Signpost Webinar

Friday 5 November 2021

Assessing Biodiversity Management Practices on Intensively managed farmland

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Based on a PhD research study

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Why care about Biodiversity?

1. **The Law**
2. **Money: BPS, AES, Eco Schemes, Nitrates Derogation**
3. **Marketing: Green image of Irish farming**
4. **Well-being: Nice to have and pass on to the next generation a farm that is rich in nature.**

Why Worry *now*?

Biodiversity is in decline
– Worldwide and Ireland

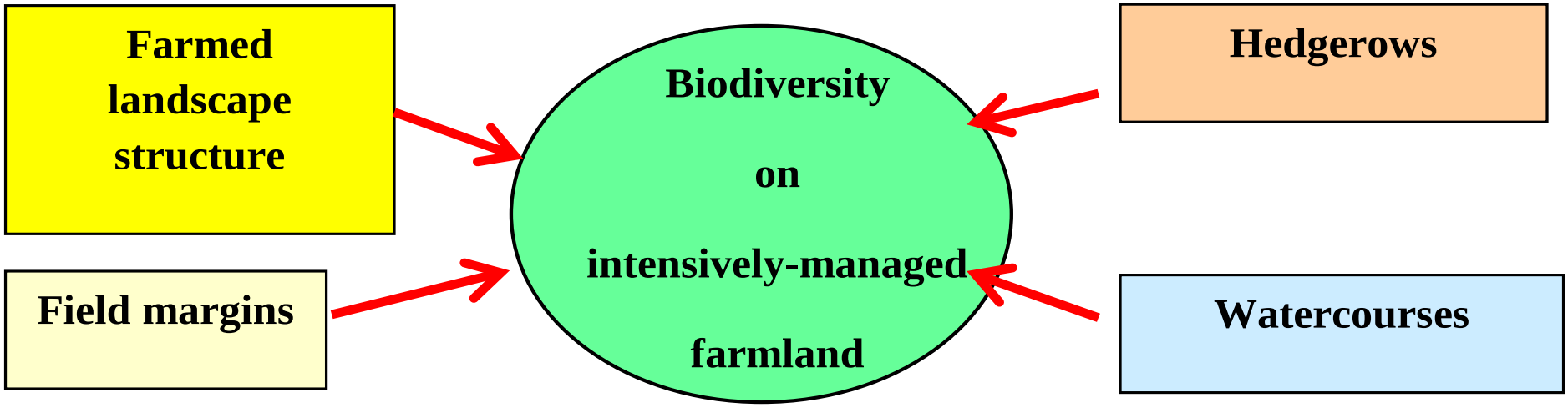
- **… one million animal and plant species threatened with extinction (IPBES, 2019)**
- **……changes in the past fifty years have been more rapid that at any time in human history (MA, 2005)**
- **One third of 98 Irish bee species are threatened with extinction**

