

'Stacking Functions'

**Phase 1 of project 'A Regenerative Dartmoor'
Listening to land Managers in the catchments of the
Rivers Walkham & Tavy**

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**'Stacking Functions' is a Permaculture design concept.
It describes one input or action that delivers multiple benefits**

Key, Legend & Abbreviations



A yellow speech bubble for the question



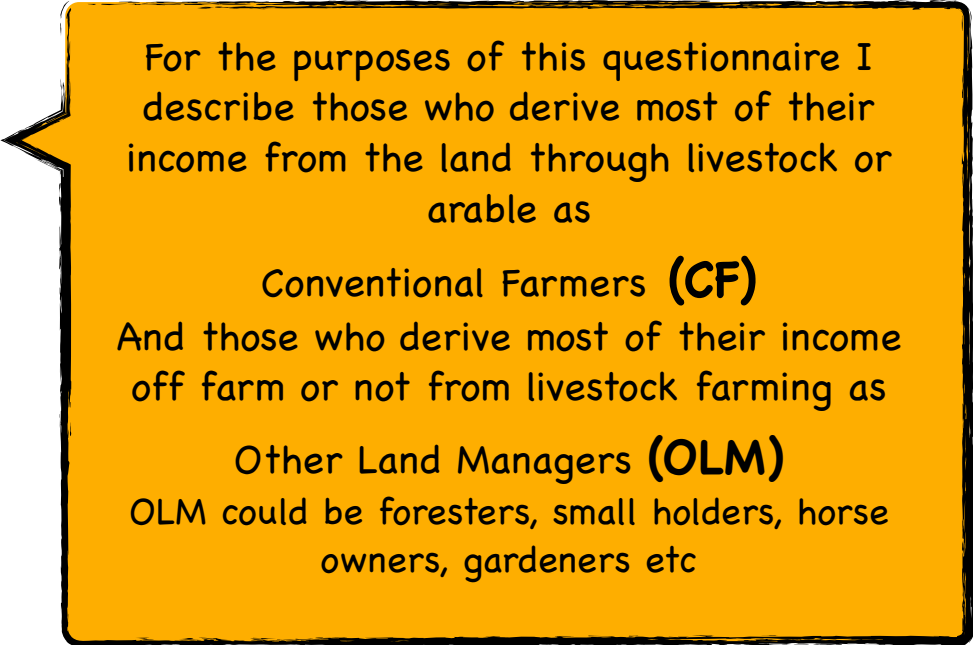
A green speech bubble for the land managers responses

LM



Q

Shows the question number



For the purposes of this questionnaire I describe those who derive most of their income from the land through livestock or arable as

Conventional Farmers **(CF)**

And those who derive most of their income off farm or not from livestock farming as

Other Land Managers **(OLM)**

OLM could be foresters, small holders, horse owners, gardeners etc



A question pertaining to soil health.

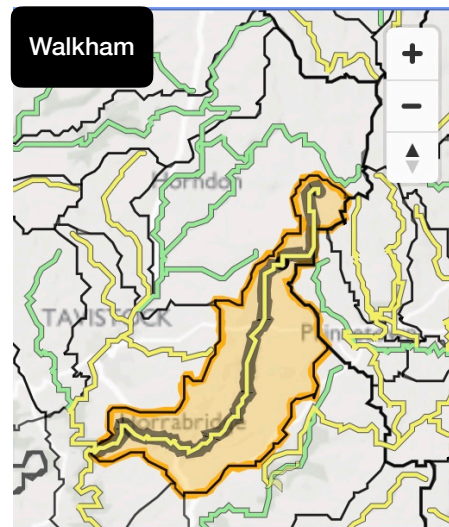
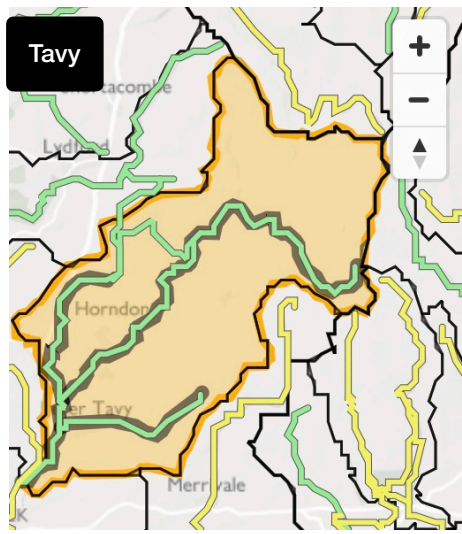


Something affecting the finances.
Costing money or generating income.



