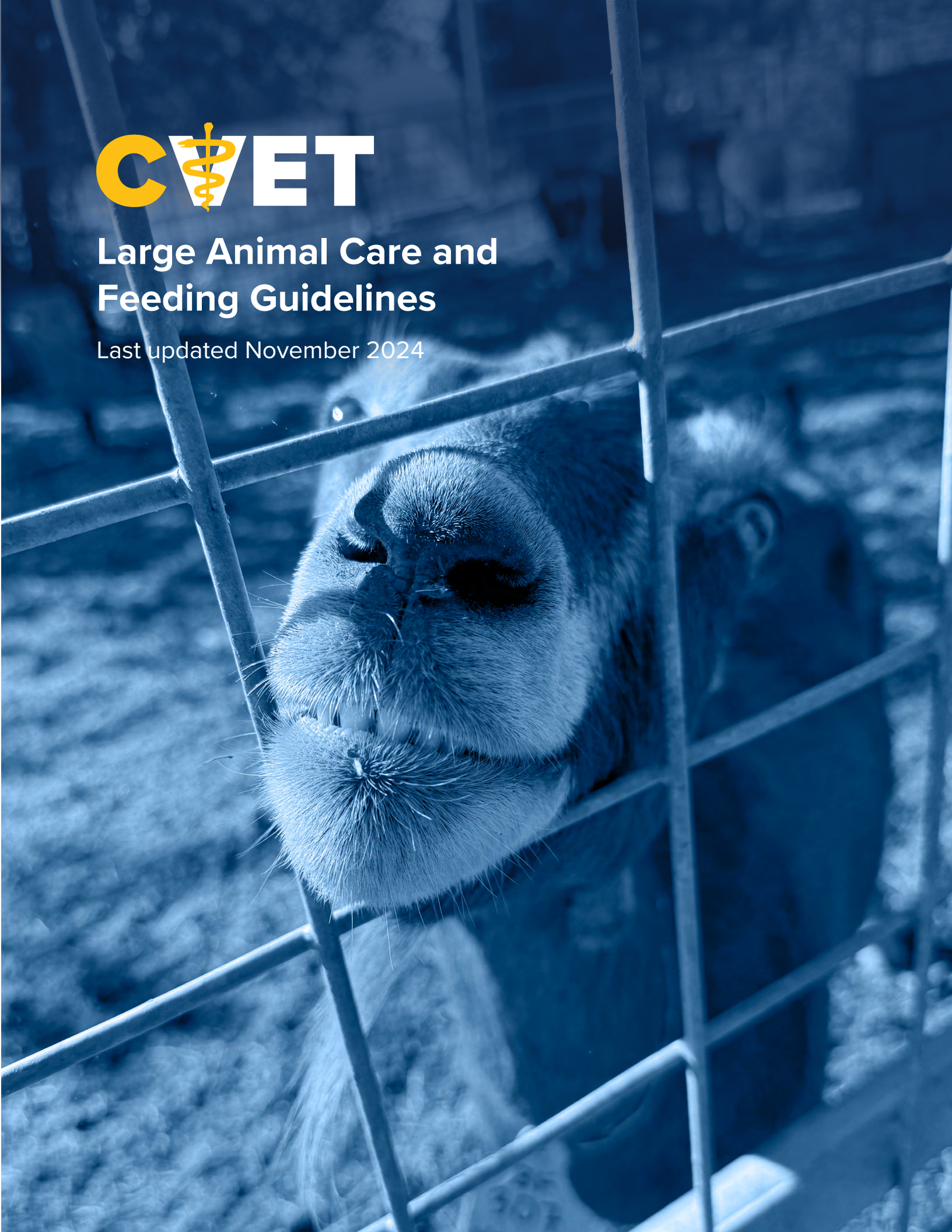

Large Animal Care and Feeding Guidelines

Last updated November 2024

Species		Feed			Feces		Water	DO NOTS
Species	Digestive Type	Type	Amount/ Feeding	Feedings/ Day	Amount	Consistency	Gallons/ Day	
Horse	Herbivore	Grass hay	1-2 flake	2*	1 pile per 3-4h	"Apple" shaped	8-10	No poultry or pig feed No sudden feed change
Donkey	Herbivore	Grass hay and clean barley straw	¼ flake grass hay ¾ flake straw	2*	1 pile per 3-4h	"Apple" shaped	7-10	No poultry or pig feed
Mule	Herbivore	Grass hay	1 flake	2*	1 pile per 3-4h	"Apple" shaped	10-15	No poultry or pig feed
Cattle	Herbivore	Grass hay	2-3 flakes	2	1 pile per 3-4h	Semi-formed	15-20	No poultry or pig feed
Sheep	Herbivore	Grass hay	¼ flake	2	1 pile per 2h	Pelleted	1-2	No poultry or pig feed
Goat	Herbivore	Grass hay	¼ flake	2	1 pile per 2h	Pelleted	1-2	No poultry or pig feed No grain or alfalfa
Llama/Alpaca	Herbivore	Grass hay	½-1 flake	2	1 pile per 2h	Pelleted	2-5	No grain
Market Swine	Omnivore	Pig Complete Feed	1-2lbs	2	4-8 per day	Round solid balls	1-2	No wet cob** No salt block
Pot Belly Pigs	Omnivore	Mini pig specific feed (Mazuri brand recommended); leafy vegetables and fruit	1 cup/30lb BW	2	4-8 per day	Round solid balls May need potty area	¼-1	No dry or wet cob** No salt block

