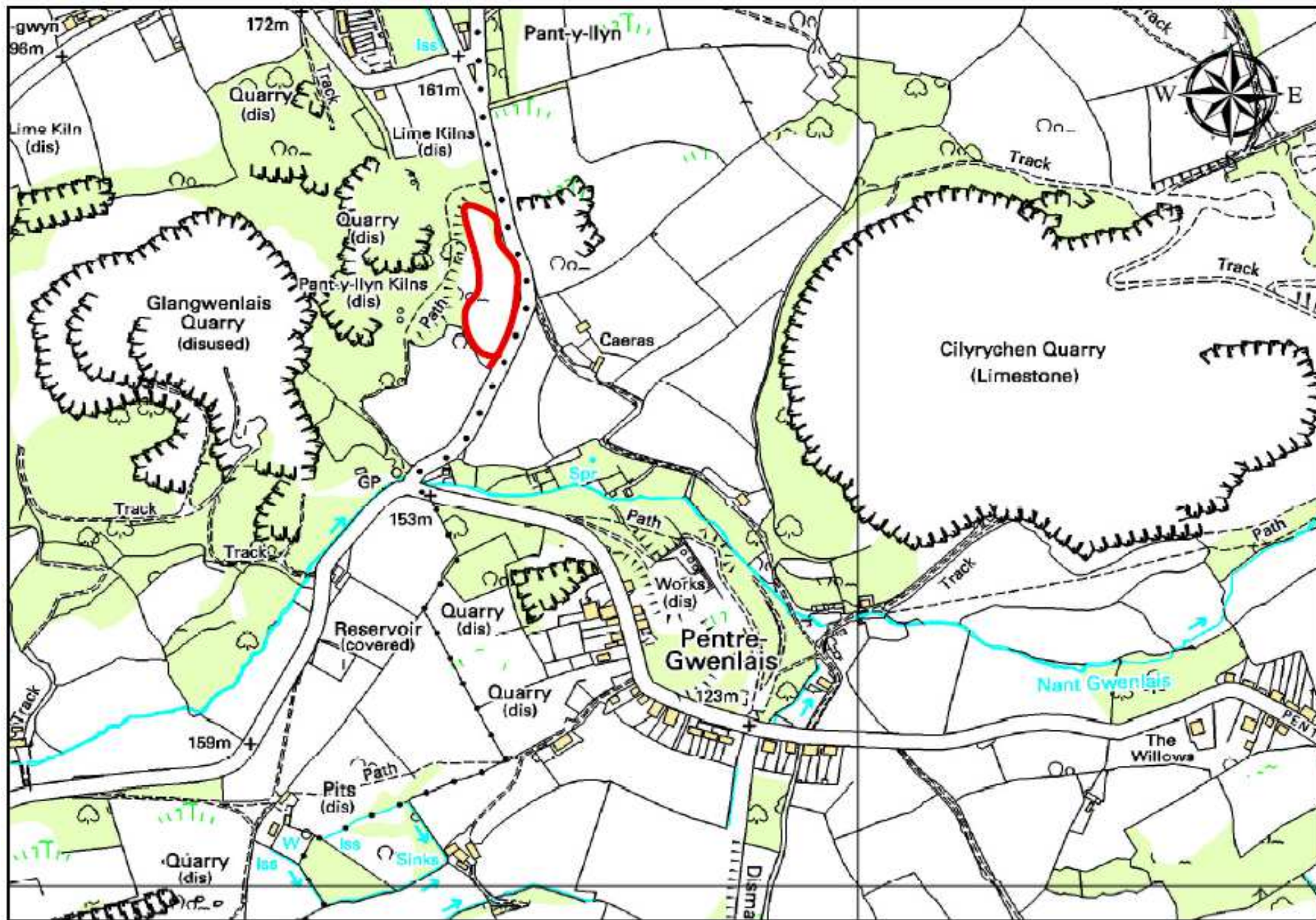
Image: Owen Naughton



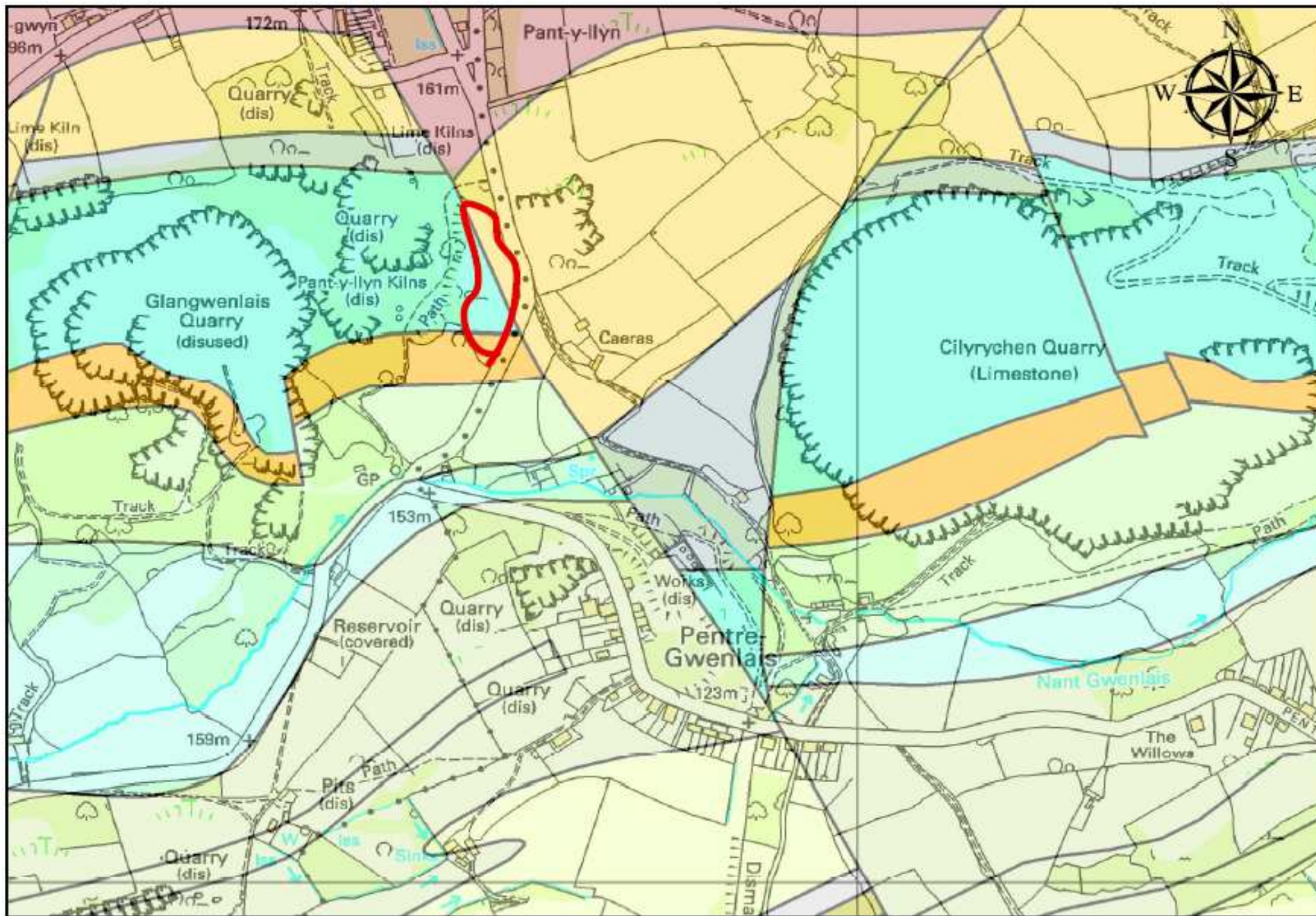
Blackrock Turlough, Co. Galway

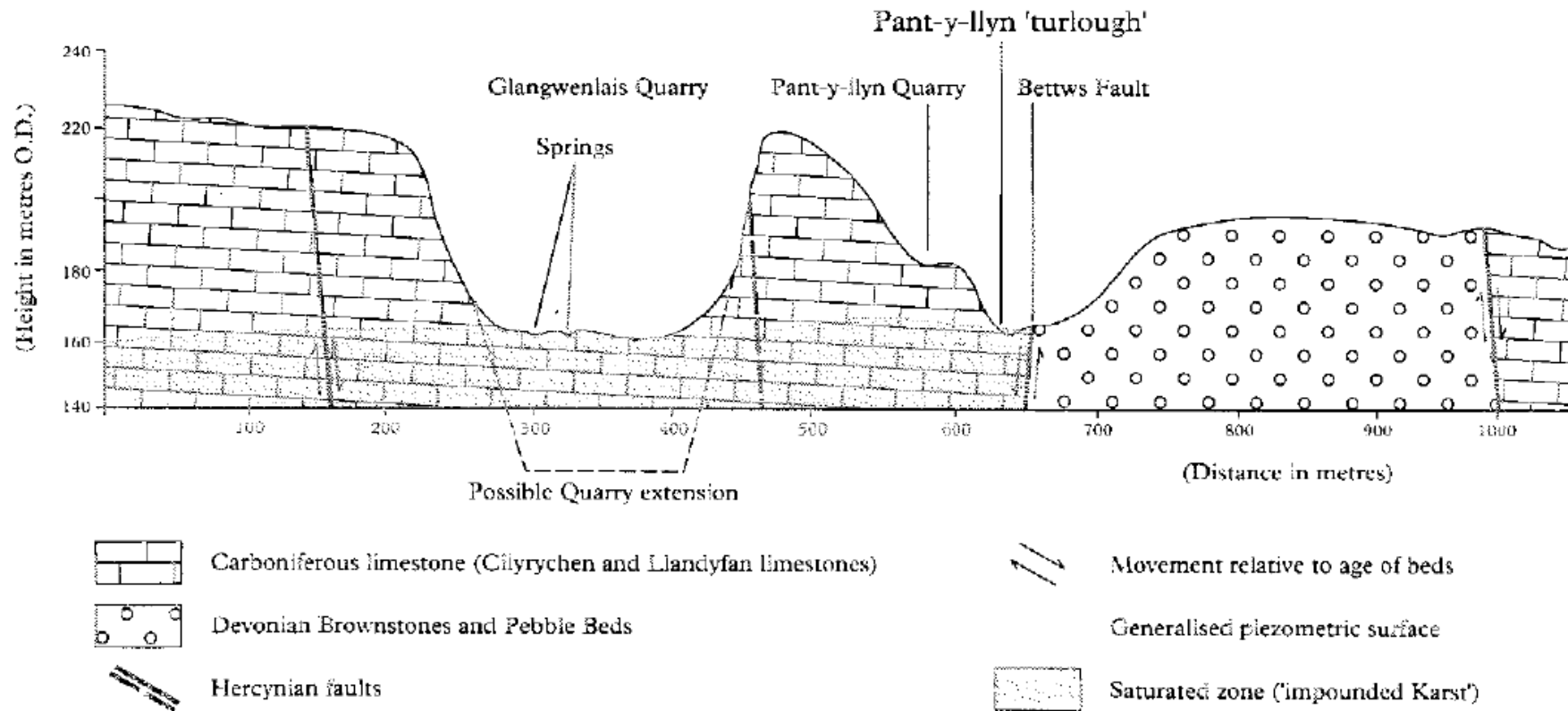
Image: Owen Naughton





