

Seeds of **CHANGE**

A guide to treading lightly on the Earth

This special section informs readers of green practices they can easily implement into their lives.

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Chemical Burn

Skin cancer isn't the only thing sunbathers should worry about.

By Cara Binder

During the hot days of summer, most people slather on sunscreen and call it a day. However, mounting evidence indicates that the very product used for protection may be quietly causing us—and the earth—serious harm.

Sunbathers, take heed.

At stake are the oceans' coral reefs and human health.

Eighty-three percent of 912 name-brand sunscreens tested for safe ingredients and acceptable protection against UVA and UVB rays did not meet standards set by the Environmental Working Group, a non-profit agency of researchers and scientists. The organization measured the toxicity rating as well as how quickly UVA and UVB protection broke down, according to research analyst Kristan Markey.

The study found that sunscreen with a high sun protection factor, or SPF, may not be the ticket to dodge skin cancer and age gracefully. While many consumers judge the potency of sunscreen

by its SPF rating, the study has shown this rating to be insufficient in judging a product's cancer protection. SPF is concerned with UVB rays and for the most part ignores UVA rays.

Of the products tested, 13 percent did not protect against UVA rays, which are responsible for skin cancer. Luckily, this confusion about sun protection may be cleared up in the near future. According to the U.S. Food and Drug Administration, a new four-star product rating system has been proposed, which would rate the strength of UVA protection in an easy-to-understand fashion.

But sun protection isn't the only concern. The study also found that toxic chemicals in sunscreen absorb into the blood and cause health issues linked to hormone problems and

allergic reactions.

"We're especially concerned with the active sunscreen ingredients because you're supposed to smear this into your body every couple of hours," Markey said.

Although testers found changes in estrogen levels linked to sunscreen usage, the more obvious damage can be found in the environment, Markey said.

Common ingredients in sunscreen are washing off swimmers and getting into water. These chemicals interfere with a specific algae living on the coral reef that provides nourishment and essential photosynthesis in the reefs, according to a January 2008 study conducted by Environmental Health Perspectives, a research journal. Without this alga, the reefs are dying. According to Markey, the beaches of California and Hawaii are most plagued with this problem.

Consumers can avoid potentially toxic sunscreen by avoiding brands that use

ingredients such as benzophenone-3, homosalate, 4-methyl-benzylidene camphor, octyl-methoxycinnamate, octyl-dimethyl-PABA, and butyl-methoxydibenzoylmethane, which have been shown to cause problems with estrogenic changes and reef bleaching.

The Environmental Working Group also recommends safe-to-use brands at cosmeticsdatabase.com. Topping the list are Badger, SPF 30; Keys Soap Solar RX Therapeutic Sunblock, SPF 30; and ColoreScience Sunforgettable Rock and Roller Ball, SPF 30.

Of course you can always just stay out of the sun. Switch a day hike to the morning to get out of the sun, lie under a tree, or claim the patio table with an umbrella. The earth (and your skin) will thank you.

Cara Binder is a senior studying journalism at MSU with a specialty in women, gender, and social justice. This is her first appearance in *EJ*. Contact Cara at binderca@msu.edu.

Sunscreen Smokescreen
Don't get burned by these misleading claims.

- Very High SPF**
SPF 90 is only 1.3 percent more protective from UVB rays than SPF 30. Apply sunscreen generously rather than opt for the high numbers.
- Chemical Free**
Sunscreens with zinc oxide and/or titanium dioxide will often print this, even though both are naturally-occurring chemicals. Look for them before buying.
- Mild as Water**
If a sunscreen claims to be as mild as water, but also warns you against getting it in your eyes, it's simply not true. Keep shopping.
- Blocks All Harmful Rays**
No sunscreen can block all rays. Even the strongest sunscreen can't block out all UVA radiation. This claims it can block out all light, which is impossible.
- PABA Free**
Virtually all sunscreens contain no PABA. It became unpopular thanks to allergies and sensitive skin. Padimate-O, a derivative, is still a commonly found toxin.
- Waterproof**
This claim also holds no water. Some sunscreens are sweat-resistant, but none are truly waterproof. Also beware of sweat-proof, sand-proof and rub-proof.

Source: Environmental Working Group
Graphic by Wes Hobling

Takin' Care of Business

Minimize Fido's environmental impact.

By Jessica A. Knoblauch

The federal government says dogs produce almost 300 pounds of waste per year.

That's some eco paw print.

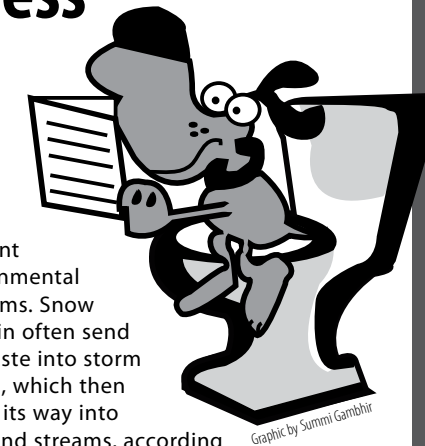
"We have two loveable and gorgeous labs, but what comes out of them is hardly gorgeous or loveable," said Sarah Waddell, an Illinois resident. "After a two-week cold snap, my husband and I trekked out to the yard wearing rubber gloves to retrieve almost 60 pounds of dung." The Waddells bagged it and threw it in the garbage. "We didn't know what else to do with it."

