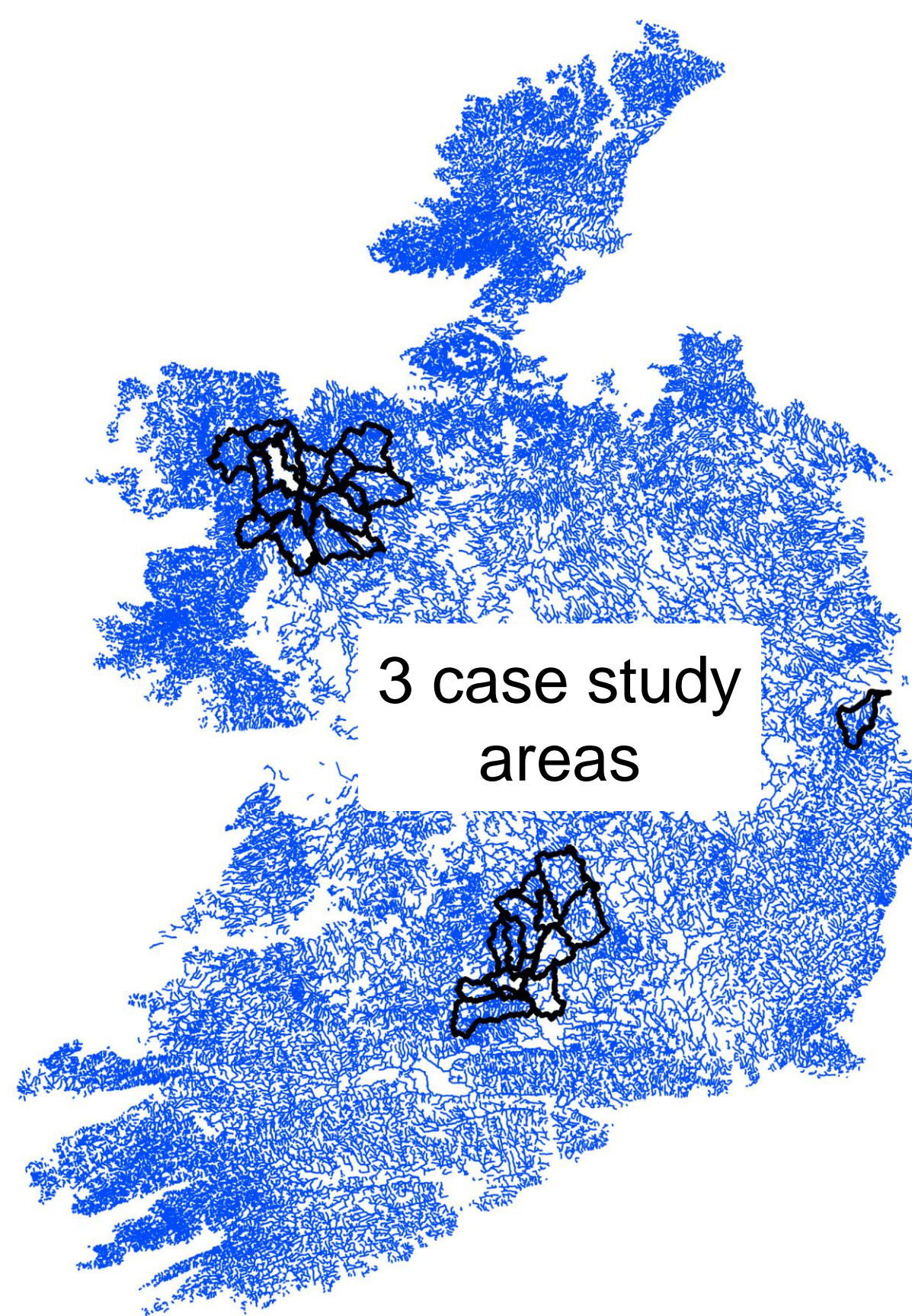# ESDecide project:

from Ecosystem Services Framework to Application for Integrated Freshwater Resources Management

Marcin Penk, Jeremy Piggott (*Trinity College Dublin, Ireland*), Mary Kelly-Quinn (coordinator), Michael Bruen, Craig Bullock (*University College Dublin, Ireland*), Mike Christie (*Blue Island Consulting, UK*), Christian Feld (*University of Duisburg Essen, Germany*), Jasper Kenter (*University of York, UK*)

Feedback to managerial decisions ← Desired ecosystem services outcomes

Catchment Management

Riparian Management

Climate Projections

© James Orr

Biotic & Abiotic Components

Ecosystem Service Attributes

Economic & Social Valuation

Ecosystem Services

Bayesian Belief Network

(T. Hallouin for ESManage project, cf Kelly-Quinn et al. 2019)

