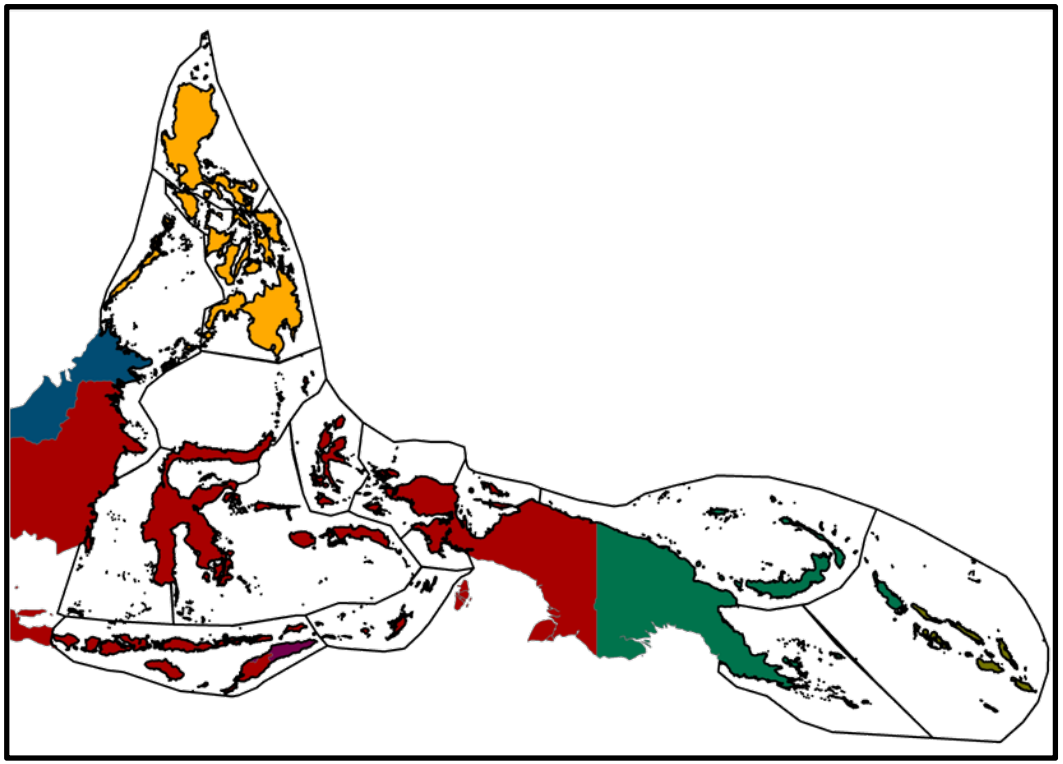
Coral Reef Conservation

Prioritizing land and sea actions

Carissa Klein – Hugh Possingham

Coral Triangle Initiative

- Aims to bring together six governments to conserve marine life



- Supported by local and global NGOs (e.g. TNC, WWF)

Threats to coral reefs

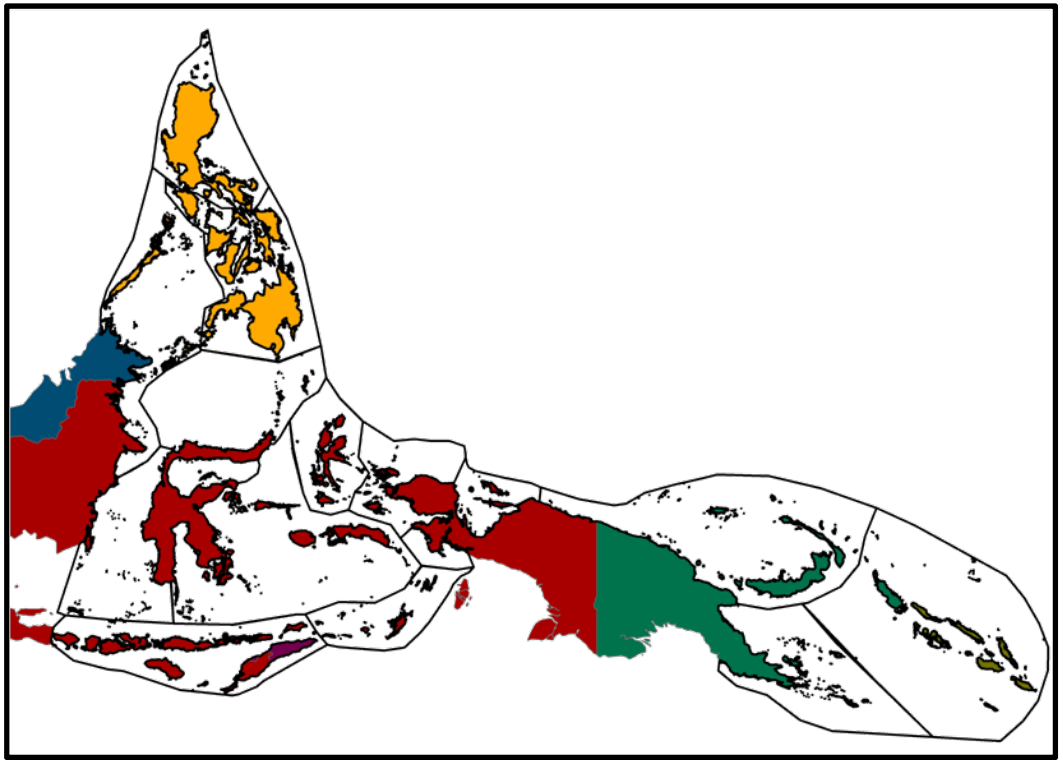
- Land-based threats (e.g. deforestation)

