





Small-scale Hydro Schemes in the Foyle and Carlingford areas

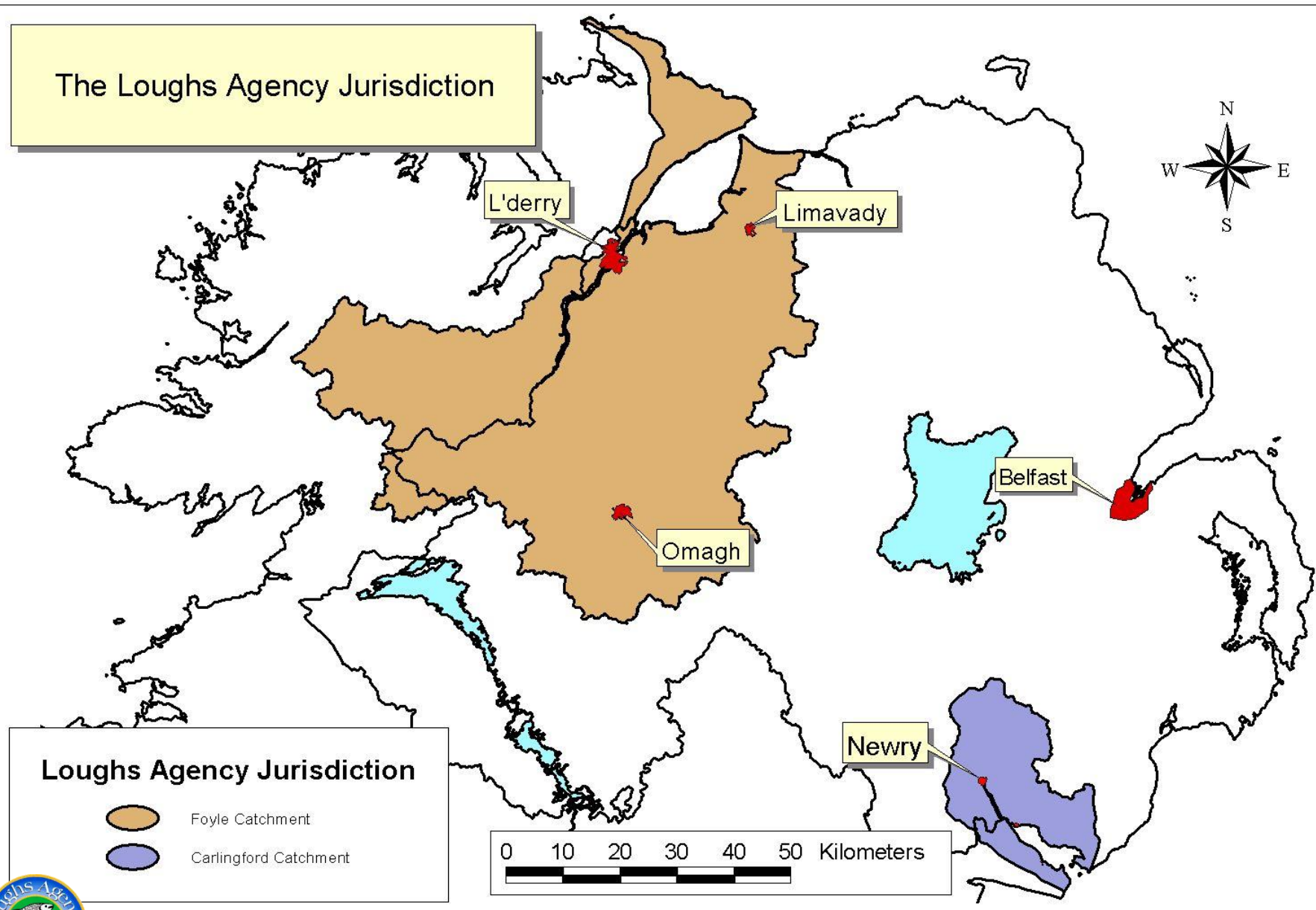
Paddy Boylan

Introduction

- Background to Loughs Agency
- Types of small Hydro schemes
- Potential impacts of small Hydro-electric development on salmon
- Loughs Agency Guidelines



