Fact or Fiction?

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Forests—Better Off Than You've Heard

What's the status of the world's forests? Here are two diametrical statements:

One view: The world is currently losing about 14 million hectares (1 hectare = 2.47 acres) of forest cover each year—an area larger than Greece—and even larger areas are being degraded by less obvious threats, such as fragmentation, soil degradation, exotic species, and air pollution.[1] This is the view more commonly accepted by the media and probably most people.

Another view: The amount of world forest has held remarkably steady over the course of the past 50 years. There are now nearly 4 billion hectares of forest on the globe, up from about 3.6 billion in the late 1940s. Nor are rain forests disappearing at an alarming rate.[2]

So the questions is, which of these statements on forests is closer to the truth? If one looks at the source of the negative view expressed above you'll find it's from The Worldwatch Institute. Bjorn Lomborg and others state that the claims of The Worldwatch Institute are simply not true. Lomborg reports, "The longest data series from the UN's Food and Agriculture Organization (FAO) show that global forest cover has increased from 30.04 percent of the global land area in 1950 to 30.89 percent in 1994, an increase of 0.85 percentage points over the last 44 years. Such global figures are not referred to, however. We are only told that 'each year another 16 million hectares of forests disappear'—a figure which is 40 percent higher than the latest UN figure. Nor is reference made to figures regarding the forests' quality—simply because no such global figures exist."[3]

Let's look at some more data.

U.S. Forests

The National Report on Sustainable Forestry notes says this: "Surveys have indicated that Americans often have misperceptions about the current status and trends for forests in the U.S. For example, many think our forests are declining in extent, while in reality the total area of forests nationally has been fairly stable since about 1920 and actually increased slightly between 1990 and 2002. Also, many think we are harvesting more trees than we are growing, while in reality net growth in U.S. forests exceeds removals by a large margin."[4]

Peter Huber and Mark Mills provide this information. "When Europeans first arrived on the continent the contiguous forty-eight states had about 1,045 million acres of forest. that shrank steadily to a low of about 750 million acres in 1920. We have been restoring forest ever since. Exactly how fast is hard to pin down: the continent is large, most of the land is privately owned, and the definitional debates rage about when regrowth reaches the point of establishing new 'forest.' But all analyses show more, not less, forest—America's forest cover today is somewhere between 20 million and 80 million acres higher than it was in 1920. Trees have been replanted, in recent years, at a rate of some 3 million acres per year. We're adding new lumber-quality trees 30 percent faster than we're harvesting them. For the first time in history, a Western nation has halted, and then reversed, the decline of its woodlands."[5]

Here are more specific numbers:

- Connecticut is today 59 percent forest versus 35 percent in the nineteenth century, though the state's population has tripled and its agricultural production quintupled.[6]
- In 1900 Vermont was so heavily farmed that only 35 percent of its land area was covered by forests. Today, a full 76 percent of the state is forest.[7]
- In two centuries, despite great increases in the state's population, 90 percent of New Hampshire is covered by forest. Massachusetts and Rhode Island have seen woodlands rebound to the point where they cover nearly three fifths of southern New England. This process, which began as farmers abandoned the cold and rocky pastures of the East for the fertile fields of the Midwest, has not yet run its course. Forest cover in New York State, for instance, continued to grow by more than a million acres a decade through 1980. [8]
- In regards to forests in the Pacific Northwest, new evidence suggests that seldom, if ever, in any moment of prehistory, had late successional forests been so extensive. In fact, current old-growth conditions may already exceed the historic average.[9]

Bill McKibben has called the rebirth of forests "the great environmental story of the United States, and in some ways of the whole world."[8]

Stability of Forests

Regardless of the fact that forests often appear to be stable and natural, they've experienced not only anthropogenic but natural disturbances approximately every decade, and have undergone major compositional changes every century, report David Foster and John Aber in their book *Forests in Time*.[10] Besides human alterations, Mother Earth has considerable say in what happens to forests. This leads to the conclusion that since current forests are not stable, human artifacts, but also subject to natural disturbances, the concept of a pristine, pre-contact landscape frozen in time and space, which is so beloved of romantics, environmentalists and even some anthropologists, is simply a fiction.[11] In other words, we can't go back to the good old days because we have no way to measure what they were. Even without help from humans, Mother Nature is continually changing the world.

