

Cluster identification in predator and human conflict situations (livestock killing by large predators)

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Photo: Trepet S.A., Pkhitikov A.B., Dzutsev Z.V., Weinberg P.I., Ryser A.
Work plan: Ryser A.

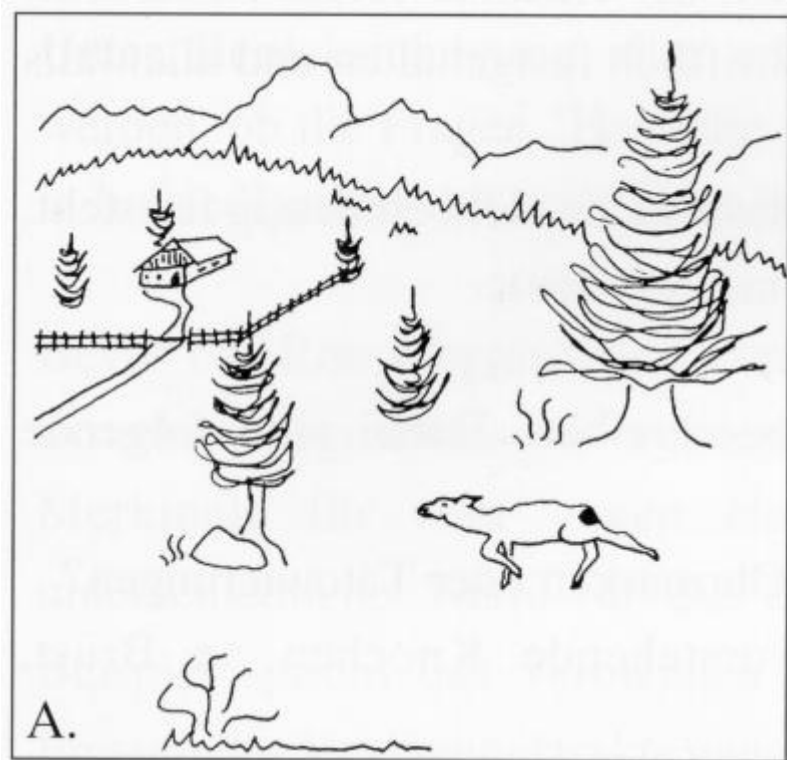
General

Leopard

Wolf

Bear

1. Methodological approach to the “crime scene” exploration: from big to small, from distant to close



Describe the site:

- Forest, pasture, bushes, distance to houses and roads
- Fence (yes/no; inside/outside)
- Snow, dirt, soft soil, mud
- One/several/many individuals dead
- Prey still alive/dead (for how long)

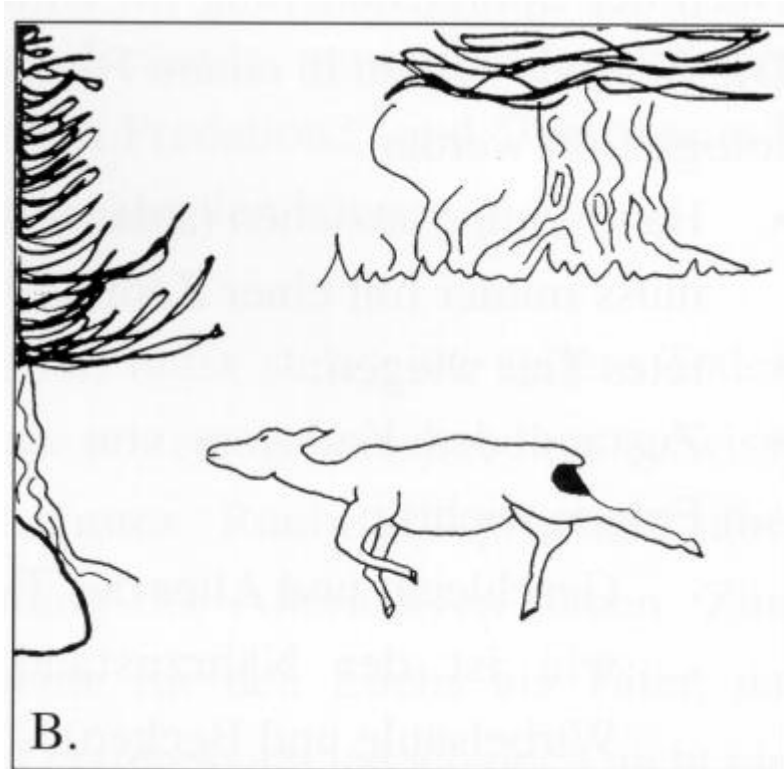
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1. Methodological approach to the “crime scene” exploration: from big to small, from distant to close



Describe the site:

- Is carcass covered by leaves/grass/snow/soil (?)
- Are all parts of the body present (?)
- Are there pieces of plucked hair around (?)
- Are there tracks present (?)
- Are there signs of dragging (?)
- Are there feces (scats) present (?)
- Are there scrapes present (?)

