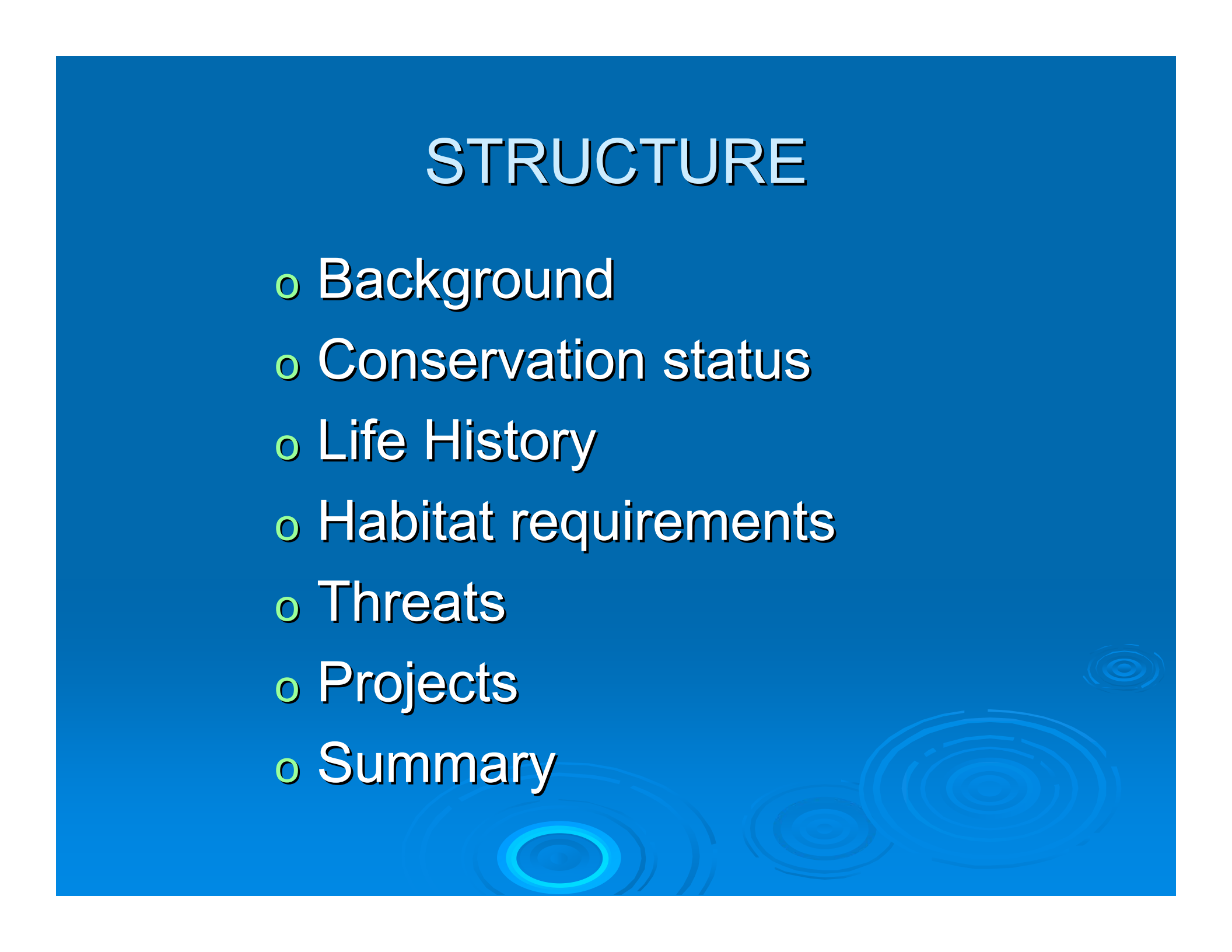


# Conservation and Ecology of the Freshwater Pearl Mussel *Margaritifera margaritifera* (L.)

Lee Hastie  
University of Aberdeen



# STRUCTURE

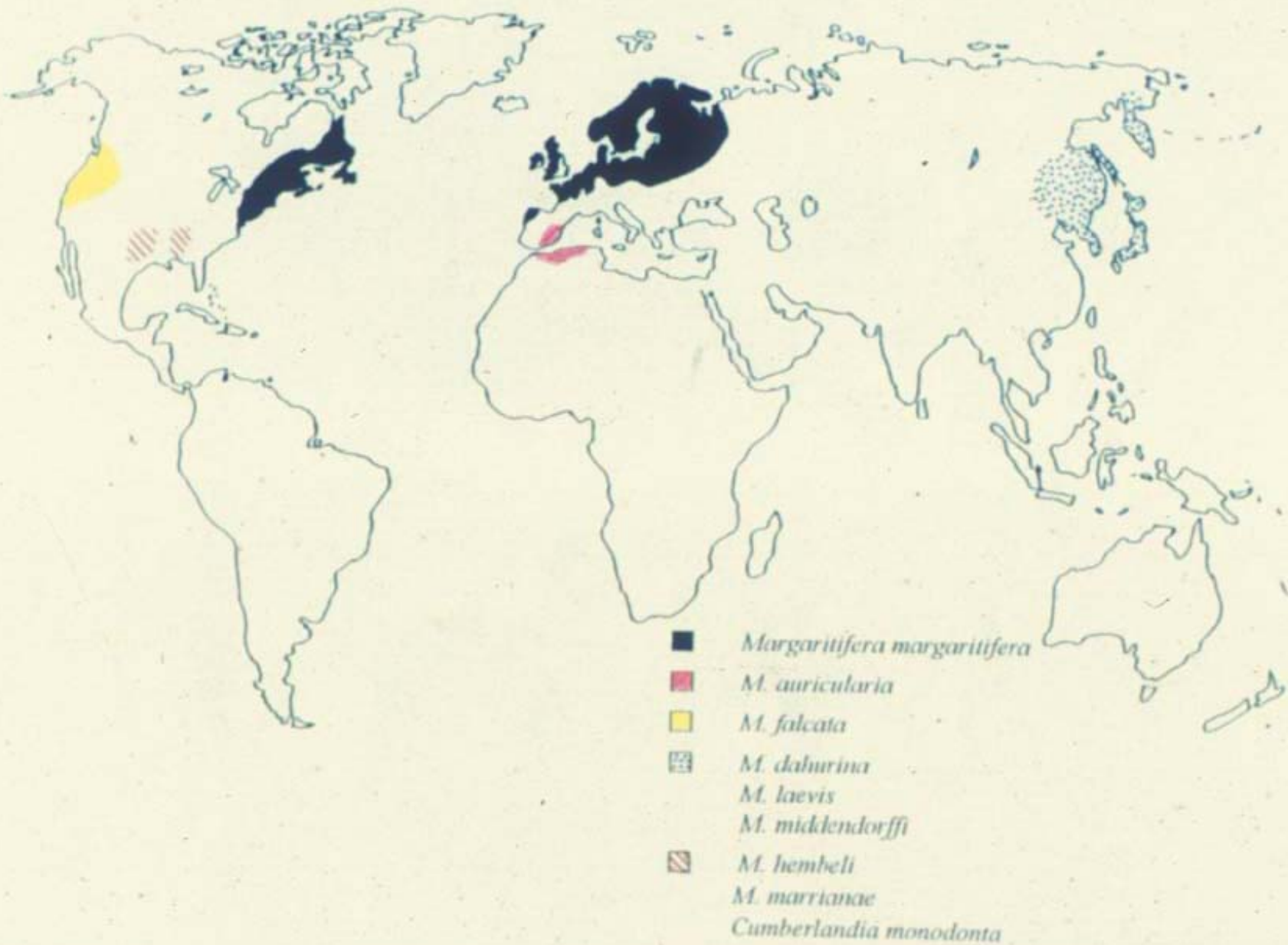
- Background
  - Conservation status
  - Life History
  - Habitat requirements
  - Threats
  - Projects
  - Summary
- 

# STRUCTURE

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- 



Natural distributions of pearl mussels (Unionoida: Margaritiferidae).



