



THE SEARCH FOR LOST SPECIES

EVEN SPECIES LOST FOR DECADES CAN BE FOUND AGAIN.

Four times bigger than the European honey bee, Wallace's giant bee, below, is the largest bee in the world. Photograph by Clay Bolt.



It turns out the largest bee on Earth is good at hiding. No one had reported seeing Wallace's giant bee, which is four times larger than a European honey bee, since 1981. Some feared the species had gone extinct. Then, in 2019, a search team found a single female bee in Indonesia. "It was absolutely breathtaking to see this 'flying bulldog' of an insect that we weren't sure existed anymore, to have real proof right there in front of us in the wild," says Clay Bolt. He's the photographer who took photos and videos of the insect, proving it still existed.

There are thousands of species like Wallace's giant bee around the world: rare animals and plants that haven't been seen in the wild for years. These "lost species" may still be out there, likely holding on in remote and unexplored corners of our planet.

Or it's possible they may have gone extinct. But to prevent extinction and protect these species, we must find them first.

Most Wanted Species

That's the mission of the Search for Lost Species campaign. The conservation group Re:wild, which was co-founded by actor Leonardo DiCaprio, launched this global effort in 2017. They define lost species as those not seen in at least 10 years.

Re:wild worked with an international team of more than 100 scientists to come up with a list of 2,100 animals and plants that fit their criteria. From these, they selected the 25 "most wanted"—which turned out to be 24 animals and one plant—to serve as poster species for the campaign.

"We started the Lost Species campaign to focus on neglected and overlooked species," says Barney Long, the senior director of conservation strategies at Re:wild. "It's important to conserve pandas and tigers, but there are so many species out there that need help and are not getting it."



Field workers search in the small country of Djibouti, located on the northeast coast of the Horn of Africa.



The Somali sengi, a type of elephant shrew the size of a mouse, was rediscovered in Djibouti.



Re:wild is trying to inspire people to search for lost species and supports expeditions all over the world. In the first five years of the campaign, eight of the top 25 "most wanted" species have been found. Wallace's giant bee was one of these success stories.

From Lost to Found

Many of the search efforts depend upon the knowledge and involvement of local partners. For example, the Somali sengi, a type of elephant shrew, was only known to live in the African country of Somalia. But interviews with local people helped a search team focus their efforts in the neighboring country of Djibouti. Once they knew where to look, the team set live traps baited with peanut butter, oatmeal, and yeast. The very first trap they set caught a Somali sengi, the first officially recorded sighting of one since 1968. In total, the team saw 12 sengis during their expedition.

Sometimes, discoveries come when they are least expected. The first species on the top 25 list to be rediscovered was Jackson's climbing salamander. This tree-dwelling amphibian had not been seen since it was first recorded in Guatemala in 1975. An amphibian reserve was created in northern Guatemala in 2015 to help protect the habitat of this and other species, but searches had turned up no sign of the animal.

Then, a few months before another search party was to set out, park ranger Ramos Leon-Tomas spotted a salamander while patrolling the reserve. He recognized it as a Jackson's climbing salamander due to earlier training the rangers had received to help them look for and identify this species. His photos confirmed that the salamander was still out there.

"It goes to show you that anyone can find these lost species, if they are willing to put the time and effort in," says Long. "You don't need to be a scientist. Anyone with the interest and ability can find a species."



Jackson's climbing salamander was spotted in northern Guatemala.



The sighting of the silver-backed chevrotain in Vietnam in 2019 is considered a significant mammal rediscovery.



Conservation Plans

Once a species is rediscovered, Re:wild goes to work with local and international partners on developing a conservation strategy. Such efforts depend on the particulars of the species, its habitat, and the threats it faces.

Take the silver-backed chevrotain, a small, deer-like animal lost since 1990. Also known as the Vietnamese mouse-deer, the species is about the size of a rabbit and has two small fangs. A team rediscovered it in 2019 in a coastal forest of Vietnam. More recently, the researchers have been working to understand how many silver-backed chevrotains exist, where they can be found, and what threatens their survival. The team will use this information to develop a conservation action plan for the species.

For the Jackson's climbing salamander, rediscovery helped generate publicity for a fundraising campaign to expand the reserve where the salamander was found. This will benefit not just the salamander but all the other species that share its cloud forest home.

Long says the success of the Lost Species campaign so far illustrates that we still know very little about our world. "Despite the fact that there are seven billion-plus of us humans on the planet, there are still pockets of wilderness out there," he says.



In 2020, locals and scientists rediscovered the black-browed babbler in Borneo after 172 years!



Searching for lost species takes effort. Sometimes it means moving to a higher elevation (above), other times setting up camera traps (right).



HOW TO SEARCH FOR LOST SPECIES

Anyone can help rediscover a lost species. It doesn't matter if you don't live in a rainforest or desert—surprisingly, many lost species are found close to towns. Barney Long, the senior director of conservation strategies at Rewild, suggests you start by checking out the full list of 2,100 lost species to see if any were last seen near where you live. (Visit www.rewild.org/lost-species.) Next, get the iNaturalist app for recording your observations. Within the app, there is a lost species page where you can record sightings and crowdsource identifications with experts. Who knows, you might make a surprising discovery—and help save a species!

"The fact that we have found eight of the top 25 missing species shows that there is hope that we can find lost species," he says. "We can turn these forgotten species into the superstar conservation success stories of the future."

Mary Bates is a science writer based outside Boston, Massachusetts. She hopes her writing draws attention to issues faced by plants and animals around the world, both well-known and newly rediscovered.