



November 5, 2021
Lincoln National Forest Planning Team
3463 Las Palomas
Alamogordo, NM 88310

RE: Public Comments on the Lincoln National Forest Plan Revision Draft Plan and Draft EIS

Submitted at: <https://cara.ecosystem-management.org/Public//CommentInput?Project=45148>

On behalf of the National Parks Conservation Association (NPCA), thank you for accepting these comments to the Lincoln National Forest Plan Revision ("plan"). Formed in 1919, NPCA's mission is to protect and enhance America's National Park System now and for future generations; our nearly 1.4 million members and supporters nationwide continue to fulfill this mission by working to protect the resources and ecological health of surrounding landscapes that can impact national parks.

The landscape around Carlsbad Caverns National Park, including the Guadalupe Ranger District of the Lincoln National Forest, is characterized by unique and fragile cave and karst systems that extend far beyond the park's boundaries. Industrial development and intensive land use in the area pose major risks for fragile cave and karst systems. Measures in the forest plan revision must be taken to safeguard these intricate cave systems and critical karst aquifers as well as the biodiversity of the Chihuahuan Desert ecosystems, surface habitats, and the unique outdoor recreation experiences offered by the landscape.

Mineral and timber extraction, among other activities utilizing heavy equipment and with the potential to abandon equipment on the landscape, poses a threat to subterranean cave and karst resources, as these landscapes are fragile and extremely vulnerable to surface impacts. Additionally, road construction, use, and maintenance can greatly impact cave and karst systems, as roads contribute to erosion and sedimentation of water systems and their impacts have the potential to outlive the industries they serve. Karst aquifers are recharged by rainwater moving rapidly through fractures in the bedrock and sometimes through open conduits and cave passages that transport rainwater and potentially industrial contaminants into the groundwater system. There is very little filtering of the water in karst regions as it makes its way down from the surface. As a result, contaminants from accidental leaks or spills from industrial processes can easily move from the surface or from leaky casing, pipelines and tanks into the aquifer system. Oil and gas activities along with timber operations have resulted in accidental spills of vehicle fuel, like oil and gasoline, into cave and karst openings. As well, if areas with high potential for cave and karst surface openings and passageways to the aquifer below are not adequately managed and protected, heavy equipment such as trucks have encountered unseen cave

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openings and cause vehicle collisions and cave-ins, resulting in public safety risks, damage to cave and karst, potential pollution to the water table below, and threats to fragile cave-dwelling species.

In addition to the role karst plays in creating and maintaining the cavern system which characterize Carlsbad Caverns and the Guadalupe Ranger District of the Lincoln National Forest, it also plays a vital role in the recharge of local water supplies. As much as 98% of the water supply for the City of Carlsbad comes from the Capitan Reef aquifer and many of the ranching communities depend on karst groundwater for their cattle operations and domestic use.¹ Groundwater tracing in the karst area near Carlsbad Caverns has shown the potential for pollutants from industrial leaks and spills to travel through the complex underground network of fractures and joints within the limestone and gypsum into drinking water supplies.²

