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# Cultural ecosystem services as emergent properties of people-place interaction in national parks

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# Rationale

- Protected Areas (PAs) is a form of anthropogenic land use; >200,000 PAs from 244 countries cover 14.7% of land
  - PAs increasingly have to balance two objectives: conserve biodiversity and contribute benefits to people
  - ES is useful concept to understand benefits that people derive from nature, e.g. material benefits from provisioning services.
  - People make 8 billion visits per year to the world's PAs, during which people-place interactions generate many non-material benefits or cultural ecosystem services (CES)
  - CES are important (for people and PAs) but not mainstream
  - Activities mediate CES experiences and give agency to people to have these experiences
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# Objectives

Explore:

- i. the diversity of activities on offer in national parks that facilitate people-place interactions;
  - ii. how these activities translate into CES; and
  - iii. the main factors influencing delivery of cultural ecosystem services in national parks (enablers, threats, constraints, opportunities, trade-offs).
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## Case study national parks



Mountain Zebra – 1937; 28,000 ha  
Rural & remote, fenced with one access gate, diverse landscape features, various charismatic animals



Garden Route – 1964/2009/2011  
Complex of protected areas managed as single entity, highly fragmented and juxtaposed with other land uses, largely non-gated access

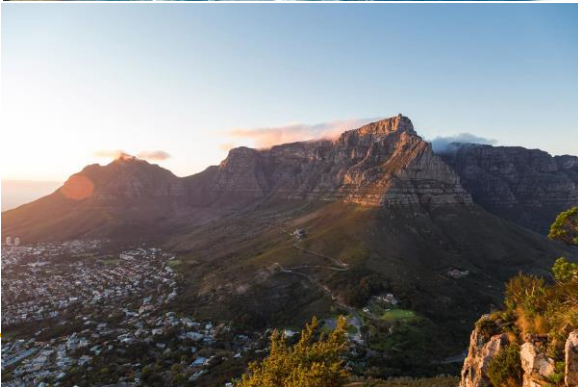


Table Mountain – 1998/2004; 25,000 ha  
Intertwined with metropolitan Cape Town, with 2,400 landowners as direct neighbours; largely non-gated access; app. 4m visits per year