A question about the resilience of
the land management operation.
“Do you want your farm to be a
farm in 100 years time?”

I would have liked to include a map here showing the exact holdings of all the participants and how these flow through the catchments, but as most participants wanted to remain anonymous at this stage, this was not possible. So here are the catchments and general area.



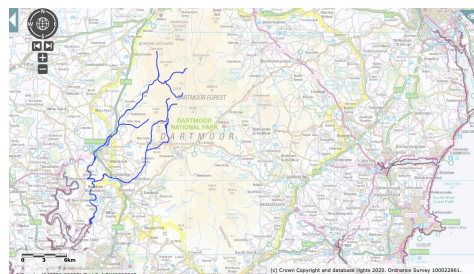
Catchment Area:

Tavy (Upper) 6325 ha

Walkham 5189 ha

Total 11,515 ha approx (28455 acres)

Walkham and Tavy catchments in relation to Dartmoor



I Questioned:

20_x Land Managers in total.

10 x Conventional Farmers (CF)

10 x Other Land Managers (OLM)

Approx 8500 acres (3500H)

CF- 85%

OLM- 15%

They held approx

Cows- 3400

Sheep - 13700

Ponies - 500

Poultry - 100

Pigs - 2

8494 acres CF- 7980 OLM- 514

The Questionnaire

1&2

What species do you run & split into how many bunches/sub herds?

Typically

100 cows might be split 10x groups of 10

1000 sheep - 10x groups of 100

Herds are fragmented by all the CF participants, citing that:

- 1) some parcels of land are small
- 2) The ground cannot take higher numbers [prone to poaching/damage in wet conditions]

My reasoning behind the question:

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This question helped me to quickly assess the style and approach of the land manager plus an insight into the layout of the farm. Perhaps the holding is made up of several small parcels of land which can affect management style. This also affects the grazing practice and ability to change systems.

£ / £

Q3

During what months do you calve and lamb?

50% of CF calved between March - June

40% calved all year

10% calved July - April (dairy sector) "my summer grass is not good enough"

My reasoning behind the question:

A cow suckling a calf requires as much as twice the nutrition of a dry cow, so it is financially efficient to calve when the forage is at its most plentiful.

There may be several reasons why a farmer calves outside this time frame but I am interested in spotting contradictions: those who will not switch their farming practice because they believe other systems are less profitable yet they calve at the most expensive time of year.

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£ / £

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What grazing approach do you use?

CF -

8 x Set Stock

1 x Strip
grazing

1 x Mob'ish

OLM -

1 x conservation grazing

1 x mob'ish

1 x AMP/Techno grazing

3 x Set Stocked

1 x non grazer

[Here's a link to explain the different types of grazing approaches we see here](#)

My reasoning behind the question:

R

Implementing a modified grazing approach to AMP or similar is the fastest way that we can improve the resilience and productivity of our land. Bunching our animals and moving them daily has huge benefits to the soil health, animal performance, biodiversity and carrying capacity. This = natural capital = greater profits. Here's a link to a video on this:

<https://youtu.be/fSEtiixgRJl>

S

£ / £

Q5

Have you been impacted by flood or drought in the last few years?

Yes x 17

Not really x 3

- . We were short of water
- . We were short of grass
- . We just scraped through
- . Grazing was very tight so held the animals back so they could have a fresh bite each day.
- . 3x LM The grass was very slow grass
- . The harvest was later
- . We had to feed cattle cake
- . Yes, It was our rotational grazing that saved us.
- . We were 2 weeks off having to buy in hay

My reasoning behind the question:

Increasing the % of Organic Matter in the soil greatly increases the soils ability to hold & release water therefore builds a more resilient farm. We must rebuild the soil carbon sponge.

