



Animal Behaviour

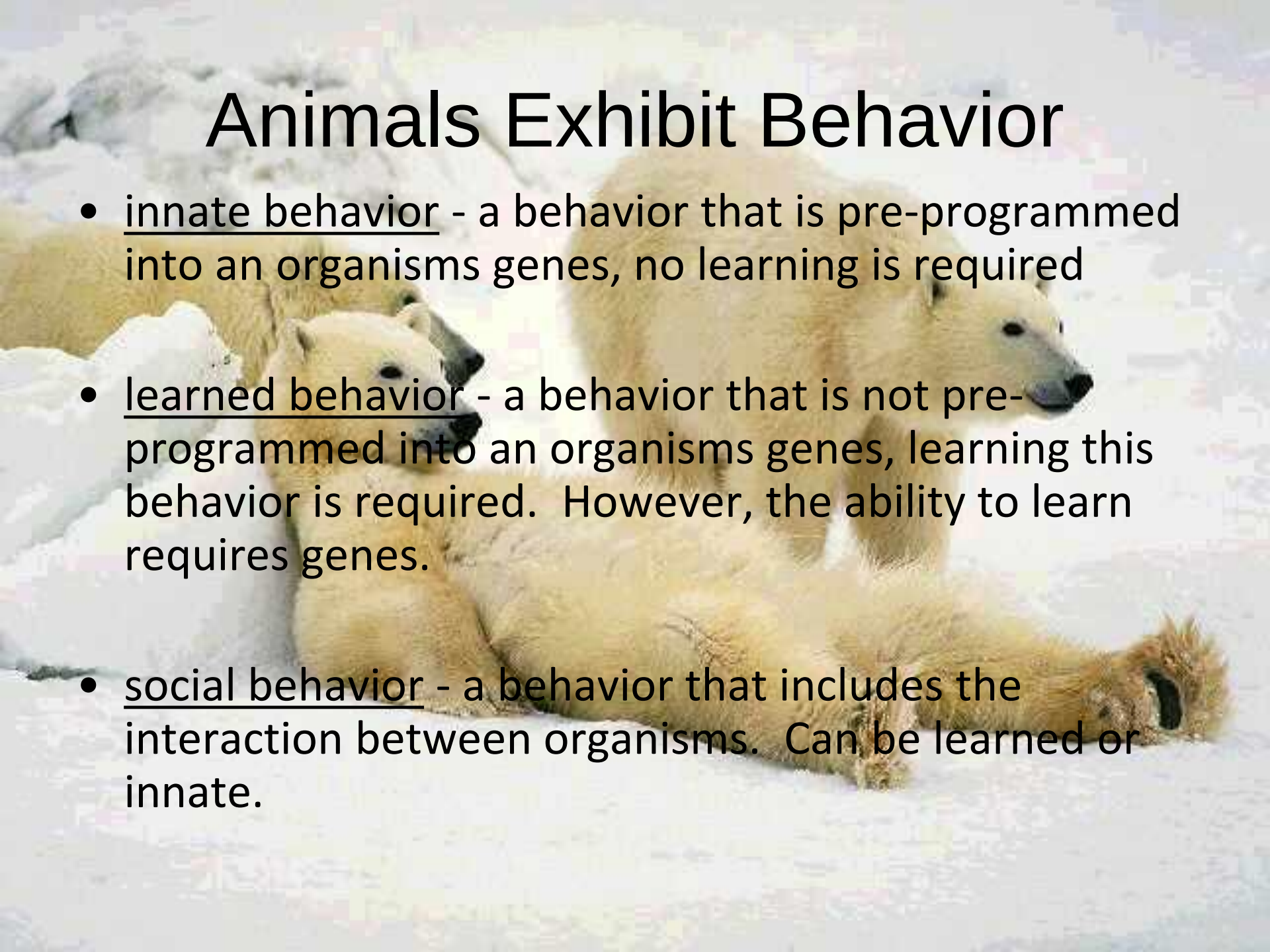
Animal Behaviour

- Behaviour: anything an animal does in response to a stimulus in its environment



Animals Exhibit Behavior

- innate behavior - a behavior that is pre-programmed into an organisms genes, no learning is required
- learned behavior - a behavior that is not pre-programmed into an organisms genes, learning this behavior is required. However, the ability to learn requires genes.
- social behavior - a behavior that includes the interaction between organisms. Can be learned or innate.