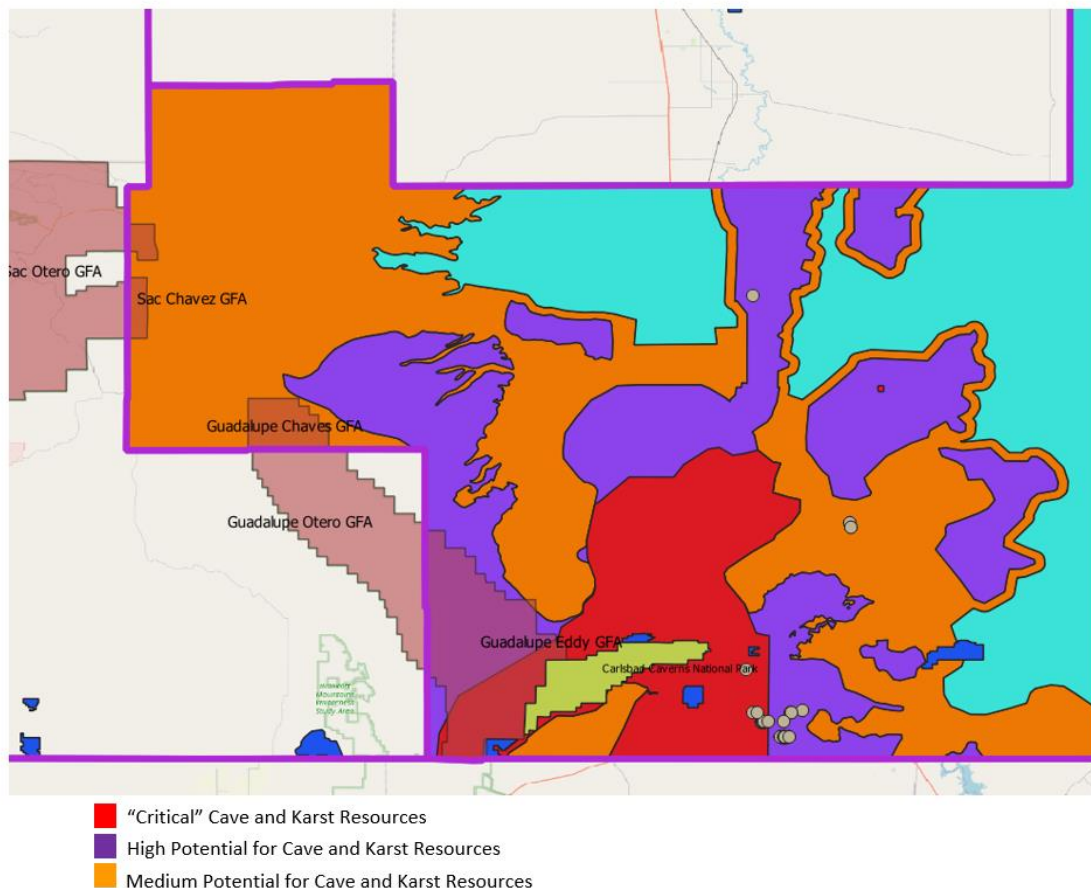
The plan only specifies the area shown on page 201, “Guadalupe Caves and Snowy River Cave Management Area” in the Land Management Plan for the Lincoln National Forest for special management of cave resources in the Guadalupe Ranger District for Alternatives B, C, and D.

For all alternatives in the plan, special cave management should apply to critical cave and karst resources in all of the Guadalupe Ranger District.

Furthermore, critical cave resources extend further beyond the specified cave management zone in Alternatives B, C, and D in the plan, per the mapping and guidance of the Bureau of Land Management Carlsbad Field Office. (Map 1)

¹ New Mexico Bureau of Geology and Mineral Resources,
<https://geoinfo.nmt.edu/resources/water/projects/bwa/CapitanReef/home.html>

² Geologic Resources Division, Natural Resource Program Center (2007). Carlsbad Caverns National Park Geologic Resource Evaluation Report. Natural Resource Report NPS/NRPC/GRD/NRR. Denver, CO.



Map 1: Cave and Karst Resources. Map created by Emily Wolf, October 26, 2021. Source: Bureau of Land Management, Carlsbad Field Office Spatial Data/Metadata (https://www.nm.blm.gov/shapeFiles/cfo/carlsbad_spatial_data.html)

Critical karst zones are those areas in known soluble rock types with high density of significant cave systems and/or bedrock fractures that lead to the rapid recharge of karst groundwater aquifers from surface runoff. These areas provide critical drinking water supplies for major communities, ranching operations, and springs that support rivers and vital riparian habitat. High karst occurrence zones are in known soluble rock types and contain a high frequency of significant caves and karst features such as sinkholes, bedrock fractures that provide rapid recharge of karst aquifers, and springs that provide riparian habitat.

