



THE NEXT STEP Toward a Healthier Future

A BI-MONTHLY NEWSLETTER OF THE SEBASTOPOL TOXICS EDUCATION PROGRAM

Sweeping Scotch Broom From Our Hillside

What did the scotch broom plant say to the gardener?

"Don't get me started."

That's because **scotch (or Scot's) broom** (*Cytisus scoparia*) is an invasive plant in this region, and can get out of control in our yards, pastures, and natural landscapes. It competes with native plants for sun, space, and nutrients, often displacing the natives and impacting the insects and animals that depend upon them.

As you drive around Sonoma County, you'll see hillsides filled with scotch broom (SB) shrubs, which are 4 to 6 feet high with a yellow pea-like flower and olive green leaf. A mature plant produces 18,000 seeds a year, making it easy to spread and difficult to eradicate. The seeds have hard coats and can survive for up to 80 years before sprouting. SB is spreading rapidly throughout the northwest, from San Francisco to British Columbia, threatening our coastal plant communities. It has overtaken about 70,000 acres in California.

Eradication of SB is difficult but prevention is easy. Herbicides are not needed, and in fact offer little help, since they do nothing to suppress the seedlings.

First, don't plant SB. Second, if you see it sprouting, remove it by the roots before it sets seed. The sooner you

begin removal, the less work it will be. Also avoid planting, and remove, **French Broom.**

For more information, see <<http://tncweeds.ucdavis.edu/esadocs/documnts/cytisco.pdf>>

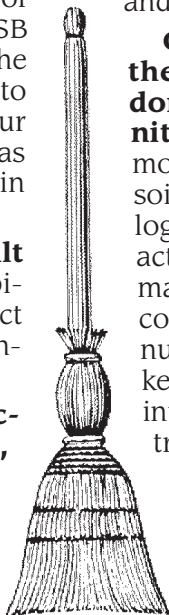
~ Karen Froiland

• • •

Native to Europe, scotch broom (SB) is an attractive perennial shrub with stiff branches that bloom in late spring or early summer with a burst of fragrant bright yellow flowers. In its native regions, SB is ecologically benign and was traditionally used to make (yes) brooms, plus baskets, thatch, fencing, fiber for paper and cloth, and tannin to tan leather. Like other legumes (members of the pea family), SB fixes nitrogen, nourishing the soil. Its extensive root systems hold in the dirt and allow SB to survive in drought conditions. SB was sacred to the Druids, and was used to purify and protect ritual space.

Only in certain regions of the world does SB come to dominate the plant community. It seems to spread more in moderate climates and disturbed soils, opportunistically filling ecological spaces harmed by human activity, including clearcuts. Like many pioneer species, it seems to come into disrupted soil to help nurture it and hold it in. In fact, a key reason humans brought SB into our area was for erosion control along highways.

See Broom, over ...



Oil, Katrina, Security, & Toxics

Recent news stories highlight three timely reasons to reduce our culture's use of toxic pesticides.

(1) Rising oil prices. Most toxic pesticides are petrochemicals (i.e., petroleum-based). Chemical companies like Dow and BASF have recently reported that they're notably raising product prices because of this year's jump in oil and natural gas prices. If oil prices keep rising (as predicted by peak oil theory), **petro-pesticide costs will keep going higher**, making alternatives ever more attractive.

(2) Toxic contamination from storms. Synthetic pesticides are known to cause health and environmental harm throughout their life-cycle, including at manufacture, transport, use, and disposal. Greatly amplifying exposure are storms like **Hurricane Katrina**. More than 350 petroleum facilities, chemical plants, and hazardous waste sites were in Katrina's path. This includes the region nicknamed "Cancer Alley" by residents, who feel that their community is being poisoned by the area's many petrochemical plants. It's likely that everything Katrina's stormwater touched (including the soil and water) is poisoned with toxics from a variety of sources — putting at risk the health of people, pets, the environment, and the local fishing industry. However, the government is barely studying the chemical composition of this "**Toxic Gumbo**," instead seeking to lift environmental regulations and reduce corporate liability for the harm.

(3) Community exposure risks from terrorism. As part of security planning after 9/11, analysts identified chemical plants as vulnerable terrorist targets, risking widespread toxic release. Yet, three years after a Senate panel unanimously passed a bill to create security standards for the nation's chemical plants, Congress has yet to agree to mandatory safeguards.

Stories like these, and so many more, make it clear to me that **we can best protect our shared well-being by simply avoiding the many health and environmental costs of toxics**, and shifting to — and creating — healthier, less-toxic approaches instead.

~ Patricia Dines

Researcher Finds Roundup Toxic to Frogs, Even at Low Doses

As amphibians disappear worldwide, the findings of a University of Pittsburgh researcher highlight one of the likely causes.

Elaborating on his previous research, Pitt Assistant Professor of Biological Sciences Rick Relyea has discovered that **Roundup, the world's most commonly-used herbicide, is "extremely lethal" to tadpoles even at low concentrations**. He also found that the presence of soil doesn't reduce the chemical's effects; and that **the product also kills frogs**.

In two articles published in the journal *Ecological Applications*, Relyea reports his findings that, even when applied at one-third the maximum rate expected in nature, Roundup still killed up to 71% of tadpoles raised in outdoor tanks.

Although Roundup is not approved for use in water, scientists have found it in wetland areas where



tadpoles live; they conclude that this is from drift, runoff, and misuse.

Relyea also found that the recommended application level of Roundup Weed and Grass Killer, a formula marketed to homeowners and gardeners, killed up to 86% of terrestrial (land-based) frogs after only one day.

Relyea's original study goal had been to see if Roundup indirectly harmed frogs, by harming their algae food source. He says, **"The most striking result from the experiments was that a chemical designed to kill plants killed 98% of all tadpoles within three weeks and 79% of all frogs within one day."**

This is even more disturbing because over 100 million pounds of Roundup are used each year in the U.S. alone, and Monsanto's RoundupReady Genetically Modified (GM) crops encourage even more use.

Frogs offer us more than natural insect control, playfully-colored hops, and throaty melodies for a summer's evening. They're a critical link in nature's food chain, a key bridge between algae, plants, and predators. They're also an important indicator species, providing early news of our planet's well-being. This is because they live in both land and water, and pollutants more easily cross their permeable skin.

Christopher Raxworthy, curator of the exhibit "Frogs: A Chorus of Colors" at the American Museum of Natural History, says, **"When we see frogs disappearing, that should be a warning to all of us."**

control SB (see *Common-Sense Pest Control*, Olkowski, et al, page 502). Scientists are also testing **biological controls**, especially insects.

To help avoid problems with SB, minimize soil disturbances. If soil is disrupted, fertilize and plant desirable plants to outcompete SB. And only buy a broom plant if you're certain that it's a non-invasive variety.

~ Patricia Dines

SOURCES: <www.efn.org/~ipmpa/Nox_broom.html> <www.paghat.com/scotch_broom.html> <www.csiro-europe.org/cytisus.html>

For more about Roundup, see *TNS I/3* and <www.pesticide.org/glyphosate.pdf>.

SOURCE: "Roundup kills frogs and tadpoles, Pitt biologist discovers", University of Pittsburgh, Aug. 24, 2005 <www.umc.pitt.edu/media/pcc050824/sci3_roundup_2005_AUG_24.html>. (Thanks to Will Shonbrun for forwarding that article.)

Timely Tips

Sonoma County's **Household Toxics Facility** (at the Central Disposal site) is free to county residents. It's open Th.-Sat., 7:30am-3:30pm. (Bring your ID.) You can also drop toxics at a **Community Toxics Collection**, open by appointment at different locations on Tuesdays, 4-8pm. This will be in Sebastopol on 11/22 and 1/3. More information is at <www.recycle.now.org> or 565-3375 (DESK).

• • •

Do you want to know more about how to **manage mold** or **create a healthy home for the holidays**? Download past TNS issues that cover these and other topics using our ongoing index at <www.healthyworld.org/STEP_Index.html>. And remember, **winter is the time to cut back your blackberry bushes**. See *TNS IV/3* for more about our tests using **vinegar** to prevent re-growth.

ABOUT STEP

The Next STEP (TNS) is published six times a year by the **Sebastopol Toxics Education Program (STEP)**. STEP is a project of the **City of Sebastopol**, implemented by local citizen volunteers. **STEP's mission** is to support city residents in reducing their toxic use and exposure, creating a healthier and safer Sebastopol for everyone.

Newsletter Editor and Layout: Patricia Dines, Email <PDines@compuserve.com>

Newsletter Editorial Team: Craig Litwin and Patricia Dines

Newsletter Design Concept and Logo Design: Lyn Dillin (née Bouguereau)

STEP Founders: Michael Black, Patricia Dines, Rebecca Dwan, Jeff Edelheit, Nan Fuchs, Craig Litwin, and Larry Robinson.

STEP, P. O. Box 1776, Sebastopol CA 95473
<www.ci.sebastopol.ca.us>

Printed on recycled paper.

Broom, continued

If you think a plant might be SB, confirm the identification before taking action, as there are other brooms that are more benign. (For help, see <www.cdca.ca.gov/phpps/ipc/weedinfo/brooms.htm>).

Winter is a good time to hand remove SB, as moist soil makes it easier to pull. Try to catch SB when it's small, before it spreads. Feel free to find uses for its stems (such as in flower arrangements); just be sure to avoid spreading the seeds. **Goats** have been also used successfully to