

Butterfly on a bomb range: Endangered Species Act at work

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A St. Francis' satyr butterfly rests on a leaf in a swamp at Fort Bragg in North Carolina on Monday, July 29, 2019. It's wing was marked for identification by a biologist studying the rare insect. (AP Photo/Robert F. Bukaty)

In the unlikely setting of the world's most populated military installation,

amid all the regimented chaos, you'll find the Endangered Species Act at work.

There, as a 400-pound explosive resounds in the distance, a tiny St. Francis Satyr butterfly flits among the splotchy leaves, ready to lay as many as 100 eggs. At one point, this brown and frankly dull-looking butterfly could be found in only one place on Earth: Fort Bragg's artillery range.

Now, thanks in great measure to the 46-year-old federal act, they are found in eight more places—though all of them are on other parts of the Army base. And if all goes well, biologists will have just seeded habitat No. 10.

One of Earth's rarest butterfly [species](#), there are maybe 3,000 St. Francis Satyrs. There are never going to be enough of them to get off the endangered list, but they're not about to go extinct either. They are permanent patients of the bureaucratic conservation hospital ward.

In some ways, the tiny butterfly is an ideal example of the more than 1,600 U.S. species that have been protected by the Endangered Species Act. Alive, but not exactly doing that well.

To some experts, just having these creatures around means the 46-year-old law has done its job. More than 99.2% of the species protected by the act survive, The Associated Press has found. Only 11 species were declared extinct, and experts say all but a couple of them had already pretty much died out when they were listed.



Nick Haddad, left, watches a captive-bred female St. Francis' satyr butterfly fly off after it was released into the wild at Fort Bragg in North Carolina on Monday, July 29, 2019. Haddad has been studying the rare butterfly for more than 15 years. (AP Photo/Robert F. Bukaty)

On the other hand, only 39 U.S. species—about 2% of the overall number— have made it off the endangered list because of recovery, including such well-known successes as bald eagles, peregrine falcons and American alligators.

Most of the species on the endangered list are getting worse. And only 8% are getting better, according to a 2016 study by Jake Li, director for biodiversity at the Environmental Policy Innovation Center in Washington.

"Species will remain in the Endangered Species Act hospital indefinitely. And I don't think that's a failure of the Endangered Species Act itself," Li says.

The Endangered Species Act "is the safety net of last resort," says Gary Frazer, assistant director of ecological services at the U.S. Fish and Wildlife Service, which administers the law. "We list species after all other vehicles of protection have failed."



A St. Francis' satyr butterfly rests on sedge in swamp at Fort Bragg in North Carolina on Monday, July 29, 2019. One of Earth's rarest butterfly species, there are maybe 3,000 specimens. (AP Photo/Robert F. Bukaty)

The act was signed into law by Republican President Richard Nixon on Dec. 28, 1973. It had been passed overwhelmingly—the House voted 355 to 4 in favor and Senate approval was unanimous, margins that seem unthinkable today.

The law was designed to prevent species from going extinct and to protect their habitat. It instructed two federal agencies—the Fish and Wildlife Service and the National Marine Fisheries Service—to draw up a list of species endangered or threatened with extinction.

Under the law, it is unlawful to "harass, harm, pursue, hunt, shoot, wound, kill, trap, capture or collect" endangered animals, and it also forbids the elimination of their habitats. At first, only animals were protected, but eventually plants were protected, too.

The law caused all sorts of environmental showdowns in the 1970s and 1980s—most notoriously, the fight over the construction of the Tellico Dam in Tennessee, which threatened the tiny snail darter fish. In the end, the Supreme Court ruled in favor of the fish, but Congress exempted the dam from the law.



A chrysalis of a St. Francis' satyr butterfly clings to a sedge blade in a controlled greenhouse facility at Fort Bragg in North Carolina on Monday, July 29, 2019. Biologists studying the rare butterfly are working to increase its range and population. (AP Photo/Robert F. Bukaty)

Now, the act is in contention once again. In September, President Donald Trump's administration changed the endangered species process in ways that some say weaken the law. Critics say one change would allow costs to industry to be taken into account when deciding how to protect species.

