

The Lord God Bird and Dozens of Other Species Declared Extinct in 2021

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This year scientists identified birds, lizards, orchids and other species that have been lost. How many more will follow?... And of course, all these disappearances can be linked to human activities — a reminder of the effect we have around us.



The extinct ivory-billed woodpecker. Photo: James St. John (CC BY 2.0)

On September 29, 2021, the U.S. Fish and Wildlife Service announced its intention to remove 23 long-unseen species from the protection of the Endangered Species Act — because they’ve probably gone extinct, and you can’t keep protecting what’s already gone.

Among the proposed dead: the ivory-billed woodpecker, an iconic lost species often referred to as “the Lord God bird,” supposedly based on the words of wonder people once exclaimed upon seeing the magnificent creature flying above them.

The news set off a firestorm of media coverage and social-media shares.

The similar extinction of a frog from Kenya did not. Nor did that of a lichen from Florida, a dragonfly from the South Atlantic or a fish from Maryland.

And that’s all too typical of the extinction crisis, which United Nations scientists predict could cost the planet up to a million species this century — most of which will disappear in silence, unnoticed, unremarked upon, even as the web of life that supports humans on this planet continues to unravel.

Yet the stories of these losses deserve telling. They help motivate efforts to save what still exists, allow us to reflect on our place in and on this world, and — especially in this age of pandemics — remind us that our ecological fates are all interconnected.

Here, briefly, are dozens of these stories — of the birds, reptiles, invertebrates, trees and other species declared extinct in 2021, pulling from scientific reports, the IUCN Red List, news articles and my own reporting. As with my lists of extinctions from 2019 and 2020, most of these lost species haven't been seen in decades. Many may still be the subject of later searches, because proving an extinction is always hard, and hope remains eternal.

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The Lord God bird and 22 other American species — These birds, mussels, fish and other long-unseen species from the contiguous United States, Hawai'i and Guam disappeared due to human activity, ranging from habitat destruction to pollution and the introduction of nonnative species. Most hadn't been seen in decades; all were added to the endangered species list too late to save them.

- Bachman's warbler
- Bridled white-eye
- Flat pigtoe mussel
- Green-blossom pearly mussel
- Ivory-billed woodpecker
- Kauai akialoa
- Kauai nukupuu
- Kaua'i 'ō'ō
- Large Kauai thrush
- Little Mariana fruit bat
- Maui ākepa
- Maui nukupu'u
- Molokai creeper
- *Phyllostegia glabra* var. *lanaiensis*
- Po'ouli
- San Marcos gambusia
- Scioto madtom
- Southern acornshell mussel
- Stirrupshell mussel
- Tubercled-blossom pearly mussel
- Turgid-blossom pearly mussel
- Upland combshell mussel
- Yellow-blossom pearly mussel

Maryland darter — This 3-inch fish hasn't been seen since 1988, despite intense searches for any evidence of its continued existence. As with the ivory-billed woodpecker, the U.S. Fish and Wildlife Service is now preparing to declare it extinct.

Norwegian wolf — Hunters and agriculture killed off the last wolves in Norway and Sweden more than 50 years ago. They were never a separate species, but research published this past year found that the wolves in these two countries were genetically distinct from the animals in nearby Finland, which have since partially repopulated their cousins' home territory.

Half the snakes and lizards of the Guadalupe Islands — Two papers published last year identified at least 31 species (which people had forgotten even existed) that disappeared after the 1492 colonization of the islands. Introduced species such as cats and rats, along with intense transformation of the landscape by humans, appears to be to blame.

13 Australian species — This list of 12 mammals and one reptile (the Christmas Island forest skink) contains no real surprises. The species had all been declared extinct already, but the Australian government acknowledged their loss this past year and formally added them to its list of the country's extinctions.

Eungella gastric-brooding frog — This Australian frog may be the latest victim of the amphibian-killing chytrid fungus. A last-ditch search this past year failed to find any individual frogs, and although the species hasn't yet been formally declared extinct, things don't look good. On the other hand, the researchers did observe three other critically endangered species in the same habitats, and they now have a chance at protection.

Epactoides giganteus — This dung beetle was newly described in 2021, based on a specimen collected on either Réunion Island or Madagascar in the 19th century and unseen since. Wherever it came from, it's probably no longer there.

Gongylomorphus borbonicus — Another Réunion species, in this case a skink not seen since 1839, shortly after the accidental introduction to the island of the lizard-eating Southeast Asian wolf snake. The IUCN formally declared it extinct this past year.

Java stingaree — This Indonesian ray was only observed once, back in 1862. As part of an assessment finding that more than one-third of sharks and related species are now threatened, scientists have classified it as “critically endangered (possibly extinct)” due to overfishing. It joins the previously reported “lost shark” and the Red Sea torpedo in that category.

Xerces blue butterfly — No surprise here, as the striking butterfly was last seen in the 1940s and has long been considered the first North American insect driven to extinction by human activities (in this case urban development). But new genetic analysis of remaining specimens finally concluded that the Xerces blue was a unique species, not a subpopulation of another butterfly, as some had previously thought, making that extinction even more notable.

