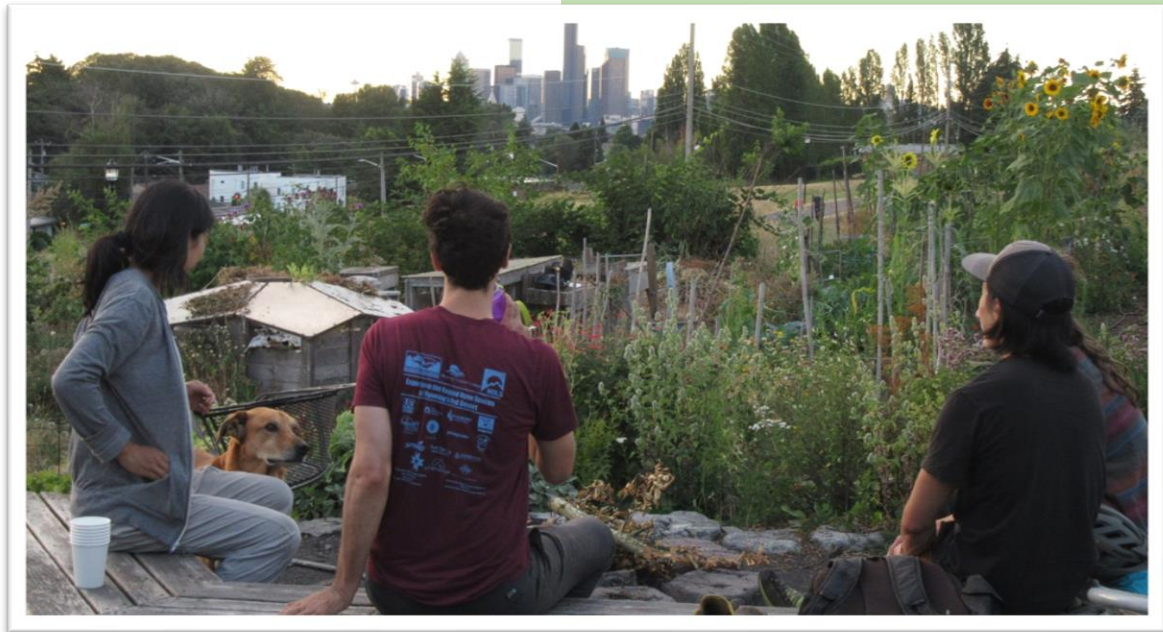




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# Community Food Futures in Australia



2020 Churchill Fellowship

**To investigate the Potential of Community Food Forests and Orchards**

**Case Study Report by**

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## **Introduction**

Between August and October 2022, I investigated community food forest and orchard projects in the USA, Canada, UK, Holland and Italy.

This **Case Study report** details my investigations into ten programs and projects including:

1. Beacon Food Forest, Seattle USA
2. City Fruit, Seattle USA
3. Lifecycles Project, Victoria BC Canada
4. Food Forests for Schools, Miami USA
5. Forested, Maryland USA
6. Philadelphia Orchard Project, USA
7. Agroforestry Research Trust, Dartington UK
8. The Orchard Project, UK
9. Coöperatie Ondergrond, Rotterdam NL
10. Picasso Food Forest, Parma Italy.

Each case study covers context, governance, operations, design features, notable plants and, where data was available, yields.

This report compliments the **Main report** that summarises my key insights, provides recommendations and details implementation pathways. The main report can be accessed via the Churchill Fellowship Trust website ([www.churchilltrust.com.au](http://www.churchilltrust.com.au) – search for my name), or by contacting me directly.

# **Beacon Food Forest, Seattle USA**

[beaconfoodforest.org/](http://beaconfoodforest.org/)

1 - 7 August, 2022

**‘We came for the plants, but we stayed for the people’.**

- Will Rak, Board president

## **Introduction**

Beacon Food Forest was THE project that catapulted the food forest concept into the north American mainstream. Major media outlets such as Associated Press, The New York Times and National Public Radio have reported on the project. The project is located on the western slope of the Jefferson Park covered reservoir in the Beacon Hill neighbourhood, south Seattle. It started as an idea amongst four friends who were studying permaculture in 2009. Site works commenced on phase 1 (1.75 acres) in 2012 after long negotiations with the land owner, the City of Seattle’s Department of Public Utilities. Phase 2 (1.5 acres) commenced in 2019. There is potentially a total of 7 acres that are available for development.



*Beacon Food Forest entry sign with cardoon plant, August 2022*

‘Public food on public land’ is a guiding principle for the group and the site is open to public who are encouraged to forage freely for food (except at the designated food bank plot and City of Seattle P-Patch allotments). The group donates significant quantities of food to local food banks (see the **Yields** section).

## **Context**

The Beacon Hill neighbourhood and the larger south Seattle area is one of the most culturally diverse places in the USA with over 100 different cultures represented. That cultural diversity has led to disparities in health, education and income and, for reasons of history and deliberate policy, white people are generally better off. As a result, there appears to be a commitment from some of the more affluent people to want to help other people in need, who live in the Beacon Hill neighbourhood including volunteering what time they have.

Seattle is regarded as a progressive, liberal city and there seems to be a real legacy of charitable work to assist people in need here. The Black Lives Matter movement is strong and active in this city.

Noise and chemical pollution from aircraft is an environmental justice issue for the city and specifically for the south Seattle area (including Beacon Hill) as this area is on the flight path to Seatac International Airport. I speculate that people are aware of this issue but there's not a lot they can do about it. So perhaps they channel their energies into Community Food and other environmental projects where they can feel empowered to make a difference on the environmental justice front.

The City of Seattle's P-patch program, in my view the world's best government led community gardening program, is firmly embedded into the cultural life of the city. Established in 1973, the program provides insurance, match funding and support to community gardens. The dedicated staff (currently 5 people) do everything from repair work to conflict resolution and garden design. It's an important part of the community food system here and that feeds into the wider community food initiative in Seattle including the City's recent Food Action Plan. Walking around the neighbourhood I saw lots of different food initiatives whether it's verge gardening, public orchards, backyard vegie patches or elementary school gardens.



Notice posted up at Beacon Food Forest, August 2022

## Governance

Beacon Food Forest is managed by the Food Forest Collective (FFC), with charitable tax deduction and tax-exempt status and a volunteer board of directors. In 2021 operating expenses totalled USD\$67,542. The FFC is also supported by the City of Seattle's Department of Neighbourhoods (DON) through the P-Patch community gardening program (see above).

## Funding

Projects are funded via philanthropic foundation grants, sponsorships and charitable donations. In 2010, a USD\$20,000 grant from the DON was provided to hire a design team to come up with a design based on input from three public design workshops (see more about that process below). In 2011, USD\$100,000 was provided by DON for the phase 1 capital works.

## **Decision Making**

I interviewed Beacon Food Forest's president, Will Rak, on 4<sup>th</sup> August 2022. Will explained the group aims to incorporate the Sociocracy model of governance into all of their decision making, a model that was championed by co-founder Jackie Kramer in 2017. Sociocracy, or dynamic governance, is a self-governing decision making system based on values of equality. However, this system of governance takes time and effort and a few years ago decision making fell back to the 'squeaky wheel', majority rule model. Not surprisingly this led to conflicts so in 2020 Will led workshops on Sociocracy and Non Violent Communication (NVC) with the aim of integrating people's objectives and reaching a point of consent (not consensus) on the issues of the day.

In late 2021 the board ratified the sociocracy process and created communications policy including email protocols. It's a slow but ironclad process particularly for the larger issues that affect many people. However, Will noted that there is still a huge amount of stuff getting done that doesn't go through committees or big processes which as it should be for smaller challenges. For example, on site decisions during construction projects just happen to fit with the schedule.

Will stressed the importance of getting comfortable with the creative process and its inherent chaos, particularly for board members. Dynamic governance cannot function on its own and it needs to fit with the organisation, and this can take time to figure out. He said it is extremely important to build relationships with all.

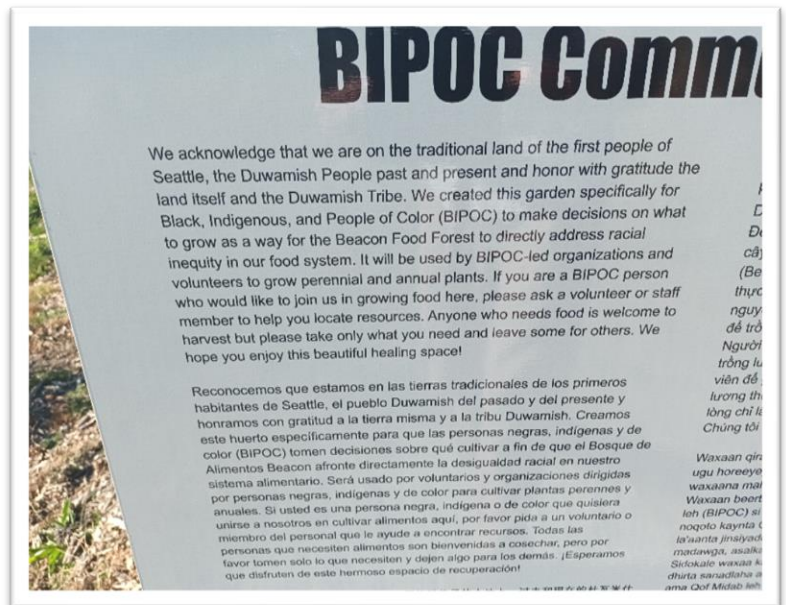
## **Key Issue – Racial Discrimination**

Racial discrimination has developed into a massive issue for the group in the last few years. The police killing of George Floyd in Minneapolis on 25 May 2020 led to major protest marches, sit ins and riots in Seattle which became part of the international Black Lives Matter movement. This tension directly affected Beacon Food Forest with complaints by people of colour about unfair site access, embedded racism in permaculture practices and board members accused of been white supremacists. As the board members and lead volunteers were predominantly white there was a perception that the organisation was run by a 'white in-crowd' who were creating barriers to entry for non-white people.

Within the Sociocracy process Will commented on the challenges for people to feel comfortable with the process of seeking unity with others of different backgrounds, understandings and ways of communicating. The process allowed the group to deconstruct the way they worked to allow people of colour to participate. One core outcome is that the group has defined a clear, transparent and universal way for getting things done that defuses perceptions of racial inequality.

The 2021 Annual Report states that:

'We partnered with two local BIPOC (Black, Indigenous, and people of colour) organizations to share land and resources through our Garden Mentorship Program. Our Community Outreach Coordinator recognized the need for true equity to come to fruition by following through with one of the strongest pillars of our foundation: People Care.



*BIPOC community garden sign detail, August 2022*

We held a critical eye up to the framework of permaculture which defined our beginnings, and realized that it did not adequately address the needs of the 79.6% BIPOC community that surrounds us. Although this was a difficult task, we realized the importance of growing food for the people who need it most, particularly during a global pandemic with seemingly no end. We believe we can learn from our mistakes and begin to steward the land in partnership with BIPOC organizations in Seattle who are already doing amazing work to address food sovereignty and injustice...

...To address food insecurity, we first realized we need to involve the people around us in tackling this enormously consequential issue. **We hope that other food forests can follow our lead on this.'**

## Operations

### Staffing

Almost all operations on site are undertaken by volunteers. However, an Outreach Coordinator position has been funded over the last four years. This is in addition to a Development and Operations Coordinator position funded in 2019. Both positions were funded through philanthropic foundation grants.

### Volunteering

The main way in which people get involved is through 'work parties'. Interestingly, these groups typically do not elect leaders, and Will stated that any leading 'just happens naturally' as groups of people commence working together. Lead volunteers identify needs and put the call out for tasks to be done. The main work parties are held monthly on Saturday afternoons and are advertised on email to a listserv, on the site notice board and at one-off mini work parties throughout the month. (Mini work parties form on an ad hoc basis when the need arises). 'Sunset Lab', is a Thursday afternoon informal weekly work party.

I was really impressed with the size of these working parties. Before the COVID19 pandemic the Saturday afternoon sessions were getting 100+ people coming along which is outstanding. In 2022, with the pandemic still in the community, they've been getting 20 to 30 people. There is a core group of about 30 volunteers who contribute regularly.

One of the reasons for this high participation rate is that the group invests in celebrating togetherness at the end of the working session. I attended a couple of 'Sunset Labs' (a tour and a gardening session) on two afternoons. These were both followed up by a bit of convivial sharing - having a chat, a drink and a laugh around the seating area with an incredible view of the city. Just a really lovely way of getting together and sharing time. A classic example of a 'third space', a safe space that's not home or work where people can gather. I think that is a big part of volunteer success story.

So, designing a gathering space that is safe with good ['prospect refuge'](#), comfortable in most weathers and ideally with a great view, nearby water feature or other attraction is important. (See the **Design Features** section below)



*Work party notice, August 2022*

Another aspect of the work parties is that most of the participants, at least the ones I observed, were relatively young and likely under the age of 50. I think one of the reasons for that is that the timing of those Sunset Lab sessions is typically after work, going for an hour or more. People who are busy don't have a lot of time on the weekend or during the week day, but they've got a little bit of time after work to come down, get involved and meet up.

And most importantly have fun and share a laugh or three.

The dynamic governance model (see **Governance** section above) that the group uses allows anyone – who chooses to participate - to have a genuine say in how the site operates. I think this process facilitates a sense of empowerment and a perception of 'ownership' of the place. I speculate that people will be more likely to get involved in work parties as a result, and repeatedly as well.

## Design Features

I shot this [video](#) of the food forest whilst doing a plant tour led by Will Rak and Glenn Herlihy. Click here for a [Google Earth link](#) that gives an aerial view of the site.

The site is located on a west facing slope and on a claypan layer. It is exposed to the western sun and harsh westerly winter winds. Mown grass with no trees was the original

*'Adult energy, into it! Nice to see folks just coming together and doing work – weeding, planting and seeding a patch. A joyful energy... Wow, this is what community is. Nothing complicated, a simple sharing for a short time before moving on, coming back another day to share whatever comes up – the good, or maybe the not so good.'*

*I felt relaxed, comfortable with this 'tribe.'*

- Journal entry 5.8.22



Before and after images, showing the existing mown western slope adjacent to the site and one of the food forest areas. August 2022





the structures for bigger events. A well-positioned bench provides stellar sunset views of the city.



