



AMIR EZER
(ISRAËL)

BARN OWL

ECOLOGY AND CONSERVATION



Unil

UNIL | Université de Lausanne





Alexandre Roulin

Schleiereulen

Evolution und Ökologie

 Springer



Barn Owls

Evolution and Ecology

with Grass Owls, Masked Owls and Sooty Owls

ALEXANDRE ROULIN



Alexandre Roulin

L'effraie des clochers

Description • Comportement • Vie sociale



PASSION











*Yesterday
(1986)*

*Today
(2018)*



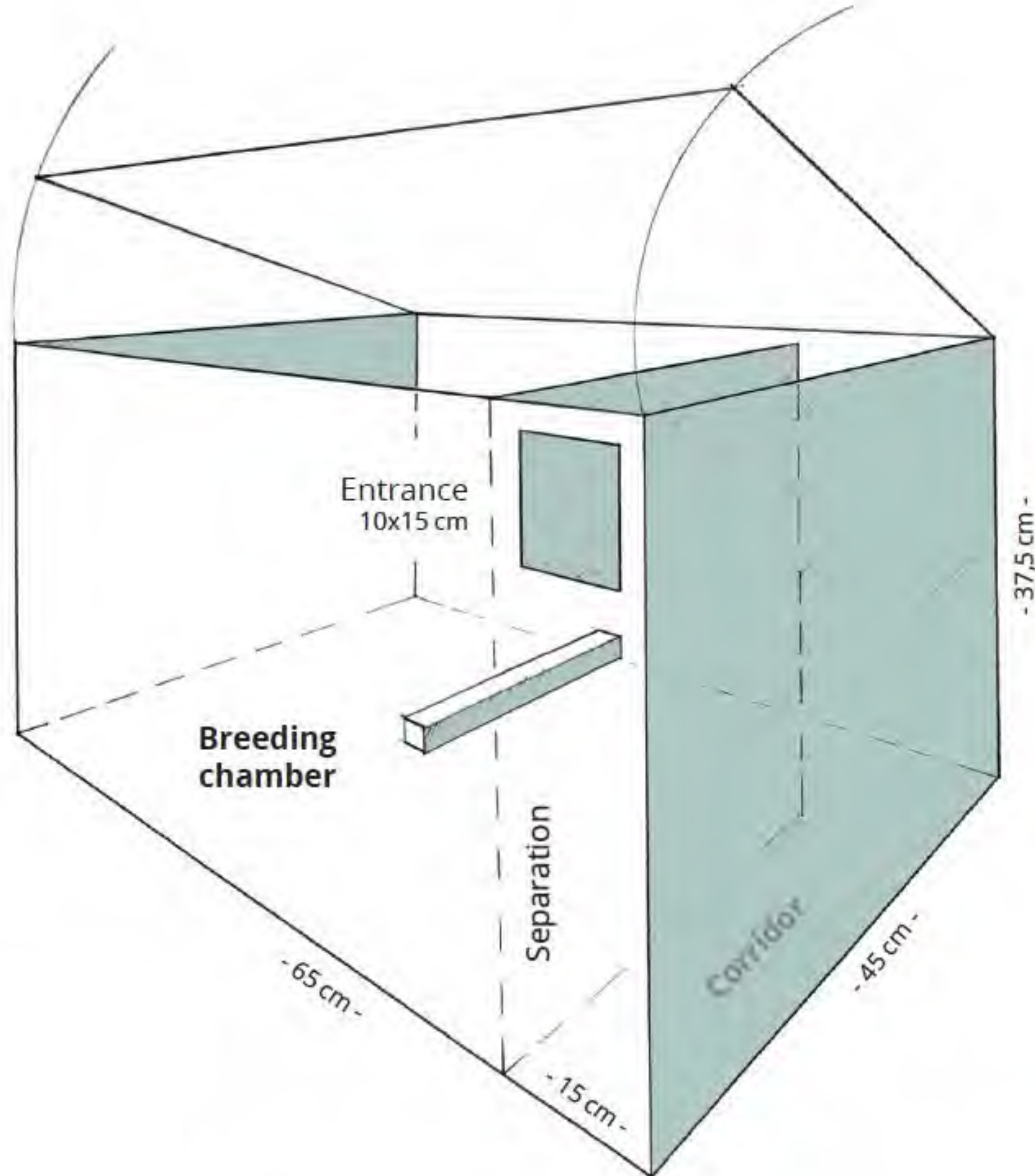
1990

FROM WHERE
IT STARTED

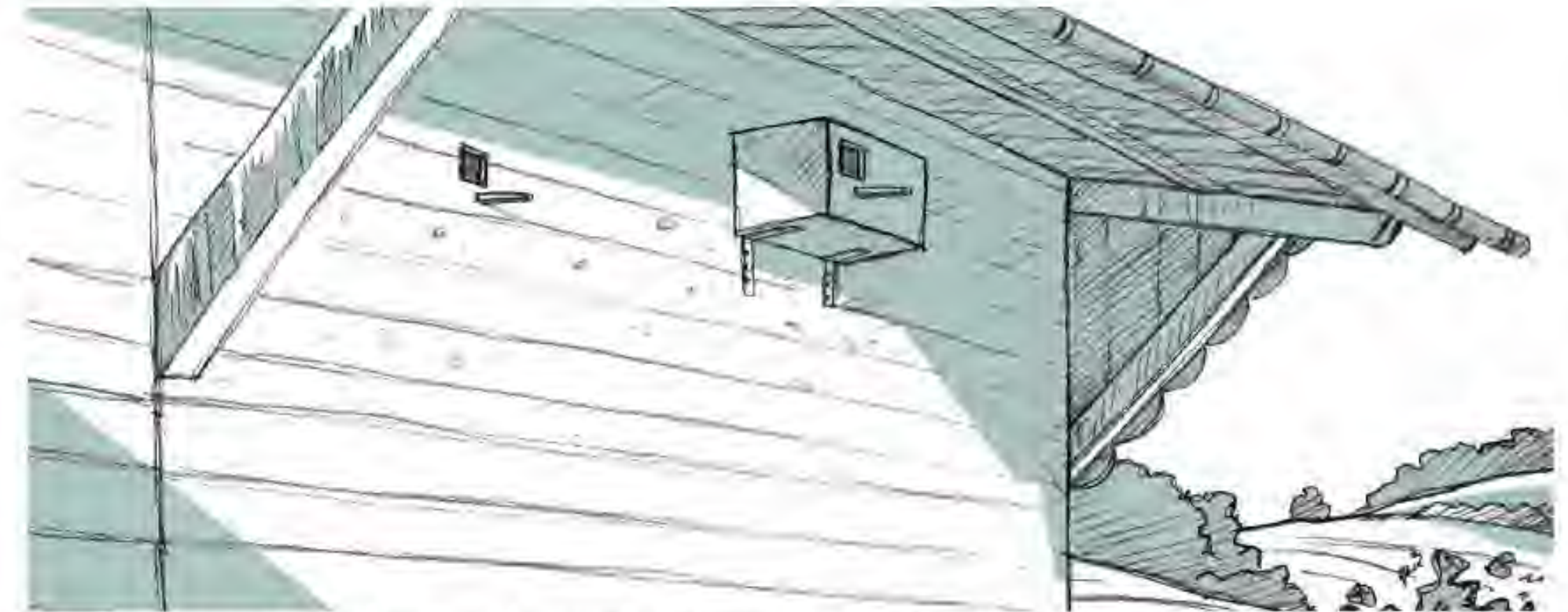




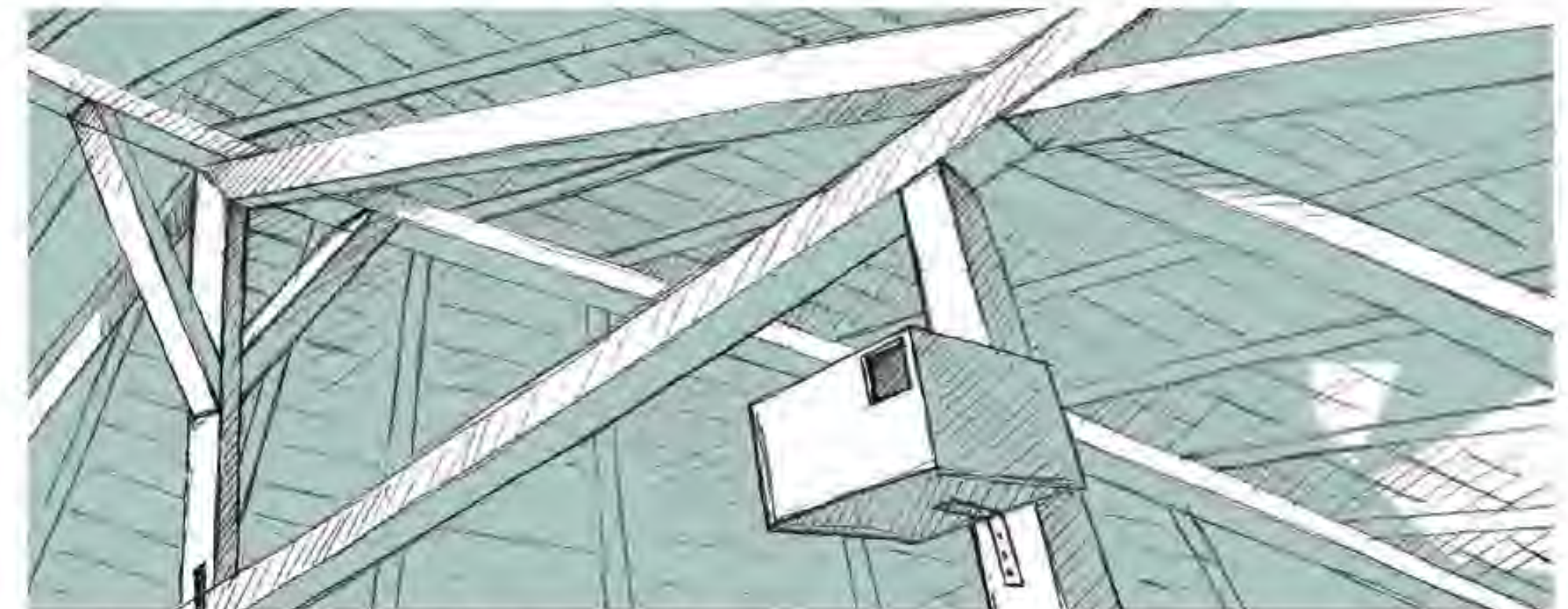
NEST BOXES



In the Middle East, nest boxes are often fixed on poles in fields.

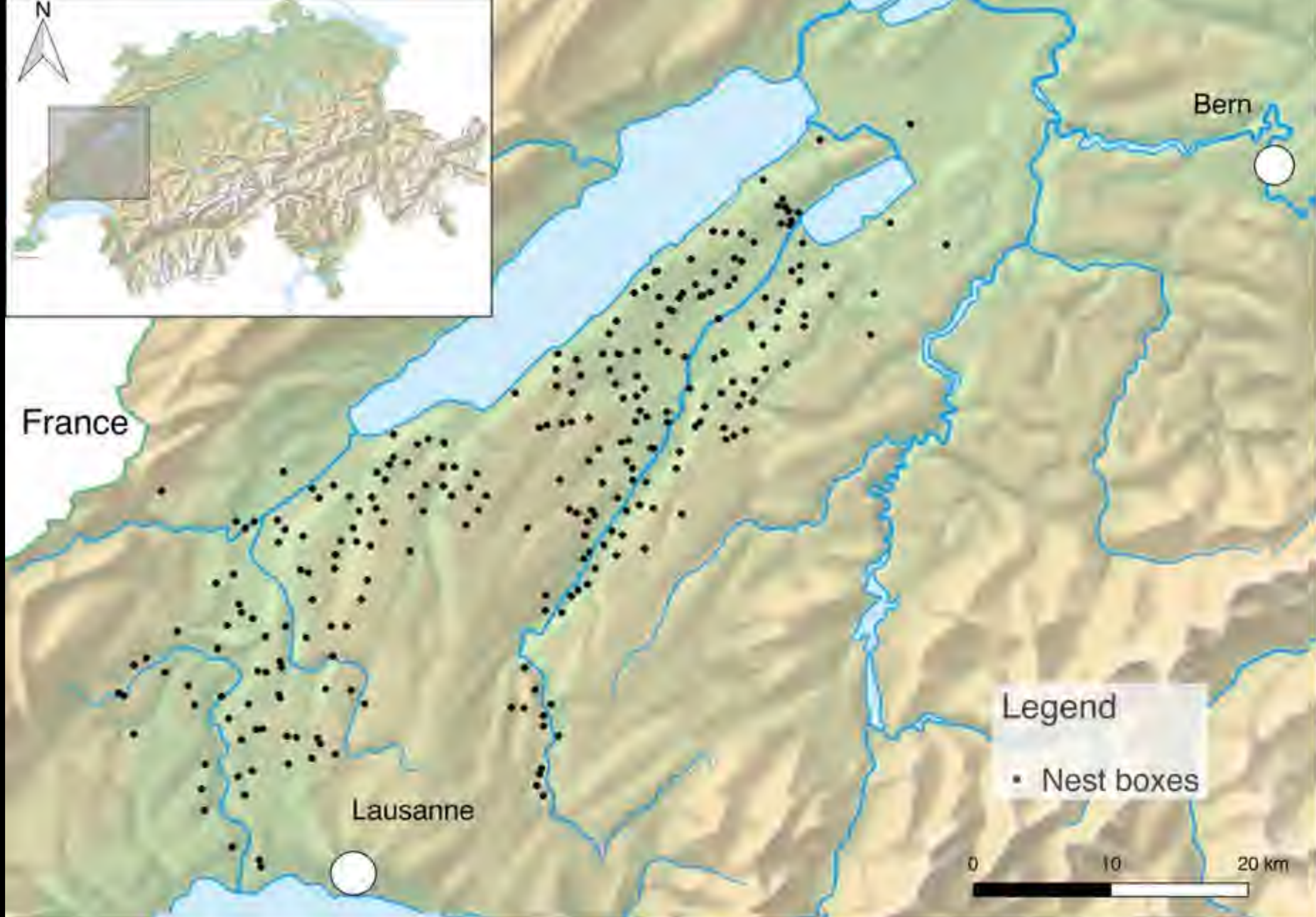


Nest boxes can be fixed against the walls of barns, with the box being either outside or inside the farm. When inside, a hole is pierced in the wall so that barn owls enter the nest box from the outside.

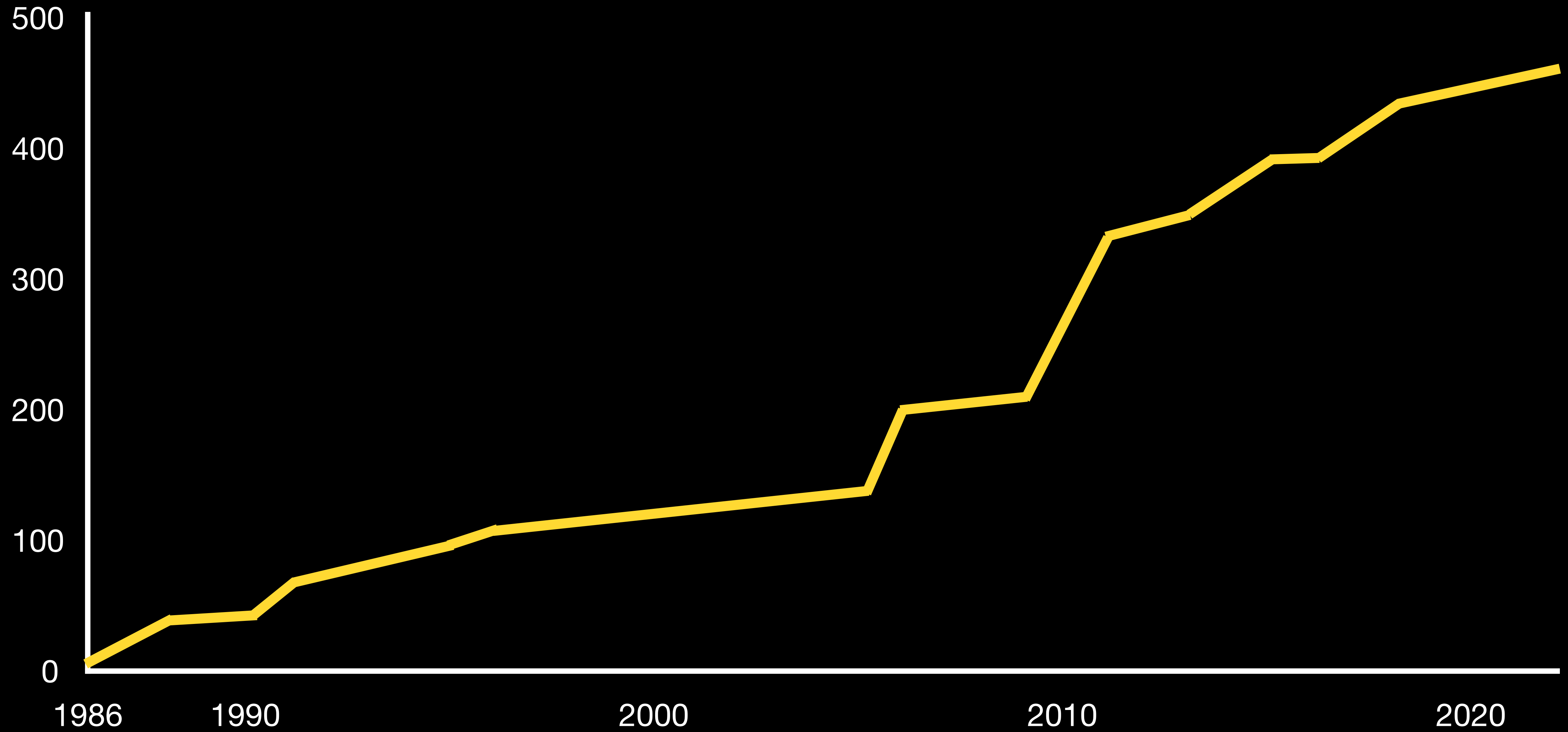


Nest boxes can be fixed inside barns, although in this situation, there is a risk that martens will reach barn owl nests





