

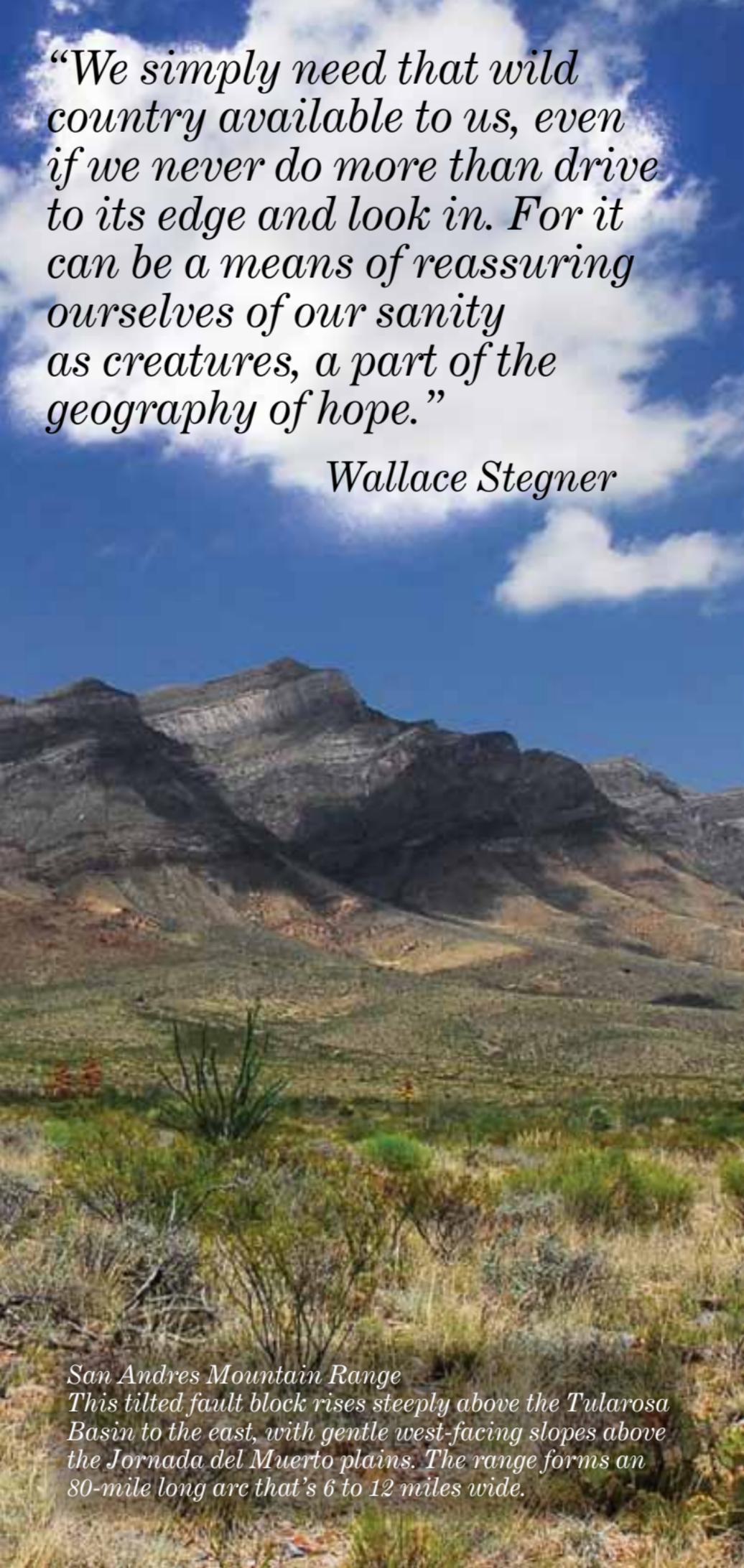
U.S. Fish & Wildlife Service

San Andres

*National Wildlife
Refuge*







“We simply need that wild country available to us, even if we never do more than drive to its edge and look in. For it can be a means of reassuring ourselves of our sanity as creatures, a part of the geography of hope.”