R

S

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Q6

Some farmers experience up to 80% of their costs during the winter months, would that be largely true on your farm?

8x 80%

2x 70-75%

3x 60%

4*x 50%

2x enough grass

1x NA

*1xCF who cuts a lot of grass for silage, felt the costs were spread more evenly throughout the year due to paying contractors in the summer.

[but I feel that, in the context of this question, this is a winter cost]

My reasoning behind the question:

To highlight where the costs in an operation are and where we need to concentrate to find better solutions which allow for a longer grazing season = shorter winters = greater profits.

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Q7

In a world where your ground could take it, would you like to be able to winter your stock out?

16x YES

3x NO

1x NA

- . Stock healthier out so less vets bills
- . Yes but out [on the] moor, not messing up my ground.
- . Impossible on our ground, too wet in winter.
- . I Like the animals in, its convenient.
- . I get a better nutritional balance if they are in

My reasoning behind the question:

To gauge if there is any appetite for doing things differently. To use better soil health to increase the robustness of the sward and enable animals to graze longer for greater profits. Best combined with adapted genetics in the herd.

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Q8

If you supplementary feed your livestock outside, how do you feed?

13x Ring feeder
4x Roll out bales
3x +cake (a supplementary feed)

My reasoning behind the question:

Different types of supplementary feeding systems can have profoundly different impacts on the land eg. Ring feeders can be very damaging where as rolling out bales, though perceived as wasteful can help increase the organic matter, build soil and reseed.

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Q9

Would reducing your winter feed/input costs be something that you would like to investigate further?

17x YES

2 x NO

1 x na

My reasoning behind the question:

Farmers/LM who are interested in reducing their winter feed bills might be interested in more efficient grazing systems, that would in turn, benefit nature.

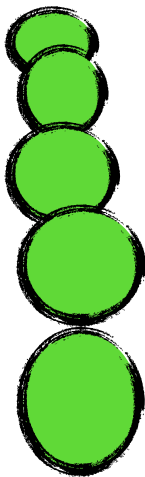
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Q10

Have you heard the term Silvopasture?



8x YES (4xCF 4xOLM)
12x NO



My reasoning behind the question:

Grazing livestock amongst trees. An ancient practice though rare now, this is a Zeitgeist test to see who's aware of trends but it is also a highly productive grazing system that would have multiple benefits for our location and climate in Devon UK. It also fits nicely into the Environmental Land Management scheme so potential for future payments.

R

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Q11

Trees have an incredibly high nutrient density which is why livestock love to eat them, have you ever used tree hay / hedge trimmings as a mineral supplement?



2x YES
13x NO

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My reasoning behind the question:

An old way of nutrient boosting and worming livestock. A practice now forgotten in favour of chemicals. An indication of the neglected value of trees to livestock beyond shelter and shade.

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Q12

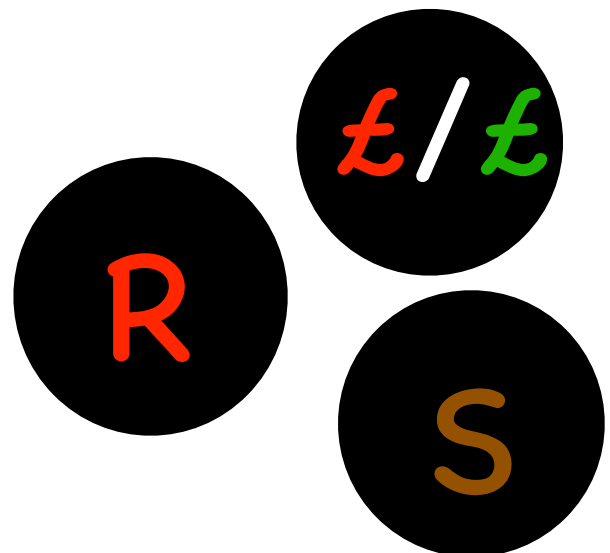
Which do you believe is the best environment for soil & livestock health?
Topped n tidy - A Mosaic of habits - Scrub

13x Mosaic
6x Scrub
1x Topped

Topped n Tidy- mechanically managed.

Mosaic- a patchwork of multiple habitats.

Scrub- Bramble, thorn, nettles etc.



My reasoning behind the question:

We have been conditioned to see and expect our current field patterns, flat monocultures, squared off hedges etc. In my experience, land managers are judged on the 'tidiness' of their farms and peer pressure weighs heavy. I believe that the appearance of the landscape must change. Although over half those questioned chose Mosaic, my feeling was that for several this was a learned response, not born out in further questioning and often not displayed in the land management.

Q13

Do you have any scrub and do you believe it adds any value to whole farm health?

16 x YES some
4 x NO

.Good for wildlife.

.No money in it.

.Not viable.

.Odd corners but can't see how it benefits the farm.

.Sign of a poor/bad farmer.

.Just a breeding ground for rabbits.

.Sheep get tangled in it

My reasoning behind the question:

Gauging scrub tolerance.

There seems to be a real negativity towards scrub.

Scoping existing and potential wildlife corridors.

R

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Q14

Have you planted any trees in the last 3 years?
And would you be interested in assistance in
any planting projects?

5 x YES (1x CF)
7 x Hedging gaps (6x grant aided)
8 x NO

My reasoning behind the question:

Is anyone planting trees? And who might be willing
to plant trees in the catchment to improve flood
resilience, create wildlife corridors and benefit
soil health.

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Q15

Would you like help to create copses,
silvopasture, shelter breaks?

13x Yes

5 x Yes if paid to do so

2x NO (1x CF 1x OLM)

My reasoning behind the question:

Who might be willing to plant trees in the catchment to improve
flood resilience and create wildlife corridors?

R

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Q16

Would you like assistance in creating wild flower meadows?

3 x Yes

9 x YES if financially assisted

3 x possibly

5 x NO

My reasoning behind the question:

Would anyone like assistance?

R

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Q17

On the whole, how do you manage your hedges?

8 x Flail annually
2 x flail every other year
2 x mixed rotation
3 x laid
4 x do nothing
1 x NA

.Nice n tidy, sign of a good farmer.
.Flail then roll on top if I could!
.Dead ground under trees so I don't want trees in hedges.
.Noticing more birds now hedges taller

My reasoning behind the question:

Reducing the use of the flail mower on hedges is a quick and easy way to create wildlife corridors, increase bird numbers, shelter belts for livestock and improve soil health by not driving on the land and save money.

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£ / £

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Q18

Do you believe that trees play any role in overall soil health on your land?

7 x YES

10 x NO

3 x don't know

. Suck up water.

. Prevent erosion.

. Shelter for animals
but no soil benefits.

. Leaves act as mulch.

. Yes a Huge role

My reasoning behind the question:

Gauging the LM's understanding of the vital role trees play in soil health and how this corresponds with other questions about trees in the landscape.

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Q19

Do you plough any ground?

4 x YES
16 x NO

. Approx 40acres
total
For winter crops.
.Occasional reseeding

My reasoning behind the
question:

To learn who is ploughing and how many acres in the catchment
This is not a regenerative approach and is damaging to soil
health and water cycle.

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Q20

Do you think that Dung beetles are an important creature on your land?

19 x YES
1x "NOT REALLY" (one of the largest CF.
25% of acres in question)

My reasoning behind the question:

To gauge the understanding amongst all LM's to the vital role that these creatures play in the carbon cycle and soil health. To see if this is borne out in further questioning on use of chemicals.

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Q21

Do you use synthetic fertiliser?

12x YES
8 x NO

My reasoning behind the question:

How many LM's are applying Chemical fertilisers in the catchments?

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Q21b

If yes, on a scale of 1-5 (1-no real knowledge to 5- up to speed with the science), how well do you understand what goes on in the soil when synthetic fertiliser is applied?

11

22

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4

. We have reduced our NPK by 50% over the last decade.

. NPK & lime on silage cutting fields.

My reasoning behind the question:

To ascertain how comfortable we are to use agrochemicals on our land without having full knowledge of the implications.

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Q22

Do you routinely worm your livestock?