3 case study areas
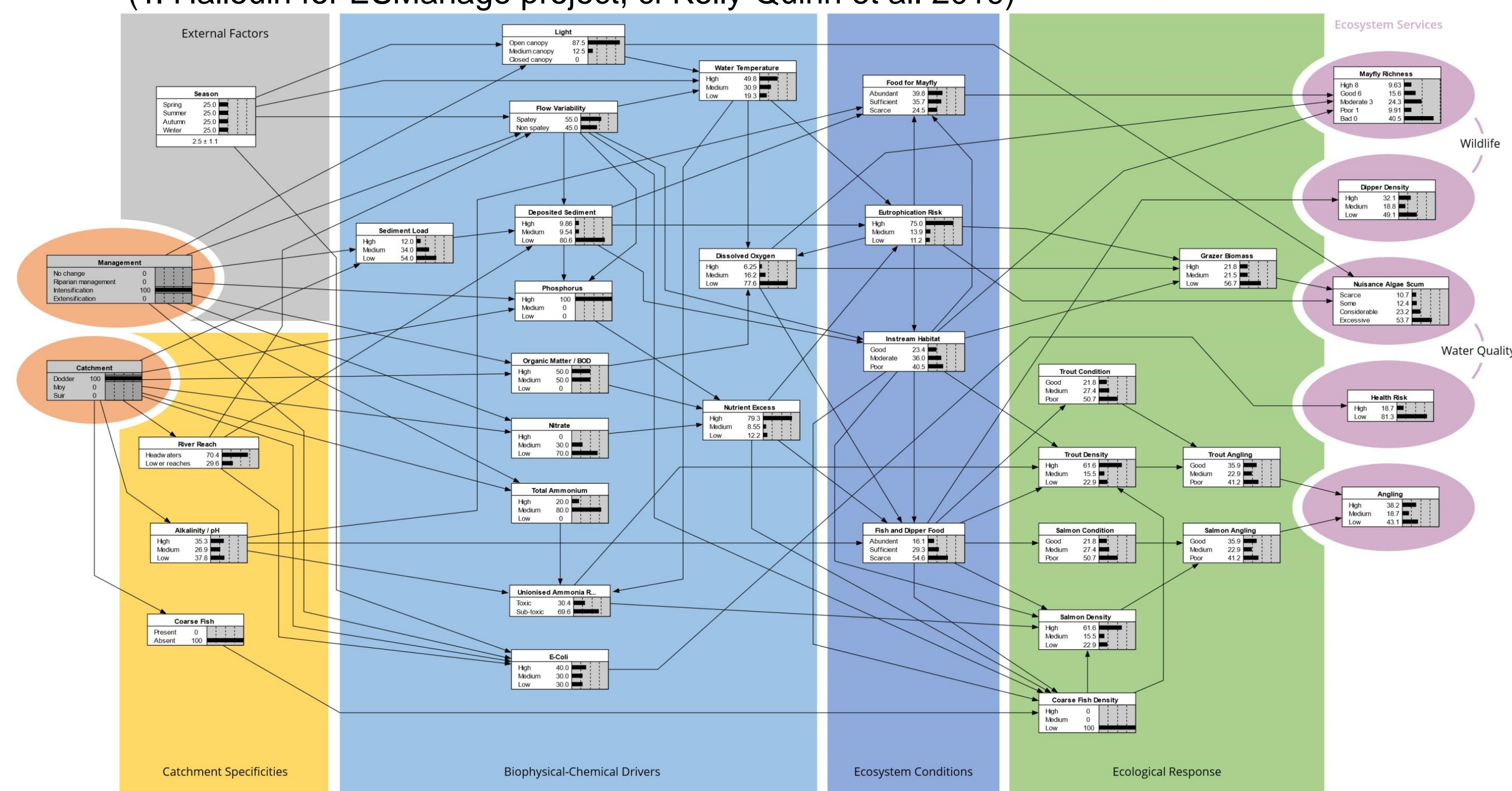
Freshwaters cover <1% of the Earth's surface but contribute disproportionately highly to ecosystem services, including water for consumption and food production, sanitation and recreation.

Freshwaters are also among the most degraded and threatened ecosystems, undermining these services. The ecosystem services framework can be a useful management tool, because it focuses on targets that policy makers, managers and stakeholders can directly relate to.

ESDecide (2019–2022) develops an evidence-based decision-support tool for Ireland's river ecosystems using a Bayesian Belief Network (BBN) model linking managerial decisions to the desired ecosystem service outcomes through biotic and abiotic causality chains.

The existing provisional BBN model will be restructured and reinforced with existing stressor-response data. Ecosystem services will undergo monetary and non-monetary valuation. The BBN model will then be developed into an intuitive online decision-support tool.

University College Dublin
Ireland's Global University

Trinity College Dublin
Coláiste na Tríonóide, Baile Átha Cliath
The University of Dublin

UNIVERSITY of York

Blue Island Consulting Ltd
Specialists in Environmental Economic Research

UNIVERSITÄT DUISBURG ESSEN

Funded by:

epaResearch
Climate - Water - Sustainability
Identifying pressures • Informing policy • Developing solutions