



# Clearcuts Don't Burn

*Either man logs it or nature will.  
Words and photos by Derek Weidensee.*

**W**ith the smell of smoke still in the air from another nasty wildfire season, there's a little-known phenomenon of forestry that may reassure a public that's growing alarmed at seeing their local forest go up in smoke and growing even more frustrated because there seems little is being done about it. It's the fact that clearcuts don't burn.

The photos shown here go a long way toward answering the question, "Does logging reduce the severity of forest fires?" Remember this evidence the next time you hear an environmentalist claim that "science" says logging not only doesn't prevent fires, it actually makes them worse. The green islands in a sea of burned old forest are "regenerated" clearcuts covered with trees 10 to 50 years old (yes, they do grow back).

The phenomenon is especially relevant in light of the massive mountain pine beetle (MPB) epidemic in the West, and the debate over proposals to salvage log in the name of reducing "fire hazard." In many places the MPB has killed up to 90 percent of the lodgepole pine.

Regenerated clearcuts can burn, but only about 20 percent of them do. As you'll see below, nobody is proposing to clearcut all the forests to save them, but because it mimics the stand-replacing wildfires that it evolved with, clearcutting is still the best fuels treatment for MPB-killed lodgepole. And because it didn't evolve with stand-replacing fires,

"thinning" is the best fire-hazard treatment for ponderosa pine as seen on the huge Wal-low Fire in Arizona (see sidebar, page 32).

The green islands are also part of a new forest role reversal. Twenty years ago the clearcuts provided the forage for wildlife and the old forest provided the cover. Those roles have now reversed. Throughout millions of acres of MPB mortality, the only hiding and thermal cover will be the regenerated clearcuts (MPB does not kill young trees in a clearcut). The green islands are now lifeboats in a sea of red, black, and soon-to-be-gray deadfall. It has yet to be seen how effective the forage habitat will be in the old forest when five feet of deadfall inhibits access to it. This is another reason to salvage log.

Members of environmental groups who oppose salvage logging should beware a fickle public. Twenty years ago, a raw clearcut in a sea of green brought condemnation to the U.S. Forest Service (FS), and the enviros were applauded. Now when the public sees green islands in a sea of black they wonder why the FS didn't do more clearcuts, and the fans of opposition are mostly silent.

In the Rocky Mountains, the public is demanding more timber harvest to alleviate the fire hazard. In Colorado, the FS is implementing a plan to salvage clearcut 60,000 acres of beetle-killed trees. These are very pro-environmentalist counties. In the town of Breckenridge, Colo. (which gave Obama

60 percent of the vote), the FS is proposing to salvage clearcut 5,000 acres around the city limits. In Bozeman, Mont., the FS is proposing to salvage log MPB-killed lodgepole in its municipal watershed. If the watershed burns, it's projected the residents will be drinking bottled water for six months.

The watershed that provides 80 percent of Helena's drinking water is heavily infested with MPB. A proposal is underway that would salvage log 25 percent of it in strategic patterns to mitigate fire hazard, backed up by extensive research by Dr. Mark Finney at the Forest Service Missoula Fire Lab. In the last 10 years, Finney has published several studies on the matter, starting with "Design of Regular Landscape Fuel Treatment Patterns for Modifying Fire Growth and Behavior," which was published in 2001.

Finney's research has shown that treatments on only 20 to 30 percent of the landscape can be effective in reducing crown fires if the treatments are arranged in a strategic pattern that slows and impedes the wildfires' progress. The treatments buy time—time to get men and equipment on-site to build fire lines and time for the hot, dry, windy extreme fire weather window to close. For safety reasons, active fire suppression can only occur after the window closes.

Small fires blow up into mega-fires because of the hot, dry, windy weather of a passing cold front. It's not unusual for 80 per-



cent of the acres to burn in the couple of days it takes the front to blow through. Fortunately, this fire weather window is usually short-lived and closes when the cold front moves on. To keep the fire small during a blowup it's important to impede its progress. A crown fire that starts running has the winds taken out of its sail when it hits the heat sink of a green clearcut. It has to go around and start over again on the other side. Again and again. The clearcuts buy time and space.

Clearcuts don't stop a fire, but that's where they're eventually contained. The phenomenon is known among professional wildland firefighters. Recently an anonymous Forest Service Type II fire incident commander, who's fought several fires in Montana, said that when he's flying over a fire, coming up with a tactical strategy to contain it, he looks for "regenerated clearcuts and old burns to tie my fire lines into and give our firefighters a safety zone to retreat to."

There hasn't been a lot of published research into this phenomenon and that's unfortunate, because in this era of timber-sale litigation and its reliance on "best available science," if a judge hasn't seen the published information, then, in his eyes, it has never happened. Before environmental lawsuits, most published research was only read by others in the forestry profession. Philip N. Omi said it best: "Forest researchers never paid much attention to it because it was already common knowledge among forestry professionals. No one wanted to publish research on something that was already common knowledge."

Here's what I've found: The Forest Service did a study authored by Omi in 1991 after the Yellowstone Fire titled, "Fire Damage on Extensively vs. Intensively Managed Forest Stands within the North Fork Fire." I walked the same clearcuts Omi refers to. The summary of the study states, "Fire severity was greatest on mature forest sites on national park lands, as opposed to areas with saplings in regenerated clearcuts on national forest lands." He also wrote, "90 percent of mature forests suffered severe fire damage while only 20 percent of regenerated clearcuts did."

Jain and Graham (2007) touched on the reasons clearcuts don't burn in their study, "The Relationship Between Tree Burn Severity and Forest Structure in the Rocky Mountains." They found that "regenerated clearcuts frequently contain moist layers of ground level vegetation.... Because these stands were managed, the surface fuels were modified



ABOVE: Rat Creek Fire 2009, 25 miles west of Wisdom, Mont. LEFT: A striking visual of the clearcuts-don't-burn phenomenon is shown in this Google Earth image of the 2000 Stone Hill Fire south of Eureka, Mont. (Google Earth can be downloaded free or use Google Maps on the web.)

