

How to move around and where to settle:

Environmental determinants of spatial behaviour in reintroduced lions (*Panthera leo*)



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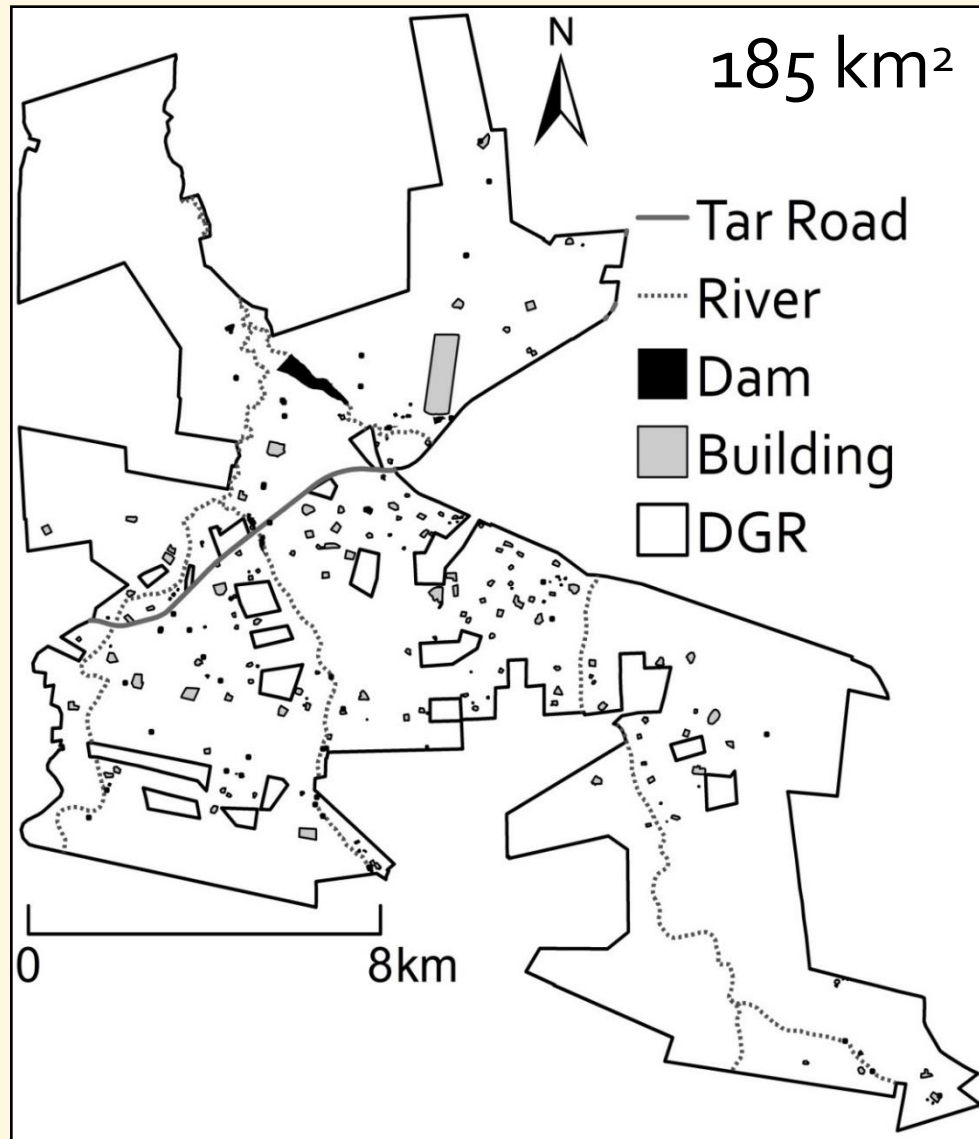
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METHODOLOGY

Dinokeng Game Reserve



Lions reintroduction

11 lions (4♂ 7♀)

3 separate releases (2011-13)



Satellite collared

6 GPS locations/day

METHODOLOGY

Habitat selection analyses

Oct 2011 – Sep 2014

2nd order: Home range (HR)

Utilization distribution

Time Local Convex Hull (T-LoCoH)

3rd order: Habitat features

Resource Selection Function (RSF)

Lions reintroduction

11 lions (4♂ 7♀)

3 separate releases (2011-13)