Beacon Food Forest's main gathering area, August 2022



Well-positioned custom made bench seat provides great views of the city. August 2022

*'Impressed by the scale of the site and the number of micro projects within it. A reflection of the human diversity of Beacon Hill and wider area. Sampling various berries and small fruits as we walked... food forest felt nice and cool, relaxing and calming to be in. The sort of space where I felt like kicking back under a young apple or walnut tree... Impressive views of the city but below an intense aircraft flight path.*

*'People walking past were invited to sample nearby wine berries.'*

- Journal entry 1.8.22

## Plants and Structure

The site is hugely diverse with over 1000 species planted over the last ten years. Clearly, that level of diversity requires specialist knowledge of plants and no one person holds all the information on all plants. Although I note that Will Rak and Glenn Herlihy appeared to be across many of the species that we saw on tour.



*Examples of plant diversity, August 2022*

The food forest is organised around guilds dominated by a fruit or nut tree. For example, there is an apple guild, a hazel nut guild and a plum guild. There are also bramble patches and borders. Refer to the site plan on page 8.

## Signage

The project has incorporated very effective signage that effectively explains various aspects of the food forest concept. At the food forest entry, a large format aluminium composite sign explains food forest ecology. A series of fired ceramic panels been mounted on painted metal frames. Both types of signs have high quality visual expression and appear to have been created by artists and/or graphic designers.



Signage examples - Left: aluminium composite; Right: fired ceramic. August 2022

## Community Design and Construction Process

I recorded [this video](#) on 1<sup>st</sup> August 2022 with cofounder Glenn Herlihy about the process.

### Phase One

In 2010 the group held three large open house design workshops, or charrettes, that were led by consultant landscape architecture firm Harrison Design. The design team took down the ideas of what people wanted to see in a community, and Glenn noted that it was great opportunity for the founders to teach everyone at the sessions about food forestry. The landscape architects came back with several different options for a basic schematic design and community members decided on which one they liked and then they got the City of Seattle's approval.

In that process, which took two years, there was a lot of community engagement, which was important for the City of Seattle, as they wanted evidence of community input. The group also had to work with many different agencies including the land owners, Seattle Public

Utilities, the Parks Department and the Department of Neighbourhoods. According to Glenn the process worked out well as there was lots of 'give and take' which is important when you have a large project with many people involved.

Phase one of the design was implemented in line with the original schematic design.

### Phase two

The design and construction of phase one gave the group the confidence to implement phase two with only minimal input from external consultants (for construction drawing drafting services only). The group volunteered their time to undertake extensive community engagement (Glenn stated that it was a lot of work!). In that process Glenn felt that it brought the community closer together. At one point there were 25 to 30 people involved and many ideas were put up for discussion. Similarities were identified and Glenn prepared schematic options and the group then decided on a finalised plan.

With both phases the group has always left the final outcomes open for field decisions. For example, changing different pathways according to the grades or difficulty in retaining soil as the site is steeply sloped in places. A lot of the site challenges come with building retaining walls throughout the site.

### Accommodating racial equity and food justice

Recently, gardens that were designated on the original phase two design were completely changed to adapt to the BIPOC community getting more involved. According to Glenn, people had mixed emotions about a group of people coming in and really changing what the community had decided previously. He stated that '...there's a lot of compassion and understanding in this project with people...to be flexible and adjust. And the needs were there. So, you address your needs, right?'

My reflection back to Glenn was that this sort of disruptive energy can be beneficial to a group, and he said that new ways of conflict resolution (that is, the sociocracy process) can be put to the test.

## **Notable Plants**

These plants stood out to me as worthy of further exploration:

- Burdock
- Cardoon

- Goji berry
- Horseradish
- Salal
- Wine berry

## Yields

According to the 2021 Annual Report 443 pounds (201 kg) of food were donated to foodbanks. In total 3771 pounds (1,714 kg) of food were officially recorded as harvested. However, there is likely a lot more food harvested that is not been measured. These figures are for the whole site including food forest areas and vegetable allotments.

*'Resting under a walnut tree, sitting on a log, back against the trunk. Sounds of cars and planes, but also small birds. Is that a frog I can hear? Crickets? Cool, shady, relaxing, secluded, dappled light, stillness.'*

- Journal entry 3.8.22



*Experiential observations whilst relaxing under a walnut tree, Beacon Food Forest. August 2022*

# **City Fruit, Seattle USA**

[cityfruit.org](http://cityfruit.org)

3 August, 2022

**“Any organisation needs to have a solid business plan”**

- Annie Nguyen, Executive Director

## **Introduction**

I spent a day with this power-packed group travelling from their HQ in inner north Seattle to a public orchard about 20km away. I participated in the harvesting of apples there and later went to lunch with the team. Unfortunately, I caught the flu on my fourth day in Seattle and had to cancel the other two days I had scheduled with City Fruit. However, I was able to interview the Executive Director, Annie Nguyen, via video call.

Founded in 2008 by Gail Savina, City Fruit is a not-for-profit urban orchard organisation that harvests apples, Asian and European pears, plums, grapes, cherries and other fruit from residential yards, business premises, farms and public orchards. This fruit is mainly donated to charitable food banks but some is also value added into ciders and preserves, served at local eateries or offered to nearby residents. City Fruit also offers tree care services, and educational workshops and programs.

## **Context**

See my notes on Beacon Food Forest for the relevant Seattle context.

Another important context specific to City Fruit is the region’s legacy as a major fruit production centre, especially apples, in the 19<sup>th</sup> and 20<sup>th</sup> Centuries. This has resulted in tens of thousands of fruit trees in existence throughout the city, including relic trees in heritage orchards and more recent plantings. There are an estimated 700 fruit trees on public lands within the City of Seattle. Fruit trees are part of the cultural life of the city.



*Apples growing alongside a public park and tennis court, Amy Yee Tennis Centre, Seattle. August 2022*

Audrey Lieberworth, author of 'Seattle's Orchards: A Historic Legacy Meets Modern Sustainability' (2012) wrote:

"Seattle may be the only urban environment in the U.S. that can still boast having an extensive network of orchards containing an assortment of heirloom varieties planted by early settlers to the region".

## **Governance**

City Fruit is governed by a volunteer board, has paid staff, and is a tax exempt, registered charity. In 2021, City Fruit's expenditure was USD\$220K (in 2019, prior to COVID, expenditure was USD\$284K).

## **Fundraising**

One of the remarkable things about City Fruit is that they offer their harvesting services free of charge. Yet, they employ 4 to 6 staff, rent an office and operate vehicles and equipment. How do they raise money?

I needed to find out more and I interviewed Executive Director Annie Nguyen on 4<sup>th</sup> August, 2022. In 2020, Annie was appointed to this position and she has had a major focus (50 to 70% of her time) on fund raising and partnering. Annie explained that City Fruit was originally a volunteer organisation and had a key focus on establishing relationships with private residents who owned fruit trees. Later, funding came from the City of Seattle for maintenance of fruit trees on public land. This funding finished a few years ago because the City of Seattle decided to go back to managing the public trees, something that Annie was not entirely happy about as she thought the City of Seattle did not have suitably qualified and experienced staff. The organisation then slipped into the red as their one major funding source disappeared.

So, thanks mainly to Annie's skills, experience and effort the group now has a diversity of funding sources. In addition to Annie's efforts, the group employs a fundraising specialist (since 2021) and requires that all board members take an active role in fundraising. In 2021, funding sources included:

- Corporate and small business sponsors (USD\$77K from 50 sponsors)
- Government grants (USD\$29K from four agencies)
- Philanthropic foundation grants (\$USD67K from 15 foundations)
- Individual donors (USD\$64K from hundreds of individuals)



- Earned revenue (USD\$50K)

She also said that they do not pursue inappropriate funding (that is, funding that is too onerous to administer or does not fit with the group's mission and goals).

## **Partnerships**

One of the keys to success with fundraising is the ability to build strong relationships with community partners. City Fruit partners with over 25 food banks and meal programs. They also team up with four 'diversion partners' who create ciders and preserves with the words 'community' and 'saved fruit' being important parts of the brand messaging. These products promote the urban orchard concept and 10% of profits go back to City Fruit. Funders are attracted to groups who are embedded in community.

## **Executive Director skills**

As Executive Director of a small but dynamic not-for-profit that 'punches above its weight' Annie listed some of the skill set and approach required:

- Experience working in the non-profit sector
- Advocacy and marketing
- Considered judgement around collaborations
- Fearlessness in making tough decisions.

## **Decision making and comms**

Annie explained that her small team tend to make decisions by collaboration and consensus. They also work to have partners involved in decision making and provide clear communication to tree owners about how the harvest is used. They also network with local orchardists and 'tree stewards' (see below).

## **Operations**

The organisation runs three main activities:

1. Harvesting and gleaning
2. Fruit tree stewardship
3. Education and outreach

Harvesting, including distribution and processing, is the dominant activity. However, the latter two activities appear to be growing. Within these activities there are multiple events,

actions and programs that this small not-for-profit holds every week. These include fund raising events, cider tastings, bake-offs, plantings and market stalls. The best way to keep up is to follow the City Fruit Seattle Instagram page!

### **Staffing and wages**

Apart from the Executive Director, in 2022 the following staff were employed:

1. Development manager, responsible for grants and donations
2. Fruit tree specialist and assistant harvest manager
3. Education and volunteer program manager.

Everyone on staff has a passion for fruit trees and they all get involved in harvest activities. During harvest season it's all hands-on deck and desk bound work tends to get done in the winter 'off season'. Annie would like two more staff members. A big issue is that wages are not adequately compensating for the hours worked.



*Lunch with volunteers and staff, 4th August 2022*

### **Harvesting and distribution**

To source the fruit, City Fruit partners with privately owned farms/orchards who allow their surplus fruit to be gleaned, and tree owning residents, community groups, businesses and government agencies. For distribution and processing they partner with charitable food bank and meal programs, and food and beverage processors (called 'diversion partners'). In 2022, more than 25 partners and 249 tree owners have been involved and 356 harvest events have happened!

They also run a 'Fruit for All' program, typically held at Farmer's Markets where fruit is offered for free to local residents. City Fruit does not participate at markets where farmers are selling similar produce.

## The pick

I attended a harvesting event in a delightfully charming apple orchard at Holy Cross Lutheran Church in Bellevue ([Google Earth link here](#)). On this occasion ladders and wide mouthed bags were deployed to harvest Transparent Apples, a soft Russian variety that bruises easily, from trees up to six metres high.

These 'A-class' apples would later be taken to a diversion partner and processed into apple sauce. All of the fallen fruit on the ground – the B-class produce – including bruised, spotty and unbruised produce was taken to a cidery for processing because of potential contamination from animal (including pet dog) excrement. The fermentation process used to make ciders (and other alcoholic beverages) kills bacteria, so this is a good use of fallen fruit. (Washing eliminates the contamination risk but City Fruit does not wash any of the produce they pick).

After the harvest I reflected that one of the challenges with harvesting a region's fruit trees is that some of the trees can be quite large (Think Bramley apple trees, nut trees like macadamia or tropical fruit trees like mangoes). Using ladders to harvest creates an increased risk so it's important that community groups induct their volunteers in safe work practices. Tree shaking is another harvest technique but the downside is that the fruit usually bruises on hitting the ground so cannot be used as a table fruit or for juicing.

*Spent Tuesday morning... harvesting apples in an old orchard... Beautiful old apple trees, gnarled and covered in moss and lichen.*

*The group were friendly, convivial and welcoming. No pressure but I felt like I wanted to harvest, to pick as many apples as possible. Good conversation as we picked.*

*Impressive to see all those apples in lots of boxes.*

- Journal entry 4.8.22

For new community orchard installations, dwarf varieties or smaller species is a way of designing out harvesting risk. Using extendable poles with harvest cages or bags is another approach but is slower and only applicable to mid-range size fruits.



*Photos of the pick at the Holy Cross Lutheran Church orchard, 4<sup>th</sup> August 2022*

### **Fruit tree care enterprise**

This is an arboriculture-based business that provides the following services to fruit tree owners:

1. Tree care assessments and action plans
2. Pruning
3. Mulching
4. Netting and bagging

## 5. Tree planting

The service is generally limited to trees less than 25 feet (8 metres) in height due to equipment limitations.

### **Education and volunteer outreach**

City Fruit offers a Master Fruit Tree Steward (MFTS) course to 'prepare community members to grow, cultivate and care for fruit trees in the greater Seattle community'. They have also just rolled out the Youth Fruit Tree Stewards (YFTS) program.

650 volunteers have been involved this year (as of November 2022). City Fruit offers individual and group volunteering opportunities that include:

- One-off activities such as pruning, harvesting and mulching
- Farmers market and fruit-for-all farmstand tabling
- Language volunteers
- Peer-to-peer fundraisers (who participate in City Fruit's annual campaign and/or create their own social media events).

They also offer a Neighbourhood Ambassador program whereby local community members are responsible for organising harvests in their area. As City Fruit's 2021 annual report states: 'Neighbourhood Ambassadors are regular harvest volunteers who have been trained to independently harvest in the neighbourhoods where they live'. This program builds capacity in the community by creating a network of skilled harvesters.

### **Design and build projects**

City Fruit's work utilises the 'urban orchard', that is, the stock of fruiting trees, shrubs and vines already in existence in the city, on private and public land. In the past they got involved with small plantings only but from 2021 they've been involved in the design and implementation of three larger orchard projects, including community engagement activities.

### **Yields**

In 2021, despite access restrictions due to the COVID19 pandemic, City Fruit harvested 37,000 pounds (16.8 tonnes) of fruit. This included apples, Asian and European pears, plums, grapes, persimmons, quinces, peaches, figs, kiwis and berries. 55% of the harvest was from apples. This year (2022) 30,247 pounds had been harvested up until October.

On the morning I attended the harvest event at Holy Cross Lutheran Church our group of six people harvested 800 pounds (363 kg) of apples.

