

## Ecological Stewardship Manual

The City of Colwood (the City) may require an Ecological Stewardship Manual (the Manual) to attach to a covenant established to protect the natural environment or an issued environmental development permit (DP). As such, the final Manual would become a legal document, although it would not contain legal requirements. The Manual would be attached to the Land Title, thus it will be accessible to every future landowner of the subject property.

Colwood has four environmental development permit areas (DPAs) (Riparian, Marine Shoreline, Sensitive Ecosystems, and Hillside), each with its own set of DPA guidelines. The subject DPA guidelines should be reviewed to inform the content of the Manual.

### **Purpose and Scope of the Report**

The purpose of the Manual is to bring forward the knowledge gained during the development process to the landowner and provide guidance to have a positive influence on the protected natural area. The Manual should be site-specific and focused on the protected natural area (as opposed to the entire property).

The purpose of the Manual is not to give advice on broad environmental stewardship practices, such as recycling, composting, water conservation, energy conservation, etc. This type of information is readily available elsewhere.

### **Who can prepare the report?**

There are a variety of potential sources of expertise that can prepare the report, such as:

- A consultant already involved with the development
- A consultant with expertise in local ecological stewardship
- A non-profit agency with expertise in local ecological stewardship
- A graduate of an appropriate diploma program, such as the University of Victoria's Restoration of Natural Ecosystems, with experience in local ecological stewardship
- A graduate student, working with an advisor, in an appropriate program

A peer review is recommended by a professional, or professionals, acting within their area of expertise, and in good standing with a regulatory body is preferred, such as members of the following:

- College of Applied Biologists
- British Columbia Institute of Agrologists
- Forest Professionals BC

## Methodology

1. Review the issued environmental development permit (DP) and development permit area (DPA) guidelines specific to the subject property (Riparian, Marine Shoreline, Sensitive Ecosystem, or Hillside) and/or covenant document to understand the terms that allowed for the development to occur. Note any outstanding requirements such as maintenance of plant material which may still be in the care of the applicant/developer.
2. Review all environmental reports that were prepared in support of the development application, which may include:
  - Environmental Impact Overview Report
  - Site Adaptive Design Plan
  - Ecological Restoration and Habitat Enhancement Plan
  - Arborist Report
  - Construction Environmental Mitigation Plan
  - Stormwater Management Plan
  - Any other report dealing with environmental impact

As part of these reports, consultants were requested to include pertinent information directed to future landowners that could be incorporated into a stewardship plan.

There may also be valuable mapping and inventory contained in the reports. Contact the consultants who created the reports for further information, if needed.

3. Conduct a site inspection to observe and photograph the protected natural area, including:
  - ecological restoration in progress
  - habitat and habitat enhancements
  - mitigation measures, such as fences, signage, buffers
  - invasive species outbreaks
  - natural features
  - species of interest
  - stormwater management systems, nature-based solutions, or green infrastructure that may tie in with the natural area
4. Create a draft Manual using the template provided by the City. A template can be found at the end of this Terms of Reference. Within the template, highlighted text requires a response. Draw upon local sources of information to guide recommendations (see Useful Resources below).
5. Consider having the draft document peer reviewed. Inquire with the City to see if staff would like to review the draft document.
6. Consider putting the document in a cover with pockets/sleeves to hold any brochures, fact sheets, or other printed material that relate to the subject property and natural area for the landowner
7. Submit a final digital version of the Manual to the City. Include a cover letter to the City to outline the expertise of the author and basic methodology. Include any recommendations to improve the Manual's Terms of Reference (TOR) and/or Template.

### **A note about watersheds**

The Manual template contains a section about watersheds where the author can select either scenario A (typical watershed) or scenario B (marine shoreline drainage), include the name of the watershed, the receiving aquatic environment (stream or ocean), and other site-specific information. This section of the Manual may be more relevant to properties in the Riparian, Hillside, and Marine Shoreline DPAs, where the property owners may easily impact the protected natural areas due to the proximity of the receiving aquatic environment or the slope of the land. On Hillside DPA properties, the impact may be downslope on adjoining properties with natural areas. Properties in the Sensitive Ecosystem DPA may have insignificant impact on the protected natural area. In this case, the watershed information may be very brief.

### **Remember your audience**

The Manual should be tailored towards future landowners of the property, not just the next one(s). The document should be appealing, useful, educational, and inspiring. Avoid the use of technical jargon and overly detailed background information. Common names of plants and animals should be used, although scientific names can be included in an appendix for property owners looking for this information. The property owner may not use English as a first language, so using photos and diagrams are always helpful.

