Deer Ecology and Management in Native Woodlands

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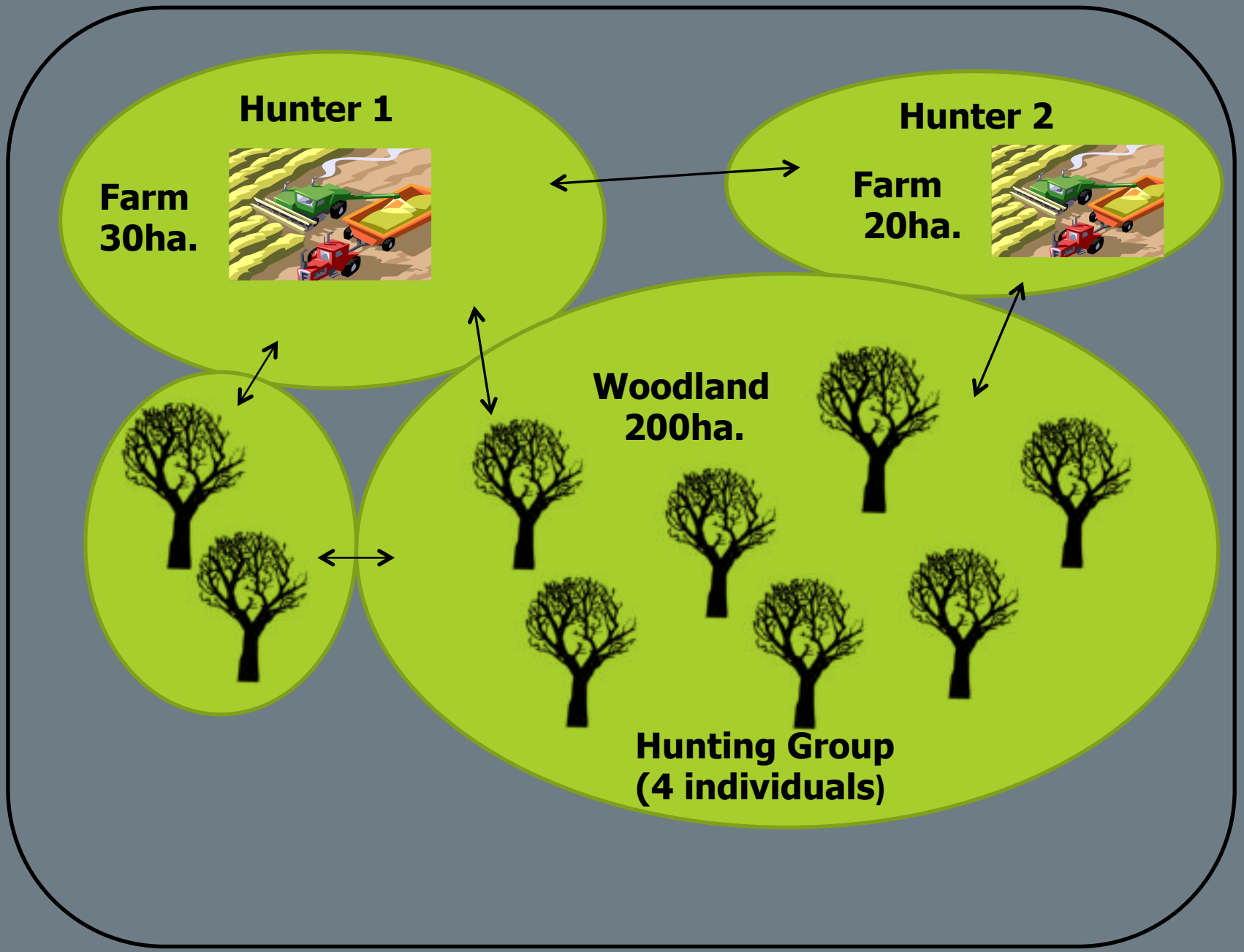
Deer Management Solutions (April 2018)

Background

- Are hard-wired to consider only the negative effects of deer presence in native woodland ecosystems
- The persistent failure to quantify deer productivity makes it impossible to effectively reduce deer density
- The default approach continues to be the use of lethal control without considering any underlying factors
- Have yet to embrace the concept of integrating deer ecology with managing deer at the landscape level


Hunter 1
Farm
30ha.
Hunter 2
Farm
20ha.
Woodland
200ha.
Hunting Group
(4 individuals)

Deer Species

- Large, medium, small
- Mobile / sedentary
- Large / intermediate / small range sizes
- All can have positive, neutral and negative effects on habitats

Deer Ecology?

