Protecting New Mexico's Wilderness, Wildlife, and Water

The role of public lands in addressing the climate and mass extinction crises

NEW MEXICO WILD

BOB WICK, BLM

GARRETT VENEKLASEN

The Threats of Climate Change and Biodiversity Loss

The world struggles with two related environmental crises: climate change and mass species extinction. We must address these issues now. New Mexico has an important role to play.

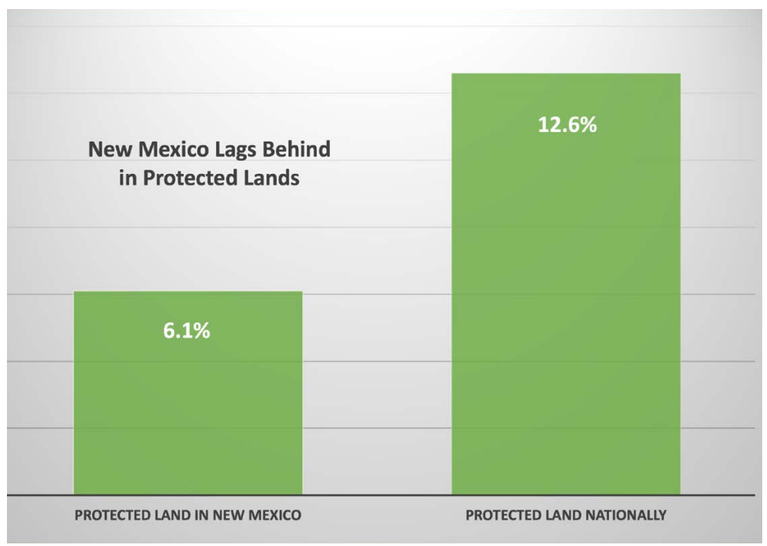
New Mexicans already are experiencing the negative impacts of climate change, including hotter temperatures, reduced snowpack, aridification, historic draught, and catastrophic wildfires. Climate change threatens our cultural heritage, our traditional uses, our economic well-being, the safety of our communities, and our natural world.

Combined with habitat loss and fragmentation from roads, development, and extraction, climate change exacerbates the loss of plant and animal species. Scientists estimate that current rates of extinction are 1,000 times higher than natural historic levels. New Mexico ranks fourth in the country for biodiversity, which includes hundreds of rare species and 90 species found only within the state.

Where to Begin and How

New Mexico Wild recently commissioned a study by EcoAdapt, an independent, nongovernmental organization consisting of a team of climate scientists. The study evaluates how protecting public lands in New Mexico can help address climate change and biodiversity loss. The study was designed to identify where new protections would have the greatest positive impact, and to inform our priorities.

New Mexico lags behind other states in protected lands managed primarily for biodiversity, at 6.1% compared to 12.6% nationally.



USGS: Protected Areas Database

COURTESY USFS

The study area covered nearly 6 million acres of federally managed public lands in New Mexico that New Mexico Wild has identified as the most ecologically intact, that are roadless, and that possess Wilderness qualities.

In order to identify priority areas for protection, five different indicators of climate change adaptation and mitigation were assessed: biodiversity, connectivity, site resilience, carbon sequestration and storage, and unrealized greenhouse gas emissions associated with unleased fossil fuels. The analysis identified the 25% of the study area where additional federal protections would have the greatest positive impact on each of the indicators. These priority areas for each indicator were then combined to better clarify which locations might make the greatest cumulative contribution to climate adaptation and mitigation.

