

SECOND EDITION

THE GARRY OAK GARDENER'S

# Handbook

NURTURING NATIVE PLANT HABITAT IN GARRY OAK COMMUNITIES



**WINNER**  
• National Citation Award •  
**Canadian Society of  
Landscape  
Architects**

**Garryoak**  
ecosystems recovery team



## ACKNOWLEDGEMENTS

The first edition of *The Garry Oak Gardener's Handbook* was developed by the Garry Oak Ecosystems Recovery Team Society (GOERT) with financial support from Parks Canada, the Garry Oak Meadow Preservation Society (GOMPS) and the Habitat Stewardship Program of the Government of Canada; and with administrative support from the Nature Conservancy of Canada.

For financial support in re-printing the second edition in 2011, GOERT thanks Parks Canada and the Capital Regional District.

In addition to the project team, many people were involved in developing and reviewing this publication. We appreciate the suggestions and ideas contributed by those who attended our workshop in June 2006, and we are grateful for the expertise of our advisors and reviewers including: Louise Blight, Pat Boyle, Todd Carnahan, Brenda Costanzo, Nathalie Dechaine, Elizabeth Elle, Tim Ennis, John Farquharson, Jean Forrest, Hal Gibbard, Lynda Grant, Rob Hagel, Jenny Heron, Pat Johnston, Nicole Kroeker, Angela Loughheed, Willie MacGillivray, Michael Meagher, Moralea Milne, James Miskelly, Sylvia Pincott, Dave Polster, Brian Reader, Betsy Rose, Pam Sinclair, Shyanne Smith, Morgan Wilde, Kersti Vaino and the Native Plant Propagation Steering Committee of GOERT.

We are grateful to the many photographers who generously donated their pictures.

The Garry Oak Ecosystems Recovery Team is a non-profit organization dedicated to the recovery of Garry oak and associated ecosystems in Canada and the species at risk that inhabit them. The team was formed in 1999 as a comprehensive partnership of experts from all levels of government, non-governmental organizations, academic institutions, First Nations, volunteers and consultants, and was incorporated in B.C. as a non-profit society in 2007. In 2009, GOERT became a Registered Charity in Canada: Charitable Number 84300 7816 RR0001.

GOERT's Recovery Implementation Groups (RIGs) are working to complete the science-based information necessary for ecosystem and species recovery, minimize ongoing site and species losses, and motivate public and private protection and stewardship activities.

Parks Canada is one of the federal agencies responsible for the federal *Species at Risk Act*, including many species at risk found in Garry oak ecosystems. With recent acquisitions in the Gulf Islands National Park Reserve, Parks Canada is responsible for the management of significant Garry oak habitats.







**Project Team:**

Judith Cullington, Katherine Dunster, Louise Goulet,  
Chris Junck, Gaileen Irwin, Carolyn Masson

**Garden Designs, Illustrations and Writing:**

Katherine Dunster

**Workshop, Interviews & Research:**

Judith Cullington & Associates with  
Peter Abrams Consulting

**Cover Art and Botanical Illustrations:**

Joanne Thomson [www.joannethomson.com](http://www.joannethomson.com)

**Design & Layout:**

Dennis and Struthers Visual Communications Inc.

**Second Edition Editor:**

Carolyn Masson

**Photography:**

Please see photo credits next to images.

*This publication is available as a free download from  
the GOERT website at [www.goert.ca/gardeners](http://www.goert.ca/gardeners).*

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First Edition ©2007

Second Edition ©2009

Second Edition, second printing ©2011

ISBN 978-0-9732181-3-8

In 2008 *The Garry Oak Gardener's Handbook*  
(first edition) won a National Citation Award from  
the Canadian Society of Landscape Architects in the  
Communications category.



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## INTRODUCTION

In recent decades, native plants have attracted the attention of coastal gardeners, and native plant gardening has become a popular activity that captures the imaginations of new and experienced gardeners alike. And no wonder! A glance through any field guide to the flora of coastal BC offers up a lush selection of colourful plants with exquisite textures and shapes – all locally adapted to our fickle climate and generally acidic soils. What more could a gardener ask for in these days of climate uncertainty than a charming plant that is completely at home in this environment?

Only a small percentage of Canadians are fortunate to live within the geographical range of Garry oak trees. This makes native plant gardening even more thrilling because an exceptional list of native plants, including many species found nowhere else in Canada, are associated with Garry oaks. By becoming a Garry oak gardener you will help the Garry Oak Ecosystems Recovery Team in its important work to protect, enhance, and restore Garry oak ecosystems and their many species at risk.

You don't have to be an experienced green thumb to become a Garry oak gardener, nor do you need a large property. And you don't need to remove all your favourite plants – if you can't do without lilacs or snowdrops, then by all means keep them. Even replacing a small patch of lawn with a few native shrubs or perennials can provide sources of food for birds and butterflies as well as colour for your yard, and will help in the conservation of nearby endangered Garry oak ecosystems.

Our intent is to help people living in Garry oak areas learn how to select and grow native plants for their gardens. To do this, we focus on the soft landscape – the types of plants that can be used to create or enhance specific types of habitat, and the planting areas themselves. Apart from a little work preparing the planting beds and adding new plants, your yard doesn't need to undergo major changes to be transformed into a Garry oak garden.

Gardens can include a number of structures – from paths and steps to walls, patios, sheds, pools and other elements. These structures form what is known as the hard landscape and will not be covered in the handbook. If you are planning a major garden makeover that includes changes to garden structures, we recommend you seek advice from a qualified professional.

This handbook contains information on establishing, enhancing and caring for Garry oak habitat. It is written for:

- Residents of communities where Garry oak ecosystems are found
- Volunteers or professionals helping a landowner or land manager
- Members of a community group or school group who want to carry out a project in a park, schoolyard or on other public land

To give you an idea of what a Garry oak garden can be, we have created several different designs, ranging from containers to meadows, that you can use as templates to adapt to your own garden setting. You will find more information on our website at [www.goert.ca](http://www.goert.ca). Please keep in touch and let us know how your garden is doing!



If you enjoy *The Garry Oak Gardener's Handbook*, please make a charitable donation to the Garry Oak Ecosystems Recovery Team Society (GOERT). We use donated funds to implement our Recovery Strategy to protect and restore endangered Garry oak ecosystems in our region, the only place in Canada where these unique and fragile landscapes occur. Contributions from people like you will allow us to distribute *The Garry Oak Gardener's Handbook* more widely, and to do more research, species at risk inventories, establishment of conservation covenants, public outreach, and more. Please use the enclosed donation card to make your contribution today, or donate online at [www.goert.ca/donate](http://www.goert.ca/donate). For more information call: (250) 383-3427 or email: [info@goert.ca](mailto:info@goert.ca)  
**Thank you for your generous support!**









## WHAT ARE GARRY OAK AND ASSOCIATED ECOSYSTEMS?

Garry oak ecosystems are places where Garry oak trees grow naturally. They include woodlands with Garry oak, arbutus and Douglas-fir trees. Some Garry oak ecosystems – such as rock outcrops, natural wildflower and grassy meadows, coastal bluffs, or seasonal pools – may have few or no Garry oak trees, but provide similar habitats for plants and animals. These are called ‘associated ecosystems’. While Garry oak ecosystems are more than just trees, every single tree counts! Ecosystems encompass interactions between all of the plants, birds, insects and other animals that live there, along with their habitats.

### A NATIONAL TREASURE

Garry oak ecosystems are a unique national treasure. Thousands of plant and animal species inhabit Garry oak ecosystems. They are the richest land-based ecosystems in coastal British Columbia, they are a defining landscape characteristic of this region and they are an integral part of the culture of this area. First Nations have harvested foods and medicines from Garry oak ecosystems for hundreds of years, and in some areas Garry oak meadows were tended and deliberately burned to enhance the production of camas, an important food source.

### GARRY OAK DISTRIBUTION

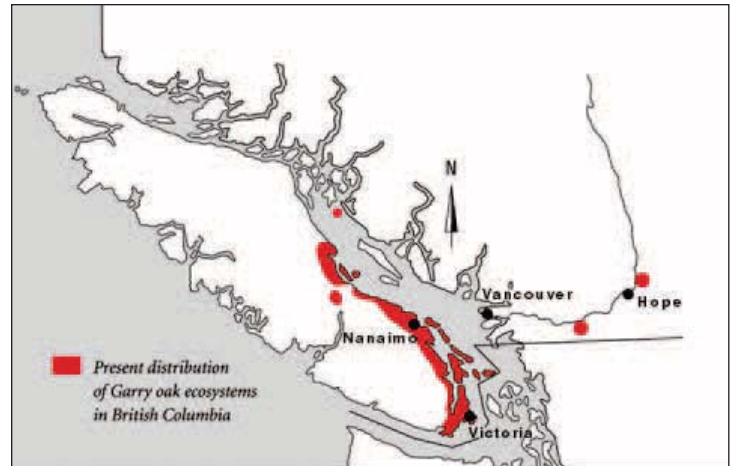
In Canada, Garry oak ecosystems are found on southeast Vancouver Island, the Gulf Islands, and in two locations in the Fraser Valley. They are also found in Washington, Oregon and California (where the trees are often known as Oregon white oaks). They exist nowhere else in the world.

### RARE AND ENDANGERED

Today, less than 5% of the Garry oak ecosystems in Canada remain in a near-natural state. Much has been lost to land clearing for farms, houses, roads, and other development, while in some areas invasive species such as Scotch broom and orchard grass have replaced the native plants that once provided habitat and food sources for a variety of local wildlife.

The loss of Garry oak ecosystems has put many species of plants and animals in jeopardy. More

< Garry oak meadow, with native camas lilies in the foreground, threatened by the spread of invasive Scotch broom (yellow) in the background. PHOTO: CARRINA MASLOVAT



GARRY OAK DISTRIBUTION MAP COURTESY OF PROVINCE OF BRITISH COLUMBIA.

than one-fifth of the rarest plants in British Columbia are found in Garry oak ecosystems. The federal and provincial governments have identified more than 100 species at risk in Garry oak areas, and several species have already been lost. Unless action is taken, more of these species and their habitat may disappear.

### SPECIES AT RISK – KNOW BEFORE YOU MOW

You may have rare plants or animals on your property that could be harmed by your landscaping activities. These species are often very difficult to identify. GOERT can put you in contact with experts who can help you identify these species. The B.C. Conservation Data Centre provides information on species at risk in British Columbia ([www.env.gov.bc.ca/cdc](http://www.env.gov.bc.ca/cdc)). GOERT's species at risk field manual (available from [www.goert.ca](http://www.goert.ca)) includes additional information on some species.



Western bluebirds are species at risk in Garry oak ecosystems.

PHOTO: WILLIAM F WALKER  
WFALKERPHOTO.COM







## BENEFITS TO BECOMING A GARRY OAK GARDENER

In our region, native vegetation has evolved over thousands of years to thrive with the local climate, soil types, mammals, birds and insects. By appreciating this long evolutionary process we can garden wisely and create beautiful places that celebrate our local biodiversity and natural heritage. Designing with nature is a highly rewarding experience that has many valuable benefits.

### SAVE WATER

Once established, most native plants rarely need watering beyond normal rainfall. Save on your water bills and conserve precious water resources by replacing water-hungry lawns and ornamental gardens with water-thrifty native plants.

### LOWER MAINTENANCE

Low maintenance landscaping techniques are a natural fit with native plants because they are already adapted to the local environment. Besides using less water, you can reduce maintenance costs and the regular chore of mowing lawns. Native trees and shrubs require minimal pruning, and if you replace short-lived annuals with native perennials, gardening can take up less of your time.

### WILDLIFE VIEWING

Native plants, birds, butterflies, beneficial insects, and other wildlife species have evolved together, and sometimes can't live without each other. Native plants in the garden can attract a diversity of wildlife species that will provide fascinating viewing opportunities in every season. Enjoy the beauty of your garden's attractive wildflowers, mosses, butterflies, and birds.

### HEALTHY ENVIRONMENT

Native plants have developed their own defences against many pests and diseases. Since most pesticides kill indiscriminately, beneficial insects become secondary targets in the fight against pests. A native plant garden uses no fertilizer and needs no pesticides. Eliminating pesticides lets natural pest control take over and keeps toxic garden chemicals away from creeks, watersheds, wildlife and the food chain that humans are connected to.

< Sea blush, a native plant in Garry oak ecosystems. PHOTO: CHRIS JUNCK



Spotted towhee on a Garry oak branch. PHOTO: TODD CARNAHAN

### HEALTHY LIVING

Studies have shown that gardening and plant appreciation are helpful in reducing stress, lowering blood pressure and improving one's outlook on life. Gardening and working in your yard are excellent ways to stay fit and improve your health while becoming more connected to the natural world and your home place. Many native berries, nuts and greens are edible for both humans and wildlife. Natural areas also help to clean the air and water, and reduce the risk of flooding. The more you can do in your own yard, the more healthy life will be everywhere.



Pat Boyle with a Garry oak sapling in her seaside native plant garden.

PHOTO: CAROLYN MASSON



**STAYING CONNECTED**

As land development replaces and alters Garry oak ecosystems, backyard habitat and native plant gardens can provide important linkages to natural habitat in nearby parks and protected areas. No garden is too small to be part of our collective efforts to protect ecosystems and the planet. Garry oak woodlands, meadows and other associated ecosystems form a landscape tapestry in one of British Columbia's most beautiful regions. Your individual efforts can have far-reaching positive results. As others in your community and surrounding neighbourhoods protect and restore these areas, a patchwork quilt of connected Garry oak habitats is created. Many plants and animals, including

species at risk, need these connected habitats to survive and thrive.

**IMPROVING COMMUNITIES**

When many people in an area choose to protect and restore Garry oak habitat, the benefits are even greater. You can help to conserve Canada's natural heritage and create a healthy environment for your children and grandchildren by helping to bring back diversity of life to your neighbourhood. Communities and neighbourhoods with plenty of green space are known to have lower turnover, creating a greater sense of community. And, when the time comes to sell, these properties usually sell very quickly and at higher prices.



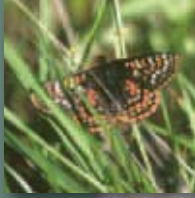
PHOTO: TODD CARNAHAN

# SIX STEPS TO A GARRY OAK GARDEN

Creating or restoring Garry oak habitat may initially take some work – a little research, some planning and getting your hands in the ground.

It is possible to transform your yard into a wonderful natural oasis for you and your family.

On the following pages we describe how to go about it in six steps.



**STEP ONE**  
DETERMINE THE SCOPE OF YOUR PROJECT



**STEP TWO**  
LOOK BEFORE YOU LEAF



**STEP THREE**  
MAKE A LANDSCAPE PLAN



**STEP FOUR**  
SKETCHING THE DESIGN DETAILS



**STEP FIVE**  
PLANTING YOUR GARDEN



**STEP SIX**  
CARING FOR YOUR GARDEN OR HABITAT

PHOTOS: TAYLOR'S CHECKERSPOT BUTTERFLY - TRUDY CHATWIN •  
SATINFLOWER - KATHRYN MARTELL • DEER - HAL GIBBARD •  
OAK LEAVES AND ACORN - JUDITH CULLINGTON •  
FLOWER PHOTOGRAPHER - CHRIS JUNCK •  
SHARP-TAILED SNAKE - KRISTIINA OVASKA





STEP ONE

**DETERMINE THE SCOPE OF YOUR PROJECT**

Depending on the existing features in your yard, there are three basic approaches you might consider.

**NATIVE PLANT GARDEN**

Creating a native plant garden is a great way to become a Garry oak gardener. We suggest starting with a small area and then expanding or adding new areas as years go by. If you are starting from scratch with bare ground or a traditional lawn and flower bed, you have many native plant garden design options to choose from. You may want to take a portion of your yard and plant Garry oak and arbutus trees, and replace non-native understorey plants with native species. If your garden is too small for trees, you might be interested in replacing small areas of lawn with a Garry oak meadow, thicket, hedgerow, or rockery. No garden is too small for native plants. We even have a design for a container garden that could sit on an apartment balcony or your front porch.



PHOTO: TODD CARNAHAN

**HABITAT ENHANCEMENT**

Your garden may already include a Garry oak tree or a small patch of Garry oak habitat. This is great news! To begin with you will want to focus your gardening efforts on habitat enhancement and work with what you already have. This may involve removing invasive plants, removing non-



PHOTO: ©BRENDA COSTANZO

native plants and re-establishing wildflowers in the understorey. After you have enhanced existing habitat you may want to expand your efforts and transform more areas into native plant gardens that complement the habitat patch.

**ECOSYSTEM RESTORATION**

If you are fortunate to have a larger property with remnant Garry oak ecosystems, you may choose to embark on a full-scale ecosystem restoration project. This may involve removing invasive plants, removing large trees that may be shading out the Garry oaks, and re-establishing the understorey vegetation. It could be a large project, depending on the size of your property, the degree to which the existing habitat is still intact and the conditions you want to re-create. The restoration decisions you make must also take into account whether you have any species at risk on your property. For more information about species at risk and who to contact for specific advice, contact GOERT at (250) 383-3427 or [info@goert.ca](mailto:info@goert.ca). While ecosystem restoration is beyond the scope of this gardening handbook, GOERT has many resources to help you with a restoration project, including several publications. We can help connect you with scientists and restoration specialists that have extensive experience with restoring Garry oak ecosystems. Visit the GOERT website 'gardening and restoration' section for a quick guide to Garry oak ecosystem restoration.



PHOTO: CHRIS JUNCK



STEP TWO

**LOOK BEFORE YOU LEAF**

A little rainy day planning can save you a lot of time, money and energy in the long run. If you have never gardened before, we suggest a trip to your local library or bookstore to find the books recommended on page 11. We also recommend that you contact your local native plant gardening club because chances are you'll connect with other gardeners that can help you with advice, plants and seeds.

Imagine what your Garry oak garden or enhanced habitat patch might look like. As you create your vision, write down a few goals you want to achieve, such as:

- Keeping part of the lawn for children
- Protecting Garry oak trees or a remnant habitat patch
- Increasing shade or sunny areas
- Converting parts of lawn to a wildflower meadow

- Attracting birds and butterflies
- Growing edible plants – vegetables, fruits and nuts
- Re-creating Garry oak habitats that were once present on your property
- Increasing diversity of native plants
- Conserving habitat to pass on to the next generation

**IDENTIFY THE SITE CHARACTERISTICS OF YOUR PROPERTY**

Your choice of plants will depend on the type of property you have and what you want to achieve. Most native plant gardeners prefer to work with the existing environmental conditions in their garden to save money and take advantage of the outstanding plants that are adapted to so-called 'difficult' conditions such as poor dry, wet or stony soils.

You may think you need to modify your garden environment to create ideal growing conditions



Emily Gonzales takes a close look at a Garry oak meadow. PHOTO: REBECCA BEST



for the widest possible choice of plants. Remember, however, that it will take energy and usually a lot of summer watering to maintain these ideal conditions. By working with native plants you have the chance to create a fine garden that is in tune with its original environment.

**WHAT SORT OF GARDEN CONDITIONS DO YOU HAVE?**

- How much sun does your garden get? There is a vast difference between the dappled shadows cast by trees and heavy shade cast by a building.
- Is it only sunny in the morning or afternoon, or is it sunny from dawn to dusk?
- How wet or dry is each area of your garden in different seasons?
- Is your garden exposed to wind?
- What types of plants do you have now?