*If possible, equids (horse, donkey, mule), should be fed 3x daily as to continually have forage available.
**COB – Corn/Oats/Barley grain combination

Table of Contents

Overview **1**

Credits **1**

Equine Care and Feeding Guidance **2**

Horses 2

Donkeys 4

Mules/Hinnies 6

Ruminant Care and Feeding Guidance **8**

Cattle 8

Small Ruminants (Goats, Sheep) 10

Swine Care and Feeding Guidance **12**

Camelid Care and Feeding Guidance **14**

Overview

This California Veterinary Emergency Team (CVET) Large Animal Care and Feeding Guidance document was developed by a collaboration of various animal response and veterinary organizations. The purpose of this document is to assist animal response team members in the general care and feeding of large animals during disasters. Response personnel provide care to a wide array of species affected by disasters in both shelter and field settings. When doing so, it is important for these responders to understand the different nuances between species as care and feeding guidelines often differ. In severe scenarios, an animal can develop medical complications by something as simple as providing the wrong type of feed. This guidance will hopefully help to educate responders and avoid some of those potential complications.

The feeding chart included at the beginning of this document is intended to serve as a an in-hand response resource. We recommend for response personnel to print it and include within their normal response protocols and procedures. The additional guidance information included below provides additional species-specific details regarding general information and terminology, appropriate housing, general care, risks and safety considerations, and reasons to notify a veterinarian.

Credits

CVET would like to thank the following personnel for their contributions to this guidance document:

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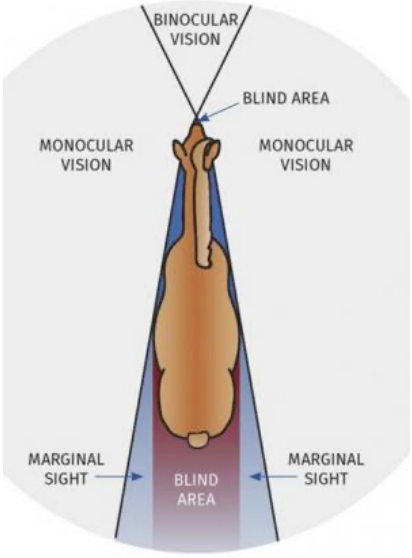
Equine Care and Feeding Guidance

Equids are single hoofed mammals of the family Equidae and include horses, donkeys, mules and zebras. Equids have muscular bodies with slender legs that have evolved for running from predators. Equids contain complex digestive systems that are highly dependent on water intake and environmental stressors and generally travel in herds.

When handling an equid, knowledge of the handling zones along with safety zones is of the utmost importance. Equids have a blind area directly in front and directly behind them. All other areas have monocular (one eye) or binocular (two eye) vision adapted to see prey coming from all angles. Equids have very agile necks and can rapidly reach and bite a handler. They can also kick in multiple directions. Equids are generally handled using a halter and led from the left side. Should you encounter an equid that you do not feel comfortable handling, please hand the animal off to an experienced handler.



Vision in the Horse (N.D)
https://www.extension.iastate.edu/equine/vision-equine

Equids have complex digestive systems that are highly dependent upon adequate water intake and minimal changes in routine. Under stress and dietary changes, equids, most often horses, are likely to develop abdominal pain associated with changes in their digestion. When equids experience abdominal pain, they show signs of colic: reluctance to eat and drink, pawing, rolling, lifting upper lip frequently, staring at their sides, and stretching out. The best ways to reduce chances of colic are to ensure adequate water supply and avoid sudden changes in type or quantity of hay. Most equids pass one pile of manure every 3-4 hours, with an average of about 6 to 8 piles per day. **If an equid is noted to be having decreased or absent fecal output over a prolonged period (greater than 6 hours), the veterinarian and shelter lead must be notified.**

Horses

General Information and Terminology

- Mares - female with udder
- Geldings - castrated males
- Stallions - uncastrated males (tend to be boisterous, have large facial musculature and have visible scrotum/testicles)

Appropriate Housing

- According to the Minimum Standards of Horse Care in the State of California, recommends that the floor space requirement be based on 2.5x the height of the horse squared. This allows for essential movements such as laying down flat on its side and standing up.
- Intact males should always be housed individually and away from females
- Fencing should be sturdy but minimize injury should the animal become caught. Fences should be at a minimum 4ft high with a recommended 5ft high in shelter scenarios to prevent biting and kicking over the fence.

