

# WATERWISE GARDENING

A GUIDE *for* BRITISH COLUMBIA'S  
LOWER MAINLAND



*Gaillardia* UBC Botanical Garden

How to create water-thrifty gardens  
through the use of  
drought-resistant plants





Lupine UBC Botanical Garden

MANY SPECIES of DROUGHT -  
RESISTANT PLANTS ARE AVAILABLE  
AT LOCAL GARDEN CENTRES

#### ELEMENTS OF WATERWISE GARDENING

**planning and design**  
**soil analysis and improvements**  
**appropriate plant selection**  
**efficient lawn areas**  
**efficient irrigation**  
**mulching**  
**appropriate maintenance**

**L**ower Mainlanders love to garden. We nurture tiny seedlings, encourage showy perennials and harvest colourful flowers. For most of the year, Greater Vancouver receives enough rain to keep gardens adequately watered. However, the summer months are usually dry, and the Greater Vancouver Regional District (GVRD) and its member municipalities regulate lawn sprinkling to ensure there is sufficient water available.

Waterwise gardening means selecting and maintaining plants that can survive long periods without water. There are many species of plants available at local nurseries that can thrive in our dry summer and wet winter conditions.



Mock orange  
*Philadelphus lewisii*

In addition to being pleasing to the eye, the Lower Mainland's plants provide shade, absorb carbon dioxide and release oxygen into our urban environment.

Gardening practices that enhance the environmental benefits of plants benefit us all.

This brochure introduces you to waterwise gardening. It describes the basic principles of this method of gardening and includes a directory of additional resources. A plant list gives suggestions for additions to your waterwise garden.

There's nothing difficult about waterwise gardening – it's just about planting appropriate plants and ensuring they are planted and cared for properly. You can conserve our precious water resource while cultivating a healthy, attractive garden.

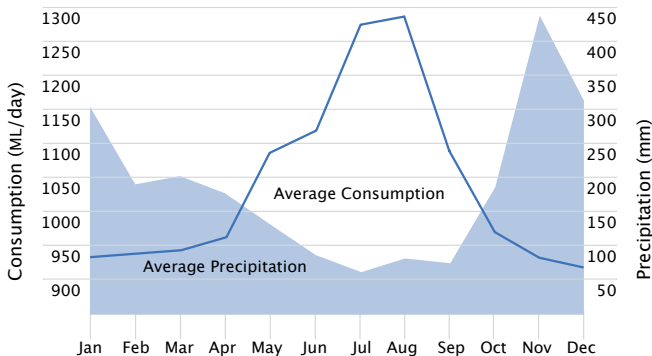
## WHY CONSERVE WATER?

On the B.C. southwest coast, we are used to living with rain – lots of rain. So why do homeowners face lawn sprinkling regulations from June through September?

The answer lies in our region’s limited ability to store water. Much of the rainfall and snowmelt in the watersheds cannot be stored for use during dry weather. Population growth in the Lower Mainland has also led to increased demand for water. The GVRD supplies drinking water to two million residents in 18 municipalities. Outdoor use accounts for about 25 per cent of total water consumption, with a great deal of that water going towards keeping our gardens alive and our lawns green during the summer. Since 1993, the GVRD has implemented lawn sprinkling restrictions to conserve water and prevent water shortages in the event of drought conditions.

By conserving water, we help maintain our quality of life in the Lower Mainland. With thoughtful planning and appropriate plants, we can enjoy healthy gardens and lawns that survive well year-round.

### MONTHLY PRECIPITATION AND CONSUMPTION\*



\*Measurements from Cleveland Dam

## PLANNING AND ESTABLISHING YOUR GARDEN

Creating a waterwise garden requires careful planning. Consider the changes that would make your garden water-thrifty. Can you incorporate drought-resistant plants into your garden?

When planning your garden, group plants according to their water needs. Southern exposure areas, which dry out faster in direct sunlight, suit plants that have low water requirements. Plants in areas of shady northern exposure need less water. Thirsty plants can be grouped together for easier watering.



Kinnikinnick  
*Arctostaphylos uva-ursi*

Recognize that if you plant under established trees or in weedy areas, the new plants must compete for water, making it more difficult for the plants to get established.

