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Water Buffalo Handling: Property to Abattoir
Part 2. On farm considerations

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PROPERTY PLANNING

Careful whole-of-property planning (if properly done initially) can make buffalo handling much simpler. Consider the following points when planning to raise buffalo:

1. *Location and design of paddocks*: Exclude wet areas or heavily timbered areas where access will be a problem when mustering. Try to avoid acute angle corners and dead ends. Radial designs with the yards in the centre are often appropriate and may help water distribution costs.

2. *Design of fencing*: Use more visible fencing at likely mustering pressure points. Properly designed and built electric fences or barbed wire fences are usually more than adequate. Extra droppers at pressure points will increase visibility; otherwise drape some plastic tape or cans on the fence. Electric fencing is highly recommended to control buffalo effectively. Design fences to facilitate testing, such as a loop system where a fence completes a wide circuit and ends up back close to the energiser for easier continuity testing. Electric fencing allows a reduction in the numbers of wires and total strength of the structures.

3. *Design of laneways:* Incorporate laneways 10-20 m wide, depending on expected herd size in paddocks, especially on larger properties, to facilitate mustering and reduce labour requirements. Laneways can be used as trap paddocks as well, if water troughs are installed in the lanes and water is turned off in the main paddocks. This will bring animals out into the laneways.

4. *Design of trapping systems:* Incorporate trapping systems to reduce the need for physical mustering. Self-mustering is much less stressful in the long term. Self-mustering is most often carried out using water; but bagged feed, good quality hay, improved pastures, supplements or mineral blocks can also be used as lures. Training animals to come to feed can usually be achieved quite easily. If paddocks are close to yards, then animals can usually be lured into the yards with feed, over time and with persistence. Animals can be trained to come in response to a call to change paddocks or to follow a leader. This is often seen in short rotation grazing systems. Spear gates (one way gates) can be incorporated into the system.

5. *Paddock size and shape:* A careful consideration of land types is important when determining paddock size and boundaries. To prevent soil erosion, avoid fences that run straight down steep slopes. If there is no other option, build runoff diversion banks across the fence line to prevent erosion problems before they begin.

6. *Mustering:* Minimise the distances for mustering to yards and provide shade and rest/water points, if needed. Laneways are valuable for mustering.

7. *Design yards and their location for efficiency:* Yards should be carefully sited on well-drained slightly sloping areas to avoid quagmires. Other factors also need to be watched, such as prevailing winds or dust, direction of the sun and shade areas. Working towards the sun is not recommended, particularly up the race, as it will be difficult for animals to see the path ahead.

8. *Design to prevent muddy areas:* Yards can be hardened sufficiently to prevent muddy spots by incorporating cement powder into the top 100 mm of soil and compacting. This will also drastically reduce dust in the dry season. Built-up manure will first need to be removed before this treatment as organic matter reduces the setting ability of cement. This design makes it easier in the long term to remove manure that builds up, because of the harder base.

9. *Design to calm animals:* A receiving paddock adjacent to the yards, with shade and water, will help settle stock down. Water troughs and hay should be available in this area or in the yards themselves, to encourage entry and to ensure positive conditioning.

10. *Design/construct efficient gates:* Lift gates in electric fences give very wide access for stock, provide continuous power and are much cheaper to install than conventional double gateways.

SEPARATING BULLS

Fighting between bulls can be a problem where multi-sire mating occurs in small-sized paddocks. Some bulls will normally be compatible; however, relationships may change when bulls are put with cows. Bulls often break fences and/or gates during the mating season. Electric fences are the best to prevent damage and lift gates are the least often damaged, compared with conventional gates. Bulls will tend to spar at conventional gateways if there is no electric power to distract them.

Bulls running together in the same age groups will generally not start fighting until at least three years old and then generally only after exposure to cows. Bulls which were friendly pre-mating can usually be re-united post mating; however, you need to be on hand at the first encounter and ready to separate them in case fighting becomes serious.

Generally, bulls separated from cows are more tolerant of other bulls in the same paddock and tend to form loose groups. It is often quicker to try and muster and yard these groups separately. If groups are pushed together in the paddock, there is usually much chasing and fighting. This can be dangerous when animals reach confined yards.

Make sure there is sufficient space for separation of bulls within a paddock. Often, two separate watering points will be necessary in one paddock if the bulls are not compatible. Provide plenty of clumps of trees in the paddock so bulls can be ‘visually’ separated.