Nest boxes



30 YEARS OF
RESEARCH



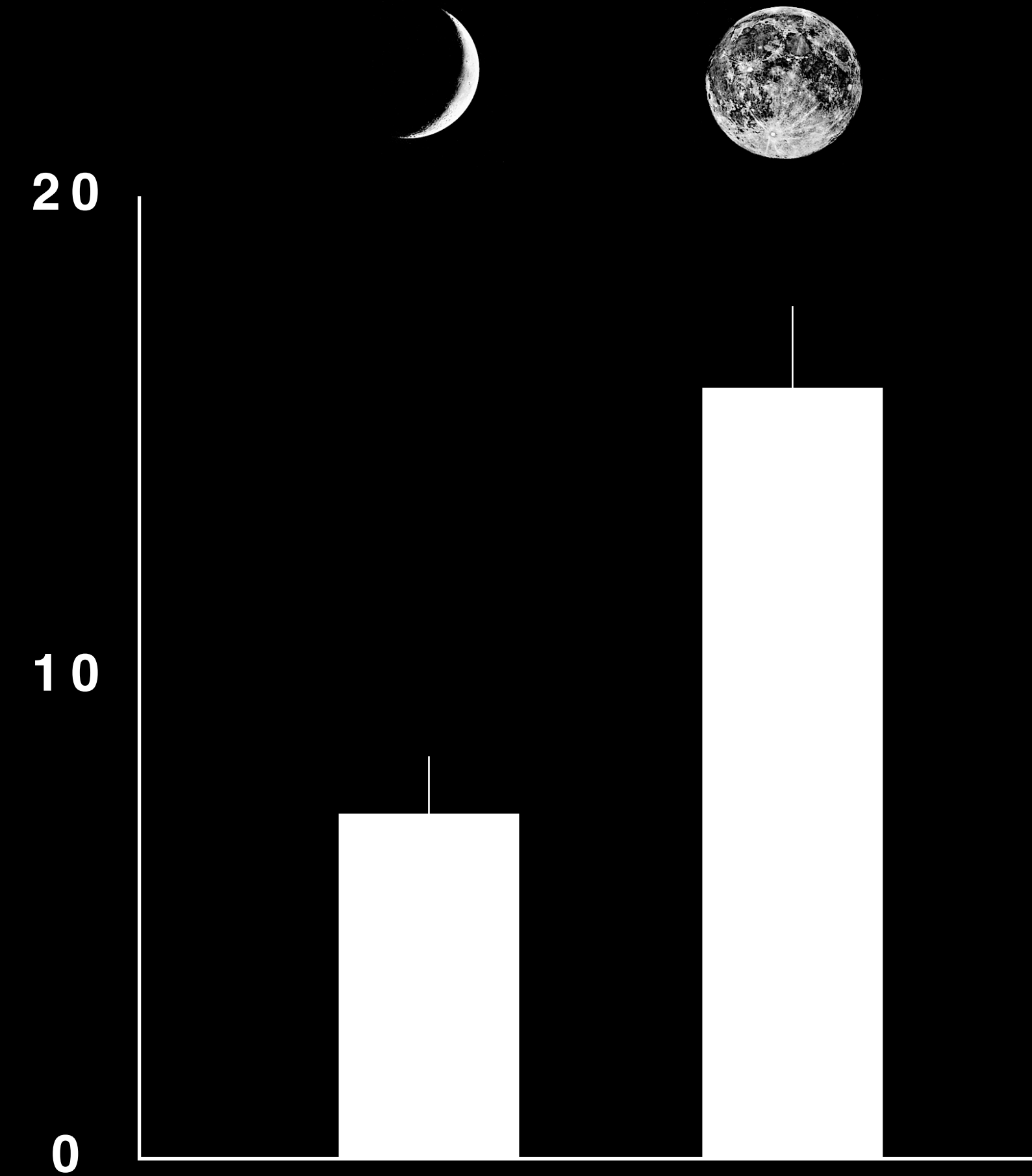
Color polymorphism







DURATION OF FREEZING BEHAVIOR (SEC)



