

Journey Through a Forest Garden

A guide to creating



community greenspace

ACKNOWLEDGEMENTS

Funders

- ♥ **BC Youth Environment Team - Ministry of Environment, Lands, and Parks**
- ♥ **City of Nelson**
- ♥ **Columbia Basin Trust through the Columbia-Kootenays Fisheries Renewal Partnership**
- ♥ **Environment Canada - Eco Action 2000**
- ♥ **Real Estate Foundation of BC**
- ♥ **Selkirk College**
- ♥ **Vancouver Foundation**
- ♥ **Youth Community Action - Youth Options BC**
- ♥ **Youth Service Canada - a program of the Nelson Human Resources and Development Center**

Gratitude to the City of Nelson for your generous support in donating use of the land, financial support and resources - including our water system, staff time, and garden materials.

Respect to our mentors who have shared their wisdom, enthusiasm, and support.

A Special thank you to all the volunteers who have contributed to the success of this project.

Many thanks to all the people who participated in tours and public events, and to all those who enjoy the garden. Come back again real soon...

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WELCOME TO THE GARDEN

Tucked away at the end of vibrant Baker Street in downtown Nelson, a magical pathway winds through a bountiful garden, a public garden that contains plants to feed and heal, to tempt all the senses, and to restore ecological balance. This garden is an innovative response by a community youth organization to issues that face many urban and rural communities, issues like: loss of biodiversity, food security, poverty, and dwindling **greenspace**.

Earth Matters is a community-based organization in Nelson, British Columbia that works on a range of community development initiatives focusing on social justice, economic sustainability, and environmental responsibility. **Earth Matters** has evolved over 5 years to offer a number of programs that provide innovative responses to local and global issues. From the start, the program has been youth driven, involving young people who contribute to their community through a variety of projects. **Earth Matters** builds partnerships with local individuals and groups and strives to involve the community at all levels of project development. [For more information about our organization please review **Appendix One – Earth Matters!**]



The **Hendryx Street Forest Garden** is a community **greenspace** project initiated in response to a request from the City of Nelson. It is a green oasis located in Nelson's downtown core. The project has provided employment and skills training for a number of local youth, and provided educational and skill building experiences for a diverse group of community members.

We are excited to share our experiences and encourage development of successful **greenspace** projects by providing some information and keys to success. In the following pages, you will find information about the importance and benefits of urban **greenspace**, specifics on **forest gardening**, the steps we took to create our project, and lots of ideas to help you initiate your community **greenspace** project.

The guidelines for this handbook can be applied for an experimental community garden or applied to existing yards or gardens. The information here outlines steps taken to create the **Hendryx Street Forest Garden** in Nelson, BC. **A forest garden is just one form of urban greenspace.** We recognize that each community has unique characteristics and we hope that this model will serve as an inspiration for you to develop a project that meets your community's needs and reflects your own community's creativity and culture.

] *Creates* employment opportunities

Urban greenspace can take many forms; in our community, we felt that a **forest garden** was an ideal solution to many local issues.

Some Ways For Urban Dwellers To Create a More Sustainable Urban Environment:

- ? *Reduce, Reuse, Recycle*
 - ? *Promote* and support greenspace
 - ? *Lessen* your dependence on fossil fuels – use alternative transportation
 - ? *Grow* a garden on your windowsill, balcony, porch, or yard
 - ? *Start* or support a community garden
 - ? *Compost* to recycle soil nutrients
 - ? *Optimize* use of resources, including water & electricity
-
- ? *Propagate* native species
 - ? *Support* habitat restoration and preservation
 - ? *Help* control invasive species
 - ? *Promote* stream and waterfront enhancement

ABOUT FOREST GARDENING

Robert Hart, an English gardener and farmer, pioneered the concept of the **forest garden**. Hart believed in creating a “green society”. He reflected on the lifestyles of primitive peoples that existed in **forest garden**-type environments in the Earth’s tropical rain forests. Hart envisioned a sustainable ecosystem that could thrive and provide for people, regardless of cooler temperatures or land limitations. He was also very inspired to compensate for global deforestation by planting many small forests. His book, ***Forest Gardening***, has introduced the concept to the Western world.

“Those who are concerned with the full implications of the ecological crisis which we now face generally agree that urgent steps should be taken to plant millions of trees...I had a vision of mini-forests in millions of back-gardens.”

Robert Hart *Forest Gardening*

Forest Gardening is ...

A **forest garden** emulates the principles and complexities of a natural forest. It is designed to work with the land rather than in opposition. Like in a natural setting, there are many layers in a **forest garden** including: a canopy layer (tall trees), lower or dwarfing fruit trees, shrub layer, vertical layer (climbing vines), herbaceous level (perennials and self sowing annuals), ground cover, and rhizosphere (root) layer.

Gardening on multiple horizontal levels is an efficient use of space and brings stability to the system through its diversity. The top canopy layer provides shade and protection for the lower herbaceous level. Shrubs and perennials make use of what would be wasted space between maturing fruit and nut trees. Ground cover fixes nitrogen to support neighboring plants and the rhizosphere draws minerals up, cycling them through the system and making them accessible for other plants.

The relationships between animals, plants, people, and insects are also intrinsic to the design. A varied plant selection of native and non-native plants increases biodiversity and helps to create more animal and insect habitat. In addition, attracting beneficial insects to the garden helps both with pollination and pest control.

