CONSERVATION · LESSON 5

Would you kill mice to save seabirds?

People, values and conservation choices

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Gough Island: what is the decision?



Seabirds at Gough Island



Introduced house mouse

Proposal: eradicate introduced mice to protect seabirds. Compare action with inaction.

Birds and mouse: Gough Island Restoration Programme. Mouse monitoring image, December 2021.

Three questions for a conservation choice

What matters?	Values and the evidence we collect
Who gains, who loses?	Justice and the distribution of effects
Who can decide?	Governance and accountability

Evidence, values and ethics

Question	Example at Gough
Evidence: what is likely?	Would eradication protect bird populations?
Values: what matters?	Species persistence and animal welfare
Ethics: what is justified?	Which harms can we accept, and why?

Soulé (1985) · Latombe et al. (2025)

What would be lost if this lagoon changed?

“This lagoon feeds my family.”

“Its birds deserve to exist.”

“This is where I learned to fish.”



Photo: Phadke09, CC BY-SA 4.0

Three reasons why nature matters

Instrumental

Nature helps achieve an end.

Food, income, protection from floods

Intrinsic

Nature matters in its own right.

Species deserve to continue existing

Relational

Meaningful relationships matter.

Belonging, care and responsibility

Chan et al. (2016) · Pascual et al. (2023)

If the income returns, is the loss repaired?

A hypothetical family

A fishing closure removes access.

Compensation replaces lost earnings.

What might still be lost?

A practice passed to children

Responsibility for a particular place



Chilika Lake: NASA Earth Observatory / USGS, 14 December 2013. Scenario is hypothetical.

What we measure depends on what matters

Concern	Possible evidence	What this alone misses
Livelihood	Catch, income and dependence	Belonging or fair access
Species persistence	Population trends and recruitment	Who bears the restrictions
Relationship to place	Interviews and participatory maps	Ecological effectiveness

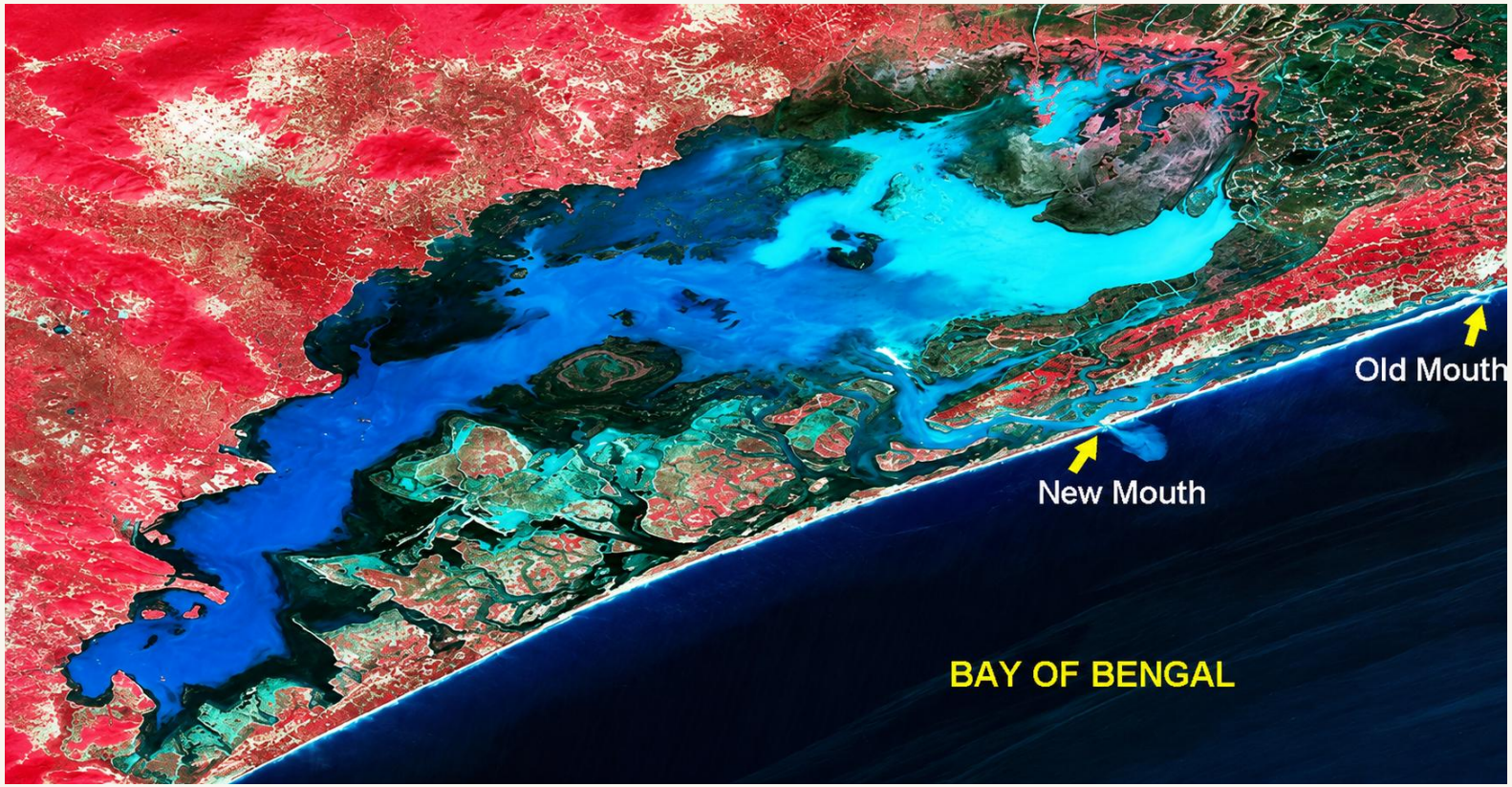
Pascual et al. (2023) · Chan et al. (2016)

