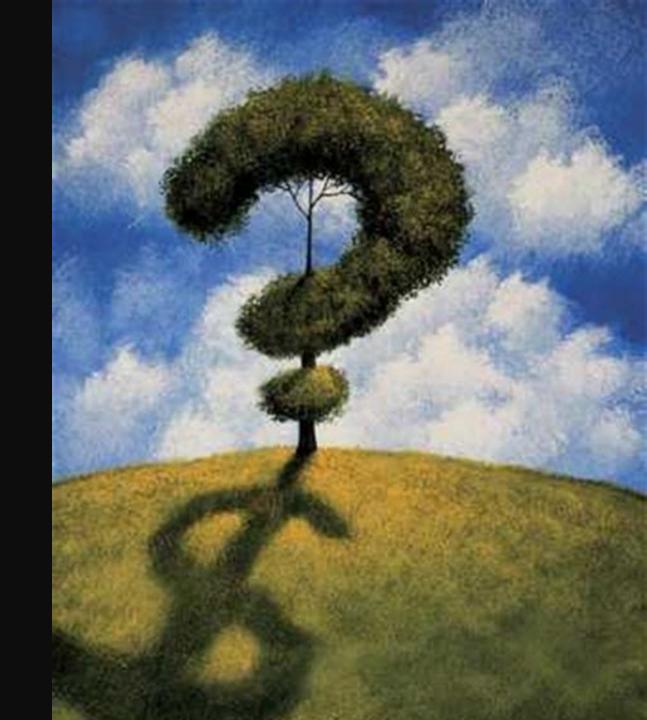


An introduction

- Wildlife biologist
- Utrecht University
- My goal is to conserve wildlife
- I am not financed by FSC
- Does FSC-certified forestry help to conserve wildlife in tropical forests?

Why is this relevant and what is the context?





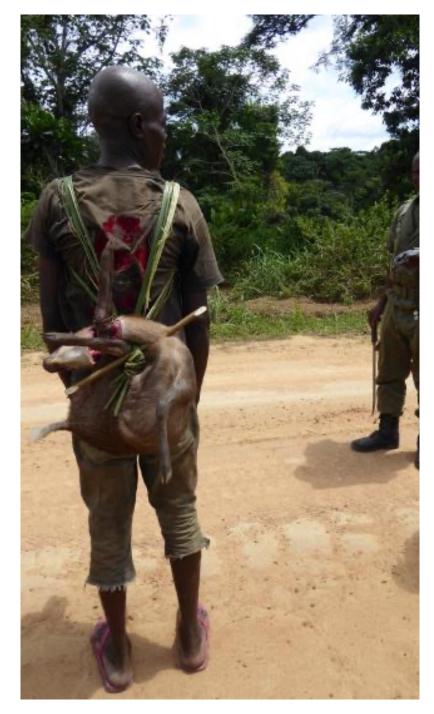
Tropical forests

- 7% of the landmass
- 62% of all vertebrate (Pillay et al. 2021)





















Why does hunting matter?

- ➤ Seed dispersal
- ➤ Nutrient recycling
- ➤ Vegetation structure and
- ➤ Protein provision
- ➤ Intrinsic value
- **≻**Carbon storage



Carbon storage

- Seed dispersal (Bello et al., 2015; Chanthorn et al., 2019; Peres et al., 2016)
- ➤ Herbivory and turnover of small trees (Berzaghi et al., 2019; Poulsen et al., 2013)





Carbon calculations on the back of an envelope

- African tropical forest ~183 Mg.ha⁻¹ (Sullivan et al. 2017)
- 7% less carbon without elephants → ~170Mg.ha⁻¹

 (Berzaghi et al. 2019)
- 220 million hectares of African tropical forest
- A loss of 2,860,000,000 Mg.ha⁻¹ (2.9 Gt)
- This equates carbon emissions of India
- At a conservative carbon price of €15
- ► €42.9 billion carbon stored by protecting elephants..