Do you want year-round shrubs, or colourful wildflowers that are only seen at certain times of year? Where do you want tall plants; where should there be groundcover? To answer these questions move through the rest of Step 2 and then go on to Step 3.

**GATHER INFORMATION**

Information and ideas for your garden project can come from many sources, including books, other gardeners, and native plant gardens. Here are some suggestions to help you get started.



Camas at Christmas Hill (Swan Lake Christmas Hill Nature Sanctuary). PHOTO: CAROLYN MASSON

**VISIT & VIEW**

- Look at natural Garry oak habitats for ideas and inspiration. While there is always something interesting to look at in Garry oak ecosystems, peak flowering occurs between March and May. Fortunately there are many parks and natural areas that you can visit to see what Mother Nature has planted in her garden.
- Native plants may already be growing wild on your (or your neighbour's) property or in nearby parks. Look at how the different plant species are grouped and spaced. Notice where they are growing (wet, dry, sun, shade). Identify the plants you like and that you think would do well in your garden.
- There are demonstration gardens and public gardens that you can visit to get ideas. If you can, talk to the person who was involved in the garden development or to the garden manager.
- Visit a botanical garden to check plant names and examine plant species that may have potential in your garden.



**In the Appendix and at [www.goert.ca](http://www.goert.ca) you will find information about parks and demonstration gardens you can visit to see natural Garry oak habitats and native plant gardens, as well as a list of native plant nurseries.**

**TALK**

Talk to people who can help. Visit nurseries that specialize in native plant species. Ask lots of questions, such as:

- What native plants do you have in stock?
- How big does this plant grow?
- What growing conditions does it prefer – sun or shade, wet or dry soil, loam or clay?
- Is it easy to grow? What maintenance is needed?
- What time of year does it flower?
- Was it collected in the wild or propagated in a nursery? We do not encourage collecting plants from the wild.
- Is this plant known to be deer-resistant?



**LOCATE NATIVE PLANT GARDENERS AND EXPERTS WHO CAN HELP YOU:**

- Join groups such as the *Native Plant Study Group* in Victoria, your local natural history group or the *Native Plant Society of BC*.
- Take a native plant gardening workshop.
- Volunteer in a native plant garden or restoration project and learn alongside local experts. See [www.goert.ca](http://www.goert.ca) for a list of restoration projects in your area.

**READ**

There are many books about identifying native plants, native plant gardening, garden design, and landscaping for wildlife. Try your local library or bookstore for the following books and field guides to native plants and gardening in the Pacific Northwest.

- *Native Plants in the Coastal Garden: A Guide for Gardeners in British Columbia and the Pacific Northwest*, by April Pettinger with Brenda Costanzo (North Vancouver: Whitecap Books, 2002). This is an excellent guide for gardeners that includes information on the selection and propagation of native plants, garden design and gardening for wildlife.
- *Gardening with Native Plants of the Pacific Northwest*, by Art Kruckeberg (Seattle: University of Washington Press, revised 2nd edition, 1997).
- *Garry Oak (Quercus garryana) Plant Communities in British Columbia: A Guide to Identification*, by Wayne Erickson and Del Meidinger (B.C. Ministry of Forests and Range, Research Branch, 2007). A technical guide to Garry oak plant communities, including woodlands, savannah, meadow, and rock outcrops. Search for it at [www.gov.bc.ca](http://www.gov.bc.ca).
- *Landscaping for Wildlife in the Pacific Northwest*, by Russell Link (Seattle: University of Washington Press, 1999).
- *Propagation of Pacific Northwest Native Plants*, by Robin Rose, Caryn E.C. Chachulski & Diane L. Haase (Eugene: Oregon State University Press, 1998).

This manual describes propagation techniques for many plants found in Garry oak ecosystems.

- *The Wildflower Gardener's Guide: Pacific Northwest, Rocky Mountain, and Western Canada Edition*, by Henry Art (Pownal, Vermont: Garden Way Publications, 1990)
- *Plants of the Pacific Northwest Coast: Washington, Oregon, British Columbia and Alaska*, by Jim Pojar & Andy McKinnon (Edmonton: Lone Pine, 2004). This is an excellent field guide that will help you to identify many of the plants in Garry oak and associated ecosystems.
- *The Ann Lovejoy Handbook of Northwest Gardening: Natural – Sustainable – Organic*, by Ann Lovejoy (Seattle: Sasquatch Books, 2003). Describes how to use organic gardening techniques to create beautiful and sustainable gardens that thrive without chemical fertilizers and pesticides, and are friendly to people, pets and wildlife.
- *Trees, Shrubs and Flowers to Know in Washington and British Columbia*, by C.P. Lyons and Bill Merilees (Lone Pine, 1995).

**BROWSE**

Several recommended internet sources contain useful information on native plant gardening, habitat creation and gardening for wildlife in British Columbia.

- **The Native Plant Society of BC** website is a good place to connect with other native plant gardeners, learn about the ethics of native plant gardening, find sources for plants, resources, and events at [www.npsbc.org](http://www.npsbc.org).
- **The Native Plant Study Group** is affiliated with the Victoria Horticultural Society and is actively dedicated to studying the native



Learn how to grow more than 75 native plants with GOERT's Native Plant Propagation Guidelines found at: [www.goert.ca/propagation](http://www.goert.ca/propagation)

**CONTACT GOERT:**

Email: [info@goert.ca](mailto:info@goert.ca)  
 Phone: (250) 383-3427  
 Website: [www.goert.ca](http://www.goert.ca)



plants of BC and promoting their use and conservation: [www.npsg.ca](http://www.npsg.ca).

- Naturescaping is landscaping in a way that mimics complex natural habitats, with native plants that are useful to humans and wildlife. The **Naturescape** website has many materials that can help you follow this approach to gardening: [www.hctf.ca/nature.htm](http://www.hctf.ca/nature.htm).
- The **Evergreen Foundation** works with schools and community groups to bring nature and culture together in cities: [www.evergreen.ca](http://www.evergreen.ca).

#### OPTIONAL RESEARCH

If you are interested in history, or are creating a garden as part of a school or community mapping project, this is a great opportunity to do some research and become more familiar with your neighbourhood's natural and cultural history. Everything you learn about your property can help you to create your native plant garden or manage existing habitat.

If you can, find out about:

- The different types of ecosystems that would have been on your site such as meadows, rock outcrops, seasonal pools, or woodlands
- Native flora and fauna
- Physical processes that have influenced your site such as fire, floods, landslides and earthquakes
- Soil types – does your property have deep moist soils or shallow dry soils?
- Site hydrology – how water moves over the land and through the ground
- Previous land uses: from traditional First Nations uses, to logging and pioneer farms, to the present day
- Previous landowners – a visit to your local museum and archives may turn up oral histories, photographs or written documentation about your property

Think about how your property has changed over time and how your native plant garden might re-create previous site conditions.



**A helpful step-by-step guide to mapping your property is *Giving the Land a Voice: Mapping our Home Places* available from the Land Trust Alliance of BC at [www.landtrustalliance.bc.ca](http://www.landtrustalliance.bc.ca).**

#### KEEPING TRACK OF YOUR GARDEN'S FEATURES

Most gardeners find it helpful to photograph or make a simple sketch map of their property (see Site Map). If you are unsure of how much space you have in your garden for native plants, working to scale will help you get things on the map in the right size, shape and location. If you have a survey plan for your

property, make a copy and just add your notes. You can also measure your property and make a simple plan using graph paper to keep track of distances.

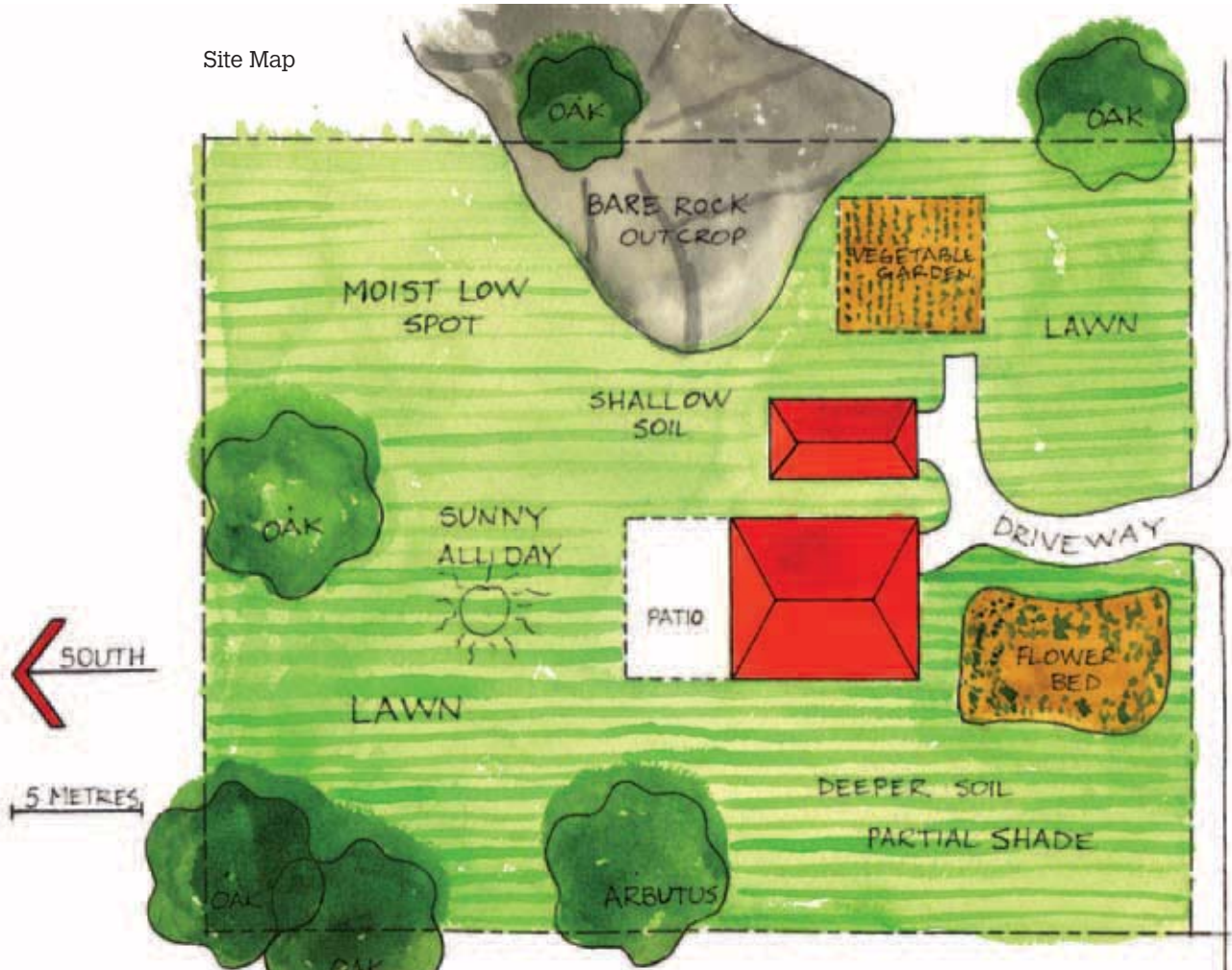
Supplies you may need:

- Pencils (2H)
- Pencil sharpener (sharp pencils draw best)
- Graph paper (1/4" grid)
- Ruler with 1/4" increments
- Notebook or writing paper
- Eraser
- Tape measure to check outside distances
- Coloured pencils (optional but very handy)

Your map could include the following information:

- Directional arrow. While the mapping convention is to show north pointing up on a plan, feel free to be unconventional and orient your plan to fit the piece of paper
- Your house and any outbuildings, driveways and paths, utilities and services such as gas, sewer, electricity, telephone, water lines and meters
- Areas of lawn, meadow, vegetable gardens, flower gardens and shrubs
- Physical features such as ponds, rock outcrops and steep slopes
- Trees (Garry oak, arbutus, Douglas-fir and other species) – note their size (height and girth), condition and crown spread
- Play areas
- Features that provide wildlife habitat, such as snags, shrubs, rock and brush piles





- Neighbouring trees, hedges or building structures that will affect the light or drainage on your property
- Nearby natural areas and parks
- Seasonally wet or dry areas, including low spots and puddles

If you have acquired your land recently, you may want to wait a full year before taking any action. This will help you to see what types of native and non-native plants are currently growing, or whether certain areas of your property are very wet, very dry, sunny or shady at certain times of the year.

Identify the features that you want to keep, for example:

- Places used by wildlife for perching, drinking, feeding, shelter, nesting and travel
- Native plants (trees, shrubs, wildflowers, grasses, mosses and lichens)

- Species at risk and their habitats
- Legally-protected cultural or historical features
- Some lawn for play areas, existing established plants, or your favourite shrubs and perennials
- The vegetable garden
- A fenced area for pets

Your assessment should help you to identify management problems that will need attention, such as large infestations of invasive plants, and poorly drained or eroding soils.



**A certified arborist can help you determine the health of your trees. GOERT keeps a list of consulting arborists familiar with Garry oak ecosystems.**

**FOR MORE INFORMATION CONTACT GOERT:**

Email: [info@goert.ca](mailto:info@goert.ca)  
 Phone: (250) 383-3427  
 Website: [www.goert.ca](http://www.goert.ca)





STEP THREE

**MAKE A LANDSCAPE PLAN**

The level of detail needed for your landscape plan depends on the scope of your project (see Landscape Plan). Keep your landscape plan up to date as you put your ideas into action. You may want to make changes as you become more experienced and knowledgeable. Your plan will serve as a long-term guide for completing other ideas in the future.

**WHAT STAYS THE SAME AND**

**WHAT DO YOU WANT TO CHANGE?**

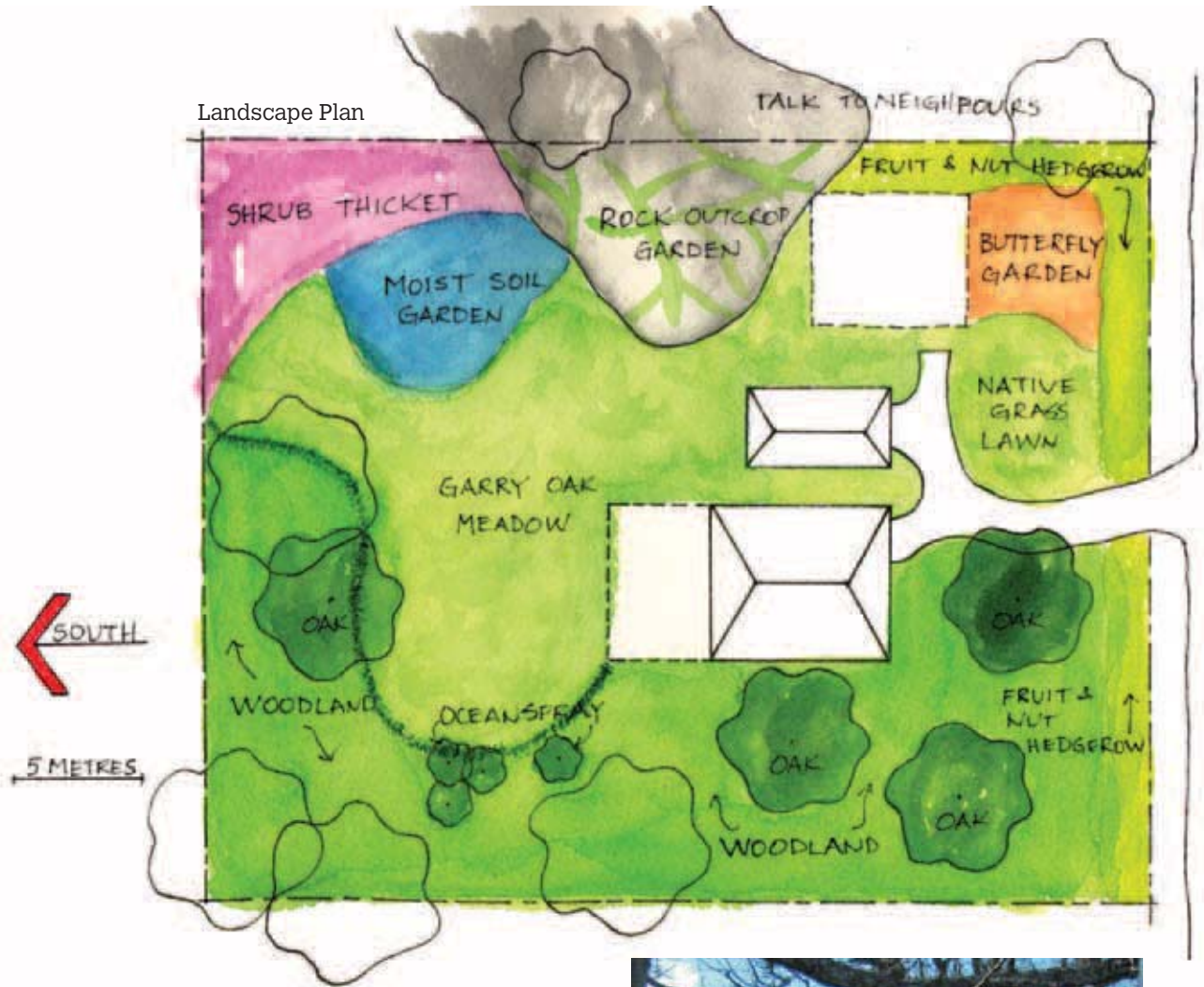
As you design your garden, look at your sketch map and notes and determine:

- What hard features such as pathways, decks, patios, playhouses and sheds should stay?

- What new plants will grow well? This will be determined by factors such as:
  - Soil type and depth
  - Light (sunny or shady)
  - Moisture (wet or dry)
  - Height and width: where do you want tall shrubs; where do you want groundcover?
- What wildlife species do you want to attract?
- What outdoor pets do you have – rabbits, cats or dogs – that might dig up your garden or chase wildlife?
- What impact might your garden have on



Garry oak habitat at Rocky Point. PHOTO: CHRIS JUNCK



neighbours? For example, will new trees drop leaves on your neighbour's property, or shade their garden? If you are converting a lawn to a meadow, let your neighbours know that taller grasses are part of the native plant design. You might consider posting a sign saying 'Garry oak habitat restoration project'.

**PHASING YOUR GARDEN PLANS: WHERE TO BEGIN?**

Unless you have unlimited time, energy, experience and budget to devote to your garden, you will need to decide which parts of the garden should first get attention. The task will be more manageable if you tackle small sections at a time; otherwise you may become overwhelmed. Phasing your work also allows you to spread the budget over a few years.



PHOTO: JUDITH CULLINGTON





STEP FOUR

## SKETCHING THE DESIGN DETAILS

There is no such thing as a typical Garry oak native plant garden. The garden designs on the following pages are ideas to get you started. All the designs incorporate these elements:

**Diversity.** Each design has a variety of different plant species and has the potential to attract butterflies and other pollinators and provide habitat for wildlife.

**Clustering.** By planting quantities of the same species together you will create naturalistic clusters, masses or drifts of flowers that will fill the gaps in your garden more quickly than a single small, slow-growing plant. Connecting with other gardeners to trade plants is a thrifty way to acquire more plants.

**Garry Oak Friendly Plant Palettes.** You will notice that some plant species appear in many of the designs, just as they do in different Garry oak ecosystems. These plants, such as common

camas, can thrive on both dry and moist sites, as well as very sunny to partially shady conditions. Their versatility makes them favourite choices. Be creative and add more species as you adapt the ideas to your own design.

