

Pearl Mussel Project EIP

A results-based payment scheme targeting an endangered species while delivering wider environmental benefits



Teagasc Signpost Series September 2021



**An Roinn Talmhaíochta,
Bia agus Mara**
Department of Agriculture,
Food and the Marine



'The European Agricultural Fund
for Rural Development: Europe
investing in rural areas'.



Pearl Mussel Project EIP

- Top 8 catchments in Ireland: c.35% of European Freshwater Pearl Mussel population
- Funding by DAFM under Rural Development Programme 2014-20
- European Innovation Partnership (EIP agri) with total budget of €10 million
- 5 year project
 - Locally adapted
 - Key stakeholders: farmers, ecologists, farm advisors, managing authorities



Pearl Mussel Project



Environmental trends

Freshwater Pearl Mussel:

- Endangered (one of 365 most endangered species on earth) IUCN
- 80% of national population in top 8 catchments (c.30% of EU population)
- Overall Status and Trend in Ireland: Bad and declining (NPWS 2019)

General Freshwater quality:

- Ten-fold decline in pristine waters since the late 1980s

Habitats within western upland areas:

- Article 17 report on Annexed habitats show bad status and declining

Climate Change:

- Climate change is compounding many of the above issues



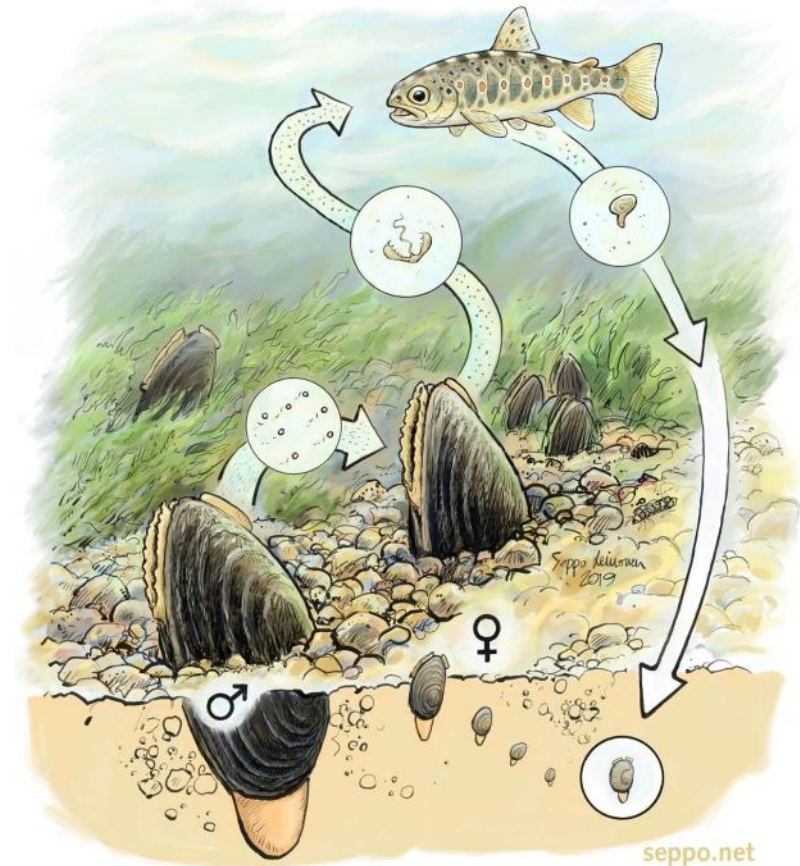
Pearl Mussel Project



Freshwater Pearl Mussel

Margaritifera margaritifera

- Biology
 - Complex life cycle
 - Live to 140 years
 - Indicator of exceptional water quality provided by near intact naturally functioning landscape
 - 8 catchments, 80% Irish population
- Pressures
 - Flow
 - Sediment
 - Nutrients
- Conservation
 - Concentrating on top eight catchments



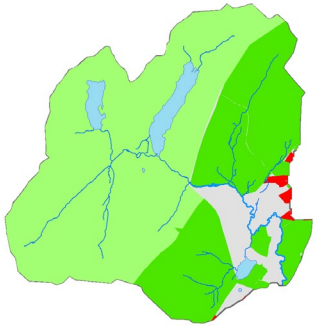
Top eight catchments

(c.574 eligible farmers, 40,000ha (400km²))

