

Combining catchment science and agricultural advice to improve local water quality

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Local Authorities Water Programme (LAWPRO)



- A national shared service working on behalf of all local authorities in Ireland.
- Coordinate efforts to achieve good or high water quality in our rivers, lakes, transitional/coastal waters, and groundwater, as required by the EU Water Framework Directive.
- There are 36 scientists and 13 community officers working in Priority Areas for Action (PAA's)
- National focussed, regionally based
 - Border, Midlands and East, South West, South East, West
- <https://lawaters.ie/> - for updates on PAA's

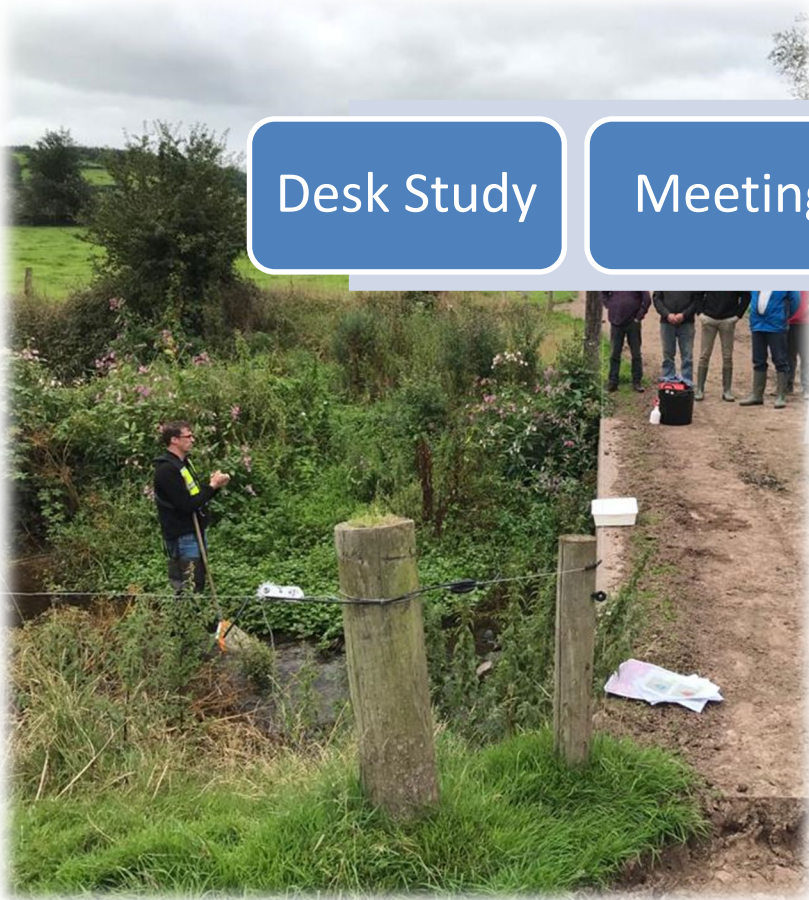
Scientist – Advisor cooperation

Desk Study

Meetings

Fieldwork

Referrals



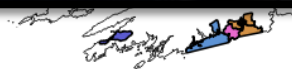
Catchment scientists role

Targeted work

- 190 areas for action nationally
- 43 (~160 WB's) in the South East of Ireland
- Work as part of a team, one catchment manager, 6 scientists, 2 community officers

Four main stages

1. Desk study – S-P-R conceptual model
2. Public meetings – Community hall, farmer discussion group
3. Fieldwork – environmental assessment
4. Referrals – communicating the results to relevant agencies



- **Catchment:** The landscape surrounding a waterbody that connects the rainwater to the river.
- **Pressures:** Typically refers to a land use type.
- **Waterbody:** Typically refers to the subsection of a river or stream and not the whole river itself.



