

Squandering the Wisdom

Native Americans maintained American forests before the Europeans arrived and knew what they were doing.

Words and photos by Steven H. Rich.

The Danish forest ecologist sighed explosively, then spoke: “Your government’s wildfire and forest policy is a foolish and ignorant insult to the poor, and an insult to nature.” His voice was shaking, his tone illustrating the fact that grownups sigh when weeping seems out of place.

“Do you know the estimates of unused logging residues and dead wood rotting in your country are equivalent to 32 billion barrels of oil [more than four year’s supply for the whole nation]? When ecologists project a yearly total of the ecologically available logging waste [branches and tops] generated on private lands in the United States to all your forests, it makes 1.36 billion barrels [a good start on the 20 million barrels a day we use]. Do you know how many good jobs that is? Do you know what that waste does to the price of fuel in poor countries? Every year you let another two- to six-million acres burn up! You do nothing effective to stop it and you do nothing with it!”

He was in a position to know the facts. Many Scandinavian countries have forest bio-fueled electricity programs well into the active-implementation stages. The discussion took place in the context of quantifying the greenhouse-gas emissions from the nearly half-million acre Rodeo-Chediski fire. In 20 days, the smoke and fumes had exceeded the national totals of many European countries for the year. The Dane had toured monitoring

plots that showed no biological recovery at all after 10 years, others covered with exotic weeds, many with catastrophic erosion still unhealed. Viewed in the light of Fenno-Scandinavian thinking, he had witnessed an ongoing disaster. Our government called it “natural.”

The American public is not told that three times the CO₂ emitted during any severe fire event continues to reach the atmosphere as the dead wood continues to degas and decompose. The environmentalists’ pro-wildfire/no-logging policy is a gigantic CO₂ and other biogas factory, stacking up more and more “production units” in the form of billions of “sacred” dead trees which—due to lawsuits—no one is allowed to harvest. Frivolous fund-raising lawsuits that prevent sound use of forest biomass alternatives could end up as the single greatest cause of American fossil carbon releases, while hugely accelerating destructive fire emissions. Forest-products companies used to put out most wildfires.

The policy—letting disease-ridden too-dense forest structures continue and allowing fuel loads to build—kills forests. On average, they burn at least twice by the time the trees of the first fire decompose. The fire that burns the wind-fallen and/or rot-fallen fire-killed trees is vastly more destructive than the first. In close contact with forest soils, the 1,700-degree Fahrenheit heat of 200 tons per acre of downed logs deeply sterilizes the forest floor.

These intense blazes can last for many hours. Few biological potentials survive, nor does the wildlife that depends on these habitats.

“On a global scale, natural emissions often outweigh those from human activities.” Andrian-Aksolugu and Keller stated this in a study of volatile organic compound (VOC) emissions, which found (as an example) that terpenes and isoprenes emitted from one species of spruce amounted to 23 percent of Switzerland’s total VOCs. Billions of termites, ants, beetles and grubs living on federal lands expel a giant plume of methane from national park and forest areas. Fortunately, livestock-enriched healthy soils contain zillions of methane-gobbling methanophobic bacteria—enough to do for several cows’ yearly emissions per month on each hectare. The bug gases get snarfed up, too. Functioning nature can happily absorb her critters’ gas output with no strain (and isn’t that an inconvenient truth).

Compare emissions from a modern wood-fueled powerplant with the witch’s brew of gases from a forest fire. The wildfire smoke exceeds the PM10 (tiny soot and other particles), NO_x (nitrous oxides NO and NO₂) and VOCs of the power plant per ton of wood by 22,500 percent. (And that’s not counting the massive carbon-monoxide totals.)