### Useful Resources for the author(s)

- Stewardship Centre for British Columbia / The Stewardship Series  
<<https://stewardshipcentrebc.ca/>>
- Garry Oak Ecosystem Recovery Team <<https://goert.ca/key-publications/>>
- Habitat Acquisition Trust (HAT) <<https://hat.bc.ca/library>>
- Capital Region Invasive Species Program  
<<https://www.crd.bc.ca/education/concerns/invasive-species>>
- Invasive Species Council of BC <<https://bcinvasives.ca/resources/publications/>>
- *Sensitive Ecosystems Inventory: East Vancouver Island and Gulf Islands 1993–1997 Volume 2: Conservation Manual* (Environment Canada and BC Ministry of Environment)
- District of Saanich Naturescape Program Booklet: *Naturescaping in Saanich—Supporting Nature at Home* <<https://www.saanich.ca/EN/main/community/natural-environment/naturescape-program.html>>
- Coastal Douglas-fir and Associated Ecosystems Conservation Partnership  
<<https://www.cdfcp.ca/>>

## Ecological Stewardship Manual Template

### 1. Cover Page

Title: Ecological Stewardship Manual for **[\* Insert address or addresses]**

Subtitle: This document forms part of **[\* Insert DP# or Covenant #]**

Date: **[\* Insert date of final report]**

Prepared by: **[\* Insert personal name(s) and business names or association of those who prepared the report]**

**Recommended Option: insert a photograph of a key natural feature on the property.**

### 2. Contents

**Insert a contents page**, including:

- Welcome
- Your Property Is Special
- Enjoying your Own Backyard
- Stewarding your Property
- Going the Extra Mile
- Great Guides for You
- Your Responsibilities

### 3. Welcome

#### Introduction

**Provide an overview of the document/generate some interest to read on**

#### Purpose

**Identify the purpose of the Manual**, such as

- Providing data to the landowner that was gathered during the development process
- Ensuring landowners know about the special natural features of the property
- Providing guidance to have a positive influence on the natural environment in their care

Meet the author(s)

**Include a very brief paragraph to introduce the author(s) of the report, with information about your background and experience in natural area stewardship.**

**Recommended Option: Include a comment about what you like about the subject natural area.**

**Recommended Option: Provide a professional email contact for future questions.**

#### 4. Your Property Is Special

Overview of the Coastal Douglas-fir biogeoclimatic zone

Colwood is located entirely within the unique Coastal Douglas-fir (CDF) zone, which is the smallest of 14 biogeoclimatic zones in British Columbia. It is also the least protected (6%) and located mainly on densely populated private land (80%). As a result, all 36 ecological communities in the CDF zone considered rare and 218 species of wildlife and plants found here are at risk.

Garry Oak ecosystems are home to a high percentage of the rare species found in the CDF zone. The CDF zone, and Garry Oak ecosystems in particular, are the highest conservation priority in BC regarding climate change.

While Colwood strives to provide complete communities to residents, the ecosystems that we all enjoy are at risk of loss on a global scale. That is why it is important for you and other residents to conserve natural areas and help provide habitat wherever possible.

Watershed

Scenario A: Your property is located within the **[insert name of watershed]** watershed. That means that most of the rainwater falling on your property, groundwater, irrigation, and stormwater runoff makes its way to **[insert name of creek]** and eventually to the **[insert name of the local marine environment]**.

Scenario B: Most of the rainwater falling on your property, groundwater, irrigation, and stormwater runoff makes its way directly to **[insert name of the local marine environment]**. This is not a typical watershed as there is no stream collecting the water before reaching the ocean.

Impervious surfaces, such as roofs and driveways, change the natural drainage of land. The more that water can seep into the soil, rather than be directed towards the nearest waterbody, the better for the watershed. This gives water a chance to slow down and clean, instead of surging into, a stream or onto a beach, causing contamination and erosion.