General

Leopard

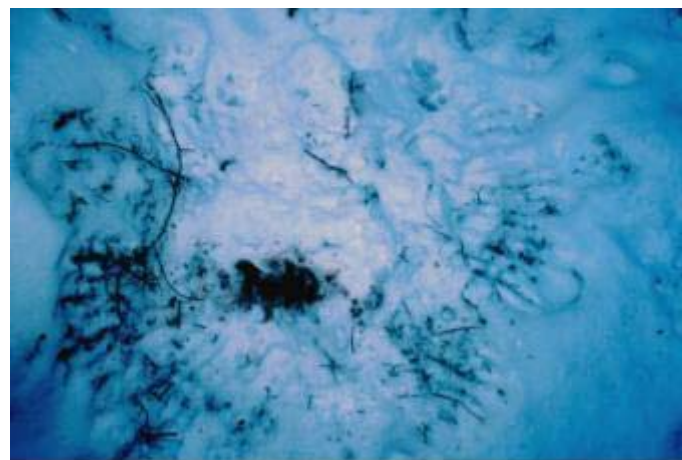
Wolf

Bear

1. Methodological approach to the “crime scene” exploration: from big to small, from distant to close



- Photo with a measuring tape
- Hair sampling
- Fecal sampling



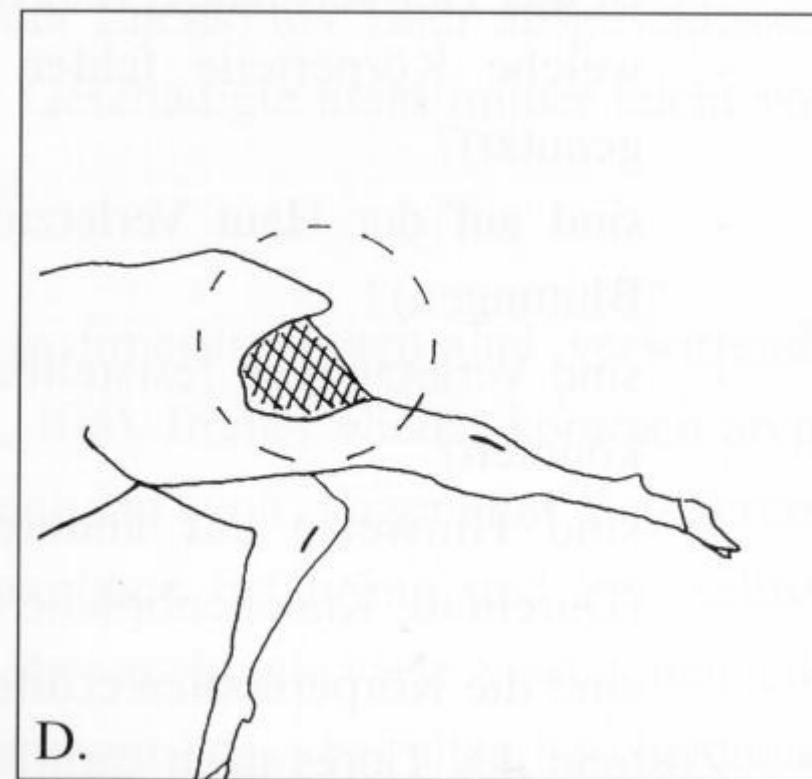
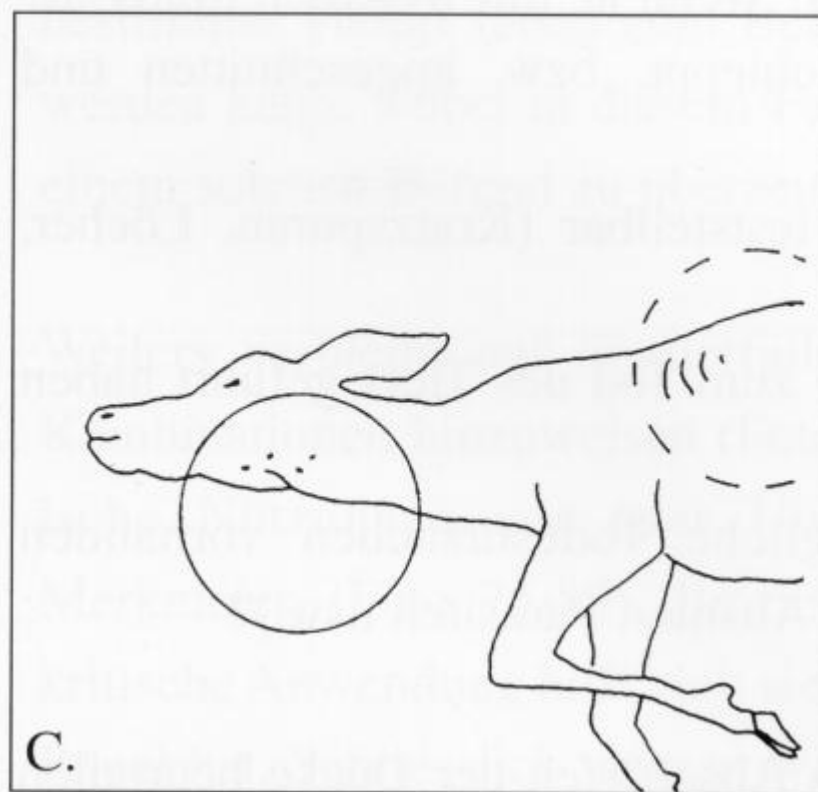
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2. Methodological approach to the carcass examination