**Existing Hard Landscape Elements and Plants.** The designs feature fences, paths, lawns and existing plants to give you an idea of how to create your Garry oak garden in and around these types of elements. Your garden will have its own unique features.

**Plant Placement for Visual Access.** Large plants are usually placed to the rear of the garden and low growing plants are towards the front in the designs to open up spaces and let you see and enjoy the garden to its fullest. Flowering vines add another layer or dimension to gardens. Since they grow upward to cover a vertical space, vines can be grown in a very small footprint. This is especially useful in a small garden or on a balcony but can be very dramatic in a large garden when, for example, honeysuckles are used to cover a hedgerow or fence.

**Room to Grow.** In the designs, we've left space under the shrubs for the herbaceous plants to grow into. When you thin and divide you can fill the gaps before you trade or transplant to another part of the garden.

### DECODING THE DESIGNS

Each of the garden designs includes a description of the natural habitat it represents (Garry oak meadow, rock outcrop, etc) along with some of the ideas that inspired the design. The colourful bird's-eye view drawings



Kings Road Native Plant Garden. PHOTO: PAT JOHNSTON



Satin-flower at Swan Lake nature house. PHOTO: ©BRENDA COSTANZO

starting on page 24 show code letters for each plant (A,B,C...). The plants are listed by their code letter in the accompanying plant list, along with the total number of plants needed in the design.

#### PLANT QUANTITIES

Plants grow and spread at different rates. The designs give you an idea of how much room the shrubs will take up when they are about 2/3 their mature size. The space occupied by herbaceous plants depends on their individual growth characteristics, whether you plant bulbs or seeds, how often you thin or divide, and how many you planted to begin with. A single camas or nodding onion plant can look a little lonely in its allotted space. You could plant a few more in a cluster to fill the spaces more quickly and to give the species more mass in the garden. Or, simply let the single bulbs grow and multiply over time.

#### DEGREES OF DIFFICULTY

Some Garry oak gardens such as balcony or patio containers can be designed and planted fairly quickly with a small budget. Container gardens are a great way to get started if you have never gardened with native plants before. Meadows and woodlands are more difficult and complex to design, install and manage and require time, trial-and-error experimentation and a lot of plants, including grasses, that may be difficult to obtain.



Foreground: Kinnikinnick; Center in flower: Shrubby penstemon with leaves of alumroot; Middle-right: Western trillium. PHOTO: ©BRENDA COSTANZO



## GARRY OAK MEADOWS



Garry oak meadows are the most familiar Garry oak ecosystems to many people, particularly in spring when the flowers are showing their most spectacular displays of colour. As the summer advances, the colour palette moves through purple, yellow and white accents. The summer heat dries out the grasses and their warm autumn colors of gold, orange, and bronze extend the meadow's visual interest well into winter. Meadow grasses provide low shelter for wildlife and seeds for birds.

New meadows are no substitute for protecting our few remaining natural ones. If you are fortunate to have a remnant meadow growing on your property, it may need some weeding, invasive plant removal and enhancement to bring it back to its full beauty.

## MAKING A MEADOW

**To Grow a Meadow in Your Lawn**

- Start by experimenting with a small patch. The size of the patch will depend on how many plants or seeds are available to create your meadow and how much time and energy you have for planting.

- Discontinue herbicide use on the grass.
- You can create a meadow by planting right into your lawn. See the 'book-flap' technique on page 35, or simply dig small holes in the lawn and place bulbs into them.
- Meadow plants can grow among non-native lawn grasses, but if you choose, you can gradually work to replace non-native grasses with native bunch grasses (seeds or plugs). Native grasses can be hard to find but are important components of functioning meadow ecosystems. See the Appendix for suppliers or contact the Native Plant Society of BC for information and sources. You may need advice to work out exactly what you need.
- When choosing wildflowers for your meadow, try to copy what would normally grow in your area. **Always use local seeds and plants** to reflect what naturally grows in your area. Never use imported seeds or plants grown from unreliable sources. Check carefully before buying any commercial seed mix.
- Plant bulbs and perennials in small clusters. If using the book-flap site preparation technique (see Step 5 for details), bulbs or fully developed plants will work better than seeds because they are strong enough to push their way up through the grass.



Spring bloom of camas in a Garry oak meadow. PHOTO: CHRIS JUNCK



- You can reduce the size of your lawn by replacing grass with native groundcovers and shrubs (see the Shrub Thicket design for one idea).
- Follow the planting and management suggestions described below.

### To Create a Meadow from Scratch

- Find a part of your property that gets some sunshine. If you can, choose poorer soils that will dry out during the summer drought – this will reduce the amount of weeding needed.
- Prepare the site by removing any invasive plants and shrubs that may be crowding out ground layer plants. For lawns and groundcover species, start in small sections using one of the site preparation techniques described in Step 5.
- Plant native grasses and/or non-native meadow bunch grasses.
- Plant Garry oak meadow herbaceous perennials using seed, bulbs or pot grown plants.
- If you have a lot of gaps to fill, sow yarrow seeds. Yarrow spreads quickly by seed and creeping rhizomes that quickly spread across open soil to form a highly fragrant lawn cover. The rhizomes transplant easily and it is easy to weed any unwanted plants. Use your lawnmower to cut down yarrow immediately after it flowers to prevent seed from spreading around the garden.
- Menzies' larkspur is known to inhibit the growth of nearby plants, and may be used to help create open patches in a lawn.
- Once the first few flowers are established, expand the meadow area. Under the right conditions, the wildflowers will multiply over time.
- As your meadow develops into wildlife habitat, you will notice other plants related to Garry oak ecosystems appearing as they are deposited by birds and other animals.
- Protect your meadow every spring, when it is most fragile, by keeping people and pets out of the area.



### MEADOW PLANTS

#### GRASSES

- California brome (*Bromus carinatus*)
- California oatgrass (*Danthonia californica*)
- Blue wildrye (*Elymus glaucus*)
- Roemer's fescue (*Festuca idahoensis* ssp. *roemeri*)
- Alaska oniongrass (*Melica subulata*)

#### HERBACEOUS PLANTS

##### EARLY SPRING BLOOMERS

- Common camas (*Camassia quamash*)
- Harebell (*Campanula rotundifolia*)
- Field chickweed (*Cerastium arvense*)
- Blue-eyed Mary (*Collinsia grandiflora*)
- Menzies' larkspur (*Delphinium menzeisii*)
- Broad-leaved shootingstar (*Dodecatheon hendersonii*)
- White fawn lily (*Erythronium oregonum*)
- Woodland strawberry (*Fragaria vesca*)
- Chocolate lily (*Fritillaria affinis*, also known as *F. lanceolata*)
- Small-flowered woodland star (*Lithophragma parviflorum*)
- Spring-gold (*Lomatium utriculatum*)
- Sea blush (*Plectritis congesta*)
- Western buttercup (*Ranunculus occidentalis*)
- Satin-flower (*Olsynium douglasii*)
- Meadow death-camas (*Zygadenus venenosus*)

##### MID-SPRING BLOOMERS

- Yarrow (*Achillea millefolium*)
- Hooker's onion (*Allium acuminatum*)
- Nodding onion (*Allium cernuum*)
- Red columbine (*Aquilegia formosa*)
- Harvest brodiaea (*Brodiaea coronaria*)
- Woolly sunflower (*Eriophyllum lanatum*)
- Fireweed (*Epilobium angustifolium*)
- Small-flowered alumroot (*Heuchera micrantha*)
- Tiger lily (*Lilium columbianum*)
- Two-coloured lupine (*Lupinus bicolor*)
- Fool's onion (*Triteleia hyacinthina*)

##### SUMMER AND LATER BLOOMERS

- Yarrow (*Achillea millefolium*)
- Pearly everlasting (*Anaphalis margaritacea*)
- Woodland strawberry (*Fragaria vesca*)
- Canada goldenrod (*Solidago canadensis*)



**PLANTING TIPS**

- Scattering wildflower seed over a large lawn or grassy area will not be successful. You will need to create gaps to give the flowers a chance to grow. See Step 5 for site preparation techniques.
- The best times to plant are fall and early spring.
- During planting, make sure you are following the proper propagation methods for each species. Here are a few guidelines to follow for planting a meadow:
  - Plant one dominant bunch grass per square metre (10sq ft).



Broad-leaved shootingstar. PHOTO: TODD CARNAHAN

- For every square metre (10sq ft) plant four to eight herbaceous perennials in random clumps between the grasses. Include spring and summer flowering plants to maintain colour and interest across the seasons.
- Cluster several plants of the same species together to create patches. Space patches at least 30cm (12") apart into openings in the turf. Plant in autumn or early spring to allow the roots to become established before the competition from other plants builds up in the spring. To help reduce this, mulch around your new plantings.
- Try not to space plants too evenly or widely as their impact will be lost.
- Plant one species at a time and mark the locations to avoid placing two plants almost in the same spot.
- Add a handful of compost or topsoil to each planting hole only if the area is too sandy or full of clay, remembering that topsoil may have weed seeds that will germinate and need to be removed.

**MEADOW MANAGEMENT TIPS**

- Dividing your meadow into a few management units encourages ecological diversity and landscape interest. Burn or mow one management unit, such as the meadow edges, in rotation each year. Leave a different side uncut each year.
- The undisturbed plots will help preserve over-wintering butterfly chrysalises and provide cover and nesting habitat for birds. Each unit will respond differently to the management cycle. This creates changing patterns of wildflowers and prairie grasses within the same planting.
- Weed out any undesirable grasses and plants that appear in your meadow. Keep a diligent lookout for invasive plants such as thistles, burdock and vigorous grasses and remove them before they become a problem. Planting bare soil as soon as possible and keeping soil fertility low will help discourage invasive plants.





Mowing to control shrubs and grasses at Somenos Garry Oak Protected Area. PHOTO: IRVIN BANMAN

- Fires have been an important part of the growth cycle of Garry oak meadows, and meadow plants are adapted to the conditions produced by fire. Burning a meadow in late winter requires a lot of planning and technical expertise. Many regional districts and municipalities have burning bylaws and may require a permit. Before you attempt a burn, consult with your local government and fire department for advice and approval.
- Mowing or cutting is an effective substitute when fire is not an option. Mowing also helps control trees and shrubs from invading your meadow. Cut your meadow at the end of summer or fall, after the plants have flowered and dropped their seed. Mowing prevents woody plants from invading the meadow, and opens the ground layer so that

sunshine can reach low-growing plants. Set your mower at about 15cm (6”) or use a hand scythe or a weed eater. You may want to finely shred the cut material to help it break down.

- As your meadow becomes established, the perennial plants will need to be divided every three or four years to retain their vigour. This is the perfect time to consider expanding your meadow or using the divided plants elsewhere in your garden.



Learn how to grow more than 75 native plants with GOERT's Native Plant Propagation Guidelines found at: [www.goert.ca/propagation](http://www.goert.ca/propagation)

**CONTACT GOERT:**

Email: [info@goert.ca](mailto:info@goert.ca)  
 Phone: (250) 383-3427  
 Website: [www.goert.ca](http://www.goert.ca)





Chocolate lily

## WOODLANDS

Oak woodlands are a tapestry of meadow plants and scattered shrubs growing beneath a semi-open canopy of Garry oak trees, along with the occasional arbutus or Douglas-fir. Woodland soils are typically deeper, richer and moister than in open meadows and are enriched with organic matter and other nutrients from decomposing oak leaves. Woodland plantings mimic nature and are defined by a colourful flush of early spring bulbs and perennials before the trees grow leaves and

shade the ground layer with dappled patches of light. Glades are small open meadows within the woodland that form sunny patches, increasing the habitat diversity and stimulating growth of summer flowering wildflowers. This may help attract butterflies, birds and other wildlife into your green space.

### WOODLAND PLANTING

There are some locations where woodland plantings are inappropriate. Woodlands should not be planted under power lines and cables or above any buried utilities. Make sure your plans for new trees do not block sunlight from reaching someone else's house, greenhouse, or garden.

Determining the number of trees to plant is dependent on how much space you have, whether there are existing trees and whether they occur in a remnant meadow, a grassy lawn, or a rock outcrop. If you have an urban property with a few large Garry oak trees, plant and protect a few acorns or seedlings that will grow to form the next generation of trees. Focus too on enhancing the understory with native wildflowers, grasses and shrubs.

During planting, make sure you are following the proper propagation methods for each species. Here are a few guidelines to follow for planting woodlands:

1. Plant one dominant bunch grass per square metre (10sq ft). If you want a grass-dominated woodland understory, increase the quantity to a maximum of five per square metre.
2. For every square metre (10sq ft), plant four to eight herbaceous perennials in random clumps between the grasses. Include spring and summer flowering plants to maintain colour and interest across the seasons.
3. For every five square metres (50sq ft), plant a shrub.
4. For every 50 square metres (1000sq ft), plant a tree.

Try not to space your trees too regularly, or in straight rows, and if your property is large and



Camas and white fawn lilies in bloom (Woodlands at Government House). PHOTO: CHRIS JUNCK



not level, follow the landform. In general, plant shrubs one or two metres away from any trees that you have recently planted to give the tree roots space to spread. When replacing the shrub layer around existing older trees, try to avoid disturbing the tree roots when digging planting holes for the shrubs.

### WOODLAND MANAGEMENT

Follow the suggestions on page 20 for meadow management.

- One major difference between open meadows and woodlands is that the woodland understorey expects an annual deposit of falling leaves that provides a blanket during the winter and decomposes to supplement the soil with fresh nutrients. Mulch woodland plants with dead leaves every fall and dig in compost or well rotted manure from time to time (this simulates natural nutrient inputs from native wildlife such as deer).
- Mowing the grass between trees every autumn can create a simple glade.
- Do not tidy up your woodland too much by removing all the dead wood and cut branches. Dead wood forms the basis of life for many ecosystems, providing food and shelter for bacteria and invertebrates like woodlice and wood-boring beetles. These are the foundation of many food chains, attracting birds such as woodpeckers, as well as bats and other small mammals.

### WOODLAND PLANTS

#### TREES

Arbutus (*Arbutus menziesii*)  
Garry oak (*Quercus garryana*)

#### SHRUBS

Oceanspray (*Holodiscus discolor*)  
Tall Oregon-grape (*Mahonia aquifolium*)  
Baldhip rose (*Rosa gymnocarpa*)

#### GRASSES

California brome (*Bromus carinatus*)  
California oatgrass (*Danthonia californica*)  
Blue wildrye (*Elymus glaucus*)  
Roemer's fescue (*Festuca idahoensis* ssp. *roemeri*)  
Alaska oniongrass (*Melica subulata*)

#### HERBACEOUS PLANTS

Great camas (*Camassia leichtlinii*)  
Yarrow (*Achillea millefolium*)  
Spring-gold (*Lomatium utriculatum*)  
Broad-leaved shootingstar (*Dodecatheon hendersonii*)  
Satin-flower (*Olynum douglasii*)  
Pacific sanicle (*Sanicula crassicaulis*)  
Blue-eyed Mary (*Collinsia parviflora*)  
Western buttercup (*Ranunculus occidentalis*)  
Menzies' larkspur (*Delphinium menziesii*)  
Chocolate lily (*Fritillaria affinis*, also known as *F. lanceolata*)  
White fawn lily (*Erythronium oregonum*)  
Harvest brodiaea (*Brodiaea coronaria*)  
Fool's onion (*Triteleia hyacinthina*)



Deep soil Garry Oak woodland at Cowichan Garry Oak Preserve.

PHOTO: SHYANNE SMITH



## CONTAINERS



Even apartment-dwellers can have a Garry oak garden. This design is scaled to fit a balcony container and includes some of our favourite wildflowers that occur in Garry oak meadows. For this particular design, your balcony should face south, southwest or west to provide sufficient sunlight for the plants listed. There's room in one corner of the planter for a honeysuckle that can be trained along a sunny balcony railing to attract hummingbirds. Let the stonecrop spill over the side of the container. Remember that the plants will grow and need dividing so don't try to cram too many plants into the container to begin with. The trick to keeping a container garden healthy is to thin and divide the plants every few years. If you can only find or afford a single chocolate lily, start with one and divide the bulbs after the plant has flowered for a few years. Some plants such



as nodding onion will reproduce and spread from seed. In the spring look around your plants for little onion shoots. Carefully lift the tiny plants without harming the roots and transplant them into a small pot. When they have grown a bit larger you can transplant them into a new space or trade with other native plant gardeners.

A wide assortment of Garry oak plants can be grown in containers. This is one design out of many possibilities!



### PLANT LIST

(Total number of plants follows name)

#### VINE

- A Western trumpet honeysuckle (*Lonicera ciliosa*) – 1 plant

#### HERBACEOUS PLANTS

- B Broad-leaved stonecrop (*Sedum spatulifolium*) – 2 plants
- C Common camas (*Camassia quamash*) – 10 bulbs
- D Chocolate lily (*Fritillaria affinis*, also known as *F. lanceolata*) – 6 bulbs or plants
- E Nodding onion (*Allium cernuum*) – 6 plants
- F Spring-gold (*Lomatium utriculatum*) – 3 plants
- G Broad-leaved shootingstar (*Dodecatheon hendersonii*) – 2 plants
- H Woodland strawberry (*Fragaria vesca*) – 2 plants
- I Satin-flower (*Olsynium douglasii*) – 2 plants
- J White fawn lily (*Erythronium oregonum*) – 1 plant
- K Menzies' larkspur (*Delphinium menziesii*) – 1 plant
- L Tiger lily (*Lilium columbianum*) – 1 plant



Container size:

0.6m x 0.9m by 0.6m deep (2' x 3' by 2' deep)

< Background pot: Pacific rhododendron;  
 Foreground pot: Sea blush. PHOTO: ©BRENDA COSTANZO  
 Above: White fawn lily. PHOTO: CHRIS JUNCK

## ROCK OUTCROPS



Woolly sunflower

Rock outcrops occur in Garry oak ecosystems in many forms: rocky shorelines with grasslands, rocky islets, coastal bluffs above the shore, and rock outcrops interspersed through woodlands and meadows. Open, sunny rock outcrops support scattered stunted oaks and shrubs like oceanspray, along with ferns, mosses, lichens and grasses. Some shade and moisture may be provided by nearby upland woods, but exposure to sun and wind dries the soil and stresses the plants. Wildflowers nestle in the soil-filled cracks and add flashes of colour through the spring and summer. There are many native plants that have adapted to these harsh conditions and grow well in rock gardens that have sun exposure for at least part of the day and have dry, well-drained soils during the summer months. These same plants do well in any sort of a rockery or container garden. If your rock outcrop has been power washed or 'cleaned', just make sure to add some compost or topsoil to the cracks and crevices to provide a growing medium for any plants you add. In our design we have used herbaceous perennials, grass and a fern to fill the cracks. Most undisturbed rock outcrops have a healthy layer or crust of mosses and lichens. See page 45 for some techniques on how to introduce moss to your garden.