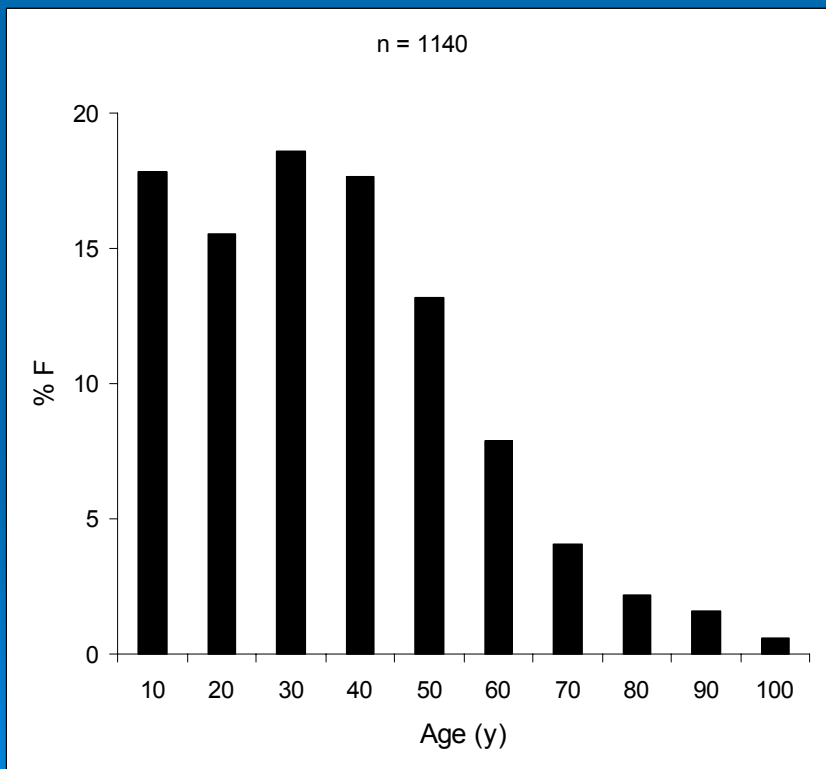
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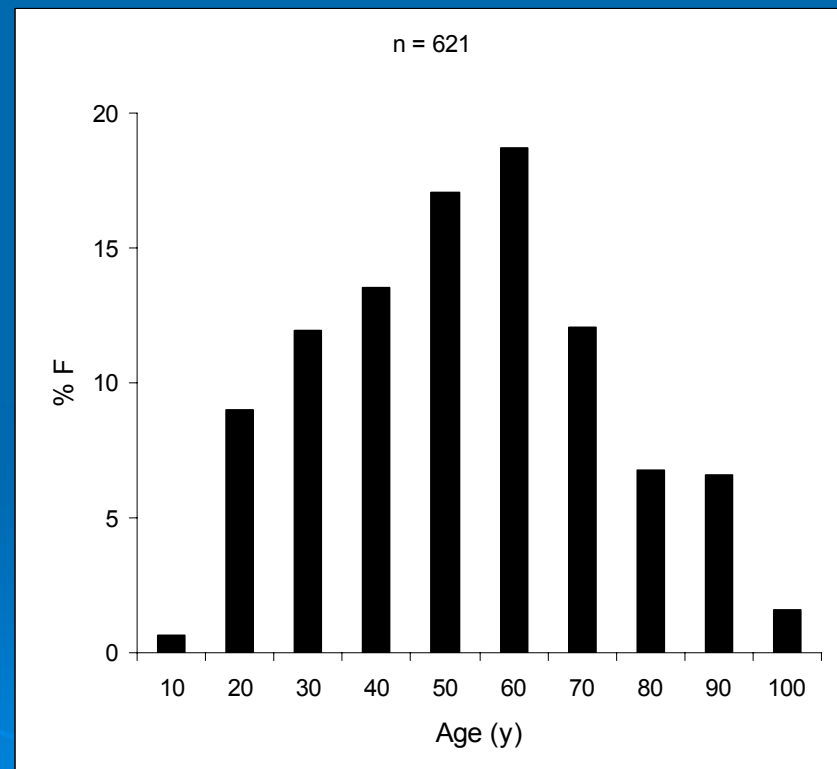


