Mitigating Cattle Losses Caused by Wild Predators in British Columbia

A Field Guide for Ranchers

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Agriculture and Agri-Food Canada

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ABSTRACT

The Wild Predator Loss, Control and Compensation Program (WPLCCP) was established in 2002 and is administered by the British Columbia Cattlemen's Association. The program was established to:

- Reduce cattle losses to predation using preventive measures and education
- Target offending predators
- Provide compensation upon a verified kill

In targeting offending predators, it soon became obvious that the more information the rancher gathered, the greater the assistance and thus, greater efficiency in removing offending predators. This realized a cost saving by reducing losses to the rancher and response time to the WPLCCP. This field guide was assembled to be specific to the cattle industry in BC and to assist the rancher to determine the predator responsible for cases of depredation of cattle. It will also support the rancher in gathering the details and information needed before making the call for assistance from the WPLCCP.

There is a vast amount of literature available on predation. The problem for many is deciphering the scientific reports and trying to apply this to common field applications. This field guide attempts to explain the most common predation indicators known on cattle that are easily recognized in the field. Presumably it will supply information necessary to determine whether there was a predator attack and thusly the predator responsible.

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A NEW APPROACH

HISTORY

"The definition of insanity is repeating the same procedure again and again expecting different results."

During the history of predator/livestock conflicts, bounties, incorrect use of poison and indiscriminate removal of any predator on the range have been employed with limited success. Consider that for years, one wolf control method used involved poison. When improperly used, the wolves that experienced the poison either by watching other pack members die or ingesting only enough to become sick, soon became trained.

The noted implications of this can include the now "poison wary" wolves killing livestock and only eating on the carcass until a human attends the kill site. Once a human attends, the pack often will not return to feed on the carcass. They have learned through experience what human presence around a dead carcass can mean. This can lead to the pack killing another animal to replace the food source they have just abandoned. This trained behavior can greatly hamper the effective and quick removal of these offending wolves.

Another example could be a large bear grazing on grass and mingling amongst your cattle. This large, non predatory bear's established territory and dominance will keep other bears out of the area. Indiscriminately removing this bear creates the opportunity for another bear, perhaps more prone to predation of cattle, to move into this now vacant territory. (The WPLCCP's experience has shown that only a small number of bears have predatory tendencies. The majority of bears is opportunistic and utilizes carrion and vegetation in order to survive.)

Many of the previous control methods used are now not publicly acceptable or permitted by the British Columbia Wildlife Act laws. The WPLCCP needed a new approach which focused on the offending predators and a method to remove only those offenders which were attacking livestock.

Reviewing the previous control methods which resulted in limited success has prompted the WPLCCP to employ new concepts not traditionally used for predator control in the past.

SPECIFIC PROBLEM PREDATOR – SELECTIVE REMOVAL

In order to best protect your livestock from depredation, the actual predator responsible for the predation is the animal that must be targeted for removal. Predators on your range that are not attacking or harassing cattle will not be considered for removal by the WPLCCP.

First, consider the wolf. In most cases, predation on livestock by wolves is limited to selective wolves in specific packs. Not all wolves have cattle on their menu as their preferred food source. With some packs, the WPLCCP has found that only one or two members are actually involved in the killing of livestock. The Wildlife Control Specialist is often able to attend and remove these specific animals and the predation has ended. The ranchers involved still see wolves on the range, but depredation has ceased since the removal of the responsible predators. Under normal circumstances, the pack members remaining will patrol their territory and keep other wolves out of their hunting grounds. This could include keeping possible "cattle killing" wolves away from your herd.

A wolf pack may cover 1000 square km which they regularly patrol and keep other wolves out of. The size of their area varies between packs and can be dependent upon such things as the size of the pack and the availability of food. If your ranch is contained in a wolf pack area and you see wolves but have no problems; leave the pack alone. As above, the pack may be protecting your livestock from wolves that are prone to attack cattle.

In some cases, you might find an area of range at the intersection of two wolf packs' territories. If you're having depredation from wolves, on one part of your range and not the other, the Wildlife Control Specialist will determine which wolves are involved with predation on your livestock. These are the wolves that will be removed. Indiscriminately removing the wrong animals does not solve the problem.

Specific problem predator removal is effective and has proven successful. One of the first complaints the Wildlife Control Specialist worked on involved a community pasture with a long history of yearly depredation problems. For years the wolves had been indiscriminately removed using various control methods. However, the range kept experiencing high yearly losses of cattle. The cattle did not utilize many sections of this range due to the predation occurring in those areas. The Wildlife Control Specialist attended and employed the selective removal concept. This pasture has now been depredation free for the past 2 years. The cattle are now utilizing areas of the range that had not been used for years. The pasture will most likely enjoy years of no conflict between cattle and wolves, regardless of the previous history of continual predator harassment.

