Local Authority Waters Programme

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Changing mindsets to improve water quality:
A new approach for RBMP 2018-2021

Ruth Hennessy

Catchments Manager, Local Authority Waters Programme

Teagasc: Catchment Science Conference
Whites Hotel, Wexford
5 – 7 November 2019

Overview

Improving Water Quality – Initiatives:

- What's driving the LA Waters Programme?
- Who are we and what are we doing?
- Water Framework Directive and River Basin Management Planning

Local Catchment Assessments – the steps?

- Desk-study
- Community Information Meeting
- Catchment surveys
- Analysis of results & determination of referrals
- Delivery of Action Plan

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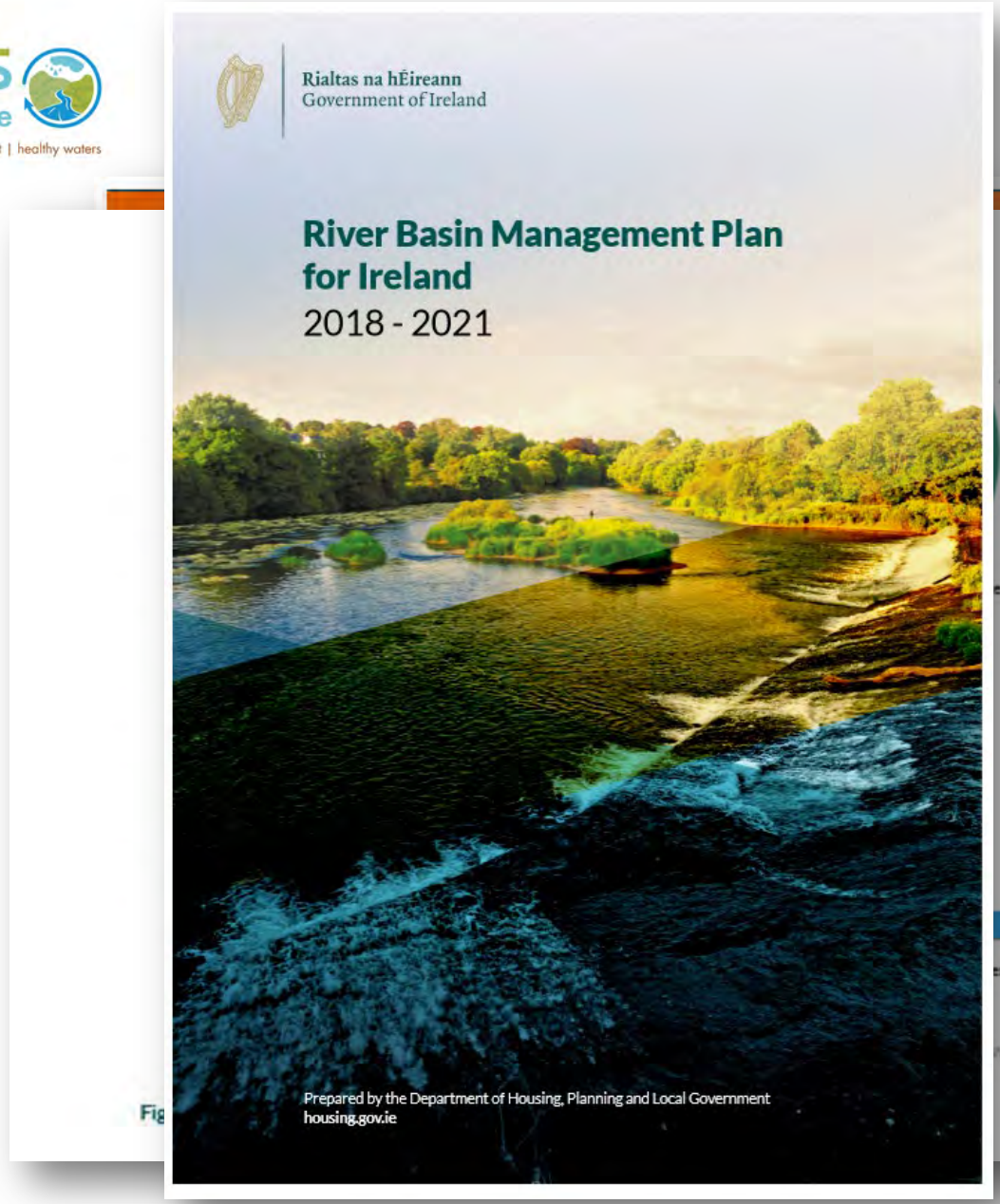

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RBMP 2018-2021

Expected Outcomes

255	Urban waste-water treatment projects progressed
€73m	Invested to reduce water leakage by 61million m^3 *per annum*. Reduce leakage from 45% - 38%
30	Sustainability advisors in place to deliver the Agricultural Sustainability Support and Advisory Programme
43	Technical personnel deployed to regionally-based Local Authorities Water Support and Advisory Teams
23,000	Farmers will receive sustainability advice under the Dairy Sustainability Initiative and the Agricultural Sustainability Support and Advisory Programme
4,000	Inspections under the National Inspection Plan for Domestic Waste Water Treatment Systems
3,000+	Water abstractions registered and an authorisation system implemented
	Guidance for planning authorities on physical planning and the Water Framework Directive
726	Water bodies to achieve general water quality improvements
152	Water bodies to experience improved water quality status

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Sample of the Implementing Bodies

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Communities Team

Catchment Assessment Team

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RBMP 2018-2021: Target Resources

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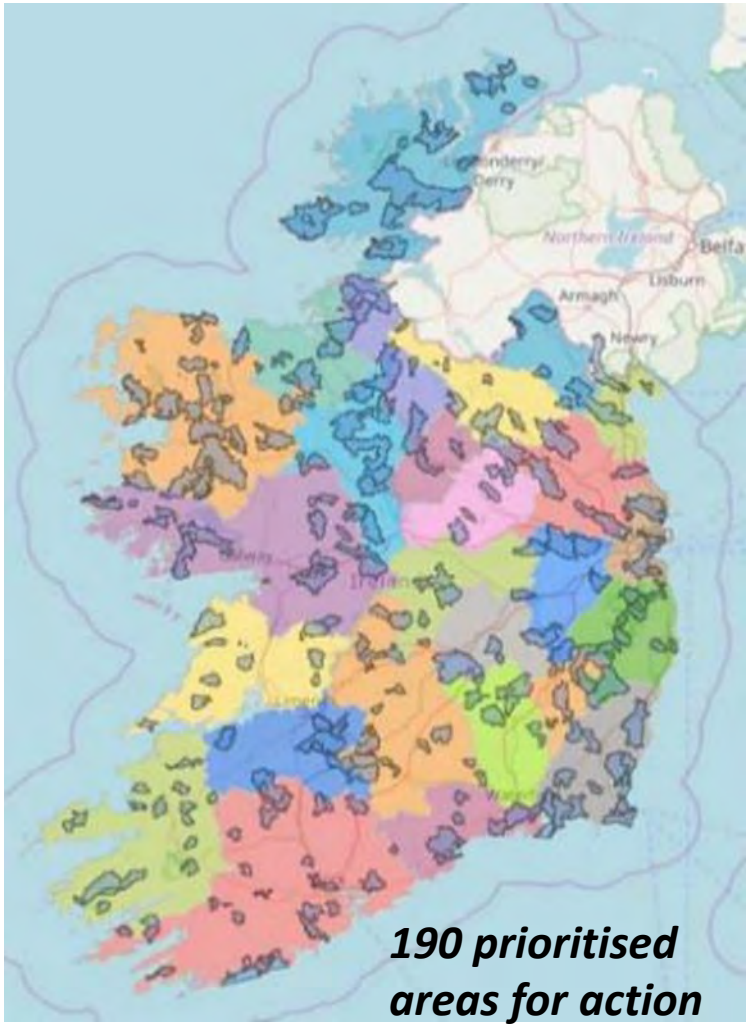