15 x YES

4 x NO only if ailing

1 x na

. All the Lambs

. Yes 3 x year

. Yes 4 x year

. Yes Pre housing

My reasoning behind the question:

To learn how much residual insecticide is passing into the soil through the dung and how this question relates to other soil health questions.

R

£/£

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Q23

Is it your belief that the soil health on your land is in a better/same/worse state than when you became the land manager?

4 x SAME

13 x BETTER

2 x WORSE

1 x don't know

.More productive not necessarily healthier

My reasoning behind the question:

To gauge where LM's think they are at in terms of soil health, to get them thinking about soil health and how previous responses may relate to this

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Q24

Have you had your soil carbon or organic matter measured?

20 x NO

My reasoning behind the question:

It is my belief that carbon trading will become a significant part of a LM's income here on Dartmoor so I am curious if anyone has a baseline. Soil Carbon can be increased quickest by improved grazing practice which also promotes soil health and biodiversity.

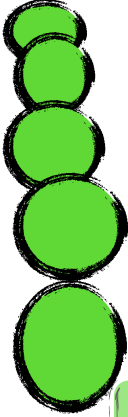
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Q25

On the scale of 1 (not at all) to 5 (very very), how nature friendly do you believe your land management is?



22

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3.5 3.5 3.5

44444444

5555

5+

. Nature's ok but in moderation.

. Badgers v bad for TB.

. I Want freedom to control all pests.

. Moles v bad on silage cutting ground.

My reasoning behind the question:

Self scoring .

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Q26

What do you believe is the biggest disadvantage to a more nature friendly approach on the farm?

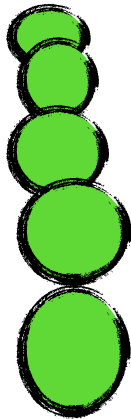
- . "More to think about
- . Who will feed the country?
- . Too expensive
- . Financial and carrying capacity.
- . Money, its not viable
- . Who will feed the world?
- . Time & money as it's not real farming
- . Loss of money and reduced carrying capacity
- . Gov. Rules- want scope to make own decisions
- . Fear change, long time to adapt
- . More ticks n disease
- . Reduced productivity
- . Reduced productivity
- . Reduced productivity
- . Fear of change
- . There are none, just misguided belief systems
- . Money
- . Lack of imagination
- . None"

My reasoning behind the question:

What are the perceived barriers to a more nature friendly approach?

Q27

Do you have any rivers, streams
or ponds on your land?



16 x Yes
4 x No

My reasoning behind the
question:

Scoping potential corridors for wildlife

R

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Q28

Any rough or marshy ground?

14 x Yes

6 x No

My reasoning behind the question:

Scoping potential corridors for wildlife and species rich areas that are perceived as lower value

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Q29

Who would you trust to offer you advice on a more nature friendly approach?

- . Peers
- . No one- all got agendas
- . No one - trust our own research
- . Dont Know
- . Hill farmers
- . Natural England
- . Definitely not Natural England
- . Own instincts
- . Depends if they are offering a stick or a carrot.
- . Anyone - I'm open
- . Dartmoor Hill Farmers Association
- . Moor meadows
- . Independent consultant
- . Permaculture
- . FWAG Farming Wildlife Advisory Group
- . 4 x WCRT West Country Rivers Trust

My reasoning behind the question:

To see who LM's trust & look to for advice

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Q30

Looking at your average field, can you list a few things that you would be willing to do to benefit nature?

- . 7 x Leave hedges to grow up
- . 5 x grazing management
- . Reseed clovers
- . Dont know
- . Lay hedges
- . Doing lots already
- . Planting trees for natural flood management
- . Leave corners of cutting fields, that would total 1H
- . 3 x create ponds
- . Only flail hedges every other year
- . Create wf meadow, pond, walls, lay hedge, leave brash in field
- . Graze a mixed species sward
- . Wider Buffer strips, but I still want to spray off nettles
- . Allow some scrub
- . Plant shelter belts
- . Remove sheep
- . Stop worming animals

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My reasoning behind the question:

Measure willingness and encourage reflection on previous questions

Q31

Wildlife on your land.

