

Assessing and caring for alpacas after bushfires



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(These notes are based on information provided by the Victorian Department of Agriculture Notes for sheep and cattle available at <http://agriculture.vic.gov.au/agriculture/emergencies>)

Soon after a fire, alpacas need to be examined (Table 1) and divided into one of four different groups according to injuries sustained. You should seek professional assistance from Department of Agriculture livestock inspector teams and your local veterinarian to assess your stock and implement a recovery program. The initial concern is to destroy suffering livestock.

Animals must be yarded if able to walk to allow adequate individual inspection. If too severely burnt, they may require immediate euthanasia. Sites to be inspected include lips, muzzle and eyes, feet and lower legs, inside the front and back legs, and around the tail/sheath/udder. Wool is a good insulator and will protect the body from intense radiant heat so recently-shorn alpacas may be more severely burnt. The outer fleece may be charred but underlying skin undamaged in heavier fleeced animals. You must take into account that animals require minimal damage to lips so they can eat; eyes/eyelids so they can see food, water and shade; feet and lower legs, inner thighs and forelegs so they can walk to troughs and shelter; anus and genitals so they can defaecate and urinate normally without increased susceptibility to fly strike; udder of lactating females so they can continue to feed crias. Animals will fall into one of the following four categories.

1. Animals requiring immediate euthanasia.

- Animal welfare must be uppermost in decisions. It is not acceptable to allow animals to suffer for extended periods.
- Severe burns to more than 10-15% of the body where skin is destroyed, splitting and sloughing; animals that are unconscious/semi-conscious.
- Extensive damage to feet and legs with swelling of legs and where skin is dry and leathery.
- Nails/foot pads coming away from foot/feet exposing foot bones.
- Burns to face generally heal well however severe burns to face and eyes will lead to inability to eat/see/breathe, weight loss and death.
- Injuries that could become infected including skin injuries and lung injuries secondary to smoke inhalation – burns are very susceptible to bacterial infection causing tissue infection and pneumonia.

2. Animals for salvage slaughter.

- Animals not euthanased immediately must be re-examined in 2-3 days to re-assess their viability and welfare. Check face, ears, feet, lower legs, teats, anus and between the legs. Salvage slaughter is unlikely to be available to alpacas as few abattoirs will accept alpacas. Owners will need to contact local knackeries to see if they can salvage slaughter alpacas only if fit for transport.
- Severe burns may not be obvious at first but after 2-3 days skin appears dry, scorched and leathery. There may be swelling, oozing of fluid and/or skin sloughing.

3. Animals to be confined to a small area, nursed and re-assessed every 2-3 days to monitor progress.

- These animals will be mobile and alert with moderate burns to less than 10-15% of their body.
- You must have adequate facilities – suitable yards with soft, even surface/fencing/feed/water/shade/labour/time and consider that recovery may take months. Offer high protein feed such as lucerne hay or good pasture hay (green and leafy not yellow and stalky).
- Inspect alpacas daily and seek veterinary help/euthanase any deteriorating alpacas and any unable to drink. Make sure scabs do not form over sheath/vulva impeding urination. Check feet and burnt areas. Animals will be reluctant to move and will not feed for a few days.

- Plan with your local veterinarian treatment options including long-acting antibiotic cover, wound management and dressings for wounds, fly control.
- Females with crias at foot must be checked to see that their udder is functional and they are allowing cria to suckle (weigh crias to monitor weight gain).
- Avoid transport of these animals over long distances and remember welfare responsibilities when loading alpacas (<http://www.animalwelfarestandards.net.au/links-and-publications/>).

4. Animals without apparent injury.

- These animals may have singeing of wool/hair but have sound feet. They need yarding and re-assessing every 5 days with particular attention to breathing problems secondary to smoke inhalation as clinical signs may take some days to develop.

Table 1. Assessing burns in domestic livestock (Braddon, Australian Cattle Veterinarians Conference Hobart 2015).