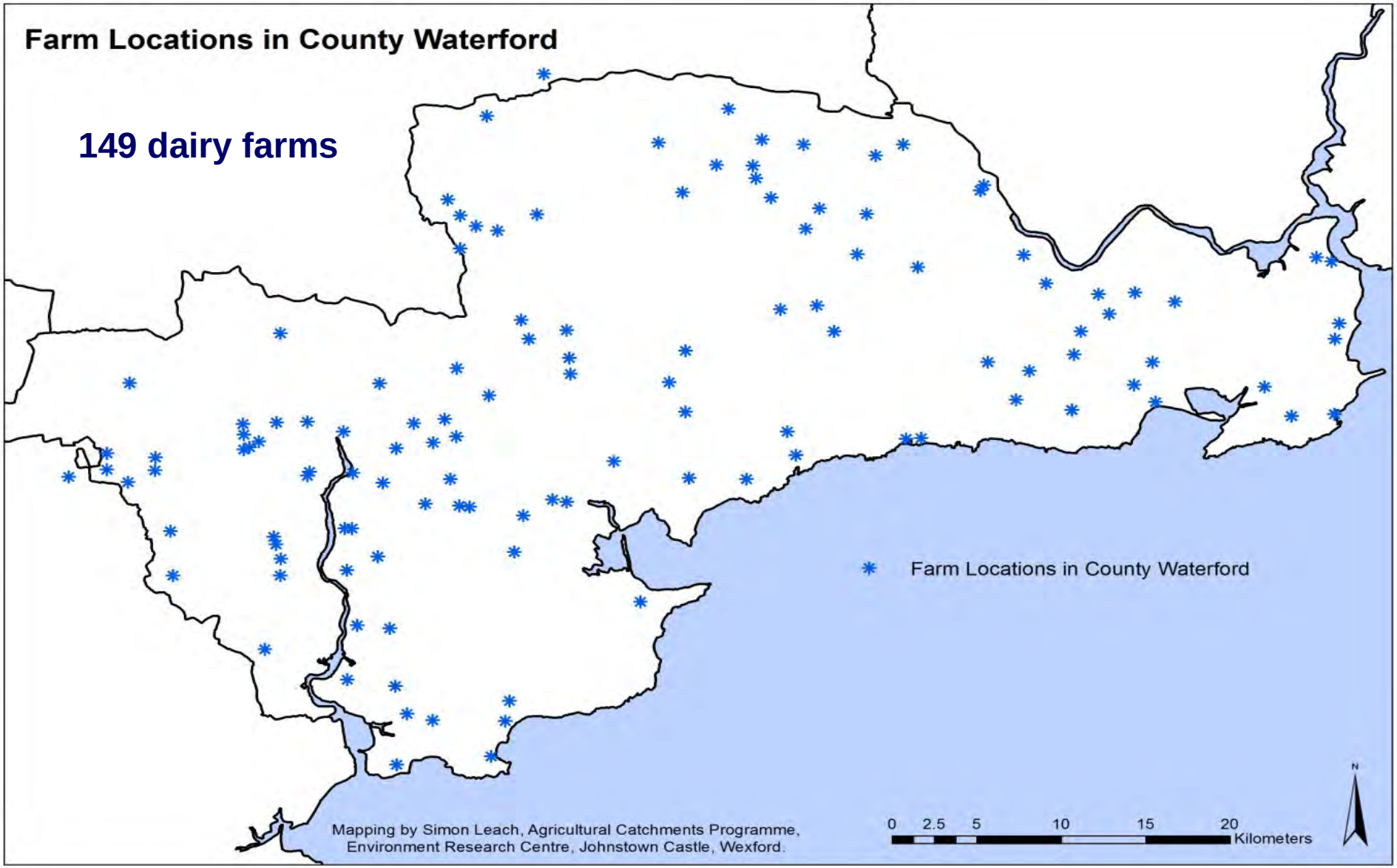
Rationale for this study

- **Link between the intensification of agriculture and the decline in biodiversity: Kleijn et al. (2009); Vackar *et* al. (2012); and Rolo et al. (2016).**

- **As majority of biodiversity studies in agricultural landscapes have focused on natural and semi-natural habitats and features, there is an urgent need to consider biodiversity management practices in intensively managed farmland (Landis, 2017).**

Four Broad Characteristics of Biodiversity
on intensively managed farmland





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Profile of 149 dairy farmers

- Owned 61 ha
- Milked 79 cows
- One third with a Stocking Rate over 170 kgs / ha.
- Farmer typically 49 years of age, male and married
- On at least 42% of farms - likely to be a successor carrying on dairying *(Only 13% unlikely)*
- Increased milk production planned by 65% of farmers

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Attitudes to biodiversity on their farms (2013)

- **97% would like to see biodiversity co-existing with dairying …. but improving biodiversity was not a priority**
- **Most farmers were satisfied with the current level of biodiversity *(Only 12% believed the level of wildlife had decreased)***
- **Acutely aware of financial implications as they believed that taking the environment into account would lower farm profits.**
- **Tidiness was important**

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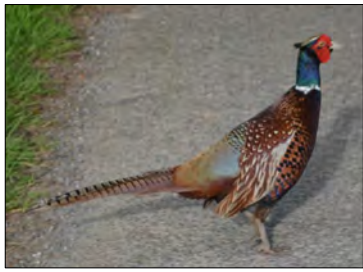
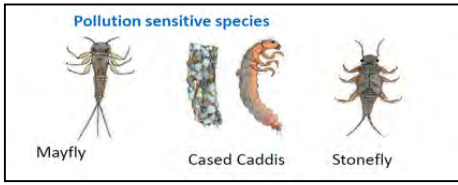
Knowledge of biodiversity

- **Undervaluation of common habitats**
  An rud is anamh is iontach
  (what's strange is wonderful)

- **Poor understanding of biodiversity**
  .. pheasants
  .. watercourses with no fish 'nothing in them'





- **Only 12% believed the level of wildlife had decreased**
  …No 'silent spring'
  …Gap left by extinction of specialist species filled by common species

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How to improve practice?

- High level of engagement with advisory services and discussion groups.
- Engaged with farming organisations but few with environmental organisations
- Sourced environmental information from their traditional sources for agricultural information.
- Other farmers and family members were along with farm advisors key influencers
- 66% were / had been involved in AES

How to improve biodiversity practice?

My Conclusions…..

- **Clear focused messages**
- **Explain the 'Why?'**
- **Delivered by trusted Agricultural Advisors**
- **Through Discussion Groups**
- **Need a Tool that:**
  - **Is simple (back of the envelope)**
  - **Gives clear signals,**
  - **Allows comparison (with others or over time)**
  - **Facilitates the setting of goals**
  - **Measure of improvement**
  - **Facilitates discussion in group settings enabling learning**

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Where to start: *Follow the principles*

1. Retain
2. Maintain
3. Enhance
4. Create






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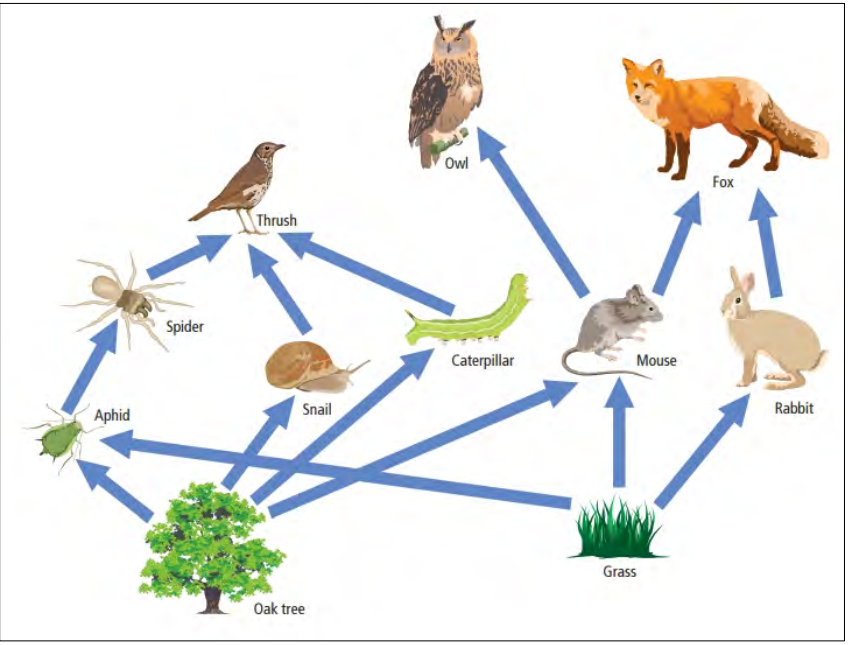
Why *Native* is best for biodiversity