- All stalls should be equipped with water and feed containers and have proper ventilation and drainage. Ideally, the stalls should provide reprieve from major environmental elements such as excessive heat or rain.
- Importantly, the housing area should be free of hazards that may cause injury.

In some cases- bedding may be removed from an enclosure if the horse is eating the bedding or on feed restriction. This will be at veterinary discretion. Miniature horses tend to eat shavings. Horses not accustomed to straw may eat the straw- which can predispose them to impaction. Alert your supervisor if you observe ingestion of bedding.

Minimum Space Standards for Confined Horses

Note: *Confined* in the context of listed stall size standards means horses are housed within the designated space without daily periods of controlled exercise being supplied or daily access to outside space for free exercise.

Horse Height at Withers (4 inches per hand)	Stall Size (feet)
12 hands (48 inches or 4 feet)	10 x 10 stall (100 square feet)
15 hands (60 inches or 5 feet)	12.5 x 12.5 stall (156 square feet)
16 hands (64 inches or 5.3 feet)	13.25 x 13.25 stall (176 square feet)
18 hands (72 inches or 6 feet)	15 x 15 stall (225 square feet)

Minimum Standards of Horse Care in the State of California, 2011

General Care

Diet and digestion: Long stem forage such as hay is the basis of a horse's diet. To best mimic their natural grazing behavior, forage (ideally fresh grass or grass hay), should be available at all times. When this feeding arrangement is not practical, horses should receive 1.5-2% of their body weight in forage daily divided into multiple meals. This generally equates to ½-2 flakes per feeding depending on the animal's size. Grain is sometimes added to a horse's diet if the forage diet does not meet their energy needs (athletes and pregnant mares).

Emergency feed: In disasters, feed a grass hay or slight alfalfa/grass mix (30% alfalfa/70 % grass). Only use pelleted or texture grain feeds to entice a horse which is reluctant to be haltered. Be aware that other horses may become aggressive for the grain so do so judiciously. If greater than 24 hours since last meal, start with ½ flake of hay per animal spaced out so each can feed. It is better to underfeed initially than overfeed. Consult with a veterinarian if any horse does not come up to eat.

Water: An average size horse normally consumes 12-16 gallons of water per day and can require 20 gallons per day in weather exceeding 85 degrees F. After 12 hours with no water, horses are likely to experience dehydration and colic, which can manifest as simply a lack of appetite. If no water is present on site, only allow access to small amounts of water (1-2 gallons at a time) at frequent intervals (30min-1hr) until they rehydrate; water deprived horses should not be allowed to drink full buckets at a time as this can lead to severe neurologic signs. **Horses suspected to have been without water for > 12 hours should be examined by a veterinarian.**

Risks and Safety Considerations

- Horses are prone to flight when they are frightened and reflect the energy of the handler. Most horses do best with a confident handler leading from the **left side** by the horses' shoulder.
- Horses can kick, bite, and strike. They will usually warn you prior to action.
- Be familiar with facial expression: ears, mouth, eye, and stance signs that indicate aggression such as ears flattened backward, retracted lips, rapid tail movements, snaking, pawing, and head bowing.
- Do not enter a pasture or enclosure until you have an experienced horse person. When evacuating horses be aware of herd dynamics and separation anxiety. Horses do best when another horse is in its line of sight. Keep an anxious animal with its buddy and never leave one horse behind - always two.

Reasons to Notify a Veterinarian

- Lack of appetite or evidence of colic (colic is a medical emergency)
- Decreased water intake
- Labored breathing at rest
- Significant limb swelling or lameness at the walk
- Unexplained sweating or staggering, drunk behavior
- Cloudy eyes, swollen eye lids, tearing or shut eye (eye problems are medical emergencies)
- Full thickness laceration or wound (wounds over a joint are medical emergencies)
- Visible burns regardless of extent or degree
- Down and unable to rise
- Feed material coming from nose and or mouth
- Significant coughing, nasal discharge
- Profuse soft paste to watery diarrhea or projectile diarrhea

Donkeys

General Information and Terminology

- Jack – male donkey
- Jenny – female donkey
- Donkeys, when free roaming, are more nomadic and less herd bound than horses.
- Domesticated donkeys usually live in pairs or very small groups.
- They can be difficult or reluctant to lead and are more likely to kick or flee when pressured.
- Some donkeys have not received proper handling, which can pose a challenge during evacuations.

Appropriate Housing[1]

[1] The Donkey Sanctuary

- Each donkey can be housed in an individual pen/stall but are often stressed when separated from other members of their herd, therefore larger pens can be made to accommodate multiple donkeys from the same owner.
- Intact males should always be housed individually and away from females
- Ideal enclosure size is 50 sq ft per animal.
- Fencing should be sturdy but minimize injury should the animal become caught. Fences should be at a minimum 4 ft high with a recommended 5 ft high in shelter scenarios to prevent biting and kicking over the fence.
- All stalls should be equipped with water and feed containers and have proper ventilation and drainage. Ideally, the stalls should provide reprieve from major environmental elements such as excessive heat or rain.
- If using a pre-built facility, an inspection should be performed to ensure that the housing is safe and there are no immediate hazards such as exposed nails, broken panels, etc.

