

FSC: Lumber You Can Feel Good About

Facts & Footnotes

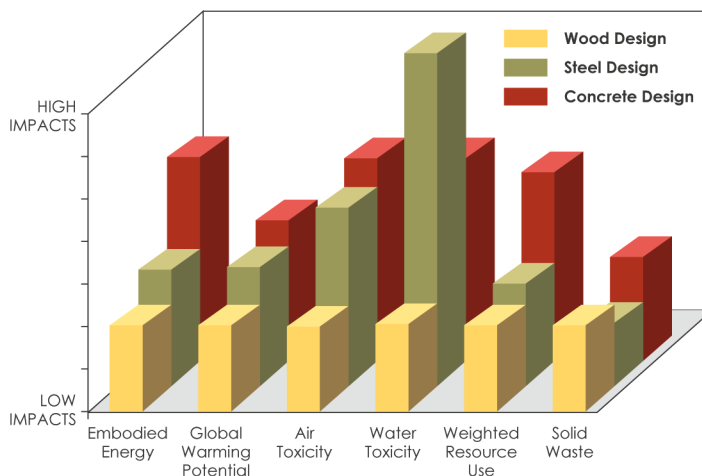
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FSC: Your Guide to the Good Wood

F [Wood] is easier on the planet than steel or concrete.

A comparative life-cycle analysis of environmental impacts shows that wood is a better choice than steel or concrete. Graph adapted with permission from Robert Kozak and Christopher Gaston, "Life-Cycle Analysis," presented at the Workshop on Climate and Forestry, Orcas Island, WA, November 13-16, 2001.



Similar findings are also documented by Meil et al.:

— **Meil, J. et al. (2003).** "Life-Cycle Assessment of Materials in Residential Construction: How Wood Products Stack Up." Consortium for Research on Renewable Industrial Materials, slides 33-34.

http://www.eeba.org/conference/2003/presentations/Lippke_Bruce.pdf

Not just trees - a forest

F Research has shown that red alder - for decades killed with herbicides under much industrial management - improves the fertility of the soil and actually accelerates the growth of Douglas fir, besides making valuable lumber in its own right.

"Red Alder is very beneficial to other plants when it comes to enriching the soil. Its litter and roots are known to increase the organic content of the soil on which it resides. In coastal British Columbia, the nutrient that limits plant growth the most is nitrogen. Red Alder has the ability to increase the nitrogen content of the soil through means of nitrogen fixation. Nitrogen fixation occurs by the alder's symbiotic actinomycetes (Pojar et. al, 1994). In a study done at a plantation on Vancouver Island, it was found that the stem growth of Douglas-fir was increased 2.5 times when the conifer was grown together with Red Alder (Haeussler et. al, 1990)."

— **Moon, B. (1998).** "Interactions Between Red Alder and Douglas-fir." University College of the Fraser Valley webpage, accessed 25 Feb 04. http://www.ucfv.bc.ca/biology/biol210/alder_df/main.htm

"Because the commercial value of alder has traditionally been lower than that of its associated conifers, most forest managers have tried to eliminate the species from conifer stands."

- **Harrington, C. (1990).** “Red Alder.” **Burns, R. and B. Honkala, tech. coords., *Silvics of North America; Volume 2, Hardwoods*. Agriculture Handbook 654, USDA Forest Service: Washington, DC, pp. 116-123.**

F FSC certification considers all these factors, and looks after the whole forest.

“Forest management shall conserve biological diversity and its associated values, water resources, soils, and unique and fragile ecosystems and landscapes, and, by so doing, maintain the ecological functions and the integrity of the forest.”

- **Forest Stewardship Council (2002).** “**Final Pacific Coast (USA) Regional Stewardship Standard, v7.9.**” **Forest Stewardship Council, 12 August, Section 6, p. 19.**
http://www.fscus.org/images/documents/standards/PCWG_final_v7.9.pdf

Growing opportunities

F Loggers need steady work, but the practices of forestry-as-usual haven’t managed to provide it. In towns like Reedsport, Oregon, and Fort Bragg, California, the major mills have shut down because the forests were cut faster than they could grow back.

“But as the years went on, the natural resources that people here depended on began to take a turn for the worse. Logging outstripped the regrowth of local forests, and returns of wild salmon dwindled... The final blow came last year when the Asian financial crisis caused a disastrous drop in prices for heavy brown paper and forced the shutdown of the area's biggest employer, the International Paper Co. mill. Built in 1964, the International Paper mill in the nearby community of Gardiner eventually employed more than 300 people. But now that its workers have been cut loose, the effect of losing a \$15 million annual payroll can be seen along Main Street, where several empty storefronts are sprouting ‘For Rent’ signs.”