- Native Irish species are in tune with each other with timing of flowering suiting associated dependent species.

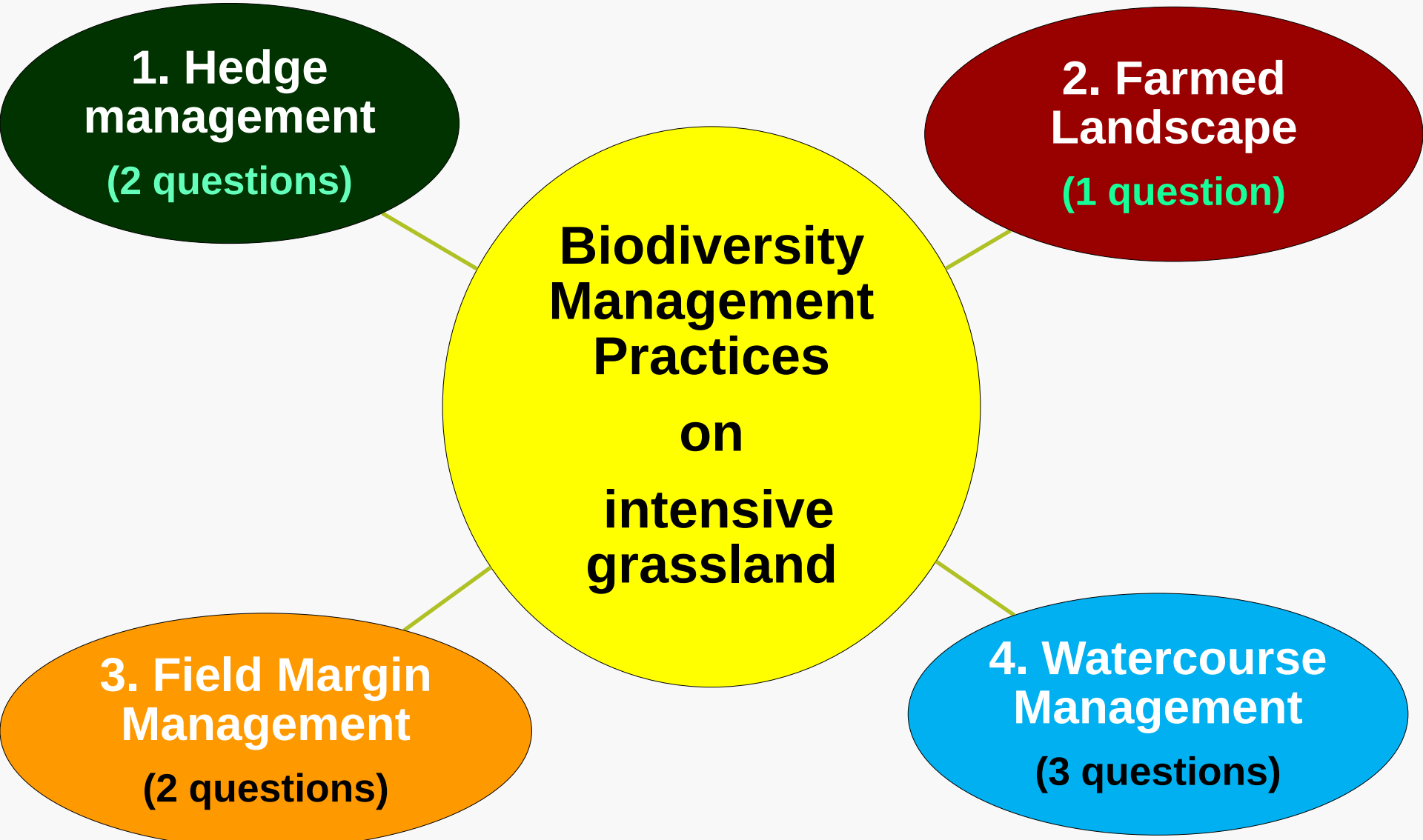
- Irish provenance (plants grown form seed from plants *growing* in Ireland) - Important if planting - species native to Ireland grown in another country *act differently*



Example Food Chain

Invertebrate Species associated with various trees	
Willow	300
Oak	280
Birch	220
Whitethorn	140
Non-natives Sycamore	30
Non-natives Chestnut	6

Teagasc Biodiversity Management Self-Assessment Tool



1. Hedge Management

Which is best for Biodiversity?

