



Cruelty Investigations and Veterinary Forensics with the RSPCA

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My Journey into Veterinary Forensics



Learning Objectives

- Basic understanding of Veterinary Forensics and its role in the community
- Understanding the classifications of animal abuse
- How to conduct a forensic examination
- Utilising entomological evidence
- How to body condition score an animal
- Overview of some commonly seen cases
- Our process of investigating large scale breeding operations

What is Veterinary Forensics?

Commonly used terminology:

- **Forensic**
 - Pertaining to the law, specifically related to public debate in courts of law
- **Forensic Science**
 - The application of a broad spectrum of sciences to answer questions of interest to a legal system
 - Commonly referred to simply as “forensics”
- **Veterinary Forensic Sciences**
 - The application of a broad spectrum of sciences, including veterinary medicine, to answer questions of interest to a court of law related to animal abuse

Importance of Veterinary Forensics

Veterinary forensic science can be used to:

1. Establish if a crime has or has not been committed against an animal
2. Solve the animal related crime

Importance of Veterinary Forensics

- Society demands the investigation of crimes against animals
- Investigating such crimes contributes to public health and safety
- Crimes against animals affects more than just the animals
- There is a link between human violence and animal cruelty
- Crimes against animals can be a warning sign of future violent acts
- Individuals who witness animal cruelty can become desensitized to violence
- Animal abuse may occur in conjunction with other crimes

The Link

- 76% of animal abusers also abuse a member of their family
- 71% of pet-owning women entering a shelter reported that their partner had threatened, hurt or killed an animal. 32% reported their children had hurt or killed animals. 25% of the battered women reported that fear for their pet's welfare had prevented them from seeking shelter sooner (Ascione 1998 & 2001)
- Animal abuse or neglect was observed in 60% of families investigated by the New Jersey Division of Youth and Family services for child abuse, and in 88% of families investigated for physical child abuse.

Defining Animal Maltreatment

- Abuse in most cases is synonymous with maltreatment
- Abuse can be classified as either cruelty or neglect given the legal definitions of these terms
- Neglect can rise to the level of cruelty
 - For example, inadequate quality of feed can lead to malnutrition and overtime can lead to starvation. In most cases inadequate feed or early malnutrition would be considered neglect, whereas long term malnutrition or starvation would be considered cruelty.

Defining Animal Maltreatment

Classifications of animal abuse:

- Physical abuse
 - Non-accidental injury
- Sexual abuse
- Emotional abuse
- Neglect and abandonment
 - Hoarding and puppy mills
- Organised abuse
 - Animal fighting
- Ritualistic abuse
 - Santeria

Classifications of Animal Abuse

- **Physical Abuse**

- Physical abuse is non-accidental physical injury
- Such as blunt force trauma, sharp force trauma, gunshot wounds, asphyxia, drowning, burning, etc

Sharp Force Trauma



Sharp Force Trauma



Sharp Force Trauma



Classifications of Animal Abuse

- **Sexual Abuse**

- Any abusive act with an animal involving the rectum, anus or genitalia; or sexual contact with animals which may or may not result in physical injury to the animal
- Animal sexual abuse is the preferred term over bestiality (in which sexual intercourse would have to take place) and zoophilia (a strong, erotic preference for animals), neither of which take into account the potential deleterious effects on the animal
- These cases fall under Victorian Police jurisdiction but vets will be involved in evidence collection and assessment of the animal

Classifications of Animal Abuse

- **Emotional Abuse**

- Although emotional abuse, bullying, excessive teasing, intimidation, exploitation, or coercion that leads to a fragile emotional state in humans are specified in numerous criminal statutes, such terminology is currently lacking from many animal cruelty laws
- POCTAA lists worries, torments or terrifies in their 9(1)(a) charge
- Persistent threatening behaviour to animals or a failure to provide them with basic emotional and companionship needs is considered by some to constitute emotional abuse. However, this has not been recognised in statutory language

Classifications of Animal Abuse

- **Neglect and Abandonment**

- Neglect is an act, often of omission, signifying a lack of care
- Neglect may often result from ignorance regarding appropriate animal husbandry or from extenuating circumstances such as poverty, family crises or substance abuse
- Neglect seems to be the most common form of animal abuse
- Of particular concern are animal hoarders and puppy farms, which commonly accumulate or maintain large numbers of neglected animals

Classifications of Animal Abuse

- **Organised Abuse**

- Refers to dogfighting and cockfighting
- “Blood sports” such as dog and cockfighting have been singled out for special attention in animal “cruelty” laws since their inception in the 19th century
- These crimes continue to flourish, often in connection with other offenses