190 prioritised areas for action

Initial Characterisation & Prioritisation

- 190 prioritised areas for action
  - 726 water bodies
- 359: Agriculture a significant pressure
- 134: Agriculture the only significant pressure

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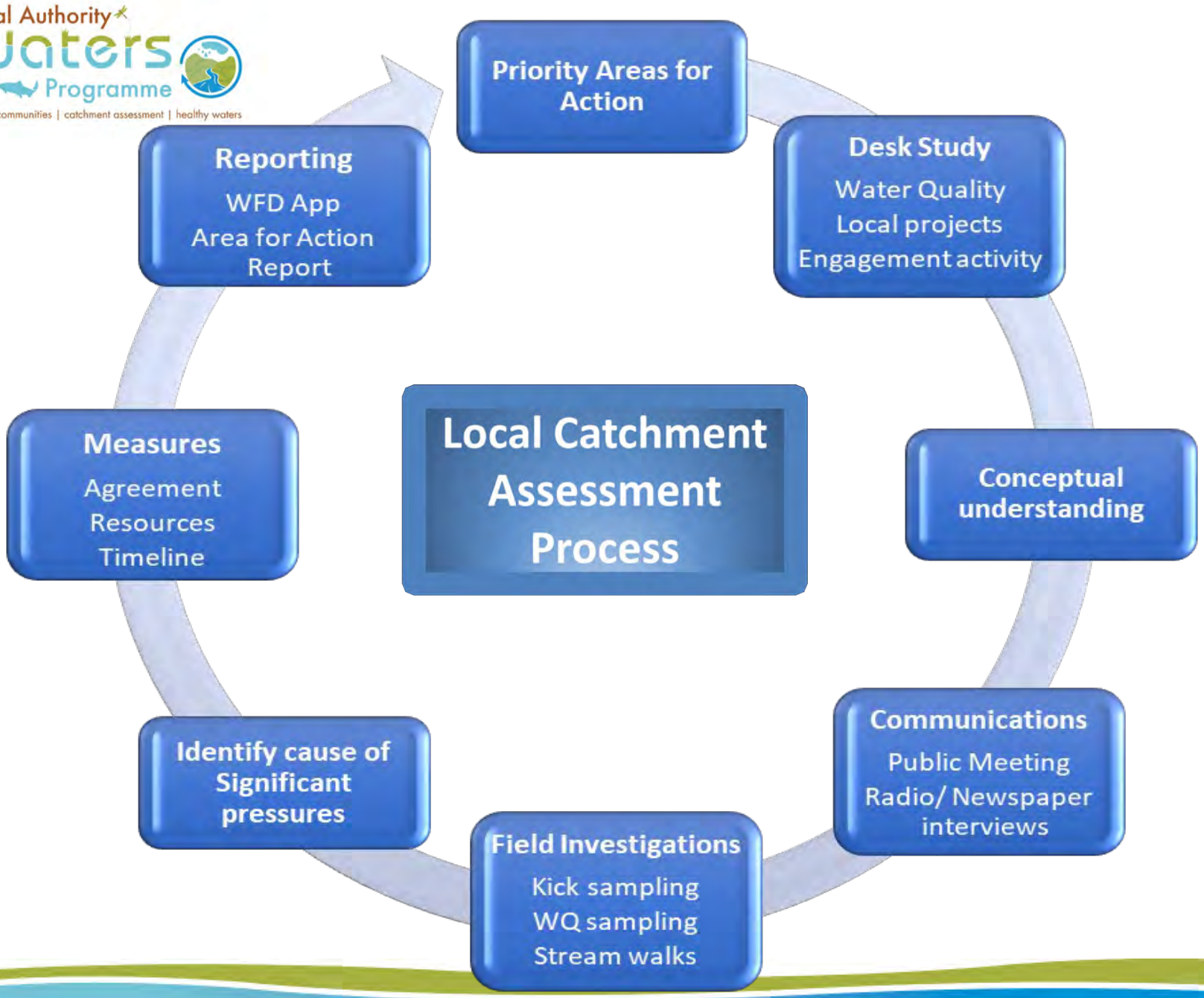
What do our assessments look like?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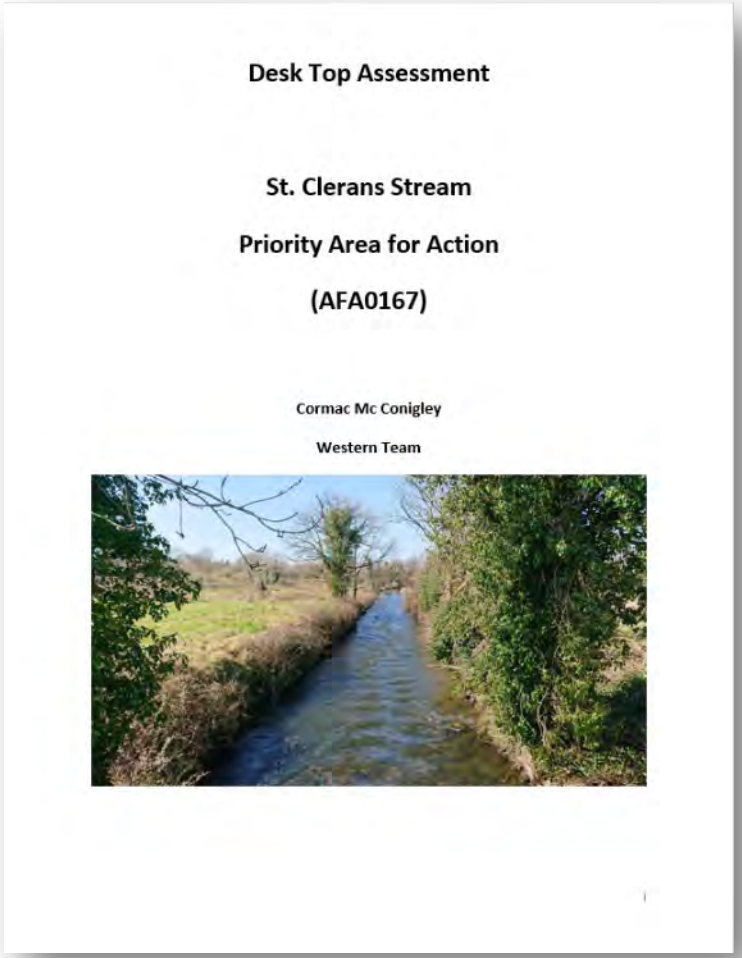
Local Catchment Assessment Process
Priority Areas for Action
Desk Study
Water Quality
Local projects
Engagement activity
Conceptual understanding
Communications
Public Meeting
Radio/ Newspaper interviews
Field Investigations
Kick sampling
WQ sampling
Stream walks
Identify cause of Significant pressures
Measures
Agreement
Resources
Timeline
Reporting
WFD App
Area for Action Report

Desk top study


Desk Top Assessment

St. Clerans Stream

Priority Area for Action

(AFA0167)