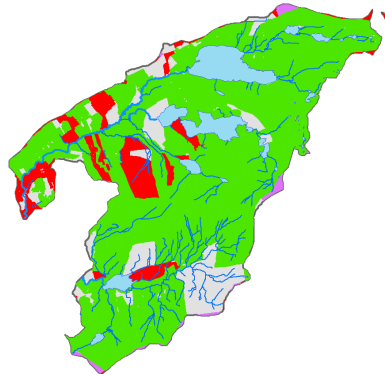


<http://bit.ly/PMPCatchments>

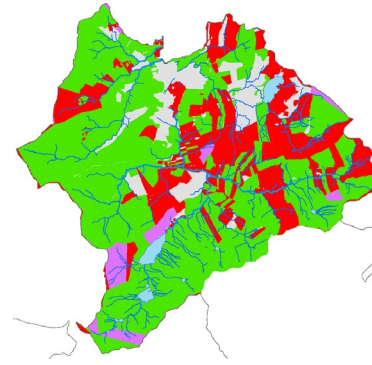
Catchment Coverage



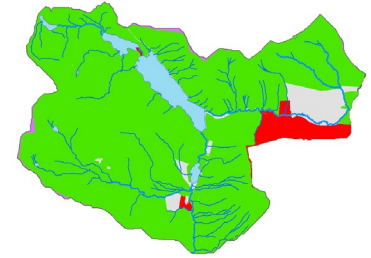
Glaskeelan



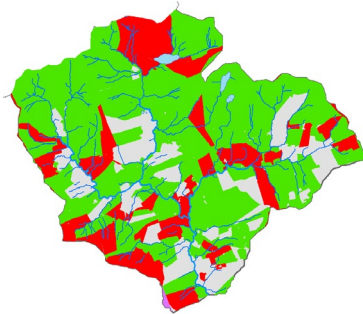
Currane



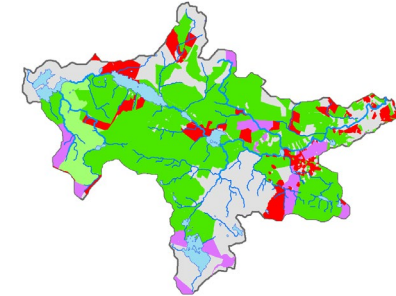
Caragh



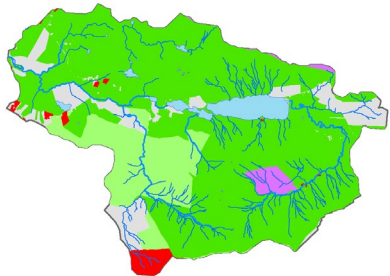
Bundorragha



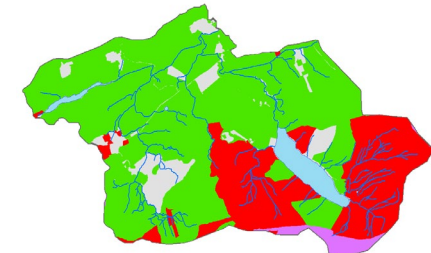
