TAKING STOCK OF PASTURE CONDITION

KNOW WHAT YOU'VE GOT, TO ACHIEVE WHAT YOU WANT

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Assessing pasture condition is a practical way of thinking about a paddock's capability of delivering feed for grazing. Pasture condition scoring is a process for critically looking at the pasture resource and thinking about how it is best used and improved to increase value to the grazing system.

DERWENT CATCHMENT PROJECT PASTURE CONDITION TOOL

The Derwent Catchment Project has developed a pasture condition scoring tool, which can be accessed at www.pasturenetwork.org/resources.

This tool provides a template for assessing the condition of pastures on a scale of 1 to 5. The tool provides visual examples and explains the reasons for the score along with an interpretation.

1 ⟷ **5**

Weakest, least desirable, least reliable and least productive pastures. They contain few sown species and offer few options for improvement with management alone

Strong, productive and resilient pastures with desirable species, few weeds, and adequate clover. These pastures reward and deserve the inputs required.

USING THE TOOL

Knowing what's where and what can be reasonably expected from a pasture is information immediately useful to a grazing plan. Identifying weaknesses informs our plans to build strength, increase condition and increase production.

The simple process of looking, rating and condition scoring is an important step towards achieving a more valuable and reliable pasture resource.

PASTURE ASSESSMENT CRITERIA

DCP's Pasture condition tool uses five key assessment criteria to describe the pasture.

- Species composition. How desirable is it?
- Desirable grass density. Are there enough sown grasses?
- Percentage of clover. How close to 30% is it in spring?
- Ground cover. Is there at least 70% cover, or more on slopes?
- Plant vigour. How big are the plants and leaves. How green? How tillered are the grasses?

Each criterion is scored on a scale of 1 (representing the weakest or least desirable state) to 5 (representing the strongest or most desirable state).

KNOW WHAT YOU'VE GOT - TAKING STOCK OF PASTURE CONDITION

Step 1: Look and walk across your paddock and take note of the variability in pasture condition present.

Step 2: Choose one or multiple representative areas to visually inspect. Assess the condition of each area using the pasture condition tool. There is an example monitoring sheet on page 3.

Step 3: Combine and average the individual criteria scores for each area for an overall pasture condition score.

Step 4: Reflect on the scores and decide if your pasture can be improved. Do you need to change your pasture management plan? Are you currently using your pasture effectively?

Step 5: Monitor again in the future to see differences in pasture condition, track changes, observe threats, and document progress.

Even if you don't follow all of these steps, taking step 1 and thinking about the condition of your pasture, is a great step to take!

IN BRIEF

- Pasture condition scoring is used to assess and compare pasture desirability and capability.
- Condition score can set realistic expectations and inform how best to use the pasture as it stands.
- Assessing species composition, desirable grass density, clover %, ground cover % and plant vigour identifies if and how the pasture can be improved.
- The DCP condition tool can be used to compare and monitor pastures, track change, see threats and appreciate progress.
- Pasture condition tells a story of what's working and what's not.

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AN EXAMPLE MONITORING SHEET

Area assessed in paddock:

General description of area:

Assessment criteria – circle the number that fits best, 1 is weakest and 5 is strongest

Species composition	**1**	**2**	**3**	**4**	**5**
Desirable grass density	**1**	**2**	**3**	**4**	**5**
Percentage of clover	**1**	**2**	**3**	**4**	**5**
Ground cover	**1**	**2**	**3**	**4**	**5**
Plant vigour	**1**	**2**	**3**	**4**	**5**

Overall condition score – an average of the individual criteria:

Next management steps:

Next date to monitor pasture:

PASTURE SPECIES PERSISTENCE

A TEST OF TIME AND PASTURE GRUBS

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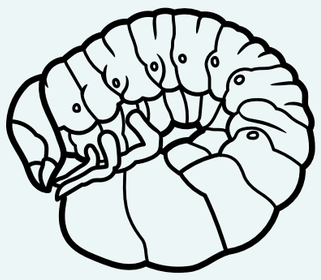


Surface feeding pasture grubs, such as corbie grubs and blackheaded cockchafers have a grazing capacity that can even put sheep to shame. They are a key component of the complex of stresses that degrade pastures and threaten pasture persistence.

