



OUT of the FLAMES

Point Reyes

Ten Years

After the

Vision

Fire

The manifold wilderness of Point Reyes—from the waves breaking on its unspoiled beaches to the raptors circling its fog-swept forests—embodies much of what we love about the natural world. With its southern tip a mere 20 miles from the Golden Gate, this vast, diverse, yet accessible natural sanctuary offers an easy escape from the mundane and urbane for 2.4 million visitors per year.

Ten years ago, in October 1995, an epic wildfire scorched 12,000 acres of the park and consumed 45 homes on nearby Inverness Ridge. Miraculously, no one was killed in the weeklong Vision Fire (so called for its origin near the summit of Mount Vision), but the blaze sent chills down the spines of people around the region, who feared for the health and survival of a favorite local treasure.

The perspective of a decade brings new understanding. The Vision Fire burned in a region that is wild but not remote, affording scientists an unprecedented opportunity to study the complexities of the landscape’s response to a massive burn. Meanwhile, open space districts and fire professionals took on the challenge of rethinking strategies for protection of human communities situated at the “wildland-urban interface,” yet another stage in the evolving and continuing relationship between people and wildland fires in a flammable landscape. Different habitats and communities respond to flame in different ways, but today all the former burn zones look lush and healthy, a testament to fire’s ancient regime of creation, destruction, and transformation.

Smoke from the Vision Fire billows over Inverness Ridge (seen here from across Tomales Bay) on the afternoon of October 3, 1995.

A Landscape Renewed by Fire

By Geoffrey Coffey

Enter the woods on Inverness Ridge and pause for a moment to listen. Natural history weaves itself into stories for those willing to hear—whether teased from the patterns in stone, distilled from the rings of a tree, or gathered from the melody of birdsong. Here in the forest, bishop pine trees whisper in the cool rush of an onshore breeze, their voices spinning a million-year-old tale.

In October 1995, several teenagers camping illegally on nearby Mount Vision lit a campfire. They drenched and buried the embers, but the fire apparently smoldered underground in old pine duff. Three days later, fed by 40-mph winds, the fire erupted. This combination of specific conditions—gusty weather, dry landscape, the meeting of spark and fuel—created the firestorm that followed.

The resinous, oily sap of a bishop pine tree burns hot, and the flames spread swiftly. A stiff northwesterly blew the blaze into the Paradise Ranch Estates, a housing development on the ridge above Inverness Park, torching 45 houses. On the second day the winds turned erratic, and the fire increased its area fivefold. The third day saw the winds shift to the northeast, and so began the fire's march from the ridge to the sea, where it met what firefighters call "the great Pacific firebreak" at Limantour Beach.

In its course, the wildfire burned through a number of distinct habitats including bishop pine and Douglas fir forest, coastal scrub, grasslands, and riparian zones. All these ecosystems have been shaped over time by fire, yet each responds differently to the burn.

BISHOP PINE FOREST

The liquid whistle of an osprey pierces the rising shadows of the forest, where new trees now stubble the face of Mount Vision like stout whiskers on the jaw of an oft-shaven giant. Bishop pine (*Pinus muricata*) grows contorted by the contrary forces of high wind and thin, granitic soil. Once widespread (as suggested by the fossil record), it now occurs only in scattered stands along the California coast from Humboldt to Santa Barbara counties, with isolated populations south to central Baja.

A relict from the Pliocene epoch (two to five million years ago), the bishop pine belongs to the category of "closed cone pines," which require intense heat to reproduce. These so-called pyrophytes evolved at a time when lightning-caused wildfires were more common. The bishop's cones have scales sealed closed with pitch, and they open to release their seeds only under high temperature. Direct sunshine on a late summer or autumn day can pop open the occasional cone with a bang (the sound of which, overheard in the depths of the woods, can be startling), but most cones remain closed until touched by the heat of fire, thereupon "flowering" like grotesque tan blossoms and dropping their seeds onto the freshly charred earth in which they germinate best. Most every

(right) The Vision Fire burned hottest in the bishop pine forest, torching mature trees and depositing a rich layer of ash that will nourish the newly-released pine seeds. (below) View north to Point Reyes from above Limantour Road; a vast area was consumed by the Vision Fire, which burned down from the ridge (out of photo) until it met "the great Pacific firebreak."



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tree in a bishop pine forest is the same age, born from a single high-intensity blaze.

Such fire-adapted species are commonly found in landscapes with a Mediterranean climate. In these temperate zones of winter rain and summer drought, the prolific sprouts of spring dry up and leave plenty of tinder for the conflagrations of fall. Wildland fire is part of the life cycle.

A bishop pine forest untouched by fire grows decrepit, unable to regenerate itself. Bishop pines have a normal life span of 60 to 80 years, so any given forest prospers with one major fire on a regular basis within that time frame.

Here on Inverness Ridge, where the Vision Fire burned 1,000 acres of bishop pine forest, the "new" forest demonstrates fire's regenerative power. Witnesses described the bishop pine seedlings coming up "like a carpet." These trees, now ten years old, cover the ridge in dense thickets around the blackened snags of their cremated forebears. Muscular branches of the rare Marin manzanita reach up through the tangle, competing with ceanothus and huckleberry for the bright sunlight that penetrates the diminishing spaces between the 20-foot treetops.

In addition to renewing the trees, fire sets in motion a series of changes in the forest community, removing certain species from the stage and cueing the conditions for others to flourish. Ecologists call this "succession," the natural sequence by which

certain groups of plants and animals are replaced over time by others.

It begins in the soil. Soon after the Vision Fire, UC Berkeley microbiologist Tom Bruns documented changes in the subsurface populations of mycorrhizal fungi in the bishop pine forest. These symbiotic organisms colonize the fine roots of trees and plants and perform the specialized job of collecting water and nutrients from the soil; in exchange for these goods brokered by their fungal partners, the roots pay in sugar, which the fungi could not otherwise obtain.

Bruns, who collected root fungus species in the bishop pine forest both before and after the fire, discovered that the mycorrhizal community had completely changed. Different species colonize the roots of seedlings rather than those of mature trees, and he found that

the fire shifted the underground population radically from the latter to the former. This indicates that a substantial "spore bank" of the fungi that colonize young trees had lain dormant in the soil for decades (probably since a previous such fire, as the one in 1927), waiting for the return of conditions under which they could flourish. By helping the bishop pine seedlings grow and survive, these early-successional fungi prepare the eventual fuel for future forest fires that will lead to their next generation.

The common bolete mushroom, *Suillus pungens*, allowed Bruns to track the spread of that mycorrhizal fungus through pre- and post-fire forest. Before the fire, he found huge swaths (more than 3,000 square feet) of genetically identical fungus, which means it had spread like a clone, vegetatively, from a single individual's DNA. This was a tired population in need of renewal. But after the fire, the genotype of every *Suillus pungens* mushroom collected was different—the result of spore colonization, the fungal analog of sexual reproduction. Like a phoenix, healthy diversity had arisen from the ashes of monoculture.

Fire has other effects on the soil. It burns off the upper layers of duff, the decomposing leaves and twigs that fall and accumulate over the years, exposing the raw mineral soil underneath. Ash contains nutrients such as potassium, calcium, and phosphorus, which are returned to the soil wherever ash accumulates (dispersed in patterns by the flow of water and the currents of wind); but combustion vaporizes nitrogen, which becomes scarce in the ecosystem after a burn.

Enter the legumes, or members of the family Fabaceae, whose roots contain nodules that fix nitrogen in the soil. A "big bang" of clover, lotus, and lupine followed the fire, awakened from a dormant seedbank deep underground and no doubt energized by the



CHARLES KENNARD



Bishop pines require intense heat to reproduce. The Vision Fire gave the conditions for the renewal of the bishop pine forest of Inverness Ridge. (top) Burned bishop pine cones opened by the fire. (left) A new bishop pine seedling, with seed cap still in place (Feb. 1996). (bottom) The fourth spring following the fire, blue blossom ceanothus and bishop pine saplings compete for sunlight and space along the Inverness Ridge Trail.



