

Protecting your soil from Stock Damage: Herd homes, feed pads and stand-off pads

Why protect your soil?

Soil structural damage can reduce pasture and crop yields and restoring structure can be an expensive and lengthy process. Under certain conditions, stock can cause significant damage.

Pugging is caused by stock when soil is so soft that hooves sink into it, compacting the soil and creating an uneven surface. Pugging is especially bad when the ground is wet after prolonged rain or irrigation and can be made worse by intensive stocking. Cows generally cause more damage than sheep or deer. Silt and clay loams are most susceptible to pugging as they hold more water and are made up of finer particles.



Badly damaged soils next to a waterway

What are the benefits of protecting your soil?

- Stock damage to soil is reduced, protecting the physical structure of the soil during wet periods.
- Pasture production loss due to compaction and soil structure damage is reduced: Pasture damage due to pugging can reduce annual yield by over 30%.
- Grass growth in spring is optimised.
- Higher stocking rates are possible.
- Soil run-off and the risk of ponding is reduced.
- Pads or homes provide a site where supplementary feeds can easily be feed to cows.

Herd homes, stand-off pads and feed pads help to prevent or minimise soil structural damage by stock.

Herd homes are barns used to house and feed cows. The roof of a herd home is made of plastic or clear polythene, which allows in light to kill bacteria. The floor is made of slatted concrete panels, to allow effluent to be collected in an underground bunker.

Feed pads are generally separate hard surface areas, used specifically for feeding stock supplements from racks or bins. Sometimes this type of supplement feeding is incorporated into raceway feeding: this consists of a concrete runway leading to and from stand-off pads or the dairy shed with areas for feed bins.

Stand-off pads are purpose built, free-draining areas, used to withhold stock from pasture to prevent pugging. There is no provision for feeding. The pad surface is often compacted wood chip bedding/sawdust or a metal mix.



A herd home. Photo courtesy of DairyNZ.

Minimising muck, Maximising money:

Stand-off & feed pad design & management guidelines' is available from DairyNZ. This guide will help you design the system that will best suit your farming operation.

Environmental considerations

Pads and homes can help protect your soils, but need to be carefully managed to avoid negative effects on ground and surface water.

Regulatory requirements

Environment Canterbury's Proposed Natural Resources Regional Plan has rules, WQL25 and WQL29, that apply to the design and location of herd homes, stand-off pads and feed pads. Providing you can comply with these rules, then the use of land for herd homes, stand-off pads and feed pads is a permitted activity and you do not need resource consent. If for some reason you cannot comply, then you will require resource consent.

A further rule, WQL26, states that discharge of effluent to land is a controlled activity and you require a resource consent to spread effluent from the holding areas to land.

Depending on your location there may also be other plans or rules you need to consider. Call Environment Canterbury for full details to ensure you comply with these rules, if you have any questions or for more detail on how to apply for resource consents.

Location & design of pads

- Pads should not be located near waterways, lakes, wetlands, bores or soak holes.
- Pads should not be located in areas prone to flooding or ponding due to heavy rainfall (1 in 5 year event).
- The pad, effluent storage facilities and all associated infrastructure shall have an impermeable base, such as concrete.
- A suitable nib-wall around the edges of the pad will prevent effluent run-off. Effluent from the pad needs to be directed to a sump.
- Dairy industry regulations state that no pad should be located within 20 metres of a dairy shed.

Riverbeds have sometimes been used as winter feeding areas. This practice is unacceptable as it damages riverbanks and reduces water quality by creating sediment and faecal contamination.

Did you know?

Because they have relatively small hooves for their bodyweight, cows exert almost twice as much downward force on the soil as a tractor.

Minimising the amount of effluent produced

- Prevent storm water from entering the pad.
- Design pads or homes to maximise cow flow and comfort. The less time the cows spend on the pads, the less effluent they will produce on the pad.
- Minimise cow stress through gentle management prior to yarding.

Collection & disposal of effluent

- All effluent and run-off should be collected and treated in the same way as dairy shed effluent.
- If you are going to use an existing effluent disposal system, you will need to ensure that the system can cope with the increased volume. Your existing consent will also need to be changed to include this extra volume.
- Storage facilities need to be able to store at least the maximum volume of effluent produced in any three day period as well as any stormwater runoff resulting from heavy rainfall (1 in 5 year event).
- Applying effluent to land is a way of recycling waste and can boost pasture yield. You will need to expand your existing effluent irrigation area to cope with any increase in quantity. You require resource consent to spread effluent on land.
- Effluent applications in the same place should be at least six months apart.
- Effluent can not be applied within 40m of a lake, 20m of a bore or soak hole or 10m of a permanently flowing stock water race or river.

Other considerations

- Ensure the water supply at the pad is adequate.
- Allow for safe disposal of waste feed products.
- Provide shelter for animals.



Feed pad on a Canterbury dairy farm.