Research on the barn owl



Sibling negotiation



Sibling negotiation

Social behavior





4 6 9

LIBERATION

PAYERNE



Home range



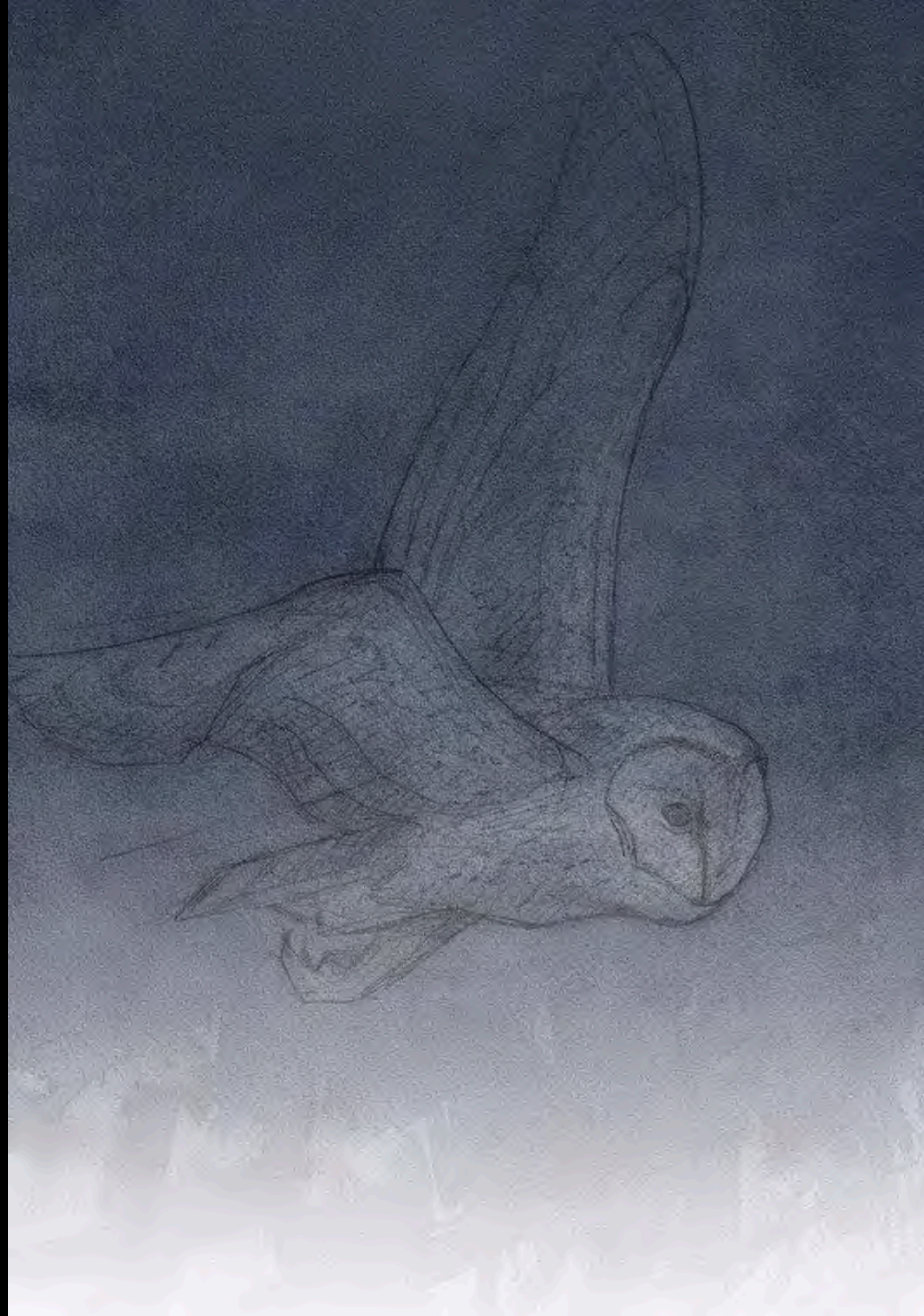
2016: 98 birds

2017: 112

2018: 98

2019: 92

2020: 71











Home range and habitat selection by the barn owl







Commuting



Perching



Hunting



W. Blanchard

Communting



Perching



Hunting



W. Blanchard

Pendeln



Communting



Hunting



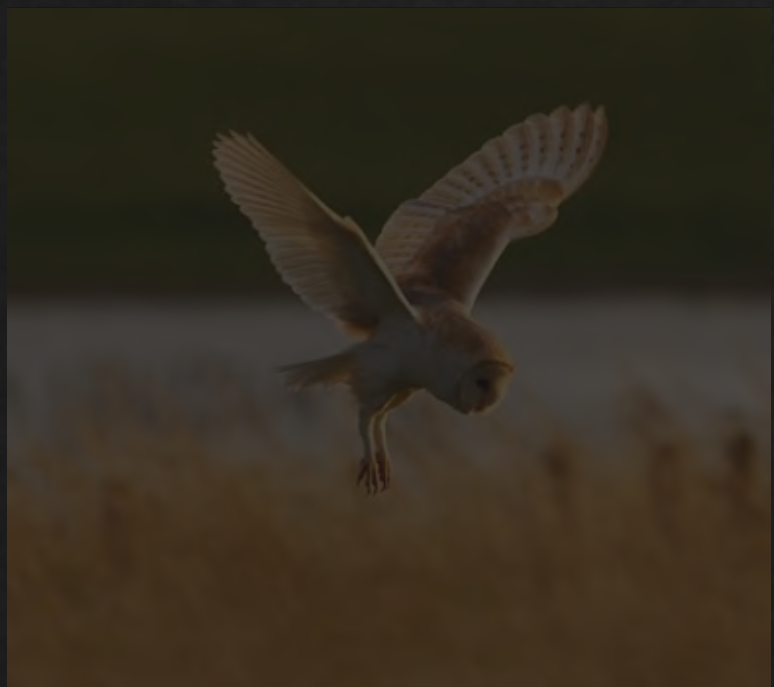
Commuting



Perching



Hunting





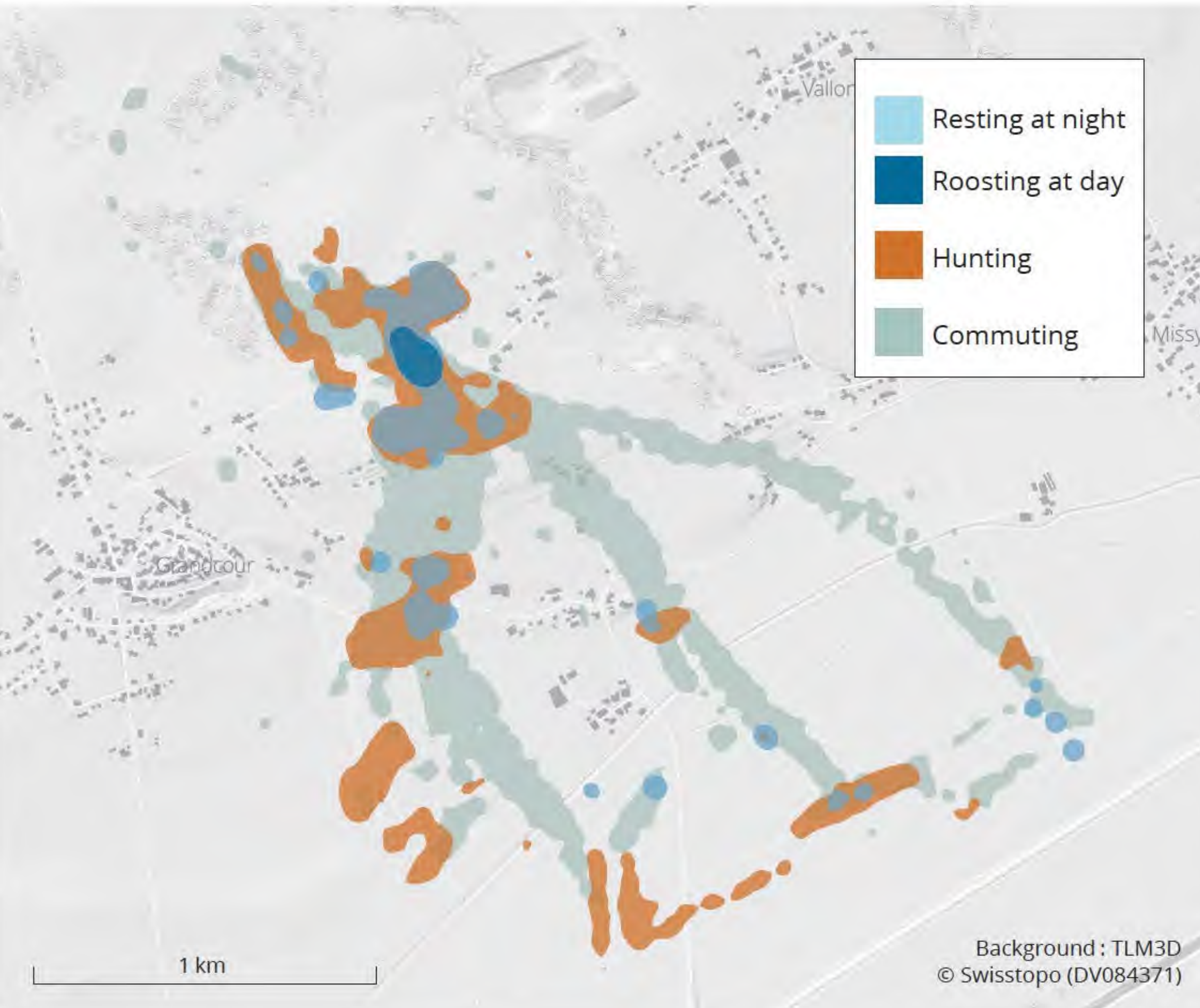
Grande Bouille

Sévaz