SUSAN VAN DER WAL

revitalized mycorrhizae. Roughly 85 percent of vegetative cover by the second year was composed of these plants. They bloomed and set seed profusely, replenishing their own seedbank in the soil, then died off as the taller trees and shrubs overwhelmed them. Notable was *Lupinus propinquus*, the blue-flowered cousin of the yellow bush lupine (*L. arboreus*), which grew into five-foot shrubs by the end of the first year and painted the hills violet with their blossoms in the second spring. Today, *L. propinquus* is no longer found in the forested regions at all, but we can assume it will spring up again after the next fire.

Plants and insects ride the roller coaster together. Transitional communities of legumes, for example, attract a transient population of butterflies and moths, documented

by UC Berkeley professor Jerry Powell. In the first year, native butterflies appeared abundantly in association with the lotus, especially the orange sulphur (*Colias eurytheme*) and the acmon blue (*Icaricia acmon*). Abundant milkmaids (*Cardamine californica*) attracted masses of the exquisite mustard white butterfly (*Pieris napi*), which flourished through three or four generations flying until October (highly unusual for this species). All declined in numbers as the low-growing plants yielded to manzanita and pine.

For the best example of life lurking on the margins, consider the rare yellow blossoms of rush-rose (*Helianthemum scoparium*), listed in 1990 as being “of doubtful occurrence in the national seashore.” This plant sprouted by the thousands after the fire, and within two years Powell discovered an association with a tiny black moth of the species *Mompba*, whose larvae fed on the rush-rose seeds. Enormous populations of the *Mompba* did not diminish by year five, and a specialist has declared this moth “previously undescribed,” i.e., a species unknown to science. “Based on past behavior of *Helianthemum* following large fires,” wrote Powell, “in time this plant and its predator will become rare again.” Sure enough, most

The colorful mosaic pattern in this mixed oak woodland near the Hostel reveals the variable effects of low intensity fire and wind. The patchiness of the burn promotes variation in vegetation structure, leading to a wider range of ecological niches and greater biodiversity.

of the *Helianthemum* were gone by year eight, and Powell has not seen any of the mystery *Mompba* in the last few years.

Another nitrogen-fixer, the blue blossom (*Ceanothus thyrsiflorus*), proliferated from dormant seed on Inverness Ridge, stimulated to germinate by the intense heat and emboldened by sunlight, in the absence of the burned-away understory. A survey by San Francisco State biogeographer Barbara Holzman, who counted plants at 50 points along 30 transects in the post-fire forest, found this blue blossom had spread significantly, with an observed increase of almost 200 percent in the number of plants in the study area between years one and two. They reached ten feet tall in year five, codominant with bishop pine, and by year ten they have maintained a position of relative supremacy. Those growing in dense stands of pine will eventually fade, but the strong population along the forest margins and in the chaparral most likely will continue to thrive.

Years three through seven saw the heyday of the Marin manzanita (*Arctostaphylos virgata*), another rare endemic. The heat of the Vision Fire, and the removal of the competing undergrowth, triggered thousands of these seedlings in areas where no plants had been known to occur in our generation. Peeking through forest openings, they

A fire-charred log is surrounded by rampant *Lupinus propinquus*, a species of bush lupine that appeared for several springs following the fire, then vanished.



BRUCE FARNSWORTH, COURTESY NATIONAL PARK SERVICE

can reach tree-like heights of 15 to 20 feet with gnarled red trunks and a gorgeous January bloom. But even now many ten-year-old manzanitas are suffering in the deepening shade of the rising bishop pine canopy, and don't have long to live. Survivors will be rare. Yet plenty of new seed now waits underground, brooding on the future.

All these organisms compete with each other for limited resources of water, nutrients, and sunlight in the seemingly random patterns of the forest. Dense stands of bishop pine will slowly thin out as the stronger trees survive and the weaker die off; scientists estimate that only three of 100 trees in an even-aged stand like this will survive to maturity. But even dead trees or “snags” play a role—they are room and board for wood-boring insects and the birds that like to eat them, and they provide nesting and perching sites for raptors. Falling snags knock over young trees and create openings in the forest, allowing shrubs like coffeeberry, huckleberry, wax myrtle, thimbleberry, poison oak, and others to reach the sunlight. Some snags roll down slope and into streams, damming the flow and creating habitat for fish and other aquatic creatures.

DOUGLAS FIR FOREST

The northern end of Inverness Ridge remains the stronghold of bishop pine, while the shale-derived southern end is dominated by Douglas fir (*Pseudotsuga menziesii*). Mixed with oaks,

bays, and madrones, and with a substory of hazelnut, red elderberry, and an occasional big-leaf maple, the Douglas fir community is more of a melting pot. This forest was heavily logged well into the 1950s, but many old-growth firs still remain, especially on the steeper slopes; some of these trees are 400 years old, rivaling redwoods in height and girth.

As Douglas fir ages, it develops a thick and spongy bark that insulates it from fire; over time the tree tends to shed its lower limbs, which might otherwise act as “ladder fuels” and carry fire into the crown. Thus adapted to the periodic burn, older Douglas firs survive most fires very well, and they regenerate readily in the aftermath. Forest fires not only clear duff from the forest floor, exposing the min-

undamaged. The mortality rate of Douglas fir in this fire was 28 to 46 percent (vs. 42 to 82 percent mortality for bishop pine). Oaks, bays, and madrones here enthusiastically stump-sprouted after the blaze. The forest is also now peppered with a fresh new helping of young Douglas firs.

COASTAL SCRUB

As the ridge descends toward the Pacific, the forest gives way to coastal scrub, a “soft chaparral” that occurs in patches at middle elevations on the western side of the ridge and on the northern point. Here the songs of white-crowned sparrows and wrentits serenade the sunrise, and trails of gray fox and mule deer weave among the coyote brush. Other com-

mon plants like sword fern, lizard tail, cow parsnip, coffeeberry, bracken fern, salal, huckleberry, blackberry, and poison oak compose the thick tangle of a northern coastal scrub plant community, especially on the north-facing slopes that conserve more moisture. Certain dry south-facing slopes contain California sagebrush (*Artemisia californica*), an aromatic species with feathered gray-green foliage more common in Southern California; here at Point Reyes it reaches the northernmost limit of its range.

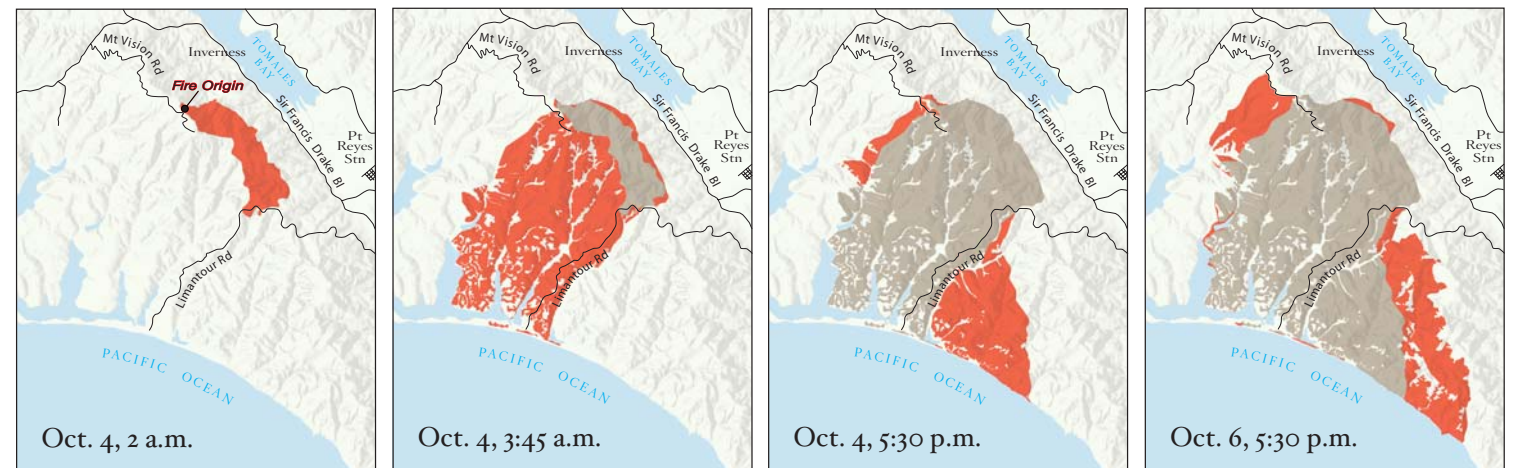


GARY FELLEMS, USGS

A Point Reyes mountain beaver caught on film with a remote camera set up by biologists studying this unusual and reclusive rodent.