Kerry Blackwater



Owenriff



Dawros



Ownagappul

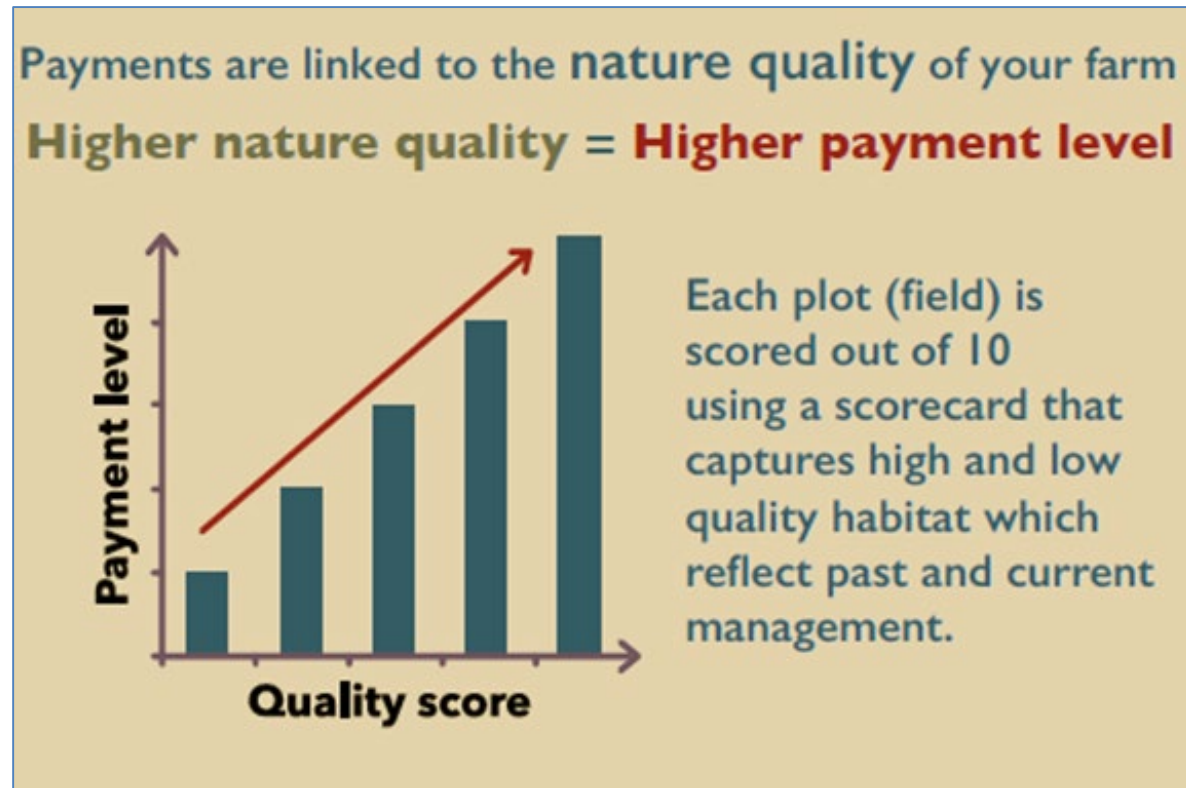
Number of participants: 472
(82% of all herd numbers)

Land area

– Total participating lands
= c.35,000ha (85%)

Results-based approach

- Payments linked to quality of the biodiversity
- Higher quality = Higher payment level
- Increased cost-effectiveness



