Field lab report:
Managing rushes without chemicals

Bilbster Mains: Field Lab Findings

The Managing Rushes without Chemicals Field Lab is running over several locations throughout Scotland to find out the best ways that rushes can be managed. It has the following aims:

- **Improve productivity** (carry more livestock and produce more silage or hay)
- **Invest in grassland for long-term production** (reduce the costs associated with reseeding and short-term weed control measures)
- **Improve wading bird habitat where appropriate** (improve biodiversity, and potentially provide an additional source of income as part of an agri-environmental scheme)

There have been two meetings held at Bilbster Mains. This report summarises these meetings.

The problem

Several fields on the higher part of Bilbster Mains farm have seen increased rush encroachment in recent years. An area of one of the fields had reverted to rushes where the soil was wettest and had been poached by cattle over the winter. Another field had a very high level of rush encroachment. This field had a soil pH of 5.3, and a moderate phosphate (P) and potash (K) status.

The fields are part of an agri-environmental scheme and will be managed as wader grazed grassland from 2016 onwards.

Actions taken

One field was ploughed and reseeded in summer 2015, and carefully managed to get a good take of grass to compete with the rushes. The field with the lower pH was topped and limed before being ploughed and sown in September with a forage brassica and long-term grass seed mix. The grass seed mix that was used contained a mixture of perennial ryegrass varieties, Timothy, and white clover.

Ploughing was carried out at Bilbster before reseeding in September. Ploughing is the best way of establishing grass and clover, but September could be a bit late in the season for clover to establish.

What happened?

Both fields established reasonably well, however at the March meeting the occasional single rush plant was visible. It was not clear how well the clover was going to establish in March. The pH in the limed field had risen to 5.6, and will continue to rise slowly. Water was lying in parts of the field visited in March: the soil was saturated due to recent heavy rainfall (rather than compaction).

What should happen next?

The single rush plants that had emerged must be controlled through topping or grazing to prevent heading and seeding. If they are allowed to do this then the

rush problem could be even worse than it was in the first place. A reseeded field should be checked for these single rushes, and should ideally be grazed rather than shut off and then cut for silage.

The farmer should keep an eye on the water lying in the fields. If it doesn't drain away when the field is no longer saturated, field drainage should be looked at. Drainage can be improved by clearing outfalls, jetting drains, and even considering replacing damaged drains. Parts of the field that don't drain can be used as wader scrapes, as part of agri-environment management. These should be very shallow areas of lying water. In these areas keeping some rushes (about a third of the area) will be beneficial for waders. Poor drainage could be due to soil compaction, so it will be worth getting a spade out and digging a hole to see if this is the case, and remediating with subsoiling or aerating if appropriate.

It is also important to continue to sample soils and get it analysed (every 4 or 5 years). The recommended amount of lime should be applied to reach the target pH (5.9 at Bilbster). This will ensure liming is done 'little and often', which is much better for soil health. SRUC Technical Note TN656 has a table of target pHs for different soil types. Phosphate and potash should also be kept at Moderate status.

If clover doesn't do well in the sward (and it could be fine, as there was a mild autumn), then oversowing clover seed later on should be considered. If a ploughed reseed fails it shouldn't be ploughed again, as this will bring weed seeds back to the surface. An oversow should be used instead. Slot seeding or broadcasting can be used to oversowing: slot seeding will work better in drier conditions, and broadcasting will work better in wetter conditions. And an appropriate mix with species that will persist in the long term, and so can compete with rushes, should be used. The ideal seed mix will vary with location, and should be decided after discussion with a grass seed merchant or advisor.

Summary

At Bilbster Mains the grassland management essentials of drainage, soil structure, pH, and soil nutrient status were all looked and were being addressed. This should lead to sustainable management of rushes in the long term.

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