All these scrub species respond well to fire, and regrowth after the Vision Fire was rampant. Today the casual observer can hardly tell that a fire happened here at all. But the scrub usually burns in a patchwork pattern, forming a checkerboard of early- and late-stage growth; this maintains the equilibrium of the habitat, with food and shelter for animals redistributed according to the vagaries of the fire. The Vision Fire disproportionately

This sequence shows the advance of the fire over the course of the first three days, from its detection at 1 p.m. on Oct. 3. The red marks the area burned since the time on the preceding map; the gray marks previously burned areas. Note the fire's dramatic wind-driven run to the ocean on the morning of Oct. 4.



GREENINFO NETWORK/LJI; DATA FROM NATIONAL PARK SERVICE (POINT REYES NATIONAL SEASHORE)



CHARLES KENNARD

“zeroed the odometer” on thousands of acres of this habitat.

This spells difficult times ahead for the Point Reyes mountain beaver (*Aplodontia rufa phaea*), an unusual and prehistoric species found nowhere else in the world. Roughly the size of a muskrat, the mountain beaver digs tunnels in cool, north-facing slopes under moderately dense coastal scrub; its primitive kidneys require it to live in moist areas and to drink one-third of its body weight in water every day. It feeds on coyote brush, sword fern, cow parsnip, and other scrub vegetation.

The Vision Fire burned 40 percent of the mountain beaver’s known range, including the majority of its prime habitat. A vast network of holes was revealed underneath the burned-away scrub. Roughly 98 percent of the mountain beaver population in the burn area died in their burrows—roasted, asphyxiated, or parched.

But all was not lost. Monitoring eight sites that showed post-fire activity, U.S. Geological Survey biologist Gary Fellers found signs of recovery at all but one site. The presence or absence of cow parsnip (*Heracleum lanatum*) appeared to play a factor in the survival of the rare rodents—presumably because this robust shrub grows quickly and thus provides more immediate food and shelter. But to thrive, the mountain beavers require the thicker

protection and taller architecture of a late-stage scrub community—especially the taller woody shrubs like coyote brush and coffeeberry, which can reach ten feet in height and usually shed their lower limbs as they grow, opening up the understory beneath them. Fellers says we must wait at least five more years, probably more, before this biome achieves the maturity necessary to support the estimated pre-fire population of 5,000 animals.

RIPARIAN CORRIDOR

Rivers, streams, and creeks—riparian corridors—trace serpentine lines of living green upon the landscape. Because they channel fresh water, these zones grow more lush trees and vegetation, and host more wildlife. In a fire, the presence of water means that plants are better hydrated, and thus more resistant to burn. Indeed, the 500 acres of riparian woodland in the Vision Fire perimeter burned at low (and occasionally medium) intensity, with a tree mortality rate of only 5 percent.



IAN TAIT

Song sparrows in Muddy Hollow showed increased reproductive success following the Vision Fire.

Wherever the riparian zone does burn, turnover happens fast—blackberry, thimbleberry, rush, nettle, man-root, poison oak, and cow parsnip swiftly recolonize the burned areas, then yield to fast-returning willow and alder, bay and buckeye. Sediment and ash washed downhill from the denuded forest leave their fertilizing deposits

Two views of the same spot in the bishop pine forest along the Inverness Ridge Trail, taken shortly after the fire in February 1996 (left) and four years later, in March 2000 (right). Even though coast live oaks are much more resistant to fire than bishop pines, the intensity of the pine-fueled fire killed the oak seen in the center of both images.

in rich alluvial fans, spurring even greater growth. Many animals displaced from other burn zones take refuge in the riparian corridors; here the fast-growing shoots make good forage for mammals, while the tangle of old and new growth provides excellent shelter for rodents, reptiles, and birds. According to Powell, who monitored Lepidoptera larvae, plants on the ridge in the bishop pine forest accumulated their caterpillar faunas slowly, while the lower canyon’s riparian woods reestablished Lepidoptera sooner and more quickly.

PRBO Conservation Science biologists Geoff Geupel and Tom Gardali discovered interesting fire-driven dynamics in the riparian bird community. Monitoring song sparrows (*Melospiza melodia*) in burned vs. unburned sites after the fire, they found significantly more birds in the burned area. As the song sparrow builds its nests in low shrubs, it likely benefited from the swift and dense regeneration of the riparian understory, and moved there en masse. An analogous boost in seed production, small insects, and other food sources likely drove the return as well.

Other bird species, such as the American goldfinch and the Allen’s hummingbird, show more flexibility in their nest-height placement—yet they were also more abundant at the burned sites than in the unburned. The proliferation of early food sources (seeds for the goldfinches, nectar for the hummingbirds) may have drawn these species back to the burn zone. Not surprisingly, most birds that live primarily in trees (e.g., the chestnut-

backed chickadee and Pacific-slope flycatcher) were found in reduced numbers at the burned site in the first few years; they will likely return only as the alders and willows of the riparian woodlands regrow.

All the above factors would account for increased numbers of birds, but not necessarily for their increased reproductive success. The latter is a better indicator of habitat quality, and hence important to measure (though difficult to quantify). Geupel’s and Gardali’s nest survival and population growth models for song sparrows suggest that the burned site became a population “source” for the region, while unburned sites were “sinks.” What accounts for the vigor that characterizes these numbers? No matter what we choose to call that special ingredient, fire appears to deliver it.

GRASSLANDS

The coastal prairie, composed of perennial bunchgrasses and sod, once covered vast stretches of Point Reyes, occupying the lower elevations roughly between the scrub and the beach. As with all of California’s native grasslands, this habitat has succumbed to a number of outside forces that disrupted their natural cycles. First came the Europeans, whose introduced annual grasses overwhelmed the natives with their sheer insurmountable numbers. Next came the beef and dairy cattle, allowed by ranchers to overgraze the bunchgrasses. Finally came the roads and the cars and the houses, the growth of the wildland-



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View of coastal scrub and Muddy Hollow from Limantour Road in the winter following the fire. Drakes Bay and the headlands of outer Point Reyes are visible in the distance.

urban interface, and the need for fire suppression, in stark contrast to the practices of the indigenous Miwok, who regularly burned grasslands to keep them fresh and productive.

Today the grasslands of Point Reyes are more rangeland than prairie, a weed patch of European annuals and grazing grounds for seven dairy and 15 beef operations. But native bunchgrasses such as hair grass (*Deschampsia*), oat grass (*Danthonia*), and fescue still bear up through the invaders, complemented by wildflowers like goldfields, checker-bloom, buttercups, Indian paintbrush, and Douglas iris. What few grasslands remained in the region touched by the Vision Fire lay blackened and fallow for one season of rain, then erupted that first spring with new life—the first and fastest zone of transition.