DERWENT CATCHMENT PROJECT PASTURE TRIALS

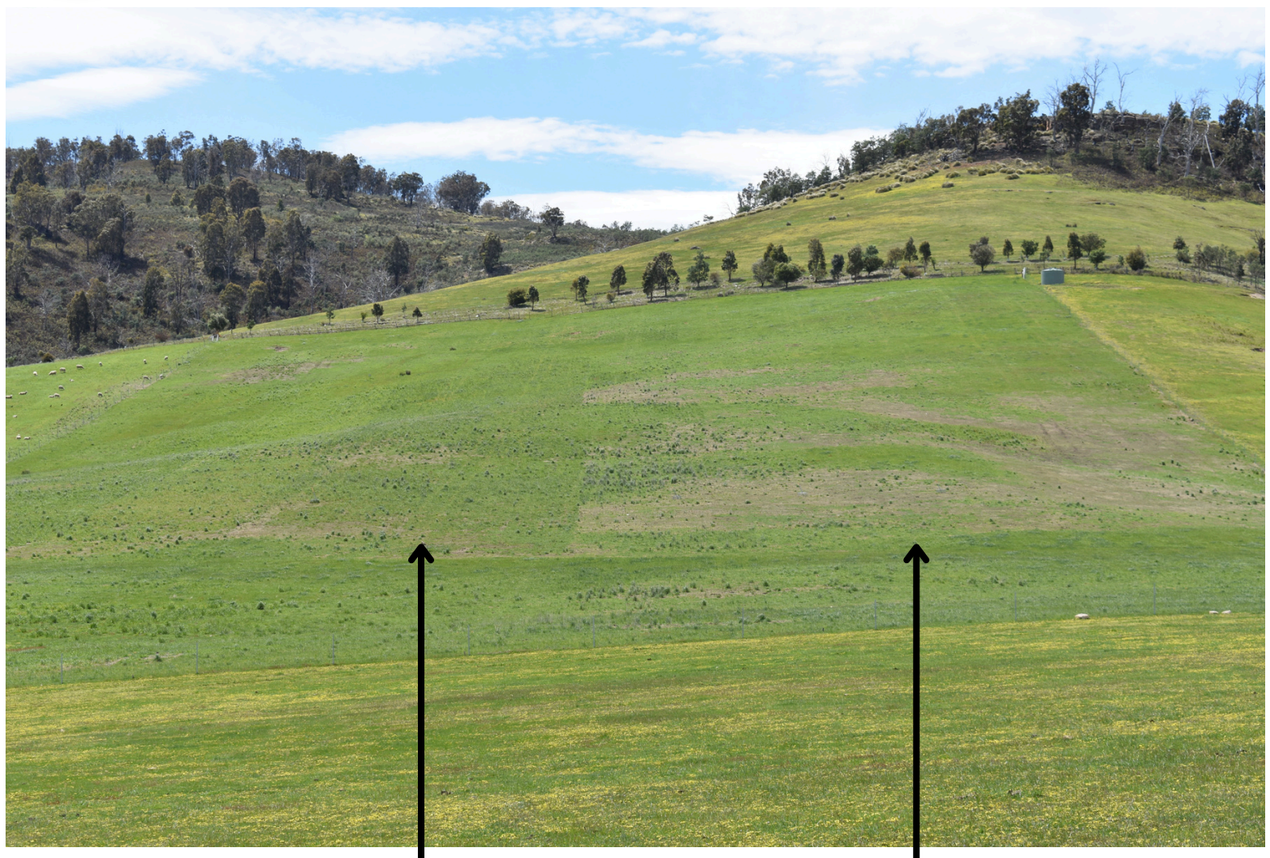
The Derwent Catchment Project is running a series of demonstration trials to test pasture species persistence on north facing slopes in the upper Derwent Valley.

Perennial grasses are the backbone of any persistent pasture. In these trials these grasses are assessed on how well they withstand the rigours of this harsh low rainfall environment.

Not only must the plants survive the day-to-day stress of a dry climate, they must periodically weather droughts and the stresses of grazers that amplify these impacts to cumulatively threaten pasture survival.

During these trials, side-by-side plots of cocksfoot and phalaris cultivars suffered a spring attack from corbie grubs, allowing observation of impact and recovery.

CORBIES ATTACK!



Phalaris plot, showing little to no impact

Cocksfoot plot showing heavy damage

CASE STUDY

In spring 2024 a corbie grub outbreak affected one of the trials. Although control sprays had been applied, one part of the slope was badly affected across a series of phalaris and cocksfoot plots.