**Add any key information known about the watershed and how the property relates to the hydrology and health of the watershed. Some examples include a riparian buffer, stormwater management system, or erosion and sediment controls.**

Key natural features on your property

**Fully describe the key natural feature(s), and their significance, which prompted the protected area designation,** such as:

- A streamside protection and enhancement Area (SPEA)
- A sensitive ecosystem
- A designated hillside
- The marine shoreline
- A rare ecosystem or species
- A nest protected under the *Wildlife Act*
- A wildlife corridor

**Describe additional natural features,** such as:

- Rock outcrops
- Drainages, seepages
- Habitat features
- Common species [Try to include some invertebrates and non-vascular plants]
- Veteran trees, old growth, and culturally modified trees

**Describe any on-site habitat enhancements, stormwater management systems, nature-based solutions, or green infrastructure (and how they relate to the protected natural area),** such as:

- Nesting platforms
- Vegetated swales
- Bio-engineered slopes or banks
- Dune restoration
- Perimeter fences and signs

**Provide a diagnostic photograph for each natural feature that is described.**

**Include a map showing the locations of each natural feature that is described. Ensure the map is relevant to “built out” conditions as opposed to pre-development.**



**Include a list of commonly found plants and animals on the property. Include a variety of diagnostic photographs for species of interest.**

**Provide information, if any, on how First Nations may have related to the ecosystems or species present.**

How nature influenced the development of your property

**Briefly describe pre-development conditions and how the development proposal considered natural features, topography, and ecosystems. Include a description of site adaptive planning and design if it was used.**

**Describe methods that are in place to protect and enhance the natural area, such as covenants, fencing, restoration, stormwater management, etc.**

**Include photos in this section if it would be helpful to the landowner.**

## 5. Enjoying your Own Backyard

Taking care of the natural features of your property begins with knowing what is there. Exploring the natural area at different times of the year will yield different sights and sounds. Some plants and animals will only be present during wet or dry seasons, migratory seasons, nesting seasons, etc. Starting a log of observations is a good way to appreciate the biodiversity of the natural area. For some inspiration, try reading the monthly chapters in *A Year on the Wild Side—A West Coast Naturalist's Almanac* (Briony Penn, 2019).

Sitting in the natural area is an enjoyable way to experience nature that often goes undetected. Placing a temporary chair or bench that is readily accessible is a good idea. Use the same footpaths to access the natural area but avoid compacting the soils around trees or crushing spring wildflowers. A pair of binoculars will bring you closer to birds and other wildlife without disturbing them.

Try locating the plants, animals, and features that are shown in the pages of this report. There are various free apps you can use to help you identify what you are seeing and hearing in your backyard. Try using these on your smartphone as you explore your property:

- Inaturalist <<https://inaturalist.ca/>>
- Merlin <<https://merlin.allaboutbirds.org/>>
- eBird <<https://ebird.org/home>>

- Pl@ntNet <<https://identify.plantnet.org/>>
- Plantsnap <<https://www.plantsnap.com/>>

There are social media groups, such as Field Naturalists of Vancouver Island, that you can join to learn about sightings and natural history. Taking photos of what you see on your property and sharing with family and friends is also a good way to learn more about what you are seeing.

The book, *Plants of Coastal British Columbia* (Pojar & MacKinnon, 1994), is an excellent resource for identifying native plants and learning about First Nation use of the plants. There are many local guidebooks for identifying birds, bats, insects, spiders, marine shoreline life, fish, and wildlife.

**Add any additional ways to enjoy the natural area that are specific to the property based on the inventory and features of the property.**

If you are really enjoying the sights and sounds of the natural area, you may want to learn about becoming a “good ecological steward.”

## 6. Stewarding your Land

Long before the Capital Regional District was discovered by European explorers and subsequently settled, local First Nations lived fulsome lives on the lands that have since been divided into parcels. The Xwsepsum (Esquimalt), Lekwungen (Songhees), Scia’new (Beecher Bay), and T’Sou-ke (Sooke) Nations had a relationship with the land that supported their families and communities. Plants and animals were harvested sustainably, and landscapes managed (such as through burning) to produce essential resources. Much has changed since then, but the deep connection to the land has not been lost. First Nation stewardship of the land provides a model of care and understanding that transcends mere nature appreciation.

Commercial logging began in the region in the 1800s, which vastly changed the landscape from treed to scarred. Since that time, new trees have grown, and forests are slowly recovering. Remnants of older forest can be experienced locally at Hatley Park National Historic Site.

Recognizing past stewardship and understanding that your actions will leave a legacy to the future owners of your property is a good starting point for thinking about stewardship.

