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# Fireworks have long lasting impacts on wildlife

By **Chrissy Sexton**  
Earth.com staff writer

In a new study led by [Curtin University](#), experts report that fireworks should be replaced with cleaner drone and laser light shows to prevent “highly damaging” impacts. Lead author Professor Bill Bateman noted that fireworks remain globally popular despite the overwhelming evidence that they negatively impact wildlife, domestic animals, and the environment.

“Fireworks create short-term noise and light disturbances that cause distress in domestic animals that may be managed before or after a firework event, but the impacts to wildlife can be on a much larger scale,” said Professor Bateman.

Quiz

As of 2023, how many subspecies of goatfish have been discovered?

50  
60  
70  
80

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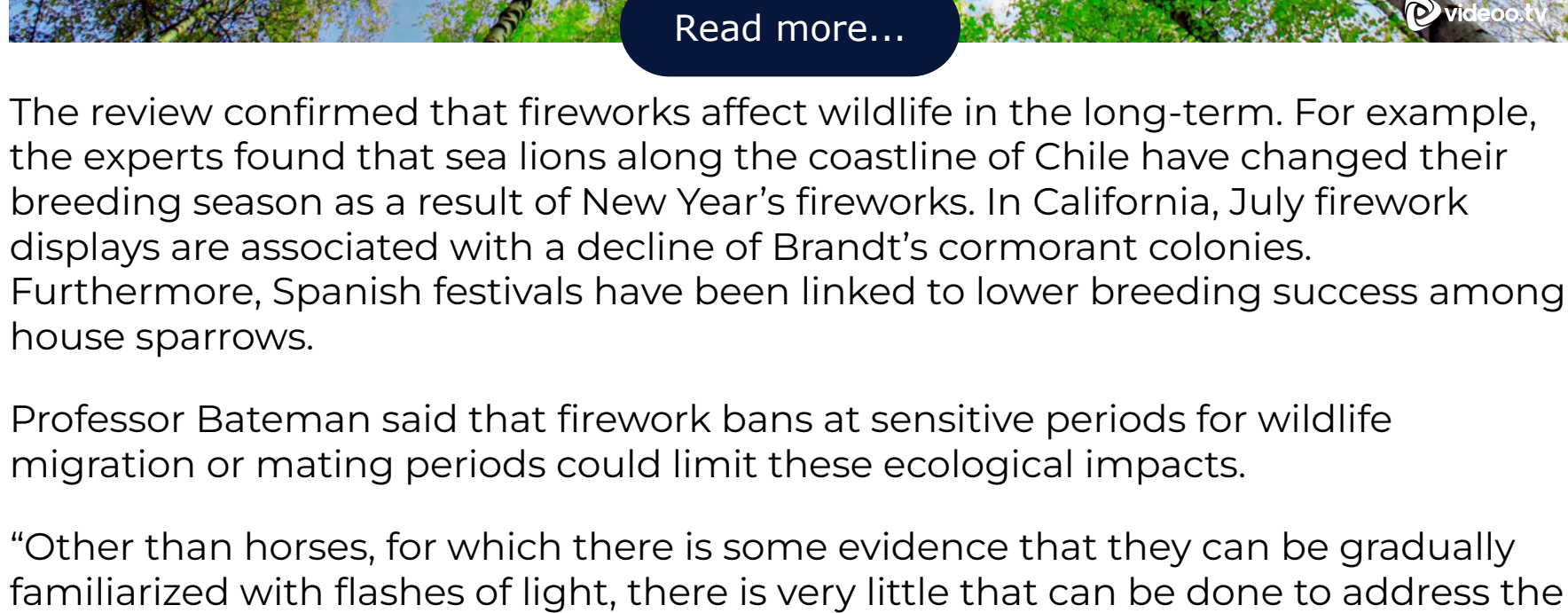
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“The annual timing of some large-scale firework events coincides with the migratory or reproductive movements of wildlife, and may therefore have adverse long-term population effects on them. Fireworks also produce significant pulses of highly pollutant materials that also contribute significantly to the chemical pollution of soil, water, and air, which has implications for human as well as animal health.”

To investigate the potential harm caused by firework displays, the researchers reviewed the ecological effects of Diwali festivities in India, Fourth of July celebrations across the United States, and other events in New Zealand and Europe.



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The review confirmed that fireworks affect wildlife in the long-term. For example, the experts found that sea lions along the coastline of Chile have changed their breeding season as a result of New Year’s fireworks. In California, July firework displays are associated with a decline of Brandt’s cormorant colonies. Furthermore, Spanish festivals have been linked to lower breeding success among house sparrows.

Professor Bateman said that firework bans at sensitive periods for wildlife migration or mating periods could limit these ecological impacts.

“Other than horses, for which there is some evidence that they can be gradually familiarized with flashes of light, there is very little that can be done to address the disturbing impact of noise from fireworks on animals and wildlife,” said Professor Bateman.

“The future of firework displays may be in the use of safer and greener alternatives such as drones, eco-friendly fireworks or visible-wavelength lasers for light shows.”

“There is growing evidence that these community events can be managed in a sustainable way and it’s clear that out-dated firework displays need to be replaced by cleaner options that are not harmful to wildlife and the environment.”

The study authors noted that firework residues also contribute significantly to chemical pollution of soil, water, and air, which has implication for human as well as animal health.

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“Modern technological alternatives to traditional fireworks – both ‘eco-friendly’ fireworks, and reusable drone and laser-based light shows – provide safer, ‘greener’ alternatives that also present a sustainable way forward for maintaining cultural traditions without perpetuating their adverse impacts,” wrote the researchers.

The study is published in the journal [Pacific Conservation Biology](#).

By [Chrissy Sexton](#), [Earth.com](#) Editor

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