- **Barnard, J. (1999).** “**Reedsport tries to reinvent itself.**” **Associated Press, 26 April.**

“In a move that marks the end of an era on the Mendocino Coast, the last lumber mill in Fort Bragg will close this summer. Mendocino Forest Products Co. announced Monday it will shut the 52-year-old mill Aug. 1. The closure will displace 59 employees. Some will transfer to jobs at other Mendocino Forest Products facilities in Ukiah and Calpella. The mill -- the last on the Mendocino Coast -- fell victim to a decline in the supply of local logs and the difficulty of obtaining timber at affordable prices... When the Fort Bragg mill closes, Mendocino County will have only four lumber mills left, down from about 200 mills that sprouted up in the county from World War II until the mid-1960s. Local sawmill operators said padlocking the mill will permanently alter the character of Fort Bragg, which only last year saw the demise of the venerable Georgia-Pacific Corp. mill and the loss of its 125 jobs.”

- **Wang, U. (2003).** “**Mendocino Coast’s last lumber mill to close.**” **Santa Rosa Press Democrat, 03 June.**

F In fact, the same year Louisiana-Pacific sold off the lands that kept the Fort Bragg mill running, they announced plans to build a new plant in Chile.

“In November 1998, L-P and the Chilean timber firm Chilena Bomasil S.A. agreed to form a Chilean joint venture company to build and operate an oriented strand board (OSB) plant located on property currently owned by Bomasil in the Municipality of Panguipulli, Chile, with a majority ownership of the joint venture company to be held by L-P. It was anticipated that the plant would begin operating in late 1999.”

- **Draffan, G. (1999).** “**Profile of Louisiana-Pacific Corporation.**” **Public Information Network website, accessed 25 Feb 04.** <http://www.endgame.org/lp.html>

F Steady work is one of the criteria that qualify a forest for FSC approval.

“Forest management operations shall maintain or enhance the long-term social and economic well being of forest workers and local communities.”

- **Forest Stewardship Council (2002).** “**Final Pacific Coast (USA) Regional Stewardship Standard, v7.9.**” **Forest Stewardship Council, 12 August, Section 4, p. 15.**
http://www.fscus.org/images/documents/standards/PCWG_final_v7.9.pdf

F Certified operations like the forestry division of the Confederated Tribes of Warm Springs provide work to hundreds of locals - including more than 300 people out of the 3,300 men, women, and children who live on the reservation - in part because they continue to log conservatively, taking less than the forest grows each year.

“Population (2000) 3,300 (p. 8) Forestry related employment contributes income to 303 Tribal members on an annual basis. (p. 9) AAC [annual allowable cut] is below growth. (p. 18)”

— **Smartwood (2003). “Forest Management Public Summary for Confederated Tribe of the Warm Springs Federation.” Smartwood.** <http://www.smartwood.org/reports/pdfs/warm-springs.pdf>

Wood for the long term

F Typically, industrial logging takes trees as soon as they’re marketable, at 40 to 50 years old. But that’s just when trees in our region are entering the most productive years of their lives. Cut the trees when they’re most vigorous, and you reduce the amount of timber the forest can produce. According to one study, that kind of premature logging actually drives down long-term harvests by 27 to 63 percent, compared with forests that stand for twice as long.

“A recent analysis of results from 17 long-term thinning trials, some extending to maximum ages of about 70 years on the best sites to 117 years on a poor site, showed that MAI [mean annual increment, the average amount of wood created per year over the lifetime of the stand] has not culminated [peaked] in any of the stands examined.”

— **Curtis, R. (1997). “The Role of Extended Rotations.” Kohm, K. and J. Franklin, editors. *Creating a Forest for the 21st Century*. Washington D.C.: Island Press, p. 168.**

Actual yield reductions for stands repeatedly thinned are as follows, by site class: 27% (comparing a 100-year rotation to two 50-year rotations); 38% (comparing a 79-year rotation to two 42-year rotations); 42% (comparing a 100-year rotation to two 50-year rotations); 63% (comparing an 89-year rotation to two 45-year rotations).

— **Curtis, R., Clendenen, G., Reukema, D., and D. DeMars (1982). “General Technical Report PNW-135: Yield Tables for Managed Stands of Coast Douglas-fir.” Portland, Oregon: USDA Forest Service.**

F Growing older trees is part of FSC certification.