Economic valuation: contribution and limits

Question	Useful evidence
What benefits might conversion remove?	Flood protection, food production, economic estimates
What happens to biodiversity?	Population, habitat and process measurements
What rights and relationships are at stake?	Rights analysis, interviews and participatory mapping

Costanza et al. (1997) · Costanza et al. (2014) · Costanza et al. (2017) · Costanza (2024) · full references in notes

Chilika: reopening the connection to the sea



Odisha, eastern India

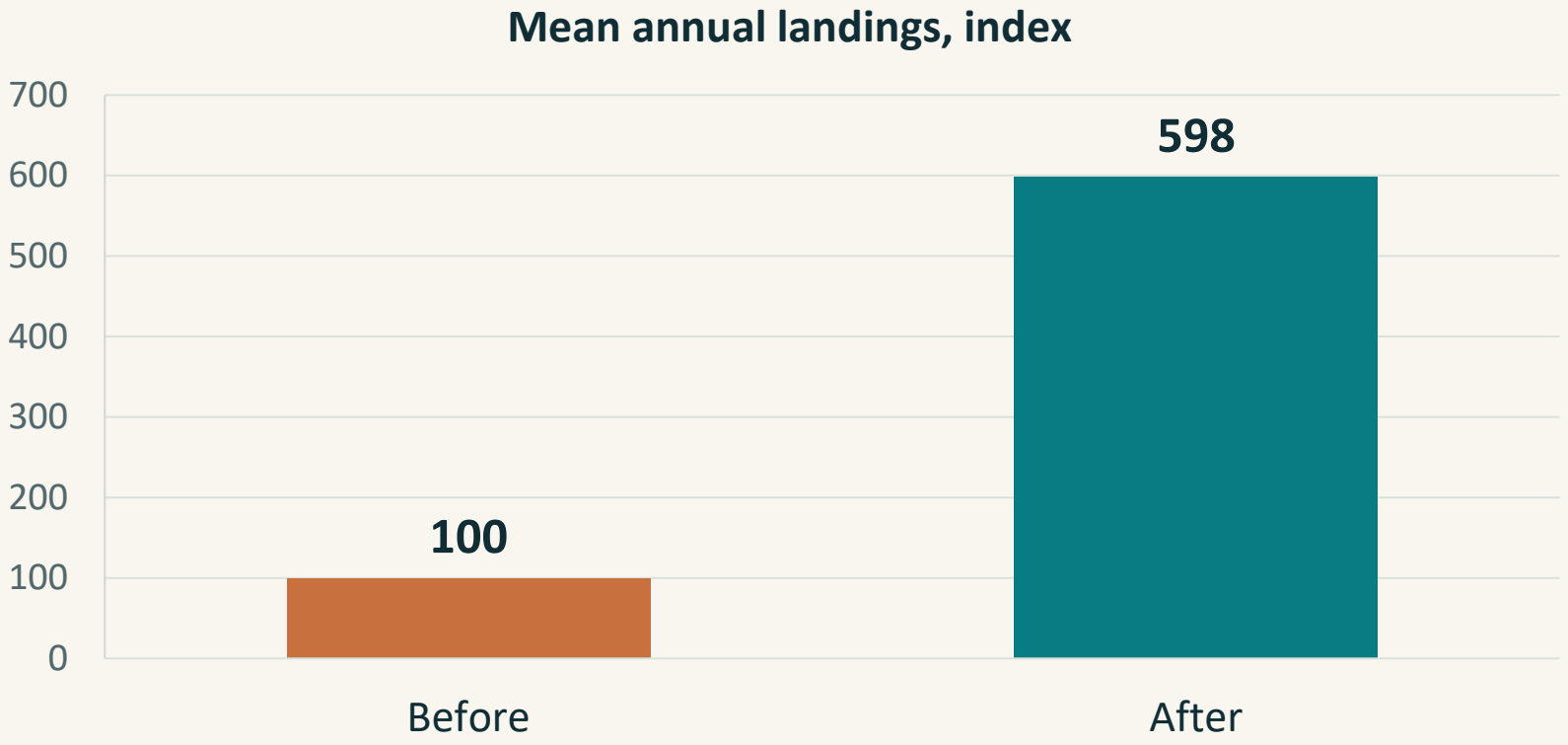
New mouth opened in 2000

Tidal exchange and movement of organisms

Before seeing the result: what would you predict for fish landings?

Site image: Chilika Development Authority

Chilika: mean fish landings rose almost sixfold