Cormac Mc Conigley

Western Team

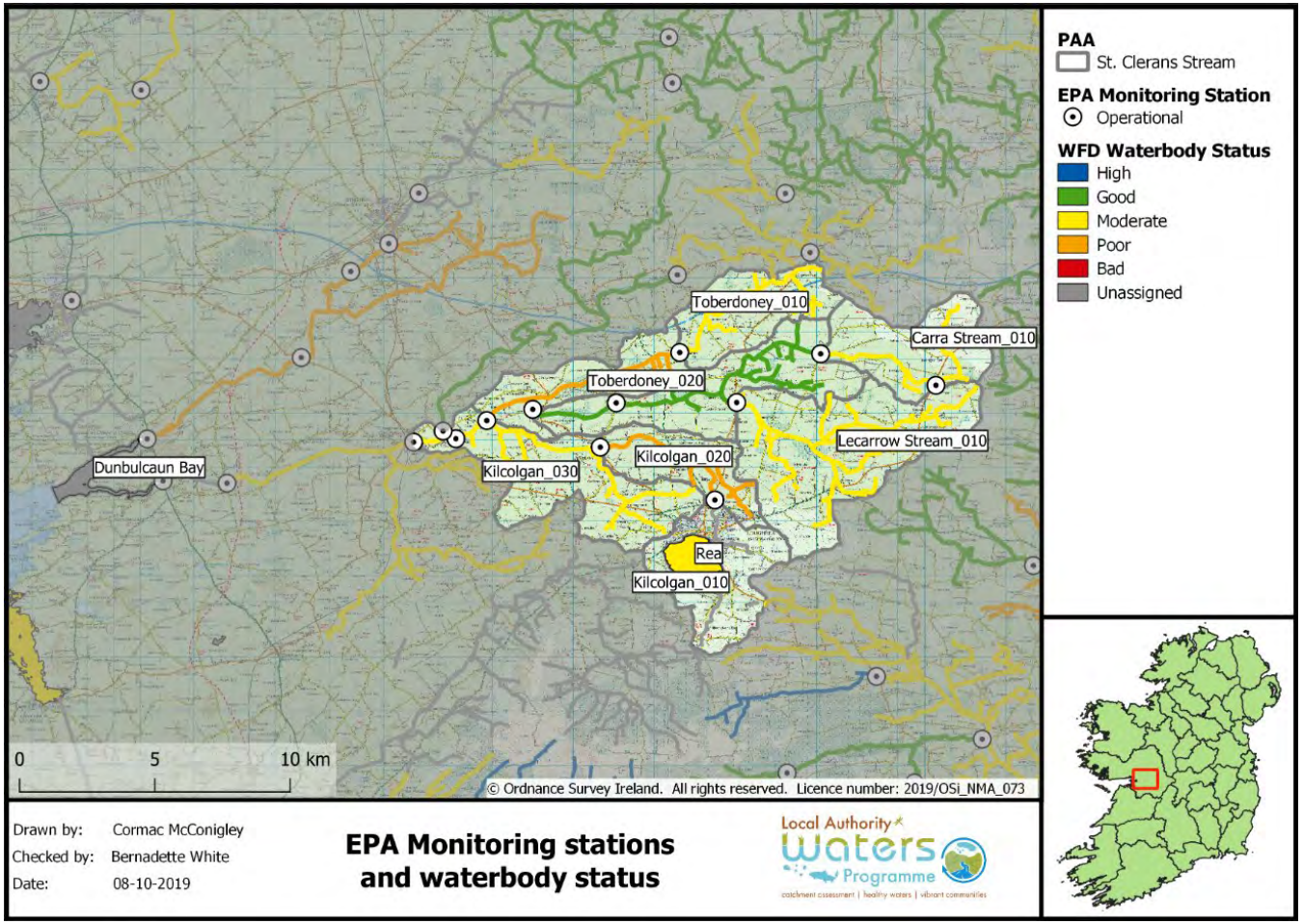
- Receptor information and assessment
- Significant pressures
- Pathway information and analysis
- Identification of data gaps

PAA summary

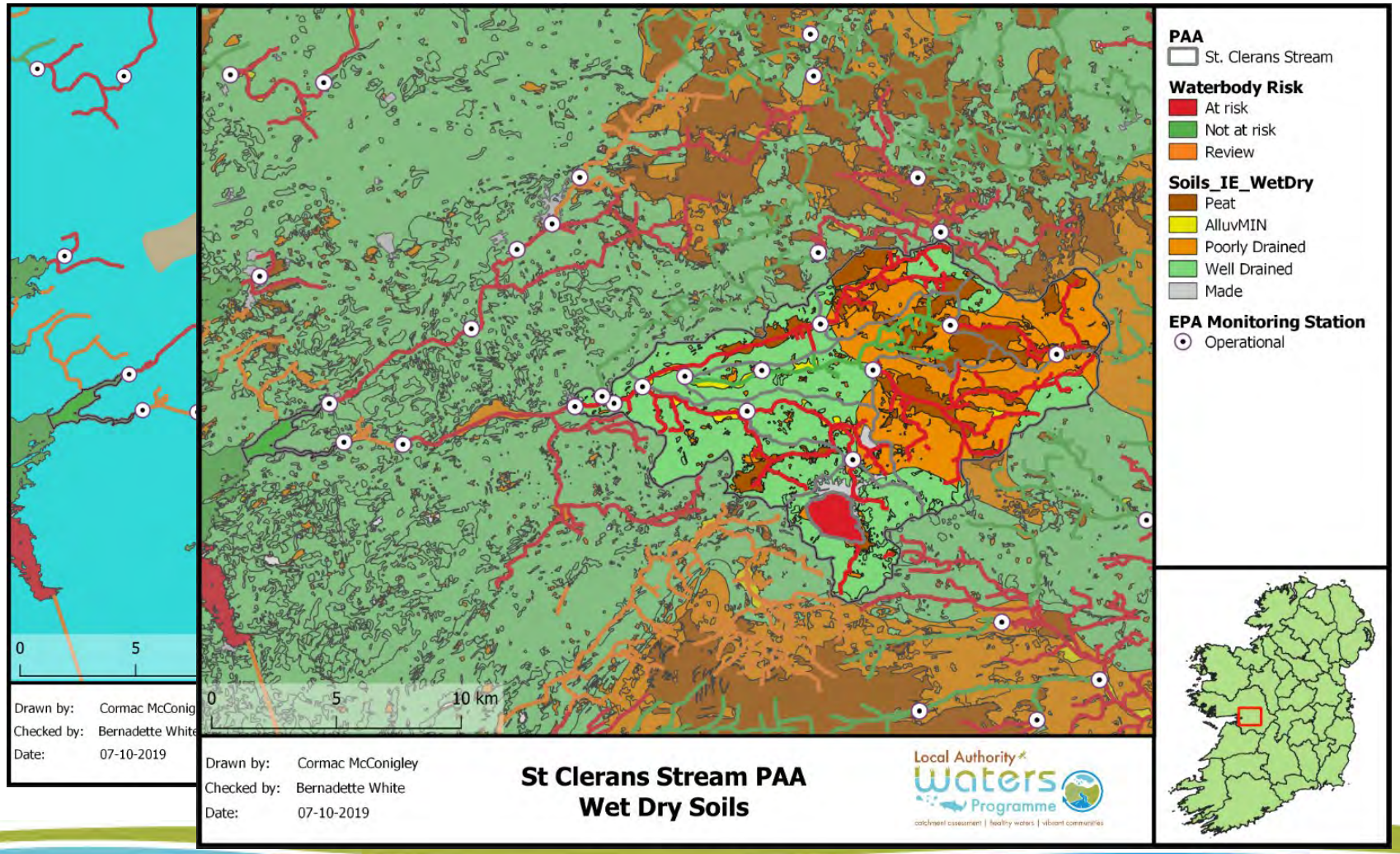
Water Body Name	Water Body Code	Water Body Type	Risk	High status objective	Ecological Status			Biological Status	Pressure Category	Pressure Subcategory	Sig. Pressure
					09	12	15	18			
Dunbulcaun Bay	IE_WE_160_0800	TWB	Not AR	No	U	U	U		-	-	-
Rea	IE_WE_29_194	Lake	AR	No	G	G	M		DWWT	Discharge	Yes
Carra Stream_010	IE_WE_29C031000	River	AR	No	M	M	M	P	Hymo	Channelisation	Yes
Carra Stream_020	IE_WE_29C032000	River	Not AR	No	G	G	G	G	-	-	-
Kilcolgan_010	IE_WE_29K010100	River	AR	No	U	U	U	U	Atmospheric	Atmospheric	No
									UWWT	CSO	Yes
									DWWT	Discharge	Yes
									Urban Run-off	Diffuse Sources Run-Off	Yes
Kilcolgan_020	IE_WE_29K010200	River	AR	No	M	P	P	P	UWWT	PE of 2k to 10k	Yes
Kilcolgan_030	IE_WE_29K010400	River	AR	No	G	G	M	B	Agriculture	Pasture	No
									UWWT	PE of 2k to 10k	Yes
									Hymo	Channelisation	Yes
Lecarrow Stream_010	IE_WE_29L010600	River	AR	No	G	G	M	G	Hymo	Channelisation	Yes
									Agriculture	Pasture	Yes
Toberdoney_010	IE_WE_29T010300	River	AR	No	P	G	M	M	Agriculture	Pasture	Yes
Toberdoney_020	IE_WE_29T010700	River	AR	No	G	G	P	M	DWWT	Discharge	Yes
									Hymo	Channelisation	No
									Forestry	Forestry	No
									Agriculture	Pasture	Yes