0 0.125 0.25 0.5 Kilometers





Campbell, Gunn & Hardwick 1992



Pant-y-Llyn, Wales

Image: Gareth Farr



Pant-y-Llyn, Wales

Image: Gareth Farr



Pant-y-Llyn, Wales

Image: Gareth Farr



Estavelle – acts as both spring and sink

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Aerial photograph © Infoterra Ltd,

Water quality

Low N & P

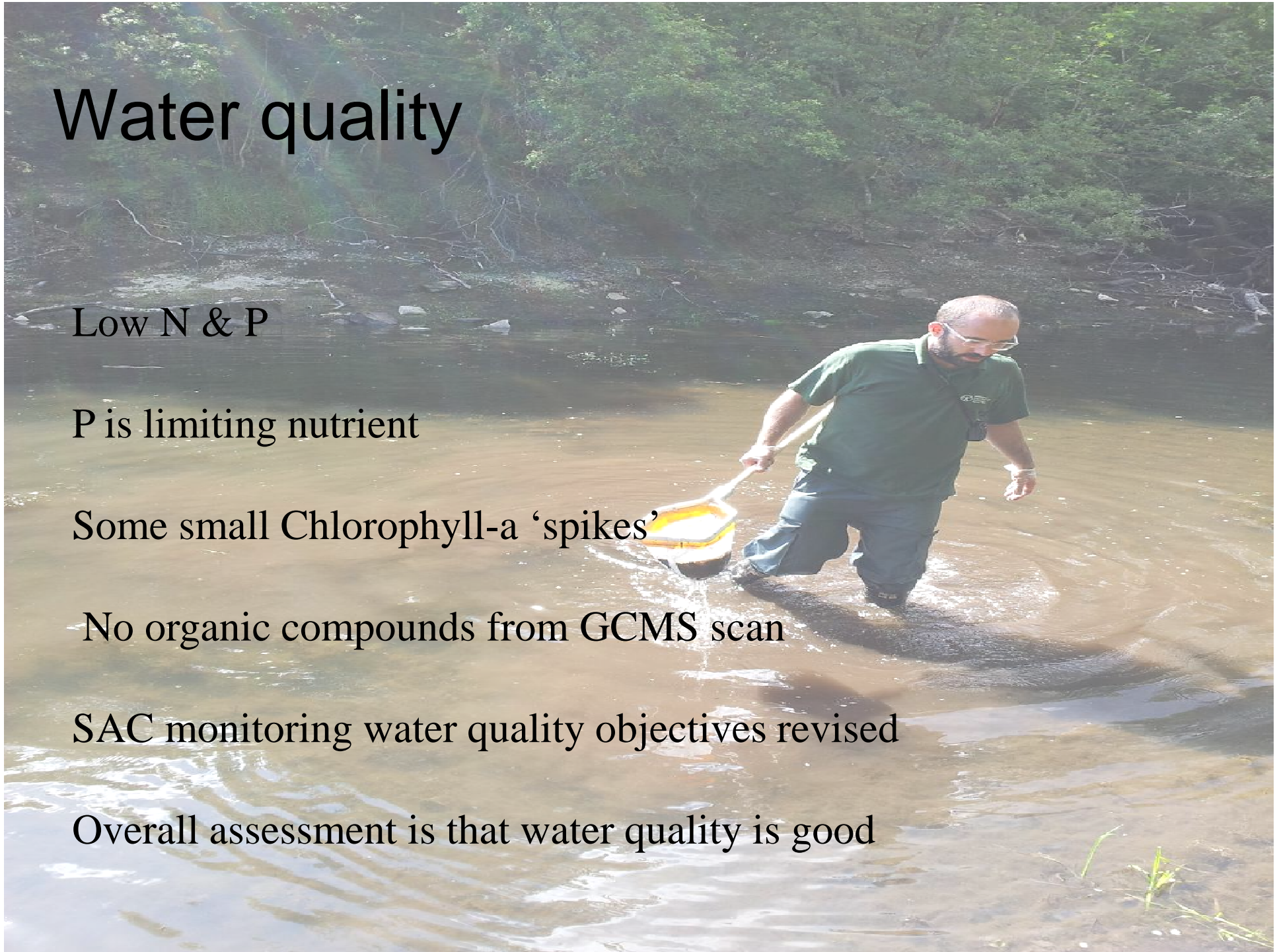
P is limiting nutrient

Some small Chlorophyll-a 'spikes'

