

Assessing bush fire burns in livestock

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Emergency Management Unit

WARNING: This document contains pictures of animals burnt in bush fires. These pictures may cause distress to some people.

This Primefact is provided as a guide for those staff assessing livestock burnt as a result of bush fires. The short-term and long-term welfare of the livestock is the prime concern.

Introduction

Many factors need to be considered when assessing burnt livestock. Factors include the immediate and long term welfare of the animals, the severity of the burns or injuries, the impact of the injuries on the animals' productivity and the availability of feed and water. The advisors and assessors must be mindful of the impact of the fire on the livestock owners. Some landholders may be in a state of shock or euphoria after having experienced or survived the disaster. In this state they may not be able to make rational decisions especially ones that are in their stock's long term interest. Repeat assessment of the livestock and continuing support for the owners will often need to be considered and/or provided.

Options for dealing with burnt livestock

a. Destruction

At the time of a fire, owners of burnt stock are often distressed. It is important that people involved in the assessment and destruction of burnt livestock are qualified and provide sound information to owners. Sound advice will ensure that landholders are spared additional stress through the needless destruction of stock or belated destruction of stock.

The decision to destroy injured stock should be made on welfare grounds.

Stock should be assessed by a veterinarian and records kept of the type, numbers and condition of animals killed directly by the fire or destroyed due to injuries.

After the assessment, livestock identified for destruction can be mustered into a corner of the yard for humane destruction. This is a more efficient and safer method than allowing people to roam around paddocks shooting animals. Only those animals that would suffer severely if moved or those that cannot travel should be destroyed where they are. During the destruction of livestock only the people

that are experienced and need to be involved should be present.

Livestock that show signs of obvious distress should be immediately treated by a veterinarian or be humanely destroyed without delay.

b. Keep, nurse and reassess

Animals that are mobile and alert and have burns that do not warrant immediate destruction are candidates for retention provided that veterinary care, facilities, labour and suitable feed are readily available **and** the owner is willing and able (both physically and emotionally) to undertake this often difficult task.

Where intensive veterinary treatment is available it may be worth attempting to save very valuable animals that have burns or injuries. In any event, treatment is likely to be a long and arduous process with no guarantee of success and the welfare of the animals is paramount.

Any stock retained need to be re-assessed regularly (initially on a daily basis and then every 2-3 days) and should either receive veterinary treatment or be humanely destroyed should their health deteriorate.

How to assess burn injuries

Assessing burn injuries is never easy and even with the most conservative assessment some livestock may deteriorate later due to burn injuries that are initially not obvious. It is therefore important that all burnt livestock be reassessed several times after the fire. Veterinary assistance should be sought as soon as practical if livestock start to

deteriorate or develop secondary problems after the fire.

When assessing burnt livestock several factors need to be taken into account before determining their fate. These include:

- the extent and severity of the burns and injuries
- the location of the burns
- whether the stock are pregnant and time of gestation
- any concurrent illnesses the stock may have
- the general body condition of the stock
- the age of the stock
- the facilities available for nursing
- the owners ability and willingness to nurse burnt stock (both physically and mentally)
- whether the type of property permits intensive care of stock
- the quality and quantity of feed and water available
- veterinarian's experience in assessing burnt stock.

Examination procedures are divided into two phases.

Emergency phase

The emergency phase occurs during or immediately after a fire. Destruction of stock at this time is essentially based on humane grounds. Severely burnt animals that are either unconscious, in obvious distress or are unable to get up or walk should be immediately destroyed.

Emergency destruction is warranted in the following cases:

- animals with severe charring of limbs, muscles or facial tissues
- animals suffering from smoke or flame inhalation resulting in acute pneumonia as evidenced by laboured breathing, frothing at the nose and mouth and coughing
- animals which are down and unable to rise because of burn injuries
- animals which are reluctant or unable to move
- inelastic skin or swelling of lower limbs in the first 24 hours post fire
- substantial swelling of the face in the first 24 hours post fire.



Figure 1 Sheep close to death, unable to get up, with burns to all bare skin areas should be destroyed



Figure 2 Burnt legs with severe swelling - warrants destruction



Figure 3 Extensive damage to underlying tissues in cattle warrants destruction (photo: Local Land Services)



Figure 4 Extensive damage to underlying tissues (bottom) - warrants destruction

Delayed phase

The delayed phase usually commences a day or so after the fire and may continue for some time afterwards. Where possible, the stock should be yarded so that each animal can be examined closely and be

critically appraised. Yards in close proximity or temporary yards can be used. The assistance of livestock owners and managers should be sought for mustering and identification of livestock, but it is important to consider the feelings of these people as they may be too upset or shocked at witnessing burnt and injured livestock and/or their destruction.

Sheep are more prone to fire injuries than other livestock. They tend to be driven before a fire in a mob and pack against fences or in gullies where they are burnt or suffocated. The types of burns often reflect this behaviour with animals on the outside of the mob being burnt. Those in the middle sometimes escape injury completely.