Presentation	Description	Action Taken
Severely burnt, unable to rise	Usually total body burns, head swollen, legs swollen and skin stiff, feet sloughing or about to	Immediate destruction
Severely burnt, but standing	Total body burns, head swollen, often appear blind, stand on own, skin of legs is swollen and leathery	Immediate destruction
Feet - all four blistered	Signs of moisture due to ruptured blisters and in some cases lift already occurring	Immediate destruction
Feet – varying	Some feet affected with blister formation, animal is mobile	Destroy / Salvage / Hospital pen???
Udder / Prepuce / Inguinal area	Tissue is swollen, has a blanched appearance, cracking or splitting of skin	Immediate destruction
Udder / Prepuce / Inguinal area	Some swelling, red and enflamed but no blanching	Salvage / Hospital pen / return to paddock??
Scrotum / Prepuce – Rams	Blanching of the scrotum, swelling of the prepuce, feet affected	Immediate destruction
Scrotum / Prepuce – Rams	Reddened, not swollen, feet ok	Hospital pen / return to paddock??
Anal area / Vulva	Blanched and swollen over both anus and vulva	Immediate destruction
Anal area / Vulva	Reddened and minimal area – sides of anal, tip of vulva	Salvage/ Hospital pen / Return to paddock???

If you decide to retain and nurse animals, the following factors need to be considered:

1. **Adequate feed, water and shade available over extended period.**
2. **Enough labour and time to tend to injured animals.**
3. **Inform insurance companies if involved.**
4. **Likely future productive and reproductive potential.**

Removal of dead stock

Quick, thorough disposal of dead stock is essential as carcasses decompose quickly and become a breeding place for flies. Specific agencies in Victoria that are responsible for carcass removal as a result of an agricultural emergency include:

- **Municipal councils** – co-ordinate clean-up including disposal of dead animals.
- **Department of Agriculture** – provides advice about disposal of dead/injured stock.
- **Environmental Protection Authority** – to ensure appropriate disposal methods are adopted so carcasses will not pollute surrounding land and waterways.

Disposal methods traditionally have been by on-farm burial. But there are a few other options to consider before initiating a major burial program:

1. Rendering into meat and bone meal and tallow

- Rendering plants are located throughout Victoria. You will need to check with individual companies to see if they will receive your stock.

2. Knackeries

- Knackeries prefer larger animals for commercial reasons such as cattle and horses and may not pick up alpacas.

3. Licenced landfill

- Disposing of carcasses in licenced landfill is an acceptable option in agricultural emergencies. Check that the landfill is licensed to accept animal materials. Many of these sites are owned by local government and are ready to use immediately.

4. On-farm burial

- You will need to consider the environment, local regulations, logistics and safety.
- The burial site should be on stable soil of low permeability, elevated land with slope < 5%, above the 1 in 100 year flood level, > 200 m from surface water (dams, creeks, rivers, springs), > 200 m from ground water supplies (bores), > 2 m above the watertable, > 300 m from housing, safe distance from above and below-ground structures (powerlines and gaslines) and out of public view.
- Operators need to cover carcasses with > 2 m soil, mound pits after backfilling to allow for subsidence and promote runoff, excavate drains upslope from pits to direct surface run-off away from pits, good accessibility for machinery.
- Where possible make a GPS recording for each pit.
- Preferred pit construction is a deep, narrow, vertically-sided pit (trench burial) dug with an excavator. Top-soil should be separated from subsoil for later return to top of pit.
- Recommended dimensions are 4-5 metres deep, with base > 2 m above watertable level; length depending on number and size of carcasses; 2 m backfill to be placed over carcasses.
- Approximately 5 adult sheep in good condition take up 1.5 cubic metre of pit-space. Adult alpacas (70 kg) are generally larger than sheep (50 kg) and will require a bit more space than this.
- Slashing of abdomens of carcasses (to reduce gas build-up) prior to burial should not be required in alpacas.
- Personal safety is essential and 2 people should always be at the pit site; have ropes available in case of wall collapse or person falling into pit; do not enter pit; wear gloves, overalls and masks.

Options for your healthy alpacas during recovery after the fires

Following the fires, owners will have suffered varying degrees of loss of stock/pastures/fences/hay sheds/farm buildings and machinery. There are many options for recovery including combinations of the following, but you will have to assess finances and farm resources (including water availability, feed availability and cost, equipment to feed out, duration of feeding, numbers of stock, classes of stock, feeding for maintenance or production) and base your decisions on your findings. ALLOWING STOCK TO STARVE IS NOT AN OPTION.

1. Sell stock

Identify healthy culls and sell as soon as possible before they lose too much condition. Maintain as many breeders as possible so you can build up numbers quickly after fires. Keep most productive animals (younger ones).