# **Lifecycles Project, Victoria BC Canada**

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

9 – 12 August, 2022

**"It's really important that our volunteers feel a lot of ownership over the program."**

- Tim Fryatt, Fruit Tree Project Manager

## **Introduction**

Founded in 1996, the Lifecycles Project is on a mission to 'build a resilient food system in Greater Victoria by growing, harvesting, and sharing food'. I visited specifically to investigate their orcharding and fruit harvest operations but the group's work encompasses many other aspects of community food, including:

1. teaching food growing, including an extensive schools' program
2. managing a large community seed bank (located in the Greater Victoria Public Library)
3. running a fruit tree maintenance business.

Lifecycles also has a headquartered orchard, the Welland Community Orchard, that they manage for the local municipality and use as an education hub.

The group is central to a local food revolution in Victoria and British Columbia. Its work over the last 25 years has established the cultural value of the city's 'urban orchard' (that is, the stock of fruiting trees, shrubs and vines on private and public lands). Through the annual practice of collectively harvesting fruits in backyards and other places – facilitated by Lifecycles – the community's ecological literacy is enhanced. Tim Fryatt, Fruit Tree Project Manager, said that "that the longevity of the program, the continuity with so many folks returning each year, [and] the longstanding relationships with tree owners... Lifecycles Fruit Tree Project thrives because people couldn't imagine it not being there".

## **Context**

The climate and soils in and around Victoria are clearly very amenable to fruit growing, particularly apples. Tim Fryatt told me that during the days of the British Empire, the colony on Vancouver Island was planned to be the Commonwealth's global centre for apple production. So, there's an incredible legacy of apple and other fruit trees in public places and in residential yards. Fruit trees have a visible presence in this city and local and regional food initiatives abound such as the Capital Region Food and Agriculture Initiatives Roundtable.

## Governance

I interviewed the group's Executive Director, Joan Stonehocker, on 9<sup>th</sup> August, 2022.

Lifecycles is a not-for-profit with a volunteer board of directors and paid staff. Their average annual expenditure, for all operations, is about CAD\$500K (excluding the pandemic period).

### Fundraising

The group strives for a diversified funding model. Joan explained that their funding sources include government grants (Federal, Provincial and Local), philanthropic foundations, donations and earned revenue. Ten to fifteen percent of revenue comes from the social enterprises including the tree care business, workshops and profits from cider sales. The board has not had a big role in fund raising but they have been getting more involved recently.

Interestingly, Joan mentioned that some of their funders are turning to a 'trust based' model to reduce the amount of red tape required to administer grants for both the funder and fund recipient. So, building relationships with key people on the funding side – building trust – by securing outcomes will be critical to the group's success going forward.

### Partnering and collaborations

Lifecycles is a member of the Good Food Leader's Network which is part of the Capital Region Food and Agriculture Initiatives Roundtable ([CRFAIR.ca](http://CRFAIR.ca)) and they get involved in the food literacy subgroup, school food subgroup and supply chain subgroup.

## Operations

### Volunteer management

I interviewed Lifecycle's Tim Fryatt on 8<sup>th</sup> August, 2022 about how they manage volunteers for the Fruit Tree Project (the urban orchard fruit tree harvest). Lifecycles has four volunteer roles:

1. **Harvest Leaders** schedule when and what to pick, drive the Lifecycles van, coordinate volunteers onsite, document the harvest, and help pick the fruit.
2. **Fruit Pickers** join one of the picks scheduled by Harvest Leaders.



3. **Tree Assessors** gather important information about trees in their neighbourhood to ensure a successful harvest.
4. **Fruit Sorters** come together twice a week during harvest season to grade the harvest and redirect it into the community.

Volunteers are incentivised by having rights to 25% of the fruit harvested. Tree owners have rights to 25% as well. Fuel costs for the vehicles – about CAD\$3,000 - is donated by a local vendor.

Approximately 70% of the harvest ripens in a four to six week period (late August to early October). It is an intense period of fruit harvesting joy!



*Lifecycles Project - some of the operations. Clockwise from L to R: Megan Sociedade, harvest and volunteer manager; shared cool room drop off area; sorted fruit boxed up and ready for distribution; harvest equipment store, sorting operation at HQ. August 2022*

### **The 'Gleaning Hub'**

The genius behind the fruit harvesting operation is a clever piece of internal software called the 'Gleaning Hub', a self-scheduling system where the volunteers can decide when and where they want to work. The way the software works is as follows:

1. Tree Stewards (that is, the tree owners) who want their fruit harvested register their trees online by providing descriptions of the fruit tree type and the property location.
2. Tree Stewards make a 'pick request'.
3. Lifecycle's staff determine the timing of the pick from photos provided by one of the volunteer Tree Assessors. The Tree Assessors are trained in taking photos of cross-sections of the fruit, the tree's 'fruit load' and the size of the tree. (See my video [here](#)).
4. The pick date is uploaded to the Gleaning Hub by the staff.
5. Harvest Leaders look at the online schedule and confirm the pick location and date.
6. Fruit Pickers can then opt in to the picks.

Joan also stated that the gleaning hub is starting to be used for volunteer opportunities beyond the harvesting operation. Having an internal volunteer management system eliminates the spam that people often encounter when signing up on external sites.

### The pick

On 11<sup>th</sup> August 2022 I got involved in two backyard picks. The first involved six or so plum trees, the second from one large apple tree. Equipment included open mouth bags, ladders and caged pickers on two metre poles (non-extending).

About 102 pounds (45 kg) of apples were harvested at the second pick site

(weighed with an on-site digital scale on-site) and the volunteers took their cut. A box of apples was left for the owner at their back door. Rotten fruit was collected to be turned into compost.

*What an honour it is to be invited into people's yards to pick their fruit... it felt energising but calming to be part of the picking crew. Nice sense of achievement and for us volunteers 25% of the harvest is divided up to be taken home. What a gift!!*

- Journal entry 11.8.22

[Here's my video](#) from the second pick of the day.



L-R: Setting up ladders for backyard plum picking; box of fruit on mobile digital scales; Lifecycles van. August 2022

## Sorting and distribution

Check out my video [here](#).

I participated in a fruit sorting session on the 9<sup>th</sup> August 2022. The remaining A-grade fruit (50% of harvest) and B-grade fruit is then taken to Lifecycle's depot for short term storage, in a large refrigerated storage shared with other businesses, prior to sorting and distribution. B-grade fruit includes fruit that is bruised or buggy. Because of potential contamination from dog and deer excrement, windfalls are not used by the project (Lifecycle's do not wash any of the fruit), but volunteers are free to take windfalls home at their own risk.

The Fruit Sorters then grade the fruit at Lifecycle's depot and take the best quality A-grade produce to the neighbouring food bank. From there the fruit is distributed to over 60 agencies. Tim Fryatt commented that some of the harvest volunteers also process their takes into preserves and beverages that they also share with community.

The B-grades are taken to Lifecycle's partner cideries, and cooking varieties (for example, Russian 'Transparent' apples used for apple sauces) are taken to other processors.



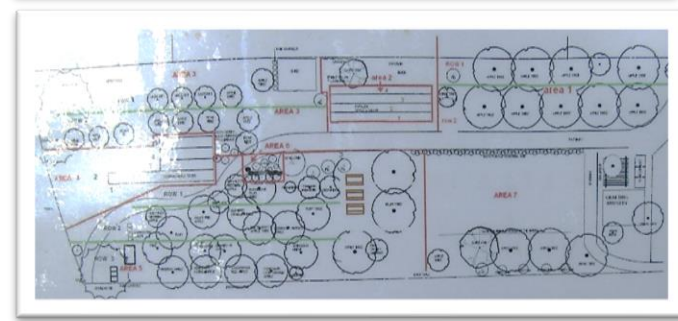
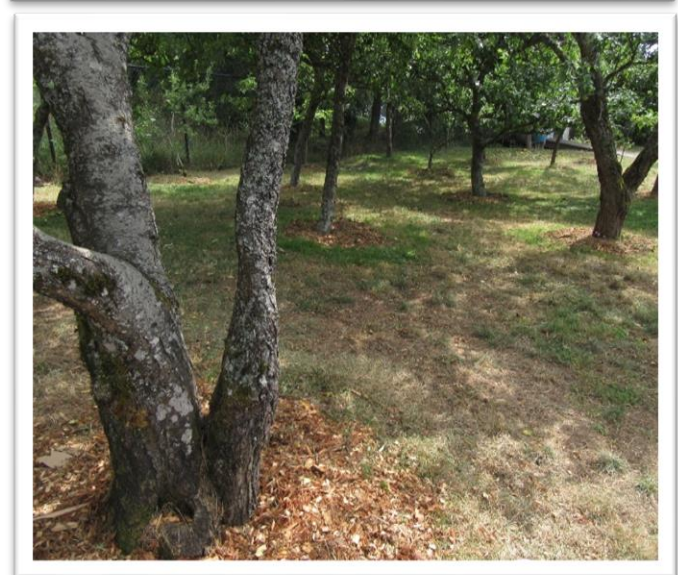
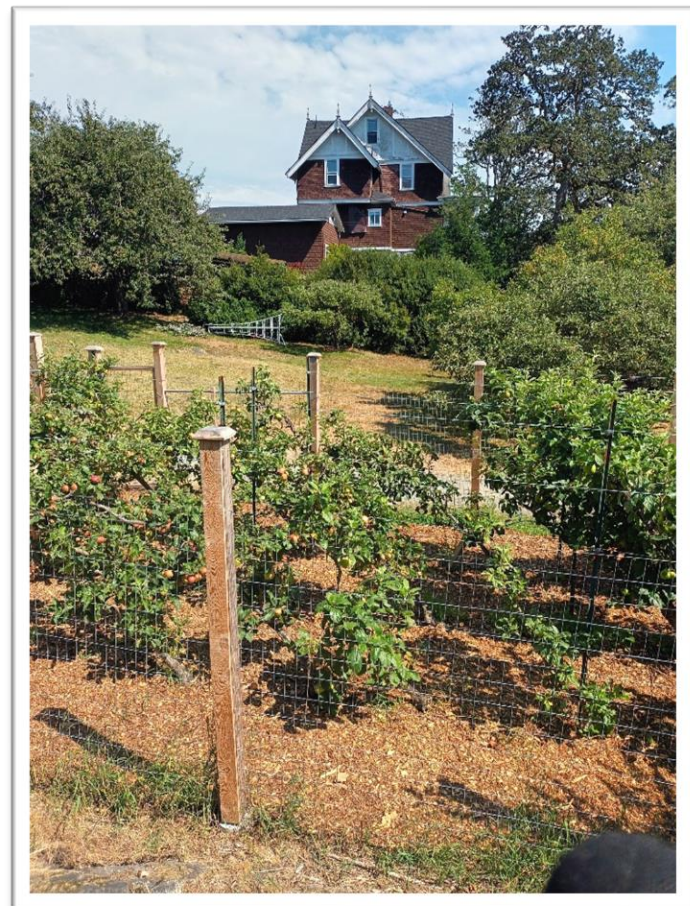
*Ciders and ales made from 'rescued' fruit by processing partners. August 2022*

## Welland Community Orchard

Check out my video [here](#). I also interviewed Rowen Warrilow, former coordinator of the orchard on my second visit on 12<sup>th</sup> August, 2022.

This impressive community orchard is a legacy project that was gifted to the local municipality by Rex Welland and his family when Rex passed away. The orchard was part of the Welland family's backyard, and prior to that was part of a colonial era farm. Rex was clearly a passionate orchardist and the site has almost 200 fruit trees. Lifecycles started managing the orchard in 2013 for the Town of Royal View.

Tim Fryatt took me on a great tour, sharing his passion for the place as well as his detailed knowledge of the arboriculture aspects. I was particularly impressed by Tim’s knowledge and skills around apples and he gave me a short masterclass on the cordon technique. I spent two sessions here during my five days in Victoria.



Welland Community Orchard. August 2022

The orchard employs a dedicated coordinator and holds educational workshops and small events. Rowen explained that part of the role is liaising with the surrounding neighbours, who are generally on board with the project (some folks knew Rex), but they are kept in the

loop regarding any proposed changes. There is an intention to install a shelter to extend the educational offering.

### **Staffing, wages and livelihoods**

At the peak of the harvest season Lifecycle's typically employs 13 to 16 people (or about six people on a full time equivalent basis). Joan mentioned that although the wages are set above the Victoria area's living wage standard the staff need to be paid more. One of the challenges is to create livelihoods that extend throughout the whole year and beyond the harvest season.

The staff positions as of January 2023 included:

- 1.
2. Executive Director
3. Welland Orchard Coordinator
4. Social Entrepreneur and Fruit Tree Project Manager (Tim's roles)
5. Education Coordinator
6. Harvest and Volunteer Coordinator
7. Farm and Harvest Facilitator
8. Communications Coordinator
9. Accountant

### **Co-location**

Lifecycles office and depot is located within a 'local food hub' that also includes the Mustard Seed Food Bank and two craft beer breweries and cideries. There are obvious synergies and efficiencies in this co-location. For example, I observed that harvested fruit could be boxed up and wheeled over to the food bank less than 100 metres away for distribution.

### **Internal Communications**

The group posts its activities for the month on a board that is prominent in the office so all staff can see what is going on. I thought this was a great idea.

## **Design Features**

At Welland Community Orchard I noted these features:

### **Safety in design (and maintenance)**

Welland Community Orchard felt safe partly because the place is overlooked by neighbouring houses. It is also well maintained with little or no evidence of vandalism and the grass has been cut recently.

### **Recreational spaces**

There's a relatively large open field on a slight slope that on first impression looks like wasted space. However, as Tim explained, this space acts as a mini ski slope in winter for the local kids. It could potentially also be a site for other activities such as fairs.

Under a beautiful grove of apples and other fruit trees two outdoor table and bench sets have been placed. It's a welcoming spot just to sit and relax, and is a simple and inexpensive element.