A SHIFTING MOSAIC

Nothing in nature is cut-and-dried; things occur by degrees. Such is the case with fire, which yields different effects on the landscape at different intensities of burn. Studies after the Vision Fire found that 70 percent of the vegetation burned at low intensity, 20 percent at moderate intensity, and 10 percent at high intensity. The result was a kaleidoscope turned in different ways—soft and easy in the low-intensity burn zone, where many of the old trees survived, vs. hard and fast in the center of the firestorm, where the old trees were

incinerated. The uneven distribution of ash and sediment from erosion is blown by the wind and washed by the rain, settling unevenly upon the landscape and further complicating the patterns of regrowth. This long-term life cycle dances to a tune called by fire, ancient destroyer and creator, artist extraordinaire.

Native plants so invigorated push the boundaries of their own communities, dictating the watershed-wide laws of succession. A grassland untouched by fire turns into scrub as coyote brush and other pioneer shrubs move in; scrub unburned may become

evergreen forest with the advance of Douglas fir. Small fires along the edges keep the boundaries in flux—or a high-intensity crown fire can torch the entire forest, setting the stage again for grassland.

We find that all roads lead back to the source, where a spark in the shadow of an old-growth forest carries all the metaphor of myth. Such ancient connections are like time-ripened seeds held in store for the calamity, yielding beauty from ashes. 🐦

The fire led to a burst of new growth and wildflowers in coastal scrub and grasslands the following spring. A charred branch frames an Indian paintbrush near the Laguna Trail, April 1996.



FRAN COX

The Vision Fire

Point Reyes



Burn Intensity

- High
- Medium
- Low

Horizontal Scale
6000 feet

Vertical Scale varies due to perspective in this simulated 3-D view. Fire intensity data courtesy of Point Reyes National Seashore. Cartography by Louis Jaffe and Peter Maier, GreenInfo Network.

HIKES

Douglas Fir Forest:
Hike the Sky Trail south from Limantour Road to Woodward Valley Trail (2.6 miles). This route through mixed-age Douglas fir reveals the varying effects of fire at different intensities. In some places, fire blackened the bark of many large, old Douglas firs, but they suffered no permanent damage. In other places along the route, you will pass standing dead trees (snags), victims of isolated crown fires. Part way down Woodward Valley, look for a clearing with a number of young Douglas fir saplings, profiting from the fire-made opening in the canopy.

Coastal Scrub:
From the trailhead near the Hostel, take Laguna Trail south to Fire Lane Trail and continue up through coastal scrub toward the ridge. Gently rub your fingers on the abundant California sagebrush and inhale the scent of its aromatic oils. These oils fed the flames that swept through here in 1995, but with the rampant regrowth, evidence of the fire is scant today. As you climb, the slope grows steeper, and soon you reenter the forest. (3.1 miles to Sky Trail; 2.8 miles return via upper Laguna Trail.)

Bishop Pine Forest:
From Bayview parking lot on Limantour Road, take Inverness Ridge Trail (which starts as a fire road) north toward the ridge. After passing around a gate, cross a stretch of asphalt and reconnect with the trail on your left (watch for sign). Skirting Paradise Ranch Estates to your right, you will find the rare Marin manzanita intermingled with the more common *arctostaphylos glandulosa* in openings between the young bishop pines. Turn left on Drakes View Trail and go downhill through the dense forest. Turn left on Bayview Trail to return to parking lot (4.6 miles round trip). Or you can walk 0.5 miles farther down, to Muddy Hollow Road, for a good view of the riparian habitat of Muddy Hollow Creek. Note the band of mixed hardwood trees running along the creek; the water these trees draw from the creek makes them more resistant to fire. (Please note: Muddy Hollow Trail is currently closed for restoration.)

Vision Fire 10th Anniversary Events

Ongoing
Film: Spark of Life—Fire at Point Reyes
An 11-minute presentation on the Vision Fire. Includes original footage and interviews with people involved in different aspects of the fire. Shown on request at the Bear Valley Visitor Center, Point Reyes National Seashore.

Saturday, September 10, 10 am–2:30 pm
Nature Hike: Tour of the Burn Area
See how various park habitats responded to the Vision Fire on a visit to the burn area at Point Reyes with Bay Nature and Jennifer Chapman, Fire Education Specialist with the National Park Service at Point Reyes. Sponsored by Bay Nature and Point Reyes National Seashore (NPS). www.baynature.org

Saturday, September 17, 10 am–4:30 pm
Seminar: Fire in the Ecosystem
Point Reyes National Seashore Association Field Seminar 10 am–12:30 pm—Presentations:
• Laurel Collins, Geomorphologist, Watershed Sciences
• Tom Gardali, Biologist, PRBO Conservation Science
• Barbara Holzman, Professor of Biogeography, S.F. State
• Jerry Powell, Professor Emeritus of Insect Biology, UC Berkeley
• Gary Fellers, Biologist, US Geological Survey, Point Reyes Field Station
1:30–4:30 pm—Field Trip
Registration required; call (415)663-1200. Suggested donation \$15–\$35. www.ptreyes.org

Saturday, October 1, 10 am–4 pm
Seminar: Fire in the Wildland-Urban Interface
Point Reyes National Seashore Association Field Seminar 10 am–12 pm—Presentations:
• Ed Mestre, Battalion Chief, Marin County Fire Department
• Keith Parker, Senior Captain, Marin County Fire Department (Tomales Station)
• Roger Wong, Fire Management Officer for Point Reyes National Seashore
• Alison Forrestel, Fire Ecologist, National Park Service, SF Bay Area
1–4 pm—Field Trip
Registration required; call (415)663-1200. Suggested donation \$15–\$35. www.ptreyes.org

Sunday, October 2, 4–9 pm
Celebrating Rebirth—A Gathering on Inverness Ridge
Slide show, potluck, artwork, and stories
Hosted by photographer Richard Blair and artist Kathleen Goodwin
RSVP to (415)663-1615

Saturday, October 8, 7–9 pm
Readings: Point Reyes Ten Years After the Vision Fire
Point Reyes Books, 11315 State Route 1, Point Reyes Station
Geoff Coffey, Sim Van der Ryn, Ane Carla Rovetta, and Greg Sarris.
Sponsored by Bay Nature and Point Reyes Books

Saturday, October 15, 2–4 pm
Discussion: Community Perspectives—Reflections on the Vision Fire
Red Barn, Bear Valley, Point Reyes National Seashore
A public dialogue on ecology, firefighting, private property, and fire safety; guest speakers will present insights for discussion.
Sponsored by Point Reyes National Seashore (NPS)

October is **Fire Safety Month** and **Fire Prevention Week** is October 2–8. The Marin County Fire Prevention Officers are sponsoring their annual **Fire and Life Safety Fair** on October 8 in Corte Madera. (415)927-5077.

Please check the Bay Nature website for additional events and updates on those listed above. (www.baynature.com/events_ptreyes.html)

Getting Burned: PEOPLE AND WILDLAND FIRE

By Geoffrey Coffey

Fire dwells deep in the human psyche. It is among the oldest of words, the most elemental of tools, and the primary means by which early man projected himself onto the world. The torch and the hearth fire enabled our move from the cave to the village, while broadcast burning gave us the ability to shape the environment to fit our needs, rather than merely adapting to the existing landscape.

The Coast Miwok lived along the coast of Marin at least 5,000 years before the arrival of Europeans. While more is known about the practices of the related inland Miwok of the Sierra foothills, the Coast Miwok most certainly managed their environment in part by regularly burning it. They learned through observation of nature that a landscape in the early stages of succession after a fire produced their primary foods in greater quantity and better quality. Thus the bounty of this region existed not despite human presence, but rather (to a certain degree) because of it.

According to Carlos Porrata, former ranger at Tomales Bay State Park, the Miwok would allow the season's first crop of acorns—which was often infested with worms—to drop uncollected. They would then light fires under the oaks; the subsequent acorn crop would be prolific and worm-free. After a fire, stump-sprouting trees, understory shrubs, and new grasses would attract elk, deer, and other game that preferred the new shoots of secondary growth to the woody stems of the old forest. Of course, an open understory also made it easier for hunters to see their prey.

