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# Informing a Strategic Approach to Address the Impacts of Climate Change on Wild Atlantic Salmon

Overview of Ireland's (EU North) management actions

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Iascach Iníre Éireann  
Inland Fisheries Ireland

North Atlantic Salmon Conservation Organisation

*2023 Annual Meeting*

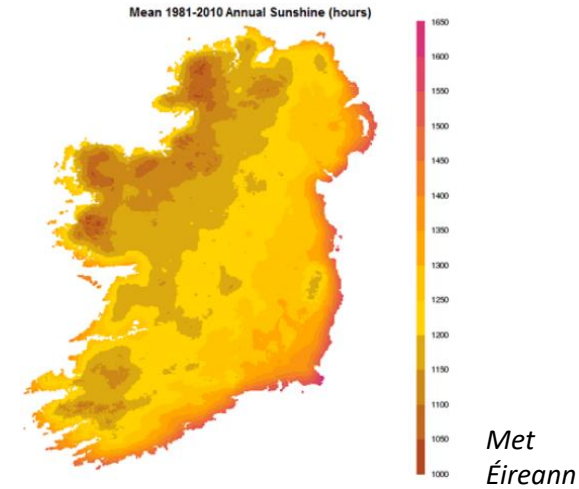
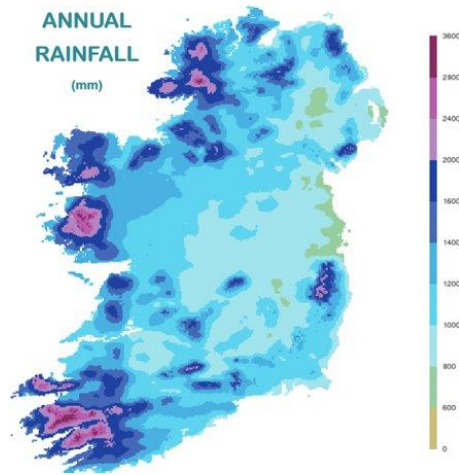
*Moncton, New Brunswick, Canada*

*5 – 8 June 2023*

Theme-based special session

# Addressing the climate challenge for Irish salmon requires us to first understand -

## 1. How will climate impacts differ geographically & within specific salmon habitat types



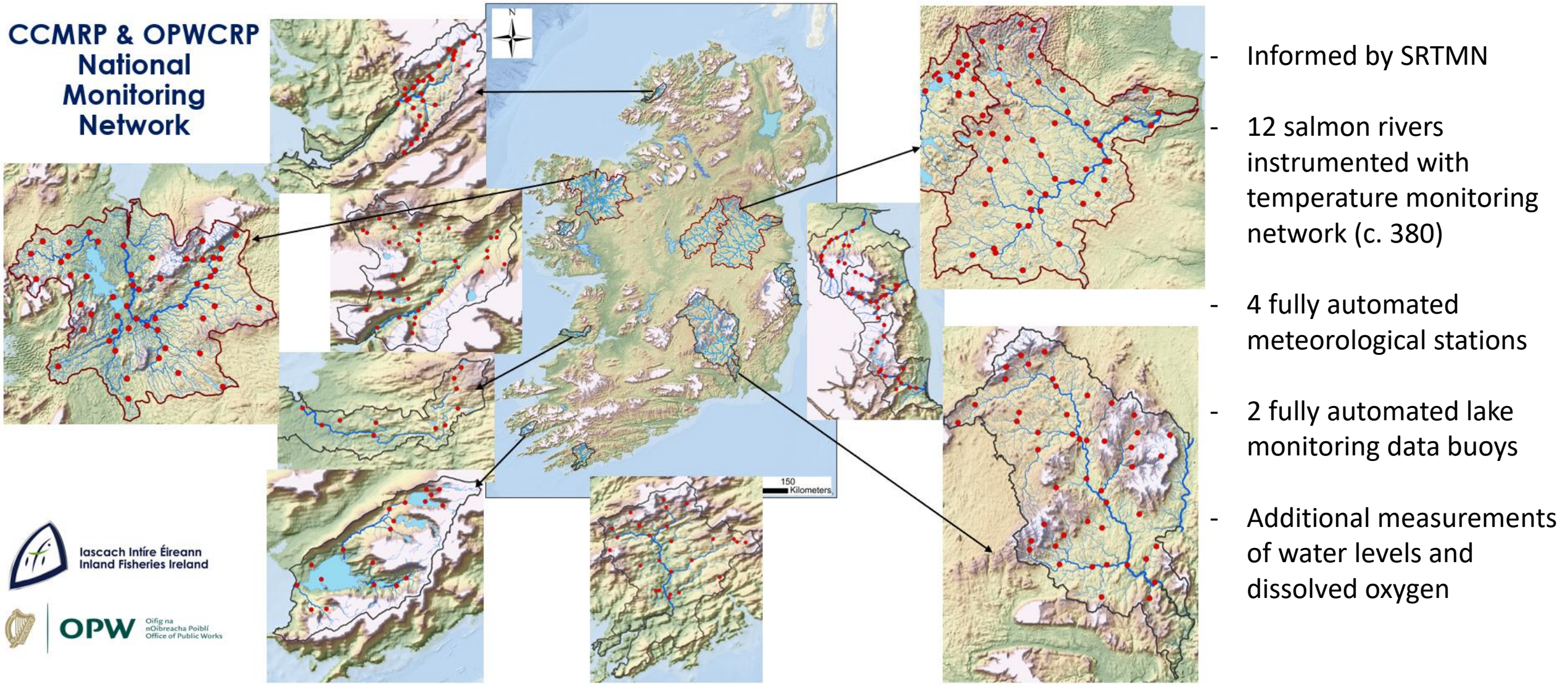
## 2. Pre-existing anthropogenic stressors that decrease the climate resilience of salmon populations and how to mitigate these effectively