Cock Fighting Ring



Cock Fighting Ring



Cock Fighting Ring



Classifications of Animal Abuse

- **Ritualistic Abuse**

- May include:
 - Neopaganism, Witchcraft, Wicca
 - Satanism
 - Cultural Spiritualism
 - Santeria
 - Palo Mayombe
 - Brujeria
 - Voodoo, Vodouon
- Few other crimes against animals create such intense concern within a community
- Uncommon/rare form of animal abuse
- In a lot of cases involve birds and other smaller animals rather than dogs and cats

At Risk Animals

- The 1999 Munro and Thrusfield survey identified which pets were at a greater risk of suffering from animal abuse and in particular non-accidental injury
- The following categories were found to be over represented:
 - Dogs and cats under 2 years of age
 - Male dogs
 - Mixed breed dogs
 - Staffordshire bull terrier (purebred or mixed)
 - Labradors showed the lowest risk of abuse
 - Domestic short haired cats

My Role at the RSPCA

- My role as the Inspectorate Vet is to assess the animals brought in by the Inspectors on admission to our clinic and collect evidence to help support or prove a case of abuse or neglect
- Inspectors may request that I come out to a property to give advice to owners or make a recommendation that the animal is unwell and needs Veterinary treatment
- In large scale breeding investigations I might be joined by a team of vets to systematically assess all animals on the property
- From each of these scenarios I then produce a Veterinary report about the animal, group of animals and/or the environmental conditions
- I continue to manage and look after the animals whilst they are in our care awaiting court outcomes
- I am an independent expert witness in all of these matters
- I have also written reports for councils and government departments regarding other acts of animal cruelty

Standard Veterinary Process

- It is always helpful for me to see what environmental living conditions the animal was being housed in either via attending the property myself or seeing photographs or video footage
- This can aid me in understanding the medical conditions the animal is presenting with or possible other problems I should consider
- Things I look out for include:
 - Suitable housing/shelter
 - Availability, accessibility, quality and quantity of food and water
 - Amount of or the absence of faeces
 - Any vomiting, diarrhoea or areas of blood
 - Any other animals it is housed with

Standard Veterinary Process

When considering an animal's degree of suffering it may be useful to refer to the "Five Freedoms":

- Freedom from Hunger and Thirst
 - By ready access to fresh water and diet to maintain health and vigor
- Freedom from Discomfort
 - By providing an appropriate environment including shelter and a comfortable resting area
- Freedom from Pain, Injury or Disease
 - By prevention or rapid diagnosis and treatment
- Freedom to Express Normal Behaviour
 - By providing sufficient space, proper facilities and company of the animal's own kind
- Freedom from Fear and Distress
 - By ensuring conditions and treatment which avoid mental suffering

Deceased Animals

- If deceased animals are found on a property much information can be obtained from their bodies
- The time of colonisation (TOC) is the length of time that insects have been associated with a dead body and can give a close estimate as to the time of death of the animal
- The first insects to arrive at a dead body are flies, knowing their predictable life cycles and with data of temperature within the region an estimation of how old the insects are can give a TOC.
- The female fly will lay her eggs around any open orifice or wound. These eggs hatch into larvae and feed on the substrate where they are. They develop into 2nd and 3rd instar larvae. Once the 3rd instar has eaten enough it will wander off the body to a dry protected area to continue its transformation

Fly Life Cycle



Entomological Evidence

Collection of blow fly evidence

- Eggs
 - Very tiny and laid in clumps around orifices or wounds
 - Can be collected with a wet paintbrush or forceps
 - Half should be preserved in 75 – 95% alcohol
 - The other half should be placed on a small piece of beef liver or cat/dog food. This will allow the entomologist to grow the eggs to adults
 - The presence of eggs can age TOC to a matter of hours
 - If there are older life stages present then the eggs are less important

Fly Eggs



Entomological Evidence

- Larvae/maggots
 - Large maggots are usually the oldest but smaller maggots may be a different species. Collect a good sample of both but aim for more of the larger maggots. You can use a spoon to collect them
 - If possible try to estimate the size of the maggot mass on the animal. They generate a lot of heat and their developmental rate may be increased due to it
 - Have a good look around the body for any 3rd instars that have wandered off
 - Half the sample should be immersed in very hot but not boiling water then drained and placed in 70 – 95% alcohol
 - The other half placed in a container with air and food such as dog/cat food