Wallace Stegner

San Andres Mountain Range

This tilted fault block rises steeply above the Tularosa Basin to the east, with gentle west-facing slopes above the Jornada del Muerto plains. The range forms an 80-mile long arc that's 6 to 12 miles wide.

Welcome: Desert Bighorn Sheep Country



This blue goose, designed by J.N. “Ding” Darling, has become the symbol of the National Wildlife Refuge System.

Some wild places have value to us whether we can visit them or not. San Andres National Wildlife Refuge is one of those special places. Here, desert bighorn sheep find precarious footholds on castellated mountains that pierce the sky. The bighorn recovery story – from one lone remaining bighorn in 1997 to more than 100 today – is a tribute to people’s care for a graceful animal that’s superbly adapted to life in the desert.

This Refuge lies within the 2.2 million-acre White Sands Missile Range, and for security reasons is not open to the public, except for arranged guided tours. The restricted access allows the Refuge to play a significant role as a natural laboratory free from most human impacts to help us better understand the ecology of this northernmost extension of the Chihuahuan desert.

Desert Bighorn Sheep

A Story of Loss and Recovery

Imagine the life of the last remaining desert bighorn sheep to roam wild on the Refuge. In 1997, one ewe had survived the scabies disease that ravaged the herds. For more than two years, she wandered alone, bounding over the empty cliffs with no bighorn in sight. The herd she grew up with had vanished. How did it happen?



South Oñate Mountain from San Andres Spring.



Desert Bighorn Family Group.

At one point desert bighorn sheep flourished at San Andres NWR, growing in numbers from 33 in 1941 (the year of Refuge designation) to 140 in 1950. Five years later, the bighorn population dropped to 70, as the herd succumbed to a severe drought that made it difficult for them to find enough grass and other plants to eat, especially when competing with livestock.

But their fortune changed again with the establishment of the White Sands Missile Range in 1952. The Missile Range eliminated livestock grazing and the bighorn sheep responded to more food and the lack of human disturbance. The herd slowly increased and by the mid-1970s, about 200 bighorn clambered over high peaks and cliffs.

Bad news struck in 1978 when psoroptic mites, or scabies, showed up on five rams harvested during a Refuge bighorn hunt. The deadly disease spread rapidly. By 1979, only about 75 bighorn remained. Despite attempts to capture, treat and return healthy bighorn sheep to the San Andres Mountains from 1979 to 1981, the population continued to dwindle until only the lone ewe remained in 1997.



View of rugged terrain from Goat Mountain.

In 1999, biologists released six rams captured from the Red Rock Wildlife Area of New Mexico to study whether they would become infected with scabies or determine if there were any other bighorn left on the mountain. Fortunately, the rams and the last native ewe tested negative for scabies, and a dramatic transplant of wild bighorn to the Refuge commenced. Fifty-one desert bighorn sheep from Red Rock and Kofa NWR in Arizona, stepped out into their new home in late 2002. Today, the future once again looks bright for the bighorn sheep of San Andres NWR.

And what happened to the last ewe? She not only survived, this remarkable bighorn went on to give birth to two lambs (a ram in 2002 and a ewe in 2003) before she died in December of that year at 14 years old. Thanks to her resiliency, the genes of the original herd continue in today's desert bighorn sheep.

Desert bighorn sheep have hooves especially adapted for climbing rugged terrain.



The black-tailed jackrabbit's long ears have many blood vessels that can expand to allow blood to cool before recirculation in its body.



In winter, the vessels contract to conserve body heat.

Plants and Wildlife

Chihuahuan Specialists

The San Andres Mountains contain the largest, intact Chihuahuan Desert mountain range in the United States and the Refuge extends 21 miles along the southern portion of the San Andres Mountains (most of the Chihuahuan Desert lies to the south, in Mexico). While the Sonoran Desert is famous for its towering cacti, here you'll mostly find grass and shrubs like creosote, as well as small cacti, yuccas and agaves. Plant life changes as you go up in elevation, from the basin floor at 4,200 feet to the peaks that rise up to 8,900 feet. Piñon pine and juniper cling to the higher slopes, while the springs and canyons support lush vegetation like desert willow and Apache plume.