General Care

Diet and digestion: Donkeys are more efficient at digesting forages than horses and mules/hinnies. Donkeys require a diet low in protein, low in sugars, and low in starches, but high in digestible fiber. Therefore, the basis of their diet should be barley straw. Donkeys have a slower gastrointestinal transit time than horses. Ideally, donkeys should be fed grass hay as < 1% of bodyweight and provided ad lib high quality straw. Donkeys, if fed like horses or ponies, become obese, which in turn puts them at risk for laminitis and hyperlipidemia (increased fat in the bloodstream) and both are life-threatening conditions.

Donkeys are grazer and browsers, in addition to forage (hay and straw), donkeys should be provided non-toxic browse such as safe logs and branches. This is not only for dietary purposes, but also to avoid them chewing on items which is considered a destructive behavior.

Emergency feed: In an emergency donkeys can be fed grass hay at approximately 1.5% of body weight/day (~3/4 flake per feeding). If necessary, feed a grass hay only, until good quality straw is available. It is best to underfeed initially than overfeed. **If any donkey does not come up to eat, call the veterinarian as soon as possible. An anorexic donkey is a medical emergency.** Be aware they may be pretend eating, which is a sign of major concern.

Water: An average size donkey (~400 lbs) normally consumes 7-10 gallons of water per day. The overall water requirement of donkeys is similar to horses. However, donkeys are well adapted to cope with thirst and rapid rehydration. Unlike horses they can be provided free access to water even after prolonged water deprivation.

Risks and Safety Considerations

- Donkeys are very stoic animals, able to endure pain and discomfort without showing any significant signs externally.
- Donkeys might be nervous and untrusting, and can be uncooperative or kick, bite, or strike (especially if not they have not been properly handled). On the other hand, well-handled donkeys are curious, calm, and affectionate.

- Donkeys are often calmer and behave best if in pairs or small groups.
- Be familiar with facial expression: ears, mouth, eye, and stance signs that indicate aggression such as ears flattened backward, retracted lips, rapid tail movements, snaking, pawing, and head bowing.

Reasons to Notify a Veterinarian

- Lack of appetite (anorexic donkey is a medical emergency)
- Evidence of colic
- Not drinking enough water
- Labored breathing at rest
- Significant limb swelling or lameness at the walk
- Unexplained sweating or staggering, drunk behavior
- Cloudiness of eyes, swollen eye lids, tearing or clamped eye (eye problems are medical emergencies)
- Full thickness laceration or wound (wounds over a joint are medical emergencies)
- Visible burns regardless of extent or degree
- Down and unable or unwilling to rise
- Feed material coming from nose and or mouth
- Significant coughing and/or nasal discharge
- Profuse soft paste to watery diarrhea or projectile diarrhea

Mules/Hinnies

General Information and Terminology

- Mule – hybrid produced with Jack (male donkey) is mated with a mare (female horse)
- Hinny – hybrid produced when Jenny (female donkey) is mated with a stallion (male horse)
- Exhibit the sure-footedness, stamina, and stoic nature of a donkey combined with the strength and size of a horse and are thought to be less prone to ailments
- Intelligent and learn quickly; but unfortunately, can learn from bad experiences and become difficult to handle

Appropriate Housing

- Each mule can be housed in an individual pen/stall.
- Intact males should always be housed individually and away from females.
- Ideal enclosure size is 50 sq ft per animal.
- Fencing should be sturdy but minimize injury should the animal become caught. Fences should be at a minimum 4 ft high with a recommended 5 ft high in shelter scenarios to prevent biting and kicking over the fence.
- All stalls should be equipped with water and feed containers and have proper ventilation and drainage. Ideally, the stalls should provide reprieve from major environmental elements such as excessive heat or rain.
- If using a pre-built facility, an inspection should be performed to ensure that the housing is safe and there are no immediate hazards such as exposed nails, broken panels, etc.

General Care

Diet and digestion: Like horses, mules require a diet primarily composed of forage such as grass hay or pasture. High quality grass hay will ensure the necessary fiber and nutrients needed to maintain a healthy digestive system. Mules are more efficient at extracting energy and protein from a fibrous forage making grain supplementation unnecessary. Mules generally eat 1.5-2% of their body weight (2-4 flakes) daily.