*I feel blessed to be experiencing another delightful place surrounded by abundance everywhere I look – fallen fruit, berry bushes, trees heavy with apples. The sun is out but under the trees it is cool and restful. I feel like I could come here and lay out a blanket, lay back and read a book. I don't feel I have to leave.*

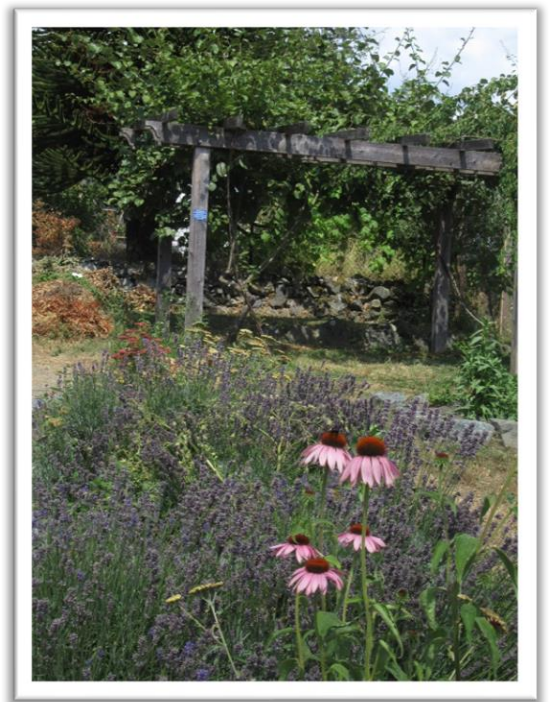
- Journal entry 10.8.22  
Welland Community Orchard

### **Pollinator garden and mason bee insect hotel**

A garden of native and exotic flowers attracts bees and other pollinator species, whilst an insect hotel has been specifically created to host mason bees, an important pollinator species in the area.

### **Cordoned apple area**

There are two fenced areas of containing cordoned trees, intentionally pruned to increase productivity. One area about 10 metres by 5 metres yields about 3,000 pounds of apples! Tim explained the technique which involves laying closely planted trunks at 45 degrees and pruning to encourage fruiting from tightly held spurs close to the trunks.



*Pollinator garden, Aug 2022*

### **Yields**

In 2021, the fruit tree harvesting operation yielded a record 79,181 pounds (36 tonnes) of fruit! On average the operation yields 15 to 20 tonnes of fruit annually.

# **Food Forests for Schools, Miami USA**

[Program webpage](#)

14 – 21 August, 2022

## **Introduction**

The Food Forests for Schools program is the brainchild of Eddie Recinos and Debi Labelle from The Education Fund. The fund's website (accessed December 2022) states that the

'... initiative is at the cutting-edge of nutrition and environmental sustainability education. In 2012, The Education Fund made history by installing the first Food Forest in a public elementary school in the nation. Today, 28 of our 51 elementary school gardens are perennial, edible landscapes, each occupying an impressive 3,500-10,000 square feet [325 to 926 m<sup>2</sup>] of school grounds'.

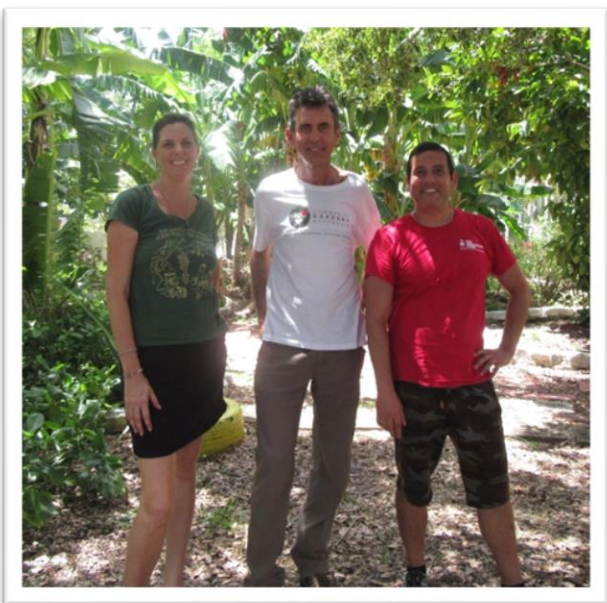


*Sign at Twin Lakes Elementary school. August 2022*

The program evolved out of a school 'box garden' (raised garden beds) scheme where annual vegetables and herbs were been grown. Over the long summer school breaks the gardens would not be tended and weeds would take over. Teachers were finding upon their return to school that they would have to spend precious little spare time preparing the

gardens to get them 'vegetable seedling ready'. School principals complained that the gardens look messy.

Debi and Eddie could see an opportunity and both were looking for a career change. Eddie was an art teacher at Twin Lakes Elementary school in Miami and he had been investigating permaculture and food forest concepts as a way of feeding his family. Debi was a professional chef with teaching experience and needed a more stable job to better raise her young child.



*With Debbie La Belle and Eddie Recinos. August 2022*

Eddie decided to convert a small part of a grassed area at his school into food forest. Using the action principle of 'act first, ask for forgiveness (if necessary) later!' he went ahead and installed the garden. The president of The Education Fund saw the garden during a tour of the school and was so impressed that she decided that every school in the district needed to have food forests.

## **Benefits**

According to the program's webpage 'The ultimate objective of Food Forests for Schools is to significantly improve eating patterns in children and their families while also improving students' academic achievement'. The children are learning about nutrition, taking home food to their families and eating school cafeteria meals prepared with food that they harvest from the food forest. They are also learning maths, science and other subjects in the food forest environments.

### *Food justice and sovereignty*

Many of the schools are in poorer neighbourhoods with large diaspora populations from the Caribbean, Cuba and Central America. Debi explained to me that there is a lack of knowledge and access to important cultural foods apart from the popular stuff that's in the Cuban and Latino shops. So, one of the winning positive aspects of the Food Forest for Schools Program is that the gardens to grow culturally important foods for the children and their families that might not necessarily be available in the shop. For example, the food forests grow some of the herbaceous plants where traditional teas and medicinal products are sourced, and other important flavours that go into Caribbean and Cuban cuisine.

I think the food forest program team have been very quick to realize that those food plants are of importance to the school communities that they operate in and are not necessarily available anywhere else apart from the school food forests.

### *Multigenerational connection*

One of the unexpected and fascinating outcomes is that some of the first and second generation immigrant children and their grandparents have bonded more closely. This is because the children are bringing home some of the traditional foods that the grandparents can still remember from 'back home'. Debi reported that the children's parents are often unfamiliar with these foods. So, a lovely bond develops when mama and/or pop show their grandchildren the old food traditions.



### Wildlife habitat and learning

Another aspect of the food forests program is that it's created habitat for local wildlife. In the three gardens I visited I saw butterflies, chickens, and a peacock, other birds and lizards. These places offer sanctuary to wildlife, but at the same time, offer potential for learning in the school about fauna and the relationships between animals and plants within an ecosystem. Those relationships might not be apparent anywhere else for the school children simply because accessible urban wildlife habitats – either remnants or reconstructions – appear to be uncommon in Miami.

### **Challenges**

Eddie and Debi listed their challenges as:

1. Administrators not understanding the food forest aesthetic
2. Training the school's ground staff in appropriate maintenance
3. Mainstreaming unusual plants

### **Context**

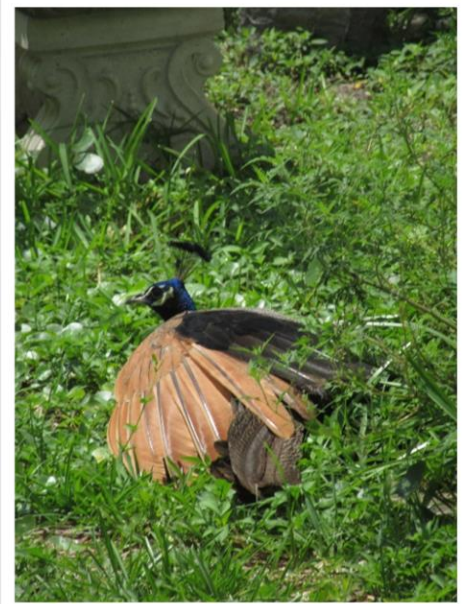
Miami is a fast paced, modern American city characterized by urban sprawl and big roads where people are reliant on cars to get around. The public transport system is inadequate (for example, there is only one train line). There's clearly a noticeable disparity between the well off and the not so well off. Miami appears to be an expensive place to live well with high costs and low wages.

Public greenspace appears limited, particularly shady parks within walking distance of most people. Parks and Miami's famed beaches are mostly accessible by cars only (the beaches are located on islands connected by causeways to the mainland). As in Australian cities, it appears that most adults don't have enough time, skills or interest in growing food gardens. There also appears to be a very limited number of community gardens in accessible public spaces.

*Another welcoming place, a stark contrast to the mown open grass between the school buildings next door... A peacock roams through the place. Small creatures – butterflies, lizards, larvae are seen. This place feels dynamic, alive... Despite the heat I feel rested and at ease in this place.*

- Journal entry 15.8.22

Twin Lakes Elementary School



*Peacock at Twin Lakes Elementary school.  
Aug 2022*

## **Governance**

The Food Forests for Schools (FFFS) program is managed by staff at The Education Fund (EF), a not for profit group within the Miami-Dade Public Schools system. EF is led by a CEO who reports to a board of directors. Their core business is to develop programs that support children.

## **Fundraising**

The FFFS program sources funds from multiple funders and Debi indicated that Eddie and herself spend some of their time promoting the program to existing and potentially new funders. As of 2022 funders included:

1. Philanthropic foundations
2. TD bank (a top 10 North American bank)
3. US Department of Agriculture (USDA)
4. US Environmental Protection Agency (EPA)
5. US Forest Service
6. Florida state funding bodies.

## **University Partnership**

The FFFS program has partnered with the International Centre for Tropical Botany at Florida International University. Led by Assistant Research Professor, Cara Rockwell, the team undertakes applied research in the schools' food forest sites. The partnership has resulted in funding from federal agencies such as the USDA and EPA due to the data and publications produced. Topics include nutritional aspects and ecosystem services.

## **Operations**

### **Staff**

The program employs up to 15 staff, all part time with the exception of Eddie and Debi. On-ground staff choose how many hours they want to work per week and then they are matched to as many schools as possible.

The staff include:

1. Program managers (Debi and Eddie)
2. Field manager (a contractor, who also supplies plants to the program)
3. Gardeners (contractors)
4. Admin support staff
5. Graphic designers (when required)
6. Curriculum specialists (when required)

All contractors are asked to commit to at least one year so that the children have continuity when the team visit their schools.

### **Stakeholder engagement**

I learnt from Debi and Eddie that they pay particular attention in ensuring that the program works for key stakeholders including teachers, principals, parents and ground staff. They explained to me that discovering the teachers' concerns and needs was pivotal to the success of the program. This was especially important in developing the teaching materials and activities, including ensuring that the activities could be incorporated into pacing guides. Hal Skop, a senior teacher at WJ Bryan Elementary, said that support from the school principal and administrative staff was very important.

### **Educational activities**

The program has developed District approved maths and science curriculums tailored to the food forests and other outdoor environments. Eddie explained that children could not attend school in 2020/21 due to the COVID19 pandemic so they developed a series of learning tools that the children could use outdoors (during their limited allowable recreation times). These tools have now been approved as set curriculum by the schools' district board and the teachers use them in the food forest environment.

Hal gave me examples of the learning activities in science (including position of the sun, observational properties, water levels, soils, erosion and weathering) and maths (collecting and categorising sticks, and modelling a maths problem with sticks). A typical session in the food forest will involve 20 kids in groups of four or five. Student results have improved by as much as 70% directly due to this outdoor learning approach.



*Talking with students at Lake Stevens Elementary school. August 2022*

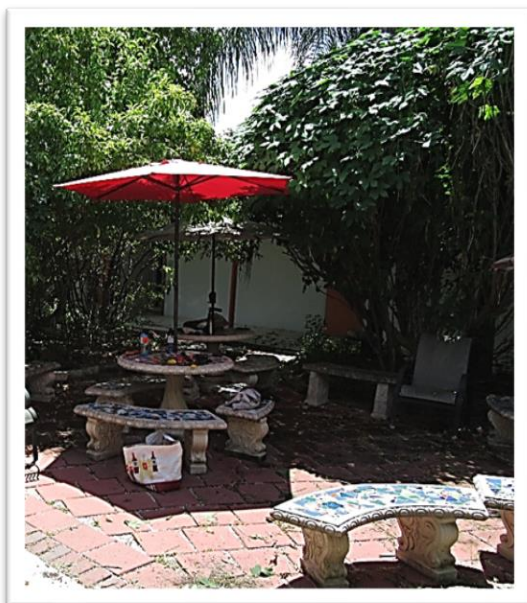
Some schools also have an after-hours garden club, driven by a passionate teacher, where the kids can do informal learning in the food forests. Hal leads a garden club at WJ Brian Elementary twice a week.

### **Maintenance**

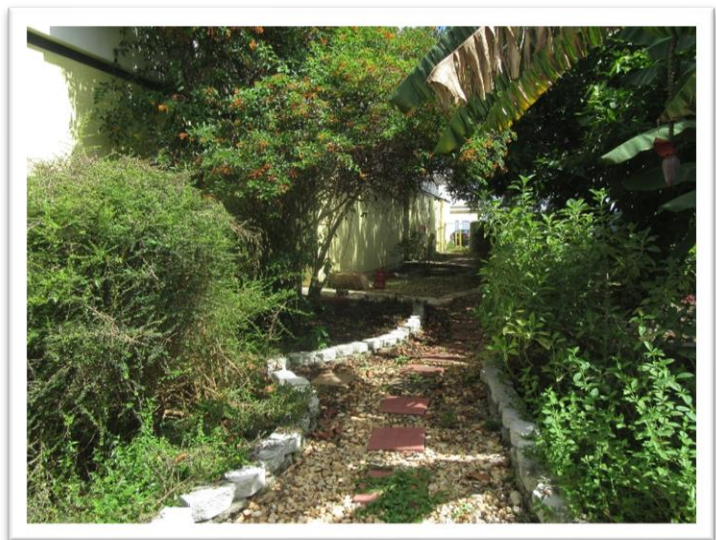
The program's on-ground staff support the teachers with timely maintenance of the gardens. This includes weeding and mulching the gardens just before the beginning of term. This practice ensures that the gardens look presentable and welcoming, not just to the children and teachers, but also to the school principal and other administrators.