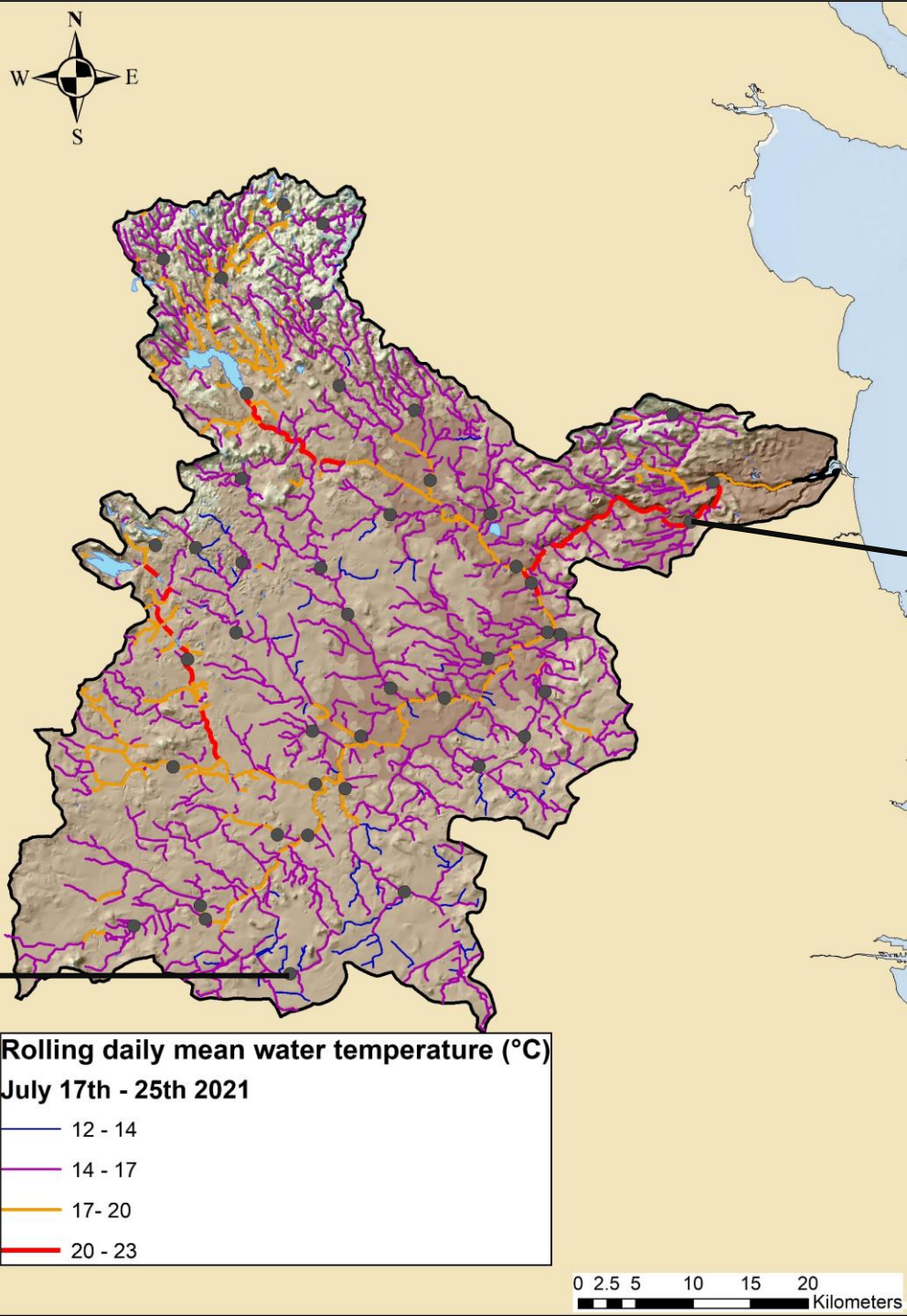
# Challenge: Which Irish salmon habitats are most acutely at-risk? Where do we prioritise mitigation resources?