(AR= *At Risk*, G=Good, M= Moderate, P= Poor, U= Unassigned, DWWT= Domestic Waste Water Treatment, Hymo= Hydromorphological, UWWT= Urban Waste Water Treatment, PE= Population Equivalent)

Defining the catchment



Conceptual modelling – understanding water flow



Community Information Meeting

ASSAP Farmer Meetings

- Farmers only meetings (following-on from public meetings)
- Presentation from Teagasc Advisors and Catchment Assessment Team
- Explanation of surveys & overall programme including equipment & mapping on display

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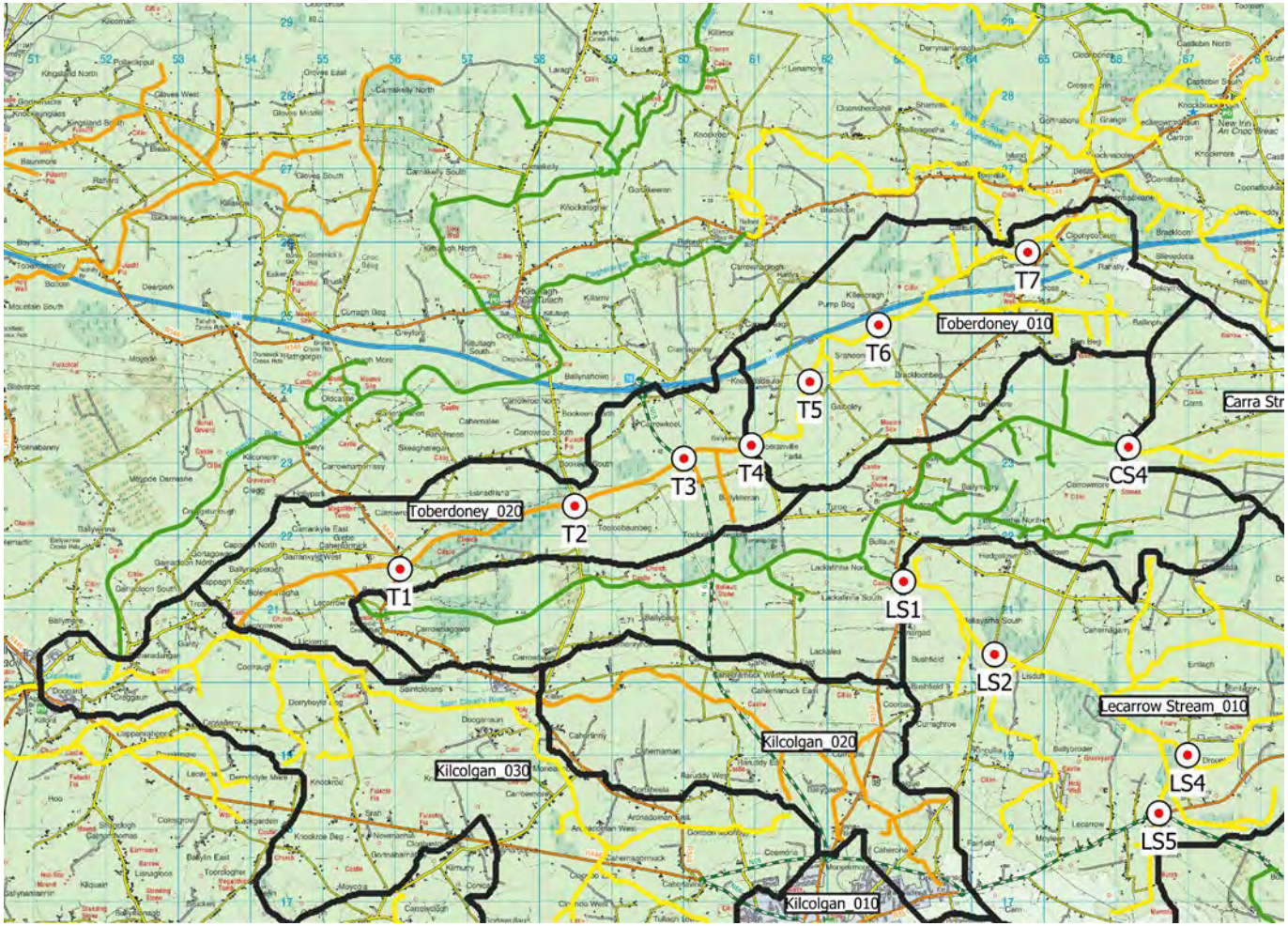
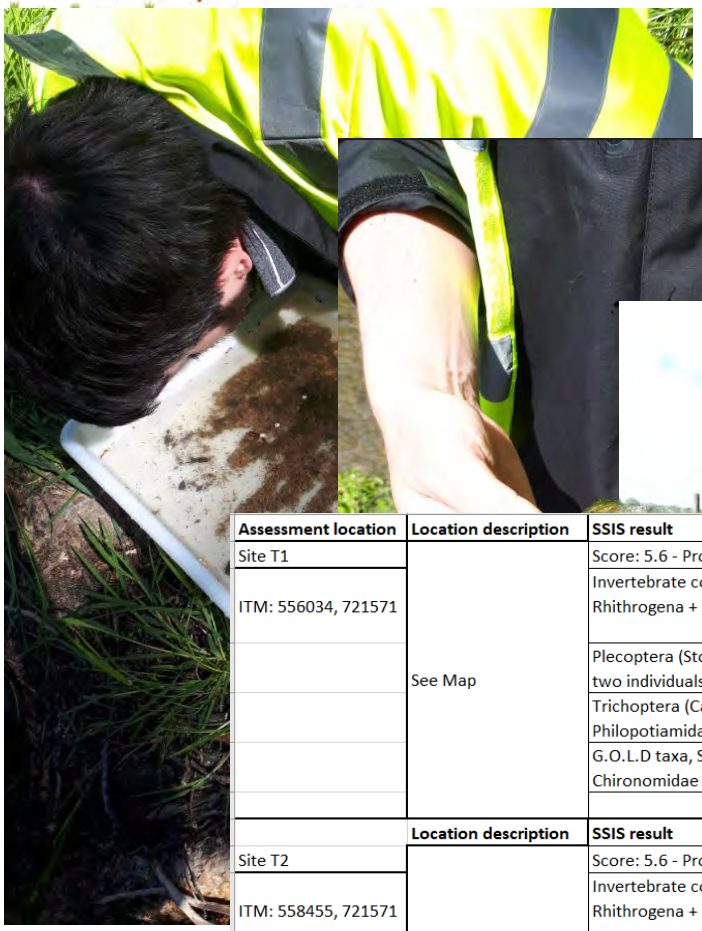
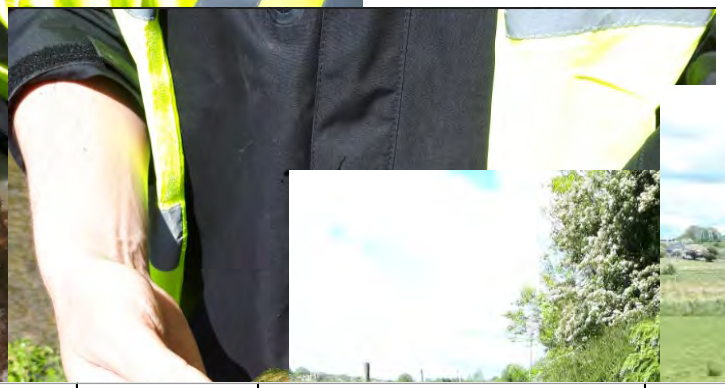
Fieldwork Planning