The Role of Public Lands

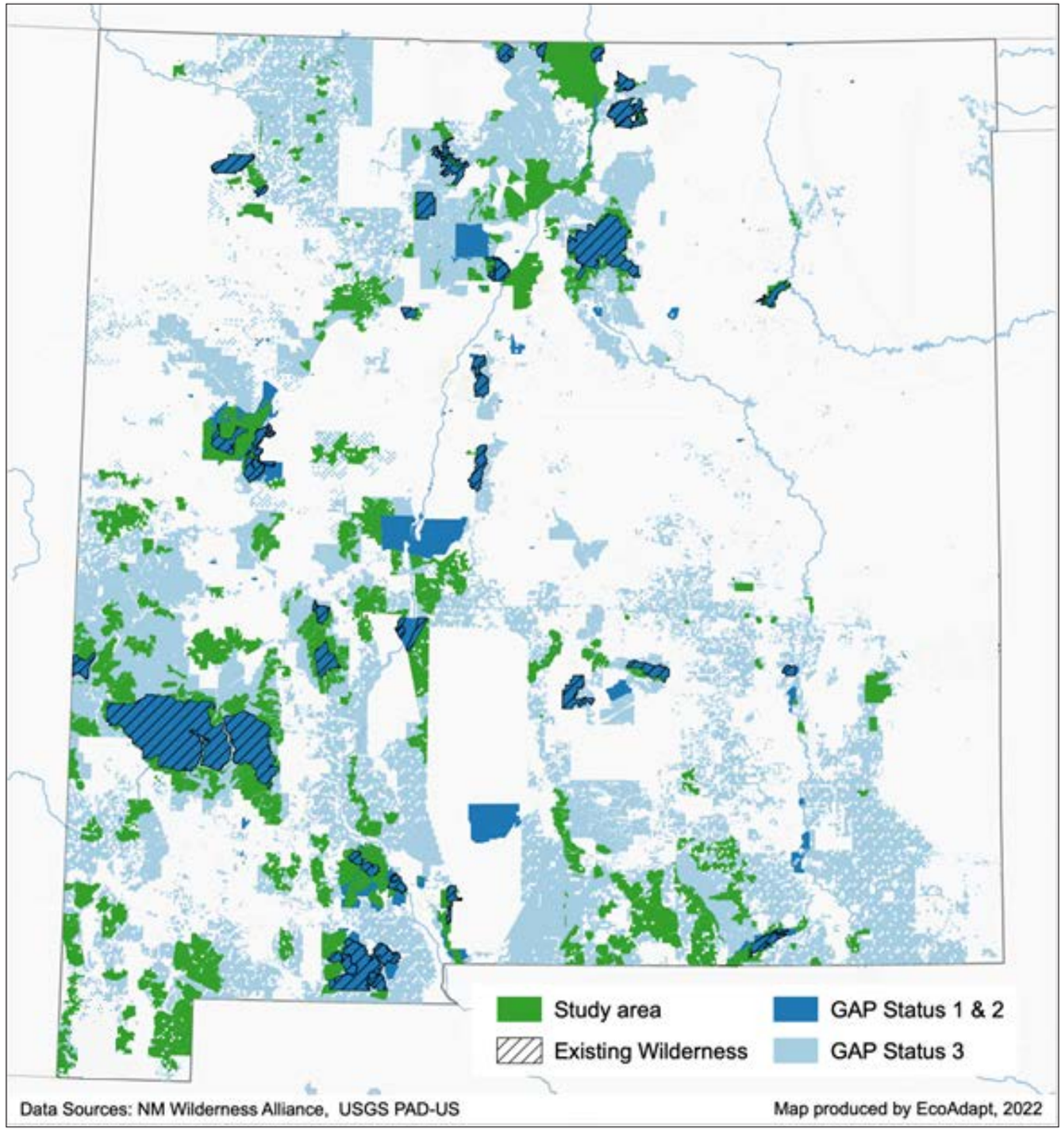
About one-third of the land in New Mexico is public and is managed by the federal government. Most of these public lands are vulnerable to threats like oil and gas development, hardrock mining, commercial logging, and road fragmentation. These lands that belong to all of us were the focus of this study. New Mexico lags behind other states in the amount of protected federal lands, at 6.1% compared to 12.6% nationally. Protecting public lands

Left: Biodiversity starts at the smallest level and includes insect life and plants.

Above: The 2022 Black Fire in Southern New Mexico became the second-largest fire in the state's history and demonstrates the catastrophic effects of forests dessicated by climate change-related drought.

The Status of Land Protection in New Mexico

New Mexico Study Area
Federal Lands With High Potential for Contributing to 30x30 Goal



GAP 1 areas are considered to have the highest protection from the conversion of natural lands, with management plans to keep the land in a natural state.

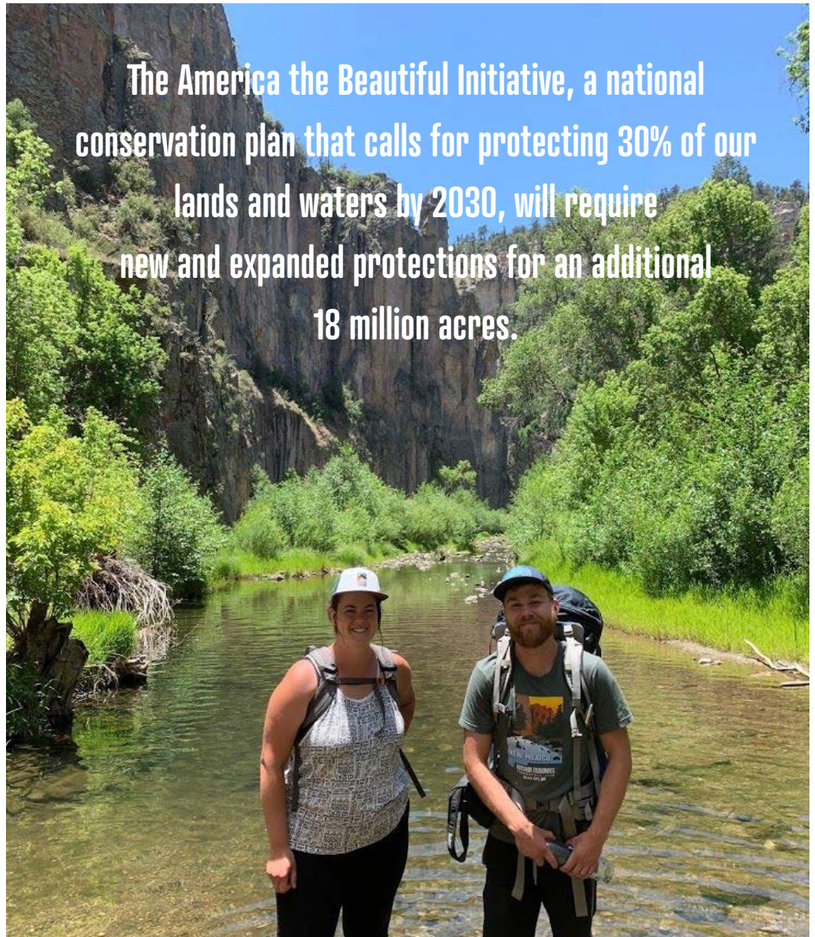
GAP 2 areas have similar qualities but maybe at some risk for alteration to natural states.

