



SAN MATEO COUNTY PARKS DEPARTMENT

Pescadero Creek County Park Climate & Habitat Resiliency Plan Summary

After the CZU Lightning Complex Fire burned over 2,800 acres of Pescadero Creek County Park in 2020, San Mateo County Parks partnered with Auten Resource Consulting to comprehensively assess post-fire conditions and develop a plan to manage the park's forest ecosystems going forward.

The Climate & Habitat Resiliency Plan focuses on nurturing Pescadero Creek Park's native species, habitats and ecosystems to cultivate a forest that is more resilient to climate change and landscape events, such as disease and fire. The Plan outlines forest restoration and management approaches that will guide the Department in achieving its goals while working responsibly and effectively. These include:

- Restore ecosystems and promote old-growth forest habitat
- Reduce forest density and nurture native species growth
- Conduct fire fuel reduction to make forests more resilient to wildfire
- Protect sensitive resources through mitigation practices
- Identify and implement monitoring, education, and research opportunities
- Protect and maintain park infrastructure and facilities
- Foster resiliency and ecological health in Pescadero Creek Park



Pescadero Creek Park from the Tarwater Trailhead

Pescadero Creek County Park is a 5,943-acre park located in the Pescadero Creek Watershed near the town of Loma Mar, CA. Prior to San Mateo County Parks assuming management in 1971, the property was extensively logged by the Santa Cruz Lumber Company. While a small number of old-growth redwood stands remain, today the forest is largely composed of dense, second-growth coast redwood and Douglas-fir.

Like many areas within the Santa Cruz Mountains, Pescadero Creek Park has experienced numerous ecological stressors, including prolonged drought, intensive land use and development, wildfire suppression, disease, and climate change. As a result, ecosystem health and resiliency has declined. Forest stands have become overly dense. Competition from invasive plant species has displaced desirable native species. With careful, adaptive management, we can restore an ideal ecological habitat that will be resilient to future large-scale events or disturbances such as wildfires and climate change.

Our Natural Resource Management Mission

San Mateo County Parks practices principles of good stewardship to preserve our County's natural and cultural treasures. We are committed to maintaining safe, accessible parks that provide recreational and learning opportunities that enhance the community's quality of life.



CZU Lightning Complex Fire | Credit: Brad Pennington/Courtesy of Midpen

Climate & Habitat Resiliency Plan Goals

Preserve biodiversity, habitat, wildlife, fisheries, soil and watershed resources

- Restore, protect and enhance important features of the forest, grassland and stream ecosystems
- Encourage the development of functional old-growth forest and habitat characteristics
- Improve forest wildlife habitat to foster healthy wildlife populations and promote biodiversity
- Nurture marbled murrelet nesting habitat
- Control invasive species by utilizing Integrated Pest Management (IPM) practices

Increase resiliency to disturbance and climate change while reducing risk of catastrophic wildfire

- Create variety in forest composition, age and density
- Reduce low-level vegetation that can fuel wildfire spread
- Encourage carbon sequestration through stand thinning to promote tree maturity
- Reintroduce fire to the landscape to foster a healthy ecosystem and reduce fuel loads

Monitor, research, demonstrate and educate

- Complement existing park recreational use with interpretation programs
- Partner with academic institutions to advance scientific research on active management of coast redwood and Douglas-fir forests
- Demonstrate forest management and restoration techniques for public education
- Conduct long-term forest monitoring and use data to inform adaptive management techniques

Identify actions for the Parks Department to implement

- Outline restoration strategies, treatments, best management practices, and permitting and budget frameworks
- Provide realistic understanding of project constraints, including time, cost, access, and permitting.



An example of old-growth redwood forest | Credit: John Harvey, SF Chronicle

Habitat

Pescadero Creek County Park encompasses diverse habitats, including those that support rare, threatened, or endangered species. Stands of old-growth redwood on the north side of the park offer a unique view into the past, when groves of large-diameter, mixed-age redwood trees dominated the Santa Cruz Mountains. However, in recent decades forests in the region and within the park have suffered significant disruption to their natural cycles as well as a departure from the traditional ecological practices of the Native peoples who

cared for them. While examples of old-growth redwood stands remain, today most of the forest is composed of dense second-growth trees that have been weakened by extreme wildfire, heavy logging, and increased competition for resources.

To restore Pescadero Creek Park to a healthy, resilient condition, the Climate & Habitat Resiliency Plan reintroduces moderate disturbance into the ecology of the forest, with approaches that replicate the effects of naturally occurring events, such as occasional low, patchy fire. Ideal outcomes include:

- A mosaic of redwood, mixed conifer, and hardwood-dominant stands that are rich in biodiversity, habitat complexity and native plant regrowth
- Reinvigoration of native grasslands that are currently being encroached upon by shrub and Douglas-fir
- Increased diversity, including more varied interaction between plant communities and more variety in the age of tree stands and in the wildlife who live in them

The endangered marbled murrelet is a unique seabird native to Pescadero Creek Park, who nests high in the redwood forest canopy | Credit nps.gov



What is Resiliency?