Photo credit: John Foley

First stage: Desk study - Information gathering

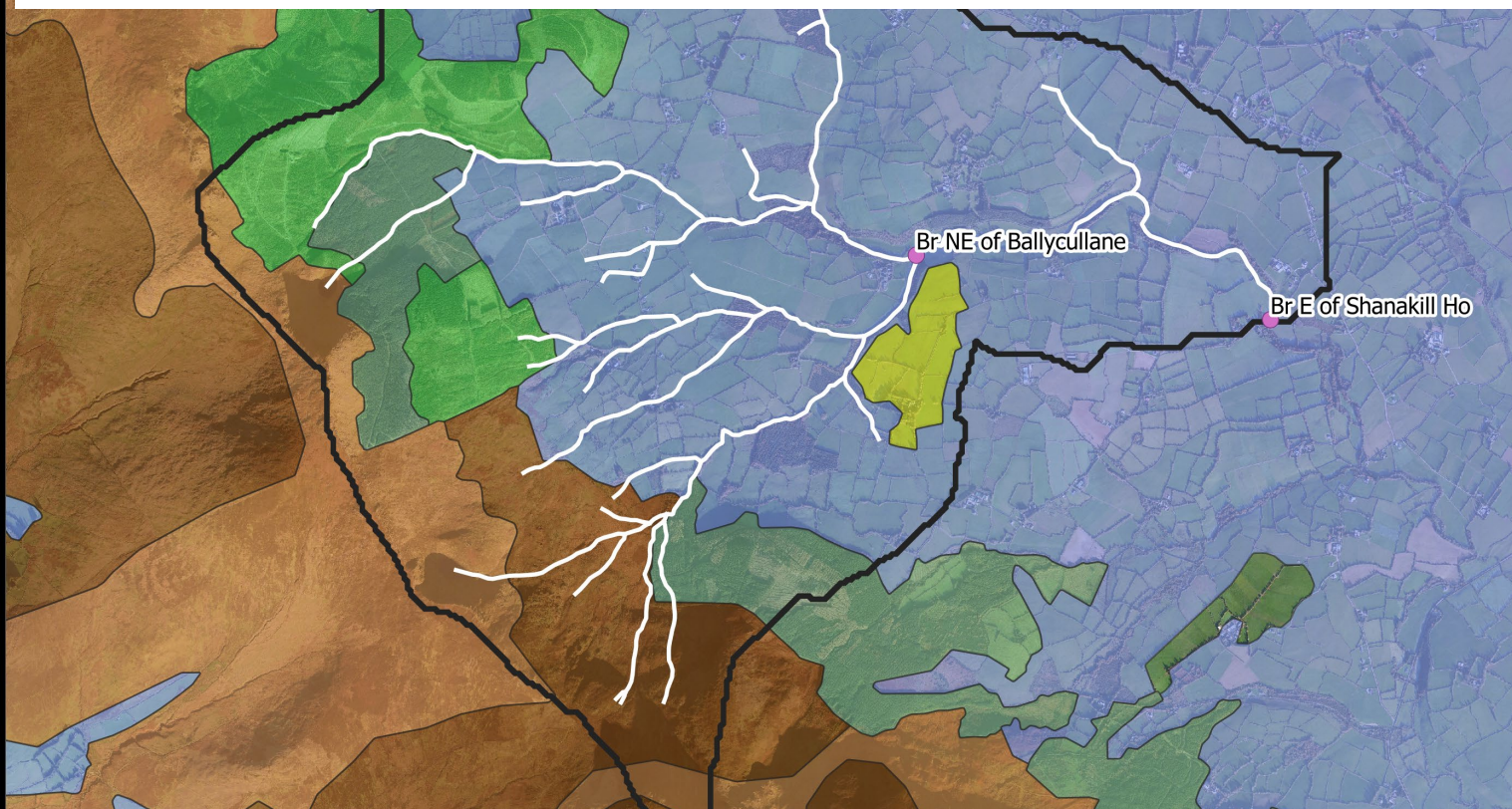
Environmental Protection Agency (EPA)

- Ecological status
 - High, Good, Moderate, Poor, Bad
- Monitoring data trends and charts (Ammonia, Phosphate, Nitrate)
- Characterisation Initial Assessment
 - Pressure examples
 - Agriculture (Pasture)
 - Urban wastewater (Treatment plant)
 - Anthropogenic (Unknown)

Inland Fisheries Ireland, Coillte, Forest Service, Irish Water, Local Authorities and more

Agriculture and Forestry pressure – likley risks

1. Nutrient loss (point and/or diffuse)
2. Sediment/soil loss
3. Hydromorphology (changes to riverbed or riverbanks)



Clodiagh SPS

Waterbody

Clodiagh_010 WB

Monitoring Station

Operational

Landuse

Coniferous forest

Moors and heathland

Arable land

Pastures

Peat bogs

Woodland-shrub

WB Name	Risk	Status obj.	Ecological Status				Monitoring station	Pressure Category	Initial Characterisation
			2007-2009	2010-2012	2013-2015	2013-2018			
Clodiagh (Portlaw)_10	At Risk	Good	Moderate	Good	Moderate	High	Br E of Shanakill Ho (RS16C030100)	Agriculture (Pasture)	Nutrient pollution
								Forestry (Forestry)	Nutrient pollution

Clodiagh catchment – pathway analysis

Overland flow

- Poorly drained soil



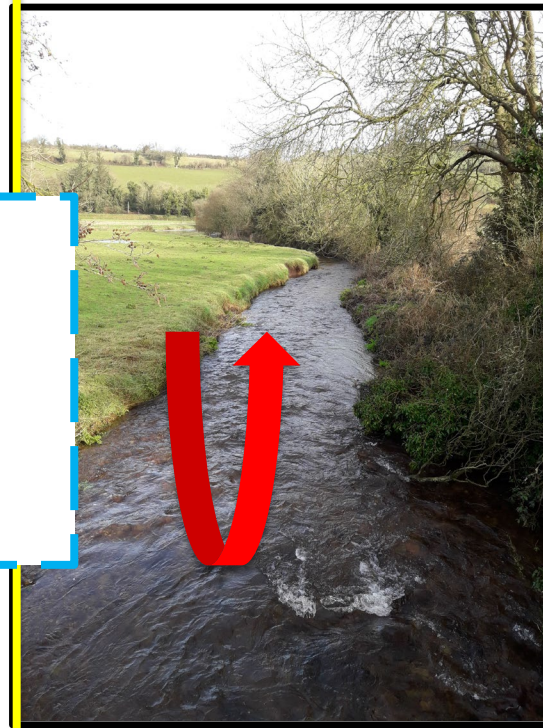
Sub-surface (shallow) flow

- Well/moderate drained soil
- Semi permeable subsoil
- Low/moderate storage aquifer