GAP 3 may have permanent protections in some areas but often have multiple-use mandates which could include timber harvesting and mining.

has many benefits, including guaranteed public access, safeguarding of cultural resources, defending traditional uses, and providing abundant recreational opportunities.

The America the Beautiful Initiative is a national conservation plan that calls for protecting 30% of our lands and waters by the year 2030. The initiative, which the state of New Mexico has also adopted, will require new and expanded protections for an additional 18 million acres in the state.

Moving more public lands to higher levels of protection is a vital way to help mitigate the climate crisis. Providing protections in strategic areas can make a substantial contribution to biodiversity.



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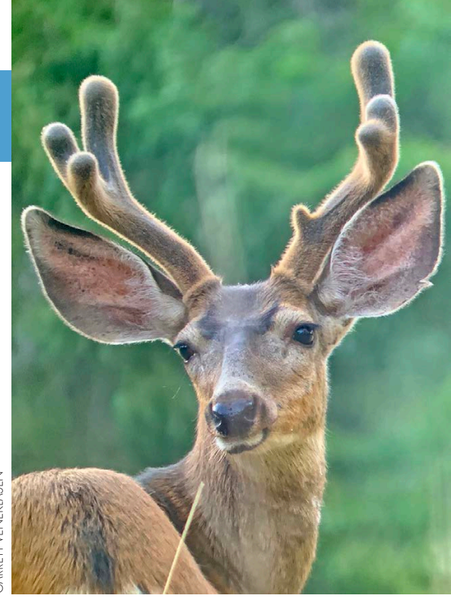
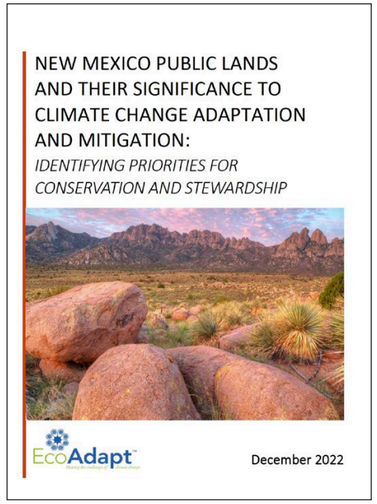


GARRETT VENEKLASEN

Above: Mule deer buck in velvet. Wildlife that migrate and move in herds rely on connected landscapes for food and shelter.

Left: The Gila River in the Gila National Forest. Riparian water sources, critical to wildlife, are especially threatened by drought.



EcoAdapt is a nonprofit founded to offer adaptation support, training, and assistance to make planning and management outcomes less vulnerable to climate change.

The Adaptation Indicators

BIODIVERSITY

New Mexico's rich biodiversity is due to its large climatic and elevational gradients, complex topography, and varied substrates. This rich terrain supports hundreds of rare species, including 90 species found only within the state. This biodiversity is not evenly distributed; rather, it tends to be concentrated in areas such as riparian corridors and isolated mountain ranges.

Because species that are isolated or have small populations and/or limited distribution tend to be more vulnerable to climate change, range size is considered a good indicator of where protected areas could play a greater role in protecting critical species from climate-driven declines.

A significant proportion of imperiled species (i.e., species with declining populations that are now at risk of extinction) occur outside of protected areas. The presence of protected areas is known to reduce extinction risk and is associated with species richness.

CONNECTIVITY

Regions that remain highly connected to surrounding intact ecosystems play a vital role in climate change adaptation. Expanding or strengthening protected areas to maintain connected landscapes, such as riparian zones and large areas with few barriers for connectivity, is likely to increase species movement/dispersal and gene flow. This will reduce the risk of extirpation in isolated populations and provide access to suitable habitat patches that can act as "stepping stones" so wildlife can more easily shift ranges as climate conditions change.

RESILIENCE

The most resilient landscapes typically are intact, high-quality ecosystems, particularly in areas with permanent sources of surface water such as riparian zones, and other locations where complex geophysical conditions create diverse microclimates and vegetation communities that support a wide variety of species.

These areas also serve as climate change refugia, which are places on the landscape that are buffered from exposure to rapid changes and climate extremes. Climate change refugia facilitate the persistence of species (particularly those with limited mobility or dispersal ability), preventing the loss of genetic diversity and buying time for adaptation over longer time scales.