Resiliency is the ability to continue flourishing in the face of adversity. The forests of North America have endured adversity for millennia, long before the presence of humans. They have survived periods of significant resource scarcity, changes in climate, disease and natural disaster. Forest resiliency, particularly in California, implies a forest's ability to overcome extreme events and to adapt to environmental changes.

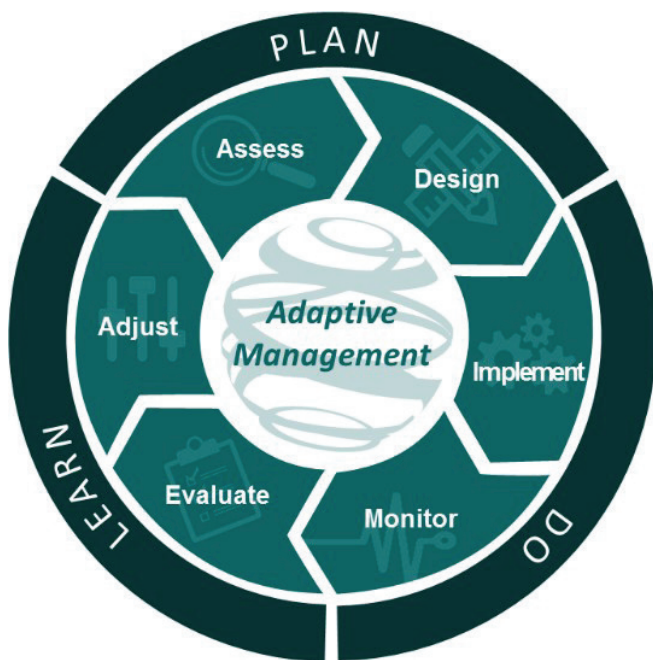
But over the past century, our forests have faced unprecedented challenges. While ecosystems rely on moderate disturbance to encourage regrowth and adaptability, ongoing mega-disturbances like wildfire and accelerated climate change deviate significantly from what our forests are adapted to. These factors are stressing the forest beyond its ecological capacity and greatly increasing the vulnerability of its various ecosystems.

Adaptive Management & Treatment Diversification

The Climate & Habitat Resiliency Plan is designed to help San Mateo County Parks address environmental change in Pescadero Creek Park over time with a toolkit of adaptable natural resource approaches.

Adaptive landscape management means restoring the forest with the future in mind and adjusting our approach as needed. A project begins by assessing the conditions, objectives, and possible outcomes that will determine the treatment design. Work will proceed under professional supervision to ensure that scope and protection measures are observed, and expectations met. Monitoring to assess the project's effects on the landscape may begin before the project starts and will continue throughout. Possibly the most important part of adaptive management is the monitoring that occurs after the work is completed, where the results of the project, both immediate and ongoing, are evaluated against the intended goals and are used to inform future projects.

Because there's no one-size-fits-all solution to restoring an entire forest ecosystem, the most effective projects will be those in which we diversify our approach, performing site-specific treatment based on previous observation.

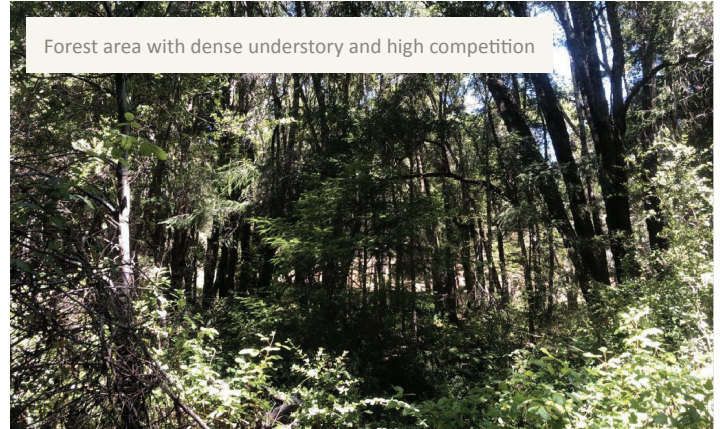


Restorative Forest Management Efforts

Silviculture is the practice of managing forest composition, structure, and growth. Silvicultural treatments can differ based on the goals of a forest management project. The goal of San Mateo County Parks and the Climate & Habitat Resiliency Plan is ecological restoration, habitat resiliency, and fire fuel reduction within Pescadero Creek Park. To that end, our treatments are meant to achieve and maintain a certain tree age, size, and density within any given stand.