They are not alone. Almost 39 percent of households own at least one dog, according to the Humane Society of the United States. Most dog-owners simply throw the waste away, adding to the ever-growing pile of plastic bags found in landfills.

Others leave it where it drops, creating

different environmental problems. Snow and rain often send pet waste into storm sewers, which then makes its way into lakes and streams, according to the Environmental Protection Agency.

Some city governments are tackling the dog poop problem head on. Last year, San Francisco began collecting dog waste and converting it into methane. The program is a great idea, but for those of us who don't live on the left coast, see the sidebar on the right for other environmentally friendly options for getting rid of Rover's waste.



Doggy "Do" Quick Tips

- **Use biodegradable poop bags.** Look for the ASTM D6400 specification, which requires bags to degrade at a similar rate as an apple. Once used, toss the bag in the garbage where it will begin to erode.
- **Flush it.** Use water-soluble bags made of polyvinyl alcohol film. Flush the used bag down the toilet and the septic system or sewage treatment plant takes care of the rest.
- **Install a pet waste digester.** Dog owners need only drop the waste into these mini-septic systems and add water and digester agent. The liquefied dog poop drains into the surrounding soil, creating nutrient rich dirt.
- **Become the bag lady.** Use plastic bags that your not so environmentally friendly friends are about to throw out. At the very least, they are put to good use before entering the landfill.

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Myth Buster

Myths about car idling exist. Flip the page upside down to see if you fall for any.

Story and Photo by Sarah Crespi

- Myth # 1** Cars like to be warm and toasty before hitting the road.
- Myth # 2** It takes more gas to restart the car than to let it idle for a few minutes.
- Myth # 3** Frequent restarting harms the ignition and engine.
- Myth # 4** Idling in a no-parking zone keeps you from getting a ticket.
- Myth # 5** Switching off the ignition does little to save the environment.

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Turning the key on idling is an example of a small change, like turning off the lights when you leave a room, that can have a big impact if widely adopted. Next time you're waiting for a train to go by, turn off the engine and make a big difference!

Truth to #1 It's unnecessary to warm a car up for more than a few seconds, even on cold mornings. The best way to warm up the car is to drive at moderate speeds so that all parts are heated at once.

Truth to #2 Idling for 10 seconds or more uses more fuel than restarting.

Truth to #3 For most cars restarting causes little harm to the ignition and engine, and those costs associated with wear are recovered in fuel savings. (Environment Canada)

Truth to #4 Having the car on won't necessarily save you a ticket, and it definitely wastes gas.

Truth to #5 A passenger car that idles for 10 minutes a day emits just under 500 pounds of carbon dioxide a year. It also uses more than 25 gallons of gas per year.

Ask An Environmentalist

Anne Woiwode, director of Michigan's Mackinac Chapter of the Sierra Club, picks top five environmental books.

By Kerri Jo Molitor

1. The Lorax, by Dr. Seuss (1971):

Where does the grackle-grass grow and the wind smell slow-and-sour? In this cautionary tale of greed and destruction, the author explores how industry and production interfere with preserving the environment.

AW: "We sometimes think that the kinds of concerns we have to have about the environment have to be complex, but Dr. Seuss explains it in a clear and concise way."

2. A Sand County Almanac, by Aldo Leopold (1949):

This non-fiction piece includes Leopold's observations on the Wisconsin countryside as well as his travels through U.S. woodlands.

AW: "It is a simple book, written in small pieces, but it gives you a sense of detail about wild places and things."

3. The Hidden Forest: The Biography of an Ecosystem, by Jon R. Luoma (2006):

In 1948, the U.S. Forest Service set aside the H. J. Andrews Experimental Forest in Oregon's Cascade Range as a living laboratory. This book focuses on how research at the lab is revolutionizing forest management.

AW: "What I particularly like about it is... we often see end products of scientific work, without seeing the missteps. Science is about trial and error. He shows

where they got it wrong."

4. The Diversity of Life, by Edward O. Wilson (1992):

This book follows the evolution and adaptation of species and the cataclysmic events that interfered with them.

AW: Wilson is considered a "premiere scientist in the world on ecosystems and ecology." Woiwode especially liked the book because he "describes things beautifully."

5. The Omnivore's Dilemma, by Michael Pollan (2006):

The author develops a portrait of the American way of eating by tracing foods from source to table. The result portrays the implications that food choices have on human health and the future of the planet.

AW: "People often feel disconnected from their own impacts. [They think] it's done by factories and big companies. I've yet to read this, but it's on my table at home."



Director Anne Woiwode

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Energy Crunch
Dial down energy use and save money.

- 38°**
The optimal temperature for refrigerators is about 38 degrees. Refrigerators set 10 degrees below this can decrease energy efficiency up to 25 percent.
- \$53**
Turn off the computer and monitor each night and save up to \$53 annually. Consider a laptop for your next purchase. They use roughly one-fifth the energy of desktops.
- 10x**
Compact fluorescents last up to 10 times longer than traditional incandescents and use 75 percent less energy. Replacing ten bulbs saves about 12 percent on the utility bill annually.
- 75%**
75 percent of all power used by appliances is drawn when they are turned off but still plugged in. Use a power strip to completely cut the power when not in use.

Sources: Department of Energy, Argonne National Laboratory, US News and World Report
Graphic by Wes Holling