### PLANT LIST

(Total number of plants follows name)

#### GRASSES

- A Roemer's fescue (*Festuca idahoensis* var. *roemeri*) or California oatgrass (*Danthonia californica*) or blue wildrye (*Elymus glaucus*) – 9 plants/plugs

#### HERBACEOUS PLANTS AND FERNS

- B Nodding onion (*Allium cernuum*) – 11 plants
- C Broad-leaved shootingstar (*Dodecatheon hendersonii*) – 2 plants
- D Spring-gold (*Lomatium utriculatum*) – 5 plants
- E Lance-leaved sedum (*Sedum lanceolatum*) – 5 plants
- F Small-flowered alumroot (*Heuchera micrantha*) – 6 plants
- G Common camas (*Camassia quamash*) – 24 bulbs or plants
- H Yarrow (*Achillea millefolium*) – 6 plants
- I Chocolate lily (*Fritillaria affinis*, also known as *F. lanceolata*) – 14 bulbs or plants in deeper soil pockets or shade
- J Oregon stonecrop (*Sedum oregonum*) – 7 plants
- K Woolly sunflower (*Eriophyllum lanatum*) – 4 plants
- L Thrift (*Armeria maritima*) – 20 plants
- M Broad-leaved stonecrop (*Sedum spathulifolium*) – 3 plants
- N Licorice fern (*Polypodium glycyrrhiza*) – 3 plants



Garden size – 6m x 3m (20' x 10')

< Rockery filled with sedum, sea blush, and small-leaved montia. PHOTO: CLAUDIA COPLEY



## MOIST-SOIL GARDENS



Pacific ninebark

The natural landscape is made up of a variety of ecosystems that are stitched together and connected by transitional ecosystems known as 'ecotones' or edges. Environmental conditions such as topography, micro-climate, soil types and hydrology can vary considerably within a seemingly dominant ecosystem

such as an oak woodland or Garry oak meadow. This creates perfect micro-site conditions for a patchwork of smaller habitats and different plant communities. There are many plant species that thrive in moist soils occurring in low spots and shady hollows within Garry oak ecosystems. When you are mapping your property, keep a lookout for low spots, and indicator plants such as willows, Indian-plum and salmonberry. If you have a low spot, work with the moist (but not continually wet) soils to create a moist-soil garden with flowering shrubs and wildflowers. In our moist-soil garden design, we found an existing salmonberry thicket and created a planting plan that stitches the new garden into the remaining natural habitat on the property.



PLANT LIST

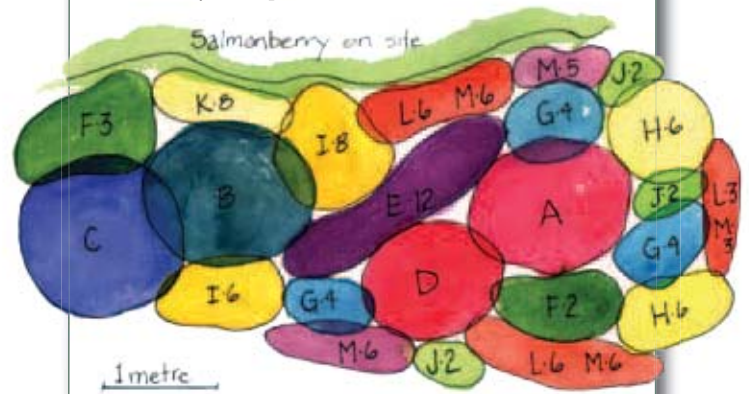
(Total number of plants follows name)

### SHRUBS

- A Red-flowering currant (*Ribes sanguineum*) – 1 plant
- B Twinberry (*Lonicera involucrata*) – 1 plant
- C Pacific ninebark (*Physocarpus capitatus*) – 1 plant
- D Indian-plum (*Oemleria cerasiformis*) – 1 plant

### HERBACEOUS PLANTS

- E False Solomon's-seal (*Smilacina racemosa*) – 12 plants
- F Sword fern (*Polystichum munitum*) – 5 plants
- G Wild ginger (*Asarum caudatum*) – 12 plants
- H Vanilla leaf (*Achlys triphylla*) – 12 plants
- I Western trillium (*Trillium ovatum*) – 14 plants
- J Deer fern (*Blechnum spicant*) – 6 plants
- K False lily-of-the-valley (*Maianthemum dilatatum*) – 8 plants
- L Small-flowered alumroot (*Heuchera micrantha*) – 15 plants
- M Star-flowered false Solomon's-seal (*Smilacina stellata*) – 20 plants



Garden size – 3m x 5.5m (10' x 18')

**Note:** Red-flowering currant tends to grow best in slightly drier sites. If your site is too wet, consider replacing red-flowering currant with mock-orange (*Philadelphus lewisii*) or hardhack (*Spiraea douglasii*).

< Western trillium. PHOTO: © BRENDA COSTANZO

Above: Pacific ninebark. PHOTO: SWAN LAKE NATURE SANCTUARY

## POND EDGES & WET AREAS



Yellow monkeyflower

This design uses a mix of shrubs and herbaceous plants to soften and enhance the edges of a small preformed pond. If you prefer, you could use the suggested plants to enhance an existing depression or a spot where groundwater seeps along a slope. The pond design has a stepped edge and shallow end that provides easier access for birds.

**Vernal pools.** If you are fortunate enough to have a natural vernal (seasonal) pool or seep on your property, please consider protecting it with a conservation covenant (see page 49). Vernal pools and seeps are associated ecosystems found in Garry oak areas. Because vernal pools are small, often taking up only a few square metres, they are typically dry by late summer or early fall and do not contain fish. However, heavy rains may fill them at any time of year.

During winter, check your rock outcrops and bluffs for small depressions with shallow water and vegetation growing around the edges. During the dry season, some visual clues that may alert you to the presence of a vernal pool include: bare soil, sedges, and a lack of trees or shrubs growing in the depression. These fragile ecosystems are most likely already providing habitat to plants and animals, some of which may be species at risk. You may want to protect them with fencing, and/or remove invasive species after consulting with a species at risk expert.



### PLANT LIST

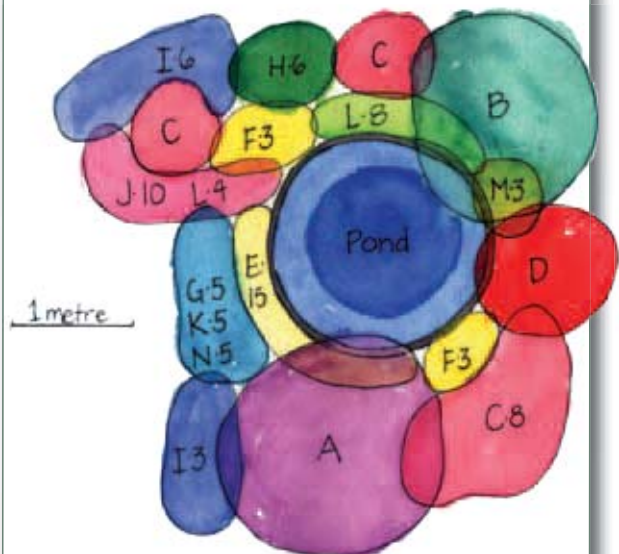
(Total number of plants follows name)

#### SHRUBS

- A Scouler's willow (*Salix scouleriana*) – 1 plant
- B Pacific crabapple (*Malus fusca*) – 1 plant
- C Salmonberry (*Rubus spectabilis*) – 10 plants moved from edge of property
- D Red-osier dogwood (*Cornus sericea*) – 3 plants

#### HERBACEOUS PLANTS

- E Yellow monkeyflower (*Mimulus guttatus*) – 15 plants
- F Skunk cabbage (*Lysichiton americanum*) – 6 plants
- G Blue-eyed grass (*Sisyrinchium idahoense* var. *macounii*) – 5 plants
- H Large-leaved avens (*Geum macrophyllum*) – 6 plants
- I Douglas' aster (*Aster subspicatus*) – 9 plants
- J Cooley's hedge-nettle (*Stachys cooleyae*) – 10 plants
- K Western buttercup (*Ranunculus occidentalis*) – 5 plants
- L Sawbeak sedge (*Carex stipata*) – 12 plants
- M Tule (*Scirpus lacustris*) – 6 plants
- N Stream violet (*Viola glabella*) – 5 plants



Garden size – 4m x 4m (14' x 14')

< Natural vernal (seasonal) pool, an associated ecosystem. Above: Yellow monkeyflower. PHOTOS: CHRIS JUNCK



## HEDGEROWS



Saskatoon

A hedgerow is a dense and somewhat linear thicket of small tree and shrub species planted to keep people and animals from straying through a garden, pasture or farmland. Hedgerows may also form naturally along ditches or fence lines that demarcate property boundaries. They form a windbreak and provide wildlife food, nesting habitat and travel corridors. As a hedgerow matures it will increase in plant diversity without your having to buy another plant. This happens when the seeds from other fruit and nut-bearing plants are consumed by birds and deposited when they visit your hedgerow.

Some of our native shrubs have had a long history of usage as ornamental hedge and garden plants in other parts of the world. If you are planning a formal single-species hedge for your garden, choose a native flowering shrub such as red-flowering currant, our native mock-orange or red-

osier dogwood. Gardeners have used ornamental spiraeas as deciduous hedging shrubs for decades. Instead, try our native pink flowering hardhack. At the nursery or garden centre, select multi-stemmed specimens; they will look less formal and will fill in the gaps more quickly.

Design your hedgerow to fit your tastes, needs and environmental conditions. To give you a few ideas we have created three designs. Each is about 20 metres (65 ft) in length, which could be replicated or diversified to cover longer boundaries. The Fruit & Nut Hedgerow is designed for regular garden soils that might get watered occasionally during the summer. It consists of patches of deciduous and evergreen shrubs interspersed with taller shrub-trees, most of which produce fruit or nuts. The Moist-soil Hedgerow might form a boundary along a low spot – all the plant species thrive in moist-soil conditions. The Dry-site Hedgerow includes native plants typically found along coastal bluffs, an ecological indicator that they can handle summer droughts in regular garden soils.



Hedgerow along a fence. PHOTO: KATHERINE DUNSTER Above: Saskatoon. PHOTO: RON LONG





Red-flowering currant in bloom. PHOTO: CHRIS JUNCK



Native red-tailed bumblebee on Oregon-grape.

PHOTO: ELIZABETH ELLE

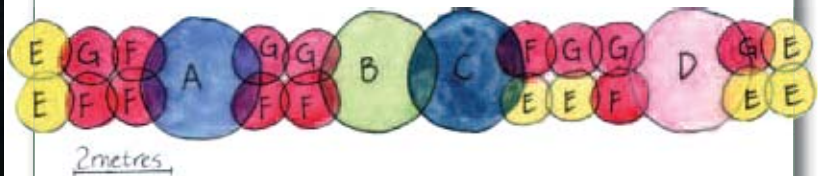


**PLANT LIST**

(Total number of plants follows name)

**FRUIT & NUT HEDGEROW**

- A Blue elderberry (*Sambucus caerulea*) – 1 plant
- B Beaked hazelnut (*Corylus cornuta* var. *californica*) – 1 plant
- C Western yew (*Taxus brevifolia*) – 1 plant
- D Saskatoon (*Amelanchier alnifolia*) – 1 plant
- E Tall Oregon-grape (*Mahonia aquifolium*) – 7 plants
- F Red-flowering currant (*Ribes sanguineum*) – 7 plants
- G Nootka rose (*Rosa nutkana*) – 5 plants



2metres

**MOIST-SOIL HEDGEROW**

- H Red-osier dogwood (*Cornus sericea*) – 9 plants
- I Evergreen huckleberry (*Vaccinium ovatum*) – 7 plants
- J Indian-plum (*Oemleria cerasiformis*) – 4 plants
- K Sitka willow (*Salix sitchensis*) – 1 plant
- L Red elderberry (*Sambucus racemosa*) – 1 plant



2metres

**DRY-SITE HEDGEROW**

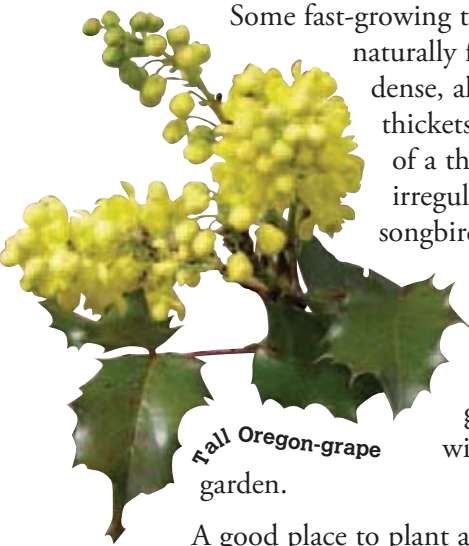
- M Arbutus (*Arbutus menziesii*) – 2 plants
- N Rocky Mountain juniper (*Juniperus scopulorum*) – 2 plants
- O Common juniper (*Juniperus communis*) – 14 plants or Hairy manzanita (*Arctostaphylos columbiana*)
- P Baldhip rose (*Rosa gymnocarpa*) – 4 plants
- Q Oceanspray (*Holodiscus discolor*) – 14 plants, or seven plants each of oceanspray and mock-orange (*Philadelphus lewisii*)
- R Western trumpet honeysuckle (*Lonicera ciliosa*) – 3 plants to grow in and out of hedge.



5metres



## SHRUB THICKETS



Tall Oregon-grape  
garden.

Some fast-growing trees and shrubs will naturally fill a space and form dense, almost impenetrable thickets. You might think of a thicket as a very thick, irregular-shaped hedge. Many songbirds find food, cover and nesting habitat in shrub thickets. The greater the diversity of plants in your thicket design, the greater diversity of birds will be attracted to your garden.

A good place to plant a shrub thicket is in a corner of your property. In the design we have cut the corner out of a backyard lawn (who wants to mow corners?) and replaced it with a sweeping curve that is filled with shrubs. Lower shrubs are towards the lawn (future Garry oak meadow) and tallest are along the fence line. The Nootka rose is thorny and will help create a barrier within the thicket. In winter the red rose hips complement the red twigs of the red-osier dogwood. Tall Oregon-grape is planted towards the front of the thicket to provide dark green contrast in the winter. It also has prickly leaves that will reinforce the barrier. Scouler's willow and Saskatoon will sucker and spread to eventually fill their allocated spaces.

From left to right:  
Saskatoon in flower.  
PHOTO: RON LONG

Native digger bee on a Nootka rose.  
PHOTO: NATHALIE DECHAIINE

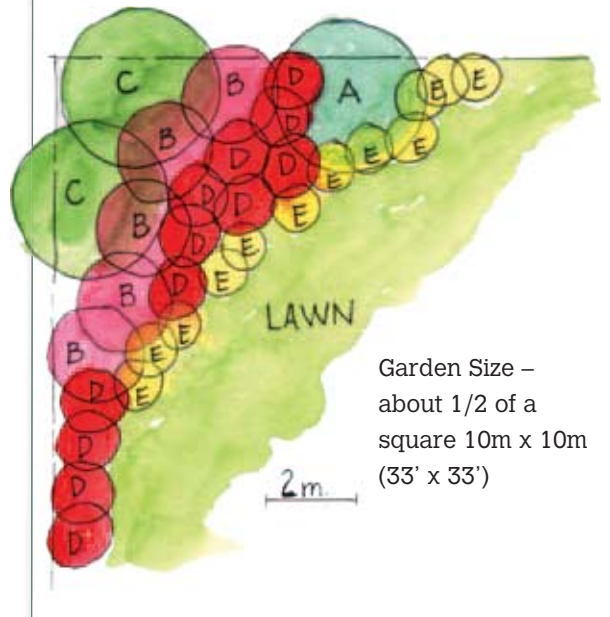
Above:  
Tall Oregon-grape.  
PHOTO: CHRIS JUNCK



### PLANT LIST

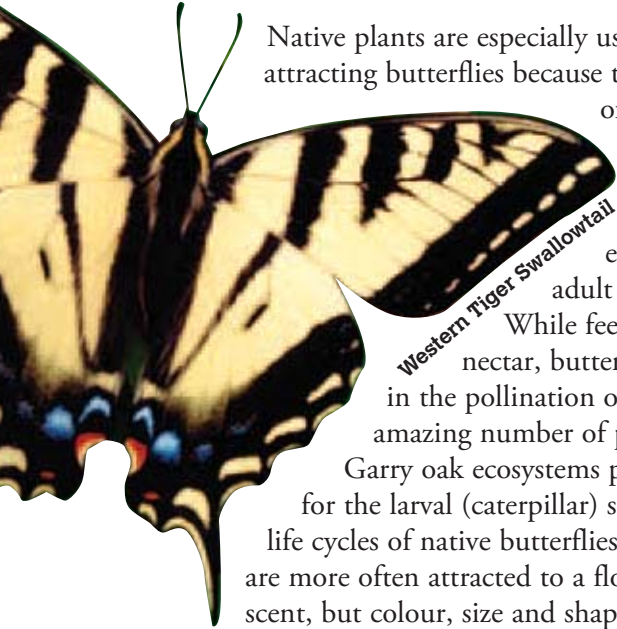
(Total number of plants follows name)

- A Saskatoon (*Amelanchier alnifolia*) – 1 plant
- B Nootka rose (*Rosa nutkana*) – 5 plants
- C Scouler's willow (*Salix sitchensis*) – 2 plants
- D Red-osier dogwood (*Cornus sericea*) – 12 plants
- E Tall Oregon-grape (*Mahonia aquifolium*) – 12 plants



Garden Size –  
about 1/2 of a  
square 10m x 10m  
(33' x 33')

## BUTTERFLY GARDENS




Western Tiger Swallowtail

Native plants are especially useful for attracting butterflies because the flowering of specific plants coincides with the emergence of adult butterflies. While feeding on nectar, butterflies assist in the pollination of plants. An amazing number of plants in Garry oak ecosystems provide food for the larval (caterpillar) stages in the life cycles of native butterflies. Butterflies are more often attracted to a flower by its scent, but colour, size and shape are also important.

A butterfly garden can be any size, but must be located in a sunny spot and sheltered from winds. For best results plant the tallest flowers behind the shorter ones, so you'll be able to see all the flowers and butterflies that appear in your garden. Butterflies are near-sighted, so help them locate their special garden by planting in clusters, rather than single plants. Some butterflies need water and minerals which they get from probing mud on the edge of puddles, an activity known as 'puddling'. If you don't have a moist-soil garden with bare muddy spots, provide a source of water for butterflies. Place a layer of soil in a shallow pan or bird bath, cover with sand and a few flat stones for perching, and moisten with water. In the heat of the summer, provide minerals for breeding males by sprinkling a little sea salt on the pan. See also page 33 and page 37.





**PLANT LIST**  
(Total number of plants follows name)

**VINES**

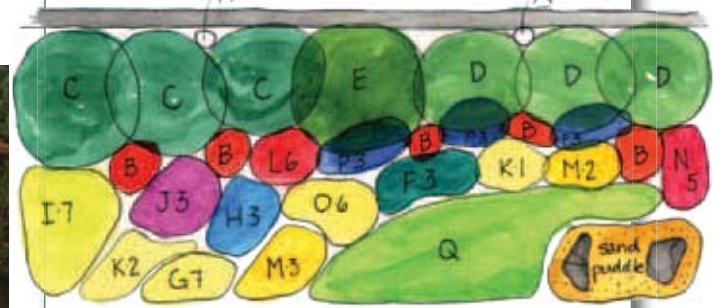
- A Western trumpet honeysuckle (*Lonicera ciliosa*) – 2 plants trained on fence
- B Hairy honeysuckle (*Lonicera hispidula*) – 5 plants to spread on ground

**SHRUBS**

- C Mock-orange (*Philadelphus lewisii*) – 3 plants
- D Oceanspray (*Holodiscus discolor*) – 3 plants
- E Scouler's willow (*Salix scouleriana*) – 1 plant
- F Kinnikinnick (*Arctostaphylos uva-ursi*) – 3 plants

**HERBACEOUS PLANTS**

- G Spring-gold (*Lomatium utriculatum*) – 7 plants
- H Pearly everlasting (*Anaphalis margaritacea*) – 3 plants
- I Yarrow (*Achillea millefolium*) – 7 plants
- J Douglas' aster (*Aster subspicatus*) – 3 plants
- K Canada goldenrod (*Solidago canadensis*) – 3 plants
- L Western columbine (*Aquilegia formosa*) – 6 plants
- M Broad-leaved stonecrop (*Sedum spathulifolium*) – 5 plants
- N Hooker's onion (*Allium acuminatum*) – 5 plants or bulbs
- O Woolly sunflower (*Eriophyllum lanatum*) – 6 plants
- P Early blue violet (*Viola adunca*) or trailing yellow violet (*Viola sempervirens*) – 9 plants
- Q Blue wildrye (*Elymus glaucus*) – seed, plants or plugs



Garden Size – 6m x 3.5m (20' x 12')

< Woolly sunflower PHOTO: © BRENDA COSTANZO  
Above: Western Tiger Swallowtail PHOTO: TODD CARNAHAN



## ATTRACTING POLLINATORS TO YOUR GARRY OAK GARDEN

Pollinators are at the heart of healthy ecosystems. There is increasing concern about their decline due to the use of pesticides and the loss of wild areas with native plants and nesting sites. As a gardener, you can make a significant contribution toward sustaining biodiversity by providing food sources and nesting habitat for native pollinators – and your garden will benefit too.

