

HEALTHY HOMES. HEALTHY FAMILIES.

Grow Smart, Grow Safe

Online guide to lawn and garden products

www.growsmartgrowsafe.org



Search hundreds of pesticide products and fertilizers for health and environmental hazards

-  Search for products, active ingredients and pests
-  Take us shopping
-  Find least harmful pest controls

Household Hazards Line...206-296-4692
Toll-free 1-888-TOXIC-ED...1-888-869-4233
TTY 711



WWW.GrowSmartGrowSafe.org

Local Hazardous Waste Management Program in King County, Washington

Search LHWMP website
Local Governments for Health and the Environment
King County, City of Seattle, Suburban Cities

- Hazardous Waste
- Environment & Health
- News & Events
- Documents
- Extranet
- About
- Contact
- Customer Service**

Grow Smart, Grow Safe
a consumer guide to lawn and garden products

Grow Smart, Grow Safe
a consumer guide to lawn and garden products

Bed Bugs
What are they, What to do about them.

Medicine Return Program
A take-back program for unwanted medicines

Grow Smart, Grow Safe
a consumer guide to lawn and garden products

[Learn More >](#)

SAFELY DISPOSE OR RECYCLE

Business Residential

Paints, Televisions, Pesticides, etc.

- ### HAZARDOUS WASTE
- Household Hazardous Waste
 - Household Disposal Locations
 - Wastemobile
 - Business Hazardous Waste
 - Waste Directory ("Yellow Book")
 - Industrial Materials Exchange (IMEX)
 - Product Stewardship
 - Report a Violation

- ### ENVIRONMENT & HEALTH
- Pesticides, Hazardous & Toxic Chemicals
 - Environment
 - Environmental Justice Network
 - EnviroStars
 - Green Purchasing
 - Health
 - Less Toxic Alternatives
 - Resources for Schools

- ### NEWS & EVENTS
- Garden Hotline booth at Issaquah Farmers Market on Sept. 10
 - Video offers health and safety tips for nail salon workers and clients
 - Wastemobile: Household hazardous waste collection comes to Bothell, Sept. 9-11
 - Wastemobile: Household hazardous waste collection comes to Covington, Aug. 19-21
- [+ View All](#) [+ Connect with us:](#)

GSGS Ranking System

- Based on Thurston County system
- Reviews are of active ingredients
- Reviews include: degradation products, mobility, persistence, biocaccumulation, acute toxicity, non-target toxicity, carcinogenicity, developmental and reproductive toxicity, mutagenicity, neurotoxicity, skin and eye irritation, data gaps, and applicator safety

GROW SMART, GROW SAFE

Home >> Grow Smart, Grow Safe

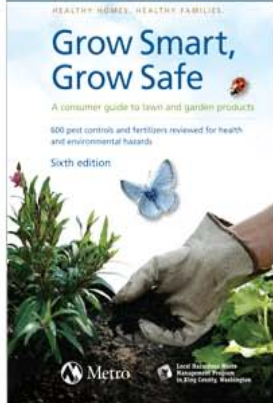
Search

Search hundreds of pesticide products and fertilizers for health and environmental hazards

---All Products---

Search

Download Guide



Download (PDF, 2.4 MB)

Grow Smart, Grow Safe >> A Gardener's Guide

Sponsors: Metro

Gardening with nature



- [Yard care without pesticides](#)
- [Good bugs are great for gardens](#)
- [Target action if pests appear](#)
- [Why care?](#)

Insects



- [Prevent by choosing right](#)
- [Observe](#)
- [Manage](#)
- [Learn](#)
- [Search for safer methods](#)

Slugs and snails



- [Prevent](#)
- [Observe](#)
- [Manage](#)
- [Learn](#)
- [Search for safer methods](#)

Diseases



- [Prevent](#)
- [Observe](#)
- [Manage](#)
- [Learn and evaluate](#)
- [Search for safer methods](#)

Weeds



- [Prevent](#)
- [Observe](#)
- [Manage](#)
- [Learn](#)
- [Best weeding tools](#)
- [Pre-emergent? Post emergent?](#)



About

- [Using this guide](#)
- [Reading a pesticide label](#)
- [Storing old pesticides](#)
- [About us](#)



