

# Open With Care: Monitoring of Fauna in Tourism Areas



Global Eco 2013

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Wildlife Tourism Australia

# Throughout Australia national parks are being opened up to ecotourism



# Throughout Australia national parks are being 'opened up' to 'ecotourism'



# Throughout Australia national parks are being 'opened up' to 'ecotourism'

What do we mean by “open up”?

What do we mean by “ecotourism”?

How do we prepare for innovation that  
remains truly eco?

# Tourism: good for the economy



# Ecotourism: good for the environment



# Ecotourism: good for the environment



If it isn't, it's not Ecotourism

# Ecotourism: good for the environment: including good interpretation



If it isn't, it's not Ecotourism

# Ecotourism: good for the local economy



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# Ecotourism: good for the local economy



If it isn't, it's not Ecotourism

# Ecotourism: good for operators' income



If it isn't, the operator can't continue

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# What is Ecotourism?

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# What is Ecotourism?

“Environmentally responsible travel to natural areas, in order to enjoy and appreciate nature (and accompanying cultural features, both past and present) that promote conservation, have a low visitor impact and provide for beneficially active socio-economic involvement of local peoples”. IUCN

# What is Ecotourism?

“Environmentally responsible travel to **natural areas**, in order to enjoy and appreciate nature (and accompanying cultural features, both past and present) that **promote conservation**, have a **low visitor impact** and provide for beneficially active socio-economic involvement of local peoples.” IUCN

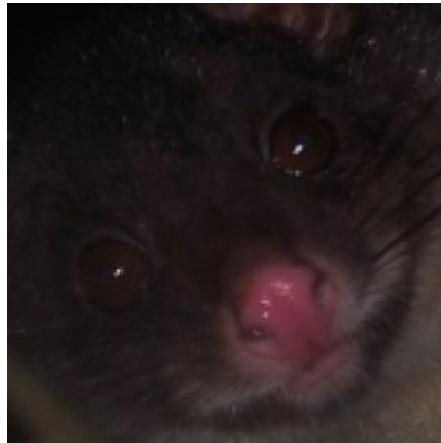
# Ecotourism Australia's definition

"Ecotourism is ecologically sustainable tourism with a primary focus on experiencing natural areas that fosters environmental and cultural understanding, appreciation and conservation".

# Ecotourism Australia's definition

"Ecotourism is **ecologically sustainable** tourism with a primary focus on experiencing **natural areas** that fosters environmental and cultural understanding, appreciation and **conservation**".

# “We are part of the environment!”



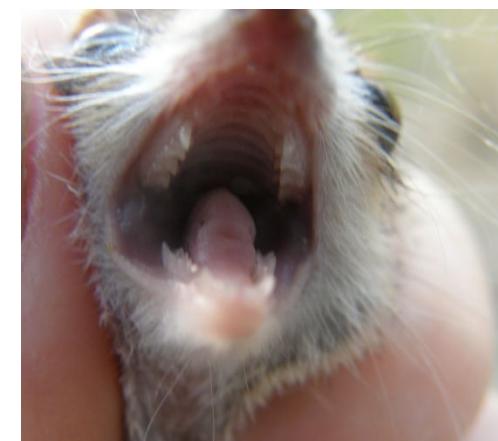
This talk focuses on biodiversity conservation -  
an essential component of sustainability

# If these disappear...



... we will soon notice

# These could disappear ...



... before we even know they are there!