Deaths have been known to occur in bull groups, particularly when a group of bulls turns on one individual bull in the group. Bulls will tend to disregard all other animals if they start fighting in a confined area, such as a yard. Many other innocent victims may be bruised or horned during these encounters. Other quiet stock will also tend to become stressed in the presence of fighting bulls. If individual bulls are known to be troublemakers, their horns should be tipped so they are less likely to inflict damage on opponents. Horns can be cut back to about a 50-mm diameter section with a horn saw. Horn tipping is a necessity for export slaughter bulls. Searing with a hot iron - hot soldering iron - can reduce bleeding significantly if done immediately after the horn is sawn off.

Export regulations require horns to be no longer or shorter than the length of their ear tips.

In the yards and on trucks

Separation on trucks and at the abattoir yards into compatible groups may be necessary to prevent undue stress and bruising in bulls. One bull can usually be put with steers or cows but not with a stranger bull. Bulls should be trucked separately from young stock. Usually, it is only one or two aggressive bulls that cause problems. Such bulls should be individually tied around the base of the horns close to a sturdy corner post in the truck, or penned separately from other bulls or put with cows. Do not mix such bulls with younger bulls or young stock, especially when they are 'stirred up'. It is always helpful when stock crates have some internal partitions.

SEPARATING GROUPS (SEGREGATION)

It is a good farming practice to keep similar classes of stock together, such as weaners, pregnant cows, dry cows, culled stock and sale animals ready for turn-off. This helps bypassing continual behavioural problems from progeny. Separation of groups can also help to provide better nutrition to groups with higher physiological requirements, such as weaners and pregnant or lactating cows. Similarly, with TenderBuff turn-off groups, you can separate animals into smaller groups of similar weight ranges which can be mustered to send off without disturbing the whole herd. Cranky (cull) animals can be kept separate from the rest of the herd whilst waiting for shipment so that they are not passing on bad habits or increasing stress levels in the rest of the group.

MUSTERING

Trapping

Most properties are adaptable in some way to trapping cattle and buffalo. Lures used for self-mustering can be feed, water or both. Self-mustering is one of the best ways to eliminate stress due to speed or distance when using helicopter, horse or vehicle mustering. Trapping onto water is most often used, but good quality fertilised pastures in a small well-fenced holding paddock can be also useful, particularly on properties where extensive areas of native pastures are grazed. Mineral blocks can also be used as a lure. There are also methods that can be incorporated into trap design to draft off weaners from their mothers using different heights of drafting gates. This reduces the need for yarding to draft off weaners and can be set at specific times of the year to coincide with management practices at optimum times. This cow-calf separator has been tested and found effective for cattle; buffalo should be no different. Of course, put attractive feed on the side for the calves when first weaned so that growth rates are not set back. There are now many and varied designs for spear gates (one-way gates), some of which are readily fabricated in a farm workshop or purchased relatively cheaply.

Mustering

Mustering late in the day will usually result in a much slower pace than if done early in the cool of the morning when stock are fresh and lively.

Mustering during the heat of the day, particularly in hotter months, should be avoided.

When mustering, it is best to try to maintain a walking pace only, as this will result in much quieter, less stressed animals once they arrive at the yards. The use of a lead rider or riders is a good method of slowing the pace to a walk and will result in a more orderly direction being taken, as buffalo readily follow the leader. Bulls will often try to take over and cut off the lead cows, actively interrupt the muster and often may try to disrupt a mob, which would normally be easy to muster. Bulls can be left behind and brought in separately if necessary, particularly if there are insufficient musterers to control the bulls.

The use of laneways markedly reduces the labour requirements in mustering and helps control the speed and direction of the muster. Again, a lead rider is useful to keep the lead cows at a walking pace.

Stock will react differently to different methods; however, with both horses and vehicles, high-speed chases to try to overtake, should be avoided. Speed and chasing to overtake an animal usually just encourages it to run faster. An indirect approach is usually the best remedy. Often an animal that breaks from the mob and is left alone and not harassed, will often return to the mob of its own volition (unless it is a lead cow for the herd). Horses tend to

be more manoeuvrable than quads or motor vehicles; so generally have fewer problems. However, a back-up vehicle may be useful at times if a particular cow behaves badly on a regular basis. A bump on the rear end with a vehicle often will send a 'recalcitrant' back to the middle of the mob, but should only be done by a skilled driver as a last resort. A badly behaved cow is best culled off and not tolerated over the long term. It will cause more problems than it is worth.

Initial weaner training should emphasise movement of a herd in a straight line, teach them to stop and to maintain a walking pace.