VERIFICATION

The art of determining the correct predator involved in the predation of livestock is crucial for the selective removal of the offending predator. This is learned by experience and careful documentation of all the details. Many factors must be considered when investigating a carcass that is being fed upon by a predator. Indicators must be viewed in a holistic rather than from a focused or isolated point of view. Attack and feeding indicators can become confused. Suppose a carrion eater takes over a dead carcass after the cow was killed by a different predator or had died from natural causes. Each predator and scavenger could leave signs and eating characteristics that might mislead the investigator in determining the correct predator responsible for the killing. An example of this could be; a wolf kills a cow, then a bear claims the carcass as its own and starts consuming it. This could include moving the carcass to a secure location (not characteristic of a wolf kill), a different eating pattern and of course tracks and scat that might indicate to the untrained eye, a bear was the offending predator. In this case, if you removed the bear, you would be killing an animal not responsible for the predation. Thusly, you would not be removing the

predator that has caused you the loss and have not solved the problem. The offending predator would likely return to kill another in your herd at a later time.

It is very important to the ranching community that the correct predator causing the losses is the one removed. There is no benefit in having a scavenger destroyed and the responsible predator remaining at large.

KILL SITE AND CARACASS INSPECTION

Cattle on range can die from many causes not related to predation. The purpose of verification is two-fold. First, is to determine if the livestock was killed by a predator. Secondly; if it is determined that it was predation, to establish which predator killed the animal. If it is not predation, it is up to the rancher to determine the cause of death and to take corrective measures. The Ministry of Agriculture and Lands can be very helpful if you are dealing with poisonous plants on range. The WPLCCP is responsible for the removal of specific predators involved with predation and not removal of predators that may simply be scavenging on a dead carcass.

When you attend to dead livestock, your first job is to determine if the animal died from predation or other causes. This should be done to the best of your ability before you contact the WPLCCP. Regular monitoring and inspection of your herd will greatly assist in this. In fact, without regular monitoring of your herd, this might not be feasible, as leaving animals until they are mostly scavenged and/or decomposed will remove many of the indicators necessary for you or the Wildlife Specialist to determine the correct cause of death. Simply finding a scavenged carcass on your range is not verifiable proof that the animal was killed by a predator (Fig. 1).

Fig. 1: Finding this carcass on range in a scavenged and decomposed state is not proof that the calf was killed by a predator.

BRUISING

The number one indicator in determining that a predator was involved with the death of an animal is tissue damage and bruising under the hide in connection with bite marks in the outer hide. In order for bruising to happen, the heart must be pumping blood throughout the animal. The above is not present if the animal died before the predator fed on it. In this case, the rancher must consider other causes of death, such as poisonous plants, bloat, disease, etc. (Fig. 2). **If there is no bruising evident, there is no need to call the WPLCCP for predator control work or compensation**.

RANCHER'S RESPONSIBILITY

You have encountered a dead animal and have determined that it was a predator by the attack site indicators (i.e. signs of struggle) and tissue

Fig. 2: When skinned out this carcass shows no signs of bites corresponding to tissue damage and bruising. This animal was not killed by a predator.

damage/ bruising of the carcass. In order to have a successful resolution the following steps should be followed:

Note: If the carcass has been covered with debris, such as sticks, grass, snow, etc., you should not do a close up inspection. If you locate a carcass that has been covered, it is recommended that you leave the area and call the Wildlife Control Specialist to attend with proper personal protection. If you are determined to do this inspection yourself, ensure that you have qualified back up with sufficient firepower to protect yourselves from a bear or cougar. When a bear or a cougar covers a carcass, they are claiming this carcass as their own and will not be far away. A bear in defense of its claimed carcass is one of the most aggressive animals you can be involved with. Use extreme caution, especially in known grizzly bear areas.

1. Determine if the attack site is the same site as the location of the found carcass. Was the carcass dragged to this location or is this where the animal was killed? Inspect the site for signs of struggle. Chunks of hair, blood trails and broken vegetation are all indicators that a struggle took place.

2. Record the posture of the carcass. Are the legs folded up underneath the carcass or are the legs extended and the animal lying on its side?

3. Examine the carcass. Note tissue damage/bruising, blood on ground, length of time since death, location and description of external wounds and the parts of the carcass consumed. Taking pictures of the above can prove invaluable to the Wildlife Specialist in case the carcass is scavenged before his/her arrival.

4. Record the eating pattern on the carcass. Are there signs of scavengers eating on the carcass? The most common, ravens, can alter what you might expect to find respecting the carcass consumption indicators mentioned later in this guide.

5. Observe the behavior of your herd. Are they bunched up, agitated or extremely nervous? Are there any other wounded or injured animals in your herd? Are some of the cattle missing their tails?

6. Note the natural features in the immediate and attack site locations. Knowing the types of trees and vegetation in the area will assist the Wildlife Control Specialist in determining the required tools needed to attend to your complaint. The carcass location in respect to the terrain is also an indicator of which predator might be involved.

7. Check both the attack site and carcass location for signs of scat, tracks, hair, etc. Often a barb wire fence is an excellent source to gather hair for determining the predator species. The nature of the barb wire fence also allows one to determine which direction the predator was traveling when it encountered the fence. Note these locations, but leave the hair intact for the Wildlife Specialist's investigation.

8. Leave the carcass at its location until you have talked to a Wildlife Control Specialist for instructions. In some cases you may be directed to leave the carcass at the site, in others, it may need to be moved.

9. Immediately telephone **1-866-398-2848** to discuss the situation with a WPLCCP staff member. After communicating all of the information you have gathered, the Wildlife Control Specialist may be able to determine/confirm the predator involved over the phone. Having all of the correct information for this first phone call will enable a quicker and more successful outcome to your predator problem.

