

Edible Opportunities: FOOD FOREST IN NOVA SCOTIA

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From growing nuts and fruit trees to other types of hardy perennial plants, the food forest method is one that (after a few initial years of planning and planting) is relatively hands off. Can designing our gardens in a way that replicates natural forest settings be the key to ensuring food security?

What are Food Forests?

Food forests are an approach to growing a diverse number of species in patterns that support self-maintenance. The methodology calls for rethinking our regular landscaping, forests, and gardens to contain more edible species and to add biodiversity to our communities. While more often called “forest gardening” in temperate climates, food forests mainly produce fruit, berries, nuts, and green leafy vegetables and herbs. Their yields may also include a wide variety of other products like timber, fungi, honey, flowers, roots, seeds, bark, animal products, and uncultivated wild species.

The term food forest was introduced to Bill Mollison, the Australian co-founder of Permaculture (which can be defined as permanent culture or permanent agriculture, but often encompasses more than just farming) in 1990 when he visited Robert Hart, a farmer who was among the first that coined the term forest garden. Mollison's first demo site was on a small 0.12 acre (500 m²) plot of land.

Food forests have been a way of planting for thousands of years in communities around the world, perhaps more common in tropical climates. Global pressures now strengthen our need to learn from the traditional ways that Indigenous people live and thrive among forests. With proper design and planning, they can benefit human and ecosystem health, as well as foster new streams of economic sustainability through management of highly diverse growing

Permaculture Food Forest Guidelines

Planting in ways that replicate the efficiency of natural systems can benefit both the backyard and community gardener. Moving from monoculture systems (single crops) to diverse polyculture systems foster a range of microclimates. Microclimates are niches in an ecosystem that have varying levels of sunlight, water, wind, and organic matter composition. Every microclimate that a gardener creates in their plan invites different species to live and thrive. This creates resilience in your growing system, and well-designed gardens become self-protected from predators and shifts in climate.

After water, sun, and soil type and condition are considered, the next step for the forest gardener is to determine the appropriate layers to plant for the site (See Box 2). Every site and garden plot is different and there is no one-size-fits-all solution. Thinking about how energy flows through our growing sites forms the basis for understanding the best way to plan these perennial gardens.

systems. This must be done in a way that allows regenerative long-term use. Jessica Fogarty, wildcrafting herbalist and farmer at *Fog Tree Forest* in Cape Breton says “We need to learn how to use our forests to grow our own medicine and food. Importing for our needs is not sustainable.”

The key to creating a self-regulating productive ecosystem lies in considering the wide scope of needs and functions of each element in a forest plan. An apple tree, for example, not only gives nutritious fruit for human consumption, it provides shade, flowers and habitat for insects and other small animals. Additionally, its leaves add mulch and fertility to the ground when they fall, and tree wood fixes carbon from the atmosphere.

Creating aesthetically pleasing environments for people to enjoy is just one of the many benefits of food forests. Increasing diversity in local food choices is another. As dietitian Nicole Marchand of Eatwell Halifax puts it, “The nutritional value of local, seasonal foods is higher than imported foods because as soon as vegetables and fruits are harvested, they begin to lose their nutritional content through breakdown of vitamins. Locally grown foods are harvested when ripe and they are more flavourful as well.” Adding to the overall harvest and diversity of what we produce or forage locally improves the health of our communities.

Perennials are plants that grow again, year after year, surviving the winter. Perennials cut down on the amount work that you have to do to get your garden ready each spring. Trees are perennials, as are bushes and shrubs, and a variety of other flowers, herbs, and vegetables.

Guild, or companion, planting is one of the basic techniques of permaculture gardening. It taps into permaculture ideas such as self-sufficient systems, plants providing multiple functions, and maximizing the productivity of a plot. Guilds are typically set up around a central fruit tree in a forest gardening system. Each plant species in an ecosystem performs one or more functions that benefit others in the vicinity as well as interacting with animal species and soil microorganisms to create an ecosystem. Plants are placed at a given spacing and orientation, can be introduced in a predetermined sequence, and many are pruned during their growth period at regular intervals.

Long-Term Community Led Solutions

Andy Pedley, co-owner at *Patchwood Farm* in Southwest Margaree is currently developing a community orchard with others in his area. “Annual gardens are high maintenance. An orchard based garden is harder work to get established, but you don't require as many volunteers in the long term. An intergenerational approach makes more sense.” Most nut trees take a long time to get established but can be productive for hundreds of years. Pedley also stresses the importance of establishing hedgerows or a ‘living fence’ of hardy, fast-growing, wind-blocking trees before investing in other plants that need a more sheltered microclimate.