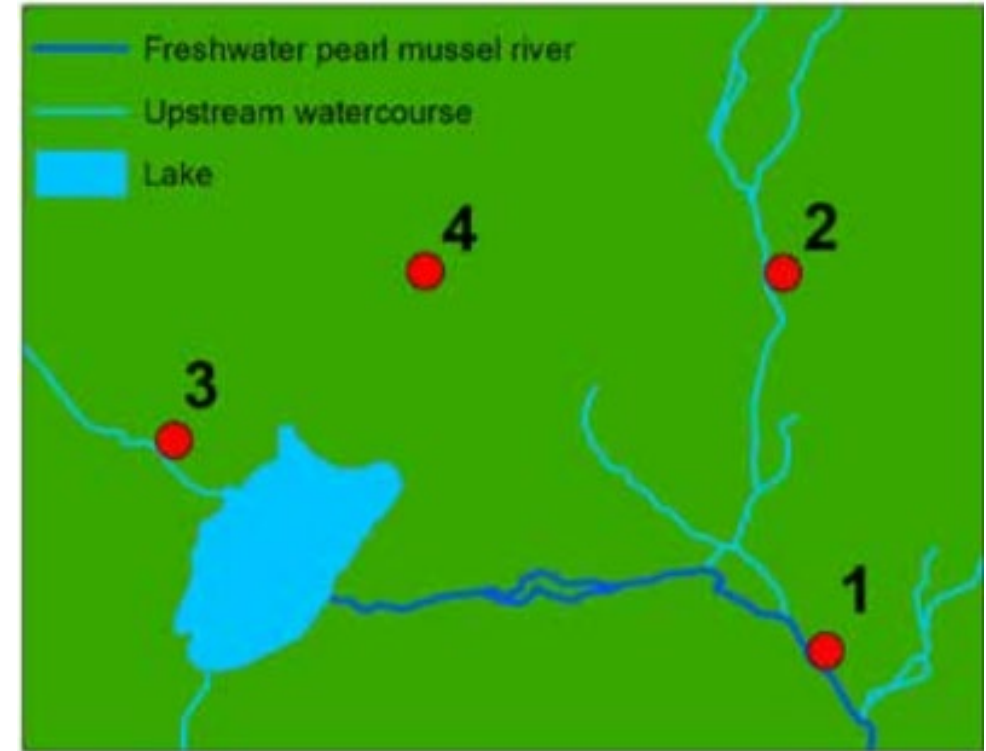
Creating a market

- Additional market: value on services provided by HNV farmland



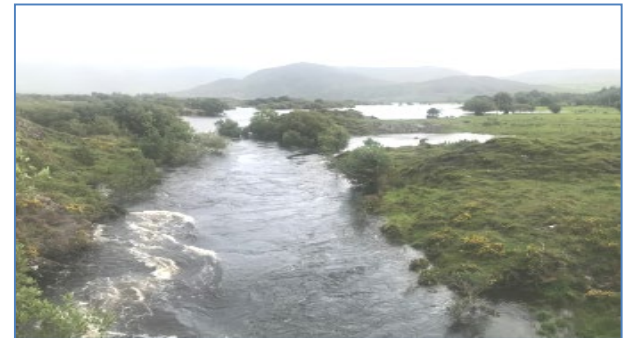
Challenges posed by aquatic species

- Choosing result indicators
- Within farmers control
- Hydrological connectivity
 - Requires whole-farm approach
 - Requires catchment based approach
i.e. not just designated lands



Result indicators

- Farm habitat quality
 - Grassland
 - Woodland & Scrub
 - Peatland
- Floodplain quality
- Drainage and watercourses
- Farm and nutrient management



Sample habitat quality

Peatland



Low quality
(Score 0-3)
€ 0



Moderate quality
(Score 4-6)
€ € €



High quality
(Score 8-10)
€ € € €

Floodplain Payment

- Reward depends on quality (habitat score) of active floodplains on farmers' lands along pearl mussel habitat



Caragh, September 2019

Whole-farm assessment

- Condition and connectivity of watercourses
- Farmyard and nutrient management
- Payment adjusted based on whole-farm result

Result based payment (before watercourse assessment)		€1000
Whole-farm assessment	Payment adjustment	Final payment
Excellent (x 1.2)	x 1.2	€1200
Good (x 1)	x 1.0	€1000
Inadequate (x 0.6)	x 0.6	€600
Poor (x 0.3)	x 0.3	€300



Assessing Results

- Annual assessment by approved farm advisors
- Habitat Quality assessment (field / plot level)
 - Scale of 0 to 10
 - Determine a score for each field
- Floodplain assessment
 - Presence / absence
- Whole-farm assessment
 - Scorecard

The image displays two smartphone screens side-by-side, showing the PMP (Pearl Mussel Project) app interface.

