BIRD COMMUNITY BODY SIZE , HABITAT FRAGMENTATION AND BIODIVERSITY

Final presentation

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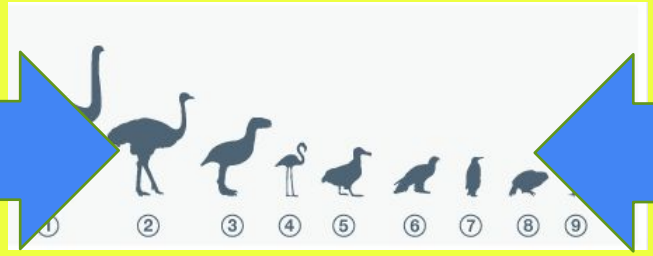


HABITAT FRAGMENTATION

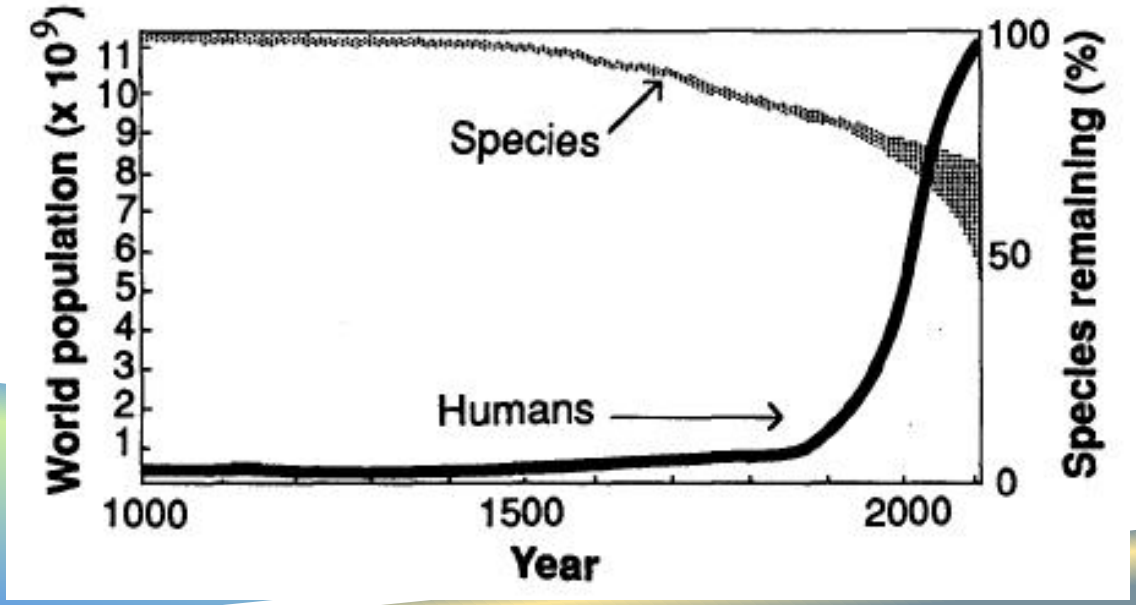
- Habitat fragmentation caused by habitat destruction

Leads to:

- Isolated patches
- Smaller populations

EFFECTS HABITAT FRAGMENTATION

- Decreases biodiversity
- Changes overall species composition
- Different species, different habitat fragmentation sensitivity

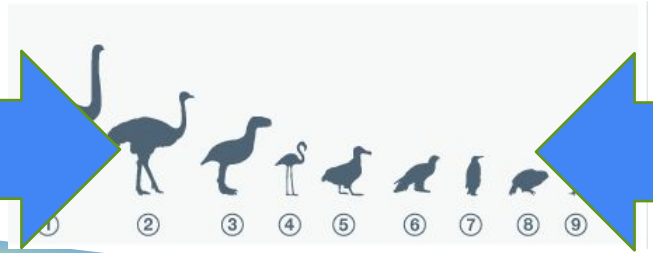


BODY SIZE

- Body size negative correlated with habitat fragmentation
- Body size negative correlated with species richness