# River Kerry age structure

a) Main stem



b) tributary

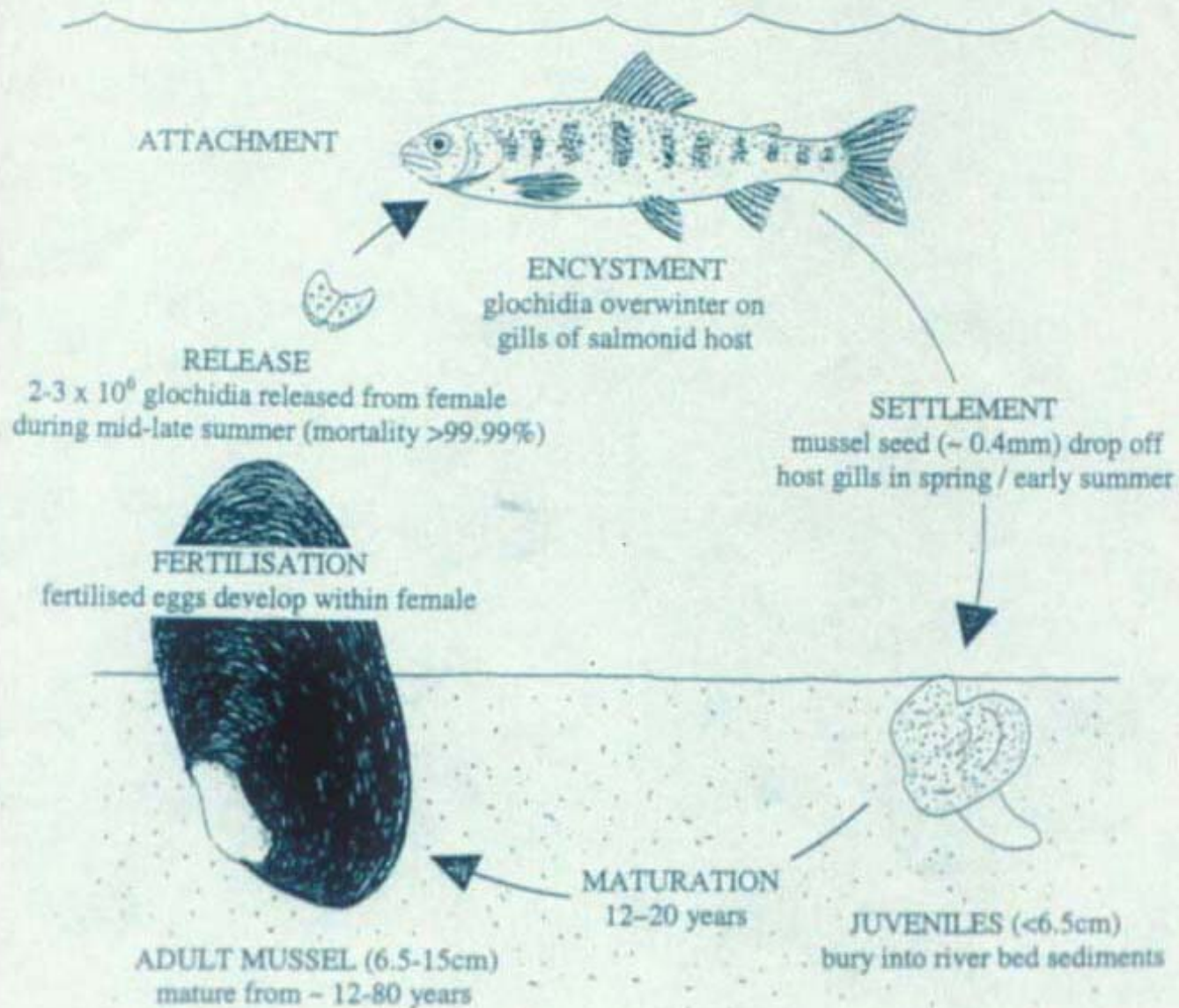


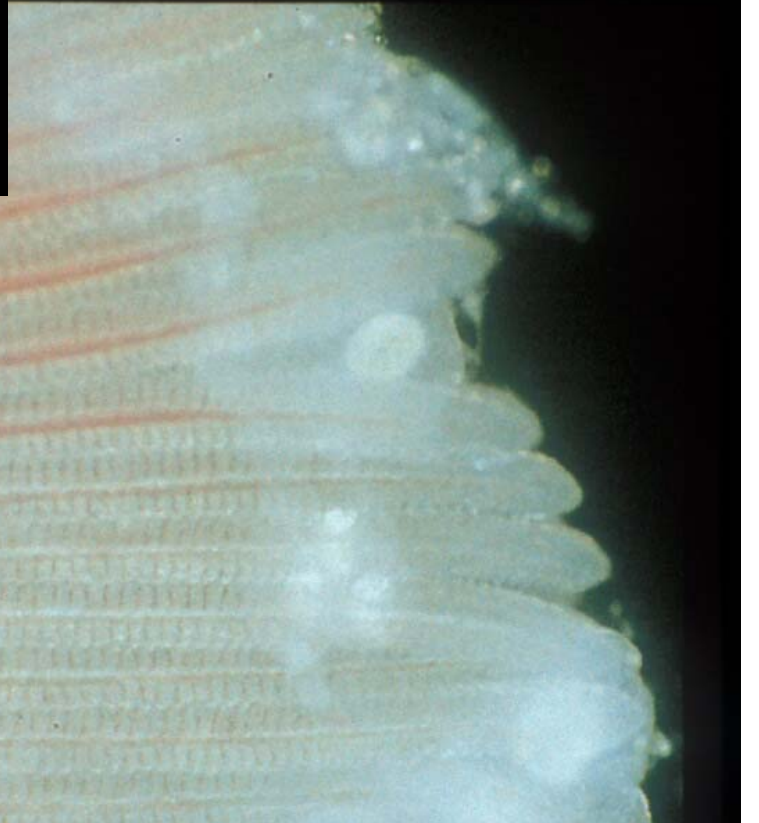


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# The