## Being a Neighbour to Nature

There are many ways to affect a natural area when living beside it. Here is a simple list of dos and don'ts:

### SOME NEIGHBOURLY ADVICE

Do . . .	Don't . . .
Landscape with native plants or “naturescape”	Use pesticides
Create a water feature	Use chemical fertilizers
Keep pet cats indoors	Let pets loose in the natural area
Landscape to attract pollinators	Take items from the natural area for landscaping
Be FireSmart near your home	“Tidy up” the natural area
Remove invasive plants	Plant invasive plants
Reduce artificial mosquito breeding sites	Use bug zappers
Maintain the natural area perimeter fence	Direct lighting towards the natural area
Properly dispose of kitchen and yard waste	Deposit garden waste in the natural area
Mow high and decrease manicured landscaping	Mow into the natural area
Maintain a clean hummingbird feeder	Feed wildlife other than birds
Install a pest-resistant bird feeder	Disturb roots or soils around protected trees

**Add any further dos or don'ts that are specific to the subject property to the table, if any, and/or expand upon any (outside of the table) as appropriate.**

## Caring for the Natural Area

Historically, natural areas were left to care for themselves and evolved through natural disturbances, adaptation, and the cycling of energy and materials. In urban areas such as Colwood, natural areas are vulnerable to climate change, invasive species, intense wildfires, pollution, and fragmentation (being disconnected from other natural areas). Natural areas within urban areas cannot fend for themselves without deteriorating over time. As a property owner, you can play an active role in helping nature thrive.

Here are some things from which almost any natural area can benefit:

- Removing garbage
- Removing or controlling invasive plants

- Watering newly planted or struggling vegetation during dry spells
- Maintaining any stormwater management systems, nature-based solutions, or green infrastructure that have been installed
- **[Add to the list as appropriate for the site—keep in mind activities requiring more effort are listed in section 7]**

Removing or controlling invasive plants takes some know-how to maximize the impact of your efforts and to not cause unintentional damage to the natural area. **[Insert best management practices or add them to an appendix, specific to the invasive species that are found in the natural area.]**

**[Insert further, basic stewardship recommendations here that are specific to the subject protected area.]**

Being a good steward can also include resisting the urge to tidy up nature. Leaving fallen leaves, deadwood, and seasonal vegetation in place will increase habitat opportunities for many plants and animals.

## 7. Going the extra mile

It is possible for the landowner to increase biodiversity in the natural area. The main ways are by increasing native plant diversity and installing habitat enhancements while being careful not to disturb soil, vegetation, and existing habitat in the process.

### Native Plants

Adding native plants to the natural area and the rest of your property is an effective way to add diversity. Native plants are best sourced locally, so choosing a plant nursery is important. Many plant nurseries carry a selection of native plants but be aware of common names of plants and hybrids (they usually have an “x” in the middle), which can be confusing. A plant nursery with a solid reputation for selling locally source native plants is the safest/best choice for biodiversity. **[Insert best options here.]**

You can also harvest seeds and cuttings <<https://goert.ca/gardeners-restoration/propagation/collection-guidelines/>> if done ethically and with some know-how <<https://goert.ca/gardeners-restoration/propagation/>>. Garry Oak acorns have a high success rate of growing new trees <<https://goert.ca/gardeners-restoration/planting-caring-for-garry-oak-trees/>>. Seeds take longer to produce results, but they are an effective way for plants to establish themselves.

Planting native shrubs so that they create overlapping layers is an effective way to increase habitat and the health of the plants.

Not all native plants will be suitable for the natural area. If the goal is simply to increase the amount of native vegetation, start by seeing what is already doing well in the natural area—those plants may have the best success in surviving and spreading. Some plants that are already thriving in the natural area include **[\* Insert common names of plants that are thriving in the natural area.]**

Other native plants that are recommended to increase biodiversity for the natural area include:

- **[List appropriate native plants here]**

Adding native plants can disturb soils and existing vegetation, so care should be taken when selecting spaces for planting. New plants will need to be watered during the dry season for the first two years, until they establish enough roots to survive annual drought conditions. Consider protecting your investment with guards to ward off deer and rabbits from eating the plants. Try an online search for “tree guards”; to find a local source or ask at your local plant nursery.