Innate Behaviour

- Inherited behaviour

- Examples

- Reflex- simplest innate behaviour with no conscience control

- suckling

- Instinct- complex pattern of innate behaviours

- Web building or nest building



Instinctive Behaviours

Courtship

- behaviours males and females carry out before mating
 - Discourages interbreeding between wrong species
 - Sounds, visual displays, dances, chemical signals



Territoriality:

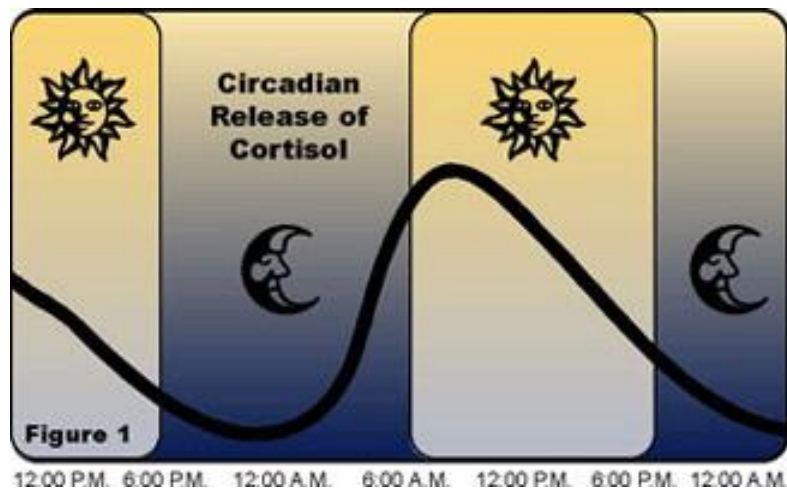
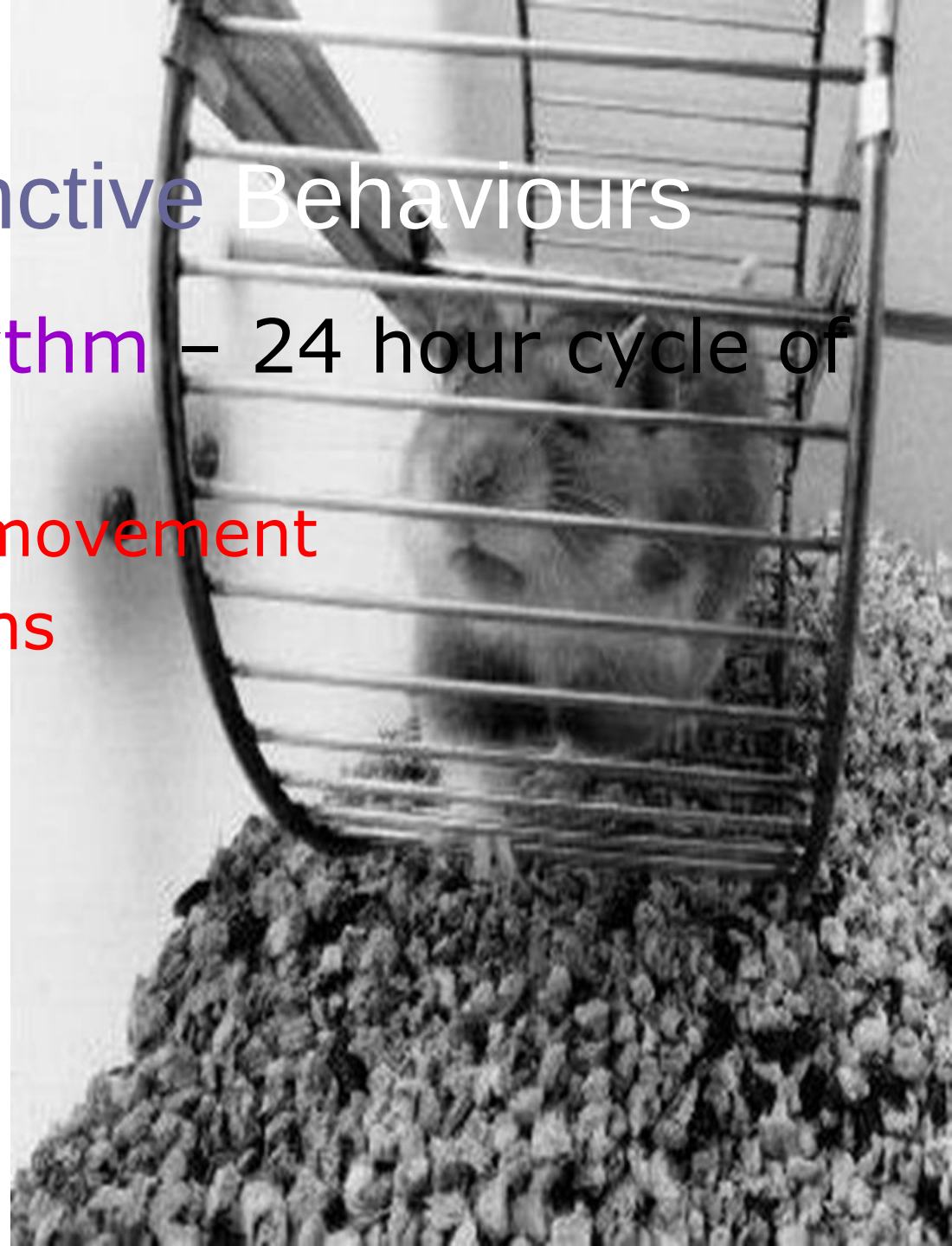