Moss

- [Prevent](#)
- [Observe](#)
- [Manage](#)
- [Learn](#)
- [Search for safer methods](#)



Animal pests

- [Moles and voles](#)
- [Rats and mice](#)
- [Deer](#)
- [Birds](#)
- [Observe and learn](#)
- [Search for safer methods](#)



Soil amendments & fertilizers

- [Creating healthy soil](#)
- [How to choose a compost product](#)
- [Soil tests can help you choose](#)
- [Soil amendments](#)
- [Fertilizer and fertilizer labels](#)
- [Search for safer methods](#)



Resources

- [From our partners](#)
- [Local nurseries](#)
- [More on gardening](#)
- [What does OMRI mean?](#)

GROW SMART, GROW SAFE

[Home](#) >> [Grow Smart, Grow Safe](#) >> [Weeds](#)

Search

Search hundreds of pesticide products and fertilizers for health and environmental hazards

---All Products---

Weeds

[Prevent](#)

[Manage](#)

[Learn](#)

[Best weeding tools](#)

[Pre-emergent? Post emergent?](#)

[Mulch cautions](#)

Weeds

Don't let unwanted guests – a.k.a. weeds – take over your garden. Instead, learn to recognize and manage them with these simple methods so you can spend time enjoying your yard.

You can prevent weed problems without toxic chemicals using the research-based strategies described here. You can also find least-toxic herbicides and learn about the hazards of particular products using the *Grow Smart, Grow Safe* [search](#) tool.



Prevent problems before they appear

Build healthy soil with compost and mulch. Good soil grows healthy, vigorous plants.

- Healthy plants crowd out weeds.
- In good soil, weeds are easier to pull.
- Mulch helps cover weed seeds, preventing them from germinating.
- Homemade compost sometimes contains weed seeds. Consider weed-free commercial compost for topdressing lawns and gardens.

Grow a multilayered garden. A variety of plants in different sizes will shade the ground in your garden beds. Without sun fewer weeds will sprout, and any that do will be less noticeable.

Grow a healthy lawn. Sunlight and healthy soil are important for growing healthy grass.

- A thick, vigorous stand of turf will have fewer weeds than a thin, spotty lawn.
- Mow at a high setting, and leave the clippings. They add nutrients and improve the soil.
- Water deeply in summer – but no more than an inch a week – to encourage deep roots.
- If your soil has poor drainage, help the lawn "breathe" with aeration.

**Local Hazardous Waste Management Program
in King County, Washington**

Search LHWMP website
Local Governments for Health and the Environment
King County, City of Seattle, Suburban Cities

- Hazardous Waste Environment & Health News & Events Documents Extranet About Contact [Customer Service](#)

GROW SMART, GROW SAFE

Home >> Grow Smart, Grow Safe >> Search Tool

Weeds

Note: Products lower in the table are more hazardous. Differences between close-ranking products may not be significant.

	HAZARDS				Active Ingredients
	Human Toxicity	Pets & Wildlife	Aquatic Life	Water Pollution	

Weeds - Pre-Emergent

Cultural, physical, and capture methods or mechanical

Lowest hazard

	Human Toxicity	Pets & Wildlife	Aquatic Life	Water Pollution	Active Ingredient(s)
Aerate and overseed lawns to improve lawn health	●	●	●	●	
Fertilize moderately in May and September	●	●	●	●	
Flame and heat weeding tools - use fire safety practices	●	●	●	●	
Mow high, mow often, leave the clippings	●	●	●	●	
Mulch - compost, wood chips, bark, natural products	●	●	●	●	
Plant thickly	●	●	●	●	
Shrink the lawn	●	●	●	●	
Water deeply but infrequently	●	●	●	●	
Weeding tools - long-handled, hori hori, trowel, etc.	●	●	●	●	

Low-toxicity pesticides, EPA exempt

Lowest hazard

	Human Toxicity	Pets & Wildlife	Aquatic Life	Water Pollution	Active Ingredient(s)
Bradfield Organics® Luscious Lawn Granulated Corn Gluten	●	●	●	●	corn gluten meal
Concern® Weed Prevention Plus®	●	●	●	●	corn gluten meal
Down to Earth Corn Weed Blocker	●	●	●	●	corn gluten meal
Espoma Organic® Weed Preventer Plus Lawn Food	●	●	●	●	corn gluten meal
Preen® Vegetable Garden Weed Preventer	●	●	●	●	corn gluten meal