Giving your plants a good start will help them be waterwise in the future. Fall planting is recommended because most plants are adapted to growing roots in the fall and winter when it rains the most.

It’s also important that the planting site have good drainage. Although soil should retain some moisture to act as a reservoir for the plant’s roots, these roots shouldn’t become waterlogged. The planting site should have adequate drainage to prevent water from pooling in wet weather.

Creating a waterwise garden is a wonderful learning experience. The *Resources* section at the end of this brochure provides more sources of guidance about waterwise gardening.



UBC Botanical Garden

## NUTRITIOUS, WELL-DRAINING SOIL IS FUNDAMENTAL TO A WATERWISE GARDEN

### WHAT IS COMPOST?

**Compost results from the natural breakdown of food and garden trimmings.**

**The compost you make at home is an excellent soil conditioner.**

**By adding compost to your garden, you help the soil retain nutrients, moisture and air, which support healthy plants.**

## SOIL: THE FOUNDATION OF A HEALTHY AND WATERWISE GARDEN

**N**utritious, water-retentive and well-drained soil is fundamental to a waterwise garden. The key is to know what type of soil each plant needs for ideal growth. Some plants thrive in sandy soil that drains quickly; others need soil with the ability to retain more water.

The acidity of the soil is also important. Most west coast gardens are acidic due to the large amount of rainfall in our region – the rain leaches minerals from the soil, leaving mostly organic matter, which is naturally acidic. Choose plants that do well in acidic soil, or add lime to reduce the acid level.

All plants benefit from the addition of organic matter to the soil. Organic matter increases the soil's ability to hold water and air while improving its nutrient content.

The best organic matter to add to the soil is compost. However, manure, composted ground bark or partially broken-down leaves are also effective. Non-decomposed materials, such as “raw” bark or green leaves, should not be added directly to the soil. They will tie up the nitrogen in the soil as breakdown occurs, robbing the plants of an element essential for growth.

Before planting, work the material into the soil with thorough digging or tilling to incorporate air and improve drainage. Annual additions of organic matter or compost to the top of the soil will help keep it nutrient-rich.

## SELECTING WATERWISE PLANTS

**C**hoosing plants is one of the most exciting parts of creating your waterwise garden. Local garden centres carry a variety of non-invasive drought-resistant plants (trees, shrubs, groundcover, perennials) in both native and ornamental species.

When buying plants, look for:

- full, healthy leaves
- balance between top growth and size of pot
- good colour, with no yellowing.

When starting a waterwise garden, you might want to experiment with a small area first. It can be difficult to introduce a new plant to an existing planting area as the established plants are better equipped to draw water out of the soil. In this situation, pay particular attention to watering the new plant to help it get established.

Most B.C. native plants grow when there is lots of moisture and go dormant when the weather turns drier, which makes them ideal for our waterwise gardens. Walking around natural areas near your home will give you an idea of which native plants do well in your area. Keep in mind, however, that most residential gardens do not provide native conditions – our soils aren't native and our landscaped gardens are in fact “disturbed sites.”

Ornamental plants are not native to our region, but many species thrive here because of a shared native climate. English Lavender is a good example of a drought-resistant ornamental plant that is well adapted to our climate.

The plant list on the following pages provides the names of widely available non-invasive waterwise plants suitable for our climate. Your local nursery can identify any special needs of plants that interest you.

## SELECTING TURF GRASSES

**T**here are many types of turf grasses, available in different mixtures. Consult with a sod supplier (look in the Yellow Pages under “Turf”) or your local garden centre about a mixture that best suits your needs. Here are some questions to consider:

### **What is the condition of the soil in the planting area?**

Even the most drought-hardy grass will not grow well if it is planted in poor conditions. Soil should be at least 15 centimetres thick, but preferably 30 centimetres thick and should be nutrient-rich, well aerated and well drained.

### **What will the grass area be used for?**

Most seed and sod suppliers will recommend a different grass for areas that get high use (such as play areas) than they would for areas that see little use. Be sure to ask your supplier how the grass will wear – sometimes a brown lawn is caused not by lack of water but simply by being worn down.