Singed wool is not always a good indicator of the severity of a sheep's burns. Sheep in full wool are less likely to have severe burns than sheep which are off-shears. The outside of the fleece can be quite charred yet the skin under the wool may be completely unaffected. It is important to be aware that apparently mild burns to vital areas may result in rapid deterioration, suffering and death.

For these reasons sheep need to be carefully examined and turned up for a closer inspection. It is important to reassess sheep daily for the first few days or if that is not possible, consider erring towards destroying the animals with apparent less severe initial burns.

The areas that must be closely examined on each animal include: the face, ears, lips, anus, vulva, teats, penis, prepuce, scrotum, axilla, inguinal areas, legs and the feet.



Figure 5 Animal with severe burns to the face and eyes should be destroyed on humane grounds

Sheep with the following burns/injuries should be destroyed:

- severe burns which have destroyed areas of skin making it split and slough away to more than 10-15 % of their body or to vital body parts (i.e. feet, inguinal areas)
- major swelling of limbs
- lame sheep with lost hooves or separation between the hooves and coronary band. Separation between the join of hoof and skin often occurs after fires and leads to loss of hoofs. While it is likely that new horn will eventually regrow, the animal will be in pain for considerable time and prone to flystrike or secondary infections leading to loss of condition. Also, regrown hoofs are often deformed making the animals more susceptible to foot problems. Unless pain relief and good consistent nursing can be provided the sheep should be destroyed.
- pneumonia through smoke inhalation evident by respiratory distress
- facial burns that interfere severely with eating, drinking or breathing.

Goats are more susceptible to stress than sheep. They are generally less protected against radiation burns because of their hair-coat. For this reason it is important that each animal be individually inspected including a close examination of the skin. Otherwise, assessment should be undertaken as for sheep.

Cattle generally manage to escape the full force of a fire, and are burnt only if they are trapped against fences or other obstacles. Teats and udders in females and penis, scrotum and prepuce in males are commonly affected and in some instances this may result in secondary problems (i.e. mastitis). Frequent reassessment is needed to ensure the normal function of these organs returns, otherwise animals should be culled.

Burns to feet will often result in painful conditions and cattle are reluctant to walk and feed. Prolonged treatment with antibiotics may be necessary. Repeated veterinary assessment is often required.

Owners need to be aware that nursing injured cattle can be costly, take a long time and be emotionally and physically draining.



Figure 6 Burnt feet with damage to the join between the hoof and skin a few days after the fire



Figure 7 The same sheep two weeks later with some separation of the join between the hoof and skin and outpouring of watery fluid. The sheep recovered uneventfully without losing the hoof



Figure 8 Burns to the udder and legs requires monitoring (photo: Local Land Services)



Figure 9 Burnt feet with hoof detachment - requires monitoring/destruction (photo: Local Land Services)

Horses, like cattle, will usually escape from the path of the fire. Horses with quite severe burns will often respond well to intensive veterinary treatment even though this may be tedious and expensive. Veterinary advice is essential if this option is to be pursued.

Pigs are very susceptible to heat stress and will often die from this alone. They do not withstand burns well and all pigs that have received burns should be destroyed.

Poultry are also very susceptible to heat stress and will usually die as a result. Those that survive a fire will normally recover without treatment. In order to reduce further stress to the survivors any birds that are injured and need destruction are best removed at night when other birds are roosting.

Nursing burnt stock

Animals that are assessed and not destroyed in the 'emergency and delayed phase' should be placed in a 'hospital' paddock or yard where they can be inspected regularly and nursed.

Points to consider and ensure are:

- place stock on the softest most level ground available, especially if their feet are burnt
- provide ready access to good-quality feed and water. Burnt animals are reluctant to move and usually do not eat for a few days. They should be given high-protein feeds such as good lucerne or meadow hay.
- inspect animals often enough to ensure they are able to move to water and drink. Animals which are unable to drink should be destroyed
- try to provide access to good shade

- remember to control worms especially after rain
- check all animals regularly for signs of flystrike, both on burnt areas of the body and on the feet and treat if necessary
- some animals may benefit from long acting antibiotics to treat secondary infections - seek veterinary advice.

Re-examine and reassess stock daily for at least a week after the fire and then 2-3 times weekly for a further 2-3 weeks. Humanely destroy animals as necessary based on these assessments. Particular attention should be given to mobility, inappetence and development of respiratory signs.

After the fire, longer term availability of nutrition or agistment needs to be assessed. Livestock owners should be made aware of assistance.

Methods of destruction

As a guide follow the directions given in the Primefact 310 *Humane destruction of stock*.

NSW Department of Primary Industries (NSW DPI) and Local Land Services (LLS), through the Local Emergency Operation Centre, can assist in coordinating the destruction and disposal of livestock.

Further information

NSW DPI and LLS have a responsibility for agricultural and animal welfare issues resulting from emergencies and will provide emergency support in these situations. Contact can be made through the Local Emergency Operation Centre in charge of the operation.

If you require assistance with any aspect of the examination and aftercare of burnt livestock contact your veterinary practitioner or a District Veterinarian with Local Land Services.

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