POPULATION DYNAMICS

RESOURCES

DEER BEHAVIOUR

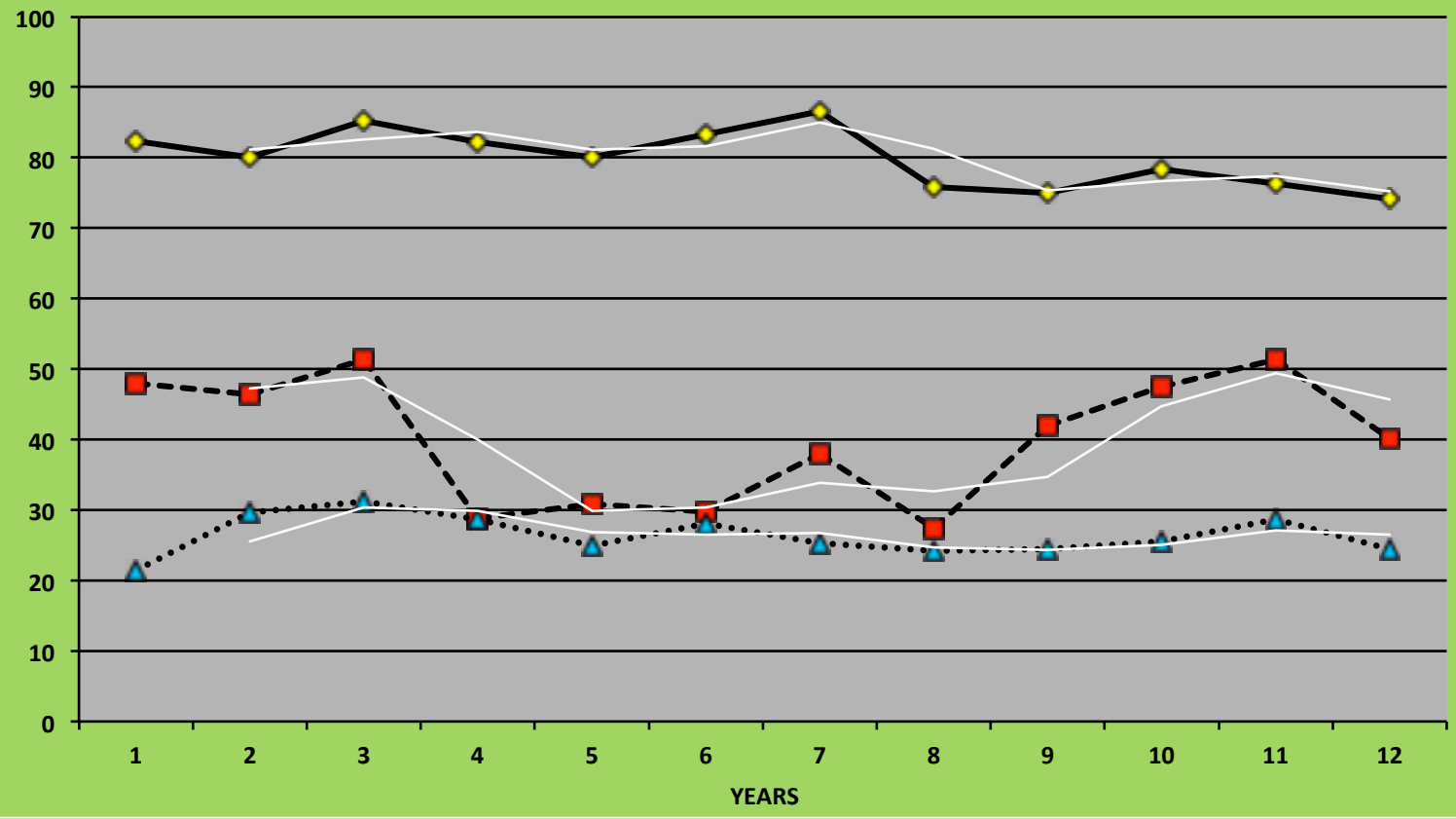
Population Dynamics

Annual variables that occur within a deer population

- Density
- Reproduction and Recruitment (productivity)
- Population structure
- Mortality