The Miwok also lit periodic fires in the grasslands after they had collected the seeds

of wild rye, madia, wyethia, lupine, and red maids, which they made into seedcakes called *pinole*. By scorching the sun-dried bunchgrasses in fall, the Miwok removed old thatch and encouraged healthy new growth and a heavy inflorescence (thus more seeds) the following year. Tasty edible bulbs like camas, soap root, blue dicks, and *Brodiaea* all proliferate after a burn. Fires also kept coyote brush, sagebrush, and other pioneer shrubs of the coastal scrub in check. And, by burning up to the edge of the forest, the Miwok created the illusion of a fence that elk and pronghorn were hesitant to cross, a technique for “tending” wild herds.

According to a Miwok chief, “Burning was limited to certain elders who were looked up to as leaders or who understood how fire should be handled.” This show of respect for fire’s elemental importance underscores the Miwok’s acknowledgment of the associated dangers. They lacked hydrants, hoses, and the other tools of a modern fire department; a fire out of control could easily mean the loss of a village. The Miwok’s regular maintenance burns not only rejuvenated the landscape but also prevented the buildup of fuels that could lead to a catastrophic wild fire.

The arrival of the colonial powers from Spain brought major changes in the fire regime. In 1793, Governor Arrillaga outlawed all deliberate fires set by Indians in California, citing “widespread damage which results to the public from the burning of fields.” We do

not know whether this negative assessment derived from a fear of grass fires spreading into towns, a misunderstanding of natural fire dynamics, or simple racism. But without a doubt, the Spanish edict altered cycles of fire ecology

Immediately after the fire, an emergency Cultural Resources Team was assembled to survey the burn area for possible damage to cultural sites. Park ranger Lanny Pinola shows Bob Allen, of the Drake Navigators Guild, a Coast Miwok stone artifact uncovered by the fire.



BRUCE FARNSWORTH, COURTESY NATIONAL PARK SERVICE



BRUCE FARNSWORTH, COURTESY NATIONAL PARK SERVICE

Firefighters from the California Department of Forestry keep an eye on flames in a bay laurel grove near Sky Camp on the third night of the fire.

that had previously turned in harmony with mankind. Native grasslands began to degrade as scrub vegetation took over and fuel levels rose in the forests, compounding the risk of uncontrollable wildfires.

The Spanish Crown eventually yielded California to Mexico, and fire policy was revised to allow Mexican ranchers to burn coastal scrub as a means of opening up new lands for cattle. These regions were then grazed to the ground and left fallow as the cattle were driven to their next pasture, a high-shock and low-value transaction.

When the United States took California from Mexico in 1848, fire policy became an instrument of the logging industry, which operated under the principle of “preservation of capital.” Trees are lumber and lumber is money, so total fire suppression was the rule. In the 1940s, the National Park Service began doing controlled burns in the Florida Everglades, the first official recognition of fire as a positive factor in promoting viable plant and animal communities. Still, it took

another two decades for prescribed fire to be embraced agency-wide as a means of ecological management and restoration.

Meanwhile, human settlements expanded rapidly in the 20th century (the suburban boom of the 1950s, the “back-to-the-land movement” of the 1970s, and the sprawl of the 1990s), resulting in a sharp increase of the number of people living at the wildland-urban



RICHARD BLAIR, WWW.RICHARDBLAIR.COM

interface (WUI). Research by the U.S. Forest Service in 2000 found that California had 5 million homes on the WUI, more than any other state and twice as many as second place Pennsylvania.

This reality presents an ongoing challenge to fire officials. At Point Reyes, as in other national parks with nearby towns, the 2004 fire management policy calls for suppression of any “unplanned ignition.” Even prescribed burns, conducted here on a limited scale, may not burn freely within their perimeters throughout the night, but must be extinguished by the end of the day they are set. This denies fire its elemental role as unregulated destroyer and creator, but it defers to the imperatives of the contemporary world, where human life and property must be protected. A major blaze like the Vision Fire is no longer just a harmonious (if dramatic) element of the landscape. It’s an emergency.

The bulk of fire-related work today along the WUI at Point Reyes focuses on mechanical fuel reduction, on both the landscape and personal scales. For the former, “shaded fire breaks” (i.e., stands of trees that have been thinned rather than clear-cut) can slow the spread of wildfires and keep them at a lower intensity until they can be contained; the current fire policy authorizes up to 1,500 acres of mechanical fuel reduction each year. For the latter, the clearance of trees, brush, and tall grass at least 30 feet around homes and other buildings creates a localized buffer of “defensible space” that can slow the spread of fire in developed areas. In the last four years, the NPS (working with the local nonprofit FIRESafe Marin) has distributed \$1.7 million in grants for fuel reduction work along the WUI, most of it focused on private

property. “In the event of a wildland fire,” says Wendy Poinot, environmental planner for the NPS fire program in the Bay Area, “no amount of fuel reduction on federal lands can compensate for the hazards of high fuel loads immediately surrounding homes

(continued on page 32)

One of the 45 homes in Paradise Ranch Estates on Drakes View Drive that burned down in the Vision Fire.

The Coast Miwok people were the original inhabitants of the area now known as Marin and Sonoma counties, including the Point Reyes peninsula. This Coast Miwok story—brief as it is (perhaps it is part of a longer narrative)—demonstrates several Coast Miwok values regarding the subject of fire. Fire is something, like all aspects of nature, that is useful and necessary and yet powerful, demanding respect. If misused or disrespected (i.e., stolen), it can turn on people in a harmful manner, or, as in the case of this story, get out of (human) control. Tom Smith, the last Coast Miwok medicine man, was over 90 years old when he related this story (probably speaking in a mixture of Miwok and Spanish, as he was not fluent in English) to Isabel Kelly, a UC Berkeley graduate student, in 1932.

GREG SARRIS

Theft of Fire

One time kulupi [hummingbird] went up the coast to get fire. The people here had none. Old Coyote sent that kulupi up the coast. He [kulupi] went at night and got a chunk of fire. He stuck it under his throat.

The next day those people from up the coast came after him. Kulupi had reached San Lucas already, which was near Tomales. Kulupi came pretty quick.

Old Coyote saw Fire Man chasing kulupi, and he was burning all the coast and the salt water. He was a big fire. Coyote came outside and said, “I’ll fix it.” He took mud in his hand and threw it on Fire Man. The mud put out the fire.

Coyote asked Fire Man, “What do you want to be burning people for?”

“Somebody took my fire in the night.”

Coyote told him, “I have that fire now. I had none for cooking.” The Fire Man said, “Why didn’t you come and talk to me? Why didn’t you tell me you wanted it? Why steal it?”

They talked and Coyote said he had his fire now. “You can go home now and take care of your fire. I don’t need you here anymore.”

Kulupi wanted the fire on his throat so that everybody would see it as he flew around. They made this fire at San Lucas.

Story taken from Interviews with Tom Smith and Maria Copa: Isabel Kelly’s Ethnographic Notes on the Coast Miwok Indians of Marin and Southern Sonoma Counties. Edited by Mary Collier and Sylvia Thalman. MAPOM, San Rafael, Calif. 2003. (The story has been further edited for clarity by Greg Sarris, tribal chair of the Federated Indians of Graton Rancheria and the great great grandson of Tom Smith.)

Fire on the Ridge: A REMINISCENCE

By Sim Van der Ryn

On a clear January day in 2005, I took a walk up from my house on the east slope of Inverness Ridge to the trail that runs south from Mount Vision in Point Reyes National Seashore to Drakes View Drive and the Paradise Ranch Estates area. At the crest of the hill, in every direction, young bishop pines, their needles glistening in the sun, filled the view. The tallest were 15 feet or more, and they were packed together, needle to needle, forming a dense, almost impenetrable, living wall. In mid-October 1995, the same walk had taken me through a ghostly landscape of ash and the stumps of once-mighty trees. I was witnessing a miracle of transition and change—the regeneration of my sanctuary, the bishop pine forest of Inverness Ridge.

