

CULTIVATING FOOD
SECURITY

CREATING A LAND INVENTORY AND URBAN FOOD LANDSCAPE ON VANCOUVER ISLAND

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Vancouver Island Community Research Alliance (VICRA) | Local Food Project

Cultivating Food Security:

Creating a Land Inventory and Urban Food Landscape on Vancouver Island



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Executive Summary

The goal of *Cultivating Food Security: Creating a Land Inventory and Food Landscape on Vancouver Island* is to provide information supporting increased food sovereignty in communities across Vancouver Island. Analyses of existing inventories of land appropriate for urban agriculture and a methodology for creating a land inventory in municipalities on Vancouver Island are provided. This report is one of four created as part of VICRA's *Local Food Project*, a collaboration involving communities and academics.

Section one of *Cultivating Food Sovereignty* includes an overview of urban agriculture and explores a range of models found on Vancouver Island. The concept and goals of a land inventory are explained. Section two investigates land inventory methodologies from urban communities in North America, with a focus on Vancouver's *Growing Spaces* and Portland's *Diggable Cities* projects. Section three provides a step by step guide to assist in carrying out a land inventory for your community, drawing from the experiences of other west coast communities.

This document can be of use whether you work for a local government, represent a community group, or want to pursue an interest in urban agriculture.

Preface

In 2006 the Island Good Food Initiative began examining the state of food production on Vancouver Island. Drawing on this work and research produced from a variety of community based projects; the Office for Community-Based Research at the University of Victoria (OCBR-UVic) officially launched a partnership with The Vancouver Island Community Research Alliance (VICRA) in 2007. VICRA is a campus-community alliance, which mobilizes the diverse and collective knowledge between the five post-secondary academic institutions (University of Victoria, Camosun College, Royal Roads University, Vancouver Island University and North Island College) and various Vancouver Island partners including community foundations, local governments, and community agencies.

In 2010, with funding from the Social Sciences and Humanities Research Council of Canada, the Vancouver Island Community Research Alliance embarked on a communications and dissemination project named *The Local Food Project*, coordinated by OBCR-UVic. The project aims to explore strategies around issues of food security and sustainability on Vancouver Island. From background dialogues and engagement activities, the project advisory committees identified four key areas where there was both need and opportunity to engage university academics, students and community to join forces and work together. These four areas can be broadly described as Urban Agriculture, Climate Change and Food Security, Institutional Purchasing, and Indigenous Food Systems.

Student interns from each of the post-secondary institutions on Vancouver Island gathered available knowledge on these topics from both academic research and from community experience. Working with an advisory committee made up of community members and academics, the students created reports and digital stories about the issues, current actions, and future actions that would strengthen island food systems.

The following report was produced by Chloe Markgraf and Chris Kay, undergraduate students at Camosun College in Victoria. The aim was to develop a methodology for producing an inventory of land suitable for urban agriculture, specific to Vancouver Island.

To view a digital story that summarizes the concepts in this report see

<http://mapping.uvic.ca/vicra/>

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To learn more about the Local Food Project, find this report, and each of the Strategy Area Reports, as well as a number of digital stories and other resources created through the Local Food Project please go to the Vancouver Community Research Alliance website at <http://mapping.uvic.ca/vicra/>

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Table of Contents

- Executive Summary..... iii
- Preface iv
- Acknowledgements..... v
- Introduction and Research Methods 1
- SECTION I 2
- Overview of Urban Agriculture 3
 - Benefits of Urban Agriculture 4
 - Urban Agriculture Models..... 5
 - Urban Agriculture Examples on Southern Vancouver Island..... 6
 - Evaluating Urban Food Production Potential 7
 - Why carry out a Land Inventory?..... 8
- SECTION II 9
 - Examples of Land Inventory Methodologies 10
 - Step One: Development of List of Potential Sites..... 11
 - Step Two: Preliminary Site Analysis..... 12
 - Step Three: Evaluation and Ranking of Sites 14
- SECTION III 16
 - Creating a Land Inventory for your Community 17
 - Phase 1: Getting Started “Sowing the Seeds” 17
 - Phase 2: Making it Happen “Cultivating the Land” 20
 - Phase 3: Presentation Harvest..... 24
 - Featured Potential Urban Agriculture Sites on Vancouver Island 25
 - Moving Ahead 26
- Conclusion..... 28
- References 29
- Appendix A: Portland Site Visit Form..... 31
- Appendix B: Networking Opportunities..... 32

Introduction and Research Methods

In a rapidly changing world, issues like climate change, world food shortages and rising transportation costs have the potential to cause major disruption to our food supply. Food sovereignty is defined as the local control of a region's food systems (World Forum on Food Sovereignty, 2001) and can be greatly improved when urban areas take advantage of available space to produce food. Increasing local food production has numerous benefits, such as the strengthening of local economies and improvements to individual and community well-being. Reduced transportation of food also helps to reduce greenhouse gas emissions.

Local governments and community groups can be proactive with respect to food sovereignty by helping create an inventory of land appropriate for urban agriculture. Benefits of conducting a land inventory include the identification of land appropriate for urban agriculture within a community and an increased awareness regarding the potential of urban agriculture. A land inventory also aids in developing policy and by-laws supportive of urban agriculture.

The trend is already apparent as all over Vancouver Island efforts are being made to improve food sovereignty. More and more people are producing food in their yards, in community gardens, on boulevards, on patios and on their window sills. An inventory of land appropriate for urban agriculture would help facilitate existing efforts to improve accessing land to grow food in your community.

The following report is based on a literature review of relevant academic peer-reviewed sources, government publications, work produced by community-based organizations, and consultations with key academic experts and key community stakeholders.

Food History of Vancouver Island

1960:
50% of food consumed on the Island was produced locally.

2008:
6% of food consumed on the Island was produced locally.

(Island on the Edge)

SECTION I



Overview of Urban Agriculture

When people think of where their food comes from, images of rural pastures and large scale farming operations may come to mind. Lately, we are seeing a trend towards food being grown in urban environments as well. Community gardens, backyard vegetable plots and urban farms are becoming significant sources of food for city dwellers.

In urban centers on Vancouver Island, neighbours are sharing their yards to allow people who would otherwise not have access to land a space to garden, boulevards are being converted to garden space, while community groups are advocating for more space to grow food. Some innovative examples include a garden installed in a homeless shelter, restaurants setting up gardens to grow their own produce, and a rooftop garden put into a recent condominium development. A budding industry called Small Plot Intensive (SPIN) farms is taking root (see sidebar, p. 6).

