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America's Largest Weed

Eucalyptus has its defenders, but today, 150 years after these "wonder trees" were first brought to coastal California, their dark side is coming to light.

By Ted Williams

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If you smell like a cough drop when you stumble out of the California woods, it's because 100 of the world's 600 species of eucalyptus grow there. None is native. They were imported from Australia during the second half of the 19th century as we were hawking our redwoods to the Aussies. "Wonder trees," the eucs were called, because they shot up in coastal scrub and vast redwood clearcuts.

Distillation from their pungent, oily leaves rivaled Dr. Kickapoo's Elixir for Rheum, Ague, Blindness, and Insanity. Eucalyptus was said to relieve pain, irritation, insomnia, malaria, venereal disease, bladder infections, cystitis, diphtheria, typhoid, dysentery, and the "fetid smell of gangrenous limbs."

Eucs were planted with varying success across America, but they took off in California. In 1876 Ellwood Cooper planted 50,000 euc seedlings on his ranch near Santa Barbara. Three years later they were more than 40 feet high; 32 years after that they were 175 feet high. Blue gum, the most popular imported euc, was unleashed in 1853. By the 1870s it was a dominant feature in California's coastal and central landscapes. Groves doubled in area every decade. "Eucalyptus trees are being planted all over the bare foothills of southern California," effused Harry W. Dunn in 1906. Fueling the craze in the early 20th century was a statewide seedling-giveaway program run by the University of California Experiment Station. Speculators jammed eucalyptus seedlings into cutover land and then sold the property for huge profits.

In Australia durable euc lumber had been milled from old growth. But in America the young, water-swilling euc pioneers were stuffed with sapwood. The few boards they yielded cracked when seasoned. Eucalyptus railroad ties threw their tracks. Soon eucs were being sold only as firewood, sometimes for just \$1 per cord. As they continued to spread and grow, their thirsty roots blocked drains, tore up pavement, damaged foundations, and fueled wildfires.

Of the many eucalyptus species that evolved with fire, none is more incendiary than blue gum. "Gasoline trees," firefighters call them. Fire doesn't kill blue gums. Rather, they depend on fire to open their seedpods and clear out the competition. And they *promote* fire with their prolific combustible oil, copious litter, and long shreds of hanging bark designed to carry flames to the crowns. Blue gum eucalyptus doesn't just burn, it explodes, sending firebrands and seeds shooting hundreds of feet in all directions. Living next to one of these trees is like living next to a fireworks factory staffed by chain-smokers.

What are the costs of America's infatuation with the eucalyptus? And have we learned anything from it? My search for answers took me to Bolinas, California (population 1,500), an hour north of San Francisco at the end of a mountain road that threads along bare, fogbound headlands. On a bright October morning Geoff Geupel, terrestrial program director for the Point Reyes Bird Observatory (PRBO), led me through a grazing lease and down to Jack's Creek, in Point Reyes National Seashore. Blue gum eucs towered to the west and east, long, leathery leaves drooping earthward, trunks light brown--almost white in spots--and looking as if they had flirted with a debarker.

Between the euc groves, in the dry creekbed, grew some of the last coastal scrub in Marin County, a profusion of plants that belong here and are all vital to wildlife—coast live oak, California bay laurel, monkey flower, coyote bush, wax myrtle, California sagebrush, lizard tail, mule's ear, cow parsnip, willows, native bunchgrasses. The scrub had its own gray, understated beauty, a beauty largely unnoticed by the public. Coastal scrub never had a Joyce Kilmer to write sappy verse about it. Trees don't belong on this riparian corridor or on most of the surrounding hills or, for that matter, in most of earth's terrestrial ecosystems. When the Boy Scouts started cluster-bombing Marin County with seedlings, Ansel Adams helped run them out, declaring, "I cannot think of a

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more tasteless undertaking than to plant trees in a naturally treeless area, and to impose an interpretation of natural beauty on a great landscape that is charged with beauty and wonder, and the excellence of eternity." /

Geupel pointed out the rustling, fleeting forms of birds and called my attention to their vocalizations, most of them strange to my Yankee ears—the churring of wrentits; the quiet *tseet* of bushtits; the high, thin whistle of golden-crowned kinglets; the clicking of ruby-crowned kinglets; the metallic chink of California towhees; the bossy flocking notes of white-crowned sparrows; the *oh dear me* of golden-crowned sparrows, fresh in from the Arctic and so full of blarney that they didn't know they weren't supposed to sing in autumn. In winter a resident race of white-crowned sparrows, rufous-crowned sparrows, and Bewick's wrens (all declining) forage for insects in the green leaves of live oaks, wax myrtle, and bay. They breed here, too.