The Loughs Agency Jurisdiction



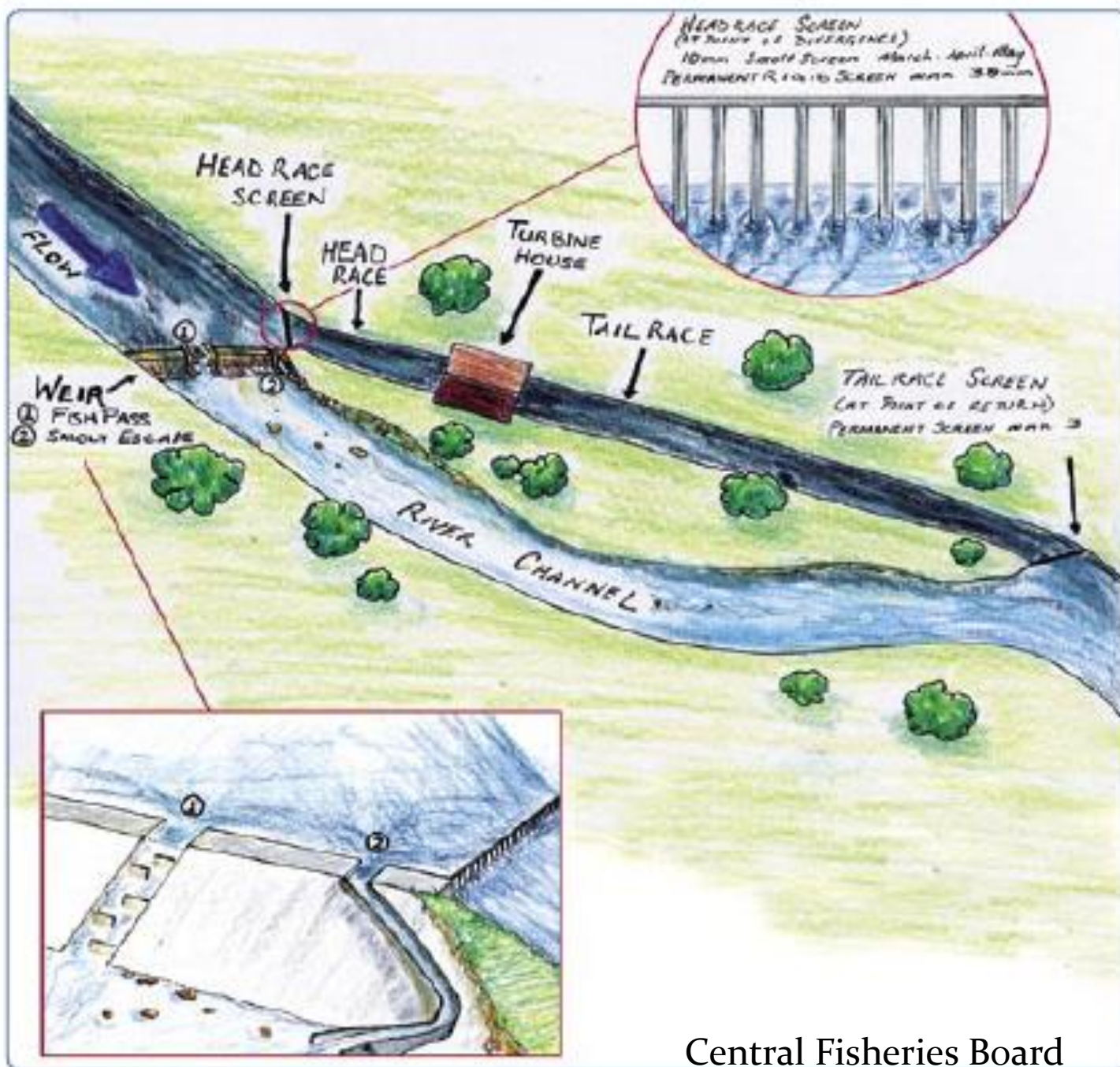
Types of Small Hydro-Schemes

- 1. Low Head Schemes
- 2. High Head Schemes (Run of river, Impoundment)



Low Head Schemes

- Lowland areas
- Abstraction of river water through use of weirs
- Flow diverted into a headrace
- Water returned to river through a tailrace
- Typically <5m head in such schemes
- Volume of water used per unit of power is therefore high
- Modern turbines can operate over a large range of lows – implications for fisheries?



