

The authors and publishers assume no responsibility for personal or property damage resulting from the use of the recipes in this publication. Human sensitivity and different surfaces vary widely and may react with recipe components in unexpected ways. Before you use any recipe in this guide, be sure to read the directions and follow them carefully. Test small quantities of a recipe first to assure safety. For questions or concerns about health effects or safety of any recipe, consult with a physician or other appropriate professional.

### ACKNOWLEDGEMENTS

**Salmon Friendly Recipes: Less Toxic Household Solutions for People and Salmon** was written and edited by Susan Fay with contributions from toxics expert/author Annie Berthold-Bond, Unified Sewage Agency (USA) Water Resources Analyst Dawn Uchiyama, Oregon Department of Environmental Quality (DEQ) Household Hazardous Waste Coordinators Abby Boudouris and Maggie Conley, and Metro Regional Government's Recycling Information Coordinator Judie Miller. The recipes and suggestions were compiled using **Better Basics from the Home, Simple Solutions for Less Toxic Living** by Annie Berthold-Bond, **The Hazardous Home Handbook** (a cooperative publication of Oregon Department of Environmental Quality and Metro), **Greener Cleaner Pocket Book** (Metro), **Science News Online "Food for Thought,"** and personal experience.

Cover design by Laura McMasters, McMinnville, OR.

## Less Toxic Household Solutions for People and Salmon

Everyone in Oregon has an important role in restoring watersheds and improving stream health. This guide provides an important path to a less-toxic household that benefits both people and salmon. Toxic household cleaning products rinsed or flushed into sewer or storm drains, and fertilizers and pesticides washed from lawns and gardens are hazardous to all aquatic life. Choosing to avoid toxic products and use less-toxic alternatives means you are playing an important role in restoring watershed health, improving water quality, and helping fish populations to thrive – the goal of the Oregon Plan for Salmon and Watersheds.

The American Association of Poison Control Centers lists household cleaners as the number one source for accidental human exposures to toxic substances. A recent Canadian study has linked past Atlantic salmon run declines to a chemical found in many products including household cleaners, personal care products, and pesticides. Clearly, we can provide a safer home and community for people, fish, and all aquatic life by using the recipes in this guide.

Product labels provide “signal words” to help you determine the product’s relative toxicity:

If the product has this signal word on its label...	It falls into this category...	And it takes approximately this much to kill an average person...
<b>DANGER POISON</b>	<b>I. HIGHLY TOXIC</b>	A few drops to one teaspoon
<b>WARNING</b>	<b>II. MODERATELY TOXIC</b>	One teaspoon to one ounce
<b>CAUTION</b>	<b>III. SLIGHTLY TOXIC</b>	Over one ounce
<b>No signal word</b>	<b>IV. NOT TOXIC</b>	-----

People can choose less toxic commercial products by reading labels, understanding the signal words, and looking for formulations that contain vegetable oil based soaps, are chlorine and phosphate free, claim to be non-toxic, and are biodegradable.

There are also mix-at-home recipes that are less toxic, as effective, and less costly than commercial products. This guide contains recipes and suggestions for:

- Household Cleaners/Polishes
- Laundry Detergents
- Metal Polishes
- Air Fresheners
- Hand Wash Disinfectants/Cleaners
- Lawn, Garden, Compost & Decks
- Insect Repellants and Baits

**If you decide to give mix-at-home recipes a try, be sure to store solutions in clearly labeled containers.** Even salt can be fatal if you consume enough of it, and a clearly labeled container will help ensure a more positive outcome in the event of an accidental exposure.

The Oregon State Department of Environmental Quality (DEQ) and Metro Regional Government in the Portland metropolitan area both want you to dispose of any unwanted household toxics safely. Metro operates two hazardous waste disposal facilities that accept household toxics from anyone living in the state of Oregon. To learn how you can dispose of household toxics, call the DEQ at (503) 229-5913 or (800) 452-4011.

For more information:

- Order or download a copy of *The Hazardless Home Handbook* from the Department of Environmental Quality ((503) 229-5913/(800) 452-4011 or <http://www.deq.state.or.us/wmc/solwaste/hhw.html>).
- Visit Metro Regional Government's Natural Gardening Web Site: <http://www.metro.dst.or.us/metro/rem/garden/natgar.html>
- Read Annie Berthold-Bond's book *Better Basics for the Home: Simple Solutions for Less Toxic Living*. New York, Three Rivers Press, 1999.

The following suggestions and recipes will help get you started on the path toward a less toxic, healthier home for you and salmon!