freshwater pearl mussel life cycle.







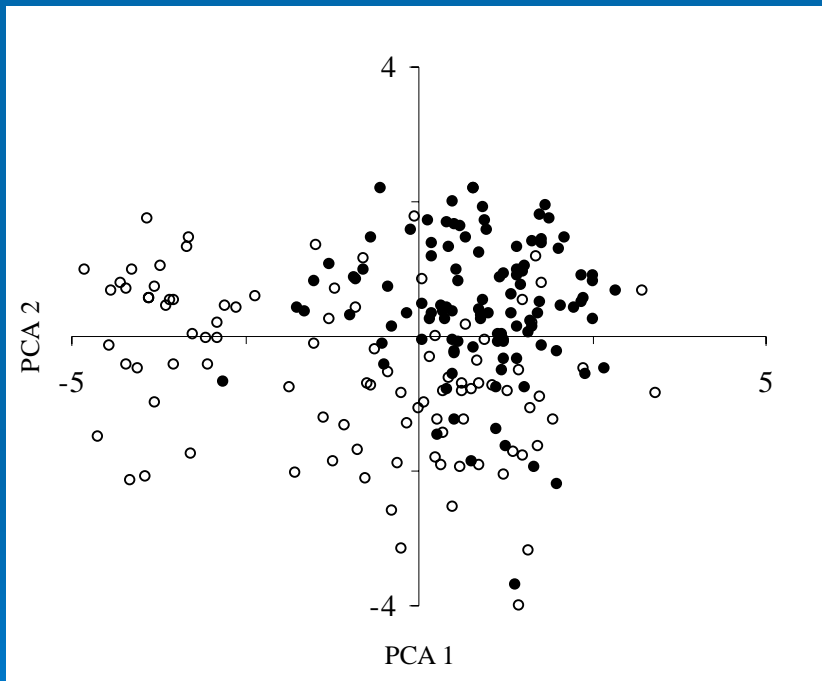
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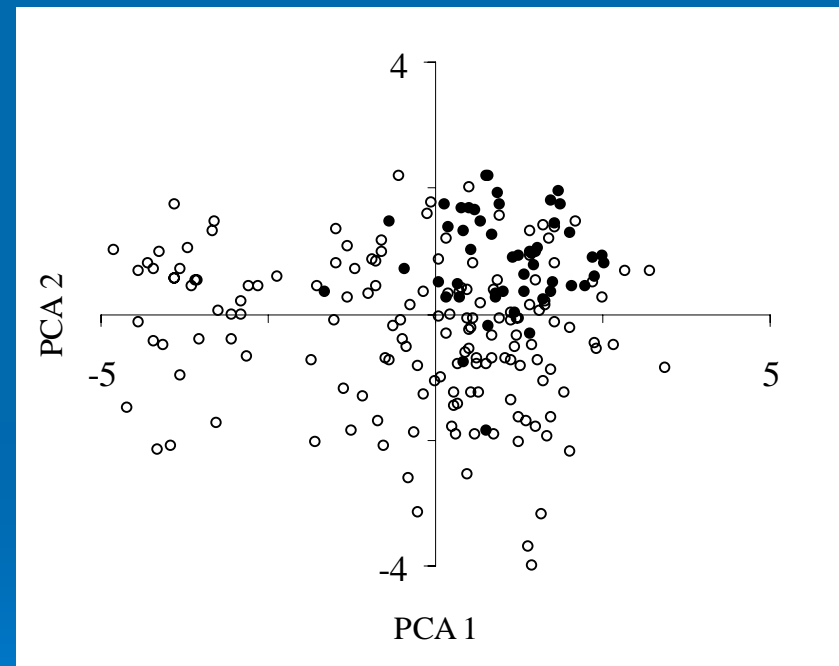