- Defense of a physical space, territory
 - Songs, calls, intimidation, marking territory, attack, chase



Cycles of Instinctive Behaviours

- Circadian rhythm – 24 hour cycle of behaviour
 - ▣ diurnal leaf movement
 - ▣ Sleep patterns



Cycles of Instinctive Behaviours

- **Migration**- seasonal or periodic movement



Cycles of Instinctive Behaviours

- **Hibernation**- state of reduced metabolism as animals sleep through **cold winter**



Cycles of Instinctive Behaviours

- **Estivation**- state of reduced metabolism as animals sleep through **hot summer**



Learned Behaviour

- Learned Behaviour - behaviour that changes through practice or experience
 - ▣ Habituation
 - Animal is given stimulus without punishment or reward
 - Gets "used to"
 - Examples: people sleeping through train
 - Cetaceans noise



Animal culture – learned behaviour

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- Lobtailing & bubble netting – feeding mechanism
 - First seen in 1980 – since then 278 humpback whales
 - Learning from others (Lee, 2013)

Tool use

- Foraging
- Sponges used for prey not readily found through echolocation (Mann, 2011)

- 3 generations of 'spongers'
- Specific to Shark Bay Western Australia



Learned Behaviour

□ Imprinting

- Partially instinct
- Attachment to an object during a certain time in an animals life



Learned Behavior

□ Trial and Error

- Learning where animal is rewarded for a particular response
- Repeated practice – more skillful
- Avoid behaviours that result in punishment



Learned Behavior

□ Conditioning

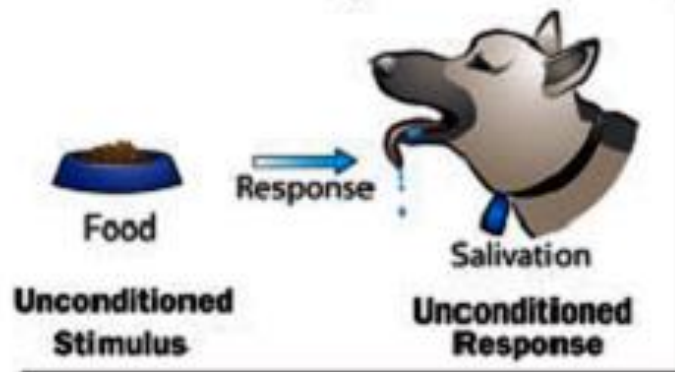
- Learning in which an animal connects a stimulus with a certain behavior
- Learning by association
- Pavlov's dogs