5.98×

the earlier period mean

Seven-year means before and after intervention.

Mohanty, Mohapatra & Mohanty (2009)

Justice: outcomes, influence and recognition

Dimension	Question	Example to investigate
Distribution	Who gains and who loses?	Loss of income or access
Procedure	Who can influence the choice?	Ability to change closure dates
Recognition	Whose rights and knowledge count?	Treatment of local seasonal knowledge

Martin et al. (2016) · Vucetich et al. (2018)

Redlining: the history behind the maps

1930s

US housing areas were graded A to D.

Discrimination

Racially discriminatory grading shaped access to mortgage credit.

Urban legacy

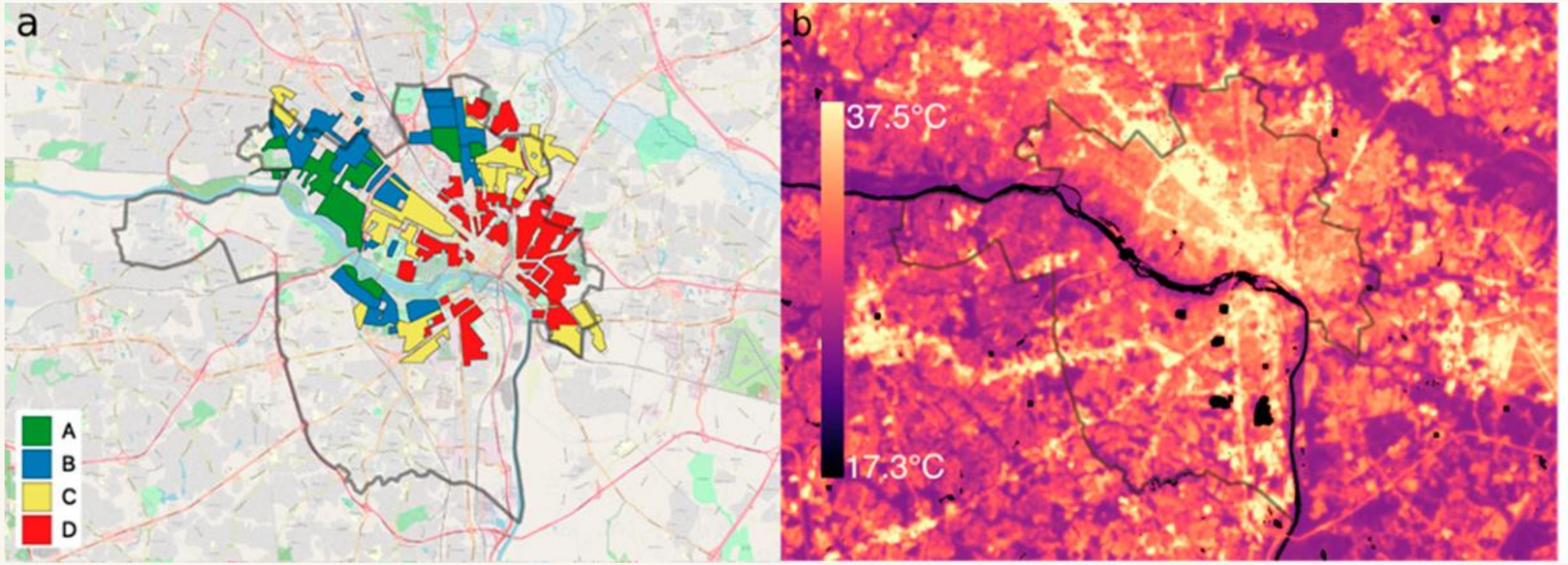
Unequal investment can leave lasting patterns in the built environment.