The goal is to create a garden similar to a natural ecosystem, where all inputs to the system are answered within the system. Human labor is one of those inputs and ultimately a **forest garden** should require very little of our help. Imitating nature is no small task and a young garden still requires helping hands in its journey to a harmonious state of balance and self-sufficiency.

Forest gardening requires more effort in the initial set up but over time is designed to produce an abundance of useful plant material within a relatively small space with little or no maintenance. The **forest garden** is more than a system for supplying humankind's material needs; it is a way of life and can nurture an individual's spiritual needs by its beauty and ability to sustain many forms of life.

*"Robert Hart's genius is to remind us of the wonderfully rich legacy we have inherited from the earth, and to propose a system of **forest gardening** that helps us live off the interest of this natural abundance in an ecologically sound way."*

Benjamin Watson

Principles

The following are general principles of **Forest Garden** design:

1. **Self-Perpetuating** - All the plants in the garden will return year after year (perennial or self-seeding annuals). Plants are selected for their hardiness & disease resistance.

2. **Self-Fertilizing** – The plants provide nutrients for each other. The trees and deep-rooted plants draw minerals up from the subsoil so that other plants can access these minerals. Nitrogen and calcium fixing plants are planted near plants that require these nutrients.
3. **Self-Mulching / Weed suppressing** - The ground cover and herbaceous level are designed to take up space that less favorable plants may otherwise occupy, while retaining moisture and reducing soil erosion. In other words, the ground cover acts as living mulch.
4. **Self-Pollinating** – The garden is designed to attract insects for pollination. Include males and females of plants species that are not self-fertile.
5. **Self-Healing** - The wide variety of plants makes the garden less susceptible to disease. Again, plants are selected for their hardiness and resistance to pests and disease.
6. **Self-Watering** - Trees and deep-rooted plants draw water up to the surface to be used by smaller plants. Trees and plants are selected for their low water needs or drought resistance qualities.

Benefits of Forest Gardening

- ┆ **Forest Gardening** is a solution to many of the pressing ecological issues facing our earth: deforestation, global warming, chemically dependant agriculture, overuse of fossil fuels, and loss of plant and animal species.
- ┆ **Forest Gardening** is an extremely practical solution to the enormous issue of food security facing urban centers. Urban **greenspace** is converted to both an agricultural asset and a quiet source of inspiration and solace in the city.

*“The **forest garden** can enable a family to enjoy a considerable degree of self-sufficiency, with minimal labor.”*

Robert Hart

CREATING SUSTAINABLE COMMUNITY GREENSPACE

Keys to success

- ┆ *Start* small, you can always expand
- ┆ *Plan* ahead, and plan thoroughly
- ┆ *Involve* community partners, individuals, governments, and organizations

- ? *Keep* detailed records of your contacts, resources, meetings, and all decisions reached.

A good objective is a **SMART** objective:

-] **S**pecific
-] **M**easurable
-] **A**chievable
-] **R**ealistic

] **T**ime-bound

Site Selection

- ? When creating a garden, we have little choice about its location but if you have choices essential elements include lots of sun, accessible water, and decent soil.
- ? If you do not own the land, obtain a lease that meets your needs (long-term lease recommended).

Observation

- ? Observe the existing vegetation, the slope of the land, the way the sun will hit the ground through the seasons, and assess what the past and current uses of the site have been. Talk to neighbors and community members.
- ? This step is crucial in the initial design stages and continues to be important as the garden grows. Be prepared to be humbled by the plants and insects, and their gentle lessons. You will learn more by interacting with them than by reading a book or listening to someone else (although you will need to do this too!).



Documentation

- ? This step logically follows observation but is often overlooked, even by those of us who should know better. Take pictures, write a garden journal, keep a maintenance log, record visitors comments, dry flowers, whatever it takes to preserve the precious moments you spend with plants. Smell,

- touch, and taste (when appropriate) the plants in their various stages of growth.
- ? If the garden is intended as a community or educational resource, provide clear signs and information for people. Let people know whom to contact with questions, concerns, and feedback.
 - ? Keep detailed records of material sources, resources, the plants, and the human activities.
 - ? Make maps and update them!

Design

- ? The time put into research and design will save you countless hours of struggling, rearranging, and muttering under your breath about the decision to put the Jerusalem artichokes in the center of the garden, blocking the sprinklers and taking over the garden at a rapid pace.
- ? The design of a **forest garden** requires careful consideration. The system should require little input (fertilizers and maintenance) although an initial period of high maintenance is required as the plants establish themselves and support systems are set up.
- ? Relationships between plants are a very necessary consideration; the design should make the most of these relationships.
- ? Get information from a variety of sources about weather, climate, pests, and plants that do well for them. Read many books, use the Internet, find mentors, and ask lots of questions. Seek out gardening clubs, agriculture groups, local gardeners. Establishing connections and networking create wonderful resources for all aspects of **forest gardening** and are great ways of promoting your garden in the community.
- ? Consider human uses of the site and optimize accessibility and educational props (sitting areas, signs, etc).
- ? Plan for the future. With a **forest garden**, you have to consider the full potential of the trees and shrubs. You also have to consider how long it will take for this growth and how to fill the spaces in the interim.
- ? Build physical structures (water system, seating areas, trellises, signs) into your design from the beginning, even if you might not add these elements until later.
- ? Be sure to select plants that are appropriate for your site and climate.
- ? Present your design to stakeholders for feedback and modify as necessary.