2. Buy in feed

If you have any dry pastures remaining, they will often provide more feed than anticipated. Plan ahead for the coming months: forward purchasing of grain and fodder. Remember that feeding is expensive and time-consuming. Body condition scoring (BCS) or weigh to monitor feeding. Maintain BCS at 2.

3. Stock Containment Areas (SCA)

Leaving stock on heavily grazed/burnt and vulnerable pastures can rapidly reduce remaining ground cover, leading to wind erosion problems initially (and later water erosion when the season breaks). It may be more prudent to “feed-lot” stock in a carefully selected area on your property to allow the majority of vegetation to remain and recover. Act early as trampling will put stress on already fragile land. Aim to start grazing paddocks after newly emerged seedlings have had adequate time to develop 3-4 leaves and adequate root systems. Grazing too early after the autumn break will delay pasture recovery.

The benefits of containing stock include protecting vegetation on the majority of the property, facilitation of stock feeding, watering, monitoring and handling, provision of shade and shelter and better control of weeds that may be imported in supplementary feed.

4. Agistment

Saves time feeding. Releases more feed for stock left on property. Compare costs with feeding at home if damage widespread. Possibilities of diseases, losses, transport costs if you run your animals on other properties.

5. Change mating, weaning and shearing times to reduce feed demands during recovery

- Early weaning - Cost of feeding a breeding female for 6 months (late pregnancy and lactation) is about 50% more than for a dry female.
- Save feed by delaying/not joining - Target maidens and older females first. Severe undernutrition of a female will decrease lifetime wool production of her cria and limit ability to conceive at next joining.
- Do not shear at cold time of year as animals require more feed to keep warm - Beware penalties for short/over-long wool.

Setting up Stock Containment Areas (SCA)

The point of setting up stock containment areas (SCA) is to protect vegetative cover on pastures and to facilitate stock feeding, watering and monitoring. If ground cover is less than 30%, wind (and water after drought breaks) will erode soil. SCAs will also protect newly improved pastures that may have survived the fires, contain weeds that may be in purchased feeds, and ensure maintenance of body weight when stock are losing weight on full drought rations in paddocks.

The SCA may be set up as a permanent structure for future emergencies and should have the following attributes:

- Moderate slope and well drained, stable soil like clay.
- Shade and shelter in lee of trees, (shadecloth if no trees), good drainage.
- Set area back from watercourses and dams by 500 m.
- No important remnant vegetation. Protect trees with guards.
- Reliable fencing with subdivisions to house different classes of stock.
- Sheep recommendations: Allow 5 square metres per animal. Keep mobs less than 500 animals.
- Close proximity to house and/or shearing shed but with minimal problems with noise and smell for you and neighbours.
- Consider access for vehicles for feeding/cleaning, ease of filling feed/water troughs. Place feed and water at opposite ends of yards.
- Good quality, reliable, reticulated source of water – Enough water trough space so 10% of mob can drink at once. Clean troughs regularly – clean water, troughs working. Put gravel around troughs to avoid boggy areas. Plan for 6 litres water per head per day, which can increase to 9 litres in hot weather and during lactation.
- Feed off the ground. Allow at least 40 cm feed trough space per alpaca. Use roof capping, shade cloth on fence, conveyor belting etc. Put gravel around feed troughs in high traffic areas to reduce dust.
- Consider early weaning of crias as lactating animals harder to manage in SCA.
- Yard adults, weaners and tuis separately.

- Vaccinate with 5-in-1.
- Worm drench into area and monitor parasite burdens using faecal egg counts (FECs).
- Start with 100% hay feeding. Use high protein feeds such as lucerne hay or good quality pasture hay (green and leafy not yellow and stalky).
- Feed daily for first 2 weeks.
- Weigh a group regularly to keep a handle on condition. Draft off shy feeders and put in separate yard (or pasture if possible) or sell.
- Allow ad lib hay/straw if budget can cope for happier, healthier alpacas.
- Maintain constant vigilance for sick animals. Common causes of death include grain poisoning, pulpy kidney, accidents, shy feeders, suffocation, flystrike and pink eye. Keep in close consultation with your local veterinarian for advice on prevention (and treatment as required).
- Avoid stress to animals (move quietly, do not use dogs), boggy ground (put down gravel around water troughs), overcrowding, dust (put down gravel around feed troughs to stabilise high traffic areas), irregular feeding times, sudden changes in feed type or quality.
- Clean yards/feed and water troughs regularly.
- Remove dung piles regularly.