Bussy

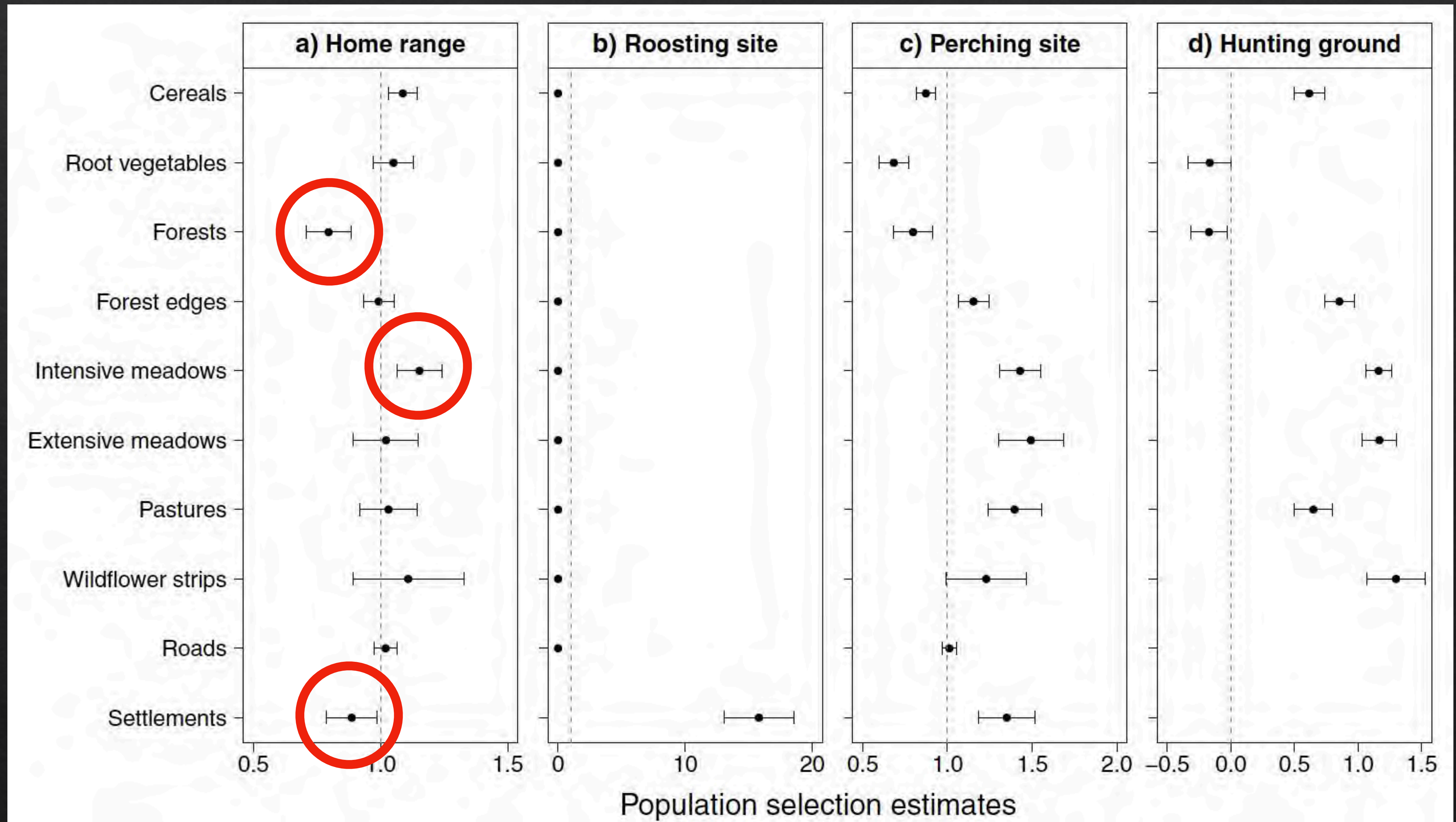
Morens

FORAGING BEHAVIOR

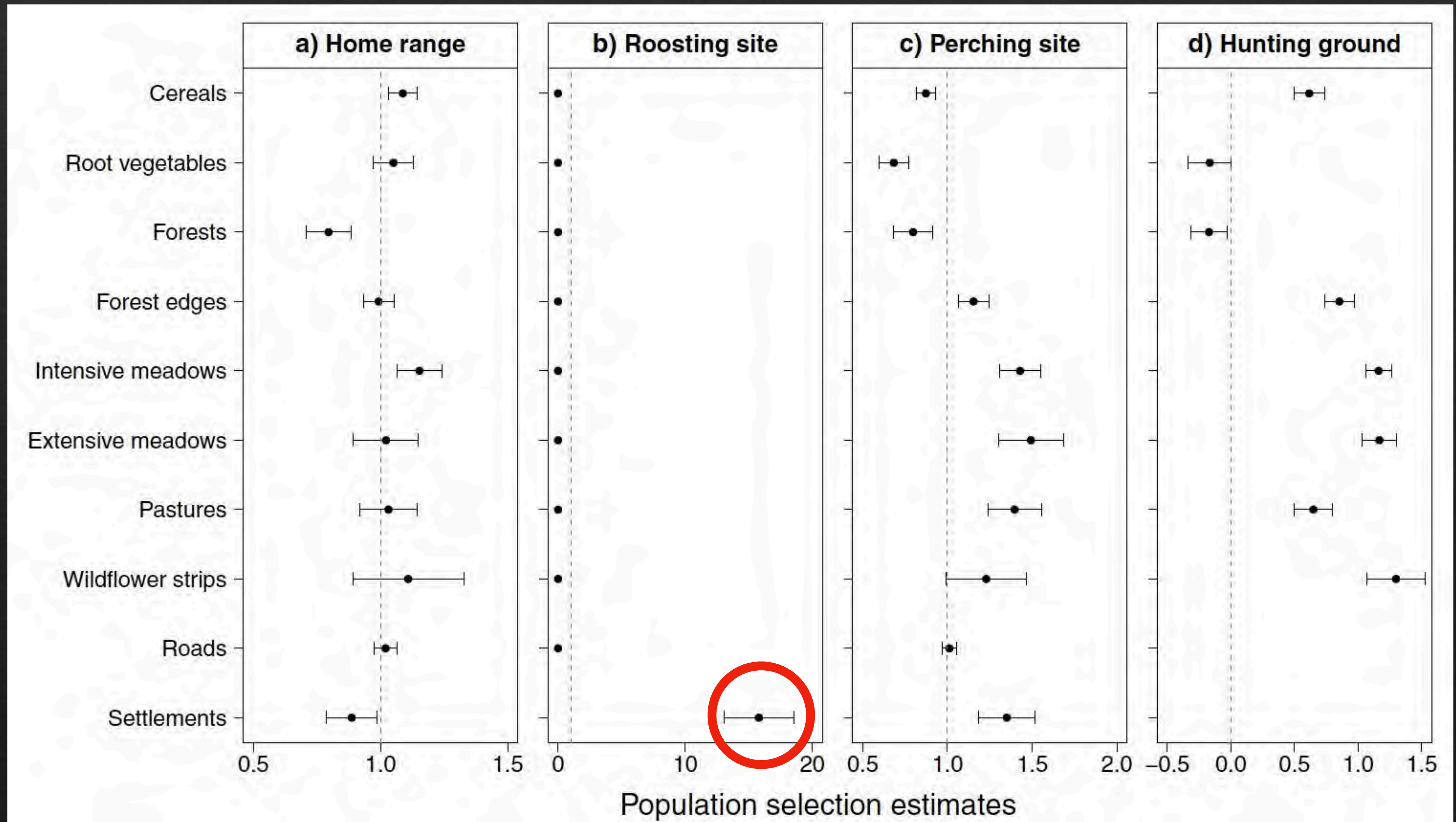




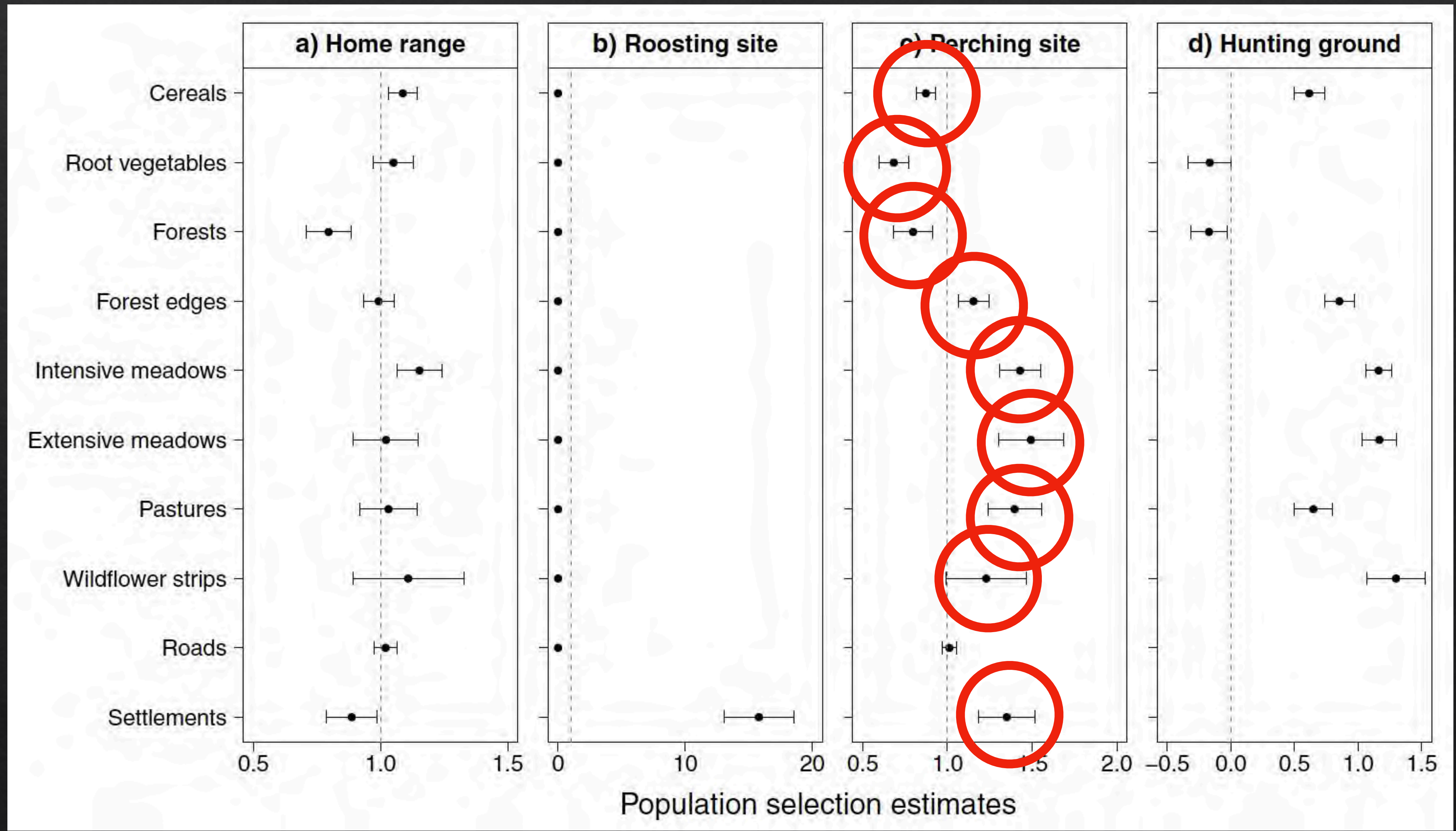
HABITAT SELECTION



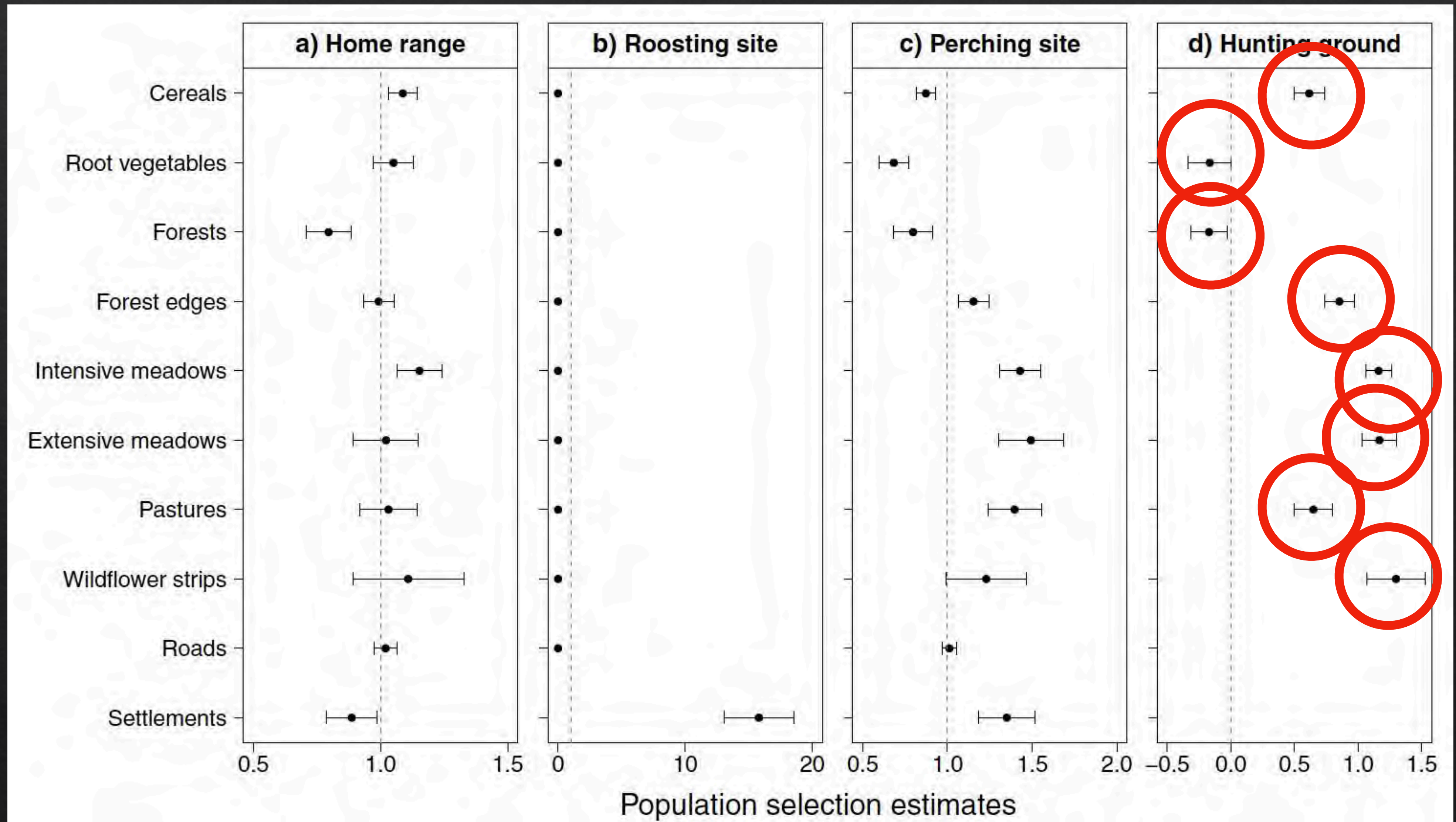
HABITAT SELECTION

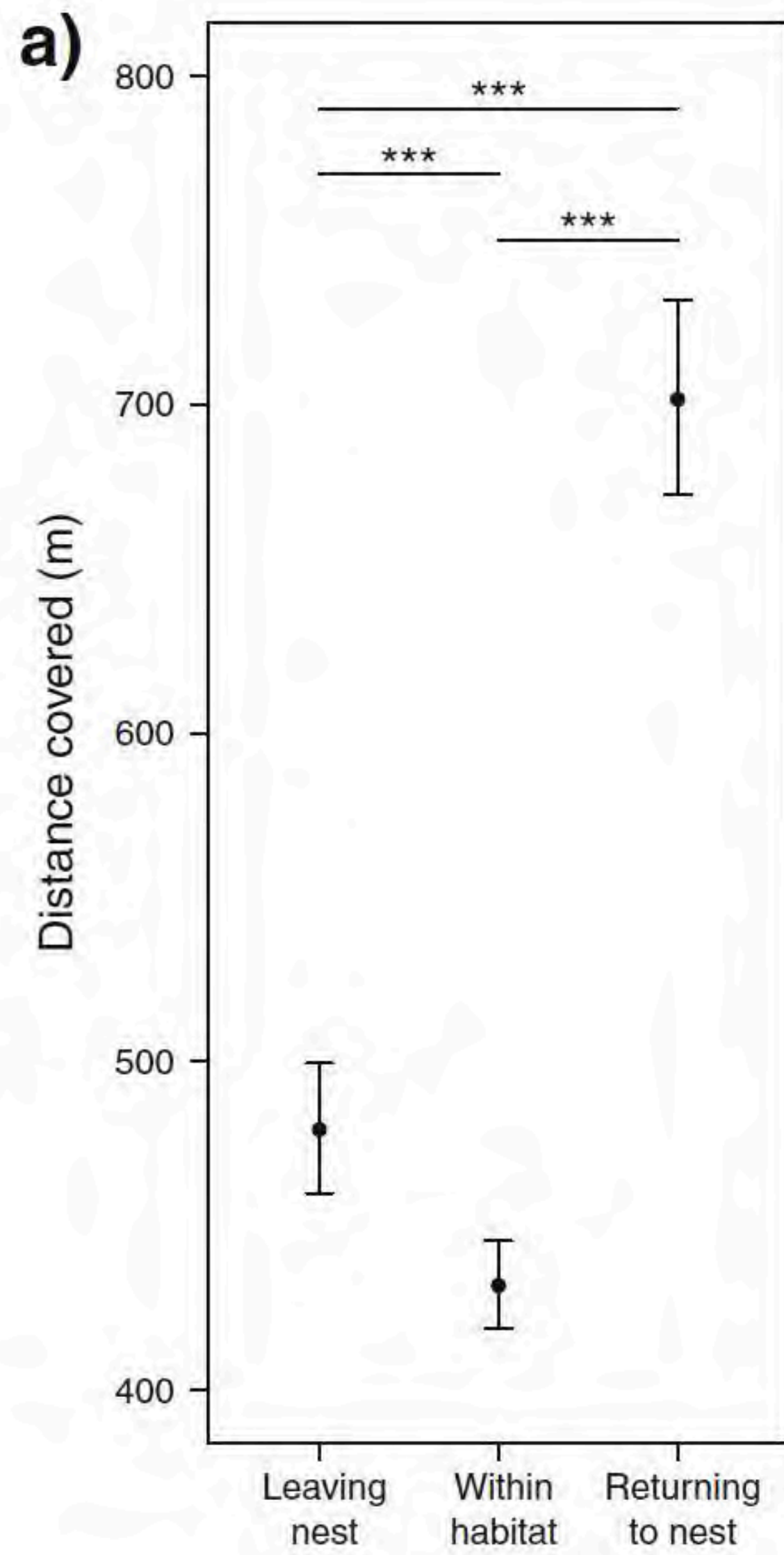


HABITAT SELECTION

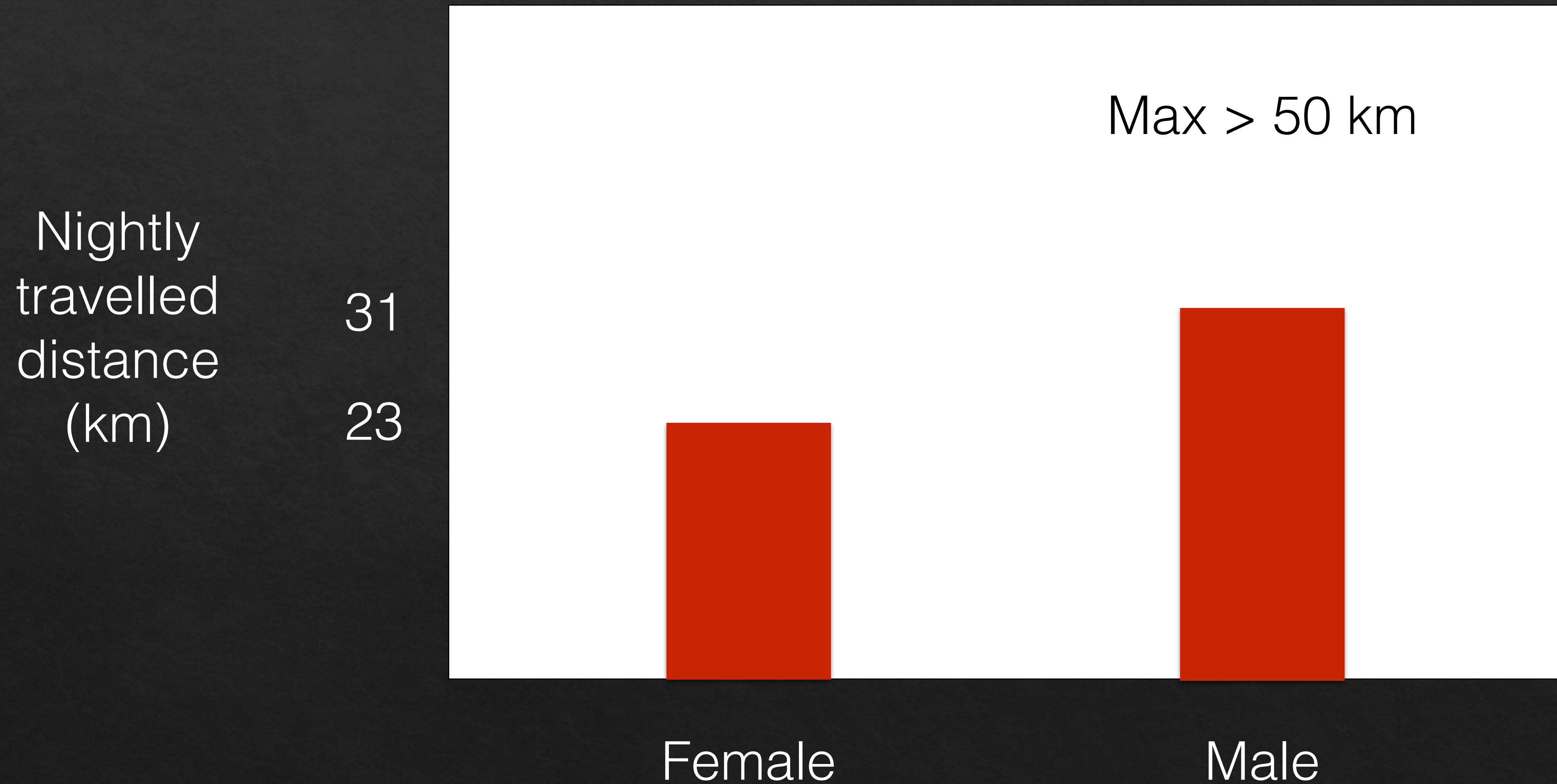


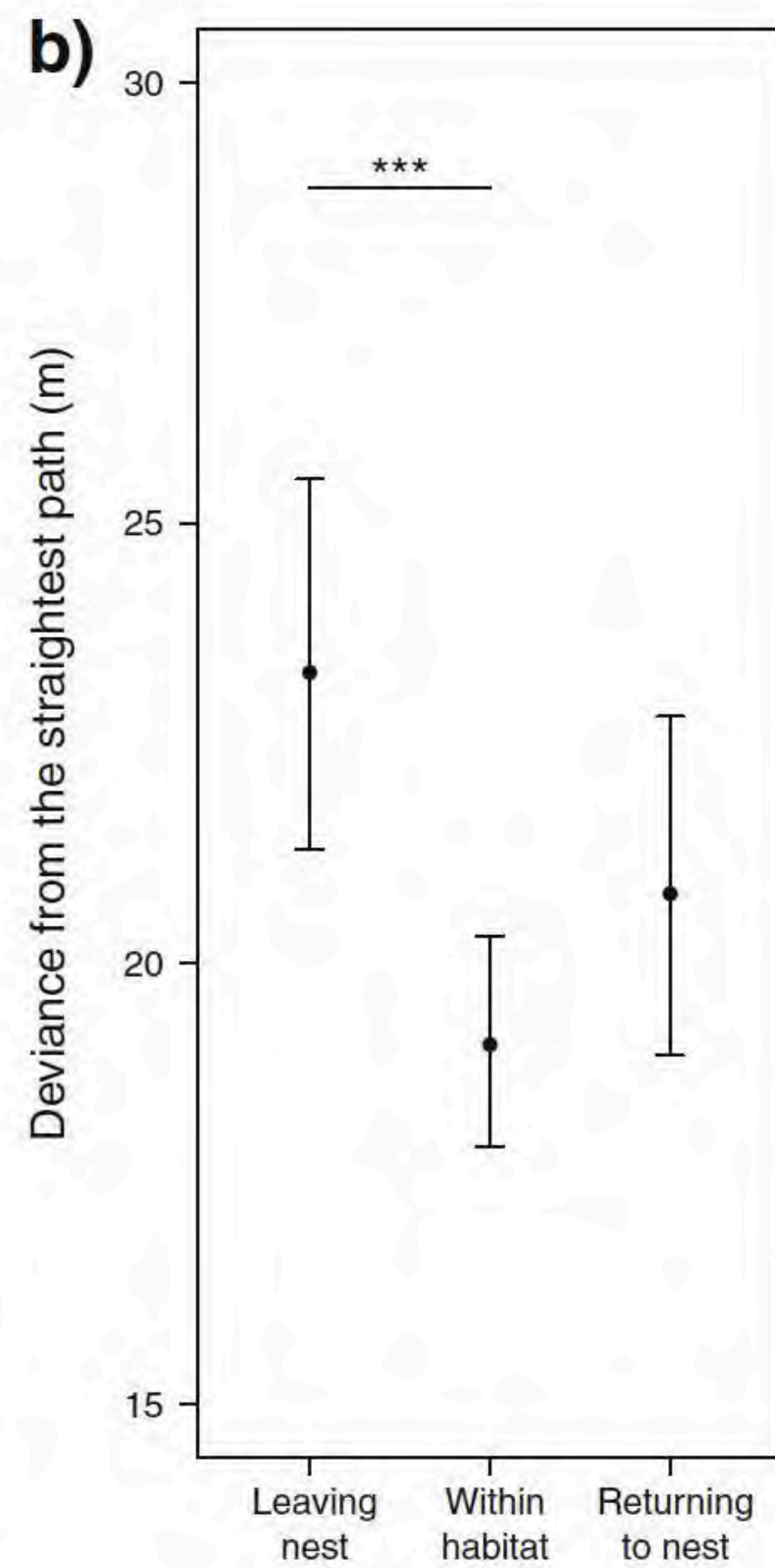
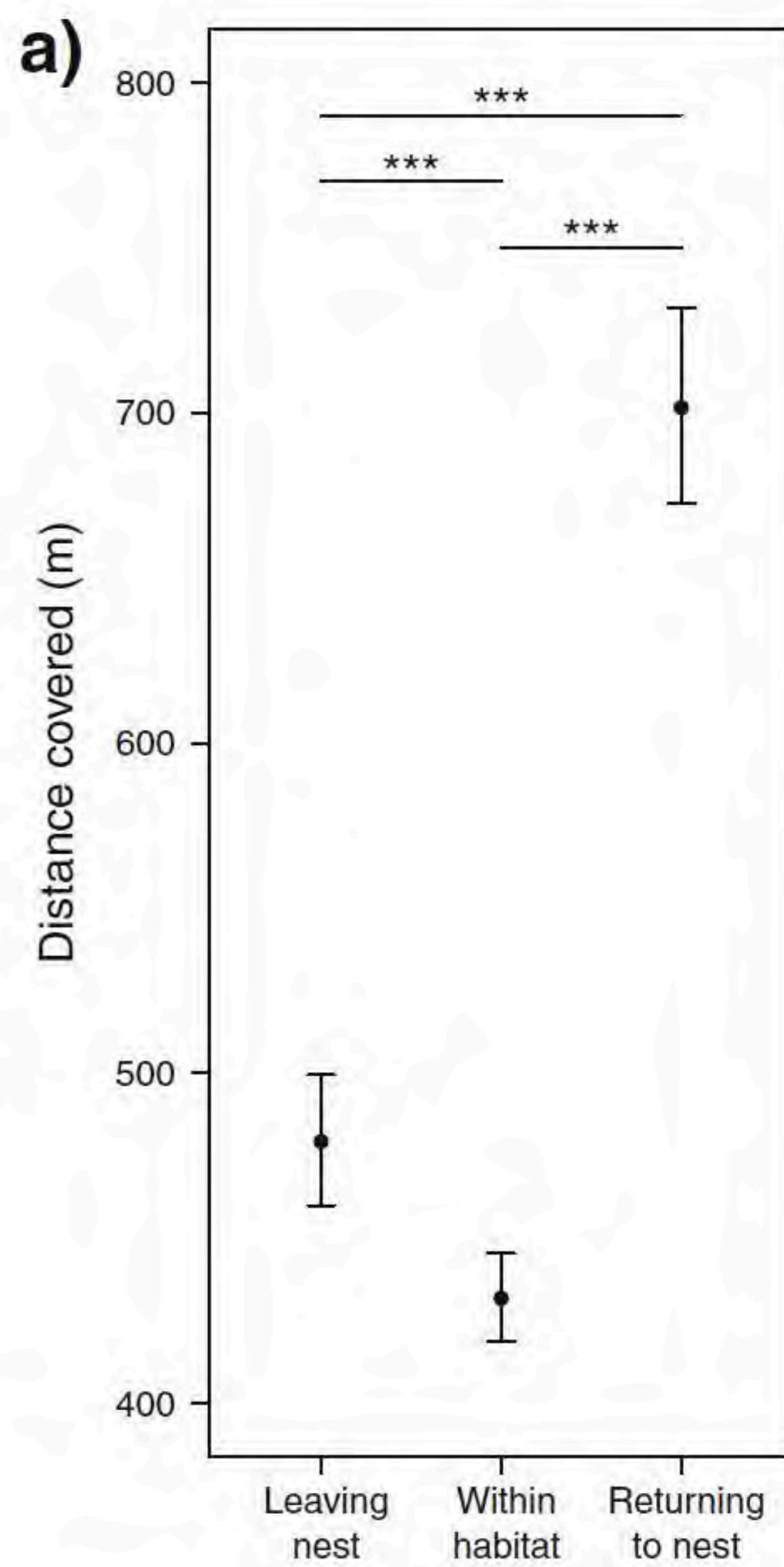
HABITAT SELECTION

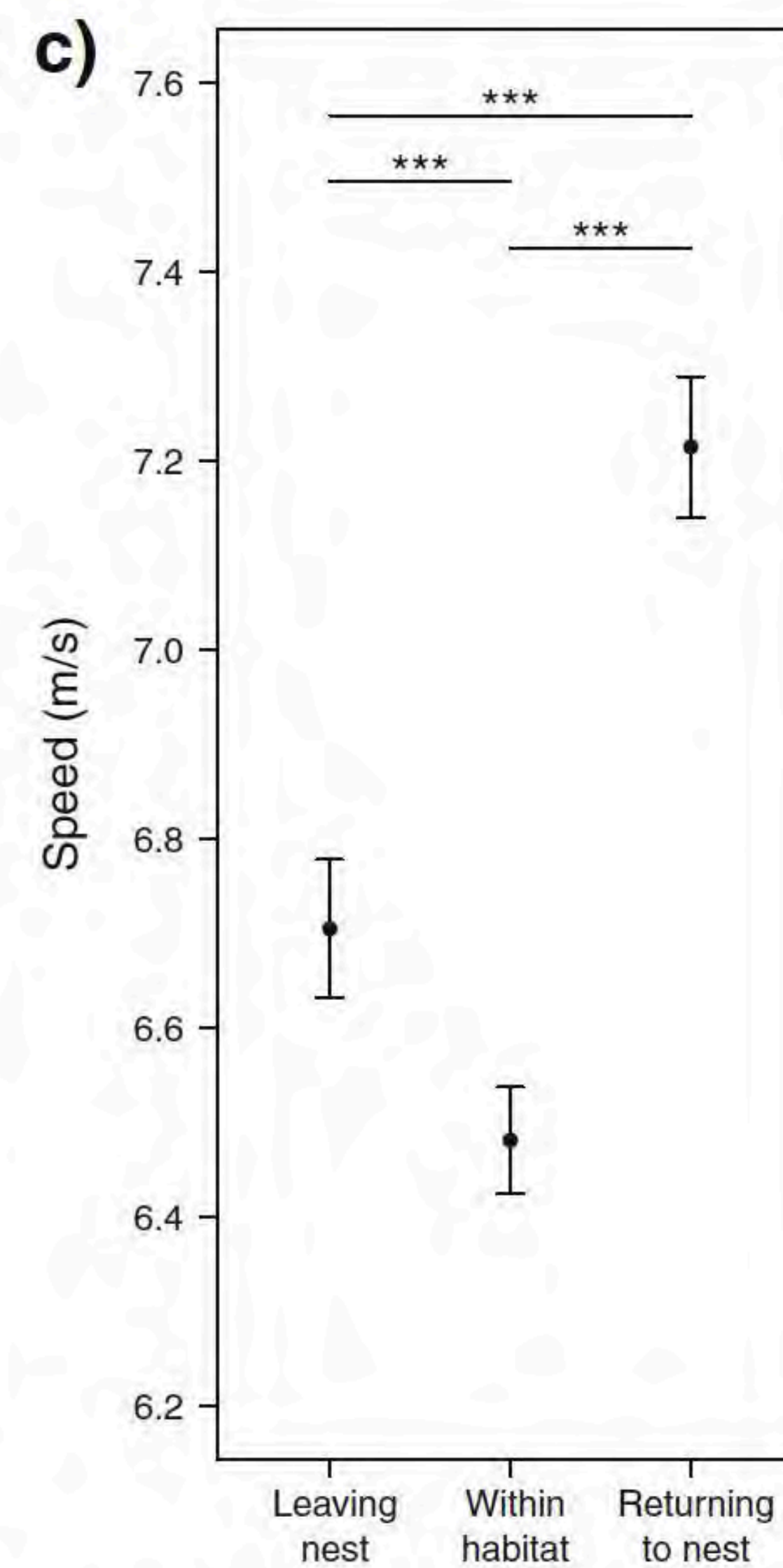
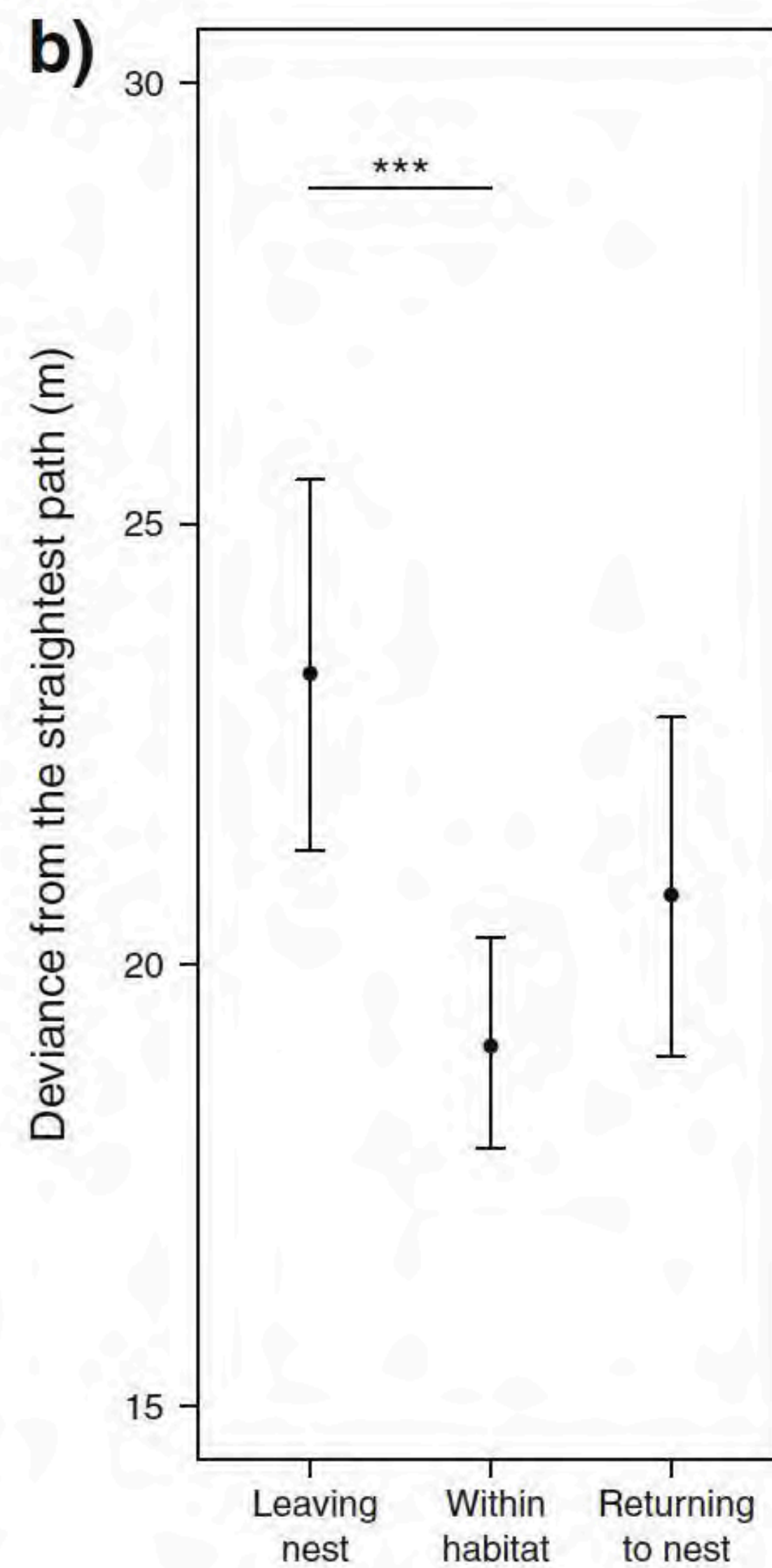
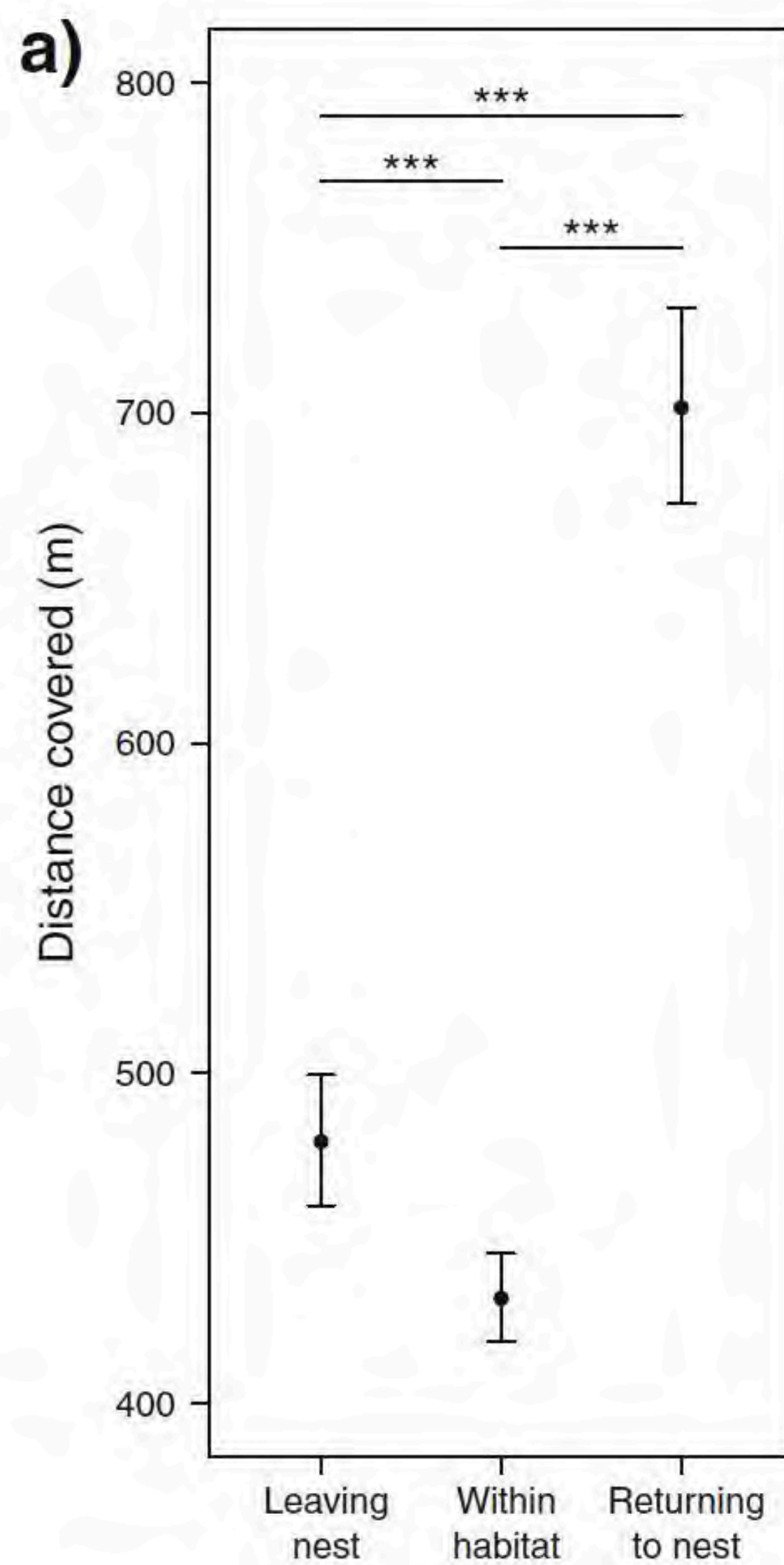