According to the Forest Service in their 2012 Planning Rule that dictates the development of Forest Plans (77 Fed. Reg. at 21163): Forest Plans must include “plan components, including standards or guidelines, to maintain or restore...[w]ater quality [and] [w]ater resources, in the plan area, including lakes, streams, and wetlands; ground water; public water supplies; sole source aquifers; source water protection areas; and other sources of drinking water (including guidance to prevent or mitigate detrimental changes in quantity, quality, and availability). (36 C.F.R. 219.8(a)(2)(iii) and (iv); see also 36 C.F.R. § 219.8(a)(1))”

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Considering the damage that could occur to aquifers from industrial leaks and spills from vehicles, blasting, road construction, active and abandoned sites, and “ghost” equipment, as well as the possible impacts to critical water supplies for Carlsbad and the surrounding area, **we urge the US Forest Service (“agency”) to expand the “special cave management area” within the plan to encompass all areas characterized as having critical cave and karst potential.**

To help safeguard aquifer resources, protect the fragile cave and karst system, and make progress in achieving landscape and climate protection goals, we urge the agency to undertake vulnerability studies, including geophysical and hydrologic studies, for areas characterized as having high and critical potential for cave and karst features. **As all “timber suitability” areas as prescribed by the plan occur in high karst areas, we recommend that the agency withdraw these timber extraction areas from zones containing high and critical karst resources, as well as withdrawal from all mineral entry. Barring a withdrawal, we urge the agency to attach stipulations to any timber extraction activities, requiring that geologic surveys occur before any extraction takes place, and all activities move forward utilizing proper techniques to protect cave and karst resources.**

Alongside this, the agency must ensure regulations are applied to existing sites that carry the potential for land, air, and groundwater contamination, and safeguards are put in place for infrastructure development. For construction of infrastructure such as roads, tree felling, prescribed burns, and other activities where heavy machinery is used, we urge the agency to ensure that language is used that more effectively directs operators to protect fragile cave and karst ecosystems. For example, we appreciate that the agency calls for operators to “Identify and document cave and karst features when they are found to occur across the landscape; these features include springs, sinkholes, and losing streams.” However, the agency goes to no lengths to ensure that these measures to identify and document caves will be effective in protecting these resources, saying on page 85, “If timber harvesting is permitted near a cave, consider directionally felling trees away from a cave and its course.” **We urge the agency to put in place stipulations and safeguards which do more than asking operators to consider felling trees away from caves; namely, adequately identifying and mapping cave and karst openings in critical and high karst areas, requiring that surveys are taken before activity is permitted in or near those areas, and requiring operators to have a 200-meter buffer away from the surveyed footprint of the cave. Cutting timber from around cave entrances increases the runoff entering the cave and can dramatically change the ecosystem of the cave as well as groundwater recharge. Likewise, cutting timber over the top of cave passages can affect the recharge of water into the cave system.** Lands with unique, fragile, and crucial subterranean resources should be treated no differently than areas containing archaeological or threatened or endangered species sites and resources.

As stated in the plan, “All caves should be protected as potential habitat and their microclimates must be maintained during management activities (such as timber harvest, prescribed fire activities, road construction, or recreation uses).” (67)

We urge the agency to undertake a wide-ranging programmatic NEPA regarding cave and karst resources prior to any industrial, recreational, or fire activities proposed. The agency should collaborate with any and all federal and state agencies, nongovernmental organizations, and universities, as well as local, regional, and National Speleological Society to identify significant caves, obtain data, encourage research on karst environments and karst-dependent species, and develop

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conservation strategies for protecting karst-dependent species and their habitats. In particular, we urge the Forest Service to collaborate with the National Park Service in management of the karst and cavern system which extends beyond the Guadalupe Ranger District to Carlsbad Caverns National Park and the surrounding region, which forms the Capitan Reef aquifer and its recharge area.

Because of the unpredictable impacts on fragile cave and karst systems, aquifer resources, and the wildlife they support from human development, **we recommend that the agency fully assess karst openings and aquifer vulnerabilities, and incorporate these findings when undertaking land transfer processes.** The landscape encompassing and extending beyond the Lincoln National Forest holds great cultural and ecological significance, and transfer of national forest lands for other uses may compromise the integrity of air and water quality, soil and watershed health, cultural sites, properties, and resources, and aquifer health. Because of the high and critical karst areas characterizing parts of the Lincoln National Forest and connecting the broader landscape through critical drinking water supplies and beloved cavern systems, we urge the agency to ensure that areas with cave and karst potential are not transferred to private ownership, ensuring protection of these subterranean resources.

We thank the US Forest Service for the opportunity to comment on the Lincoln National Forest Plan Revision and weigh in on a management plan which has the potential to irreversibly impact the region's aquifer, as well as fragile and ecologically significant cave and karst resources and wildlife. Please don't hesitate to reach out with additional questions.

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