Site Preparation

- ? Plan community work parties. Be well organized and provide all necessary supplies, tools, snacks, and beverages (we have learned that volunteers will work even in horrid weather conditions if you feed them well).
- ? If possible, prepare your site at least a season in advance. This preparation includes weed removal, soil amending, and mulching. An area sheet mulched in the fall will provide an excellent bed for spring planting.
- ? Make sure that your water source is available and working before you begin planting.

Materials

- ? Try to find free or cheap materials. Talk to local governments, businesses, farmers, and individuals. Plants, soil, manure, compost, wood chips, and scrap lumber are often available at no cost. Ask for donations and discounts for other materials. Businesses are especially happy to help out if you thank them publicly through signs, literature, and press coverage. Try to use recycled materials.
- ? Secure and clearly label tools and equipment. Store them securely in a shed and fix and replace them as necessary.

Planting

- ? It is crucial to have detailed plant information included in your design. It can be so exciting to get the plants in the ground that you often forget to consider the long term picture – how big they will grow, whether they will become invasive, their maintenance and water needs.
- ? Most perennials need to be planted in the spring or fall. For detailed planting information look to a variety of sources, including books and mentors. [Please review **Appendix Three – Plants to Consider**]

Maintenance

- ? It is critical to plan for maintenance in the earliest stages. Since funding can be challenging to secure for ongoing maintenance, volunteers often are crucial to the maintenance of **greenspaces**. Stewardship, which involves community members taking some ownership - involved in decision making as well as maintenance - is often an ideal solution. Stewardship does require planning and coordination. [see **Appendix Two - Resources** for places to find more information]

Publicity

- ? Getting the word out about your project is crucial to its success. If people know what you're doing, they will be able to get involved and offer support and feedback. There are many ways to share with your community: posters, brochures, press coverage, paid advertisements, internet postings, open houses, radio advertisements, information tables at community events, speaking at community events, networking with other groups, and speaking to absolutely everyone who comes near you.
- ? Posting signs in your **greenspace** helps people to know who you are and what you are doing. It is important to include contact information so people can get in touch with you.



Challenges

- ? Vandalism is often a concern. Strategies include inviting vandals to participate in the project, keeping the space well maintained and repairing damage promptly, ensuring frequent 'people presence' in the **greenspace**, and friendly signs asking people to respect the space (as opposed to telling people what not to do). If graffiti is an issue, try providing colored chalk for people to decorate rocks and fences.
- ? Provide educational opportunities for participants and community members.
- ? Keep the **greenspace** well maintained.
- ? Ask for and respond to evaluation.

DEVELOPING THE HENDRYX STREET FOREST GARDEN

Many hands have helped create the beautiful urban oasis that is known as the **Hendryx Street Forest Garden**. Earth Matters was approached by City of Nelson in 1997. The city wanted flower gardens planted to beautify the site at the east end of Baker Street, Nelson's beautiful and historic main street. An overgrown, unused lot on a steep slope, it was considered unattractive and unproductive by many community members. Earth Matters realized this was opportunity to create a **greenspace** that demonstrated a sustainable solution to a variety of ecological and social issues, as well as being beautiful.

The garden is located in the Hendryx Street right-of-way, an area of city owned land where a street was not continued due to the steep slope of the land. This previously unused space extends for four blocks up the mountain. The garden is

located in the lower block bounded by Baker Street, Herridge Lane, a car dealership, and local residences.

Following are the main actions taken to plan, design, establish, and share this space, year by year:

Year One

Planning and Design

The first steps involved extensive research. Information on design and principles came from resources on permaculture and forest gardening. In addition to written resources, we have been lucky to have many inspiring and resourceful mentors locally. The principles of **forest gardening** seemed well suited for the site. [Please review **Appendix Two – Resources**]

Other initial steps involved finding and analyzing topographical maps, wind and rain records, terrain type (gradients and heights), and erosion potential. Comprehensive rain and wind records are available through Environment Canada, at a substantial cost. The Public Works department of the City of Nelson was helpful in providing access to their records. There was a moderate erosion potential identified on one bank that resulted in plans to plant shrubs to stabilize the slope.

Next, our researchers completed an inventory of existing plant species and performed soil tests. Since this garden is designed to be a community greenspace, the neighbors were surveyed to gain their input into the design and become involved. One challenge was that local children have used the site each winter for tobogganing. We have installed signs and fencing to keep the toboggans from destroying some tender perennials, such as blueberry and hardy kiwi. We have planted a children's garden at the top of the site hoping that kids will develop a sense of pride and ownership in this sensory garden and choose not to toboggan over the plants.

Site Preparation

The next step was designing and building the path. The original path ran straight from the bottom to the top of the site and, while providing a very short thrill for cyclists, hampered accessibility for children, the elderly, and people with physical challenges due to its steep grade. The path was redesigned to wind gently through the garden, making access easier and exposing more of the garden. Cyclists have been encouraged, through signs and physical barriers, to walk their bikes down the path. We strive to keep the path clear for people wandering through and have worked to make it accessible for strollers and rugged wheelchairs.

