

Putting the Pieces Back Together

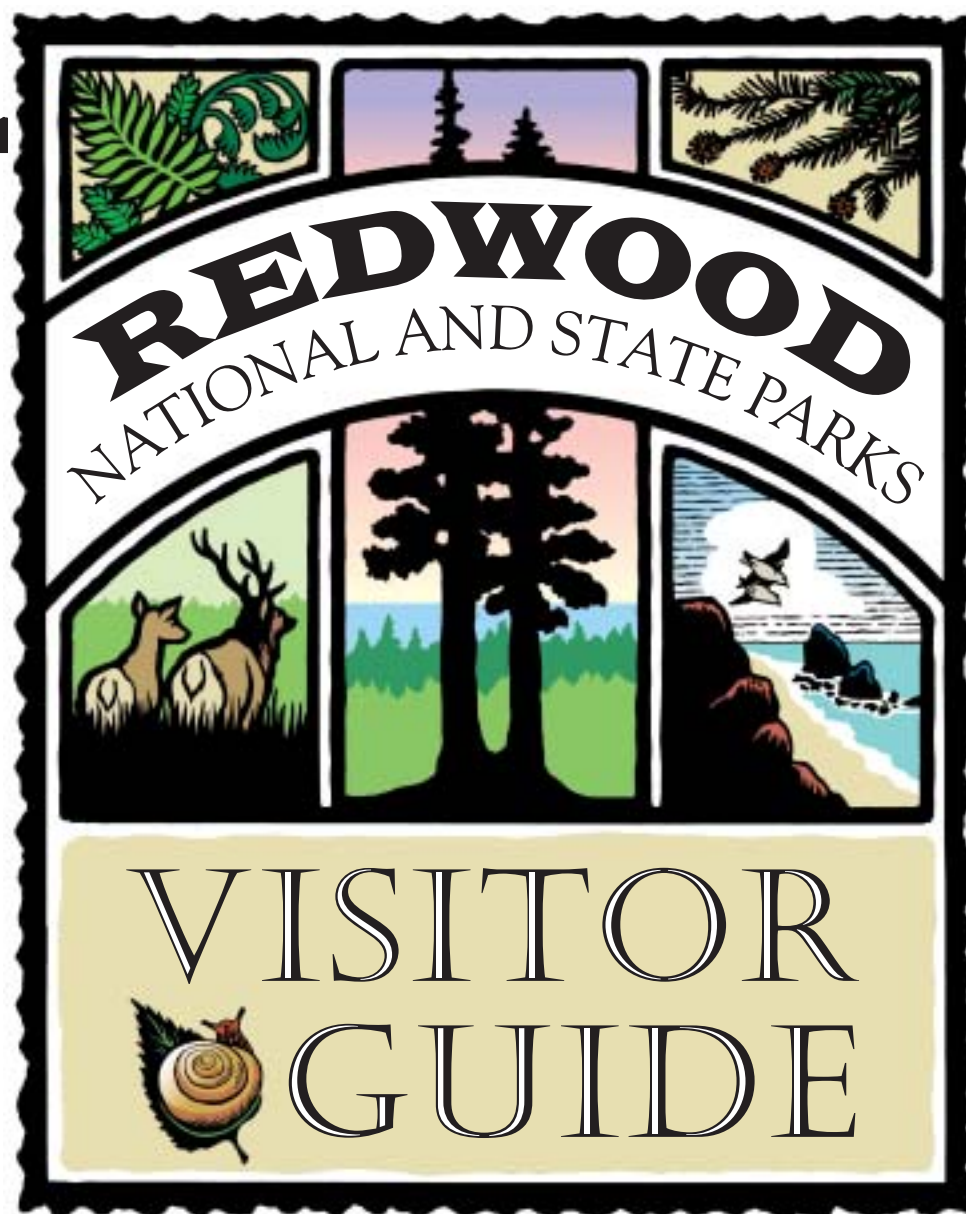
By Jim Wheeler

The redwood forest along Mill Creek stood tall and whole 150 years ago. From its headwaters on Childs Hill to the alluvial flats where it joins the Smith River, the Mill Creek watershed held within its ridgelines an ancient, pristine, and healthy ecosystem.

However, the untrammelled landscape did not survive the 20th century intact. By the early 1900s, Mill Creek's watershed had been pared into pieces, some pieces protected as natural reserves, others hungrily consumed by a growing nation. In June 2002, the chance to make Mill Creek watershed complete once more was realized when Stimson Lumber Company sold 25,000 acres of heavily logged land to the Save-the-Redwoods League (SRL) and the State of California. **In December 2005, federal legislation was approved to expand Redwood National and State Parks by including the Mill Creek watershed within its boundary.**

Reuniting the forests on the headwaters and middle reaches of Mill Creek with those of Redwood National and State Parks (RNSP) constitutes a milestone in the history of redwood forest conservation. With the entire Mill Creek and upper Rock Creek basins under the umbrella of public ownership, new restoration techniques and adaptive management can be used to encourage the now-young forest toward its ancient forest ways. The Mill Creek ecosystem can be made whole again.

Standing atop Childs Hill and gazing over the watershed, the importance of reunification becomes apparent. Mill Creek, a major tributary of the Smith River, is finally protected along its entire length. Below lies the sweeping expanse and deep canyons of the new parklands. In the distance, the dark green edge and rounded canopies of the ancient forest at the boundary of RNSP marks the lower portion of the creek, protected since 1929. Coastal views extend from Brookings, Oregon to St. George Reef Lighthouse six miles offshore.



MILL CREEK UPDATE: 4 YEARS LATER



Only 200 acres of ancient forest remain in five isolated stands, with the rest of the forest in various stages of regeneration. Its stream corridors are largely intact, providing a variety of habitats for area wildlife. Mill Creek has always been an important passage-way for anadromous fish. The most prolific coho salmon stream left in California also supports Chinook and chum salmon, and steelhead and cutthroat trout. While logging reduced or eliminated some plant and animal species, Mill Creek remains home to 23 threatened and endangered species. Next door, the ancient forests of RNSP act as biological reservoirs, filled with a myriad of plants and animals that will replenish the newly acquired lands as the forests mature.

North and east of the headwaters, the ridgeline of the Little Bald Hills marks the geologic boundary between the Coast Range and the Klamath/Siskiyou Mountains. Here sedimentary, shale, and schist rocks of the coast range meet continental peridotite and serpentine, nutrient poor mantle rocks and soils that host a variety of endemic plants.

Carnivorous California pitcher plants thrive in boggy serpentine soils edging the Klamath/Siskiyou bioregion. The endangered western lily and McDonald's rock cress are found here. Port-Orford-cedars, the tallest and arguably most beautiful cedars native to North America, flourish in this region. Across the South Fork of the Smith River to the east, massive snow covered mountains and the rectangular projection of Preston Peak dominate the skyline. Below, knobcone pine covered ridges east of Rock Creek reveal the serpentine soils of the Siskiyou.

The pieces of the Mill Creek watershed, tugged apart years ago for different uses, have come together. Acquisition of the Mill Creek and Rock Creek watersheds provides public ownership and protection of lands stretching from the rocky Pacific coastline to the snowy crests of the Siskiyou. Natural processes can return to an intact landscape. The pieces of Mill Creek, reunited once again, can recover their ancient forest qualities.



There's No Place Like Home

By Lynne Mager

The endangered marbled murrelet, one of the world's only seabirds to nest in trees, faces extinction in California. Marbled murrelets nest in very large coniferous trees within 35 miles of the ocean — a rare commodity after more than 150 years of logging. Old-growth trees provide large limbs for nesting, as well as canopy cover to protect murrelets from predators as they fly swiftly from their forest home to the sea and back gathering fish to feed their young.



The Mill Creek watershed once provided a prime neighborhood for murrelet breeding, but forest fragmentation has taken its toll. Today, less than one percent of the Mill Creek property is old growth. Envision adult murrelets trying to avoid densely-packed, even-aged stands of trees at speeds up to 60 miles per hour, then flying out in the open over clear-cut land — a dangerous way to travel, indeed. In addition, fragmented forests and trash left by humans attract ravens and jays, birds that feed on murrelet eggs and chicks. Although it could take hundreds of years for second-growth stands to mature into suitable nesting habitat on their own, thinning crowded stands will accelerate the process and encourage more marbled murrelets to again call Mill Creek home.

