

Oryx

Jaguar habitat rediscovered in Arizona and New Mexico

By Eric W. Sanderson, 16th March 2021

Jaguars are renowned as top predators that roam tropical habitats such as the rainforests of the Amazon and Central America, but jaguars are quite catholic in their habitat requirements. These large cats also live in mountains, flooded grasslands, dry scrub, and pine forests, and deserts. What jaguars need is: prey, of which they are not picky, eating over 80 different species; cover in which to hunt and hide their cubs; water to drink; and freedom from persecution by people.

Few people may be aware that during the last century jaguars ranged as far north as the Grand Canyon in Arizona and the northern Rio Grande in New Mexico. In the 19th century jaguars were shot by Texas rangers north of San Antonio. Harder to believe but nonetheless intriguing observations come from California, Colorado, northern Texas/Oklahoma and Louisiana.



Jaguars *Panthera onca* live in a wide variety of habitats in the Americas, not just tropical forests, but also dry scrub, flooded grasslands, and even deserts. Photo: Julie Larsen Maher/WCS

The historical evidence for jaguars in the United States is strongest in Arizona and New Mexico. Multiple photographs, skins, skulls and first-hand accounts attest to jaguars living there during the first half of the 20th century, as collected in Dave Brown and Carlos Lopez-Gonzalez's 2001 book, *Borderland Jaguars/Tigres de la Frontera*. As the Arizona Territory was settled, jaguars were hunted in the mountains north of Tucson and in the Sky Island ranges to the south and east. Cattlemen, shepherds, and government agents shot, trapped, and poisoned jaguars as well as other predators, such as Mexican wolves. The last jaguar killed in central Arizona was killed in 1964 by a US government hunter north of the Interstate-10 highway—a major thoroughfare traversing the

southern part of the country. For a time, it seemed that jaguars had been lost from the USA for good.

As a result, when the U.S. Fish & Wildlife Service first listed jaguars on the U.S. Endangered Species Act in 1972, jaguars were only protected south of the border, in Central and South America. Discussions, court cases, and scientific articles encouraged a more expansive view. Policy about jaguars swayed back and forth between dismissive and supportive regarding the possibilities for jaguar conservation in the USA, but the arguments were mostly theoretical: jaguars, always elusive and magnificently camouflaged, were practically non-existent north of the border.



The Last Jaguar in Texas – 1948

On April 25, 1948, page eight of the Corpus Christi Caller Times unceremoniously reported the killing of a large jaguar on a farm near Kingsville.



THE LARGE MOUNTAIN JAGUAR shown above with Richard C. Culbreth, ranger for the White Mountain Apache Tribe, was caught last week near Maricopa on the Fort Apache Indian Reservation. The male cat was estimated to weigh 150 pounds. Native to South America and Mexico, the jaguar seldom straggles into Arizona. Several years in the past it has been seen in the White Mountains. George the last one killed. It made his home by a lower Lake hunter calling varmints near Big Lake last

summer. The jaguar has a reputation of being the most aggressive and dangerous of the cats living in the Americas. Culbreth had been trapping for lion in the area for some time and had found evidence of several livestock kills. Also, several Apache cowboys had reported sightings of "spotted leopards" before the catch was made. White Mountain Recreation Enterprise Photo by Jim Spahn



Not that long ago, jaguars lived in Arizona, New Mexico, and Texas, as shown in these 20th century newspaper clips. Photos: Laura Paulson (left & right), Carlos Lopez González (middle)

That changed in 1996, when a rancher hunting for cougars in the Peloncillo Mountains found himself face to face with a jaguar in Arizona. Warner Glenn's and [subsequent photographs](#), unmistakably of a jaguar in arid terrain, intensified interest in the species. They were the first photographs of a live jaguar ever taken in the USA. Scientific studies followed. Over the last 3 decades, camera traps have photographed a handful of male jaguars in the mountains south of Interstate-10, including pictures as recent as January 2021.