Even putting that aside, the act has its costs. Another species found at Fort Bragg—the red-cockaded woodpecker—is a case in point.

In 2016, the last year with per-species spending estimates, the U.S. government spent \$25 million on the red-cockaded woodpecker, more than 100 times what it spent on the St. Francis Satyr butterfly. From 1998 to 2016, the federal government spent \$408 million on the woodpecker, making it one of the most expensive species on the endangered list.

The small woodpecker is a member of the original class of 1967. It may soon fly off the endangered list or, more likely, graduate to the less-protected threatened list.



Nick Haddad heads to a swamp in search of the rare St. Francis' satyr butterfly, at Fort Bragg in North Carolina on Monday, July 29, 2019. Haddad has studied the vanishing butterflies in hopes of understanding why they are disappearing, and why they are worth saving. (AP Photo/Robert F. Bukaty)

"Something is going right," says Fort Bragg Endangered Species Branch Chief Jackie Britcher, holding a male woodpecker in her hands as a group of biologists stood under trees with giant nets to catch, count and band the birds.

The woodpeckers live only in longleaf pines, which have been disappearing across the Southeast for more than a century, due to development and suppression of fires. When naturally occurring fires were tamped down, other plants and brush would crowd them out.

Unlike other woodpeckers, these birds build their nests in live trees, sometimes taking as long as a decade to drill a cavity and make a home.

In the 1980s and 1990s, efforts to save the woodpecker and their trees set off a backlash among landowners who worried about interference on their private property.

"I've been run off the road. I've been shot at," says former Fish and Wildlife Service woodpecker official Julie Moore.



A St. Francis' satyr butterfly is released after it was captured and marked biologist in a swamp at Fort Bragg in North Carolina on Tuesday, July 30, 2019. The endangered butterfly is one of the rarest in the world. (AP Photo/Robert F. Bukaty)

Army officials weren't happy either: They were being told they couldn't train in many places because of the woodpecker.

"We couldn't maneuver. We couldn't shoot because they were afraid the bird was going to blink out and go into extinction," says former top Fort Bragg planning official Mike Lynch.

By the 1980s, the red cockaded woodpecker population was below 10,000 nationwide, says Virginia Tech scientist Jeff Walters, a

woodpecker expert. Biologists built boxes to serve as nests, attaching them to trees. The woodpeckers weren't interested.

Then Walters tried something different. He put the boxes inside the trees. The birds started living in them.

Instead of prohibiting work on land the woodpecker needs, Fish and Wildlife Service officials allowed landowners to make some changes as long as they generally didn't hurt the bird.



A red-cockaded woodpecker is weighed by a biologist collecting data on the species at Fort Bragg in North Carolina on Tuesday, July 30, 2019. The bird was captured, measured and banded as part of an ongoing study of the endangered species. (AP Photo/Robert F. Bukaty)

Such "safe harbor" agreements "effectively laid out the welcome mat for endangered species" without burdening the landowner, says former assistant Interior Secretary for Fish, Wildlife and Parks Michael Bean, who wrote the seminal 1977 textbook on endangered species law.

Meanwhile, Army officials were convinced to start setting fires to burn away the scrub. Now about a third of the area burns every three years or so.

The result? When Britcher started, in 1983, there were fewer than 300 families—with about three birds per nest—on Fort Bragg, and the numbers were dropping. Now she counts 453 families on the base and 29 nearby. That's well over the goal the Army set for itself.

At least 15,000 of the woodpeckers thrive on bases across the Southeast, where they're best protected and counted regularly, Walters says.



Wildlife biologist Gabe Pinkston prepares to release a red-cockaded woodpecker back to a long leaf pine forest after collecting data on it at Fort Bragg in North Carolina on Thursday, Aug. 1, 2019. The bird was captured, measured and banded as part of an ongoing study of the endangered species. (AP Photo/Robert F. Bukaty)

The woodpecker is "an umbrella species" biologists say. What helps woodpeckers is good for the St. Francis Satyr butterfly and dozens of other vulnerable species.