### **All Purpose Cleaner**

- Combine ¼ cup white distilled vinegar, ½ teaspoon liquid vegetable oil based soap (i.e. Dr. Bronner's Magic Soaps), and ¾ cup warm water in a labeled spray bottle. Shake to blend before use. Spray the problem area and wipe with a clean cloth or sponge. For really big jobs, combine ¼ cup liquid vegetable oil based soap, ½ cup white distilled vinegar, and 2 gallons of warm water in a pail and stir. Wearing gloves, saturate a sponge with the mixture, wring out excess liquid, and wash area.

### **Kitchen and Bathroom Disinfectant**

- For kitchen cutting boards and bathroom fixtures, use a white distilled vinegar spray followed by a 3% peroxide spray, then wipe clean.

## Oven Cleaner

- Use baking soda to sprinkle and cover the bottom of your oven. Spray the baking soda with water until very damp, and keep moist by spraying every few hours. In the morning, remove the baking soda and grime with a spatula. Rinse the oven well. Washing soda can be substituted for ½ the baking soda for really tough jobs, but requires more rinsing and is caustic (wear gloves).

## Chlorine Free Scrubbers

- Baking soda is a mildly abrasive cleanser that deodorizes as it cleans.
- To make a heavy duty scouring powder, combine ½ cup each baking soda and washing soda. This formula may scratch fiberglass. Use gloves as the washing soda is caustic.
- Rust stains can be removed from porcelain by scouring with cream of tartar.

## Chlorine Free Soft Scrub

- Combine ½ cup baking soda with enough vegetable oil based liquid soap to make a frosting-like mixture. Scoop the mixture onto a sponge and scrub the bathtub, sinks, Formica countertops, or shower stall and rinse.

## Fiberglass Stain Remover

- Use a paste of baking soda and water.

## Toilet Bowl Cleaners

- Combine ¼ cup white distilled vinegar and 2 cups of water in a labeled spray bottle. Spray along the inside rim of the toilet. Leave on for 15 minutes before you scrub using a toilet brush.
- Put ½ cup borax into the toilet, swirl, scrub, and let sit overnight. Swirl with a toilet brush in the morning. Iron rings will disappear! Be sure to **close the lid if you have a pet that gets drinks from the toilet.**
- Combine 2 teaspoons tea tree oil with two cups of water in a labeled spray bottle. Shake and spray along the inside rim of the toilet. Let stand for 30 minutes before scrubbing.

## Drain Cleaner

- Pour 1 cup baking soda or ½ cup washing soda down the drain followed by 3 cups of boiling water.

## Window Cleaner

- Many commercial window cleaners leave a wax build-up. The first time you clean your windows using this formula, you will need to add a little soap to help remove the residue. Combine ¼ cup white distilled vinegar with ½ teaspoon vegetable oil based soap and 2 cups warm water in a labeled squirt bottle. Shake to blend, then spray on windows and wipe clean using a cotton diaper.

## Tile Cleaner

- Mix ½ cup baking soda, enough vegetable oil based soap to make a frosting like consistency, and 15 drops of tea tree oil. Scoop the creamy mixture onto a sponge, wash the surface, and rinse.

### **Linoleum Floor Cleaner**

- Damp mop using  $\frac{1}{4}$  cup vegetable oil based liquid soap in 2 gallons of warm water.

### **Vinyl Floor Cleaner**

- Damp mop using 1 cup vinegar in 2 gallons of warm water.

### **Wood Floor Cleaners**

- For unvarnished floors damp mop using  $\frac{1}{4}$  cup liquid vegetable oil based soap,  $\frac{1}{2}$  teaspoon glycerin,  $\frac{1}{4}$  cup white distilled vinegar, and 2 gallons of warm water.
- For varnished floors, damp mop using 1 part vinegar to 10 parts water.

### **Removing Black Heel Marks from Floors**

- Make a paste of  $\frac{1}{2}$  cup baking soda and vegetable oil based soap. Test mix on a small portion of the scuff mark by washing and rinsing well. If the floor finish is removed, you may be able to restore it using  $\frac{1}{2}$  cup cornstarch and enough water to make a paste. Rub this mixture into the spot, let it dry, then buff to a polish.

### **Carpet Cleaners**

- For general cleaning, use a soap-based, non-aerosol rug shampoo and vacuum when dry.
- To neutralize carpet odors, sprinkle baking soda over the entire carpet. Leave on overnight. Sweep off as much baking soda as you can, then vacuum up the rest.
- **Spills:** Blot up quickly with cotton towels. Club soda or clear water is effective on some types of stains including alcoholic beverages, coffee, or tomato-based food. Pulverized chalk will absorb grease.
- **Urine:** A solution of 50% white distilled vinegar and 50% water can be sprayed or sponged onto the stain. Let it stand for about ten minutes before blotting the mixture up with a sponge or paper towel.