### **How much water does the turf actually need in order to grow?**

Not all grass needs the same amount of water. Your supplier should be able to tell you which grasses use water most efficiently. Grass that creates long, sturdy root systems is good because the roots can store water for later use.

### **How will the grass survive during dry periods?**

Be sure to ask your supplier how the grass will manage if it doesn't get watered during warm, dry periods, and if it will simply go dormant or if it will be damaged. If a green lawn is important to you, ask about grass that stays green longer during dry periods.

# WATERWISE PLANTS FOR THE LOWER MAINLAND

## COMMON NON-INVASIVE DROUGHT -TOLERANT SHRUBS AND CLIMBERS

SCIENTIFIC NAME	COMMON NAME	MATURE SIZE HEIGHT X SPREAD	EVERGREEN	SUN	PART SHADE	SHADE	WELL- DRAINED SOIL
<i>Arbutus unedo</i>	strawberry tree	8m x 8m	•	•	•		•
<i>Amelanchier alnifolia</i>	Saskatoon berry	1-5m x 1m		•	•		
<i>Arctostaphylos uva-ursi</i>	kinnikinnick	10cm x 2m	•	•			•
<i>Holodiscus discolor</i>	oceanspray	3-5m x 3-5m		•	•		•
<i>Camellia</i> species	camellia	1.5-2.5m x 1-2m	•		•	•	•
<i>Ceanothus</i> species	California lilac	1-3m x 3-4m	•	•			•
<i>Chaenomeles</i> species	Japanese quince, japonica	1.5-2.5m x 2-3m		•			
<i>Cotinus coggygria</i>	smoke bush	5m x 5m		•			•
<i>Juniperus</i> species	juniper	20cm-20m x 4-7m	•	•			•
<i>Mahonia aquifolium</i>	Oregon grape	1-3m x 1m	•	•	•	•	•
<i>Osmanthus</i> species	osmanthus	2-5m x 2-5m	•	•	•		
<i>Philadelphus</i> species	mock orange	1-2m x 2-5m		•	•		
<i>Rhus</i> species	sumac	2.5-5m x 2.5-6m		•			•
<i>Ribes sanguineum</i>	red flowering currant	1.5m x 1m		•	•		
<i>Rosa nutkana</i>	Nootka rose	1-3 m x 1-2.5m		•	•		
<i>Salix scouleriana</i>	Scouler's willow	2-12 m x 1.5m		•	•		
<i>Sambucus cerulea</i>	blue elderberry	3-6m x 1-2m		•	•		
<i>Sarcococca</i> species	Christmas box	40-100cm x 80-120cm	•		•	•	
<i>Shepherdia canadensis</i>	soapberry	1-3m x 1-2m		•	•		
<i>Symphoricarpos</i> species	snowberry	2-2.5m x 2-2.5m		•	•	•	

### INVASIVE PLANT SPECIES IN GREATER VANCOUVER

Invasive species are a growing problem in Greater Vancouver. What distinguishes an invasive species from a weed? Invasive plants are non-native and grow so rapidly or spread so quickly that they overwhelm native plant species that wildlife depend on for food and shelter. Invasive plant species can also cause erosion, increased fire hazard and other problems. Some contain chemical compounds that are toxic to people, pets and wildlife.

Before you buy, take some time to learn a bit about the most common invasive plant species in the region and some healthier alternatives. The GVRD has produced a brochure **Help Stop the Spread of Invasive Plants**, available along with other information at [www.parkpartners.ca/gvipc/](http://www.parkpartners.ca/gvipc/)

## COMMON DROUGHT-TOLERANT TREES

SCIENTIFIC NAME	COMMON NAME	MATURE SIZE HEIGHT X SPREAD	EVERGREEN	SUN	PART SHADE	SHADE	WELL- DRAINED SOIL
<i>Arbutus menziesii</i>	arbutus	15-20m x 8-10m	•	•			
<i>Gleditsia triacanthos</i>	honey locust	8-18m x 6-8m		•			•
<i>Picea</i> species	spruce	8-30m x 4-6m	•	•			•
<i>Pinus</i> species	pine	6-25m x 3-7m	•	•			•
<i>Quercus</i> species	oak	8-25m x 6-15m		•			
<i>Sciadopitys verticillata</i>	Japanese umbrella pine	10-20m x 6-8m	•	•	•		•
<i>Thuja plicata</i>	western red cedar	20-35m x 6-9m	•	•	•	•	•

## COMMON NON-INVASIVE DROUGHT-TOLERANT PERENNIALS

SCIENTIFIC NAME	COMMON NAME	MATURE SIZE HEIGHT X SPREAD	EVERGREEN	SUN	PART SHADE	SHADE	WELL- DRAINED SOIL
<i>Achillea</i> species	yarrow	25-150cm x 25-150cm		•			
<i>Arabis</i> species	rock cress	5-10cm x 20-30cm	•	•			•
<i>Anaphalis margaritacea</i>	pearly everlasting	30-100cm x 25-150cm		•			
<i>Armeria maritima</i>	common thrift	20-50cm x 30cm	•	•			•
<i>Bergenia cordifolia</i>	heartleaf bergenia	20-60cm x 45-75cm	•	•	•		
<i>bulbs and corms</i>	daffodil, crocus, etc.	10-100cm x 10-50cm		•	•		•
<i>Cerastium tomentosum</i>	snow-in-summer	5-8cm x indefinite	•	•			•
<i>Festuca glauca</i>	blue fescue grass	30cm x 25cm	•	•	•		•
<i>Fragaria chiloensis</i>	coastal strawberry	0cm x 20cm		•	•		
<i>Gaillardia grandiflora</i>	blanket flower	30-90cm x 45-80cm		•			•
<i>Gaura lindheimeri</i>	butterfly flower, white gaura	120cm x 90cm		•			•
<i>Helleborus</i> species	hellebore	30-100cm x 45-90cm	•		•	•	•
<i>Lavandula angustifolia</i>	English lavender	20-45cm x 30-50cm	•	•			•
<i>Lupinus</i> species	lupine	50cm-1m x 30-50cm		•			•
<i>Paeonia lactiflora</i>	peony	50-70cm x 50-70cm		•			•
<i>Perovskia atriplicifolia</i>	Russian sage	150cm x 100cm		•			•
<i>Polygonatum</i> species	Solomon's seal	80-100cm x 60cm				•	
<i>Saxifraga umbrosa</i>	London pride	25cm x 60cm	•	•	•	•	•
<i>Sedum</i> species	stonecrop	5-50cm x 30-60cm	•	•	•		•
<i>Stachys byzantina</i>	lamb's ears	45cm x 60cm	•	•	•		•
<i>Tanacetum coccineum</i>	painted daisy	45-75cm x 45cm		•			
<i>Yucca</i> species	yucca	60-120cm x 80-100cm	•	•			•

## MULCH, MULCH, MULCH!



*Lavender* UBC Botanical Garden

PLANTS PROTECTED  
BY MULCH REQUIRE LESS  
FREQUENT WATERING



*Swallow tail butterfly* UBC Botanical Garden

**M**ulching is one of the best ways to conserve water in your garden. Mulch— a layer of coarse material placed on top of the soil – preserves moisture by reducing soil temperature. It shelters the ground from drying winds, slowing the rate of evaporation from the soil.

Mulch also reduces erosion by diffusing the force of water before it reaches the soil – the water gently seeps from the mulch into the ground. It discourages weed growth by burying seeds. And while decomposing it improves topsoil condition.

If you are mulching to improve the soil, use a thin layer so it can break down. If you are using mulching to slow evaporation (any organic material will do), use a thicker layer and top it up regularly. Fine material breaks down quickly; chunkier mulch lasts longer.

Organic mulches include wood or bark chips, leaves, grass clippings, manure and compost. As they decompose, they contribute nutrients to the soil. The material should be applied 7-10 centimetres deep with more shallow distribution around smaller plants, tree trunks and new plantings. Keep mulches away from plant stems. Organic mulches need to be “topped up” regularly.

Inorganic mulches do not contribute nutrients to the soil, but they can still help conserve water. Rocks, available in varying sizes and shapes, are a permanent ground cover that help prevent erosion and limit weeds, too.