Fieldwork

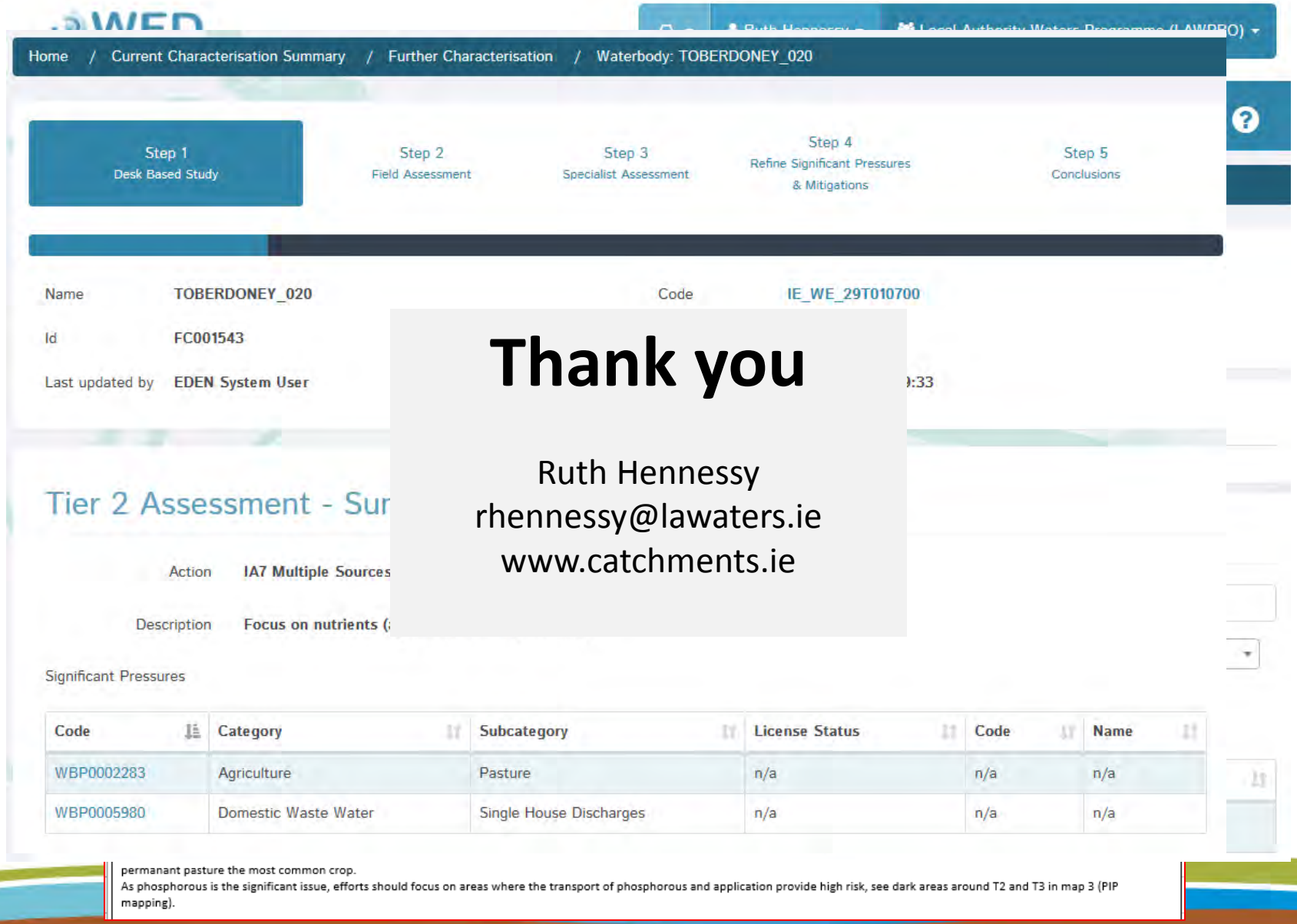




Assessment location	Location description	SSIS result	Probe readings		Comments
Site T1		Score: 5.6 - Probably impacted	D.O: %	95.8	Algae cover was Abundant (>50% to <75%) across the site, dominated by Vaucheria. The Abundant (>50% to <75%) algae cover indicates nutrient pollution of the site (See photos sheet). Significant sedimentation was noted at the site, particualrly under the cover of macroalgae, which traps sediment within its filaments.
ITM: 556034, 721571		Invertebrate community: Ephemeroptera (Mayfly) Rhithrogena + Ephemerellidae (Index Score 4)	pH:	8.2	
	See Map	Plecoptera (Stonefly) absent with exception of two individuals of Isoperla (index score 4).	Temp: °C	12.2	
		Trichoptera (Caddisflies) 3 Limnephilldae and 3 Philopotiamidae (index score 2).	Conductivity: µS	673	
		G.O.L.D taxa, Simullidae (>100 individuals) and Chironomidae (index score 0).			
	Location description	**SSIS result**	**Probe readings**		**Comments**
Site T2		Score: 5.6 - Probably impacted	D.O: %	95.8	Algae cover was Abundant (>50% to <75%) across the site, dominated by Vaucheria. The Abundant (>50% to <75%) algae cover indicates nutrient pollution of the site (See photos sheet). Significant sedimentation was noted at the site, particualrly under the cover of macroalgae, which traps sediment within its filaments.
ITM: 558455, 721571		Invertebrate community: Ephemeroptera (Mayfly) Rhithrogena + Ephemerellidae (Index Score 4)	pH:	8.2	
	See Map	Plecoptera (Stonefly) absent with exception of two individuals of Isoperla (index score 4).	Temp: °C	12.2	
		Trichoptera (Caddisflies) 3 Limnephilldae and 3 Philopotiamidae (index score 2).	Conductivity: µS	673	
		G.O.L.D taxa, Simullidae (>100 individuals) and Chironomidae (index score 0).			
	Location description	**Rapid assesment**			**Comments**
Site T3					
ITM: 559967, 723077	See Map	Could not carry out a kick sample due to sedimentation and impact from works at the N65			Hymo impacted by culverting for N65 and straightened

Table 1: Assessment results

Referrals to Implementing Bodies = Action Plans



Thank you

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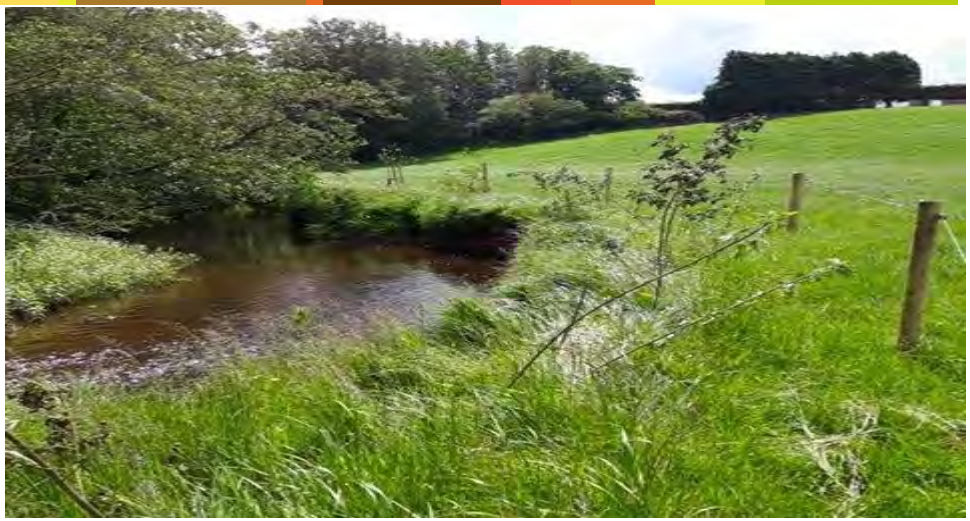
Catchment Science Conference
November 2019



