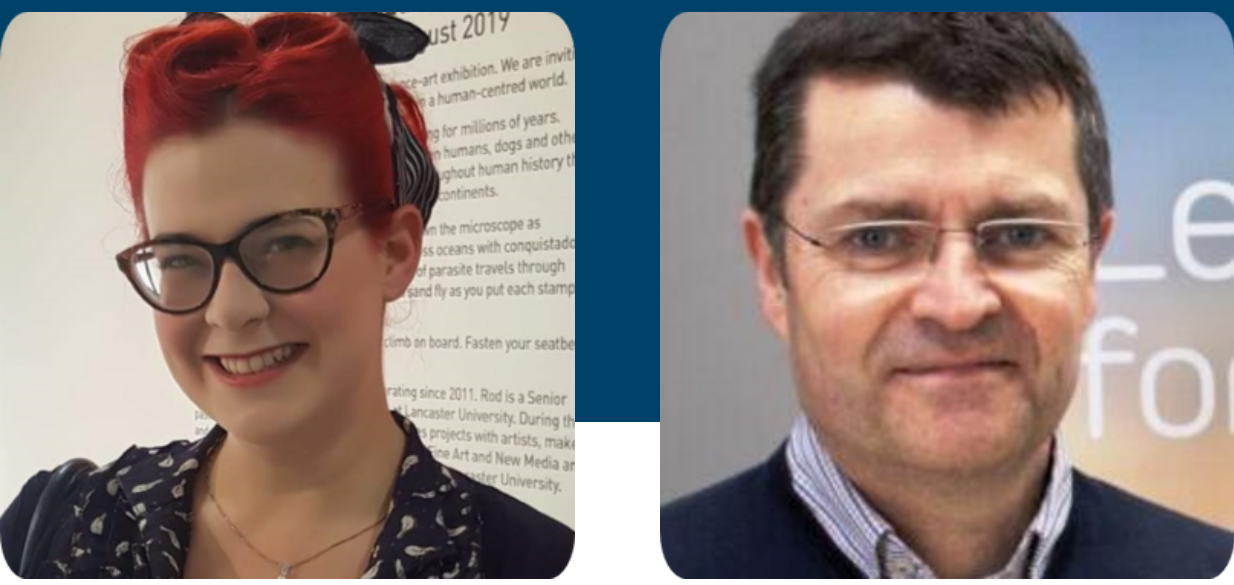


PEATLAND RESTORATION: delivering environmental gains without compromising LIVESTOCK HEALTH



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SRP Project MRI-B2-1: Improving livestock
productivity & sustainability through management & genetics



The Question

Liver fluke (*Fasciola hepatica*) is a pathogenic flatworm parasite of sheep & cattle. Transmission depends on a mud snail (*Galba truncatula*).

Farmers & crofters raised concerns about liver fluke risk from **grazing restored peatlands** for climate & biodiversity goals.

We investigated whether restored peatlands in Shetland provide suitable conditions for the **fluke life cycle**.



The Evidence

Restored peatlands were acidic, waterlogged & mud-free → **unsuitable for *Galba truncatula***.

No evidence that peatland itself supports active fluke transmission, although marginal areas (paths, drains, communal grazing zones) did support *G. truncatula* snails, & 10% were infected with *Fasciola hepatica*. Another snail species & potential intermediate host, *Ampullaceana balthica*, was found in a blocked drain on site.