As the urban areas on Vancouver Island continue to develop, food security needs increase. Underused or vacant land, rights of way, schools and parks are all examples of land that could be producing food for the local community. These parcels represent what could be a portion of the local food pie on Vancouver Island.



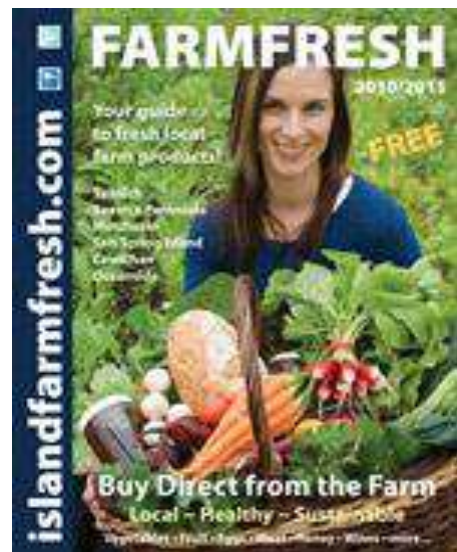
The term Urban Agriculture is defined as the production of food within an urban environment (Wikipedia, 2011).

Benefits of Urban Agriculture

On Vancouver Island, urban agriculture is one of a number of tools that are being used to reduce dependence on food imports. The following economic and social benefits have been identified by both community members and academics (Hynes, 1996; Henning, 1997; Ostry, 2010):

TABLE 1: BENEFITS OF URBAN AGRICULTURE

Social Benefits	Economic Benefits
Enhanced food security	Vegetable production
Better health, through dietary diversity and fresh produce	Return on investment: the results of a 23-city USDA study show that for every dollar of government investment, six dollars in vegetables were produced (Hynes 1996).
Education and job skills training for youth and under-privileged	Low-cost method of public space maintenance
Recreational opportunities	Strengthening local economies
Community well-being and neighborhood stabilization	
Beautification and greening of the city	
Improved urban environmental management of soils, water, and waste	
Reductions in greenhouse gas emissions currently caused by long transportation routes	
Connections made by people to their food source	



Urban Agriculture can contribute to healthy lifestyles while greening a city's landscape.

Urban Agriculture Models

In developing a food landscape in an urban area, there are various models to choose from. Here is a list of some common practices in urban agriculture.¹

- **Community allotment gardens:** An area of land where plots are assigned to individuals or families for their gardening pleasure. Allotments allow individuals to have access to personal gardening space.
- **Urban Farm:** Typically larger scale growing operations managed by an individual or a small group of individuals often for entrepreneurial purposes.
- **Edible permaculture gardens:** Food-bearing gardens designed to mimic natural ecosystems.
- **Commons:** Community managed gardens located on public land. Maintained by volunteers, harvest is typically shared.
- **Educational Gardens:** Garden facility that focuses on capacity building.
- **Mixed Garden Model:** Combination of two or more of the above models.



¹ The list of models was developed through interviews with Vancouver Island community members engaged in urban agriculture activities.

SPIN farming:
S-mall **P**-lot
IN-tensive farming is a new model being practiced in urban areas. It maximizes production on plots less than an acre in size by using intensive (usually organic) gardening techniques

(SPIN Farming, 2011)

Livestock, such as chickens, can play an active role in many urban agricultural models



Urban Agriculture Examples on Southern Vancouver Island



Urban Agriculture Model: Community Allotment Garden

Jubilee Community Garden

Location: Duncan

Basis: Allotment gardens and Horticultural Therapy program connecting seniors and youth

Urban Agriculture Model: Community Urban Farm

Haliburton Community Organic Farm

Location: Saanich

Basis: 7 acres divided into 4 farms producing organic fruit and vegetables for weekly food box program and farmers' markets.



Urban Agriculture Model: Edible Permaculture Gardens

Spring Ridge Commons

Location: Victoria

Basis: Volunteer maintained public urban garden of edible plants, managed by a local non-profit.

Urban Agriculture Model: Educational Garden

Greater Victoria Compost Education Centre

Location: Victoria

Basis: Provides gardening and composting information as well as workshops for the community.



Urban Agriculture Model: Mixed Garden Model

Warmland Community Garden

Location: North Cowichan

Basis: Greenhouse and garden plots for residents of homeless shelter/educational garden for local school.

Evaluating Urban Food Production Potential

An Historical Glimpse at Paris, France

In 1850, 6% of land within the limits of the city of Paris was dedicated to intensive vegetable and fruit production. The city was completely self-sufficient and a net exporter with respect to vegetables. (Coleman, 2009)



FIGURE 1: URBAN AGRICULTURE IN 19TH CENTURY FRANCE

Workers unrolling straw mats for overnight insulation of plants under glass cloches in 19th century France. (Coleman, 2009)

A Land Inventory is the identification, assessment and categorization of land with potential for urban agriculture (Chaney, Taggart, & Meaney, 2009). Land Inventories have been conducted by various

cities and communities across North America to increase access and knowledge about their urban growing capacity.

On Vancouver Island many communities may have vacant or under-utilized land with potential for urban agriculture. An inventory can include both public and private land; however, the scope should be identified prior to its undertaking.

Why carry out a Land Inventory?

