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The Future
of Sustainable
Aquaculture

An innovative freshwater multi trophic system trialed on Irish peatlands

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- Water is becoming a scarce commodity and its use is under scrutiny
- Traditional aquaculture systems are under increasing regulatory pressure around abstraction & discharge
- RAS systems are being developed worldwide
- Many flow through systems are now being modified to include partial recirculation



Background

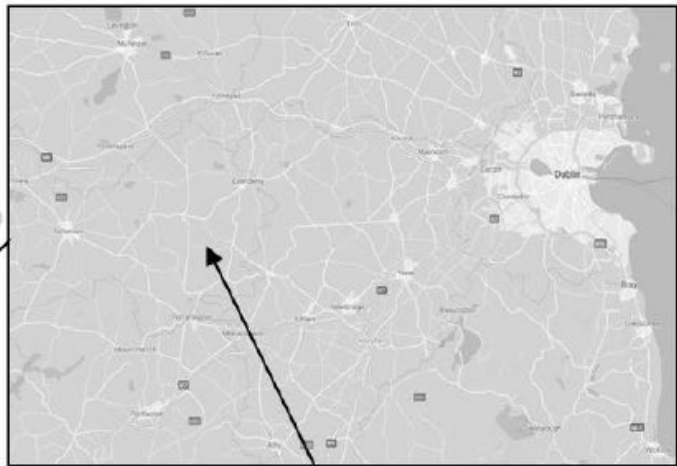
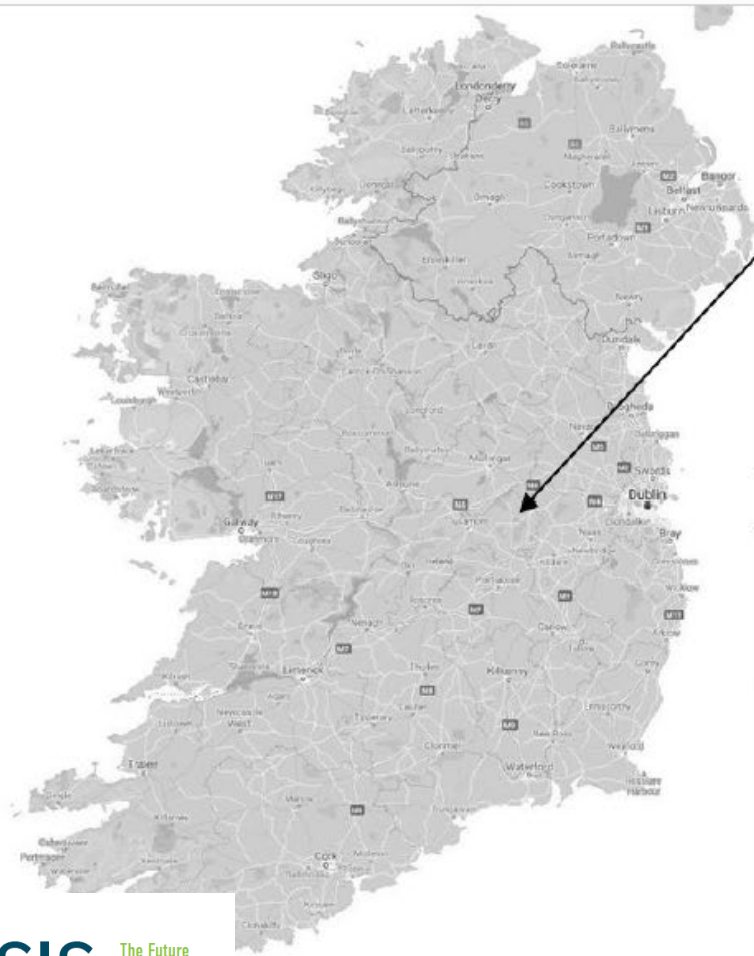
- In 2012 Irish government agencies began a collaboration assessing potential for commercial aquaculture on cutaway peatland
- There are some 80,000 hectares of cutaway peatland in Ireland

Background

- Underlying much of this peatland is glacial till which can be formed into fish ponds
- Following a feasibility study, planning and aquaculture licences a trial farm was established at Mount Lucas in Co. Offaly in 2018.
- Construction completed in 2019
- Investigating culture of trout, perch and duckweed
- Project undertaken between BIM, BNM, Goatsbridge Trout, Keywater Fisheries, AIT & UCC.