Emergency feed: Feed a grass hay or slight alfalfa/grass mix (30% alfalfa/70% grass). If more than 18 hours since last feeding, start with ½ flake of hay per animal spaced out so each can feed. It is better to underfeed initially than overfeed. **Consult with a veterinarian if any mule does not show interest in feed.**

Water: An average size mule normally consumes 10-15 gallons of water per day. After 12 hours with no water, mules are likely to experience dehydration and colic, which can manifest as simply a lack of appetite. If no water is on site when you arrive, gradually introduce water over 1-2 hours; water deprived mules should not be allowed to drink full buckets at one time. **Mules suspected to have been without water for > 12 hours should be examined by a veterinarian.**

Risks and Safety Considerations

- Mules have a mixture of donkey and horse behavior; they are sometimes nervous, untrusting, stoic, and/or calm. Mules, like horses, may flee or run when they are frightened, or they may become uncooperative or decide to fight, kick, or strike. They may switch from one behavior to the other in a split second.
- Be familiar with facial expression: ears, mouth, eye, and stance signs that indicate aggression.
- Most mules do best with a confident handler, but if they have not been handled much, they can be very intimidating. If a mule is making you nervous, hand it to a more experienced handler.
- Unlike a horse, mules may not warn you prior to action.

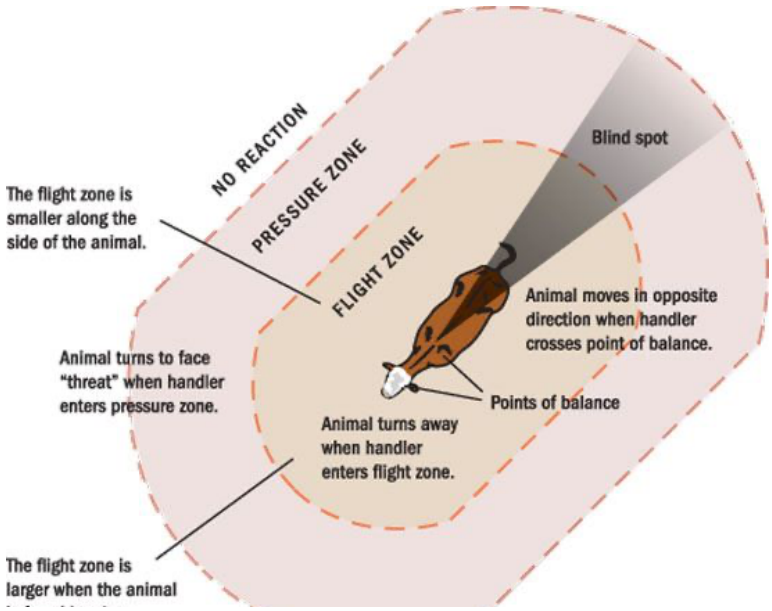
Reasons to Notify a Veterinarian

- Lack of appetite or evidence of colic (colic is considered a medical emergency)
- Not drinking enough water
- Labored breathing at rest
- Significant limb swelling or lameness at the walk
- Unexplained sweating or staggering, drunk behavior
- Cloudiness of eyes, swollen eye lids, tearing or clamped eye (eye problems are medical emergencies)
- Full thickness laceration or wound (wounds over a joint are medical emergencies)
- Visible burns regardless of extent or degree
- Down and unable to rise
- Feed material coming from nose and or mouth
- Significant coughing, nasal discharge
- Profuse soft paste to watery diarrhea or projectile diarrhea

Ruminant Care and Feeding Guidance

The term ruminant refers to even-toed, ungulate mammals that chew their cud regurgitated from its rumen. Ruminants have a four-compartment stomach designed to ferment feed and provide precursors for energy for the animal to use. Their unique digestive system allows them to better use energy from fibrous plant material. Ruminant livestock include cattle, sheep, and goats.

Ruminants are prey animals and often maintained in herds. Handling of ruminant herds in a safe manner is crucial to prevent accidents as well as reduce stress in the animals. The handler should remain calm and quiet and move within the point of balance, pressure zones, and flight zones to move the animal(s). For example, to move the animal forward, position yourself behind the point of balance and move slowly at a 45-degree angle from the shoulder, being careful to stay in their line of vision. Ruminants can also be restrained with a rope halter if tame enough to do so safely.



How to Handle Cattle – Mother Earth News (Grandin)
https://www.motherearthnews.com/homesteading-and-livestock/how-to-handle-cattle-zm0z17djzsor/

Cattle

General Information and Terminology

- Cow – female that has had at least one calf
- Bull – mature male used for breeding
- Calf – male or female less than 1 year old
- Heifer – female that has not had a calf
- Steer – castrated male
- Prey animals and move in herds
- Cattle found in the hills are mostly beef cattle and are often wild/untamed

Appropriate Housing[2]

- Each cow should be housed in an individual pen/stall but are often stressed when separated from other members of their herd, therefore larger pens can be made to accommodate multiple cattle from the same owner.
- Intact males should always be housed individually and away from females.
- Ideal enclosure size is 75-100 sq ft per animal (minimum 10 ft x 10 ft) with sturdy pipe or panel fencing at a minimum 4 ft tall (5 ft ideal).