WPLCCP STAFF RESPONSIBILITY

The information you have collected from the scene will determine the response you will receive from the Wildlife Control Specialist. In many cases, if you have recorded all of the pertinent indicators from the kill scene, the Wildlife Control Specialist can often determine the predator involved prior to an on site inspection. This saves valuable time that often increases the chance of a successful predator removal. In many cases where the predator can be determined over the phone, a Wildlife Control Specialist will be dispatched with the correct equipment and the control methods will be implemented without delay.

Follow the directions the Wildlife Control Specialist gives you over the phone. Depending on the predator, it may be beneficial to leave the carcass alone for a short period to ensure the predator remains at this location and does not move on to another food source. His/her initial advice will be dependent upon the information you have collected.

In some instances, you may not have collected all the information required to determine the predator or the cause of death. A carcass covered with ground debris that you have backed away from for safety concerns or cross contamination by scavengers, are examples of this. In these cases, a Wildlife Specialist or the Wildlife Control Specialist will attend and determine the cause of death. Upon verifying that the livestock was killed by a predator, compensation will be paid; and if necessary, control action will be put in place.

WHAT TO DO ABOUT WOLF PREDATION

In BC, the predator most affecting the cattle industry is the wolf. This predator is also one of the most wary of all the predators. Catching a grizzly or black bear predating on cattle is far less onerous than the removal of predating wolves.

Removal of wolves predating on cattle does involve assistance from the ranching community. It will involve some homework, keen observation and regular patrols of your range. The WPLCCP has found that when ranchers are involved with the requirements to remove a predator from their range, the success rate and the speed at which the offenders are removed, is greatly increased. This knowledge and its implementation can save the individual rancher from further losses.

RECORDING THE CYCLE TIME

WPLCCP's preferred method for wolf removal is trapping. A two inch by two inch pan is what the Wildlife Control Specialist has to get the wolf to step on. With no background work, having a wolf that roams a 1000 km_ area, step on a four square inch piece of metal is unlikely. Knowing when the wolves will be at a given location is critical in catching this offender.

Wolf packs will regularly patrol (cycle time) the boundaries of their territories, marking scent posts to maintain the established territory. Dates they attend any given location in their territory is fairly consistent and can be predicted with relative accuracy. Depending on the size of the pack and their territory, the abundance of food and the time of the year, the cycle can range on average from 3-14 days.

There are three times during the year when this pattern will be affected and you might notice wolves in a particular area on a more regular basis. This will be the breeding season when the Alpha wolves break away from the main pack (February-March). This will also happen during the period when the Alpha female is giving birth (April-May). In addition, the wolves will remain close to the den during this time, until the pups are ready to travel (June-July).

Record the areas where you have seen scat, fresh tracks and scent posts. Record when you hear howling and the general location you believe the howling is coming from. Mark these dates and locations on a calendar. Recording this information will enable you to establish the cycle and predict when to expect them back in a given area at a given time. You will be surprised how regular and predictable the pattern is. Recording this information is something that can be done on a regular basis even when you are not experiencing any predation problems. Establishing the cycle time will greatly increase the Wildlife Control Specialist's efficiency and reduce your losses should a pack start predating on cattle.

In some cases, you might have already experienced wolf predation and have an animal partially consumed. The Wildlife Control Specialist may

require you to establish the days the wolves attend and feed on the carcass. The pattern or cycle times will become evident. Monitoring when the wolves are eating on a carcass will allow you to predict when they will be back for another feeding. Knowing these dates should ensure removal of the predators.

During the summer months, this process is critical in order to avoid non targeted species from stepping into the traps. Also, during winter conditions, it is beneficial to know when to set or tune the traps in relation to the wolves' anticipated arrival in the area. Ideally, the Wildlife Control Specialist will set up 1-3 days before the wolves are expected to return.

PREDATORS' CHARACTERISTIC INDICATORS

When reading the different predator characteristic indicators you will see the terms "may be, might be, often, etc." Remember with respect to the points presented, you probably won't encounter all of the indicators listed. You will have to consider all the evidence to correctly identify the offending predator.

WOLF

General

The livestock and number of animals killed will be influenced by the size of the pack and the experience of the wolves involved. In some cases the entire pack will be involved in predation on cattle. In these situations, you may find bite marks to the front end of the cow's nose and neck, along with the more characteristic wounding to the hindquarters and flanks. When in large numbers, some of the wolves attacking the frontal region are characteristic of a distraction, so the more effective wounding to the hindquarters may occur by other wolves in the pack.

Commonly, select members of the pack wound the large prey (initial attack), but the entire pack will be involved in the consumption of the carcass. In many attacks, one or two experienced wolves (commonly the Alpha female and male) do the initial wounding, leaving the cow(s) to weaken (stiffen up)

or die. They may repeat this in various areas within their territory. The wolves then return at a later date (part of the cycle time) normally with the rest of the pack for the feeding. This often used attack strategy, employed by wolves, is their method of "putting meat in the freezer". It is a learned survival technique that lessens the chance of injury to the wolf and has served them well for generations.

A wolf with its jaw broken from a kick in the face from a large, healthy cow would not survive very long. The cow's limited mobility after the initial wounding allows for easier killing when the time arrives.