Buffalo are usually more content when given 'room to move'. Tightening the mob can cause some anxiety within the herd as they worry about being bumped by a dominant animal and they become less relaxed. The best muster is one where the herd strings out a little and is quietly moving straight following the lead cows at a walking pace. The quieter the herd, the closer you can get. You can judge the right distance by the reaction of the animals. They speed up if you are too close. Closer contact is more likely to elicit alarm responses. The greater the pressure applied, the greater is the stress and the lesser the likelihood of the desired outcome. In such a case, buffalo may turn to face the aggressor disrupting the flow of the muster. Musterers need to maintain a fair distance away depending on the flight zone of the particular group. The better the prior training and frequency of exposure to people, the smaller will be the flight zone of the mob.

The 'coacher' concept can be used when there is a group of 'wild' buffalo that are a bit 'full of running'. A quiet well-trained group of cows or buffalo can be used to 'train' or slow down the rest.

YARD DESIGN

Careful consideration of modern concepts of yard design will be an important part of good handling of stock. Modify areas that cause problems. Concepts to consider when building or modifying yards include:

1. A receiving paddock/yard with shade, feed, water and mister units to cool down stock in hot weather. Misters will also help settle dust in dry weather.

2. Curved designs, which give fewer corners and allow for better movement of stock.

3. Covered panels in races to reduce visibility will help movement of buffalo.

4. Anti-backing devices.

5. V-races to reduce turning around. Removable bottom rails are necessary for downers.

6. Large revolving gates, which are very useful in safely getting buffalo into forcing yards or races.

7. Wider races than the standard for fully grown Riverine buffalo; 760 minimum to 800 mm is recommended.

8. Large, minimally filled yards. Leave plenty of room for manoeuvring the herd. A maximum number of buffalo in a yard should be 1/3 of its capacity. Leave plenty of space for people movement outside the pens so that you do not need to stand right up against the fence.

Sprinklers in buffalo yards are a great asset, both to keep dust down and buffalo cool and comfortable. Stressed buffalo will usually soon calm down under a water spray. Misters are ideal as the volume of water is low and can be on for many hours without causing muddy conditions in the yards. If gravity water pressure is low, use small electric, petrol or 12V pressure pumps to provide sufficient pressure to operate misters or low volume, mini-sprinklers.

WORKING WITH BUFFALO IN YARDS

Once buffalo arrive at the yards, they should always be given time to settle down before working - at least 15-30 minutes. Provision of shade, feed and water is important. It is best to give a good impression on each entry and departure from the yards. A few bales of good hay strategically placed will help give that impression. Buffalo particularly appreciate being cooled off by sprinklers in hot weather or even just a hose sprayed over the whole herd. A fire cart is ideal if piped water is not available.

Work quietly in yards with small groups, rather than large unwieldy groups. In very large groups buffalo will tend *not* to work well through the yards without a lot of unnecessary yelling and carrying on. It is best to peel small groups off the face of the mob and move them through separately.

Electric prodders - if used at all in the yards - will cause increased tension, aggression and fear over a period of time. Buffalo will become increasingly nervous at your approach, if you use prodders continuously. Prodders should only ever be used on the most obstinate animals and only as a last resort when all else fails. If the buffalo are properly trained (quietly) in the yards when weaners, there should be absolutely no need to use a prodder. The best advice is to have only one prodder available in the yards to restrict its use to only one reliable person who is unwilling to use it. The main problem with most people is that pressing the button eventually becomes automatic. However, a prodder can be used just as an arm extension without the need for the power to be turned on. The main aim should be to work the buffalo slowly and quietly through the yards in small groups with no shouting, yelling and fuss. Buffalo should not be encouraged to get nervous and flustered. The main reason that an animal will get upset is that there are usually too many people or they get too close and cause stress. Stress reduces the ability of the animal to think rationally. Buffalo that repeatedly behave badly in the yards should be culled, as they only generate similar behaviour in others. Stock handlers new to buffalo will need careful watching initially to ensure they are confident enough to work quietly with buffalo. A radio in the yards at all times during training will help to keep stock and stockmen calm, preferably music dispersed with talking voices. Low stress Stock-handling® training is thoroughly recommended for all people handling stock to learn the correct attitudes and principles involved in handling livestock.

If a cow is agitated and is difficult to move on foot through the yards, the first move is to leave it to settle down and then try later to move it from a greater distance away. If all else fails, then a horseman, four-wheel drive or another vehicle is usually effective where it might otherwise be dangerous for a person on foot. Allow the animal settling time before rushing in with a horse or four-wheel motor bike. Most cows will generally move away from a horse because of its larger size and the desired effect will be achieved. Older bulls may be less reliable with horses but usually are more easily moved on foot, albeit at a greater distance away.