A

A. Image of relict hedge

B. Image of escaped hedge

B

C

C. Image of hedge trimmed to a triangular profile sloping from a wider base with occasional trees retained

D. Image of low, neat flat-topped treeless hedge

D

Hedge height

Is the height of all your internal hedges at least 1.5m above ground level (or above hedge bank if present)?

At least 1.5 m high

- for birds to nest
- to have cover over and under the nest

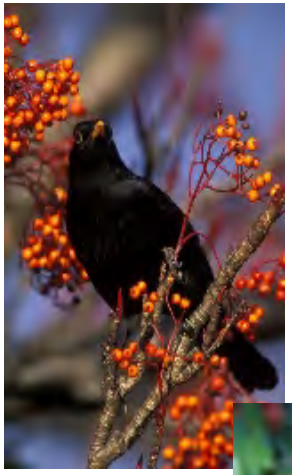
- **60% had hedges > 1.5 m**

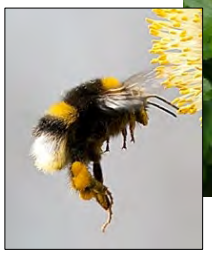
Flowers in hedges

Is there a flowering thorn tree in every hedge?

- **Flowers for bees and Fruit for birds and small mammals**

Topped hedges





& Escaped Untopped hedges

New thorn saplings provide song-posts and thorn trees for the future

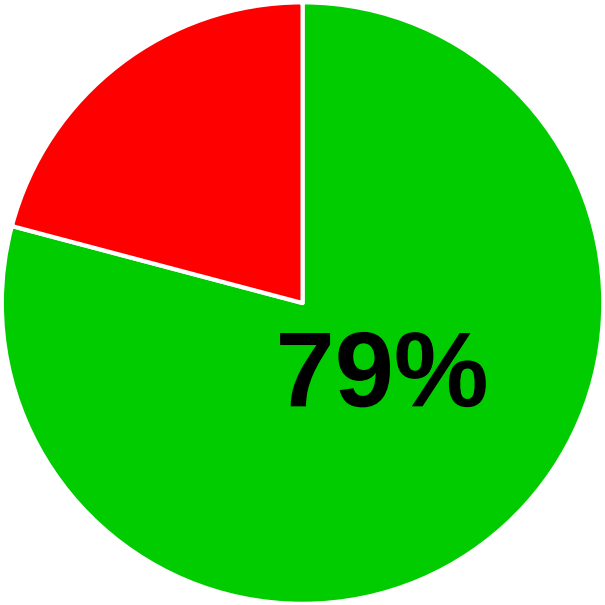
- **81% retained saplings**

but only 22% retained a whitethorn tree

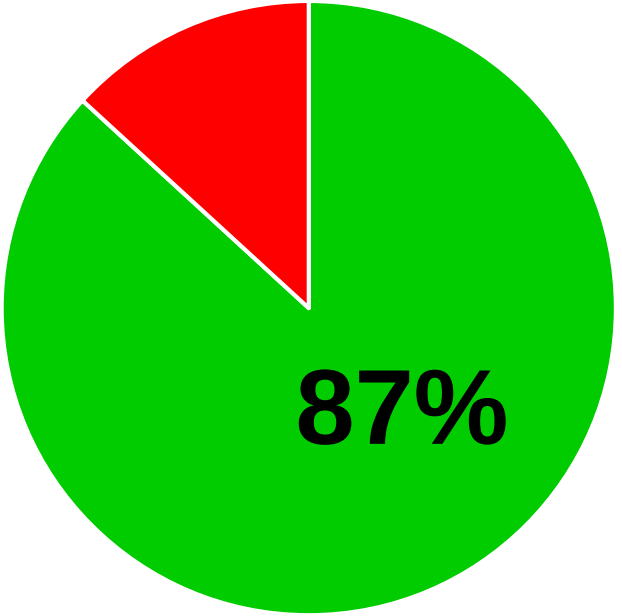
90 Dairy Farmers in Kilkenny / Waterford

(Leader, A. 2020)

Hedge height over 1.5m



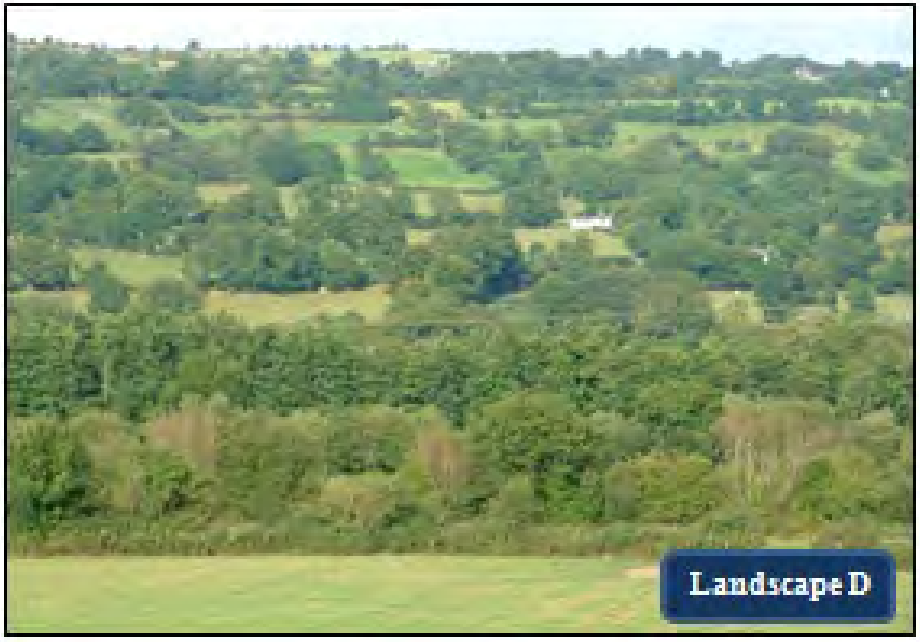
Mature / sapling thorn trees present



93% and 77%

53 Meath Derogation farmers ***(Murphy, M and A. Markey, 2020)***

2. Layout of Farming Platform



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2. Farming Platform Structure

Is your Average field size Less than 5ha?