Pinchot Institute’s Coordinated Resource Offering Protocol (which studies forest biofuels potentials) estimates that seven western states could have important biofueled electric-generation rates in the next few years: Washington, 15 percent; Oregon, 25 percent; California/Nevada, 20 percent; Arizona, 15 percent; New Mexico, 30 percent; and Montana, 25 percent. According to this study, solar-electricity costs average from 40 cents to 90 cents per kilowatt-hour (kWh), and wind costs 16 to 20 cents compared to an average



Once grass-rich but now tree-poor, this land is thickly covered with the financial potential for its own rescue and restoration. This Tonto National Forest landscape represents the West’s millions of acres of too-thick, over-competitive piñon/juniper woodland. Horribly denuded and eroding because almost all soil-stabilizing grass and flowers were competed to death by the trees, it could supply many times its present wildlife, watershed and economic value. Diamond Rim is on the far horizon.



Biological disaster in former grassland. This barren sight is typical of the ground between the aggressive trees. The only worse disaster would be a fire burning the clogged forest—afflicting the soil-poor, degraded, biodiversity-poor land with scouring floods and nonnative weeds.



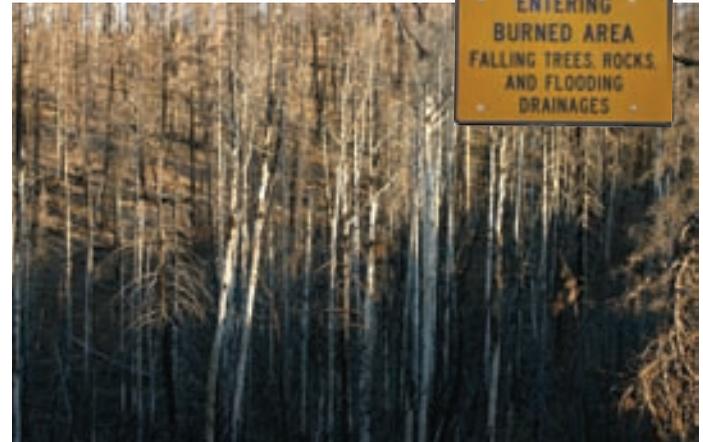
Tonto National Forest's Payson Ranger District—responding to Gila County's fire-management plan—spent big money to protect citizens. Private firms would pay to remove the dangerous trees and restore the forest/grassland ecosystem. Thinning treatments evaluate each tree. In this area, blackjack oaks and walnuts would be spared along with other unique and valuable plants.



Arizona's Department of Transportation restored the highway right-of-way north of Payson to a much healthier, more biodiverse state—similar to native Apache management in the 1800s. Thinned forests will continue to yield extra biomass for electric generation, etc. INSET BELOW: Forest Service lawyers—fearing liability claims—posted a warning. The situation is worse than the sign admits.



Native Americans intentionally created vast meadow areas for wildlife habitat, economic and spiritual reasons—all around the West. Here, the North Kaibab forest is losing its famous meadowlands to conifer invasion. Thinning conifers restores the grass-stabilized water cycle—making drainage bottoms too wet for pines and preserving the meadow.



With salvage logging blocked by lawsuits four years after the famous Warm Fire, severe-burn-area biological monitoring stats are like those of a desert. Aspens are resprouting, as are deep-rooted sedges, but most biodiversity is gone—replaced by bare ground and weeds. Floods still reach miles into the valley. A half-billion dollars in timber stands there, giving off CO₂ and becoming worthless.

6.5 to 10 cents a kWh for wood-biomass electricity. Of alternative energy sources, only wind and geothermal are cheaper.

Unlike other green projects, wood-fired electric generators must be built near the fuel source. Biomass electric generation creates many long-lasting, well-paid industrial jobs in job-starved rural areas. These jobs serve to harvest a sustainable supply of already over-dense, dangerously fire-prone trees. With proper planning, wood harvest will do nothing but profoundly improve soils, watersheds and habitats while preventing catastrophic fire damage and devastating firefighting and ecological repair costs. When the value of preventing vast damages is added to the balance, the cost of wood power could be zero.

Wood power has other environmental importance. Researchers Matthew Hurteau

and Malcolm North modeled six prescriptions for mixed-conifer forest structure to study their potential for carbon sequestration. They came up with basically the same answers that Dr. Wallace Covington at Northern Arizona University reached in his work: Do it the way the Native Americans did.