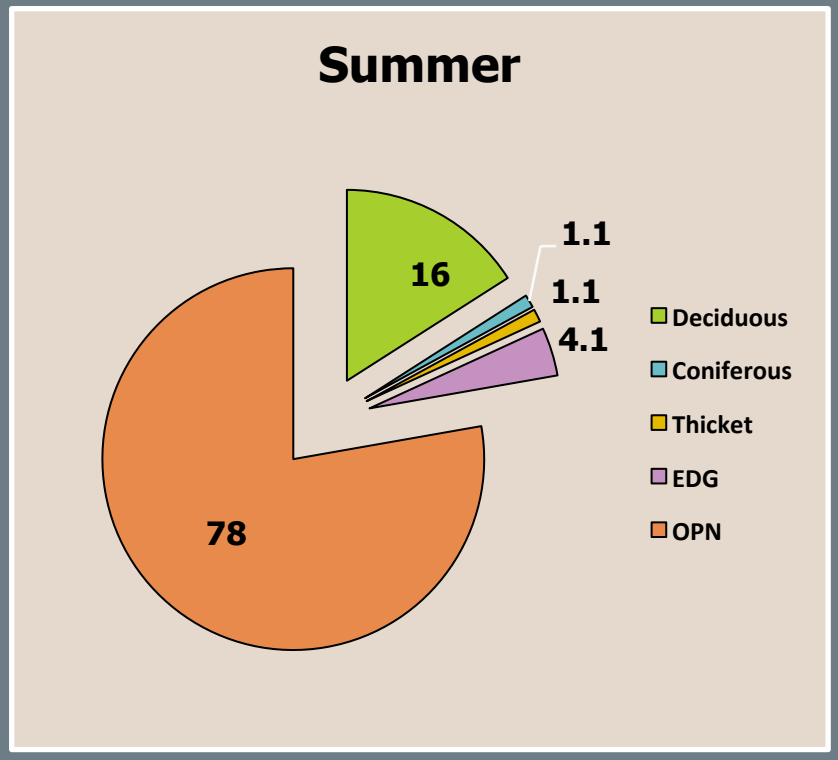
Stag, Hind and Calf density (km^{-2}) 1992 to 2003

Reproduction (RR) and Recruitment (RCR) % 1992-2003

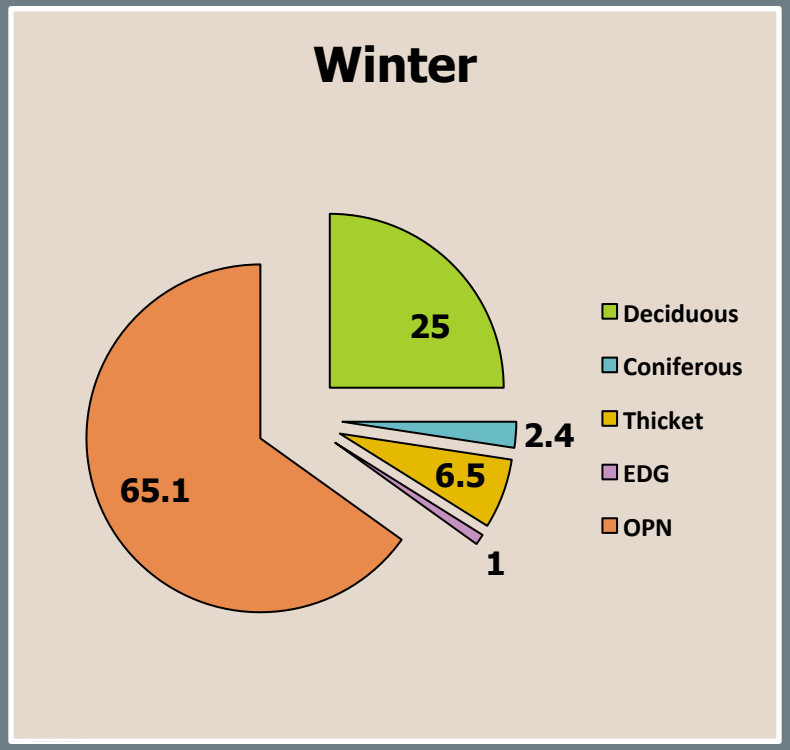


Landscape Habitat Use (Burkitt 2009)

Red deer - Summer Habitat use (%)