The green polygons are the clearcuts that didn't burn. To see for yourself, enter the following latitude and longitude in the "fly to" box: 48 48 22N, 115 11 12W.

Use the clock face in the toolbar on Google Earth to compare them to pre-fire photos. OPPOSITE: Brush Creek Fire 2007, 30 miles west of Whitefish, Mont. The green islands surrounded by burned forest are five different regenerated clearcuts covered with trees up to 35 years old.

BELOW: A closeup of the Brush Creek Fire. Note the sharp contrast between the burned old forest and the unburned 30-year-old trees in the clearcut.

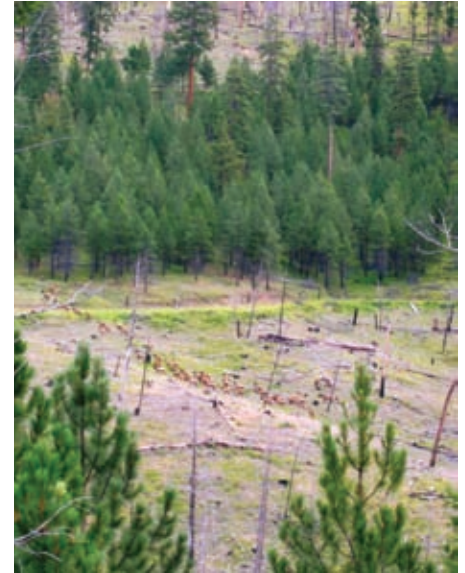






**LEFT:** A healthy clearcut with lots of young trees has a greater chance to save itself from Mother Nature's clearcut.

**BELOW:** A perfect example of "forest role reversal." The herd of elk are moving into the cover of a 28-year-old regenerated clearcut after I spooked them. They were grazing in the foreground which used to be old growth before it was burned and then salvage logged. The clearcut used to provide the forage and the old forest provided the cover. This is the 2002 Bitterroot Complex Fire, 20 miles north of Sula, Mont.



**LEFT:** Another striking visual is this Google Earth satellite image of the Rat Creek Fire, 25 miles west of Wisdom, Mont. You can download Google Earth to your desktop, free. To see for yourself, enter 45 41 34N, 113 45 13W in the fly-to box. Use the clock face in the toolbar to compare them to pre-fire photos. The patches of green are the clearcuts that didn't burn.

through slash disposal.... Crown fires would burn around these areas...evidence that firebrands landed in these stands. However, surface fuel conditions prevented sufficient fire from developing that could burn the tree crowns." In short, the treatment of post logging surface fuels and the moist microclimate is the reason they don't burn.

Case studies aren't hard to find. It's easy to overlay a burn severity map over a "past treatment" map. It's an effective visual. It's how I found most of the clearcuts that didn't burn. I would like to share just a couple of cases I've found.

I've taken three trips to the 30,000-acre Brush Creek Fire that burned in 2007 just west of Whitefish, Mont. (see photos). On areas with past timber harvesting (clearcuts), 75 percent suffered moderate, low or no fire damage while 25 percent suffered severe damage. On areas without timber harvesting (old forest), only five percent suffered low damage while 75 percent suffered high burn severity. The reason the old forest burned was because of heavy surface fuels due to an MPB epidemic 20 years ago. Forty percent of the forest within the burn perimeter is still green, and 90 percent of that is regenerated clearcuts. The FS found water clarity to be

"surprisingly clear."

The nearby Chippy Creek Fire burned in 2008. Only 15 percent of the 26,000-acre Rock Creek watershed had been logged. They estimate that in the first year, "wildfire induced erosion" will amount to 55,000 tons (that's 5,000 dump-truck loads), while "road induced erosion" amounts to 58 tons. That's a thousand times more than roads!

On many of these fires I've seen post-fire erosion that would have made the cover of *TIME* magazine if a logger had caused it. Suddenly sediment isn't news if a "natural" wildfire caused it. The media applies a double standard when covering the ecological effects of wildfire versus logging. The only real difference between a clearcut and a wildfire is that a clearcut has a hell of a lot less environmental impact. If nature can recover from a wildfire, it can surely recover from a clearcut.

*Derek Weidensee has worked as a licensed land surveyor for the last 20 years in Rapid City, S.D. Before that he spent 10 years as a logger, five of those salvage logging MPB-killed timber in the Targhee National Forest in Idaho. "I've photographed the phenomenon on eight different Montana wildfires," he says. "I've made it my cause to tell the public about the clearcuts-*

*don't-burn phenomenon and would be happy to share the photos with anyone. Just email me at [survey@rushmore.com](mailto:survey@rushmore.com)."*

## WALLOW FIRE FOOTNOTE

*As I write this the Wallow Fire in Arizona has just incinerated half a million acres including 73 endangered Mexican spotted owl nesting sites. Todd Schulke, of the radical enviro group Center for Biological Diversity, issued a press release where he praised and endorsed the positive effects that "thinning" had on fire behavior. The thinning was done under the White Mountain Stewardship Project, which his group has supported. It has thinned 35,000 acres of ponderosa pine in six years.*

*Unfortunately, the CBD shut down the timber industry in 1995. The Apache-Sitgreaves 1987 Forest Plan called for "commercial thinning" of 20,000 acres a year out of 800,000 acres of conifer forest. So that means Todd is responsible for 300,000 acres that DID NOT receive the thinning treatments he just endorsed. This could be the first chapter in a book titled, "Forest Disasters: How radical enviros bungled forest policy."—DW*