'Affordable housing' for reptiles

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Naturally regrowing woodlands in the subtropics can help to reduce declines in Australia's reptiles, scientists have proposed.

Research at the National Environmental Research Program's (NERP) Environmental Decisions Hub has found that woodlands in the Australian subtropics can be restored as a haven for native reptiles if cleared areas are left to regrow.

In turn, reptiles such as skinks, dragons, and geckos help restore the woodland ecosystems by providing links in the food chain.

"Regrowth can deliver major environmental benefits to subtropical areas in New South Wales, Victoria and the Northern Territory, as well as international regions such as South America," says Professor Clive McAlpine of NERP and The University of Queensland (UQ). "But, in Australia, Queensland has the best opportunity to restore its biodiversity because it has 700,000 hectares of land that are suitable for regrowth."

Researcher Melissa Bruton of UQ explains that by 2000, nearly half of Queensland's regional ecosystems had lost more than 70 per cent of their original area due to extensive land clearing over the previous 150 years. In 2004, the State established laws that significantly reduced clearing activities to protect its threatened ecosystems.

"Subtropical areas that were previously cleared have since been abandoned and left to regrow," Ms Bruton explains.

To find out whether regrowth woodlands can help restore biodiversity, the NERP researchers surveyed and compared reptile communities in cleared, regrowth and intact – uncultivated – woodlands in Queensland's Brigalow Belt Bioregion.

"We found that reptile communities in the regrowth woodlands were indistinguishable from their corresponding communities in intact woodlands," she says. "There was no difference in reptile diversity, species dominance and the composition of reptile communities in regrowth and intact woodlands.

"We were surprised by the results because of how 'young' these regrowth woodlands were. They were between 10 and 23 years old, with the trees only half the height of those in the remnant/intact woodlands. This means regrowth doesn't have to be 'old' to provide high quality habitat for reptiles."

Prof. McAlpine explains that the quick re-colonisation is caused by the woodlands' native plants – eucalypts (gum trees) and acacias (wattles). "These plants dominate the regrowth areas, and because they naturally send up shoots from roots left in the ground, the cleared sites quickly regrow and become homes for the reptiles."

"This shows that we don't have to spend millions of dollars on replanting trees to restore biodiversity," Prof. McAlpine says.

"For subtropical woodlands, simply leaving cleared lands to regrow offers quick, cost-effective and large scale opportunities to reduce the biodiversity declines caused by the over-enthusiastic clearing of vegetation in the past."

"Our study reveals that regrowth areas that are adjacent to remnant woodlands should be prioritised for protection because they provide high

quality habitat for reptiles," Ms Bruton says. "However, conservation of existing woodlands must always be considered a higher priority."

More information: Melissa J. Bruton, Clive A. McAlpine, Martine Maron, Regrowth woodlands are valuable habitat for reptile communities, *Biological Conservation*, Volume 165, September 2013, Pages 95-103, ISSN 0006-3207, dx.doi.org/10.1016/j.biocon.2013.05.018

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