Hoffman, Shandas & Pendleton (2020) · Schell et al. (2020)

Richmond: housing history and surface heat

Historical housing grades

Land surface temperature, 2 July 2016



Different maps, different variables. Surface temperature differs from air temperature.

Hoffman et al. (2020), Fig. 3a–b, CC BY 4.0

Who benefits from an urban greening programme?

2.6°C

Mean D–A land surface temperature difference

108 US urban areas

10,000 new trees: where, for whom, and with what access?

Hoffman, Shandas & Pendleton (2020) · Schell et al. (2020) · Martin et al. (2016)

Cabo Pulmo: protection that people sustained



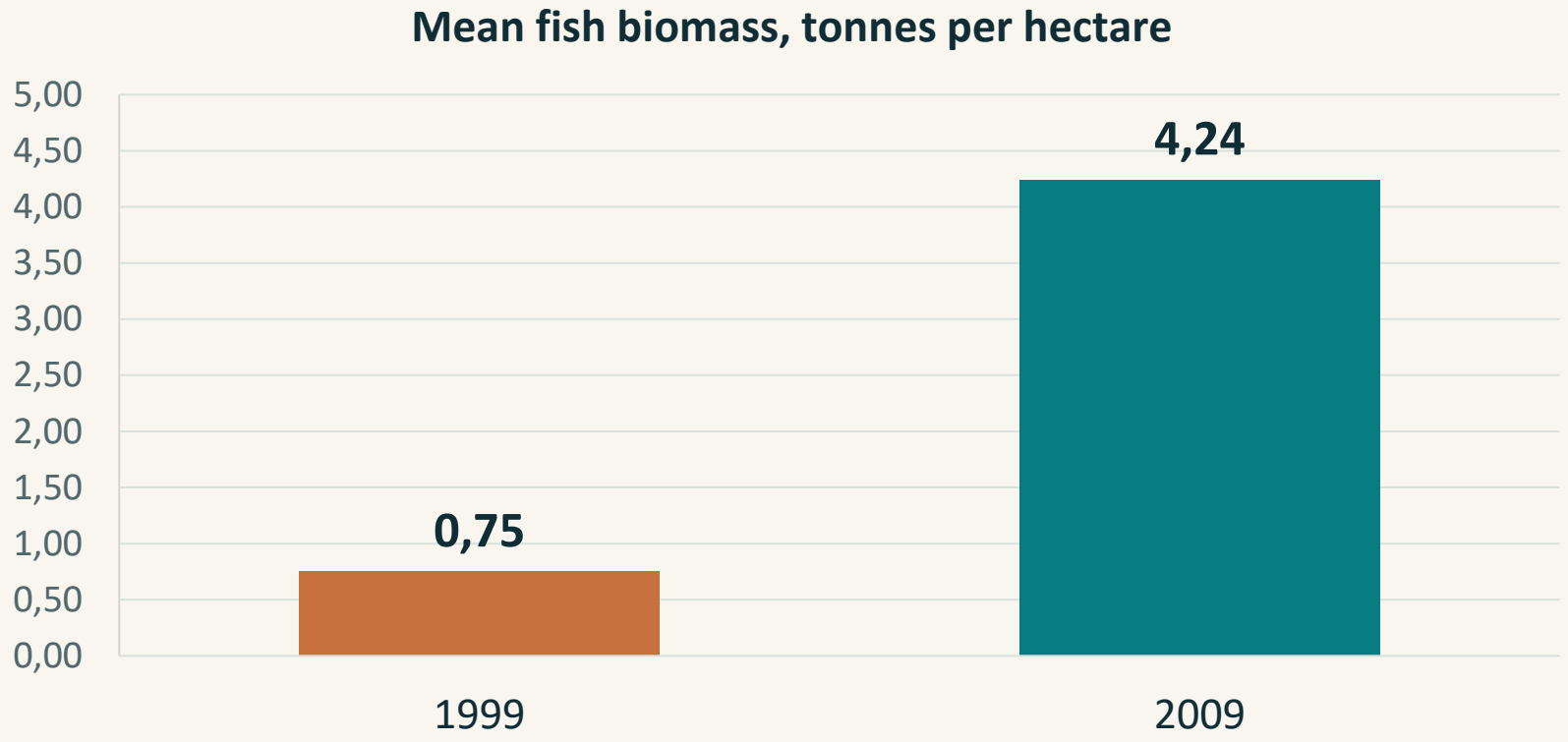
Gulf of California, Mexico

National park designated in 1995

Fish surveys: 1999 and 2009

Photo: Octavio Aburto; Aburto-Oropeza et al. (2011), Fig. 4c, CC BY.

Cabo Pulmo: fish biomass increased about 5.7-fold



≈5.7×

the earlier biomass

Aburto-Oropeza et al. (2011)

Governance: who can change the rules?

Decision function	Question for a fishing restriction
Authority	Who can set or change the rules?
Implementation	Who can enforce them, with what resources?
Accountability	Who can challenge a decision or request a review?

Management: the action. Governance: authority, rules and accountability.

Ostrom (2009) · Reed et al. (2009)

Local influence and conservation outcomes

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publications reviewed

Positive social and ecological outcomes often involved a central local role.

A meeting is not evidence of shared authority.

A cross-case pattern, not a guarantee that every participatory project succeeds.

Dawson et al. (2021) · Reed et al. (2009)

How can a conservation action be justified?

Ethical approach	Question at Gough
Consequences	Which option is likely to reduce harm overall?