### **Design features**

Click [here](#) for a tour of Twin Lakes Elementary school's food forest. Each food forest is uniquely designed to fit with the school layout and needs of the users.



*Outdoor classroom, Twin Lakes Elementary school. Aug 2022*



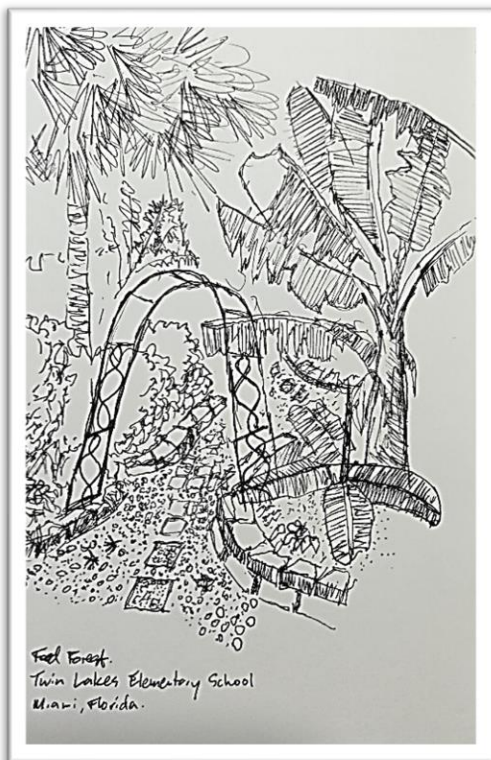
*Gravel paths with pavers, Lake Stevens Elementary school. August 2022*

### **Outdoor class rooms**

Every garden has an outdoor area where children and teachers can gather for learning activities. In the gardens I visited these were all simple arrangements of tables and chairs in the shade. At two of the gardens the furniture looked interesting, either using mosaics or repurposed timber pallets.

### **Drainage solutions**

To deal with the huge amounts of rain during tropical storms 100mm deep gravel is installed between the beds with unit paver 'steppers' on top.



Sketch showing archway and tiles, Twin Lakes Elementary school. Aug 2022

### Visual 'permission' with garden devices

In the three gardens I visited simple archways have been installed at the entrances to different spaces. Also, mosaic tiles (made by the children as a school activity) are placed on paths. Debi explained that these garden devices are important visual 'cues' that give the children 'permission' to enter the gardens without having to ask first. I also noticed small garden ornaments such as Buddha statues and bright signs that are also welcoming.

### Banana groves and circles

All of the gardens employ banana circles that not only provide a high yielding food source but also host class room activities. For example, Debi explained that the children learn about composting here.

### Notable plants

Edible plants from the region and Caribbean, Cuban and central and south American cultures abound in these gardens. A foundational plant list is used in developing plans. As I live in a similar climate to Miami, I recognised many of the plants (such as Pinto's peanut, Cuban oregano, and Moringa). However, the following plants were unfamiliar to me:

- Chaya (*Cnidoscolus aconitifolius*)
- Costa Rican mint (*Satureja viminea*)
- June plum (*Spondias dulcis*)
- Seminole Pumpkin (a variety of *Cucurbita moschata*)
- Tahitian spinach (*Xanthosoma brasiliense*), used to make the Caribbean dish Callaloo.



Banana grove, Lake Stevens Elementary school. August 2022

# **Lincoln Smith and Forested LLC, Maryland USA**

[forested.us](https://forested.us)

23 August, 2022

## **Introduction**

I spent a few hours on a sunny day with Lincoln Smith at his 10 acre food forest in Bowie, Maryland, on the peri-urban fringe of Washington, DC. Lincoln is a food forest innovator and he runs Forested, an ecological business that offers a wide range of services. His food forest project started in 2012 and is at a stage where the forest structure is starting to make itself more defined and easier to 'read'.

Lincoln is also a qualified landscape architect (like myself) who has made the transition into the agroforestry space. I wanted to meet Lincoln to talk about design, plants, community involvement and the business of food forestry.

An added bonus of my very short visit was that Catherine Bukowski, author of [The Community Food Forest Handbook](#), also met me at Lincoln's place. It was great to talk with her and Lincoln about the challenges of making a realistic livelihood in food forestry.



*With Cathy Bukowski and Lincoln Smith. August 2022*

## **Governance**

Forested is a for profit limited liability company (LLC). However, it has a core mission of integrating people into natural ecosystems of the eastern US, that is, the forest. To do that it offers both paying and free opportunities to the public.

## **Income streams**

Fund raising is mainly via fee for service offerings that include:

- Design for communities, government agencies and private clients.
- Gourmet tours – the Food Forest Feast
- Tours
- Lectures

- Education – the Permaculture Design Course

The business also has a small range of merchandise (poster, hat and T-shirt), and solicits funds via Patreon and one off donations.

### **Community partnerships and involvement**

Despite it being a private business, Forested invites community participation on site through volunteering opportunities and via partnering with specialist groups like a bee keepers' association and a wood workers guild. Lincoln has also created a community vegetable garden on-site in partnership with local people. Whilst Lincoln needs to derive an income to support him and his family, he has built a networked community around him to support his mission.

## **Operations**

### **Graphic communications**

One of the things that really impresses me about Lincoln's business is the high quality of his web based communications. The graphic design quality of his free downloadable design guide clearly showcases his landscape architecture skills. This visual information makes for easier understanding of how a food forest works. As Lincoln states on his website:

'I find that I grasp concepts better with pictures, so I created these illustrations over 10 years of forest gardening successes and failures (ahem, learning experiences) ...'

### **Listening to the land**

In keeping with permaculture principles, a core approach is to observe the cues from nature that indicate what the land 'wants' to grow. Lincoln uses local natives that are 'volunteering' the site or similar species. For example, wild blackberry is prolific in the area so thornless blackberry varieties have been introduced. Another example is the native persimmons that are 'planted' by foxes (via their droppings), and these trees are either used as grafting root stocks for superior scion wood or left as is. It is a very tough plant and productive for the land.

Another core piece of observation is discovering, then utilising, native plants that can compete with the weeds. Groundnut is a native vine on the property that appears competitive with honey suckle weed.

## Establishment

Check out [this video](#) where I talk to Lincoln about establishing a food forest.

The site was previously a corn field with over 100 years of use so the soils were very depleted. The site was sown with red and white clovers to put back nitrates into the soil and weeds were allowed to grow to build biomass. Black locust trees are a pioneering nitrogen fixer that is native to the eastern US and specimens were planted throughout the site. The timber is very durable and logs have been harvested and used as fence posts and other utility items. Lincoln deploys sheet mulching techniques using cardboard with bark chip to smother grasses and other weeds prior to planting.

## Design Features

([Google Earth link here](#))

### Vegetative layering

I shot [this video](#) with Lincoln where he illustrates the layered design of his food forest. The vegetative layers are arranged so that all plants get access to sun. For example, canopy trees are placed at the back (relative to the sun) to allow smaller trees solar access. Shaded areas are generally where support shrubs are located.

### Trails and paths

Lincoln explained the importance of creating 'comfortable places' for people to immerse in. So, for him, paths need to be wide and not too claustrophobic. On his site, paths are mown grass, but on smaller sites wide paths could be in gravel or other materials. Wide paths are also important on public sites to create clear site lines to enhance site safety.

## Notable foods and plants

The following plants and their foods were standouts for me during my visit and worthy of further exploration in Australian (and New Zealand) community food forests:

- Bamboo (*Phyllostachys* spp) - shoots
- Black locust (nitrogen fixer)
- Butternut / White Walnut
- Feral potatoes
- Oak – acorn flour



- Ostrich fern (*Matteuccia struthiopteris*) – fiddle leaf heads
- Passionfruit - flowers and leaves
- Shitake mushroom
- Sochan (*Rudbeckia laciniata*) - leaves
- Sunchokes
- Yaupon Holly (*Ilex vomitoria*) – only native US plant with caffeine in it. Ornamental shrub, make a tea with it.

# **Philadelphia Orchard Project, USA**

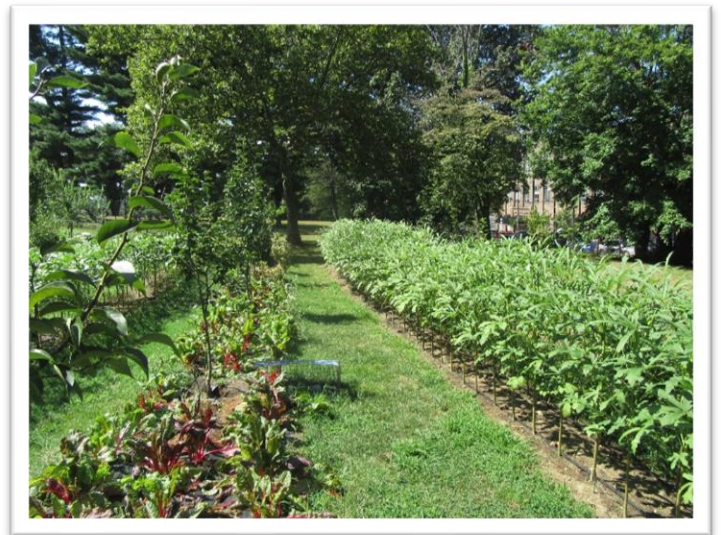
[phillyorchards.org](http://phillyorchards.org)

25 – 30 August, 2022

## **Introduction**

The Philadelphia Orchard Project (POP) provides orchard establishment and tree care services to schools, urban farms, community gardens, universities, health centres, heritage places and places of worship. Since 2007 they have established 67 community orchards throughout the city. I visited six of those orchards. They also offer educational resources, workshops and training, and promote tree-based growing in the city.

POP's headquartered 'Learning Orchard', recently established in 2019, provides educational outreach to their partners. It's an excellent example of integration and activation of underused green space and it is located within the grounds of a historic cemetery. POP's offices are also located here. The 'Learning Orchard' is also a potent example of how orchards can be managed. In this case an alley cropping system has been integrated amongst the tree rows to increase production before the trees start to bear fruit. In response to the COVID19 pandemic all produce goes to people in need.



*Alley cropping system at the POP Learning Orchard, August 2022*

## **Context**

Most of the inner city housing appears to be medium to high density and as a result almost all residents have very small yards, at best. Sidewalk (verge) widths are mostly limited or are contested with other demands, and parkland areas appear low in number and size. So, there is limited opportunity for growing food at home. However, the City's community food system includes about 350 allotment style community gardens where people mainly grow vegetables and herbs. The City of Philadelphia has also just released its first draft of an Urban Agriculture Plan for the city.



*Sankofa Community Farm sign. August 2022*

## **Governance**

I interviewed Phil Forsyth and Kim Jordan, POP's Co-executive Directors on 26<sup>th</sup> August, 2022.

POP is a not for profit organisation with a volunteer board of directors and paid staff. It has both income tax exemption and tax deductible charity status. Board members are drawn from POP's partner organisations, institutions and people in the local food space. In 2021, POP's revenue was USD \$352,000.

### *Fundraising*

Like the other programs I visited on this trip funds come from diverse sources including:

- Foundation grants
- Program fees
- Monthly donors
- Corporate support
- Special events

Kim estimates that 60 to 70% of their funds are derived from foundations. In 2022, over 40 foundations and businesses contributed to both ongoing operational costs and one off events. Kim's role includes keeping funders updated and researching new opportunities and she has been promoting POP to various departments in the city. Recently, POP worked with

Philadelphia Parks and Recreation to supply, and sometimes install, fruit trees that the City of Philadelphia gives to residents.

## **Partnerships**

POP partners with other community groups and institutions who want to install an orchard including:

- Schools
- Community gardens and city farms
- Low income housing
- Hospitals
- Universities

Phil explained that POP invests in building long term relationships with community partners and at the beginning of projects they screen potential partners to make sure they are 'orchard ready'. The partners are the primary stewards of the orchards who undertake day to day maintenance (weeding, watering, harvesting and distribution) so it's important that they have capacity and interest in orchard care.

Also, POP needs to see that a potential partner is committed over the long term and that the land has a good chance of not been developed. One of the ways that they mitigate risk, especially with a new partner, is to plant over several rounds. So, they'll do an initial planting, see how that goes and then expand on that initial work based on feedback about what's working and not working, and assessing the actual capacity on the ground.

Phil also said that in the early years they had very mixed results. POP has since developed a 'very systematic approach to partnership and evaluating a successful partner'.

POP's ongoing support model typically involves a once per season visit either as a work day with the partner's people, or a consulting visit to give technical advice (such as pests and diseases). On larger and older partner sites POP undertakes monthly engagement where volunteers are brought in to train residents in orchard care.

In general POP does not do outreach for creating more partnerships. The motivation for Community Orchards is driven by the partners.

Phil also stated that one of his biggest challenges is working with limited partner capacities. For example, most partners are unable to implement complicated spray regimes. So, the challenge is to create orchards that require relatively minimal care but at the same time cater to people's desired fruits (like apples, which are high maintenance).

## **Decision making**

Phil explained that Kim and himself make the majority of the bigger decisions. However, for some things they get a lot of input from other staff members. Staff generated the idea of a Wellness Benefit health stipend and were given autonomy to design it.

## **Operations**

In addition to interviewing Kim and Phil, I also interviewed POP's Orchard Manager, Sharon Apiah, on 26<sup>th</sup> August 2022.

## **Staff**

In 2022 the staff included:

1. Two executive directors (Phil and Kim)
2. Orchard manager (Sharon)
3. Two orchard assistants
4. Education director
5. Fundraising and communications assistant

Phil and Kim talked about the challenges of retaining staff within the context of communities with high levels of trauma and in a sector (urban agriculture) that historically offers low wages. POP has increased pay rates recently, added paid time off, a health stipend and professional development. They also offer flexible schedules and year round employment with a variety of tasks that changes throughout the year (harvest season is more hands on, winter is more desk bound).

## **Executive Director roles**

The two executive director roles cover both program management (Phil) and the fundraising, finance, communications and administrative areas (Kim). Although, these roles tend share admin and fundraising.

