Location! Location! Location!
Fitness consequences of choosing among habitats

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Introduction

• Individual contributions to future generations is determined by survival and number of offspring surviving to reproduction (reproductive value: Fisher 1930, Engen et al. 2009).

• Often positively related to body mass (e.g. Cameron et al. 1993, Festa-Bianchet et al. 1998, Festa-Bianchet et al. 2000, Milner et al. 2013, Festa-Bianchet et al. 1998, Gaillard et al. 2000).

• Predation risk profound effects (Frair et al. 2005).

• Adaptive plastic behaviour (Lima and Dill 1990).
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  • profound effects (Frair et al. 2005).
  • adaptive plastic behaviour (Lima and Dill 1990).
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• Movement and habitat use increases hunting mortality (Ciuti 2012, Little, 2014, Lone, 2015).

• What about?
  • Reproduction
  • Offspring survival
  • Offspring body mass
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Trade-offs
Methods

- Moose
  - Harvested species: main source of mortality (Kvalnes, 2016).

- GPS & weights
  - During marking in mid February
Methods

• Moose
  • Harvested species: main source of mortality (Kvalnes, 2016).

• GPS & weights

• Among-individual variation in
  • home range size
  • resource availability
  • resource use (Ofstad et al. unpubl.)

• Habitat type, movement rate, terrain roughness, light, hunting
Results: Twinning rate

Increases with the use of open areas.
Results: Calf weight, seasonal

- Age effect: 4.60 (0.92)
- It is usually most beneficial with high/intermediate use of open areas.
  - Skewed fitness curve
- Herbs and bilberry
  - Early summer
- Movement rate
  - Early summer
  - Late summer
  - Winter
Results: Calf survival, seasonal

- Open, grass
  - Number of calves
  - Survivors more during night
- Movement rate
  - No offspring > Offspring
  - Twins > Singletons
Results: Adult survival

- Probability of being shot increased approximately linearly with the use of open, grass areas, and with terrain roughness.
Results: Adult survival, seasonal

- Use of open, grass areas
- Males > Females.
- Surviving animals showed a decrease
- shot animals showed an increase
- Survivors show higher night allocation (especially females)
- Increase towards harvest, although not a significant shift with its onset.
Results: Adult survival, seasonal

- Movement rate
  - Males > Females
  - Shot > Survivors (particularly among females).
  - The onset of harvest: increase in movement rates, that was slightly larger for those who survived the hunt.
Summary

- Relationship between P(Shot) and Speed.
- Relationship between P(Twin) and Speed.
- Relationship between Calf weight and Speed.
- Relationship between Speed and harvest status (Not harvest, Harvest).
- Relationship between Open, grass and harvest status.
- Relationship between Open and harvest status.
- Relationship between Open/Grass and harvest status.
Thank you for listening to this guy who thinks he knows what's going on...
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