### **Wood Cleaning Formula**

- Combine  $\frac{1}{4}$  cup white distilled vinegar,  $\frac{1}{4}$  cup water,  $\frac{1}{2}$  teaspoon liquid vegetable oil-based soap, a few drops of jojoba or olive oil, 3 to 5 drops essential oil (optional) in a bowl. Saturate a sponge with the mixture, squeeze out the excess, and test wood surface to be cleaned. If tested area looks good, wash the entire surface. Rinse sponge in warm water between washes.

### Furniture Polish

- Mix ¼ cup white distilled vinegar and a few drops food grade linseed oil, jojoba, or olive oil. Test on wood first, then polish.

### Laundry Detergent

- Commercial laundry detergents that are less toxic to the environment are available. Seventh Generation, Ecover, Life Tree and Earth Friendly Cleaner provide concentrated, vegetable oil-based (not petroleum) laundry detergents without synthetic fragrances. These products can be purchased at Fred Meyer Nutrition Centers, Thriftway, Natures, health food stores, or via the Internet.

### Bleach

- Look for a commercial non-chlorine bleach (i.e. Seventh Generation) or try using:
  - \* ½ cup 3% hydrogen peroxide in the rinse cycle, or
  - \* ½ cup lemon juice to the rinse cycle, or
  - \* ½ cup washing soda to warm or hot water wash cycles

### Metal Polishes

- Use natural acids like vinegar and lemon juice to clean aluminum, bronze, brass, and copper.
- Remove the lacquer cover on new brass, bronze and copper by submerging in boiling water with a few teaspoons each baking soda and washing soda (wear gloves). **Never use baking soda on aluminum** as it will pit the surface.
- Combine 3 teaspoons of salt, 1 tablespoon of flour, and enough white distilled vinegar to make a paste. Scoop the paste onto a clean sponge and polish bronze, brass or copper. Rinse with hot water and buff dry with a soft cloth.
- Soak bronze, brass or copper in a ½ white distilled vinegar, ½ water solution overnight. Rinse in hot water and wipe dry with a soft cloth.
- Rub white toothpaste into silver, and then polish with a soft clean cloth.
- Apple cider vinegar can be used to clean chrome. Polish chrome using club soda.

## **Room Air Fresheners**

- Locate the source of the odor problem and take corrective action (cleaning) first. If that isn't possible:
  - \* Set out a dish of vinegar, or
  - \* Simmer cinnamon and cloves, or
  - \* Pour vanilla extract in a dish with a cotton ball. Use in your car, home, or refrigerator.

## **Hand Wash Disinfectants**

- The Environmental Protection Agency recognizes soap as a legitimate disinfectant. There are many vegetable oil based soaps available at supermarkets, Fred Meyer Nutrition Centers, and health food stores.
- Tea tree oil is antibacterial and antifungal. Add ten drops tea tree oil to four ounces of liquid vegetable oil based castile soap (i.e. Dr. Bronner's Magic Soaps). Shake to blend and store in a pump container of your choice.

## **Hand Cleaners**

- Combine 4 ounces of beach sand, 1 ounce of pumice powder, and enough glycerin to moisten in a labeled screw top jar. Use about 1 tablespoon at a time, rubbing into the hands thoroughly.
- Try using margarine.

## **Fertilizer**

- Use natural soil amendments that release nutrients slowly over a longer period of time than chemical fertilizers (i.e. blood meal, fish meal, fish emulsion, seed meals, bone meal, rock phosphate, greensand, kelp meal, manure, and compost). Your Oregon State University (OSU) County Extension Office Master Gardener program can provide more information.
- Learn how to compost at home. For more information about composting, contact OSU Master Gardeners or city, county or regional government recycling programs.
- Consider planting an ecology lawn that requires less fertilizer and water. Contact your local OSU County Extension office for more information.

## **Eco-Lawns**

- For a ground cover that requires significantly less fertilizer, water, and maintenance, try an ecology lawn consisting of:

Perennial "Elka" ryegrass or hard fescue	70 to 80 %
Common white yarrow	5 to 10 %
Strawberry clover	5 to 10 %
English daisy	10 to 20 %
Roman chamomile	3 %

## Weeds

- Remove weeds the old fashioned way. Pull weeds, or hire neighborhood kids to help pull them before seed heads form.
- Repeated mowing can weaken perennial weeds in the lawn. Growing a healthy lawn helps out-compete weeds.