Giving a score of 0-5

0- Zero tolerance and 5 - Actively encourage,
which species do you want or not want to see on
your land?

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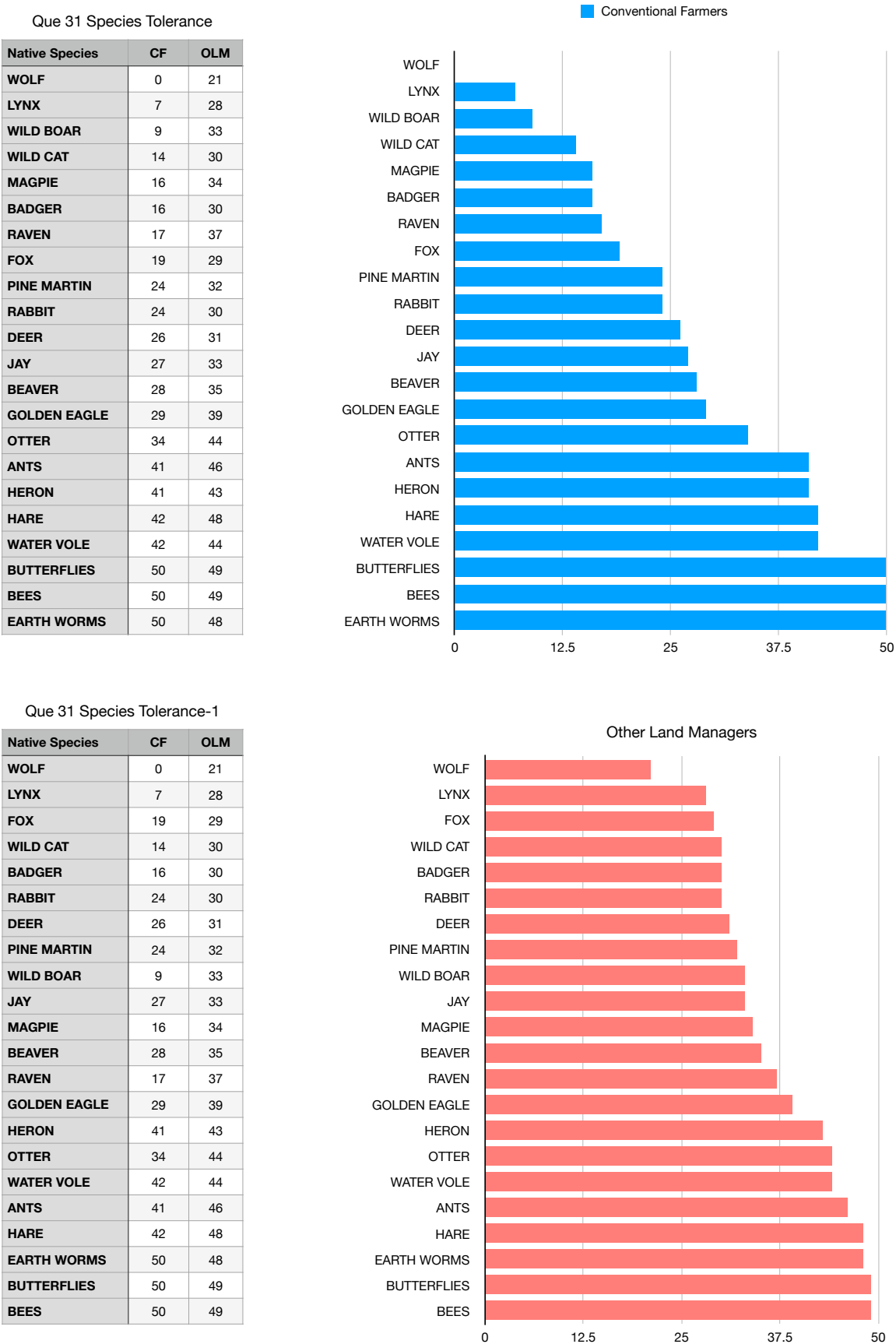
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See fig 1

The **blue bars** show scores from the **CF's**

The **pink bars** show scores from the **OLM's**

Fig 1



Q32

Do you believe that there is a climate emergency?