In the eucalyptus grove to the west we met perfect silence, a scene from Keats's "La Belle Dame Sans Merci" in which the "sedge is wither'd from the lake and no birds sing." The eucs, I suppose, were beautiful in one sense, but their beauty struck me as cold and otherworldly, the beauty of the hollow-bodied fairy dame who sat sideways on the knight's horse before sucking out his youth. The aliens had sucked out the creek. As eucs' trunks move in the wind, their sinuous roots tear up huge chunks of earth that slide into the channel. A quarter-mile seaward they literally spill onto a beach strewn with their bleached carcasses. Trees totter on a high bluff, then fall, taking more topsoil with them.

The only native plants we encountered in the grove were shallow-rooted--mostly poison oak. I stuck my hand in euc leaf and bark litter and couldn't find the bottom; in California it can be four feet thick because the microbes and insects that eat it are in Australia. Native plants that manage to push through the litter often get poisoned; as a natural defense against competition, eucs exude their own herbicide, creating what botanists call "eucalyptus desolation." Plants that are most immune include poison oak and pernicious aliens such as Cape ivy and English ivy.

Eventually we heard a single ruby-crowned kinglet. Native birds do use eucalyptus groves, though the Point Reyes observatory has found that species diversity there drops by at least 70 percent. Eucs flower in winter, attracting insects and insectivorous birds. To deal with the sticky gum, Australian honeyeaters and leaf gleaners have evolved long bills. North American leaf gleaners such as kinglets, vireos, and wood warblers have not; so the gum clogs their faces, bills, and nares, eventually suffocating them or causing them to starve.

Bird carcasses last only a few hours in the wild; if you find a few, it probably means that lots of others died, too. One local bird author I talked to—Rich Stallcup, who writes for the PRBO—told me that over the years he has found about 300 moribund warblers "with eucalyptus glue all over their faces." Says Stallcup, "We see a large number of gummed-up Townsend's warblers, yellow-rumped warblers, ruby-crowned kinglets, Anna's and Allen's hummingbirds, and a few Bullock's orioles. Anyone who birds around eucalyptus trees sees it all the time."

Bird artist and birder Keith Hansen, who illustrates some of Stallcup's work, has found about 200 victims. "The worst one was last year--a yellow-rump," he says. "At first I thought it was deformed, because there was such a dome of gum over its beak that it made a horn. The bird was hunched forward, breathing very heavily." If you try to remove the gum, the upper mandible will break off in your fingers.

Gum isn't the only danger. Eucs give nesting birds a false sense of security, creating population sinks. For example, the PRBO has found that in eucs, 50 percent of the Anna's hummingbird nests are shaken out by the wind. In native vegetation the figure is 10 percent. "Birds will use these trees year after year, nesting but producing almost no young, until the population crashes," says Geupel. Somehow the public isn't getting the message about America's largest weed. After the PRBO published a Stallcup-Hansen article entitled "Deadly Eucalyptus," the group got a call from a woman asking what kind of eucs she could plant that were *good* for birds.

"I kill eucalyptus," is what Russ Riviere, a dapper Bolinas arborist who wears a vest to work, told me when I asked him what he did. But Riviere is more than a euc euthanizer; he is a champion of native ecosystems. When he finishes a job he frequently turns the site over to his friend Ann Young, an energetic and upbeat restoration ecologist who spends her life planting everything that Bolinas and its vanishing wildlife are running out of. Riviere

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met me outside my room at the 151-year-old Smiley's Schooner Saloon, and we drove to the current job site, where, among crashing eucalyptus trunks and limbs, he introduced me to his crew. The streets on this "mesa," as the local plateaus are called, were named by easterners for trees that don't belong here. This site was on Elm Street.