The Mitigation Indicators

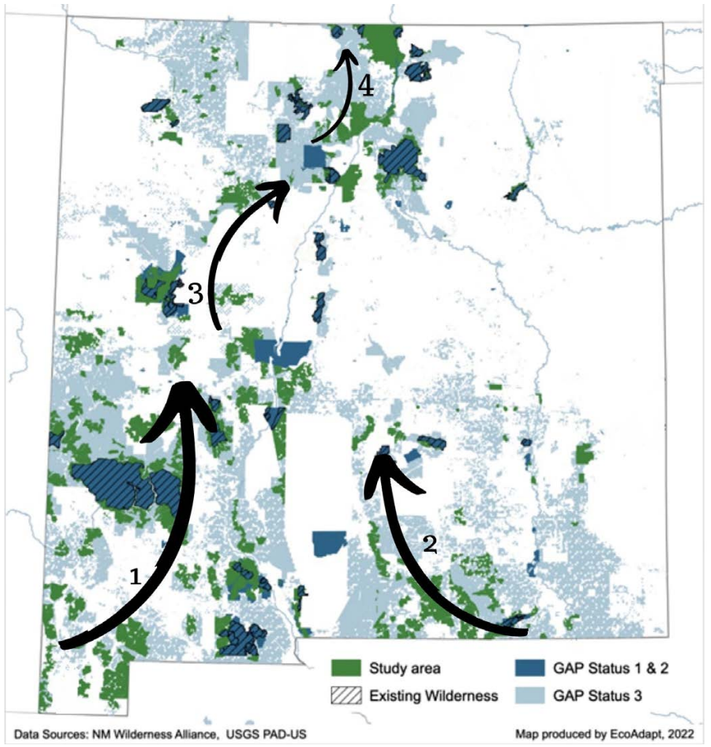
CARBON

Forests and grasslands play a central role in retaining stored carbon and mitigating climate change. Within the 5.9-million-acre study area, 38% of the carbon is found within 25% of the total acres (about 1.45 million acres). Protecting public lands in carbon-dense areas will prevent loss of existing carbon stocks and ensure continued carbon sequestration into the future.

GREENHOUSE GAS

Nationally, a large proportion of energy production comes from public lands in the Western U.S. that are leased by federal agencies to private companies for oil, gas, and coal extraction and sale. In New Mexico, for example, over 90% of Bureau of Land Management (BLM) lands in the Farmington district are leased for extractive purposes. The greater Permian Basin of west Texas and southeast New Mexico accounts for **nearly 40 percent of all U.S. oil production**.

Studies suggest that public lands account for up to 50% of all remaining unleased U.S. fossil fuels. Keeping oil, gas, and coal in the ground, particularly in the most sensitive and ecologically important areas, is necessary for climate mitigation efforts.



CONNECTIVITY MAP

1. Bootheel connects Mexican Highlands and Chihuahuan Desert Ecoregions to the Greater Gila and Arizona/New Mexico Mountains Ecoregion.

2. Otero Mesa connects Chihuahuan Desert Ecoregion to Arizona/New Mexico Mountains Ecoregion.

3. BLM Lands with Wilderness Characteristics connect Arizona/New Mexico Mountains to Arizona/New Mexico Plateau and Southern Rockies Ecoregions.

4. Caja del Rio and National Forest Roadless Areas connect Southern Rockies Ecoregion into Colorado and the San Juan Mountains.

Conclusions

A clear and workable solution has emerged: **Protect more of our public lands**. This is a vital strategy for climate adaptation and mitigation and to reduce biodiversity loss.

Moving more public lands to higher levels of protection is essential to help mitigate the climate crisis. Providing protections in strategic areas can make a substantial contribution to biodiversity resilience.

It is important to add or strengthen protected status in **areas that provide the greatest benefit across multiple indicators** (e.g., parcels that harbor range-restricted imperiled species, are resilient and have high levels of connectivity, and hold significant carbon stocks).

Additional considerations include **areas with particularly high ecological integrity** and those that are adjacent to or would enhance connectivity among existing protected areas.

The five indicators in the study can be used as guidance to expand or strengthen federal land protections in key locations to maximize climate change benefits. This includes both support of ecosystem adaptation and biodiversity resilience to climate change as well as mitigation efforts.

Providing greater levels of protection for public lands is a vital strategy for climate adaptation and mitigation, and for reducing biodiversity loss.

GARRETT VENEKLASEN

JIM O'DONNELL

The approximately 6 million acres of the study represent the most ecologically intact and remaining wild quality lands in New Mexico. New Mexico Wild believes that all of these lands should have increased protections.

Within the study area, several regions emerge as priorities for protection in the context of the climate and extinction crises. Specifically, areas with characteristics that place them in the top 25% of multiple indicators are found in the unprotected public lands adjacent to several existing Wilderness areas, including Gila, Aldo Leopold, Apache Kid, Carlsbad Caverns, and Pecos. Other portions of the study area that contain many unprotected BLM lands include Otero Mesa and the Bootheel.

Far Left: Burrowing owl populations have been declining sharply due to habitat loss.

Above Left: Biodiversity on display on the Caja del Rio Plateau west of Santa Fe.