Low level view of the river Hydro-Scheme

Central Fisheries Board

High Head Schemes

- Comprise Run of the river or impoundment schemes,
- Both utilise upland catchments where sufficient head is available,
- Run of the river schemes have little or no storage and exploit natural river flow at all times,
- Lake impoundment schemes are likely to cause fish passage problems and restrict access to spawning areas.



Potential effects on salmon

- Smolts and kelts attracted to main flow,
- Impingement
- Difficulty in finding by-pass channels
- Delays in migration may increase mortality due to predation
- May be an impact on spawning and nursery potential due to reduced flow.
- May benefit passage at higher flows enabling fish to cross barriers over longer windows

Potential effects on salmon

Determined by the:

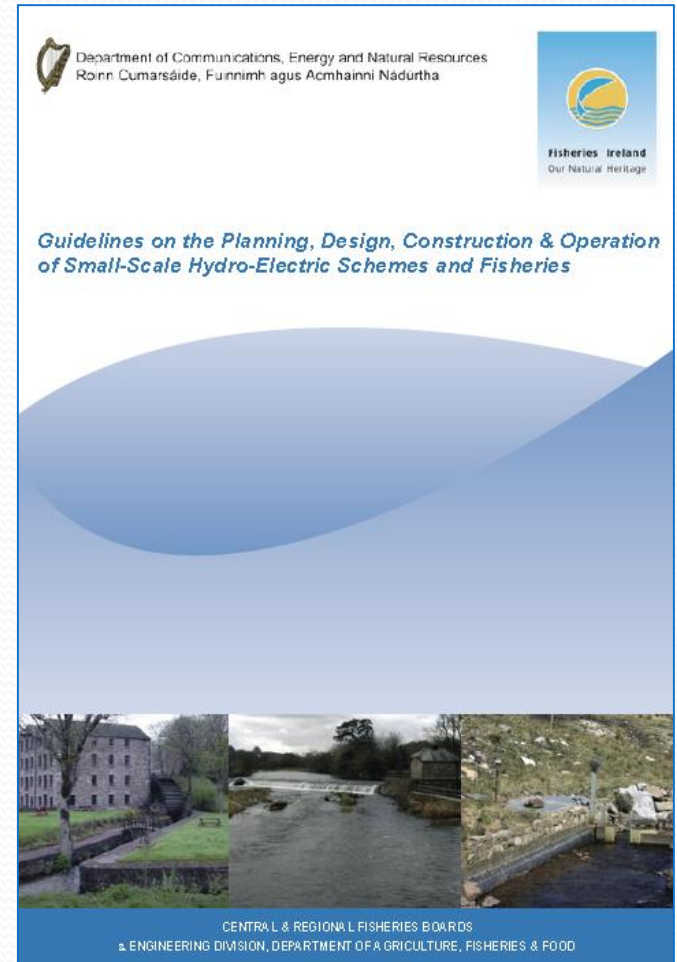
- Location
- Scale
- Design of the development
- The type, size and location of the associated fishery.
- Baseline data vital
- Cumulative effect



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Loughs Agency Guidelines

- Adopted the Central and Regional Fisheries Boards Guidelines. Developed in 2007.



Loughs Agency Planning Consultations list

Year No. of applications

- 2008: 1
- 2009: 3
- 2010: 3
- 2011: 12
- 2012: 3
- 2013: 3
- 2014: 2
- 2015: 1
- 2016: 1
- 2017: 0
- 2018: 0



Gary Larson: The Far Side