Changing mindsets to improve water quality

Ivan Kelly, ASSAP Advisor

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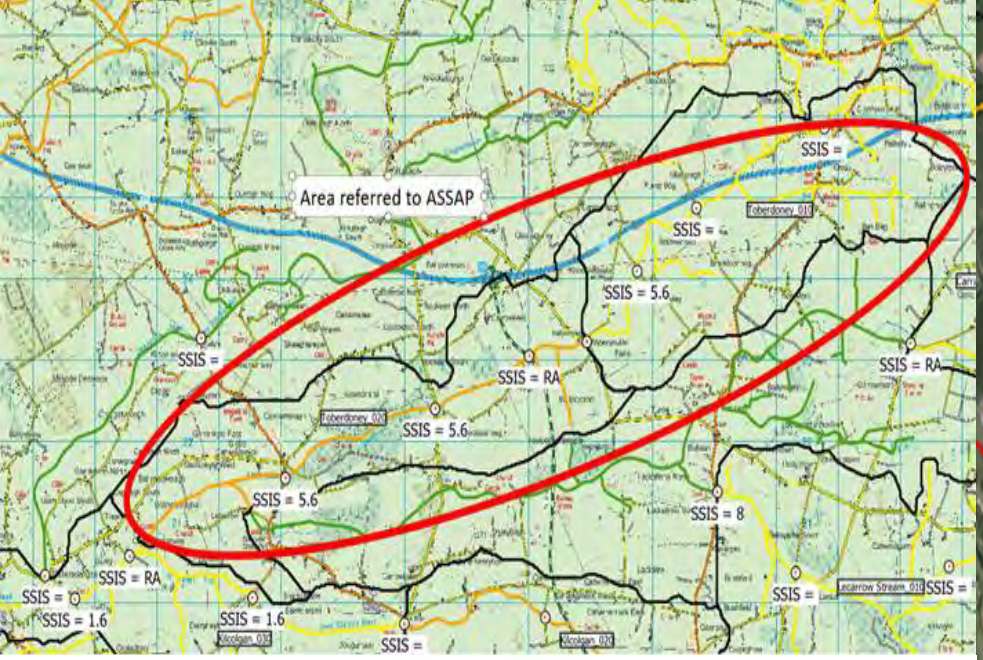
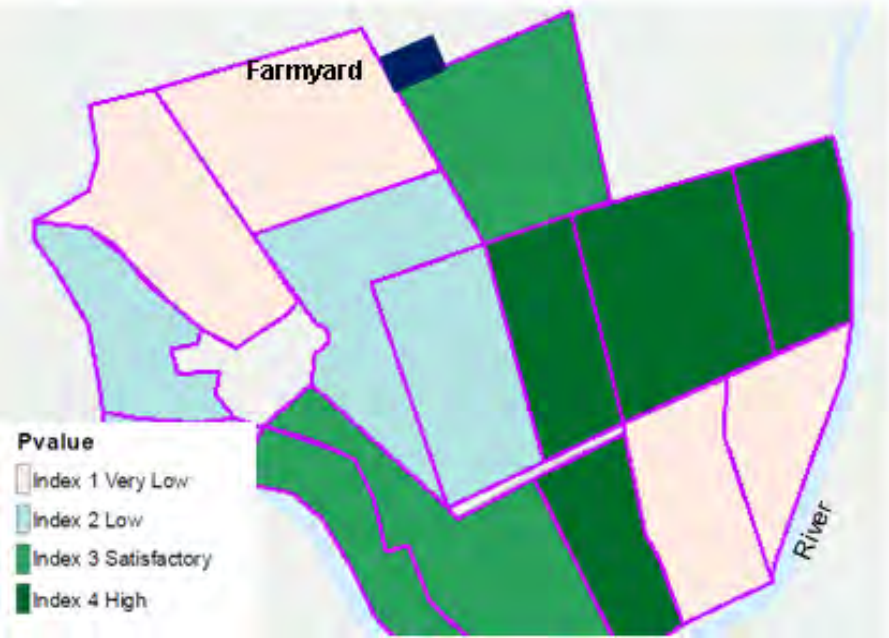
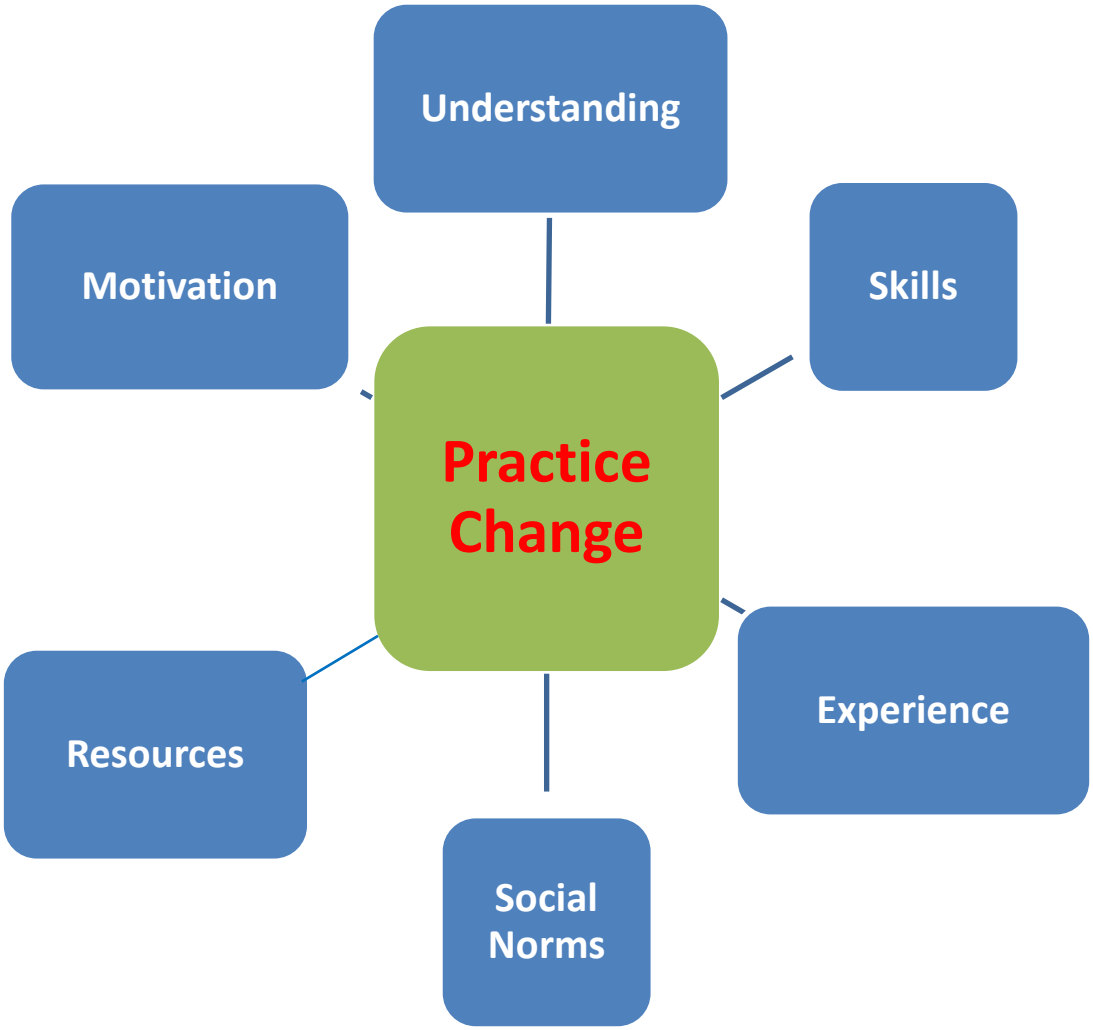