**Action: Establishing a national monitoring programme for delineating climatically vulnerable salmon habitat and for mitigation prioritisation**

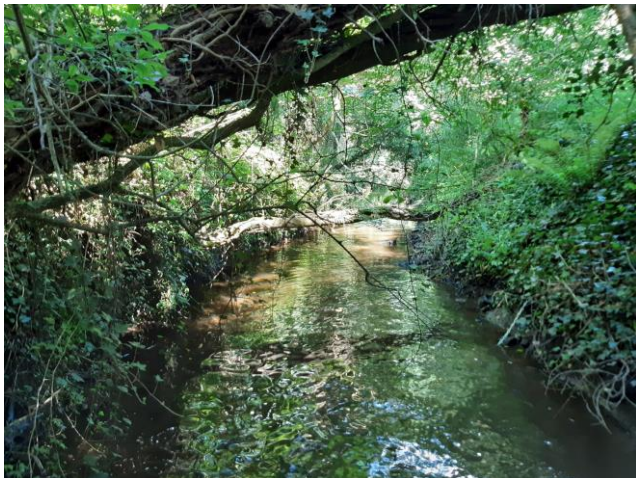




Scenario map (based on model predictions) delineating River Boyne catchment showing mean daily temperatures during July 2021 heatwave event



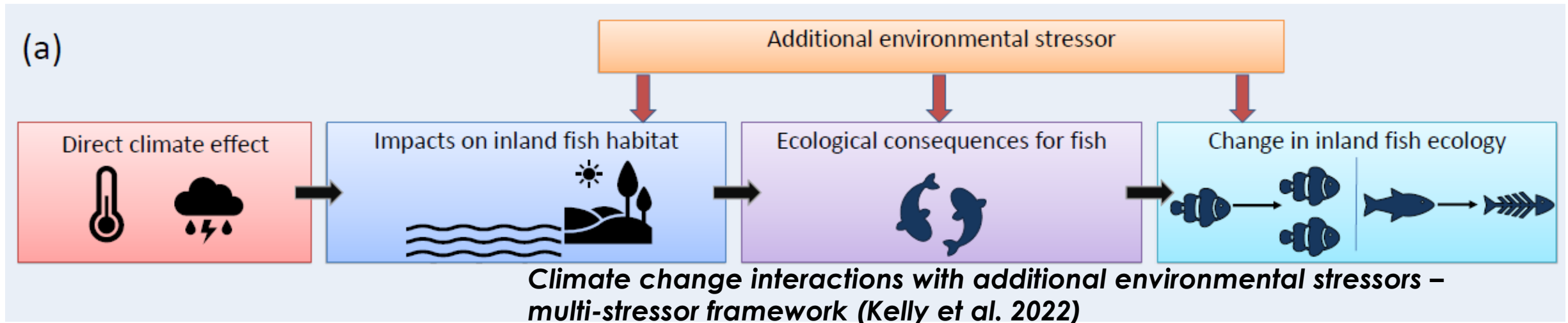
Coolest observation site



Hottest observation site



# Challenge: Identifying and remediating anthropogenic stressors that compromise salmon resilience to climate change



## Case study: Debilitated Physical River Habitat



Remnants of a native oak riparian forest in otherwise bare landscape



Culvert impeding fish migration (Credit: B. Coghlan (IFI))

