

Earliest known seed-eating perching bird discovered in Fossil Lake, Wyoming

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The 52-million-year-old fossil of *Eofringillirostrum boudreauxi*, the earliest known perching bird with a beak for eating seeds. Credit: (c) Lance Grande, Field Museum

Most of the birds you've ever seen—sparrows, finches, robins, crows—have one crucial thing in common: they're all what scientists refer to as perching birds, or "passerines." The passerines make up about 6,500 of the 10,000 bird species alive today. But while they're everywhere now, they were once rare, and scientists are still learning about their origins. In a new paper in *Current Biology*, researchers have announced the discovery of one of the earliest known passerine birds, from 52 million years ago.

"This is one of the earliest known perching birds. It's fascinating because passerines today make up most of all [bird species](#), but they were extremely rare back then. This particular piece is just exquisite," says Field Museum Neguanee Distinguished Service Curator Lance Grande, an author of the paper. "It is a complete skeleton with the feathers still attached, which is extremely rare in the fossil record of birds."

The paper describes two new fossil bird species—one from Germany that lived 47 million years ago, and another that lived in what's now Wyoming 52 million years ago, a period known as the Early Eocene. The Wyoming bird, *Eofringillirostrum boudreauxi*, is the earliest example of a bird with a finch-like beak, similar to today's sparrows and finches. This legacy is reflected in its name; *Eofringillirostrum* means "dawn finch beak." (Meanwhile, *boudreauxi* is a nod to Terry and Gail Boudreaux, longtime supporters of science at the Field Museum.)"

The fossil birds' finch-like, thick beaks hint at their diet. "These bills are particularly well-suited for consuming small, hard seeds," says Daniel Ksepka, the paper's lead author, curator at the Bruce Museum in Connecticut. Anyone with a birdfeeder knows that lots of birds are nuts for seeds, but seed-eating is a fairly recent biological phenomenon. "The earliest birds probably ate insects and fish, some may have been eating small lizards," says Grande. "Until this discovery, we did not know much about the ecology of early passerines. *E. boudreauxi* gives us an

important look at this."



Researchers in the field at Fossil Lake, Wyoming, prying up a slab of rock containing fossils. Credit: (c) Lance Grande, Field Museum

"We were able to show that a comparable diversity of bill types already developed in the Eocene in very early ancestors of passerines," says co-author Gerald Mayr of the Senckenberg Research Institute in Frankfurt. "The great distance between the two fossil sites implies that these birds were widespread during the Eocene, while the scarcity of known fossils suggests a rather low number of individuals," adds Ksepka.

While passerine birds were rare 52 million years ago, *E. boudreauxi* had the good luck to live and die near Fossil Lake, a site famous for perfect fossilization conditions.

"Fossil Lake is a really graphic picture of an entire community locked in stone—it has everything from fishes and crocs to insects, pollen, reptiles, birds, and early mammals," says Grande. "We have spent so much time excavating this locality, that we have a record of even the very rare things."



Scientists in the field at Fossil Lake, Wyoming, sawing apart rock to free fossils.
Credit: (c) Lance Grande, Field Museum

Grande notes that Fossil Lake provides a unique look at the [ancient world](#)—one of the most detailed pictures of life on Earth after the extinction of the dinosaurs (minus the [birds](#)) 65 million years ago. "Knowing what happened in the past gives us a better understanding of the present and may help us figure out where we are going for the future."

With that in mind, Grande plans to continue his exploration of the locale. "I've been going to Fossil Lake every year for the last 35 years, and finding this bird is one of the reasons I keep going back. It's so rich," says Grande. "We keep finding things that no one's ever seen before."

The study is published in *Current Biology*.

Provided by Field Museum

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