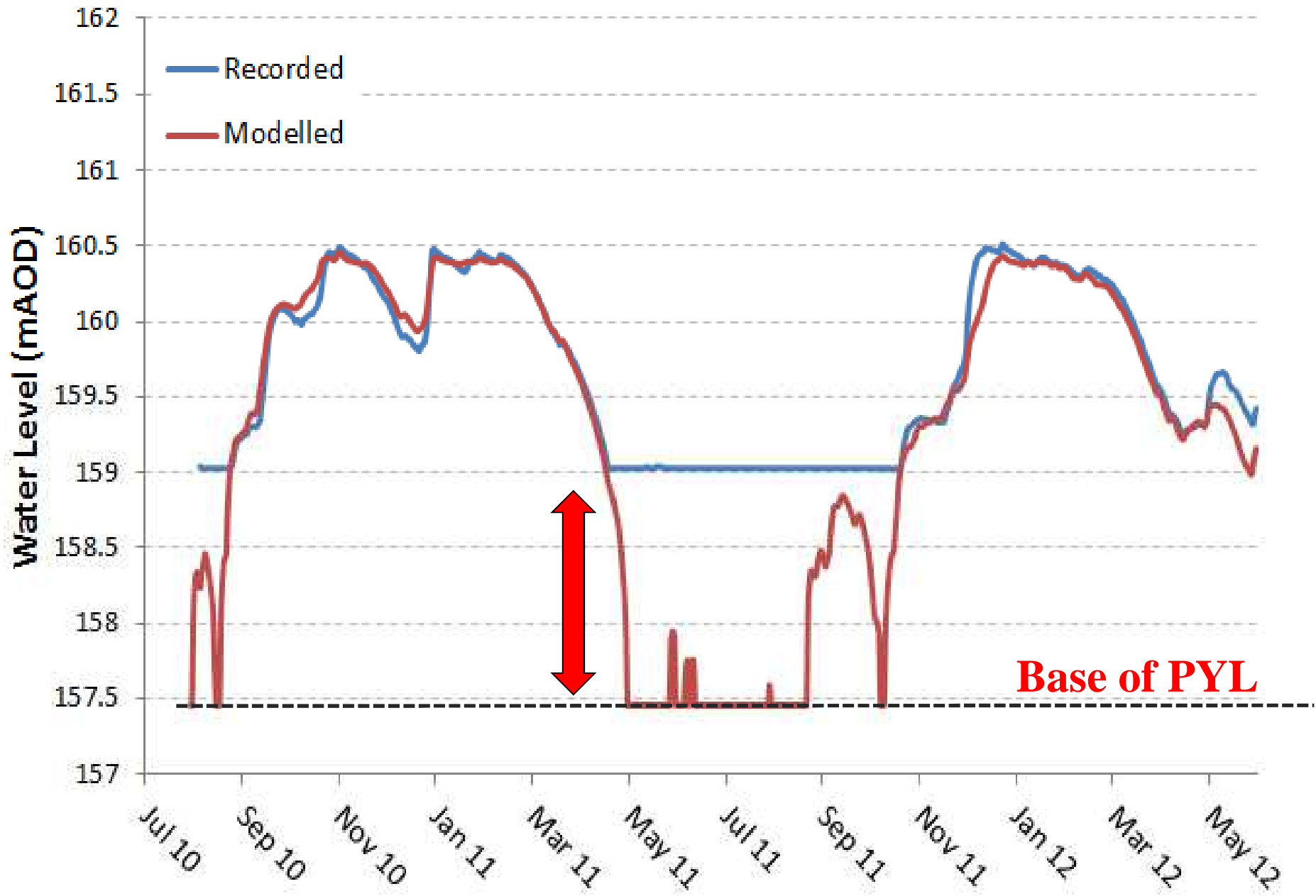
No organic compounds from GCMS scan

SAC monitoring water quality objectives revised

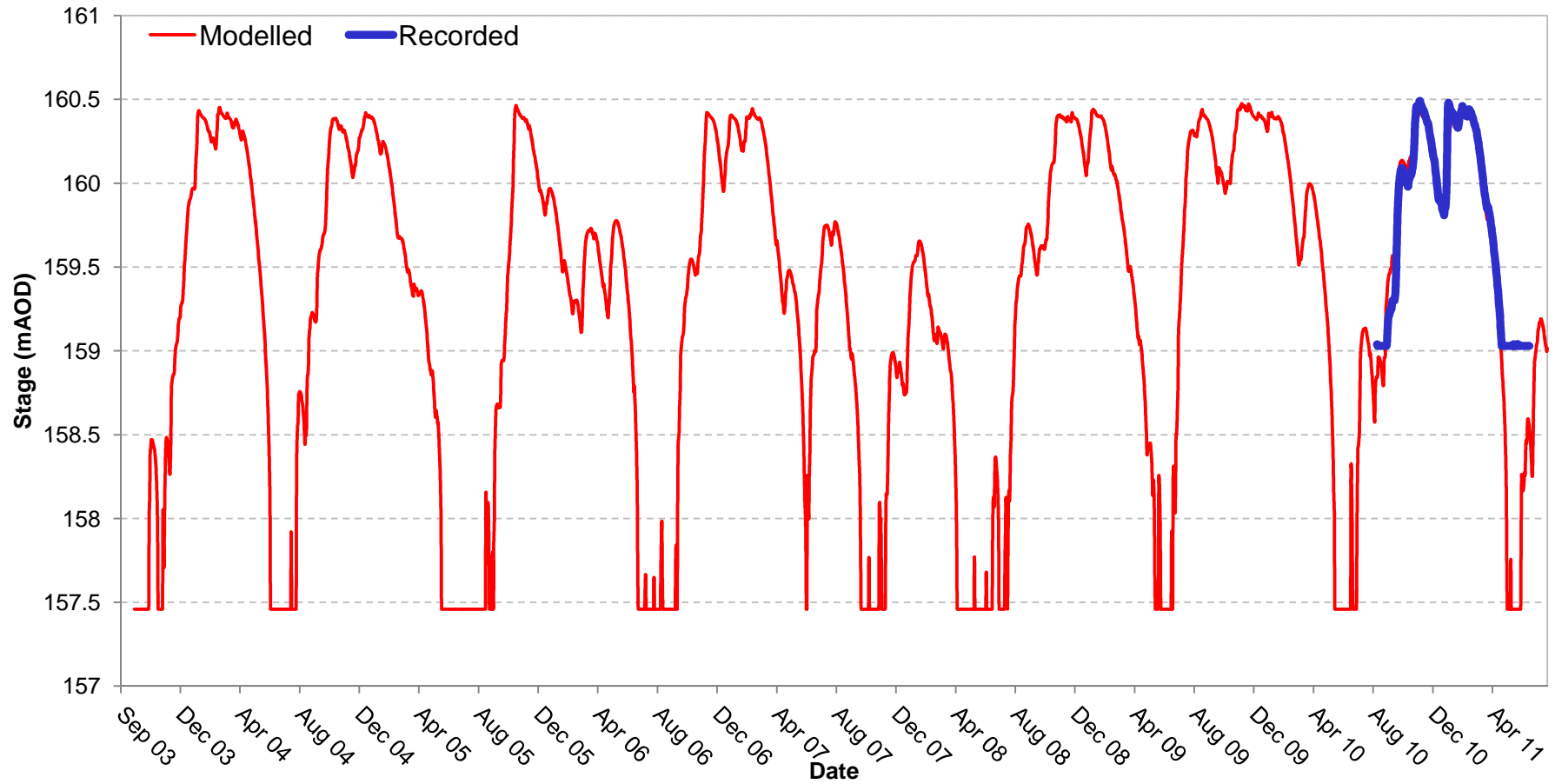
Overall assessment is that water quality is good