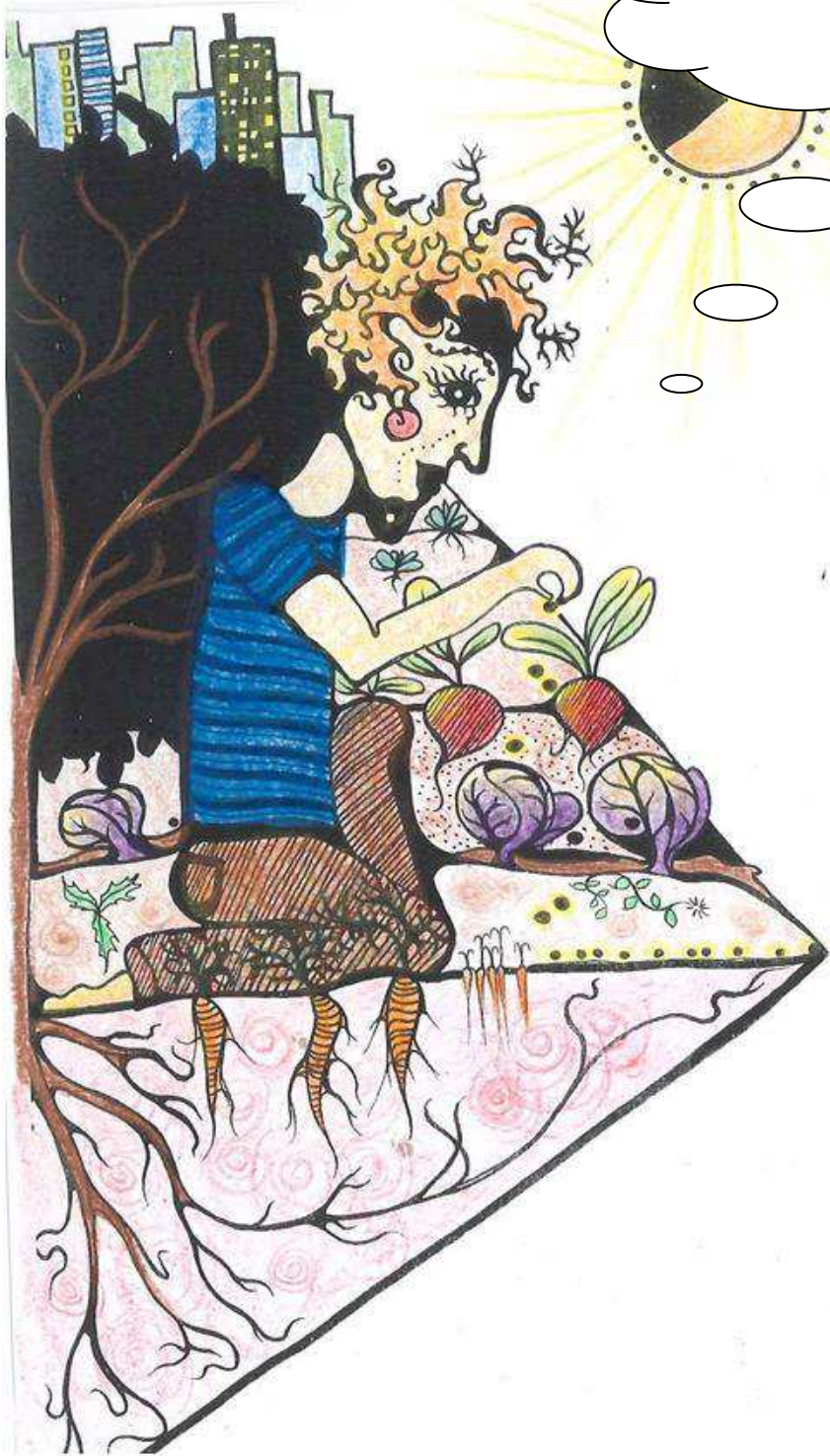
An inventory of land with potential use for urban agriculture on Vancouver Island serves a number of purposes which ultimately benefit local communities.

Those engaged in urban agriculture on Vancouver Island describe the following benefits of creating a land inventory:

- Identifies land appropriate for urban agriculture within a community
- Increases awareness about the potential of urban agriculture
- Aids in developing policy and by-laws supportive to urban agriculture
- Supports the incorporation of urban agriculture into Official Community Plans
- Creates a benchmark to monitor land use changes with respect to agriculture
- Facilitates connections between urban agriculture and local government priorities such as sustainable communities and capacity building
- Generates data with which to create targets to implement effective urban agriculture policies
- Capitalizes and supports emerging opportunities in urban agriculture
- Enhances information base to assist land use decision-making



SECTION II



Examples of Land Inventory Methodologies

Cities like Portland, Vancouver, Seattle, Oakland, and Cleveland provide comprehensive analysis and varied methodologies that Vancouver Island urban areas can draw from. This section describes in depth the approaches used by both Portland and Vancouver, identified as the most relevant for Vancouver Island.

FIGURE 2: PORTLAND AND VANCOUVER'S THREE STEPS

Both Portland and Vancouver's urban agriculture land inventory projects followed three main steps.

1. A list of potential sites was compiled from relevant local government departments and community consultation.
2. The sites were analyzed using digital technology and maps.
3. Priority sites were evaluated by visits and set criteria.

In both cities **partnerships** were created to guide the process:

➤ As a critical initial step, Portland's Diggable City project set up a **Technical Advisory Committee** (TAC) composed of city staff, community members, and interest group representatives. The land inventory was linked with various bureaus at the municipal level. This included the Bureau of Environmental Services, Parks and Recreation, and the Bureau of Transportation and Water. These departments provided data on land parcels in Geographical Information System (GIS) format.

➤ Vancouver's project included people from diverse backgrounds in their **land inventory working group**. These included individuals from the Food Policy Team of Social Planning Department, city staff, Food Policy Council representatives, stakeholders and community members

The City of Seattle developed a comprehensive resolution and policy in support of expanding their community garden program. In April 2008, City Council passed an important resolution with respect to urban agriculture. The resolution states specifically "... to work with relevant departments and universities to conduct an inventory of public lands in Seattle appropriate for urban agriculture uses" (Resolution #31019).

A network of diverse partners can contribute valuable resources and perspectives to the Land Inventory Project. For this reason it is important to seek out engagement of different stakeholder groups early in the process.

Step One: Development of List of Potential Sites

A list of potential sites was compiled from relevant municipal departments and community consultation.



In **Portland**, the involved city departments provided property data in Geographic Information System (GIS) format. The GIS files were analyzed and cropped to remove environmental zones, developed areas of parks and parcels with a size of less than 1000 ft².

The public land inventory in **Vancouver** included land under management of the Department of Engineering Services and Federal Department of Public Works. Other sites were identified and included in the project based on advisory meetings and community consultation.

Oakland, California conducted a land inventory of vacant publically owned land, only to find that it was limited in scope and usability.

As a result, the Advisory Committee decided to expand the project to include:

- parks
- land adjacent to government buildings
- lawns
- fields
- fallow lands

This allowed for extensive plotting of Oakland's Urban Agriculture potential within the limited framework of an extensively developed urban area.

(Unger & Wooten, 2006)

Step Two: Preliminary Site Analysis

Both **Portland** and **Vancouver** used GIS and aerial photos, initially dividing parcels of land into four general categories based on size. These categories were:

- Large scale Urban Farm
- Small Scale Farm

Small and large scale farms included: greenhouses, farm stands, forest farming, and pocket farms.

- Community Gardens

For the smaller community garden sites, various social criteria had to be met such as: appropriate growing conditions and community access.

- Growing on impervious or poor soil

Impervious surfaces included various alternative uses of the land from greenhouse production and processing facilities to container gardens.