Maggots



Entomological Evidence

- Pupae
 - Keep any pupae alive because once they are preserved it is difficult to work out which species of fly it is
 - Collect any pupae and put in a vial with some wet paper towel. Small holes will need to be in your container to allow air in but not the fly out
- Once your entomological evidence has been collected get it to an entomologist as soon as you can

Standard Veterinary Process

- After assessing the environment I will review any known previous medical history of the animal before beginning my examination
- A forensic medical examination is a detailed and thorough exam done in order to document the animal's condition and search for case specific evidence
- Upon arrival of the animal any general impressions are noted:
 - Level of consciousness
 - Behaviour
 - Posture
 - Locomotion
 - Body shape
 - Nutritional condition
 - Coat
 - Abnormal sounds or smells
 - Any other notable abnormalities

The Forensic Exam

- All body systems are examined and detailed notes are taken
- Throughout my examination I am also considering:
 - The level of pain and suffering the animal is or has been experiencing
 - An estimated duration or age of the medical issues found
 - The long term and short term effects of these problems
 - Whether the conditions should have been apparent to the owner/caregiver
 - Whether the conditions are preventable or where Veterinary care should have been provided
 - Did the delay in seeking Veterinary care result in additional pain, suffering or the inability to successfully treat the animal

The Forensic Exam – Body Condition Scoring

Body Condition Scoring (BCS)

- As a large majority of our cases involve animals in poor body condition we utilise BCS to help demonstrate how an animal has improved in our care
- Many BCS scales are available
- We use the Department of Primary Industries which ranges from 1 – 5 where 1 is emaciated and 5 is obese
- You must visualise and palpate the animal in order to properly BCS especially for cats where their fur can hide just how skinny they are
- It is a subjective scoring system and 2 people can have different opinions

Body condition score chart - Cat

Emaciated



- Individual ribs, spine and pelvis prominent and evident from a distance.
 - Lack of muscle mass.
 - Little or no body fat.
 - Rump hollow.
 - Waist prominent when viewed from above.
 - Neck thin.
 - No flank fold (under belly), abdomen very tucked up.
- Veterinary advice must be sought.

Thin



- Ribs, spine and pelvis bones visible and easily felt.
- Little body fat.
- Neck thin.
- No flank fold (under belly), abdomen tucked up.
- Obvious waist when viewed from above.

Increase feeding and worm cat if not wormed recently (ensure all-wormer used - some products do not cover all-worms).

Seek veterinary advice if cat remains underweight or unsure of feeding or worming regime.

Ideal



- Ribs and spine can be felt, but few ribs may be visible.
- Flank fold (under belly) maybe visible from side.
- Cat should have a waist when viewed from top.
- Good muscle mass.

Overweight



- Ribs and spine not visible but can be felt.
- Little or no waist when viewed from above, rounded appearance.
- Flank fold (under belly) clearly visible and will wobble when cat moves. Belly and chest rounded.
- Large ventral fat pad covering hind legs.

Reduce feed intake or provide lower calorie feed. Consider options to increase exercise level of cat.

Obese



- Ribs and spine not visible and difficult to feel.
- Tail has obvious fat deposit.
- No waist and back broadened when viewed from above.
- Flank fold (under belly) hangs down and will sway when cat moves. Belly and chest very rounded.

Seek veterinary advice on diet and exercise regime.

DOGS

CONDITION SCORE CHARTS

EMACIATED



- Ribs, spine and pelvic bones prominent and evident from a distance.
 - Lack of muscle mass.
 - Little or no body fat.
 - Fungus follows.
 - Waist prominent when viewed from above.
 - Abdomen obviously tucked up.
 - Neck thin.
 - No fat on tail.
- Veterinary advice must be sought.

THIN



- Ribs, spine and pelvic bones visible and easily felt.
 - Little body fat.
 - Neck thin.
 - Abdomen tucked up.
 - Little fat on tail.
 - Obvious waist when viewed from above.
- Monitor feeding and weigh dog if not weighed recently.
(Some all-women used - some products do not cover all women.)
Seek veterinary advice if dog remains underweight or unsure of feeding or watering regime.

IDEAL



- Ribs and spine can be felt, but few ribs may be visible.
- Dog should have a waist when viewed from above.
- Belly is tucked up when viewed from side.
- Good muscle mass.
- Fungus well masked.