The scene took me back to an experience more than 30 years ago on the five acres where I now live. I had recently bought this piece of wilderness forest land and decided to host the UC Berkeley architecture class I was teaching on “Making a Place in the Country” here. The first assignment was to decide collectively how to design and build a structure that would meet our needs for food, water, sanitation, and energy, while impacting the land as little as possible. The first structure we built was a 16-by-24-foot meeting space we fondly dubbed “the Ark,” after the original Maybeck building that had housed the Berkeley architecture school until its move into an ugly concrete tower in 1964.

The group debated about the best site to erect the building so we wouldn't have to



TOM VABISH

remove any big trees. In the end, we selected a site that required the removal of several very small bishop pines. But several students—in the Berkeley fashion of the time—staged a “sit-down strike” to defend the young trees, proclaiming it was immoral to destroy any trees, no matter how small. We argued the issue for some hours before finally agreeing that inhabiting a forest did not have to mean destroying it. The kind of design for living we were experimenting with required a mutually beneficial adaptation and coevolution of forest and humans. What we weren't aware of at the time was how a forest of a relatively fast-growing and short-lived species quite regularly changes and renews itself.

Fast-forward almost 25 years. On the afternoon of October 3, 1995, I got a call at my office in Sausalito from a friend in Bolinas who said there was thick smoke overhead

A firefighter from the Marin County Fire Department arrives on the scene as a house in Paradise Ranch Estates goes up in flames.



ROY DWELLY, FIRE PHOTO

from a fire up in Inverness. He offered to drive me up to my house in his big 4x4 truck. Soon thereafter, we were heading up north on Highway 1. From the road we could see the thick plume of smoke along the top of the ridge. At the Inverness turnoff we were stopped by a Highway Patrol roadblock. There were fire crews parked at the intersection trying to make radio contact with units fighting the fire. My friend talked his way through, saying he was a volunteer fireman. We headed up the hill to my house. The smell of smoke became stronger; looking up toward Mount Vision, we saw dense smoke and flashes of flame.

Soon after we got to my house, my son showed up. No one else was around. We took a hose and wet down the roof. I called a friend in another part of town; he told me our hill had been evacuated hours earlier. By then it was dark. We heard a sheriff's car approaching and ordering everyone to evacuate. I wasn't going to leave my sanctuary, at least not yet. We headed up to the hot tub hidden from the house, taking along a bottle of my favorite single malt scotch. We heard the sheriff's car in the driveway, saw flashlights, heard men talking and then drive away.

From the hot tub, we had a clear view of Mount Vision, a 45 minute hike from my house, maybe a mile and a half northwest as the crow flies. One by one, the bushy-needled



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(left) Strong winds from the northeast on October 3 blew embers from the initial fire site, causing the fire to leapfrog south along Inverness Ridge. The view of the resulting “spot fires” is from across Tomales Bay, north of Point Reyes Station. (above) “One by one, the bushy-needled crowns of the big pines on the ridge popped into flame like wooden matches.”

crowns of the big pines on the ridge popped into flame like wooden matches. We sat in the hot water, transfixed by the awesome power of the wildfire. We heard no sound except the fierce explosions of trees bursting into flame. There was a northerly breeze and in the 45 minutes we sat silently sipping scotch in the hot tub, the fire had moved quite a distance south along the ridge, the flames moving more slowly in our direction down the eastern slope. We figured the fire would have to leap a fire road about a half mile west of us before crossing the drainage and moving towards us. The upward draft of the ridge fire slowed the downhill movement of the flames; and the moist, dense bay trees on that slope wouldn't burn as quickly as the dry needles and shaggy bark of the pines above.

The scotch bottle was empty. Our minds numbed by the spectacle, our bodies limp from the warm water, we went into the house for an uneasy sleep. Sometime during the night, I heard men shouting and went outside. There were two fire trucks idling in the driveway with five or six firefighters inside. They were from Kensington in the East Bay. The chief looked me over. “Didn't the sheriff tell you to leave?” “They never came here,” I lied. The chief told me, “The fire's moving mostly south but it could easily come this way, and we need to keep it from moving down the hill toward the town. There are other units up at the houses

on the Nature Conservancy land. You can stay for now, but if we tell you to leave, you'll follow my orders. Have you got a place for my men to sleep?” I smiled and took them to the Ark, our old class project which had since become a popular bed-and-breakfast cottage.

In the morning, the chief asked me to show him around the property he might have to defend. I took him through our rambling house and I showed him our 10,000-gallon concrete water tank with its own hydrant along with our 15,000 gallon-concrete-lined fish pond. The chief nodded approvingly. “You're in good shape. We'll hope for the best.”

I walked up the road with the chief and my son into the Bishop Pine Preserve, a 600-acre watershed that had been donated to the Nature Conservancy by an English painter, Gordon Onslow Ford, who still lived on the preserve together with fellow artists J.B. Blunk and John Anderson, to whom he had granted homesites.

Department of Corrections fire crews were busy cutting trees along the road through the preserve to widen it for big equipment that was arriving later that day. Ford's home overlooked a deep valley and a hill with magnificent stands of twisted old pines. My son had often taken me down secret trails through this

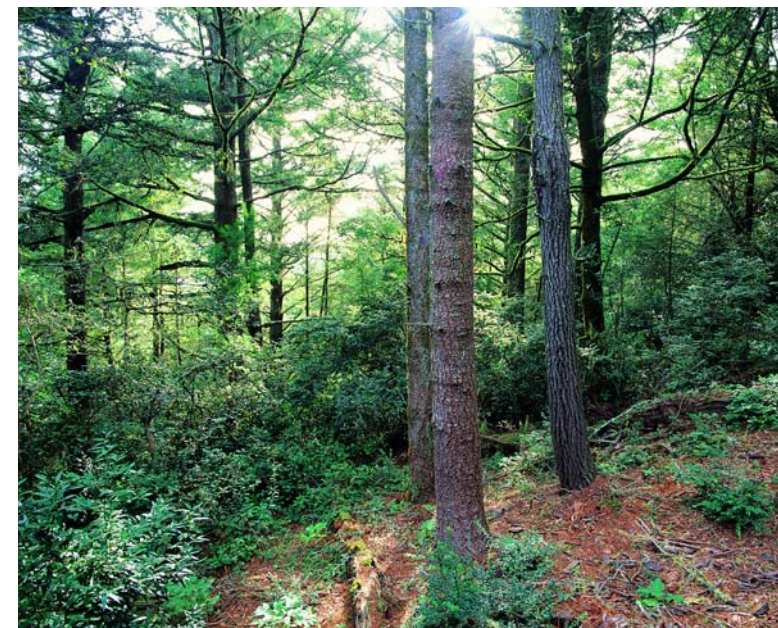
unique fairyland of sword ferns, mosses, and pines. Because *Pinus muricata* has no value as lumber, this forest had never been logged.

The Fire Command had decided to make Ford's home their command center for our sector. Ford, a recluse, seemed confused and upset by all the activity. I thought of his talk many years earlier, at the dedication of the preserve, which had made a deep impression on me. Referring to his paintings—abstractions of the

carbon molecule in points, lines, and circles—he spoke at length of “carbon consciousness.” I thought to myself, “We may all get to experience carbon consciousness pretty soon now.” But for the time being we were in no immediate danger, as the prevailing wind kept pushing the fire south, away from us.