TABLE 2: CATEGORIZATION EXAMPLE OF INVENTORY MODEL

	Primary Parcel Category		Subset Category	
Category	Large-Scale Growing Operations	Small-Scale Growing Operations	Community Gardens	Growing on impervious or poor soil
Size*	1. ha + (1000 sq. m+)	0.009-0.1ha (92-1000 sq. m)	0.015-1.5 ha (150-14000 sq. m)	0.045 ha + (465 sq. m+)
Use	CSAs, urban farms, community orchards, animal husbandry, horticulture, nursery, beekeeping	Farm stands, educational gardening programs, composting, vermiculture, food bank gardening, herb growing, beekeeping, market garden, edible landscaping, fruit trees	Gardens with individual or small plots; gardens with shared space and resources	Vertical gardening, indoor growing (sprouts, mushrooms, aquaculture, vermiculture), greenhouses, farm stands, processing facilities, farmers markets, container gardening, hydroponics

Source: *Growing Spaces: The potential for urban agriculture in the city of Vancouver*

In **Portland**, aerial photos were evaluated using the following characteristics:

- Tree Canopy
- Prohibitive Infrastructure



Boulevard Gardens are an example of the efficient use of small sites

- Vehicle Accessibility
- Visual Impression with respect to suitable urban agriculture models
- Notable Other Observations (such as proximity to schools)



FIGURE 3: GIS IMAGE
PORTLAND DIGGABLE
CITIES

Comparison of aerial
photograph and GIS
image of a potential
site from the Portland
Diggable Cities project

Loose Surface Vegetation
Impervious Surface Water

Land parcels in the Portland *Diggable Cities* project were given a subjective rank (between 1 and 4) based on the site's location and its feasibility. Certain site criteria were also separately ranked when deemed necessary.



Rank 1: 0-25%



Rank 2: 26-50%



Rank 3: 51-75%



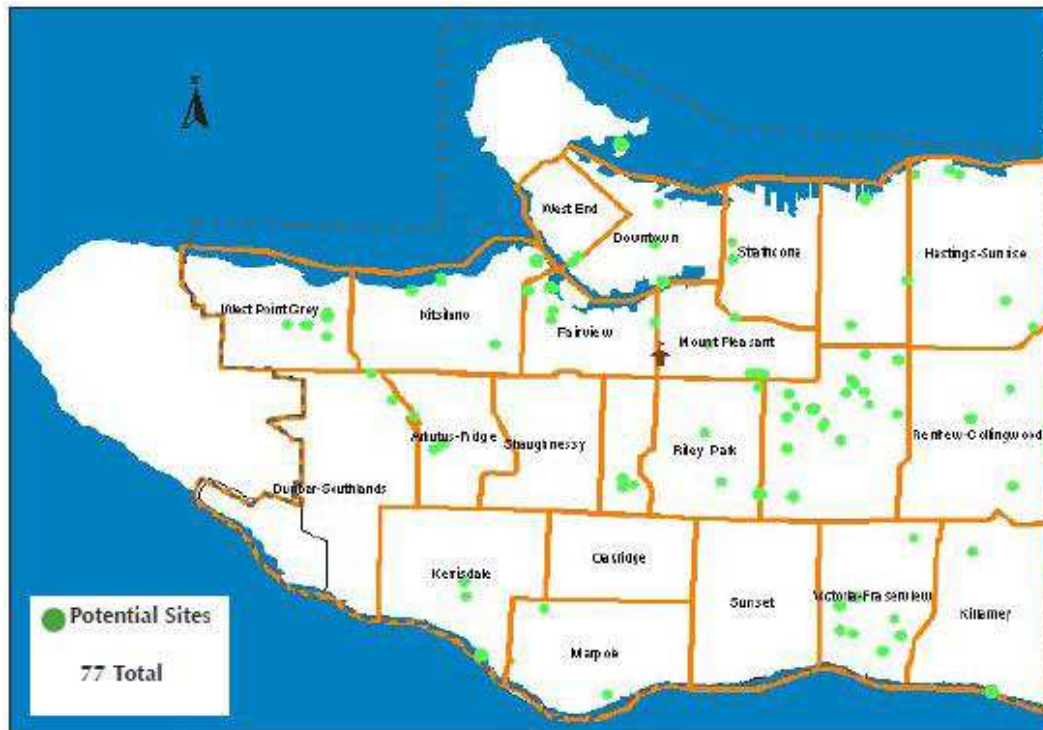
Rank 4: 76-100%

Figure 4: Portland
Tree Canopy
Ranking

Comparison and
ranking of sites
based on Tree
Canopy criteria
done in the
Portland *Diggable
Cities* project.
Clockwise, starting
in upper left corner:
Rank 1, 2, 3 then 4.

In *Vancouver*, addresses of the sites were mapped and analyzed using the Vancouver GIS mapping application, VanMap. These sites were evaluated based on surface coverage, access, the type of potential urban agriculture use. Sites were then ranked. Vancouver's model applied a simple set of criteria to prioritize potential sites:

FIGURE 5: MAP OF POTENTIAL URBAN AGRICULTURE SITES



SOURCE:
VANMAP: CITY OF
VANCOUVER
DEVELOPED AS
PART OF
VANCOUVER'S
GROWING SPACES
PROJECT.

Of the 77 sites identified 20 were classified as Large Scale, 49 as Small Scale, 37 as Community Gardens and 16 as Impervious Surface.

Step Three: Evaluation and Ranking of Sites

In *Portland*, sites were evaluated and analyzed based on geographic distribution, and distance from existing community gardens. Twenty-four sites were selected for site visits and analyzed using the "Site Visit Form" (see [Appendix A](#): *Portland Site Visit Form*).

In *Vancouver*, thirty of the 77 sites were selected for visits and of those, five were selected to do a more in-depth analysis and determine potential of converting site to urban agriculture use.

The value of the information gathered while visiting a site cannot be over-stated, however for practical reasons; it is not always possible to visit every site. Select site visits enhanced the information included in the land inventory. The potential to engage students, community and neighbourhood associations, schools and service clubs in site assessments would greatly enhance the ability to review a greater number of sites, building community interest and engagement at the same time. This element would also require an additional step of training community/school leaders to undertake the site assessments.

Use of Geographic Information Systems (GIS) to Assist Ranking

As noted above, both Vancouver and Portland used GIS data extensively. Where GIS data is available, it can prove useful in a variety of ways. Use of GIS for identifying and compiling a list of sites can increase efficiency; however it is important to evaluate the quality of the data used. Findings will reflect the initial data; therefore GIS technology is only useful when quality data is accessible. Once identified, sites can be assessed on slope, shade and environmental considerations.