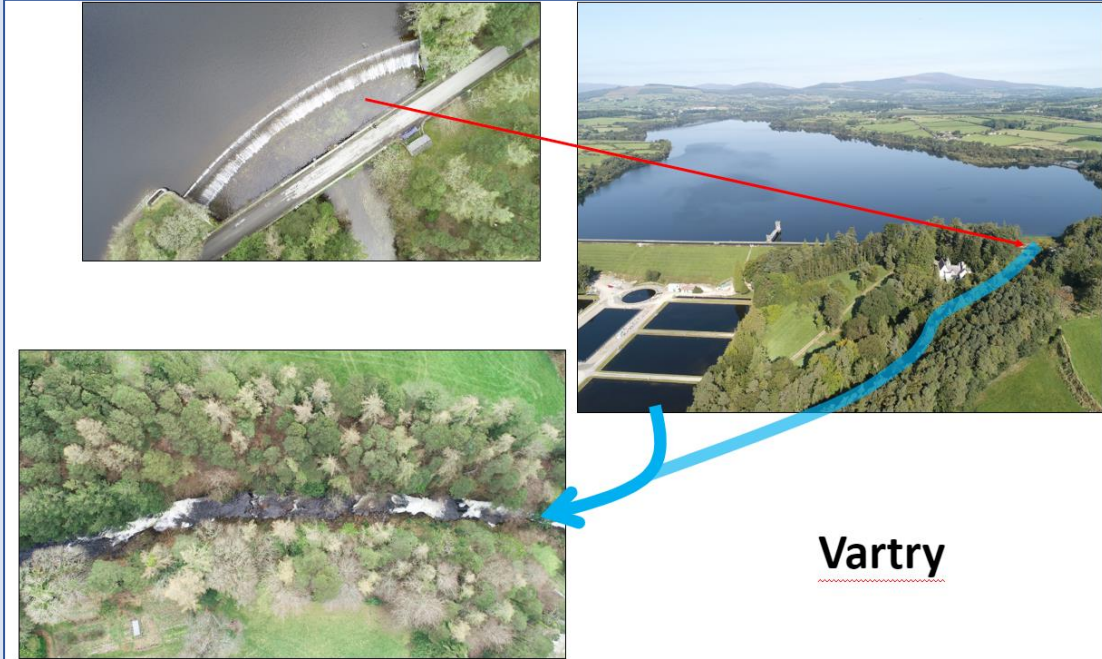


River channelisation for land drainage

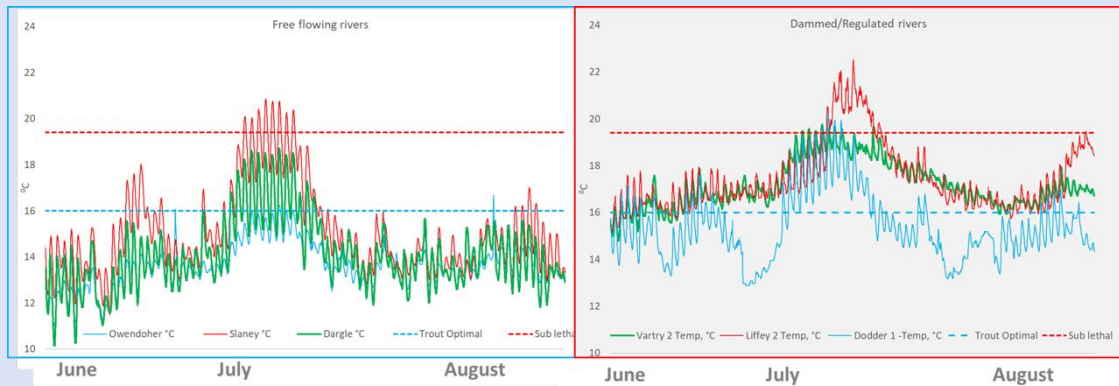


# Action: Programmes to assess hydromorphological recovery strategies aimed at improving salmon habitat resilience to climate change

## Environmental Flow Assessments



Vartry



*Incorporating thermal criteria into environmental flow management from reservoirs (credit R. Ó'Briain, IFI)*

## National Barriers Programme



*Pre- and post-barrier mitigation works, Ballinacarrig Weir, Co. Carlow (credit B. Coghlan, IFI)*