# These could disappear

before we even know they are there



# Which animals should we protect?

# Which animals should we protect?



Koalas and kangaroos top the list for tourist popularity

# Which animals should we protect?



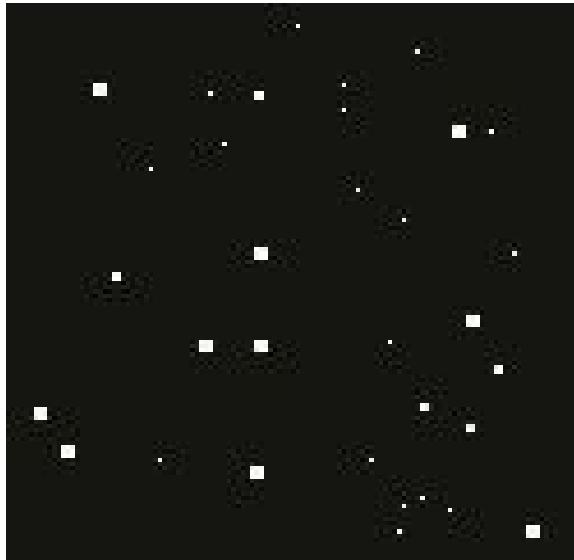
Many others are already very popular

# Which animals should we protect?



Many others could become more famous

# Which animals should we protect?



Many others could become more famous

# Which animals should we protect?



Many birds are already sought after by birders, even if not well-known to non-birders

# Which animals should we protect?



**And what about the others?**

# Which animals should we protect?



**True “Ecotourism” should protect  
ALL native fauna & flora populations**

# Which animals should we protect?



**and recognise and protect the many  
ecological links and processes**

# Potential impacts



Habitat loss, habitat alteration, inappropriate feeding, erosion, trampling, roadkill, introduction of weeds, scaring animals from feeding, nesting and resting areas etc.

# Not all impacts will be bad

e.g. Horses may be ok if:

- Free of weeds (hooves and manure)
- Not used on easily-eroded areas
- Using a short section of carefully controlled track through a conservation area to connect 2 sections of riding trail
- On private/leasehold land adjacent to rather than within conservation areas
- Impacts are monitored (otherwise we may never know!)



There are many effects that most don't see



e.g. Too many 4WDs can cause serious compaction of sand



... affecting burrowing invertebrates ,,,

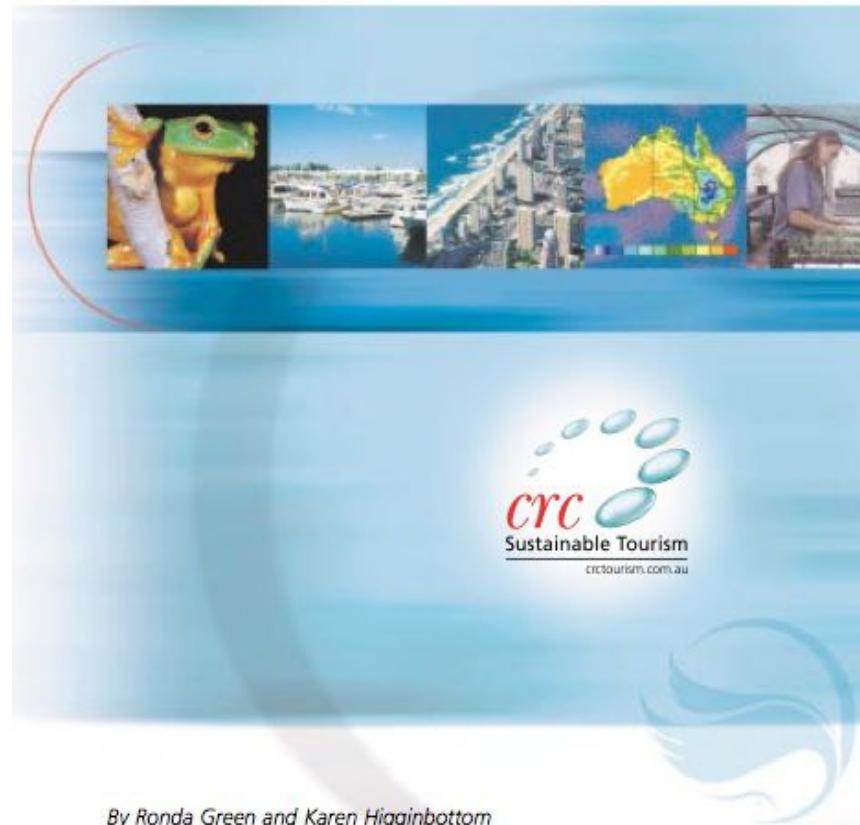


... and birds that eat them

# Potential impacts

There are many potential effects, and not always obvious: see Green and Higginbottom's report for the Sustainable Tourism CRC