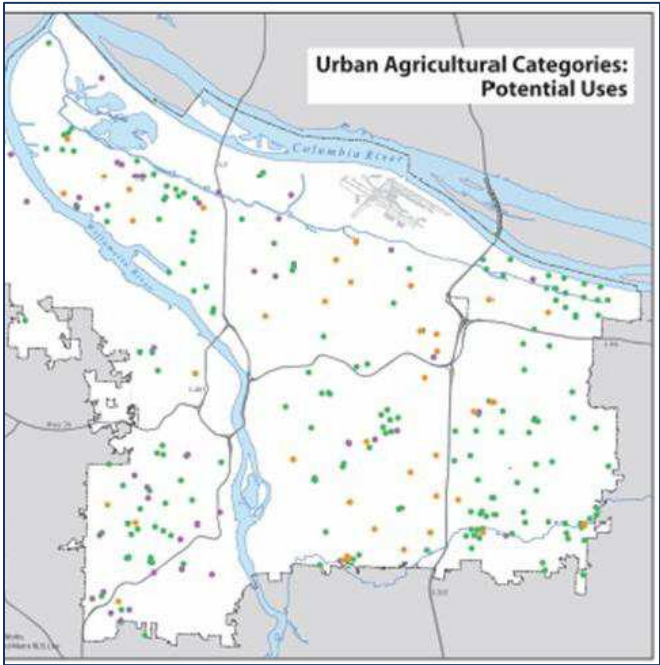


FIGURE 6: PORTLAND MAP CATEGORIZING POTENTIAL USES

Map created using Geographic Information Systems (GIS) of urban agriculture sites and their categorization according to potential uses done in the Portland, *Diggable Cities* project.

- Legend:
- Small Scale Agriculture
 - Large Scale Agriculture
 - Community Gardens

SECTION III



Creating a Land Inventory for your Community

The following is a guide for communities, a recommended methodology for undertaking an inventory of land suitable for urban agriculture within any community on Vancouver Island based on experiences of other communities who have carried out land inventories. Local circumstances may make certain aspects of the methodology more or less relevant. We have attempted to provide a thorough summary, which local governments or organizations can use as a template, adapting it to suit the specific circumstances of their region.

Phase 1: Getting Started “Sowing the Seeds”

The initial phase of the project includes the establishment of partnerships between diverse groups with the common objective of developing an inventory of land suitable for urban agriculture. This involves the development of an Advisory Committee Team (ACT) and/or Food Policy Council (FPC) to direct the project appropriately.

WHO are the stakeholders?

Who?



ACT should be composed of city staff, academics, students, community organizations, city planners, businesses, farmers, restaurants, grocery stores, and other relevant community members. Portland included a wide variety of stakeholders and, as a result, there was substantial buy-in and engagement from community members.

WHY is this important for our community?

Why?



Develop ACT'S mandate.

Capital Region-Food and Agriculture Initiatives Roundtable (CR-FAIR) was formed in 1997 and is a partnership of organizations and individuals involved in the regional local food movement in the Capital regional District. CR-FAIR's mission is to increase awareness and information to bring about positive change in the food and agriculture system within the region.

- Assess the community's needs. – Is there a need for: an educational component? Local produce in food banks? Increasing local food production? Food security initiatives?

WHAT are our urban agricultural priorities?



Explore different models of Urban

Agriculture projects and select priorities within the community.

- Focus can be on one model, for example, community garden expansion, or multiple models such as: community gardens, urban farm, permaculture gardens, agricultural forestry, school gardens, farmer's markets, etc.
- In-depth research into municipal by-laws and zoning relevant to urban agriculture may be necessary.



WHEN do you want the land inventory completed?



Establish land inventory project timeline.



HOW will this come together?



Determine strategy.

- Community engagement and consultation. ACT would be responsible for the public engagement process, including: surveys, workshops, focus groups, public forums, etc.
- Determine specific types of urban land to be included in the inventory. Once community input is gathered, ACT will compile and assess criteria for the Land Inventory project.

The cities of Victoria and Oak Bay on Vancouver Island have amended their by-laws in order to make Urban Agriculture possible in people's back yards within city limits.

In Oak Bay, urban agriculture was added as a use of residential land, although limits were places on the size of gardens that were permitted (95 m²).

Victoria Zoning by-law 80-159 has been amended to allow for multiple zoning in residential areas which allows up to two people to cultivate at home as their employment.

A key purpose of the Advisory Committee Team is to identify and engage stakeholders, involving them as partners from the commencement of the project.

Table 3: Roles of Advisory Committee Team Members

<i>Partners</i>	<i>Role</i>
Local Government employees	Provide knowledge of: municipal regulations, potential available sites, varying policy, funding sources, resources, etc.
Community Groups	Represent user groups and community members; identify community needs and opportunities, site identification.
Farmers/Gardeners	Offer practical knowledge base of local food growing conditions.
Provincial/Federal government employees	Provide knowledge of resources and funding opportunities.
Academic Institutions	Research, create internship opportunities, and offer academic perspectives.
GIS Specialists	Assist in identification, categorization, and mapping of potential sites.
Businesses	Develop entrepreneurial aspects of urban agriculture projects.
Other	Support may vary depending on available skills, resources, and knowledge.

Phase 2: Making it Happen “Cultivating the Land”

The following section provides a guide for identifying, assessing and ranking suitable land parcels based on the experience from communities across North America. Local governments on Vancouver Island are encouraged to adapt the template to suit their unique circumstances.

Define parcels that will be included in the plan:

For example:

- Local government owned properties (vacant/underused)
- Rights of Way
- Parks
- Public School Land
- Land leased by community groups

1. Find sites using available maps and resources:

Vancouver and Portland used a combination of the following:

- Geographic Information Systems
- Google maps & Google Earth
- Aerial Photos
- Community Consultation

2. Categorize sites based on size:

Minimum sizes should be considered, this will vary depending on what is available and what type of urban agriculture projects are being considered.

- Larger sites may be more conducive to an urban farm model, while smaller plots may be ideal for community gardens, permaculture gardens or commons models.
- See [Growing Spaces Inventory Model](#) for Vancouver

