



Changing TIMES

In the second of a three-part series, environmental consultant SALLY LINTON looks at what climate change means for horse owners

In my last environmental column (NZH&P, April issue) I looked at the contribution that horses have made to climate change. The good news is that as hindgut fermenters, horses have far lower emissions of greenhouse gases than ruminant animals, such as cattle, sheep and deer.

However, this does not mean we horse owners can ignore climate change, as our properties contribute to greenhouse gas emissions (albeit less than other pastoral properties), and we all need to consider the effects of climate change on how we manage our land.

In New Zealand, we are already experiencing increased frequency and intensity of extreme events such as higher temperatures, flooding, droughts and wildfires, which not only impact how we operate our horse properties but also impact our communities, infrastructure and resource-based economy. It is worth noting that these climate changes may also bring opportunities, such as being able to grow new crops, so it may not all be bad news.

Mitigation and adaptation

Mitigation and adaptation are the two key strategies to managing and living with climate change.

Mitigations are actions that will reduce greenhouse gas emissions to limit further climate change, such as increasing sinks by planting trees which absorb these gases.

Adaptation is the ongoing process of adjusting to the actual and expected changes to the environment resulting from the greenhouse gas emissions which have already been released into the atmosphere, and those that may be released in the future. Adaptation is finding ways to manage change and requires planning, flexibility and preparation.

In this article, I will explore opportunities for mitigation on your equine property. In the next one, I will look at how we can better adapt to the impacts of climate change now and into the future.

Options for mitigation

There is significant research being undertaken on greenhouse gas mitigation options for New Zealand farming. While there is currently little in relation to the equine sector, with the focus on ruminant animal properties (dairy, sheep and beef), some of these findings are still applicable to horse properties.

It is easy to dismiss the equine sector's role in climate change mitigation in that the sector is small; as discussed earlier, horses don't emit as much as ruminant animals; and because the sporthorse sector has relatively small properties compared to those in pastoral farming.

However, the message that Government is trying to get out – and one that I support – is that we all have to do our bit, as lots of small bits add up to a big bit. Also, not doing your bit undermines any gains that are being achieved by others.

So, what can horse property owners do to reduce greenhouse gases?

1 Plant trees

Tree-planting is an excellent mitigation option. While the government is promoting the planting of large forests as part of the Emissions Trading Scheme, the planting of any and all trees and shrubs goes towards mitigating the effects of

climate change. As trees grow, they help stop climate change by removing carbon dioxide from the air, storing carbon in the trees and soil, and releasing oxygen into the atmosphere.

Using trees for shade and shelter also provides a better environment for your equine friends. For some ideas and recommendations on planting native trees on your property, see my article in the September 2020 issue of *NZ Horse & Pony*.

Also, if you have waste or wet areas on the property that are difficult to manage, it is often more cost-effective to retire areas than to have a constant battle trying to maintain a pasture cover. Ideally, wet areas should be reinstated as wetlands which not only help in reducing greenhouse gases but also filter nutrients from waterways and provide habitat for native species.

As all plants absorb carbon dioxide and therefore mitigate climate change effects, maintaining grass cover is another mitigation tool. As I have written about in previous articles, over-grazing, decreasing pasture mass and opening up pastures has other negative impacts including weed growth in bare areas, increase in mud during wet periods and sediment loss to waterways. Good pasture management to maintain a dense pasture sward have multiple benefits to your property, including combating the effects of climate change.

2 Composting

The composting of dung heaps can reduce greenhouse gas emissions. However, it needs to be done correctly,

HOW TO MAKE GOOD COMPOST

To compost horse manure, you will need a good mix of compostable material (not just manure), have it reach a temperature of 80°C, and stay at that temperature for a couple of weeks. To do this, it's recommended you create a pile at least 2m across at the base, so it has enough mass to keep up the critical temperature for the required time.

You could use some old netting to form a circle to keep it in place. Build up a layer of manure around 15cm deep, making sure it is damp but not

wet (hose it if it's too dry).

Add a handful of nitrogen-rich granule fertiliser if you wish. Then add a 20-30cm layer of brown material (eg. tree clippings, old hay/straw). This will compact. Repeat these steps until the compost pile is about 1m high. Your end-goal is to have a pile of compost that is 50% manure, 50% other additives. Leave it for at least six months. You can check it after a week to see if it's steaming, or you can buy long thermometers at gardening stores to measure the temperature.



Making compost out of horse manure is one way to help reduce your greenhouse gas emissions, as well as improving your soil health. Reduce plastic waste as much as you can

as incorrect composting will have the opposite effect. The use of compost provides numerous greenhouse gas benefits, both directly through carbon sequestration and indirectly through improved soil health, reduced soil loss, increased water infiltration and storage, and reduction in other inputs such as fertiliser.

Making good compost is a bit of an art, takes time and will need space to be able to leave each pile for at least six months. If you are able to make good compost, it will reduce your need for fertiliser – another significant source of greenhouse gases. Alternatively, see if you can find a local composting firm who will take your horse manure away for composting.

3 Reduce, reuse and recycle

Plastics are the main culprit here; the majority of packaging is in some form of plastic. See if you can reduce the amount of plastic you use, reuse plastics you have where possible, and recycle plastics that you have no further use for (see my article from the November 2020 issue for more on dealing with plastics).

Does your one horse really need 20 rugs, 10 saddle blankets, six sets of bandages and five bridles? Consider the carbon footprint of making each of these items; and remember, any polyester

component is petroleum-based. Many products are imported, so have done a fair few air or sea miles to get here. Rationalising your horse's wardrobe is not only good for the planet: it also has a positive impact on your wallet.

4 Vehicle maintenance

While the agricultural sector gets the most media coverage, it's in fact the transport sector that is New Zealand's biggest greenhouse gas emitter. For most horse owners, it is likely that a sizeable chunk of our greenhouse emissions will be from the vehicles we use to transport our equine friends on a regular basis.

While currently there is no cost-effective transport alternative that will reduce emissions, many of the major vehicle brands are developing electric utes as well as committing to stopping producing combustion engine vehicles in the next five to 10 years.

There are already electric trucks

available here that will take a horse box conversion. Although the battery range for EV trucks is currently only about 200km/charge, a battery swap option is now being developed. I doubt it will be long before there will be battery swap stations where you can get the battery changed in the time it takes to order a cup of coffee.

But until EV towing and truck vehicles become more readily available, the best thing you can do to minimise your vehicle emissions is to keep your maintenance up to date, rationalise your usage where possible, and ensure your tow vehicle and float are loaded correctly.

To conclude, everything we buy, use and do has created in its production or will create in its use, greenhouse gas emissions. We can still enjoy our equine friends and reduce our footprint by only purchasing what we need, using what we have more efficiently and effectively and recycling goods at the end of their life wherever possible.

Just as I completed this article, the Climate Change Commission released its final report and recommendations to Government. If we don't meet these targets, along with the rest of the world, next month's article on adaptation will become compulsory reading. ■

ABOUT THE AUTHOR



Sally Linton is an environmental consultant who lives on a lifestyle block just outside Cambridge. She has spent most of her career working with the dairy, dry stock and horticultural sectors, and her current focus is working with the equine industry to improve its environmental performance. Sally has ridden all her life and has also been on the boards of both Eventing NZ and the NZPCA.