

# Adapt... OR DIE

In the third of her three-part series, environmental consultant SALLY LINTON looks at ways horse owners can manage climate change effects on their properties

**L**ast month I looked at options for the mitigation of climate change emissions on equine properties and the need to slow – or ideally, halt – those emissions. If the world is unable to meet the necessary climate change targets, we are going to have to be able to adapt to increasingly more severe climate events. And even if we do successfully act to control our collective emissions, some degree of change will still occur, so we need to plan now.

This month I will look at what sort of adaptations we need to consider for our horse properties, now and into the future.

Adaptation to climate change means altering how you manage your property and horses, as a result of the changing climate. Successful adaptation requires preparation, and not being merely reactive to the changing climate.

## Extreme weather events

We are already seeing the effects of climate change, with more droughts and floods. While we have always had both droughts and floods in New Zealand, they will come with increased severity, and there will be more of them. I started writing this in early June, as Canterbury was experiencing a one-in-a-100-year flood event, on the back of another drought.

The issue is not that these weather events occur, but rather the intensity and the increasing regularity of them.

While Canterbury desperately needed rain to break the drought, the hundreds of millimetres of rain it got, resulting in severe flooding, is likely to set back pasture recovery even further.

As New Zealand is two long, relatively skinny islands, some regions will get both droughts and floods, other regions will have more flood events and others more

Widespread flooding is becoming much more common

drought events. How you adapt to these will depend on where you live. For more information on climate change impacts in your region check out the following: [niwa.co.nz/climate/research-projects/our-future-climate-new-zealand](http://niwa.co.nz/climate/research-projects/our-future-climate-new-zealand)

### Adapting for drought

Coping with drought is all about preparation. You need to expect that you will have a drought, rather than panicking when you are already in drought conditions. The main issues for horse owners during drought conditions are water supply and feed supply, along with adequate shade.

**Water:** If you are on tank water, or taking water from a stream or dam, you need to have a plan for if in an extreme drought the supply dries up. Waiting until you have no water is a disaster, not to mention a serious animal welfare issue. Water carriers often have a two- or three-week waiting period in a normal dry year, so it's likely to be even longer when there are a lot more people needing water. Therefore, always keep a careful eye on your supply so you know how much water you have and how long it will last, so you can order well before it becomes a critical issue.

Even if you are on bore water, don't be lulled into thinking a bore means you'll always have water. Bore water comes from underground aquifers which can get low, just like storage tanks – it all depends on where the bore is, and who else is using the aquifer.

Water conservation is an important aspect of managing water in dry periods. Once you have had to pay for a few tankers of water, the term 'liquid gold' starts to ring true. Ways to save water



FROM LEFT From one extreme to another; we need to accept this will be normal ABOVE Kikuyu, or 'couch grass' is becoming more widespread throughout the North Island

include only sponging your horses off rather than hosing after riding, and capturing and re-using water wherever you can. Watering your arena or hosing out your truck will probably be a luxury that will need to be foregone.

Most regional councils have rules that will come into effect in extreme dry periods. You will be aware of the rules that have applied to Auckland in regards to urban supply, but in severe events these will also apply to rural areas and may limit your water usage outside domestic use to stock drinking water and essential activities, like for milking cows.

Note that regional council rules apply to all water takes, both from streams and bores, whether you have a consent or not. Being aware of your council's rules and when they could apply will help with your planning in an extreme drought. If you happen to be connected to an urban supply, it will be the district or city

council rules and you probably have already been impacted by summer water restrictions.

If water supply is likely to be a problem for you, alternative ways to get access are worth considering. It could be as simple as installing an additional water tank and harvesting off your roof, or, if you have enough land, building a small dam. (Note that you may have to get a consent to construct a dam; check with your regional council).

**Feed:** The other major issue in a drought is grass growth, or rather the lack thereof, and feed supply generally. While this seems counterintuitive, the biggest piece of advice I can give in regards to your pastures in drought is don't over-graze. Overgrazing down to nothing will mean that when it does rain, your pastures will take much longer to recover, if they do at all, and if you have to re-grass it will mean another three to four months with no grazing. Protecting your pastures and keeping a grass sward of at least 5cm, preferably longer, will mean your paddocks bounce back to a grazable pasture much faster when the rain does come.

If grass is scarce, hay and baleage are going to be in demand and the saying "Make hay while the sun shines" (or more correctly while the grass grows) is a great way to prepare for drought conditions. If you grow surplus feed in the spring, making your own baleage or hay is a great insurance policy for a dry summer or wet winter. With good management you don't need a lot of land to get a

surplus. Last year on my 1.5ha effective (the grazable land) with three horses on it, I was able to make over 110 small baleage bales and around 80 conventional bales of hay, and the horses weren't on any more restricted grazing than normal. I will admit it was a good season, and in a dry year we might have only got the baleage off.