EPA-registered pesticide products

Moderate hazard

	Human Toxicity	Pets & Wildlife	Aquatic Life	Water Pollution	Active Ingredient(s)
Schultz™ Supreme Green™ Crabgrass Preventer with Fertilizer	○	○	●	○	dithiopyr
Vigoro® Premium Mulch with Weed Stop®	○	○	●	○	dithiopyr
Vigoro® Ultra Turf™ Pre-emergent Crabgrass & Weed Control	○	○	●	○	dithiopyr

Highest hazard

	Human Toxicity	Pets & Wildlife	Aquatic Life	Water Pollution	Active Ingredient(s)
Miracle Gro® Garden Weed Preventer & Plant Food®	●	○	●	○	trifluralin
Miracle Gro® Shake n Feed® All-Purpose Plant Food plus Weed Preventer	●	○	●	○	trifluralin
Preen® Garden Weed Preventer + Plant Food	●	○	●	○	trifluralin
Preen® Mulch Plus®	●	●	●	●	trifluralin, isoxaben

Green® Weed Preventer with Brilliant Blooms™ Fertilizer	●	○	○	○	trifluralin
Green Light® Portrait® Broadleaf Weed Preventer	●	●	○	○	isoxaben
Green® Garden Weed Preventer	●	○	○	○	trifluralin
Monterey Weed Impede™	●	○	○	○	oryzalin

Weeds - Selective, Post-Emergent

EPA-registered pesticide products

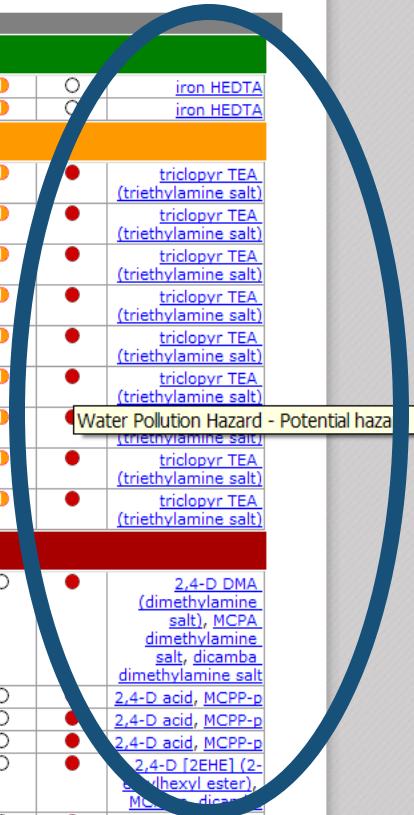
Lowest hazard					
Ortho® EcoSense Brand Lawn Weed Killer	○	○	○	○	iron HEDTA
Ortho® elementals™ Lawn Weed Killer	○	○	○	○	iron HEDTA

Moderate hazard

Bayer Advanced™ Brush Killer Plus RTU	○	●	○	●	triclopyr TEA (triethylamine salt)
Lilly Miller® Brush, Blackberry & Vine Brush Killer RTU	○	●	○	●	triclopyr TEA (triethylamine salt)
Ortho® MAX® Poison Ivy & Tough Brush Killer RTU	○	●	○	●	triclopyr TEA (triethylamine salt)
Bayer Advanced™ Brush Killer Plus Concentrate	○	●	○	●	triclopyr TEA (triethylamine salt)
Green Light® Cut Vine & Stump Killer	○	●	○	●	triclopyr TEA (triethylamine salt)
Image® from Lilly Miller® Brush & Vine Killer	○	●	○	●	triclopyr TEA (triethylamine salt)
Lilly Miller® Blackberry & Brush Killer	○	●	○	●	triclopyr TEA (triethylamine salt)
Ortho® MAX® Poison Ivy & Tough Brush Concentrate	○	●	○	●	triclopyr TEA (triethylamine salt)
Ortho® Weed-B-Gon® Chickweed, Clover and Oxalis Killer for Lawns	○	●	○	●	triclopyr TEA (triethylamine salt)

Highest hazard

Lilly Miller® Ultra-Green Weed & Feed	●	○	○	●	2,4-D DMA (dimethylamine salt), MCPA dimethylamine salt, dicamba dimethylamine salt
Scotts® Lawn Pro® Super Turf Builder® with PLUS 2® Weed Control	●	●	○	●	2,4-D acid, MCPP-p
Scotts® Turf Builder® WinterGuard With PLUS 2® Weed Control	●	●	○	●	2,4-D acid, MCPP-p
Scotts® Turf Builder® with PLUS 2® Weed Control	●	●	○	●	2,4-D acid, MCPP-p
Vigoro® Ultra Turf™ Phosphorus-Free Weed & Feed	●	●	○	●	2,4-D [2EHE] (2-hexyl ester), MCPA, dicamba
Vigoro® Ultra Turf™ Phosphorus-Free Winterizer Weed & Feed 2	●	●	○	●	2,4-D acid, MCPP-p, dicamba
ACE® Spot Weed Killer 2	●	●	○	●	2,4-D DMA (dimethylamine salt), MCPP-p, dicamba dimethylamine salt
Bonide® Poison Ivy & Brush Killer BK-32 RTU	●	●	○	●	MCPA dimethylamine salt, triclopyr TEA (triethylamine salt), dicamba



Water Pollution Hazard - Potential hazard is high

ADMINISTRATION

ENVIRONMENTAL HEALTH

- Drinking Water & Wells
- Environmental Services
- Fees, Forms & Permits
- Food Safety
- Garbage Dumping & Complaints (Solid Waste)
- Gardening
- Gravel Mines
- Hazardous Waste
- Health Codes & Regulations
- Healthy Home Environment
- INTEGRATED PEST MANAGEMENT (IPM)
 - Developers
 - Homeowners/Land Managers
 - Internal County Programs
 - Glossary
 - IPM Program Development
 - Land Use Review
 - Publications & Brochures
 - Rodents, Bats, Insects & Other Vectors
 - Septic Systems
 - Surface Water (Lakes, Rivers & Streams)
- PERSONAL HEALTH
- SOCIAL SERVICES

EH Home > IPM > Homeowners > Terrestrial Herbicides

IPM - TERRESTRIAL HERBICIDE REVIEWS

click on the active ingredient to read its review

- ◆ Potential hazard is low
- ◆ Potential hazard is moderate
- Potential hazard is high
- ▲ Unable to find useful data

Pesticide Active Ingredient	Thurston County Rating	Human Toxicity	Other Mammals	Bird Toxicity	Bee Toxicity	Aquatic Toxicity	Mobility Hazard	Persistence Hazard	Bio-accumulation Hazard
ammonium nonanoate	Passed	◆	◆	◆	◆	■	◆	◆	◆
ammonium salt of fatty acids	Passed	◆	◆	◆	◆	■	◆	◆	◆
clethodim	Passed	◆	◆	◆	◆	◆	■	◆	◆
clopyralid	Passed	◆	◆	◆	◆	◆	■	◆	◆
ferric sulfate	Passed	◆	◆	◆	▲	◆	◆	■	◆
ferrous sulfate	Passed	◆	◆	◆	▲	◆	◆	■	◆
ferrous sulfate (monohydrate)	Passed	◆	◆	◆	▲	◆	◆	■	◆
glyphosate	Passed	◆	◆	◆	◆	◆	◆	◆	◆
iron HEDTA	Passed	◆	◆	◆	◆	◆	◆	◆	◆
iron sulfuron methyl	Passed	◆	◆	◆	◆	◆	■	◆	◆
pelargonic acid (nonanoic acid)	Passed	◆	◆	▲	◆	◆	◆	◆	◆
potassium salt of fatty acids	Passed	◆	◆	◆	◆	■	◆	◆	◆
aminopyralid	Conditional	◆	◆	◆	◆	◆	■	■	◆
dicamba	Conditional	◆	◆	◆	◆	◆	■	◆	◆

http://www.co.thurston.wa.us/health/ehipm/pdf Terr/terrestrial%20actives/iron%20HEDTA.pdf - Windows Internet Explorer

http://www.co.thurston.wa.us/health/ehipm/pdf Terr/terrestrial%20actives/iron%20HEDTA.pdf

pesticide information

File Edit Go To Favorites Help

Grow Smart, Grow Safe, A ... LHWMP.org - Extranet Sign... Suggested Sites Download RefGrab-It RefGrab-It bookmarklet

http://w... http://cr... LHWMP... http://w... New Tab Grow Sm... http:...