The bulk of pollination in Garry oak ecosystems is carried out by bees, and to some extent, flies. There are at least 140 species of native bees, including the familiar bumble bees along with mason bees, leafcutter bees, sweat bees, digger bees and mining bees. Some form small colonies, while most live solitary lives that last only a few weeks.

### PROVIDING FOR POLLINATORS

**Grow a variety of native plants.** Bees collect both pollen and nectar, and are especially attracted to plants with blue, purple, white and yellow flowers. Because bees vary in size and have a variety of tongue lengths, they have a variety of flower preferences. Providing a range of flower sizes and shapes means a diversity of pollinators can work in your garden.

**Provide a sequence of flowers throughout spring, summer and fall.** By having several plant species flowering at once and a succession



Lorquin's admiral butterfly on oceanspray.  
PHOTO: TODD CARNAHAN



of plants flowering through the seasons, you can support a range of bees that fly at different times of year. Mason bees and queen bumble bees, for example, require food sources close to their nests in early spring, and queen bumble bees preparing to hibernate feed on late-flowering species.

### Provide large clusters of plants where possible.

Flowers clustered into patches of one species will attract more pollinators than individual plants scattered throughout the garden.

### Provide nesting habitat.

There are houses for mason bees available commercially, which can also be used by leaf cutter bees. Our other native bees nest in the ground and benefit from the presence of untended, open patches of soil. Bumble bees are known to move into abandoned mouse holes and empty birdhouses. Other bees may nest in banks or in sandy or poor soils with south or west exposure. To benefit bees and other wildlife, leave some untended areas

### PLANTS FOR BEES

#### EARLY FLOWERING

Blue-eyed Mary  
Broad-leaved shootingstar  
Oregon-grape  
Sea blush  
Spring-gold  
White fawn lily  
Willows

#### MID-SEASON

Arbutus  
Camas species  
Gold star  
Menzies' larkspur  
Nootka rose  
Oceanspray  
\*Penstemon species  
Red-flowering currant  
Snowberry  
Woolly sunflower

#### LATE-FLOWERING

Aster species  
Brodiaea  
\*Canada goldenrod  
Douglas' aster  
\*Fireweed  
\*Hardhack  
Pearly everlasting  
Nodding Onion  
Other wild onions  
*\*not necessarily Garry oak species, but excellent native plants for bees.*

in your yard, and don't worry about having a manicured lawn.

**MORE PLANTS FOR BUTTERFLIES**

Large butterflies such as swallowtails, admirals and ladies prefer to land on flowers with large composite heads because they can rest on them while feeding. Composites include plants in the aster family such as goldenrod, pearly everlasting, and yarrow. Flowers in the carrot family, including spring-gold, are also popular with large butterflies.

Other butterflies are attracted to plants with large numbers of fragrant flowers such as those listed in our butterfly garden design, plus red-osier dogwood, clovers, wild mint, and strawberries.

Food plants for caterpillars include arbutus, broad-leaved stonecrop, oceanspray, lomatum, lupines, native grasses, and stinging nettle. For our butterfly garden design, please see page 31.

**SYRPHID FLIES**

Syrphid flies, also known as hover flies or flower flies, are often mistaken for bees or wasps because of their similar body colours and flight patterns. They are important pollinators in native plant gardens. The larvae are predators, feeding on scale insects and aphids. Black oily smears on the top of plant foliage are excrement of syrphid fly larvae. Syrphid flies overwinter as larvae in the leaf litter throughout your garden and pupate sometime in the early spring.

**FOR FURTHER READING**

*Ecoregional Planting Guides for pollinators* available at [www.pollinator.org/guides.htm](http://www.pollinator.org/guides.htm). The guide best suited to southwest BC is 'Cascade Mixed Forest'.

*The Xerces Society for Invertebrate Conservation* provides a wealth of information on pollinators: [www.xerces.org](http://www.xerces.org).

*Bringing Nature Home: How Native Plants Sustain Wildlife in Our Gardens*, by Douglas W. Tallamy (Timber Press, 2007 & 2009).

Top facing page: Male red-tailed bumble bee on nodding onion. PHOTO: TODD CARNAHAN



Blue orchard Mason bee on camas. PHOTO: ELIZABETH ELLE

  
**Most birds feed their young with insects (both larval stages and adults), so if you have a thriving insect population in your garden, you are providing a crucial food source for birds**



Syrphid fly on camas. PHOTO: SANDRA GILLESPIE



Beefly on satin-flower. PHOTO: TODD CARNAHAN





STEP FIVE

## PLANTING YOUR GARDEN

### SITE AND SOIL PREPARATION

Your potential garden site may require the removal of non-native invasive plants such as Scotch broom, daphne, English ivy, and others. If you already have relatively intact Garry oak habitat, invasive plant removal and maintenance may be all you need to do to enhance it. Please see page 38 for details on invasive plant removal. If you are starting from scratch, until your plants have become established and have filled all the space in your garden, you will need to prevent invasive plants from getting a foothold. One way to keep invasive plants from thriving is to maintain low soil fertility. Many Garry oak ecosystems have nutrient-poor soils, and you can mimic these conditions by refraining from fertilizing your soil. If you have very rich soil or a lot of weeds, you can go as far as stripping off the top 5–10cm (2”–4”), and lightly raking to produce a planting bed. If you don’t like the idea of reducing soil fertility, be prepared to weed diligently to keep invasive plants at bay until your garden becomes established.

If you are starting with a grassy lawn, you can create a meadow by planting Garry oak meadow plants right into the lawn. See the ‘book-flap’ technique on the following page. If you’d like to remove a section of your lawn or a weedy area to make way for woodland understory plantings, thickets, or other plantings, here are four techniques you can use to prepare the site:

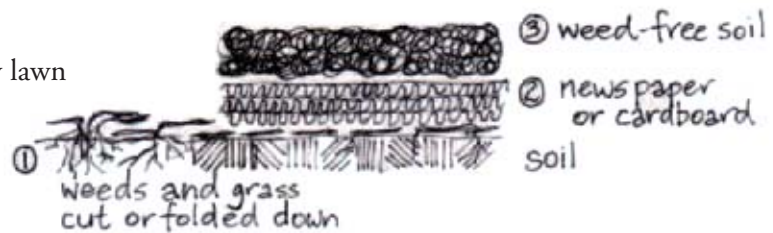
#### 1) Solarizing

An easy way to remove grass or a weedy lawn without digging is to ‘solarize’ the lawn. Cover the grass with a sheet of plastic (clear or black plastic will work fine), anchor the edges, and leave it to bake for six to eight weeks during the

dry summer months. If you use clear plastic you can monitor progress. By mid to late September, or when all vegetation appears to be dead, remove the plastic. You may want to rake and remove the dead grass or plant material. In the fall, plant bulbs, seedlings or seeds directly into the soil. You will need to monitor regularly to remove any invasive plants. If you are not going to plant in the fall, use a green manure or cover crop such as annual rye to suppress weeds and protect the soil from leaching nutrients, but dig it in before spring planting.

#### 2) Sheet Mulching

Closely cut grass or weeds and cover the patch with a layer of newspapers (1/2cm or 1/4” thick) or cardboard (2–4 sheets thick). Overlap the weed barrier material so that it completely covers the ground without any gaps. If you want to save some existing plants, leave a generous opening for air circulation around the root crown. By carefully placing the weed barrier, you will avoid having to deal with emerging weeds later on. Cover the newspapers or cardboard with approximately 8–12cm (3”–5”) of weed-free soil or mulch. You can plant seedlings or seeds directly into the soil but will need to monitor regularly to remove any invasive plants. For shrubs and trees, cut a hole in the cardboard or newspaper so the roots can penetrate through to the soil layer.



Sheet mulching is an easy method for removing turf

### 3) Cultivation

Cultivation may be an appropriate technique if you are planting in an old field, abandoned lawn, or if your site has a lot of invasive weeds. You can remove any existing turf by cutting it into manageable blocks and scraping it off with a sharp, square-ended shovel (or a rent a turf cutter). The turf blocks can go upsidedown into your compost bin. Once the grass has been lifted, the soil can be dug to loosen it up, and any remaining roots removed. Shrubs, plants, seedlings and grass plugs can be planted into this new garden bed, and any open areas can be covered with at least 15cm (6") Garry oak leaf mulch. The mulch will break down over a few months, and in the meantime, it will keep the weeds to a minimum and retain moisture for your new plantings.

### 4) Book-flap Technique

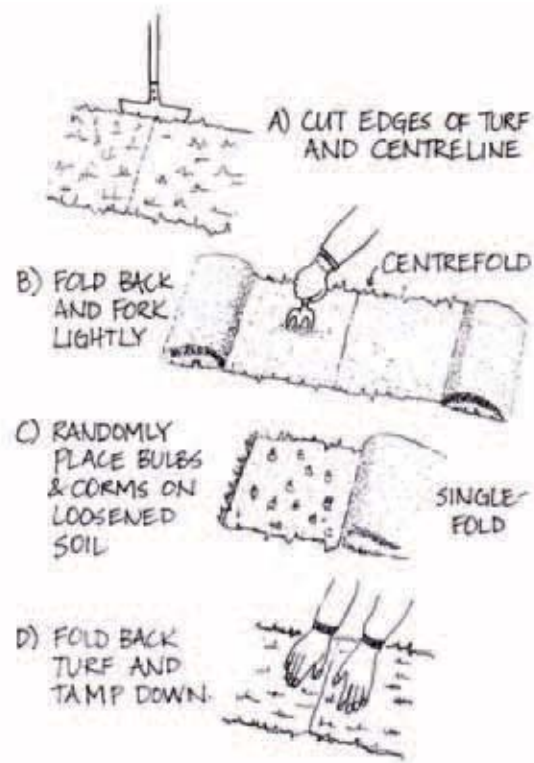
This technique consists of cutting a small square or rectangle in the lawn or turf. For a centrefold book-flap, cut down the centreline and fold back the sod on either side. For a single-fold, cut and fold the sod on one side as if turning a page of a book. Do this in the fall and place bulbs or corms of herbaceous perennials directly on the loosened, exposed soil. Fold the flaps back into place, tamp down, and in spring the flowering plants will force their way up through the lawn. Alternatively, you can simply dig holes in the turf and plant bulbs into the holes.

#### WHEN TO PLANT?

The best season to plant a Garry oak garden is in the fall, when plants can benefit from fall and winter rains and the soil is softer. The plants will establish good root systems through the winter before facing competition from existing vegetation in late spring. However, many native plant sales occur in the spring. If you purchase or trade at a spring sale, choose container-grown plants and plant immediately.

#### ACQUIRING PLANTS

- **Cuttings.** If you have a friend or neighbour who is able to give you a cutting or division of a native plant, this is the least expensive way to acquire plants for your Garry oak



Planting bulbs under turf with the "book-flap" technique

garden. If the plant comes from a nearby site, this may help to retain the genetic integrity of plants in your area. Divide perennials from late summer through early spring, or take cuttings in late summer or late winter.

- **Seeds.** Starting from seed is an inexpensive way to obtain plants for your garden. If you already have native plants on your site, you can collect seeds from them, or you can begin to collect seeds from your garden once the plants have matured. You can trade with other gardeners too. Beware of commercially available 'wildflower mixes', as they often contain non-native and sometimes invasive species. Buy seeds from a reputable local source and ensure that they are native to your region. Please see the Appendix for seed and plant suppliers.
- **Plant Salvaging.** Never take plants from local parks or natural areas. You will be harming the natural environment, and the practice is illegal. Be careful about suppliers of salvaged plants, as illegal plant scavenging is a concern for the future health of natural areas.

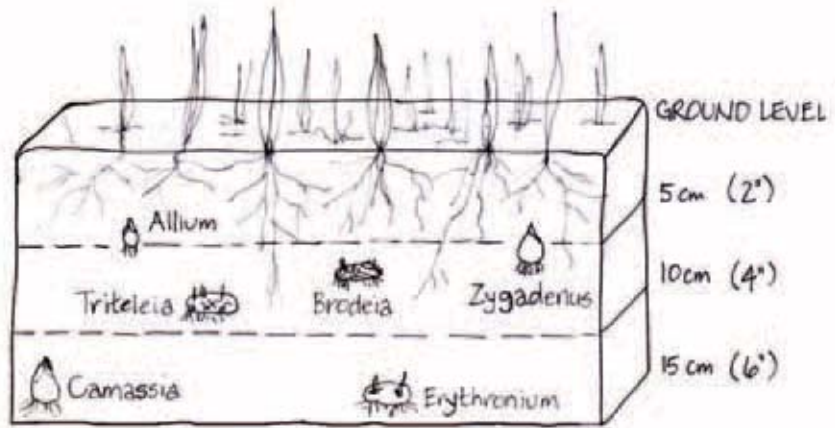


Local naturalist groups may be aware of legitimate plant salvaging opportunities. When a new road or subdivision is going in, for example, a local group may ask for permission to remove healthy plant material for use elsewhere. Offer to help with these salvaging operations, and you may be able to keep some of the salvaged plants. Please read the **Guidelines for the Collection and Use of Native**

**Plants** posted at [www.goert.ca](http://www.goert.ca) under the 'gardening & restoration' tab.

Contact your local naturalist group to ask if they are aware of salvaging programs in your area or contact the Environmental Education Officer at the Municipality of Saanich: (250) 475-5579.

- **Sourcing.** When you are sourcing native plants for your garden, make sure they are local, common species and not rare ones. Species at risk are listed on the GOERT website ([www.goert.ca](http://www.goert.ca)), the COSEWIC website ([www.cosewic.gc.ca](http://www.cosewic.gc.ca)) and the B.C. Conservation Data Centre website ([www.env.gov.bc.ca/cdc](http://www.env.gov.bc.ca/cdc)). See the Appendix for sources of native plants and seeds. See also [www.canadanursery.com](http://www.canadanursery.com) and click on 'plant finder'.
- **Choosing plants.** Choose plants whose needs will be satisfied as much as possible by the environmental conditions of your property. Know each plant's growth requirements and natural habitats as well as your property's natural features. Choose container grown plants from nurseries, sustainably-harvested seeds or legally-salvaged plants. Some gardeners may want to try their hand at propagating new plants from existing stock. See the information box on page 11. Be prepared to adapt your design or wait another year if some plants are not available when you are ready to start.



Planting depths for bulbs

#### HOW TO PLANT

The illustration above shows maximum planting depths for bulbs and corms featured in our garden designs. As a general rule, plant bulbs, corms and rhizomes at a depth of two to three times the bulb's width.

#### Success with Seeds

There are two ways to grow from seed: by sowing into flats or pots and transplanting the seedlings or bulbs at the correct depth, or by direct sowing. With direct sowing, there are a few steps you can take to ensure good germination success.

1. Prepare the seedbed by removing invasive plants, clearing off debris to increase sun exposure at the soil surface, and lightly tilling the soil to improve aeration and water infiltration.
2. Sow the seed at a depth approximately equal to the widest thickness of the seed, which typically means less than 6mm (1/5").
3. Firm the soil by gently tamping or rolling (but not compacting) to be sure the seed and soil have made close contact. This improves germination success.
4. Mimic nature by sowing in the fall when it usually rains. Seeds will absorb moisture, germinate and initiate root growth prior to going dormant until the spring.



## STEP SIX

**CARING FOR YOUR GARDEN OR HABITAT**

Native plants have survived in this area for many thousands of years. With a little help from you, nature will take its own course in your garden. It typically takes two to five years for a natural habitat garden to grow to maturity. Once plants are established, there will be less weeding involved, but weeding must be kept up until the plants have covered the soil surface.

**Maintaining Your Garden**

Here are some more general garden maintenance suggestions:

- If you are concerned about soil fertility or soil moisture levels, do test plantings in small areas to see how well the plants thrive. Many Garry oak ecosystem plants thrive in poor soils and require little attention once established.
- Add a handful of compost or topsoil to the planting hole when you are planting bulbs or plants.
- Water regularly during the first year or two when the plants are growing roots and becoming established. To conserve water, use a soaker hose or drip irrigation and water deeply early in the morning.
- Once established, most Garry oak ecosystem species are adapted to summer drought and you can allow the plants to dry out between watering. This will help them grow deep roots and become more drought-tolerant. You may need to water some moisture-loving plants in very dry summers. If your garden is in a schoolyard, make sure someone will be in charge of regular watering during the summer months when the school is closed.
- Monitor for arrival or emergence of invasive plants and weeds. Remove them immediately to protect your new plantings.
- Add new plants gradually. Remember that they will spread naturally over time, and small shrubs will become much bigger.
- Plant some acorns or young oak trees (see page 40) as soon as you can, as they will take time to become established.
- Avoid pesticides and herbicides and use only organic fertilizers if desired.
- Mulch your garden (except meadows) at least once in the fall with 5–15cm (2– 6”) of shredded Garry oak leaf mulch.
- Fine gravel may be used to mulch areas where you are planting rock outcrop species such as stonecrop, shootingstar, woolly sunflower and alumroot (see the Rock Outcrop garden design for more species).
- Be a lazy gardener! The larva of the Propertius duskywing butterfly, a species at risk, over-winters in the leaf litter and disturbing the leaves can harm the caterpillars. Leave the oak leaves under your Garry oak trees and elsewhere in your garden. Leaf litter protects the soil and over-wintering wildflower bulbs and enriches the soil as it decomposes. If you have to remove leaves from one area such as a meadow, consider spreading them in another spot or adding them to the garden compost; leaves won't blow around once they are wet. Don't worry if they are full of holes – many friendly organisms like to lunch on leaf litter; it's all part of the cycle of life.
- Be patient and persistent. Some plants take years to become established, and even longer to bloom.
- You may need to erect a temporary fence around your garden to prevent damage to young plants.



## Removing Invasive Plants



Volunteer Carol Davies removes ivy from a Garry oak. PHOTO: GARRY OAK RESTORATION PROJECT

Imported from other regions of the world, English ivy, daphne and other invasive plants are wreaking havoc in Garry oak ecosystems. Non-native plant and animal species, introduced into ecosystems where they did not previously live, are considered invasive when they spread aggressively and displace native species. Whether introduced by well-intentioned gardeners or imported accidentally, invasive plants are one of the biggest threats to Garry oak ecosystems, second only to land conversion. You can help the situation by removing invasive plants from your yard and preventing their spread to natural areas.

- Before you begin, consult GOERT's resources on invasive plant management (see sidebar).
- Consider how you are going to dispose of the unwanted plants and what you are going to plant in their place.
- Clear one small area at a time and avoid leaving large open areas of bare soil. Put native plants in the ground as soon as possible and mulch to cover the exposed ground until new plants can become established.
- Pull very small plants out by the roots between October and January, or during summer when plants are stressed by drought. Take care not to disturb native species — do

not remove invasive plants during the spring when delicate wildflowers are emerging or blooming.

- For larger plants, use hand tools that are specially designed to cut stems just below ground level.
- Remove invasive plants before they fruit or set seed to prevent birds and other wildlife from spreading the plants to natural areas.
- Wear protective clothing and eyewear when necessary.
- Place cuttings onto tarps or into heavy-duty bags to keep berries and seeds from spreading and to keep discarded roots and stems from taking root.
- Dispose of the removed plant material at an approved municipal site, such as a public works yard where high-intensity heat composting is used. Please do not dump garden waste on roadsides or in natural areas.
- Over time, work to make growing conditions more difficult for invasive species and easier for native species.
- If you are working with a large area, consult with experts before you undertake any work. Clearing your land of invasive species can be a difficult operation on your own, especially if you have well-established invasive plants.



**Native bulbs can lie dormant for many years, and if you open up the site by removing invasive plants, wildflowers such as camas and fawn lilies may emerge.**



Butterfly bush (*Buddleja davidii*) is a serious threat to Garry oak ecosystems. PHOTO: DAVE POLSTER



Scotch broom (*Cytisus scoparius*) has already degraded much of the landscape in this region. PHOTO: CHRIS JUNCK



English holly (*Ilex aquifolium*) produces berries that are spread by birds to natural areas. PHOTO: CAROLYN MASSON



Daphne can infest Garry oak woodlands and form a dense canopy, displacing native species.



Daphne, a highly invasive shrub, is often mistaken for rhododendron. DAPHNE IN FLOWER PHOTO: TODD CARNAHAN. ALL OTHER PHOTOS THIS PAGE REPRODUCED BY PERMISSION: NATURAL RESOURCES CANADA, CANADIAN FOREST SERVICE.

#### DAPHNE

You may be surprised to find out that you have been harbouring *Daphne laureola* in your yard, thinking that it is a rhododendron. Daphne, or spurge laurel, is a highly invasive evergreen shrub that grows up to 1.5m tall. The leaves are dark green and glossy. Inconspicuous greenish-white flowers grow in clusters near the top of the stem, and shiny black berries develop in summer. The berries, bark and sap are poisonous, and should be handled with care. Wear protective clothing and avoid getting the sap on your skin or in eyes, or breathing the vapours. Cut the stem below the soil line, ideally in summer. Dispose of safely; do not transport inside an enclosed vehicle where the fumes may cause respiratory irritation. For a



To learn more about removing invasive species without harming sensitive ecosystems (including species at risk) consult GOERT's invasive species field manual, best management practices, and decision support tool found at [www.goert.ca/invasive](http://www.goert.ca/invasive)

See also:

Coastal Invasive Plant Committee:  
[www.coastalinvasiveplants.com](http://www.coastalinvasiveplants.com)

Invasive Plant Council of BC:  
[www.invasiveplantcouncilbc.ca](http://www.invasiveplantcouncilbc.ca)

Municipality of Saanich invasive plant brochure:  
[www.saanich.ca/living/natural/pdf/Invasive\\_brochure\\_08\\_web.pdf](http://www.saanich.ca/living/natural/pdf/Invasive_brochure_08_web.pdf)

Weeds BC: [www.weedsbc.ca](http://www.weedsbc.ca)



When English ivy (*Hedera helix*) matures, its leaf shape changes and it produces berries that are spread by birds.

WorkSafe BC Toxic Plant Warning, go to [www.worksafebc.com](http://www.worksafebc.com) and search for 'daphne'.

#### ENGLISH IVY

English ivy's dense growth shades and crowds out native species, and when it climbs trees it can harm or kill them. When English ivy matures, its leaf shape changes and it produces berries that are spread by birds. Vines growing up trees should be cut and removed at waist height all the way around the trunk in a 1m (3') tall band to sever contact between the roots and the vines. The upper vines can be left to decay on the tree or removed when brittle. Remove ground ivy by pulling up stems and removing as much root material as possible, preferably in the fall.



## Planting and Caring for Garry Oaks

*When the oak is felled the whole forest echoes  
with its fall, but a hundred acorns are sown  
in silence by an unnoticed breeze.*

- Thomas Carlyle (1795-1881)

The majestic Garry oak is under threat from urban development and encroaching trees, shrubs and the climbing vines of English ivy. You can help reverse its decline while adding beauty to your property. The trees can live for hundreds of years. Growing and caring for a Garry oak tree is a project that you can do with your children to create a lasting legacy for your family. Plant acorns or seedlings and watch them grow.

In nature, very few acorns become mature trees. The acorns that have the best statistical chance are those that happen to land in safe sites – small protected spots that offer partial shade, protection from herbivores, and favourable hydrological conditions. Success can be

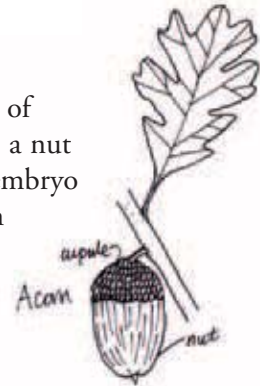


Steller's jays are the primary native dispersal agents of Garry oak acorns. PHOTO: BRUCE WHITTINGTON



### From Acorns to Oaks

An acorn is the fruit of an oak tree. There is a nut containing a single embryo protected by a tough shell that hangs from a branch by a 'cupule' or stemmed cap.



dramatically improved by arranging for all the acorns or seedlings to start off in safe sites.

- The best time to collect acorns is in the fall, as soon as they start falling from the trees. Collect several from your neighbourhood so that that you have a good selection of healthy ones. Local strains (ecotypes) have evolved in response to local conditions and are best adapted for survival in your area.
- Use the acorns quickly; they germinate best soon after falling from the tree and should not be allowed to dry out. If the acorn has lost its cupule it is ripe.
- To choose the healthiest acorns with viable nuts, use the float test (see next page). If you find an acorn that has already sprouted (you will see an emerging white root), plant it immediately on its side following the instructions below.
- Plant your acorns in late fall to early winter, choosing a site with dappled shade or full sun.
- Moisten the upper layer of soil at your planting site.
- Plant acorns 5–10cm (2"– 4") deep on their sides.
- When the seedling appears, surround it with wire mesh to protect it from wildlife and human activity (see illustration on next page).
- During the first two summers, water the seedling every 2–3 weeks.

- Clear away grass and weeds in a 1m (3') circle around the seedling, until the seedling is at least 15–25cm (6"–8") tall. Use mulch around the tree as a weed barrier, but keep it away from the stem.
- If you want to store acorns temporarily, bury them in leaf piles rather than in pots and transplant the sprouted acorns or seedlings while they are still young and have short roots.

### *The Float Test*

Put your acorns in the bottom of a container such as a large pail or bathtub, and fill it with water. Throw away the acorns that float to the surface or sit on the bottom making bubbles. The rest of the acorns on the bottom are healthy; they should not have any holes or cracks. To get the cream of the crop, choose the ones with the fewest flaws or blemishes. Soak these for 24 hours and then plant them.

### *Transplanting an Oak Seedling*

There are three advantages to using seedlings:

1. The tree has a good head start when planted in its site.
2. It is easier to mark and protect a seedling than a buried acorn.
3. There are fewer problems with insects and wildlife.

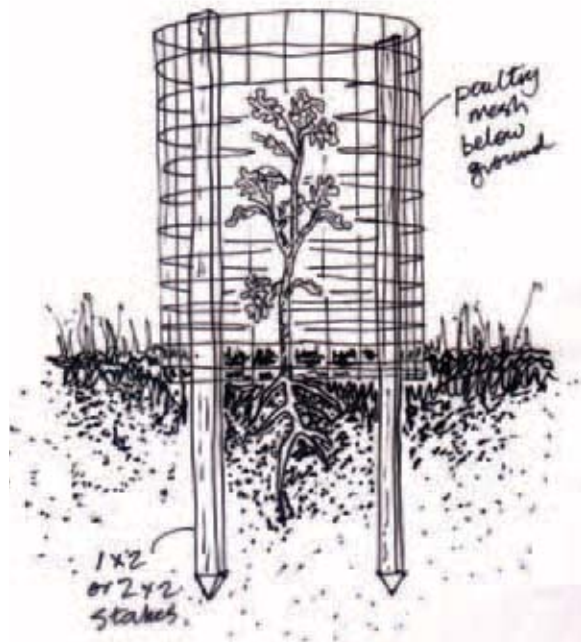
Here are some suggestions that will help your seedlings survive and thrive after transplanting.

- Plant seedlings in the fall.
- Plant only young seedlings for best results. Make sure the taproot is directed straight down and doesn't loop back up. Do not plant the seedling if the taproot is coiled as it will not form a proper root system.
- Remove any stones from the planting hole.
- Fill the hole with some fine-textured soil until the root crown is level with the ground. Firmly tamp the soil with your foot. Add more soil up to original ground level and tamp lightly.
- Thoroughly soak the ground around the seedling to encourage deep rooting.

- During the first two summers, water the seedling every 2–3 weeks (depending on rainfall and soil conditions).
- Clear away grass and weeds in a 1m (3') circle around the seedling, until the seedling is 15–25cm (6"–8") tall. Use mulch as a weed barrier, but keep the mulch away from the tree bark.
- Don't worry if you don't see much growth. Garry oaks are slow to grow and most of the action is happening underground at the start. Seedlings may take 10 years or more to reach 1m (3') in height. In rich deep garden soil, young Garry oaks can grow a metre or more per year.
- Build tree shelters to support and protect the growing seedling. Shelters made from rolls of plastic or cloth can also create a mini-greenhouse to improve growing conditions around the seedling.

### *Protection for Seedlings*

You may want to protect your oak seedling with a wire mesh cage for a few years. If you are converting a lawn to woodland, a wire mesh cage will protect the seedlings from lawn mowers.



Wire mesh protection for a seedling.

Adapted from [www.hastingsreserve.org/OakStory/PlantingOaks.html](http://www.hastingsreserve.org/OakStory/PlantingOaks.html).





Garry oak leaves and acorns. PHOTO: CHRIS JUNCK

### *Caring for Garry Oak Trees*

- Avoid sudden changes such as over-watering or long periods without watering.
- Don't create stress by hanging things off the tree such as signs or clothes lines.
- Protect your tree from soil compaction in its root zone, as well as from stress or damage from parked cars, swimming pools or construction projects.
- Don't pave under the tree. Tree roots extend out at least as far as the branches of the tree and the ground beneath the canopy should be protected from disturbance.
- The older the tree, the more important its shallow roots are and the less able it is to adapt to change.
- If you have a stand of oaks on your property, you may need to find out about techniques to maintain the trees' health. Consult an arborist for advice.
- Garry oaks do not grow well in the shade of larger trees such as Douglas-fir. Consider thinning some of the shading branches to allow more light through. If you decide to remove a tree, check your municipality's tree protection bylaw first, and consider leaving a 3-5m (10' to 15') tall snag to create wildlife habitat. You may be required (by law) or wish to consult with a qualified arborist before thinning or removing trees.
- Protect your trees from invasive vines such as English ivy that can smother and kill. For

information on ivy removal, see page 39 and [www.goert.ca/invasive](http://www.goert.ca/invasive).

### **Oak Pests and Diseases**

Garry oak trees have evolved with hundreds of different insect species, as well as a number of micro-organisms, and it's perfectly natural to see nibbled oak leaves or leaves with small holes in them. For example, large 1 – 2cm (½"–1") speckled oak leaf galls are caused by native gall wasps whose populations are kept in check by native parasitoids and do not pose a serious threat to Garry oak trees.

Introduced insect pests such as jumping gall wasps, oak leaf phylloxera, winter moths and gypsy moths can be more problematic than native insects.

Many Garry oaks recover from moderate infestations without treatment. However, if you are concerned that your trees are unhealthy, have an arborist with Garry oak expertise check them, as weakened trees may eventually succumb to multiple or repeat infestations.

- **Jumping gall wasps** (*Neuroterus saltatorius*) lay their eggs on several ornamental oak species in British Columbia, but the Garry oak is the only tree on which it can complete its life cycle and where it does the most damage. Tiny 1.5mm (1/16") yellow galls that look like mustard seeds on the undersides of the leaves house the wasp larvae. When the larva matures, the gall falls to the ground and as the wasp moves around inside, the gall visibly and audibly jumps. Yellow-brown spots are left where the galls were attached to the leaves. Symptoms appear in mid-June and include anything from simple spotting of leaves on lightly infested trees to complete scorching and premature defoliation on the most severely infested trees. Fortunately, there are some parasitoids that feed on and kill the wasp larvae, and earwigs and some ground beetles eat galls. Although there are commercially-available insecticides, we do not recommend them.

- **Oak leaf phylloxera** (*Phylloxera species*) damage is first visible as yellow spots on the leaves in May and June. This gradually progresses to complete browning and defoliation of some trees by late July. By late July or early August, heavily affected trees lose their leaves, although the trees often produce a second flush of leaves in August. Most trees with phylloxera seem to have light infestations without damage, while a few trees are heavily attacked year after year, becoming severely weakened and eventually dying. At least ten species of predators have been recorded feeding on phylloxera, but they do not appear to control it.
- **Gypsy moths** (*Lymantria dispar*) come from Europe and Asia. They were accidentally introduced to North America, near Boston, in the 1860s. Since then the range of gypsy moths has expanded and continues to increase. Occasionally, isolated populations of the moths are found in British Columbia's Garry oak trees. Gypsy moth caterpillars have a voracious appetite for oak leaves and can completely defoliate trees. If all of the leaves are eaten in successive years, the infested trees may die, especially if they are weakened by diseases and other stressors.
- **Winter moth** (*Operophtera brumata*) caused extensive damage to deciduous trees on southeast Vancouver Island in the early 1980s, until a biological control program using parasitic wasps and a parasitic fly brought the moths under control. They are also kept in check by native predators such as ground beetles.
- **Sudden oak death syndrome** (*Phytophthora ramorum*) occurs when water-borne spores land on the bark or leaves of oak trees, causing bark cankers, leaf yellowing and dieback. Sudden Oak Death Syndrome (SODS) is also known as Ramorum Blight and Dieback Disease. This disease can kill oak trees and other host plants such as arbutus, hairy manzanita and hairy honeysuckle. Fortunately for this region,

it has only affected trees in California and Oregon woodlands so far, and Garry oaks are not known to be susceptible. In British Columbia it has appeared on rhododendrons and other imported plants, but a careful inspection system is attempting to detect any affected plants before they are sold. It is important to prevent the introduction of this disease, so never transport potentially infected host material or soil taken from areas where the pathogen is known to occur. Symptoms on oak trees include a rapid decline (dieback). Leaves turn brown suddenly and stay on the branch for up to a year, while bleeding or oozing cankers develop on the lower trunk and branches. If you think you spot symptoms, report possible cases to your local office of the Canadian Food Inspection Agency or the Canadian Forest Service.

The **BC Ministry of Agriculture & Lands** has useful bulletins on several Garry oak diseases and pests at [www.agf.gov.bc.ca/cropprot/nonnativepests.htm](http://www.agf.gov.bc.ca/cropprot/nonnativepests.htm).

### Plants You Don't Need to Buy

Have a look around your garden and neighbourhood. You may spot some native plants that could be a natural seed source. Sometimes they will show up as volunteers in your garden without any help. Plants such as red alder are considered pioneer species that will quickly invade if soil conditions are right after land has been cleared. Other plants produce seeds that can lie dormant in the soil (the seed bank) until the right conditions for germination come along years later. Still other plants produce fruits that are eaten by birds; the seeds pass through the digestive system unharmed and are deposited in a different place. If your neighbourhood has Garry oak trees and you have seen or heard Steller's jays or red squirrels, they may have already planted acorns in your garden. It can be a lot of fun to incorporate volunteer plants into your garden designs. The following list will give you an idea of the kinds of volunteer plants you might find





Indian-plum. PHOTO: CHRIS JUNCK

popping up in your garden. You may want to keep some where they are or move others into a planting bed. A few species such as red alder may form dense thickets of seedlings that will crowd out your own plantings unless you weed and thin to just a few specimen trees.

- Bigleaf maple (*Acer macrophyllum*)
- Yarrow (*Achillea millefolium*)
- Red alder (*Alnus rubra*)
- Pearly everlasting (*Anaphalis margaritacea*)
- Bleeding heart (*Dicentra formosa*)
- Purple-leaved willowherb (*Epilobium ciliatum*)
- Fireweed (*Epilobium angustifolium*)
- Large-leaved avens (*Geum macrophyllum*)
- Oceanspray (*Holodiscus discolor*)
- Common rush (*Juncus effusus*)
- Small-flowered woodrush (*Luzula parviflora*)
- Indian-plum (*Oemleria cerasiformis*)
- Trembling aspen (*Populus tremuloides*)
- Willows (*Salix* species)
- Hardhack (*Spiraea douglasii*)
- Snowberry (*Symphoricarpos albus*)
- Early blue violet (*Viola adunca*)
- Trailing yellow violet (*Viola sempervirens*)

## Dealing with Deer

One of your goals in establishing Garry oak habitat on your property may be to attract native wildlife. For example, you may have chosen particular native plants to provide food and water for birds and butterflies, and find you have created some tasty treats for deer as well.

Some people enjoy the deer and welcome their presence. Others want to discourage these visitors. Deer can do a great deal of damage to the plants growing in your yard. Young and tender plants may need protection from them. More mature plants are adapted to handle some loss of foliage and the deer's browsing may not be harmful. Well-established plants will often re-grow the parts that have been eaten, with no long-term impact.

If you decide deer control methods are necessary, here are some ideas to try.

- **Fencing.** You may decide to fence a part of your yard (such as the vegetable garden or your newly planted native plant garden). Check your local bylaws first. If possible, fencing should be at least 3m (10') high and set at least 30cm (1') below the ground. Openings should be less than 10cm (4").
- **Netting.** Individual trees and shrubs can be covered with stiff plastic netting. This helps to reduce browsing but does not eliminate it.
- **Repellent plants.** Some plants – such as catnip, garlic, lavender and yarrow – are reputed to repel some deer.
- **Resistant plants.** Some plant species, such as Oregon-grape and kinnikinnick, are more deer resistant than others. Ask your local nursery for suggestions of appropriate species for your area. Many native plants are more tolerant of browsing than exotic species.
- **Scare tactics.** Strobe lights, motion detector lights, radios, aluminum pie pans and other deterrents can startle deer, especially when they first appear. The presence of dogs is also helpful.
- **Odour and taste repellents.** There are several commercially



available products which may help to repel some deer, and many people have homemade recipes for repellents including hanging bars of soap from tree branches. However, there is no local evidence such techniques actually work and it can be an onerous task to re-apply these remedies on a regular basis.

*Deerproofing Your Yard & Garden* by Rhonda Massingham Hart (North Adams, Massachusetts: Storey Publishing, 2nd edition, 2005) is a very useful reference with many more ideas for gardeners learning to co-exist with deer.

For more tips, check the **Canadian Wildlife Federation** website at [www.wildaboutgardening.org](http://www.wildaboutgardening.org).

### Protecting Wildlife From Predators and Hazards

#### *Wildlife Sinks*

A new neighbourhood habitat full of tasty food plants could become a wildlife 'sink'. Cats, dogs, grey squirrels, rabbits, starlings, cowbirds and other introduced animals can be destructive to plants, and kill or out-compete the wildlife you are trying to attract. If one of your goals is to create habitat or a sanctuary for specific species such as butterflies, take measures to prevent predation by non-native animals.

#### *Mowing can be Dangerous*

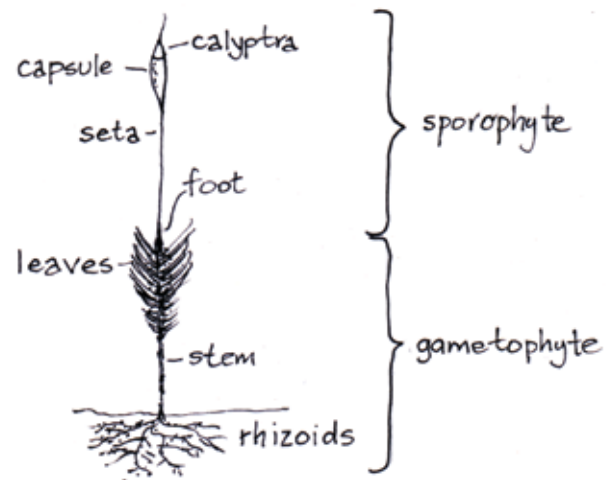
Careful! When using a mower or weed eater make sure that you do not harm small animals such as snakes, alligator lizards and frogs.

### Techniques for Growing Moss

All Garry oak ecosystems have a complement of moss and lichen species that provide a top crust that covers rock and soil. Unfortunately, they are currently not sold in nurseries, and lichens are difficult to propagate, so take care of any mosses and lichens already in your garden – they are sensitive to light conditions and have specialized habitat needs. If you remove a large tree, the increased sunlight can result in a change in moss species in the surrounding habitat patch.

A useful reference for anyone interested in growing mosses

Parts of a moss



Stonecrop and moss. PHOTO: TODD CARNAHAN

is *Moss Gardening*, by George Schenk (Portland, Oregon: Timber Press, 1997).

The easiest way to acquire moss is to transplant a small strip from your own garden or a neighbour's (with their permission, of course). It is best to keep the moss attached to the layer of soil it is already growing on to avoid excess damage to the plant. Remove moss from rock outcrops very carefully, with a wide putty knife or lino cutting knife. If it is in a crevice, wait until the soil is dry and try to pry up a whole





piece, with moss attached. In woodlands, use a sharpened square-bladed spade to cut a small moss turf with 2.5cm (1”) of soil from the moss patch. When choosing the moss transplant site, be sure to consider the sun’s location during all four seasons. An area that is fully shaded now may be in full sun by mid summer. At the transplant site, lay the piece of moss down on bare soil just like you would with grass sod, and tamp it firmly to remove air pockets. Water well for the first two to three weeks until it becomes established.

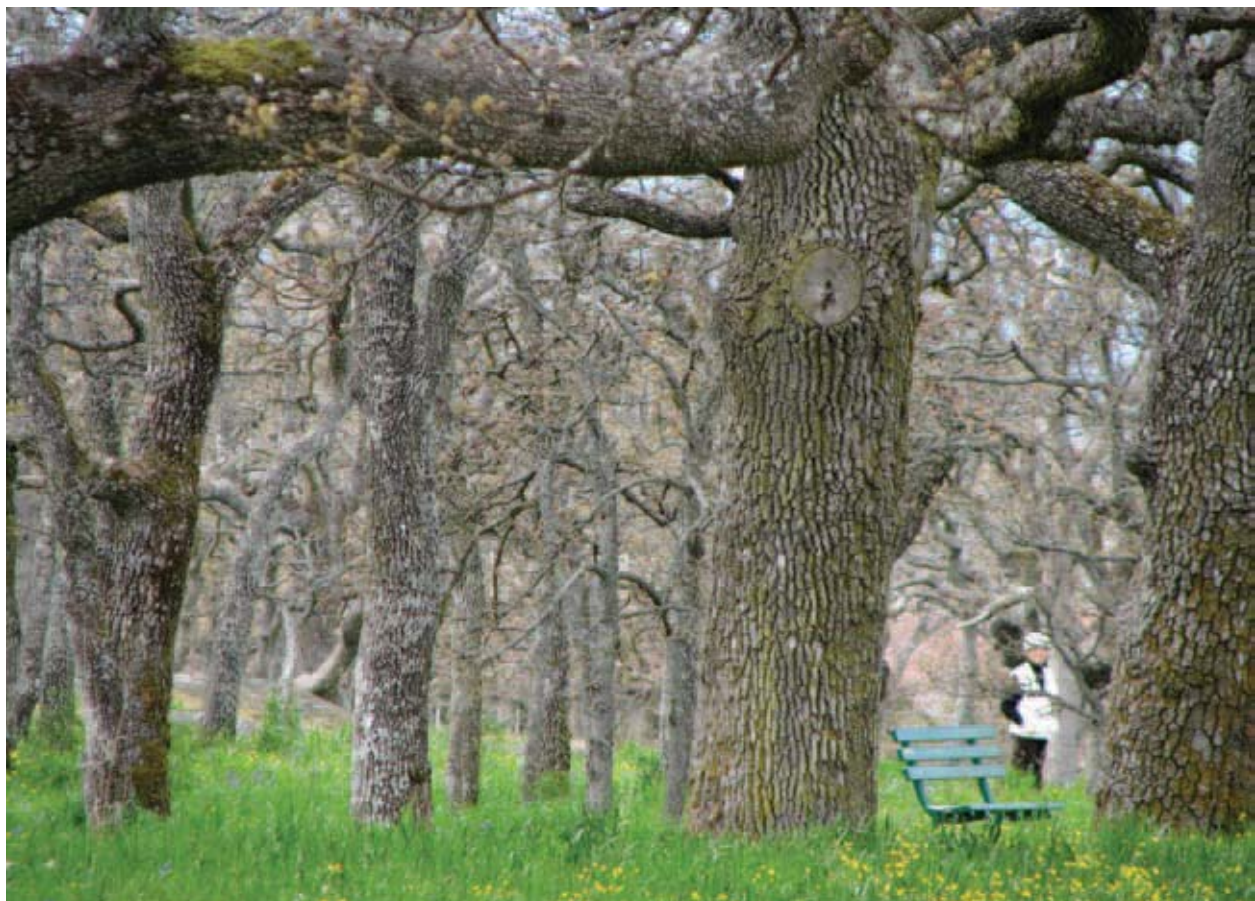
If you cannot find a donor site to obtain moss for transplanting an intact clump, use the moss milkshake technique for a quick way to inoculate a location with spores and bits of rhizome that will grow into a moss patch.

*Making a Moss Milkshake*

- Locate habitat similar to the garden you are creating. Ask permission to collect a small handful of moss.

- Take a small handful of healthy moss (remove any soil) when the sporophyte capsules appear to be ripe (you are after any spores and the rhizoids) and put into a 1-litre (4-cup) blender.
- Mix a half litre (2 cups) of milk, buttermilk or plain yogurt with a half litre of water and add to blender.
- Blend at the lowest speed until thoroughly mixed and having the consistency of a thin milkshake (add more water if too thick).
- Paint the mixture onto rocks or pour into cracks or onto the ground wherever you’d like your moss to grow.
- Keep moist for a month and soon the spores will begin to grow and the bits of blended moss will regenerate into whole rooted plants that will colonize the area.

Many mosses are not fast growers and may need one or two seasons to become established, depending on moisture levels, shade requirements and soil composition.



Garry oak woodland. PHOTO: TODD CARNAHAN

## GREEN ROOFS



Green roofs, also known as eco-roofs or living roofs, are gardens built on top of conventional roofs. They provide aesthetic enhancement,

improved building insulation, reduced rate and volume of stormwater runoff, reduced urban heat trapping, and reduced water pollution. There is a variety of green roof systems, each requiring several protective waterproof layers and a drainage system located beneath the growing substrate and plants.

A green roof provides benefits to those using the building, and helps the environment in several ways:

- Providing wildlife habitat including potential fly-over habitat for birds and butterflies
- Visual amenities and passive recreation opportunities
- Reducing stormwater runoff; a green roof can absorb 70 - 90% of rainfall
- Reducing heat loss from the building in winter
- Reducing internal building temperature during summer
- Reducing overall building energy costs
- Improving acoustic performance of the building
- Removing carbon dioxide and absorbing pollutants from the air

There are two main types of green roofs. Intensive roofs are physically accessible (load bearing), have deeper soils and can be landscaped with trees, shrubs, flowers and outdoor furniture. Extensive roofs are physically inaccessible and can be viewed from the street or surrounding buildings and are landscaped with a shallow 8-15cm (3-6") layer of growing medium and herbaceous plants.

Green roofs have great potential to become shallow-soil Garry oak meadows. In fact many

of the plants grown by B.C. nurseries for green roof gardens have their native origins in Garry oak ecosystems. Have a look at the Container and Rock Outcrop garden designs to get an idea of the plant palette you could use on a green roof.

The **BCIT Centre for the Advancement of Green Roof Technology** provides resources and industry contacts and offers short professional courses. See their website at [www.common.bc.ca/greenroof](http://www.common.bc.ca/greenroof).

These three publications provide useful general and technical information:

*Green Roof Plants: A Resource and Planting Guide*, by Edmund C. Snodgrass and Lucie L. Snodgrass. (Timber Press, 2006)

*Introductory Manual for Greening Roofs*, by Cornelia Hahn Oberlander, Elisabeth Whitelaw & Eva Matsuzaki (Ottawa: Public Works Canada, 2002)

*Roof Gardens: History, Design and Construction*, by Theodore Osmundson (New York: W.W. Norton & Company, 1999)



**FOR MORE INFORMATION  
CONTACT GOERT:**

Email: [info@goert.ca](mailto:info@goert.ca)  
Phone: (250) 383-3427  
Website: [www.goert.ca](http://www.goert.ca)



Top photo: Green roof on garden shed, Michigan Street Community Garden. Bottom photo: Green roof on Burnside-Gorge Community Centre. PHOTOS: CAROLYN MASSON



## LEARNING GARDENS AND SCHOOLYARDS



Braefoot Elementary students planting their natureescape with help from HAT.

PHOTO: TODD CARNAHAN

Garden-based learning is a global movement to engage students of all ages in the transformation of schoolyards into a variety of theme gardens and cross-curriculum outdoor classrooms. School gardens have been constructed for native plants, wildlife habitat, vegetables and fruit, water conservation, and climate change.

Creating, growing and maintaining a native plant garden provides an authentic outdoor educational experience for students where they can play, learn, and develop a genuine respect for nature and each other in a safe environment. Through hands-on activities, learning gardens teach students about the importance of protecting and celebrating nature.

**Evergreen** has promoted Learning Grounds of all sizes for several decades and provides useful information, case studies and resources.

In the Capital Regional District, **Habitat Acquisition Trust (HAT)** helps students create and care for native plant gardens on school grounds as part of their Green Spots Program. Call (250) 995-2428 or see their website.

In Greater Victoria, **LifeCycles** has developed a school-based food gardening program and has resources for teachers interested in school gardening projects.

The **Canadian Biodiversity Institute** is another excellent resource for parents and educators working with schoolchildren on native plant gardens and wildlife habitat creation projects.

The **Association for Canadian Educational Resources** has developed a schoolyard tree certification program as part of their climate change monitoring initiative.

Native plant gardens provide many opportunities for curriculum tie-ins in a variety of subjects, and can aid in a better understanding of First Nations perspectives regarding traditional uses of plants, relationships with the land, and our interconnections with nature. Consult with local **Aboriginal Education** specialists and elders in your school district for advice and suggestions regarding the incorporation of traditional food and medicine plants in a school garden project. For ideas on integrating Aboriginal content into the curriculum, see the **BC Ministry of Education** website.

***Garry Oak Ecosystems of British Columbia: An Educator's Guide*** is full of activity plans for groups of various ages. The book contains background information, graphics and hands-on activities for experiential learning about Garry oak ecosystems. Contact WILD BC to place an order. Phone (250) 356-7111, or email wild@gov.bc.ca.

**Native Plant Gardening Workshops** with Pat Johnston. Co-sponsored by CRD Water Services and Swan Lake Christmas Hill Nature Sanctuary. Call Swan Lake at (250) 479-0211 or see the CRD website at: [www.crd.bc.ca/water/conservation/outdoorwateruse/workshops/index.htm](http://www.crd.bc.ca/water/conservation/outdoorwateruse/workshops/index.htm).

**Restoration of Natural Systems Program** (University of Victoria): [www.uvcs.uvic.ca/restore](http://www.uvcs.uvic.ca/restore).



**EVERGREEN**

[www.evergreen.ca](http://www.evergreen.ca)

**HABITAT ACQUISITION TRUST**

[www.hat.bc.ca](http://www.hat.bc.ca)

**LIFECYCLES**

[www.lifecyclesproject.ca](http://www.lifecyclesproject.ca)

**CANADIAN BIODIVERSITY INSTITUTE**

[www.schoolgrounds.ca](http://www.schoolgrounds.ca)

**ASSOCIATION FOR CANADIAN EDUCATIONAL RESOURCES**

[www.acer-acre.org](http://www.acer-acre.org)

**BC MINISTRY OF EDUCATION**

[www.bced.gov.bc.ca/abed/shared.pdf](http://www.bced.gov.bc.ca/abed/shared.pdf)

## PROTECT THE FUTURE OF GARRY OAK HABITAT

Garry oak habitat can take decades to develop and mature. During this time, your property may change hands many times. You can protect your efforts and leave a living legacy for future generations.

There are several options, including conservation covenants, to ensure the long-term protection of your Garry oak habitat or garden. Most landowners use these options in partnership with a conservation organization or land trust dedicated to protecting nature on private land.

### CONSERVATION OPTIONS FOR PRIVATE LANDOWNERS

#### *Conservation Covenants*

A conservation covenant allows you to protect natural features on your land. For example, you could protect a mature Garry oak and a small pond that provide habitat for a few native plants or animals without having to donate or sell your land.

A conservation covenant is a voluntary legal agreement between you as a landowner and a conservation organization and/or local government. In return for the long-term protection of natural features, you commit to protecting the land in specified ways. For example, you might promise not to cut down any Garry oaks and to maintain the understorey vegetation. The terms you agree to become part of the covenant, which is then attached to the land title and must be followed by every future landowner. The conservation organization will carefully watch the land to ensure that the terms of the covenant are followed, so you can sell or donate your property whenever you like and be assured of the protection you arranged. Contact the Land Trust Alliance of BC for more information.

#### *Donating Your Land*

If you donate your property (or a part of your property) to a qualified organization such as a local government or land trust, you may

receive a tax receipt for the appraised value of the donation. If your property has ecological value, you may be able to increase your tax benefit under the Ecological Gifts Program. For advice on ecological gifts, contact the Canadian Wildlife Service at (604) 940-4700.



**Contact the Land Trust Alliance of BC at (250) 477-4766 or visit their website: [www.landtrustalliance.bc.ca](http://www.landtrustalliance.bc.ca) for more information regarding conservation covenants.**



Chocolate lilies and other wildflowers grow in profusion on some protected islets. PHOTO: EMILY GONZALES





Garry oak ecosystems are protected in the Gulf Islands National Park Reserve of Canada. PHOTO: BRIAN READER

### *Life Estate*

You may give your property as a gift to a local government or land trust, but include a life estate. This means that you – and your children if you choose this option – have the right to stay on your property for the rest of your lives. Title to your

property is transferred to the new owner only when you no longer live there. There are usually some restrictions on your use of the property to protect its ecological values, but in return you may receive some tax benefits.

### *Selling Property*

You can sell your property to a conservation organization or government agency to ensure its future protection in a couple of ways. You may have your property appraised and use its fair market value, or, by selling it for less than this, you can provide a bargain. If your sale price is less than 80% of the appraised value, you can receive a tax receipt for the difference.

### *More Ways to Protect Your Garry Oak Habitat*

There are other simple ways to protect your habitat. These include writing agreements with conservation organizations, taking protective measures when re-developing your property, and using local bylaws and provincial or federal laws. Local land trust organizations will provide you with more information.

### **OTHER WAYS YOU CAN HELP**

- Volunteer at a restoration project near you to remove invasive species from local parks, schools, and other lands.

- Attend workshops and other events sponsored by GOERT and our partners.
- Join or support organizations involved in conserving, protecting and restoring Garry oak habitat.
- Share what you know about species at risk and Garry oak ecosystems with your friends and neighbours.
- Protect trees in your community. If you think Garry oaks may be damaged or cut down, contact your municipality or GOERT to find out how they might be protected.
- Ask your local government to incorporate Garry oak ecosystem conservation into their local planning processes, and support initiatives to protect Garry oak habitat from development.
- Share your knowledge with others and take part in discussions. Subscribe to our listserv and e-newsletter at [www.goert.ca/subscribe](http://www.goert.ca/subscribe).
- Tread gently near sensitive areas (e.g. vernal pools, moss- or lichen-covered bluffs), and stay on designated pathways.
- Treasure the natural and wild areas in our yards, parks and all public and private lands.

### **SPREAD THE WORD!**

Let others know what you are doing and why it is so important.

- Install interpretive signs at the edge of the property so that people will know what you are doing.
- Talk to your neighbours; if you can get them interested, they may offer to help. If they are interested in creating or protecting Garry oak habitat on their property, offer to help them.
- When your garden is ready, you could offer tours to local naturalist and garden clubs, schools and other interested individuals.

If you have questions you can't find answers for, please call GOERT at (250) 383-3427 or send an email to [info@goert.ca](mailto:info@goert.ca).

## APPENDIX

Here are some resources to help you find native plants and seeds, and to find Garry oak gardens and natural habitat for inspiration.

Please note that the listings are accurate to the best of our knowledge at the time of printing. This is not an exhaustive list, but is intended to provide a selection of useful resources.

For the most up-to-date information, please see [www.goert.ca](http://www.goert.ca) under 'gardening and restoration'. To suggest an addition or correction, please contact GOERT.

## SUPPLIERS OF NATIVE PLANTS AND SEEDS

### *Victoria area*

#### **Cannor Nursery**

4660 Elk Lake Drive, Victoria  
Phone: (250) 658-5415  
Website: [www.cannor.com](http://www.cannor.com)

#### **GardenWorks - Colwood**

1859 Island Highway, Victoria  
Phone: (250) 478-2078  
Website: [www.gardenworks.ca](http://www.gardenworks.ca)

#### **GardenWorks - Saanich**

4290 Blenkinsop Road, Victoria  
Phone: (250) 721-2140  
Website: [www.gardenworks.ca](http://www.gardenworks.ca)

#### **Island View Nursery** (wholesale to the trade)

2933 McIntyre Road, Saanichton  
Phone: (250) 544-4802  
Email: [islandvn@telus.net](mailto:islandvn@telus.net)

#### **Lochside Nursery**

Dooley Road at Lochside Drive, Brentwood Bay  
Phone: (250) 544-3100  
Website: [www.csl.ca/lochside.html](http://www.csl.ca/lochside.html)

#### **Marigold Nurseries**

7874 Lochside Drive, Saanichton  
Phone: (250) 652-2342  
Email: [admin@marigoldnurseries.com](mailto:admin@marigoldnurseries.com)  
Website: [www.marigoldnurseries.com](http://www.marigoldnurseries.com)

#### **Nature's Garden Seed Company**

Box 32105, Victoria, BC V8P 5S2  
Phone: (250) 595-2062 or 1-877-302-7333  
Email: [mail@naturesgardenseed.com](mailto:mail@naturesgardenseed.com)  
Website: [www.naturesgardenseed.com](http://www.naturesgardenseed.com)

#### **Queenswood Victoria Nursery**

(wholesale & retail)  
6458 Central Saanich Road, Victoria  
Phone: (778) 426-4455  
Email: [info@queenswoodnursery.com](mailto:info@queenswoodnursery.com)  
Website: [www.queenswoodnursery.com](http://www.queenswoodnursery.com)

#### **Russell Nursery**

1370 Wain Road, North Saanich  
Phone: (250) 656-0384  
Email: [russellnursery@telus.net](mailto:russellnursery@telus.net)  
Website: [www.russellnursery.com](http://www.russellnursery.com)

#### **Thousand Summers Environmental Design**

Phone: (250) 727-0229  
Email: [thousandsummers@shaw.ca](mailto:thousandsummers@shaw.ca)

#### **Swan Lake Christmas Hill Nature Sanctuary**

(*annual native plant sale*)  
3873 Swan Lake Road, Victoria  
Phone: (250) 479-0211  
Email: [info@swanlake.bc.ca](mailto:info@swanlake.bc.ca)  
Website: [www.swanlake.bc.ca](http://www.swanlake.bc.ca)

### *Up-Island and Gulf Islands*

#### **Cairnpark Nursery Services Inc.**

3467 Glenora Road, Duncan  
Phone: (250) 715-0559  
Website: <http://members.shaw.ca/cairnpark/>

#### **Cannor Nursery**

609 East Island Highway, Parksville  
Phone: (250) 248-0093  
Website: [www.cannor.com](http://www.cannor.com)

#### **Fraser's Thimble Farms**

175 Arbutus Road, Salt Spring Island  
Phone: (250) 537-5788  
Email: [thimfarm@telus.net](mailto:thimfarm@telus.net)  
Website: [www.thimblefarms.com](http://www.thimblefarms.com)

#### **MacWatt Plants** (*by appointment*)

1750 Maple Bay Road, Duncan  
Phone: (250) 748-1527 or cell (250) 732-7315  
Email: [dmacwatt@shaw.ca](mailto:dmacwatt@shaw.ca)



**Natural Abundance Native Plant Nursery**

*(call or email for hours and directions)*

Phone: (250) 714-1990

Email: plants@nalt.bc.ca

Website: www.nalt.bc.ca

**Oud's Natural Resource  
Native Plant Nursery &  
Demonstration Garden**

*(by appointment)*

2466 Roome Road, Duncan

Phone: (250) 748-0684

Email: r\_oud@shaw.ca

**Quamichan Native Plants Inc.**

*(by appointment)*

2380 Hatchery Road, Duncan

Phone: (250) 732-0713

Email: elliot\_ken@hotmail.com

**Streamside Native Plants**

*(wholesale & retail)*

7455 Island Highway West, Bowser

Phone: (250) 757-9999

Toll Free: (877) 570-3138

Email: richard@streamsidenativeplants.com

Website: www.streamsidenativeplants.com

**Sylvan Vale Nursery Ltd** (wholesale)

2104B Kelland Road, Black Creek

Phone: (250) 337-8487

Email: info@svnltd.com

Website: www.svnltd.com

**Wildside Nursery**

*(by appointment)*

1770 Corrigal Road, Denman Island

Phone: (250) 335-1379

Email: wildside@island.net

**Yellow Point Propagation Ltd** (wholesale seeds)

13735 Quennell Road, Ladysmith

Phone: (250) 245-4635

Email: ypprop@shaw.ca

www.yellowpointpropagation.com

*Lower Mainland*

**BC's Wild Heritage Plants**

*(wholesale and retail, by appointment)*

47330 Extrom Road, Sardis

Phone: (604) 858-5141

Email: bcwildplants@uniserve.com

Website: www.bcwildheritage.com

**Linnaea Nurseries Ltd** (wholesale)

3666 - 224th Street, Langley

Phone: (604) 533-8281

Email: john@linnaeanurseries.com

Website: www.linnaeanurseries.com

**Mosterman Plant Inc** (wholesale)

43583 Adams Road, Chilliwack

Phone: (604) 823-4713

Email: mostplantsinc@shaw.ca

**N.A.T.S. Nursery** (wholesale & retail)

24555 32nd Avenue, Langley

Phone: (604) 530-9300

Website: www.natsnursery.com

**Pacific Rim Native Plant Nursery**

Box 413 Chilliwack, BC V2P 6J7

Phone: (604) 792-9279

Email: plants@hillkeep.ca

Website: www.hillkeep.ca

**Pickseed Canada**

Abbotsford

Contact Don Biggin for retail orders of "Garry Oak Upland Mix" grass seed (70% Roemer's fescue, 30% California oatgrass).

Phone: (604) 504-7964

Toll Free: (877) 504-7964

Email: dbiggin@pickseed.com

Website: www.pickseed.com

**Quality Seeds West** (wholesale seeds)

Langley

Phone: (604) 574-7333 or 1-888-770-7333

Email: support@qualityseedswest.ca

Website: www.qualityseedswest.ca



*Washington State*

**Fourth Corner Nurseries** (wholesale)  
5652 Sand Road, Bellingham, WA  
Phone: (360) 592-2250  
Toll Free: (800) 416-8640  
Email: sales@FourthCornerNurseries.com  
Website: www.FourthCornerNurseries.com

**Madronamai**

3923 Mt. Baker Highway, Everson, WA  
Large Garry oak trees up to 8.5" caliper available  
Phone: (360) 592-2200  
Email: madronamai@aol.com  
Website: www.madronamai.com

*Oregon*

**Pacific Northwest Natives** (wholesale and retail)  
1525 Laurel Heights Drive NW  
Albany, Oregon  
Phone: (541) 928-8239  
Email: pacificnwnatives@comcast.net  
Website: www.pacificnwnatives.com

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**SUGGESTED PARKS AND GARDENS  
FOR VIEWING NATIVE PLANTS**

*Victoria Area*

**Beacon Hill Park**

*Bordered by Douglas Street, Dallas Road and Cook Street, Victoria*

Remnants of Garry oak ecosystems occur in this City of Victoria park, providing spectacular spring shows of camas and other native wildflowers. (250) 361-0600.

**Fort Rodd Hill National Historic Site of Canada**

*603 Fort Rodd Hill Road, off Ocean Boulevard, Colwood*

Parks Canada is working to restore Garry oak ecosystems at Fort Rodd Hill. Introduced invasive plants are being removed to improve general ecosystem health and give rare and plants at risk a chance to recover. A number of Garry oak patches are visible from designated trails. Contact the Park Interpreters' office at (250) 478-5122 or susan.macisaac@pc.gc.ca, or call (250) 478-5849.

**Glendale Gardens and Woodland Horticulture Centre of the Pacific, 505 Quayle Road, Victoria**

Visit the native plant garden, which is an extension of a natural Garry oak meadow. There are native plants for sale, and staff can offer help and advice to native plant gardeners. For more information: (250) 479-6162; info@hcp.bc.ca; www.hcp.bc.ca.

**Gonzales Bay Native Plant Garden  
1843 Crescent Road, Victoria**

A residential seaside native plant garden, featured in the April 2007 issue of House and Home magazine. There is also a small Garry oak restoration area to the east of the Boyle property, beside the walkway to Gonzales Beach. The restoration area is accessible from the sidewalk along Crescent Road. The City of Victoria has kindly given permission for work to continue on the restoration site. Please contact GOERT for more information (info@goert.ca or 250-383-3427).

**Gore Park**

*1049 Greig Avenue, Central Saanich*

This 6.77 hectare park is situated in a Garry oak ecosystem. Cooper's hawks are known to nest in the area. Wildflowers and mossy outcrops are found in abundance.

**Highrock (Cairn) Park  
Esquimalt**

Highrock Park features Garry oak meadows and rocky knolls. The view from the Cairn is one of the most panoramic in the Greater Victoria area. Enter footpaths from Cairn Road off Old Esquimalt Road, Highrock Place off Rockheights Avenue, or from Matheson Avenue off Rockheights Avenue. For more information, call (250) 414-7100 or see www.esquimalt.ca/parksrecreation.

**John Dean Provincial Park  
John Dean Road (off East Saanich Road),  
Central Saanich**

This 174 hectare park located on top of Mount Newton provides spectacular views and protects old-growth Douglas-fir and Garry oak habitat. A number of hiking trails wind through Garry oak meadows where hikers will enjoy expanses of native wildflower blooms in spring. www.env.gov.bc.ca/bcparks/explore/parkpgs/john\_dean.





**Kings Road Native Plant Garden**

*Corner of Kings Road and Roseberry Avenue, Victoria*

This is a residential native plant garden where Garry oak habitat was restored over a period of four years by volunteers meeting once a week. The garden, in the front yard, can be viewed from the street. Please contact GOERT for more information.

**Matson Conservation Area**

*Along the WestSong Walkway in Esquimalt*

The Matson Conservation Area is a demonstration site for urban habitat conservation and community education. Camas and other native plants grow beneath the floating walkway that leads up to a unique view of the City and Inner Harbour. At the top, a drought-proofed naturescape garden planted by volunteers still contains remnants of the European meadow gardens dating from the colonial period. Contact Habitat Acquisition Trust (HAT) at (250) 995-2428; hatmail@hat.bc.ca or see www.hat.bc.ca.

**Metchosin Municipal Grounds**

*4450 Happy Valley Road, Metchosin*

View integrated horticultural and native plant gardens as well as an ongoing Garry oak meadow restoration project. See also nearby St. Mary's Church.

**Oak Bay Native Plant Garden**

*Beach Drive at Margate Avenue  
(across from site of Oak Bay Beach Hotel)*

As well as a restored Garry oak meadow, the garden includes more than 120 plant species from all areas of lower Vancouver Island, many of which were salvaged from development lands. Please contact Carol Davies at (250) 475-4412 or ecdavies@uvic.ca for more information.

**Oaklands Green**

*Belmont Avenue (across from Oaklands Elementary School), Victoria*

Oaklands Green is a park teeming with native plants that was created out of a field of grass. This is a community project aimed at educating the public about the value of naturescaping and Garry oak ecosystems, and is part of the 'Greenways at Oaklands' initiative to create a greenway loop in the neighbourhood. Contact Oaklands Community Centre at (250) 370-9101.

**Pacific Forestry Centre**

*506 West Burnside Road, Victoria*

There is a small demonstration native plant garden on the berm between the lower parking lot and Burnside Road, and three traffic islands to the east of the main building are landscaped with native plants. Open to the public.

**Royal BC Museum Native Plant Garden**

*675 Belleville Street, Victoria*

Located on the corner of Government and Belleville Streets, this sunken garden holds one of BC's largest and most diverse collections of native plants. The garden contains more than 400 plant species from a variety of environments, including alpine, coastal, and dry inland.

**St. Mary's Church**

*Metchosin Road near the corner of Happy Valley Road, Metchosin*

The church yard has a fabulous display of white fawn lilies and other spring wildflowers growing among the gravestones. The grounds are maintained by church volunteers. See also nearby Metchosin Municipal Grounds.

**Summit Park**

*Between Summit and Finlayson at Blackwood, Victoria*

This City of Victoria park features a striking spring display of native camas and buttercup under Garry oak trees. (250) 361-0600.

**Swan Lake Christmas Hill Nature Sanctuary**

*3873 Swan Lake Road, Victoria*

Long-term control of broom, blackberry, ivy and daphne at Christmas Hill has resulted in a beautifully restored Garry oak woodland meadow on the Hill. There is also a native plant garden surrounding the nature house. Contact Swan Lake at (250) 479-0211; info@swanlake.bc.ca or see www.swanlake.bc.ca.

**Uplands Park**

*31 hectare municipal park in Oak Bay*

Uplands Park is a large protected area in a residential neighbourhood, and is a wonderful place to view Garry oak meadows and coastal rock bluffs. The park provides important habitat for many plants and butterflies at risk.



**Woodlands at Government House*****1401 Rockland Avenue, Victoria***

The Woodlands volunteers of the Friends of Government House Gardens Society work in the natural Garry oak area of the Government House grounds (below the house), managing, restoring and conserving this rare habitat. Public tours of the area are given to teach about these ecosystems, their value, and our role in their conservation. There is also a self-guided trail. Please contact GOERT for more information at [info@goert.ca](mailto:info@goert.ca) or (250) 383-3427, or see [www.ltgov.bc.ca/gardens/individual-gardens.htm](http://www.ltgov.bc.ca/gardens/individual-gardens.htm) (scroll to bottom of page).

**CRD PARKS**

Here are a few of the many Capital Regional District parks that protect Garry oak habitat. For more information, please contact CRD Parks at (250) 478-3344 or go to [www.crd.bc.ca/parks](http://www.crd.bc.ca/parks).

- Bear Hill Regional Park
- Devonian Regional Park
- East Sooke Regional Park
- Francis/King Regional Park
- Lone Tree Hill Regional Park
- Mill Hill Regional Park
- Mt. Wells Regional Park
- Mt. Work Regional Park
- Thetis Lake Regional Park

**GARRY OAK RESTORATION PROJECT (GORP)**

GORP is a public ecological restoration program designed to educate local residents about the value and sensitivity of Garry oak ecosystems. There are nine restoration sites on Saanich municipal parklands with a variety of volunteer and viewing opportunities. Four of the nine sites are listed here. For more information, please call (250) 475-5539 or see [www.saanich.ca/gorp](http://www.saanich.ca/gorp).

- **Camas Park**

***McKenzie Road at Cedar Hill X Road near Camas Court***

This GORP site features woodland, rock outcrops and a remnant meadow with a spectacular camas display.

- **Mount Douglas Summit**

***In Mt. Douglas Park on the south-facing slope near the lookout at the summit***

This GORP site is a remnant of open Garry oak savannah with rock outcrops.

- **Mount Tolmie Park**

***In Mt. Tolmie Park off Cedar Hill X Road, on the north-facing slope***

This GORP site is a small portion of Mt. Tolmie and is a Garry oak woodland/rock outcrop.

- **Playfair Park**

***Off Quadra Street between Rock, Kathleen, Judge and Cumberland Roads***

The GORP site within Playfair Park is focused on the north facing Garry oak meadow described as an open woodland savannah with predominately camas and grass understorey. The spring wildflower display in this meadow attracts many visitors.

***Gulf Islands*****Mt. Maxwell Provincial Park*****Central west coast of Salt Spring Island***

This park features outstanding Garry oak woodlands, rock outcrops, and associated vegetation. Adjacent Burgoyne Bay Provincial Park also protects Garry oak habitat. [www.env.gov.bc.ca/bcparks](http://www.env.gov.bc.ca/bcparks).

**Ruckle Provincial Park*****Southeastern Salt Spring Island along Swanson Channel***

Among other features, this popular park features Garry oak habitat and associated species at risk. [www.env.gov.bc.ca/bcparks](http://www.env.gov.bc.ca/bcparks).

**Gulf Islands National Park Reserve, Parks Canada*****A variety of southern Gulf Islands, including islets and reefs***

This national park protects outstanding examples of Garry oak habitat. For more information, please see: [www.pc.gc.ca/eng/pn-np/bc/gulf/index.aspx](http://www.pc.gc.ca/eng/pn-np/bc/gulf/index.aspx), call (250) 654-4000 or email [gulf.islands@pc.gc.ca](mailto:gulf.islands@pc.gc.ca).



*Cowichan Valley*

**Cowichan Garry Oak Preserve**

***6 km east of Duncan***

This Nature Conservancy of Canada (NCC) site protects one of the largest, most intact Garry oak woodland meadows on Vancouver Island.

Volunteer events and educational tours for community and schools are available. Please contact the Site Manager and Restoration Technician at (250) 748-7124.

[www.natureconservancy.ca](http://www.natureconservancy.ca).

**Mt. Tzuhalem Ecological Reserve**

***4 km east of Duncan; for public access information, please see BC Parks website.***

The ecological reserve protects Garry oak woodland meadows and rock outcrops and their associated species at risk. It is located on the south-facing slope of Mt. Tzuhalem.

[www.env.gov.bc.ca/bcparks](http://www.env.gov.bc.ca/bcparks).

**Somenos Garry Oak Protected Area**

***Adjacent to Somenos Lake, Duncan***

Garry oak habitat is being restored at this site through removal of invasive species and replacement with native species. For more information, please contact Genevieve Singleton, natural history interpreter, at (250) 746-8052.

[www.env.gov.bc.ca/bcparks](http://www.env.gov.bc.ca/bcparks).

**St. Peter's Anglican Church**

***5800 Church Road, Duncan***

Phone: (250) 746-6262

The church yard displays a profusion of Garry oak wildflowers in spring and summer.

*Nanaimo Area*

**Jack Point Park**

***At end of Duke Point Highway (Hwy 19), Nanaimo***

For more information, please go to [www.nanaimo.ca](http://www.nanaimo.ca) or call (250) 755-7505.

**Neck Point Park**

***1055 Morningside Drive off Hammond Bay Road, Nanaimo***

For more information, please go to [www.nanaimo.ca](http://www.nanaimo.ca) or call (250) 755-7505.

*Lower Mainland*

**UBC Botanical Garden**

***6804 SW Marine Drive, Vancouver***

Visit a prominent garden exhibit of Garry oak ecosystem trees, shrubs and vines with an understory of native bunch grasses, bulbs, perennial and annual wildflowers. Student education and research is ongoing. Tours can be booked by calling (604) 822-4208.

[www.ubcbotanicalgarden.org](http://www.ubcbotanicalgarden.org).



Blue-eyed Mary and sea blush on a rock outcrop. PHOTO: KATHRYN MARTELL



If you enjoyed *The Garry Oak Gardener's Handbook*, please consider making a charitable donation to the Garry Oak Ecosystems Recovery Team Society (GOERT) – Charitable Number 84300 7816 RR0001.

We use donated funds to implement our Recovery Strategy to protect and restore endangered Garry oak ecosystems in our region, the only place in Canada where these unique and fragile landscapes occur.

Please use the enclosed donation card to make your donation today, or donate online at [www.goert.ca/donate](http://www.goert.ca/donate).

*Thank you for your generous support!*



Parks Canada  
Parcs Canada



Ministry of Environment



HAT  
Creating Conservation Legacies



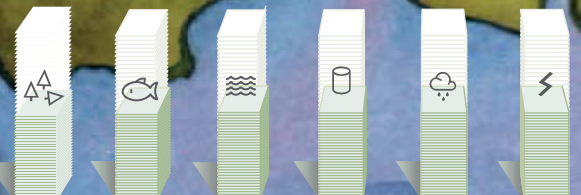
Canada  
The Habitat Stewardship Program of the Government of Canada



Garryoak ecosystems recovery team  
[www.goert.ca](http://www.goert.ca)

GOERT saved the following resources by using 2011 kg of Reincarnation Matte (FSC), made with 100% recycled fibre and 60% post-consumer waste, processed chlorine-free and manufactured with electricity offset with Green-e® certified renewable energy certificates.

22 trees preserved for the future	29 kg water-borne waste not created	35,740 liter wastewater flow saved	474 kg solid waste not generated	933 kg net greenhouse gases prevented	15,743,700 BTUs energy not consumed
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