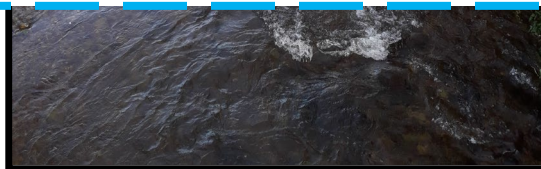
Sub-surface (deep) flow

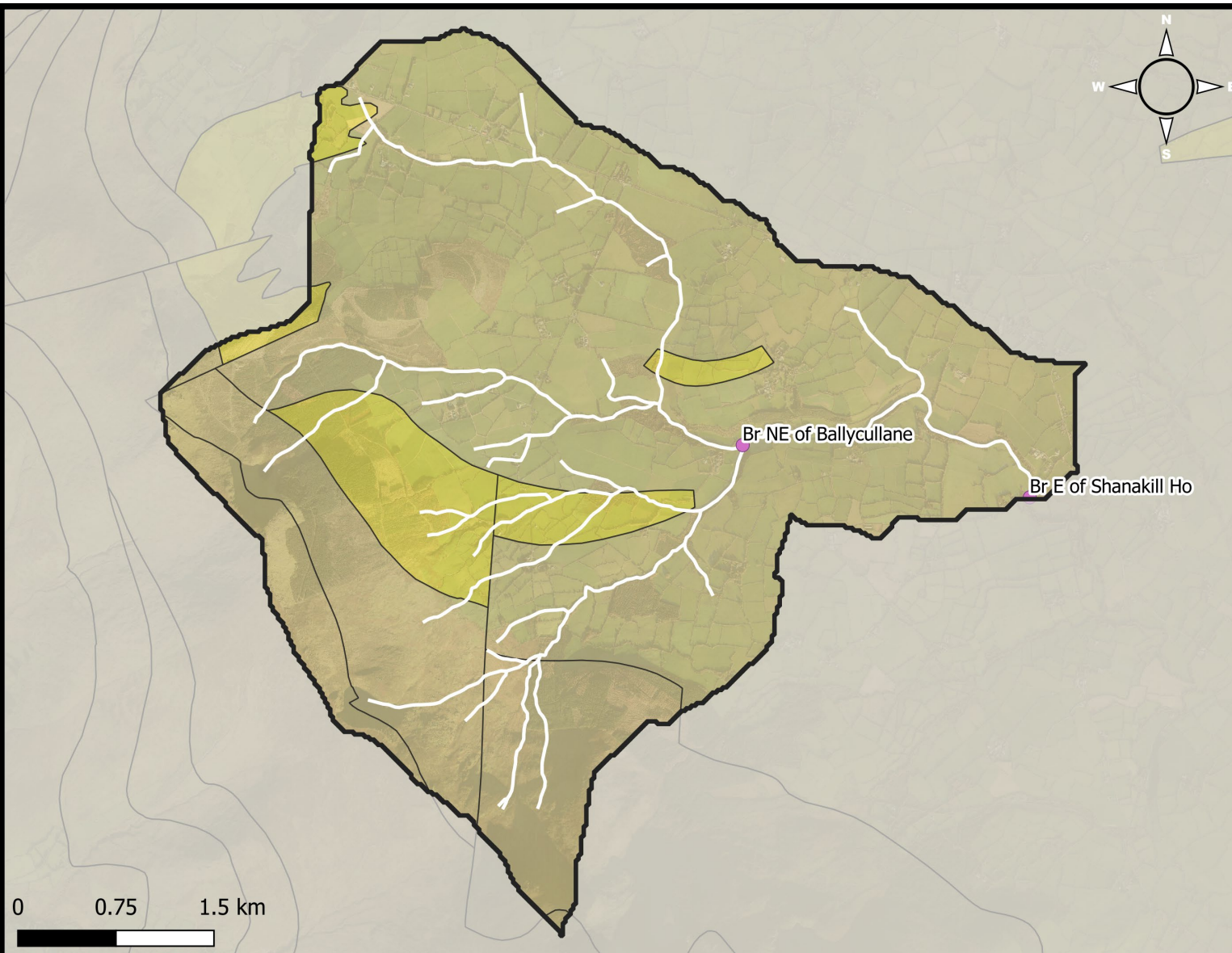
- Well drained soil
- Permeable subsoil
- Good storage aquifer



Exceptions:

Karst/limestones areas
Variation in bedrock type
Variation in soil type





Clodiagh PAA Boundary

Waterbody

Clodiagh_010 WB

Monitoring Station

Operational

Aquifer/ Bedrock

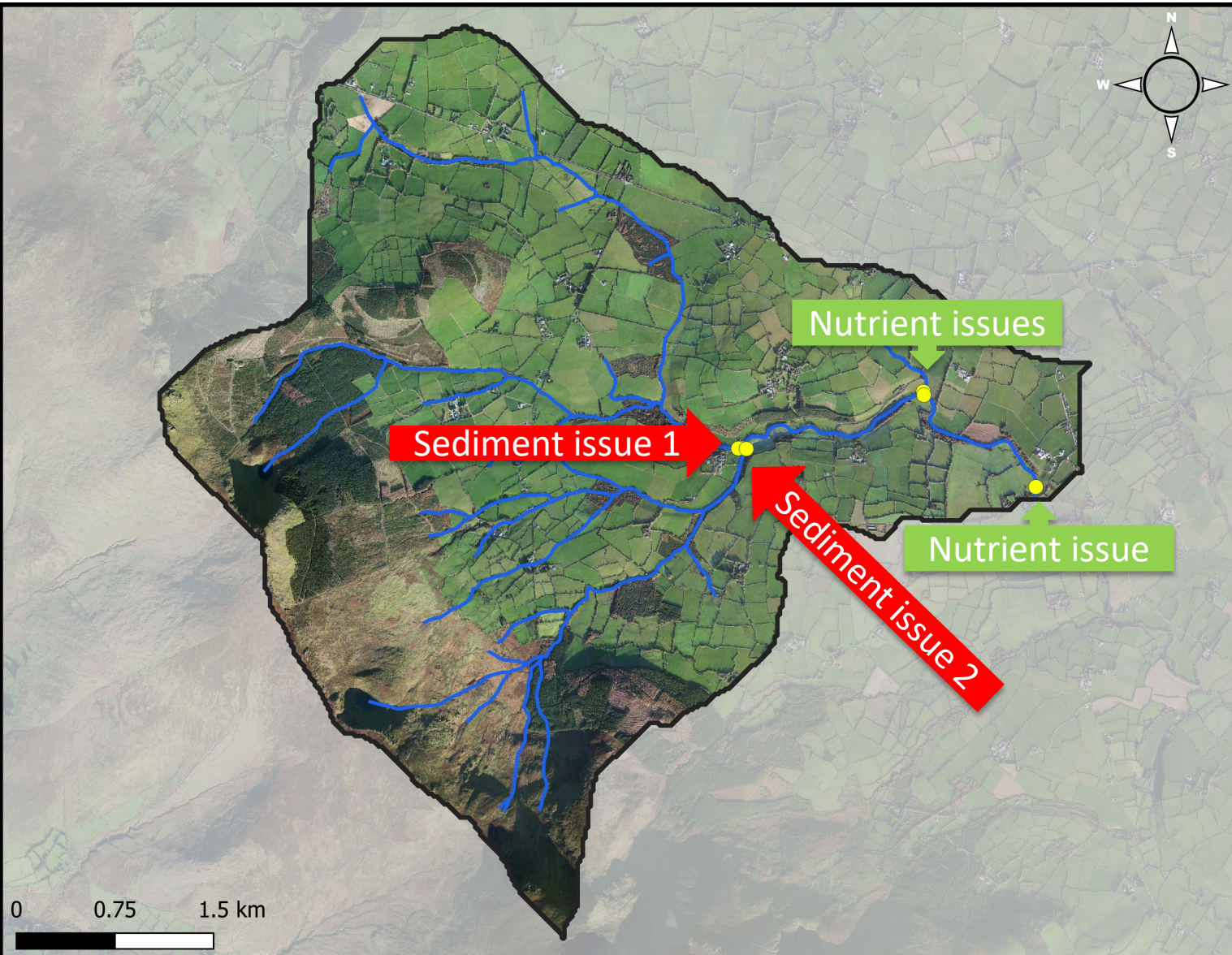
LI - Moderate storage

PI - Poor storage



Drawn by: Philip Murphy
Checked by: Ruth Hennessy
Date: 07-09-2021