Average Field Size =

Hectares owned ÷ Number of fields

(surrounded by permanent boundaries - *Not wire fences*)

Average Field Size per farm

- **Av Field size per farm: 5.15 ha**
- **Range of Av Field Size: 1.17 ha – 37.25 ha**

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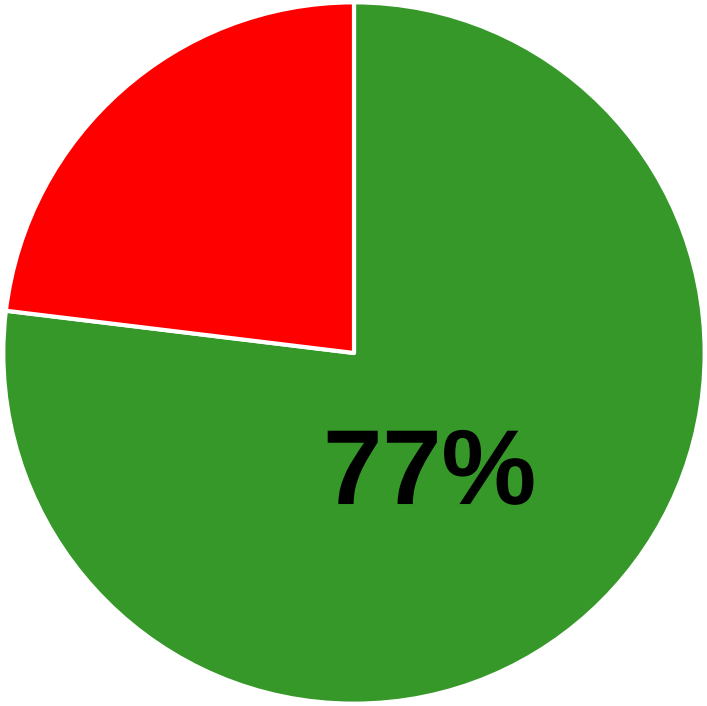
90 Dairy Farmers in Kilkenny / Waterford

(Leader, A. 2020)

Average Field Size < 5 ha



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3. Field Margin Management

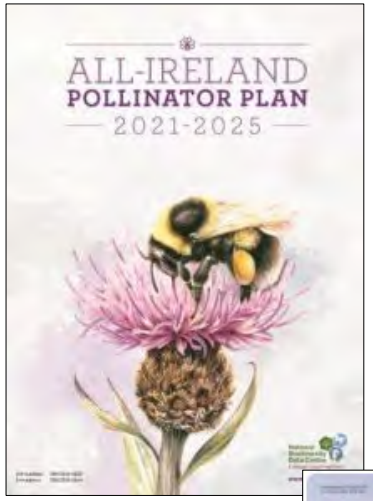
Uncultivated field margins

Do you always retain at least 1.5m uncultivated margins when cultivating?

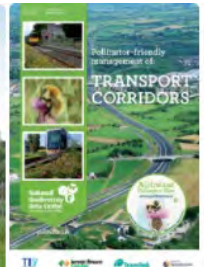
- **To allow native wildflowers and grasses grow, providing habitat for biodiversity**

- **20% retained an uncultivated field margin**

All Ireland Pollinator Plan



- **Bees need flowers**
- **The All-Ireland Pollinator Plan is often asked, “should I plant wildflower seed?”**
  - **Our answer is always that pollinators themselves would say “no”.**



Unsprayed field margins

Do you avoid spraying within your field margins (except for spot spraying noxious weeds)?

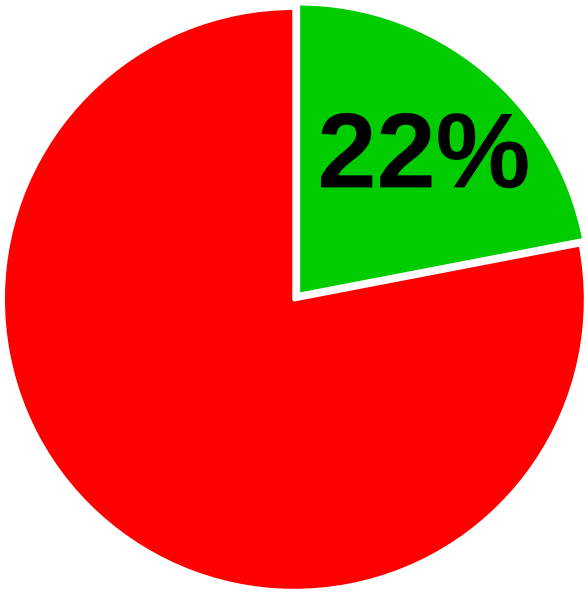
- **To allow native wildflowers and grasses to grow providing habitat for biodiversity**