[2] NASAAAEP Best Practices: Mass Care and Sheltering

- If sheltered in a barn, ensure there is adequate airflow/ventilation. Large fans can be added to increase airflow, but caution when used in areas that contain potential infectious animals as to not further spread disease to other animals.
- If using a pre-built facility, an inspection should be performed to ensure that the housing is safe and there are no immediate hazards such as exposed nails, broken panels, etc.
- Ideally the chosen facility is able to be cleaned and disinfected between use.
- If housed outside, every animal should have adequate shade coverage.

General Care

Diet and digestion: Cattle will graze vigorously and then lie down in sternal recumbency (on their stomachs) in groups to chew cud (ruminate). Look for outliers, those not with herd and/or those not approaching for feed. It is not normal for an adult cow to lay flat on its side. Cows produce piles of semi-formed manure which sits on the ground in a mound. Most cattle pass one pile every 3-4 hours. When excited or stressed, their manure can become runny (i.e., in transport).

Emergency feed: Grass hay or a light alfalfa/grass mixture is best to feed. Most cattle are not accustomed to any quantity of grain if they live on pasture, so only use grain to entice movement towards a chute/loading area. You may need to spread hay out along a fence line to ensure that all animals have access.

Water: The cattle's large rumen (part of the intestinal tract) can store water. Therefore, cattle can go longer periods of time than equines without significant issues. However, cattle should not go longer than 24 hours without water. If no water is present on site, only allow access to small amounts of water (1-2 gallons at a time) at frequent intervals (30min-1hr) until they rehydrate. Note: An average cow consumes 10-15 gallons per day in warm weather ($\geq$ 85 degrees).

Risks and Safety Considerations

- Cattle can kick and stomp a human or use their head to pin one against a tree or the ground. They can also use their head to flip someone into the air.
- Cattle do not have upper incisors so they have limited ability to bite.
- Cows are protective of calves. Be aware of your surroundings as you enter an area with calves present.
- Bulls (identified by larger musculature, visible testicles and scrotum, may have horns) can be loose in pasture with the herd at certain times of year. Wait for an experienced cattle person before interacting with the herd if a bull is present.

Reasons to Notify Veterinarian

- Down and unable to rise, or flat out on its side
- Significantly swollen limb or lameness at the walk (possible hoof burns)
- Eye swelling, significant amount of discharge or closed shut (eye problems are medical emergencies)
- Visible laceration or evidence of trauma
- Visible burns
- White froth at nose or mouth, difficulty breathing

- Significant coughing, nasal discharge, or liquid diarrhea
- Loss of definition to jawline or face and brisket edema (swelling of the chest) compared to other cattle
- Does not come up to eat with others, lack of appetite
- Staggering or drunk behavior
- No water on site for greater than 48 hours

Small Ruminants (Goats, Sheep)

General Information and Terminology

- Goats (caprine)
  - Buck – intact male
  - Doe – female
  - Kid – young goat
  - Wether – castrated male
  - Dairy breeds generally tamer and more domesticated
  - May have horns and will use them when threatened or cornered.
- Sheep (ovine)
  - Ram – intact male sheep
  - Ewe – female sheep
  - Lamb – young sheep
  - Wether – castrated male
  - Form strong social hierarchies within their flocks and will become highly agitated if separated from the group

Appropriate Housing

- Goats and sheep can be contained individually but are often stressed when separated from other members of their herd.
- Intact males should always be housed individually and away from females.
- Each goat or sheep should have at least 20-25 sq ft per animal.
- Pen height should be considered as some goats can jump up to 5 ft.
- Goats and sheep with horns shouldn't be kept in fences with large openings as this increases the risk of getting caught in the wire.
- If using a pre-built facility, an inspection should be performed to ensure that the housing is safe and there are no immediate hazards such as exposed nails, broken panels, etc.
- Ideally the chosen facility is able to be cleaned and disinfected.
- If housed outside, every animal should have adequate shade coverage.

General Care

Diet and digestion: Ruminants will graze vigorously and then lie down in sternal recumbency in groups to chew cud (ruminate). Look for outliers such as those not with herd or those not approaching for feed. It is not normal for an adult goat or sheep to lay flat on its side for more than a few minutes. Small

ruminants pass individual pelleted manure in small piles. Quantities of manure can vary, but they often produce one pile approximately every 2 hours.

Emergency feed: Grass hay is the best to feed. Most small ruminants are not accustomed to any quantity of grain if they live on pasture, so only use a small amount of oats or dry COB (corn, oats, barely) grain to entice movement towards a chute/loading area. **Grain and alfalfa hay are not recommended for castrated males (wethers), as they can promote urinary stone formation.** Hay may need to be spread out along a fence line to ensure that all animals have access.

Water: Small ruminants have a large rumen (part of the intestinal tract) that can store water. Therefore, ruminants can go longer than equines without significant issues. However, they should not go longer than 24 hours without water. If no water is present on site, only allow access to small amounts of water (0.5-1 gallon at a time) at frequent intervals (30 min-1 hr) until they rehydrate. Note: An average small ruminant consumes 2-3 gallons per day in warm weather (> 85 degrees F).

