

Zoology

Back where they belong

A marsupial species hit by introduced predators is making a comeback



Michael Dalton

THIS small marsupial is one of 100 eastern barred bandicoots (*Perameles gunnii*) that were released on Phillip Island, near Melbourne, on 21 April.

They are the result of a breeding programme that was led by the Odonata Foundation, Cesar Australia, and the Eastern Barred Bandicoot Recovery Team.

The eastern barred bandicoot was declared extinct in the wild in mainland Australia in 1991, due to habitat loss and hunting by introduced predators such as feral cats and red foxes.

Previous reintroduction efforts struggled because of inbreeding, so, this time, conservationists mixed mainland bandicoots with those from Tasmania – in what they say is a world-first gene-mixing approach. It is hoped that the same approach could one day be used to boost the numbers of other endangered species. ■



JAMES D MORGAN/SWINS

Space

We've just found a record number of planets

ASTRONOMERS have identified more than 10,000 candidate planets in data from a NASA telescope, the most ever found in a single haul.

NASA's Transiting Exoplanet Survey Satellite (TESS) was launched in 2018. It is tasked with looking at stars across the sky for planets in orbit, known as exoplanets. It identifies these exoplanets by looking for brief dips in the brightness of the light reaching Earth from each star – a sign that an exoplanet orbiting the star has passed in front of it.

So far, the telescope has found more than 750 confirmed exoplanets, but it has thousands more candidates awaiting

confirmation. There are other telescopes that have found exoplanets, and the total number of exoplanets confirmed by all telescopes now stands at more than 6000.

Joshua Roth at Princeton University and his colleagues have

10,091
Number of new candidate exoplanets found in telescope data

now announced a much bigger number of possible planets by re-analysing the first year of TESS data. By combining images taken by the telescope, the researchers were able to look for planets

around stars that are less bright, due to their smaller size or greater distance from Earth, than was previously possible. This revealed 11,554 candidate exoplanets, of which 10,091 haven't been identified in previous exoplanet searches ([arXiv, doi.org/q4cb](https://arxiv.org/doi/10.48550/arXiv.2205.12480)).

"There have been predictions that there were thousands of planets still lurking in the TESS data," says Roth. "It just hadn't been searched yet."

The planets extend up to 6800 light years from Earth towards the centre of our galaxy, he says, double the distance TESS was previously able to search. More than 90 per cent of the new planets are hot Jupiters, gas giant worlds

that orbit incredibly close to their star and in just a few days. TESS is particularly suited to finding such worlds. A much smaller fraction are Neptunes and super-Earths.

However, not all of them will turn out to be real planets, with each needing to be independently followed up by other telescopes. Some could be false positives, such as binary stars or other blips in the data. "TESS usually has a false positive rate of 50 per cent," says Roth. "I would say a maximum of 5000 are real planets", and possibly just 3000 are, he says.

Even then, the trove would increase the number of known exoplanets in the universe by half. ■
Jonathan O'Callaghan