1 / 3 Sign Find

iron HEDTA

Review Date: 7/21/2010

CAS #: 17084-02-5

Type	Selective contact herbicide
Controls	Controls several broadleaf weed species in established turf (dandelion, daisy, thistles, chickweed, creeping buttercup, moss, algae, etc.)
Mode of Action	The exact mode of action is unknown, although, iron is a catalyst for oxygen reduction which produces reactive oxygen species that can cause cellular damage and cell death (Reference 2).

Thurston County Review Summary:

Herbicides containing iron HEDTA as a sole active ingredient pass Thurston County's review criteria. Iron HEDTA is not expected to move off the site of application unless it is washed off with excessive rain or irrigation water. Although the iron will remain in the soil where it is applied, the compound iron HEDTA is not expected to be persistent or bioaccumulate in animal or fish tissue. The risk for toxicity to humans from handling, applying or contacting treated (dry) vegetation is considered low. The risk to non-target birds, mammals, bees, and fish is considered low. Use of iron HEDTA herbicides around small shallow ponds should be avoided because it could result in concentrations in the water that may cause harm to amphibians (Reference 2).

MOBILITY

Property	Value	Reference	Rating
Solubility (mg/L)	Miscible	2	High
Soil Sorption (Kd=mL/g)	0.57	2	High
Organic Sorption (Koc=mL/g)	Not found		

Mobility Summary:

Iron HEDTA mixes well in water and can be expected to bind poorly to soil without organic matter. With respect to leaching, Health Canada made the following statement: "Based on proposed use pattern (mode of application, application rate and use area), the risk for potential leaching and exposure of FeHEDTA to drinking water (surface or ground water) will be low" (Reference 2). The hazard for iron HEDTA to move off the site of application is rated moderate for potential to wash off the application with excessive rain or irrigation water but low in hazard for leaching potential for all soil types except sand and gravel.

PERSISTENCE

Local Hazardous Waste Management Program in King County, Washington

Search LHWMP website

Local Governments for Health and the Environment
King County, City of Seattle, Suburban Cities

Hazardous Waste Environment & Health News & Events Documents Extranet About Contact

GROW SMART, GROW SAFE

Home >> Grow Smart, Grow Safe >> Search Tool

--All Products--

Note: Products lower in the table are more hazardous. Differences between close-ranking products may not be significant.

	HAZARDS				Active Ingredients
	Human Toxicity	Wildlife	Aquatic Life	Water Pollution	

Insects

EPA-registered pesticide products

Lowest hazard

Lilly Miller® Worry Free® Insecticidal Soap	○	○	●	○	potassium salt of fatty acids
---	---	---	---	---	---

Highest hazard

Lilly Miller® Systemic Rose, Shrub & Flower Care	●	●	●	○	acephate
Lilly Miller® Grasshopper, Earwig, Cutworm & Sowbug Bait	●	●	●	●	carbaryl

Snails and slugs

EPA-registered pesticide products

Lowest hazard

Lilly Miller® Worry Free® Ferramol Slug & Snail Bait	○	?	○	○	iron phosphate
--	---	---	---	---	--------------------------------

Highest hazard

Lilly Miller® Slug, Snail & Insect Killer Bait	●	●	●	●	carbaryl, metaldehyde
Lilly Miller® Slug & Snail Bait	●	●	●	●	metaldehyde
Lilly Miller® Snail & Slug Mini-Pellets	●	●	●	●	metaldehyde
Lilly Miller® Snail & Slug Spray RTU	●	●	●	●	metaldehyde
Lilly Miller® Hose 'n Go Slug & Snail Spray	●	●	●	●	metaldehyde