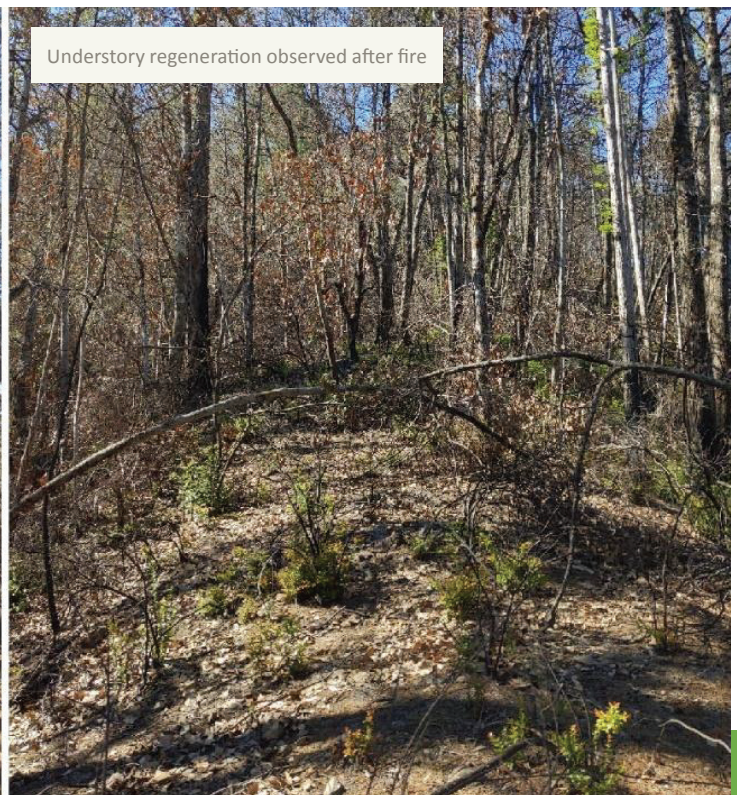
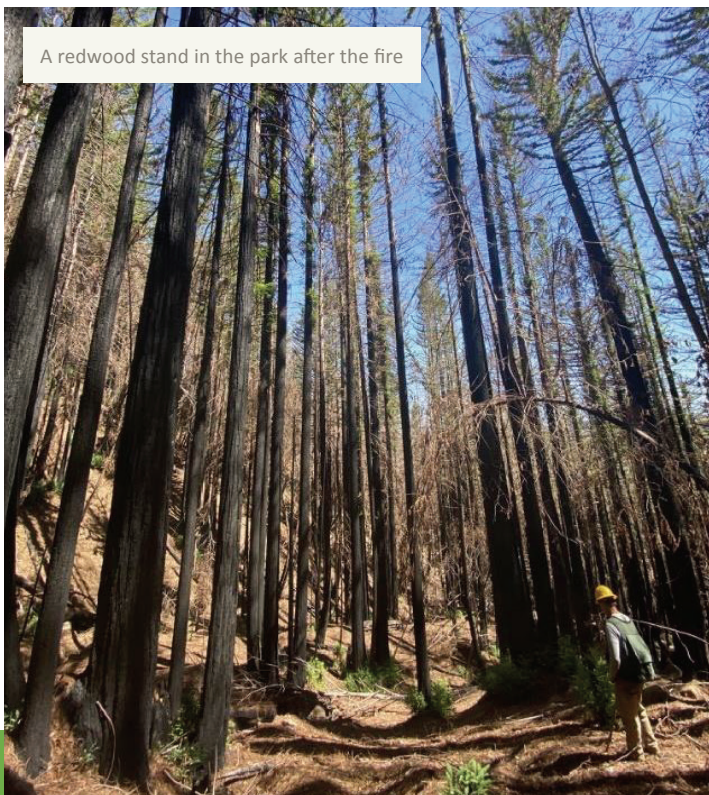
Creating shaded fuel breaks and defensible spaces removes ground, ladder, and crown fuels and breaks up vertical and horizontal fuel continuity. These treatments hinder wildfire spread, lessen its duration and intensity, and allow firefighters access when a fire does occur.

As trees are removed individually or in small groups, care is taken to preserve variety in tree age and size. This keeps fires from burning out of control and contributes to forest health. Reduced competition for water, sunlight, and soil nutrients encourages the continued



growth of the remaining trees. The reduced density of trees promotes growth of old-growth trees, overall health and vigor within the stand, and allows for natural regeneration.

Grassland, meadow, riparian, and wet-area restoration treatments are intended to restore, retain, or enhance such areas for their ecological value by removing encroaching conifers and shrubs, where applicable.



The Climate & Habitat Resiliency Plan provides the Parks Department with a comprehensive, actionable strategy for implementing important forest restoration work. With its clear guidance and direction we can proceed with permitting and implementation of the restoration goals for this park.