11 x Yes

1 x No

5 x Change but not emergency

3 x Don't know

Asked 9 people

Biodiversity emergency?

5 x Yes

1 x No

3 x Don't know

My reasoning behind the question:

World beliefs

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£ / £

Q33

If there was a local market, paying a premium for meat grown to exemplary pasture fed standards, would this be of interest to you as a consumer or producer?

18 x Yes

. Hill pony

2 x No

My reasoning behind the question:

There is a vacuum in the market for Regeneratively produced food & fibre, food which has a net gain for nature. I believe Dartmoor farmers have a huge opportunity to be the early birds in this line of production whilst simultaneously restoring the landscape. As it stands the Hill pony meat would be a very 'clean' meat as these ponies tend not to receive any chemical inputs like wormers.

S

£ / £

Q34

To attract the higher tiers of payment from ELMs we will need to collaborate with our adjoining land owners and graziers. Would you be interested in the higher tiers of payment?

18 x Yes
2 x No

. In terms of food chain & environmental delivery, collaboration can be very tricky.
. HLS on commons is a good example of collaboration already

My reasoning behind the question:

Collaboration will be key to landscape scale nature recovery and higher payments through ELM, so beginning conversations early is beneficial.

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£ / £

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Q35

Can you list any of the public goods that you could be paid for through ELMs?

15 x NO

5 x YES (3xCF 2xOLM)

Listed 2 x Public Access, 2 x Air, 3 x Water
1 x thriving plants

Mistakenly listed as public goods-
3x Carbon, 1 x conservation grazing

My reasoning behind the question:

What interest or knowledge of ELM is out there?

Q36

Do you believe that working with nature could be more profitable?

18 x YES

- . Dartmoor is a wet rock, fight nature, we lose.
- . Can't push water up hill
- . Yes to a point but driven by bottom line
- . To a degree
- . Could be?
- . Costs of repairing damage never factored in- so yes always

2 x NO

- . Less profitable definitely.
- . No way can it be more profitable

My reasoning behind the question:

Is there any willingness or belief that it is possible to work 'with' Nature and have a viable business ?

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£/£

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Q37

Would a visit to a farm
demonstrating true nature
friendly farming practice be
useful to you?

17 x Yes

3 x No

My reasoning behind the
question:



Everyone is different, so I believe its
going to take a variety of
approaches to achieve any shift in
practice. Seeing is believing.



Q38

If you could wave a magic wand over your farm, what changes would you like to see?
(Money, time, labour, no object, total blue sky thinking exercise)

R

Build houses on it
More wildlife
Proper fencing
Big shed
Greater regeneration of recovering species
Enable a young farmer to take on a going concern.
Happy as I am - less rain- longer summers
Lavender field
Restore hedges
Bigger farm
Balance between wildlife and profit
More buildings and a slurry solution
Big fields like Wiltshire
Better bigger buildings
Slurry storage
Plant fruit trees & enable wildlife corridors

A Creative visualisation exercise. I believe that creativity fosters innovation. We must allow ourselves to dream in order for those penny dropping moments to happen.

We must give ourselves the freedom to imagine doing things better; environmentally, financially and socially.

Q39

If you could wave a magic wand over Dartmoor, what changes would you like to see?
(Money, time, labour, no object, total blue sky thinking exercise)

- . Better quality grazing
- . Heather
- . Trees
- . Tackle surface run off
- . Better understanding of niche habitats
- . Better dialogue with Dartmoor National Park
- . A grazed landscape
- . Get back to 50's 60's not over grown
- . Re forest valleys
- . More livestock - winter cows out
- . Collaboration on vision- doing nothing would give better value to tax payer.
- . Less grazing - allow natural regeneration of trees.

My reasoning behind the question:

A Creative visualisation exercise. I believe that creativity fosters innovation. we must allow ourselves to dream in order for those penny dropping moments to happen. We must give ourselves the freedom to imagine doing things better; environmentally, financially and socially.

S

Q40

Can I come back to you with any follow ups?

All said YES

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Figure 2