FSC certification mitigates impacts by:

- 1. Blocking old logging roads
- 2. Checkpoints on main roads
- 3. Anti-poaching patrols
- 4. Logging teams with food
- 5. Provision of alternative proteins
- 6. Reduced impact logging
- 7. Protection of vulnerable habitats
- 8. Disease mitigating measures
- 9. Environmental education
- Third party auditing



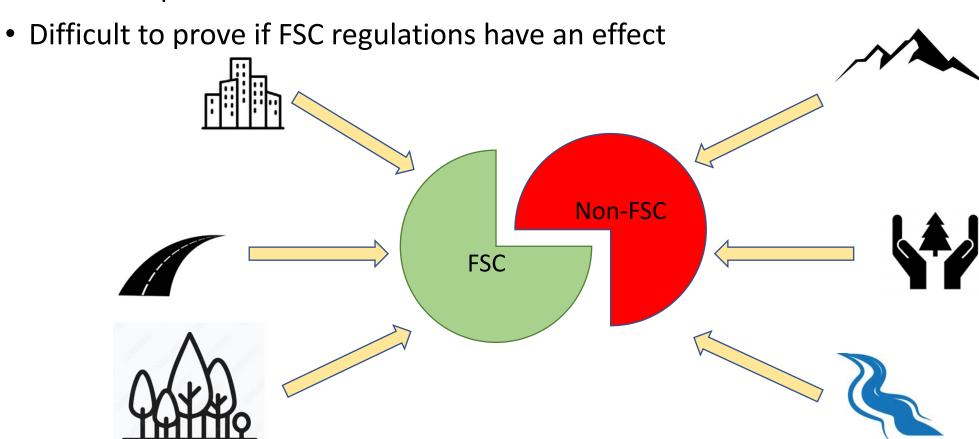
The knowledge gap

- FSC *claims* they mitigate environmental threats
- But who can tell?
- Knowledge gap (Blackman and Rivera, 2010; Burivalova et al., 2017; Van Kuijk et al. 2009; Romero et al., 2018; van der Ven and Cashore, 2018)
- Consumers, legislators, traders, NGOs need to know!



Why is there a knowledge gap?

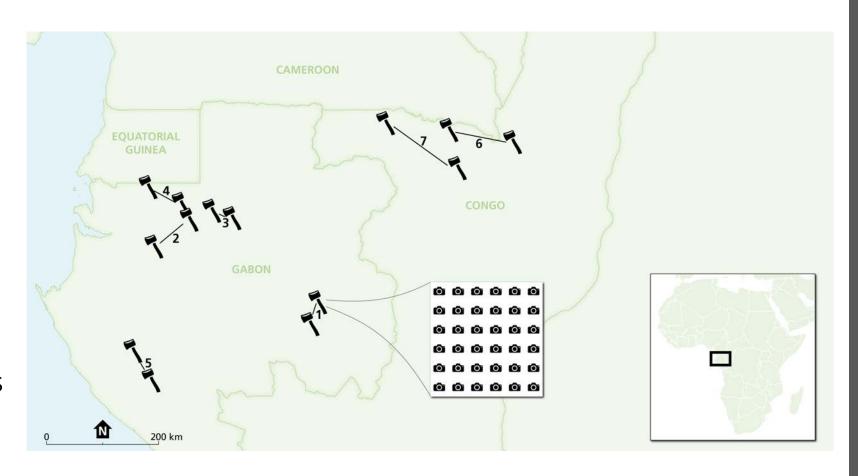
• Pseudo-replication





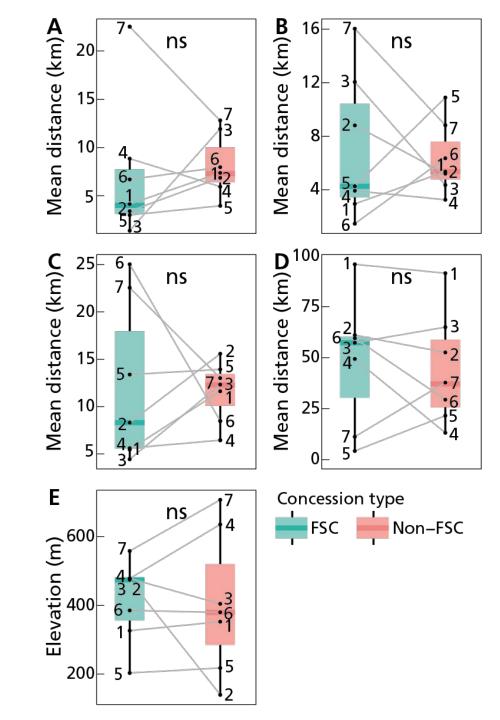
A paired design

- 14 paired logging concessions
- 7 FSC
- 7 Non-FSC
- Similar socioeconomic background
- Bushmeat hunting is pervasive



