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# FLOOD ALERT - Managing Horses During a Flood Crisis

by Dr John Kohnke BVSc RDA

The recent floods in 3 Australian states have highlighted the plight of horses during a flood crisis. In fact over 100 horses were lost on a single stud during the flash flooding in the Toowoomba area and Lochyer Valley during the early part of 2011.

Although many consider that horses are naturally strong swimmers and are observed to tread water for hours and can escape rising flood waters during a deluge, foals, young horses, pregnant mares and aged horses are often unable to swim against a raging current of cold, fast flowing water during a flash flood. They may be able to escape if they have access to higher ground, but may be restricted by fences which can lead to entanglement and hamper their escape. Horses are less likely to panic as they do in the face of a bushfire, but early evacuation to higher ground is paramount.

In contrast to horses in the path of a bushfire where they may be able to be evacuated on foot or on a trailer to a safe zone, often flood waters are much more hazardous because of the creeping, insidious nature of rising water and the uncertainty of the depth and current as it approaches.

## Major Considerations

An evacuation plan should be put in place to move horses from low lying areas in advance of the flood waters.

1. If flood warnings are broadcast on radio or television, it is imperative to heed the advice and arrange for horses to be moved to higher ground or allow self access through a gate to a safe area above the estimated peak height of the rising water. If you are unable to move the horses by trailer to a safe area, then ensure that they have their own free access to higher ground, even arranging with a neighbour to allow you to cut a fence or open gates. It is unwise, as some suggest, to turn them free up a roadway to allow them to escape, as this can lead to risk of vehicle accidents and injury to the horses themselves on barbed fences or uneven ground on the sides of the road. If the dry high ground is limited in area as an island, then check the pasture for poisonous plants or trees, such as Oleander, (sudden death due to gastritis), Oak

### Handy Hint

#### Salvage wet hay promptly after a flood

If you have hay stored in a shed or in a paddock hay shed, ideally it should be stacked on pallets to prevent moisture uptake from the ground. After a flood, hay can be salvaged in many cases if the stack is pulled apart and wet bales removed to reduce the risk of them going mouldy and ruining the bales around them. Hay which is stacked tightly together will resist water penetration for a few hours and only the outer bales may need to be removed. However, do not attempt to dry out and feed flood soaked hay to horses or other livestock as the flood water is likely to be highly contaminated and at risk of causing diarrhoea or gut infection. Use it for mulching the garden or as bales for preventing erosion on bare, cut ground in a water course or sides of a roadway on a slope, ensuring it is fenced off to prevent access by horses.

### Handy Hint

#### Protect stored hay from rain or seepage

Make sure that the hay stored on high ground is kept as dry as possible, placed on logs or posts to reduce ground contact and water uptake. Do not cover hay or other feed directly with plastic covers to prevent rain damage as it is likely to sweat under the plastic and develop moulds which could cause colic. Always place timber over the hay to keep the plastic or iron sheets from touching the hay and ensure some ventilation around the hay. Likewise for stores of hard feed and chaff on higher ground in a flood emergency.

trees (risk of Stringhalt from new shoots and leaves) or Flame trees (sudden death), for example. Potentially poisonous plants such as flat weed and dandelion (Stringhalt) and bracken fern shoots (diarrhoea and nervous conditions) may affect horses forced to graze them over a 2-3 week period. If moving horses to a 'home' paddock near a house built on higher ground, be aware that some ornamental garden plants are poisonous to horses, so restrict access to garden beds if possible.

Remove flymask, headstall and rugs - In the event that a horse might have to swim to higher ground during a flood emergency, it is important to remove anything that could catch on trees or fenceposts. A rug could weigh the horse down while swimming and is also a catching hazard.

Identify Your Horses - Many horses are now microchipped, but if your horse is not, consider getting an identifying microchip inserted. Record your horse's brands and take a photo of your horse(s) and keep it in a safe place so that you have a record for identification. In an emergency situation, a plastic key tag tied in the mane is cheap & the hard plastic won't melt. An engraved metal 'dog tag' is preferred. Write his name and your phone number (mobile) and address on the reverse side with a black waterproof pen.

2. Plan to have a reserve of feed available in a dry place above the estimated water level, so that horses have access to hay especially as heavy rain can reduce grazing time and ability for horses to meet their demands for energy and protein, particularly if the flood lasts 5 - 7 days or longer.
3. Ensure that foals, growing horses, pregnant and lactating mares, as well as aged horses and ponies have hay or some hard feed to help maintain their energy, protein and fibre needs. In fact, lucerne hay at the rate of 1 biscuit (2kg) per 150kg body weight, or 3 - 4 biscuits for the average 500kg horse, or approximately 1.5% of body weight of dry feed, provides the energy and protein needs for flood stranded horses without the need for a complicated hard feed mix. A supplement of trace-mineral and vitamins, such as **Kohnke's Own Cell-Vital®**, or **Cell-Grow** for pregnant, or lactating mares and foals in a small volume of chaff will help to correct shortfalls in the hay or minimal amounts of hard feed.