Existing vegetation was described by one employee as a “looming jungle of happy, well established couch grass, knapweed, tansy, morning glory, false bamboo, thistle, and thimbleberry - just to name a few of our opponents”. The



group learned that these plants are good indicators of soil type. Invasive plants are hardy and grow in the poorest of soils (often through cracks in concrete). They also discovered nitrogen-fixing plants such as clover and lupines that demonstrated nature's ability to take care of itself. The presence of horsetail and moss were a sign of acidic soil. Two soil tests confirmed what the plants already told, acidic soil with low nitrogen content. A soil analyst was brought in to offer more detailed information about the condition of the site.

The main soil preparation technique used was sheet mulching. Some of the more invasive species were pulled and dug out; time has shown that much labor can be saved if most of the invasive undesirables are removed early - and removed vigilantly as they reappear. Examples of these plants were left on the edges of our garden to educate people of the many edible and medicinal uses of these plants (couch grass, for instance, has a multitude of medicinal properties, as well as having an edible root that can be dried and ground into flour.) Sheet mulching has proved a very useful technique. We also mulched around trees, shrubs, and herbaceous plants with straw and bark mulch. The result? The weeds are very persistent and without regular maintenance in the first few critical years can choke out tender plants. Mulching has helped to keep weeds down, as has the planting of ground covers.

Planting

Plants came from a variety of local nurseries. A mix of native and non-native species was planted. Community involvement in the design, planting, and maintenance of this garden has been critical. Neighbors were consulted in the early design stages and the first big public event in the garden was Community Planting Day. Although a trying event for coordinators, the turnout was encouraging and the response positive. The second big day was Community Mulching Day, which went much more smoothly due to better coordination and planning. Everyone worked hard and the results were worth the energy, sweat, and headaches. [Please review **Appendix Three – Plants to Consider**]

Water

The garden's water needs are nearly met by 3 underground sprinklers, which are activated by a computerized control. The sprinklers do not reach all areas of the garden and the hand watering has proved a time consuming task. We currently water for one hour every second night and hand water as necessary. The computerized system means changing the timing and amount of watering is very easy, involving a phone call to city parks staff who can reprogram the system



instantly. The City, who has been very supportive (as has been the Parks Department), owns the land where the garden resides and has been very helpful, installing our watering system and donating materials such as bark mulch. One situation that wasn't anticipated was plants growing tall and blocking the water from reaching plants behind them. A water system should be designed to meet the long-term needs of the garden.

In the fall of the first year, a group of youth was employed for three months to build a small pond and provide some further improvements to the site. The pond was designed to provide habitat for water loving plants and creatures. There was hope that amphibians would be attracted to the site and much discussion of relocating frogs and toads to our garden (there aren't many hanging around in downtown Nelson, seeking a new home). The pond provides a very necessary water source for pollinating insects. After almost two years of observation, we have decided to enlarge the pond in order to create a small ecosystem that can sustain itself. We would like to include more plants that oxygenate the water and relocate some tadpoles in the spring. Children have a fascination with water and it is important to design the pond in a way that it is safely accessible.

Year Two

The second year was one of much observation and learning about the plants and sharing with the community the garden and the amazing varieties of useful plants within. In the spring of 1998, two young people were hired to provide interactive education about the garden and the plants within. This proved to be an exciting challenge given the time constraints (part time for six months) and lack of experience. The task of researching the plants and the history of the project was difficult since previous employees were unavailable to provide information and share their experiences. We discovered that documentation of the garden and all that happened within it was essential, and we highly recommend that anyone involved in gardening projects take lots of photos and detailed notes. This garden has been a huge learning experience for all involved

Tours

Garden tours are provided to the general public and for interested community groups - including children from local daycares and summer programs. Tours can be as entertaining and educational for the facilitators as for the participants. A typical Hendryx Street tour involves sharing information about the principles and benefits of **forest gardening**, the history of the site, and our steps to create the garden. Information about the plants, their uses, and the roles of insects are also discussed. Tours are rather informal and are designed to be interactive, with tour participants sharing their knowledge, observations, and questions. Our series of children's programs was the highlight of that second summer (for more information, please see **Children's Garden**, page 20).

Garden Projects

In the fall of the second year, community stewards were involved in a variety of garden improvement projects including: designing a composting system, redesigning the pond area, providing interpretive signs, and further soil preparation (sheet mulching) for new plantings. A rock wall was rebuilt to increase safety in the garden. Making herbal products (oils, vinegars, lip balms) from plants in the garden and selling them at a community event became a successful fundraiser.

By end of this second season, it was clear that community members enjoyed walking through the garden but that something more than an invitation to steward the site was needed. After brainstorming and consulting other communities, a program was planned that would provide community members with exciting, hands-on horticultural training in exchange for a commitment to provide weekly maintenance of the garden over the eight-month growing season.

*“Working in the **Forest Garden** has been a wonderful experience. It has given me insight to a whole new dimension of gardening. Through the **Forest Garden** I have learned so much about plants and their many uses. I am also beginning to see that the educational aspect of the **Forest Garden** is endless, for children and adults alike.”*

Amy Stewart Youth Community Action Participant

Year Three

The third year has featured the implementation of the Green Thumb Apprenticeship Program (see **Community Stewardship** page 14). We have also accomplished further garden development, production of additional educational resources, continued interpretive tours and children’s programs, and the amazing growth of the plants.