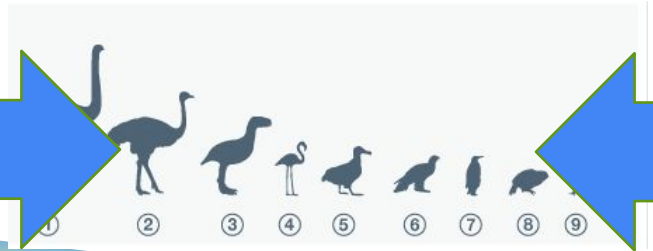
RESEARCH QUESTIONS

- Is there a relation between habitat fragmentation and bird community body size?
- Is there a relation between biodiversity and bird community body size?



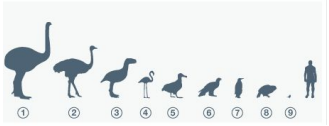
HYPOTHESES

- Habitat fragmentation has a negative relation with bird community body size
- Biodiversity has a negative relation with bird community body size



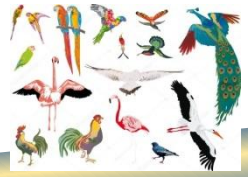
METHODS

- Community body size
  - Weighted mean community body mass
  - Abundance: PREDICTS database
  - Species mean body mass: Received from Dr. W. D. Kissling



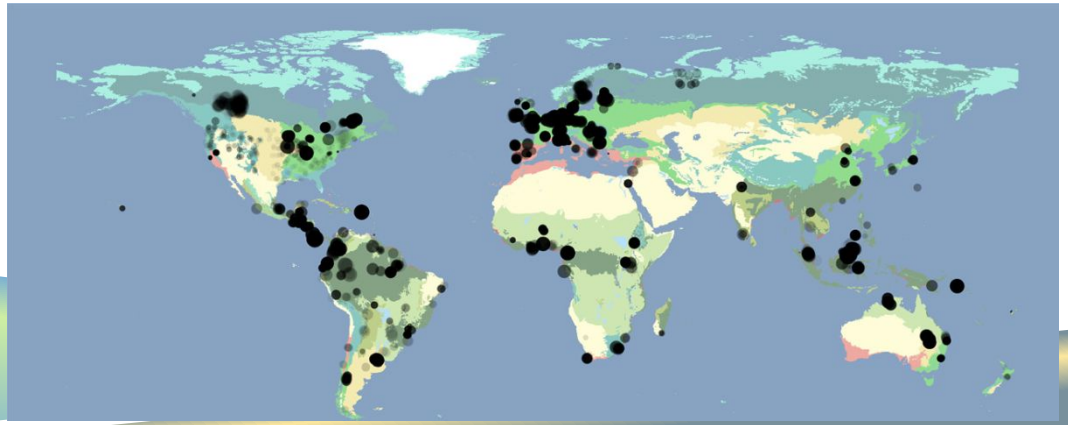
- Habitat fragmentation
  - Core area index
  - Maps of forest cover change by Dr. W. D. Kissling and Colleagues

- Biodiversity
  - Distance to edge of high biodiversity habitat: PREDICTS database



COMMUNITY BODY SIZE

- Weighted mean community body mass
- PREDICTS database
- Database of 666 studies which looked into biodiversity
- Selected studies concerning bird species and abundance
  - Sites within study => 10
  - Minimal species counted per site => 3