Disease

EPA-registered pesticide products

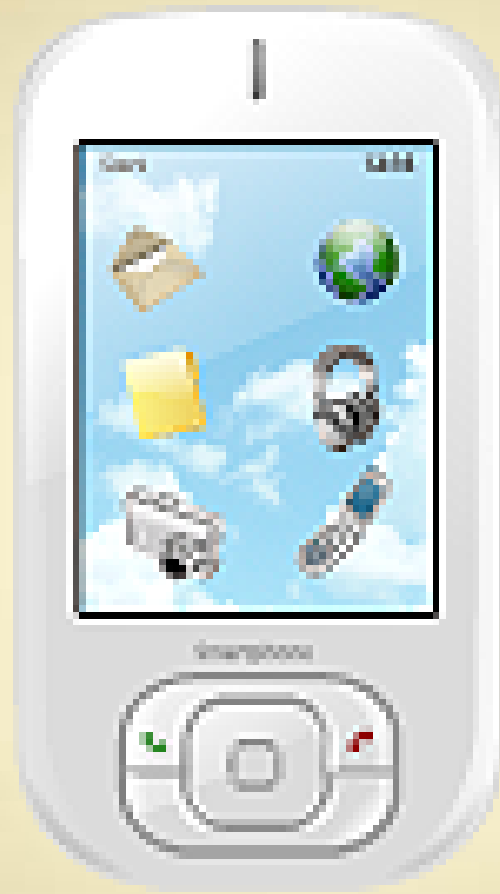
Lowest hazard

Lilly Miller® Multi-Purpose Fungicide RTU	○	○	○	?	sulfur
---	---	---	---	---	------------------------

Highest hazard

Lilly Miller® Worry Free® 3 in 1 Garden Spray	●	●	●	?	sulfur, pyrethrins
---	---	---	---	---	------------------------------------

Weeds - Selective, Post-Emergent



Pesticide free public spaces

<http://www.lhwmp.org/home/pfparks/index.aspx>

Local Hazardous Waste Management Program
in King County, Washington

Search LHWMP website

Local Governments for Health and the Environment
King County, City of Seattle, Suburban Cities

Hazardous Waste Environment & Health News & Events Documents Extranet About Contact [Customer Service](#)

PESTICIDE FREE PUBLIC SPACES

[Home](#) >> [Pesticide Free Public Spaces](#)

Pesticide Free Public Spaces [Link](#)

Site list

Site Name

- 12th West & West Howe Park
- 132nd Square Park
- 3001 E Madison
- 6th Avenue NW Pocket Park
- A. B. Ernst Park
- Albert Davis Park
- Alki Beach Park
- Alki Playground
- Alvin Larkins Park
- Amy Yee Tennis Center
- Andover Place
- Arapahoe Triangle
- Arrovos Natural Area

[Map search](#)

[Legend](#)

[Definitions](#)

[Using the map](#)

Map Aerial Hybrid

0 5 10mi

Disclaimer: The information provided in this application has been compiled by King County staff from a variety of sources and is subject to change without notice. King County makes no representations or warranties, express or implied, as to accuracy, completeness, timeliness, or rights to the use of such information. This application is not intended for use as a survey product or to generate legal documentation. King County shall not be liable for any general, special, indirect, incidental, or consequential damages including, but not limited to, lost

PESTICIDE FREE PUBLIC SPACES

[Home](#) >> [Pesticide Free Public Spaces](#)

Pesticide Free Public Spaces

[Link](#)