From Elm Street we moved down to Pine Gulch Creek—also eroded and dewatered by eucs, to the peril of its few remaining coho salmon and steelhead (both threatened). On another creek—where eucs are protected because they're wrongly said to provide sanctuary to monarch butterflies—we encountered invading eucs, some being hauled down by Cape ivy. On both creeks the eucs have completely clogged the corridor to the sea, important habitat for all sorts of birds, including shorebirds that need to move up into creeks when the tide covers mudflats.

Monarch butterflies do roost on certain eucalyptus trees in winter, a fact used to full advantage by those who believe that all trees are always good no matter where they came from or where they were planted. When the eucs weren't there, neither, apparently, were monarchs—at least not in noticeable numbers. Perhaps they migrated down the coast until they encountered native trees like Monterey pines. Geupel believes that eucs may create monarch sinks the way they create bird sinks—that is, monarchs are attracted to them, then get blown out by storms, perishing by the tens of thousands. "Monarchs are declining, and I would argue that eucs may be the reason," he says.

One day last summer Riviere was driving past the Bolinas cemetery when he saw Josiah Thompson, vice-president of the cemetery board, slashing away at euc saplings. The place was rank with eucs of all ages, a Little Shop of Horrors with serpentine roots hauling down gravestones. No cadaverous feet were sticking through the dirt yet, but that probably wasn't far off. "You can do better than that," declared Riviere. The board didn't have much money, but he agreed to be paid in part by grave sites.

Riviere's crew had barely cranked up their chainsaws when Madeline Muir appeared. "Eucalyptus has a right to be here, too," she later informed me. Muir doesn't buy any of the stuff about fire hazards, eucalyptus desolation, swamping of native ecosystems, or suffocating birds: It's all "hysteria built up to make a lot of money." In a poem, published in the October 5, 2001, *Bolinas Hearsay News*, she compared the razing of alien trees to the razing of the World Trade Center: "Terrorism, in all its forms, is not for me. Stop the violence. Stop the violence."

As Riviere worked, Muir leveled a video camera at him and started asking hostile questions. "She got hostile answers," recalls Thompson, who provided them before Riviere could speak. Shortly after Muir turned the tape over to the Marin County Community Development Agency, the deputy sheriff appeared and ordered Riviere to stop work. In letters to the public and to the cemetery board, the county announced (falsely) that these eucs might be important to monarch butterflies, which it claimed (falsely) "are listed as an endangered species by the federal government." Therefore the cemetery needed a "coastal permit" of the sort traditionally required of developers. Cost of the application: \$1,400. Thompson drove to the development agency and asked to see the map of important monarch roosts the agency used to make its determination. Nobody could produce one. Finally, he got a lepidopterist to inform the development agency that the cemetery eucs had never been used by monarchs, and it backed off. Meanwhile, however, it has been warning property owners who desperately desire to cut their eucs that they may need to file \$1,400 coastal-permit applications.

Moreover, the public, the county, and the National Park Service seem singularly unconcerned about the many species of butterfly that evolved with coastal scrub and that are dying out because eucs have killed it. A good example is the threatened bay checkerspot, whose larvae feed on a tiny, narrow-leaved plantain that grows in the Jack's Creek corridor. The Xerces blue butterfly is thought to have been made extinct by eucs.

Spokespeople from the logging company, on hand to answer questions, were greeted with chants of "Save the eucalyptus." Removal would be "clear-cutting," proclaimed the euc defenders, "genocide," "ethnic cleansing." Moreover, it would cause "global warming." Those pushing euc removal were "plant Nazis." Ann Young and the equally tireless and talented activist-author Judith Lowry, who scratches out a living propagating, selling, and promoting native plants, were heckled when they spoke. Euc branches were shaken in their faces. They were "in it to get rich." The sunless, impenetrable monoculture was a "cathedral," a "sacred grove," an "old-growth forest." Someone had given birth under a euc, someone else had been baptized under one, someone else married. A poem was submitted, suggesting that the trees be consulted. Eucalyptus cough drops were distributed. "Humans aren't native either," someone testified. Most of all, the defenders argued that monarchs

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require eucs. The county swallowed it hook, line, boat, and motor, and this past summer the development agency made it clear to sewer officials that there would be no cutting without a coastal permit. So political is the scene that the town has decided to do nothing except remove new saplings and the few mature trees that have hold of sewer pipes.