Risks and Safety Considerations

- Goats and sheep can stomp a human or use their head to pin one against a tree or the ground.
- They can use their horns to hook a body part or head.
- They do not have upper incisors so they have limited ability to bite. Bucks (male intact goats) and rams (male intact sheep) can be aggressive and charge an intruder.
- Make a plan with an experienced leader before entering a pen of small ruminants.

Reasons to Notify Veterinarian

- Down and unable to rise or flat out on its side
- Significantly swollen limb or lameness at the walk (hoof burns)
- Eye swelling, significant amount of discharge or clamped shut (eye problems are medical emergencies)
- Visible laceration, wound over a joint or evidence of trauma
- Visible burns
- White froth at nose or mouth, difficulty breathing
- Significant coughing, nasal discharge, or liquid diarrhea
- Loss of definition to jawline
- Failure to come up to eat with other animals
- Straining to urinate (blocked goats are a medical emergency)

Swine Care and Feeding Guidance

Swine are generally referring to a variety of pigs. They are stout-bodied, short-legged, omnivorous mammals with thick bristly skin and a long flexible snout. Swine descended from domestication of the wild boar.

Market breed pigs are large (up to 800lbs), and minipigs or potbelly pigs can be a wide variety of sizes (30lbs up to 200lbs). Market breed pigs are difficult to restrain and are often moved with the assistance of pig boards (plastic or wood boards with a smooth side and handles at the top) to direct their movements safely. Mini pigs or potbelly pigs are not usually trained on a leash or halter but can be moved with pig boards or dog crates if available.

Pigs are at a high risk for salt toxicity. This can occur if they are exposed to a large amount of salt, if they do not have free access to water, or if they drink large amounts of water free choice after going thirsty for longer than 24 hours. For this reason, **they should not have access to a salt block**. There is enough salt in commercial feeds to satisfy their dietary needs. **If you have questions about how much water to provide over a time period, consult a veterinarian.**

General Information and Terminology

- Boar – intact male
- Sow – female pig who has had at least one litter of piglets
- Gilt – female pig who has not produced a litter of piglets
- Barrow – castrated male
- Piglet – young pig
- Generally, very social with other pigs they are used to but can become very aggressive with pigs they are not familiar with.

Appropriate Housing

- Pigs may be kept individually, or with their pen mates. To reduce stress, it is best to keep pigs together that were evacuated together unless otherwise instructed by the owner.
- Intact males should always be housed individually and away from females.
- Pigs may be kept in short-sided pens. Enclosures must be attached to the ground or heavy as pigs are able to root under and lift panels easily.
- A juvenile pig needs roughly 20 sq ft, with the space need increasing roughly 10 sq ft per 100 lbs. [Ex: 300 lb pig: 20 sq ft + (10 sq ft. X 3) = 50 sq ft)
- If using a pre-built facility, an inspection should be performed to ensure that the housing is safe and there are no immediate hazards such as exposed nails, broken panels, etc.
- Ideally the chosen facility can be cleaned and disinfected.
- If housed outside, every animal should have adequate shade coverage.

General Care

Diet and digestion: Pigs are omnivores meaning they only have one stomach (like dogs and cats). This digestive system does predispose them to stomach ulcers and constipation. Therefore, it is recommended that pigs be fed a ration with pellets or a coarsely ground diet that meets the needs of

their current age. Mini pigs require a specific amount of protein (12-14%) otherwise run the risk of obesity and other medical issues. Mini pigs should be fed a specific mini pig chow (Mazuri recommended brand) twice daily.

Emergency feed: Pig complete feed 1-2 lbs twice daily is best for market pigs. Mini pigs should be fed a mini pig complete feed.

Water: Pigs do not have the ability to sweat. Therefore, water is of critical importance. If pigs have not had water for 24 hours, if there is no water on site, or if you are unsure, introduce small amounts of water slowly over 4-6 hours. Water can be introduced by using small water bowls (1 cup at a time) or let a hose run water over cement for a few minutes at a time before allowing them free access.

Risks and Safety Considerations

- Pigs have upper and lower incisors and can bite when they feel threatened.
- Market pig breeds may be very large and can be aggressive when cornered or threatened; they may try to bite hands, shoes, legs, and may try to slam into people or try to knock people down.
- Pigs often vocalize loudly when scared, cornered, or while being handled, and these screams can damage hearing; **it is important to use hearing protection when handling vocalizing pigs.**
- Pigs often display rooting behavior, creating large holes in dirt paddocks, and can bite or chew at wood paneling.