- Sea-based threats (e.g. fishing)

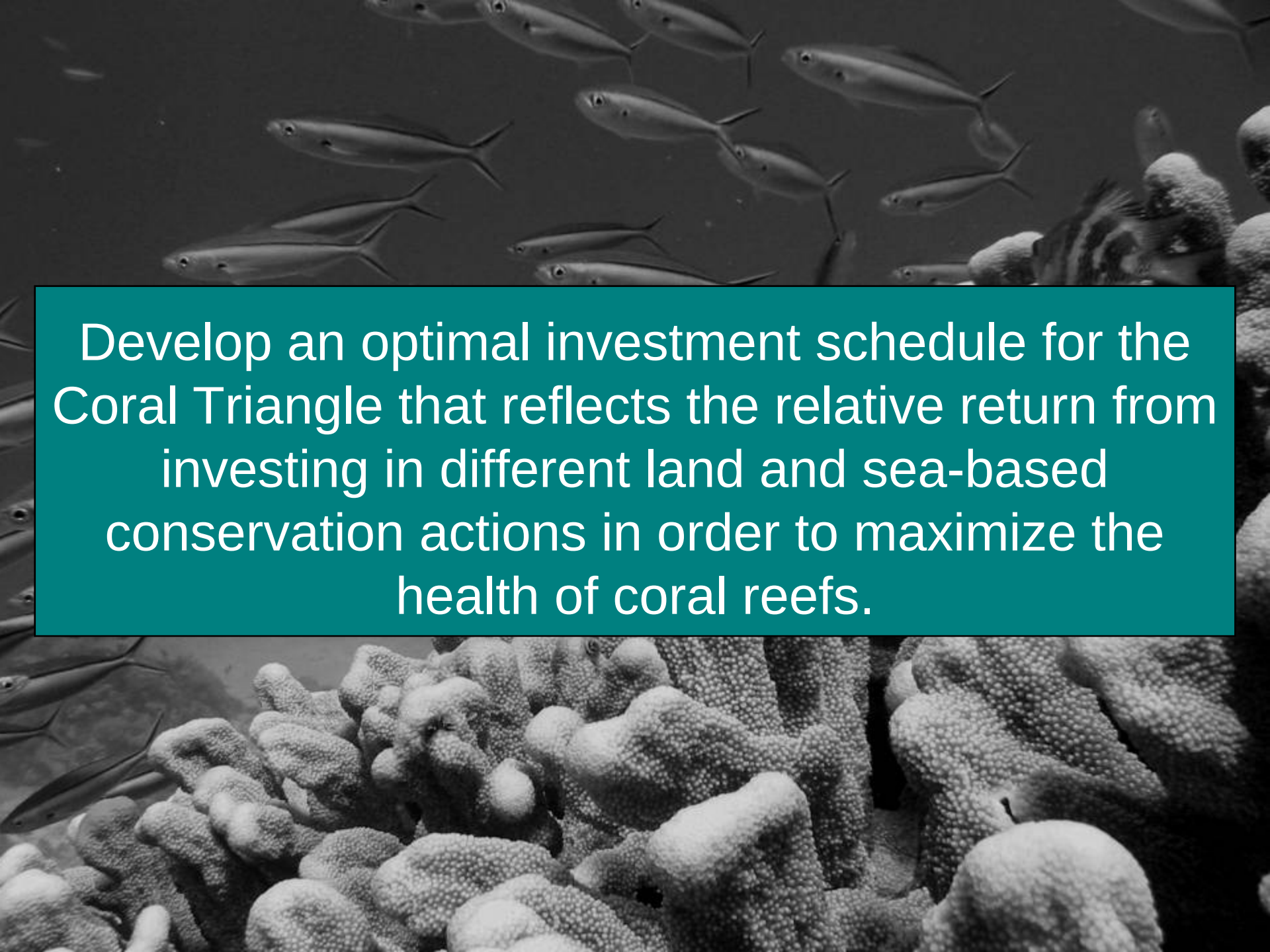
How much should we invest in abating land and sea threats?

Conservation costs vary

- Between ecoregions
- Between conservation actions



How much should we invest in each region and each action?



Develop an optimal investment schedule for the Coral Triangle that reflects the relative return from investing in different land and sea-based conservation actions in order to maximize the health of coral reefs.

Biodiversity benefit

- Health of coral reefs is a function of:
  - 1) land based threats
  - 2) marine based threats

- Using information on threats to coral reefs (Halpern et al, 2008) we are developing a benefit function for each land and sea conservation action

Conservation actions

- Effective management of the ocean
- Effective management of the land

With effective management of the land and sea, the impact of some threats on coral reefs can be reduced

Cost of conservation actions

- Effective management of the ocean

  - Management costs (Balmford et al.)

  - Opportunity costs from fishing and aquaculture (FAO, Halpern et al.)

- Effective management of the land

  - Management costs (Moore et al.)

  - Opportunity costs from agriculture and forestry (FAO, Naidoo et al.)

Return on investment

- Prioritize the actions in ecoregions that provide the most benefit (reef health) per dollar spent
- Actions in ecoregions will be prioritized until the budget for conservation is reached

Results will inform how to cost-effectively allocate scarce conservation resources to protect biodiversity

Collaborators

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