And it helps soldiers, too, who now have greatly improved training lands, Lynch notes.

Lynch made that observation in the right field stands of the new

Fayetteville, North Carolina, minor league baseball stadium. The name chosen by the community for the first-year team: the Fayetteville Woodpeckers. A community that once hated the bird has now embraced it as their own.

From 1998 to 2016, the federal government tallied \$20.5 billion in spending on individual species on the [endangered list](#). That's based on an annual per-species spending report that the Fish and Wildlife Service sends to Congress, but that tally is not comprehensive.



Wildlife biologist Brian Ball, protected by a safety harness, examines a nesting cavity used by a red-cockaded woodpecker at Fort Bragg in North Carolina on Tuesday, July 30, 2019. (AP Photo/Robert F. Bukaty)

Over that period, more than \$7 billion went to two species of salmon alone. (Salmon are expensive, in part, because helping them involves removing dams.) Seven species, mostly fish, ate up more than half of the money expended under the act, according to the annual accounting figures.

About \$3 million was spent to save the St. Francis Satyr butterfly.

Nick Haddad—the world's leading expert on the St. Francis Satyr, a Michigan State University biology professor and author of the book "The Last Butterflies"—got permission to go to the butterfly's home, the artillery range.

He was expecting a moonscape. Instead, he says, "these are some of the most beautiful places in North Carolina, maybe the world."

Because no one was venturing into the woods there, no one was dismantling beaver dams. No one was snuffing out fires. Aside from lingering fragments of munitions, the landscape was much like North Carolina before it was altered by humans.



An artificial nesting cavity is seen in a long leaf pine in a forest at Fort Bragg in North Carolina on Tuesday, July 30, 2019. The cavity offers nesting and roosting space for the red-cockaded woodpecker while discouraging it's use by larger birds or snakes. (AP Photo/Robert F. Bukaty)

The picky butterfly thrives amid the chaos. It needs a habitat that is disturbed, but only a bit. It needs a little bit of water, but not a lot. It needs fire to burn away overgrown plants, but not so much as to burn its food.

The butterfly appears only twice a year for two weeks each time. When it does, Haddad rushes to Fort Bragg and joins a team of Army biologists to count the butterflies and improve their habitat. They install giant inflatable rubber bladders that mimic beaver dams; they produce the

minor floods that the butterfly needs.

Haddad and his students also tromp through the swamp—on thin planks placed in the water so as not to destroy the delicate leaves the butterfly feeds on—as they count the insects.

"It couldn't be better than this," Haddad says, beaming as an egg-bearing butterfly takes flight. "When I see, every year, just a slight change in the right direction of the butterfly's conservation, let me tell you, that inspires me."



A red-cockaded woodpecker is held by a biologist collecting data on the species at Fort Bragg in North Carolina on Tuesday, July 30, 2019. The bird was captured, measured and banded as part of an ongoing study of the endangered species. (AP Photo/Robert F. Bukaty)

After years of criticisms from conservatives that the endangered species program isn't working and is too cumbersome for industry and landowners, President Donald Trump's administration has enacted 33 different reforms.

Among them: a change in the rules for species that are "threatened," the classification just below endangered. Instead of mandating, in most cases, that they get the same protection as endangered species, the new rules allow for variations.

That is better management, says the Fish and Wildlife Service's Frazer, adding, "It allows us to regulate really only those things that are important to conservation."

While Michael Bean, the former Interior Department official, calls the plan an "unfortunate step back, not catastrophic in its consequences," Noah Greenwald, endangered species director of the Center for Biological Diversity, characterizes the regulations as "a disaster."