- **47% did not spray within field margins**

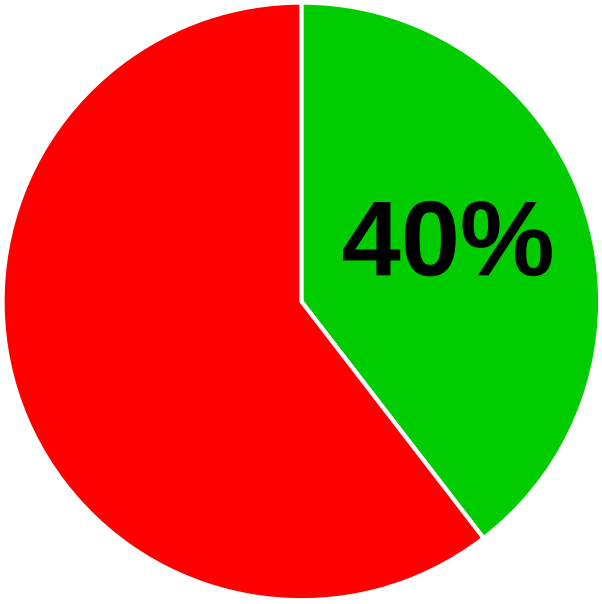
90 Dairy Farmers in Kilkenny / Waterford

(Leader, A. 2020)

Uncultivated field margins retained (>1.5m)



Field margins unsprayed



8% and 74%

53 Meath Derogation farmers ***(Murphy, M and A. Markey, 2020)***

4. Watercourse Management

- **87% of farms had watercourses**
- **Average length: 1314m / farm**
- **Range: 80 - 8175m**

- **The main advantage as seen by them of having watercourses was as a back-up supply of water.**

- **Dairy farmers who had engaged in agri-environment schemes had better watercourse management practices such as fencing watercourses and creating watercourse margins**

Fenced watercourse banks

Are all watercourse banks on your farm fenced?

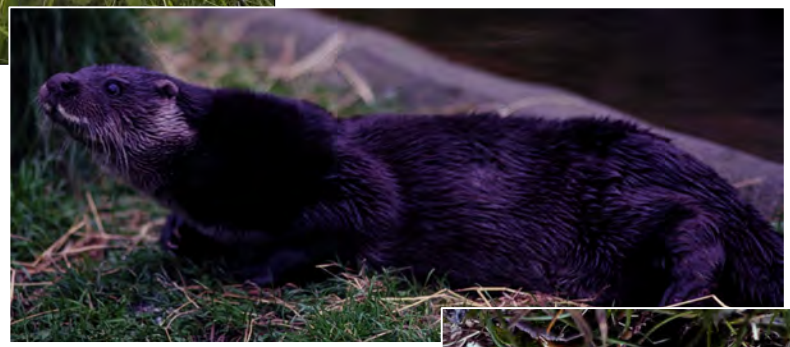
- To allow vegetation grow, protect the habitat and reduce siltation

- 85% had watercourse banks fenced

Watercourse margins

Is there a fenced margin over 1.5m on all watercourses?

- **To further protect watercourses and allow space for native wildflowers and grasses to grow, providing habitat for biodiversity**

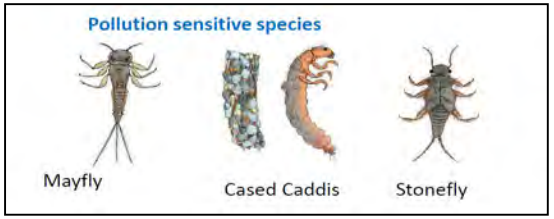


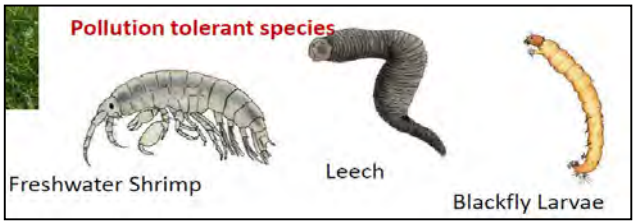
- **63% had a watercourse margin > 1.5 m**

Prevention of livestock drinking access to watercourses

Do you prevent livestock drinking access to all watercourses?

- To reduce siltation of watercourses, and protect the habitat for instream biodiversity



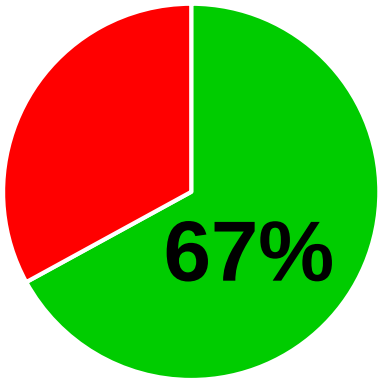


- 36% excluded drinking access

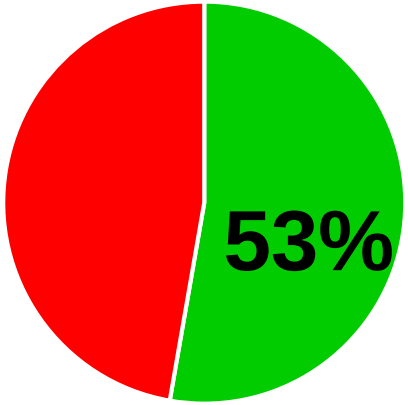
90 Dairy Farmers in Kilkenny / Waterford