## NEGATIVE EFFECTS OF WILDLIFE TOURISM ON WILDLIFE



By Ronda Green and Karen Higginbottom

WILDLIFE TOURISM RESEARCH REPORT SERIES: NO. 5  
Status Assessment of Wildlife Tourism in Australia Series

# Nature Conservation and Other Legislation Amendment Bill (No. 2) 2013

*Please note:*

I am not affiliated with any political party and nor is Wildlife Tourism Australia, just commenting from an ecotourism and ecological perspective, and a concern for both biodiversity conservation and economic sustainability of ecotourism and wildlife tourism enterprises

# Nature Conservation and Other Legislation Amendment Bill (No. 2) 2013

*Please note:*

I am also a keen horse-rider, enjoy cross-country 4WD, boating, rock-climbing and other such activities



# Nature Conservation and Other Legislation Amendment Bill (No. 2) 2013

*Please note:*

... and am not opposed to allowing activities and facilities into conservation areas where it can be shown to truly have minimal impact



# Nature Conservation and Other Legislation Amendment Bill (No. 2) 2013

*Please note:*

... e.g. the proposal  
to develop  
accommodation at  
the wool-shed in  
Currawinya NP  
seems sound



# Nature Conservation and Other Legislation Amendment Bill (No. 2) 2013

*However:*

# Nature Conservation and Other Legislation Amendment Bill (No. 2) 2013

*WTA concurs with the comment in a dissenting report by 3 MPs:*

“While it may be appropriate for educational, recreational, cultural and even commercial activities to take place within protected areas it must always be recognised that these are secondary activities and not the primary purpose of protected area management”

# Nature Conservation and Other Legislation Amendment Bill (No. 2) 2013

*We concur also with EDO's following concerns:*

- “The changes in the Bill will allow for uses which aren’t ‘ecologically sustainable’ in protected areas. Given that **national parks are less than 5% of Queensland** this unacceptably threatens biodiversity; and
- The Bill **removes key opportunities for public participation** in the management of our protected areas. This reduces transparency and accountability in the management of our protected areas”

# Nature Conservation and Other Legislation Amendment Bill (No. 2) 2013

*In WTA's brief submission we wrote:*

“[W]e fully **support responsible tourism**, including a major expansion of wildlife tourism throughout Australia, but this **must not be at the expense of our biodiversity**, and the proposed changes will weaken the commitment of government, managers and developers to afford adequate protection”.

# Similar legislation is being made or promoted in other parts of Australia



*From Protect the Bush Alliance*

Vegetation Management Framework Amendment Bill 2013 (14th May 2013)

<http://www.parliament.qld.gov.au/documents/committees/SDIIC/2013/10-VegetatationMgmtFramewk/rpt-023-14-May2013.pdf>

Vegetation Management Framework Amendment Bill 2013 (About the Bill. Many have expressed concern that so little time was given for the public to comment on this change)

Queensland vegetation protection laws: Environmental Defenders Office Massive clearing of high value regrowth vegetation will now be possible

<http://concernedqldscientists.wordpress.com/> Response by scientists to the proposed change to Qld legislation n vegetation clearing 2013

Permits for hunting in national parks and other conservation areas are becoming easier to obtain in several states

On 13 March 2013 a Bill was introduced into the House of Representatives to amend the Environment Protection and Biodiversity Conservation Act 1999 (Cth) (EPBC Act) so as to include 'water resources' as a new matter of national environmental significance for large coal mining and coal seam gas projects.