A red-cockaded woodpecker is seen on a long leaf pine at Fort Bragg in North Carolina on Tuesday, July 30, 2019. The woodpecker was one of the first birds protected under the Endangered Species Act of 1973. (AP Photo/Robert F. Bukaty)



Research assistants David Pavlik, left, and Emily Price, roll out an inflatable rubber dam in an effort to create habitat suitable for the rare St. Francis' satyr butterfly, at Fort Bragg in North Carolina on Tuesday, July 30, 2019. The butterflies prefer wet meadows created by beavers. (AP Photo/Robert F. Bukaty)



Smoke rises from a log a few days after a prescribed burn in a long leaf pine forest at Fort Bragg in North Carolina on Tuesday, July 30, 2019. Frequent burns are beneficial to the endangered red-cockaded woodpecker and the St. Francis' satyr butterfly. (AP Photo/Robert F. Bukaty)



New growth flourishes on the floor of a long leaf pine forest, just three months after a prescribed burn at Fort Bragg in North Carolina on Tuesday, July 30, 2019. Frequent burns keep the undergrowth in check, restoring the forest to habitat the endangered red-cockaded woodpecker once thrived in before natural fires were suppressed by settlers. (AP Photo/Robert F. Bukaty)



A venomous cottonmouth snake moves over a small stream in close proximity to biologists working to improve habitat for the rare St. Francis' satyr butterfly, at Fort Bragg in North Carolina on Tuesday, July 30, 2019. (AP Photo/Robert F. Bukaty)



A sign warns about the dangers of a firing range in a long leaf pine forest at Fort Bragg in North Carolina on Tuesday, July 30, 2019. Frequent prescribed burns keep the undergrowth in check, restoring the forest to habitat the endangered red-cockaded woodpecker once thrived in before natural fires were suppressed by settlers. (AP Photo/Robert F. Bukaty)



Soldiers prepare to leave a firing range at Fort Bragg in North Carolina on Tuesday, July 30, 2019. The area where guns are fired and bombs are detonated is ideal habitat for the rare St. Francis' satyr butterfly. (AP Photo/Robert F. Bukaty)



A sign indicates a tree used by a red-cockaded woodpecker in Southern Pines, N.C., on Tuesday, July 30, 2019. Unlike other woodpeckers, the red-cockaded woodpecker only nests and roosts in living long leaf pines. (AP Photo/Robert F. Bukaty)



Julie Moore, a fierce opponent of de-listing the red-cockaded woodpecker from the endangered species list, visits the bird's habitat in a long leaf pine forest at Fort Bragg in North Carolina on Tuesday, July 30, 2019. In the 1980s and 1990s, efforts to save the woodpecker and their trees set off a backlash among landowners who worried about interference on their private property. "I've been run off the road. I've been shot at," says Moore, a former Fish and Wildlife Service woodpecker official. (AP Photo/Robert F. Bukaty)



A red-cockaded woodpecker prepares to enter its roosting cavity for the night in a long leaf pine forest in Southern Pines, N.C., on Tuesday, July 30, 2019. The woodpecker was one of the first birds protected under the Endangered Species Act of 1973. (AP Photo/Robert F. Bukaty)



Bunker, the team mascot of the Fayetteville Woodpeckers minor league baseball team, watches the action during a game in Fayetteville, N.C., on Sunday, July 28, 2019. The region, which was once fiercely opposed to the listing of the red-cockaded woodpecker on the Endangered Species Act, has begun to embrace the rare bird. (AP Photo/Robert F. Bukaty)

Li says the exceptions will allow species to be harmed greatly when they move from the endangered category to threatened status—for example, the American burying beetle, which is in conflict with oil and gas interests.

The biggest problem, Li and others say, is that new species in trouble aren't being added to the list. At its current pace, this will be the second consecutive year that more species come off the endangered species list

than are added—an unprecedented occurrence.

Meanwhile, scientists across the globe warn of the coming extinction of a million species in the decades ahead.

Nick Haddad is determined that the St. Francis Satyr butterfly won't be one of them.

Emily Dickinson called hope "the thing with feathers." For Haddad, it's about a thing with wings, the law that saved it and the Army officials who enforce that law.

"This is the thing that gives me hope," Haddad says. "That's where the Endangered Species Act had an impact."

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