Geographic covariates

- (A) Roads
- (B) Rivers
- (C) Human settlements
- (D) Protected areas
- (E) Elevation

















Endless dirt roads











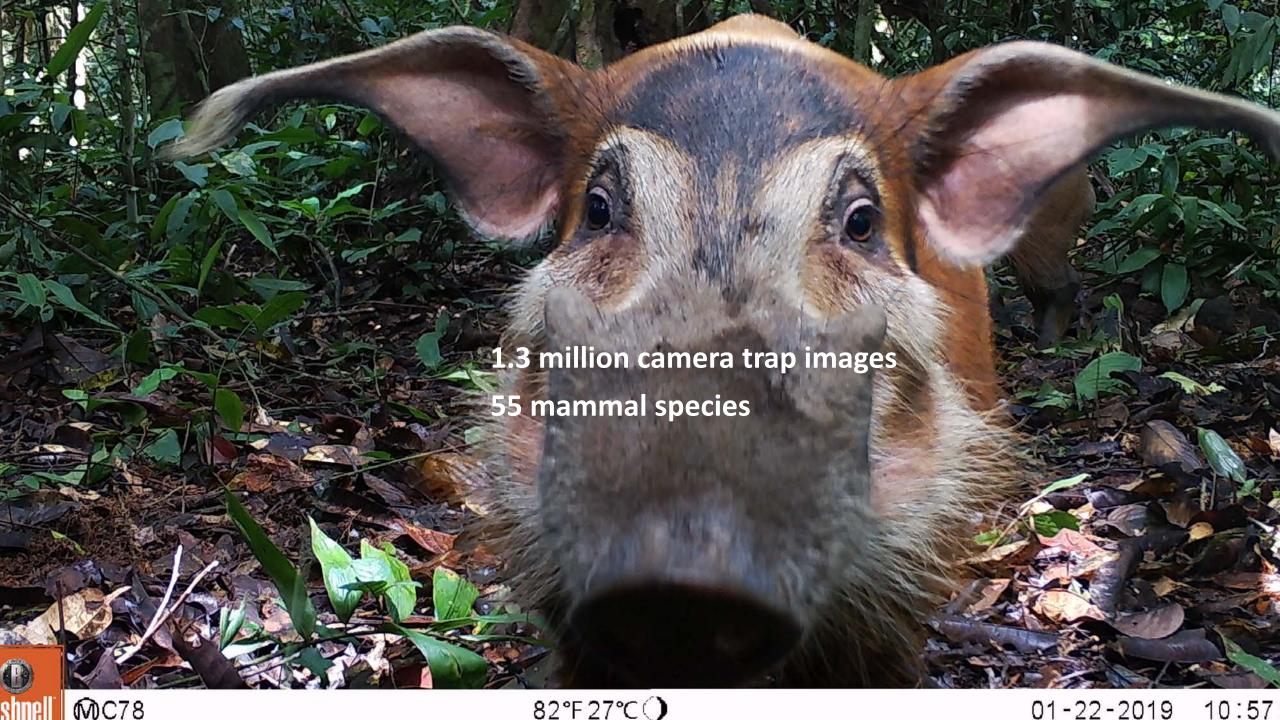


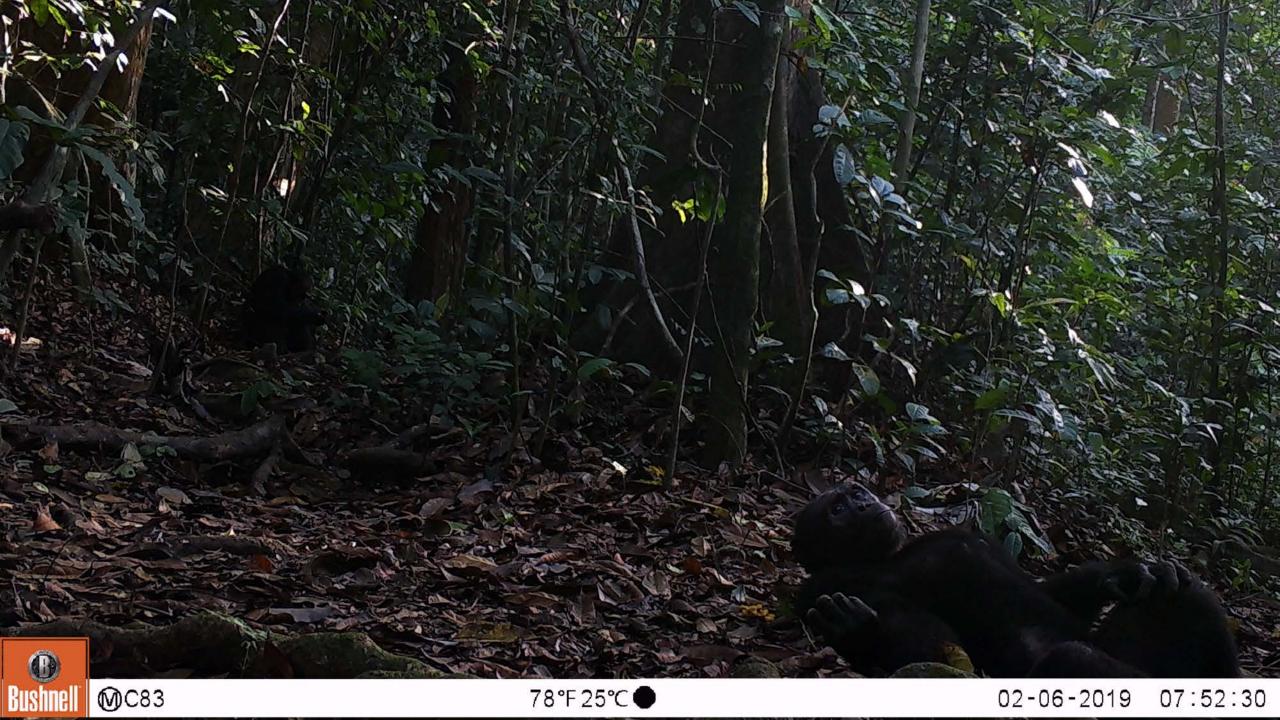






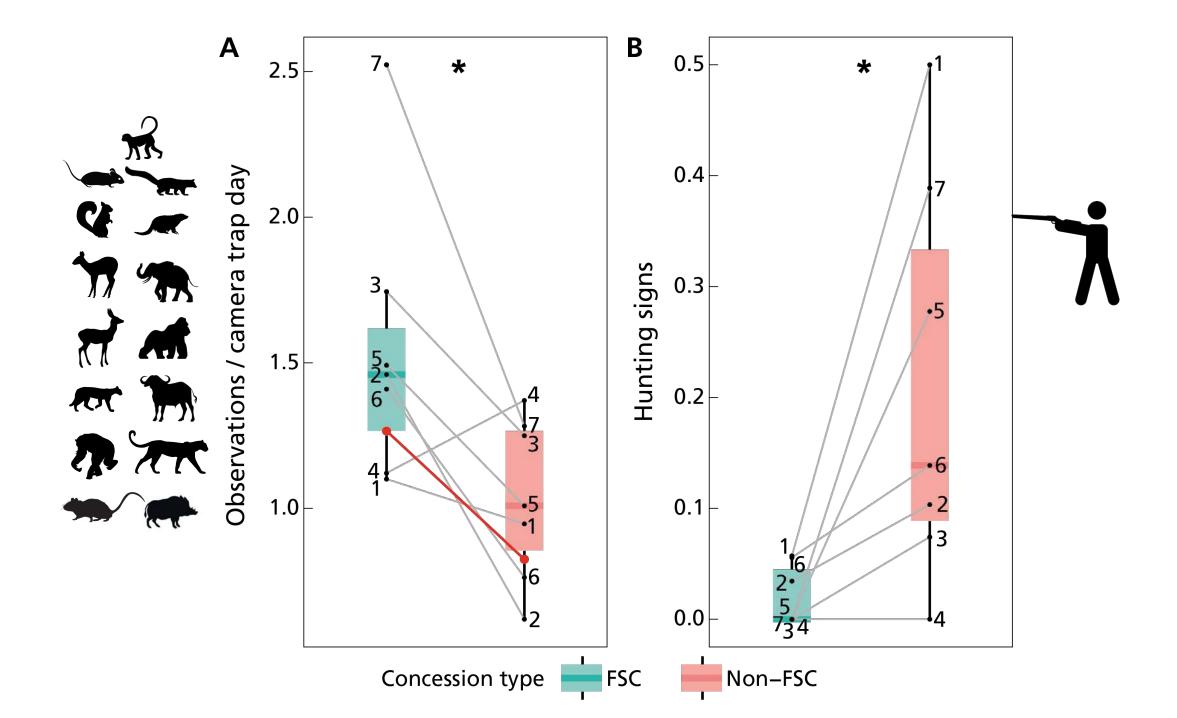


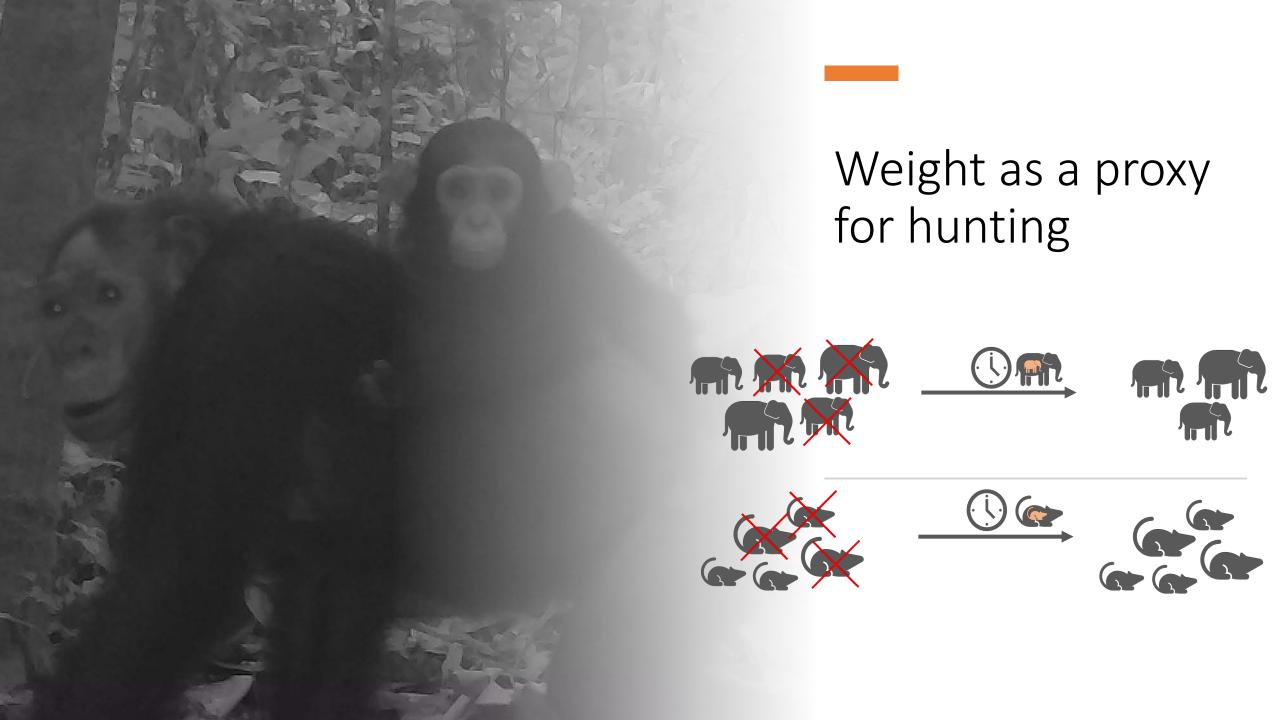