“6.3.f.3. If regeneration harvest ages do not approach culmination of mean annual increment (CMAI, see Glossary), retention approaches the upper end of the range required in 6.3.e.5.

“6.3.e.5. Within harvest openings larger than 6 acres, 10-30% of pre-harvest basal area is retained. The levels of green-tree retention depend on such factors as: opening size, legacy trees, adjacent riparian zones, slope stability, upslope management, presence of critical refugia, and extent and intensity of harvesting across the FMU. Retention is distributed as clumps and dispersed individuals, appropriate to site conditions. Retained trees comprise a diversity of species and size classes, which includes large and old trees.”

— **Forest Stewardship Council (2002). “Final Pacific Coast (USA) Regional Stewardship Standard, v7.9.” Forest Stewardship Council, 12 August, Section 6.3, pp. 24-25.** http://www.fscus.org/images/documents/standards/PCWG_final_v7.9.pdf

Clean water

F You may have heard that clearcuts and logging roads can lead to landslides that muck up clear running streams, and a 1996 study in Oregon confirms those fears.

“The frequency of landslides within recently clear-cut areas and along forest roads was much higher than for comparable watersheds in middle elevation wilderness or unmanaged areas. Increased rates of landsliding was clearly associated with forest land use activities.”

— **Weaver, W. (1996). “Post-Storm Aerial Reconnaissance of the Middle Oregon Cascades and Middle Coast Range.” Pacific Watershed Associates.** <http://www.peter.unmack.net/archive/acn/acnlmar96/0054.html>

☐ But it's possible to have a working forest and clean water to boot. In fact, FSC guidelines demand it.

“6.5. Written guidelines shall be prepared and implemented to: control erosion; minimize forest damage during harvesting; road construction; and all other mechanical disturbances; and protect water resources. Applicability note: Soil cover and fertility are maintained in a condition that is sufficient to: (1) minimize soil erosion, (2) protect soil microbial communities, (3) protect inherent site productivity, (4) protect surface water quality, and (5) protect the natural processes in aquifers... Logging operations and the use of roads and skid trails occur only when soil compaction, erosion, and sediment transport do not result in degradation of water quality, site productivity, or habitats.”

- **Forest Stewardship Council (2002). “Final Pacific Coast (USA) Regional Stewardship Standard, v7.9.” Forest Stewardship Council, 12 August, Section 6.5, p. 26.**
http://www.fscus.org/images/documents/standards/PCWG_final_v7.9.pdf

☐ For example, the City of Astoria, Oregon, has earned FSC certification for its logging in the same lands that produce the city's drinking water. The City's forest will provide enough timber to build 140 homes each year forever, while providing pure water for its ten thousand citizens.

"Water quality is exceptional in the watershed due to a concerted effort by the City of Astoria to minimize sediment from roads, skid trails, and harvest units." (p. 15) Annual cut of 2 million BF (p. 5) converted to number of houses under assumption of 14,000 BF/house.

- **Sims, B. and C. Andrus (2003). “Forest Management Certification Evaluation on the Watershed Forest of the City of Astoria, Oregon.” SCS Forest Conservation Program.**
http://www.scsertified.com/PDFS/forest_astoria.pdf

Healthy habitat

☐ One study finds that salamanders are less than a third as abundant on clearcuts as in mature forests.

“Numerous correlative studies have shown the density of many amphibian species to be lower in clearcuts compared to mature forests. Terrestrial salamanders, in particular, appear to be reduced by harvesting practices, with a median 3.5-fold difference in abundance between clearcut and forested sites (deMaynadier and Hunter 1995).”

- **Maxcy, K. and J. Richardson (2000). “Abundance and Movements of Terrestrial Salamanders in Second-Growth Forests of Southwestern British Columbia.” Darling, L., editor. *Proceedings of a Conference on the Biology and Management of Species and Habitats at Risk, Kamloops, B.C., 15 - 19 Feb., 1999*. Kamloops, B.C: B.C. Ministry of Environment, Lands and Parks, Victoria, B.C. and University College of the Cariboo, p. 295.**

☐ But some logging - like the kind certified by FSC - can actually be good for wildlife. Thoughtful cutting recreates tree canopies of many sizes and species faster than if the same land were set aside as wilderness, making young forests hospitable to wildlife as quickly as possible.