## Aphid Control

- Know your insects. Most insects are either harmless or beneficial. For help identifying insects, contact your local OSU Master Gardeners program.
- Mechanically remove aphids by squishing them or hosing them off the host plant.
- Encourage beneficial insects like ladybugs, lacewings, and hover flies that prey on aphids by planting “good bug” food sources like alyssum, bronze fennel, and Shasta daisies.
- If the above measures are unsuccessful, mix 1 tablespoon castile or liquid vegetable oil based soap (detergent can burn plants) with 1 tablespoon vegetable oil and 1 gallon of water. Place in a labeled squirt bottle and test spray on infested plant parts. Soap kills soft bodied insects by damaging their cuticle. If the plant appears unaffected, treat the remaining infested areas. If not, reduce the soap content and re-test.
- For individual pest control information, reference *The Hazardless Home Handbook* available from the Oregon Department of Environmental Quality (see page 3).

## Black Spot and Powdery Mildew Spray

- Mix 3 tablespoons baking soda with 2 teaspoons insecticidal soap or ultra fine horticultural oil and 1 gallon of water. Store in a labeled squirt bottle and spray on affected plant parts.

## Hot Compost

- Mix a pile of 2 parts brown (carbon-rich) materials like brown leaves or straw to 1 part green (nitrogen-rich) materials like lawn clippings and a few scoops of topsoil. Maintain the moisture level of the pile equal to a wrung out sponge, cover, and turn every week to aerate. The pile will remain hot during the decomposition process. Once the pile cools, cover and cure for two weeks before using.
- Do *not* compost diseased plants, weeds with seed heads, invasive plants like bindweed, pet feces, dead animals, breads or grains, meat or fish, dairy products, grease, cooking oil, or oily foods.
- There are many ways to compost. Your local OSU Master Gardener program, or city, county or regional government recycling programs can provide information about composting. Metro Regional Government’s Natural Gardening web site (see page 3) is also a great resource.

## Pressure Washing

- Try using water only. Water pressure alone often removes the dirt and grime.
- A broom is often all you need to clean hard surfaces and doesn’t waste water. Sand and a push broom can be used to remove unwanted algae.

## Ant Bait

- Mix 1 cup borax, 1 cup sugar, and 3 cups of water in a bowl. Pour the mixture into four screw top jars (artichoke jars are ideal). With a hammer and nail, make 4 to 8 holes in each jar lid. Place the jars in an area where you have ants, but **keep them away from children and pets**. This trap will catch the worker ants, but not the queen.
- Blend ¼ cup confectioner's sugar and 1 tablespoon of borax. Sprinkle the mixture in ant traffic areas, but **not where children or pets might ingest it**. This is not enough borax to kill the worker ants immediately – they take the mix back to the nest, where it will eventually destroy the whole colony.

## Moth Repellants

- Store clean woolens in sealed plastic bags or airtight containers.
- Place garments in the freezer for several days to kill adult moths and larvae.
- Vacuum rugs, carpets, and upholstered furniture regularly.
- Combine 2 ounces each dried rosemary and mint, 1 ounce each dried thyme and ginseng, and 8 ounces of whole cloves. Blend well and make into moth repellent sachets.
- Dry cleaning is a significant source of air pollution. Woolens can be hand-washed using a mild soap.

## Less Toxic Household Solutions Shopping List

The following items are used in the recipes and suggestions offered in this publication:

- |   |  |
|---|--|
| <input type="checkbox"/> Baking soda                                    | <input type="checkbox"/> Margarine   |
| <input type="checkbox"/> Blood meal                                     | <input type="checkbox"/> Mint  |
| <input type="checkbox"/> Bone meal                                      | <input type="checkbox"/> Oil, essential (your choice)                                |
| <input type="checkbox"/> Borax  | <input type="checkbox"/> Oil, jojoba   |
| <input type="checkbox"/> Chalk, pulverized                              | <input type="checkbox"/> Oil, linseed (food grade)                                   |
| <input type="checkbox"/> Cinnamon                                       | <input type="checkbox"/> Oil, olive  |
| <input type="checkbox"/> Cloves   | <input type="checkbox"/> Oil, tea tree   |
| <input type="checkbox"/> Compost  | <input type="checkbox"/> Oil, ultrafine horticultural                                |
| <input type="checkbox"/> Cotton balls                                   | <input type="checkbox"/> Pumice powder   |
| <input type="checkbox"/> Club soda                                      | <input type="checkbox"/> Rock phosphate  |
| <input type="checkbox"/> Corn starch                                    | <input type="checkbox"/> Rosemary, dried   |
| <input type="checkbox"/> Cream of tartar                                | <input type="checkbox"/> Rug shampoo, non-aerosol<br>soap-based                      |
| <input type="checkbox"/> Fish emulsion                                  | <input type="checkbox"/> Salt  |
| <input type="checkbox"/> Fish meal                                      | <input type="checkbox"/> Sand, beach   |
| <input type="checkbox"/> Flour  | <input type="checkbox"/> Soap, castile or vegetable oil<br>based (i.e. Dr. Bronners) |
| <input type="checkbox"/> Ginseng  | <input type="checkbox"/> Soap, insecticidal  |
| <input type="checkbox"/> Glycerin                                       | <input type="checkbox"/> Sugar   |
| <input type="checkbox"/> Greensand                                      | <input type="checkbox"/> Toothpaste, white   |
| <input type="checkbox"/> Gloves, latex                                  | <input type="checkbox"/> Thyme, dried  |
| <input type="checkbox"/> Hydrogen peroxide, 3%                          | <input type="checkbox"/> Vanilla extract   |
| <input type="checkbox"/> Kelp Meal                                      | <input type="checkbox"/> Vinegar, apple cider  |
| <input type="checkbox"/> Laundry detergent<br>(i.e. Seventh Generation) | <input type="checkbox"/> Vinegar, white distilled                                    |
| <input type="checkbox"/> Lemon juice                                    | <input type="checkbox"/> Washing soda  |
| <input type="checkbox"/> Manure   |  |