Clodiagh (Portlaw) PAA

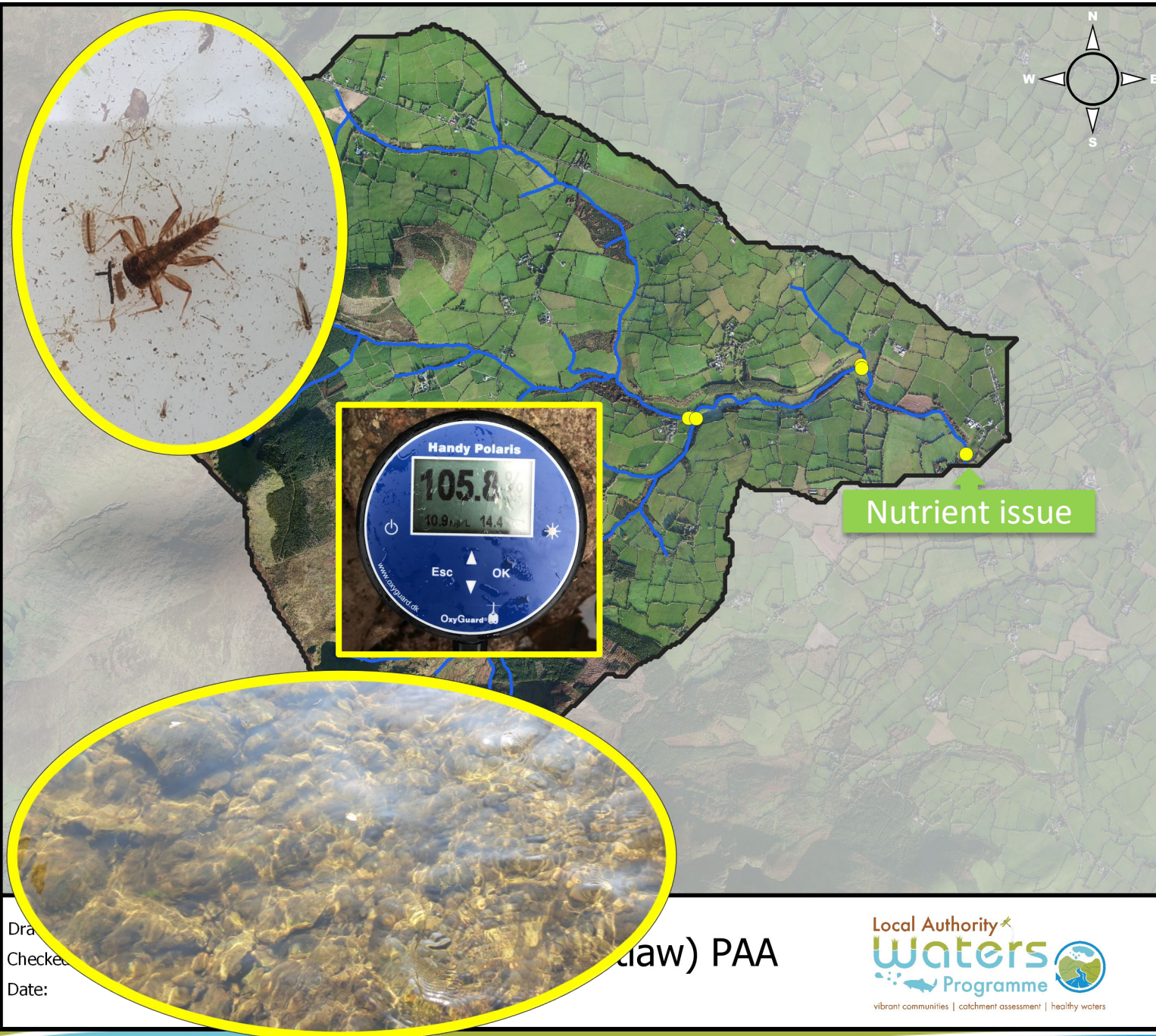


- Clodiagh PAA Boundary
- Waterbody
 - Clodiagh_010 WB
- Sites visited

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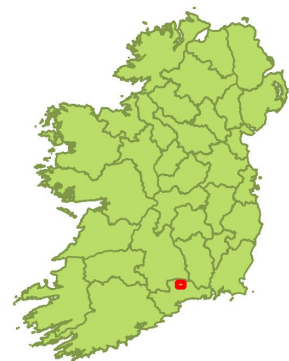
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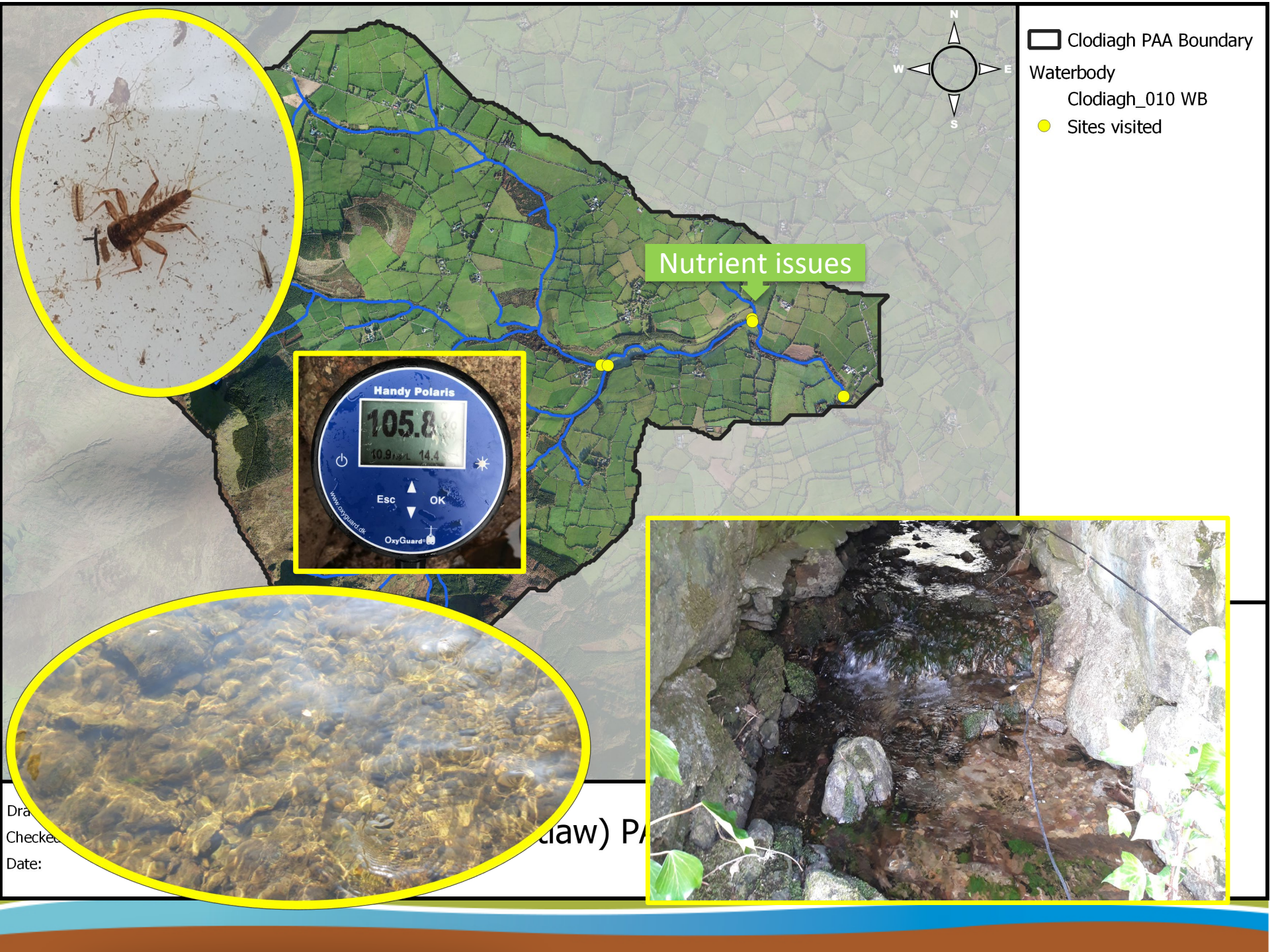


