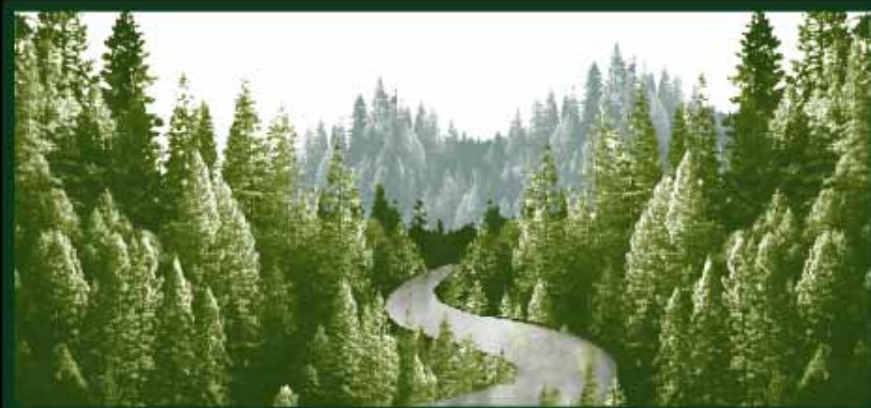


Paper or Plastic?



WATERSHED MEDIA

Searching for Solutions to an Overpackaged World





Timber and
Forests



Petroleum
and Corn



Renewable
and Reusable

- Packaging is a \$500 billion global industry
- Nearly 60 percent of all packaging is for food and beverages
- Europe, North America and Japan consume nearly 2/3 of all packaging



- Over half of packaging is wood-based
- In the U.S. alone, 315 million disposable drink cups are used every day
- Global packaging grew at about 3.95% between 1993-2003
- More than 800 pounds of packaging per person per year in U.S.



In an environment that is screwed up visually, physically, and chemically, the best and simplest thing that architects, industrial designers, planners and others could do would be to stop working entirely.



But it seems to me that we can go beyond not working at all and work positively.



Victor Papanek
Design for the Real World

The Packaging Stream Upstream vs. Downstream



90%

UPSTREAM

Raw materials
Processing
Design
Manufacture
Transportation

10%

DOWNSTREAM

Recovery
Reuse
Recycling
Landfilling
Incineration
Litter

What it Does ...

Product protection

Convenience and pleasure

Safety and hygiene

Nutrition

Spoilage prevention

Information and Branding

Transportation and trade



What it Takes to Do ...

Energy

Water

Raw materials

Design

Labor

Transportation

Infrastructure











What Doing it Takes

- Airborne emissions
- Waterborne emissions
- Solid Waste
- Habitat impacts
- Climate impacts
- Human community impacts







Cultural, economic, ecological concerns

- Packaging eliminates traditional producer/customer relationships
- Packaging increases distances between producers and consumers
- Many food and beverage packages have shelf-lives thousands of times longer than the actual product

The Economist

DECEMBER 13TH-19TH 2003

www.economist.com

Gore anoints Dean

PAGES 12 AND 33

America's Taiwan test

PAGES 12 AND 29

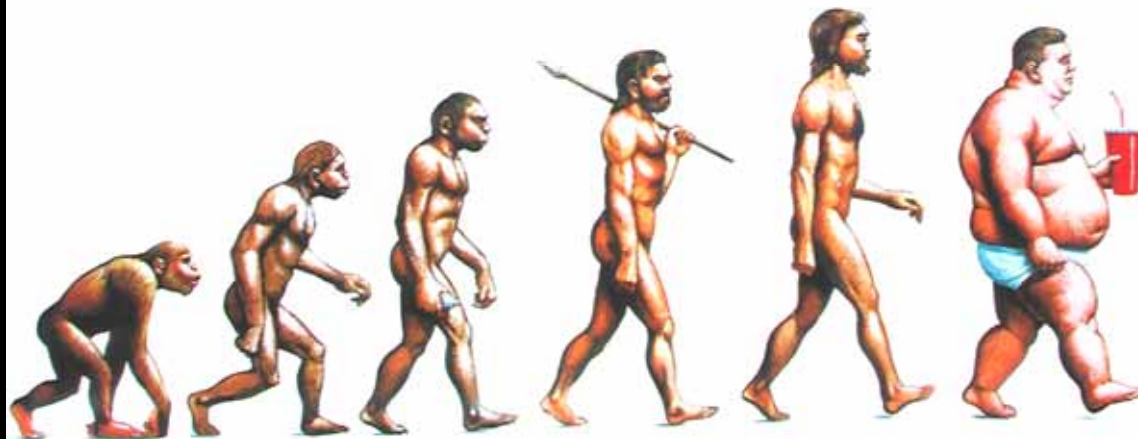
The future of flight

PAGES 79-81

A SURVEY OF FOOD

AFTER PAGE 52

The shape of things to come



The Package *is* the Product



Predatory Packaging



The de-evolving food chain



Faith in the
packaged
versus the
natural and
unprocessed



Retailer Responsibility



It is possible to believe both that some packaging is essential, and that the trend is still toward increasing waste in packaging. Waste could result from a competitive “arms race” in which one company adopts larger, more elaborate packaging solely to compete with another company’s larger more elaborate packaging, in the struggle to win the attention of consumers.—*Frank Ackerman, Tufts University*