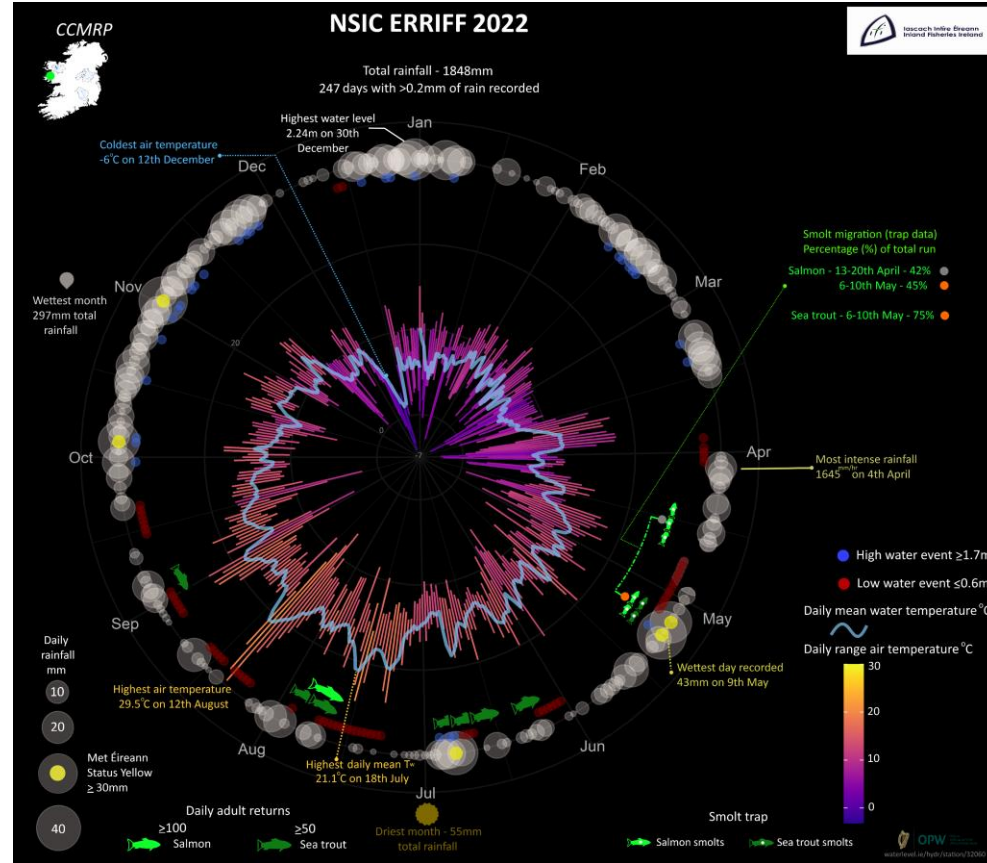
# Action: Development of the National Salmonid Index Catchment (River Erriff) as a centre for salmon-climate research excellence



*Native oak riparian woodland – setting for new study on salmon thermal refugia*



*DST tag implanted into smolts (SMOLTRACK) inform of temperature influences on migration and survival dynamics*



*A year on the Erriff showing the dominant influence of climate conditions on salmonid migration ecology. (Credit: J. Coyne (IFI))*



*Downstream (above) and upstream (below) fish traps allow complete census of migrating adult and juvenile salmon*

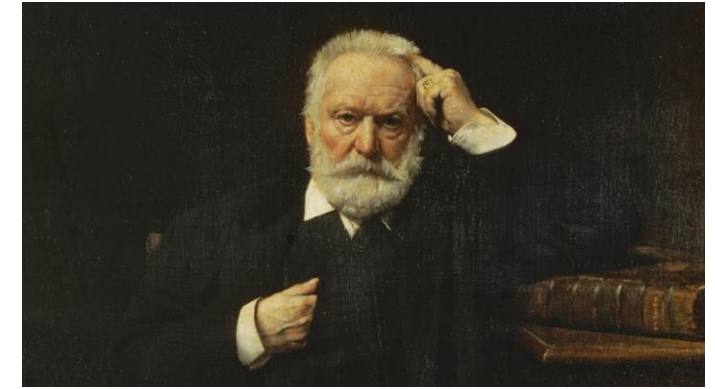




# In summary

## Most management actions so far focused on:

- large-scale monitoring programmes to establish baselines and monitor change over time
- implementation of applied research programmes to inform effective mitigation strategies



## Benefits - informed decision making on:

- angling & fishery management
- habitat prioritisation for conservation/restoration & how to achieve effectively
- raising stakeholder awareness surrounding salmon and climate



***Scientific advice alone can only do so much – measures that boost salmon habitat climate resilience must be incorporated into policy***





# Acknowledgements

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- Met Éireann
- Office of Public Works



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Department of Housing,  
Local Government and Heritage



**Iascach Intíre Éireann**  
Inland Fisheries Ireland



**OPW** Oifig na  
nOibreacha Poiblí  
Office of Public Works