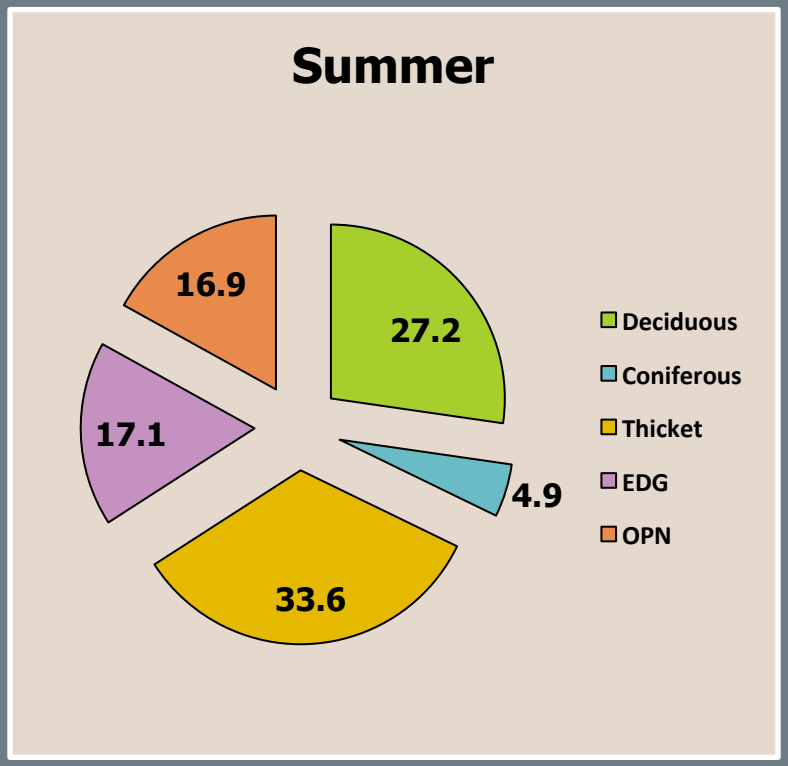


Red deer - Winter habitat use (%)

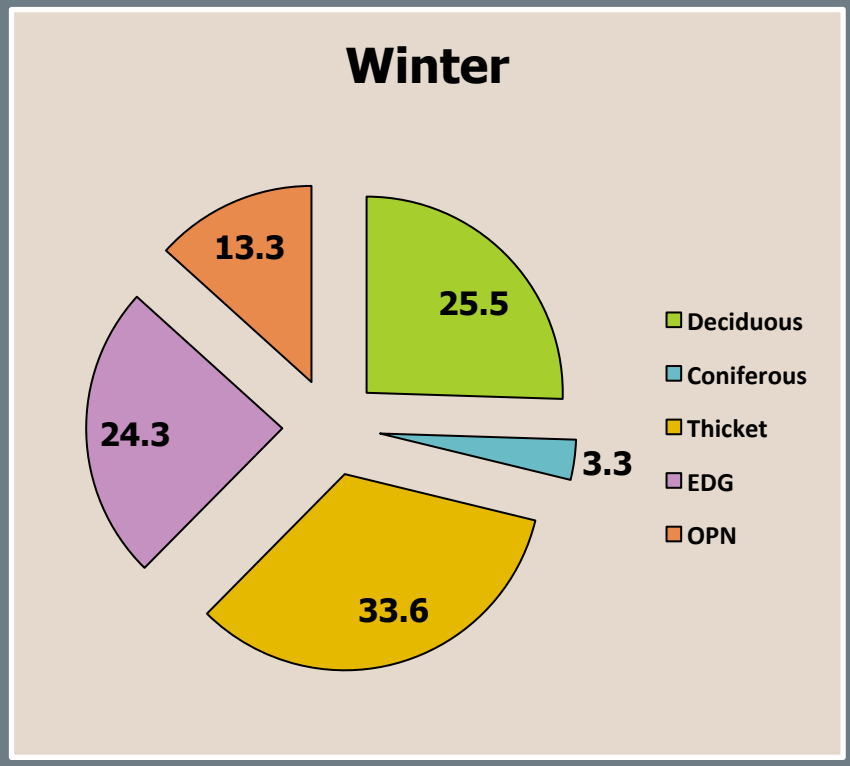


Landscape Habitat Use (Burkitt 2009)