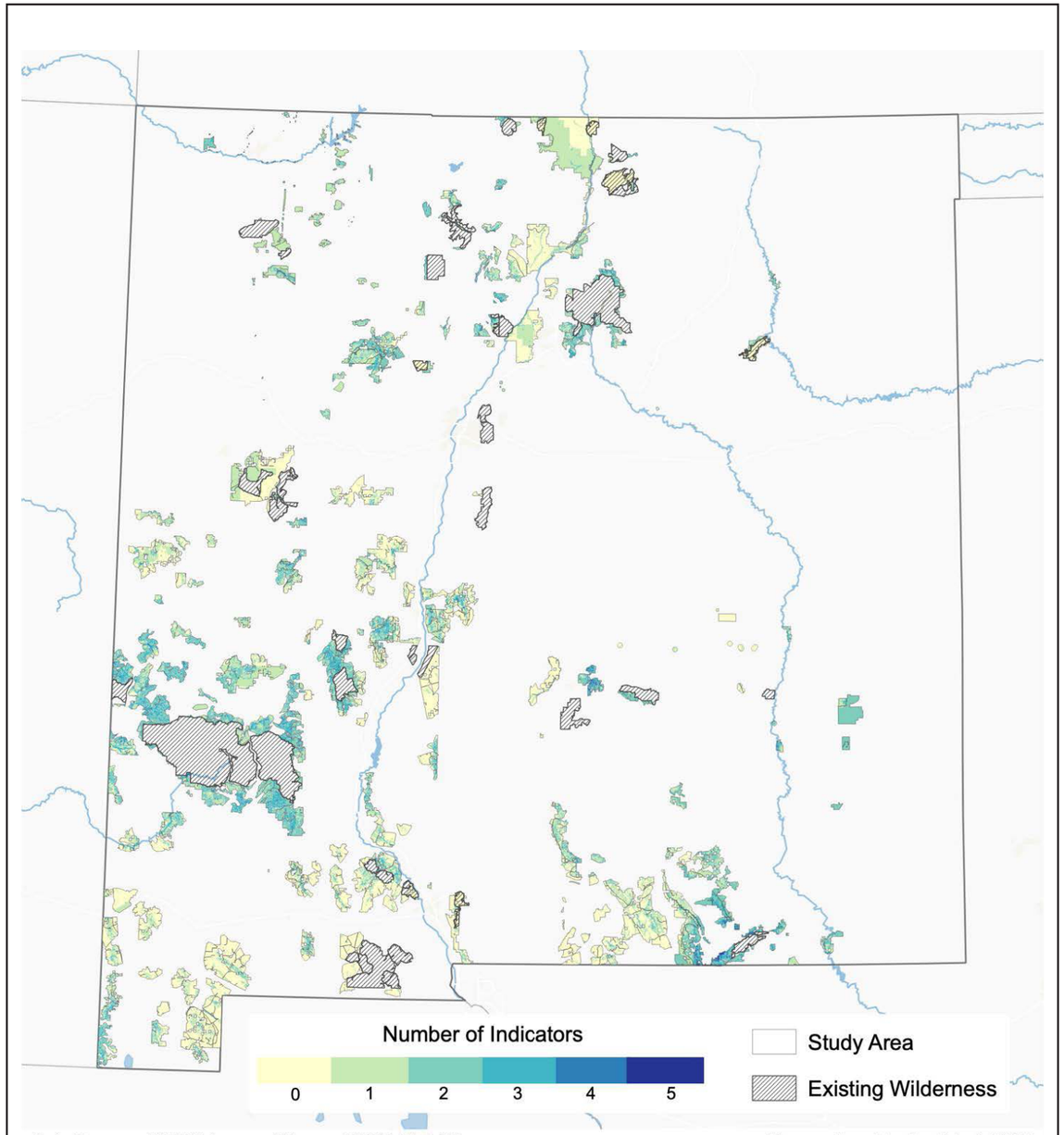
Below Left: Young hikers at Rio Grande del Norte National Monument.