WEIGHTED MEAN COMMUNITY BODY MASS

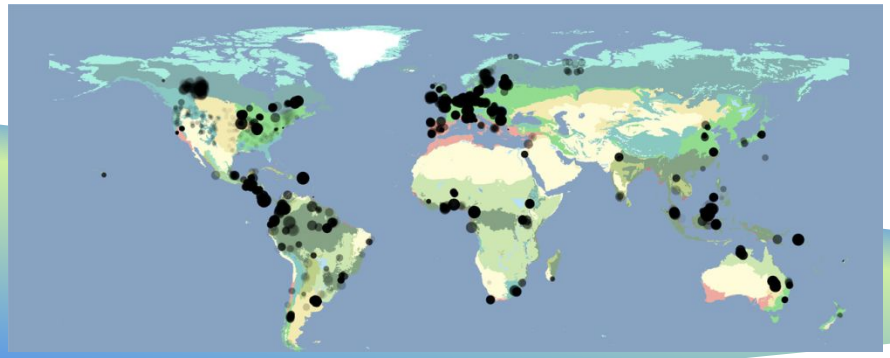
- Abundance: PREDICTS database
- Species average body mass received from Dr. W. D. Kissling

Example:

10 birds of species A with average body-mass 10 grams

5 birds of species B with average body-mass 20 grams

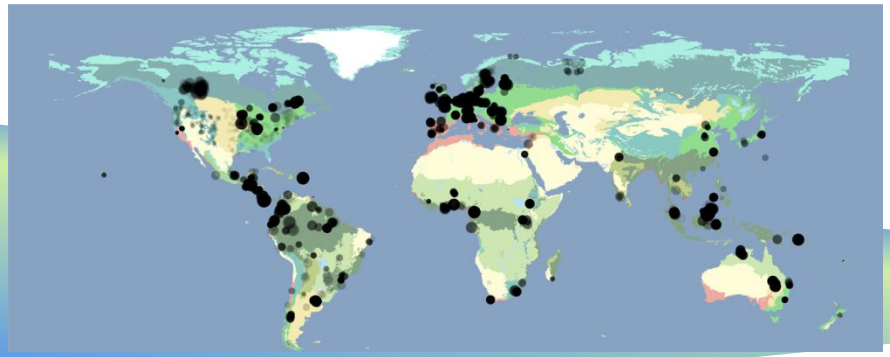
WMCBM = 10/15 * 10 + 5 /15 * 20 = 13.33 grams

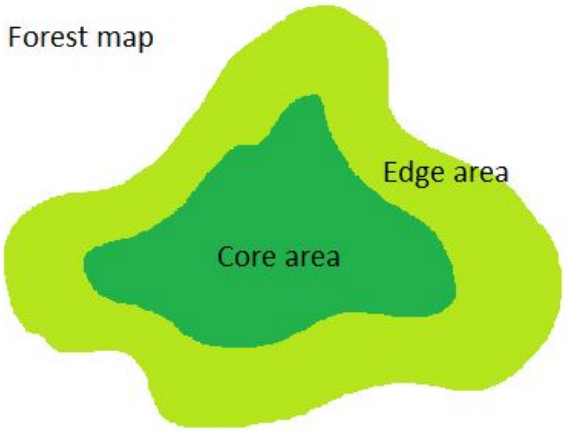


HABITAT FRAGMENTATION

- Map by from Kissling and colleagues
- Used to measure habitat fragmentation per site
- Core area index used as a unit for habitat fragmentation
- Intersect with sites from PREDICTS database

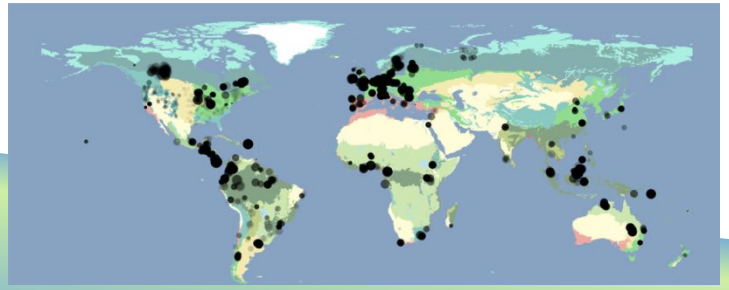
- **Core area index** = Core area / Edge area

