

Conservation needs re-focusing on our backyards

Conservation planning efforts apparently need radically re-directing to urban regions if the majority of Australia's native animals are to be protected for the longer term.

According to Dr Gary Luck, an ecologist from Charles Sturt University, while many of our largest and best-known national parks encompass 'wilderness areas' such as deserts and alpine regions, which help protect a proportion of our unique wildlife, most native animals reside on Australia's east coast – in direct conflict with 80% of the country's human population.

'Animals aren't distributed evenly across the landscape,' Luck says.

'For example, deserts have relatively few animal species, while tropical rainforests are abundant in wildlife. What is crucial for conservation management in Australia is the issue that where we find lots of species, we also find lots of people; and in Australia, that's the east coast.'

Studies around the world have demonstrated a correlation between species richness and human population density. Recently, Luck conducted a similar study in Australia and North America, in collaboration with US-based researchers Dr Taylor Ricketts of the World Wildlife Fund, Dr Gretchen Daily of Stanford University and Marc Imhoff of the National Aeronautics and Space Administration (NASA).

The study compared the distribution of species richness for birds, mammals, amphibians, butterflies and reptiles, with human population density, and found a positive correlation for them all, except reptiles.

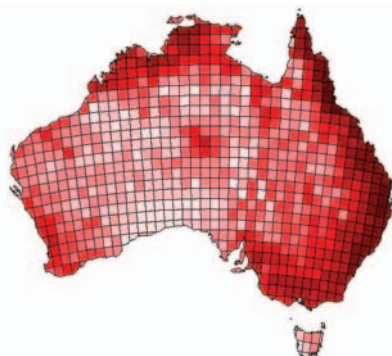
'Most reptiles live in sparsely populated desert regions, but all other taxa are strongly correlated with human settlements in both countries,' Luck says.

This correlation arises because both people and animals are attracted to the most productive landscapes. Luck says early settlers were probably initially drawn to sites with fertile soil and easy access to water, later spreading outwards from these hubs. So what does this mean for conservation?

Current and future issues

According to Luck, the challenge now is to manage the impacts that current and future settlements have in the regions supporting our most productive ecosystems.

In terms of our current settlement patterns, it could be argued that it is too late for conservation. Skyrocketing land



Australia's human populations closely coincide with concentrations of native animal biodiversity. In this map, the darker the coloured squares, the greater the density of biodiversity in those squares.

prices in high-density areas have made conservation an expensive exercise. And even if land were secured close to human communities, conservation efforts could be affected by pollution, recreation, firewood collection, and domestic animals, among other influences.

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However, Luck's research has shown that limited conservation goals could be met.

'We could conserve a representative sample of almost all species, while avoiding areas of high human population density, because many species occur in sites of low as well as high density,' he says.

'But conserving a single representative sample of each species is a poor substitute for the protection of ecosystem processes, viable species populations and other elements of biodiversity.'

It seems the answers lie in how we choose to approach future conservation efforts. Right now we can 'save as much as we can' by retaining habitats in suburbs, but in the future, Luck says, we should consider two major issues: human population growth and conservation of maximum biodiversity within future development frameworks.

Human population growth

Australia's population size is a crucial conservation issue. Given the historical pattern of human settlement, and the like-

lihood that the trend will continue, the high population growth advocated by some will have a huge impact on our ability to conserve species.

'Our society is reaching a point where it must decide its future path,' Luck says.

'We need to consider whether we want to limit development in productive ecosystems and areas containing many native species, and curb urban sprawl by increasing housing density in our major cities. Or should we spread the load more evenly by encouraging people to live in inland regional centres?'

Luck is skeptical of encouraging growth in inland regional areas given the historical settlement patterns around coastal regions. Supporting evidence from the Australian Bureau of Statistics shows that coastal living is becoming an increasingly popular lifestyle choice. If we want to conserve biodiversity, then limiting population growth may be the simplest solution.

Conservation planning

In the meantime, the alternative is careful planning of future settlement patterns. The Queensland Government offered a good example of the way forward recently when it announced the development of a south-east Queensland regional plan. The plan will attempt to halt urban sprawl by passing laws on which areas can and cannot be developed over the next 20 years.

While this is a good, albeit belated initiative, other states such as Tasmania and the Northern Territory, in which population growth is only now ramping up, have the best chance to make a difference.

Luck says historical records and current trends provide clues to where future human settlements may lie. If we can use these clues in conjunction with our knowledge of biodiversity hotspots, we may be able to maximise conservation in those areas before it's too late.

● Wendy Pyper

More information:

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Contact: Dr Gary Luck, (02) 6051 9945, galuck@csu.edu.au