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2. Methodological approach to the carcass examination

- Body condition (estimated mass)
- Neck skin (pathological changes, damage, parasites)
- Absent or consumed body parts – which ones (?)
- If in doubt, the carcass should be skinned as the main signs can be seen only subcutaneously
- After autopsy – recommended to check the organs
- “test the lungs” (pulmonary hemorrhage)

General

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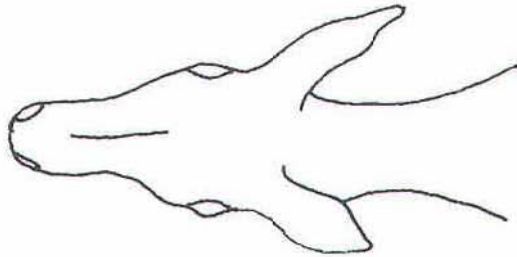
Wolf

Bear

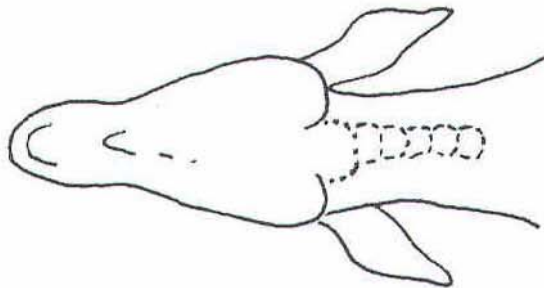
2. Methodological approach to the carcass examination

Mark damaged parts by pencil on a printed image of the carcass

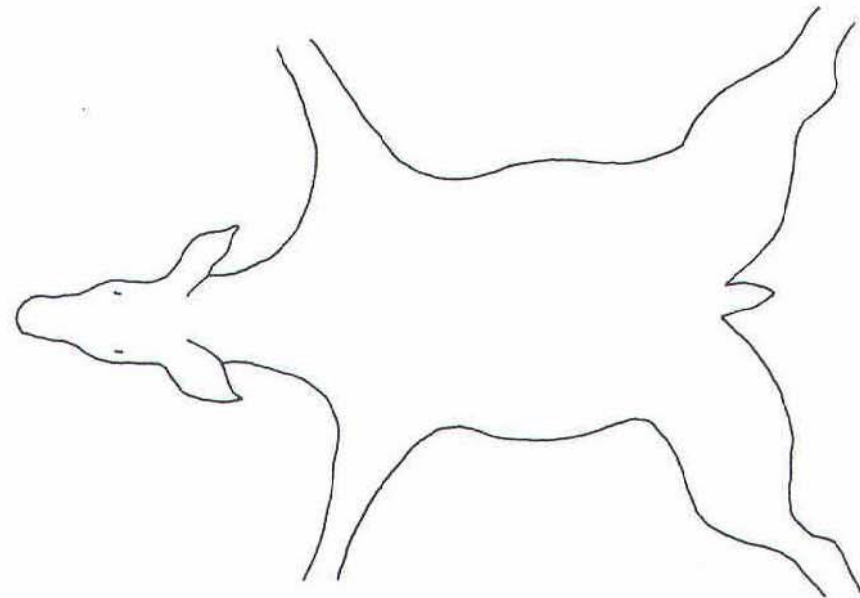
Head and neck (from above)