Extended Producer Responsibility





Essential Requirements

- Materials must be separable and recoverable
- Degradable packages must be organically recoverable
- Packages must be as small as possible
- Packages must be free of noxious substances
- Preference for reusable materials



Extended Producer Responsibility, 2004



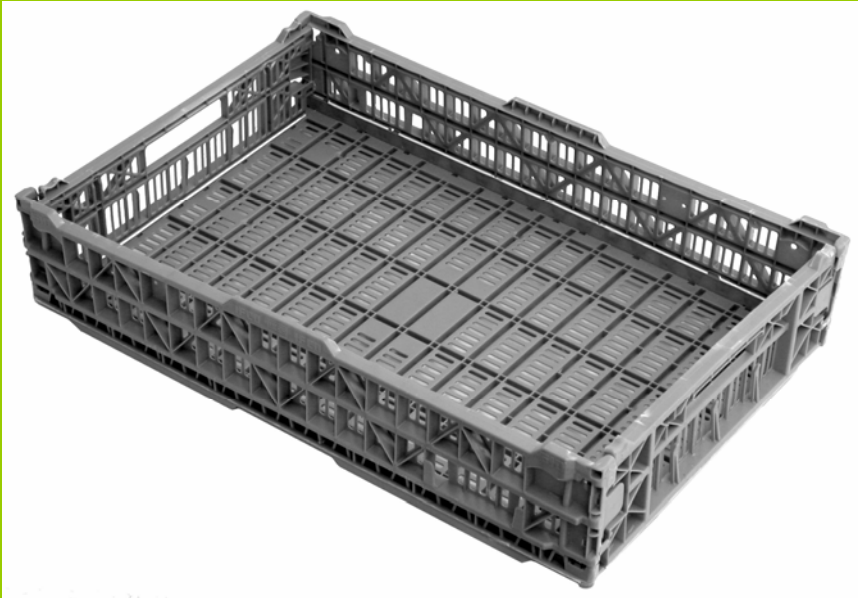
Source Reduction



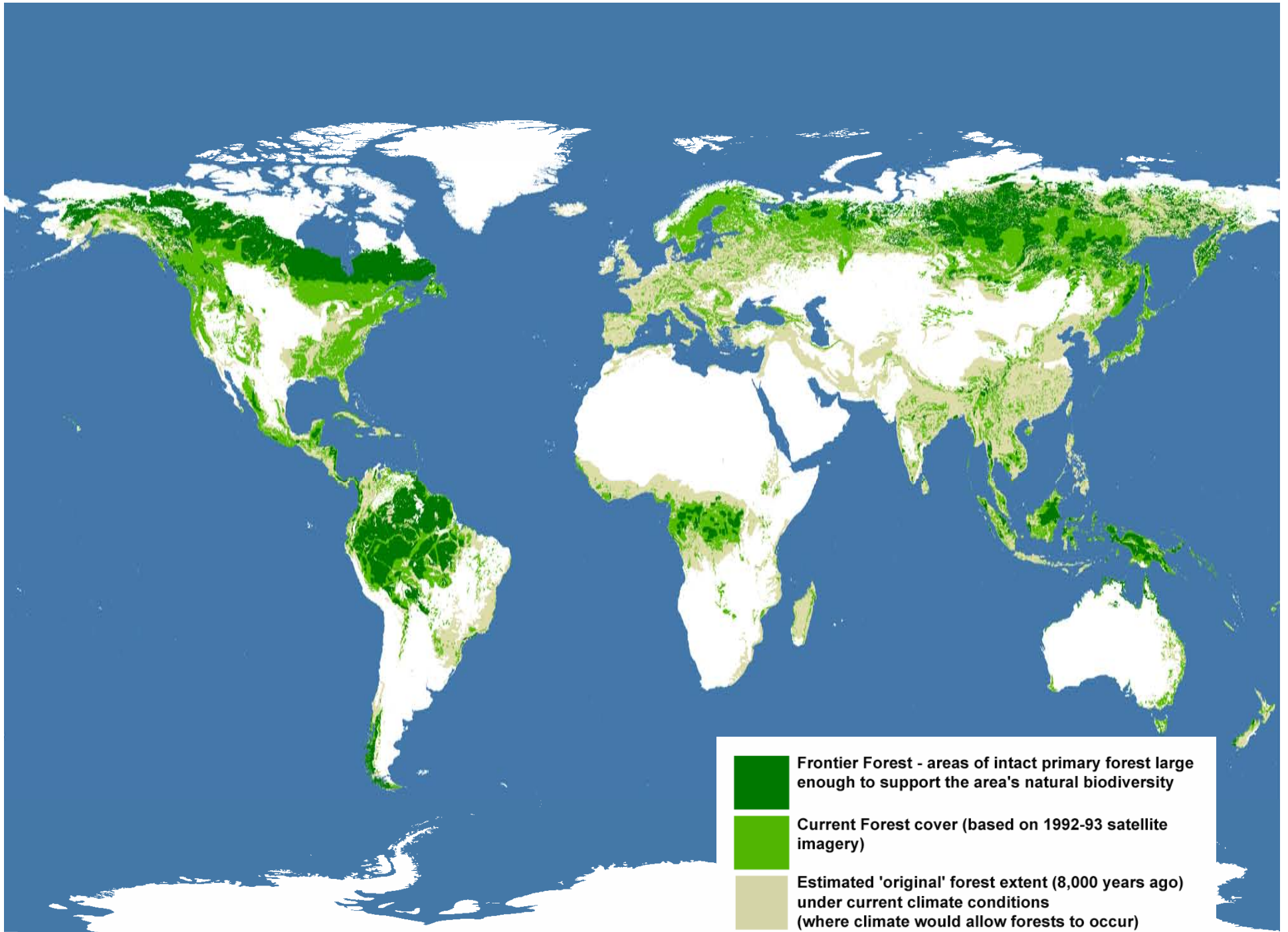
Source Reduction

- Reduce package weight and volume
- Minimize the number of materials
- Reduce energy consumption
- Maximize post-consumer content
- Strengthen or reformulate the product
- Eliminate a material or element