“The alternative to set a stand aside (with no management) with the expectation that natural aging and disturbances will eventually produce diverse structure with increased biodiversity sacrifices all economic value, or about \$4000 per acre if the stand is ready for a first thinning, or in excess of \$12,000 per acre if the stand has reached age 50 and is ready to harvest. Late seral-like structures from these young set-asides would not likely be reached until much later than under managed alternatives--perhaps more than 100 years later. Long rotation wildlife treatments or selective harvest treatments within riparian buffers can greatly reduce the cost of no management buffers while more rapidly producing the diverse forest structures desired for habitat.”

- **Lipke, B., Sessions, J., and A. Carey (1996). “Economic Analysis of Forest Landscape Management Alternatives.” Cintrafor Special Paper #21.** http://www.cintrafor.org/RESEARCH_TAB/links/Sp/SP21.htm

Greater fire safety

F Scientists have found that replanted clearcuts are the type of forest most likely to burn hot.

“FDCs [fire damage classes] were roughly uniformly distributed among the plantations, while in the uncut/partial-cut stands they were skewed somewhat toward the lower FDCs. A larger proportion of higher FDCs in plantations is to be expected because the smaller trees are more easily damaged.”

— **Weatherspoon, C. and C. Skinner (1991).** “An assessment of factors associated with damage to tree crowns from the 1987 wildfires in northern California.” *Forest Science* 41, p. 438.

“In some forest types -- including Douglas-fir, ponderosa pine, and moist tropical -- large intact blocks of healthy mature forests, or nondecadent, old-growth forests are less susceptible to catastrophic fires than young or fragmented forests. Landscapes dominated by these types buffer and dampen the spread of crown fires and hence preserve the forest structure. Once some threshold proportion of the landscape becomes fragmented and permeated by flammable young forests or grasses, the potential exists for a self-reinforcing cycle of catastrophic fires -- an absorbing landscape crosses a threshold and becomes a magnifying one.”

— **Perry, D. and M. Amaranthus (1997).** “Disturbance, Recovery and Stability.” **Kohm, K. and J. Franklin, editors.** *Creating a Forest for the 21st Century.* Washington D.C.: Island Press, p. 38.

F On the other hand, harvest practices that are common on FSC-certified lands - like selective cutting and thinning - are the same ones that have been found to reduce the severity of fire.

“Many forest stands in Washington are overcrowded. Growing too close causes stressed and unhealthy trees -- which can result in several problems. When trees compete for sunlight and moisture, results are: High wildfire hazard - When crowns of adjoining trees touch, fire can spread quickly.”

— **Washington State Department of Natural Resources (1996).** “Backyard Forest Stewardship for Western Washington.” *Washington State Department of Natural Resources website*, accessed 24 Feb 2004.
<http://www.dnr.wa.gov/htdocs/rp/stewardship/bfs/WESTERN/thinning.html>

Carbon storage

F Studies along the West Coast have found that FSC-style management, emphasizing mixtures of young and old trees, will hold twice as much carbon as the young, even-aged forests that we typically see with industrial logging.

“We compared carbon storage and fluxes in young and old ponderosa pine stands in Oregon, including plant and soil storage, net primary productivity, respiration fluxes, eddy flux estimates of net ecosystem exchange (NEE), and Biome-BGC simulations of fluxes. The young forest (Y site) was previously an old-growth ponderosa pine forest that had been clearcut in 1978, and the old forest (O site), which has never been logged, consists of two primary age classes (50 and 250 years old). Total ecosystem carbon content (vegetation, detritus and soil) of the O forest was about twice that of the Y site (21 vs. 10 kg C m² ground), and significantly more of the total is stored in living vegetation at the O site (61% vs. 15%)... The biological data show that above-ground net primary productivity (ANPP), NPP and net ecosystem production (NEP) were greater at the O site than the Y site.”

— **Law, B. et al. (2001).** “Carbon storage and fluxes in ponderosa pine forests at different developmental stages.” *Global Change Biology, Volume 7, Issue 7*, p. 755.
<http://www.blackwell-synergy.com/links/doi/10.1046/j.1354-1013.2001.00439.x/abs/>

For redwood forests, see also Prichard et al.

— **Prichard, S., Wayburn, L., and M. White.** “Modeling Carbon Storage In Redwood Forests With Different Management Scenarios.” Presented at Conference on Coast Redwood Forest Ecology and Management.
<http://www.cnr.berkeley.edu/~jleblanc/WWW/Redwood/rdwd-Modeling.html>