Travelled distance per night

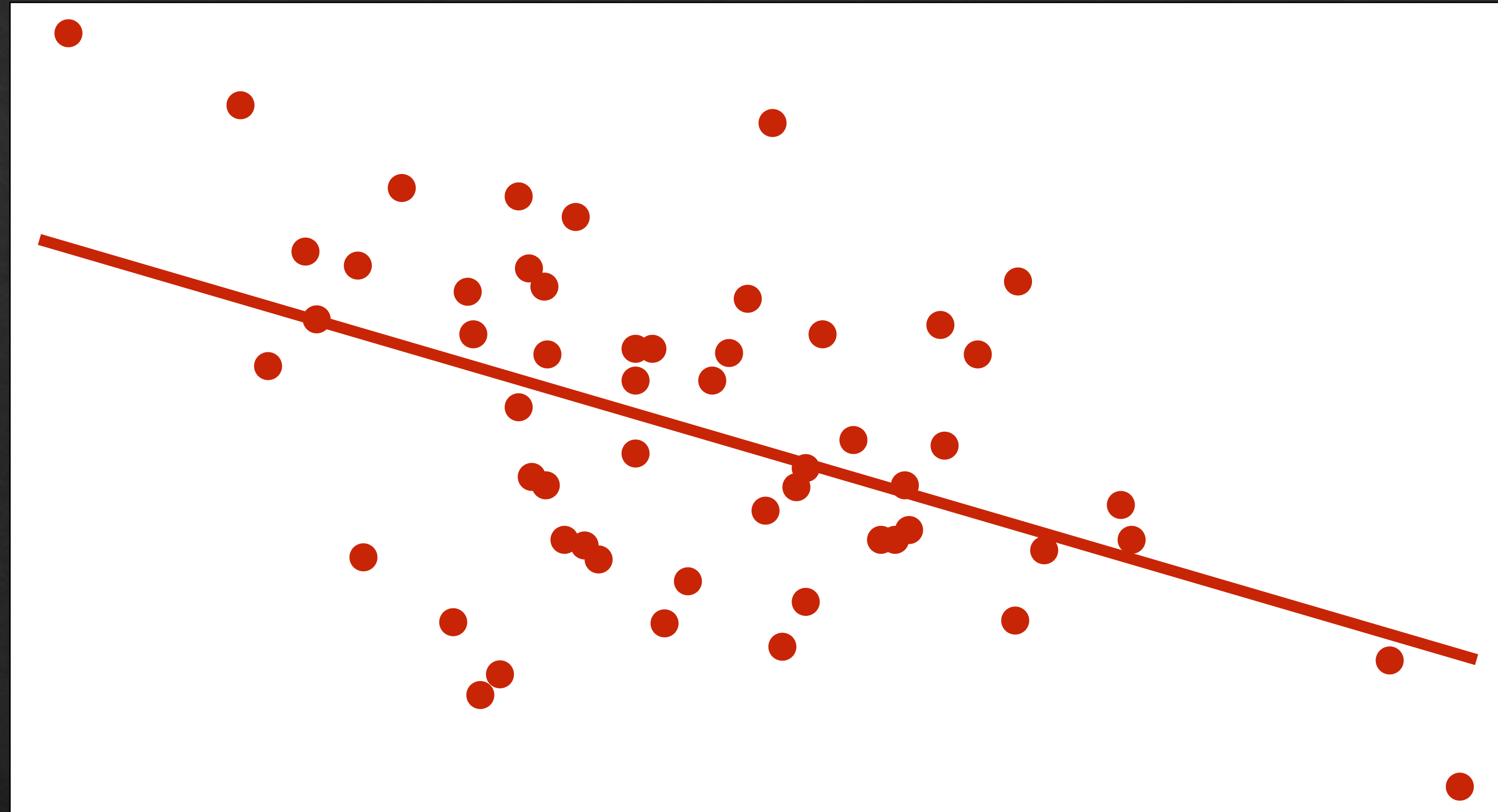






Home range size

Home range size



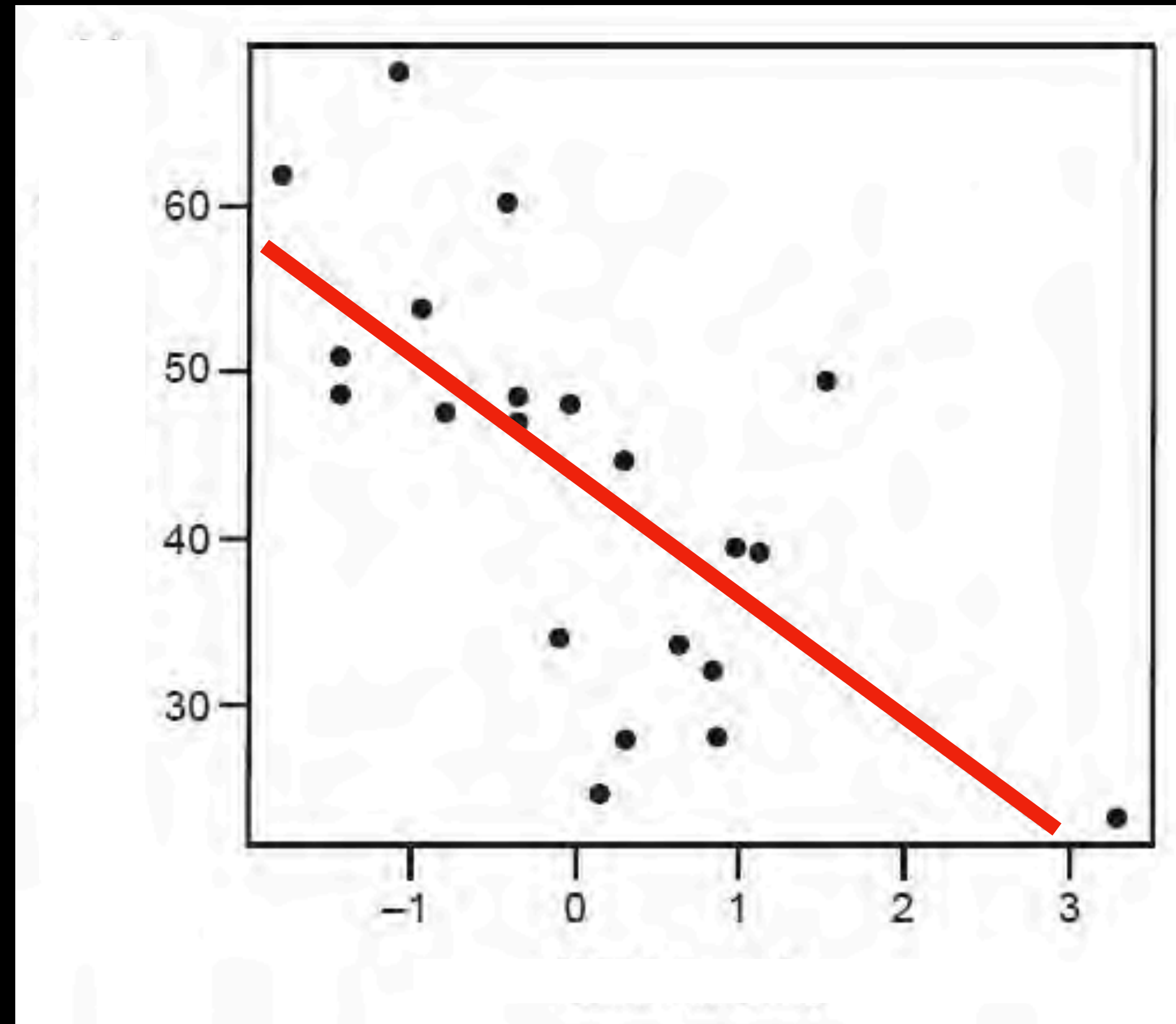
Proportion of selected habitats present in the home range

SENSITIVITY TO WEATHER



Winter conditions

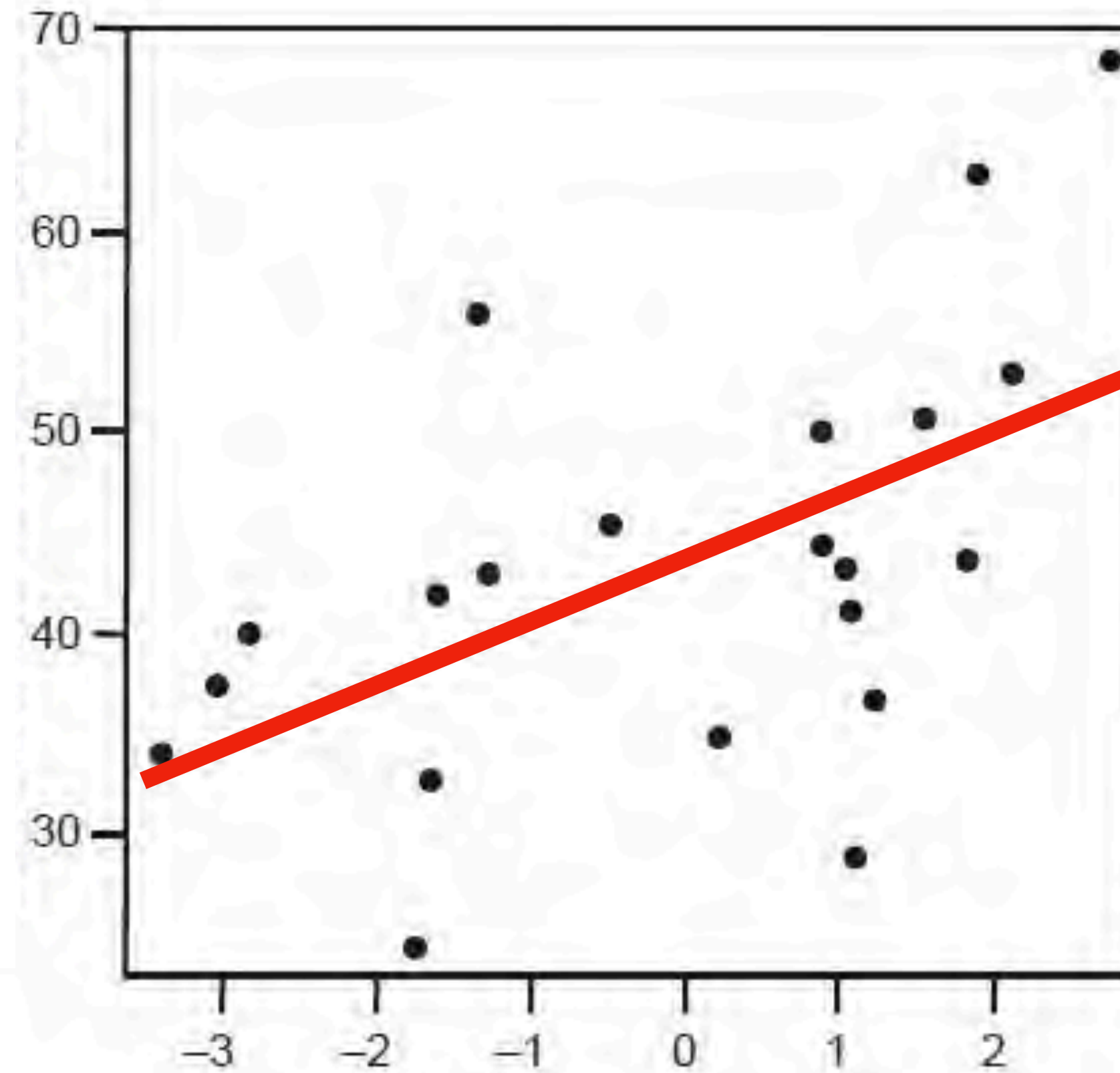
Barn owl annual
number of
breeding pairs



Winter severity

Spring conditions

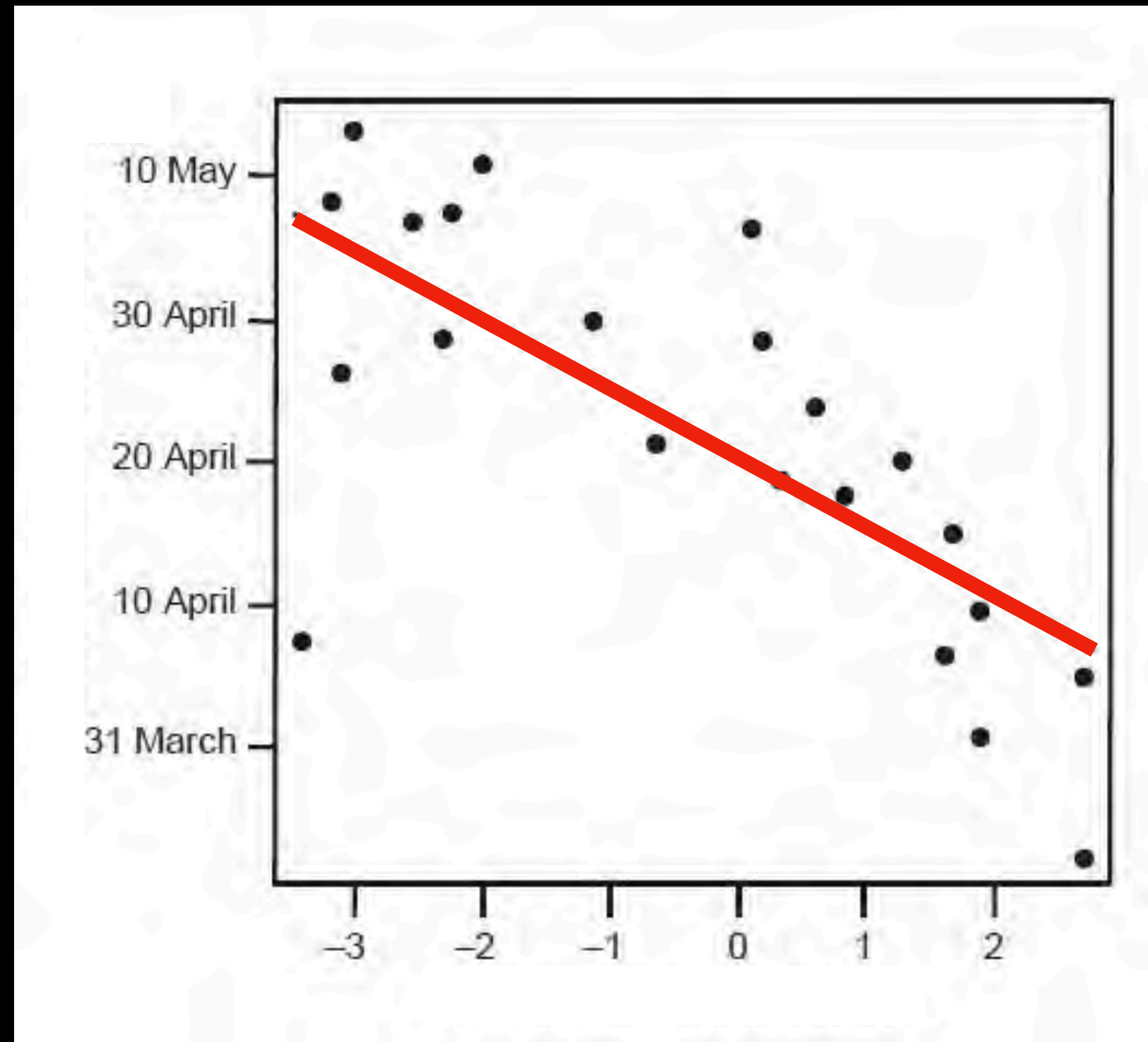
Barn owl annual
number of
breeding pairs