## Method

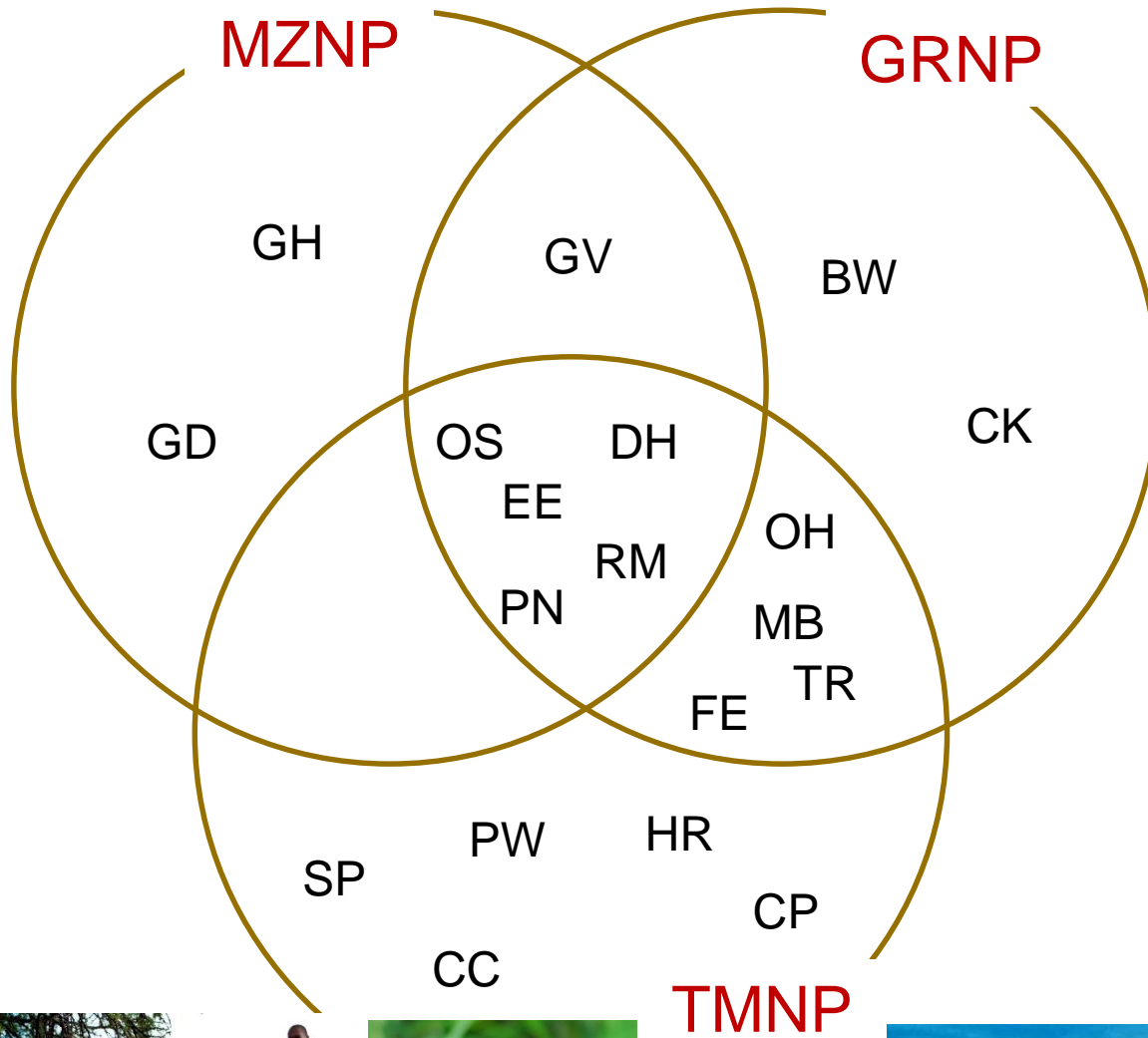
### Focus group meetings with park staff:

- Compiled activity inventories
- Related activities to seven classes of CES
- Discussed the enablers, threats, opportunities and trade-offs related to delivering each class of CES

MEA 2005	CICES 2013	Milcu et al. 2013	Palomo et al. 2013	Ament et al. 2016
Aesthetics	Aesthetic	Aesthetic values	Aesthetic values	Aesthetic
	Existence; Bequest	Bequest, intrinsic and existence	Existence value and species conservation	
Cultural diversity and identity		Cultural diversity		
Cultural landscapes and heritage values	Cultural heritage	Cultural heritage values		Cultural and heritage
	Educational	Educational values	Environmental education	Educational
	Entertainment			
Inspiration		Inspiration		
	Scientific	Knowledge systems	Scientific knowledge Traditional ecological knowledge	
Recreation and tourism	Physical and experiential use	Recreation and ecotourism	Tourism (Nature, rural, ski)	Recreational
		Sense of place		
		Social relations		Social
Spiritual services	Sacred and/or religious; Symbolic	Spiritual and religious values	Spiritual values	Spiritual and religious

## Seven CES used in this study

1. **Aesthetic value** – Appreciation of landscape [or nature's] beauty
2. **Cultural heritage value** – Appreciating local history and culture
3. **Environmental education** – Instruction in ecological processes, raising of awareness about biodiversity and ecosystem services in visitor centres or educational activities
4. **Recreation** – Enjoyment of nature through activities such as walking, dog walking, horse riding, swimming, gathering wild foods, angling, hunting, mountain biking, shell collecting...
5. **Sense of place**– Sensory and emotional experiences (including spiritual) fostering a sense of authentic human attachment and belonging.
6. **Scientific knowledge** – Gathering of scientific knowledge from the study of ecosystems
7. **Social relations** – Socialising with friends and meeting people