Wood Reduction



- Source reduction
- Source avoidance
- Source substitution
- Source protection
- Source certification
- Natural Capital Accounting



The Benefits of Switching to 35 percent postconsumer recycled content for medicine or cosmetics paperboard

Annual Benefit

- 156,000 tons of greenhouse gases
- 2.6 billion gallons of wastewater
- 510,000 trees
- 106,000 tons of solid waste

Annual Equivalent

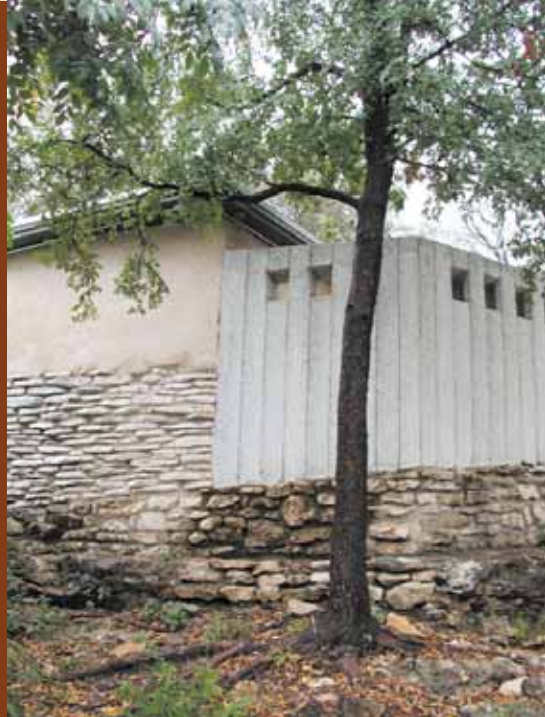
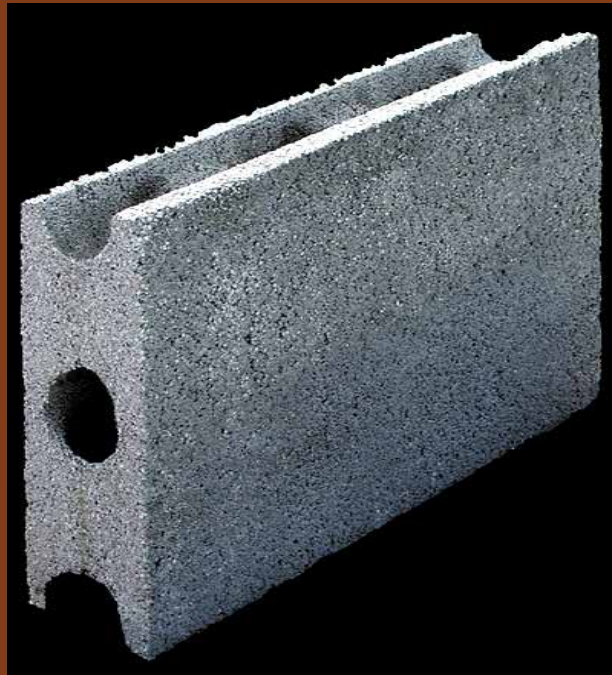
- CO₂ from 27,00 cars driven 200 miles per week
- Wastewater from 27,000 households
- Copy paper for 11m people
- Trash generated by 49,000 households