Area referred to ASSAP
SSIS =
SSIS = 5.6
SSIS = RA
SSIS = 8
SSIS = 1.6

NMP


Farmyard
Pvalue
Index 1 Very Low
Index 2 Low
Index 3 Satisfactory
Index 4 High
River


Aerial View

Farmer Readiness Assessment



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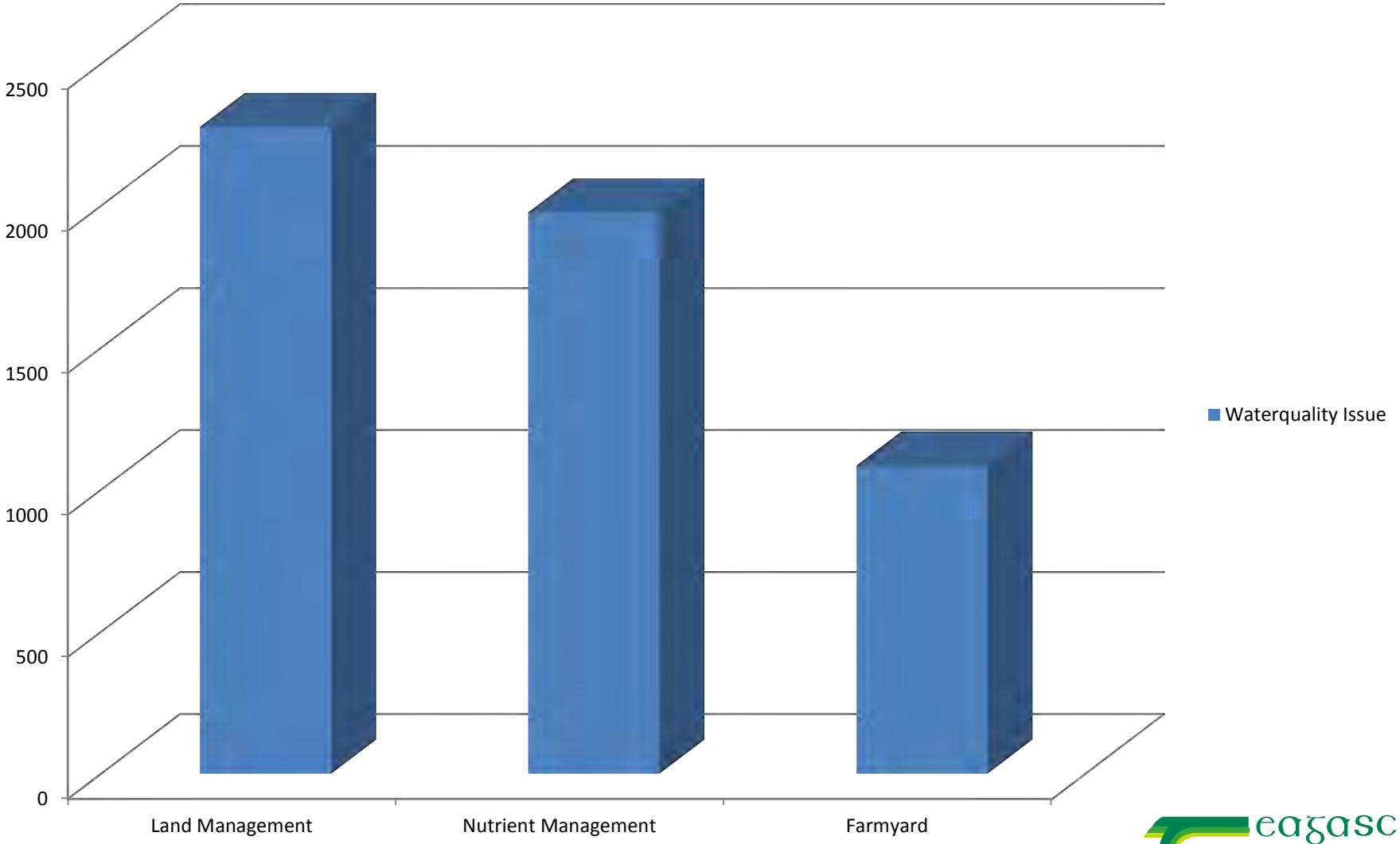
ASSAP Issue



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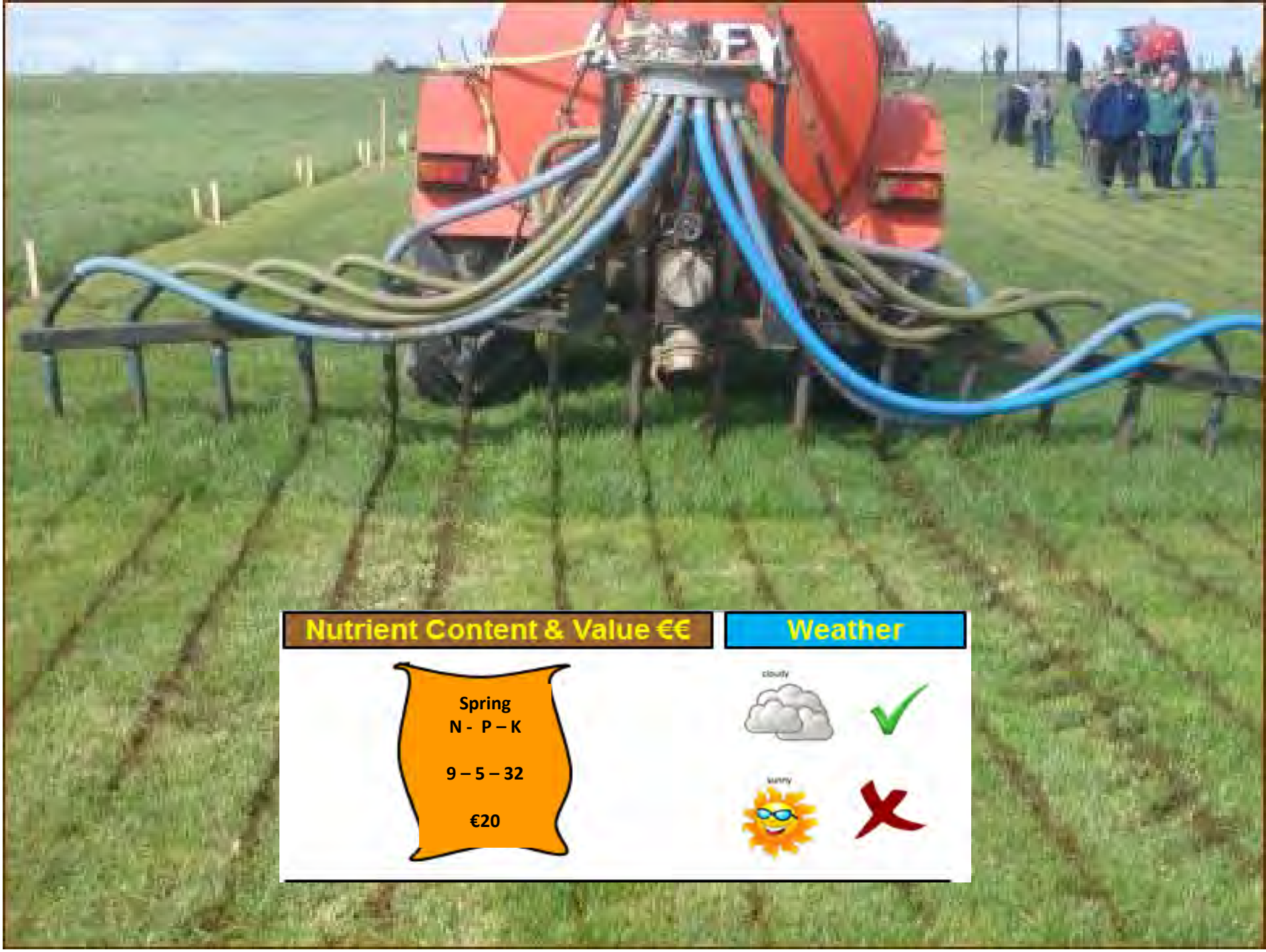
Critical Source Area's