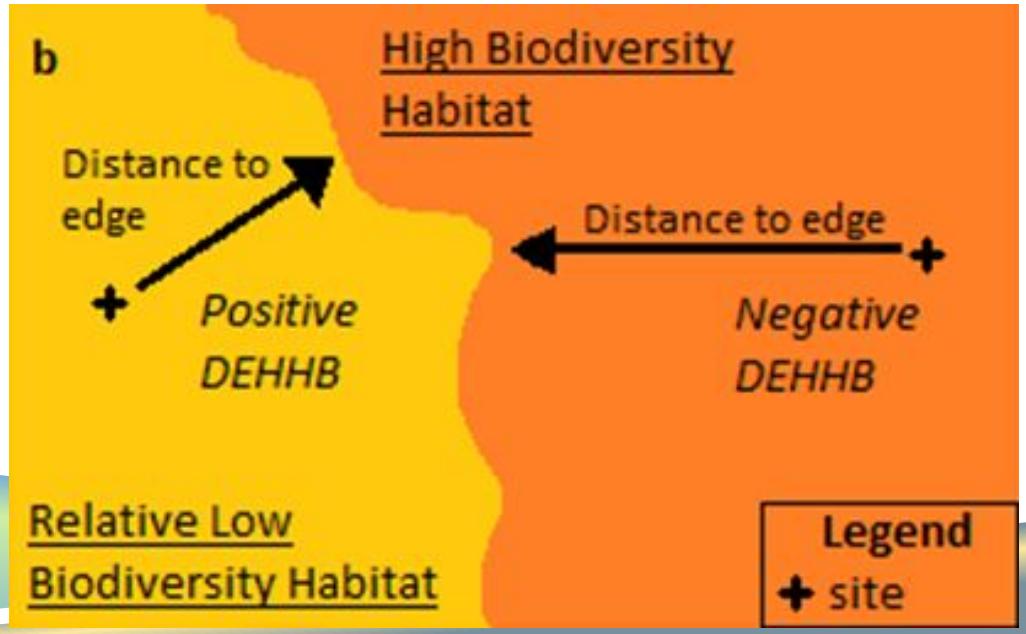




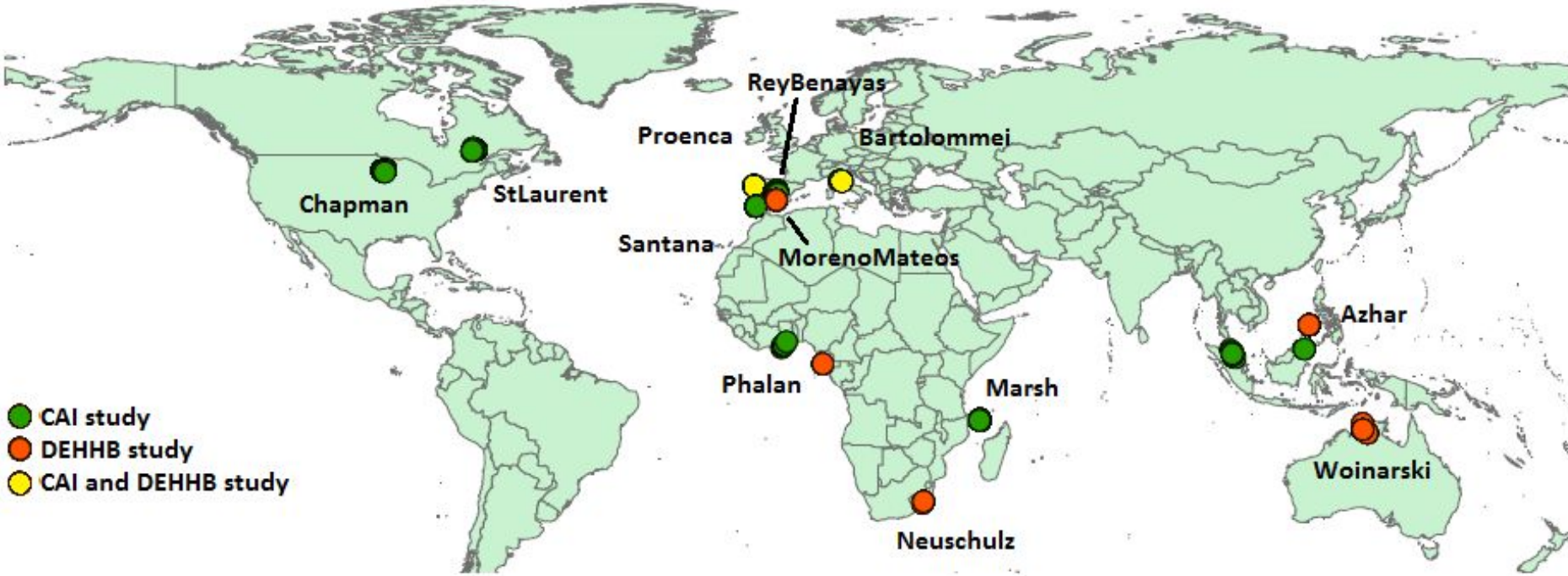
DISTANCE TO EDGE OF HIGH BIODIVERSITY HABITAT