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Nutrient issue

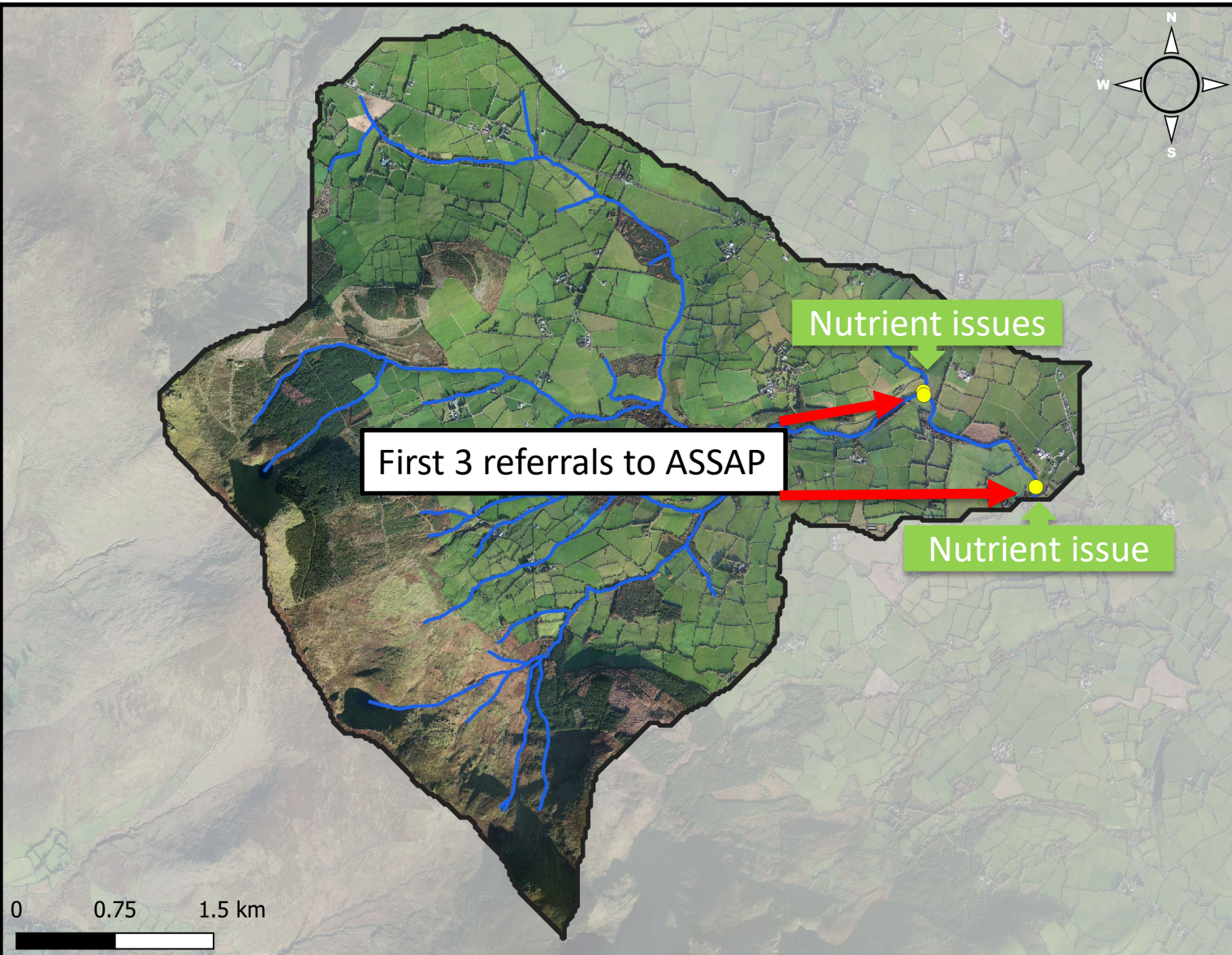


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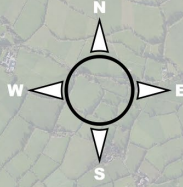


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