# Macro-habitat features

a) Presence/absence



b) Optimal habitat



# THREATS

- Pearl fishing
- Pollution (industrial/agricultural)
- Loss of habitat






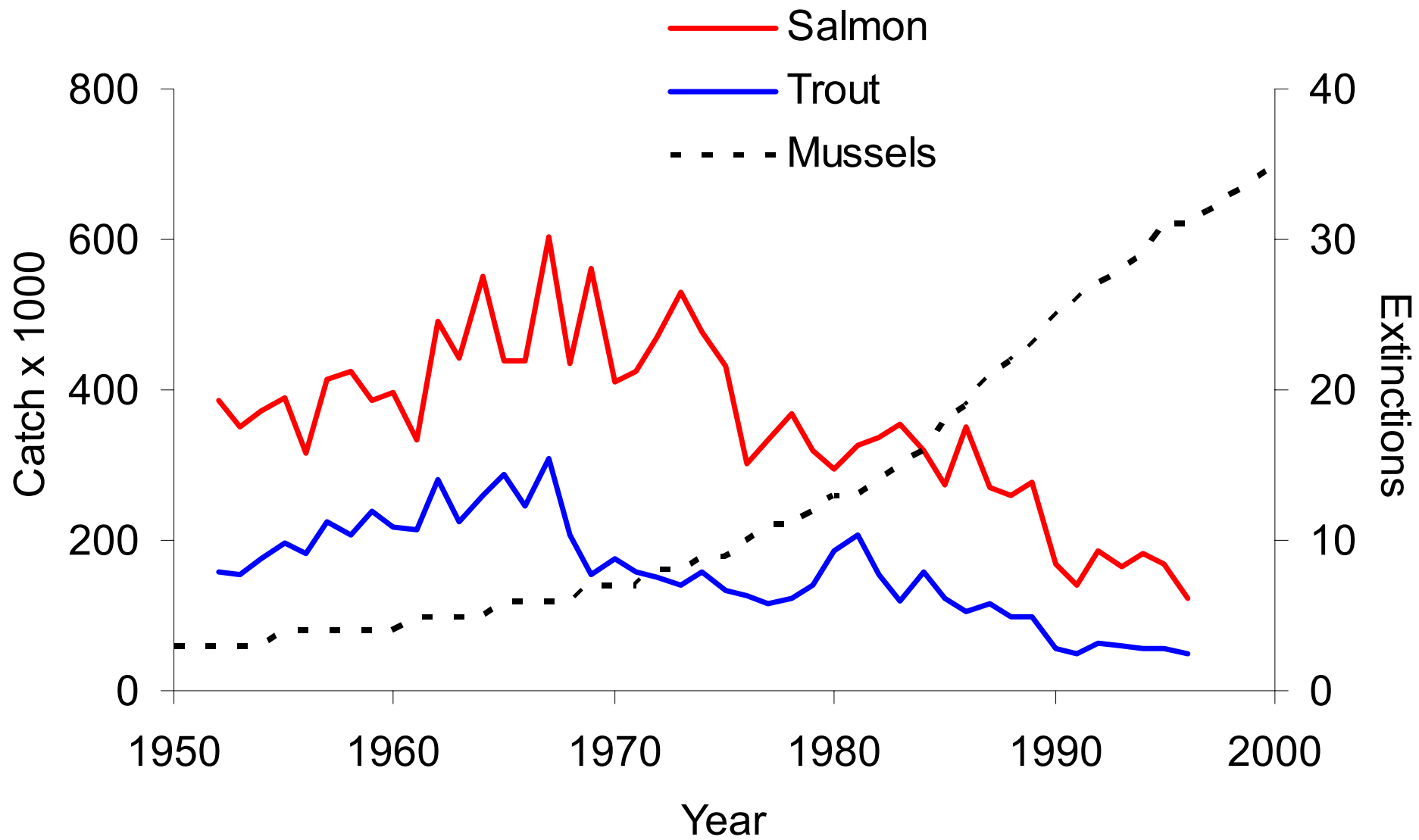






# THREATS

- Pearl fishing
  - Pollution (industrial/agricultural)
  - Loss of habitat
  
  - Decline of host fish stocks
  - Climate change
- 



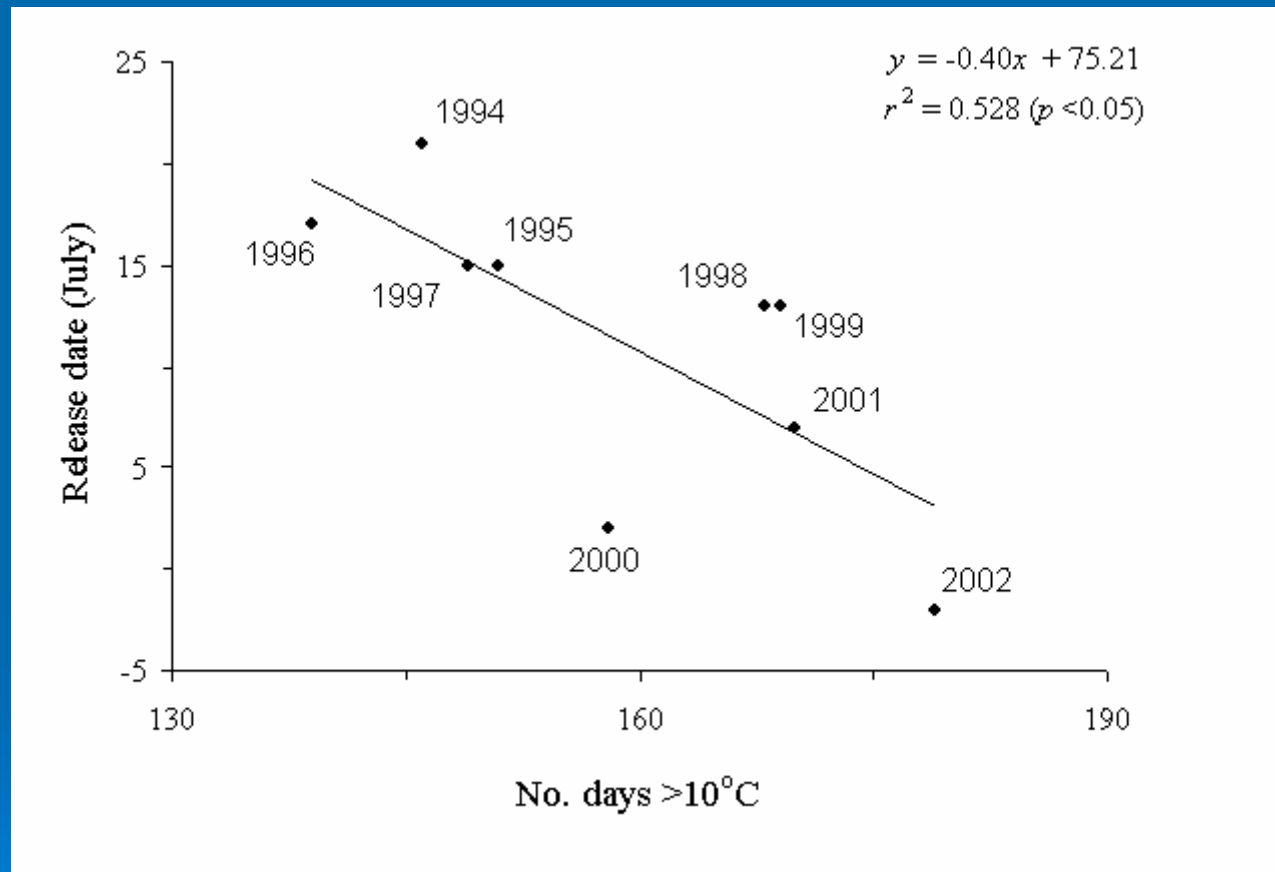