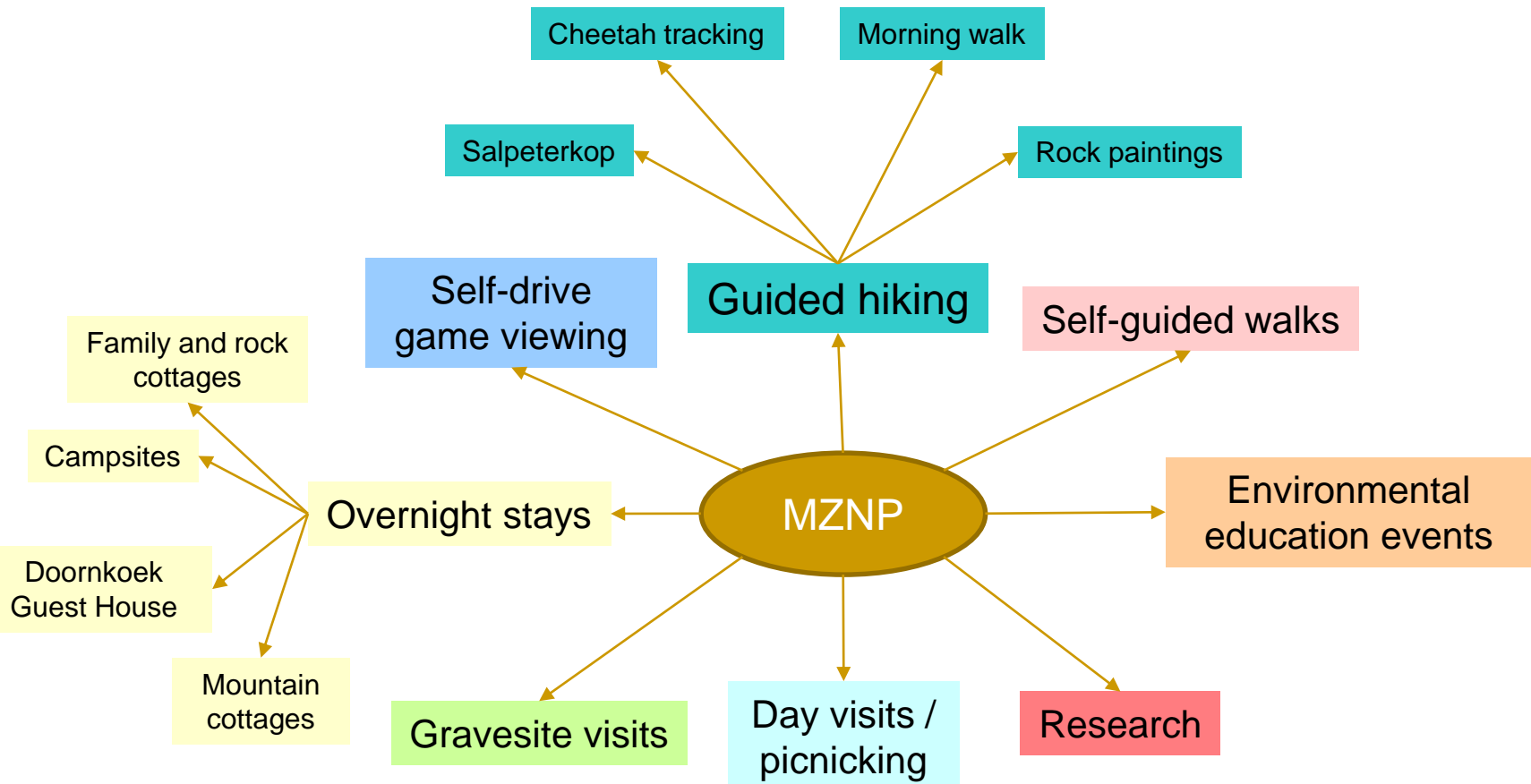


BW	Bird watching
CC	Cable car rides
CK	Canoeing & kayaking
CP	Cape Point
DH	Day hikes
EE	Environmental education
FE	Functions & events
GD	Game drives
GH	Guided hikes
GV	Gravesite visits
HR	Horse rides
MB	MTB
OH	Overnight hikes
OS	Overnight stays
PN	Picnicking
PW	Penguin watching
RM	Research & monitoring
SP	Spiritual practices
TR	Trail running