New developments in the **Hendryx Street Forest Garden** include a children’s garden, consisting of a sitting area and 5 ‘sense’ gardens - including plants to touch, taste, smell, hear, and see. Our compost bin was rebuilt with the help of a very enthusiastic local youth group. Other projects included: making the garden more accessible, creating more signs that provide information about the garden and plants, and increasing the garden’s biodiversity. Evaluation of the garden and its associated projects is an ongoing process. We have identified a number of improvements that can be made in the garden and are creating action plans to facilitate these changes.

In our third year, we have been able to hire a full-time community education coordinator who is developing our children’s programs. We want the garden to be accessible to all young people in the community, particularly educational groups. We are also developing new educational resource materials - like **greenspace** manuals.

COMMUNITY STEWARDSHIP

Mentorship

- | | | |
|---|----------------------|----------------------|
|] | <i>Tell me</i> | <i>I will forget</i> |
|] | <i>Understand me</i> | <i>I will listen</i> |

- | | | |
|---|------------------------------|--------------------------|
| J | <i>Show me</i> | <i>I will remember</i> |
| J | <i>Involve me</i> | <i>I will understand</i> |
| J | <i>Respond to my needs</i> | <i>I will act</i> |
| J | <i>Remind and support me</i> | <i>I will keep doing</i> |

The spirit of community stewardship has been persistent since the earliest planning stages of the **Hendryx Street Forest Garden**. We have realized that a garden of this size, complexity, visibility, and intended use cannot simply be planted and ‘handed over’ to the community to maintain and care for without providing support and structure. While community enthusiasm for the site has been high, maintenance of this space has proved a challenge and many creative approaches have been used to keep this garden flourishing. Securing funding for ongoing maintenance is challenging and does not fit with the principles of permaculture and **forest gardening**, which promote that the system’s needs be met from within. The challenge, therefore, is to create a feeling of ownership and involvement by community members and to encourage them to exchange their love and care of the garden for the beauty and bounty of plant material that it provides.

It is a big job to form a sustainable system, comprised of extensive written documentation, knowledgeable coordinators with strong leadership skills, committed community involvement, excellent resources, and local mentors to support the garden. As the garden has many elements that form a system, there must be many human elements to support the human involvement in the garden.

Our Steps Toward Community Involvement

At the end of the first year, a stewardship committee was formed after many meetings and much discussion. The first year of garden development was very visual in the community and involved many community members. The ten members met on a monthly basis and divided the garden into eight sections - each assigned a steward to maintain the space. Tasks included weeding, watering, garbage removal, and whatever else was required.

The committee had dwindled to four by the second spring. Main activities in the garden the second year involved promotion of the garden and free public tours and workshops. Few community members stepped forward to help with the task of weeding and caring for the garden. Maintenance was a challenge without funding to organize and support this. At the end of the second year, we renewed our focus on securing support to enable stewardship of the **Forest Garden**.

In the winter of the third year, funding came through for implementation of a stewardship program called the Green Thumb Apprenticeship Program. Green

Thumb is an educational program whereby apprentices exchange their labor for training in horticulture. By doing so, they increase their skills and become the stewards of the **Forest Garden**.

Members get practical, hands-on training in an innovative garden setting and the opportunity to be directly involved in decisions affecting the **Hendryx St. Forest Garden**. Committed stewards ensure a prosperous season. The program is



designed to offer the community a unique, skill-building opportunity while developing stewardship for the **Forest Garden**. In providing urban dwellers the opportunity to foster a relationship with land, contribute to creating and protecting habitat, and know the labor of growing food, we provide them with the awareness to become better stewards of the Earth.

Green Thumb Program

The **Earth Matters Forest Garden** Committee designed and planned the program. Publicity about the program involved ads in local newspapers, extensive posterage, and brochure distribution. Interested applicants were asked to fill out a detailed application form. We were thrilled to receive twice the number of applications we anticipated!

Following are details on structure, roles and responsibilities, training, and evaluation of the Green Thumb Program:

Structure

- ? **Earth Matters** provides staff, training and resources for the program; participants are routinely consulted and involved in program planning.
- ? We have a number of local mentors available to provide information, support, and training and a range of community partners in addition to extensive written resources. We strive to keep current with related events and issues, and also be available as a resource to the general public.
- ? In our first year, we have employed one part-time coordinator from mid February to August and one part-time research and support person from June to August. We hired a full-time educational coordinator from July to October to coordinate interpretive tours and activities in the garden (specifically targeting school children) and to coordinate the Green Thumb program from August to October.

Green Thumb Participant Responsibilities

- ? *Participate* in the Green Thumb Apprenticeship Program from April to October

- ? *Commit* to a minimum of 2 hours per week of garden practicum (weeding, watering, garbage removal, etc) to ensure that the assigned plot is maintained
- ? *Attend* training sessions and work parties as scheduled
- ? *Respect* the neighbors and people walking through the garden
- ? *Return* tools to shed and put plant material in compost (generally keep garden looking tidy)
- ? *Find* someone to replace you in the event that you are unable to fulfill your commitment
- ? *Speak* with project coordinator if you have any questions, concerns, or feedback