Updates on the Environment Protection and Biodiversity Act

Proposal to hand environmental decisions to the states and territories

Proposed changes in Victoria could endanger tall forests in Victoria, habitat for Leadbeater's possum and many others

<http://uqecology.files.wordpress.com/2010/07/final-brigalow-declaration.pdf> and

<http://uqecology.files.wordpress.com/2010/07/final-brigalow-statement-signatories.pdf> The Brigalow Declaration 2003

Similar legislation is being made or promoted in other parts of Australia



... and many conservationists are worried!  
(National Parks Association, Victoria)

Similar legislation is being made or promoted in other parts of Australia



... and many conservationists are worried!  
(a WTA member is included here)

# How to minimize biodiversity loss

- Find out what is there



Photo: Araucaria Ecotours

# How to minimize biodiversity loss

Find out what is there

## Who can assist?

- Ecologists
- Conservation managers
- Students
- Naturalists
- Volunteers
- Tourist and tour operators – see  
<http://www.wildliferesearchnetwork.org/>

... at various levels

-

# How to minimize biodiversity loss

Find out what is there

## Finding mammals

- Monotremes



Platypus – dawn&dusk searches in creeks, look for burrow entrance

Echidna – search for echidnas and their tracks, scratching, droppings

*Not always easy!*

# How to minimize biodiversity loss

Find out what is there

## Finding mammals

- Monotremes
- Marsupials – herbivorous



Seek kangaroos, most wallabies dawn and dusk

Seek bettongs, potoroos, possums, gliders etc. at night with spotlights or motion-sensing cameras or traps or hair-traps

# How to minimize biodiversity loss

Find out what is there

## Finding mammals

- Monotremes
- Marsupials –  
omnivorous/insectivorous/carnivorous

Seek larger ones at night with spotlights or motion-sensing cameras, smaller ones with traps



# How to minimize biodiversity loss

- Find out what is there
- Finding mammals
- Monotremes
- Marsupials
- Native rodents (~25% of our fauna species)  
trapping



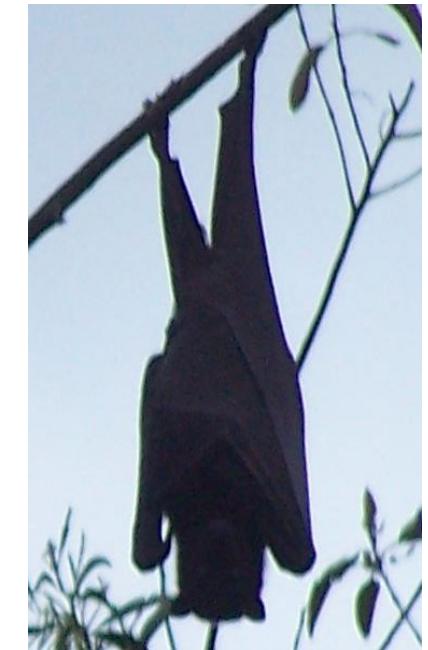
# How to minimize biodiversity loss

Find out what is there

## Finding mammals

- Monotremes
- Marsupials – herbivorous and others
- Native rodents (~25% of our fauna species)
- Bats (~25% of our fauna species)

fruitbats - visually



# How to minimize biodiversity loss

Find out what is there

## Finding mammals

- Monotremes
- Marsupials – herbivorous and others
- Native rodents (~25% of our fauna species)
- Bats (~25% of our fauna species)  
microbats – anavbat or trapping



# How to minimize biodiversity loss

Find out what is there

## Finding mammals

- Monotremes
- Marsupials – herbivorous and others
- Native rodents (~25% of our fauna species)
- Bats (~25% of our fauna species)
- Sea mammals - visually



# How to minimize biodiversity loss

Find out what is there

## *Finding mammals*

- Monotremes
- Marsupials – herbivorous and others
- Native rodents (~25% of our fauna species)
- Bats (~25% of our fauna species)
- Sea mammals

# How to minimize biodiversity loss

Find out what is there

Finding birds

- Diurnal – obvious



# How to minimize biodiversity loss

- Find out what is there
- Finding birds
- Diurnal – obvious



# How to minimize biodiversity loss

Find out what is there

Finding birds

- Diurnal – obvious
- Diurnal – cryptic/rare



# How to minimize biodiversity loss

Find out what is there

Finding birds

- Diurnal – obvious
- Diurnal – cryptic/rare  
(patience! calls,  
mistnets)



# How to minimize biodiversity loss

Find out what is there

## Finding birds

- Diurnal – obvious
- Diurnal – cryptic/rare
- Diurnal – nomadic/migratory



# How to minimize biodiversity loss

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Find out what is there

## Finding birds

- Diurnal – obvious
- Diurnal – cryptic/rare
- Diurnal – nomadic/migratory
- Nocturnal – terrestrial