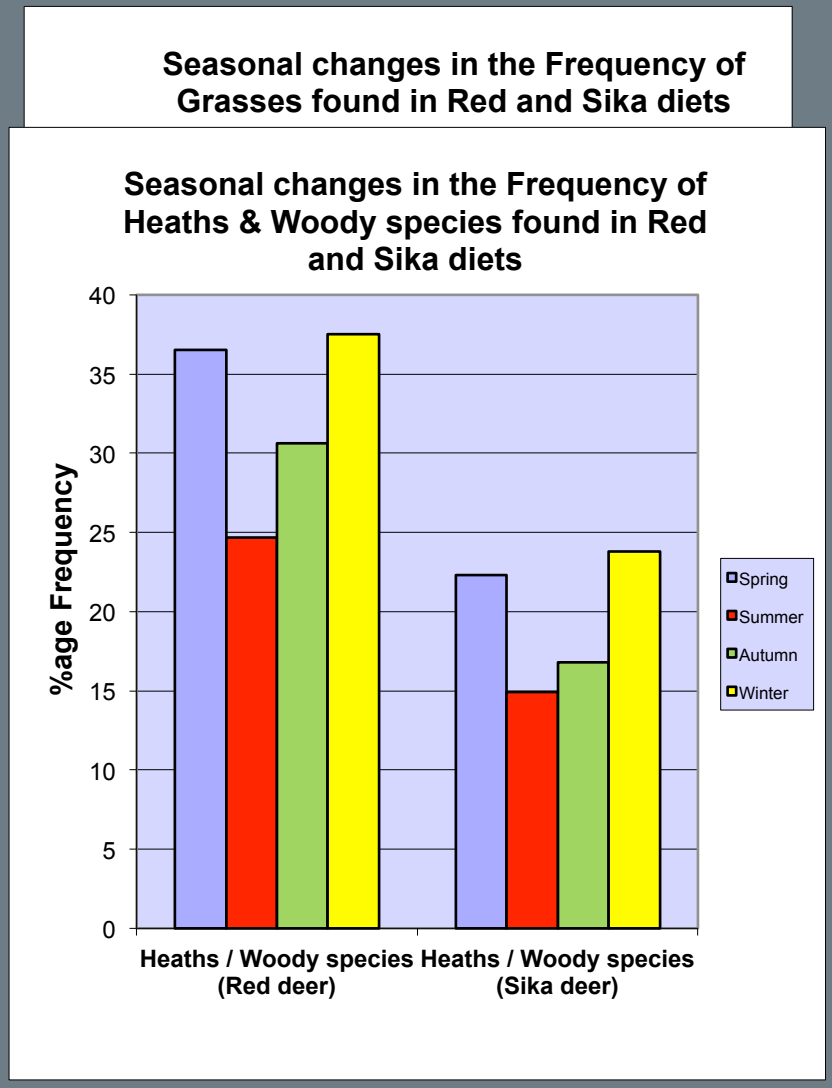
Sika deer - Summer Habitat use (%)



Sika deer - Winter habitat use (%)