Speaking for the anti-cutting study group is Judy Molyneux, who paints superb pictures of eucs. She would hate to think she had been painting "bad" trees. "I don't buy the argument that we have to preserve native habitat," she says. Besides, "the eucs have been here so long they've become native." She knows this because she once read something by a biologist who studied eucs "right after they came to California" (that is, in the mid-19th century) and, having noticed that the structure of the seeds had changed, "postulated that we are giving birth to a new form of eucalyptus." Molyneux now reports that "the eucalyptus forest is a home for great horned owls. They make the most splendid sounds, and I love the fact that they're here." The Point Reyes Bird Observatory does not. Despite its lack of conifers, western Marin County holds the world's largest known concentration of northern spotted owls, which, because they didn't evolve with significant numbers of great horned owls, are docile and trusting and therefore one of the great horned owls' favorite prey items.

Euc paintings by Molyneux's dead mentors—the "Eucalyptus School" of California impressionists—are much coveted by art collectors, especially because there are now so few of them. In 1991 many of the best examples were incinerated, along with the houses of the Berkeley professors who owned them, when real eucs fueled the Oakland Hills fire—which killed 25 people, destroyed 3,000 buildings, and is commonly cited as "the most destructive wildfire in U.S. history."

Nine years earlier a report identifying the danger and recommending euc removal had been submitted to the city of Oakland by the East Bay Regional Park District and other fire authorities. The city ignored it. As a result Oakland got hit with a broadside of negligence suits. Liability risk to Marin County is even greater because it doesn't just ignore advice from fire experts, it spends money *preventing* that advice from being implemented.

Even by California standards, Bolinas is funky. Residents tend to be well-to-do, artsy, passionately given to liberal causes. Bumper stickers and posters exhort the populace to "save the redwoods," heed the ghostwritten pronouncements of Chief Seattle, seek "justice NOT revenge" in Afghanistan, go "Dancing With the Planets." For 30 years there has been a building moratorium. Tourism is anathema. There's only one road into Bolinas, and every time highway officials alert the world to the town's existence by erecting a sign, someone rips it down. Might Bolinas be an anomaly?

No. The city of Santa Cruz, for example, protects eucs under—of all things—a Heritage Tree Ordinance. A euc qualifies for "heritage tree" status when it's about 16 years old—that is, when the trunk two feet from the ground is 16 inches in diameter. To cut one, even on your own property, is a criminal offense punishable by a fine of not less than \$500. You can apply for a permit, but the overwhelming majority of applications get turned down.

For a decade Robert Sward, an English professor at the University of California-Santa Cruz, has been trying to get permission to cut the blue gum eucs that overhang his house and rain flammable litter on his roof. "This is no frivolous undertaking," he remarked. "It would cost us \$3,000. When we tried to trim the limbs the workmen were chased out of the trees by the [Santa Cruz] Parks and Recreation Department." For three years one of his neighbors, Geraldine Kaspar, has been trying to cut the huge, sickly, litter-spewing euc that is growing into and over her house and poisoning her lawn with toxic drippings. Now the roots are ripping up her driveway. If the damage continues, the repair bill will be several thousand dollars. Kaspar tells me she'll try one last time for a permit, then cut the tree and pay the \$500 fine.

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Usually the only thing that happens when Santa Cruz fire marshal Mark Latham recommends euc removal to the city fathers is that it "gets studied," he says. "We have categories of flammable plants, and eucalyptus is way up at the top—almost off the scale. It's a nasty situation." He calls the Heritage Tree Ordinance "pretty prevalent up and down the coast."