**T**ry looking at your lawn from a new perspective. Can you modify your lawn area or tolerate a dormant lawn? Consider low-water-use varieties of grass, shrubs or ground cover.

There are many ways to care for your lawn in a waterwise way. Lawns go dormant during hot, dry weather, but they recover when the weather becomes cooler and wetter. Evaporation and general root stress decrease significantly when you let your grass grow longer in the summer. The recommended lawn height is eight to 10 centimetres, and you shouldn't remove any more than one-third of the grass blade length at each cutting. Here are a few other tips to save water while maintaining a healthy lawn:

- Consult with your local garden centre about low-water-use varieties of lawn seed. Ask your supplier to stock them. Avoid high maintenance grasses, such as turf used for golf greens.
- Water only when the lawn needs it. Most lawns only need sprinkling once a week to a depth of 2.5 centimetres.
- Water during the coolest part of the day. Early morning is best because it reduces the amount of water lost to evaporation.
- Consider watering only a portion of your lawn, such as the part that is seen most. Let the rest go dormant – it will revive quickly after a good rainfall or when the weather becomes cooler.
- Reduce the amount of fertilizer added in summer.
- Sharpen mower blades frequently.
- Use a mulching mower and leave grass clippings on the lawn during the summer.

**T**he idea of waterwise gardening is that plants can survive without additional water once established. However, when you choose to irrigate (such as during drought conditions), there are ways to use water efficiently:

- Sprinklers should not mist. Larger drops are less likely to evaporate or get blown away and more likely to reach their intended destination.
- Irrigation systems can make watering easier, but they can also waste water if not installed, maintained and operated properly. Your system should be designed and installed by a certified irrigation system designer. Consider requiring a “Class A” contractor, as certified by the Irrigation Industry Association of B.C.
- Keep water pressure at an appropriate level and keep your irrigation system well maintained and scheduled properly. All automatic irrigation systems should have a properly installed rain sensor so they don't operate when sufficient rain has fallen.
- Soaker hoses are an inexpensive and effective way to water gardens, shrub borders and trees. These devices allow small amounts of water to seep into the soil, avoiding runoff and making it easy for water to penetrate deep into the soil, so the plant can store it for future use. Soaker hoses are not generally an efficient way to water lawns.
- Minimize water use by being familiar enough with the garden to know which areas need water, how much and how often. Water only when it's necessary.
- Gardens, trees and shrubs need to be watered during warm, dry weather. For this reason they are exempt from lawn sprinkling regulations.

## APPROPRIATE LAWN AND GARDEN MAINTENANCE

**W**hen it comes to taking care of your lawn and garden, a bit of planning and care can save a lot of water.

- Reapply mulch as needed so it can keep doing its job.
- If you have an irrigation system, make sure it is properly designed, installed, scheduled and maintained.
- Pull weeds regularly so plants don't have to compete for available moisture.
- Protect our waterways by eliminating unnecessary pesticide usage (the term pesticides includes herbicides, fungicides and insecticides).
- Choosing the right plant for an areas particular growing conditions will help prevent pest and disease problems.
- Learn about beneficial insects already at work in your garden.
- As a last resort, check your municipal by-laws for reduce risk products that may be used sparingly on areas of concern, rather than blanketing an entire area.



*Winter-blooming camellia* UBC Botanical Garden

## LOCAL WATERWISE GARDEN RESOURCES

### LOCAL GARDENS

Botanical gardens are great places to learn about new plants. Local gardens display many varieties of drought-resistant plants.

#### **UBC Botanical Garden**

6804 Southwest Marine Drive, Vancouver

#### **VanDusen Botanical Garden**

5251 Oak Street, Vancouver

### COMPOST DEMONSTRATION GARDENS

There are 10 compost demonstration gardens located in various municipalities throughout the Lower Mainland. The following seven gardens explicitly demonstrate waterwise gardening.