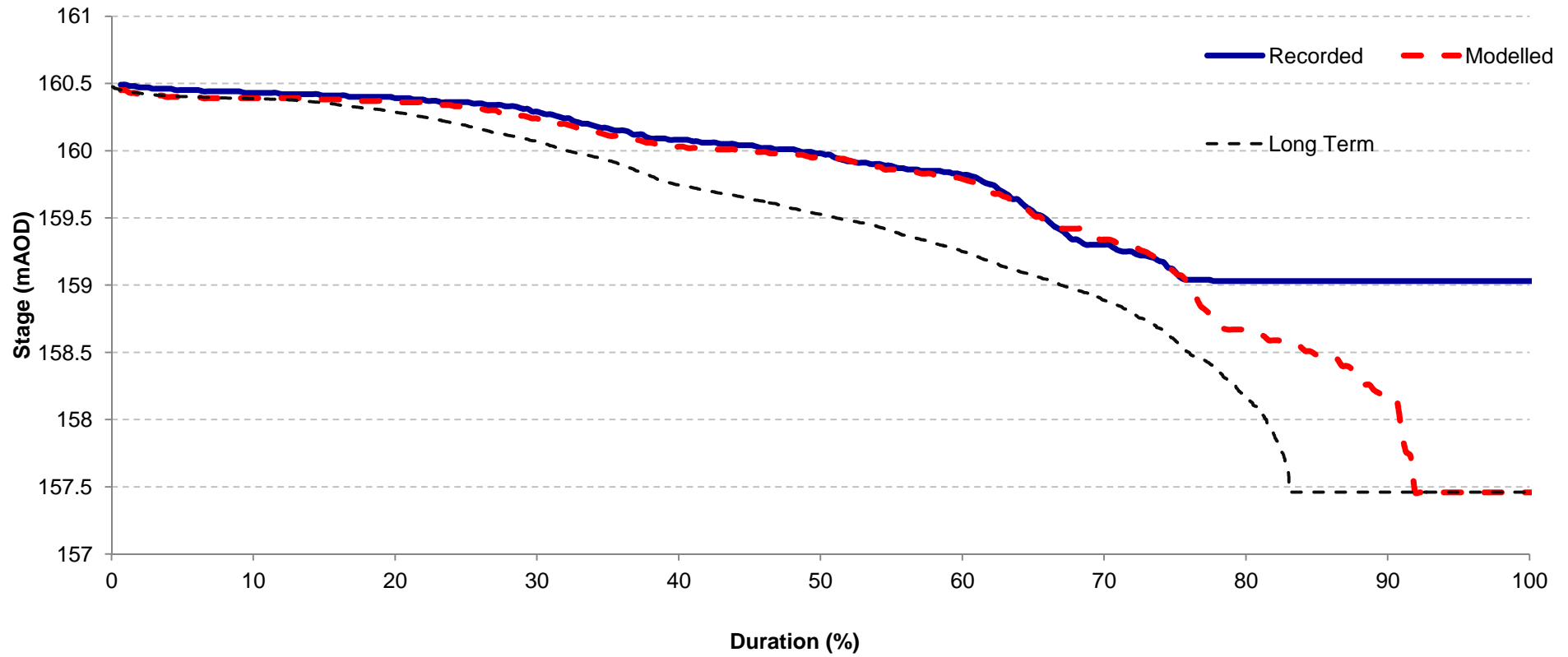
Recorded and Modelled stage