3. Develop criteria for site assessment:

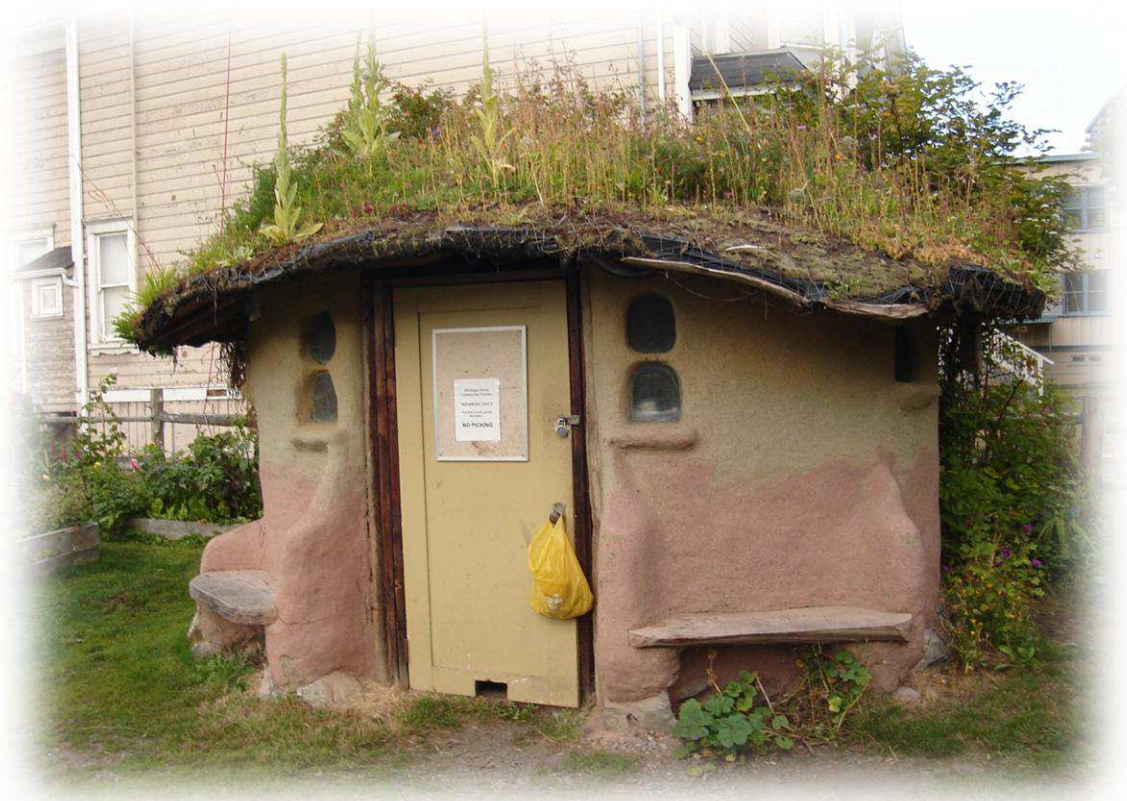
Oakland, California conducted a land inventory of vacant publically owned land, only to find that it was limited in scope and usability. As a result, the Advisory Committee decided to expand the project to include parks, land adjacent to government buildings, lawns, fields, and fallow lands.

Consult with stakeholders to develop criteria for land selection. The criteria may vary depending on the scope of the project and what type of Urban Agriculture models are supported by the community and local government.

List of physical criteria to consider:

- Zoning and by-laws
- Current and future land use plans
- Sun Exposure
- Land Surface
- Maximum slope
- Existing Infrastructure (Water, fencing, buildings)

Stakeholders are key to identifying appropriate criteria for their community - Portland's Diggable Cities stakeholders decided that if 'prohibitive infrastructure' was on a site it should be eliminated from the inventory.



List of social criteria to consider:

- Accessibility (buses, parking, bike racks, sidewalks, wheelchair)
- Socio-economic demographic
- Proximity to schools & community facilities
- Proximity to other urban agriculture projects
- Existence of active community groups

In Portland vehicle accessibility and proximity to schools were included in the list of social criteria; while Vancouver identified 'accessibility' as one of its criteria, including buses and walking as well as vehicle access.



4. Assess sites:

Use set of developed criteria to evaluate suitability of located sites. An example of quantitative ranking of sun exposure is found in the sidebar.

- Some assessment can be done using GIS/air photos (see page 14 for *Vanmap*, a tool used in Vancouver’s assessment process).
- Site visits are highly recommended to assess physical and social characteristics. [Appendix A](#) provides the Site Visit Form used by Portland’s *Diggable Cities*.

5. Rank sites:

Use information gathered in assessment to determine the priority sites. Ranking system can be as detailed as needed. Large communities with many identified sites may require a detailed ranking system. Ranking can be done using a point system, priority sequence (high, medium & low priority), or by listing available sites. Portland’s *Diggable Cities* used a 1 to 4 Ranking System (page 13).

6. In depth assessment of top-ranked sites:

Visit priority sites to gather relevant supplementary information. This information may include:

- Historical use of the site (industrial, recreational, commercial, residential, etc) to insure minimal potential for contamination.
- Soil sample result analysis
- Assessment of depth to water table/bedrock and depth of topsoil
- Use of site by wildlife

An example of quantitative analysis of sun exposure:

A site with 25% or less shade Ranking: 1

35-50% shade Ranking: 2

50-75% shade Ranking: 3

(Used by Portland’s Diggable Cities project)

Phase 3: Presentation “Harvest”

Consideration should be given to the presentation of the information gathered in the previous phase.

The final document should be easily accessible to all user groups.

The product of the land inventory should be an accessible document compiling the information and data collected on potential sites in priority sequence for access and use by community members, FPCs, local organizations, city planners, policy makers, farmers, etc.

An online dissemination tool can allow for wide-spread access to the results of the land inventory. *Sharing Backyards* is an example of an inventory dissemination tool of private land that was created by LifeCycles in Victoria. It provides an online map of available land and locations of interested gardeners as well as contact information. Over forty communities across North America are using *Sharing Backyards*; currently, Greater Victoria and Nanaimo are listed for Vancouver Island.

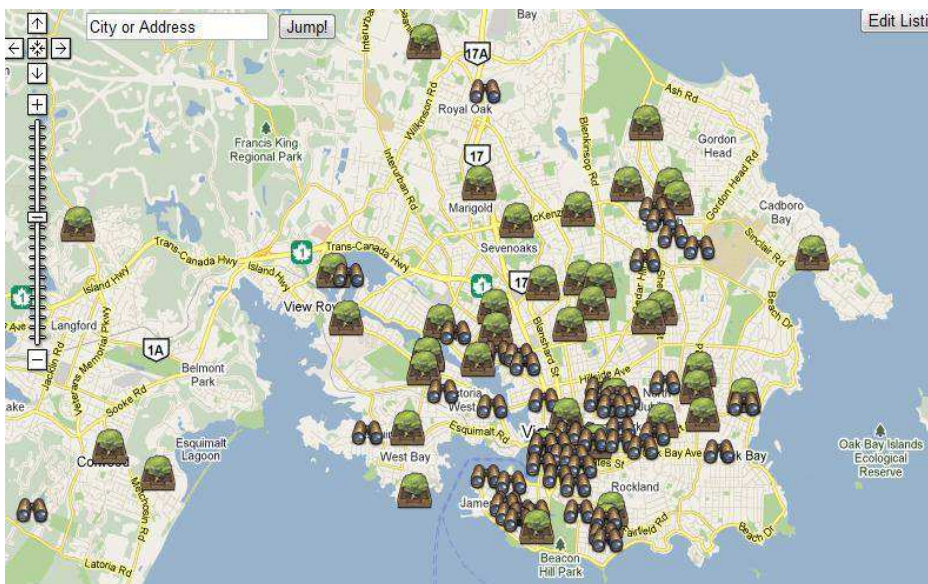


FIGURE 7: SHARING BACKYARDS WEBSITE

Screen shot of *Sharing Backyards* website. Map is of Victoria, green trees are landowners offering space and binoculars are gardeners looking for land.