Wednesday was a quiet day in our sector as the fire raced south into the park, jumping the Limantour Road toward Mount Wittenberg, the highest point in the area. It also roared into Paradise Ranch Estates, a housing development near the top of the ridge, destroying many of the homes there. I walked north along the Inverness Utility District fire road, where California Conservation crews

The bishop pine forest before the fire was a “unique fairyland of sword ferns, mosses, and pines.”



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During a moment of calm on the morning of the fifth day of the fire, two firefighters make their way across a charred ridgetop.

were cutting firebreaks to keep the fire from working its way down towards us and the town of Inverness below. Bulldozers ripped through a steep slope of sword ferns, exposing the three-foot-solid mat of roots that makes these dense communities of native ferns an ideal form of natural erosion control.

On Thursday some friends showed up with rented equipment to cut a firebreak. Ken, a master builder for the Zen Center for many years, had experienced the Marble Cone fire near Big Sur which had almost destroyed the Zen monastery at Tassajara. He recommended that we clear the underbrush and small trees to the south and west of the house. If fire were to come, it would be from that direction. By now, there were more than 3,000 firefighters on the line up the hill, lots of bulldozers cutting firebreaks, and a number of helicopters making the five-minute round-trip from the ridge to Tomales Bay with their 3,000-gallon buckets. Never had the thumping whine of helicopters sounded so sweet.

On Friday morning, the chief woke us early. "The fire is headed this way. You'd better pack up and get ready to leave." Until then, we had been having a shared high adventure. Now, for the first time since that first night of the fire, I felt the sour rush of fear in my stomach. I surveyed the house filled with artifacts and the stories they told. We loaded up the beautiful rare redwood lace burl table that J.B. Blunk had made, along with a few other pieces of handcrafted furniture and some favorite old clothing and treasured photos. We left our collection of bronze Buddhas to melt back into the earth.

We walked up the road to the fire line at J.B.'s house a quarter mile up the hill. All hell was breaking loose. The bulldozers that had

been cutting a firebreak deep in the major drainage through the preserve had just been overrun by the fire and their operators had barely escaped. "Hot shot" crews (specially trained backfire crews from Montana) had been cutting other firebreaks to contain the fire at the bottom of the canyon. The fire jumped their lines and roared up the hill, fanned by its own rising heat. Luckily no lives had been lost. Clusters of exhausted firefighters stood gazing upward at the line of helicopters expertly tipping their loads of Tomales Bay water on the flames, which were now only several hundred yards down the hill from Blunk's house. I heard one crew chief tell his men, "The 'copters are our only shot at keeping the fire from taking Inverness." Borate bombers made direct hits on Blunk's house and outbuildings, covering them with pinkish fire retardant. The smoke was so thick I could hardly see.

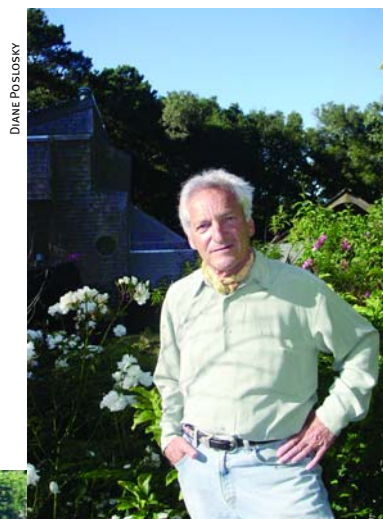
The chief spotted me and put an arm around my shoulder. "It's time to head back to your house

and wait for word from the command center. We'll need to hook up our pumps to your pond and storage tank."

It was late afternoon and the helicopters would have to stop flying when it grew dark. We went back down and got in the pickups, ready for a quick exit. Sitting in the driver's seat, I again felt the cold jolt of fear in my gut.

It was almost dark when the chief drove up, a broad smile on his grimy face, with a Marin County fire captain. "The fire's been contained," he said. "You're safe." The all-out assault of borate and the cooling effect of hundreds of water drops had held the fire. Onslow Ford's and Blunk's houses on the north shoulder of the canyon came through unscathed. The next day, crews went into the still-smoldering canyon to put out the lingering small burns. Our adventure, and our ordeal, had ended.

Two aerial images—one taken in the early 1990s, the other just recently—show my homesite before and after the fire. I lost no trees in the fire, but afterwards, many of the trees still standing were attacked by beetles attracted by the large stands of fire-damaged trees. Many of the mature trees had reached the end of their relatively short life spans—generally 60 to



DIANE POLOSKY

(left) Architect Sim Van der Ryn in the now-sunny garden of his home below Inverness Ridge. (below) Recent aerial view of Van der Ryn's home. Note the solar panels and the open areas around the house that were formerly shaded by bishop pines.



SAUL CHAIKIN

80 years—and I had to cut them down or risk having them fall on the house. One totem tree that had towered over the Ark had been cut a few years before, after being damaged in a severe windstorm. We counted 103 annual rings on that tree—the oldest bishop pine I know of. Some new trees have sprouted on my property since the fire, but nothing like the dense mass up the ridge, sprouting from seeds liberated by the fire's heat and nourished by the minerals released by the fire.

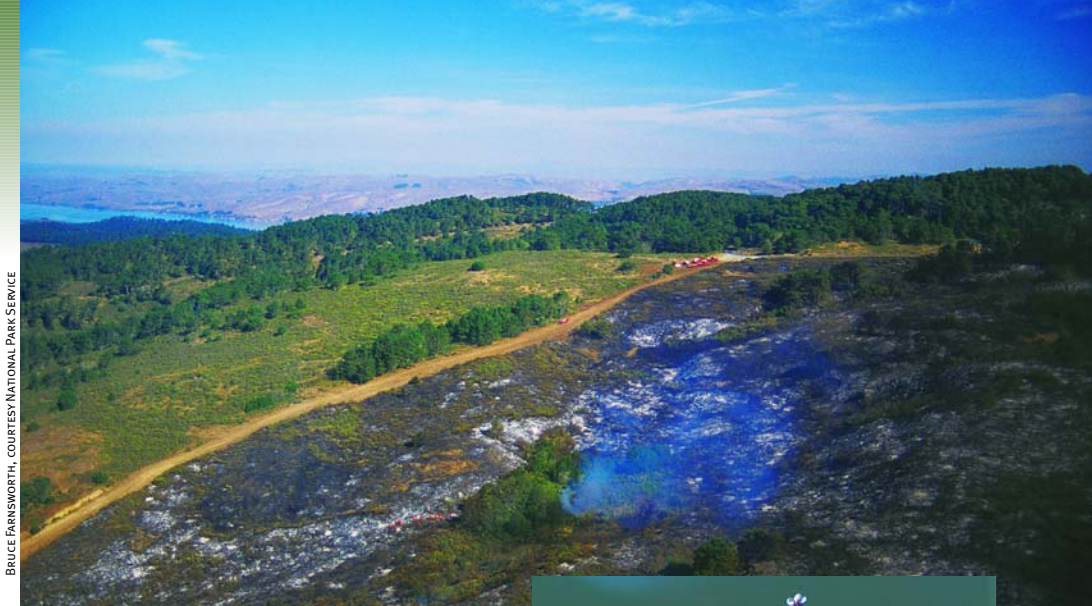
The regular pulse of nature, like our own breathing, feels normal and we scarcely notice the gradual changes taking place until a so-called surge event disrupts the normal patterns. Even though the proximate cause was human, the fire surge event of 1995 was nature's way of renewing the forest's 60- to 80-year life cycle. And of reminding us that living in a bishop pine forest is an inherently temporary situation.

If I had really wanted to continue living in a bishop pine forest, I suppose I could have carefully planted young trees around my house. I didn't, in part because it is the form of the mature trees that attracts and intrigues me. And in many ways, I find myself appreciating the new adaptations that have occurred. We have more light and sun. Yes, our carefully nurtured shade garden had to be replanted with plants more adapted to sunlight. Where there was brush and dying trees, we now have a lush meadow. The new solar collectors on the third-floor roof, unshaded by towering trees, produce two-thirds of the electricity we use. Where the giant pines once stood, we are planting an orchard.

