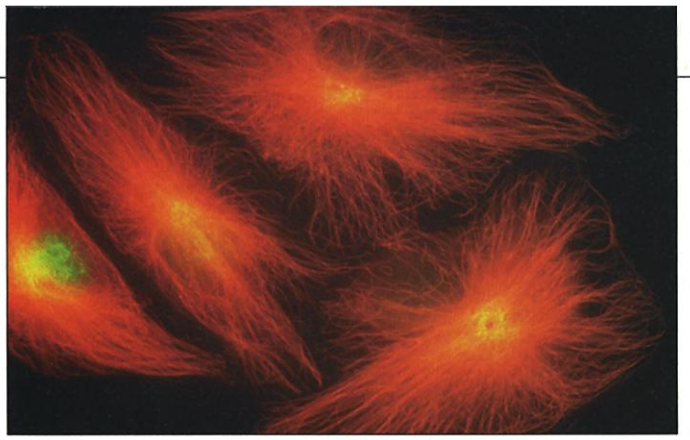


NETWATCH
edited by JOCELYN KAISER

COOL IMAGES

Cells Afire

This picture of red microtubules flaring from yellow cell nuclei is an example of fluorescence microscopy, which since the 1980s has become a routine lab tool for probing cellular innards. The Web Atlas of Cell Structures* offers dozens of pretty images and some how-to advice. It describes protocols for staining cells with fluorescent antibodies that stick to certain proteins, as well as the kinds of light microscopes you then shine on the fixed cells—including the confocal microscope, which gets sharper images by collecting light from only a thin slice. Students can download large image files and try processing them themselves.

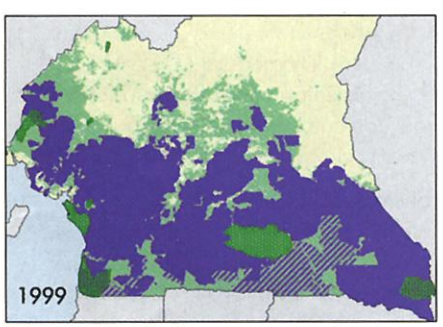
* www.itg.uiuc.edu/projects/atlas

NET NEWS

Network to Log World Forest Loss

In a new strategy to guard what's left of the world's original forests, conservationists have created a global network and Web site to keep tabs on where trees are coming under the saw. Global Forest Watch (GFW),* announced last week, combines satellite technology and old-fashioned legwork to create detailed forest maps that reveal activities such as illegal logging.

The project involves two kinds of data: land cover images from U.S., European, and Russian satellites; and on-the-ground info on logging permits, mining, and other development gathered from governments and local advocacy groups. GFW experts combine the data using spatial coordinates from the Geographic Information System, then post the maps on the Web. Already online are interactive maps of Canada, Cameroon, and Gabon. They show, for example, how logging concessions have expanded from 8% to 76% of Cameroon's forest since 1959 (in purple above)—even though many permits are expired or otherwise illegal.



The network, launched by the World Resources Institute (WRI) in Washington, D.C., and dozens of partners, is intended to be neutral. Governments can use the maps to manage forests better, for instance, while activists might wield them to oppose logging in virgin forests. GFW plans to expand to 21 countries over the next 5 years. "This is the first attempt to try to do this for much of the world," says WRI scientist Anthony Janetos.

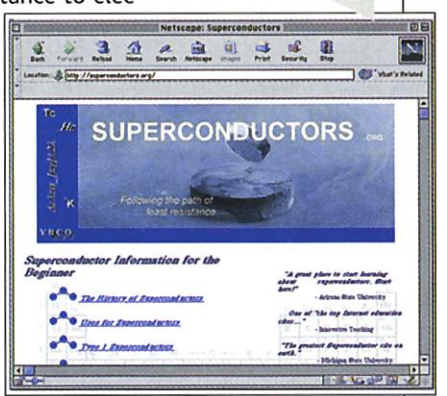
"It's an important step forward," agrees Chris Justice of the University of Virginia, Charlottesville, who works on an international global forest cover project that uses data from satellites only. He thinks GFW's biggest challenge may be "building trust" with loggers. "If it's seen as undercover digging up," he says, "they won't get access to information."

* www.globalforestwatch.org

SITE VISIT

Good Conduct

superconductors.org



Since the discovery 14 years ago that some materials lose all resistance to electricity at temperatures well above absolute zero, superconductor research has attracted thousands of physicists and sparked hot commercial interest. Superconductors.org is aimed at beginners, but its hyperlink-sprinkled pages also serve as an excellent roundup of the field's major Web attractions.

Start by versing yourself in the history of superconductivity, discovered in 1911 in mercury cooled by helium to 4 kelvin. Then run down the major types of superconducting materials, including the record holder, a five-element ceramic concoction that superconducts at a warmish 133 K. Or catch up on applications: Superconducting materials may speed data links on the Internet, for example, while Japan's experimental maglev train last year reached a mind-boggling 552 kilometers per hour.

Want to dig deeper? Click a button to pull up all 56-and-counting U.S. patents on superconductors. Other links lead to superconductor newsletters, major labs, companies, and an abstracts database in Japan. You can even find out about kits for making superconductors in the classroom—or the basement, perhaps. Superconductor.org's creator, electrical engineer Joe Eck, says he studies them "as a hobby" at home.

HOT PICKS

What's on trial? Patients and others interested in learning about ongoing clinical research can troll through this new database of over 4000 clinical trials, most sponsored by the National Institutes of Health. The site will eventually include more non-NIH and private studies. clinicaltrials.gov

Riding waves. It can be tough to tease out long-term patterns from the several-year spikes of geophysical phenomena such as sunspots and El Niño ocean warming. This tutorial on "wavelet analysis" takes readers through mathematical approaches and offers software for seeing these large-scale trends. paos.colorado.edu/research/wavelets

Engineering's greatest hits. Radio, highways, spacecraft, the Internet: These are among the top 20 engineering feats of the last century, according to a just-announced National Academy of Engineering list. Find out more at www.greatachievements.org

Send Internet news and great Web site suggestions to netwatch@aaas.org

CREDITS: (TOP TO BOTTOM) IMAGING TECHNOLOGY GROUP; GLOBAL FOREST WATCH/WRI