You can help the plight of the murrelet. Please attend to all food items at your camp or picnic area and on trails. Leave no crumb behind! Together, we can ensure a place in the wild for a rare bird.

Mill Creek

challenges us to think about the long term promise. A tributary of the Smith River, Mill Creek travels through the northernmost region of redwoods and boasts strong populations of salmon. The acquisition of Mill Creek completes an entire watershed and forms habitat links between the coast redwood forest and inland forests of the Klamath-

The Most Important Groves

By Jeff Denny

With dark green spires towering 300 feet above steep canyons and massive trunks dwarfing the forest bedding, the redwoods of Mill Creek astounded Stephen Mather and Madison Grant in the summer of 1919. Mather, director of the National Park Service, and Grant, cofounder of the Save-the-Redwoods League (SRL), proclaimed the Mill Creek redwoods "the most important groves" in northern California. Mather added, "As Del Norte County is somewhat remote it may be immune for a short time from serious inroads by the axe and there is no doubt that the Smith River redwoods should be acquired for a National Park."

The towering redwoods would not be remote for long. Paving of the Redwood Highway in 1915 drew tourists who marveled at these quiet giants, while timber tractors and saws reached deeper into the forests. A

1915 Del Norte County advertisement proclaimed, "There is enough timber in this country to keep a dozen mills at work for a thousand years."

Mill Creek's redwoods had felt the sharp edge of the axe as early as the 1850s. The needs of a growing population and post-War industrial innovations accelerated consumption of the northern redwoods. By 1920, nearly one third of California's original redwoods had been converted to shingles, building materials, and railroad ties.

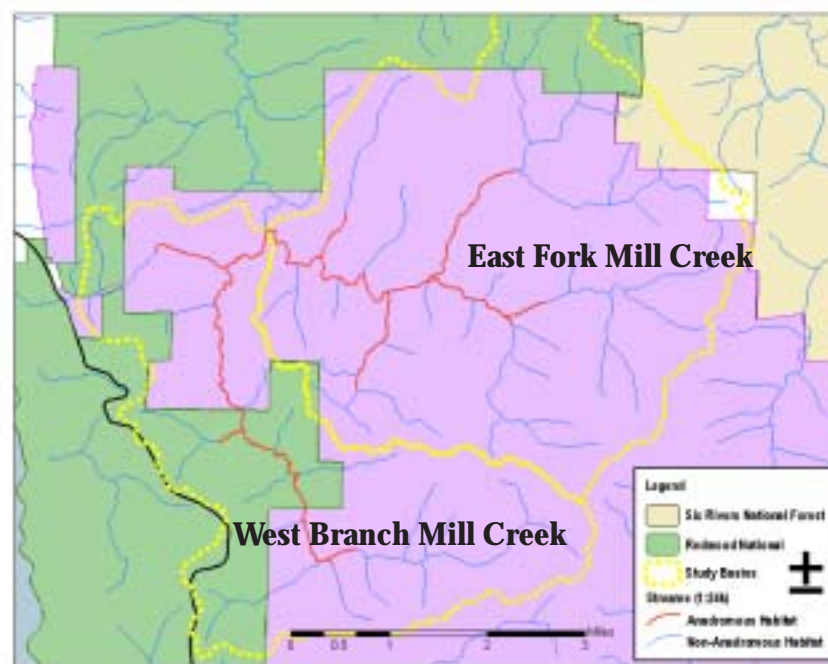
The time to protect Mill Creek's trees was now, Mather determined, but Congress failed to act. Between 1911 and 1947, Congress rejected six different proposals to create a Redwood National Park. Meanwhile, Grant's Save-the-Redwoods League worked tirelessly to acquire redwood groves through private donations. In

the 1920s, land purchased by the League created the first redwood state parks in California. The redwoods of the lower Mill Creek drainage found protection within Jedediah Smith Redwoods State Park, but the remaining 25,000 acres of its giant trees gradually disappeared.

The last and best chance to save the Mill Creek giants came in 1964. Proponents of a large national park finally found a willing audience in Washington. However, advocates for a new Redwood National Park along Redwood Creek won the day, and by 2000 only 200 acres of old-growth forest remained in Mill Creek.

Today, Mill Creek joins Redwood National and State Parks as a complete watershed, but only as a shell of the healthy ecosystem of the past. Our responsibility in the 21st century is to restore the life and health of one of our most important redwood groves.

UPDATE: A Tale of Two Forks



By Lynne Mager

Why would the west branch of Mill Creek produce twice as many salmon smolts as the east fork of the very same creek? Logging commenced in the west branch in 1908 and continued until 1920. The countryside then turned to sheep and cattle raising and luckily, some trees were left standing. Logging in the east branch began in 1954. By then, new technology and forestry practices stripped the landscape of trees straight down to the creek. Salmon need big trees shading the streamside to keep the water cool. But that's not all. From 1970 to 1980, the east fork was cleaned out of "large woody debris." Large fallen logs create pools that are essential for salmon spawning.

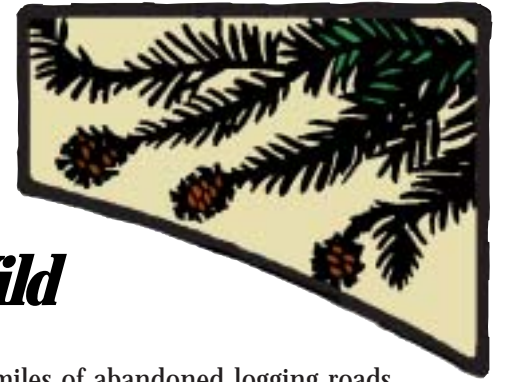
A tale of two forks tells us about habitat. The west branch has had more time to recover from fewer impacts on the land and the riparian corridor. It has twice the "wood" in its water to support salmon growth.

In the past 11 years, researchers have been "following the critters" to see what's happening to fish populations. The west branch boasted 37,000 smolts over those years while the east fork produced only half as many juveniles. The fish study, initiated in 1980, will continue to conjure up more accurate "fish tales" in the future.



Photo by Paul Albro

Siskiyou bioregion. After 50 years of timber harvesting, the forest is protected and can grow again for thousands of years. Careful restoration techniques will stimulate large tree development, including a multi-layered forest canopy that supports diverse plant and wildlife. Mill Creek — a place to visit the wild creatures, hike the misty redwoods, and find solace. We are four years into the promise.



UPDATE: Regaining the Wild

By Debbie Weist

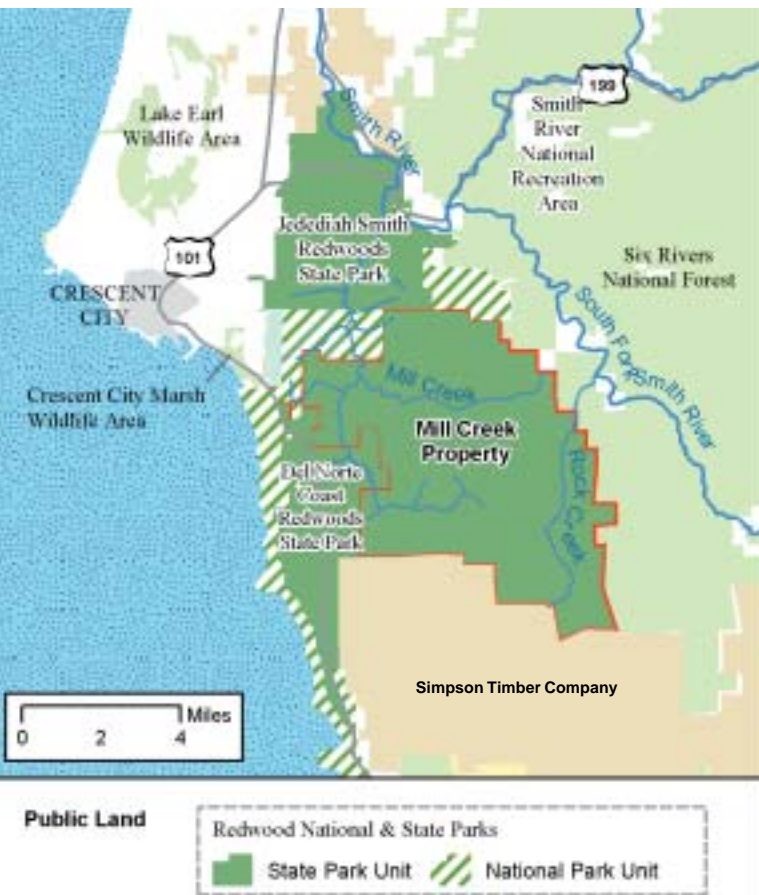
Standing on this old spur road — one of the hundreds of miles of abandoned logging roads weaving through the Mill Creek addition — I am captivated by the full and roaring Rock Creek below me. For the first time, I truly understand what it means to protect a whole watershed. Second-growth forest lies on either side of me. Stretching to the horizon, my eyes follow the undulating coastal range inside Six Rivers National Forest. Behind me lies the reason for my visit.

Since 2002, park crews have assessed the intricate network of roads and begun the long process of road removal. Through more than 30 years of trial and success in Redwood Creek (in the southern end of the parks), managers developed revolutionary methods of recontouring hillslopes and reshaping landscapes using excavated debris from earlier road construction.

Why remove the roads? Roads require maintenance and repairs. Without routine upkeep, culverts plug and streams are diverted, resulting in excessive erosion and unnatural landslides. The increased sedimentation in streams destroy crucial habitat for salmon spawning and rearing. Roads also fragment habitat, reducing home ranges for many other animals. Removing roads increases the useful habitat for these animals, such as bear, lions, elk, and bobcat.

Gazing once more at the hillside before me, I notice the healing scars from the roughly 18 miles of road restoration already completed. With a little imagination, I can see the marks disappear over the next 20 years and envisage young healthy redwoods reaching for the sun, complete with lush greenery forming under the canopy. Rejuvenated, I return to the office, knowing the prospects for redwood renewal are in good hands. By removing roads, the foundation is laid for the ancient ones to return. By reclaiming landscapes and restoring drainages, native plants naturally populate the soil and animals find places to flourish. With these techniques, future generations will be able to enjoy a fully restored old-growth redwood forest.

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Right. An excavator removes an old culvert from a washed out stream crossing. All road fill will be pulled out and the original stream grade reestablished.



Save-the-Redwoods League, California Department of Fish and Game, Coastal Conservancy, Wildlife Conservation Board, United States Fish and Wildlife Service, Smith River Alliance, California Conservation Corps, National Park Service, and California Department of Parks and Recreation staff have contributed to restoration efforts.

UPDATE: Forest Restoration - New Beginnings

By Lathrop Leonard

Imagine a young second-growth forest — planted, say, fifteen years ago. The trees grow tall and narrow in neat, clean lines. Look closer. It's shady and dark. Little grows under the dense canopy. The lower and middle branches of the trees are dying. Competition for light and nutrients stunts tree growth. This forest was planted for timber production. But the goals for the Mill Creek watershed no longer involve maximizing timber revenues. Park objectives focus on how to encourage biodiversity and forest health, and eventually how to get historic old-growth forests growing here again.

The work we (botanists, forestry technicians) do today in restoring young forests will take many decades off the centuries needed to develop old-growth characteristics. We start by prioritizing areas with the greatest need for restoration. Scientists generally agree that very young stands (11 to 24 years old in Mill Creek) often

benefit the most from forest restoration. This is the most dynamic time in a forest's life. Many stands have more than a thousand small trees per acre, when historically we know there should only be 30 or 40.

The next step may sound counterintuitive, but in order to grow



big trees, we have to cut down some little ones. By reducing tree density, the remaining trees grow vigorously. Reduced competition also allows more light to reach the forest floor. More plants will grow, animals will return, and biodiversity will increase.

Nonetheless, we aren't simply removing trees. As we thin, we're also changing the mix of tree species to restore historic conditions. By cutting many of the Douglas-firs that were planted for timber production, we're encouraging redwood, Sitka spruce, grand fir, and western hemlock trees to play an important role in the forest's future. So far we've thinned about 500 acres. We hope to find funding to thin an additional 3,500 acres over five years.

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Left. Second Growth: The uniform leaf canopy blocks sunlight, creating a dark, tedious landscape with little variation or diversity of plant and animal life.

Guided tours of Mill Creek by vehicles, bicycle, horseback, and foot are being offered to the public on a limited basis.