Pre-breeding food conditions

Spring conditions

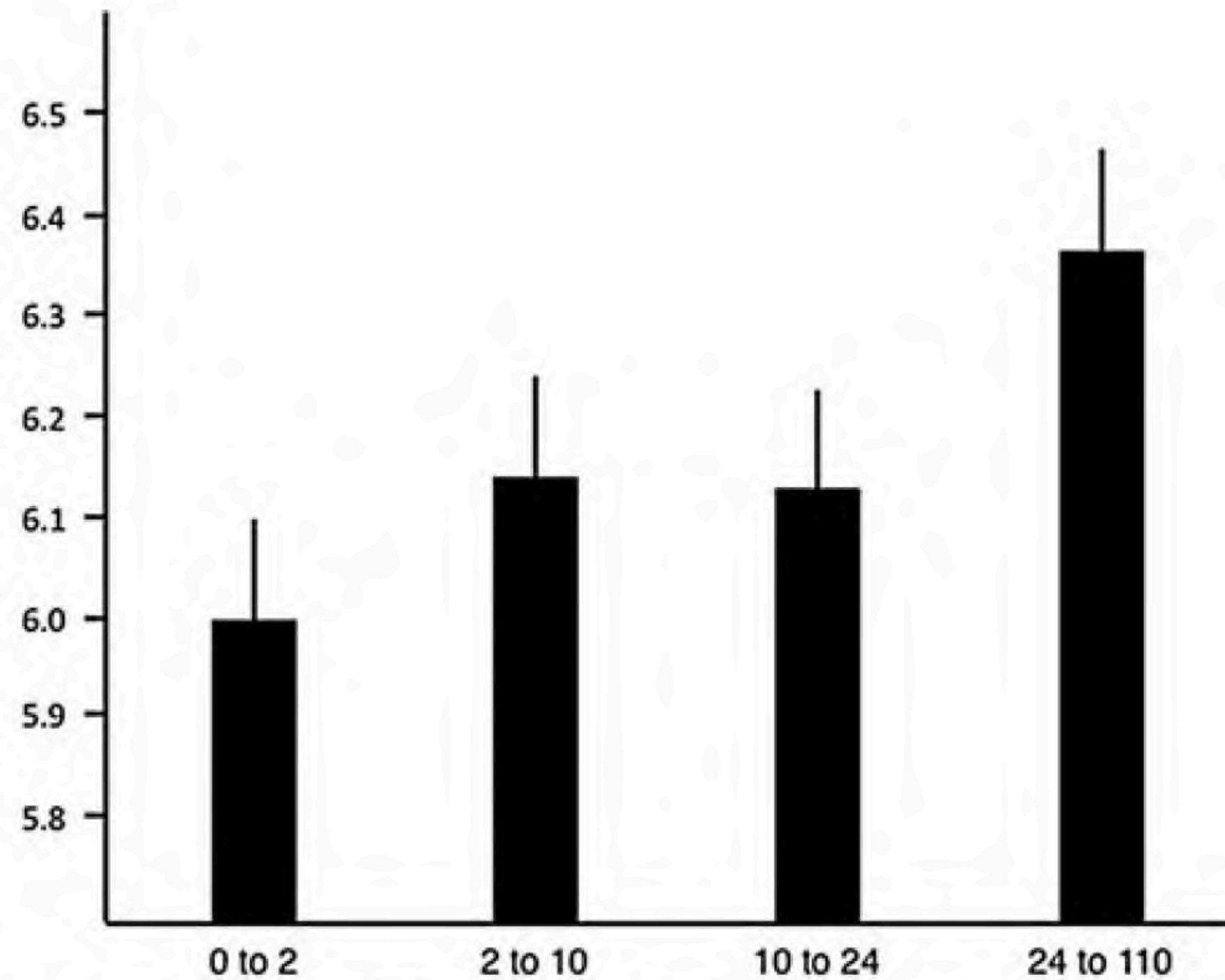
Barn owl annual
mean laying date



Pre-breeding food conditions

Spring conditions

Mean
clutch
size

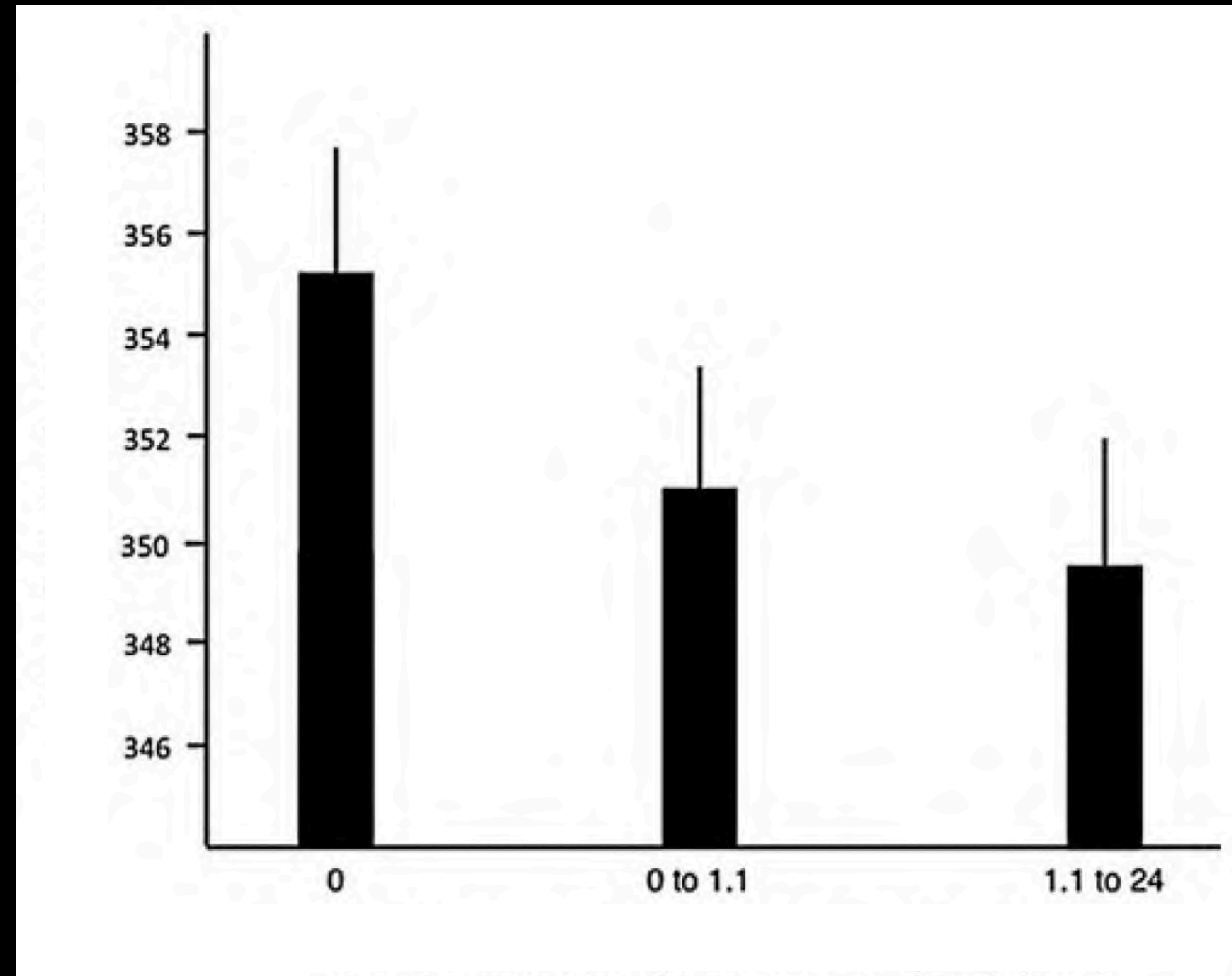


Total rainfall between 17 and 24
days before egg laying (mm)



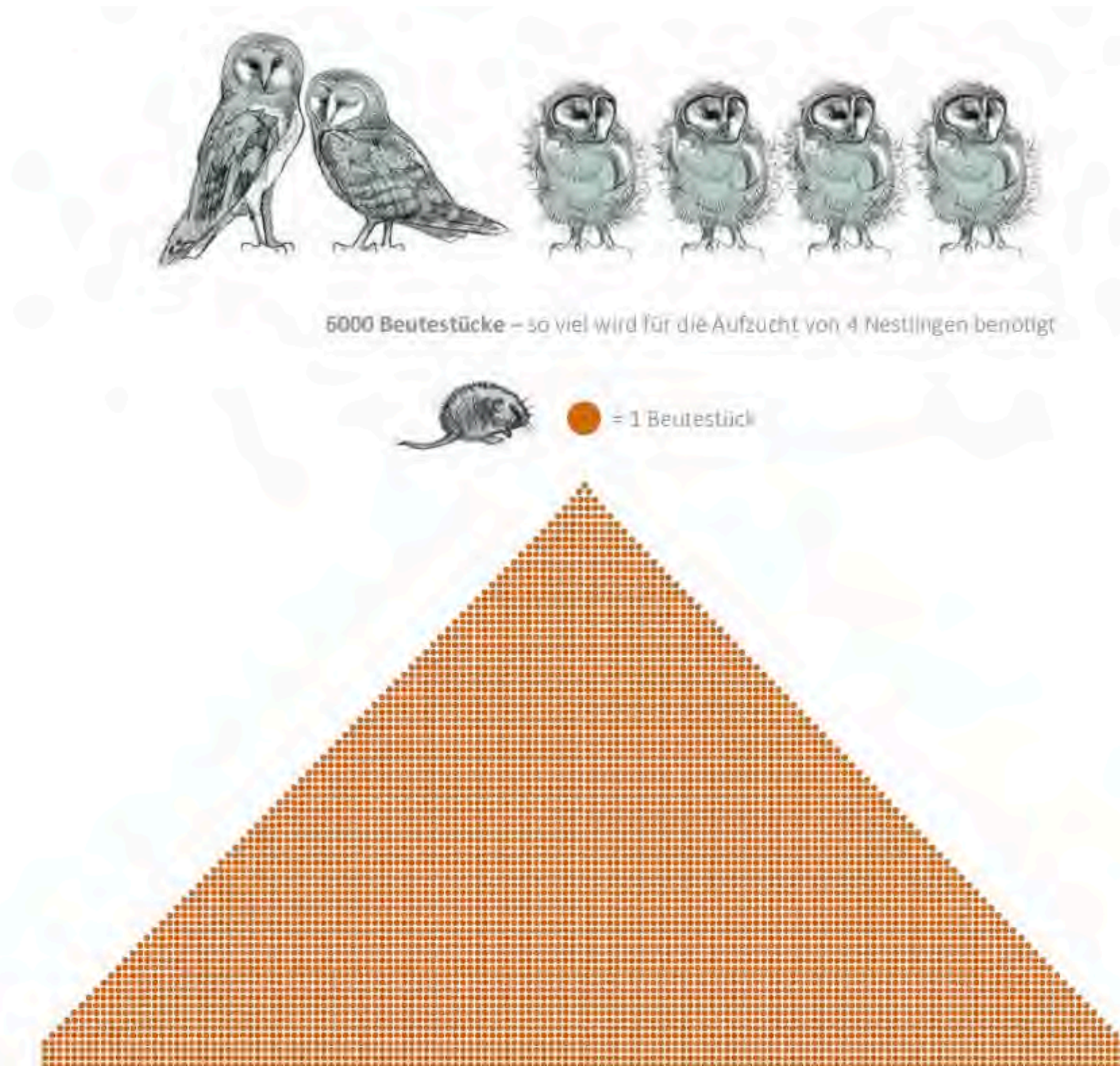
Spring conditions

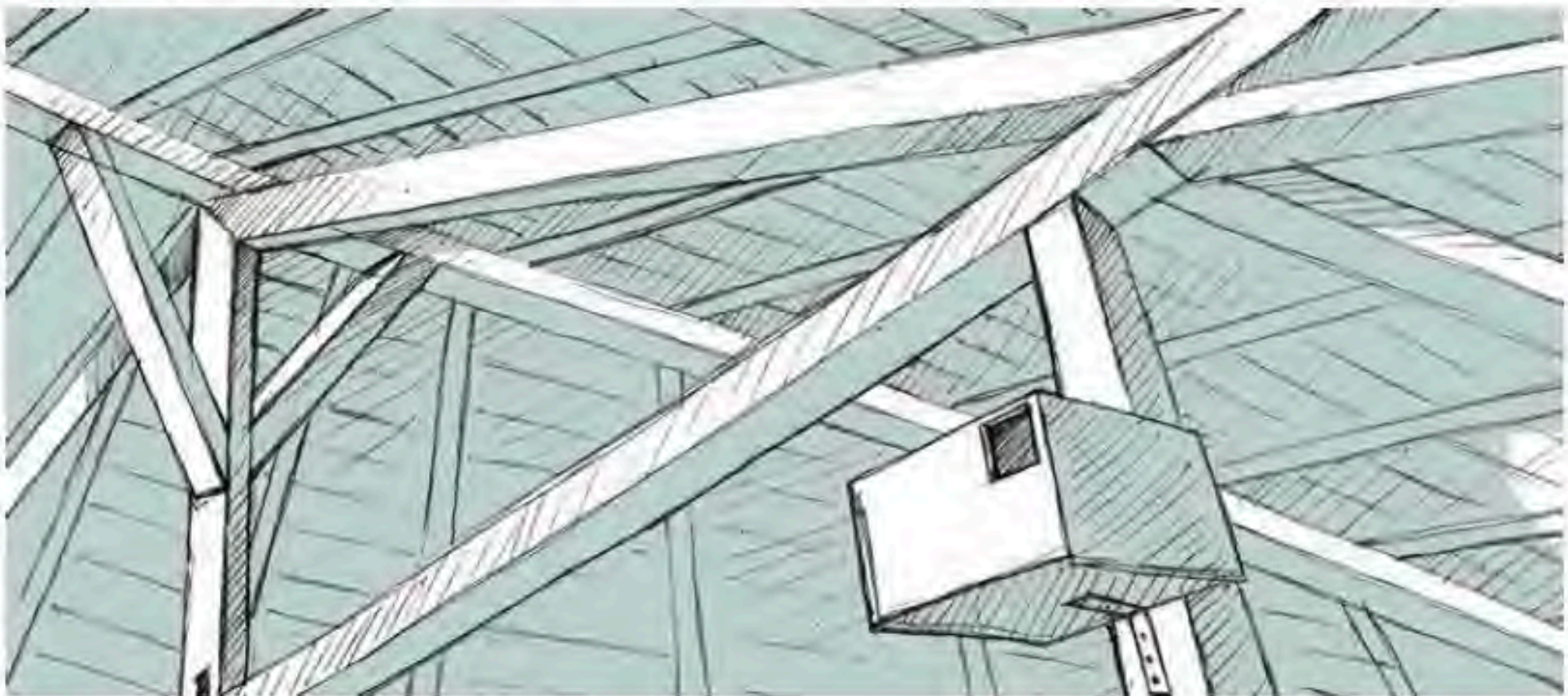
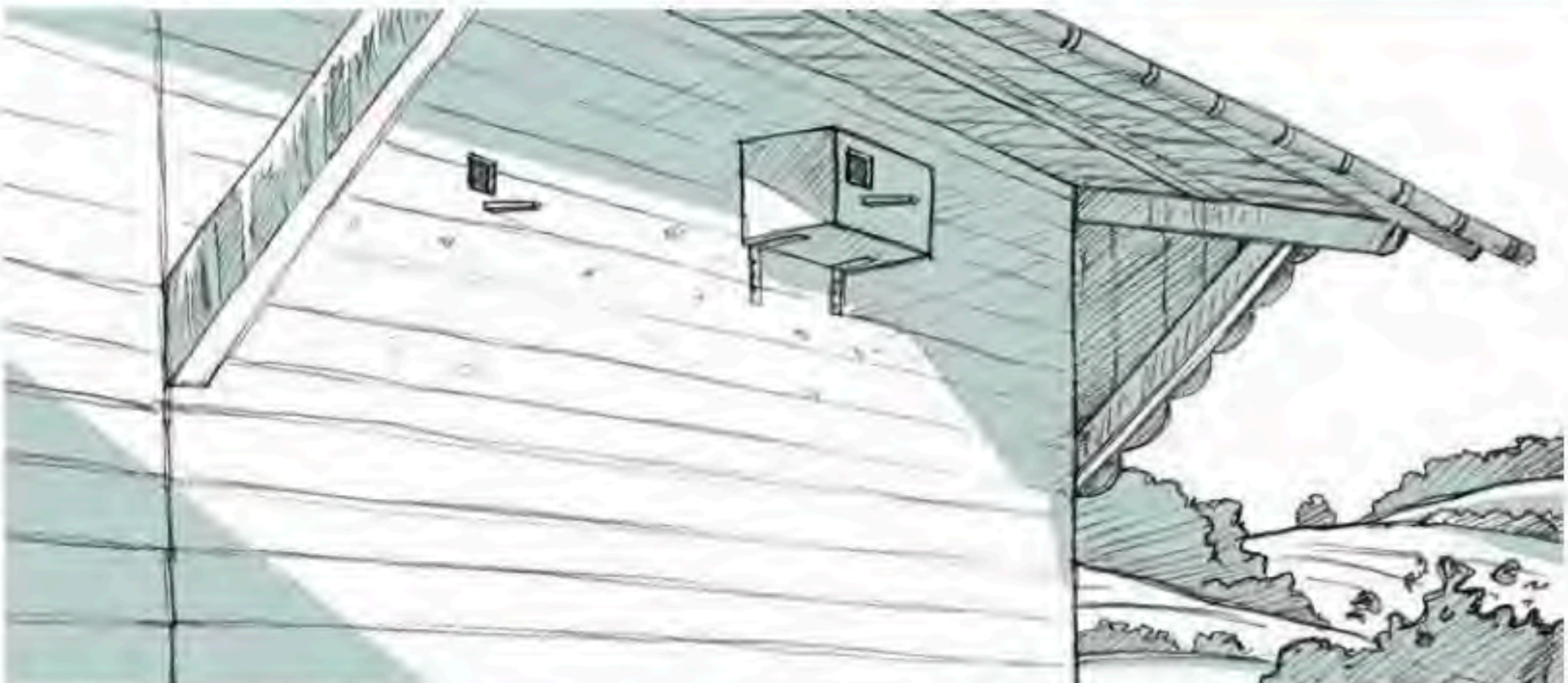
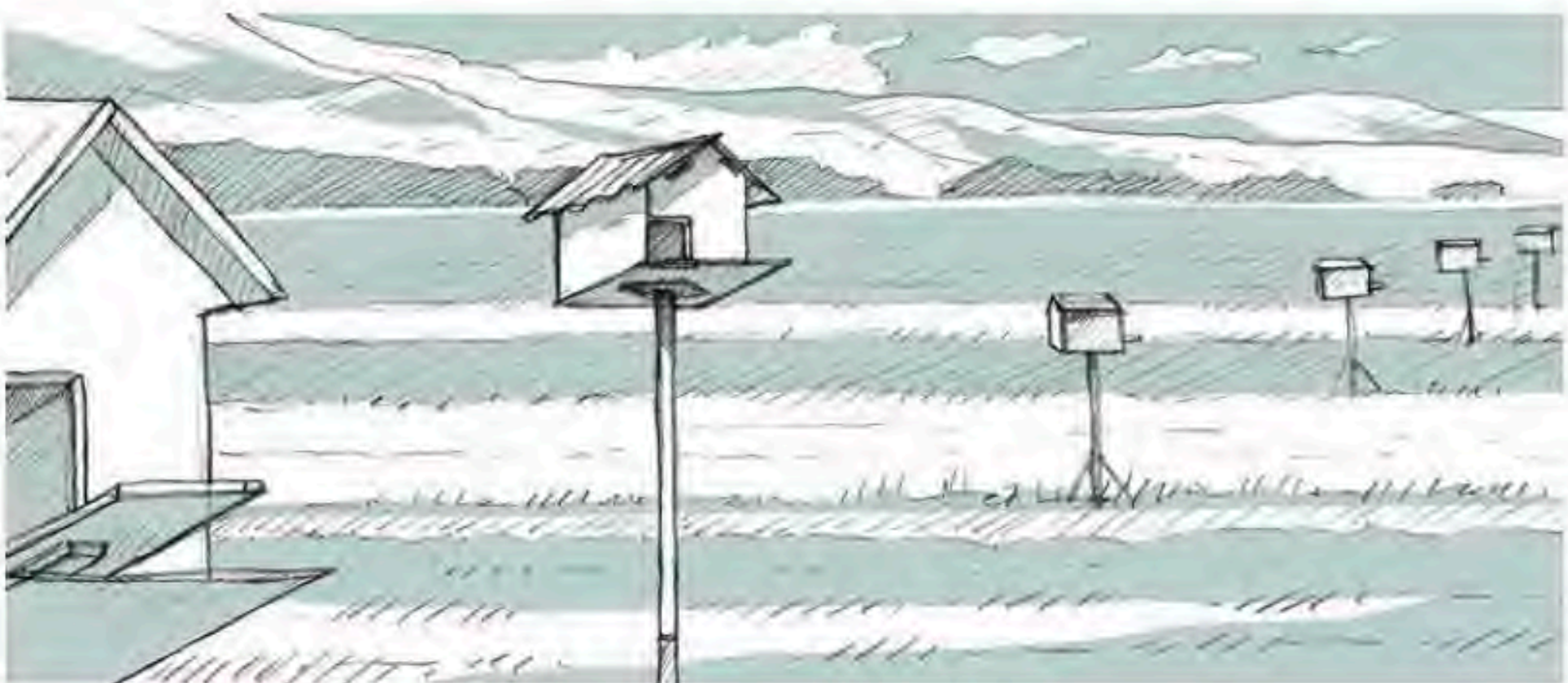
Mean fledging
body mass (g)