This presented a considerable challenge, with significant differences between plots during the period of damage. Hungry corbie grubs took their job seriously.

Phalaris plots were largely unaffected. The corbie grubs neither threatened these plants nor removed much growth. In the phalaris plots, spring was still present.

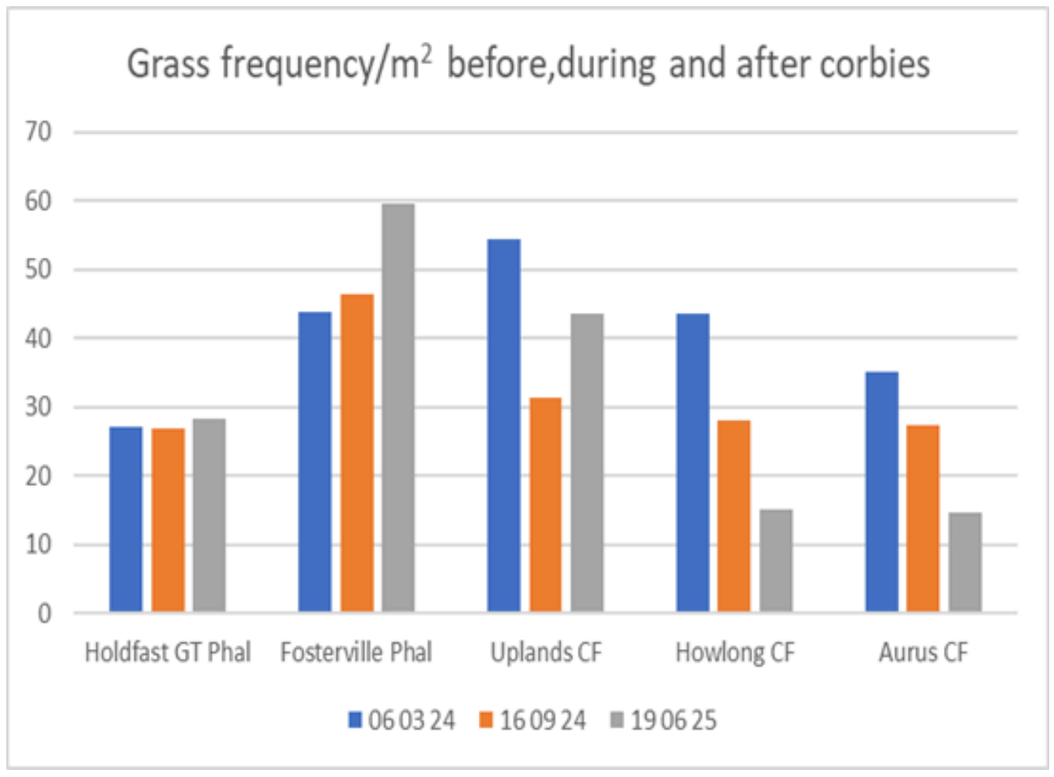
In the cocksfoot plots, the grubs grazed some affected areas to dirt, removing almost all evidence of plants. Feed was lost and plant survival severely threatened. Spring faltered.

Banner image credit: Kristi Ellingsen, Insects of Tasmania

RECOVERY

Assessments of the recovering plots eight months on are indicating that phalaris density has been unaffected or increased.

All cocksfoot cultivar densities in the affected area have declined, and currently (2025) only one looks sufficiently resilient enough to recover. While more time is required to fully assess the impact on persistence, the impact on reducing feed availability is clear in the cocksfoot plots.



Phalaris resisted the corbies and grew

Cocksfoot got grazed by the corbies and faltered

RESILENCE

While chemical controls are effective against surface feeding pasture grubs, pasture species resistance and tolerance is a stronger basis for feedbase resilience. Choices made at sowing time are critical to achieving this resilience.

Phalaris is known to resist grubs and it did. Cocksfoot however is reputed to at least tolerate them. Clearly though this tolerance is not universal, with some cocksfoot cultivars severely impacted and threatened by this pasture grub attack.

Persistence has such great benefit and grubs are such a big threat to it, observations of resistance and tolerance deserve serious consideration.