(Leader, A. 2020)

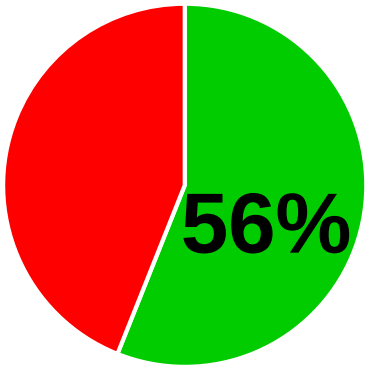
Watercourse banks fenced



Fenced watercourse margin of at least 1.5 m



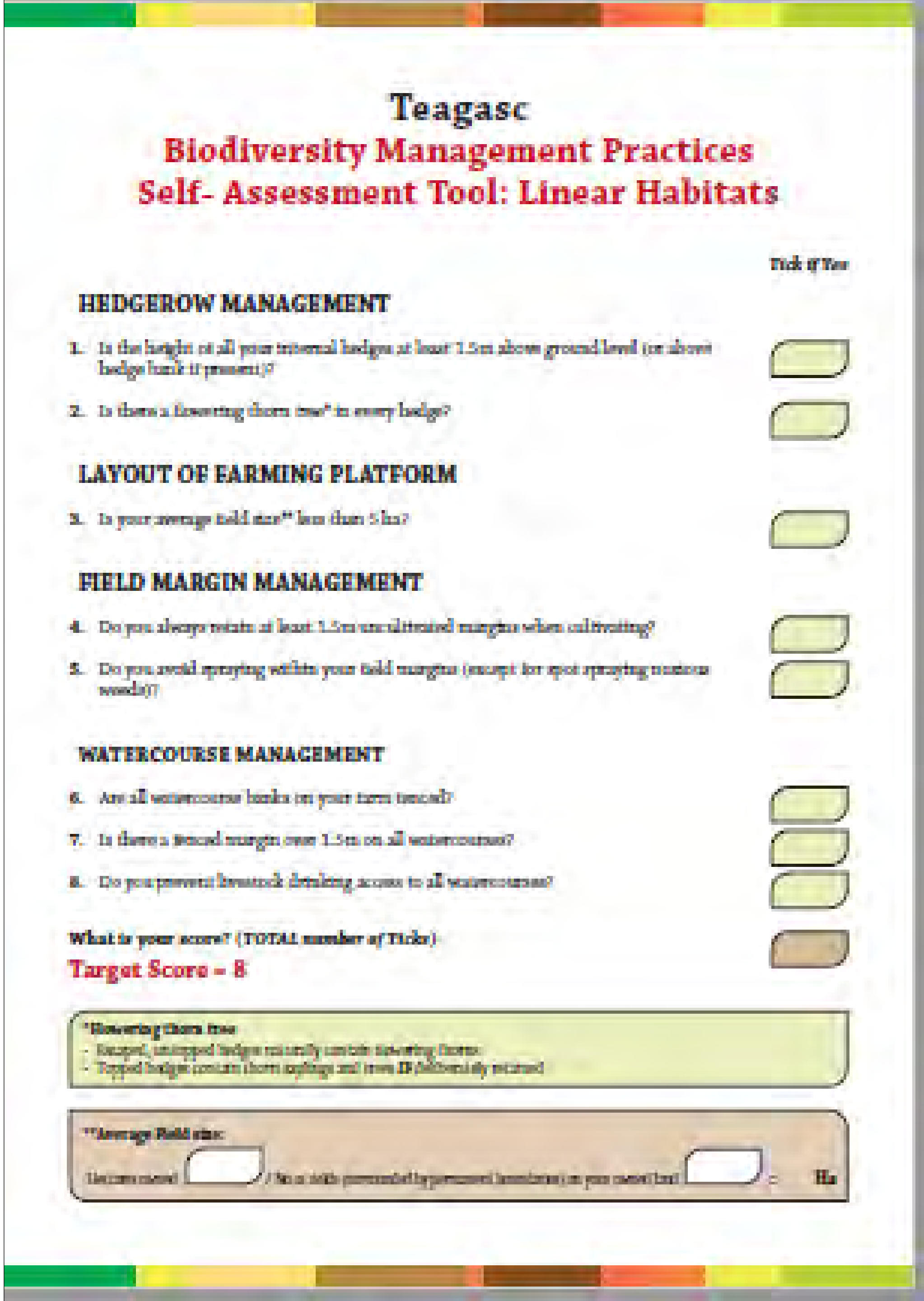
Drinking access prevented



66%; 38% and 62%

53 Meath Derogation farmers ***(Murphy, M and A. Markey, 2020)***

How are you doing?



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Biodiversity Management Practices Self- Assessment Tool: Linear Habitats

Tick if Yes

HEDGEROW MANAGEMENT

1. Is the height of all your internal hedges at least 1.5m above ground level (or above hedge bank if present)?
2. Is there a flowering thorn tree* in every hedge?

LAYOUT OF FARMING PLATFORM

3. Is your average field size** less than 5 ha?

FIELD MARGIN MANAGEMENT

4. Do you always retain at least 1.5m uncultivated margins when cultivating?
5. Do you avoid spraying within your field margins (except for spot spraying noxious weeds)?

WATERCOURSE MANAGEMENT

6. Are all watercourse banks on your farm fenced?
7. Is there a fenced margin over 1.5m on all watercourses?
8. Do you prevent livestock drinking access to all watercourses?