# How to minimize biodiversity loss

Find out what is there

## Finding birds

- Diurnal – obvious
- Diurnal – cryptic/rare
- Diurnal – nomadic/migratory
- Nocturnal – terrestrial
- Nocturnal – aquatic (can be very difficult)



# How to minimize biodiversity loss

Find out what is there

## *Finding birds*

- Diurnal – obvious
- Diurnal – cryptic/rare
- Diurnal – nomadic/migratory
- Nocturnal – terrestrial
- Nocturnal - aquatic

# How to minimize biodiversity loss

Find out what is there

## Finding reptiles

- Lizards and snakes: diurnal – obvious
- Lizards and snakes: diurnal – cryptic/rare
- Lizards and snakes: nocturnal
- Turtles – freshwater
- Turtles – marine
- Crocodiles

# How to minimize biodiversity loss

Find out what is there

## *Finding frogs*

- Common, summer
- Common, winter
- Appearing/calling only after heavy rains
- Rare/endangered

# How to minimize biodiversity loss

Find out what is there

## Finding frogs

- Some we can find easily by calls
- Some we find occasionally by calls
- Some we find by trapping – at the right times



# How to minimize biodiversity loss

Find out what is there

## *Finding frogs*

- Some we can find easily by calls
- Some we find occasionally by calls
- Some we find by trapping – at the right times

If a survey finds only a few frogs (or none) but was conducted only in winter or only on dry nights

# How to minimize biodiversity loss

Find out what is there

## Finding frogs

- Some we can find easily by calls
- Some we find occasionally by calls
- Some we find by trapping – at the right times

If a survey finds few frogs but was conducted only in winter or only on dry nights **the conclusion is virtually useless**

# How to minimize biodiversity loss

Find out what is there

## *Finding fish*

- Marine, common
- Marine, rare/endangered
- Freshwater, common
- Freshwater, rare/endangered

# How to minimize biodiversity loss

Find out what is there

## *Finding invertebrates*

- Can't find them all!
- What should we look for?

# How to minimize biodiversity loss

- Tourism interest
- Potential interest
- Ecological roles
- endangered



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- Tourism interest
- Potential interest
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# How to minimize biodiversity loss

- Tourism interest
- Potential interest
- Ecological roles
- endangered



# *A new way of finding species:*

Biodiversity soup: metabarcoding of arthropods for rapid biodiversity assessment and biomonitoring

Douglas W. Yu (Chinese Academy of Sciences, Kunming) *et al*

“...extraction of ecological, taxonomic and phylogenetic information from bulk samples of arthropods”

*Methods in Ecology and Evolution.* 2012. 3:613-623



# *A new way of finding species:*

Biodiversity soup: metabarcoding of arthropods for rapid biodiversity assessment and biomonitoring

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“...we have detected several vertebrate species in our insect malaise trap samples (bats, frogs, birds and ungulates) that are known to exist in the trapping area (authors' unpublished data). We suspect that we are amplifying DNA from vertebrate blood that is borne by mosquitoes, and this suggests that terrestrial vertebrate diversity might be measurable with mass mosquito or leech collections.”



# *A new way of finding species:*

Biodiversity soup: metabarcoding of arthropods for rapid biodiversity assessment and biomonitoring

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*Methods in Ecology and Evolution.* 2012. 3:613-623

Can Australia help pioneer this ground-breaking method of *relatively* cheap, rapid fauna surveys based on DNA of invertebrates plus DNA of vertebrates in blood-sucking invertebrates ?



# How to minimize biodiversity loss



Understand  
ecological  
requirements  
and  
interactions

Dispersal of micchorhizae spores by potoroos and bettongs aids forest trees

# How to minimize biodiversity loss

Understand  
ecological  
requirements  
and interactions



Seed dispersal is essential in native forests, and many plants depend on animals. Dispersers are not always interchangeable, and they have their own needs.

# How to minimise biodiversity loss

Understand  
ecological  
requirements and  
interactions



Pollination is also essential.  
Different plants have different  
pollinators.