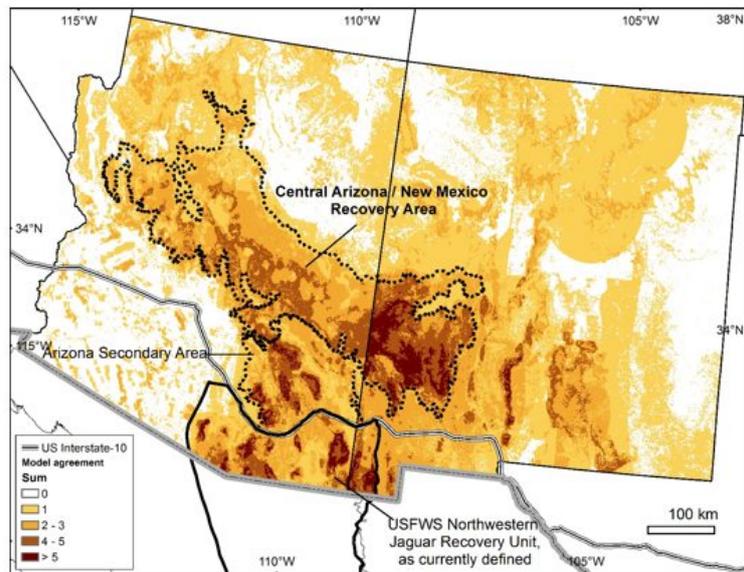
The detection of jaguars in the USA also led to a flurry of scientific activity to predict their potential distribution. Over the last 25 years, researchers created nine models using a variety of different inputs, techniques and starting presumptions, which we discovered after a carefully-constructed, systematic review. Our team, a multidisciplinary group of scientists, created three additional models. Despite differences in approach, variable selection and method, all 12 models pointed to a similar conclusion: an 82,442 km² contiguous area of potential jaguar habitat, on the edge of the Colorado Plateau known as the Central Arizona/New Mexico Recovery Area.



Jaguars still live in the USA but at the moment are limited to mountainous habitat in southeastern Arizona and southwestern New Mexico, south of the Interstate-10 freeway. These photographs of jaguars in the USA were captured by remotely-triggered cameras over the last decade. Photo: U.S. Fish and Wildlife Service Southwest Region and the University of Arizona

We found that there is a lot more potential habitat for the jaguar in the USA than was previously recognized: a habitat block equivalent to the size of South Carolina awaits the jaguar's return.