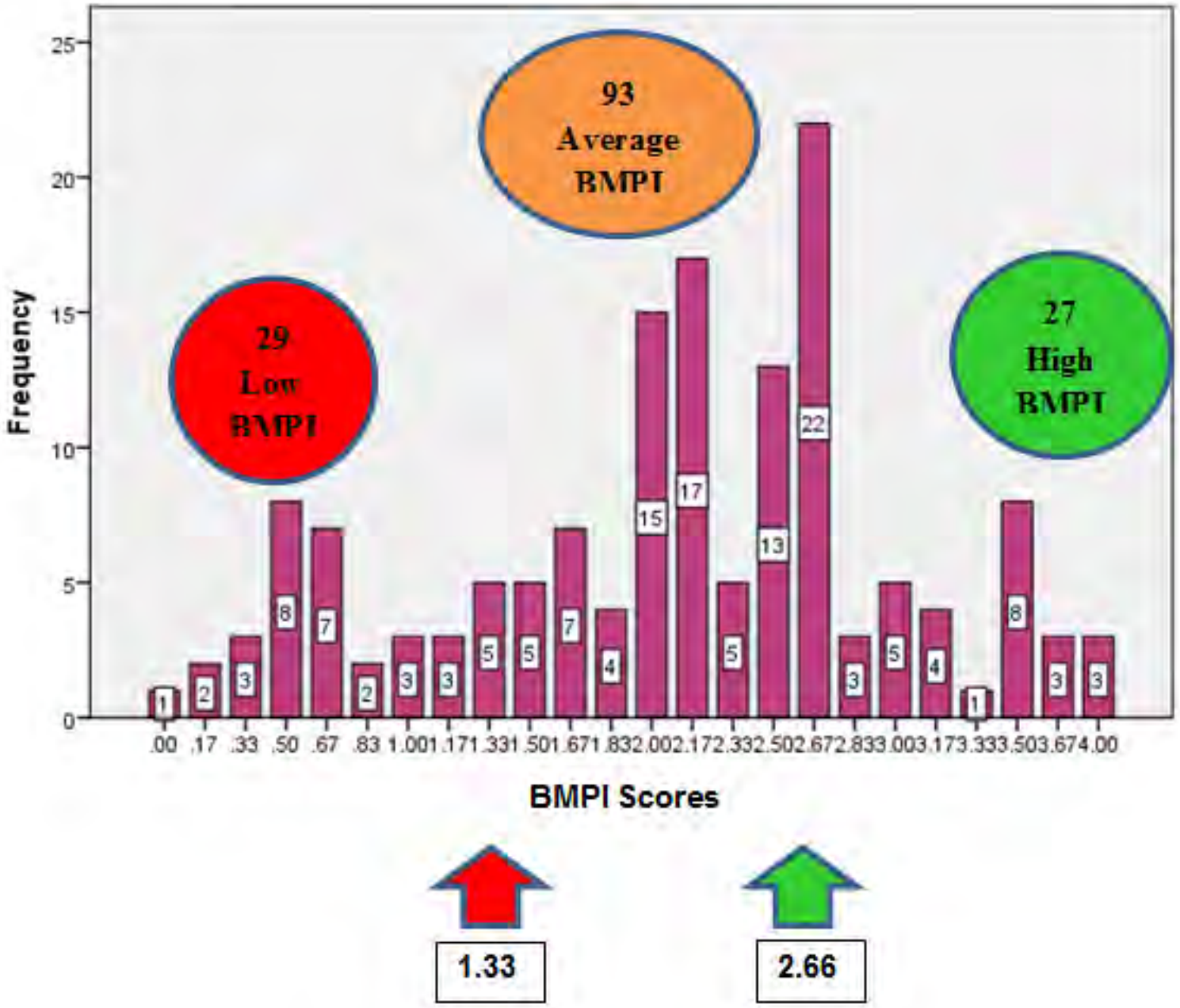
What is your score? (TOTAL number of Ticks)

Target Score = 8

*flowering thorn tree
- Escaped, untopped hedges naturally contain flowering thorns
- Topped hedges contain thorn saplings and trees IF deliberately retained

**Average field size:

Hectares owned ____ / No. of fields (surrounded by permanent boundaries) on your owned land ____ = ____ Ha



Categorisation of Farmers based on their BMPI Scores (n = 149)

Call to Action!

- **What is your BMP score? …. / 8**

Target BMP score = 8/8

How do you compare?

90 Dairy farmers in Kilkenny / Waterford

Source: Aoife Leader, Teagasc Walsh Scholar

- **Average BMP score = 5/8**
- **Range of BMP scores = 2/8 – 7/8**

Farm with low BMP score

- Few internal hedges
- Low hedges without flowering thorn trees
- Field margins cultivated and sprayed
- Watercourse banks unfenced with drinking points

Farm with high BMP score

- Internal hedges over 1.5 m with flowering trees
- Field margins uncultivated and unsprayed
- Watercourse banks fenced with margins no drinking points

Farmers who felt it was important to encourage wildlife on their farms were more likely to be in the category of farmers who ranked high on the BMPI.

"We will only conserve what we love
We will love only what we understand and
We will understand what we are taught"

Dioum, B. (1968) *Speech to the International Union for Conservation*. New Delhi, IUCN.

Go raibh maith agaibh!

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