Source: www.sharingbackyards.com

Featured Potential Urban Agriculture Sites on Vancouver Island

The following are two examples of potential urban agriculture sites and initial site assessment criteria on Vancouver Island.

FIGURE 8: FEATURED SITE KINSMEN PARK, NORTH COWICHAN:

Potential Model – Urban Farm/Educational Garden: Initial Site Assessment



- ✓ City owned property (park)
- ✓ High sun exposure
- ✓ Minimal slope
- ✓ Close to a school – educational opportunity
- ✓ Existing water and tool shed infrastructure
- ✓ On-site existing urban agriculture projects can be expanded
- ✓ Available parking
- ✓ Neighbourhood need/demand

FIGURE 9: FEATURED SITE HILLSIDE AND QUADRA, VICTORIA

Potential Model – Urban Farm/Community Allotment Gardens: Initial Site Assessment



- ✓ No current land use plan
- ✓ High sun exposure
- ✓ Open field
- ✓ Minimal slope
- ✓ Close to community centre
- ✓ Active local UA community group
- ✓ Available parking, accessible by bus
- ✓ Neighbourhood need/demand

Moving Ahead

The following are opportunities that were identified through the consultation with community members regarding the use and continued improvement of the Land Inventory.

Public Engagement

The ability to engage the public at each step when creating land inventories is critical to increasing implementation. Not only will the public have creative ideas for potential sites and their value to the community, their involvement in the identification and assessment of the sites will build their interest and ownership in garden creation and maintenance over the long term.

Public dissemination

It is important to make the inventory accessible to a wide range of potential users. This may involve development of a communication strategy to ensure that the information is available to stakeholders.

- Public Engagement Events are a useful forum for the presentation and discussion of the Land Inventory
- Online access to the land inventory offers an economical dissemination option

Partnerships

It is also important to involve key players early in the process who can contribute to the long term sustainability of the gardens. It was mentioned that having a range of stakeholders involved in the advisory or working group for the assessments is key. This is true not only for the site identification and assessment but also for the purpose of bringing together the appropriate

Linkages to Policy and Planning

The creation of a Land Inventory has the potential to inform long term planning and policy development. When creating neighborhood, community and regional plans, knowing the location of potential agricultural lands assists in land use and zoning decisions for both sustainability and health related objectives.

In addition, policy can be created to facilitate and regulate food growing activities in communities. For example if a neighborhood has no lands available for food growing, a Parks Department, or School District policy could be developed that would allow for the use of park or school lands to create urban agriculture opportunities for the community.

Continued Improvements and Updates of the Land Inventory

Depending on the original scope of the project, it may be worthwhile to work with private landowners or other levels/departments of government to expand the land inventory. Due to the changing nature of urban landscapes it is important to periodically revise the document to incorporate any changes or new developments.

Conclusion

Food sovereignty, the local control of our food system, starts with increased local food production: this can be achieved in boulevards, backyards, empty lots and parks. Municipalities can be proactive in planning for the future as climate change, world food shortages, and transportation costs put mounting pressure on the availability of affordable healthy food. Increasing local food production also improves local economies, health, and community cohesion while reducing greenhouse gas emissions.

An urban agriculture land inventory provides the community and local organizations with maps of potential parcels, as well as serving to develop municipal regulations and land designation for food growing. With the rising interest in agriculture, municipalities can thrive through a variety of food growing programs and community projects. As a key first step in understanding a community's growing capacity, a land inventory demonstrates a region's capacity and commitment to food security as well as providing support for those wishing to embark on food growing projects. The results of a land inventory can yield considerable parcels of land for a variety of potential urban agriculture uses.

Let's get growing!



References

- Balmer, K., Gill, J., Kaplinger, H., Miller, J., Peterson, M., Rhoads, A., Rosenbloom, P. & Wall, T. (2005). *The Diggable City: Making urban agriculture a planning priority*. Portland: Portland State University.
- Brown, C., Gordon, M., Polowyk, H., Sharuga, C. & Waddell, R. (2010). *Urban agricultural capacity in the Capital Regional District (CRD): Environmental studies 382*. University of Victoria, Victoria.
- City of Victoria (2005). *Community gardens policy*. Victoria: City Of Victoria.
- City of Victoria (2010). *Official community plan framework for plan development*. Retrieved from <http://www.shapeyourfuturevictoria.ca/the-plan/framework-for-plan-development/>
- Chaney, M., Taggart, M. & Meaney, D. (2009). *Vacant land inventory for urban agriculture*. Cleveland: Cleveland-Cuyahoga County Food Policy Coalition.
- Coleman, Eliot (1993). *The new organic grower*. Chelsea, Vermont: Chelsea Green Publishing
- Coleman, Eliot (2009). *The winter harvest handbook*. White River Junction: Chelsea Green Publishing.
- Cui, J., Du, Y., Fu, Q., Tong He, X., Kongshaug, R., Narkar, S. & Xiao, L. (2005). *Making the edible landscape: A study of urban agriculture in Montreal*. Montreal: Minimal Cost Housing Group, McGill University.
- Epstein, Gabriel. Personal Interview. March 25, 2011.
- Gruen, D. (2007). *Urban farming in Seattle: Opportunities and issues*. A report to the City of Seattle Department of Neighborhoods P-Patch Program and Department of Planning and Development.
- Henning, J. (1997). Cities Feeding People: An overview. *Ecological Agricultural Products*. Montreal: McGill University.
- Hynes, Patricia (1996). *A Patch of Eden: America's inner city gardens*. Chelsea, Vermont: Chelsea Green Publishing Company.
- Keathler, T.M. (2006). *Growing spaces: The potential for urban agriculture in the City of Vancouver*. School of Community and Regional Planning, University of British Columbia, Vancouver
- Mendes, W., Balmer, K., Kaethler, T. & Rhoads, A. (2008) Using Land Inventories to Plan for Urban Agriculture: Experiences From Portland and Vancouver. *Journal of the American Planning Association* 74 (4): 435 – 449.
- O'Neill, C., Goldwynn, S., Simuong, K., Keeley, A. & Hartzenberg, A. (2010). *Mapping Vancouver Island's urban agriculture potential: Environmental studies 382*. University of Victoria, Victoria.
- Ostry, A. (2010). *Food for Thought: The Issues and Challenges of Food Security*. Edited by Aura Rose and Jan Enns. Provincial Health Services Authority. Retrieved from <http://www.phsa.ca/NR/rdonlyres/C3E70150-66FF-48E1-B2F1->

SPIN Farming (2011). *What's SPIN*. Retrieved from <http://www.spinfarming.com/>

Stafford, Judy. Personal Interview. March 19, 2011.