Wolves are well known for eating carrion in winter months. As with bears, also well known for eating carrion, it is imperative that all indicators of the predation be gathered to ensure that you are identifying the correct cause of an animal's death.

The following attack indicators are affected by the structure of the pack involved in the killing of and feeding on livestock.

Attack Indicators

Attacks consist of a chase with biting at the flanks and hindquarters/legs (hamstring) (Fig. 3). If more than one wolf is involved in the attack, biting on the nose and neck may also be evident. Generally speaking, the majority of wounding will occur on the back half of the animal in a typical wolf attack on larger prey species.

Scene Evidence Indicators

You may find broken or missing tails on cattle. For the wolf, this is a game and not necessarily an attack on that particular animal. Often this is caused by the experienced wolves training pups or subordinate pack members, on how to run and eventually kill cattle. When wolves decide to predate on cattle, it will be more direct and effective than simply the biting of tails.

When a predation on a cow occurs, it won't necessarily be missing its tail, but other members of the herd may have missing or broken tails. This is a good indicator that you have a problem with wolves on your range and

Fig. 3: The typical wounding location and damage on cattle by a single wolf - back half of animal. (Note: more extensive than a coyote bite mark)

regular monitoring of your herd should be employed. The killing of cattle by wolves can be noisy and obvious to the rest of the herd. The attack is not quick or efficient. Several other animals in the herd may well have been chased before the actual cow was selected. Often you will find other animals in the herd in a very stressful and agitated state. They may be bunched together and/or resist herding by a dog. Reluctance to go/stay in the under utilized grazing areas is another common indicator.

Often there are signs of blood and chunks of hair scattered through the attack area. Signs of a life and death struggle will be evident. (Fig. 4, 5)

Prey will be consumed at the kill site, rather than being dragged or moved to a secluded eating location. On consumed carcasses, the bones will be scattered throughout the area, over a period of time.

Fig. 4: A wolf kill. Note the sign of struggle and the attack's biting location on the cow.

Fig. 5: Wolf tracks on top of the cow's blood in the snow during the chase to bring the cow down.

Carcass Consumption Indicators

The first feeding on large prey, such as cattle, often involves the internal organs (heart, liver, lungs, internal fat, etc.). Normal progression is to the hind quarters. The neck and ribs may also be favored during the first feeding. Large bones will be chewed on and broken (Fig. 6). If a large pack is involved, the entire animal can be consumed in one feeding and the pattern will not be evident.

Fig. 6: Typical eating pattern of the wolf. Note that the large rib bones are chewed and broken.

COYOTE

General

Coyotes are primarily scavengers; however, they may be involved as predators on calves. They have also been known to attack cows while they are calving.

Attack Indicators

The rear and flanks of older calves are the main attack areas when coyotes are involved with predation. You may note damage to the nose, hindquarters and tails of calves, quite similar to the indicators of wolf predation. There will be significantly less damage per bite when compared to a wolf's bite, due to the lack of strength in the coyotes' jaws.

Scene Evidence Indicators

Coyote predation is similar to that of the wolf; however, only smaller animals (calves) will be involved.

Carcass Consumption Indicators

The coyotes' carcass consumption will be similar to the wolf with few exceptions. Only smaller bones are broken and chewed when compared to the larger bones (i.e. leg bone) that the wolf will chew and break. Notably, when eating on carrion in the winter months, the coyote tends to "mine" out holes and eat from these locations rather than a general eating of the entire muscle mass.

COUGAR

General

Due to the fact that cougars are not normally carrion consumers and are picky eaters, requires quick reporting and response to attacks for control purposes. Sometimes bait can encourage a cougar to return and feed, but generally speaking, they prefer their own kill. During hot weather, the cougar will only eat on a fresh kill and will not return to feed on its kill once it has spoiled. Delays in reporting will greatly affect the quick removal of this predator.

A big difference between a cougar and other predators is that a cougar kills rather than attacks its prey. They are extremely efficient predators. Luckily there are not a high number of cattle killed in BC from cougars. Their preferred prey livestock are horses and sheep. It is characteristic of the

cougar to gorge feed and bed close to the area of its kill. Extreme caution must be used when approaching a cougar kill site.

Attack Indicators

On large prey such as cattle, the cougar will leap onto the prey's back and bite into the vertebrae at the base of the skull to bring the animal down. Once down (found in about 90% of large animals), a bite to the cow's throat will ensure its death (Fig.7). Teeth marks on the neck and claw marks in front of and just behind the shoulders are characteristic of cougar kills on large prey. Due to the nature of the hides, these marks will be obvious on a horse kill, but may not be that noticeable on cattle. Claw marks from the cougar clinging on the cattle's back will only show as pin holes in the hide. Tearing of muscles is done under the hide. When the hide is skinned back this will be very noticeable. Sometimes there will be claw marks on the face or nose from positioning the cow's head in order to bite accurately into the vertebrae. On small prey, cougars do not leap onto their backs, but approach from the side and pull the small prey in. On smaller calves this may mean crushed skulls and vertebrae as attack indicators (Fig.8).