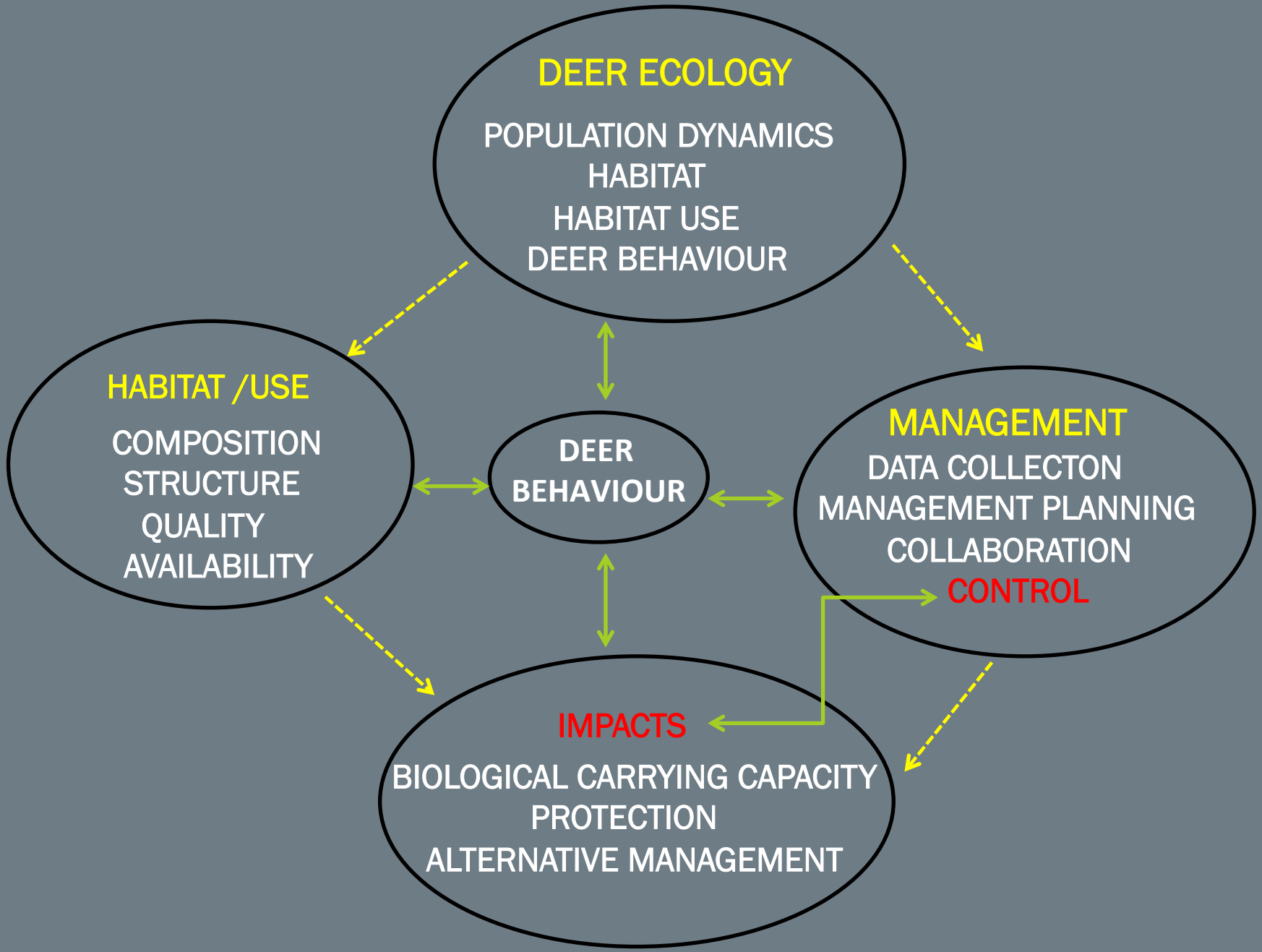
Diet (Burkitt 2009)



- Most deer species are preferential grazers
- Diet changes seasonally
- Quality and abundance can have a profound effect on deer body weight and condition
- Affects reproductive performance, productivity and survival

BEHAVIOUR

- Behaviour is affected by a number of factors
- Distinct interspecific differences in behaviour
- Disturbance (particularly shooting) can modify behaviour, often permanently
- Management prescriptions are likely to be influenced by changes in behavioural patterns


DEER ECOLOGY
POPULATION DYNAMICS
HABITAT
HABITAT USE
DEER BEHAVIOUR
HABITAT /USE
COMPOSITION
STRUCTURE
QUALITY
AVAILABILITY
DEER BEHAVIOUR
MANAGEMENT
DATA COLLECTON
MANAGEMENT PLANNING
COLLABORATION
CONTROL
IMPACTS
BIOLOGICAL CARRYING CAPACITY
PROTECTION
ALTERNATIVE MANAGEMENT

What is required now

- Set realistic and achievable objectives
- Interpret the landscape composition and predicted changes over time (habitat modelling)
- Understand population dynamics – predicted change over time (population modelling)
- An objective, ecosystems approach to the collection, analysis and application of critical data

Critical data requirements

- Assess Habitat Composition and Structure
- Identify patterns of deer habitat use
- Quantify impacts objectively
- Assess the need for protection / alternative management strategy
- Quantify annual Recruitment
- Estimate abundance
- Determine annual mortality
- Modify the level of population control accordingly

Summary

- To be successful, Deer Management in native woodlands requires a profound understanding of Deer Ecology and the dynamics that exist between deer and their habitat
- A paradigm shift is required in attitude, approach and application to the principles of deer management
- Must learn to be proactive rather than reactive
- This can only be achieved through the process of Deer Management Planning
- Otherwise, effective, long-term solutions to issues of deer overabundance will continue to be elusive

Thank you for your attention