#### **Burnaby Compost Demonstration Garden**

4856 Still Creek Ave, Burnaby

#### **McKittrick Earthwise Garden**

80th Avenue and 111th Street in North Delta

#### **Port Haney Compost Education Garden**

11739 - 223rd Street Maple Ridge

#### **Langley Compost Demonstration Garden**

49th Ave. at 221 Street, Langley Township

#### **Park and Tilford Gardens**

440 - 333 Brooksbank Avenue, North Vancouver

#### **Richmond Waterwise Demonstration Garden**

2631 Westminster Highway in the  
Terra Nova Rural Park, Richmond

#### **Vancouver Compost Demonstration Garden**

2150 Maple Street, Vancouver

For information about composting or local compost demonstration gardens, call the Compost Hotline at 604-736-2250.

## GARDEN CENTRES AND NURSERIES

Visit your neighbourhood garden centre or nursery to consult with staff. Ask to see the drought-resistant varieties of plants they have in stock.

## COURSES

Many colleges and continuing education programs offer gardening courses on weekends or weeknights. Contact your local school board or post-secondary institution for course descriptions. Many courses are offered by:

Capilano College Landscape/  
Horticulture Program  
604-984-4960

Kwantlen University College  
Horticulture Program  
604-599-3254

UBC Botanical Garden  
604-822-3928

VanDusen Botanical Garden  
604-257-8666

## ORGANIZATIONS AND GARDEN CLUBS

BC Council of Garden Clubs  
604-530-2035

BC Landscape and Nursery  
Association (BCLNA)  
604-574-7772

Vancouver Natural History Society  
604-737-3074

Naturescape British Columbia  
[www.hctf.ca/nature.htm](http://www.hctf.ca/nature.htm)  
1-800-387-9853, Ext. 5

Native Plant Society of British Columbia  
604-255-5719

## PUBLICATIONS

Want to learn more about waterwise gardening? Check your local library or book store for these resources:

### LOCAL

Bennett, Jennifer  
*Dry Land Gardening*

Kruckeberg, Arthur R.  
*Gardening with Native Plants of the Pacific Northwest*

Pettinger, April  
*Native Plants for the Coastal Garden*

Pojar, Jim and MacKinnon, Andy  
*Plants of Coastal British Columbia*

Tarrant, David  
*David Tarrant's Pacific Gardening Guide*

Stechert Black, Kathryn  
*Sunset Western Garden Book*

Stevens, Elaine et al.  
*Twelve-Month Gardener: A West Coast Guide*

Whysall, Steve  
*100 Best Plants for the Coastal Garden*

### GENERAL

Chatto, Beth.  
*The Dry Garden*

Ellefson, Stephens, Welsh, Maxwell.  
*Xeriscape Gardening*

Taylor, Jane  
*Plants for a Dry Garden*

*Waterwise Gardening: Beautiful Gardens with Less Water*  
The editors of Sunset books and Sunset magazine

*Wildflower*  
Box 335, Postal Station F  
Toronto, Ontario, M4Y 2L7  
[www.wildflowermag.com](http://www.wildflowermag.com)

## OTHER GVRD ENVIRONMENTAL SERVICES

### HOME PAGES: CHOICES FOR WISER LIVING

Turn to the *'Home Pages: Choices for wiser living'* in the front section of your White telephone directory for simple ideas that will reward you and the environment. Some will save you time. Many will save you money.

### COMPOSTING – THE NATURAL WAY TO RECYCLE

Did you know that organic waste (food and garden trimmings) makes up 32 per cent of the garbage that goes to our landfill? To find out how you can backyard compost or worm compost, call the Compost Hotline at 604-736-2250.

### AIR QUALITY

The 24-hour regional air quality complaint line is 604-436-6777.

### ATTENTION CLASSROOM AND COMMUNITY EDUCATORS

The GVRD develops resources and delivers workshops on regionally-relevant environmental topics filled with engaging activities for K-12 audiences. To learn more, contact the GVRD Information Centre or visit: [www.gvrd.bc.ca/education](http://www.gvrd.bc.ca/education).



*Baby hummingbirds* John Dyson

### THANKS TO

Doug Justice,  
UBC Botanical Gardens

Dawn Hanna,  
BC Invasive Plant Council

Allan O'Connor,  
Creative Garden Services

BC Landscape and Nursery Association

Capital Regional District – Water

Swan Lake Christmas Hill  
Nature Sanctuary

The Corporation of Delta

The City of Vancouver

City Farmer

GardenWorks

Art Knapp Plantland