Natural Systems Design



Natural System Design Elements

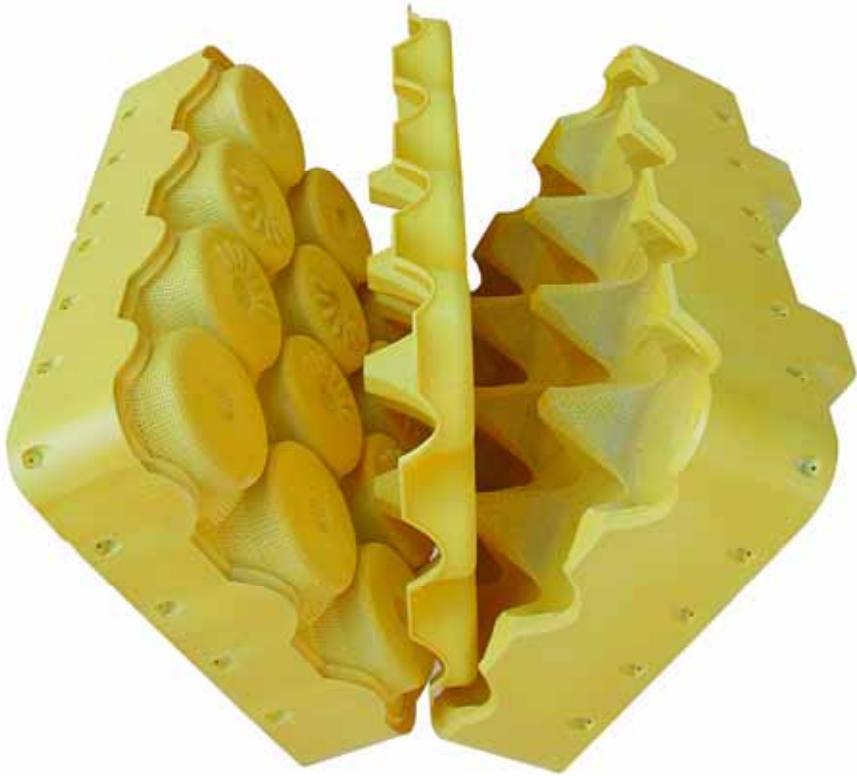
- Sound
- Solar
- Efficient
- Cyclic
- Humane
- Safe
- Conservation-based
- Nature Inspired Designs





Mini-mill Technologies





Third-Party Certified Materials



Forest Stewardship Council Certification



- Conserve forests' economic resources
- Recognize and respect rights of indigenous peoples
- Protect biological diversity
- Regular monitoring and assessment



Bioplastics — The “*Cornification*” of Packaging



- Corn dominates the United States landscape and creates a “Dead Zone”
- Corn requires more synthetic fertilizers and pesticides than nearly any other crop
- Genetically modified corn varieties now contaminate seed banks in U.S. and Mexico

The Global Revival of Local Economies







Packaging Guidelines

- Designed from a whole systems perspectives
- Contains no ancient forest fibers; virgin fibers come from a verified third-party source
- Avoids hazardous chlorine compounds, heavy metals, and other toxins
- Can be reprocessed within local and regional resource loops whenever possible

More Thoughts ...

- Uses as few materials as possible and breaks down easily into reusable or separable elements
- Considers how a redesigned or reformulated product can affect packaging
- Is only as large as it needs to be
- Is safe for all species and habitats
- Has been optimized through some form of life cycle study

More Thoughts ...

- Is information-intensive as opposed to material- and energy intensive
- Contains as much post-consumer recycled or agricultural waste materials as possible
- Attempts to close the gap between the life span of its materials and the shelf-life of the product it packages



- *Paper or Plastic: Searching for Solutions to an Overpackaged World*
- *Building with Vision: Optimizing and Finding Alternatives to Wood*
- *Farming with the Wild: Enhancing Biodiversity on Farms and Ranches*

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