Global Forests

While there may be some cause for concern about preserving tropical rain forests in Brazil and other developing nations, and old growth forests in the United States, the fact remains that forests are not shrinking and trees are not disappearing. The amount of world forest has held remarkably steady over the course of the past 50 years. There are now nearly 4 billion hectares of forest on the globe, up from about 3.6 billion in the late 1940s. Nor are rain forests disappearing at an alarming rate.[2]

If you go back to the dawn of agriculture, globally it's estimated that we have lost a total of about 20 percent of the original forest cover since that time. This figure is far smaller than the one so often bandied about by the various organizations. The World Wildlife Fund, for example, claims that we have lost two-thirds of all forests since agriculture was introduced. As mentioned in the introduction, there is no evidence to support this claim.[12]

Lastly, regarding global forests, Bjorn Lomborg points a finger at first world countries bemoaning forest lost in developing countries: "Generally speaking one has to ask what foundation we actually have for our indignation about tropical deforestation, considering our own deforestation of Europe and the U.S. It seems hypocritical to accept that we have benefited tremendously from felling large sections of our own forests but not to allow developing countries to harvest the same advantages."[13]

Other Misconceptions

Another misconception is that we deforest land to produce paper. We do not. Half the fiber for paper comes from waste wood obtained from sawmills that produce lumber, and the other half comes from pulp wood from tree farms.[7]

Regarding species extinction; remarkably, despite the massive impacts of land use, land-cover change, and human exploitation on the northeastern United States, relatively few species of plants or animals have been driven to extinction. Arguably, the two most important examples of colonial extinctions from the temperate forests of New England are the passenger pigeon, which was remarkably widespread and abundant, and the heath hen, which was of much lower and more localized distribution.[14]

Carbon Dioxide Imbalance

A particularly fascinating discovery is that the growing forests sequester far greater amounts of carbon than had been suspected. When extrapolated to consider regrowth throughout the developed world over the last century, this finding has important implications for the global warming/Kyoto debate that are often ignored.[15]

For example, in the decade 1980–90, the unaccounted uptake of carbon dioxide amounted to approximately 1.5 gigatons of carbon per year (1 gigaton = 1 billion metric tons, or 10^{12} kilograms), equivalent to about 30 percent of the input from fossil fuel. Even larger amounts are missing in the 1990s, report Foster and Aber.[16]

A key source of this 'missing' carbon is growing forests, which sequester far greater amounts of carbon than had been previously suspected. Foster and Aber add, "In the 1990s, about 25 percent of the carbon dioxide from fossil fuel combustion was absorbed by the ocean and roughly 40 percent stayed in the atmosphere. The remainder was taken up by terrestrial vegetation. Carbon dioxide distribution over the globe and data from forest inventories point to significant storage of carbon in forest vegetation and soils."[17]

Their work with the Harvard Forest in the Northeast revealed that, on average about two tons of carbon were taken up by the forest for each hectare per year. The total land area in North America and Europe with similar age structure and comparable soils and climate is 200 to 400 million hectares. Foster and Aber calculate that forests such as these could take up a significant fraction of the 'unaccounted' carbon, about 0.25 to 0.50 gigatons per year.[18]

Rising carbon dioxide levels may be helping forests to start reclaiming the world's deserts. John Von Radowitz notes that this trend could explain why a forest planted on the edge of the Negev desert in Israel 35 years ago is expanding much faster than expected.[19] Researchers were surprised to find the Yatir forest on the edge of the desert was a substantial carbon dioxide 'sink' that was absorbing carbon dioxide as efficiently as vegetation in more fertile areas. The forest was also expanding quickly into the desert. The observation could indicate an unexpected consequence of man-made greenhouse gas pouring into the atmosphere. It could be helping to make arid regions more green. Most probably, you will not here this from the doomsayers.

Summary

Basically, our forests are not under threat. In a historical perspective, about 20 percent of all forest has been lost, while about a third of the world's land mass is still covered by forest, and since World War II This area has not changed much. Tropical forests are being deforested, though on levels much below the feared 1.5 to 4.6 percent per year—the newest data from the FAO indicate an annual rate of 0.46 percent.[13]

As Stephen Moore notes, "No, we are not running out of farmlands, trees, or forests. Initiatives in Washington and state capitals to plant trees are wonderful public relations for politicians, but create a false impression that we are a nation of Darth Vaders with chainsaws. That portrayal is a far cry from the reality of our resource picture."[20]