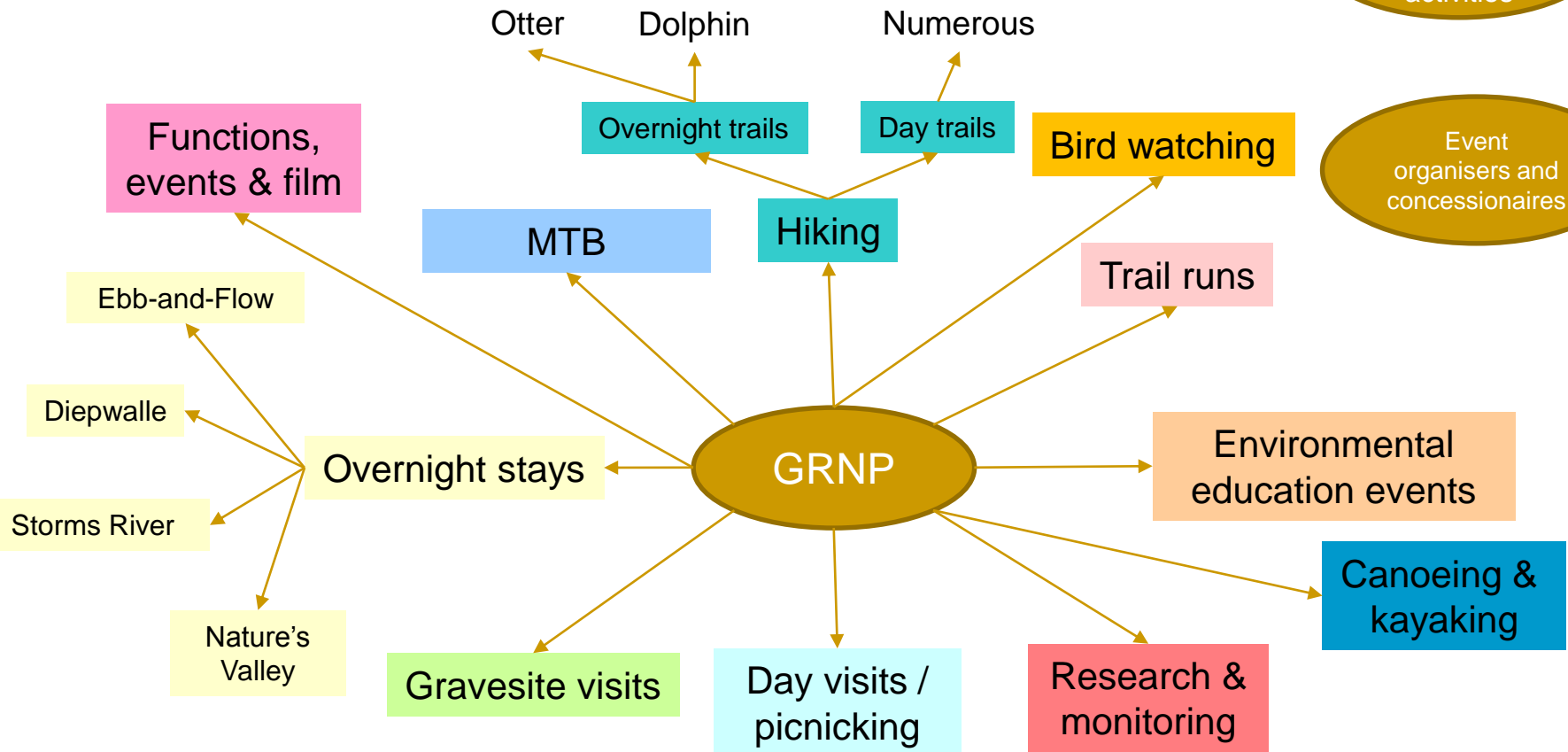
# Activity inventory: MZNP



# Activity inventory: GRNP

Self-organised activities

Event organisers and concessionaires



# Activity inventory: TMNP



# Activities translate into multiple CES

Activity	Aes	Cul	Edu	Rec	SoP	Res	Soc
Overnight stay - Cottages/Chalets	X			X			X
Overnight stay - Mountain Cottages	X			X	X		X
Overnigt stay - Doornhoek Guest House	X	X		X	X		X
Overnight stay - Camping				X	X		X
Environmental education events			X		X		
Gravesite visits		X			X		X
Guided drives (day and night)	X		X	X			X
Guided walks	X		X	X			X
Picnicking (swimming)	X			X			X
Research			X			X	X
Self-drives (including 4x4)	X			X	X		X
Self-guided hike	X			X	X		X

# Enabling aesthetic value (Mountain Zebra)

## Enablers

- variable topography, environmental gradient and climatic conditions (snow in winter and thunderstorms in summer)
- distance from major towns (e.g. light impacts, noise)

## Constraints / threats

- restricted to vehicle
- Invasive alien trees & developments in buffer zone (e.g. power lines, wind turbines)

## Opportunities

- more naturally safe look-out points
- propagation through photography & social media (virtual experiences)

## Trade-offs

- topography enhances aesthetic value but also limits access
- built infrastructure aids access but detracts from natural beauty
- low tourist numbers enhance experience but hamper fin. sustainability

# Enabling cultural heritage value (Garden Route)

## Enablers

- >200 heritage sites listed (but many not open to public)
- diversity of cultural heritage, spanning stone age, Griqua and woodcutter eras

## Constraints / threats

- lack of appropriate staff and dedicated resources
- limited documentation, e.g. oral histories
- difficult to access when via multiple land owners

## Opportunities

- explore community guiding initiatives
- propagation through photography & social media (virtual experiences)

## Trade-offs

- Increased access comes with increased responsibility (e.g. to safeguard assets) and may lead to increased vandalism

# Enabling scientific knowledge (Table Mountain)

## Enablers

- research collaborators in close proximity
- long history of documentation
- unique biodiversity
- science liaison officer

## Constraints / threats

- Territoriality and ego issues
- Lack of information management system
- Park management ambivalence (e.g. post fire opportunities)

## Opportunities

- unexploited social, cultural and social-ecological opportunities
- better knowledge harvesting & science-management interfacing

## Trade-offs

- invasiveness; interventionist research altering a system (e.g. penguins)