IN BRIEF

- Pasture species and cultivars vary in their capacity to withstand and recover from pasture grub attack.
- Phalaris generally resisted the grubs, suffered less damage, and continued to grow.
- All cocksfoot cultivars suffered severe defoliation, with recovery variable. One cultivar is recovering more capably.
- The resilience of phalaris should not be overlooked whilst the tolerance of cocksfoot cannot be assumed. Cultivar choice is important.
- Further information about the Derwent Catchment Project's pasture network trials and information is available at pasturenetwork.org

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KNOW YOUR LIMITS

UNDERSTANDING LIMITATIONS TO PASTURE PRODUCTION

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Pasture growth is a response to many factors interacting to produce biomass for grazing. It is a product of the biological capability of the plants, the environmental resources available to fuel growth, and the management and grazing decisions we apply that affect growth.

Understanding the limits affecting pasture growth is a key step to making changes to grow and graze more.

LIMITATION

At any time, pasture growth is realised up to the point of the most limiting factor or least available resource. At that point no further growth response is possible, no matter how sufficient the supply of other resources. A limit has been reached.

Addressing one limit can boost growth up to the point where another resource or factor halts further increase. It's likely that that a series of limiting factors will need to be addressed to optimise growth. Limiting factors need to be considered together.

DIMINISHING RETURN

For any single factor, there is an upper threshold where more of something makes no improvement. Only so much is needed. As that threshold is approached, the benefit per unit of additional resource supplied also reduces, reducing return on investment.

FOR EXAMPLE

Limits in action:
Sub clover leaf size responds to nutrition.
Here P and K increased leaf size in winter.

Small leaves in the control were not just due to the cold, but due to P and K limitation.

Adding nitrogen alone without addressing the P/K limit, had no effect.

Limitations are well illustrated in terms of fertiliser responses. If soil potassium is limiting pasture growth, it doesn't matter how much there is of other nutrients, additional growth will need additional potassium.

If potassium is applied it will boost growth either to a new level of potassium limitation, or to the upper limit of potassium requirement, or to a point where another limiting factor comes into operation. Even within fertiliser alone, multiple limiting factors may need to be addressed to increase growth.

Our fertiliser example also reminds us that every paddock is different. Each may have a different fertiliser or management history effecting the limitations at work. We also need to consider that nutrient is only one type of limit.

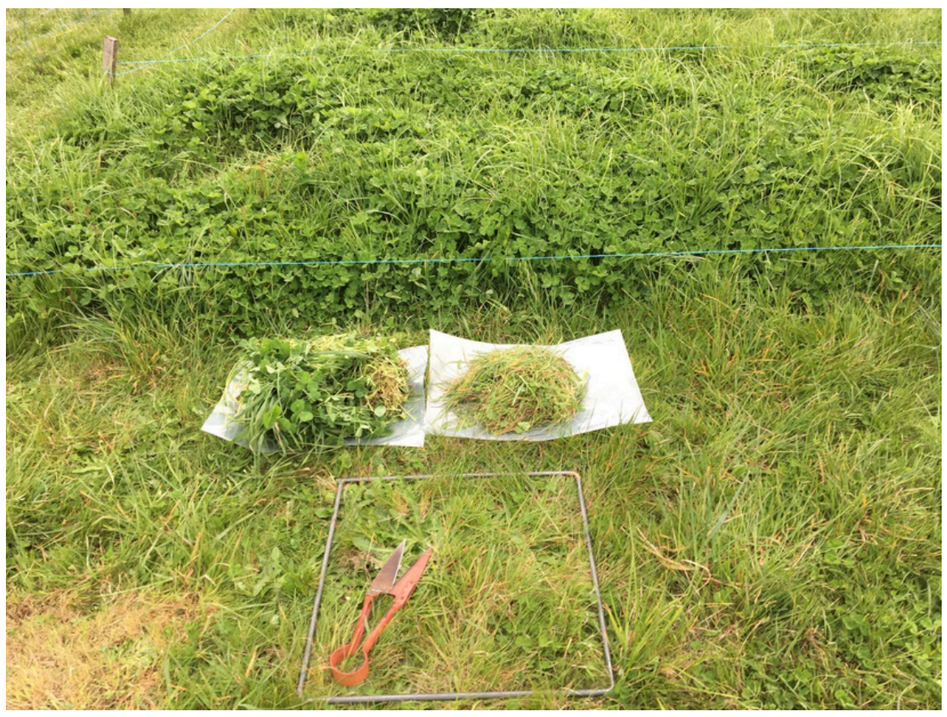
KEY LIMITS

- Soil nutrition - core considerations of N, P, K, Mo, pH.
- Pasture species - weeds or improved sown species, annual or perennial.
- Grazing management - rest, re-grazing, biomass, leaf stage, leaf area, wildlife.
- Light- modified by the pasture canopy intercepting it.
- Temperature- modified by shelter, biomass.
- Water – modified by groundcover, organic matter, root depth, irrigation.

