

## Global challenge

Vet Danny Chambers considers the impact climate change could have on our horses, and looks at how owners need to adapt to cope with the challenges



### OUR EXPERT

Danny Chambers graduated from vet school in 2008. He works at Ardene House Veterinary Hospital, Aberdeen, a member practice of XL Equine.

Climate change has been a major concern of the scientific community for years. Increasing global temperatures over the next few decades are going to cause a rise in sea levels and changes in weather patterns worldwide.

This will affect the geographical areas where some animals, plants and insects can survive.

They may die out in certain areas, and be able to survive in areas they never existed before.

Obviously, the very nature of climate change makes it difficult to predict, with the media claiming every hot summer, flood or cold snap is due to this phenomenon.

Scientists are more interested in measuring long-term trends rather than the actual weather in specific years.

So what has been predicted for the UK? Computer simulations suggest that the average temperature in Britain will rise by about four degrees centigrade by 2080.

The effect will be slightly warmer, wetter winters with a much higher incidence of heavy downpours that will cause flash floods and river flooding.



Could severe flooding become an annual occurrence in the UK?

Photography: Shutterstock.com/kastianz

Let us consider how this could impact on our horses, and the way we manage them...

### Flooding risks

The government estimates that 330,000 properties are currently at risk of flooding, and this could increase to over a million by the 2080s.

As we saw in early 2014, extreme flooding in Somerset caused huge amounts of land to be under water for weeks.

Livestock and horses had to be evacuated, alternative temporary stabling found and extra feed brought in from other areas of the country to replace what had been destroyed by floodwater.

This caused untold expense and stress to horse owners and farmers.

The question is, will this become an annual occurrence over larger areas of the country? In the future it is possible some people will have to accept that their property is simply not suitable for keeping their animals on during the winter.

Others will have to make contingency plans, including alternative stabling for horses available at short notice when flood warnings are issued.

It is essential to act quickly and not wait until your land is under water and it becomes an emergency operation to move the horses.

### Wet pastures

The less extreme consequences of warmer, wetter winters is that fields are more at risk of being waterlogged and churned up.

This will put horses at greater risk of conditions such as rain scald, mud fever and foot abscesses.

Be proactive during the drier months of the year to reduce the risk of land becoming boggy – such as installing better drainage and creating all-weather areas for horses to stand in the dry.



Warmer, wetter winters will put fields more at risk of becoming waterlogged



“Computer simulations suggest that the average temperature in the UK will rise by about four degrees centigrade by 2080”

### Soaring temperatures

Conversely, the predictions for UK summers are that they will be warmer and drier over the next few decades.

Although this sounds idyllic, it means an increased chance of droughts and uncomfortable temperatures for our horses.

In a drought, keeping horses supplied with fresh, ad-lib water when streams or mains water supplies run low could become a logistical nightmare, and potentially a huge expense.

Depending on their size, horses can drink around 40 to 60 litres of water per day, and significantly more in hot weather.

If you own two horses, it would require many thousands of litres per week being brought to them during dry periods.

Dehydration is a problem during prolonged spells of intense heat and can cause issues of its own. In hot countries such as India, where water is often scarce and the food dry, impaction colic (a blockage in the intestines) is common.

We may have to change our riding habits and hack or school early in the morning or during the evening, to take advantage of cooler conditions.

If you compete you will need to consider whether this is an option if heat is intense, and ensure that horses are rehydrated and given electrolytes as necessary.

### The risk of disease

The average UK temperature has risen by about one degree centigrade since 1970 and the veterinary industry has already noticed some

effects of climate change on the diseases that vets commonly treat.

For example, the dog lungworm (*Angiostrongylus vasorum*) used only to be diagnosed in the milder climate of the South West, but in recent years cases has been creeping further north.

Bluetongue disease affects sheep and cattle and is caused by a virus that is spread by midges.

The disease has travelled from Africa into Europe, and in 2007 was detected in the UK for the first time. It was a great burden on the agricultural industry and many farmers had to shoulder the added expense of vaccinating against this new disease.

The concern for the horse world is that viruses and insects which were previously unseen in



## Vet Report

the UK will begin to cause disease among our equine population.

The virus that causes African Horse Sickness (AHS) is closely related to bluetongue and is spread by the same type of midge.

If our climate has altered in such a way that bluetongue can enter the UK, there's a risk AHS can do the same.

A horrific disease, AHS causes horses to develop a high temperature, laboured breathing and nasal discharge.

Most worrying of all, the disease has a high death rate – 90 per cent of infected horses can die during an epidemic.

Another illness, West Nile Virus, has moved from Africa into Europe. It is spread by certain species of mosquitoes and while never before detected in the UK, some of these particular

mosquitoes have been identified in the north Kent marshes, along the Thames estuary.

### The threat of lyme disease

Ticks are biting insects that thrive best in warm, moist environments where there is plenty of shade.

Woodland, heather, bracken, dense long grassland and ferns provide a suitable habitat.

They are mostly seen during the spring, summer and autumn months, although warmer wetter winters could mean that they remain active all year round.

Their life cycle in the UK typically takes three to four years to complete, but in warmer climates this can be reduced significantly.