Dainty Apache plume flowers.

To live in the Chihuahuan Desert, animals must tough out scorching summers, freezing winters, and little rain. Within the San Andres range and Tularosa

basin, wildlife have mastered desert living. Desert bighorn sheep, for example, can lose 30 percent of their body weight when water is scarce and yet quickly recover. Their body temperatures can safely fluctuate several degrees.

Mountain Lion



Those big ears of mule deer and black-tailed jackrabbits serve both for hearing and as devices for heating and cooling. Some kinds of beetles and lizards scuttle on long legs that elevate them above the scorching earth.

Lions, Bats and Birds

The steep mountains are ideal for mountain lions that depend on stealth to surprise mule deer. The rock caves also shelter at least 13 species of bats that play important roles as pollinators and insect hunters.



More than 150 bird species inhabit the Refuge for all or part of the year. In spring, the riparian areas come alive with bird song. The colorful plumage of blue grosbeaks, summer tanagers, and yellow-breasted chats lend an almost tropical feel to these oases. Meanwhile, on the dry rocky flats, the greater roadrunner (state bird of New Mexico) zooms after lizards as turkey vultures circle overhead.

Top, Say's Phoebe Bottom, Gambel's Quail Right, Mule Deer buck





A well managed prescribed burn can provide a beneficial tool for habitat restoration. Above, Black Brushy fire.

Keeping Fire on Our Side

Prescribed Burning

Wildfire can be dangerous when close to homes, but here in the wilds of the San Andres Mountains, fire has long played a natural role by shaping healthier habitats for bighorn sheep, mule deer, and birds. Fire is nature's great recycling agent, releasing nitrogen and phosphorus locked in plants back into the soil. For thousands of years, lightning-ignited fires swept across this terrain, keeping juniper and piñon pine from overtaking desert bighorn sheep habitat.

Here, as in many places, managers are working to restore fire after years of suppressing flames. Armed with knowledge of ecological benefits, managers carefully prescribe burns to rejuvenate mountain mahogany plant communities and grassland habitats.

Post-fire.



Reducing Nonnative Oryx

Oryx cow.



Within this large, desert Refuge, an exotic animal now makes its home. The oryx; a species of antelope from southern Africa; was introduced in the Tularosa Basin in the late 1960s, a time when biologists were less aware of the problems that tend to arise when a nonnative species enters a new range without native checks and balances. The oryx population increased to the point that the herds compete with desert bighorn sheep and mule deer for limited food. The animals may pose disease threats as well. Annual oryx hunts on the Refuge are designed to reduce their numbers.

Removing Invasive Plants

*Best method to
remove salt cedar
is cut the tree and
treat the stump
with herbicide.*



Like the oryx, plants that don't belong in the native ecosystem can become invaders that threaten the natural plants that support wildlife. Salt cedars have long tap roots that suck up water and outcompete native plants that are important to wildlife. These aggressive non-native shrubs can easily take over the small desert riparian habitats that are vital in a dry land. Refuge staff work to remove salt cedar and other exotic plants like Russian thistle.

Wildlife Research

This relatively undisturbed Refuge provides ideal opportunities to study and monitor wildlife to better



Above, Neon Skimmer

understand their needs, and to be alert to possible declines in response to climate change and other challenges.

Research projects include mountain lion, desert

bighorn sheep, and mule deer studies; prescribed burn effects; inventories of the rich array of insects; and bird banding to learn more about species' movement, survival and behavior.

Early History

Rock Art, Gold and Outlaws

The San Andres Mountains are rich with legends of lost gold mines, outlaws, and clues to the earliest inhabitants. Evidence of Native American camps dating to 900 A.D. reveal a lengthy presence of native peoples who hunted for desert bighorn sheep and created rock art in the canyons.