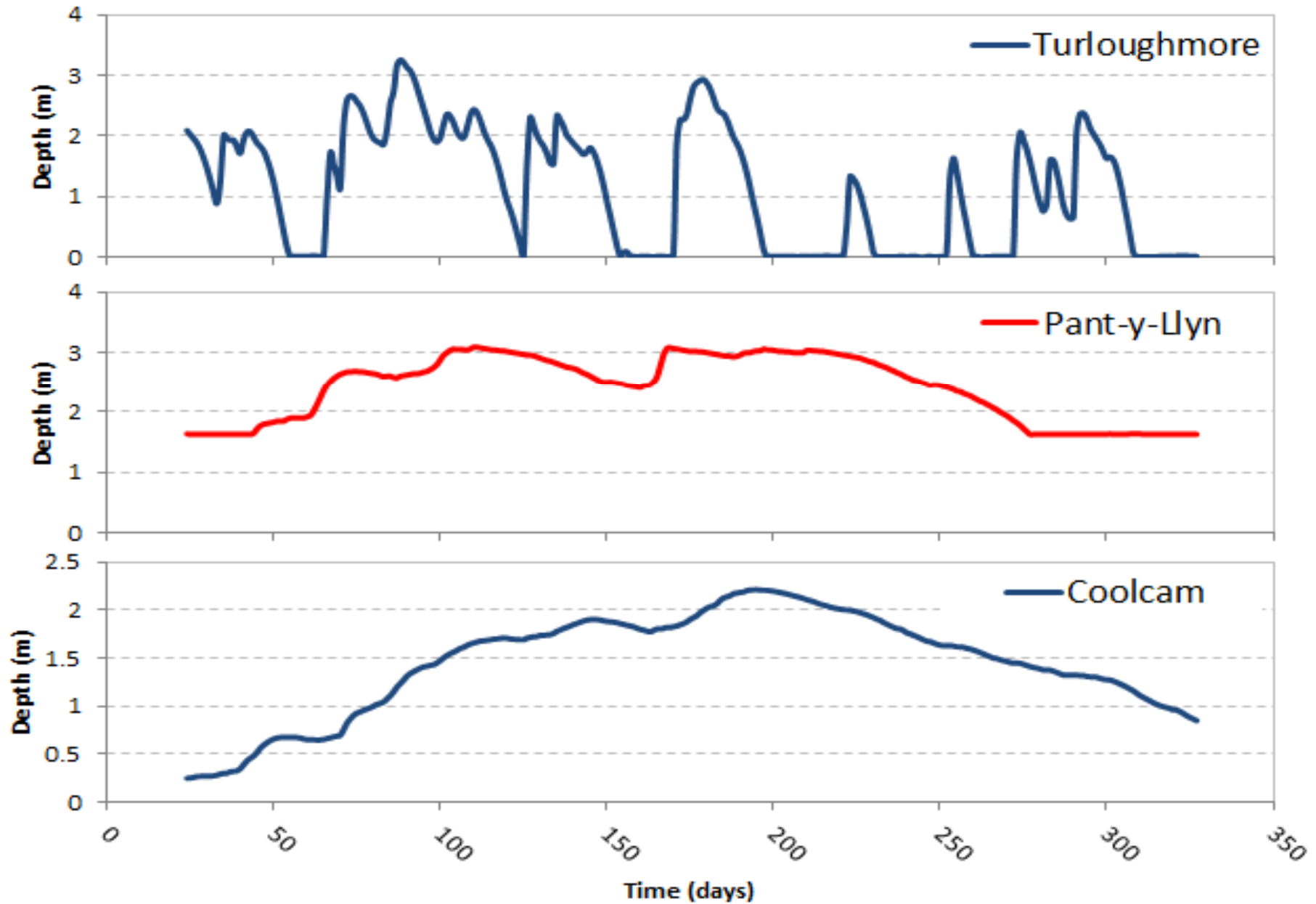
Recorded and Long Term Modelled Stage

