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The Sangre de Cristo Mountains in New Mexico have faced significant challenges due to wildfires, particularly the largest-ever wildfire in the state's history that burned over 340,000 acres in 2022 ¹. Post-wildfire recovery strategies in this region focus on public safety and environmental restoration, employing various scientific approaches:

Watershed Restoration

Watershed restoration is a critical component of post-wildfire recovery in the Sangre de Cristo Mountains. Local organizations, such as the Hermit's Peak Watershed Alliance (HPWA), are using small-scale,

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nature-based approaches to restore the Gallinas watershed ¹ . These efforts include:

1. Building structures with on-site materials like stones and fallen timber to slow flooding and collect sediment ¹ .
2. Using damaged or burned trees in restoration projects, aligning with Indigenous knowledge of maximizing local resources ¹ .
3. Creating ponds and other structures to spread out erosive surges and deposit sediment over a broad area, enhancing floodplain resilience ¹ .

Soil Stabilization and Erosion Control

Post-wildfire landscapes are prone to erosion and flooding due to unstable, water-repelling soils. Scientific literature suggests several strategies to address this issue:

1. Contour felling: Cutting down burned trees and placing them perpendicular to the slope's incline to create natural dams that slow water runoff ¹ .
2. Seeding and mulching: Applying quick-growing or native plant species and mulching with certified weed-free straw or wood chips to protect high-value resources ⁷ .
3. Installing erosion control measures at critical sites to prevent soil loss and protect cultural resources ⁷ .

Landscape-Scale Forest Restoration

To enhance long-term resilience and reduce the risk of fu'





landscape-scale forest restoration is crucial:

1. Capitalizing on areas that experienced beneficial fire effects by using prescribed burns to maintain these healthier forest conditions ² .
2. Implementing strategic fuels reduction in high-severity burn areas to protect remaining live forests from future high-severity fires ² .
3. Focusing on slope analysis to identify areas between 20% and 55% slope, which are more prone to erosion and require prioritized stabilization efforts ³ .



Water Supply Protection

Protecting water resources is essential for both public safety and environmental health:

1. Assessing and treating micro-watersheds (approximately 250 acres) to ensure proper scale and design of conservation measures ³ .
2. Modifying or removing culverts to allow drainage to flow freely and constructing drainage dips or emergency spillways to prevent roads and bridges from washing out during floods ⁷ .

Strategic Reforestation

While large-scale replanting may not be feasible, strategic reforestation can aid in long-term recovery:

1. Identifying and seeding areas where trees have the best chances of surviving, focusing on high-elevation locations to natural seed dispersal downstream ¹ .





2. Monitoring and supporting the natural regeneration of vegetation, such as aspen trees and scrub oak, which are already emerging in some areas of the burn scar ⁶.

These strategies, based on scientific literature and local experiences, aim to restore the Sangre de Cristo Mountains' ecosystems while prioritizing public safety and long-term environmental resilience. Implementing these approaches requires collaboration between federal agencies, local organizations, and community members to ensure effective and sustainable recovery efforts.

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