## **Orchard manager role**

Sharon said that she loves the autonomy of her job and the leadership is very collaborative. Sharon explained that her role includes crop planning and leading work days at the Learning Orchard. She's also responsible for delegating tasks and organising (with Kim) the Lead Orchard Volunteers (see below). She works at the Learning Orchard two days a week, and usually two days a week on other sites (she works on 15 partner orchard sites close to where she lives), and one day a week on admin.

## **Volunteers**

POP has developed a Lead Orchard Volunteer (LOV) program where community members care for an orchard in their local area. This is a similar approach to the volunteer programs run by City Fruit in Seattle and Lifecycles in Victoria BC. The program builds community capacity and associates a familiar face, and go-to person, with an orchard.

In 2021, POP had 27 LOVs working at 17 orchards. A stipend is available to cover the LOVs costs and they get training and resources to work in the field.

## **Programs and resources**

I was blown away by POP's service offering which is astoundingly broad and deep for a small organisation. The programs include:

1. Orchard planting – this includes design, orchard training and plant material for community partners only (see also 'Partnerships' section above)
2. POPCORE certified orchardist course
3. Online orchard care Google group
4. Listserv newsletter and online resources
5. Harvest-Ed – workshops by the community that are curated by POP and are held in a local community orchard
6. Gleaning events – harvesting the cities 'urban orchard'.
7. Learning orchard – head quartered orchard that holds workshops and events. Also includes an edible plant nursery that supplies partner orchards, and a high poly tunnel for trialling warm climate plants (for climate adaptability research).

Some of the fee paying programs are offered to community partners either for low cost or free of charge. POP also offers services to disadvantaged groups who do not have security of land tenure.



Sign at the entry to the POP Learning Orchard. August 2022

## Public safety

The majority of partner orchards are fenced and the produce is used in the partners' programs. Phil explained that the partnership model also helps to minimise the risks to POP as it is the community groups themselves that are managing the orchards day to day and not POP.

Regarding soil contaminants, Phil explained that tree crops are generally safer than vegetable gardening. For example, there is no uptake of lead into tree fruit.

## Design Features

Check out [this video](#) of the Learning Orchard at Woodlands Cemetery, including the recent alley crop installation. ([Google Earth link here](#)).

Site preparation includes sheet mulching and compost teas. Despite the word 'orchard' used in their name, POP aims for a food forest model with planted understoreys as it eliminates

mowing in the tree root zone and builds soil health (although Phil acknowledged that mown orchards require less effort, initially at least).

Berry bushes, vines and pollinator species are always included. Grey squirrels are a major pest so nut trees such as hazels will only be planted in an open field (making it difficult for squirrels to access). Blight resistant varieties of chestnut and other large nut tree species will also be incorporated where there is enough space. Phil would like to introduce Muscovy ducks into Learning Orchard. Whilst being not as good as chickens in pest management they are less destructive on plants.



# **Agroforestry Research Trust, UK**

[agroforestry.co.uk](http://agroforestry.co.uk)

17 & 18 September, 2022

## **Introduction**

I spent an immersive weekend at the Agroforestry Research Trust (ART) in Devon with the founder Martin Crawford. The ART's core mission is education and research with a focus on the food forest aspect of agroforestry. It was founded in 1992 and comprises three sites:

1. Dartington food forest (established 1994 on 2 acres).
2. Trials/nut forest (established 1997 on 8 acres)
3. Littlehempston multi-use site (established 2011 on 11 acres)

I visited the Dartington and Littlehempston sites. The aim of my visit was two-fold:

1. To learn more about the technical aspects of food forestry, namely design and plant selection.
2. To investigate how the organisation functions and see if it could be a model worthy of replication in Australia.

My visit was the site tour component of Martin's *Extended Forest Gardening / Food Forests Course*. I later travelled with Martin back to Dartington village and met his wife, Sandra. I interviewed both of them over lunch and a pint of the local ale!

## **Context**

The ART is located in south Devon, a region that is perhaps the most environmentally progressive in the nation. The original Dartington site is located within the grounds of Dartington Estate which has a long history of social and environmental innovation. It is also adjacent to Schumacher College, internationally recognised for its alternative education courses. The town of Totnes, where the Transition Towns movement was pioneered in the UK, is less than three kilometres from both the Dartington and Littlehempston sites.

## **Governance**

### **Structure**

The ART was created by Martin and is a not for profit registered charity governed by a volunteer board of trustees. Martin explained that originally, he thought the Trust model would help attract donors but that did not happen because they were completely unknown. However, the Trust model is appropriate for a research and education group.

Martin explained that in the UK, for most small charities the Trust model is used. Founders carefully choose their Trustees so they - the Founders - can get on with the job. Martin more or less has complete autonomy as the trustees are 'hands off'. There is a minimal number of trustees (three) and only one official meeting per year (the AGM). Trustee liability insurance protects the Trustees.

However, the ART recently switched to a 'Charitable Incorporated Organisation' which is similar to a limited company but still registered with the UK Charities Commission. Trustees are automatically insured and the Trust can own land in their name (rather than in the names of Trustees).

### **Land tenure and relationship**

The original Dartington site is leased, originally at peppercorn rent, from the Dartington Hall Trust (current owners of the Dartington Estate). Sandra mentioned that the Dartington board is much more risk adverse than 30 years ago and perhaps a project like the ART would not get off the ground these days. Interestingly, it was never intended that ART's tenure would be long term but she said the Dartington Estate leverages off the ART by using, for example, images of Martin at work to promote their real life sustainability cred.

The trials/nut forest site and Littlehempston site is owned by the ART.

### **Funding**

According to the ART website (accessed December 2022), 'Funding for the work of the A.R.T. comes from several sources. Self-generated income comes from sales of plants, seeds and publications, and also from course fees. In addition, some income comes from grant-making Trusts and in donations from individuals.' Martin and Sandra reported that they are happy that they are not reliant on government grants (due to the usual low amounts on offer and high reporting requirements).

However, despite funding been dominated by business activity, one of the advantages of being a registered charity is that very occasionally a member of the public will make a large donation. For example, someone left them £50,000 a few years ago!

## **Operations**

### **Staff**

Martin is the Trust Director and he does almost all of the work at the Trust. This is supported by Sandra, his wife, in the background with occasional admin. Martin also employs one or two workers occasionally at the Littlehempston site.

### **Access**

All of the sites are open only during tours or educational events, or by appointment.

### **Courses**

Sandra explained that, in response to the COVID19 pandemic, ART's courses have changed from the live in, catered experiences to online offerings with limited on-site time. Bonding between students clearly diminishes as a result but, as both Sandra and Martin explained, the online offering with recorded session allows more people from further afield and with limited free time to get involved plus they can re-watch the lessons. Also, Martin does not need to deliver the same presentation repeatedly.

### **Community relationships**

The ART is linked strongly to the Dartington Estate who have a very visible presence locally, and they are a well-known and respected organisation in progressive circles across the UK and internationally. As a lessee, the ART's community connection has benefitted from Dartington's reputation but the ART does not explicitly have community building or support as an aim in its charter. However, local relationships have been building through horticulture-based training (including regen agriculture and forest gardening courses) in partnership with Schumacher College. Some graduating students have stayed on in the area and have created livelihoods including volunteering and employment with the ART. Despite the ART having an international reputation with permaculture and agroforestry practitioners, Sandra noted that local people have been slow to catch on.

### **Impacts of climate change**

Martin reported that one of his biggest challenges in recent years have been long, dry spells in Spring leading up to Summer, late Spring frosts and early Autumn frosts. It's a problem for all of Western Europe not just South-West England. Martin also reflected that the climate crisis is seriously affecting people's mental health, and for him, doing something positive is really important.

## Design features

### Dartington site ([Google Earth link](#))

This is one of the world's oldest known cool temperate-zone food forests. This 2-acre site yields copious quantities of fruit, vegetables, nuts and mushrooms. It was commenced in 1994 and took ten years, part time, to be fully planted.

The site was chosen as it has good shelter from the westerly winds due to an existing mature tree belt. However, Martin explained that in Europe there is a trade off because there is less afternoon sun.

### Canopy Trees

Martin explained that it is important to establish the canopy layer first before planting out sensitive understorey plants. Italian alder has been placed for sun and shade balance through the site, acting as a pioneering canopy tree that fixes nitrogen and Martin explained that, along with birch and acacia species, this species is tolerant of high winds.

### Shrubs

The shrub layer includes 'tree vegetables' species such as Linden (Lime tree) that are pollarded to maintain a shrubby form. Martin always recommends bamboo for its edible shoots (*Phyllostachys* species) and he said that all temperate species are edible (if the stem is not too narrow) and they benefit from having nitrogen fixing plants nearby. Sichuan pepper, Autumn olive (good windbreak), Feijoa, and low height Chinquapin chestnut were also noted.

### Herbaceous and vine layers

I noted Fuki (Japanese vegetable with an edible stalk), Ostrich fern (like at Lincoln Smith's site in Maryland, USA), and Hostas (grown for their shoots). The vine Hops has edible shoots with a nutty flavour.

### Ponds

Martin explained the importance of ponds in the system to attract beneficial predatory insects like dragonflies. He uses a clay infused 'bentonite geotextile' that self-seals and the hemp-based matrix eventually biodegrades. It is important not to have too much shade over the pond so species choice and strategic pruning are part of the system as well.

### Other points

Winter flowering species (in the cold temperate zone) also need to be considered to aid birds and insects over the colder months. Social spaces in a forest garden are important

considerations as well. Martin also grows shitake and oyster mushrooms on logs cut from the food forest.



*Martin talking to students with New Zealand flax (*Phormium tenax*) in the background. Sept 2022*

**Littlehempston site\_**[\(Google Earth link\)](#)

This 11-acre site includes four forest gardens and a commercial plant nursery.

**Glass house subtropical food forest**

One of the food forests is located in a massive glasshouse (approximately 20x20x5 metres) that cost £50,000! It is a research project to understand potential food crops in a future hotter climate as a result of climate change. Designed by Martin, the temperature is set to 5 degrees above the current area average. Sensors automatically open and close roof vents and air mixers, and the walls consist of twin-wall polycarbonate sheets. A soil heat storage system keeps the ground temp above 2 degrees all year round (this is a region that freezes



*Glasshouse with subtropical food forest trial inside. September 2022*

in winter). Plants include bananas, guava, avocados, figs, New Zealand spinach, Okinawa spinach, turmeric and dwarf tamarillo.

### Grass control

At another forest garden on this site Martin explained that the existing grasses were not sheet mulched or sprayed but will be suppressed in 7 to 8 years as the tree canopy begins to shade the grasses out. Part of the strategy is about storing carbon in the grass leaves – suppressing the grasses results in carbon release to the atmosphere. It's a similar approach to that used in Holland, as I was to find out when I visited Rotterdam a few weeks later.

### Other points

On my tour of this site, I also noted the Sea Buckthorn hedge and an experimental walnut coppice at 4 metres spacing. One of the gardens used endemic nitrogen fixing 'nurse plants' such as broom and gorse that were densely planted (about 2 metre spacings). Also, Martin explained that soil inoculants were incorporated into open fields to be planted where trees and shrubs had been absent for a long time.

## **Notable plants and foods**

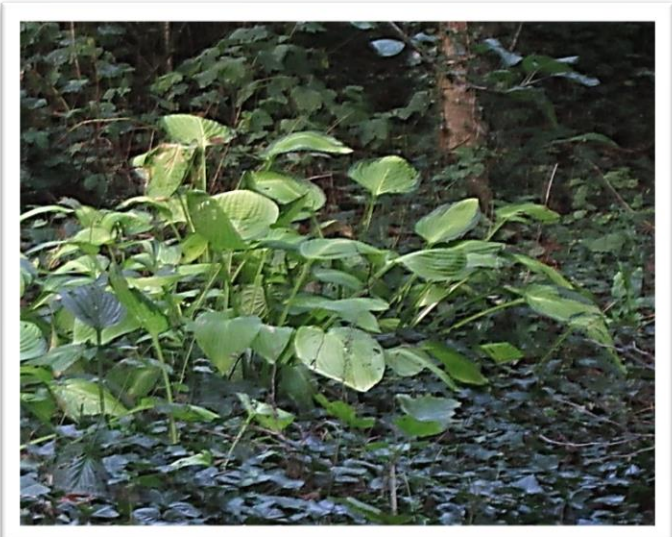
From the Dartington site my pick of plants for further investigation for Australia's cool temperate zones

- Autumn Olive (*Elaeagnus umbellata*) for fruit leather – Martin notes that the genera offer useful multipurpose species
- Chinese toon
- Chinquapin chestnut
- Fuki
- Green-Glaucous Bamboo (*Phyllostachys viridiglaucescens*) for shoots
- Heart nut – best taste of all the walnut family
- Hostas shoots
- Lindon tree – tree vegetable
- Ostrich fern
- Sichuan pepper
- Shitake and oyster mushrooms

As with the Dartington site, the Littlehempston site had an almost overwhelming level of edible and support plant diversity. The plants I noted included:

- Beech (*Fagus* species) – tree vegetable

- Buckler sorrel
- Day lily – best edible flower
- Dwarf comfrey
- Dwarf quince (or Northern Lemon) – lemonade drinks
- Dwarf tamarillo
- Good King Henry (*Chenopodium* species)
- Perennial kale
- Sea beets – leaf vegetable
- Sea Buckthorn



*Clockwise L-R: Northern lemon or dwarf quince; American elderflower (*Sambucus canadensis*); Dwarf comfrey (*Symphytum ibericum*); Giant butterbur (*Petasites japonicus*). September 2022*

# **The Orchard Project UK**

[theorchardproject.org.uk](http://theorchardproject.org.uk)

22 – 29 September, 2022

## **Introduction**

I spent a week in London with the intention of meeting some of the team from The Orchard Project (TOP) and participating in an activity or two. I did a great interview with the CEO, Kath Rosen, (after meeting her for lunch) and I participated in an apple harvesting event organised by TOP at the Royal Orthopaedic Hospital apple orchard in Stanmore (NW London). I also made a trip to Bristol to interview Abby Cremin, TOP's Head of Operations and Programs (and I investigated some community food projects including Windmill Hill City Farm whilst I was there).