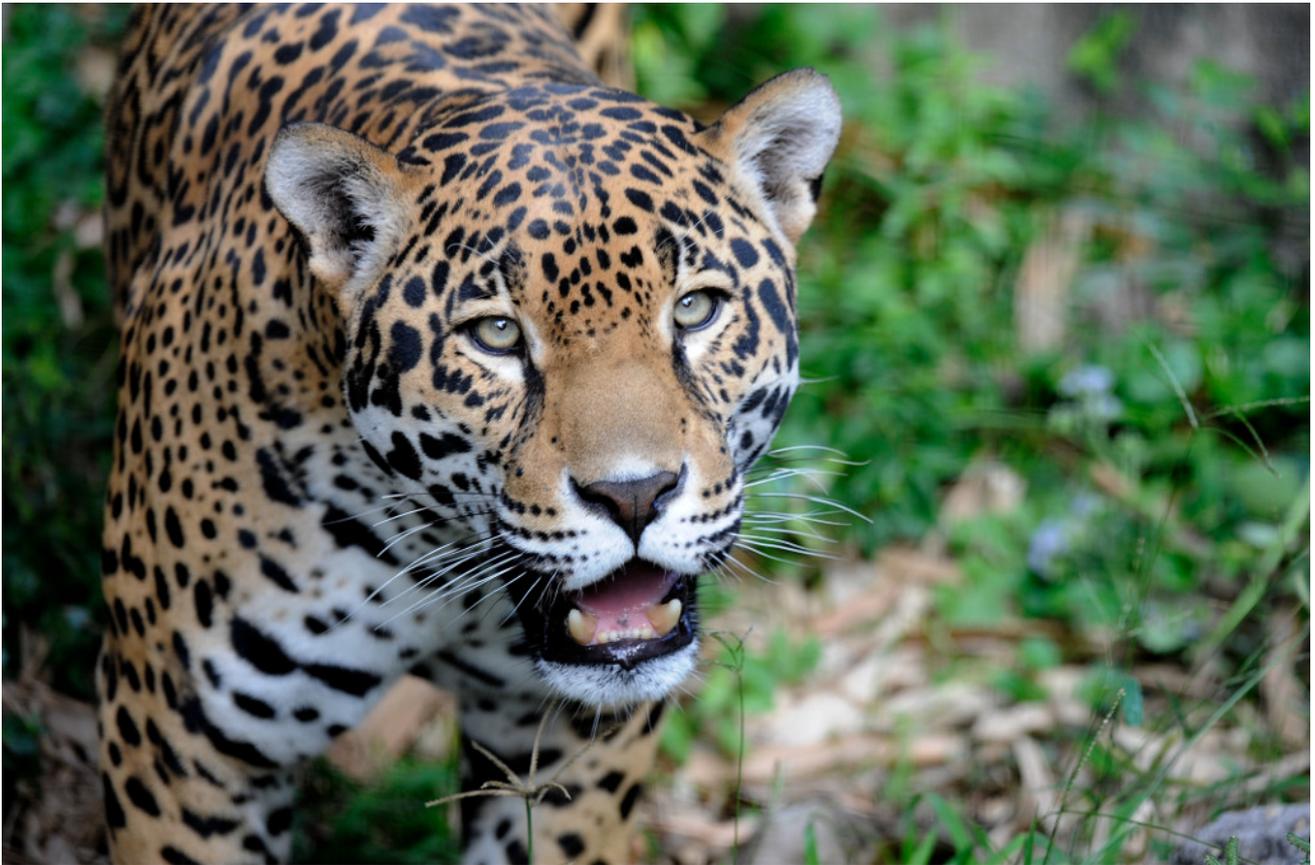
Unfortunately, the U.S. Fish & Wildlife Service considered Interstate-10 to be the de facto northernmost extent of jaguar range in the Americas in their [2018 recovery plan](#) (released in 2019) for the species. South of Interstate-10, they estimated that there is only enough habitat for six jaguars. North of Interstate-10, using their same model, we estimate there may be room for an eventual population of 90-150 individuals.



We compared 12 different potential habitat models, and all pointed to a large block of habitat, which we call the Central Arizona/New Mexico Recovery Area. This area is the same size as the State of South Carolina and might eventually hold a population of 90–150 jaguars. Photo: Eric Sanderson/WCS

The Central Arizona/New Mexico Recovery Area covers more territory than other important jaguar conservation units in Central America and South America, such as the Selva Maya of Guatemala and the forests around Iguazu Falls in Brazil, both of which have viable, self-sustaining populations. Potential habitat is not the same as occupied habitat, however. How or when jaguars could ever return to this habitat block remains an open question.

The population of jaguars closest to the USA that includes both males and females currently inhabits the thornscrub of Sonora, Mexico, 80–100 km south of the international boundary. Ongoing conservation and recovery of this population is critical to jaguar conservation and depends on collaboration and knowledge-sharing between the USA, Mexico and other countries.



Will jaguars return once again to central Arizona and New Mexico? Time will tell. In the meantime, coordinated conservation efforts on both sides of the US/Mexico border is required. Photo: Julie Larsen Maher/WCS

The U.S. Fish & Wildlife Service Recovery Plan specifically called for conservation work in Sonora and other parts of the Northwestern Jaguar Recovery Unit, as presumably the animals found in the USA today are dispersing males from this area. This recommendation was an important conclusion of the recovery plan, which is both appropriate and necessary.

Yet the focus on the Sonoran population and other populations south of the border should not preclude acknowledging that the Central Arizona/New Mexico Recovery Area offers new opportunities for recovery of the species in the USA in the long-term.

Conservation requires patience and steadfastness. But if conservationists forget that jaguars once lived in central Arizona and New Mexico, then who will remember? That is why we wrote this article.

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Historical jaguar observations in the US and northern Mexico can be queried online at <https://jaguardata.info>

The open access article [A systematic review of potential habitat suitability for the jaguar *Panthera onca* in central Arizona and New Mexico, USA](#) is available in *Oryx—The International Journal of Conservation*.



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