Scene Evidence Indicators

Little to no chase or evidence of a chase will be evident at the attack site. The attack will usually take place near a cover that the cougar has utilized to stalk its prey. This can include high grass to trees with overhanging branches. Cougars will drag or carry their prey to a secluded spot to eat. At this location they may "surgically" disembowel their prey and move the carcass away from the gut pile (Fig. 9). You may find the gut pile covered with debris. Cleaning of the prey, in this fashion, is an indication on how fussy the cougar is. The cougar is the only predator that will do this. Normally, cougars will cover a carcass with available ground material

Fig. 7: Cougar killing bite marks on the throat of the calf (to lap up blood).

Fig. 8: A cougar crushed the skull of this calf. Not noticeable until skinned out.

Fig. 9: Cougar kill. Note the clean cut edges, the hide is removed and the prey is disemboweled.

Fig. 10: Two month old calf covered by a cougar. A grizzly or black bear would do similar.

between feedings (Fig. 10). This can include snow, grass, sticks, leaves and soil. Other animals in the herd will not be agitated or nervous and may be completely unaware that this predator has attacked an animal in the herd.

Carcass Consumption Indicators

Heart, liver, kidneys and lungs are the preferred items for the first feeding. About 90% of their large prey will have a hole in the underside of its neck where the cougar will lap up blood from the animal while it is dying and its heart is still pumping. In some cases, during the summer months, a cougar will kill strictly for this drink of blood, and then move on without returning to the carcass. They prefer to eat as little hide as possible and in some cases; it may appear that they have skinned the prey, leaving the hide neatly laid out. When eating meat they may leave very clean cut edges, as if cut by a knife, verses the tearing of the meat as seen by other predators.

GRIZZLY BEAR

General

Grizzly bears by virtue of their strength and size will make cleaner and quicker kills than black bears. There will be no sign of a long chase when compared to the wolf. Bears are "lazy" and will not expand a lot of energy into a prolonged chase. They are well known for feeding on carrion. In addition, cows have been killed strictly for their milk (eating only the udder). It is characteristic for the grizzly bear to feed and bed close to the area of its kill. Extreme caution must be used when approaching either a grizzly bear kill site or a carcass that has died of other causes and has been claimed by a grizzly bear.

Attack Indicators

The optimum kill method for the grizzly involves biting to the front regions of cattle. This may result in a broken skull, neck or shoulder. Chunks of meat may be missing and extreme bruising may be noted in the neck and shoulder area. Contrary to popular belief, the main weapon all predators

use to kill an animal is biting. The grizzly's claws are used to restrain or hold the prey in order to control its' biting patterns. You may note claw marks from the struggle, but the majority of the wounding will be from the biting action of the grizzly.

Scene Evidence Indicators

Grizzlies prefer to drag the carcass to a secure, secluded location before eating. The majority of time, they cover the carcass with available material such as leaves, grass, sticks, logs, soil, etc. between feedings. They will leave a great deal of scat and tracks in the immediate area. They do not scatter bones like the dog family. If a younger calf is killed, they may consume all of it with the exception of the hoofs and teeth, as they have been known to devour soft bones.

Carcass Consumption Indicators

The normal eating pattern is to consume the hind legs first (Fig. 11). The pattern will start at the back of the animal and move towards the front. The bone structure, including the ribs and vertebrae will remain more or less intact. Occasionally, the leg bones will be detached from the hip but will be in very close proximity to the other remains. Often the majority of the hide will also be intact and remain at the kill site. Meat will usually be consumed before the internal organs.

BLACK BEAR

General

Black bears tend to wound more often than kill cattle. Generally, they are not efficient killers. In most cases, an attack will involve an immature bear preying on calves. A lot of times, a mature cow will be able to chase off the young bear while protecting her calf. Many wounded animals endure bite marks on the back and neck and will survive the initial attack (Fig. 12).

Fig. 11: Grizzly bear attack site. Note the eating pattern started at the back and worked towards the front. Bones and hide are intact.

There will be no signs of a long chase as compared to the wolf. Black bears, like grizzlies, are "lazy" and will not expand a lot of energy in a prolonged predator chase.

The black bear is more prone to eat carrion than the grizzly. They have been known to take calves for the milk, only eating the stomach contents. Predation by black bears often increases in spring, when the 2 year old bears are being "kicked out" from the guidance of the sow as mating season begins. This is often the same time branding occurs before cattle are turned out on many ranches. The presence (scent) of calves with burned hair and unhealed brands could be a major attractant to these immature bears while searching for a new food source. Delay in turning out your animals until the brands have healed may help deter possible problems. Predation during the

Fig. 12: Black bear bite marks to top of shoulders and neck. These wounds have been stitched and the calf survived. Typical bite locations of a black bear attack.

late summer and fall months can also be evident during dry years when quality vegetation and berries are in low supply.

It is characteristic of the black bear to feed and bed close to the kill area. Extreme caution must be used when approaching either a black bear kill site or a carcass that has died of other causes and has been claimed by a black bear.

Attack Indicators

Similar, to the grizzly, is the bite on the top of the neck and the back of cattle. This would however, usually involve a calf rather than a full grown animal (Fig. 13).