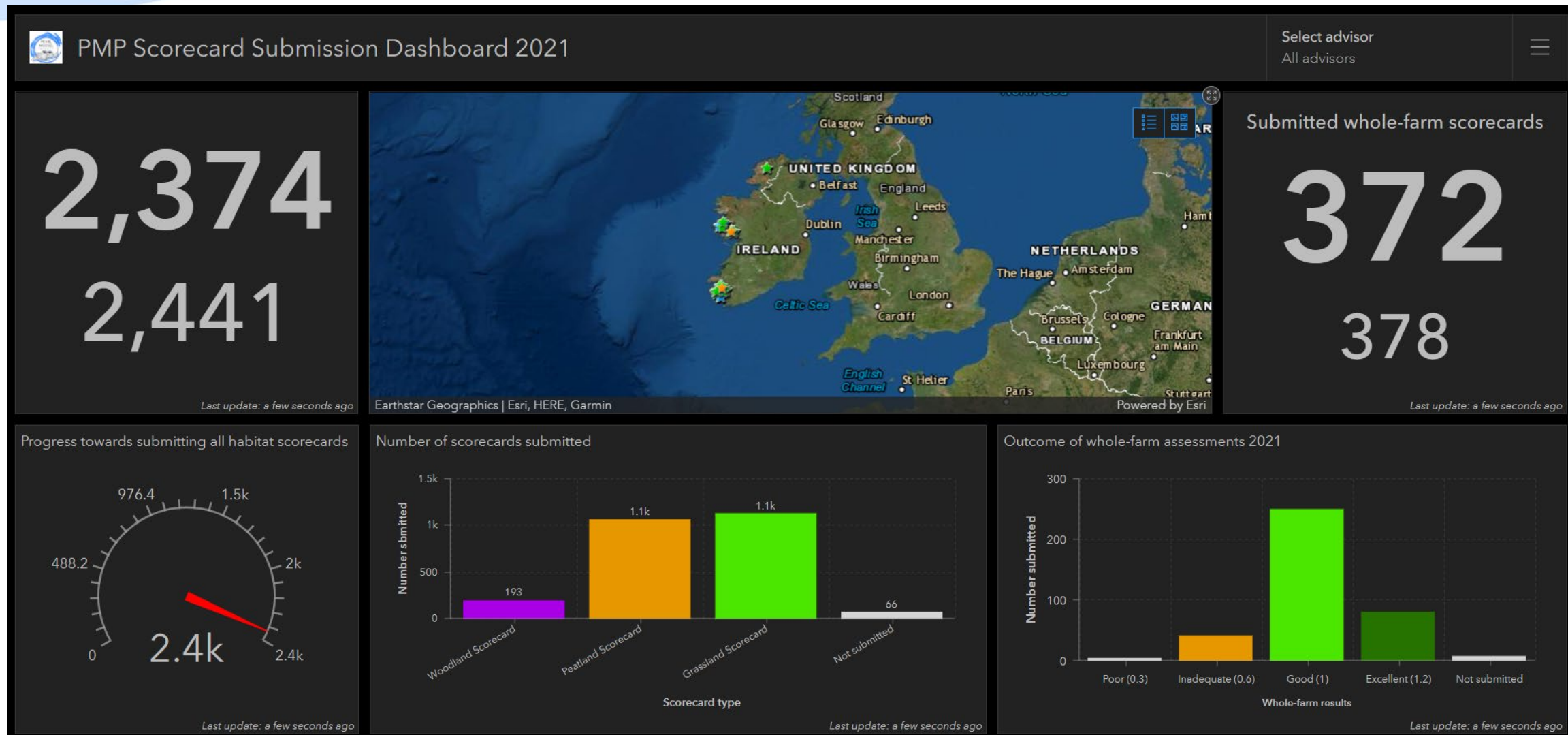
Left Screen: PMP Habitat Scorecard

- Header: PMP Habitat Scorecard
- Map: A map showing a location marked with a red dot and a blue circle. The text "Bell Heighs" is visible on the map.
- Surveyor Location: A field with a red star icon and the text "Surveyor Location *". Below it, a location is specified as "51°53'N 9°35'W".
- Choose Scorecard: A section with three radio button options:
 - ☐ Grassland Scorecard
 - ☐ Peatland Scorecard
 - ☐ Woodland Scorecard

Right Screen: PMP Whole-farm Scorecard

- Header: PMP Whole-farm Scorecard
- Section: D) Risk of nutrient or sediment entering watercourses
- Text: What is the level of risk of sediment or nutrients entering watercourse? *
- Options: Four radio button options with corresponding scores:
 - ☐ High (0.3)
 - ☐ Moderate (0.6)
 - ☐ Low (1)
 - ☐ None (1.2)
- Text: Help assessing loss of nutrients and sediment to watercourses:
- Section: Take photo of relevant watercourses
- Text: Use camera or select photo