Nutrition

Burnt animals usually do not feed for a few days. They generally regain appetite after about a week. Aim to feed high protein hay such as lucerne or green and leafy pasture/oaten hay (not yellow and stalky hay as this is not good enough quality) to facilitate healing of injuries.

How much to feed?

An adult alpaca that is maintaining body weight (not growing, not lactating, first two-thirds of pregnancy) will eat approximately 1.5% of body weight as dry matter (DM) per day. A lactating alpaca will eat approximately 2.5% of body weight as dry matter and growing animals will eat approximately 2.0% of body weight as dry matter. Table 2 gives a rough outline of what to feed different classes of stock. Bear in mind that the classes of stock that require the best quality feed are lactating females and weaners, followed by late pregnant and growing alpacas, followed by dry females, males and wethers.

Table 2. Nutrient recommendations for different physiological states.

Physiological State	Dry matter feed intake per day as a % of body weight	Actual hay intake per day (hay = 90 % dry matter)
Adult Maintenance	1.5 %	1.2 kg hay for 70 kg animal
Pregnancy (first 8 - 9 months)	1.5 %	1.2 kg hay
Pregnancy (last 2 - 3 months)	2.0 %	1.5 kg hay
Lactation	2.5 %	Approx. 2 kg hay
Cria (< 6 months)	2.0 %	0.3 kg for 15 kg cria
Juveniles (6-12 months)	2.0 %	0.9 kg for 40 kg weaner
> 12 months	2.0 %	1.2 kg for 50 kg tui

e.g. You own a herd containing the following classes of livestock:

Class of livestock	Number in group	Amount of hay required per day per head	Total amount of hay required per group
Females in the first-two thirds of pregnancy	20	1.2 kg	24 kg
Late pregnant females	10	1.5 kg	15 kg
Lactating females	10	2 kg	20 kg
Stud males	3	1.2 kg	3.6 kg
Mature wethers	15	1.2 kg	18 kg
Weaners	20	0.9 kg	18 kg
500 kg horse (2.2% DMI)	1	12 kg	12 kg

You will need approximately 110 kg hay per day (then add 20% for wastage). You may need to feed for 8 weeks so you will need to source more than 7 tonnes of hay (including wastage). Bales of hay vary in weight so weigh where possible for better accuracy.

To monitor your progress, you must continually monitor all animals using body condition scoring. Aim to maintain all livestock over BCS 2 (out of 5, using AAA score). If animals are losing condition, feed them more and if animals are gaining condition/wasting > 20% feed, feed them a bit less. If you have scales, weigh 20 alpacas from each mob regularly to monitor and record findings so comparisons can be made from week to week. Draft off shy feeders (the 10 % of each group that is losing condition when others are not) and place in a separate yard with best quality hay. You may need to supplement some classes of stock with lupins/oats (eg lactating females) if hay quality is not allowing maintenance of body condition. Introduce grain/supplementary feed slowly and make sure all animals have access to it simultaneously to avoid grain overload. All livestock may require vitamin A and E supplementation if there is no access to green feed for more than 8 weeks.

References:

Drought feeding and management of sheep. Ed: Jane Court; Agriculture Victoria, 2007. Free PDF copy at http://agriculture.vic.gov.au/__data/assets/pdf_file/0010/228295/Sheep-Drought-Dec07.pdf.

USE GOOD HUSBANDRY TECHNIQUES. KEEP GOOD RECORDS. WRITE DOWN TREATMENTS/MATING DATES/MEAT WITHHOLDING TIMES.

NO PRODUCTS ARE REGISTERED FOR USE IN ALPACAS. CONSULT YOUR VETERINARIAN AND ALWAYS READ THE LABEL BEFORE USING ANY OF THE PRODUCTS MENTIONED. NEVER USE ANY PRODUCT IN ALPACAS THAT IS NOT REGISTERED FOR USE IN FOOD PRODUCING ANIMALS.

FOR ANY SIGNS OF UNUSUAL OR SERIOUS ANIMAL DISEASE, RING THE DISEASE WATCH HOTLINE: 1800 675 888.



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