“Hazelnuts and sweet chestnuts are hugely underutilized species in our province,” Pedley notes. “We need a lot more experimentation to determine what works best. Pawpaws are a great option for maritime backyard growing because they don't travel well, but they do need a bit of extra care in creating the proper microclimate.” Mersey Tobetic Research Institute initiated a project in Queen's County that planted a mix of 14 varieties of fruit, nut, and berry trees and bushes including many that are native to Nova Scotia. They note that “This project provides a snapshot of the edible opportunities we have in our own native forests and wetlands.” There is certainly more room to explore the possibilities of what we can grow in our own backyards and communities in the province.

Quebecois permaculture food forest pioneer Stefan Sobkowiak urges us to learn to work with nature and move toward abundance. His philosophy toward growing, outlined in his recent documentary, *Permaculture Orchard* is work less, yield more, have fun. Dennis Laffan, owner of *North River Organics*, a small mixed farm in North River, Cape Breton sums up his approach to food security quite simply: “Plant things you can eat, things that enhance the food producing environment, and things that will provide food for many generations.”

FURTHER READING

- **The Original 7 Layers of a Temperate Forest Garden** chelseagreen.com/2014/05/21/designing-a-forest-garden-the-seven-story-garden
- **Expanded 9 Layers of a Forest Garden & Plant List** tpermaculture.com/site/plant-index
- **Our Atlantic Woods: A Photo Guide to Non-Timber Forest Products** fundymodelforest.net/images/pdfs/publications/education/NTFP1.pdf
- **Temperate Permaculture** holzerpermaculture.us
- **The Permaculture Orchard: Beyond Organic. Based in Quebec** miracle.farm/en
- **Agroforestry & Permaculture Explained** agforinsight.com/?p=118
- **The Permaculture Handbook** permaculturehandbook.com
- **Seattle Community Food Forest** ecorazzi.com/2013/08/29/seattle-has-plans-for-nations-largest-community-food-forest

ETHICS OF PERMACULTURE

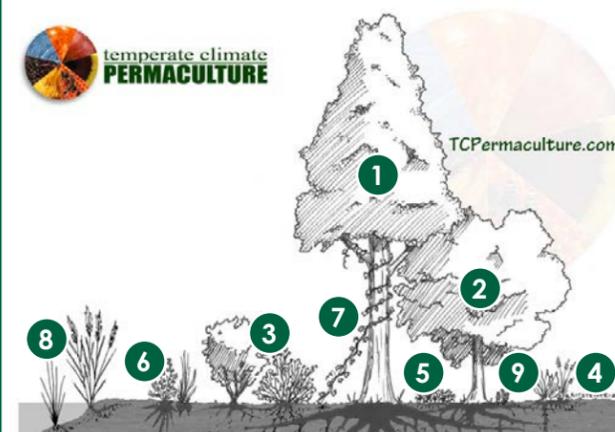
The ethics of earth care, people care and fair share form the foundation for permaculture design and are also found in most traditional societies.

Earth Care: The state of the soil is often the best measure of the health and well-being of society.

People Care: Asks that our basic needs for food, shelter, education, employment and healthy social relationships are met.

Fair Share: The last ethic synthesises the first two. It acknowledges that we only have one earth and we have to share it with all living things and future generations.

LAYERS OF A FOREST GARDEN



Nine Layers of the Edible Forest Garden

1. Canopy/Tall Tree Layer
2. Sub-Canopy/Large Shrub Layer
3. Shrub Layer
4. Herbaceous Layer
5. Groundcover/Creeper Layer
6. Underground Layer
7. Vertical/Climber Layer
8. Aquatic/Wetland Layer
9. Mycelial/Fungal Layer

Credit: John Kistener, **Temperate Climate Permaculture**

REFERENCES

- Edible Trees & Shrubs merseytobetic.ca/projects-edible-trees.php
- 7 Parts of An Apple Tree guildregenerative.com/magazine/seven-parts-apple-tree-guild
- 7 Benefits of Eating Local Foods msue.anr.msu.edu/news/7_benefits_of_eating_local_foods
- Syntropic Farming livingnow.com.au/syntropic-farming-tropics/

Megan MacLeod has been working to establish tropical food forests to restore ecosystems and create additional livelihood streams in Andhra Pradesh, India, for the past 2 years. You can follow her on Instagram at [@eatlocalsocial](https://www.instagram.com/eatlocalsocial) and on Facebook at [Wild Forest Permaculture](https://www.facebook.com/WildForestPermaculture).