Submission dashboard



Pearl Mussel Programme

Payment streams

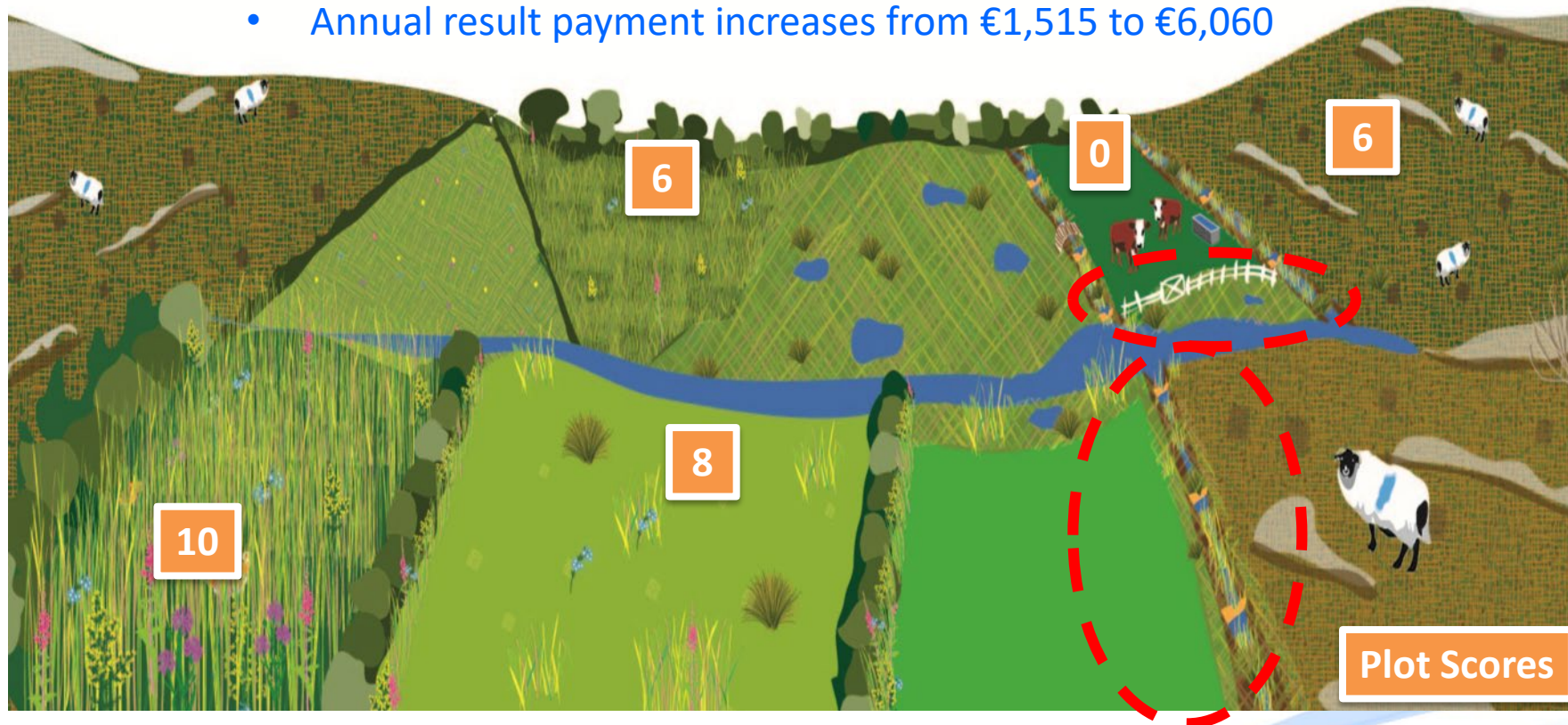
Results Payment



Supporting
Actions
Payment

Private farm example: 50ha

- Co-funded supporting actions
- Whole farm improvement
 - WFA Result from Poor (0.3) to Excellent (1.2)
 - Environmental improvement
 - Annual result payment increases from €1,515 to €6,060



Supporting actions

Peat plugs – rewetted peatland, Co Donegal



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Timber weirs







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Stock management



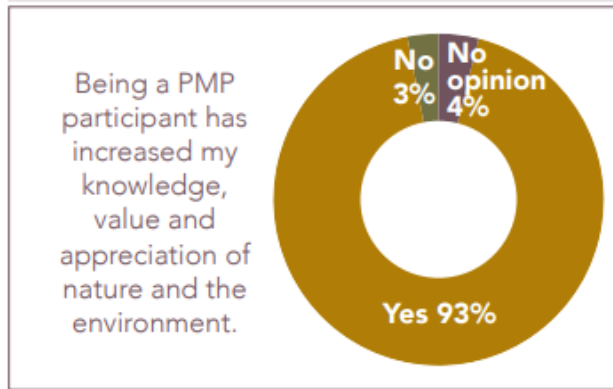
Advisor Training & Support

- Programme delivered by network of farm advisors
- 61 advisors trained
- Team supports advisors
- Further up-skilling planned