Scene Evidence Indicators

Blacks prefer to drag the carcass to a secure, secluded location before eating. They may cover the carcass with available material such as leaves, grass, sticks, logs, soil, etc. between feedings. In 2003, the WPLCCP noted 3 cases of black bears covering their prey similar to the grizzly. Although

Fig. 13: Efficient black bear attack with bite to the top of shoulder. Also, note bruising which is evidence this calf was alive when bitten by a black bear.

this is not normally the case, it certainly seemed to be more normal than abnormal in 2003. They will leave a great deal of scat and tracks in the immediate area and they do not scatter bones like dog family.

Carcass Consumption Indicators

The consumption pattern is very similar to the grizzly beginning at the back of the animal, moving toward the front, consuming the hind legs first. The bone structure, including the ribs and vertebrae, will remain more or less intact. Occasionally, the leg bones will be detached from the hip but will be in very close proximity to the other remains. Often, the majority of the hide will also be intact and remain at the kill site. Meat will usually be consumed before internal organs.

PREDATOR TRACKS

The following shows the main differences between the tracks of various predators. The tracks can be easily determined in the field.

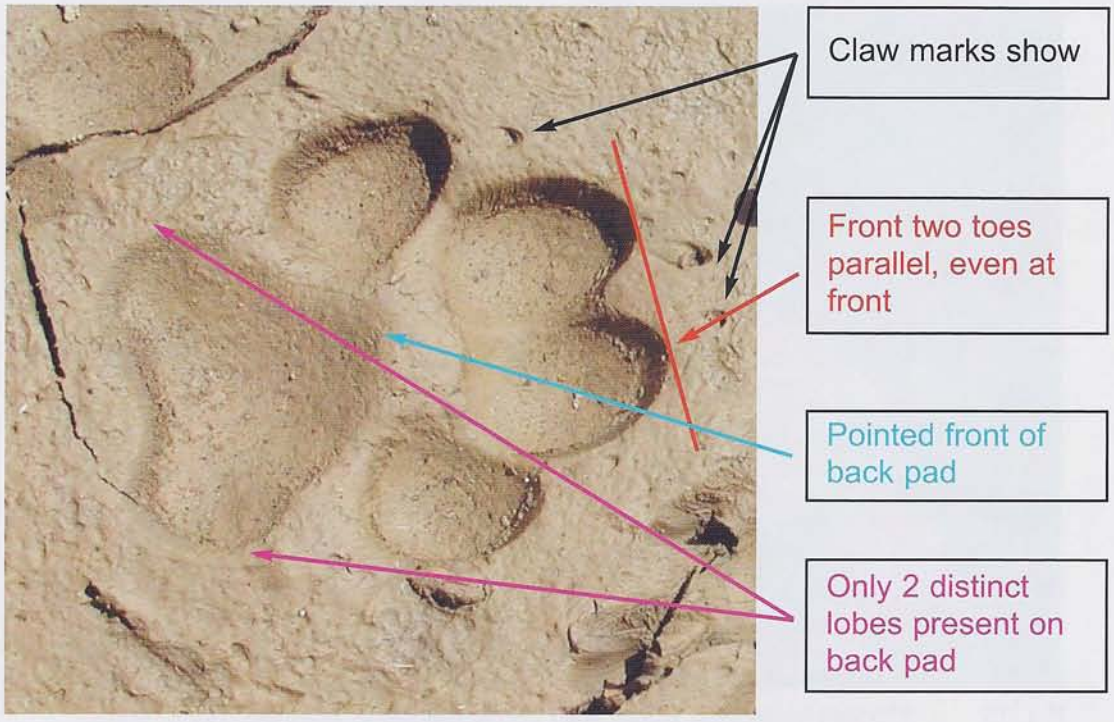

Fig. 14: Wolf track in mud. The wolf has 4 toes and the tracks are about 4" to 5" long and show claw marks. A coyote track is similar but about 1/2 the size.

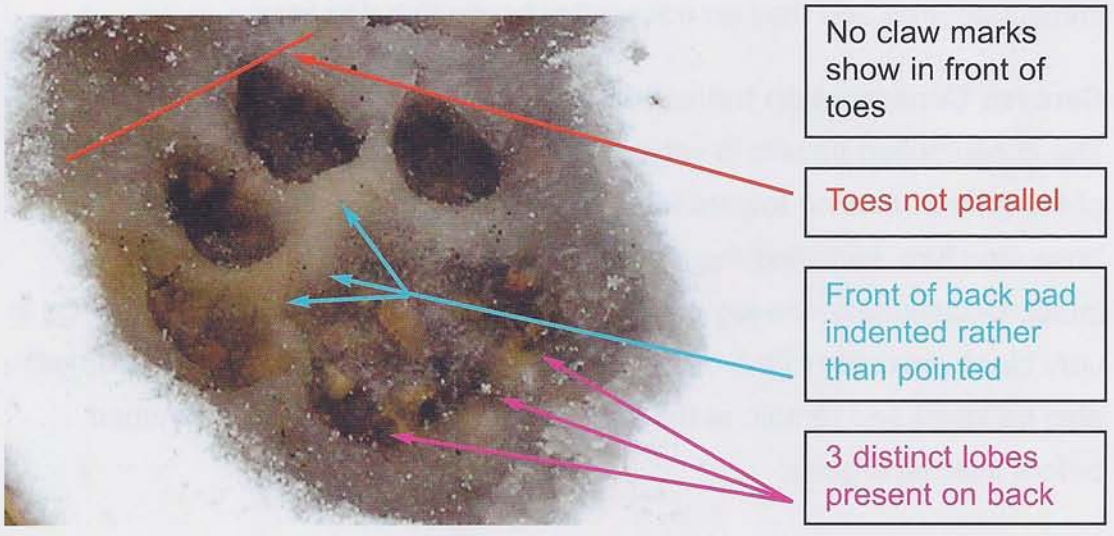

Fig. 15: Cougar track in snow. A cougar has 4 toes but no claw marks. The track is about 3" to 4" long. Like a house cat, their claws are retractable and will not be evident in their track impressions.