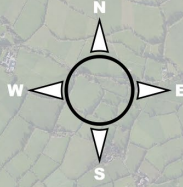
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Sediment issue 1



(Portlaw) PAA





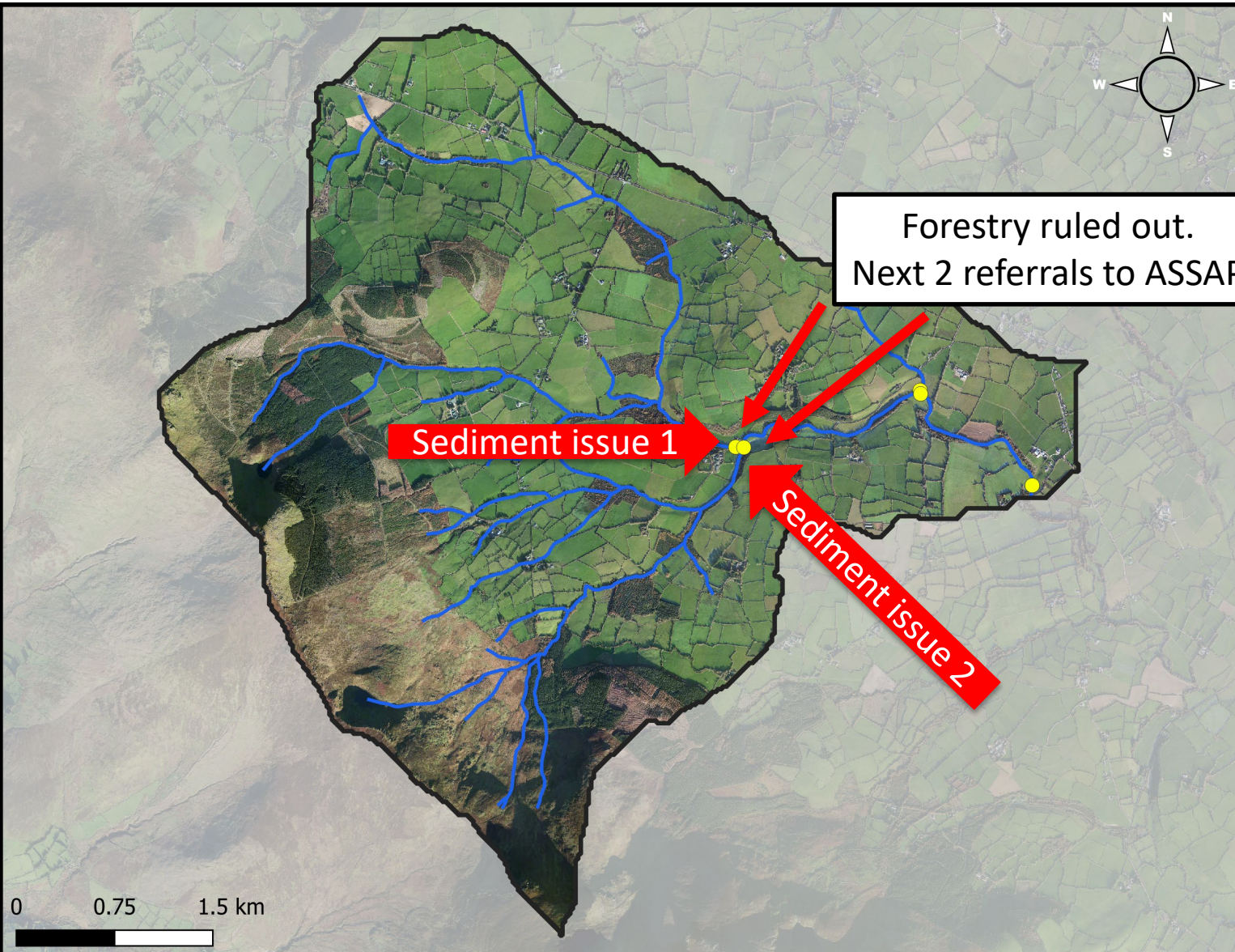
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Sediment