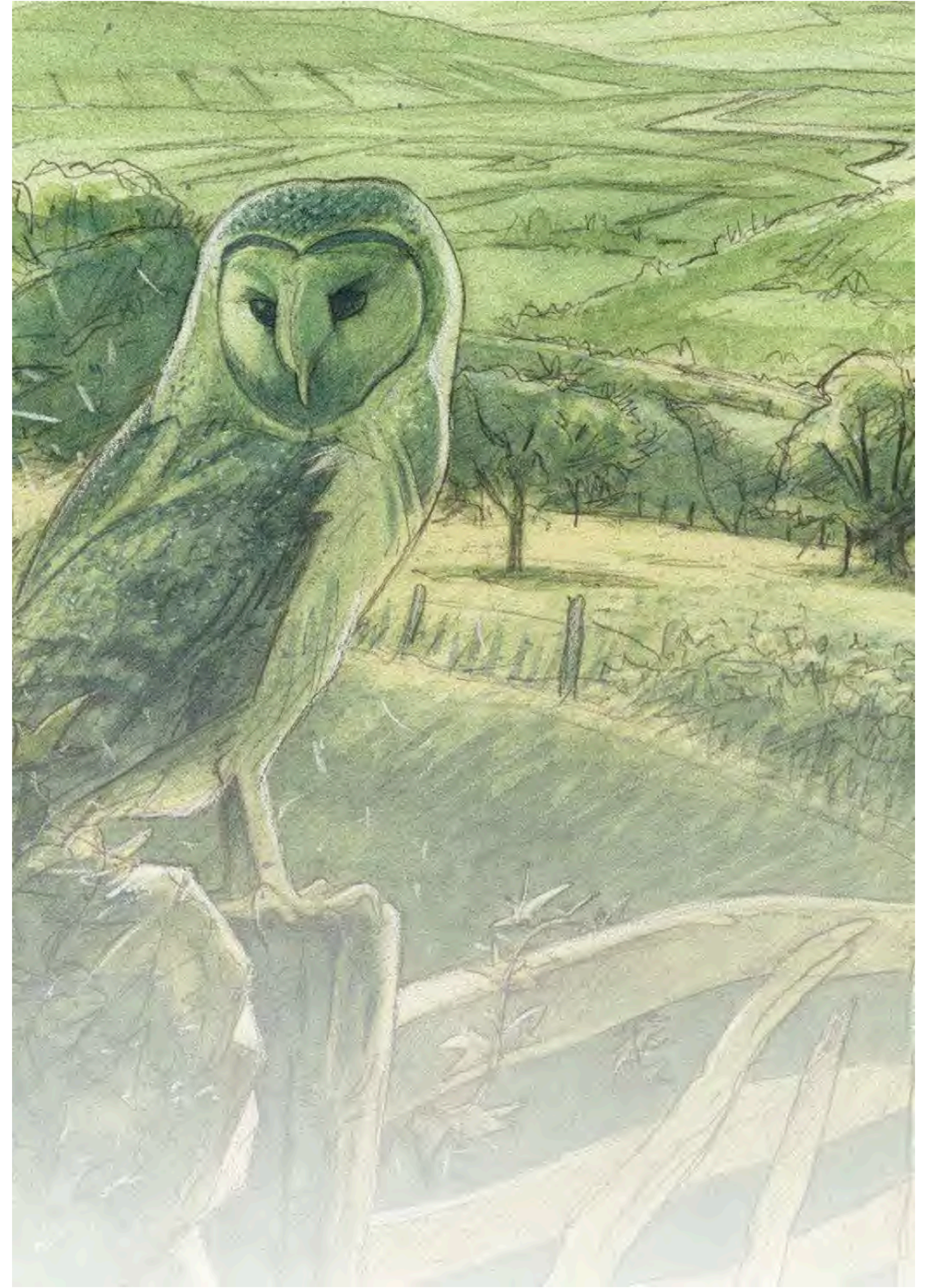
Total rainfall the night before
weighing (mm)

BARN OWL CONSERVATION





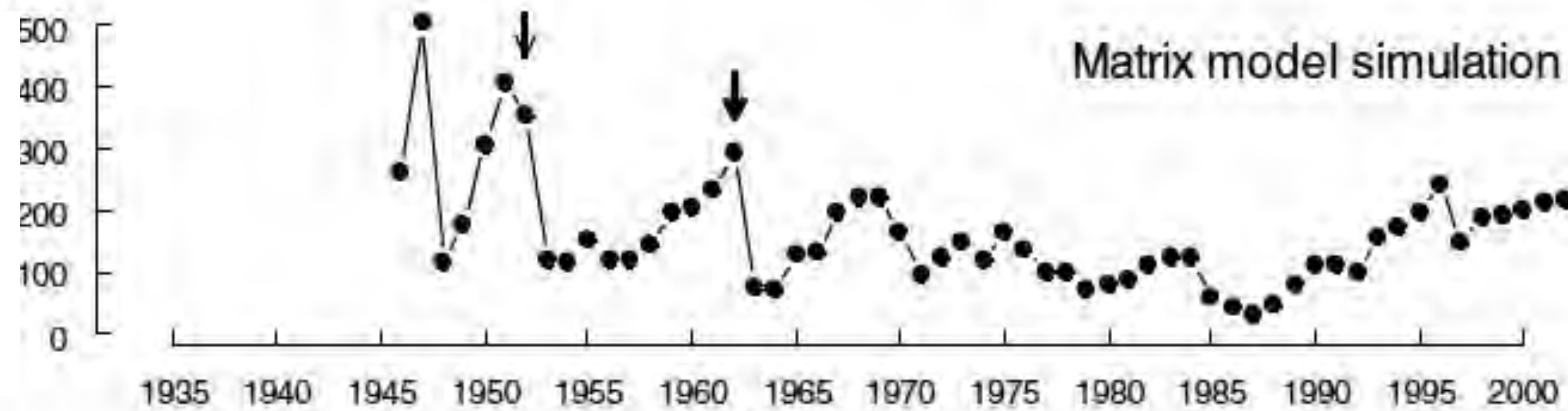
Nest-boxes
Habitat preservation
Traffic
Stress



Barn owl population size



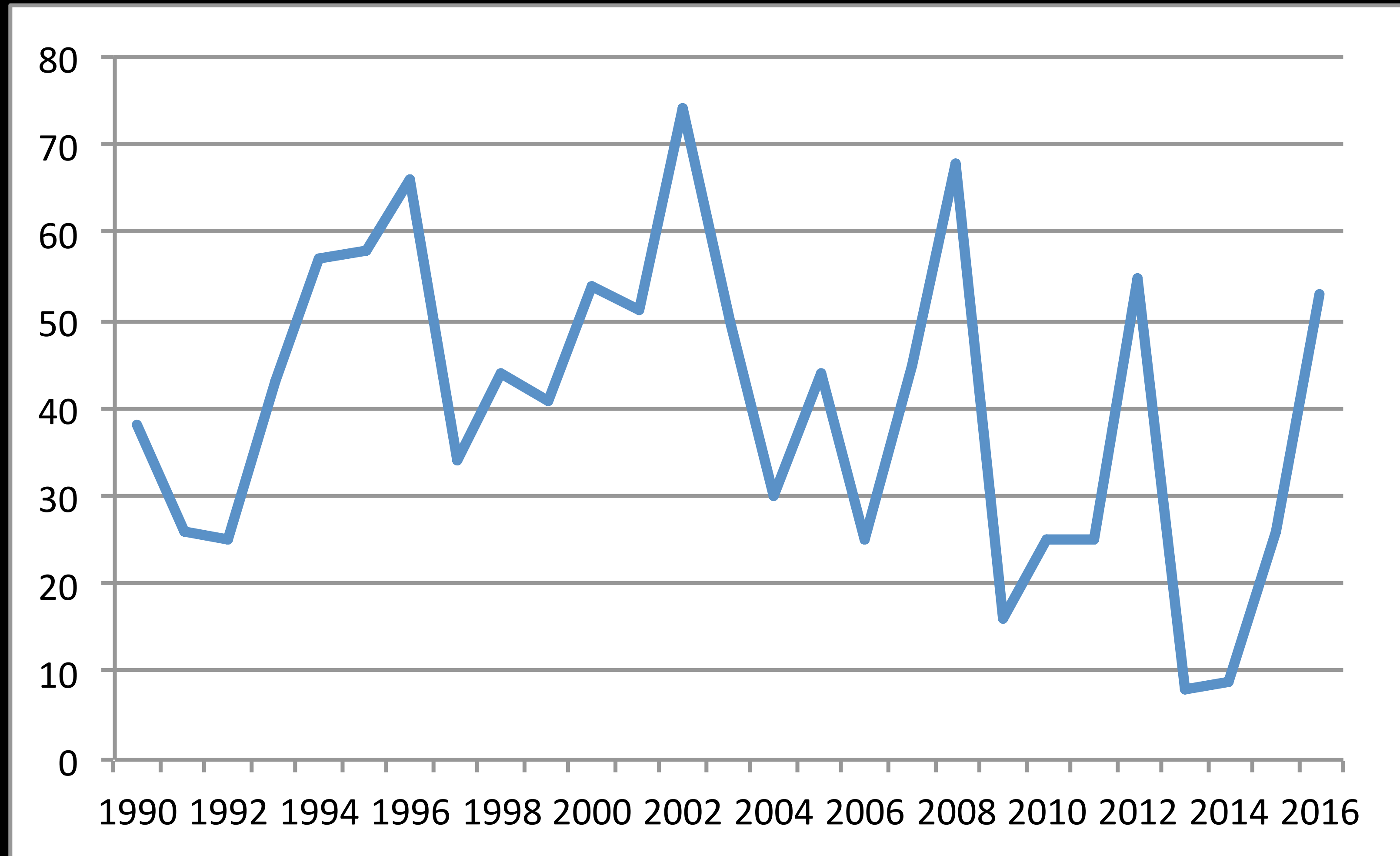
Population size



Year

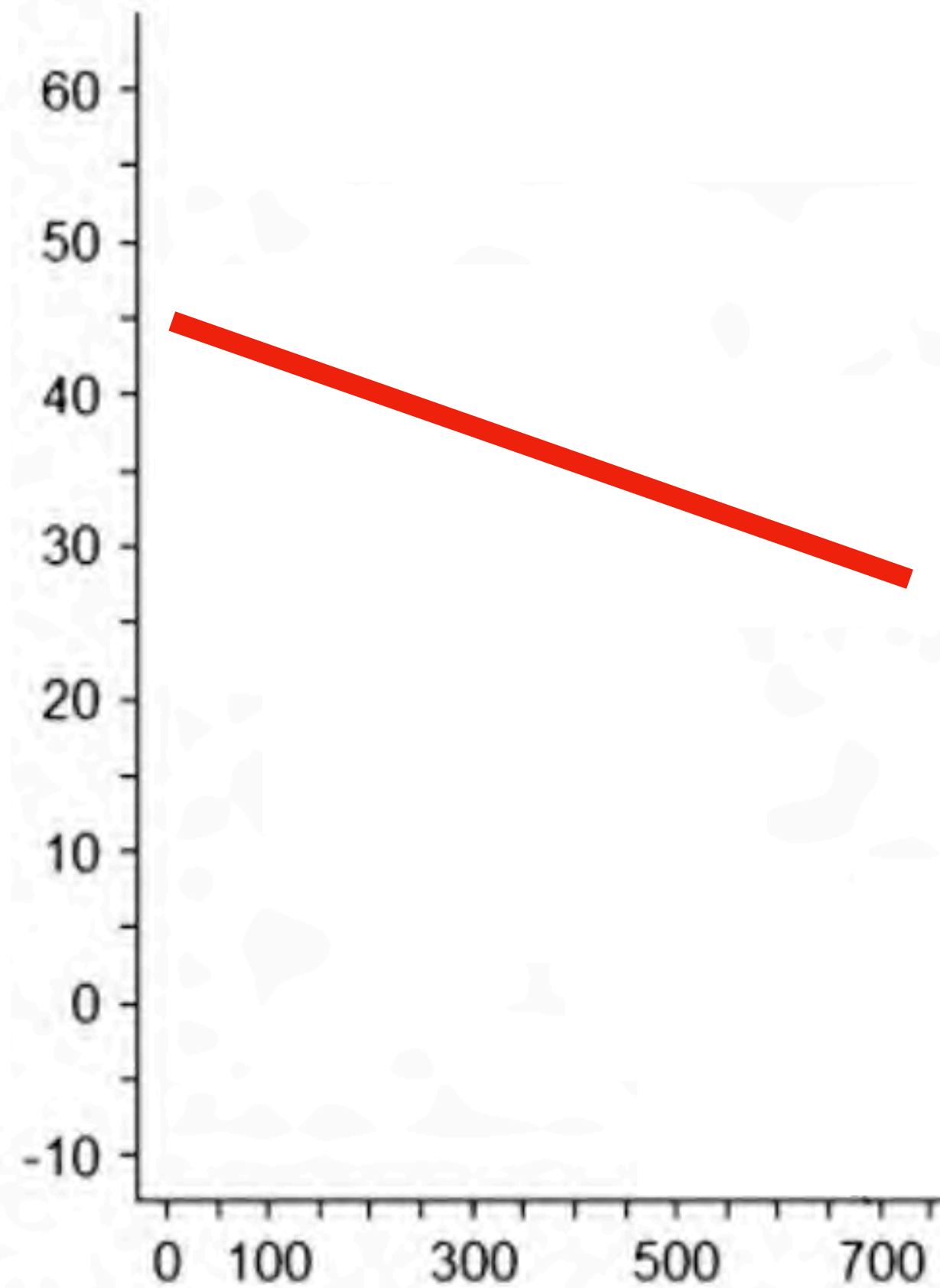
Barn owl population size

Number
of pairs



Stress due to human activities

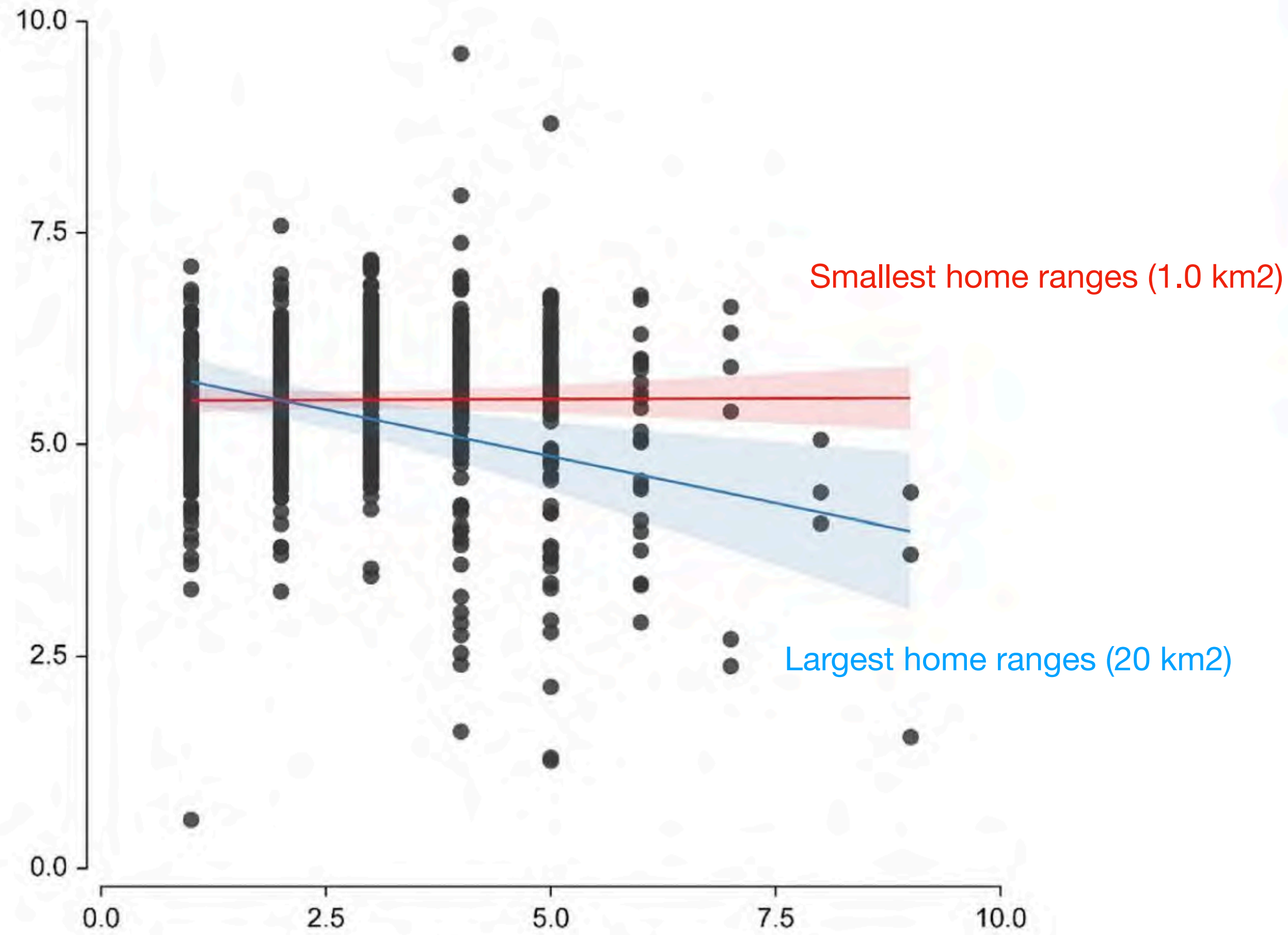
Acute
corticosterone
response



Distance to next inhabited house (m)