Farmer Training

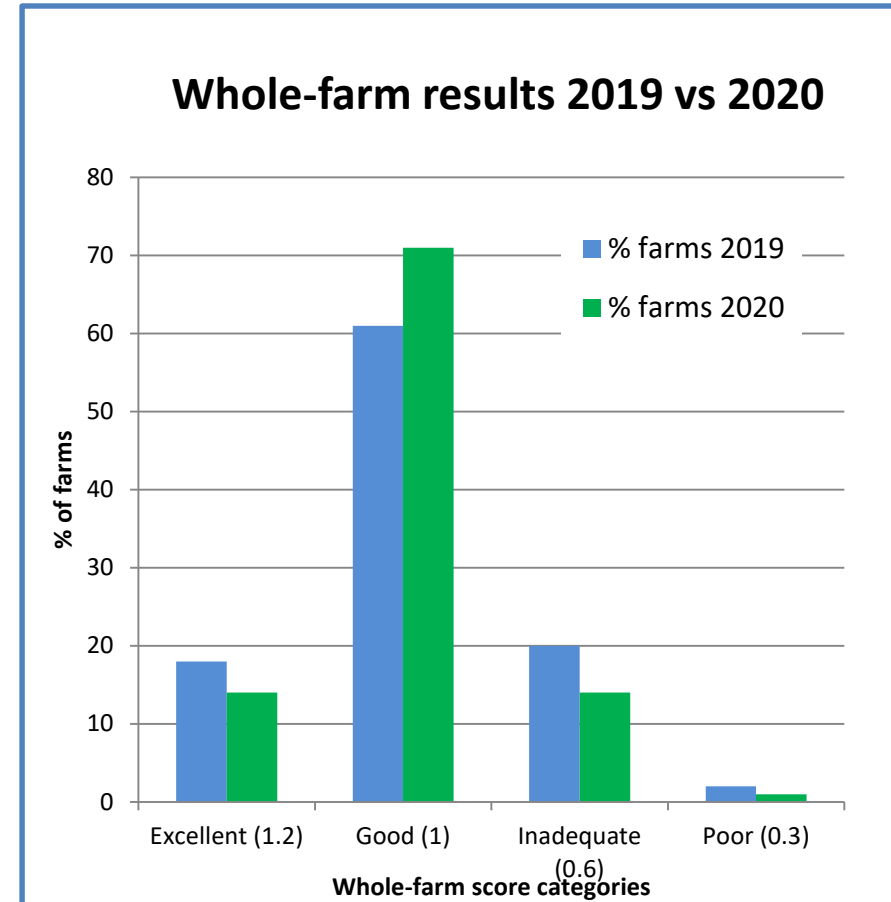
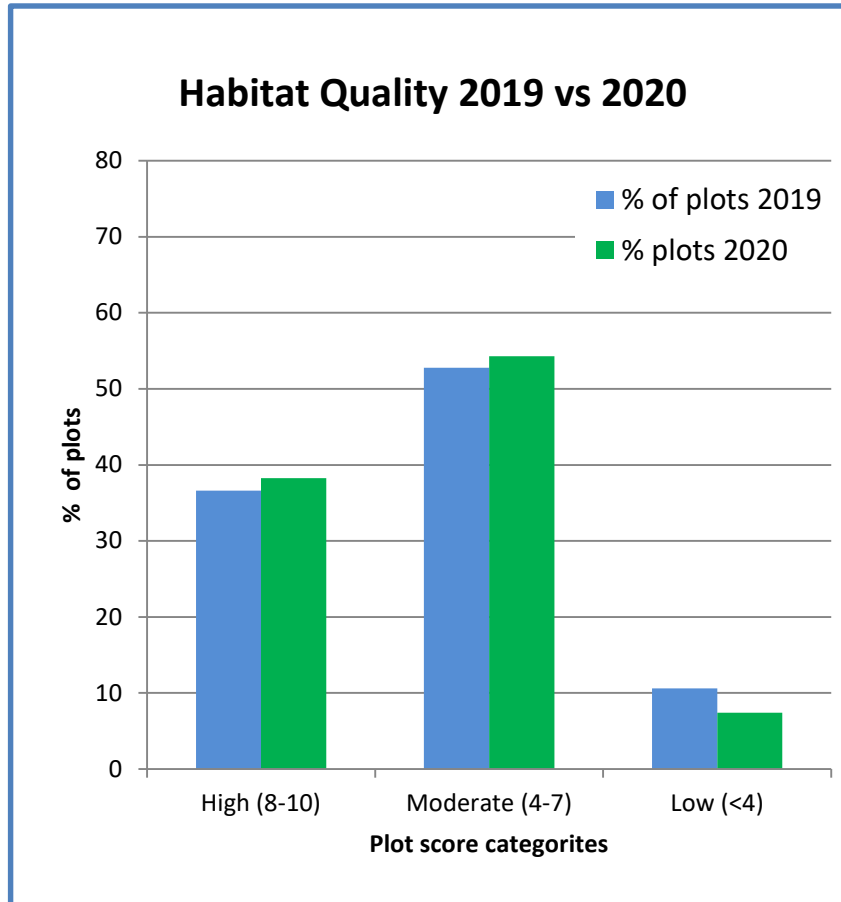
- Mandatory annual training
- Field visit and indoor discussion



*What's my score?
What's it worth to me?
What do I have to do?
How can I increase score?
Drainage, nutrients, and pesticides?*