Clodiagh (Portlaw) PAA



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Forestry ruled out.
Next 2 referrals to ASSAP

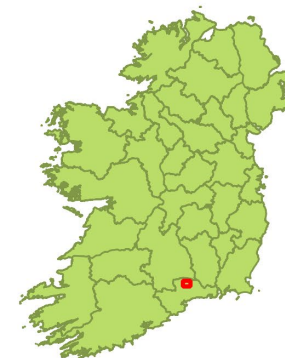
Sediment issue 1

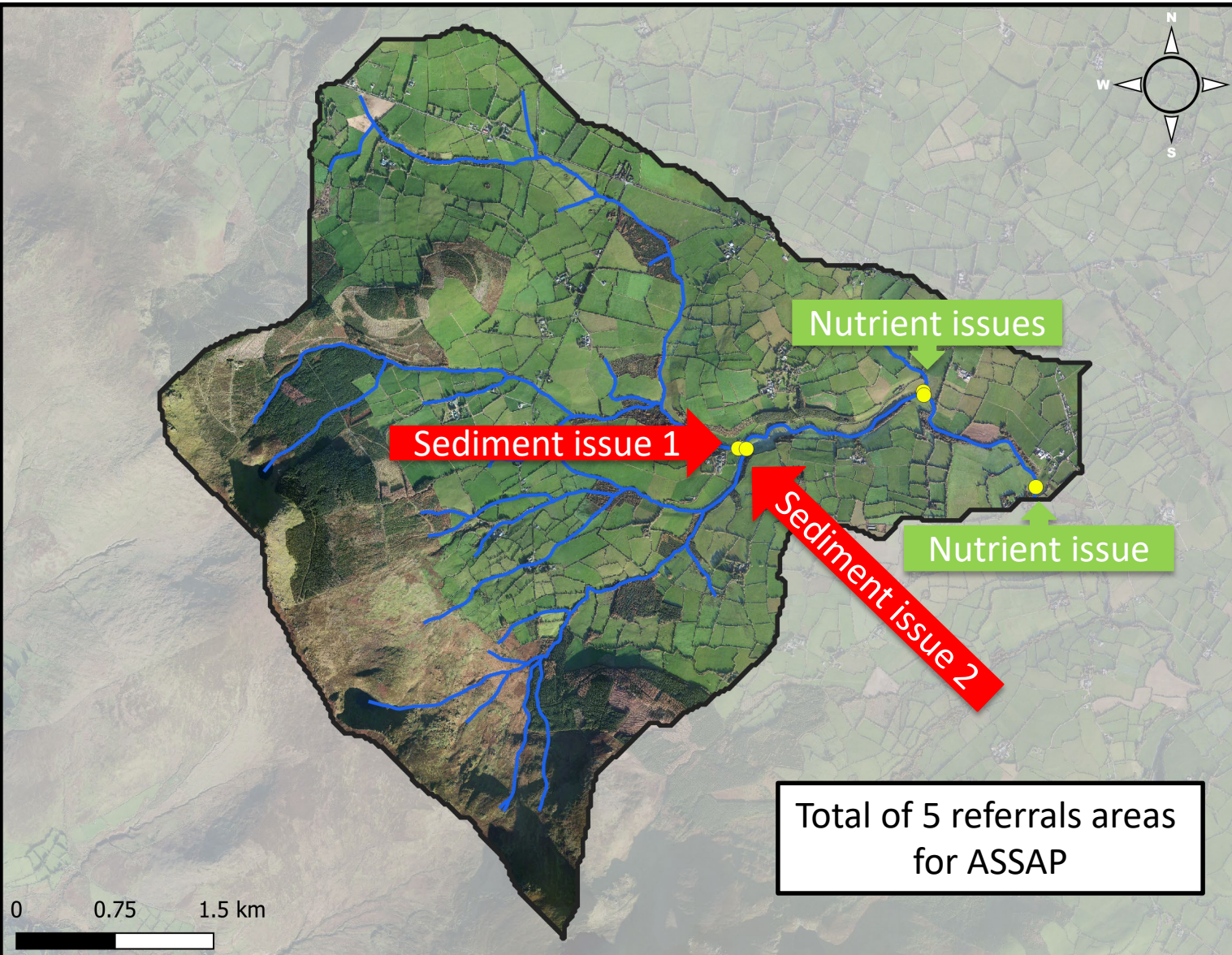
Sediment issue 2

0 0.75 1.5 km

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Clodiagh (Portlaw) PAA

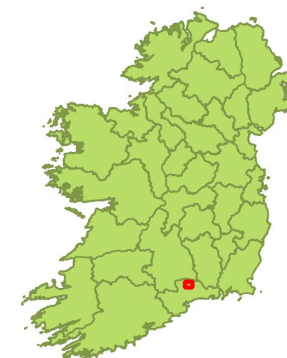




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Clodiagh (Portlaw) PAA



Catchment scientist

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Agricultural advisor