Home range

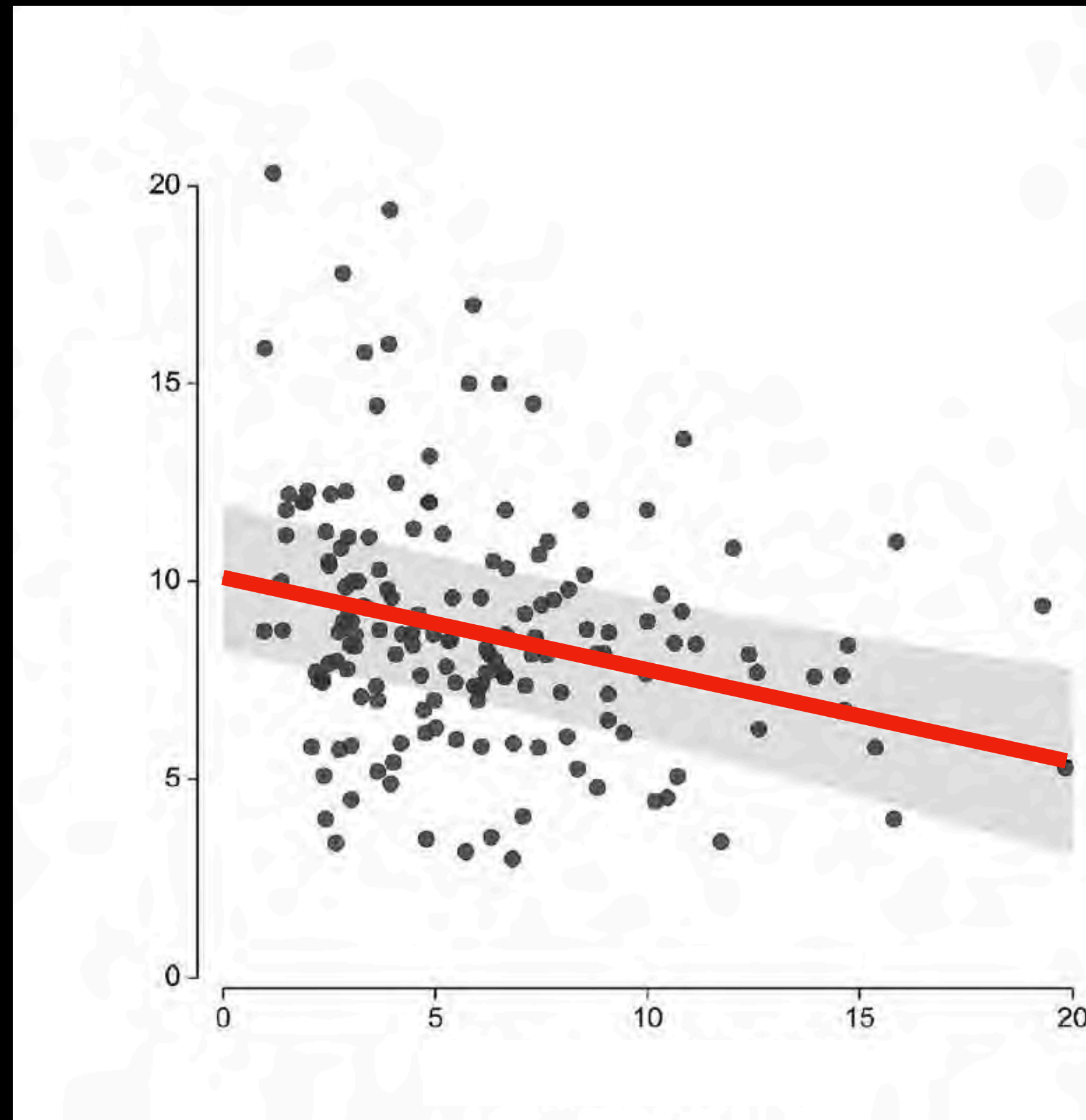
Daily
growth rate
(mm/day)



Nestling's rank

Barn owl home range

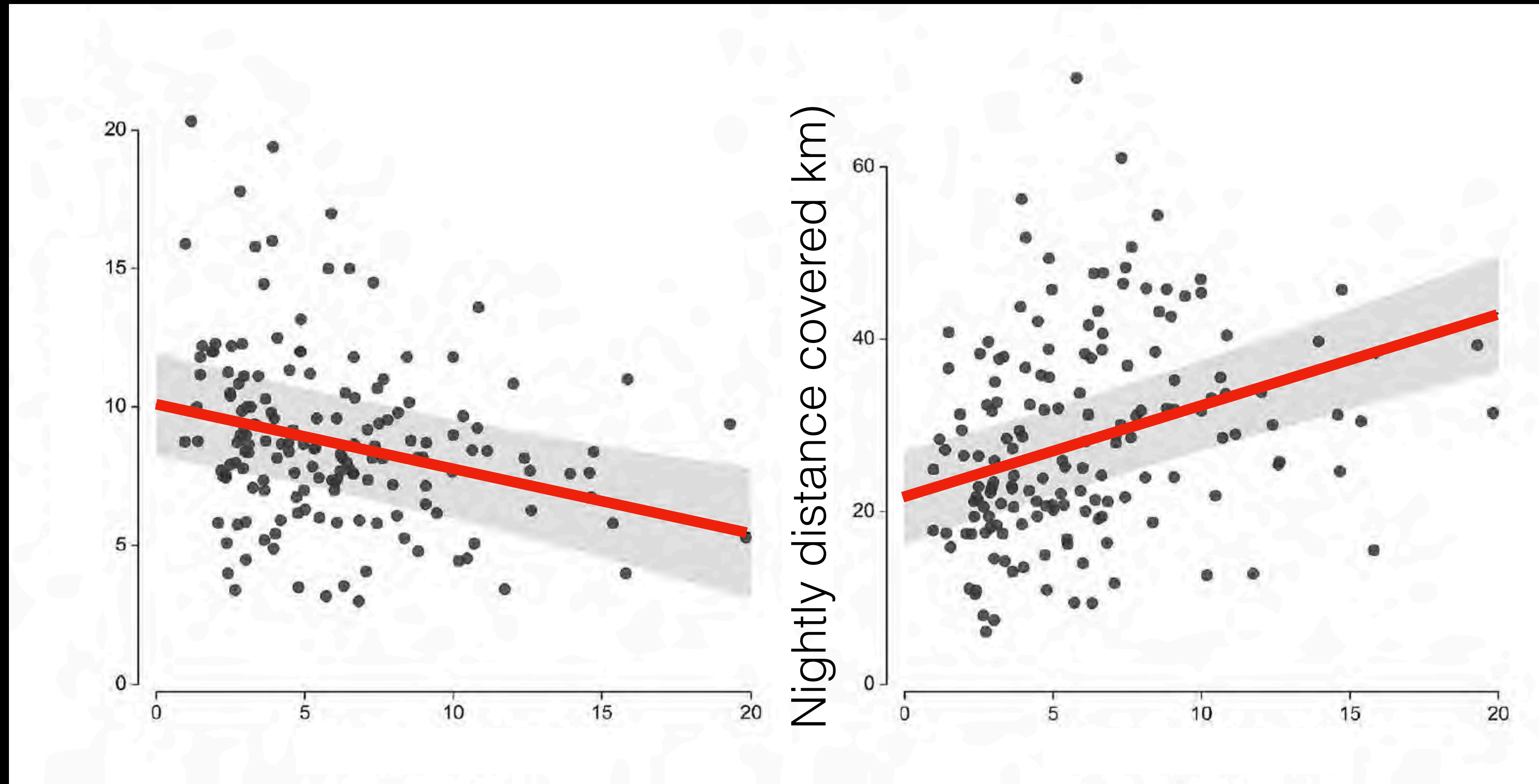
Nightly prey provisioning



Home range size (km²)

Barn owl home range

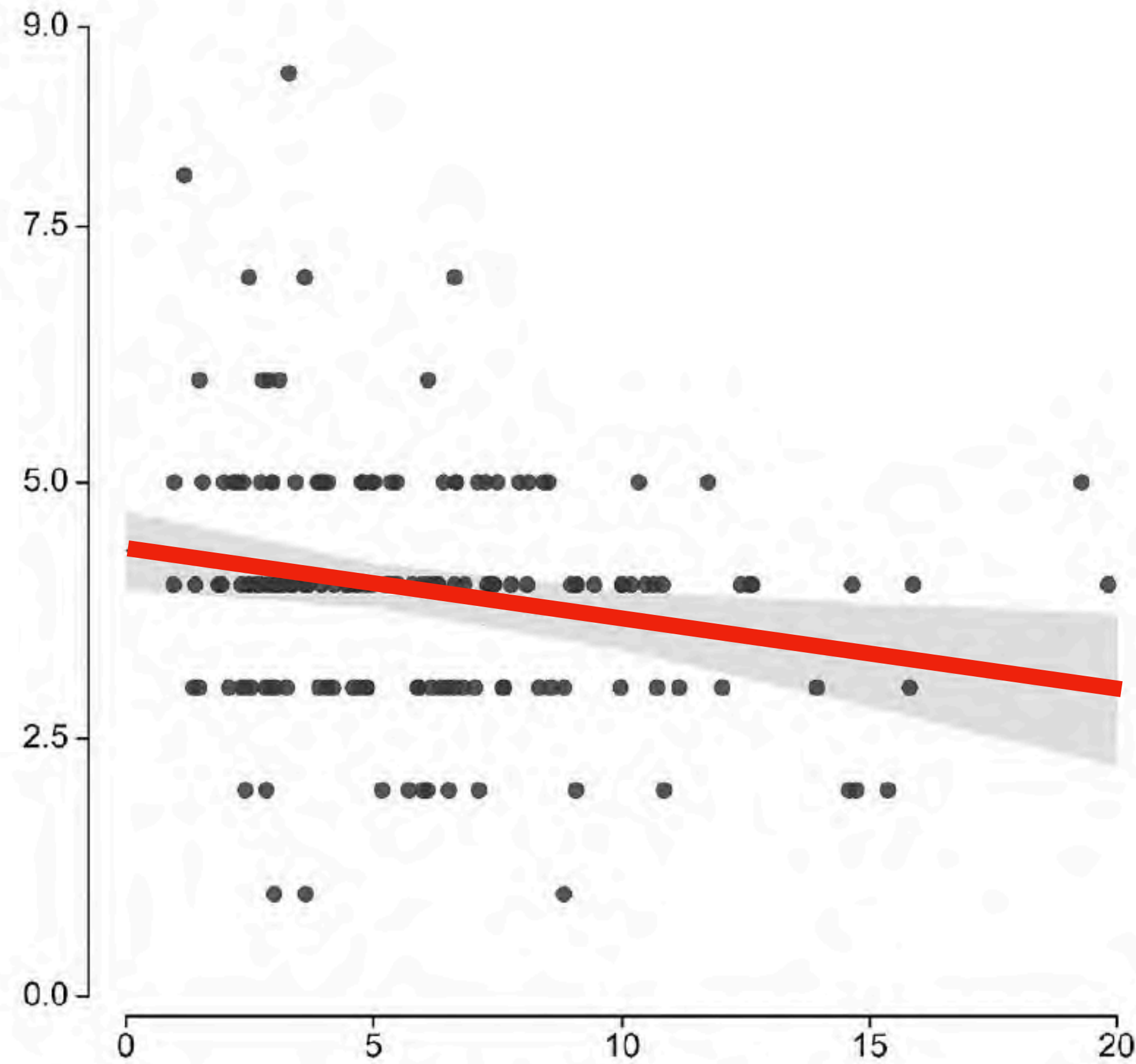
Nightly prey provisioning



Home range size (km²)

Barn owl conservation

Number of
fledglings



Home range size (km²)



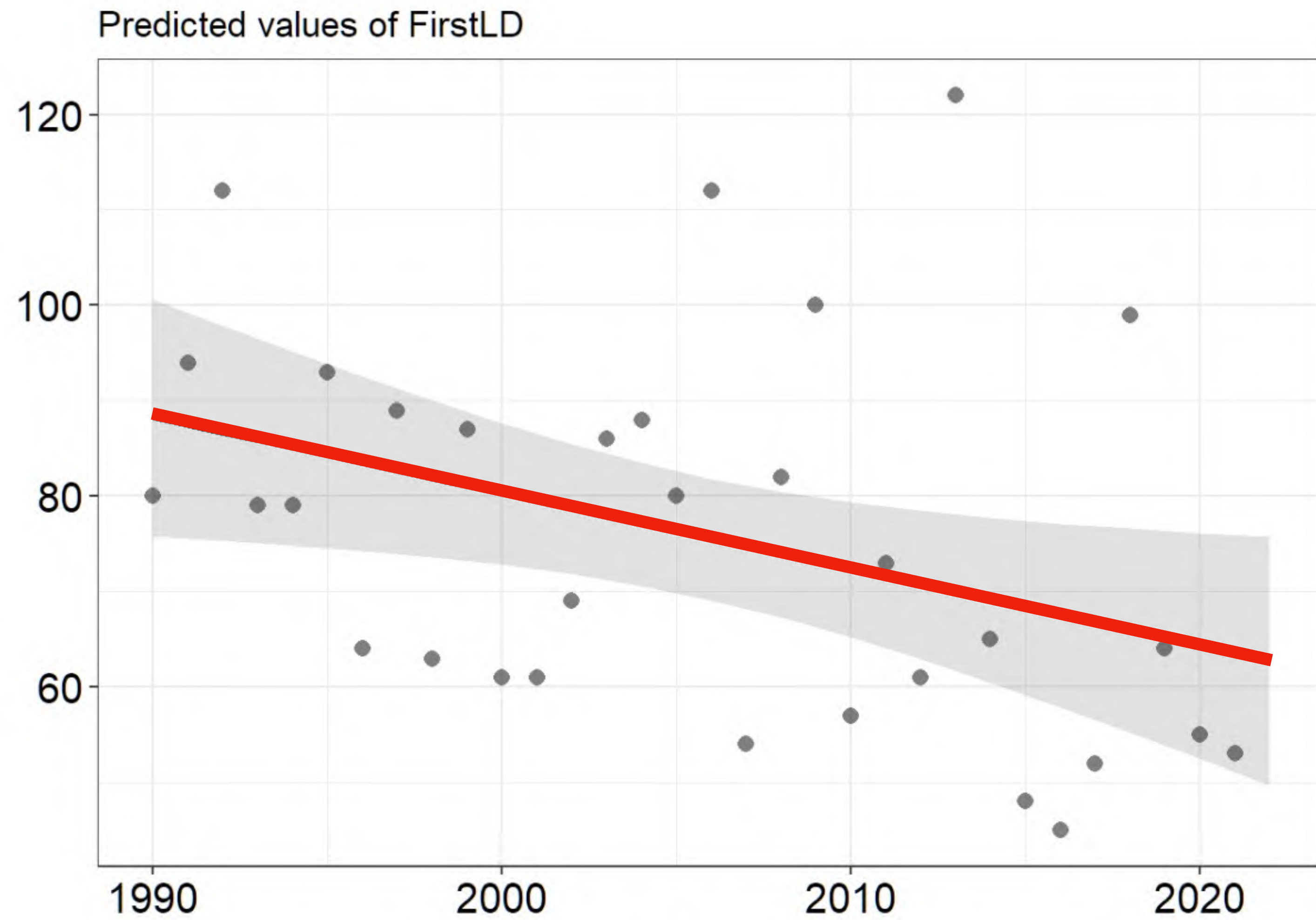


GLOBAL CHANGE



Climate Change

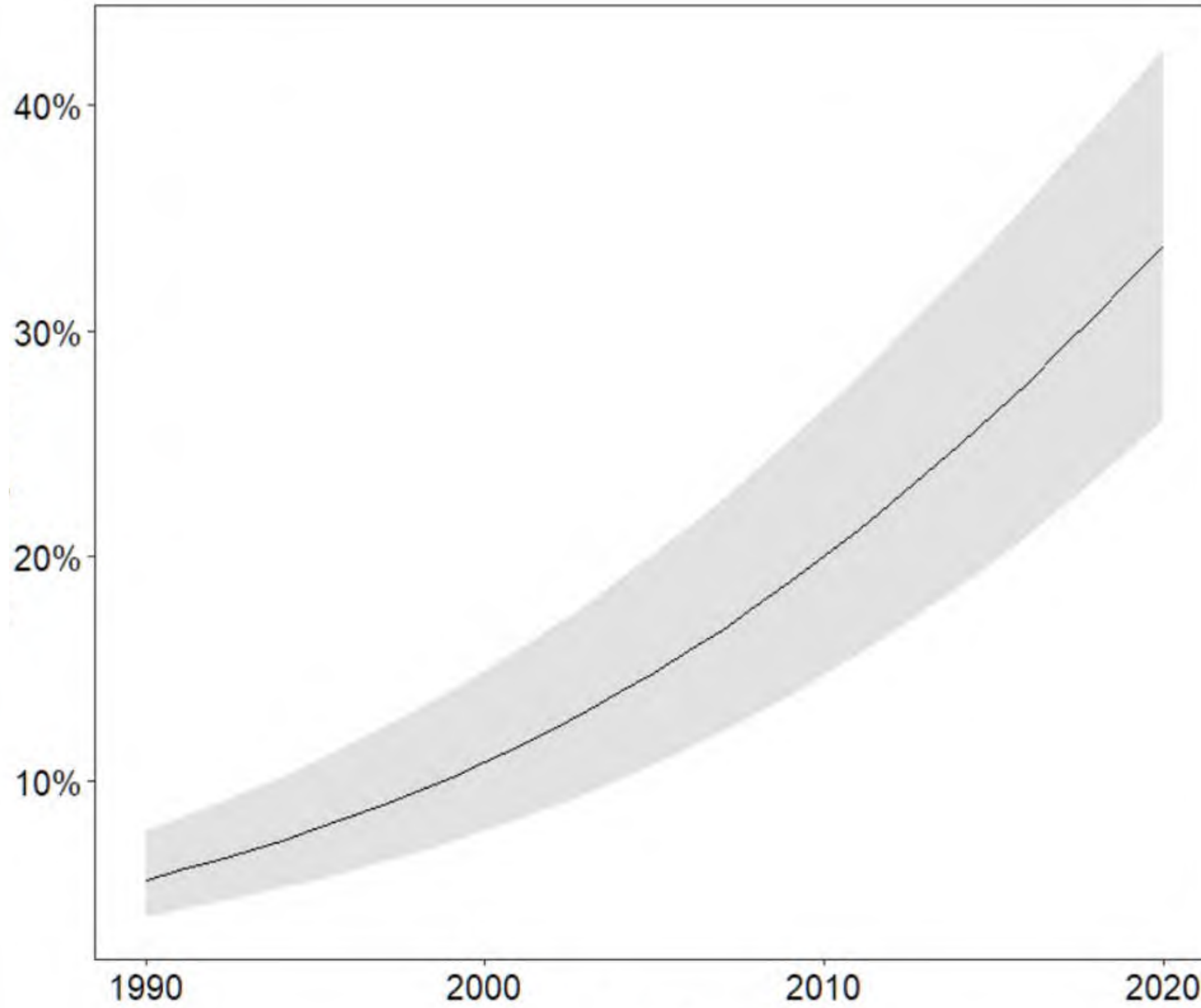
Laying date



Year

Climate Change

Proportion
of second
clutches



Year





I thank you for your attention