# How to minimise biodiversity loss

Understand  
ecological  
requirements  
and interactions



Forest clearing for facilities can increase edge effects, favouring some species at the expense of others (noisy miner are not 'bad birds', but they do tend to take over in edge habitats)

# How to minimise biodiversity loss

Understand  
ecological  
requirements  
and interactions



It is possible even with a small amount of clearing to jeopardise wildlife, if it includes a food tree that is needed in lean season, hollow trees for nests, etc.

# How to minimise biodiversity loss

Understand ecological requirements and interactions



And chains of dependency can be broken – e.g. birdwing caterpillar needs vine which needs a gnat which needs mountain streams

# How to minimize biodiversity loss

Understand potential external threats (e.g. climate change, habitat fragmentation etc.)



# How to minimize biodiversity loss

Understand potential external threats (e.g. climate change, habitat fragmentation, etc.) **so we can avoid making these threats worse, & maybe help mitigate/reverse some of them**



# How to minimize biodiversity loss

- Understand potential impacts of proposal

# How to minimize biodiversity loss

Develop sound management plan including adequate monitoring



# How to minimize biodiversity loss

- Find out what is there
- Understand ecological requirements and interactions
- Understand potential external threats (e.g. climate change, habitat fragmentation)
- Understand potential impacts of proposal
- Develop sound management plan including adequate monitoring

# We do have a natural advantage

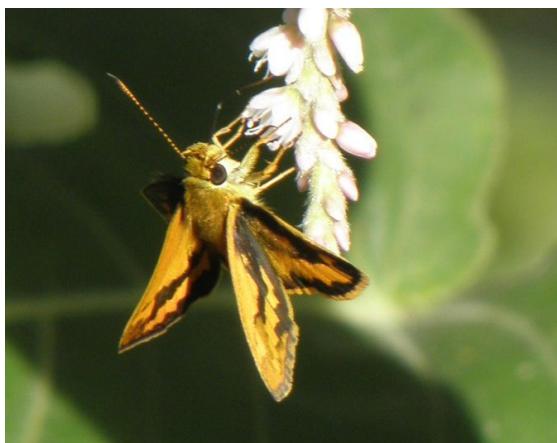


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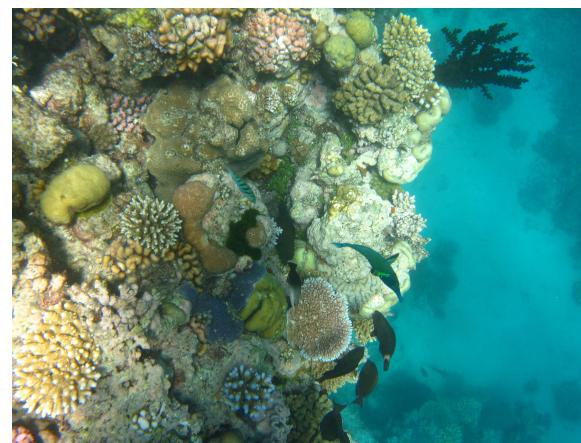
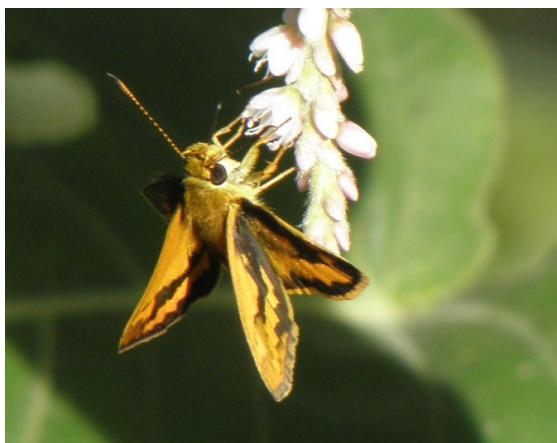
Let's make sure we protect it

# We do have a natural advantage



Let's make sure we protect it – ALL of it!

# We do have a natural advantage



Let's make sure we protect it – ALL of it!

Wildlife Tourism Australia

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