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4. It is most important that heavily pregnant pony and Thoroughbred mares are given at least good quality hay and if possible a hard feed daily to avoid the risk of them developing potentially fatal hyperlipaemia as a result of starving if confined to high ground, especially if they need to share food with other horses, cattle or other livestock taking refuge on high ground. Hyperlipaemia can be triggered in fat ponies and horses if they are unable to graze during wet weather, flooded pasture areas or have limited access to feed to maintain their energy needs for as short as 12 hours during a flood crisis. Hyperlipaemia is a genetic and breed related syndrome in ponies, some Thoroughbreds and even donkeys. It develops within 1 - 2 days under reduced or low feed intake and if not recognised within 3 - 5 days of onset, is often fatal within 8 - 10 days from the start of feed and water deprivation.

## Handy Hint

**Observe heavily pregnant pony mares for early signs of Hyperlipaemia.**

The problem is more likely under cold conditions, and in heavily pregnant mares, as energy reserves are depleted much more rapidly. The early signs are depression, loss of appetite and weight loss as the animal's body literally runs out of energy due to a metabolic block caused by complexing of protein to fats (lipoprotein complex) in the liver as the susceptible animal attempts to mobilise its fat reserves to meet its energy needs. Check the horses daily, even if they are being given hay and examine the hay, especially if it is raining and soaked, to ensure that they are actually eating the hay or hard feed. If you observe these signs a few days after a flood has covered the grazing area or cut off access to pasture, then call your vet immediately to seek advice.

5. If horses are able to escape the rising flood water and reach higher ground, they are likely to have to share it with a variety of friendly and not so friendly animals, including snakes, lizards, rabbits and other animals as they too attempt to flee to high ground above the water line. It is possible that horses can be bitten by snakes also seeking refuge, and on a small area of high ground surrounded by an expanse of water, it can become crowded if there are no logs or undergrowth for shelter for snakes. If you visit the horses by boat, and particularly if you wade into water to reach them with food, always wear clothing to cover your legs and arms and closed footwear in case you come into contact with snakes or other potentially harmful 'critters', or walk on debris deposited by the flood waters. Do not take a dog or children with you as they could have a high risk of being bitten by a snake. Snakes can become aggressive if disturbed or annoyed by a dog.

## Disease Issues

Probably the hardest issue to confront in a flood, although there is plenty of water surrounding the horses for them to drink, is that the water is likely to be highly contaminated! Flood waters often pick up harmful bacteria such as Salmonella spp, E. coli, Giardia and other potential water borne harmful organisms carried in run-off from bird roosting areas, cattle and other animal yards, as well as septic systems and sewerage treatment areas where the flood has invaded and carried these organisms into the flow of water.

Horses drinking contaminated water, especially foals and aged horses with lower immunity, are at risk of ingesting gut pathogens and developing diarrhoea, which is often difficult to treat if they cannot be isolated or moved to a less contaminated area for treatment. Even water from mains can become contaminated, although water stored in a tank on higher ground and reticulated to taps or troughs is likely to be safer for horses to drink, provided that the pipes have not been damaged by the erosion of fast flowing flood torrents. If you need to transport feed each day to a high ground area by boat, take a tub and a drum of fresh water for the horses to drink.

## Insect Borne Diseases

High rainfall and flooding during the warmer weather facilitates mosquito breeding which can increase the risk of insect transmitted diseases, such as Ross River Fever, which has been reported in humans in a number of areas in Victoria over recent years, as well as annoying bites and allergic skin reactions to 'mozzie' bites in thin coated horses. Horses are susceptible to Ross River Fever, with a high temperature (fever), loss of appetite, depression and weakness which develops 7 - 10 days after the virus is introduced by infective mosquitoes.

One of the most disturbing reports from the North Queensland floods is that fruit bats are invading southern orchards in search of food and they have the risk of carrying highly fatal Hendra virus that can infect humans and horses, which is shed in higher amounts when the bats are under stress such as forced relocation or starvation.

## Skin and Hoof Problems

Horses which are confined to water-logged yards, high ground areas and continuous periods of rain, are at risk of developing soft hooves, especially the hind hooves of heavily pregnant mares which are carrying the extra weight of their foals (an extra 70kg for a 500kg near term mare). Application of preparations, such as **Kohnke's Own Hoof-Seal** on alternate days can assist to maintain moisture content of the soles and frogs. Keeping the hooves as dry as possible will help reduce the risk of sole collapse and other wet weather conditions, such as Thrush in horses standing in their own droppings when confined to a small area.