OVERWEIGHT



- Ribs and spine not visible but can be felt.
 - Fat deposit on tail.
 - Little or no waist when viewed from above, rounded appearance, back appears broadened.
 - Dog sags along back line when viewed from side.
 - Abdomen not tucked up, may appear rounded underneath.
- Reduce food intake or provide lower calorie food. Increase exercise.
Seek veterinary advice if unsure of appropriate diet or exercise regime.

OBES



- Ribs and spine not visible and difficult to feel.
 - Tail has obvious fat deposit.
 - No waist and back broadened when viewed from above.
 - Belly obviously rounded and possibly distended.
 - Dog sags or rounded up along back line when viewed from side.
- Seek veterinary advice on diet and exercise regime.

Emaciation



Emaciation



The Forensic Exam

- The forensic exam continues with the collection of any evidence from the animal
- Diagnostic testing usually includes:
 - Full bloods, urine, faeces, swabs and radiographs.
- Radiographs are essential as they can:
 - Provide valuable information regarding a history of abuse
 - May observe recent, healing, or healed fractures
 - Most victims of abuse have been subject to repetitive abuse
 - If there is evidence of other acts of cruelty this can be introduced at court to show motive, intent or the absence of mistake or accident

The Forensic Exam

- Photographic evidence is always utilised and it forms a vital part of our investigation. It is used to:
 - Identify the animal
 - Show the extent of the animal's problems
 - Demonstrate improvement in the animal's condition over time and with Veterinary treatment
- A forensic ruler can be used to measure and document the size of lesions on an animal

Overall Photos



Orientation Photo and Close-up with Scale



The Forensic Exam

- Videography can also be extremely useful. It can be used to:
 - Show gait abnormalities or neurological conditions
 - Show certain behaviours such as vocalisation due to pain or severe brain injury
 - Demonstrate how hungry or thirsty an animal is when offered these things
- Follow up videos can also be utilised. These may show differences in behaviour and the resolution of medical issues

The Veterinary Report

- The purpose of the vet report is to clearly convey the animal's condition on its presentation to the RSPCA and explain the results from the medical examination and any collected evidence.
- Comments are generally made about the level and duration of suffering the animal may have experienced and additionally whether a lay person should have been able to recognise that there was a problem with their animal and sought Veterinary treatment for it
- If there has been a resolution of illness or weight gain this is also discussed and what treatment was needed to facilitate the improvement in the animal

Case Studies

Emaciation

- Emaciation can be caused by
 - Food deprivation
 - Poor quality food
 - Inappropriate food
 - Intermittent feeding
 - Lack of appetite due to disease
- We can't just assume an emaciated animal has been starved. Cancer and underlying gastrointestinal disease may be a medical reason for low body weight
- Starvation can be proved by showing an animal's body condition increase with minimal to no medical intervention and appropriate feeding

Emaciation - Starvation

- Starvation is also known as protein - calorie malnutrition causing a gradual loss of lean body mass and adipose tissue
- An animal can die due to the progressively deteriorating process which may be before all of the body's fat stores are consumed
- It is important to place the state of starvation in context with the animal's life stage.
- Young animals with the demanding nutritional needs of growth can be more profoundly affected than adults with weight loss and stunted growth. Radiographs may show growth arrest lines in long bones

Emaciation - Starvation

- Starvation has several adverse effects on the body and numerous organ systems:
 - Reduced elasticity of the lungs and impairment of the respiratory defense system predisposing the animal to pneumonia
 - There is a substantial decrease in the size of organs. In the heart there is reduced cardiac contractility in addition to reduced mass of the ventricles
 - Prolonged gastric emptying and gastrointestinal transit times also gastric erosions and ulcerations may be seen
 - Intestinal villi flatten which reduces the absorptive area leading to impaired fat and carbohydrate digestion
 - Ulceration of the lingual or buccal mucosa

Emaciation - Starvation

- In starvation loss of muscle occurs after 24 hours
- The visual appearance of muscle atrophy begins in the back and thigh muscles quickly progressing to all muscle groups
- Generalised muscle atrophy is a reason why live emaciated animals may be weak at presentation. Their posture may be one of a weak animal with its head and tail hanging down
- Photographs after the animal has gained weight will frequently show this contrast in posture and strength

Emaciation



Before



After

Emaciation



Before



After

Emaciation

- To work up an emaciation case we need to know about the environment the animal has come from. In particular:
 - The presence or absence of food
 - What type of food was present
 - Are there other objects in the environment that the animal may have consumed that could cause an intestinal obstruction?
 - Was there any faeces present, the animal may have been eating their own