Green Thumb Coordinator Responsibilities

- ? *Attend* regular weekly **Earth Matters** Programs Committee meeting to provide project updates, get support and feedback, offer support and feedback for other programs, and assist in running the ongoing activities at **Earth Matters**
- ? *Be* available for general **Earth Matters** support, training, and special events (community outreach, work parties, potlucks)
- ? *Design* and plan a program that meets objectives of **Earth Matters** and project Funders
- ? *Organize* training and work parties – contact participants in advance of scheduled events
- ? *Make* sure information and resources are available to participants, and be available to answer questions and concerns
- ? *Have* an ongoing evaluation of events and the program in general, and respond to feedback
- ? *Make* sure the garden is maintained and ensure that tools and supplies are available
- ? *Organize* tours and other public events (children’s educational programs) in the garden, arrange publicity and community outreach, be available for questions and feedback from the community
- ? *Work* with City Parks staff to monitor water system settings and request garden supplies (mulch and compost)

- ? *Update* Funders and **Earth Matters** Steering Committee, and be responsive to feedback

Here is some of the training **Earth Matters' Green Thumb** participants receive:

Orientation An introduction to **Earth Matters**, a detailed overview of the Green Thumb program, a tour of the **Hendryx Street Forest Garden** and another **Earth Matters** demonstration garden.

Introduction to Permaculture A detailed slideshow and discussion covering the basics of permaculture philosophy and design.

Soil and Composting A hands-on workshop covering the basics of soil structure and composting.

Basic Organic Gardening Designed for garden novices, this workshop covers gardening basics such as soil preparation, plant selection, seeding and transplanting and plant care; participants planted two small gardens as a hands-on activity in this workshop.

Plant Walk A stroll up the mountain to discover the bounty of edible and medicinal plants that grow wild in our area, very detailed and useful information.

Forest Garden Tour A visit to an established **Forest Garden** in Grand Forks, very inspiring and tasty!

Teas, Tinctures and Salves A hands-on workshop about making herbal products and using medicinal plants - various plants from the Forest Garden are used.

Water Gardening This workshop covers the basics of designing a habitat pond, participants will enlarge the existing pond to enhance the aquatic ecosystem.

Seed Saving This workshop introduces the techniques and importance of seed saving, and includes harvesting and saving seeds plants from the **Forest Garden**

Food Preservation The basics of canning and drying fruit, vegetables, and herbs are covered, a portion of the products made will be donated to local anti-poverty groups

We aim to garden as a group, although this can be complicated with a large group of diverse individuals. This group approach, however, can be especially beneficial for new gardeners who wish to learn from more experienced ones. Green Thumb is about having fun, as well as developing skills, stewardship, and community involvement.

Volunteer Program Suggestions

The Green Thumb Program has been running for 5 months and we have learned a few things about running a volunteer program; some suggestions include:

-] *Plan* ahead! The more you can prepare before you accept volunteers the smoother things will go. Have your training schedule confirmed so you can let participants know dates and times well in advance.
-] *Find* support and partners in your community.
-] Secure funding for a paid coordinator and support staff (depending on your ambitions) as well as training, supplies, and other expenses.
-] *Make* participant expectations clear from the beginning. Have participants commit to agreements, and have a contingency plan to deal with those commitments falling apart.
-] *Garden* together as a group. This is more fun than gardening alone and gives everyone a chance to share his or her knowledge.
-] *Educate* the community about your project. This can involve advertising, press coverage, speaking and running information booths at public events, offering tours and workshops, and especially talking to people in the garden and surrounding neighbors.
-] ~~*Plan* fun activities, such as potlucks. This gives participants a chance to~~ get to know each other and also builds a social and community identity that can be woven throughout the program.

Community Partners

Community partnerships have been vital to the success of this project. Our partners have included:

- ♥ **The City of Nelson** and their Department of Parks have been extremely helpful. They donated use of the site, access to information, an underground irrigation system, compost, bark mulch, and financial support to encourage sustainability of the site.
- ♥ **Local mentors** have helped and inspired us. We are lucky to have so many skilled and resourceful people in our small community.

- ♥ **Community members** who have volunteered in the garden have carried this project. We have been encouraged by the support we receive.
- ♥ **Local organizations** addressing environmental and social issues have been very supportive and shared invaluable resources.

Possible partners in your community may also include local and regional governments, businesses, service clubs, youth groups, environmental and social organizations, schools, and anyone else who demonstrates an interest. Search out partners in your earliest planning stages, and keep them involved in all decisions, events and evaluation.

Community Education

Greenspaces are an ideal environment to provide educational opportunities for your community. This experience can be provided in a number of ways, including: educational signs and written materials, tours and workshops, displays and speakers at community events, multi-media coverage. Outreach to the community has been implemented in many ways. The **forest garden** is accessible to anyone in the community at anytime of day or night.

There is a compost bin that is available to the surrounding neighbors. And, importantly, the garden is located in downtown Nelson in the middle of all the urban activity. At the front of the green space is a welcoming garden that contains a variety of bright and inviting plants. Even in it's young stages, there is an immediate feeling of solace when entering the garden, one literally steps from concrete into a world of green.



Involving the community dovetails with education. As expressed earlier, there are many positives related with **forest gardening** within your community or personal space. However, the challenge is taking this valuable information and providing it to the community.

Earth Matters has taken this challenge on in several ways. One effective method has been conducting interpretive programs in the **greenspace**. A **forest garden** is the ideal environment for experiential education. All of the six senses can be engaged and all learning styles can be encouraged. During programs, one can introduce the concept of **forest garden** while presenting to participants a myriad plants and insects. Plants can be touched, seen, smelled, tasted, heard, and more. They are loved by children and adults alike.