Reasons to Notify Veterinarian

- Down and unable to rise
- Significantly swollen limb or lameness at the walk (possible hoof burns)
- Eye swelling, significant amount of discharge or clamped shut (eye problems are medical emergencies)
- Visible laceration, wound over a joint or evidence of trauma
- Visible burns
- White froth at nose or mouth, difficulty breathing
- Significant coughing, nasal discharge, or liquid diarrhea
- Failure to come up to eat with other animals
- Straining to urinate or defecate
- Neurologic behavior such as circling, stumbling, star-gazing or blindness

Camelid Care and Feeding Guidance

Camelids are defined as an even-toed mammal that has a 3 chambered stomach. This includes camels, llamas, guanacos, alpacas, and vicunas. Llamas and Alpacas are the most common camelids in the US and are used in a variety of ways including packing and transportation, fiber production, guard animals for sheep and goats, companion animals, and competitions. The best way to distinguish between a llama and an alpaca are their size, hair, face shapes, and disposition.

Llamas are generally larger and average around 300lbs. Their faces are more elongated with banana shaped ears. Llamas have more coarse wool, are known to be more difficult to handle, and are independent minded.
Alpacas are generally smaller in size averaging about 150lbs and possess a small, blunt face, with short ears. They have shaggy hair used for fleece production and are generally more timid and tend to stay with their herd.

Some camelids are halter broke and lead well, while others are handled minimally and need to be moved by indirect movement. If they are domesticated, they will often approach for a grain treat or a mock bucket shake. They can be herded to a chute or trailer using a long line with volunteers on either end via indirect movement.

Camelids normally lay down in a “cush” position, with their front and hind legs tucked underneath their bodies. Laying on their side, with their hind legs out to one side, or with their neck outstretched on the ground is typically abnormal behavior and may be a signal that there is something wrong. Camelids are notoriously stoic animals, and subtle changes in behavior may be the first sign of illness.

General Information and Terminology

- Female – adult female
- Gelding – castrated male
- Cria – neonate
- Stud – intact male

Appropriate Housing[3]

- Llamas and alpacas are herd/social animals do best when housed with their herd mates. If they come to the shelter as individuals, they should not be housed with other llamas or alpacas outside of their herd.
- Intact males should always be housed individually and away from females.
- Fencing should be sturdy but minimize injury or damage to fiber should the animal become caught. Fences should be at a minimum 4 ft high with a recommended 5 ft high in shelter scenarios to prevent biting and kicking over the fence
- If using a pre-built facility, an inspection should be performed to ensure that the housing is safe and there are no immediate hazards such as exposed nails, broken panels, etc.
- Ideally the chosen facility is able to be cleaned and disinfected.

[3] International Camelid Institute – The Ohio State University

- If housed outside, every animal should have adequate shade coverage.

General Care

Diet and digestion: Camelids have three stomach compartments, as opposed to one large rumen such as in a cow. They are well adapted to consume high-forage diets of variable quality. Hay generally makes up the bulk of their diet (grass or alfalfa), with complete rations also being implemented depending on the animals use and energy requirements. Camelids are also known to exhibit browsing tendencies. Camelids tend to pass formed, pelleted manure in piles or clumps.

Like ruminants, they will lie in sternal recumbency and chew their cud during the day. Their thick fiber can hide their body condition status, and palpating (feeling) their spine can give you a better idea of weight and health status. Their spine vertebrae should just barely be palpable under a good layer of fat. Camelids can show symptoms of colic. They will paw, get up down, stretch out, and lay flat out if they are experiencing gut pain. Changes in diet should be done gradually to minimize the risk of colic.

Emergency feed: During an emergency where current diet is unknown, grass hay can be fed at approximately ½ flake per animal twice a day. A small component of alfalfa (30% or less) can also be fed. **Camelids cannot be fed grain in large amounts.** Only use small amounts of grain to entice animals during handling/leading.

Water: Alpacas drink 1-1.5 gallons of water per day and llamas drink 2-3 gallons of water per day. Lack of water can lead to colic behavior similarly as seen in horses. Camelids can often go 24 hours without water before experiencing complications such as impactions or colic. **If no water is present on site, or if the animal has gone without water for >24 hours, an exam should be performed by a veterinarian.**

Risks and Safety Considerations

- Camelids can use their heads and hooves for defense. They have a rapid cow kick and can rear up to kick with their front hoofs like a horse. In addition, if their hooves are overgrown, they can create lacerations when they kick.
- They are athletic and can jump away from restraint with moderate power.
- They can spit stomach contents when threatened. Most will warn first with pinned ears, glare, and a regurgitation sound. It is wise to drape a towel or loose sock over their halter that dangles across their mouth when handling or restraining an individual animal. Being regurgitated on is more of an inconvenience than a zoonotic/disease risk.
- Camelids need to be approached and handled differently than most other hooved animals. They prefer a left shoulder approach and do not like facial contact.
- Additional training specific for camelid handling is recommended to know how to approach, halter and restrain.

Reasons to Notify a Veterinarian

- Down and unable to rise or laying in an abnormal position
- Colicky behavior and/or does not come up to eat with rest of animals
- Severe nasal discharge, cough, diarrhea
- Laceration or visible burn
- Lame at walk or notable swelling

- Clamped eye or ocular discharge (eye problems are a medical emergency)
- Open mouthed breathing
- Vomiting or feed material from nose
- Emaciated (each vertebra readily palpable under fiber (wool))