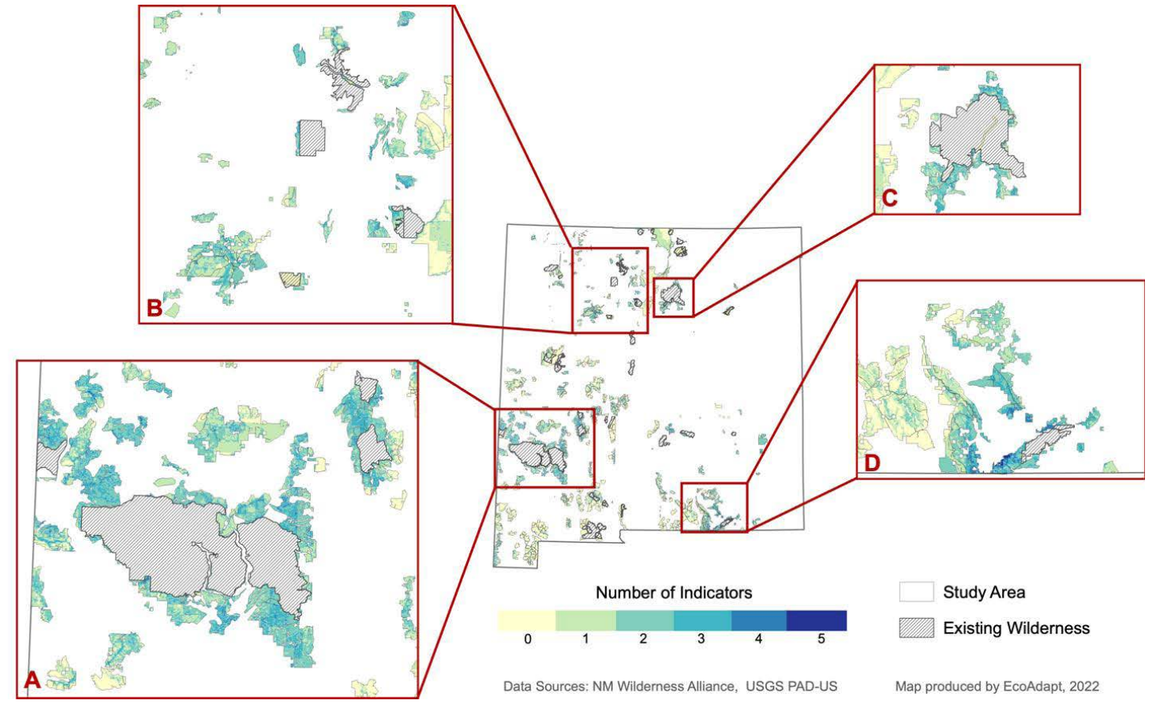
Below: San Antonio Mountain in Rio Grande del Norte National Monument.

This study highlights opportunities for federal lands protection related to climate adaptation that we must consider when crafting campaign priorities.

Top Priority Areas Based on Adaptation and Mitigation Indicators

Number of Indicators for Which the Study Area Scores in the Top 25%





(A) Portions of the study area in the vicinity of the Gila, Aldo Leopold, Blue Range, Apache Kid, and Withington Wilderness Areas. (B) Portions of the study area within the Southern Rockies ecoregion, near the San Pedro Parks, Chama River Canyon, Bandelier, and Dome Wilderness Areas. (C) Portions of the study area around the Pecos Wilderness. (D) Portions of the study area in the vicinity of Otero Mesa and the Carlsbad Caverns Wilderness.

SUMMARY

New Mexico Wild has been the leader in protecting federally managed public lands, water, and wildlife in New Mexico for the past 25 years. This report documents the urgent need to protect certain areas that don't currently enjoy protections and that are at risk from threats such as road building, oil and gas development, hardrock mining, and commercial logging. It highlights the need to "upgrade" existing protections on other lands to make them stronger and more permanent.

While the protection of wildlands for their own sake has inherent value and remains important, this study highlights opportunities for federal lands protection related to climate adaptation and mitigation that we must also consider when crafting campaign priorities.

The study area included nearly 6 million acres of roadless areas with Wilderness characteristics that merit higher levels of protection through

Strategies to Address the Climate and Biodiversity Crises

We believe that conservation efforts that are driven by community are the most successful.

Wilderness and other federal designations. The study results further refine 25% of these, which were shown to been particularly important to climate mitigation and adaptation and combating biodiversity loss. As noted on the following pages, these include areas like Otero Mesa, the Greater Gila, the San Mateo Mountains, and areas adjacent to the Pecos Wilderness.

New Mexico Wild believes that the remaining remnants of roadless areas with Wilderness characteristics deserve permanent protections, starting with designated Wilderness, our nation's strongest and most durable level of protection. We also recognize that not every place under threat is appropriate for Wilderness designation and that a range of tools must be utilized that include other legislative and executive designations and federal agency administrative actions.

In pursuing these strategies, New Mexico Wild is committed to working with communities to ensure that our campaigns are guided by diverse coalitions of stakeholders, including honoring and ensuring the protection of cultural resources and traditional uses of Pueblos and Tribes, Hispano, and other land-based communities. We believe that conservation efforts that are driven by community are the most successful.

TISHA BROSKA

NATHAN SMALL

WILDERNESS
and Other Federal Land Designations

New Mexico lags behind most Western states in the proportion of lands and waters that are adequately protected. For example, only about 3% of the land in New Mexico has the highest level of federal protection: designated Wilderness. In contrast, approximately 5% of the United States is protected as Wilderness.

Increase Designated Wilderness Areas

Protect roadless areas with Wilderness qualities that are **contiguous** to existing Wilderness areas by expanding and creating new Wilderness areas, including the Greater Gila, San Mateos, Pecos, and others.

Protect all **inventoried roadless areas** (IRA) managed by the Forest Service. While inventoried roadless areas enjoy some protections, these lands generally remain open to extractive uses such as oil and gas drilling and hardrock mining.