The Apache tribes defended these lands from Europeans until the 1880s. Settlers from Northern Mexico often took the risk of entering Apache territory to gather salt from spring-fed playas in the Tularosa Basin. On their "salt road" they drank from San Nicolas Spring on the Refuge; the tracks from their heavy wooden carts are still visible today in some areas.



Fragments of another time.

From the 1880s well into the Great Depression, prospectors hiked up and down the rugged steep slopes in hopes of finding gold. Ranchers also entered the forbidding mountains seeking grass and water for their cows. The Wildy outfit arrived in the 1880s to run a hardy breed of black cattle.

A Refuge interview with horse rancher Walter Baird in 1944 included this Wild West story:

“When Dave Wood was a kid he roped a mountain sheep ram (in very poor shape) in his corral at Big St. Nicholas. The older men of his family had to rescue him as the ram trampled on him when he tried to remove the rope.”

Getting to Know the Refuge

San Augustine Pass Overlook

For a magnificent view of the San Andres Mountain Range, visit the interpretive kiosk at San Augustine Pass on Highway 70 (south side) between Las Cruces and Alamogordo.

Guided Tours for Environmental/Educational Groups and Organizations

To schedule a local educational program or a guided group tour (planned well in advance to meet security requirements), please contact the Refuge office.



Texas Horned Lizard

Wildlife Watching Tips

Dawn and dusk are the best times to see wildlife.

In warmer climates, little is moving on hot summer afternoons or on windy days.

Observe from the sidelines. Leave “abandoned” young animals alone. A parent is probably close by waiting for you to leave. Don’t offer snacks; your lunch could disrupt wild digestive systems.

Cars make good observation blinds. Drive slowly, stopping to scan places wildlife might hide. Use binoculars or a long lens for a closer look.

Try sitting quietly in one good location. Let wildlife get used to your presence. Many animals that have hidden will reappear once they think you are gone. Walk quietly in designated areas, being aware of sounds and smells. Often you will hear more than you will see.

Teach children quiet observation. Other wildlife watchers will appreciate your consideration.

Look for animal signs. Tracks, scat, feathers, and nests left behind often tell interesting stories.



Oryx Hunt



Contact the Refuge for details on the seasonal oryx hunt, a program to reduce the impact of oryx on native wildlife and habitats. Refuge staff escort small groups of hunters with a license applied through the New Mexico Department of Game and Fish.

Explore Nearby



To get a feel for the Refuge landscape, visit nearby public lands that are open to visitors:

Organ Mountains *(Bureau of Land Management)*

Aguirre Springs offers dramatic landscapes with camping, picnicking, hiking and views across the Tularosa Basin to the 12,000-foot Sierra Blanca Peak.

White Sands National Monument *(National Park Service)*

Featuring the world's largest gypsum dune field with hiking trails, scenic drives, and ranger-led activities. The eastern portion of the Refuge can be viewed from the Monument.



Mourning cloak caterpillar and red ocotillo flowers.

Volunteering

A great way to contribute to the San Andres NWR is to lend a hand. Refuge staff particularly need volunteers with skills in maintenance, public outreach, or botany. They also appreciate help with taking traveling displays to county fairs.

Refuge Office Headquarters



Contact the Refuge office near Las Cruces to add a stamp to your national wildlife refuge passport book. Please contact the Refuge Manager, for any current volunteer opportunities.

San Andres NWR Facts

Where is it?

The Refuge is 30 miles northeast of Las Cruces, New Mexico. The Refuge office is located 10 miles east of the Interstate 25 and Highway 70 junction on the north side of Highway 70 .

When was it established?