Grizzly bear front foot print, 4-6" wide. Black bear would be similar except smaller in size.

Fig. 16: Grizzly bear front foot track in soil. The bear family has 5 toes. Claw marks on the front feet will be 2" to 4" in front of a grizzly's toes and about 1 - 1 1/2" in front of a black bear's toes.

FIELD PREDATION AIDS

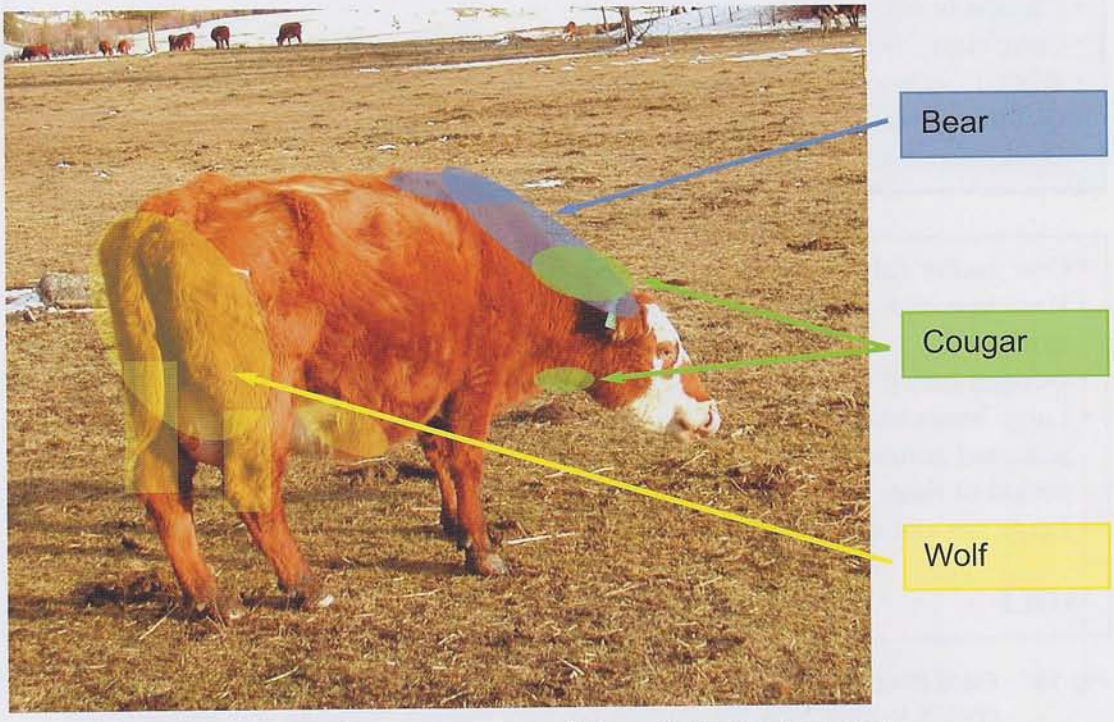

Fig. 17: Common attack areas on a cow. Colours indicate where you would expect to find bruising and bite marks on a carcass that has experienced predation by the predator indicated.