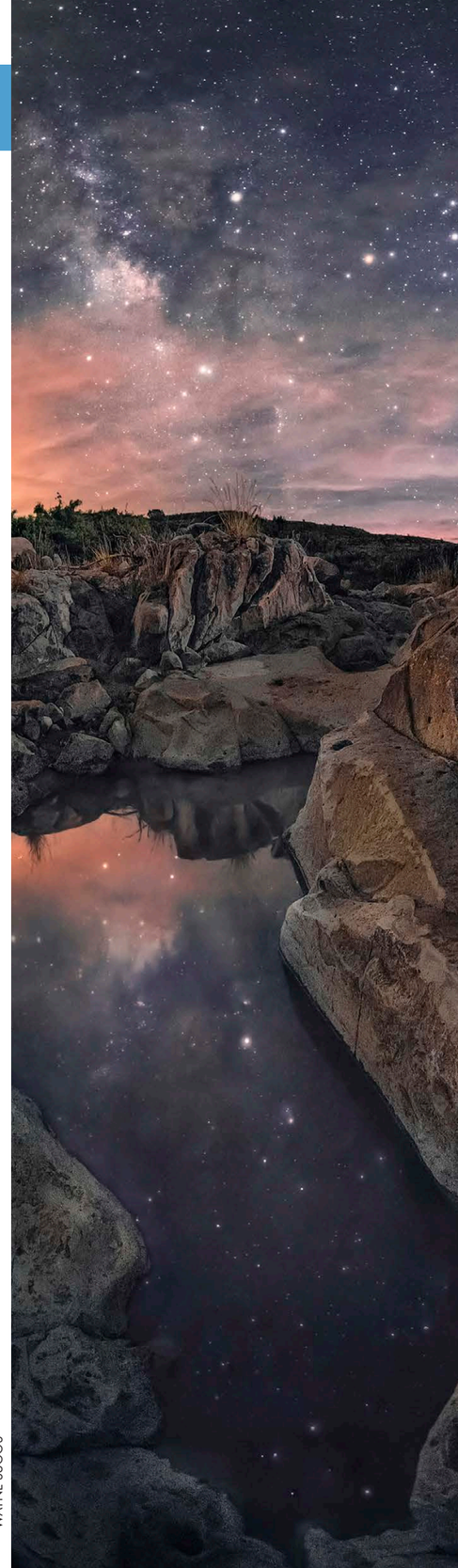
Protect New Mexico Wild **inventoried and agency identified** Lands with Wilderness Characteristics (LWCs). New Mexico Wild, and to a lesser extent, the federal land management agencies have identified several million acres of LWCs on lands managed by the BLM, Forest Service, and National Park Service. LWCs have little to no protection.

Convert all Wilderness Study Areas to designated Wilderness. There are 53 Wilderness Study Areas (WSAs) across New Mexico established by congressional or administrative action that should be designated as Wilderness to elevate the level of protection and make protections permanent.

Areas not designated as Wilderness could be considered for **other legislative or administrative designations** such as special management areas, cultural heritage areas, backcountry conservation areas, national conservation areas, or new wilderness study areas.

Increase the number of **national monument designations.** Following the examples of the wildly popular Rio Grande del Norte (2013) and Organ Mountains-Desert Peaks (2014), expand those monuments and create new national monuments for special places like Caja del Rio and Otero Mesa—the largest intact Chihuahuan grasslands on public lands—now. National monuments are created by presidential proclamation under authority from the Antiquities Act.

New Mexico must take advantage of vital opportunities to combat climate change and species extinction through land protection.



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WILDLIFE

Many species in New Mexico are range-restricted due to habitat fragmentation resulting from development, infrastructure, resource extraction, and roads. Focusing on the protection of high-quality habitat, enhancing habitat connectivity and wildlife corridors, and promoting other species protections offers an opportunity to begin to address the extinction crisis in New Mexico.

Permanently protect the Caja del Rio and other landscapes with extraordinary biological and cultural resources as **national monuments or under other federal designations.** The 107,068-acre Caja del Rio, near Santa Fe, is characterized by culturally and environmentally sensitive lands with exceptional wildlife habitat and populations and symbolizes the history and identity of the American West.

There are also other vast landscapes in New Mexico with exceptional biodiversity, habitat, and cultural resources that do not necessarily qualify for Wilderness designation that should be permanently protected under other federal designations.

Expand and increase the level of protection of BLM designated **Areas of Critical Environmental Concern** (ACEC). ACECs are administratively designated by the BLM to protect unique and important wildlife, fish, historical, cultural, scenic, and other natural resource values. The number and size of ACECs should be expanded to better protect wildlife, biodiversity, habitat, and other resources, and the level of protections offered by ACECs should be enhanced to offer more robust and permanent protection of the values for which they are established.

Safeguard the recovery of the critically endangered **Mexican gray wolf** and expand its range into central and northern New Mexico. Based on the wide-ranging travels of Asha, the footloose Mexican gray wolf, into northern New Mexico in early 2023, the U.S. Fish and Wildlife Service should modify the permitted range of the wolf to cover the entire state to address the threats of human-caused mortality.