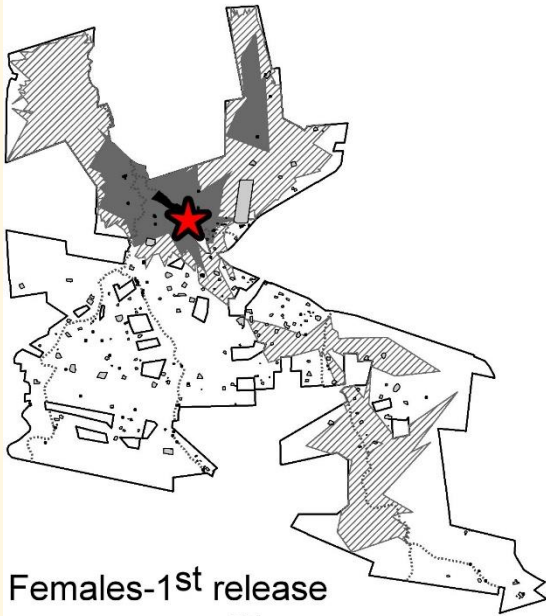


Satellite collared

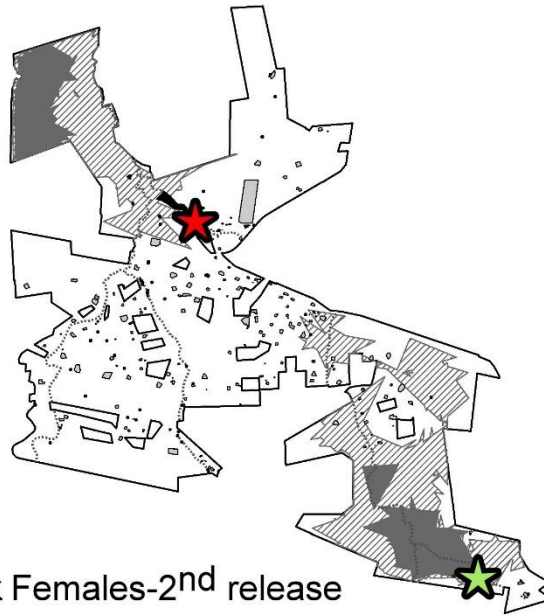
6 GPS locations/day

RESULTS: 2ND ORDER - HOME RANGE ESTABLISHMENT

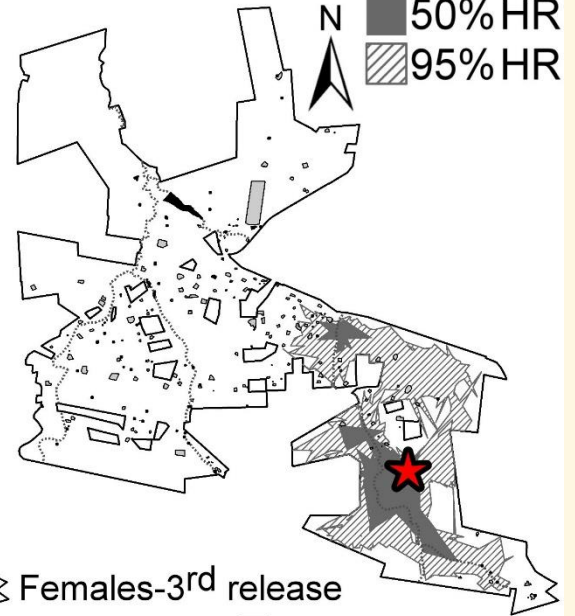
Males-1st release



Males-2nd release

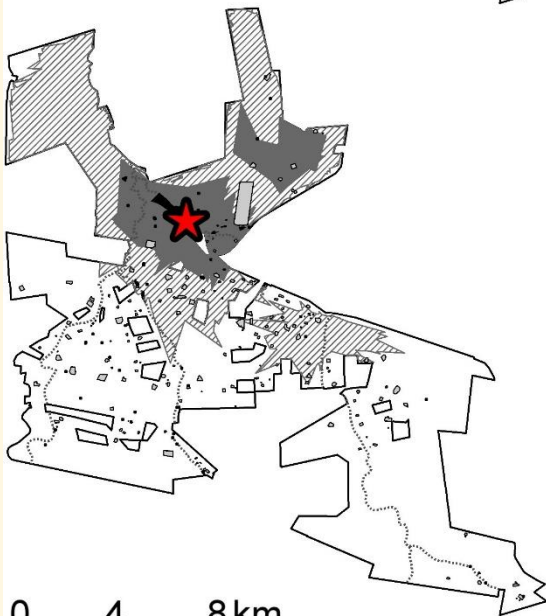


Females-3rd release

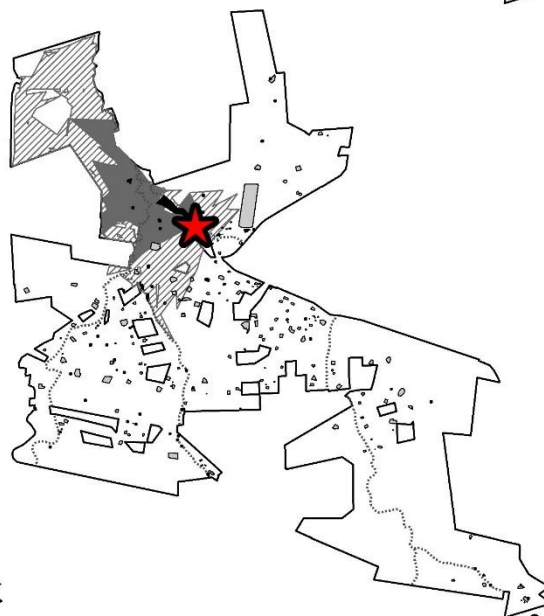


N
■ 50% HR
▨ 95% HR

Females-1st release



Females-2nd release



Females-3rd release



0 4 8 km

★ Release site ★ Translocation

RESULTS: 2ND ORDER - HOME RANGE ESTABLISHMENT

Effects of territorial conflicts on HR overlap %

Event: Lions-2nd release killed by lions-1st release

Males-1st release: ↑ 66.72%

Females-1st release: ↑ 67.55%

Surviving male-2nd release: ↓ 90.69%



RESULTS: 3RD ORDER - HABITAT FEATURES

Areas close to dams, rivers & with high % tree cover
Riparian vegetation & seasonal floodplains

Response of lions to one unit increase in distance to dam



CONCLUDING THOUGHTS

- Release location affects long-term establishment
- Intra-specific competition leads to selections for sub-optimal resources
- Behavioural differences of animals reintroduced in different orders should be considered



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Mongena rangers

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