The Children's Garden

"I believe that involving children in community gardens is essential. Children are fascinated by the natural world and remind us to be keen observers and find magic in all living things. By involving children, we demonstrate and encourage a

lifelong respect and love for nature and are blessed by their joy and enthusiasm.”

Jenny Henri Forest Garden Stewardship Coordinator

Since **Earth Matters** is a youth organization, there was a particular interest in helping urban children understand the concepts of **forest gardening**. The garden is still very young and by the time the children reach early adulthood the **forest garden** will have grown and changed considerably. There is a section in the garden dedicated to children, referred to as the Children’s Garden. A sitting circle of flat stones has been created for discussions, and 5 ‘sense’ gardens have been planted. These beds contain plants that children can touch, see, smell, taste, and hear.

The experiences the children have during these tours are meant to be as equally enjoyable as educational. In the future, there will be a larger variety of interpretive methods incorporated, such as story telling. As noted by **Earth Matters** staff, children can recall an amazing amount of information when it is delivered to them in an interactive way. Tours are organized to ensure specific information is delivered but often the garden provides impromptu learning opportunities. A grasshopper or another child’s discovery can lead into discussions that are more memorable than a stringently set tour plan.



Children and the forest garden seem to go hand and hand. For anyone interested in creating a **forest garden** environment, having children in the **greenspace** can be an enlightening experience - for the children and the adults!

Tours for very young children (under 5 years) were designed with a garden fairy theme. The fairies were photographed by a passing newspaper photographer, who exclaimed that one doesn’t often see a fairy walking down the street. The fairies sang and told stories and romped with the children through the garden, observing ‘bugs’ and touching, smelling, tasting, listening to and looking at many fascinating plants. The children were treated to a snack of the varieties of berries and fruit that grow in the garden (supplied from a local organic source - our baby plants are still establishing themselves) and iced mint tea, which was so popular we now make twice what we anticipate people will drink. The children left in a poof of fairy dust, clutching stickers and catnip to take home for their kitties.

Programs for older children involve practicing observation skills and lots of exploration in the interrelated elements of the garden – plants, insects, soil, water, people, and others. We introduce a variety of plants, touching, tasting, smelling, and sharing interesting information. We share fruit and tea and are constantly amazed by the children’s enthusiasm, energy, and ability to engage.

What the Children Say

♥ *“Thank you for shoing your garden I like eating the plants!” – Ryan (age 9)*

- ♥ *“Thanx for the tour!!! My favrit bug was the bee! Thanx”* – Mike (age 7)
- ♥ *“Thank you for the tour it was fun and yummy!”* – Megan (age 6)

GOOD-BYE FOR NOW

Thanks for joining us in the garden today. If you like what you see contact us, if you have questions contact us, if you have suggestions contact us, if you have a story to tell – contact us! We think **EARTH MATTERS** and you can find us in Nelson British Columbia at:

Earth Matters!

Phone 250-352-2140

Fax 250-352-2146

Email earth@netidea.com

Website www.kics.bc.ca/earthmatters

Snail P.O. Box 746 Nelson BC V1L 4J3

To order copies of this handbook, please contact Earth Matters.

Best of all – grow a garden!

Appendix One

Earth Matters!

Earth Matters is a community-based organization that works on a range of community development initiatives focusing on *social justice, economic sustainability, and environmental responsibility*. Through innovative experiential education programs, **Earth Matters** strives to build the capacity of people and their communities to meet needs in creative, proactive ways.

Earth Matters is sponsored by *Nelson District Community Resources Society* (NDCRS), a non-profit, registered charity that has been actively involved in community service and skills training in the Nelson area since 1974. The Society has a Board of Directors consisting of community members from Nelson and adjacent areas, and an administrative staff of four at its office in Nelson. NDCRS administers five other community agencies including STEP Sawmill, Career Development Services, West Kootenay Boundary Addictions Services, Kootenay Society for Community Living, and the Advocacy Center.

Earth Matters began in the spring of 1995 when two local youth were inspired to create a summer pilot project for high school students called “HANDS-ON”. Building on its success, **Earth Matters** evolved out of “HANDS-ON” as a *youth-driven* organization focused on involving young people in giving back to their community through work on environmental and social justice projects. Today, **Earth Matters** continues to be largely *youth-driven*, but now extends its innovative educational programs to all ages.

Appendix Two

RESOURCES

Following is a list of resources that have been helpful in designing and creating the Hendryx Street Forest Garden and this handbook:

Books

Youth and Sustainable Cities Series

1996, LifeCycles and The West Coast Ecological Youth Alliance
#410-620 View Street
Victoria, BC V8W 1J6
250-383-2062 (LifeCycles)
250-386-3449 (WCEYA)

Three booklets covering urban sustainability, biodiversity and agriculture issues. Produced by youth organizations, these booklets contain useful information and invitations to action.

How Does Your Garden Grow, A Guide to Community Gardening Success

Laura Berman
1997, FoodShare Metro Toronto
238 Queen Street West
Toronto, Ontario M5V 1Z7
416-392-6653

A very detailed and useful 'How To' guide for starting and succeeding with community gardening.

The Stewardship Series:

Naturescape British Columbia: Caring for Wildlife Habitat at Home

1997, Ministry of Environment, Lands and Parks
1-800-387-9853

A very useful series providing tools to restore, maintain improve or protect wildlife and habitat at home.