LOOK, MEASURE, CHANGE

Every pasture provides clues about the limitations it has. The species present can indicate nutritional stresses, hint at grazing impacts on preferred species or the availability of bare ground for weeds.

Leaf size, plant colour, shoot density, plant size, % bare ground, also provide clues. Soil testing can provide information. Rest from grazing can provide growth opportunity. Each can help identify what limits are at work. Look, measure, change.



Limits addressed. A pasture and growth transformed.

IN BRIEF

- Pasture growth is always limited by some factor or factors.
- Pasture species have differing growth capabilities.
- Temperature, light and rainfall are key limits to growth. We can modify their impacts.
- Soil fertility is a key limit. It’s far more than phosphorous alone.
- How the plants are managed and grazed has a huge impact on growth.
- Identifying the most limiting factors is essential in planning to improve growth.
- Addressing one limit can have a big impact, but often more than one must be managed.
- Further information about the Derwent Catchment Project’s pasture network trials and information is available at pasturenetwork.org

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SEED-SOIL CONTACT

THE IMPORTANCE OF GOOD SEED-SOIL RELATIONS

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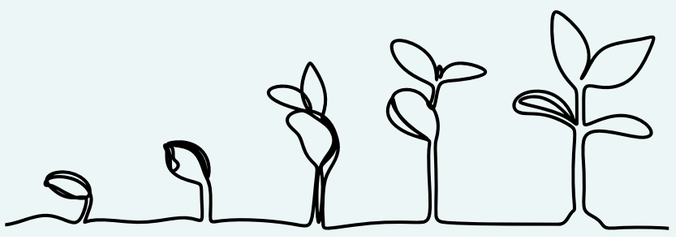


Seed-soil contact is essential to getting germination off to a speedy and uniform start, or in fact just getting it going at all. This factsheet presents observations from a series of five trials where we direct drilled pasture into north-facing slopes.

OBSERVATIONS FROM PASTURE TRIALS

In difficult terrain where soil, slope, wind, and water all contribute to erosion risk, direct drilling is a preferred sowing method. Even on less prone sites, direct drilling may be used to reduce soil disturbance or disruption, retain soil moisture and organic matter, and simplify the preparation for sowing.