Emaciation

- A full physical examination is done including:
 - Body condition scoring
 - Weighing
 - Bloods – to see if there is any medical reason to explain the poor body condition
 - Faeces – to check for the presence of worms, parasites or bacteria
- A feeding plan is started to slowly reintroduce the animal to food and then increase its daily caloric intake to ensure weight gain

Emaciation

- In many of these cases the animal might be anaemic, that is lacking circulating red blood cells, due to a lack of iron in their diet. This can be life threatening
- Any medical issues found through our diagnostic tests are addressed and treated
- The animal will be weighed weekly and adjustments can be made to the feeding plan to help with weight gain
- Follow up photos can help show just how much the animal has improved often from providing adequate nutrition alone

Blunt Force Trauma

- Occurs as a result of the impact of an animal's body against a blunt surface, or the impact of an object with a blunt surface against an animal's body
- At the time of the blunt force impact there is a transfer of kinetic energy from the blunt object to living tissue where all of the energy delivered to the tissue is absorbed and changed
- The larger the area over which the energy is delivered, the less severe the injury

Blunt Force Trauma

- Causes of BFT:
 - Hit by car
 - High rise falls; greater than 2 stories for cats, 1 story for dogs
 - Injuries of activity; running, jumping, falling
 - Physical assault injuries; non-accidental injuries
- Types of injuries caused:
 - Contusions
 - Abrasions
 - Lacerations
 - Fractures

Blunt Force Trauma - Bruising

- A bruise is an area of tissue haemorrhage caused by a blunt force impact that ruptures the blood vessels
- Gravity may affect the spread of the underlying haemorrhage away from the original site of injury
- An animal's hair coat may minimise surface injury and protect the skin
- As animals have a reduced blood supply to the skin compared to humans, external bruising is not commonly seen
- When bruising is present it is usually caused by a severe force that may have also caused bleeding in the underlying tissue structures
- We often need to shave the hair coat to see the full extent

Blunt Force Trauma

- These cases will often come in after someone has witnessed the animal be subjected to blunt force trauma.
- The animal may be limping, or have an obvious swelling on its body
- In some instances it may have no obvious injury
- As usual I would begin my thorough clinical examination to see if there is a specific area that is painful on palpation
- If an animal has sustained a blow to the abdomen it is important to collect a blood sample to see if there is any organ damage and then continue with careful monitoring to ensure the animal's condition does not decline.

Blunt Force Trauma

- Radiographs are essential and help us focus in on the area we are most worried about while additionally looking for evidence of any previous injury to other bones
- The radiographic image will also demonstrate areas of soft tissue swelling
- The most commonly found fractures are:
 - **Dog**
 1. Femur
 2. Skull
 3. Ribs
 - **Cat**
 1. Skull
 2. Femur



This is a classic pattern of rib fractures in a physical abuse case

Blunt Force Trauma



Blunt Force Trauma



Large Scale Animal Breeders

RSPCA Attended Puppy Farms



General Housing



General Housing



Old and Dangerous Housing



Birthing Areas



Raised Wire Floor Puppy Pens



Raised Wire Floor Cages



Large Scale Breeding Investigations

- Investigating large scale puppy or kitten breeding establishments is labour intensive and requires lots of resources such as personnel, time and space
- On site investigations will usually involve a large number of Inspectors, Vets, vet nurses and animal attendants who work in groups together to get through large numbers of animals.
- An initial walk through of the property gives us an understanding of the current issues the animals are facing and helps us make a plan of how to proceed
- Every animal is photographed and examined by the Veterinarian. The environment it is living in is thoroughly documented as well
- Each animal is given a unique number that informs us of where it is located on the property