## Handy Hint

**Apply 10% Iodine to the hooves, lower legs and top-line**

Other conditions, such as Greasy Heel, Rain Scald and a higher risk of swollen lower limbs due to infection of lacerations (cuts), must also be managed during a flood crisis. If you note that the horses are becoming sore footed because of the damp conditions or the repeated rain showers which cause Rain Scald to flare up along the top-line, take a bottle of 10% Betadine® or Vetadine® PVP slow release iodine with you when visiting with feed. Paint the soles of the hooves and apply the iodine solution to the lower limbs and along the top-line if Rain Scald scabs are evident. Leave the iodine on the hooves and top-line for 10 minutes to release the iodine to help control surface infection. If it is raining, there is no need to rinse it off, but do not apply it to the head above the eyes as it could wash into the eyes as a horse grazes or eats its food and cause eye irritation. If it is not raining, then rinse off the iodine after 10 mins with a small volume of clean water. Repeat the iodine application every second day for best results.

## Handy Hint

**Take steps to avoid 'Mozzie' worry**

Don't forget that following a flood, often pools or lakes of water remain for some time, which facilitate mosquito breeding. If you are aware of high populations of mosquitoes in your area following a flood, cover yourself with appropriate clothing, and your horses with a light rug against insect bites and apply a suitable repellent, such as long acting Flygon each night to reduce 'mozzie' worry. If 'mozzies' are aggressive, then it is best to shift the horses to another location to reduce the risk of allergic reactions. Ultraviolet 'mozzie' zappers may be useful if located on the outside of the stables.

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## After the Floods

In most cases, it is best to wait for at least 7 - 10 days after the flood water has receded before moving the horses back onto the pasture to allow the soil and pasture to dry out and recover. This will help prevent soil erosion and 'pugging' damage to the pasture and reduce the risk of hoof problems from the water-logged ground. After a flood or heavy rain, ensure that you remove any uneaten feed from feed bins left in a paddock and put it in the garbage as it may develop mould within a few days. Hungry horses returning to the pasture may be tempted to eat the spoiled feed or hay.

Although you may rejoice that your horses have survived the flooding and are well, you must be careful to observe them for signs of stress related colic, that the food and water is not contaminated and that Mud Fever does not lead to severe skin infections as the paddocks dry out. Check them thoroughly each day for the first 7 - 10 days after the flood in case they develop infections in lacerations or hoof infections and abscesses due to the wet, contaminated ground. It is good practice to give a tetanus booster to horses which have not been given a booster shot during the past 2 years. Consult your vet for advice.

One of the most common problems is the contamination of the grazing areas with faecal matter and sand. If sand is deposited onto the pasture and grazing area, it will cling to the plant stems and leaves and be ingested as horses hungry for a green pick, forage on the pasture. This can increase the risk of sand colic as quite significant volumes of sand can be ingested. It is important to avoid these grazing areas if the pasture appears to be loaded with sand. Although follow up rain will wash the sand off the plants, it may take some time before the pasture has a low risk of causing sand colic. Horses may also be tempted to eat weeds such as thistles drowned by the flood water, and even pasture grass such as ryegrass, cocksfoot and fescues as they become sweet as they wither and may cause diarrhoea or excess sugar intake in a horse or pony with underlying Equine Metabolic Syndrome (EMS) and trigger an episode of founder.

### Handy Hint

#### Check out paddocks before restocking with horses

Receding flood waters are often highly contaminated. Walk the paddocks to pick up flood debris, and sticks and check for damaged fences, loose and broken wires and erosion, before allowing horses to return to their pasture or yards. Provide feed and hay in bins to reduce the uptake of potential harmful bacteria, and if necessary, fence off ponds and water pools to prevent horses drinking highly contaminated water, especially as the water dries up and becomes more concentrated in potentially harmful organisms and contamination. It is important to remove and bury any dead animal or bird carcasses to reduce the risk of botulism in horses grazing near the decaying carcasses.

And lastly, if you had to move your horses in the flood emergency, make some plans for evacuation in the event of another flood in the future, especially if you have low lying flat paddocks. If your paddocks are likely to flood next to a creek, then it may be worth considering building a flood mound on the highest part of the paddock and locating a water trough there so that horses can walk to higher ground under minor flood situations. A suitable size is 20 metres by 60 metres (a full size dressage arena) which is large enough for 4 horses for a few days with feed brought in daily. If possible locate a flood mound next to a built up roadway, linked by a bank for easy access or escape, in the event of a flood.