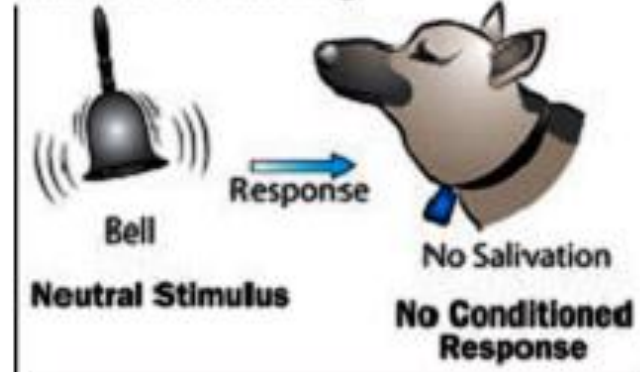
□Pavlov's dogs

How Dog Training Works

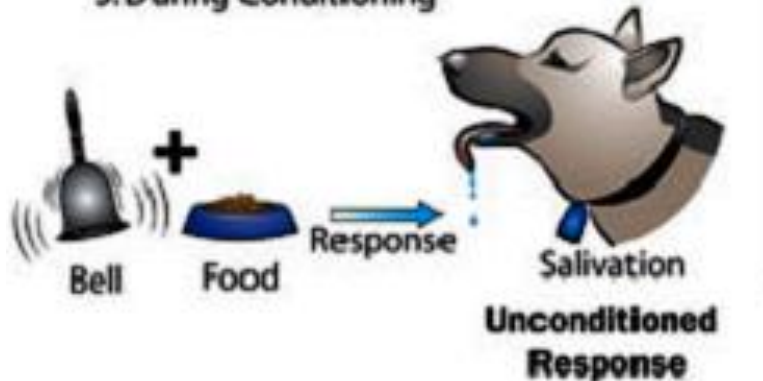
1. Before Conditioning



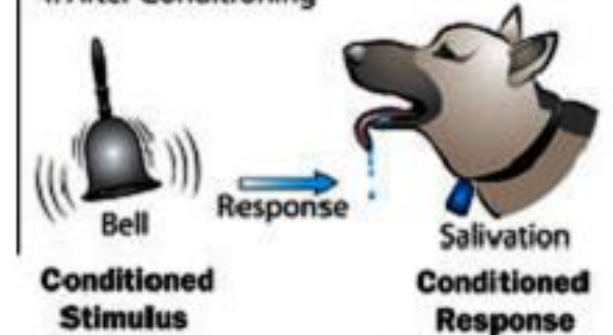
2. Before Conditioning



3. During Conditioning



4. After Conditioning



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Learned Behavior

□ Insight

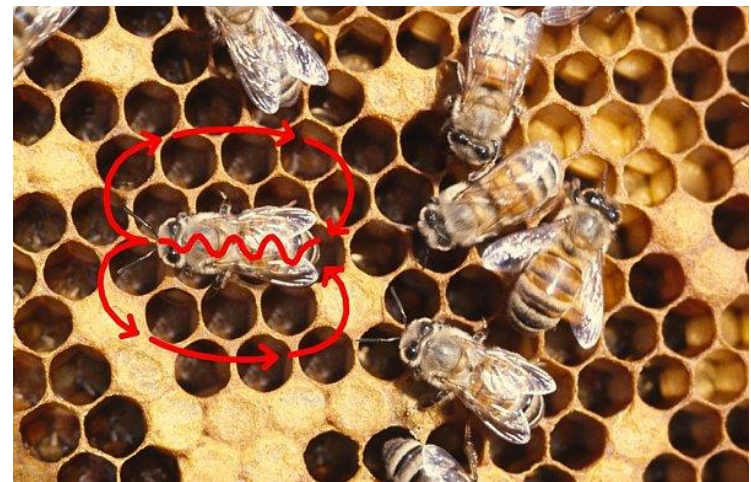
- Animal uses its experience to respond to something new
- Capable of using reasoned thought – can use past experiences with reasoning
- Problem solving – chimps with the banana boxes
- Pattern – failure, pause, look at potential tools, attempt again
- Involves insights and planning



