

# Short-term bang of fireworks has long-term impact on wildlife: Study

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Popular fireworks should be replaced with cleaner drone and laser light shows to avoid the "highly damaging" impact on wildlife, domestic pets and the broader environment, new Curtin-led research has found.

The new research, published in *Pacific Conservation Biology*, examined the environmental toll of firework displays by reviewing the ecological effects of Diwali festivities in India, Fourth of July celebrations across the United States of America, and other events in New Zealand and parts of Europe.

Examples included [fireworks](#) in Spanish festivals impacting the breeding success of House Sparrows, July firework displays being implicated in the decline of Brandt's Cormorant colonies in California, and South American sea lions changing their behavior during breeding season as a result of New Year's fireworks in Chile.

Lead author Associate Professor Bill Bateman, from Curtin's School of Molecular and Life Sciences, said fireworks remained globally popular despite the [overwhelming evidence](#) that they negatively impacted [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," Associate Professor Bateman said.

"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](#)."

Associate Professor Bateman said firework bans at sensitive periods for wildlife migration or mating periods could limit the impact, as well as drone or other light-based shows.

"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," Associate Professor Bateman said.

"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 full paper, "Not just a flash in the pan: short and long term impacts of fireworks on the environment," is available [online](#).

**More information:** Philip W. Bateman et al, Not just a flash in the pan: short and long term impacts of fireworks on the environment, *Pacific Conservation Biology* (2023). [DOI: 10.1071/PC22040](https://doi.org/10.1071/PC22040)

Provided by Curtin University

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