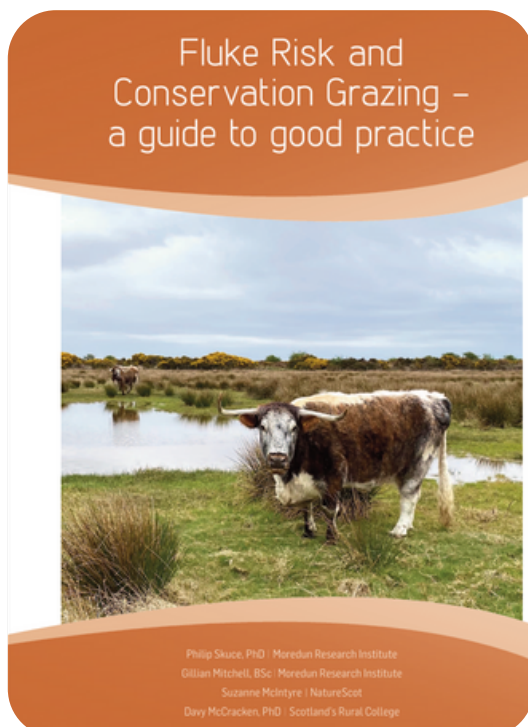
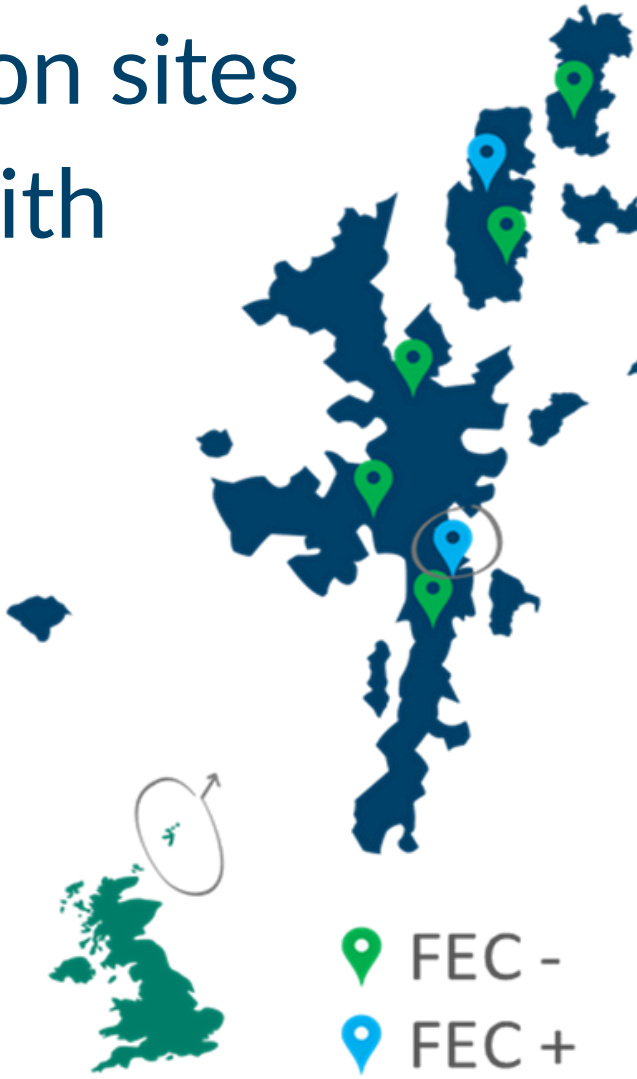
Evidence shows that peatland restoration ≠ increased livestock risk, the threat lies in marginal grazing habitats.

The Study

Study area: Peatland restoration sites in Shetland, in collaboration with NatureScot & local crofters.

Data collection:

- Faecal Egg Counts (FEC) in grazing sheep
- Habitat surveys for snail host presence
- Molecular testing for snail species ID & liver fluke infection status



The Impact

With monitoring & informed management, conservation grazing can deliver environmental benefits without compromising livestock health. We encouraged local crofters to take up fluke testing through SG PSF funding.

Findings provide an evidence base for: Scottish Government policy teams (climate, biodiversity, animal health), land managers & producers planning restoration or agri-environment schemes.

Research evidence → risk assessment → policy guidance → environmental & agricultural outcomes



Does Grazing Peatland Increase Livestock Fluke Risk



Do livestock already have infection?

Fluke **eggs** are shed in the dung of infected animals. We can use Faecal Egg Counts to detect the presence of adult fluke.

Of the 7 peatland restoration sites tested, only 1 site had sheep which were regularly egg count positive for liver fluke.

Is the liver fluke snail host present?

Fluke need a specific **mud snail**, *Galba truncatula* to replicate. Snails survive buried in mud if temperature is too cold/warm.

The peatland study sites did not look optimal for *Galba* snails. No snails of any species were found on the peatland itself.

Are the environmental conditions right?

Fluke **cysts** are shed by infected snails onto vegetation & then are eaten by grazing animals. Snails need specific conditions to thrive.

The peatland site appears to be too acidic & waterlogged to support snails & the fluke life cycle.

What about livestock management?

Multiple fluke/snail habitats may exist on-farm. At certain times, **Grazing animals** may need to be kept away from high-risk areas.

Large numbers of *Galba* snails were found by the path leading to the peatland site, where sheep communally graze.



Are the snails actually infected?

Cysts shed by infected snails can be seen under the microscope. Molecular methods allow us to screen snails for fluke infection.

~10% of the snails collected on the peatland site path margins tested **positive for liver fluke**.

View Case Study:

