

WASHINGTON  
TOXICS  
COALITION

# Alternatives

protecting health by preventing pollution

## *Carbaryl Use in Willapa Bay and Grays Harbor to End Settlement Phases Out Insecticide, Seeks Alternatives*

Erika Schreder

After 40 years of yearly dosing with the insecticide carbaryl, relief is in sight for the people, fish, and wildlife of Willapa Bay and Grays Harbor. The Washington Toxics Coalition, the Ad Hoc Coalition for Willapa Bay, and the Willapa Bay/Grays Harbor Oyster Growers Association have signed a historic agreement to phase out the use of carbaryl in the bays by 2012. The agreement comes as a settlement to the appeal mounted by the Toxics Coalition and the Ad Hoc Coalition to the growers' Clean Water Act permit, which was required in 2002 for the first time.

For many years, oyster growers have sprayed carbaryl directly on the tideflats of these important estuaries to kill native burrowing shrimp. The shrimp hamper oyster cultivation by softening the tideflat surface so that oysters grown on the surface tend to sink. Many fish, crabs, and other creatures die each year as a direct result of the spray; it is likely to have more subtle, long-term effects as well on fish and wildlife by disrupting food supplies and through non-lethal effects such as hormone disruption. Local residents including the Shoalwater Bay Tribe have also raised concerns about the human health effects of the spray.

Because of a court ruling in 2001, the oyster growers were required for the first time in 2002 to obtain a Clean Water Act pollution permit before spraying. Despite hundreds of comment letters from major environmental groups and the public, the Washington State Department of Ecology issued a flawed permit in May 2002 that allowed the spray to continue. The permit did not require the growers to meet best available technology requirements or sediment standards and allowed carbaryl levels to exceed water quality standards for up to a month following the spray.

To challenge the permit, the Toxics Coalition teamed up with the Ad Hoc Coalition for Willapa Bay to file an appeal to the Pollution Control



Hearings Board. We were able to secure the pro bono assistance of amazing attorney Margaret Archer of the firm Gordon Thomas Honeywell and Malanca, based in Tacoma. We challenged the permit's failure to require best available technology, meet sediment standards, and meet water quality standards.

Our strong appeal brought the oyster growers to the negotiating table in late 2002. Bill Dewey of Taylor Shellfish Company led the effort to find a solution that would be positive for all parties. Because the ultimate solution to the issue will be a complex one that finds oyster culture methods that maintain the oyster industry while protecting the environment, we believed that a settlement was more likely to develop the appropriate solution than continuing the appeal would have been.

After four months of very difficult negotiations, we were able to come to an agreement with the growers in April 2003. Our agreement contains the following key provisions:

*Oyster dredges such as the one pictured above ply the waters of Grays Harbor and Willapa Bay. Under the recent agreement, growers will find less-toxic methods of protecting their oysters from native burrowing shrimp.*

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## Clean Water for Salmon



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- ❖ The growers will end the use of carbaryl by December 31, 2012.
- ❖ The growers will begin reducing carbaryl use this year by 10%, followed by a 20% reduction in 2004 and a 30% reduction in 2005.
- ❖ The growers will spend an additional \$10,000 annually over the next three years on alternative shrimp controls or culture systems over and above research requirements prescribed by the permit.
- ❖ Washington Toxics Coalition and the Ad Hoc Coalition will drop the appeal of the permit and will not appeal future permits issued to the growers.
- ❖ We agreed to inform our members about the agreement and request that they act consistently with it.

We ask that anyone who takes actions on behalf of the Toxics Coalition act consistently with our agreement.

As part of the agreement, we also pledged to work with the growers to develop alternatives to carbaryl, since an alternative has not been identified that the growers feel works for them and that is not damaging to health or the environment. We are participating in a multi-agency committee tasked with identifying alternatives and assisting the growers in prioritizing research. We are hopeful that working together will result in a solution to carbaryl spraying before the 10 years of the settlement are up.

This agreement is a huge victory for the people, fish, and wildlife that call Willapa Bay and Grays Harbor home, for anyone who eats oysters, and for all residents of Washington state. We owe a large debt of gratitude to Larry Warnberg, Sandy Bradley, and Fritz Cohen of the Ad Hoc Coalition for their many years of work to stop the carbaryl spray, and to Margaret Archer for her tremendous work in appealing the permit.

Finally, thanks to our many members who wrote Ecology to tell them that spraying pesticides in water is not acceptable. All of our efforts have resulted in a solution that will bring about the end of a toxic insecticide spray that has plagued southwest Washington for decades. ■

## Strongest City Pesticide Use Policy in State Adopted on Bainbridge Island

Angela Storey

Last month, after two years of dedicated work by community members, the Bainbridge Island City Council unanimously adopted a new ordinance that eliminates use of all toxic pesticides on city properties. Community members worked with WTC throughout the process, and the ordinance is based on WTC's Clean Water for Salmon Campaign model policy to protect salmon and health.

"The City of Bainbridge Island is dedicated to doing everything in our power to have clean streams and public places free of pesticides," said Christine Nasser, City Council president. "We're proud to pass an ordinance that sets the standard for the Northwest."

Once implemented, this ordinance will be the strongest in the state regarding use of pesticides on public property, allowing use of only a limited number of very low toxicity products. The ordinance also requires 48-hour advanced posting of all sites that will be treated and bans use of any products near water or storm drains. Use of CCA-treated wood will also be banned, due to health concerns related to arsenic leaching into soils.

Bainbridge Island has successfully maintained their city roadsides without the use of herbicides since 1996 and the Bainbridge Island School District has one of the strongest policies in Washington restricting use of pesticides on school grounds.

WTC has a long track record of working with concerned citizens and community groups on Bainbridge Island. We began working with the schools in 1996, under our Model Schools Program and created one of the state's first entirely pesticide-free schools, Woodward Middle School. We advocated for the adoption of the district-wide policy and have continued to help with implementation of least-toxic practices under this policy. We will continue to work with the growing group of active community members on Bainbridge Island, supporting the existing strong policies, and advocating for decreased pesticide use in other areas.

### What You Can Do

If you are interested in adopting a pesticide ordinance in your town, contact Angela Storey at 206-632-1545 ext. 11 or [astorey@watoxics.org](mailto:astorey@watoxics.org). ■

## Clean Water for Salmon

### City of Seattle Fails to Meet Pesticide Reduction Goals

Erika Schreder

In 1999, the City of Seattle established a landmark pesticide reduction policy that ended the use of the most hazardous insecticides and fungicides and set a reduction target of 30%. The policy led to excellent initial successes, including a 26% reduction in pesticide use in the first year. The City also established six pesticide-free parks in 2001, primarily small parks with playgrounds.

Today, however, progress appears to have stalled. As of the end of 2002, the City has fallen far short of its 30% reduction goal, with a total reduction of 17% achieved. The City has yet to phase out the most hazardous fungicides, which are used in abundance on its four public golf courses. And the City has refused to establish more pesticide-free parks.

The City's biggest ongoing challenge for pesticide reduction is golf courses. While it achieved reductions of 29% outside of golf by 2002, golf courses have actually increased pesticide use by 4%.

You can help! Write to Mayor Greg Nickels. We are asking Mayor Nickels and the City Council to get Seattle back on track with keeping its promises for pesticide reduction and setting new goals to move toward pesticide-free landscapes. Please join us in asking the mayor to:

- ❖ meet the City of Seattle's pesticide reduction target of 30%, and set aggressive new targets;

- ❖ eliminate the use of fungicides that cause cancer and other health problems or threaten fish and wildlife; and
- ❖ establish new pesticide-free parks, including at least one major city park.

A sample letter is below. You can also visit our website at [www.watoxics.org](http://www.watoxics.org) and send a letter directly from there.

Mayor Greg Nickels  
600 Fourth Avenue, Floor 7  
Seattle, WA 98104

Dear Mayor Nickels:

The City of Seattle's commitment to reducing pesticide use on city property is a critical element of making our city healthy and safe for people, pets, and fish and wildlife. I am extremely disappointed that the City has failed to meet its goal of reducing pesticides by 30%.

Seattle should do what it takes to meet the 30% reduction goal as soon as possible, and set new goals to keep us on a course toward healthier public spaces and clean water. The City should set a short timeline for the phaseout of the most hazardous fungicides, those that cause cancer and other health problems and threaten fish and wildlife. Seattle also needs to dedicate a large park to be pesticide-free, so that we have a large natural space in the city that people, pets, and wildlife can use without being exposed to pesticides.

Please, keep the City's promises and make pesticide use reduction a priority for the City of Seattle.

### Court Will Restrict Water-Polluting Pesticides to Protect Salmon

Erika Schreder

In July of 2002, we won a major victory when Federal District Court Judge John Coughenour ruled that the Environmental Protection Agency was out of compliance with the Endangered Species Act and must act to protect salmon from pesticides.

Now, Judge Coughenour has responded to our request for injunction with an order indicating that he will impose restrictions on pesticide uses that contaminate water and harm endangered salmon. Specifically, he will restrict the use of 54 pesticides near waters where salmon are found.

"Despite its legal obligation not to allow

actions that harm endangered salmon, EPA has continued to authorize the use of dangerous pesticides that are ending up in salmon streams," said Patti Goldman, the Earthjustice attorney that represented the groups. "The court agreed to block the use of pesticides along salmon streams until the government has ensured salmon will not be harmed."

The Toxics Coalition filed for the injunction along with the Northwest Coalition for Alternatives to Pesticides and the Pacific Coast Federation of Fishermen's Associations. The groups requested

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## Toxic-Free Legacy

# Legislature Fails to Protect Public Health From Toxic Pollution

## Final Budget Cuts Key Program to Eliminate Persistent Toxic Chemicals

Laurie Valeriano

Washington state's momentum toward a future free from persistent toxic chemicals was dealt a serious blow this legislative session. In the final hours of budget negotiations, legislative leaders Sen. Rossi (R-Issaquah) and Rep. Helen Sommers (D-Seattle) agreed to eliminate funding for the Department of Ecology's groundbreaking program to end persistent toxic pollution. Despite support from Gov. Locke and scores of postcards and phone calls from concerned members of the public, legislators chose to prioritize interests of the chemical and pulp-and-paper industries over our children's health.

Funding for Ecology's program has been hotly contested ever since its inception. The Association of Washington Businesses, the pulp-and-paper industry, and the American Chemistry Council (representing Dow, Dupont and others) have lobbied hard to eliminate funding for the program with the goal of stopping Ecology's progress toward holding industry accountable for persistent toxic chemicals.

As the program has gained a track record and become more successful, the industry pressure has intensified, and this year the legislature buckled and zeroed out the program budget.

They did so in clear contradiction to the will of the people. According to a recent statewide poll, more than eighty percent of voters support a policy to phase out persistent toxic chemicals and replace them with safer alternatives.

Although 2003 was an extraordinarily tight budget year, legislators can't be applauded for saving money that will otherwise be spent on education or health care. Money for this program is available from a tax on hazardous substances. This money sits in a toxic-waste cleanup fund and cannot be spent on education or health care. Earmarking a small amount of these funds would have saved the program.

The bottom line is that legislators failed to prioritize this program as critically important for children's health. We are now faced with serious problems.

- ❖ Many actions that Ecology needs to take to eliminate mercury pollution could be slowed, such as reducing mercury pollution from dental offices and hospitals.

- ❖ Ecology's testing of fish for mercury and other toxic chemicals is in jeopardy. Recently, Ecology's data-gathering efforts revealed high levels of mercury in Washington bass. As a result, the Department of Health issuing a statewide fish advisory that warns pregnant women and children to limit the amount of bass they eat because of high levels of mercury in the fish.
- ❖ Moving forward with a plan to eliminate dioxin pollution may be delayed.

Washington Toxics Coalition is working with WashPIRG, Washington Physicians for Social Responsibility, People for Puget Sound, Healthy Building Network, and many others to get the Department of Ecology to move forward with the program. Our state can't afford the consequences of scaling back efforts to eliminate persistent toxic pollution. We are paying too high a price right now.

Ecology should move the program forward this year by:

- ❖ Finalizing Washington's list of persistent bioaccumulative toxic (PBT) chemicals;
- ❖ Prioritizing the next chemicals for action plan development, including dioxin and PCBs;
- ❖ Refining and establishing the process to develop chemical action plans so that the next plans can be started by January 2004;
- ❖ Requiring all Ecology programs to conduct audits to identify specific measures and timelines to reduce and eliminate PBTs;
- ❖ Implementing the mercury chemical action plan. Ecology should demonstrate significant mercury reduction from dental offices by the end of 2003. In addition, Ecology should continue to monitor for mercury and other persistent toxic contamination in fish and work with the Washington State Hospital Association on mercury elimination plans and activities for hospitals.

Gov. Locke should issue an executive order that directs Ecology to pursue these activities. The executive order should also direct the state to purchase products that do not result in persistent

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***Our state can't afford the consequences of scaling back efforts to eliminate persistent toxic pollution. We are paying too high a price right now.***

## Toxic-Free Legacy

### Proposed Rule Changes Would Encourage Solid-Waste Incineration

Brandie Smith

The Department of Ecology has proposed a rule that will allow expansion of solid-waste incineration in Washington. The practice of burning garbage is a dangerous game that risks the health of humans and the environment. Polyvinyl chloride (PVC), one of the most widely used plastics in the world, is one of the largest chlorine sources in municipal waste and a large contributor to the waste stream. When PVC is burned, dioxin and other persistent chemicals are emitted into the air. Similarly, when mercury-containing products are burned, mercury is emitted into the air and makes its way into the food chain, ending up in our bodies.

The proposed changes to the incinerator rule contradict Ecology's policy to eliminate persistent toxic chemicals because they allow the continuation of a practice that emits these dangerous chemicals into the environment. If the current rule is changed, certain industries will benefit but the public will ultimately lose. Some of the effects of the rule include:

- ❖ Allowing a currently closed source of dioxin and mercury emissions, the Tacoma Steam Plant, to reopen. The Steam Plant has been closed since September 2001 because it cannot comply with the current requirements.
- ❖ The Spokane incinerator will be able to continue operations with the option of either opting to comply with the proposed rule or operating under less-stringent existing standards.
- ❖ Allowing the burning of creosote-treated wood at the Kimberly-Clark facility in Everett.
- ❖ Allowing cement kilns, such as Ash Grove and Lafarge, to continue burning tires and other wastes such as PCB-contaminated oil.

The Department of Ecology accepted public comments on the proposed rule changes until July 29, 2003, and we expect them to make a decision soon. For updates on this issue please contact Brandie Smith at 206-632-1545, ext. 18, or [bsmith@watoxics.org](mailto:bsmith@watoxics.org). ■

### What Is That Smell?

Brandie Smith

For close to two years, people in Seattle, especially the South Park neighborhood, have been plagued by a noxious smell that keeps some of them confined to their homes on the really bad days. The smell has been described as a chlorine-like scent that leaves a trail of burning eyes and sore throats. Who is behind this foul odor?

Finally, last February, after hundreds of complaints from local residents, the Puget Sound Clean Air Agency (PSCAA) cited Lafarge North America (Lafarge) for violating a nuisance ordinance. Unfortunately, people are still being plagued by the chemical smell.

In addition to odor concerns raised by local residents, the Washington Toxics Coalition has concerns about the toxic emissions reported to be released by the plant. According to the Environmental Protection Agency's 2001 Toxic Release Inventory (TRI) data, Lafarge reported releasing 73 pounds of mercury compounds into the air. This is a significant amount considering that 1 gram of mercury is enough to contaminate a 20-acre lake to the point where the fish are unsafe for human consumption. In addition, Lafarge reported releasing 3.8 grams of dioxin and dioxin-like compounds to the air. Both mercury and dioxin are part of a class of chemicals known as persistent toxic chemicals. These chemicals persist in the environment and build up in the food chain and eventually our bodies.

Please call PSCAA at 206-343-8800 and ask them to take action now to end the smell and to end the burning of wastes and fuels that result in persistent toxic pollution in Seattle. ■

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#### *State Budget, continued from page 4*

toxic pollution as an incentive for manufacturers to produce cleaner products.

Please take a minute to call Gov. Locke at 360-902-4111 and urge him to sign an executive order that directs Ecology to move forward with its persistent toxic chemical program and end state purchasing of harmful products that result in persistent toxic pollution.

You can also help us hold the legislature accountable by contacting your legislators about failing to fund the program. Ask your legislators to support the program and direct Ecology to move the program forward this year. ■

**According to 2001 Toxic Release Inventory data, Lafarge reported releasing 73 pounds of mercury compounds into the air.**

## Personal Pollution Stories

# Betting the Farm: A Small-Grower's Story

Hayden Bass

It all started with the sweet peas. In the 2000 growing season, says Art Biggert, proprietor of Ocean Sky Farm on Bainbridge Island, his crop of sweet peas failed. The following year, the crop failure was on an even larger scale: all of the beans, tomatoes, and the cover crop of Austrian winter peas, failed to produce.

Both years Art had, as usual, covered his land with compost. He had spread the compost, gathered from stable sweepings, at a rate of about seven to ten tons per acre (organic farmers use up to fifteen tons per acre). He began to wonder if the compost he was using might somehow be the problem.

In July of 2001, David Bezdicek of Washington State University published a paper on clopyralid residues in compost. Clopyralid is an herbicide used to control brush and weed species. Similar reports were coming from Penn State University, Christ Church, New Zealand, and San Diego, California. The papers said that clopyralid, an herbicide effective against weeds like thistle and napweed, is extremely toxic to some legumes, tomatoes,

potatoes and sunflower at levels of ten parts per billion or less. Grain- and hay-fed animals, like horses, are often fed hay contaminated with clopyralid and excrete it in their waste. Even though as little as 1-2% of the animal feed may be contaminated (as the Washington Wheat Growers Association claims), this still results

in the waste products of these animals being 100% contaminated.

Art contacted Bezdicek and described his crop failures, and Bezdicek said that although he couldn't say for sure, the symptoms — leaf cupping, failure of leaves to develop, and prevention of fruit set — seemed consistent with clopyralid contamination. So Art had his soil tested, and discovered that it tested positive for clopyralid at three parts per billion. This was lower than the level considered necessarily toxic, but since clopyralid is highly water soluble, and the tests were conducted after heavy rains, it seemed likely that the original

contamination level had been much higher.

After 2001, Art only composted around his perennials, corn, and grains. Due to the 2001 crop failure, the 2002 crop was plagued with a weed

problem; the soil now had less nitrogen content

and less weed competition from a dense cover crop. Art didn't know what composts would be safe. Ocean Sky Farm is run under the assumption, says Art, that "if you have a balance, you won't have problems with plant or insect pests." For example, unlike conventional farmers, Art intermixes his crops with flowers to encourage carnivorous bugs to eat the bugs that are harmful to crops. "Basically," says Art, "there are two separate farming paradigms, the organic and the conventional. The organic farmer's mindset is that if you have weeds, it's because there is something wrong with the soil, and you need to adjust the mineral balance or take other measures. The conventional farmer, on the other hand, can't wrestle with the soil and do rotations." Although Art uses organic methods, Ocean Sky Farm is not registered as an organic farm. Art views the organic certification as an unnecessary expense because, he says, "all of our sales are direct to the customer, and everyone who buys our products knows how they were grown. I can't justify paying for a third party certification."

Even so, when Art reported his clopyralid levels to the WSDA, he asked whether similar levels would have an affect on the status of registered organic farms. He was told that, "from a regulatory standpoint, these farms could probably still sell their crops as organic, but they would have to change their source of parent material composted, or the company they bought compost from, who would then be liable for any contamination." But most farmers can't afford to buy compost, and generally make their own. Clopyralid contamination leaves many of them with tainted stable sweepings that can no longer serve a purpose, but must be



Hayden Bass

Art Biggert traced his crop failures to clopyralid-contaminated compost.

***"Farming is a balancing act. Every plant has different needs, and creates a different habitat. It's the grower's job to maintain that balance while generating an income."***

***— Art Biggert***

## Personal Pollution Stories

eliminated with as little danger to the environment as possible. (Clopyralid has been found in watersheds and river basins from Trinity River in Texas to the Columbia River basin. Although it is generally assumed that clopyralid does not harm aquatic life, no studies testing this theory have yet been conducted.)

During the crop failures of 2000, 2001, and 2002 Ocean Sky Farms had been a part of a CSA — a community supported agriculture group, in which customers paid a subscription fee and received a bag of produce each week during the season, from April through September. But after the crop failures, Art was forced to drop out of the CSA in order to let the ground lie fallow, and start all over again. “It put us back five years,” he says.

But the story of Ocean Sky Farm has a happy ending. After the crop failures, Art was forced to convert his beds to medicinal herbs and a family garden, and after doing so he realized that although growing produce accounted for 75% of his labor input, it only resulted in 15% of his revenue flow. Herbs, on the other hand, could be grown in 10% of the time, for five times the income. Ocean Sky Farm is now a successful herbal bath and body products business, and Art thinks of the clopyralid crop failures as “the crisis that forced us to make a good business decision.” Of course, since Art and his wife are both registered nurses, they were able to support themselves even when the crops failed, a luxury that most small farmers, and nearly all conventional farmers, do not share. “Conventional growers are losing so many of the tools they rely on that they are defensive about losing a tool like clopyralid,” he says. “They have to deal with issues like the neurotoxicity of organophosphate pesticides to children and their accumulative neglect of the soil. They can’t afford to let the ground lie fallow.”

The clopyralid crisis also had the beneficial effect of prompting Art to become more politically active. He now serves as the only organic grower on the WSDA Technical Advisory Committee, monitoring clopyralid. He testified at the first attempt of legislation to control the herbicide in Olympia (although this piece of legislation never made it out of committee). He generally describes his work on the agriculture committee as “fighting the Dow army.” Dow, he says, invests in a great deal of misleading research to support its claim that chemicals like clopyralid have no negative effects.

For example, Dow supported research at the Washington State University research station in Puyallup, Wash., that used clopyralid as a growth stimulator for lettuce, but the research ignored the

potential threats and risks for clopyralid use in order to prove the benefits. Native soil and soil amended with clopyralid contaminated compost was planted with lettuce, but the study failed to use a control of native soil amended with uncontaminated compost. Clopyralid causes the lettuce leaves to be large, albeit misshapen, and since farmers don’t want lettuce to flower and go to seed, the fact that clopyralid prevents this from happening is not a problem. But the same thing would never work with beans or with tomatoes, and the study has never appeared in a peer-reviewed journal. “Having read a lot of agricultural research, I’ve learned to be a much more critical reader,” says Art. “It’s very important to evaluate the methodology.”

There are steps that growers can take to protect themselves from chemicals like clopyralid, says Art. “Be careful with the parent materials you use for composting. Composting is chemically, physically, and biologically different from manure. You can get clopyralid-free compost, but this limits your access to compost. Using washed dairy manure helps, since clopyralid is water-soluble. Animals fed alfalfa and bedded on its chafe will not be exposed to clopyralid, since alfalfa is a legume.”

The bottom line, says Art, is that “Farming is a balancing act. Every plant has different needs, and creates a different habitat. It’s the grower’s job to maintain that balance while generating an income.” ■



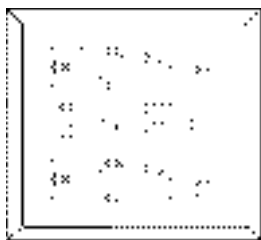
Kristina Logsdon

### Welcome to New WTC Intern Kari Mosden Will Write Personal Pollution Stories

Hello! My name is Kari Mosden. I’ll be heading up the Personal Pollution Stories Project this summer, and I’m delighted to be here. I am working on finishing my master’s degree in Environment & Community Studies at Antioch University, and I am pleased to be a part of the WTC team. I’ve focused on small-scale community involvement and place-based education, and I’m excited to be a part of the great work that WTC does.

I am a car-free cyclist, and in my free time I devour music and books, and spend as much time as possible outdoors, hanging out in the park reading, throwing disc with friends, or hiking and camping.

I am thrilled to have the opportunity to write these stories, and I am proud to be a part of educating the public about the effects of chemicals and pollution. I look forward to working in the community and meeting more of the WTC family! ■



## Home Safe Home

# Killing with Kindness: Removing a Lawn Without Herbicides

Philip Dickey

Removing a lawn is like taking up wall to wall carpet in one respect: you're sure to find dirt underneath. But while the dust under a carpet serves no useful purpose — quite the contrary, in fact — the soil under a lawn sustains the life above.

There are several reasons to remove all or part of a lawn. One is to make room for other plantings that use less water, are more interesting, and are easier and more fun to maintain. Another is to renovate a lawn that is weed infested or needs

major drainage or soil improvement. Fortunately, there are more ways to remove a lawn than a carpet, and the dirt underneath doesn't have to be vacuumed up.

Removing grass to make room for a garden or other plantings can be hard work, especially if the area involved is more than a few square feet. Many experts recommend killing the lawn with an herbicide, an appealingly simple prospect at first, until you start looking at the details. Dressing up in suitably protective clothing and hosing down the yard with chemicals is not my idea of a fun time, especially on a warm day. A few years ago, a neighbor asked me what was the best way to remove her lawn. I suggested renting a sod cutter. She ignored my advice, however, and

sprayed the lawn with a weed killer. Some of the grass died. She sprayed it again. More of it died, but not all. She sprayed a third time. In the end, she rented a sod cutter.

This article describes three methods for removing a lawn without using herbicides. Each method has advantages and disadvantages: some methods are quicker, while others are easier. All of them are proven to be effective if done properly.



Right: Starting to remove the front lawn.

Below: Installation and mulching.



Photos by Philip Dickey

### Sod Cutter Method

In this method, the sod layer is sliced off the top, leaving the ground underneath bare and ready to be improved. If you just want to lay out a small garden bed or two, you can use a spade to cut through the sod and lift it out in manageable pieces. For larger jobs, you'll want to rent a sod cutter. The sod that has been removed can be useful if you want to mound up some areas or fill in low spots. I've had good results with this method by turning the sod upside down and layering it until the desired height is reached. Apply some organic fertilizer between each layer and wet them down as you stack them. Then cover the piles with black plastic until they break down. You'll need to remove the plastic from time to time to wet the sod again. The sod should compost in a few months to a year, depending on the temperatures. If you have no use for the sod, you can haul it away to a topsoil or composting facility. Call around to find out who will accept this material.

To prepare your new beds for gardening, till if necessary to break up hardpan layers and grade as desired. Add compost to improve the soil, mixing it several inches deep into the existing soil. Save some for mulch after planting, or use wood chips or straw.

### Multiple-Till and Irrigation Method

In this method, the sod is covered with soil amendments and then rototilled. The area is watered to stimulate the growth of any weed seeds present,

then tilled more shallowly to destroy the sprouted weeds. The process is repeated several times to deplete the seed reserve. Be warned that while this method is pretty effective at killing weeds, it may not completely kill invasive grasses, which get chopped up but can resprout from small pieces. So if you have lots of crabgrass or quackgrass, you may want to use one of the other methods instead.

Here's how natural lawncare expert David McDonald describes the method:<sup>1</sup>

“The method requires moist but not soggy soil (a saturated soil's structure can be damaged by tilling, especially in clay soils), a powerful 8 hp walk-behind tiller or tractor-mounted tiller, and three to six weeks of time. First add the soil amendments: 2 inches of compost, plus lime or other minerals as indicated by a soil test (uncomposted manure might be used too, since most sprouting weeds will be killed in this process). On an existing lawn, adding some quick-release nitrogen fertilizer at this point will cause any roots that survive the first tilling to grow quickly and exhaust their reserves, and so be easier to kill on the second tilling. Then till deeply to incorporate the amendments, and to completely chop up the existing sod, if it has not already been removed. Irrigate to moisten the upper 2 inches of soil. After one to two weeks, when weed seeds and the remaining live grass roots have sprouted, till shallowly (1 inch deep) to kill them (hot sun will help). Irrigate again and repeat the shallow tilling when more seeds sprout – don't till deeply because that will bring more seed to the surface. Three tillings will deal with most weed seeds; more may be needed to kill resprouting grass roots. After the initial deep tilling, an alternative to re-tilling is to kill sprouting weeds with a flame-weeder.”

### Sheet Composting

The sheet-composting method that some call “lawn lasagne” is great if you have access to large amounts of compostable material and/or compost. Basically, you are going to cover the existing lawn with layers of organic material that will break down and, in the process, soften and kill the grass itself. Some writers suggest breaking up the sod layer first but others do not.

There are four basic layers to the lasagne, although numerous variations are possible. This recipe comes from *Sheet Mulching: Soil Building on a Budget*.<sup>2</sup> The first layer is basically a nitrogen fertilizer. You can use one to three inches of fresh grass clippings or manure, or alternatively apply a nitrogen-rich organic fertilizer. The next layer is the weed barrier, typically up to eight overlapping layers of newspaper or a sheet of cardboard. Be sure

that no gaps exist in this layer. Then cover the area with weed-free material such as fall leaves, sawdust, manure, compost, shredded garden trimmings, or whatever you happen to have. One to three inches depth is great, but you can go higher if you have more material. Finally, top it all off with a layer of weed-free mulch such as wood chips, finished compost, or straw. This is partly for appearance and partly to keep leaves in the layer below from blowing around. Be sure to keep the whole thing moist while it breaks down. If you put wood chips on top, don't till these in because they will use up valuable nitrogen.

It probably doesn't matter too much exactly how you build your lasagne as long as you put the nitrogen-rich materials on the bottom and everything on top of the barrier is free of weeds. Since this thin, horizontal compost pile doesn't get hot enough to kill weed seeds or plant diseases, be sure not to use diseased plants, seed heads, or aggressive weed material. People have recommended all kinds of strange things for the weed barrier, including burlap, old wool carpeting, and even discarded blue jeans.<sup>3</sup> ■



Our front yard today.

### References and Resources

1. McDonald, David (1999). *Ecologically Sound Lawn Care for the Pacific Northwest. Findings from the Scientific Literature and Recommendations from Turf Professionals*. Seattle Public Utilities, Community Services Division, Resource Conservation Section. Available on the Internet at <http://www.cityofseattle.net/util/lawncare/LawnReport.htm>.
2. Seattle Public Utilities and Seattle Tilth Association. *Sheet Mulching: Soil Building on a Budget*. Natural Soilbuilding Resource Manual, 2002. Available from the Natural Lawn and Garden Hotline: 206-633-0224.
3. Craig Elevitch and Kim Wilkinson. *Sheet Mulching: Greater Plant and Soil Health for Less Work*. AgroForester, PO Box 428, Holualoa, HI 96725 <http://www.agroforestry.net>.

## Point of View

### Vote to get Pesticides out of Seattle Creeks

Pam Johnson

September 16 is the day Seattle citizens have a chance to act in their own best interests by making a big difference in the health of our creeks and all of us who enjoy them. That's the day Seattle voters need to go to the polls and vote YES on Initiative 80, to Save Seattle Creeks.

Washington Toxics Coalition has endorsed I-80. This initiative would ban the use of pesticides on city property within 200 feet of a creek. That means parks and other public property where our kids play would have additional protections within creek buffers. While the city has made some efforts on reducing its use of pesticides, this initiative provides increased accountability and enforceable timelines for real progress.

Seattle deserves the open space, good water quality, and improved drainage that I-80 would bring. Five salmon-bearing streams are within our city limits; they need better and longer-range protection. Besides saving creeks from pesticide pollution, I-80 also requires proponents of major creekside developments to protect and restore creeks by removing fish-passage barriers, including in some cases daylighting, or removing the creek from a culvert or pipe. The city is also required to develop a long-term creek-restoration plan that includes reducing storm-water pollution and flooding and daylighting creeks on city property in the next 20 years.

*Seattle deserves the open space, good water quality, and improved drainage that I-80 would bring.*

I-80 has also been endorsed by the Sierra Club, Seattle Audubon, WashPIRG, Washington Conservation Voters, Livable Communities Coalition, and Seattle Community Council Federation, and many other community organizations. I-80's opponents? The developers. They are staging a well-funded anti-80 campaign, with fearful, negative and misleading claims of high costs. In reality, the costs to households have been capped at \$5.00 per household per year.

I-80 Save Seattle Creeks is a grassroots campaign and needs YOUR help:

- ❖ **VOTE.** September 16 is the primary ballot, and only a fraction of the voters turn out, so we need Seattle voters to vote!
- ❖ **VOLUNTEER.** Our campaign will be fueled by lots of volunteers taking part in our efforts to contact and "get out" voters to the polls.
- ❖ **SPREAD THE WORD.** Tell your friends, tell your neighbors, tell your co-workers. Seattle creeks need everyone to vote on September 16.

Just a few hours of your time could make a difference in getting pesticides out of Seattle's creeks. Call Kristina Logsdon at 206-632-1545 ext. 20, or e-mail at [klogsdon@watoxics.org](mailto:klogsdon@watoxics.org) to get involved. To see the complete text of Initiative 80, go to [www.yesforseattle.org](http://www.yesforseattle.org). ■

*Pam Johnson is the co-chair of Yes For Seattle.*

#### *Restrictions, continued from page 3*

buffers for the 54 pesticides as well as bans on consumer uses of 13 pesticides frequently found in urban streams.

The court will hold a hearing on August 14 to decide the specific size of the buffers that will be required for particular pesticide uses and to decide whether to impose additional restrictions on urban uses of the 13 pesticides. A final ruling will follow the hearing.

"It makes no sense to keep poisoning salmon in our rivers while trying to protect them," said Glen Spain, Northwest regional director of the Pacific Coast Federation of Fishermen's Associations, one of the Plaintiff groups. "As the judge said, buffer zones to keep chemicals out of streams is a logical and already much-used technique."

The court order issued in 2002 required EPA to comply with the Endangered Species Act by consulting with the National Marine Fisheries Service on the effects of 54 pesticides for which we provided evidence. In November 2002, we asked the court to impose interim measures to protect salmon from the 54 pesticides during the time it will take EPA to comply with the law.

In its most recent order, the court found "with reasonable scientific certainty, that the requested buffer zones — 20 yards for ground applications, 100 yards for aerial applications — will, unlike the status quo, substantially contribute to the prevention of jeopardy" to salmon.

He further found the evidence to "demonstrate that pesticide-application buffer zones are a common, simple, and effective strategy to avoid jeopardy to threatened and endangered salmonids." ■

# Volunteer Profile: Joanna Smither

**Name:**

Joanna Smither

**Place of birth:**

Dearborn, Michigan

**When did you first become aware of WTC?**

In December, a few months after I moved to Seattle.

**What interested you about volunteering for WTC?**

I was only working part time and needed something more positive and challenging to fill my days. I've always wanted to be more involved in fighting toxic pollution and WTC seemed like the perfect place.

**How long have you been volunteering with WTC?**

Since January of this year.

**Why are you passionate about toxics issues?**

I am passionate about toxics issues because I



Kristina Logsdon

see them as some of the most difficult, but also most important, environmental issues to understand and combat. We cannot sense toxic chemicals as they make their way into our food, water, air, and bodies, so it becomes more difficult for us to grasp the damage that these chemicals are doing. Many things are not right with this, and I feel the need to be involved in educating people about this issue and helping them to find alternatives to the use of toxic chemicals.

**What is your role or what has been your role at WTC?**

This spring, I helped coordinate a grounds work day at Highland Park Elementary School. I have also been working on development projects, and right now I am helping to obtain auction donations for the annual celebration and dinner.

**What have you learned at WTC?**

Through my work at WTC, I've learned a lot about how non-profits work. It has been amazing to me how much work needs to go into making money for the organization. I've also learned a lot about how vast the issue of toxic pollution is, and how many categories and campaigns it can encompass.

**Is there anything else you would like to add?**

Thank you for giving me the opportunity to work with you! ■

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# Pesticide Free Zone Signs Order Form



By posting the colorful Pesticide Free Zone sign in your lawn or garden, you can tell your neighborhood that you don't use pesticides and you're proud of it. The signs are also suitable for schools, parks, and businesses.

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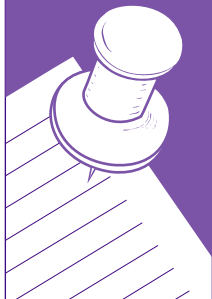
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## Bulletin Board



### Welcome to New and Returning Board Members

The results of our annual board of directors election are in, with nearly unanimous response. Of the 60 votes cast, 58 voted yes for the entire slate, while the remaining two voted for four of the five candidates. Don Bollinger, Jennifer Dold, and Jon Stier return to the board for another term, while Paul Bogart and Steve Gilbert officially join us for their first two-year term. WTC would like to thank its membership for participating in this election. ■

### 2002 Annual Report is Now Available

Washington Toxics Coalition's 2002 Annual Report is available, both in print form and as a PDF file on our website.

The report features campaign descriptions and details of our successes in 2002, a board of directors list with short biographies, lists of donors and foundation supporters, and a financial statement. The report is a nice, concise way to get updated on all of our major accomplishments from the past year.

To order a free print copy, contact Ken Steffenson at 206-632-1545 ext. 17 or [ksteffenson@watoxics.org](mailto:ksteffenson@watoxics.org). On the website click on "About Us" and then "Annual Reports." ■

### Diver Joins Toxic-Free Legacy Campaign

Sibyl Diver

Things happen when you least expect them. Attending a spring environmental career fair, I was past ready to go home when I found myself engaged in a great conversation with Kristina Logsdon, WTC volunteer coordinator.

One month later, I started my new job, coordinating a campaign to eliminate persistent toxic pollution for the Toxic-Free Legacy Coalition, of which WTC is a leading member. I am thrilled to be working with such seasoned activists.

I came to environmental advocacy work through the back door. I studied Russian language and human biology at Stanford University. After doing ecological research and teaching science, I joined the non-profit organization Pacific Environment, where I led exchange programs for Russian environmental and indigenous leaders. My experience working with Russian grassroots activists and encountering some abhorrent environmental health problems brought me here.

I moved to Seattle from San Francisco last fall and am originally from Lewes, Delaware. ■



Shien Chiou

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