Site list

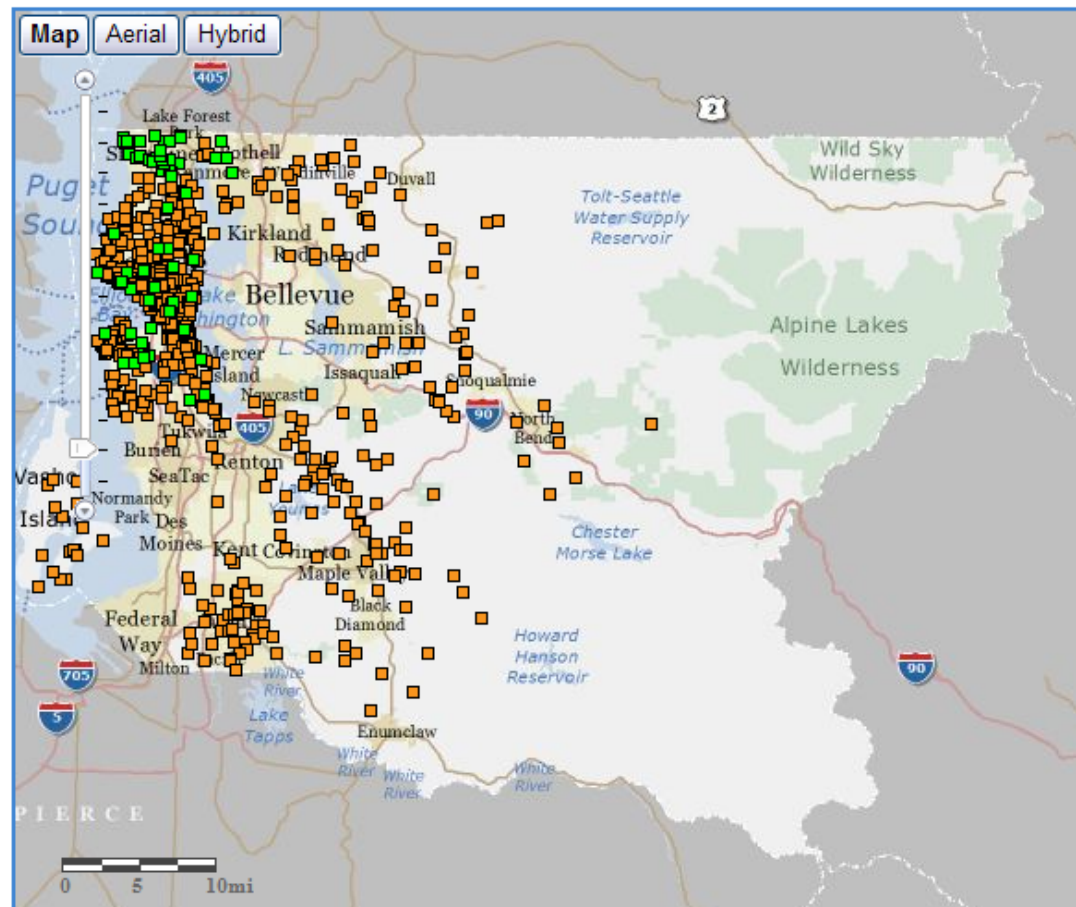
Site Name
12th West & West Howe Park
132nd Square Park
3001 E Madison
6th Avenue NW Pocket Park
A. B. Ernst Park
Albert Davis Park
Alki Beach Park
Alki Playground
Alvin Larkins Park
Amy Yee Tennis Center
Andover Place
Arapahoe Triangle
Arrovos Natural Area

Map search

Legend

Definitions

Using the map



Pesticide free public spaces

- Soft launch – still recruiting
- 45 entities that own 240,000 acres of parkland in King County eligible
- Currently 30,000 acres Pesticide Reduced
- and 930 acres Pesticide Free

Pesticide free public spaces

- Search by park name or zip code
- Click on symbol for more information about the park
- Currently Shoreline, Duvall and Black Diamond manage all parks Pesticide Free
- Seattle and others in both sections

Pesticide free public spaces

- The map will list other types of public spaces, such as universities, zoos, etc and may spin off other map layers, such as hospitals and libraries.
- Your ideas?

Pesticide free site:

- No EPA-registered pesticides are used in the normal maintenance of the park or recreation area.
- Special exemptions are given for limited IPM based use of an herbicide to remove *noxious weeds* as *mandated* by county-wide noxious weed policy, or in the case of an insecticide used to remove dangerous insects (wasps, hornets) as long as adequate notification or signage is used to warn the public.

Pesticide reduced site:

- Children's play areas and lawns are pesticide free.
- In outlying areas of the site: flower beds, fence lines, natural areas and playing fields, grounds managers use their own IPM policy to determine pest control needs and minimize use of pesticides.

Lisa Niehaus, Local Hazardous Waste Management Program

130 Nickerson St., Suite 100 Seattle, WA 98109

Phone: (206) 263-3046 Fax: (206) 263-3070

e-mail: lisa.niehaus@kingcounty.gov

www.lhwmp.org www.envirostars.org www.growsmartgrowsafe.org

Julia Singer, Local Hazardous Waste Management Program

130 Nickerson St., Suite 100 Seattle, WA 98109

Phone: (206) 263-3042 Fax: (206) 263-3070

e-mail: julia.singer@kingcounty.gov

www.lhwmp.org www.envirostars.org www.growsmartgrowsafe.org