Stevenson, Danielle. Personal interview. March 19, 2011.

Timmins, C., Emanuel, B., Dorfman, P., Roberts, W. & Cook, B. (2010). *Cultivating food connections: Toward a healthy and sustainable food system for Toronto*. Toronto: Toronto Public Health.

Unger, S. & Wooten, S. (2006). A food systems assessment for Oakland, CA: Toward a sustainable food plan. Oakland Mayor's Office of Sustainability & University of California, Berkeley, Department of City and Regional Planning.

Urban Agriculture. (n.d.) Retrieved June 9, 2011, from Wikipedia: the free encyclopedia:
http://en.wikipedia.org/wiki/Urban_agriculture

Versteeg, N. (Director). (2007). *Island on the Edge* [DVD]. Canada: DV Cuisine.

Appendix A: Portland Site Visit Form

Site Visit Form

Bureau ID: _____

Site #: _____

General Information

Location:	_____
Date Visited:	_____
Surveyor(s):	_____

Current Use: _____

Adjacent Uses/Nearby Community Resources:

Structures

Type	Description/Location
_____	_____
_____	_____

Site Details

	Yes	No	Notes
On bus/MAX line?			
Fenced/Secured?			
Sidewalk?			
Curb cuts?			
Adjacent bike lane/path?			
Adjacent parking?			

Surface Condition (pavement, unimproved, etc.)

Light (trees, tall shrubs, building obstructions, etc.—identify specific location)

Notes

Appendix B: Networking Opportunities

Over the last few years, the local food movement across Vancouver Island has grown substantially. Organizations and individuals promoting food security can be located in every urban centre. The following is an index of established local food security organizations on Vancouver Island and potential partners.

Capital Region - Food and Agriculture Roundtable (CR-FAIR):

CR-FAIR, formed in 1997, is a coalition of organizations and individuals involved in our local food system, with a secretariat provided by the Community Council. CR-FAIR's mission is to increase knowledge of and bring about positive change in the food and agriculture system within the Capital Region District.

<http://www.communitycouncil.ca/initiatives/crfair/index.html>

Cowichan Green Community Society:

(CGC) is a non-profit organization that has been focusing on environmental sustainability in the Cowichan Valley for over ten years. For the last five years CGC's mandate has revolved mainly around improving food security by developing strong relationships with local food producers and increasing urban and rural food production.

<http://www.cowichangreencommunity.org/>

Food LINK Nanaimo:

Food Link Nanaimo Society is a non-profit networking agency that provides communication support for local food organizations and growers, businesses, educational institutions, governments, and the local community. One of five VIHA Food Security Hubs on Vancouver Island, and Food LINK is connected to provincial and national food networks through BC Food Systems Network and Food Secure Canada.

Food Link Nanaimo provides assistance and support to individuals and community organizations in the Nanaimo area in planning, coordinating, and communicating for the purposes of capacity building, active support of food systems, food policy development, and short-term food relief.

<http://www.vifood.info/>

Gorge Tillicum Urban Farmers –

Gorge Tillicum Urban Farmers (GTUF) is a community of people who live or work in the Gorge Tillicum neighbourhood. They share information about food production and support each other to produce more food locally. They connect through food growing meetings, garden tours, email contact, etc, whilst promoting food security. They provide a platform for discussion and a context within which initiatives can be launched. They encourage participation, collaboration, discussion, generosity, creativity, personal ownership and fun.

<https://sites.google.com/site/gorgetillicumurbanfarmers/>

Greater Victoria Compost Education Centre(GVCEC)

The Greater Victoria Compost Education Centre is a non-profit organization, with charitable status located in Victoria, British Columbia, Canada. They provide composting and organic gardening education to CRD residents.

<http://www.compost.bc.ca>

Lifecycles Project Society:

Lifecycles is a Victoria based nonprofit organization dedicated to cultivating awareness and initiating action around food, health, and urban sustainability in the Greater Victoria community. This predominantly youth driven organization is geared towards education and building community connections through hands-on projects that work towards creating better local and global food security.

<http://lifecyclesproject.ca/>

LUSH Valley Food Action Society:

Lush Valley is a charitable, non-profit community grassroots organization focusing on food security that supports food related projects to educate and empower the people of the Comox Valley towards personal wellness, community health and environmental stewardship. LUSH Valley supports local, sustainable food production at home and on the farm through Community Kitchens, A Fruit Tree Project, Information, and networks

LUSH = Let Us Share the Harvest

<http://www.lushvalley.org/>

Nanaimo Foodshare:

Foodshare helps people develop the skills they need to increase food security, build community, and be self-sufficient. Through the programs, workshops, and community networks, Food Share's aim is to educate and empower by sharing not just food -- but also information, resources, workloads, and new opportunities.

<http://www.nanaimofoodshare.ca/>

The North Saanich Food for the Future Society:

The North Saanich Food for the Future Society is dedicated to supporting farms and farmers, and further developing the agricultural capacity of the district. Our primary focus is to make our community aware of the importance of food sustainability, and of the current fragility of our link with the land and our place in strengthening it.

<http://www.northsaanichfarmmarket.ca>

Sooke Food Community Health Initiative.

Sooke Region Food CHI Society is a registered, non-profit society consisting of a group of concerned individuals, producers and consumers, from Sooke District, Otter Point, East Sooke, and Shirley.

Sooke CHI are developing a Food Strategy for the Sooke Region.

<http://www.sookefoodchi.ca/>

WestShore Harvest - Western Communities:

WestShore Harvest is part of the WestShore Chamber of Commerce [Healthy Communities Initiative](#), a food security collaboration involving the Sooke School District, farmers markets, governments and community organizations growing a local food movement. West Shore Harvest promotes food security through classes, Community Gardens, Learning gardens, Gardener`s Forums, Apprenticeship Programs, and by making information available to people who want to support all facets of the organization.

<http://westshoreharvest.ca/about.php>



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