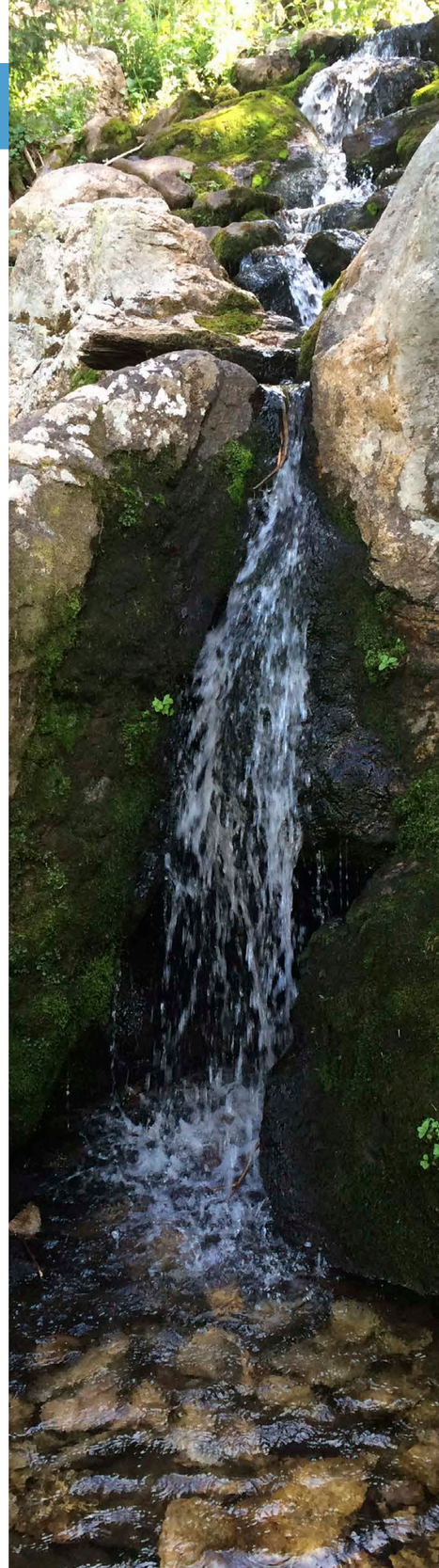
WATER

The climate crisis is resulting in the aridification of New Mexico, with consequences for both people and wildlife. New water policies and protections must be enacted to conserve water; protect watersheds, water quality, and riparian habitat; and ensure that water resource management considers non-consumptive benefits such as keeping rivers flowing for endangerred fish. As climate change increasingly affects our rivers, streams, wetlands, and lakes, New Mexico trails behind other Western states in addressing water issues. Now is the time to put enhanced water protections in place to better adapt to and mitigate the climate and extinction crises.

Secure federal **Wild & Scenic River designations** for the Gila River and its tributaries, segments of the Rio Grande, and other eligible rivers. Wild & Scenic River designation—the highest level of federal protection for rivers—requires that the free flowing character, water quality, and a wide array of biological, cultural, geophysical, and social values unique to eligible rivers are permanently protected. While New Mexico was home to one of the very first Wild and Scenic River designations (segments of the Rio Grande), currently only one-tenth of 1% (or 124 miles) are protected.

Expand **administrative mineral withdrawals** on public lands and make them permanent through legislation. Oil and gas extraction and hardrock mining often significantly impact water quality and quantity, as well as other cultural, biological, and social values. For instance, proposed exploratory mining poses grave risks to water quality in the Pecos Watershed, and previous proposals for mining and drilling Otero Mesa would irreversibly damage its treasured cultural resources, habitat, and aquifer.

Establish additional **Outstanding National Resource Waters** (ONRW) designations. By designating eligible rivers and streams as ONRWs, the state of New Mexico provides the highest level of protection from water quality degradation to these rivers, tributaries, watersheds, and wetlands under the federal Clean Water Act, with resulting benefits to species, biodiversity, and downstream users. Momentum was gained in 2022 with the designation of segments of the Pecos River, Rio Grande, East Fork of the Jemez River, Rio Hondo, and other rivers. Additional qualifying rivers, streams, and wetlands should be designated as ONRWs.



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Other Land Jurisdictions

Although federally managed lands make up a sizable portion of New Mexico and other Western states, the protection of federal public lands alone will be inadequate in addressing the climate and extinction crises.

Given New Mexico Wild's focus on the protection of federal public lands, we urge state, local, and Tribal governments, and private property owners to undertake similar studies to prioritize non-federal lands for protection to maximize climate adaptation and mitigation opportunities. These additional studies should further be used to take bold and rapid action to strategically expand protected area networks to include interconnected state, local, tribal, and private lands.

Go to www. _____ to see the full report and to learn more about New Mexico Wild's campaigns.

GARRETT VENEKLASEN

The New Mexico Wilderness Alliance (New Mexico Wild) is a nonprofit 501(c)(3) grassroots organization dedicated to the protection, restoration, and continued enjoyment of New Mexico's wildlands and Wilderness areas. Founded in 1997, we achieve our mission through administrative protection, federal Wilderness designation, and ongoing stewardship.

NEW MEXICO WILD

317 Commercial Street NE, Suite 300
Albuquerque, NM 87102

Field offices in Santa Fe, Las Cruces, and Silver City

NMWILD.ORG

505.843.8696