- Heavy clay soil
- Slopes from other fields into this area
- Prone to occasional flooding


14/06/2019


Nutrient Content & Value €€
Weather
Spring
N - P – K
9 – 5 – 32
€20
cloudy
sunny

ASSAP Farmyard Management Advice

Minimise Point Sources of Nutrient Loss by:

Clean Water Controls

- Drainpipes & Guttering
- Diversion Manholes

Cattle Housing

- Adequate Slurry Storage
- Adequate FYM Storage
- Collection of Seepage

Yards

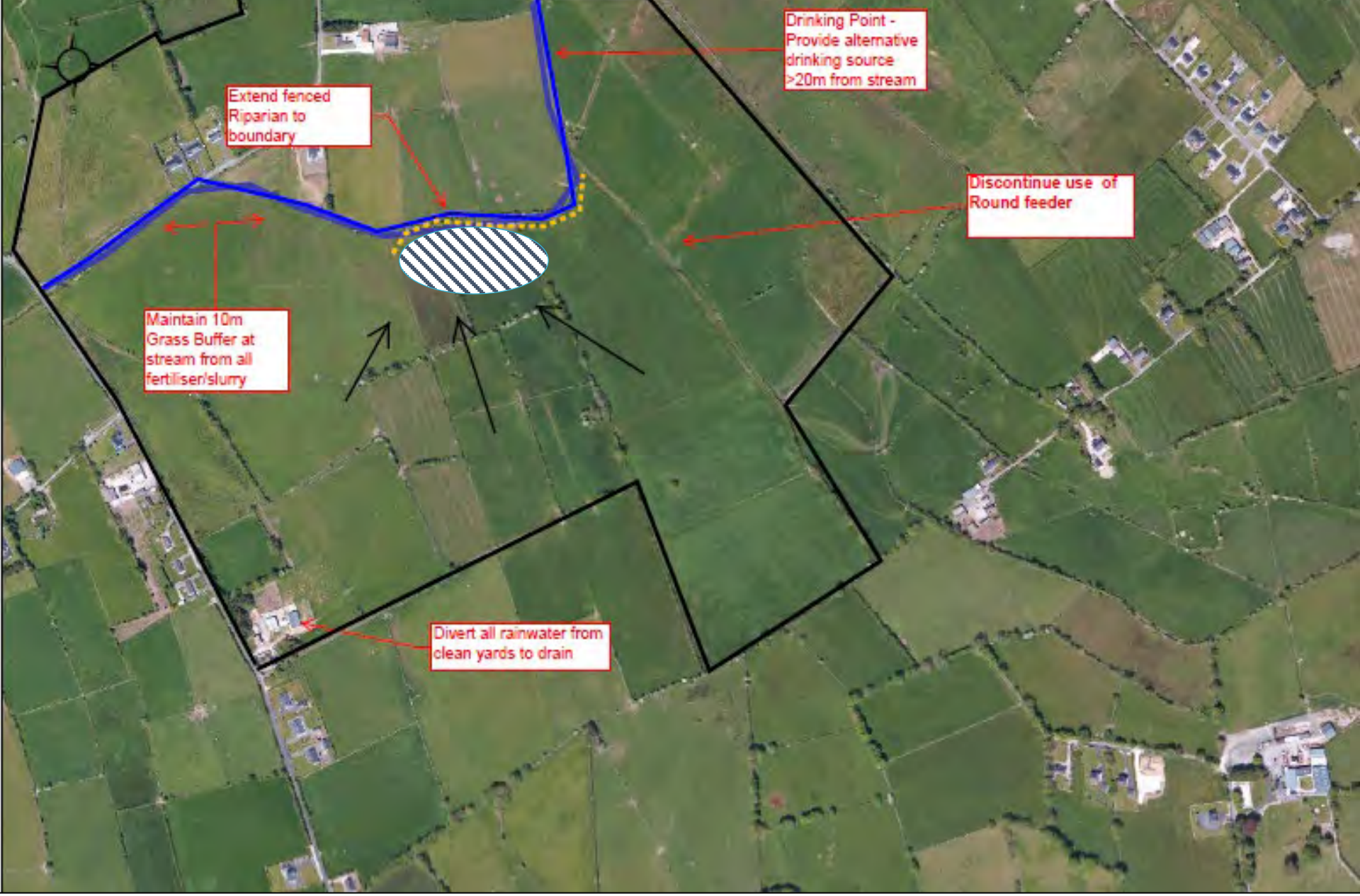
- Minimise soiled water areas
- Adequate collection of soiled water
- Wash down areas
- Concrete Surface Soundness

Silage Pits

- Adequate Effluent Collection
- Minimise Silage Waste

Milking Facilities

- Soiled Water Management
- Dairy Washings Storage
- Chemical/ Detergents use



= Critical Source Area

Agriculture and Food Development Authority

Mellows Campus
Athenry
Co Galway
Tel: 091 845200

Autofit

Dear Joe

Thank you for taking the time to meet with me on my recent visit to your farm. Based on our discussion I include a list of recommentations as agreed with you on the day. Please do not hesitate to contact me about any of the issues outlined.
This is not a complete list of issues on the farm but addresses the most important actions for water quality improvement in the catchment

The St Clarens Catchment has been characterised by the Catchments assessment team

The significant pressure identified by the EPA during initial characterisation was Agriculture (sub category Pasture) and Domestic Waste Water (Nutrient Pollution). The main pathways for pollutants are overland in the peaty area and subsurface in the well drained sections.phosphorous and sediment are the significant issues, efforts should focus on areas where the transport of phosphorous and sediment provide high risk.

We recommend that you undertake the following actions to reduce losses from your farm

Issue	Implementation Advice	Risk	Status	Visit	Progress
P Loss Through Overland Flow	In field grass buffers are essential in all fields containing open drains and streams. Riparian margin and vegetation also provide additional protection to nutrient loss to waterbody. Extend current Riperian margin to south East boundary.	1	Agreed	1	Commenced
Sediment Loss	Discontinue practice of feeding cattle at round feeder beside drain during winter. Consider housing or alternative arrangements for this group of stock.	1	Agreed	1	Not Started
Drinking Points & Stream Fencing	Fence off drinking point at stream and provide alternative drinking source for livestock at least 20m from stream.	2	Not Agreed	1	Not Proceeding
Identify and Mange Critical Source Areas	Avoid slurry spreading and fertliser during or before wet weather. Delay spreading until weather/ground is suitable and grass growth is occuring to maximise uptake of nutrients. Maintain minimum of 10m buffer when spreading fertiliser on sloped fields. No slurry to be applied to hill field (CSA on Map).	1	Agreed	1	Ongoing

Yours sincerely

Ivan kelly

email ivan.kelly@teagasc.ie
Phone 087 9690610

Summary

- Positive action and resource management
- Voluntary, targeted & effective mitigation measures
- Key to success - Implement and maintain practice change

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