Allowing a tangled mass of stunted trees to grow does sequester (take out of the atmosphere) lots of carbon—until it catches fire. When fire is added to the model, it becomes clear that a forest of widely spaced big trees is much safer from fire and sequesters more carbon for much longer. It has the added virtue of building rich, grass-supported soils with benefit of the tree's needle-drop. A symbiotic (living together) grass/fungus “liquid carbon pathway” funnels atmospheric CO₂ through grass leaves to

grass roots to fungi. The fungi deposit large volumes of sticky glomalin (when their short-lived micro-root-hairlike “hyphae” die and quickly decompose) to stick soil particles together so they hold many times their weight in water. Glomalin is the sweet-smelling stuff in rich soil.

The ecological, social and economic benefits vastly favor restoring the Native American forest-structure maintenance system. Every year, the stream flows will increase and stabilize, wildlife will increase and soils will grow richer. This is a grazeable woodland, very productive of biodiversity and progressively healthier. These are the landscapes from which dozens of Arizona trout streams once flowed down to broad, beautiful, lower-slope grasslands, which are now choked with alien Utah junipers and chaparral shrubs. Perhaps



Billions of dollars are lost in dead wood and overstocked trees. Untreated mixed-conifer forests have up to 80 tons per acre of dead, downed logs—added to 50 tons of duff and litter. Wildlife do need some logs for cover, but present levels are a lethal fire threat. Here, the National Park Service piled fuel for winter burning on the Grand Canyon park boundary at public expense.



Black runoff from a lightly burned slope shows how badly fire damages water cycles. Prefire—no runoff occurred. Severe fire makes “hydrophobic crusts” on soils, turning them into water-repellent sheets. Millions of forest acres burn up annually. Logging creates vastly less runoff and heals quickly. Small pines encroaching on meadowland are another indication that the water cycle needs help.



Covering perhaps one-fifth of the area of the Warm Fire (80,000 acres total), this photo gives some concept of its grotesque waste and destruction. There’s no restoration budget. The land will never recover unless it’s allowed to pay for its own healing.



This beautiful once-logged area would now benefit from fire-prevention thinning—according to research and experience. Return to Native American-era tree densities protects forests and yields periodic biomass and timber dividends with far less disturbance than wildfire or even prescribed fire.

15 percent of the grass biomass still survives. This is another landscape which deserves to be restored to its pre-European-contact splendor. Those junipers will make great generator fuel when mixed with the extra turbinella oak and manzanita. Every western state has equivalent situations.

Who would object to restoring paradise while aiding the cause of energy independence? Who objects to restoring rural economies, relieving taxpayers of the burden of supporting the Forest Service (which used to make money), and greatly enhancing our national security both through an ecologically positive boost in tax revenues and a huge drop in oil imports? This approach also can improve the security of other nations, as their oil costs drop in response to our decreased demands. Long ago, Native Americans knew that the trees and shrubs grew too thickly,

choking out everything else and then catching fire, doing huge damage. They worked very hard and used cool-season fire to thin tree and shrub stands, release grasses and flowers from domination, make meadows, attract game and increase useful plants and animals. They also did it to protect their families from being burned to death. They greatly admired large trees and used small ones. They increased nut crops by decreasing competition from other trees. Their management plan greatly increased nuts, berries, bulbs, corms, basketry and cordage materials, grass-seed production, game and water. It created farming opportunities. It was intelligent, superbly adapted, highly sophisticated, and it created beauty.

The environmental movement must abandon the false belief that the America the European explorers found was “pristine” in

any way. Almost every American landscape was what ethnologists and ethno-biologists call an anthropogenic (human-created) landscape. Doctrinaire environmentalists are trying to recreate a world that never existed. To deny the Native Americans’ role in the beauty and abundance Europeans found is to perpetuate the 15th-19th century assumption that they had no role. Rural Americans must firmly resist any plans which use nature unsustainably and result in diminished potentials.

New forest-products technologies make smaller trees profitable in making beautiful homes. We can now spare many of the forest giants to make a safer, more beautiful, more productive forest using the research-proven model that Native Americans created. ■

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