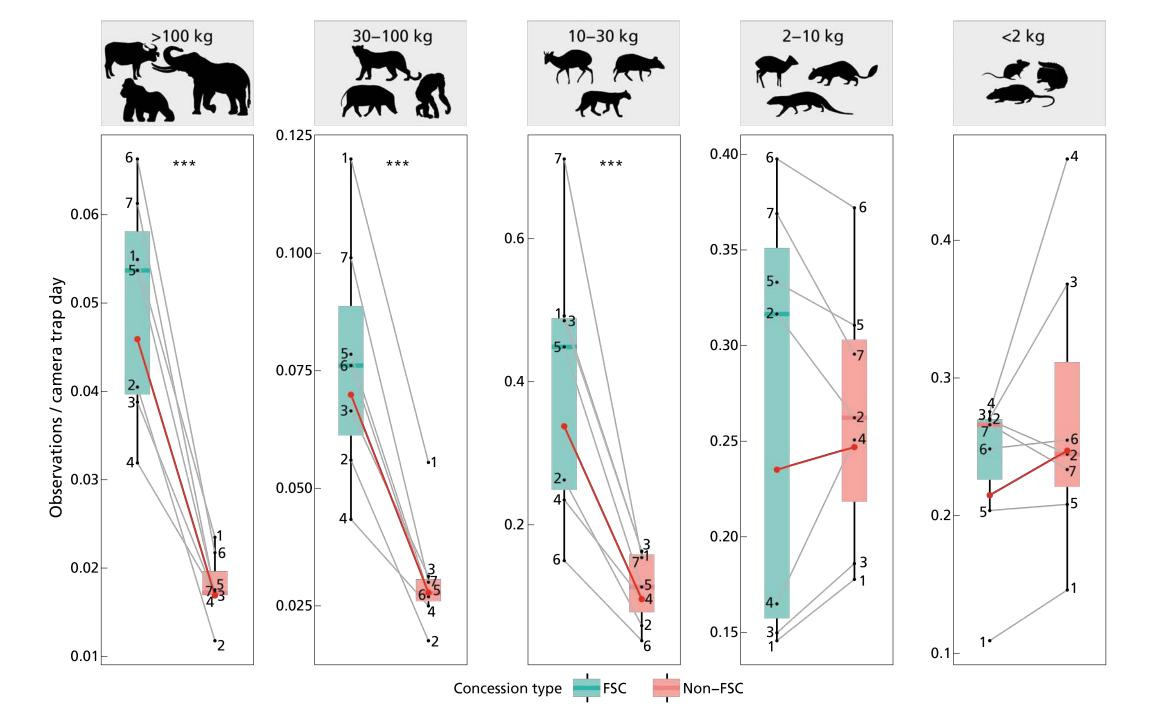






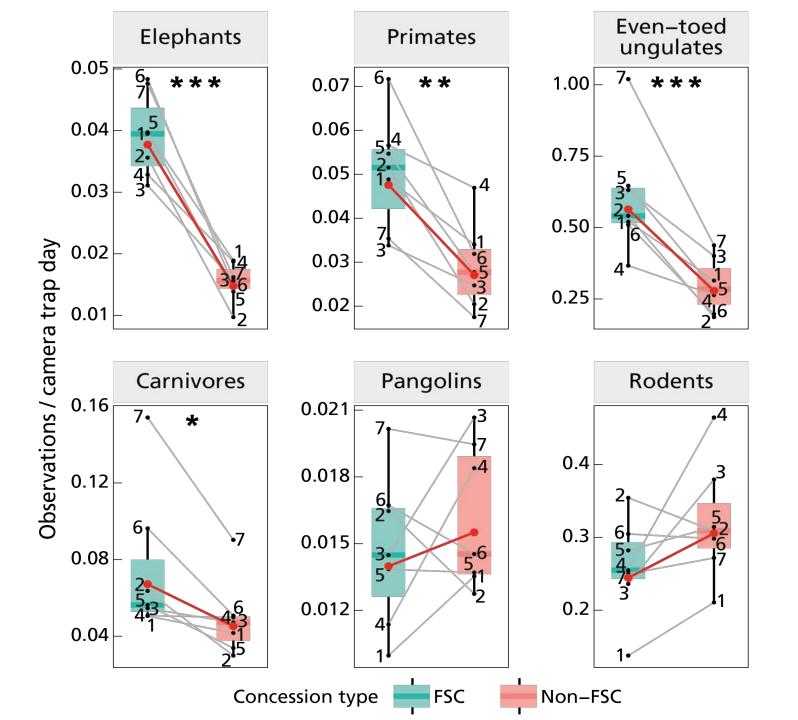




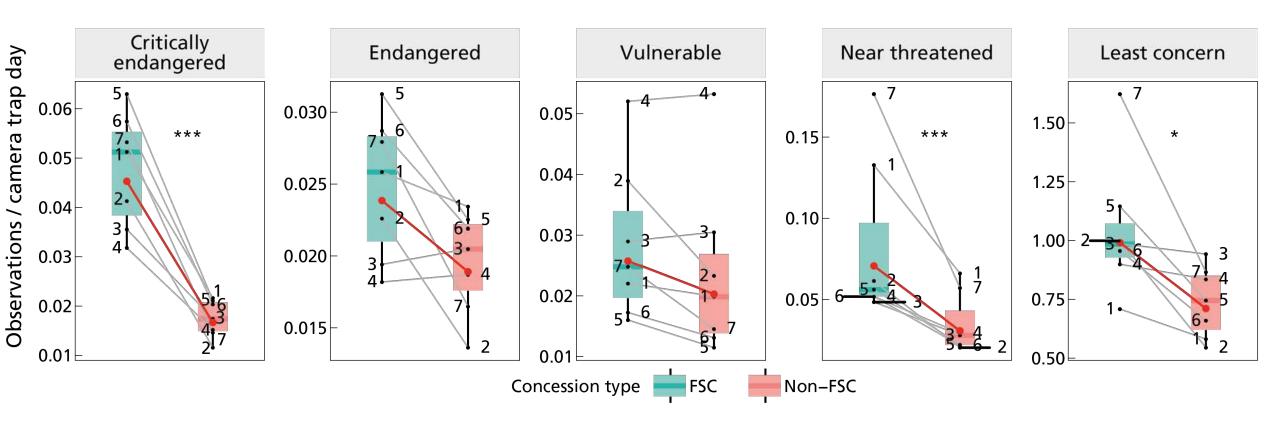


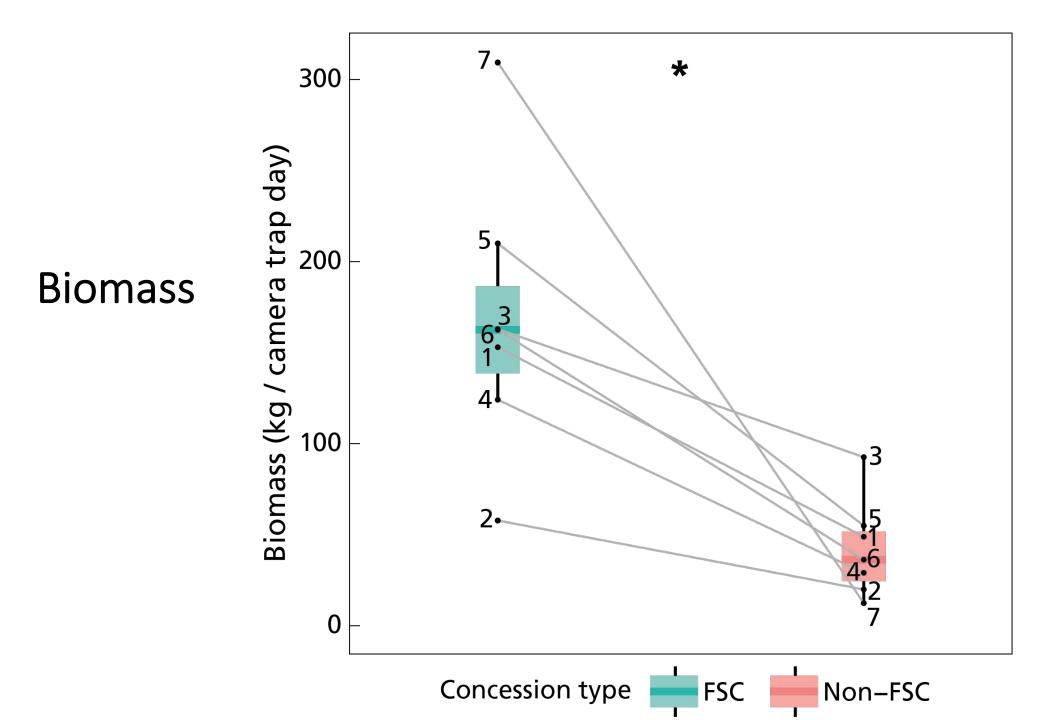






IUCN conservation classes





Does FSC certified forestry help to conserve wildlife in tropical forests?

- > Yes