Ticks thrive in warm, moist environments



Ticks can be an irritant in themselves when they attach, and in very extreme cases a large number of ticks feeding off the blood one animal at the same time can cause anaemia.

They also transmit the bacteria that causes Lyme disease, a debilitating illness.

While currently rare on our shores, this could change if the numbers and activity of ticks increases due to climate change.

### Grass growth concerns

Horse owners are familiar that fast-growing grass, typically in spring but any time there is a sudden warm wet spell causing a flush of grass, contains a lot of sugar.

This causes horses that suffer from equine metabolic syndrome (a condition similar to diabetes) to develop laminitis if they consume too much sugar.

Many owners manage laminitis by only allowing their horse – or more typically, their pony – out on grass during the winter months, when the grass is less rich and barely growing.

Warmer wetter winters will provide a better environment for grass to grow, thus extending the growing season.

This is ideal for dairy farmers who need as much grass as possible for grazing or for silage, but lush farmland can be a death sentence to a pony prone to laminitis.

Those prone to laminitis may have to be kept off fresh grass, even during the entire winter.

The plus side of grass having a longer growing season and a hotter, drier summer is that it should be easier to harvest good quality hay.

### A modern disease

The latest disease to concern horse owners has been atypical myopathy (AM).

The exact cause of AM – which results in muscle stiffness and kidney failure and is often fatal – is yet to be fully described. However, it is believed sycamore seeds are to blame.

By looking at comparisons with similar human conditions, it was discovered that a toxin, hypoglycin A, appears to be responsible for the clinical signs. The toxin is present in the seeds of the sycamore tree.

It causes damage and death of the cells that make up muscles. All muscles in the body are affected, including those responsible for movement, breathing and heart function.

Weather conditions, such as temperature, rainfall, the strength of wind and soil quality, will affect the number of seeds produced, seed dispersal and the concentration of substances produced in seeds and fruits by trees in general.

What has not yet been researched is how our changing climate may affect the levels of toxin in sycamore seeds, or the number of seeds produced by the trees.

What has been confirmed is a sharp increase in cases of AM in the UK and Europe since 2000, and this is a recurring theme with diseases affected by climate change.

Warm wet weather encourages grass growth, which could put horses more at risk of developing laminitis



All over body rugs offer protection from biting insects

## The consequences for sweet itch sufferers

Midges not only spread deadly viruses like African Horse Sickness (see page 79). They are also responsible for causing the hypersensitivity reaction known as sweet itch.

Horses suffering from sweet itch will rub themselves constantly, severely damaging their skin in the process.

They need to be carefully managed by limiting their exposure to midges during the high season, which is currently from April until the end of September.

Typically, native UK midges spend the autumn and winter as larvae in the soil. They emerge as adults in the late spring/early summer.

There is then a second wave of adults emerging during late summer that

produce the larvae that will emerge next spring.

However, the recent trend for warm, damp summers can lead to a third wave of adults emerging in early autumn, resulting in a longer adult (biting) season and more larvae overwintering, ready to emerge en masse in the following spring.

Warmer summers and milder winters may result in horses being exposed to a greater density of midges, and for an extended period of the year.

This would mean management factors, such as all over body rugs, keeping horses stabled during dawn and dusk, insect



Climate change is bad news for sweet itch sufferers

repellents and medications would have to be implemented more strictly to cope with extra midge numbers over longer periods.

The survival rate of this disease is low and identification of symptoms by owners early on is key to successful treatment.

Signs to look out for are:

- Lethargy and dullness;
- Difficulty breathing;
- Muscle weakness, stiffness or colic-like symptoms;
- Dark or red-coloured urine;
- Dark (red or purple) coloured gums.

It is not known for certain whether this emerging disease is due to climate change, but if so, it is likely that we will see other new conditions arising over the next few decades.

### Allergies on the increase

Many horses suffer from breathing problems which are similar to human asthma.

These problems are normally caused by an allergy to the dust that is found in

stables, pollen during the summer or a mixture of both.

In hotter summers, pollen counts tend to be higher causing humans with asthma and horses with recurrent airway obstruction (RAO) to struggle with their breathing.

If horses have to be stabled for longer periods during the winter, due to wetter weather, much greater care will have to be taken by owners to ensure a dust free environment, including increasing ventilation, soaking hay and providing dust-free bedding.

### Internal parasites

It is likely that a warmer, wetter winters will increase the worm burden horses are exposed to when grazing.

By 2080, unless many new drugs have been developed, there will be significant or complete resistance to the wormers we currently use.

This means that pasture management, rotational grazing, removing manure from the pasture, faecal worm egg counts and other management factors will be even more vital in preventing disease and deaths due to these intestinal parasites.

### Looking at the positives

Climate change is a very real issue and one that will start to affect us more and more in the future.

What we can do now is recognise how it is likely to affect our own individual horses, and take appropriate action.

While, unfortunately, most of the consequences of climate change are negative, or require more work on our part to manage our horses, at least we can look forward to more enjoyable riding if summers are warmer. Also, milder winters would make the early morning mucking out a slightly less painful task. ■