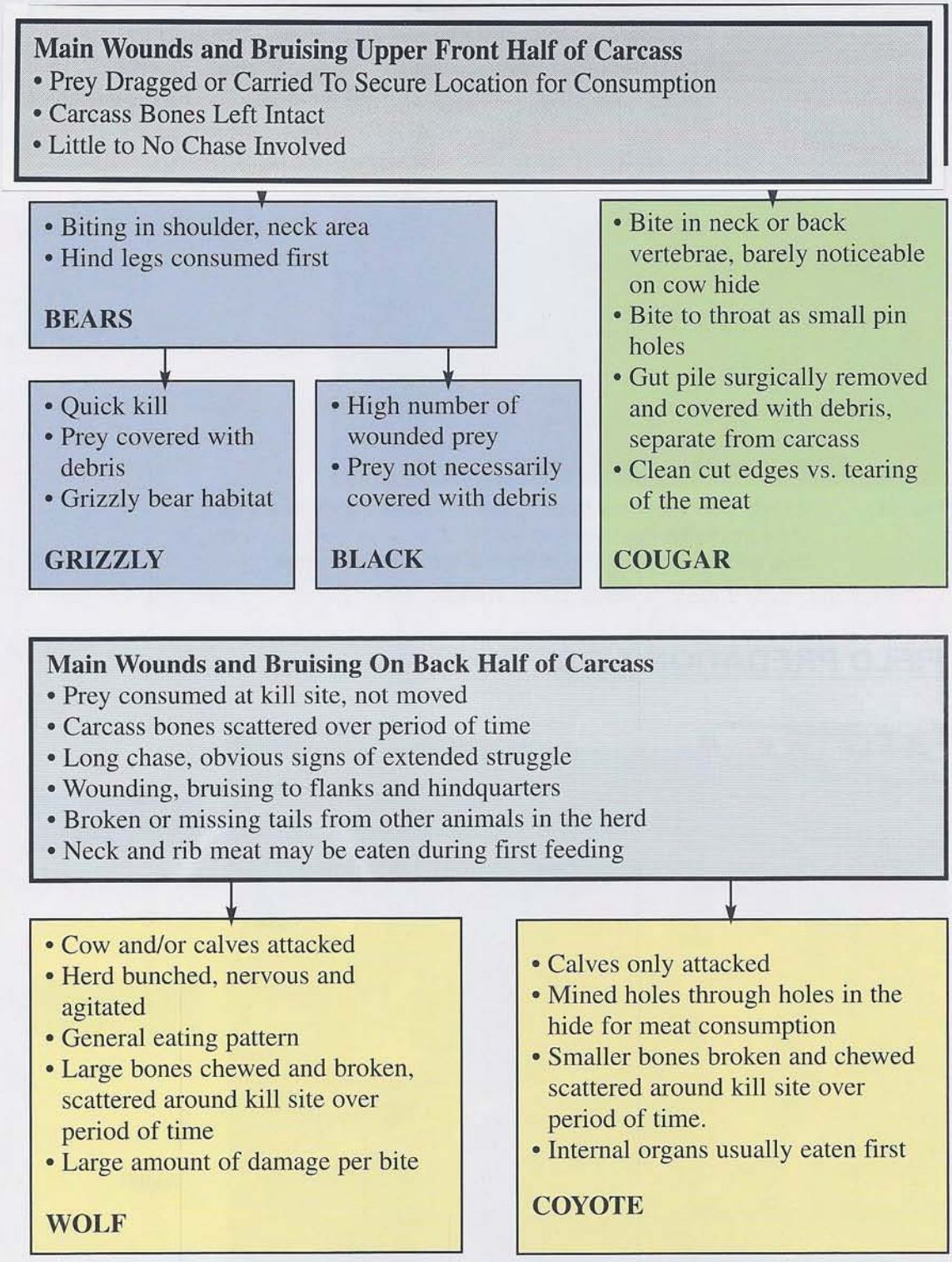

Fig.18: **Field Predation Chart.** The chart is a simplified explanation used for quick field checks to determine the possible predator responsible when you are observing a carcass attack and kill site. It is not to be considered as all inclusive and is condensed to the obvious indicators that one might find. If some of these obvious signs are present, refer to the identified predator indicators as noted in this field guide.

THE PROGRAM'S LIMITATIONS

The WPLCCP is permitted by the Ministry of Environment to remove predators that are predating on cattle. The program must work within the boundaries of the issued permit. In addition, it is the WPLCCP's strong and proven belief that selective removal of only the offending predator(s) is by far the most effective means and will assist the ranching community to a better degree than indiscriminate removal. This selective, justified removal of only cattle killing predators also allows for sound defense of the program in the public relation's campaign of the cattle industry.

At times there has been some frustration in the ranching community due to no response to unconfirmed cattle losses from suspected predators. Calls for the Wildlife Control Specialist to attend and remove wolves because of these unconfirmed cattle losses have been made.

This program will not and can not respond to such requests. There is a high likelihood that the WPLCCP could lose the permit under which it is authorized to work, should work on predators that are not verified cattle killers be undertaken. In addition, as noted under "A New Approach", this would not effectively solve predation problems and in some cases, could increase predation on livestock.

Being short 15 head during fall round up may raise some alarm bells, but is not verifiable proof that there is a predator problem. In cases where a rancher is experiencing livestock losses such as this, it is time to increase human presence on the range to locate a carcass that can be verified as having been attacked by a predator. This will ensure response from the Wildlife Control Specialist and removal of the specific predator will follow. As previously noted, once the predator(s) causing the problem are removed, the producer should enjoy a significant time period without predation occurring.

SUMMARY

Attend each kill site with an open mind. The biggest mistake you can make is to decide on the predator or "jump to conclusions" before the investigation is completed. This point can not be stressed enough as it can jeopardize the process and lead to incorrect verification of predated livestock. Seeing a bear near the cattle a week ago does not mean this is the offending predator. Predetermining the predator before recording all of the indicators will cause one to be biased in collecting the evidence. This "tunnel vision" often leads to incorrect verification.

Ensure that you use a holistic approach rather than becoming focused on one or two indicators. While reading the "Individual Predator Indicators", it may appear obvious and that verification should be a rather simple process. In the majority of cases however, this is not the norm. Scavenging, weather conditions and delays in locating the carcass can confuse the signs.

All information gathered by the rancher should be immediately passed on by phoning **1-866-398-2848**. Delays in reporting may negate the effective removal of the specific predator involved. The quicker the information is received by the WPLCCP, the more opportunity for a successful conclusion to the removal of the specific, offending predator.

Little to No Chase Involved

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