# Climate change scenarios for Scotland

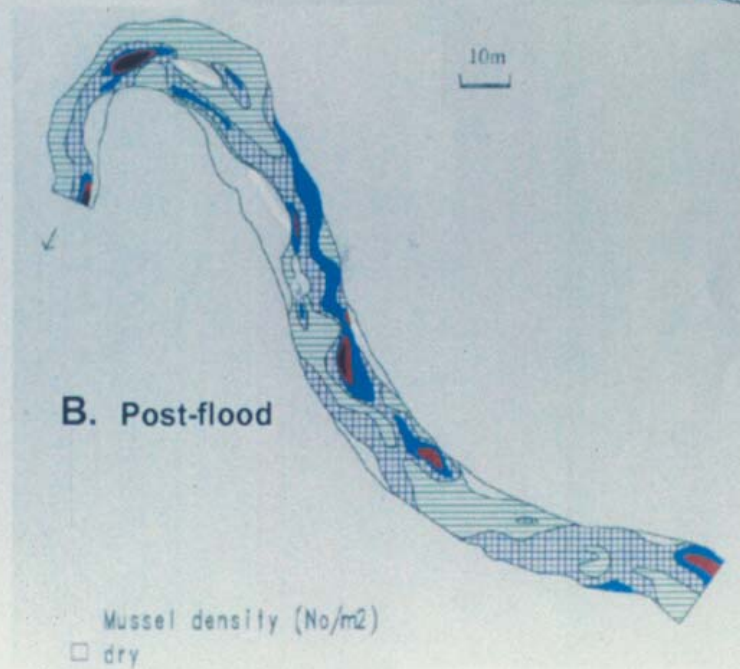
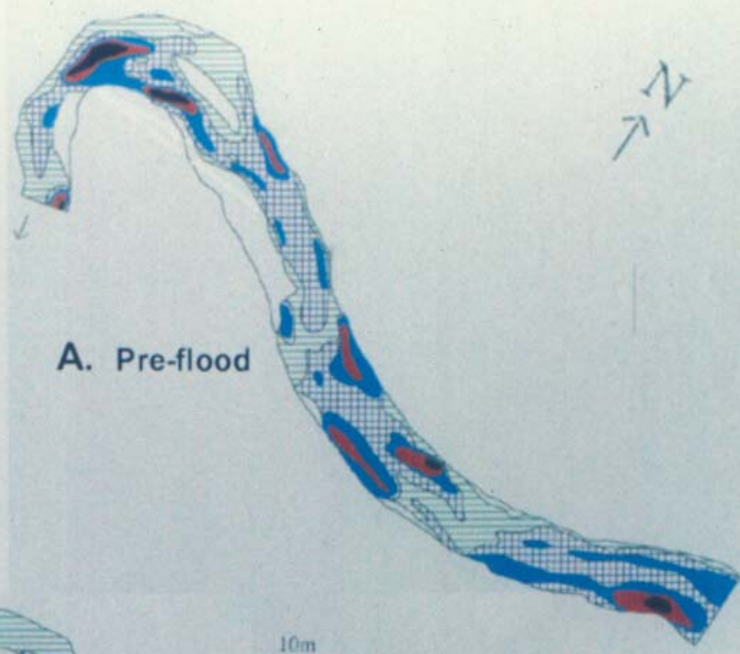
Year	Temp (°C)*	Precipitation (%)*	CO <sub>2</sub> (ppmv)*	Sea level (m)**
1990	-----	-----	353	-----
2020	+0.5 → +1.2	+3 → +6	415 → 434	-----
2050	+0.8 → +2.0	+3 → +5	467 → 528	+0.1 → +0.7

\* 30 year periods, with respect to 1961-1990 average (Hulme & Jenkins, 1998)

\*\* Mean sea level rise projections (Dawson et al., 2001)

# Glochidial release dates 1994-2002





Mussel density (No/m<sup>2</sup>)

- dry
- ▨ < 1
- ▩ 1 - 10
- 11 - 50
- 51 - 100
- > 100



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- 









# SUMMARY

- Range
- 70-100% decline
- Recruitment
- Factors
- Conservation