A big advantage of baleage is that it can be stored outside until needed, whereas hay will need a shed of a reasonable size if you are going to have enough to get you through a dry period. If you end up with a surplus, you can always sell it later on.

If you are unable to grow your own hay or baleage, you should buy a good supply when there is plenty around, rather than wait until you're in the middle of your dry period, as feed sources not only become scarce but you will find yourself paying double or even more – often with transport costs on top if it is coming from out of your area.

It is a good idea to plan as to when you will need to buy in feed, and for guidance on when a drought is likely Niwa produces a seasonal outlook three months ahead at [niwa.co.nz/climate/seasonal-climate-outlook](http://niwa.co.nz/climate/seasonal-climate-outlook)

### Adapting for floods

At the other end of the spectrum are floods, and when extreme rainfall occurs after a drought the damage is more severe as water cannot move easily through the soil profile.

If you are in an area which is prone to flooding, or could be impacted from the

effects of flooding, such as road closures, it is important to be prepared for a civil emergency event. The protection of yourself, your horses and other livestock is paramount. You need to be prepared to evacuate; if so, where you will go? Can you feed your horses for a week if road access is cut off and the paddocks are flooded?

While having a plan for a civil emergency event such as flooding is important (and equally important for a fire or snow event) adapting to climate change means thinking about how you will manage after the initial emergency has passed. You need to consider things such as pasture remediation and repairing or replacing fences and other infrastructure, how you will manage your horses while this occurs as well as the cost of replacement. Insurance becomes important, and having a clear idea of what your insurer will and won't cover will help with your planning.

If you are in an area that is likely to have more regular flooding events, you may have to seriously consider what you can do to reduce your exposure (or risk) to flood events. For example, can you move, fences, buildings, stables, or the dressage arena to a less risky location? You may even have to consider whether it is an appropriate property for you, especially if your expensive dressage arena is being washed away every four or five years.

And if you're on the cusp of buying your equestrian dream, do your homework; finding out the risks prior to purchase will save heartache in the future.

### More things to consider

#### Shade and shelter

If extreme weather events are going to become more regular, you are going to need to consider providing shade and shelter if you don't have them already. This should be, if possible, somewhere that will keep your horses safe and secure in an extreme weather event and also provide adequate shade during periods of hot weather. It could be stables or covered yards, but a hard stand area on higher ground, planted with shade and shelter trees, that considers wind direction and sun position during the hottest part of the day will also work. In designing, you need to consider easy access during an extreme weather event, and access to water and feed.

#### Change in pasture species

As the climate changes, so will the type of pasture species. A classic example is kikuyu, a subtropical grass historically only found in Northland, but which is now found throughout the North Island. Meanwhile timothy, a common horse grass species, is not particularly drought-tolerant so will be difficult to establish in drought-prone areas. If you are in a drought-prone area it would be worth looking into deeper-rooting pasture species such as cocksfoot, tall fescue and prairie grass, which are more hardy and drought tolerant.

In warmer areas you may increasingly find the less-palatable summer grasses taking over your paddocks, especially if the pasture has have opened up from

## 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.

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**ABOVE** Preparation for drought includes ensuring you have ample fresh water, being organised before your tanks actually run dry

over-grazing. Even in well-managed pastures, warm weather can see the rampant growth of paspalum, couch, summer grass and bristle grass. The problem with these grass weeds is that there are limited options that will selectively control them and not also kill the grasses you wish to retain.

### Pests and diseases

Milder winters and warmer weather is bug paradise, not only for existing species but, in the future, it will increase the risk of new tropical species establishing here. Management and control of diseases and pests will become increasingly important to ensure the welfare of our horses.

Be aware of existing and potential pest species, and how best to manage these before they become a problem. It's worth noting that, while not a climate change issue, over-reliance on chemical control methods, whether for worm treatment or herbicides for weed control, is creating chemical resistance, making the pests and diseases harder to control.

Use environmental controls wherever possible (eg. resting paddocks, mucking

out and cross-grazing to reduce worm burdens), and work with your vet, using chemical control only when necessary.

### Feed sources

When we need feed for our horses we currently rock on down to the local feed store to get what we want, being mildly annoyed if our preferred brand is not available. Increasing droughts will potentially decrease yields or could even make it unviable to grow the grains and fibres we currently feed. Decreased crop yields will mean increased demand from other consumers of these products – humans and agricultural stock. This could not only mean feed scarcity, but will also drive up the price.

Preparation here is to know where your feed is grown, and if there are any risks to ongoing production, talk to your feed merchant and find out what concerns they may have for future supply. ■

## CONCLUSION

While we are already seeing some of the impacts of climate change, such as longer and more regular droughts and more severe storm events, other things such as feed scarcity, restricted water availability and increased pest and disease outbreaks could be just around the corner. A lot depends on how we – and the rest of the world – tackle and reduce climate change emissions. However, we need to be prepared to adapt and change the way we manage our properties and horses, and that starts with having a plan so you are prepared if the grass doesn't grow or the rain doesn't stop.