Horses can be extremely beneficial in buffalo handling and should be an integral part of the weaner training program if they are used. A buffalo bull with sharp horns can easily open up a horse's abdomen if it gets too close. So suspect or cranky cows or bulls should have their horns tipped to reduce the chance of injury at close quarters, or culled at the first opportunity, if they are a persistent problem.

DEHORNING

Benefits

The benefits of dehorning include less bruising in yards, trucks and at meatworks, and less room required on trucks.

Dehorned animals are much easier to work in the yards and tend to be much less aggressive. They fit through races and gateways more easily. People will also be more confident when working with dehorned stock, as they will be less likely to be scared or intimidated. Buffalo tend to sense very quickly and take advantage of people who are tentative and not confident. Dehorning dairy buffalo may be quite advantageous; similarly, it will be convenient where there is no dingo predation. However, where there is dingo risk, animals should not be dehorned as their horns are very effective in protecting the young from dingo attack.

When transporting stock, horns can take up more room and can cause more problems when animals go in a truck. Some mature swamp cows or steers can develop very wide-spreading horns, which make it very difficult to negotiate a race. Some reduction in horn length may be necessary in such cows if they do not learn to tilt their heads sufficiently to move along a race. For export, all stock need to be tipped to a maximum of 600 mm spread. The best guide is to trim back to the width of horn level with ear tips. In older stock, this can be achieved with mechanical or hand saws and bleeding can be minimised by cauterising with a heated metal probe, such as a reasonable wattage soldering iron. A protected blade disc grinder equipped with a tungsten-tipped saw blade is the fastest and safest method for dehorning; however, the animal will need to be very well restrained in a crush head-bail that allows absolutely no movement. A restraining rope of 15 mm minimum diameter can be attached around the base of the horns and half hitched around the muzzle. The rope is then tied to pipe lugs welded to the sides of the head bail at around nose height. This method gives the best restraint when the nose is pulled around to the left to take off the right horn and then to the opposite side to do the left horn.

Embryotomy wire is an alternative method for small numbers but physical fitness in the operator is a major requirement. It tends to cauterise the blood vessels during the operation due to the heat generated.

Disadvantages

If polled and horned breeders are mixed, many social problems can emerge due to horned cows chasing polled or dehorned cows, both in the paddock and when trying to muster the group. Separation of mature dehorned stock from mature horned stock is probably the best option, when dehorning a herd. All young stock should be dehorned early as calves.

Where dingoes are quite prevalent in extensive areas, there may be advantages in retaining horns as they are used very effectively to protect calves. Baiting dingoes with 1080 at calving and perhaps at weaning is an alternative effective remedy. In more intensive situations, use electric fences designed to eliminate dingos from calving paddocks.

The general recommendation would be to dehorn for small intensively-managed herds or for buffalo on rural blocks, small farms or in dairies, but keep horns on animals under extensive native pasture conditions. Trophy stock may be an option in some enterprises but a 10-12 year-old trophy bull needs to generate a lot of income to make up for the value of it being sold as a two-year-old, because fewer breeders can be carried on the same area of land, as bulls need much larger areas because of fighting and its effect on fences and gates. Fighting can also damage the trophy horn irreparably.

Method

Dehorning (disbudding) can be carried out effectively by using a hot iron within two to four weeks of birth, or by using scoop dehorners up to three months – the earlier the better. As with cattle, it is necessary to remove at least 5-6 mm of the hairline around the entire base of the horn in a calf to ensure there is no regrowth. Scurs from unsuccessful dehorning (no ring of hair) can be a big problem if horns grow inward onto the cheek and need to be removed several times. Tipping of older stock can be done with the dehorning saw (curved tree pruning saw) or a power saw or disc grinder with a tungsten tipped blade (provided the animal is well restrained in the head-bail). It is recommended that no more than half of the length of the horn be cut off when dehorning adult buffalo. Cutting off at the base is very distressing for an adult buffalo and will cause large blood loss. The cross sectional area of the sinus is very large in an adult buffalo and it bleeds very freely. Cauterising the main blood vessels with a hot iron is highly recommended. A disinfectant/fly repellent can be used to good effect at this time.

A good time for dehorning calves is during the dry season (but this may be too late depending on the calving season) or in dry upland paddocks where wallowing is not possible for a week or so. This will help reduce infection and the wound will heal more quickly. If you are inexperienced in these procedures, seek prior advice to ensure an effective and humane job. Dehorning is not recommended when animals are stressed or in very hot weather. Best done in the afternoon so that the cool of the evening is fully available for best recovery.