Community Stewardship, A Guide to Developing Your Own Group

Fraser Basin Management Program
Suite 2970-700 West Georgia Street
Vancouver, BC V7Y 1B6
(604) 660-177

A great guide to developing community stewardship.

Community Environmental Projects, From Needs Assessment to Evaluation

Action 21, Environment Canada

1995, Ministry of Supply and Services Canada

http://www.ns.doe.ca/action_21/menu.html (Click on Reference Guides)

An excellent resource for developing Needs Assessments, Objectives, Partnerships, Communication And Evaluation

Forest Gardening

Robert Hart

1996, Chelsea Green Publishing Company

An inspiring vision and lots of useful information and history on Forest Gardening.

Plants of Southern Interior of BC

Coupe and Lloyd Parish

Edible and Medicinal Plants of the Rocky Mountains and Neighboring Territories

Terry Willard

1992 Wild Rose College of Natural Healing, Ltd.

Organizations

Dragon's Eye Nursery

RR#1 Grand Forks, BC

V0H 1H0

250-442-5731

Kootenay Permaculture Institute

P.O. Box 43

Winlaw, BC

V0G 2J0

250-226-7302

SPUD (Start Planning Urban Dirt – Nelson Community Gardening Organization)

Suite #4

823 Victoria Street, Nelson, BC

250-352-0052

Christopher Spicer Center for Sustainable Agriculture and Rural Life

P.O. Box 578

Winlaw, BC

V0G 1Z0

Farm Folk / City Folk Society

#208-2211 West 4th Ave
Vancouver, BC V6K 4S2
604-730-0450

City Farmer

#810-318 Homer Street
Vancouver, BC V6B 2V3
604-0431
www.cityfarmer.org (information galore)

BC Food Systems Network

S-6, C-27
RR#1 Sorrento, BC
V0E 2W0
250-675-4866

Strathcona Community Gardens

Environmental Youth Alliance

P.O. Box 34097 Stn. D
Vancouver, BC
V6J 4M1

Life Cycles

#410-620 View Street
Victoria, BC V8W 1J6
250-383-5800

Environmental Youth Alliance

P.O. Box 34097 Stn D
Vancouver, BC
V6J 4M1

There are many useful websites to be discovered, with more being developed daily. Take the time to search a few sources for relevant information on almost any topic.

Appendix Three

PLANTS TO CONSIDER

Improve Soil

- ? **Comfrey** – deep-rooted perennial that draws water and minerals from sub soil, excellent organic fertilizer or compost addition, leaves and root contain medicinal properties
- ? **Sea Buckthorn** – large silvery shrub, nitrogen fixing, roots stabilize soil yet do not interfere with neighboring plants, highly nutritious berries, many medicinal properties
- ? **Legumes** – fix nitrogen

Attract Beneficial Insects

- ? **Bergamot** – An upright, clump forming perennial with a citrus-like scent. Attractive to most species of bees, also known as Bee Balm.
- ? **Echinacea** – Tall perennial with striking reddish-purple, cone shaped flowers. Well known for its stimulating effect on the immune system.
- ? **Yarrow** – A medium sized perennial with dense, flat flower heads, which have a number of medicinal properties. Attracts a variety of beneficial insects, including: Hover Flies, Lady Beetles, and Parasitic Wasps.

Native to Kootenays (substitute plants native to your area):

- ? **Filbert** – Deciduous shrub growing 1-4 meters tall. Found in moist areas with well-drained soils. Produces clusters of edible nuts.
- ? **Saskatoon** – A deciduous shrub normally growing 1-5 meters tall. Found in a wide variety of interior habitats and provides winter browse for many species of hoofed mammals. Produces an abundance of purplish edible berries in the late summer.
- ? **Elder** – Deciduous shrub that grows from 1-3 meters tall. Produces a sweet and juicy fruit that can be made into jams, jellies, or wine. Other parts of the plant have various medicinal values. Not to be confused with the Red Elderberry that is toxic.
- ? **St. John's Wort** – A mid-sized perennial with a deep taproot. Has a variety of medicinal uses including sedative and anti-depressant properties.

Xeriscape (plants that need little water)

- ? **Kinikinnick** – trailing evergreen shrub produces berries for birds and other creatures
- ? **Lavender** – aromatic perennial herb, also attracts insects.
- ? **Mock-orange** – Shrub with fragrant white flowers which provide nectar for butterflies

Edible Perennials

- ? **Asian Pear** – hardy pear variety, which produces luscious fruit.
- ? **Swiss Stone Pine** – Evergreen, conifer growing up to 25 meters tall, mature cones are collected for the edible pine nut.
- ? **French Sorrel** – Low growing herbaceous plant with sour tasting, edible leaves.

Children's Favorites

- ? **Pansies** – self-seeding annual, edible flowers attract insects.
- ? **Lamb's Ear** – non-edible perennial with velvety, comforting leaves, also drought resistant.
- ? **Sweet Cicely** – A fern leaved perennial growing up to 2 meters tall with anise-flavored seeds. Leaves and roots are edible raw or cooked.
- ? **Catnip** – A clump forming perennial with aromatic leaves and flower stalks. Has intoxicating properties for cats. Repels rats and flea beetles. Can be made into a relaxing tea or used for a variety of medicinal purposes.
- ? **Daylily** – Popular perennial with bright orange blossoms. Unlike other lilies, this one is entirely edible (bulb, young leaves and flowers).