This publication is one of a series of guides to help Oregonians get involved in the Oregon Plan for Salmon and Watersheds. The series includes:

- Ten Ways **Boaters** Can Restore Clean Water and Salmon
- Ten Ways **Farmers** Can Restore Clean Water and Salmon
- Ten Ways **Forest Landowners** Can Help Restore Clean Water and Salmon
- Ten Ways **Gardeners** Can Help Restore Clean Water and Salmon
- Ten Ways **Homebuilders** Can Help Restore Clean Water and Salmon
- Ten Ways **Homeowners** Can Help Restore Clean Water and Salmon
- Ten Ways **Irrigation Delivery Entities** Can Help Restore Clean Water and Salmon
- Ten Ways **Irrigators** Can Help Restore Clean Water and Salmon
- Ten Ways **Landscapers** Can Help Restore Clean Water and Salmon
- Ten Ways **Ranchers** Can Help Restore Clean Water and Salmon
- Ten Ways **Recreationalists** Can Help Restore Clean Water and Salmon
- Salmon Friendly Recipes:** Less Toxic Household Solutions for People and Salmon

For more information about the series, contact the Governor's Natural Resources Office at 503-378-3589 X821.



**THE OREGON PLAN**  
*for salmon & watersheds*

## NOTES

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Using these **Salmon Friendly Recipes** is one way you can get involved in the Oregon Plan for Salmon and Watersheds. To discover other ways to help, call the **Oregon Watershed InfoLine**, designed to provide YOU with information about your part in creating a future of healthy watersheds, clean waters, and thriving wild salmon and trout populations in Oregon. Even one small change in how each person treats a watershed can make a big difference if everyone pitches in. The packets below are full of actions that you can take at home, at work, at play, and traveling between.

**TO GET FREE INFORMATION, CALL  
1-888-854-8377**

**Oregon Watershed InfoLine** operators are ready to serve you 8AM to 5PM Monday through Friday. They will guide you through a series of questions that will help them find the information best suited to your needs. Information will be promptly mailed to you. In addition to specific publications and information, the following packets are available to help you help salmon and watersheds:

<ul style="list-style-type: none"> <li>• Introduction to Salmon and Watersheds</li> <li>• Boaters</li> <li>• Businesses</li> <li>• Educators</li> <li>• Farmers</li> <li>• Forest Landowners</li> <li>• Gardeners</li> <li>• Homebuilders, Developers, Realtors</li> <li>• Homeowners and Renters</li> <li>• Incentives and Stewardship Programs for Landowners</li> </ul>	<ul style="list-style-type: none"> <li>• Incentives for Conservation</li> <li>• Irrigators and Irrigation Delivery Entities</li> <li>• Ranchers</li> <li>• Recreationists</li> <li>• Small Acreage Landowners</li> <li>• Volunteer Opportunities</li> <li>• Oregon Plan for Salmon and Watersheds</li> <li>• Willamette Restoration Initiative</li> <li>• Oregon Watershed Enhancement Board</li> <li>• Federal and State Laws and Regulations</li> </ul>
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The Oregon Watershed InfoLine is sponsored by the  
Oregon Plan for Salmon and Watersheds  
([www.oregon-plan.org](http://www.oregon-plan.org)) and the Willamette Restoration  
Initiative ([www.oregonwri.org](http://www.oregonwri.org)).