TRAINING WEANERS

There is now plenty of evidence, even in cattle, of the benefits of good weaner training leading to a high carcase quality at slaughter. Good habits start early, particularly at weaning. Buffalo should be at least 150 kg live-weight, preferably 200 kg, and/or more than six months old at weaning. Crossbreds will be much heavier than Swamp buffalo at weaning, so can be done earlier. Weaning is best done when good feed is available, such as in the early wet season with new green feed or saved floodplain country in the late dry. This presumes that there is a controlled mating season in the NT. Other states would have differing seasonal regimes. Good quality hay or average hay plus pelleted concentrate should be fed in the yards for a week or so, combined with frequent human contact, music (radio), working through the yards and races, and letting animals out of the yards into a training paddock with lift gates, electric (training panel in yards) fences and horses. Penning back in yards each night and being left with feed will provide positive reinforcement. Walking to do this mustering is good training for both stock and handler, given that the person cannot match the speed of weaners. This is an incentive to learn the low stress skills to make the job easier. The yards should be thought of by stock as being a place where mostly good things occur, so always spread a few bales of good hay around when animals are first arriving and just before leaving the yards for positive reinforcement. When working through the race, it is advantageous to provide "free-runs" where all the gates are open and the weaners can simply follow each other all the way through without stoppages. This is also a very useful tool with adult buffalo every now and again if they start hesitating in races.

An electric prodder should never be seen anywhere near the yards during weaner training. Again, the emphasis should be on overcoming their initial fears of close human presence and on *quiet,* slow, steady movements. Get them used to being in close contact. Be able to move freely about the group without having them run away. This is most easily achieved at feed times. Low stress stock-handling will teach you the basics of slowing movement, applying and releasing pressure and controlling speed of movement. Bad behaviour generally only starts to show up in mature buffalo, never usually in young stock. So, great care needs to be taken in the initial training phases or during subsequent yarding of weaners. Aggression tends to occur only after mistreatment, when animals are scared, when too much pressure is applied and not released or when they are not given a clear escape route. More care needs to be taken with stock that have not been in the yards for a long time, to give them time to settle down. These may need a couple of days of close confinement and retraining, enough to prevent running, whilst being subjected to human non-threatening presence. The initial training regime in the yards will involve teaching the weaners to slow down, to stop and to walk in a straight line. This is best achieved by a single person in a large rectangular yard. Initially, the weaners will want to rush in one direction and this movement can be controlled by walking parallel to them in the same direction at a wide enough distance to cause a slowing of the movement. This is repeated in all directions until they learn to slow down and relax their pace. When they get to a fence, the movement can be initiated by putting a little pressure on them and then paralleling again at a distance to control the slowing.

The emphasis should be on maintaining peace, tranquillity and slow positive, quiet movements when working buffalo. A length of stiff white plastic PVC pipe is a very useful tool in managing quiet buffalo in a yard situation. It saves the handler the necessity of having to approach too closely and cause more of an alarm response. People wishing to learn more would be well advised to read any of Dr Temple Grandin's (USA) publications, on cattle handling. Courses on low stress stock-handling are also now available in Australia.

When approaching older buffalo groups in paddocks, try to avoid moving toward the stock quickly and directly, otherwise they may want to gallop off. A slow zigzag track is more effective and you will be less likely to have them run away. Carefully approach and hold stock in position so that *you* leave them, not the other way around. Stay outside their flight zone (the distance at which an animal will react to your presence). Buffalo should be held relaxed in a group before moving them for their destination. It is good practice to just block up a group in a paddock on a regular (at least weekly) basis even without them being taken anywhere, firstly to check on their well-being (head count and check for injury) and just to keep them used to coming in contact with vehicles, horse-riders and people on foot.

GRAZING MANAGEMENT

More subdivision of paddocks will help with group separation and pasture management. This can be achieved cheaply with a single, 2-wire or 3-wire electric fence. In the tropics, it pays to not completely graze pastures down to ground level before moving on the stock. It pays to keep the pasture in the active (maximum rate) phases of the pasture growth curve. This will mean faster changes of paddocks, but will maximise both pasture quantity and quality. This will improve growth rates and reproduction in the whole herd in the long run as well as improve overall carrying capacity. Good grazing management also keeps weeds at low levels in the pasture by maximising competition from the edible grasses and legumes.

FURTHER READING

Publications by Dr Temple Grandin.

"Moving 'Em: A Guide to Low Stress Animal Handling" by Burt Smith (1998).

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