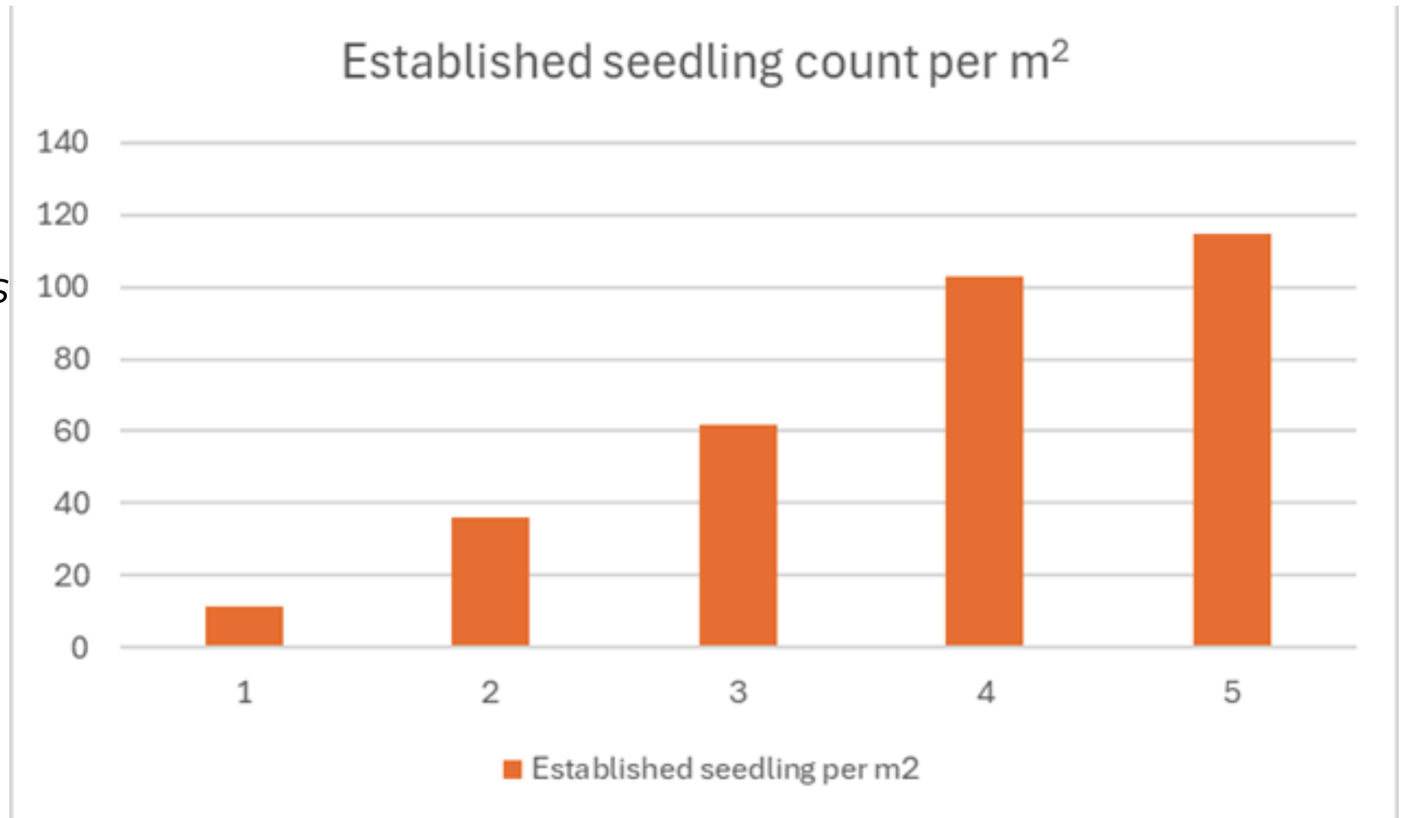
Some direct drill processes can however complicate seed-soil relations. The impact of this can be easy to underestimate when other threats loom large. Sowing rate, sowing depth, seedling vigour, weed competition, pasture pests, rainfall, all have their impact on pasture persistence too.

Our trials support an association of increased sowing success with use of a pre-sowing forage crop and sufficient time between spray kill and ultimate sowing.

Pasture Persistence Trials

GRAPH 1: Establishing seedlings at five direct drilled sites, with different pre-sowing preparations and herbicide sprays

Site 1: Sprayed once days prior to sowing
Site 2: Sprayed once weeks prior
Site 3: Sprayed twice over prior months
Site 4: Prior crop + multiple sprays
Site 5: Prior crop + multiple sprays