Communication



- ❑ Exchange of information that results in a change in behavior
- ❑ Sounds, body movements, facial expressions, chemicals



Communication

- Social Behavior.
- Pheromones – chemical signals that can be detected and used for communication.
- Ants leave a pheromone trail for other ants to follow.
- Dancing – bees dance to tell other bees where the good flowers are.
- **Sounds** – Animals will use sounds to warn of danger, cry for a mother, or talk to each other.

Methods of monitoring & measuring behaviour

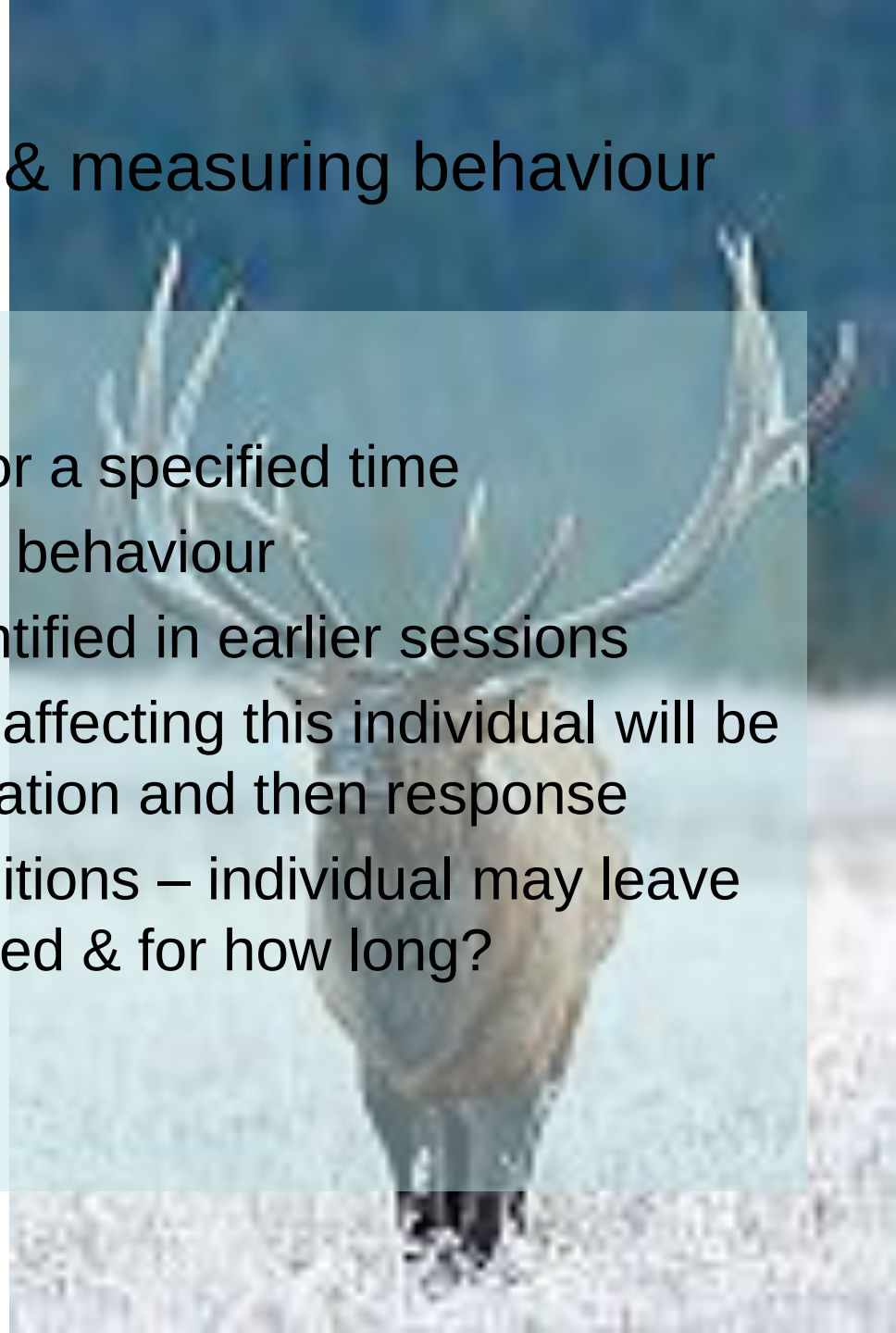
- **Ad Libitum:**

- No systematic constraints
- Observer writes down what he/she sees at the time
- Often focus on predominant activity/conspicuous
- Often underestimates social interaction particularly in younger group members
- Useful during preliminary observation or recording rare but important events

Methods of monitoring & measuring behaviour

- **Focal sampling**

- Observing one animal for a specified time
- Records all instances of behaviour
- Choice of individual identified in earlier sessions
- Often other interactions affecting this individual will be needed – stimuli – causation and then response