References

1. Janet N. Abramovitz and Ashley T. Mattoon, "Recovering the Paper Landscape," in Lester R. Brown *et al*., *State of the World 2000*, (New York, W. W. Norton & Company, 2000), 104.
2. Stephen Moore, "A Century of Environmental Progress and Natural Resource Abundance," in *Global Warming and Other Eco-Myths*, Ronald Bailey, Editor, (Roseville, California, Prima Publishing, 2002), 116.
3. Bjorn Lomborg, *The Skeptical Environmentalist*, (New York, Cambridge University Press, 2001), 13.
4. Steven Hayward and Ryan Stowers, *2003 Index of Environmental Indicators*, (San Francisco, Pacific Research Institute, 2003), 60.
5. Peter W. Huber and Mark P. Mills, *The Bottomless Well*, (New York, Basic Books, 2005), 160.
6. Gregg Easterbrook, *The Progress Paradox*, (New York, Random House, 2003), 109.
7. Jay Lehr, "Green Spirit: Trees Are the Answer," *Environment & Climate News*, **8**, 18, May 2005.
8. Bill McKibben, *Atlantic Monthly*, 275, 61, April 1995.
9. Alston Chase, *In a Dark Wood*, (New York, Houghton Mifflin Company, 1995), 403.
10. *Forests in Time*, David R. Foster and John D. Aber, Editors, (New Haven, Yale University Press, 2004), 140.
11. Steven F. Hayward, *Index of Leading Environmental Indicators 2005*, (San Francisco, Pacific Research Institute, 2005), 8.
12. Bjorn Lomborg, *The Skeptical Environmentalist*, 112.
13. Bjorn Lomborg, *The Skeptical Environmentalist*, 117.
14. *Forests in Time*, David R. Foster and John D. Aber, Editors, 159.
15. Michael Williams, "What's Been Going On in the Woods," *Science*, **306**, 1479, November 26, 2004.
16. *Forests in Time*, David R. Foster and John D. Aber, Editors, 381.
17. *Forests in Time*, David R. Foster and John D. Aber, Editors, 203.
18. *Forests in Time*, David R. Foster and John D. Aber, Editors, 388.
19. John von Radowitz, "Greenhouse gas soaked up by forests expanding into deserts." www.news.independent.co.uk, May12, 2003.
20. Stephen Moore, "A Century of Environmental Progress and Natural Resource Abundance," in *Global Warming and Other Eco-Myths*, 118.

Columbia Chemical Attains Delphi Approval

Columbia Chemical Corporation, Brunswick, OH, has attained Delphi approved supplier and applicator status for automotive specifications DX551305, DX551312, DX551319, and DX551300, using three of its proprietary zinc plating processes. The approval also includes two proprietary post-treatments, as well as a zinc-iron electroplate base coating.

"Delphi approval is a challenge to achieve, but it is definitely worth the investment of time, labor and expertise. The approval status is a direct benefit to our customers who need processes that meet these specifications," said Columbia Automotive Specialist Joe McDaniel, who spearheaded the effort.

ASTM International Offers Course on Corrosion Testing

ASTM International is offering its training course on "Corrosion Testing: Application and Use of Salt Fog, Humidity, Cyclic, and Gas Tests" June 13–14 in Atlanta, GA; September 19–20 in Detroit, MI; and November 28–29 at ASTM International Headquarters in West Conshohocken, PA.

First used in 1914, the salt fog test is still the most widely applied corrosion test, though it is often misused and misapplied. This course will provide a clear understanding of the proper application of ASTM B 117, and will furnish information regarding corrosion testing in general, so that attendees can understand the significance of the salt fog test.

The $795 attendance fee includes standard B 117, D 1193, Standard Specification for Regent Water, and a publication on "How to Run a Salt Spray Test" by instructor Raymund Singleton. The fee also includes course notes, a certificate of attendance, 1.5 continuing education units (CEUs), and refreshment breaks.

To register, or for a free brochure describing the course, contact Eileen Finn, ASTM International (610/832-9686; fax: 610/832-9668; e-mail: efinn@astm.org; or visit www.astm.org).

Test Your Plating I.Q. #415

By Dr. James H. Lindsay, AESF Fellow

Barrel plating

1. What are the factors to be considering when deciding whether a part should be barrel or rack plated?
2. What situations cause parts to nest?
3. What precautions must be taken when barrel anodizing aluminum or magnesium?
4. Generally, the tank size containing a barrel is larger than a corresponding rack operation. Why?
5. What factors can decrease part-to-part thickness variation within a load?

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