

# BUILD IT AND THEY *STILL* MAY NOT COME

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Using new knowledge to move beyond  
physical restoration of wildlife habitat

Prof Michael Mahony, Dr John Clulow and Alexandra Callen

RESTORATION

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SCIENCE

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CONSERVATION

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# RESTORATION

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'Success is stumbling from failure to failure  
with no loss of enthusiasm'

WINSTON CHURCHILL

In the beginning.....



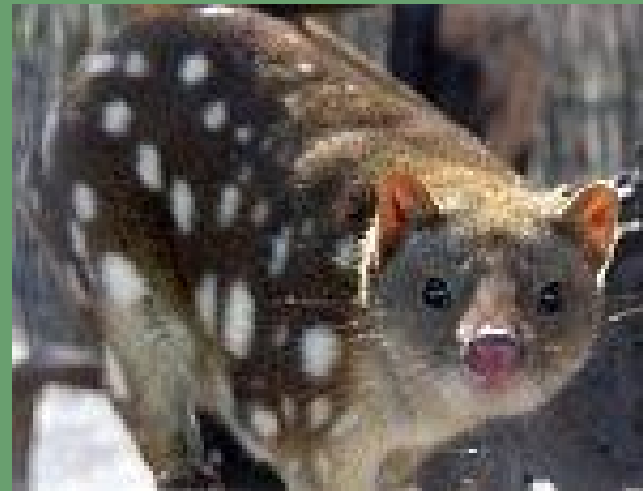
...restoration ecology was not focussed on biodiversity conservation

Wildlife restorations are typically passive...



Source:  
[www.nrm.gov.au/publications/land-management-practice-trends-australia](http://www.nrm.gov.au/publications/land-management-practice-trends-australia)

They focus on structure,



Source:[www.thewebsiteofeverything.com](http://www.thewebsiteofeverything.com)

and hope that wildlife will come

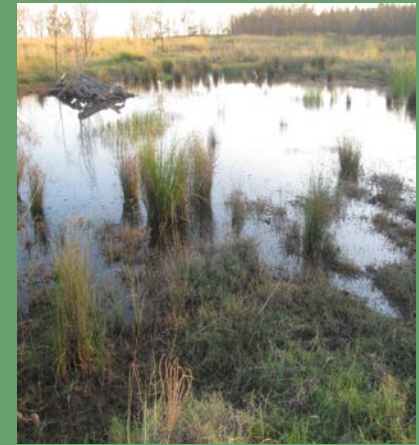
# Very limited data is available on colonisation of restored areas by wildlife



Donaghy's Corridor, north-eastern QLD  
Source: Nigel Tucker



Restored bauxite mines in Western Australia  
Source: J. Restoration Ecology



Mt Owen complex fauna monitoring  
Source: John Clulow

And long-term monitoring often shows establishment of viable populations of generalist or early successional species

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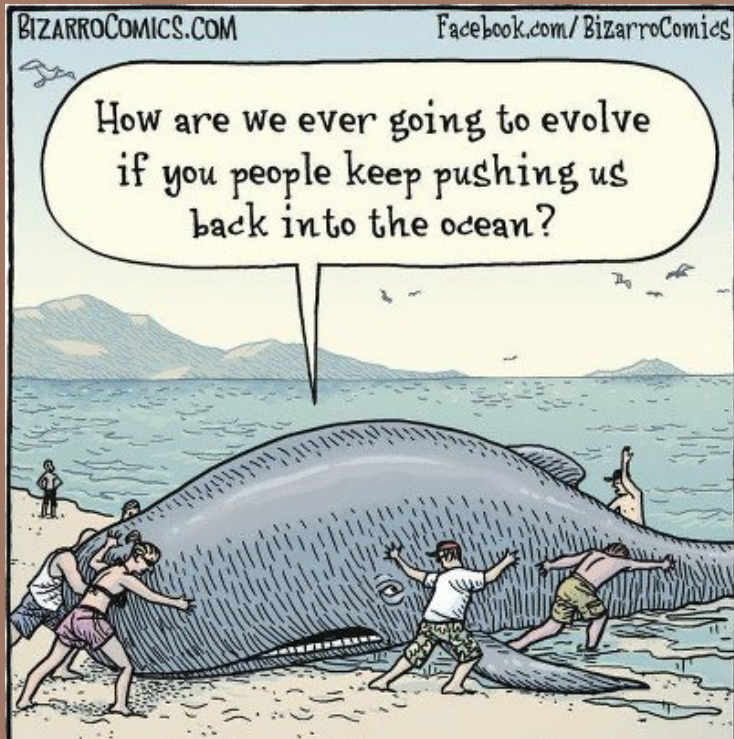
# SCIENCE