- Difficult under field conditions – individual may leave area. Should it be pursued & for how long?



Methods of monitoring & measuring behaviour

- Scan sampling
 - Entire group rapidly 'scanned' at regular intervals
 - Limited in the number of behaviours which can be recorded
 - Can be biased – towards conspicuous behavioural patterns
 - Can be used in conjunction with focal scanning

Continuous versus time sampling

- Continuous – an exact record of behaviour:
 - Frequencies & durations
 - Times when behavioural patterns start and stop
- Time sampling – Behaviour is sampled periodically – sample points
 - Sample intervals
 - Sample points

A close-up, black and white photograph of a lion's face, focusing on its eyes and nose. The lion's eyes are large and light-colored, looking directly at the camera. Its nose is prominent in the center. The fur is short and light-colored. The image is used as a background for the slide.

Habitat Management

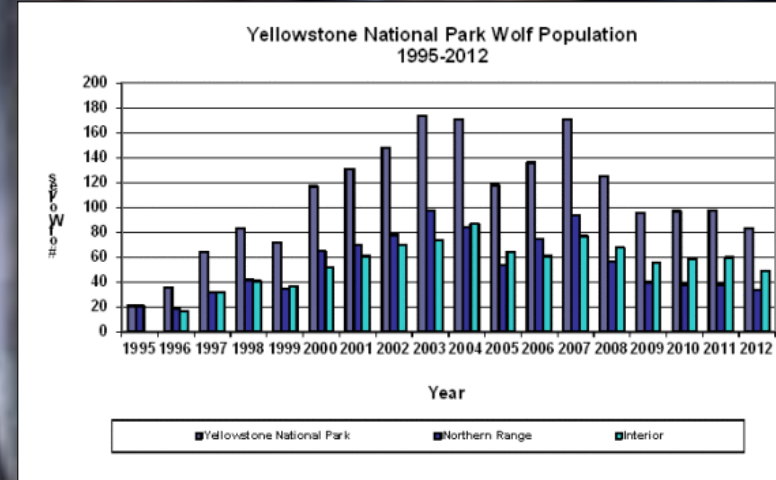
- Identification of critical habitat – breeding/feeding/migratory/socialising informs habitat management
- Alert us to negative impacts
- Informed choices
- Understanding behaviour can be critical to solving problems such as reserve design