# Early insights – context influences potential

Mountain Zebra – conventional “island” park with dangerous animals

- Field guides
- Sense of being in control of offered experiences

Garden Route – fragmented park intertwined with cultural landscape

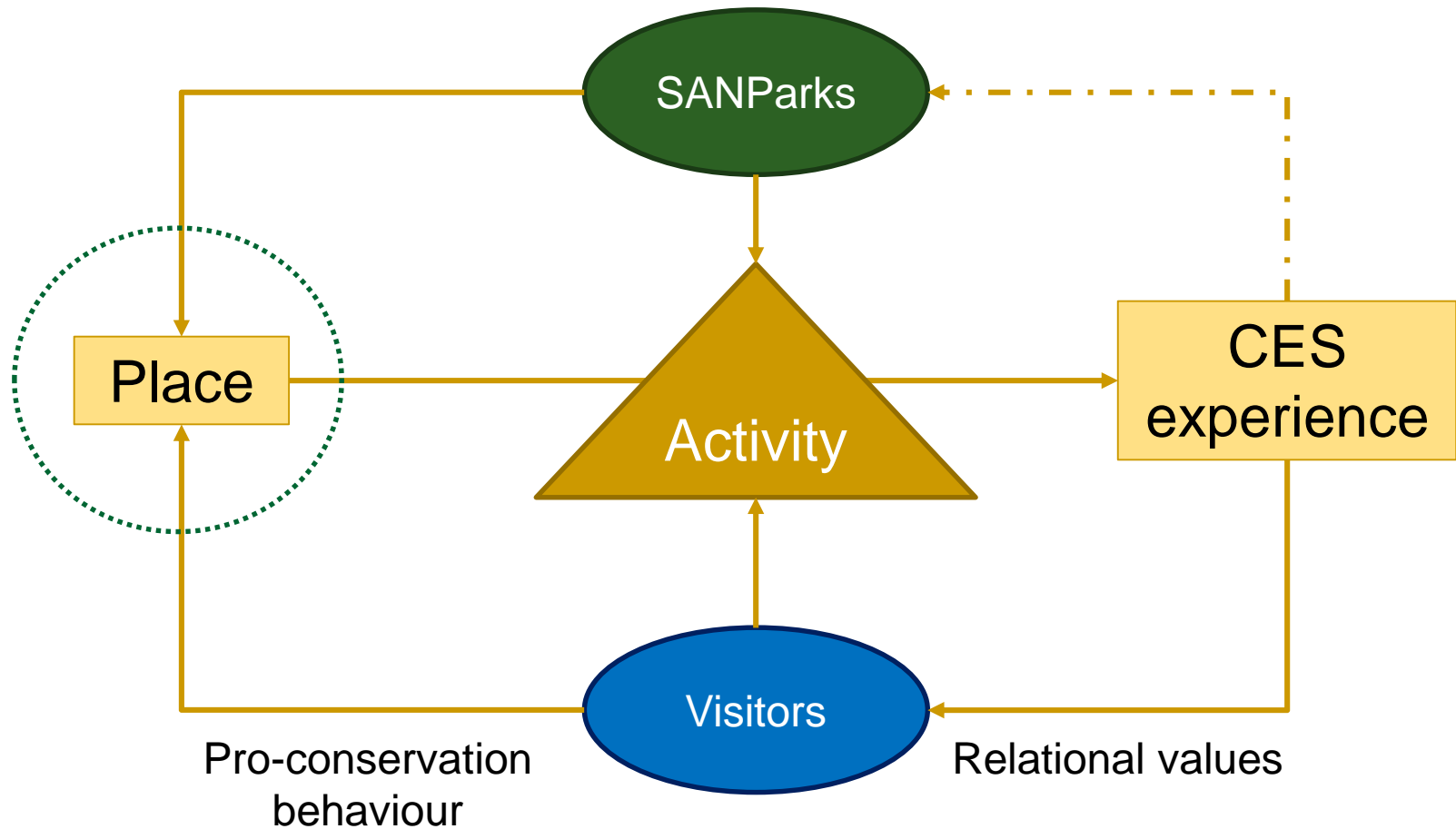
- Ranger: “I feel like the town psychologist having to listen to all the complaints of dog walkers, fishermen and property owners”.
- Sense of not being in control of visitors or concessionaires

Table Mountain – city park

- We are so connected and in some ways yet so disconnected from society
- Many rangers don't want to wear their uniforms because they will just get blamed by the public for some or other thing. Feels like you can get nothing right



# Early insights – relationships and feedbacks



# Early insights – changing the narrative is not enough

- Vision: “A Sustainable National Parks System, Connecting Society”
- Research bias
- Conserve a species or an experience
- Core business or concession