SITE OBSERVATIONS

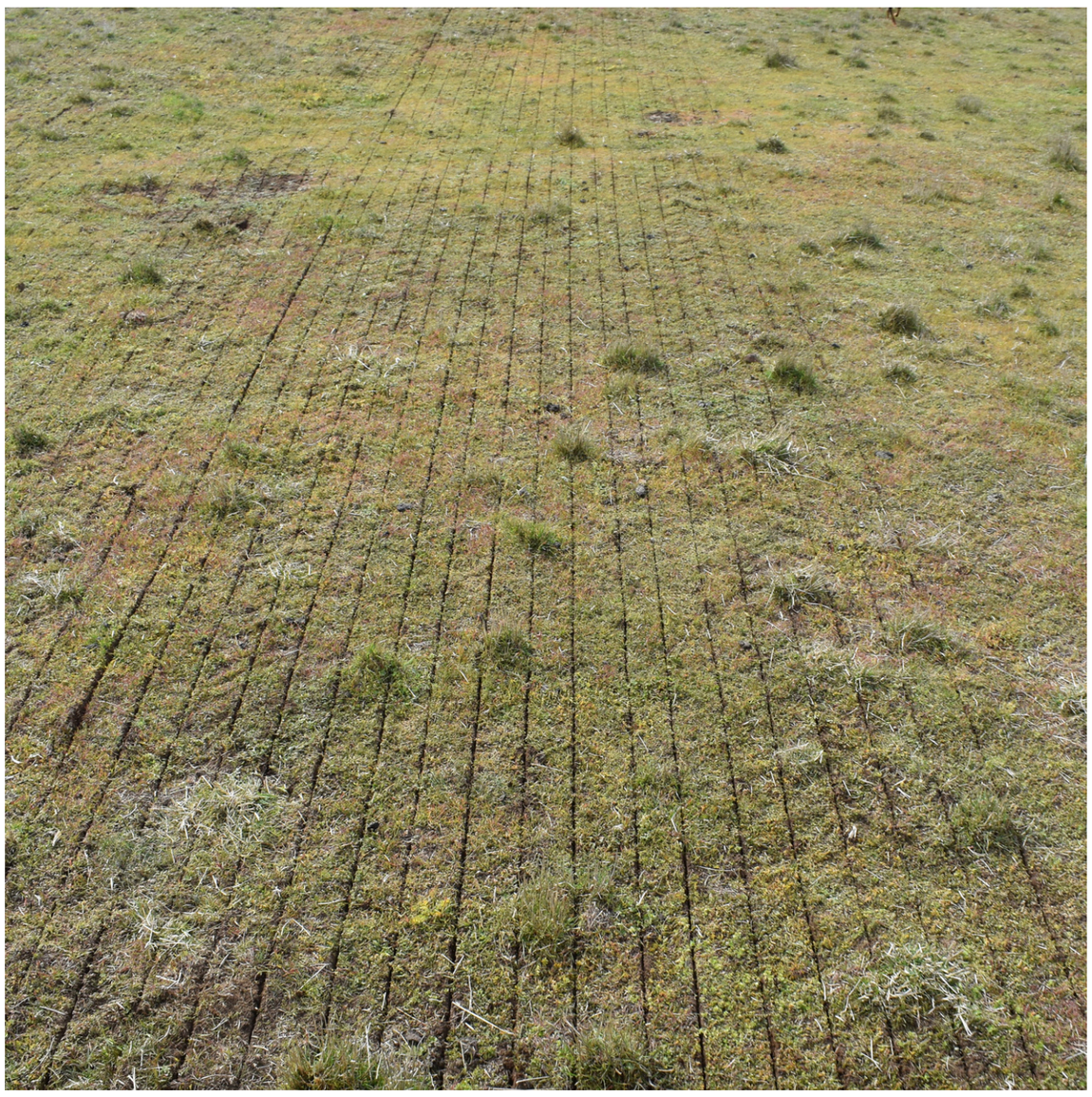
Site 1: This sowing was drilled into pasture sprayed days prior to sowing and displayed poor drill slot closure. Still living roots and vegetation contributed to poor soil cover of seed, exacerbating other negative environmental impacts and ultimately leading to seedling establishment failure.

Site 2: This sowing was sprayed once weeks prior to sowing and displayed similar impacts to Site 1 whilst supporting a more viable but suboptimal germination and establishment.

Site 3: This site was sprayed twice in the months prior to sowing. Persistent annual grass trash interfered with drilling and germination, but it nevertheless performed better than Sites 1 and 2.

Sites 4 & 5: Sites were forage cropped prior to sowing and sprayed multiple times, allowing for effective root and surface trash breakdown. The combined elements of more effective weed control and adequate seed-soil contact were associated with improved early establishment in these two sowings.

Plenty of seedlings establishing after plenty of prep. Seed with just enough soil coverage in the drill lines provided a great start to a long journey.



Site 2: Dying turf and binding roots keep the drill slots open, reducing seed-soil contact and increasing risk to germination and seedling establishment.

Unpicking the keys to success or otherwise of sowing pasture is a consideration of many variables. Each can have a pivotal impact on success or failure.

Adequate preparation is a key success factor and at these sites more thorough site preparation was associated with increased seedling establishment.

While seedling establishment is only one factor in overall success, it is an important one. Without good establishement, you are limiting pasture success from the very start.

IN BRIEF

- Direct drilling can present difficulties for achieving adequate seed-soil contact.
- Lack of uniformity of sowing depth, poor drill slot closure and interference from retained pasture trash can all cause problems.
- Review of the five direct drilled trials indicated a positive relationship of seedling establishment with a preparatory forage crop and a sufficient time interval from herbicide spray to sowing.
- Observations suggested soil tilth, drill slot closure, and seed-soil coverage were improved by adequate breakdown of spray-killed pasture residue and roots, and by the additional cultivation effect of direct drilling a pre-pasture forage.
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