- Given by PREDICTS database
- Negative value inside
- Positive value outside





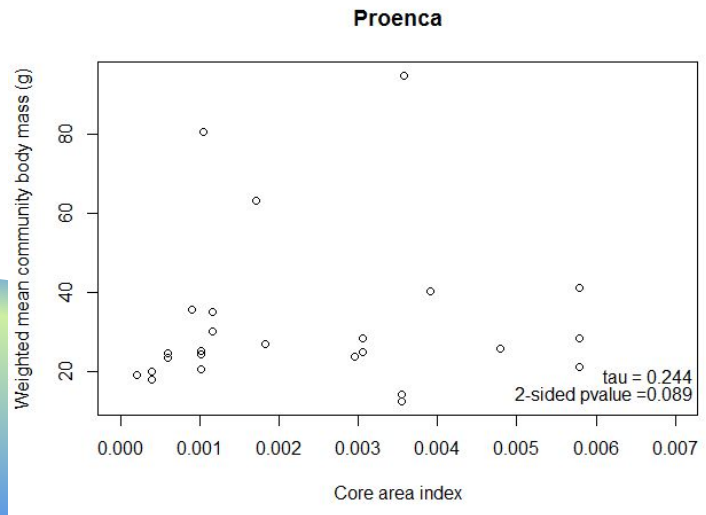
RESULTS

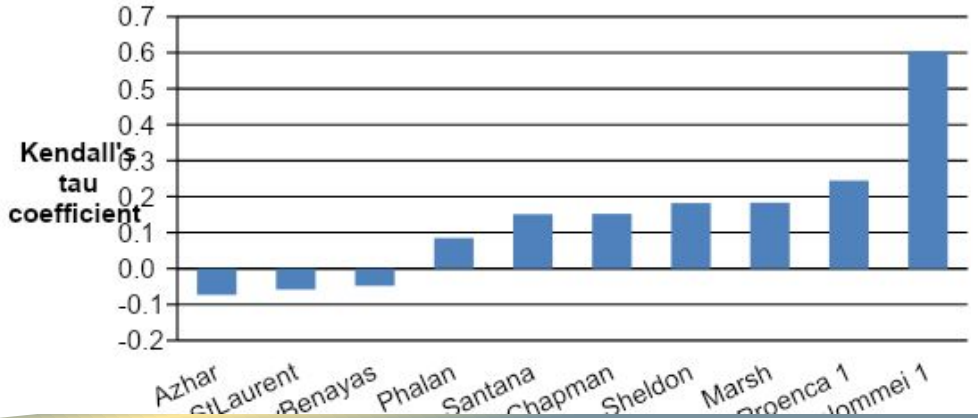


Study locations and study names

RESULTS – HABITAT FRAGMENTATION

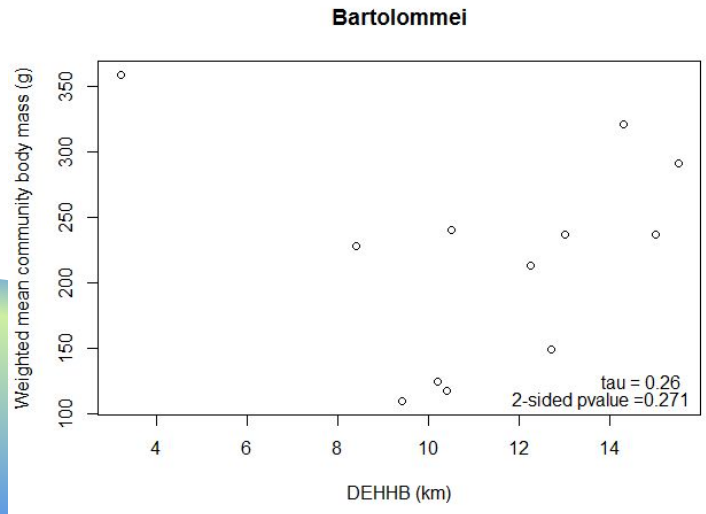
- Three of ten studies negative correlation
- Three of ten studies significant correlation
- These latter three do not correspond with the first
- No consistent relation found between core area index and weighted mean community body mass

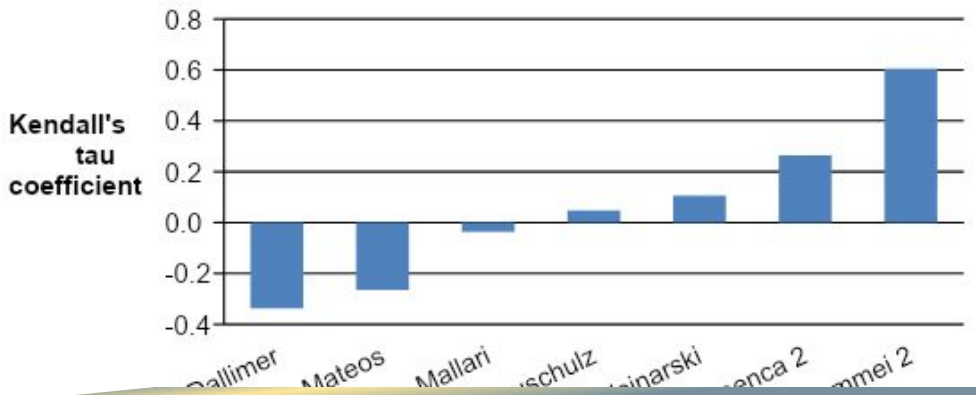




RESULTS – EDGE DISTANCE

- Three of seven studies negative correlation
- No study gave a significant correlation
- No relation found between distance to nearest edge of habitat supporting high biodiversity and weighted mean community body mass





DISCUSSION

- No relation found between habitat fragmentation and community body size
- No relation found between biodiverstiy and community body size

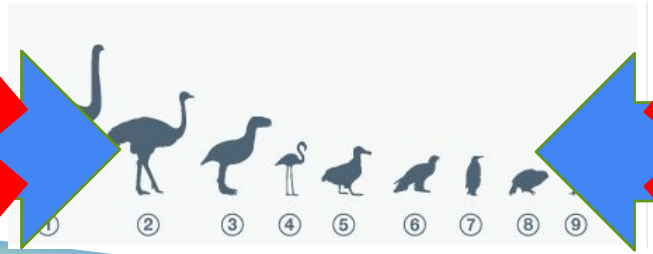
- Different spiecies have different on edge effects

- Limited amount of species in this study.
- Different reaction on different type of edges
- Vague variable: distance to nearest edge of habitat supporting high biodiversity remains vague in PREDICTS database.

CONCLUSION

- Results are in contrast with hypotheses
- No relation found between habitat fragmentation and community body size of birds
- No relation found between biodiverstiy and community body size birds

- More inclusive research needed to verify



QUESTIONS?