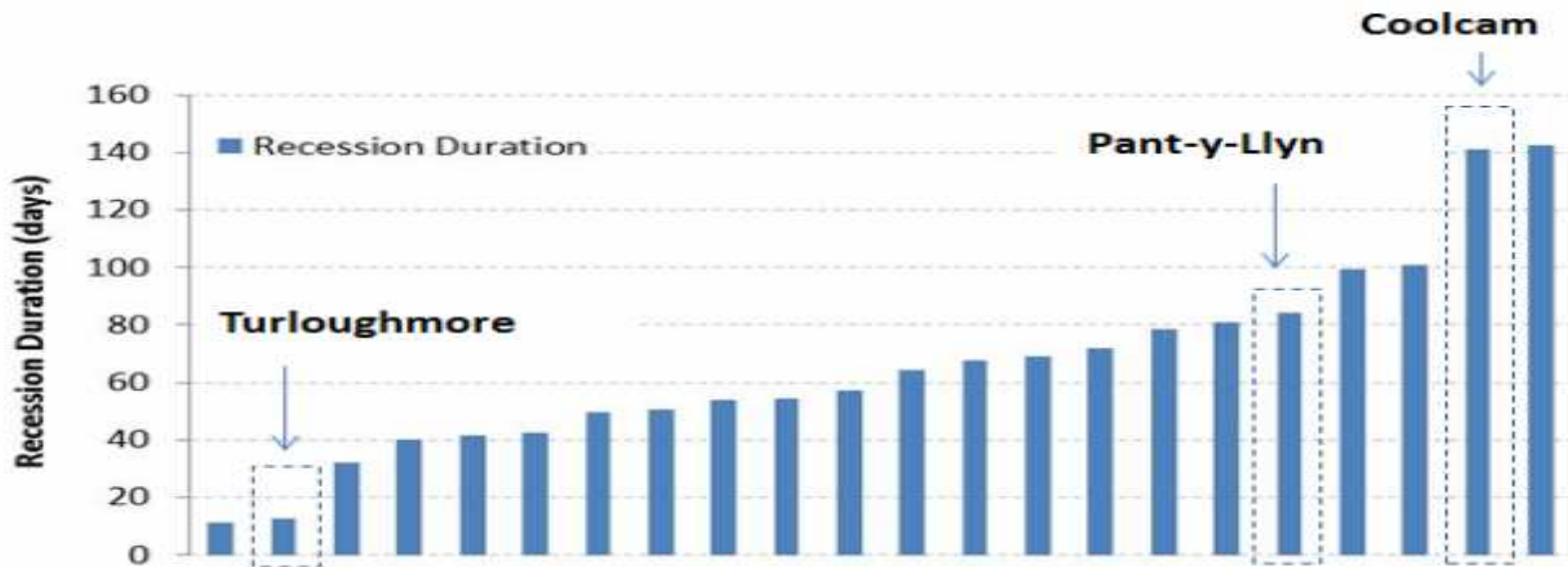
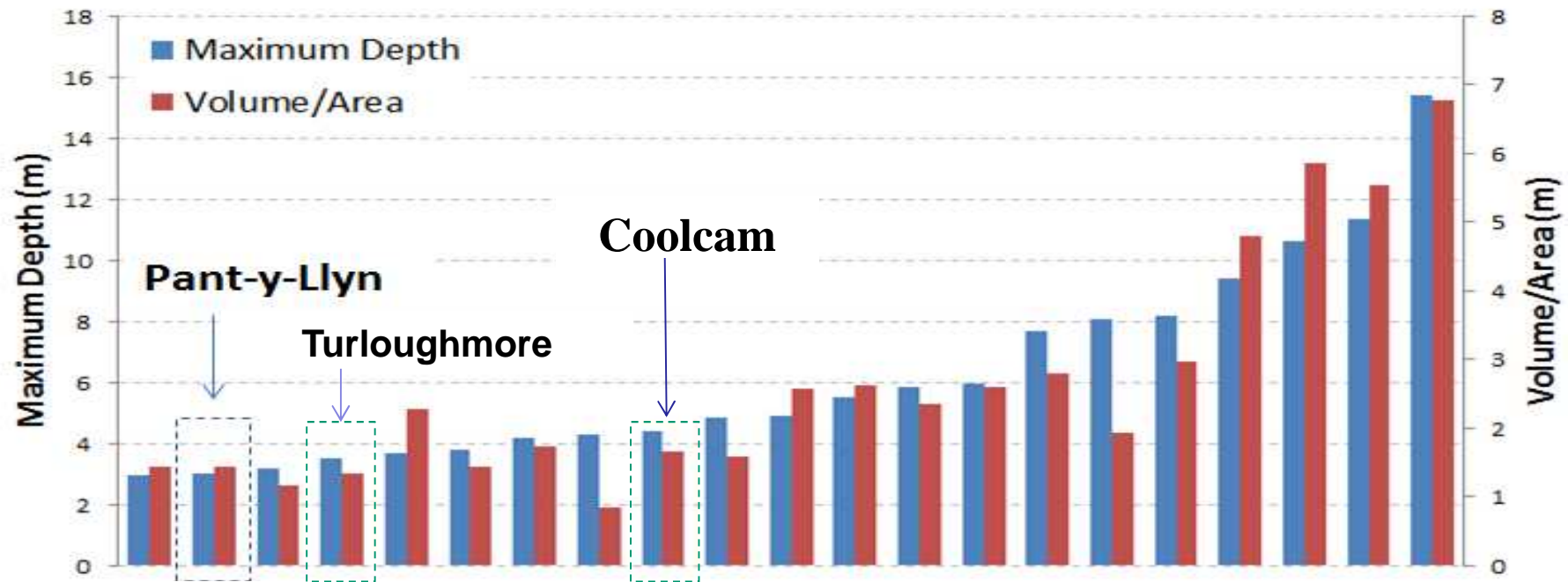