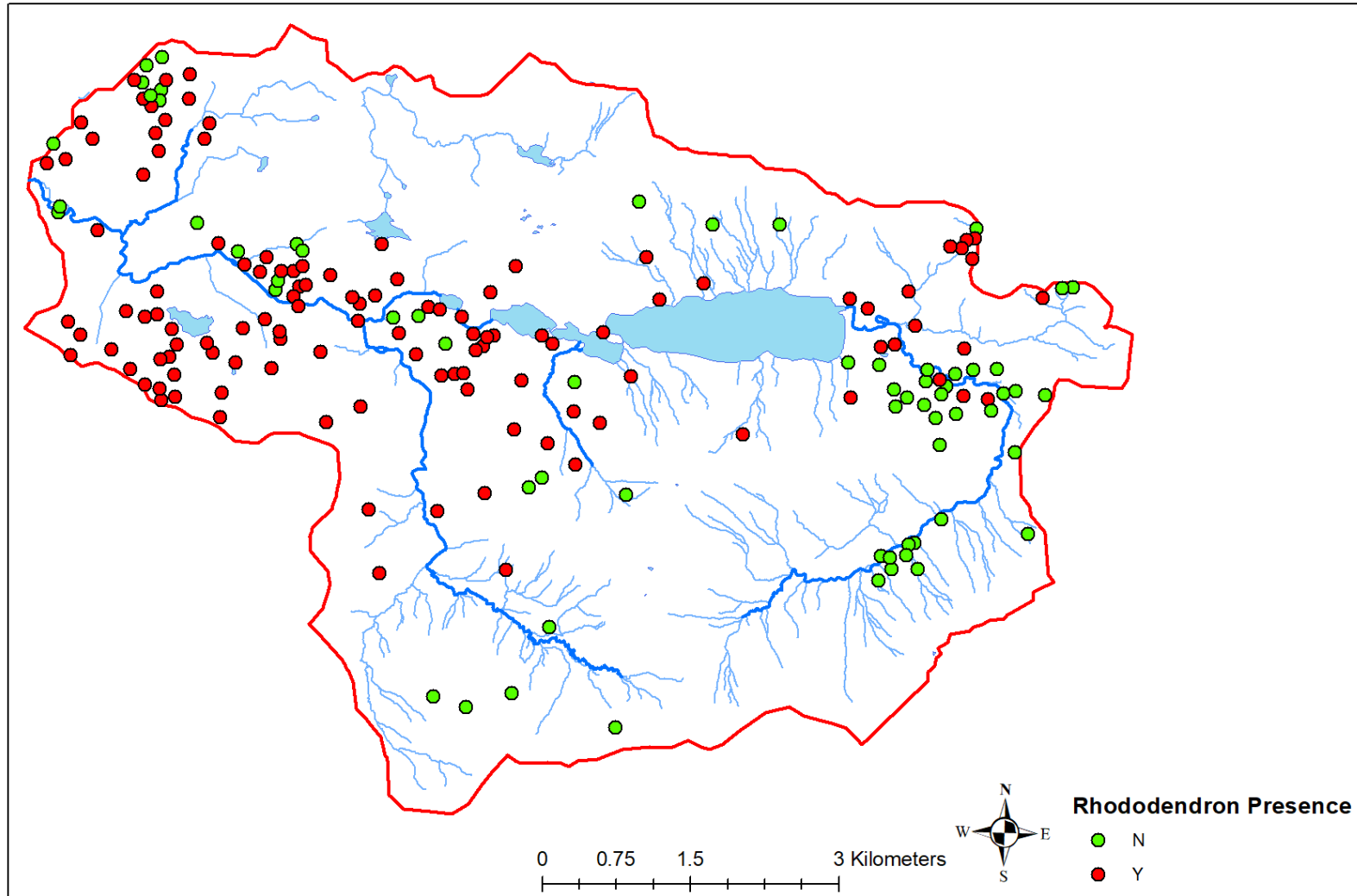


Summary results 2019 vs 2020



Value of scorecard data

Presence of Rhododendron



Where to next?

- Approach can be universally applied
 - Wild Atlantic Nature adopting same approach elsewhere in west of Ireland
 - By end of 2022 there will be 1300 participant farmers
- New CAP the opportunity to expand and roll-out
 - Compatibility with Burren Programme, Hen Harrier EIP.
 - Demonstrable Delivery of Climate; Biodiversity; Water quality benefits
- Current programme to run to end 2023
- Transition period (2021 – 2023)
 - Expansion and roll-out should be initiated during this period
- PMP provides a tool to align multiple policy objectives



What services are being provided by our participants?

- Biodiversity
- Stable climate
- Carbon sequestration
- Protection of soil
- Clean water
- Flood management
- Aesthetic value
- Food
- Recreation + well-being



Thank You!

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