Trial Objectives

- Expand potential for aquaculture in Ireland
- Develop a sustainable fish farm model with minimal abstraction & discharge utilising renewable energy
- Investigate potential of duckweed and algae culture for alternative proteins
- Organic principles



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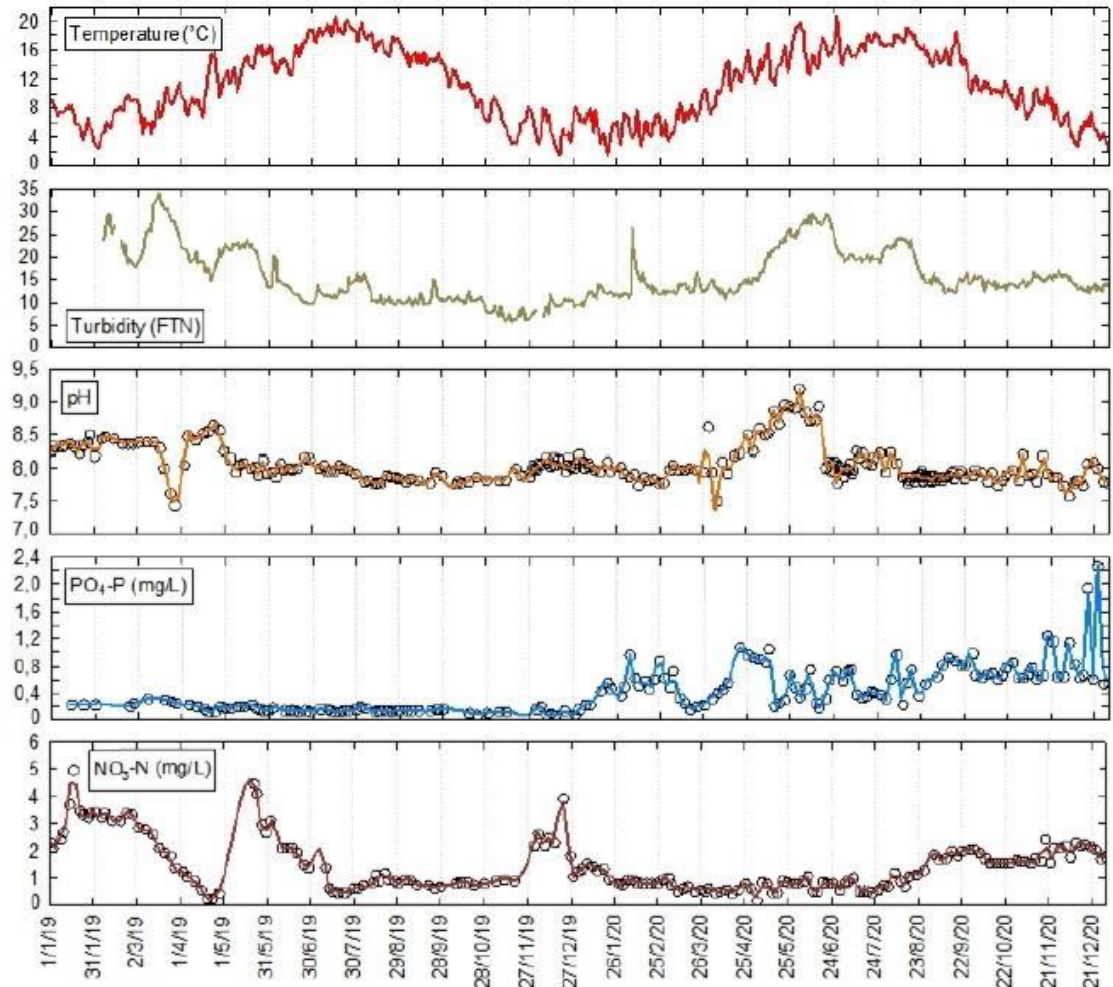
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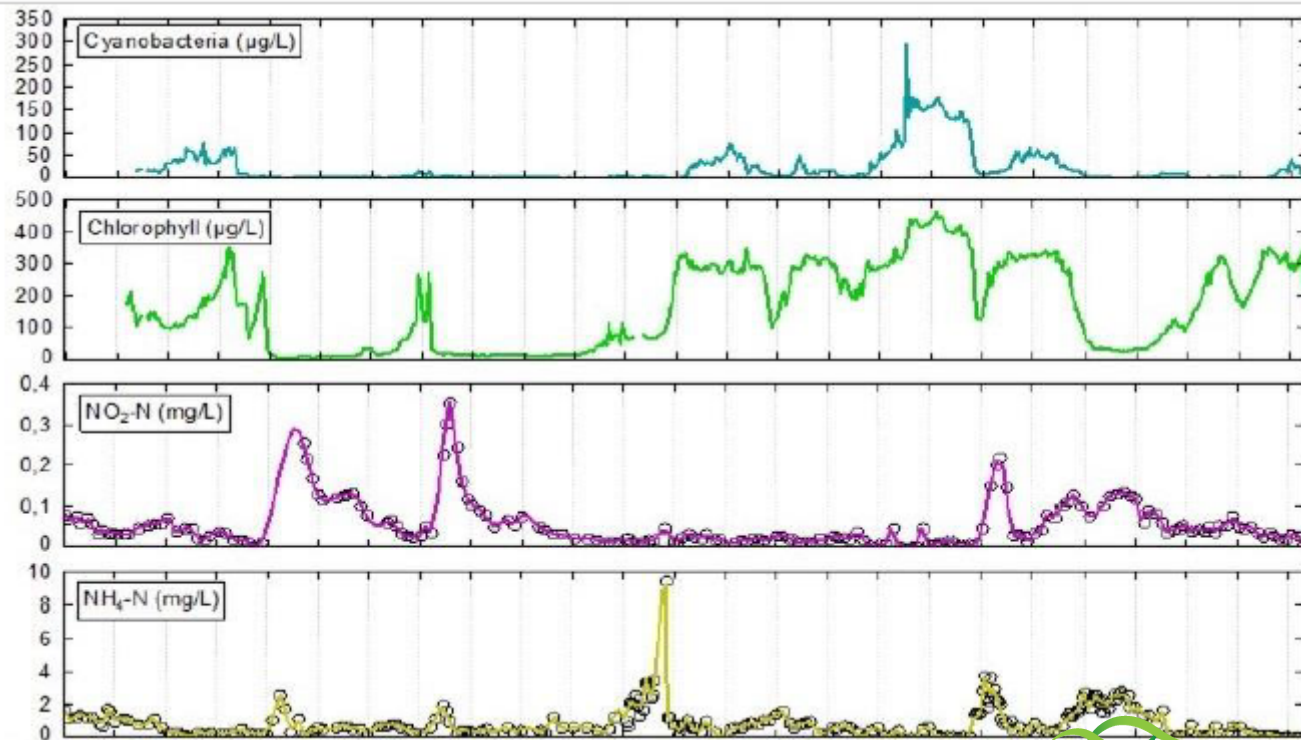
Results: general overview



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Results: general overview



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Trial Results

- Successfully grown trout & perch to harvest size and marketed
- Duckweed and algal treatment has been successful with low ammonia in system
- Work has started on duckweed as alternative protein (salmon feed diets)
- No discharge 9/12 months
- Algal control biggest challenge
- Worlds most sustainable fish farm



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Thank You.



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