Carolina parakeet — Again, no surprise, as this bird was declared extinct in 1939 after decades of hunting for its feathers and to protect crops. But new models suggest that the parakeet actually went extinct twice, with the western subspecies disappearing around 1914 and the eastern subspecies persisting as late as the mid-1940s. Why does that matter now? As researchers wrote, “Since the Carolina parakeet was a wide-ranging species that went extinct during a period of rapid agricultural and industrial expansion, conditions that mirror those occurring in many parts of the world where parrot diversity is highest, any progress we make in unraveling the mystery of their disappearance may be vital to modern conservation efforts.”

Four Czech orchids — A thorough assessment of the orchids found in the Czech Republic classified four species as extinct: *Dactylorhiza curvifolia*, *Gymnadenia odoratissima*, *Anacamptis coriophora* and *Herminium monorchis* (some of these still exist in other nations). Agriculture, livestock and pollution get the blame for the disappearance of these plants in the country — and the remaining orchid species there aren't doing too well, either.

Cora timucua — This Florida lichen was identified this past year, after sitting in historical collections for decades. The fungus was last collected in 1985 and most of its known habitats have been converted from their natural states. Researchers call this species “potentially extinct” and say it could still exist in Ocala National Forest, “although recent macrolichen surveys in that area did not encounter this species.”

Du Toit’s torrent frog — Last seen on Kenya’s Mount Elgon in 1962, this evolutionarily unique frog was part of a group of species that split off from other amphibians 70 million years ago. More recently, its habitat was destroyed by logging and agriculture. Intense searches have failed to find evidence that the frog still exists, and a paper published in 2021 concluded it’s probably extinct. “It’s not just losing a species, it is losing a distinctive branch of the evolutionary tree,” said coauthor Simon Loader of the Natural History Museum, London.

Arachis rigonii — No one has seen this yellow-flowering South American legume — a relative of the peanut and nutmeg — in the wild since 1959, and they likely won’t see it again. It only grew in one location, which is now “in one of the most populated cities of Bolivia,” according to the IUCN, which declared it “extinct in the wild” in 2021.

Rodrigues blue-dotted day gecko — Native to the island nation of Mauritius — famously also home to the dodo — this once-common reptile hasn’t been seen in more than 100 years. The IUCN declared it extinct this past year, blaming its disappearance on invasive rats, and possibly on the cats brought to the island to control the rats. Deforestation also likely played a role in this extinction.

Bois Julien — Also from Mauritius, this tree isn’t technically extinct, but you can’t get much closer to gone. One wild specimen remains, fenced in on private property, “but it is not producing viable fruits,” according to the IUCN, which declared the species “extinct in the wild” last year. Several nonfruiting clones also exist, but the likelihood of propagation or rewilding seems slim.

Myoporum rimatarense — This tree from French Polynesia was only collected once, back in 1921, and extensive plant surveys have failed to find another. The IUCN declared it extinct this past year, blaming habitat destruction and logging for its loss.

Bourreria veracruzana — No one has seen this Mexican tree since 1984. The IUCN declared it extinct in 2021, blaming habitat degradation “by agro-industry farming and agro-industry-ranching.”

Tetramolopium lepidotum arbusculum — This Hawaiian plant, part of the daisy family, once grew on the island of Maui. Last seen in 1842, the IUCN assessed it as extinct this past year, blaming “severe decline in habitat due to the impacts of invasive plants and animals.”

Boesenbergia albolutea* and *Boesenbergia rubrolutea — Neither of these plants (ginger relatives native, respectively, to the Andaman Islands in the Indian Ocean and northeastern India) have been seen since the late 19th century. A paper published last year recommended classifying them each as “extinct in the wild,” although they remain unseen. The IUCN currently lists *B. albolutea* as “data deficient” but does not have a listing for *B. rubrolutea*.

St. Helena darter — This dragonfly, native to the South Atlantic volcanic island for which it’s named, was last seen in 1963, when a single female was collected. The species was assessed as extinct in 1986, then listed by the IUCN as “data deficient” in 2011, and then “critically endangered (possibly extinct)” in 2019. Last year it was reassessed again, removing the “possibly” from the equation — although the invasive frogs that killed it off appear to be doing just fine.

Licaria mexicana — An evergreen tree from Hidalgo and Veracruz, Mexico, last seen around 1930 and unlikely to persist “as a result of forest clearance in the area and habitat completely destroyed where it was known from,” according to the IUCN.

Gallirallus astolfoi — Scientists described this rail, a type of bird, in a paper published Dec. 20, making it the last reported extinction of 2021. This potentially flightless bird from the island of Rapa Iti in the South Pacific is known only from a single leg bone, although that was enough to declare it a “new” species — the seventh extinct rail species from French Polynesia. This one probably went extinct hundreds of years ago after humans colonized the island. Other extinctions on Rapa Iti have been blamed on predation by people and feral goats, as well as rats and cats, along with habitat destruction. Exactly how this species disappeared remains a mystery.