Lobo – the wolf that changed America

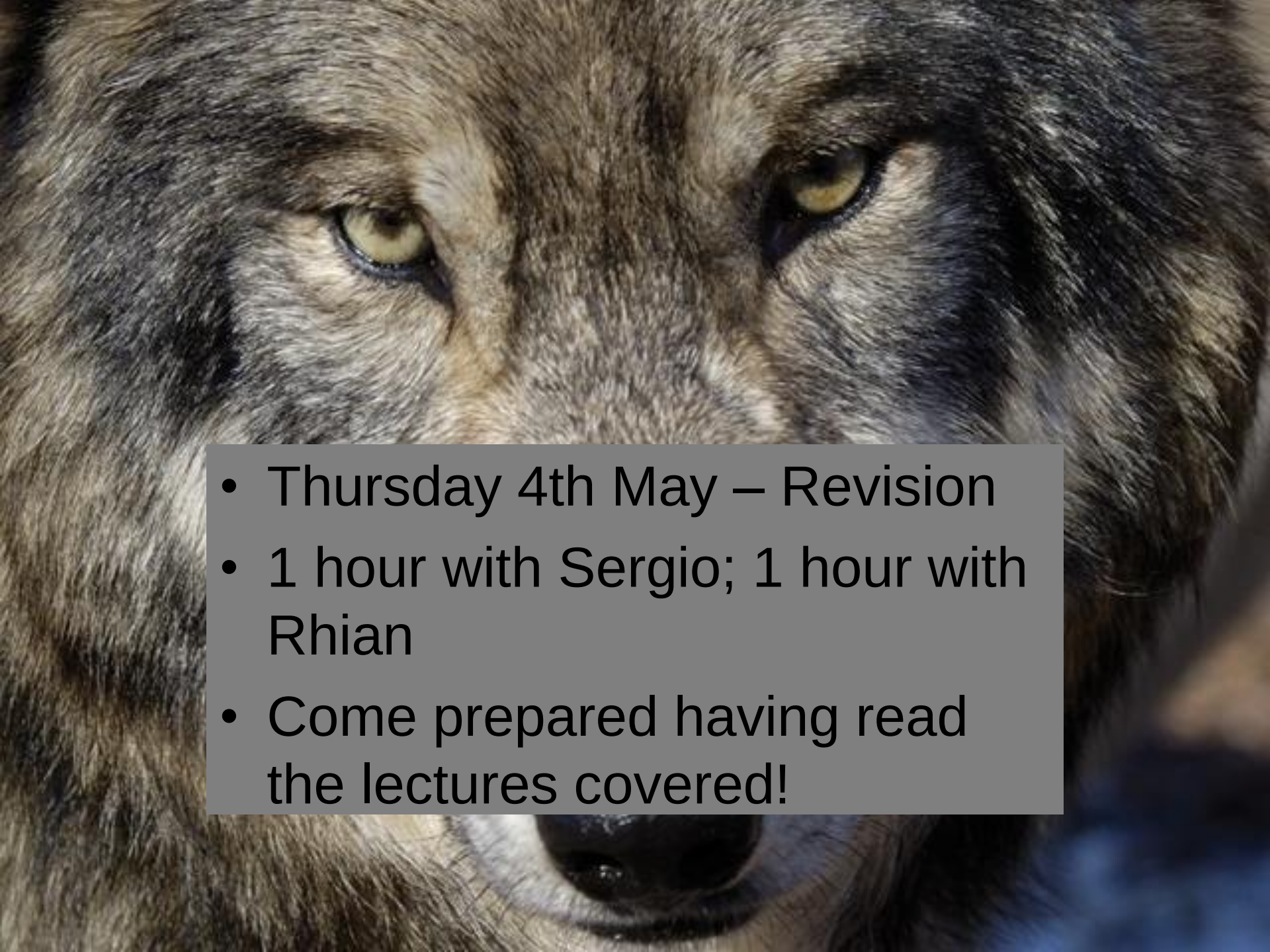


How the behaviour of one wolf in particular changes the way Seton and much of America viewed their relationship with wildlife

Wolves in Yellowstone



- Habitat Management through reintroductions
- Climate change – carbon sequestration
- Ungulate survival
- Ethics
- Controversial

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- A close-up photograph of a wolf's face, focusing on its eyes and fur. The wolf has thick, greyish-brown fur and piercing yellow eyes. The image is used as a background for a text overlay.
- Thursday 4th May – Revision
 - 1 hour with Sergio; 1 hour with Rhian
 - Come prepared having read the lectures covered!