Common Medical Conditions - Dental Disease



Common Medical Conditions - Dry Eye



Common Medical Conditions - Dry Eye



Common Medical Conditions - Cherry Eyes



Common Medical Conditions - Ear Infections



Common Medical Conditions - Skin Disease



Common Medical Conditions - Matting



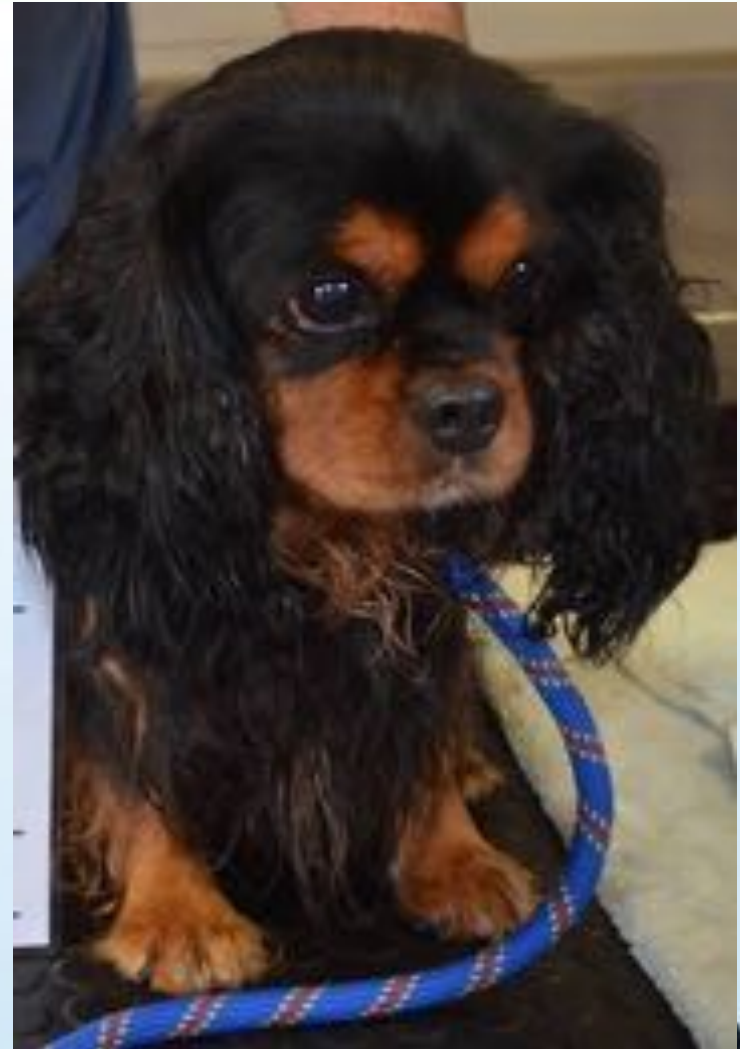
Common Medical Conditions - Matting



Common Medical Conditions - Fleas



Common Medical Conditions - Heart Murmurs



Collar wounds



Diarrhoea issues in puppies



Diarrhoea issues in puppies



Large Scale Breeding Investigations

- Any animals that are seized from a large scale breeding investigation are re-examined by the lead case Veterinarian at the RSPCA in Burwood as quickly as possible in the days after the seizure date
- The longer it takes for an animal to be re-assessed the less weight we can place on any discovered evidence of disease. This is why it is vitally important for the Vets to document and have photographed any illness found on the animal at the property

Large Scale Breeding Investigations

- Each animal is treated as an individual cruelty case and worked up accordingly
- The first evidentiary samples obtained from the animals are in most instances faeces. Their first faecal deposit in the pen will be collected and sent off to external pathologists. This immediate collection and testing helps prove that the animals came in with these particular gastrointestinal diseases and is also useful from a shelter management and infection control point.
- Every animal is individually assessed, vaccinated, wormed and given flea prevention medication
- Everything about the animal is documented through Veterinary notes, photographs or videography
- Any medical issues are addressed and a plan is initiated for whatever is needed; weight gain, resolution of illness, etc

Large Scale Breeding Investigations

- Once all the evidence is collected it is collated and the lead case Veterinarian will write a report. This will include general comments about the environmental conditions the animals were living in and then specifically go through every individual animal and the medical conditions associated with it.
- While the case awaits its court date the animals remain seized in our care. They are vet assessed at regular intervals and any medical issue that arises is quickly dealt with. This can be a stressful and busy time if there are a large number of animals taken in the seizure

Large Scale Breeding Investigations

- Additional to any medical issues these animals may have, they invariably also have often severe behavioural problems that manifest themselves with:
 - Circling, pacing
 - Avoidance of touch
 - Fearfulness of sudden movements, unfamiliar objects and loud noises
 - Reactiveness
 - Aggression
 - Resource guarding
 - Inappropriate toileting
 - Shut down

Large Scale Breeding Investigations

- These behaviours stem from their upbringing in an environment where there is little to no human interaction, often limited food or water and lack of control of their surroundings
- As their first experience of human contact may be the day the RSPCA arrive to examine them it is important that we take this into account on the day of investigation.
- Shortly after their arrival at the RSPCA every animal is assessed by an animal behaviourist. A rehabilitation plan is made for each individual which may include mental stimulation and exercise especially for working dogs, counter conditioning and desensitisation and the slow process of gaining their trust. In some instances medication is also initiated to help the animals recover

Thank You!