TOP is the UK's - and probably the world's - only national charity dedicated to promoting community orchards. Established in 2009 (originally as the London Orchard Project), TOP works with other community groups to create orchards (similarly to POP in the USA) and to date has co-created over 540 orchards. Their vision is that 'every household in the UK's towns and cities is within walking distance of a community orchard'. According to Abby, TOP sees itself as a long term support organisation for community groups to build their capacity. Or as Kath said, TOP is a primarily a skills development group.

TOP works in and around seven UK cities:

- Birmingham
- Edinburgh
- Glasgow
- Leeds
- London
- Manchester
- Swansea

It's been a tough couple of years for TOP and many other smaller environmental charities in the UK. The COVID19 pandemic, Brexit, record breaking summer 2022 heat, and the UK's recent economic woes have been hugely disrupting for the group. London is a heaving metropolis at the best of times and, in Kath Rosen's words, 'is just too big and unsustainable', which makes it challenging for a small charity.

## **Context**

Note that this description applies to London only, and not the other cities where TOP operates.



London is a massive world city of about 10 million people. It seems to me that people involved in the community food sector perhaps feel under siege with a lot of demands on public open space. I noticed that a lot of the community gardens and orchard sites that I either visited or viewed online are fully enclosed with high fencing with sharp stakes at the top and in some cases, opaque fencing so that the public can't see into the gardens.

Also, many of the places that I wanted to visit had very limited opening hours. One orchard I wanted to visit was only open to the public for two hours per week. Another place is open for just four hours on a Tuesday and four hours on a Sunday. My investigations revealed that for many of the community orchard sites I wanted to visit the opening times were not advertised on their websites (or they did not have a web presence). I also had very little response to my emails and DM's.

That says to me that these places are very much for local people who are connected in with their community food network. (Which makes my investigation work more challenging as it's harder to contact coordinators, particularly without introductions). But I can totally understand why that situation might come about given the crowded conditions of the London. The coordinators of these gardens probably want to control who comes to these places.

There is quite an established community food system within the greater London area that includes allotments where there is a high demand for plots (up to 20 year wait times!). It also includes about 120 community orchards, some community food forests, city farms, care gardens, and big urban agriculture organizations like Sustain (not to be confused with Sustain in Melbourne). Kath Rosen said that, in her view, that an advantage of community orchards is that they have more of a community impact than allotments and give more of a sense of ownership to individuals.

## **Governance**

TOP is a national charity governed by a CEO who reports to a volunteer board of directors. In 2022, TOP's total operating expense was £609,681.

## **Funding**

TOP employs a fundraising manager and revenue is sourced from:

1. Donations (£82K in 2022)
2. Earned revenue (£110K in 2022)
3. Grants (£484K in 2022).

Grants are derived mainly from foundations and trusts, and corporates. A small amount comes from government.

In 2014, TOP secured a major corporate sponsorship deal with the multinational brewer Heineken, which supported the organisation for a few years and allowed them to step up and become a truly national organisation with robust systems and processes in place. From 2016 to 2019 TOP also had major funding for the Heritage Lottery Fund. Abby mentioned that the group has since progressed to a more diverse funding model that requires more staff resources to manage. One of challenges with short term, multiple funding streams is the ability to review their effectiveness. Grants need to be carefully reviewed before committing.

Abby also indicated that funders and partners are more attracted to the biodiversity and community development outcomes of TOP's work rather than addressing nutrition or food access. For example, Abby said that, for the Greater London Authority (GLA), tree canopy cover has become a more important issue than food justice.

### **Partnerships and building relationships**

Kath said, that in her opinion, in London the environmental charities are quite competitive for a limited pool of funding so there are not any 'true' partnerships between them. However, it is very different for the smaller cities.

Kath explained that TOP currently has 18 months funding from [Farming the Future](#) that aims to develop three food forest sites in Scotland and Wales. The [Soil Association](#) and the community land group '[Shared Assets](#)' have partnered with TOP to evaluate the project and look at policy recommendations. (See **Special projects** section below for more detail).

### **Decision making**

Kath takes a collaborative approach and aims for a flat decision making structure. However, she said that there is a need to strike a balance between agility and efficiency, and allowing everyone to have a say. She also explained that a flat structure can lead to powerful personalities taking over. There is an internal focus on helping staff to feel involved.

Regional project managers act with a high degree of autonomy. All staff get together on the monthly team meeting video call. The management team meets fortnightly.

## **Operations**

### **Services**

TOP offers seven key services to community groups:

1. Orchard establishment (read more below).
2. Restoring old orchards. From 2016 to 2019 TOP's 'Celebration of Orchards' program (funded by the Heritage Lottery Fund) restored 30 relic orchards in London.
3. Creating wildlife habitats. Orchard trees generally reach 'old age' earlier than native trees, thus creating hollows and other features vital for wildlife habitat.
4. Training (read more below)
5. Community building events including harvesting days
6. Schools program that includes lesson plans, outdoor and classroom delivery
7. Consultation. Clients include well-resourced community groups and private landowners, and property developers.

*Royal Orthopaedic Hospital, London*

*An excellent day harvesting apples from the hospital's orchard. This event was organised by TOP... On this day our small group harvested 552kg of apples that will be used to make cider. It was a fun event, lots of laughs and stories between the harvesting, with a delightful picnic lunch as well!*

- LinkedIn post 26.9.22

TOP has developed an Orchard Design Kit that is used with clients to create new schemes.

### **Orchard establishment**

Kath explained that although they are often approached by 'well-resourced middle class groups', as TOP's staff resources are limited, they tend not to assist them as they can generally self-organise. TOP's focus is on more

challenging work in areas of cities that have a lot of deprivation. These are long term community projects and TOP ensures, prior to committing, that there is buy in from the community and that there are people on the ground who want to make things happen.

Before TOP chooses a group, they make sure that there are at least 3 to 4 committed people, and that the group have done the community consultation. TOP typically partners with 10 to 20 groups nationally (6 TO 8 in London) ever year. Community groups do not pay any fees for this service. With each successful group TOP will then:



*Apple harvesting, Royal Orthopaedic Hospital, London. Sept 2022*

1. Lead an orchard design session
2. Identify 'orchard leaders'
3. Deliver an informal volunteer training program
4. Organise a planting day (that includes supply of plants, tools, equipment and insurance)
5. Return the next year to check the trees and provide advice.

The new orchards then become a part of the orchard network. TOP's commitment, in theory at least, is five years but Kath said that it is really challenging to find funding for that period. Some groups just 'get on with it' and do not require five years of support, but others need longer hand holding to ensure the trees are looked after. In response, the aftercare is delivered in different ways including:

- direct advice from staff
- regional 'orchard summits'
- bringing CICO students to the sites (read more below)
- orchard 'blitzes' inviting volunteers from further afield on lapsed sites.

The survival rate for trees on TOP's community orchards is 90% which compares favourably with the average for urban trees in the UK of 50%.

## **Training**

TOP's training includes:

- a. General workshops for the public
- b. Certificate (level 3) in Community Orchardring (CICO)
- c. Orchard Leader training
- d. Accredited Forest Gardening award (level 2)
- e. Orchard Mentor training

Kath explained that they target marginalised groups like people of colour with their training programs. Course fees are either via direct charges or subsidised by employment and training agencies (a blended funding model).

CICO is very popular with five courses being run nationally every year, and the duration is ten months (it was also created as a result of the Heritage Lottery Fund). TOP has been offering the course in economically inactive areas to provide a route to employment. Thirty percent of people who do the CICO go on to paid employment. TOP also offers 'CICO pro' for landscape architects and other environmental professionals.

The Accredited Forest Gardening (AFG) course is a high quality training and it enhances TOP's reputation as a quality training provider. It was developed by London-based food forester Jo Homan in consultation with the ART's Martin Crawford.

TOP has partnered with the Greater London Authority (GLA) to deliver training (site survey, design and tree selection) to groups wanting to implement orchards who are funded by the GLA. They have also partnered with the Ministry of Justice to train staff in orchard practice (who will then implement programs for prison inmates).

### **Head office**

TOP's headquarters is an office in Tottenham, but since the COVID19 pandemic in 2020 staff in London have been working remotely and this asset is becoming redundant. Kath explained the advantage of not having to travel – London is very large – and less expense in not having an office, but the big disadvantage is that human contact is missing.

### **Staff**

In 2022 TOP employed 16 staff including:

1. CEO (Kath Rosen), responsible for strategic direction, fund raising, budget, HR.
2. Head of Operations and Programs (shared between Abby Cremin and one other)
3. Project Managers (at least one in each city)
4. Education, Skills and Training Manager
5. Head of Fundraising
6. Philanthropy Manager
7. Communications Manager
8. Training Coordinator
9. Comms and Operations Support Manager
10. Finance Manager

The team is structured around a senior management group of four (CEO, Heads of Operations and Programs), the regional project managers, project assistant coordinators and admin support. Strategic roles include fundraising and program managers.

Kath explained that the project managers need to be firmly embedded in the communities where they work and TOP purposely targets community activists, involved in, for example, cooperatives and community organising, when recruiting staff.

### **Public safety**

TOP undertakes risk assessments, staff training and induction of volunteers before commencement. TOP only does harvest events occasionally as it is not their core business. They don't use ladders, preferring poles and tree shaking as a harvesting method.

## **Events**

The regional project managers will organise events under their own budgets, and events are not coordinated on a national level. For example, there was a Welsh Orchards Gathering in September 2022. National events are a rarity and don't attract funding (Surprisingly, TOP does not get involved in National Apple Day, for example).

## **Special projects**

TOP currently has a Food Forest transition project that aims to research repeatable models of community based forest gardening that can be retrofitted to existing orchards and applied to new projects. This, in turn, will create more resilient and productive sites in the face of climate change. However, Kath explained that the funding angle may evolve into a social impact project rather than having a yield focus. One site is a CSA in Wales, another in the grounds of a hospital, and another is a 'community buy out' site in a deprived area of Glasgow.

## **Bethlem Royal Hospital orchards**

Who would have thought this psychiatric hospital has an eighty year old orchard with 200 very large Bramley apple trees! Another beautiful community food place, in this case, right next door to a medium security prison and mental health facility. The orchard, planted in the 1930's, was forgotten about for decades until someone spotted a couple of apple trees above the tangle of brambles and weeds below.

I met with Peter O'Hare, the head of occupational therapy. Peter saw a therapeutic need for the orchard, and a restored walled kitchen garden, when clients started asking for gardening activities. And so, programs have been developed for folks with major challenges to connect with nature, cultivate confidence, and learn new skills via activities in the orchard and gardens. Peter sees horticultural therapy as an important aspect of his professional practice. As the hospital has a wide range of clients the orchards and gardens serve their needs in different ways including:

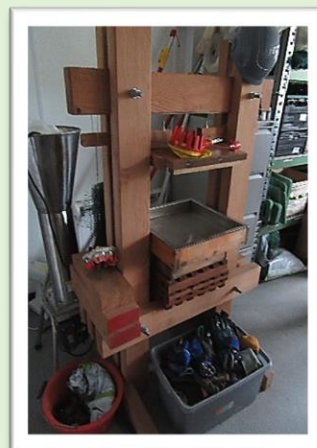
- For people with extreme anxiety by having a graded program of exposure within the garden and orchard.

- For people with depression and/or autism taking them out to the orchards and connecting them with nature is beneficial.
- Gardening and orcharding skills development and paid work sessions for prison inmates in transition back into society.

With assistance from TOP the old orchards were restored, tree varieties were identified and then, up until the COVID19 pandemic, TOP ran workshops for ground staff and patients. TOP also initially helped with harvesting days.

Harvesting is the main patient activity in the orchards but they also get involved in juicing apples, making preserves, weeding and mulching. The orchards compliment the extensive walled kitchen garden where most of the horticulture activities take place. TOP also assisted with setting up a juicing press and showed the hospital staff how to do their first press. Juice and preserves are sold via the hospital shop, and local residents nearby can enjoy the Traditional Orchards Nature Trail as the site is open to the public.

Ground staff keep the grass mowed below the trees which is helpful as it allows the gardening staff to focus on the kitchen garden. They tried converting some of the orchard to forest garden but this proved difficult for the ground staff to manage and for harvesting the apples.



*Clockwise from to left: espaliered fruit in the kitchen garden; juicing press; Peter O'Hare in the main Bramley apple orchard; walking trail sign. September 2022*

# Coöperatie Ondergrond, Rotterdam, NL

[ondergrond.eu](http://ondergrond.eu)

2 – 9 October, 2022

## Introduction

Coöperatie Ondergrond is a 'cooperative of social entrepreneurs' who are creating a network of food forests in public and semi-public spaces across the city. The group formed in 2019/20 but evolved from a series of initiatives and actions that started with Edible Rotterdam in 2007, and included the Rotterdam Forest Garden Network (2012 to 2020). This long development has allowed the founders to become well known in Rotterdam as the 'go-to people' for edible landscaping and urban agroforestry.

For a team of five, Coöperatie Ondergrond's work is impressive. Sixteen urban community agroforests have been created since 2013. Sites include botanic gardens, schools, artist residences and underused greenspaces. Their mission is to create 'as many food forests as possible that contribute to sustainable food production and a healthy living environment and works towards a society in which they can flourish'. The group feels that urban agroforestry can serve as a model for organising all of society!

I visited ten of the sites, and of these I spent the most time, and shot videos, at:

1. Food forest Vlaardingen – see break out box
2. Food Forest Overtuin, established 2018 (two visits – video [here](#), [Google Earth link](#))
3. Secret Food Forest, Kraalingen, established circa 2017 (video [here](#)).

All of the sites were relatively young when I visited in 2022 (up to nine years) so vegetative structure is not fully developed. Visually, most of the sites do not yet 'read' as food forests as they are too young, however Vlaardingen, Kraalingen and the Secret Food Forests sites are starting to display vegetative structure and layering.

I interviewed and toured with three of the founders – Paul de Graaf, Max de Corte and Bastiaan Rooduijn.