Thirty-five years ago, I settled in the midst of a forest of bishop pines, bays, and oaks. Today we live in an ecotone (or transitional area) that is partially natural and partially designed. The wildlife have adapted to the new landscape. The water elements attract a great number of birds, and also deer and skunks. The food and flower garden needs to be fenced from the ubiquitous deer, but most of the garden plants are natives. The house is also home to a large colony of bats. I love to watch them darting at dawn and dusk making their way out from the eaves over my bed.

And then there are the ospreys, the majestic heralds of the forest ridge. I've counted eight nests in tall dead pines in our watershed. All spring and summer the birds circle and wheel in the sky above us, their sharp mating cries reminding us of the process of continual renewal.

The inevitable question is, Should people live in or near fire-prone forest areas? On my



desk is a postcard of a photo taken in 1909 on Mount Tamalpais looking out over Mill Valley toward San Francisco Bay. There is very little settlement except for farms in the flat-

lands; the hills above are mostly grasslands. Today those hills are filled with houses, trees, and dense brush. The trees were probably planted and grew up with the houses. When I drive through the steep, narrow canyons of Mill Valley today, where the trees grow right up against the houses, it is clear to me that there will be a major conflagration soon, like the 1991 Oakland hills fire. If people and forest are to coexist, we have no choice but to steward and manage habitation and vegetation as a single system, both components of which change over time.

Of course, the local forest landscape was already managed by humans prior to the arrival of European settlers: The Native Americans here kept the forest understory clear, in order to hunt more easily and to reduce the fire danger. They respected and utilized the forest for the valuable resources it provided, but they didn't live in it. In Switzerland, Germany, and Japan, we find similar models of forest/habitation interfaces, with villages and farms limited to meadow grassland and riparian corridors bordering forests that remained as "commons," supplying a sustainable supply of fuel and timber for the local communities. However, our apparently inextinguishable love affair with private property and distrust of collective forms of ownership make this model impracticable in the here and now.

Some insurance companies have already

(above) A view of the north-west flank of the fire on Mount Vision, on the morning of the third day. The day before, fire crews had conducted "burn-out" operations (i.e., a prescribed burn) from the "dozer line" to deprive the advancing wildfire of fuel.

(right) The leading tip of a seven-year old bishop pine sapling in the burn area.



CHARLES KENNARD

made clear where they stand on the matter, declining to issue fire policies for homes in much of California's forested and brush-covered areas. Current fire regulations that require a brush-free zone 30 feet around a structure are no guarantee of safety in a major fire. Neither are so-called fireproof materials such as concrete and steel; when temperatures are high enough, concrete crumbles and returns to dust, while steel loses its strength and collapses or melts.

Basically forests and permanent human habitation don't mix well, unless they are separated by wide enough corridors of meadow or other less flammable ecosystems. Better to take a walk in the woods nearby than to worry about trees falling on your home or setting it alight. The damp debris-covered forest floor and the dappled, leaf-scattered light of the coastal forest are great for quiet exploration and calm contemplation; they are less desirable as living environments for people. 🐦

(continued from page 27)

on private lots.” To this end, the Marin County Open Space District allows private land owners to mow grass into public land up to 30 feet from shared boundaries. Officials can’t do it all (they just don’t have the budget), so they encourage local residents to help out.

Since the Vision Fire, officials at Point Reyes have taken steps to inform future fire-fighting efforts by collecting data on the specific location of major water resources, endangered plant communities, and listed animal species. When a wildfire occurs that does not threaten life or property, NPS policy calls for suppression methods that minimize resource damage. The park now has resource experts on staff to help the lead responding fire agency develop or adapt strategies that avoid undue incidental harm.

But how can we reconcile the subdivision


and the forest? Paradise Ranch Estates, where all the houses were lost in the Vision Fire, was swiftly rebuilt even as young bishop pines rose up all around and throughout its properties. These young pines are flammable; they will grow old within our lifetimes, and require a fire of their own to produce heirs.

“You get a short-term response from the public,” says Kent Julin, president of FIREsafe Marin. “We have these fires—the Oakland hills, the Vision Fire—but within a few years, people just forget and move on.” His organization works to reduce or eliminate fire hazards and to promote fire safety education, but the contradictions of human habitation in a fire-prone ecosystem cannot always be resolved. “It’s definitely a challenge to balance the needs of people and ecology,” he admits.

The photographer Richard Blair, who lost a cabin to the Vision Fire, offers a wry

hypothesis that, along with house sprinklers and 30-foot brush-free zones, insurance may be the latest human adaptation to fire. “If you want to live in a fire zone,” he says, “and every 50 years you’re willing to take a settlement from the insurance company and rebuild—well, that’s one way to handle it.”

Blair recalls watching the fire that consumed his neighborhood, and describes his unexpected feelings of hope and expectation. “I sensed that something good would come of it,” he says. “Even as my house was burning down, I was struck by the sheer beauty and majesty of the event.”

Such are the paradoxes along the wildland-urban interface, where our desire to commune with Nature confronts its fierce and ancient mandates, contributing yet another chapter to the ongoing saga of people and wildland fire. 

Resources on Fire Ecology & Wildland Fire

ORGANIZATIONS

The California Fire Safe Council (CFSC) fosters the creation of local and county Fire Safe councils, which provide information and resources to protect communities from wildfires. The CFSC maintains a comprehensive website (www.firesafecouncil.org) that serves as a clearinghouse for fire prevention education materials.

Bay Area Fire Safe Councils

Diablo FireSafe Council (Contra Costa County): www.diablofiresafe.org

FIREsafe Marin: www.firesafemarin.org

FIRE SAFE, San Mateo County: www.smcfiresafe.org

Santa Clara County FireSafe Council: www.sccfiresafe.org

Fire Safe Sonoma County, Orinda Fire Safe Committee, Mount Veeder Fire Safe Council (Napa County), Santa Cruz County Fire Safe Council (See www.firesafecouncil.org)

LITERATURE

Kent, Douglas. **Fireescaping: Creating Fire-Resistant Landscapes, Gardens, and Properties in California’s Diverse Environments.** Wilderness Press, 2005.

This new hands-on guide to fireproofing your home turf includes tips and resources on fire resistant landscaping and construction, including fire resistant plant lists tailored to the myriad climates of California.

WEBSITES

Point Reyes National Seashore: Vision Fire www.nps.gov/pore/fire_visionfire.htm

National Park Service website specific to the Vision Fire provides access to historical incident reports and publications, including the recently released “Vision Fire: Lessons Learned from the October 1995 Fire.”

Firewise www.firewise.org/fw_index.htm

Serving both homeowners and firefighters, Firewise offers resource materials ranging from information on fire-proofing your home to fire safe landscaping to a new video series, “Firefighter Safety in the Wildland/Urban Interface.”

Annotated Bibliography for Fire Ecology in California

www.ice.ucdavis.edu/cafe/tab_info_biblio.html

A searchable bibliography that canvasses electronic databases, scientific literature, and other sources.

Fire Safe – “Inside and Out” www.firesafecouncil.org/education/insideout/firesafebig.html

This CFSC educational website covers a breadth of fire-safety issues, including how to develop and maintain fire safe landscaping around your home, how to build or remodel your home to be fire safe, and what to do when a wildfire threatens.

The above-listed resources are only a small sample of what is available for learning more about fire safety and fire ecology in California. For a more complete listing, please visit www.baynature.com (July–Sept 2005 issue).

CONTRIBUTORS

• **Geoffrey Coffey** writes features on local landscapes for the *San Francisco Chronicle*. He is the proprietor of Madroño Horticulture (www.madrono.org), a landscape design and education concern; and a founding partner of Triteleia Natives (www.triteleia.com), a nursery specializing in Bay Area native plants. Find more online at www.geoffreycoffey.com.

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