- **[Add any plant-specific advice here]**

### Habitat Enhancements

Habitat enhancements increase the opportunities for animals to eat, drink, shelter, and nest. Some habitat enhancements that are useful in most natural areas include:

- Bird nesting boxes
- Bat roosting boxes
- Mason bee boxes
- Nut- and berry-producing native plants
- Flowering native plants
- Bird baths
- Water features (This may require permission from the City under the protected area rules)
- Coarse, woody debris (such as logs or large branches on the ground)
- Rock piles, especially if mostly buried (This may require permission from the City under the protected area rules)

The Habitat Acquisition Trust (HAT) website has great resources for enhancing habitat

[<https://hat.bc.ca/library>.](https://hat.bc.ca/library)

**[Insert information about specific habitat enhancements, including instructions and locations, for this property.]**

### Networking

Going the extra mile can also be in the form of monitoring and reporting. This can be as simple as creating a “project” in iNaturalist to report your plant and animal sightings, or contacting the provincial government about nesting activity **[insert names of birds with year-round protected nests]**.

Joining an environmental non-governmental organization can enhance your stewardship experience by connecting with other stewards and new sources of information. There are many from which to choose! See <<https://onlineacademiccommunity.uvic.ca/nature/community-organizations/>>.

Finally, going the extra mile means influencing family, friends, and neighbours by sharing your experiences of the enjoyment, benefits, and success stories of being a good steward. Photos and walks can go a long way to stretching your stewardship mile.

### 8. Great Guides for You

If you are ready to learn more about stewardship of the ecosystem, plants, and animals on your property, here are some recommended guides and websites that are relevant to your property:

**Curate a list of guidance documents or organizations that can provide advice specific to the natural features of the subject property. Provide a few sentences describing the contents and use of each. Provide web addresses wherever possible. Try not to overwhelm the user but to focus them on the key resources.**

The following are examples of appropriate guides:

*The Garry Oak Gardener’s Handbook: Nurturing Native Plant Habitat in Garry Oak Communities* (Garry Oak Ecosystem Recovery Team, 2011)

Habitat Acquisition Trust (HAT) online library <<https://hat.bc.ca/library>>

*Your Marine Waterfront—A guide to protecting your property while promoting healthy shorelines* (Canadian Edition) <<https://stewardshipcentrebc.ca/your-marine-waterfront/>>

District of Saanich Naturescape Program Booklet: *Guide to Naturescaping—Supporting Nature at Home*  
<<https://www.saanich.ca/EN/main/community/natural-environment/naturescape-program.html>>

Coastal Douglas-fir Ecosystems [brochure] <[https://www.cdfcp.ca/wp-content/uploads/2022/02/CDFCP\\_Coastal.Douglas-fir.Ecosystems\\_Brochure\\_WEB-landowners.pdf](https://www.cdfcp.ca/wp-content/uploads/2022/02/CDFCP_Coastal.Douglas-fir.Ecosystems_Brochure_WEB-landowners.pdf)>

Look Inside a Watershed . . . It's All Connected! [brochure] <[https://www.crd.bc.ca/docs/default-source/es-watersheds-pdf/watershed-k-12-education/look-inside-a-watershed.pdf?sfvrsn=4ceb7dca\\_2](https://www.crd.bc.ca/docs/default-source/es-watersheds-pdf/watershed-k-12-education/look-inside-a-watershed.pdf?sfvrsn=4ceb7dca_2)>

## 9. Your Responsibilities

Whether your property is protected by a covenant or by an environmental development permit area (DPA), there are some basic rules that come with ownership. As the owner, you should familiarize yourself with whichever applies:

- The covenant document (attached to land title)
- The issued environmental development permit (DP) (attached to land title)
- The environmental (DPA) guidelines (Riparian, Marine Shoreline, Sensitive Ecosystem, and/or Hillside) contained within the Colwood Official Community Plan (OCP)
- The location of the protected areas

**[Insert a map of the protected areas. Ensure the map shows post-development conditions, the location of any protective fencing, and any buffer areas.]**

It is the responsibility of the landowner to be aware of the various limitations and requirements in the above documents. *It is considerably less expensive and time consuming to follow the rules than to have to professionally repair any damage to the natural environment.*

Some of the basic rules that are common to the above documents are:

- You may maintain existing ornamental gardens and landscaping
- You may remove invasive plants, being careful not to disturb the soil or native plants when in the protected area
- You may plant vegetation native to the Coastal Douglas-fir (CDF) zone in the protected area, being careful not to disturb the soil or native plants
- All native vegetation (dead or alive), soil, rocks, etc. are protected in the designated area
- Trees are only considered hazardous when they are a proven risk to people and property (A Colwood Tree Management Permit may be required to remove a hazardous tree.)

**Add any rules that apply specifically to the subject protected natural area.**

Should you have any questions about specific activities you are contemplating, it is better to ask first and receive guidance by calling Colwood Planning.