Duties and rights	What must not be ignored or simply traded away?
Care and responsibility	What do we owe to animals and places affected by us?

Compare the proposal with feasible alternatives, including the consequences of inaction.

Latombe et al. (2025) · Vucetich et al. (2018) · Biasetti & de Mori (2021)

What happened at Gough?



2021: eradication was attempted.

Surviving mice showed that eradication had failed.

2022–23: temporary breeding gains; renewed predation was recorded.

Photo: Gough Island Restoration Programme

What would make us review the decision?

Concern	Possible indicator	Reason to review
Ecological recovery	Recruitment or biomass	The ecological objective is missed
Unequal burdens	Income and access by group	Basic needs or important rights are threatened
Workable governance	Compliance and meaningful influence	Rules fail or exclusion becomes evident

Ostrom (2009) · IPBES (2022)

What will you ask before the next decision?

What matters here?

Who gains, who loses?

Who can influence the rules?



Photo: Gough Island Restoration Programme

Ethics and conservation

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Chilika Development Authority. Eco-Restoration. Site imagery and intervention history.

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Gough Island Restoration Programme (2023). MacGillivray's Prions: good 2022–23 breeding success but evidence of mouse predation recorded.

Visual credits and teaching methods

Gough Island Restoration Programme. Project overview and photographs. RSPB and Tristan da Cunha.

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Phadke09 (2019). Chilika lake fishing boats. Photograph, CC BY-SA 4.0.

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