Head and neck (from below)



Skin removed from the body
(from inside and outside)



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3. Results for interpretation

- 1) General condition of the carcass
- 2) External/internal hemorrhages. Punctures on the skin
- 3) Distribution of the damaged parts on the skin
- 4) Missing body parts (?)
- 5) General health condition of the dead animal (?)
- 6) Death circumstances and the death site

Determination from the knowledge of carnivore biology and ecology

General

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Bear



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General

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- Leopard (particularly female) can cover its prey remains with leaves, grass or snow
- Carcass dragging is common – to ravines, riverbeds, caves, crevices or dense shrubs



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- It kills by long grasping of the throat (1) or the soft nasolabial part of the muzzle (2) – in both cases a prey dies from suffocation



Suffocation (asphyxia)

- Hemorrhage in lungs
- Lungs are expanded and hydropic
- The right side of the heart is enlarged and full of blood

If the throat is bitten, the larynx and the internal tissues are bitten as well

Large prey: the size of a red deer



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- It kills by breaking the neck near the basal part of the skull. Death is caused by the damage of the spinal cord
- Claw marks on the skin – if deep they are well visible from inside the skin

The bitten skull of a wild boar (Killi)



The bitten basis of the skull of a chamois (reintroduced female named Volna)



General

Leopard

Wolf

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- Cats do not scatter prey remains around. The food leftovers are the skull, usually full skeleton, skin and the limbs, all in one place



1 night



2 nights



3 nights

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Chamois



Wild boar



Bison calf

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- Cats do not scatter prey remains around. The food leftovers are the skull, usually full skeleton, skin and the limbs, all in one place



Rumen is not consumed, can be dug separately

*These predation signs are common also in lynx, so additional confirmation and tracks are required



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Conclusions on predation by leopards:

- Bitten throat, basis of the skull, or soft nasolabial tissues of the muzzle
- Few, but very specific punctures on the throat, including the larynx!
- Usually (but not always) kill sites are located in transitional zones of habitats (near forest glades, on boundaries between forests and alpine meadows...)
- The carcass can be slightly covered by leaves, grass or snow, or dragged to a cave, ravine, deadwood or shrubs
- Flesh of the rump (rear, external or internal parts of the hip, sometimes the scapula) is consumed first
- The stomach and rumen are not consumed and can be dug nearby
- Body parts are not mutually displaced
- When the carcass is being consumed, its skin is turned inside out!
- Thin but deep claw marks can be noted on the rump and/or shoulders

**The rule: a prey killed unusually for a feline predator
is surely killed not by a cat!!!**

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General

Leopard

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If the throat is damaged then it has smashed tissues, abundant tissue ruptures, and numerous subcutaneous hemorrhages caused by a powerful spurt from tissue-cutting lateral movements of the head confronted with a strong retention. Blood is abundant.

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A sign of canid hunt: Legs and the lower part of the belly can be damaged, the groin can be lacerated

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Conclusions on predation by wolves:

- Claw marks are rarely seen. If present, they are rough, large and superficial, not deep
- Throat bite with massive ragged wounds
- Tissues with ruptures, severely damaged, with numerous hemorrhages
- Frequent (but not always present) bites and traumas of the belly, legs or joints
- Wounds show the application of a strong power
- When feeding, wolves scatter the prey's body parts around, rarely leaving the whole skeleton, consuming often with the skin, digging body parts in different places. Consumption begins from the abdominal part
- Wolves utilize the carcass very fast and, whenever possible, fully

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- The prey is dragged far away
- Thoroughly dug
- Numerous ragged wounds on the skin and the body
- Deep ragged claw marks
- Body parts can be absent or cut off
- Bones (most likely, the neck) can be broken

Not every dead animal is killed by a
predator!

Hit by a car



Killed by a stone during the landslide



A stillborn calf



The same carcass can be visited by different predator species and the cause of death is impossible to determine