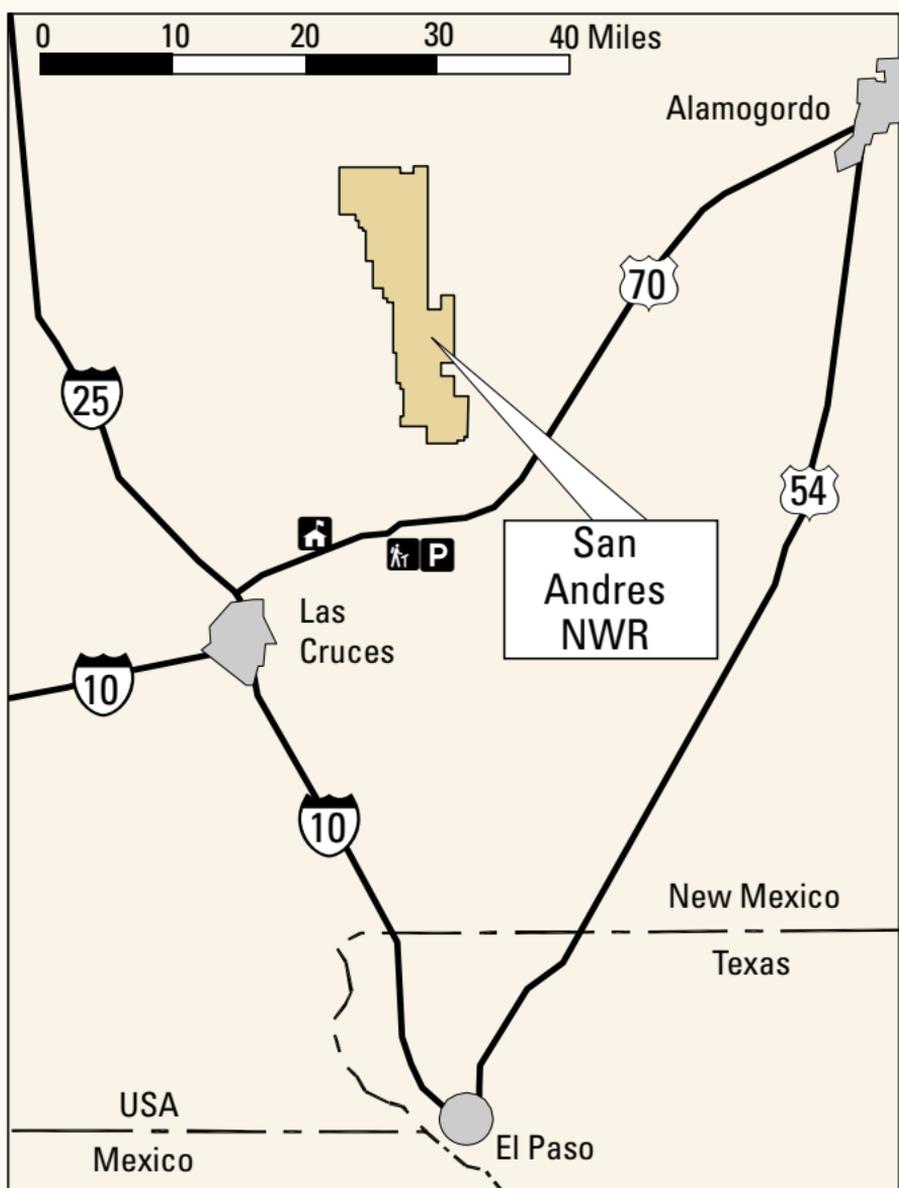
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How big is it?

57,215 acres

Why is it here?

Established for “conservation and development of natural wildlife resources,” the Refuge has long focused on restoring desert bighorn sheep and their habitat. Today, the Refuge also plays a vital role in conserving biological diversity and understanding natural processes in a changing world.



San Andres National Wildlife Refuge
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575/382-5454 FAX
<http://www.fws.gov/southwest/refuges/newmex/sanandres/>

U.S. Fish and Wildlife Service
<http://www.fws.gov/southwest/>

For Refuge Information
1 800/344-WILD

New Mexico State Relay System
1 800/659-8331

Desert Bighorn Sheep at San Andres NWR.
All images otherwise noted by Mara Weisenberger, FWS

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