Wherever managers have dared to remove eucalyptus trees, ecosystems have surged back. Amid native shrubs and grasses pushing up between gray euc stumps, I stood on Angel Island, which juts 781 feet out of San Francisco Bay. Beside me was David Boyd, resource ecologist for the California Department of Parks and Recreation. Pivoting from right to left, we admired the towers of the Golden Gate Bridge reaching through a fog bank, then the city of San Francisco, the Bay Bridge, the UCal at Berkeley tower, the Richmond Bridge, and China Camp State Park, 20 miles away over hazy hills. Sailboats and pelicans drifted across the azure bay. A distant bell buoy chimed. Ten years ago the only view here was peeling euc bark.

Restoration hadn't been easy, Boyd explained. There had been fierce opposition from a group called POET (Preserve Our Eucalyptus Trees). Having frightened the National Park Service into abandoning an ambitious plan to free the Golden Gate National Recreation Area of eucs, POET fired off a salvo of verse--a poem lovely as a giant weed in which it quoted the eucs as they cried out against arboricide: "We love our home / Here on the isle / We love our fellow trees, plants, animals / And people / We would love to continue living / But we have no voice." Boyd was called a "plant Nazi" and accused of plotting to "eradicate history." When the department's consultant testified that it was okay to get rid of invasive nonnative plants, POET countered with, "The next thing we're going to hear from you is that getting rid of all nonnative people is okay." In an attempt to cover itself, the department undertook a study, publishing a 265-page report six months and \$25,000 later. POET found the report inadequate and sued, so the department undertook an environmental review, which consumed another six months and another \$25,000. By then the chip market, which would have paid for the tree removal, had dried up. So the department had to cough up \$200,000 to have 16 acres logged by helicopter. The rest of the operation, 64 acres, cost another \$200,000.

When the work was finally completed, in the spring of 1996, there was angry talk about how the department had constructed a building without holding public hearings or even telling anyone. The eyesore was plainly visible from the mainland amid a mix of bay laurel, large toyon, madrone, and coast live oak. The department had even painted it red.

The building, Boyd and his colleagues explained, was a hospital built by the U.S. Army in 1904. For almost a century it had been hidden by eucalyptus monoculture.

TED WILLIAMS's environmental advocacy was inspired by hunting and fishing.

What You Can Do

Euc protection is just one example of what's happening all over America, as people insist on planting trees where they don't belong. But it doesn't have to be this way. Speak out for the removal of invasive exotics, and remember that restoring native ecosystems begins at home. For instructions, click here:

<http://magazine.audubon.org/backyard/native.html>.

Paraguay: The Weed of Discord. South America's biggest weed supplier: Illegal cannabis production and the war on drugs. Paraguay is one of the largest producers of weed in South America, the crop may be a scourge, but it's the only source of livelihood for too many. While some wage war on drugs, others see decriminalising weed as the way out, turning Paraguay into the biggest legal marijuana producer. North America. Caribbean. Central America. Northern America. South America. Sovereign states. Antigua and Barbuda. Argentina. Bahamas. This era of Big Weed corporatization will not be exactly what the more utopian legalization activists once dreamed of. Even as companies like MedMen thrive, half a million people, disproportionately black men, are still being arrested each year for marijuana possession; people of color have been largely frozen out of the legal industry. The last time prohibition ended in America, Joseph Kennedy was already in business thanks to some medicinal whisky import licenses. The Only Weed Identification Guide You'll Ever Need: 33 Common Weedy Plants to Watch For. A weed can be any plant growing where you don't want it to, but there are some particularly weedy species to keep an eye out for. These aggressive plants choke out the garden plants you've worked so hard to grow. Use this handy guide to identify these weeds by appearance and know how to remove them safely. Read More. 6 Small Steps You Can Take Today to Get Organized for Good. In America, 35 states allow medical marijuana at least. Fifteen in total technically permit recreational cannabis. In some of these states, sales won't begin for another year or two. Final Verdict About the Biggest Weed Companies in the U.S. When deciding who the biggest weed companies are, you often need to scale your expectations. Marijuana companies tend to be on the smaller side, as more giant corporations have yet to form.