## Context

Rotterdam is a compact, mid to high density city with a port that is one of the world's busiest. As a result, the city is a centre for international trade and is relatively affluent. It has very well



organised active and public transport systems and is very easy to get around. (I got about on foot and bicycle during most of my stay).

The Netherlands is powering on with agroforestry, with edible forest gardening becoming a popular concept. Wouter van Eck, a very well-known Dutch agroforester, has done a lot of work in Holland to promote the agroforestry concept, there is a national monitoring program as well as interest from the commercial farming sector. There are other community food projects in Rotterdam such as allotments and community orchards.

## **Governance**

Cooperatie Onderground is a 'non-profit cooperative of social entrepreneurs', with three board members. In 2021 the group had a budget of €100,000 and in 2022 the projected budget was €250,000.

### **Cooperative social entrepreneurial model**

Paul explained that the group strives to find a balance between the tension of independent professionals working together in a cooperative model that has social goals as a key part of its agenda. Social aspects are the biggest challenge, according to Max. At this point he is focussing less on design and systems (the easy part), more on social organising by building a solid organisation with clear rules and boundaries. Whilst the group does not want to have hierarchy, the sociocracy model they strive for takes time and can be a challenge for the entrepreneurial spirit! My impression is that the team members are courageous communicators who are not afraid of expressing their concerns as the cooperative evolves.

### **Funding**

The group's main income is currently via a design and build service. Typically, a potential site's owner will come to the group with an idea and a member of the cooperative will assist them to develop a scheme and financial plan, plus assist the owner in applying for grants that include all of the cooperative's fees. They charge €90 to €100 per hour depending on client. The contract includes future harvesting rights for the cooperative's members (although further research is required to understand if this a formal or informal arrangement).

In the long term Max sees the harvest at food forests paying for administration and site maintenance. Both Max and Paul stressed that one of the challenges with the harvest business model is that food forests have very long lead times before they become fully productive (20 years in Paul's view). Further research is required to understand the intended

percentage allocation of harvests to volunteers, land owners, other community members and Coöperatie Ondergrond.

The sites need maintenance funding prior to full productivity. So, the group has had to get creative with other funding streams in the short term. The group also receives funding that includes:

- carbon reduction funds for planting trees
- site maintenance on some of their projects.
- grant funding for volunteer management (read more below).

Ten percent of the profits are invested back into the organisation. This pays for accountant fees but is also invested into social goals such as conflict resolution facilitation at a garden.

## **Operations**

### **Consolidation**

Whilst there is demand for more projects this creates more sites to maintain over the long term but as both Max and Paul explained, there is currently not enough people or funds to maintain them. Paul said that they need to get more organised if they want to grow and do more projects. They have been approached to create in other cities but this is outside of their scope. The group has been consolidating in the last few years, working on organisation structure and volunteer programs.

Paul explained that they are currently focussing on fair and inclusive work practices for everyone involved including volunteers, as well as clearly defining their service offering. A lot of his focus at present is on organisational structure and admin.

### **Staffing**

All members are part time and they do professional and other work outside to the cooperative. Paul, a professional architect by training, works three days a week on Ondergrond projects. He does some project work on a pro-bono basis but sees this as an investment in Ondergrond. Max said that currently two thirds of his week is working on food forest projects, organisation and admin.

Paul sees the organisation as a vehicle for assignments and professional development. It's a passion project for Paul – he gets paid but does a lot work because he says it's important for his community and society at large.

Some members do more paid project work (and generate more financial dividends for the organisation), whilst others put a lot of work into the unpaid back end of the enterprise. Paul was saying that the group is working on how they strike a fair balance with this.

## **Research**

Max explained that a significant part of the enterprise is currently based on researching and learning 'on the go' and then applying that knowledge to a new client's site. In some ways, I see Cooperative Ondergrond as an applied research and development social enterprise consultancy at this stage of their development. Max quipped that in the beginning 'they did everything wrong' but have learnt a lot through the process of trial and error. The group apply those learnings to every new project they work on.

Bastiaan is involved with a national monitoring program of food forest projects throughout The Netherlands. Food Forests Vlaardingen and Overtuin are part of the program.

## **Satellite site**

On 3<sup>rd</sup> October 2022 I visited Food Forest Groengenoten, about 60 km south of Rotterdam near the village of Rucphen. This site has been created by Bastiaan who took me on a tour. The site is very young, perhaps 3 or 4 years old and is used for experimentation but with a commercial focus. Bastian owns the site but sees it as part of the Ondergrond network in Rotterdam, as it is a source of knowledge and plant material for the city.

## **Volunteer management**

Max explained that one of the aim's is to build an informal learning organisation. Volunteers help establish and maintain sites that bring in money and in return they get informal education.

Recently, they received a grant to build the organisational culture and develop a business model for managing volunteers. Max said they are exploring a possible partnership arrangement with another community food group - [Groen Goed Rotterdam](#) - that has social outcomes and preventative health as a focus. In 2023, the intention is to run multiple volunteer work days at all their sites with Ondergrond paid to manage the program and Groen Goed paid to run sessions. In the longer term, the plan is to deploy the Groen Goed team as relationship managers with location owners, and as community organisers with the volunteers. Max sees this arrangement as a good fit that allows Groen Goed to fulfill its specialist provider role as a social subsidy-funded business and Ondergrond's as a social enterprise business.

## **Insurance**

Each member of the cooperative takes out their own individual insurance.

## Design Features

### Sequentially ripening rows

At the Groengenoten satellite site, different varieties of the same species have been laid out sequentially in a row starting with the earliest ripening cultivars and ending with the latest ripeners. I understood that this arrangement maximises, for each cultivar, the varying amounts of sunlight entering the site throughout the season.

### Signage

One of the features that impressed me was the very professional interpretive signage (designed by Paul de Graaf) for Food Forest's Vlaardingen and Overtuin. The signs are appealing to the observer with interested graphics and detail. Most strike a balance of imagery and text. The main entry sign at Overtuin is dominated by text but the text has been arranged in an appealing hexagonal pattern.

I was also impressed by the large entry gate at Overtuin. It's done in Corten steel and gives a 'natural' rusty look and the patterning reflects the plants of the forest. It's eye-catching to passers-by on the nearby street. Clearly, Overtuin was a well-funded project!



L – R: Large entry sign; entry gate; both at Food Forest Overtuin. Sept 2022

## Re-purposed pavers

At both the SKARS atelier sites – Borgerstraat and Ruivenstraat – pavers, that covered the now gardened areas, have been repurposed into garden edging by creating end stops of stacked pavers that hold lines of vertical pavers between them. It's a simple-to-build solution that creatively reuses hardscape material onsite.



*Repurposed pavers. October 2022*

## Notable Plants and Foods

Plants and foods that I noticed during my week in Rotterdam, for potential application in Australian agroforestry, included:

- Chinese toon
- Honey Locust – edible pods
- Medlar
- Monkey puzzle (*Araucaria* species) – similar to bunya nuts
- Quince
- Sea buckthorn
- Service tree (*Sorbus domestica*) – precursor to apples and pears. Popular in ancient times.
- Sichuan pepper

## Yields

The Secret Food Forest is a great example of urban agroforestry integration, in this case with an outpatient rehab centre. This garden is young, only 5 years old but it yields 50 to 80kg of bamboo shoots annually (from a pre-existing planting). At the going rate of €30 per kg this young, small and serene garden already generates €1,500 to €2,400 income... every year!

## Flavours of the Food Forest

Whilst at Food Forest Vlaardingen, I met Femka Snijders, owner of the high end Aloha restaurant, and her chef Theo, and they spoke about the 'flavours of the food forest' and their interest in the garden's plants. They were at the food forest to purchase produce - quince on the day I visited – and sample some of the more unusual flavours like Sichuan pepper and Chinese toon. This food forest is selling product to four establishments in Rotterdam.

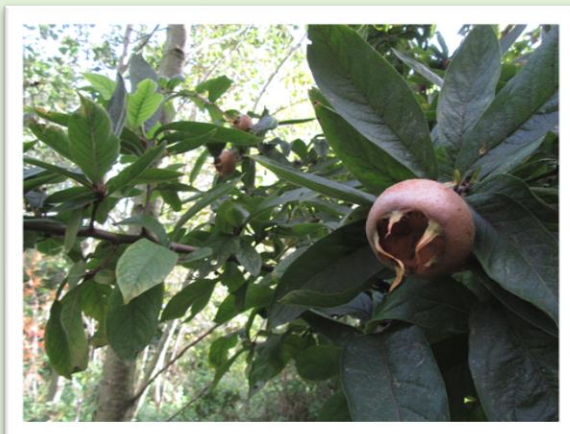
The next day I went to Aloha restaurant, met Theo again and did a tour of the kitchens and sampled some superb food forest flavours including fig-leaf-infused iced latte and sea buckthorn tart! Femka's philosophy is that the chef can act as a conduit between the land and people. It's a sentiment that really resonated with me. The potential for food forest projects, growing unusual foods and flavours, to partner with the food and beverage industry is huge!

[Click here](#) for a video I shot with Femka.

## Food Forest Vlaardingen

[website](#)   [Google Earth link](#)

I met the site coordinator, Jolien, chatted with volunteers and did a tour. The food forest was started in 2014/15 and, being on the edge of the city, is one of the largest sites in Rotterdam. Check out this [video](#). As with many sites in Holland and Europe generally, sheet mulching is not practiced, as the grasses are seen as habitat (some grasses are native). Rather plants are installed into the ground with a small mulch ring around them. I question this practice but apparently the trees and shrubs established just as well.



## **Picasso Food Forest, Parma, Italy**

[fruttortiparma.it/foodforest\\_en.html](http://fruttortiparma.it/foodforest_en.html)

20 – 25 October, 2022

### **Introduction**

This 0.5 Hectare site is believed to be Italy's first public food forest, and was first planted by a group of citizens in 2012. Co-founder Francesca Riolo, a qualified ecologist, has clearly put her stamp on this place as there is a clear commitment to employing agroforestry to rewild urban spaces. To date over 300 animal species (including 50 species of birds) have been observed and more than 300 species of plants have been either installed in the gardens or are self-sown.

Food was seen by the group as the main impact factor on the environment so they wanted to trial other ways of growing food. Another aim of the project was to create an outdoor education area that is achieved through exceptional signage (see more below).

### **Context**

Parma is a prosperous conservative agricultural town famous for its prosciutto (cured meats) and Parmigiano Reggiano (parmesan cheese). However, this prosperity has come at great cost to the environment with the city having some of the worst air pollution in Europe and the local waterways trashed with animal effluent and waste. Allotments are present in Parma.

The food forest is edged by a local roads and medium density residential towers.

### **Governance**

Picasso Food Forest is managed by a grass roots volunteer group, Fruttorti Parma, which recently became a project of [Parma Sostenibile](#) (Sustainable Parma). There are no paid staff.

### **Funding**

Government grants make up all of the funding. Funds are used to purchase plants and installed infrastructure such as signage and a pond.

## **Partnerships**

The group has connections with local farmers and strives to promote their produce as well. They've been working with the farmers to conserve local heritage varieties of fruit trees like the blood peach. The specimens at the food forest are now a source for cuttings of scion wood that allows more heritage trees to be propagated.

## **Operations**

### **Tours**

The group runs tours for schools and community groups.

### **Access**

The gardens are open to the public 24 hours a day, seven days a week. It is an open site with no fences along the road boundaries, but there are fences separating the residential towers from the greenspace (residents access the food forest from the road reserves).

When I visited (three times) people were walking through the site just enjoying the plants and spaces.

Open access is encouraged to promote the concept of sharing and for people to connect with nature and understand the food forest concept.

### **Irrigation system**

An irrigation system was recently installed to counter the effects of recent droughts and a changing climate that appears to be getting hotter. The system uses mains water, that the group has to pay for, and is only used at night during extreme periods. Drippers are used on shrubs along the road edge, and spray emitters elsewhere.

To me, this is a good use of the public water utility as it frees up valuable volunteer time for other activities.

### **Increasing soil carbon content**

Grass clippings from the mown paths have been placed in piles and allowed to decompose to add soil carbon insitu.

### **Community composting**

A small bin allows residents to add their food scrapes. It's easy to operate and does not require turning. Pests such as rodents are unable to enter as the bin walls are timber sheets.





to correct the links. The labels are enclosed in a waterproof plastic case and mounted on a galvanised steel wire frame.

### **Deluxe insect hotel**

Timber palettes have been repurposed to create a large insect hotel. The voids in the structure have been packed with various 'housings' including hollow bamboo sticks, bricks, wood and paper. Francesca explained that each type of housing is specific to families and genera of insects.

### **Wood pile and 'mail box'**

A simple pile of branches and logs creates habitat, whilst the wood 'mail box' simulates the hollows found in an old growth forest allowing specific insect genera to nest.

### **Butterfly garden**

A butterfly garden using edible plants and with a very effective sign is located at one of the entrances. This provides a pleasant experience for visitors. I found it odd that perennial cabbage had been specifically planted to attract the cabbage white butterfly (and for food of course), which is a major vegetable pest in Australia, until I realised that this butterfly is a native of Italy!

### **Pond**

The week after I left Parma a wildlife pond was installed. In Part 3 of my video – refer to the chapters - I talk to Francesca about this feature. It took five years to negotiate with the municipality before been approved, despite having near unanimous support from local residents. Francesca pointed out that well-designed and maintained ponds do not breed mosquitoes as predator insects control larvae. The pond has a 1.5 metre high fence around the perimeter to prevent children from entering.



*Plant label. October 2022*



*Deluxe insect hotel. October 2022*



*Wood pile & 'mail box'. October 2022*

## **Rough grass patches, flower meadow and dry flower heads**

Areas of unmown grass are important insect habitats as is a flower meadow that students from the University of Piacenza use for research. Rather than dead heading plants, the dry, dead flowers are left in place as they are important food sources for birds and nesting sites for insects and other invertebrates during the cold winters in Parma.



*Dried flower head of a Cardoon plant that is hosting native snails. October 2022*

## **Notable Plants and Foods**

- Autumn olive (*Elaeagnus umbellata*)
- Perennial cabbage
- Cardoon
- Salvia leaf fritters - *Salvia sclarea*
- Strawberry tree (*Arbutus unedo*)
- Rose hips