- The extra investment really makes a difference
- And don't forget the social impacts (Cerutti et al. 2014)
 - Worker rights, safety gear, medical facilities



Close of old logging roads to prevent hunting



Finance anti poaching patrols



Provide access to food for the people in the logging camps



Annual, independent audits on management measures





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Sizeable advantage

Commercial logging affects more than one-quarter of the world's tropical forests. The Forest Stewardship Council (FSC) aims to promote sustainable practices to conserve biodiversity through forest management certification. In this week's issue, <u>Joeri Zwerts and colleagues</u> examine the effects of FSC certification on mammal populations in western equatorial Africa. The researchers captured nearly 1.3 million photos from 474 camera locations in 14 logging concessions. They observed more mammals in FSC-certified forests than in non-FSC areas. The effect was particularly — <u>show all</u>

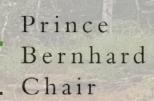
Cover image: David Maitland/Nature Picture Library



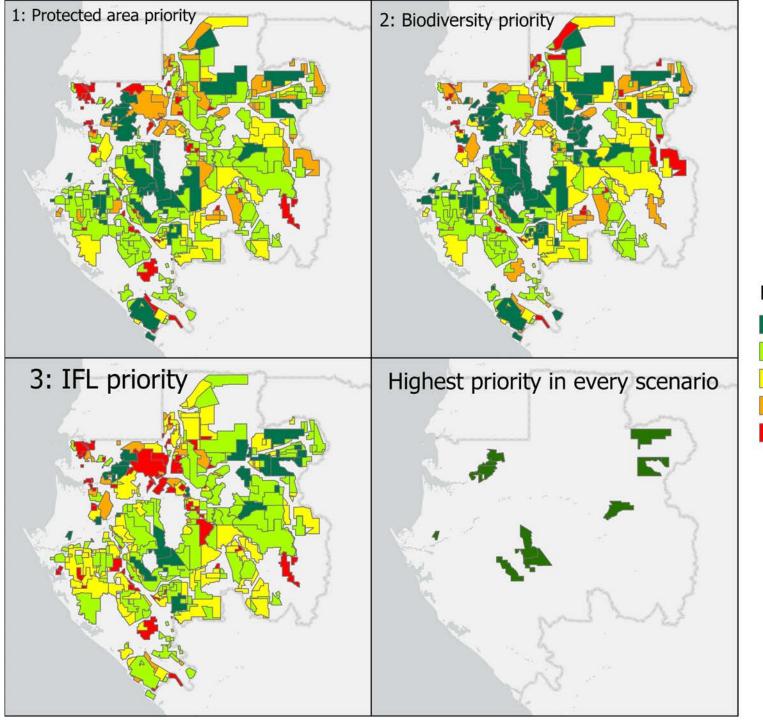
Thank you for your attention











Legend

FSC certification priority

Highest

Lowest

