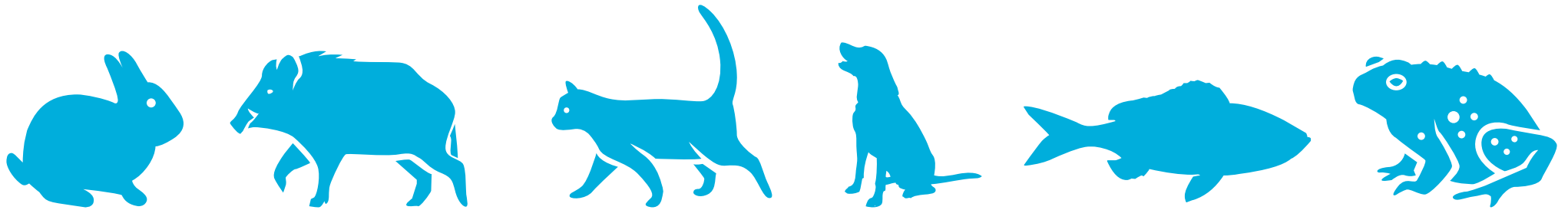


# SYNTHETIC BIOLOGY: Managing invasive pests

[www.csiro.au](http://www.csiro.au)



**Many animals have been introduced into Australia. Some of these animals have become feral, which means they live and reproduce in the wild and do not depend on humans for survival.**



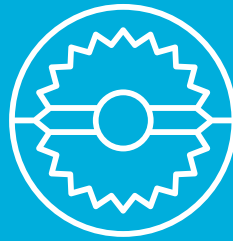
**Feral rabbits, pigs, cats, dogs, carp and cane toads are all species that have established populations in Australia.**

**These animals have a significant impact on Australia's environment, threatening natural landscapes, native flora and fauna, and overall biodiversity. Invasive feral animals also negatively impact agriculture, and can spread disease.**

Currently, invasive pest species are controlled through manual methods, such as:



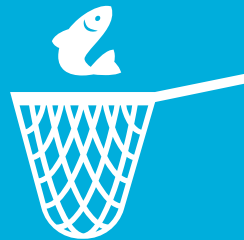
Baiting/poisoning



Trapping



Hunting



Electrofishing  
(for carp)

But these methods are not keeping up with the rate at which these pest populations are increasing.



Current methods are also labour-intensive, expensive and can unintentionally harm native species.

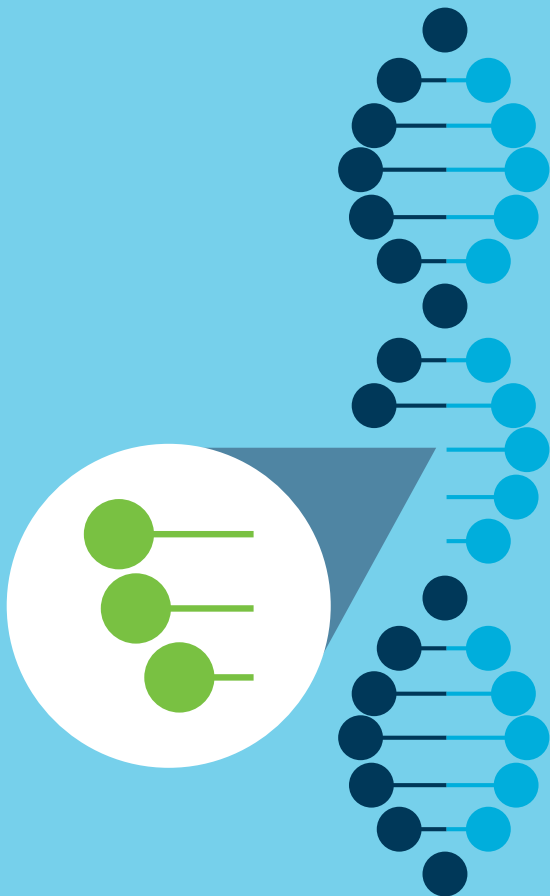
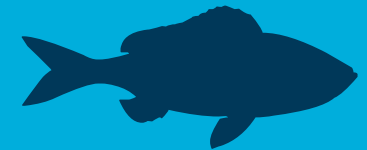


# With new synthetic biology technology, it may be possible to reduce or eliminate populations of invasive pests.

**Example 1.** The genes of feral cats could be modified so that all offspring are a single sex (e.g. male only), reducing opportunities to mate and decreasing the population over time.

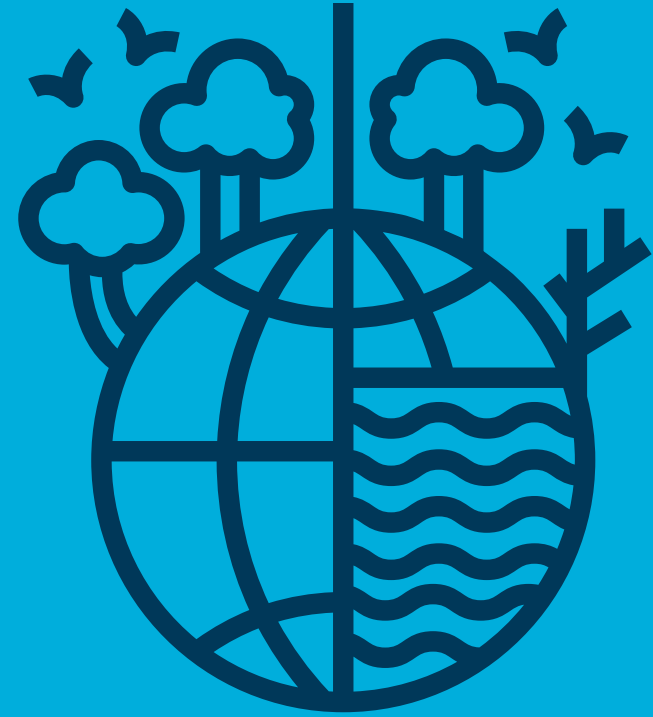


**Example 2.** The genes of European carp could be modified so that females only produce infertile males, reducing carp numbers over several generations.

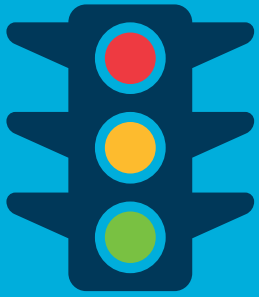




**This would mean that, over time, pest species would reproduce less and their populations could be contained. Some feral species may eventually die out.**



Managing pest species in this way could help to increase biodiversity and ensure no further damage to Australian fauna, flora and natural landscapes.



## This technology would likely be approved and/or regulated by:

The Office of the Gene  
Technology Regulator

The State-based  
Biosecurity legislation

The Environment Protection and  
Biodiversity Conservation Act

The RSPCA

Together, these regulatory bodies and standards would ensure that:

- The research and development occurs under controlled laboratory conditions, and
- Any environmental, ecological and health risks or concerns are properly reviewed and addressed.



## Australian residents like you may have the opportunity to ...

Take part in public events where scientists share their research on the technology

Participate in online or face-to-face discussions to ask questions and share your thoughts about the technology

Sign up to receive regular updates on the technology development

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