Flood Duration



Comparisons with Irish sites



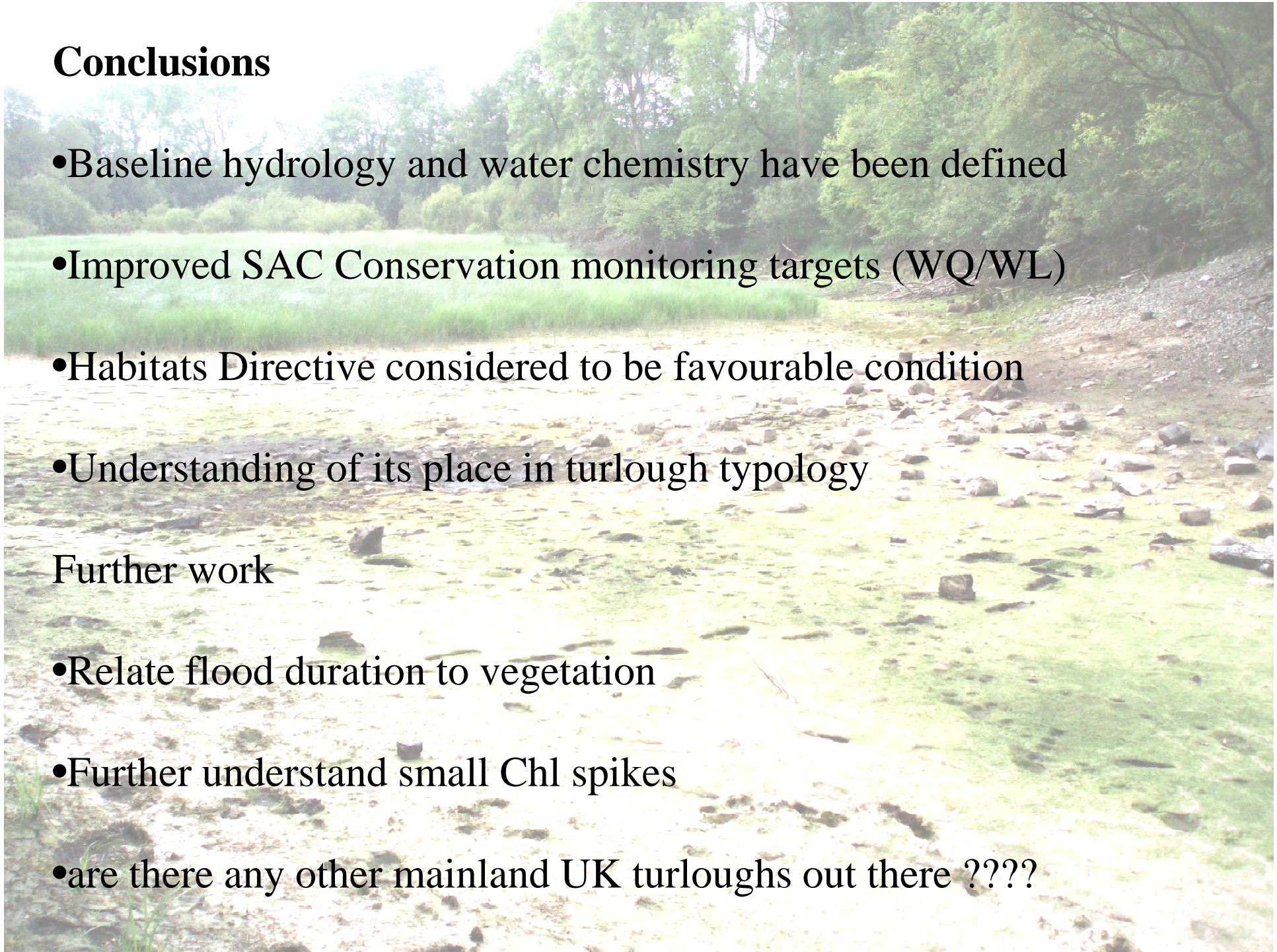


Conclusions

- Baseline hydrology and water chemistry have been defined
- Improved SAC Conservation monitoring targets (WQ/WL)
- Habitats Directive considered to be favourable condition
- Understanding of its place in turlough typology

Further work

- Relate flood duration to vegetation
- Further understand small Chl spikes
- are there any other mainland UK turloughs out there ????



Acknowledgments

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