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'The only real mistake is the one from  
which we learn nothing'

HENRY FORD

# What we know now that we didn't know then



- Metapopulations & small populations
- It's not always about habitat
  - Synergistic impacts
  - Disease
  - Conspecifics
- Management and monitoring



# Can we hasten wildlife restoration?

## Translocations



Source: [www.kanyanawildlife.org.au/](http://www.kanyanawildlife.org.au/)

## Captive breeding (insurance populations)



Source: Simon de Salis, DPIW

## Propagule pressure



Source: <http://www.portlawns.com/>

## Case Study

# Reversing population declines of a threatened amphibian



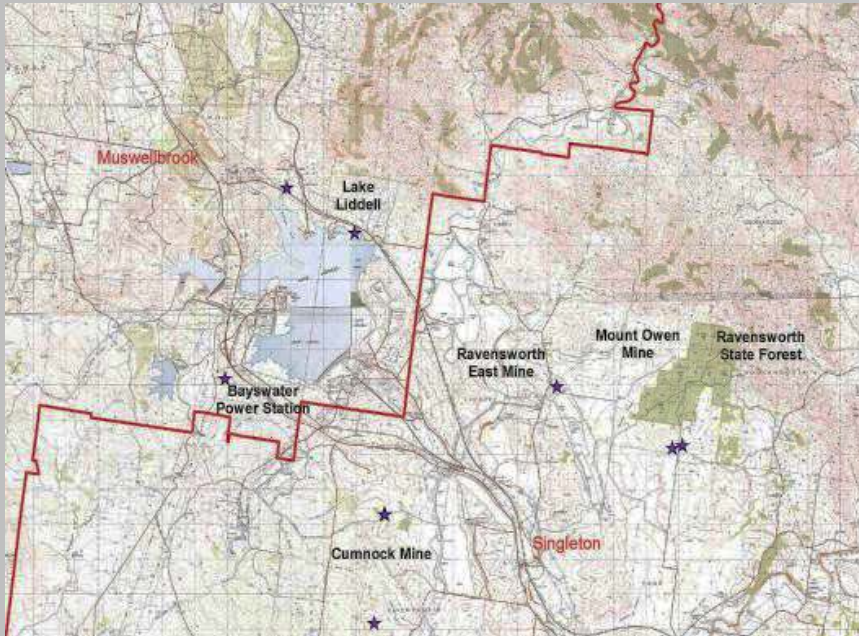
Source: "Litoria aurea range in Australia" Original uploader Tnarg 12345 at en.wikipedia

The green and golden bell frog (*Litoria aurea*)



Source: Emily Gardiner

## Diffuse population of the green and golden bell frog in the Upper Hunter



Source: DECC, 2007

## Artificial ponds created on Main Creek in the Mt Owen offset



Source: John Clulow

# Using new knowledge to make bell frog habitat work

- Habitat manipulations
- Genetics
- Headstarting
- Innate immunity
- Propagule pressure



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# CONSERVATION

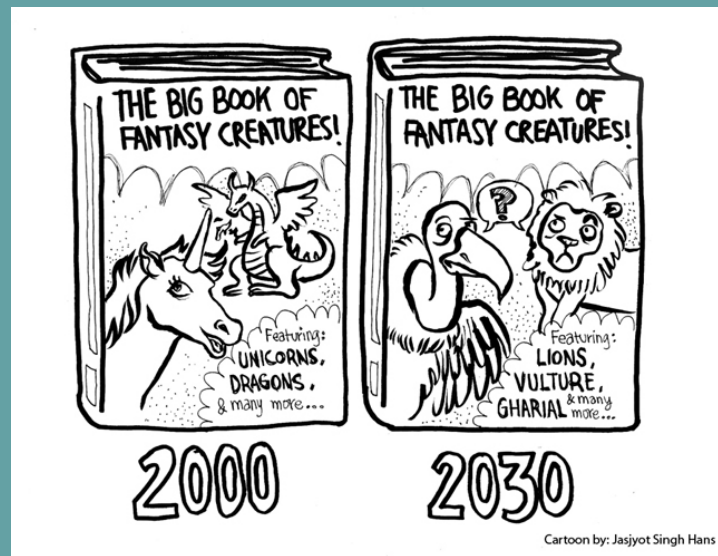
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'Failure isn't fatal but failure to change might be'

JOHN WOODEN



In just over 200 years Australia has recorded over 20 mammal extinctions



The uncertain future of many more species suggests that wildlife colonisation needs to be hastened to ensure successful habitat restoration

Does the new NSW Biodiversity Offsets Policy hold promise for wildlife restoration?



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# CONSERVATION

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'Knowing how to heal isn't a licence for causing harm'

HIPPOCRATIC OATH