

Ten-year Forest Garden Trial
Permaculture Association

Year 3 report

Tomas Remiarz, 12th August 2014

Acknowledgements

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For the Permaculture Association

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Participating projects as mentioned in the report

The generous anonymous donor of the initial project funding

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Background and Methodology

As the first ever participatory trial undertaken by the Permaculture Association (PA), our approach was informed by the Association's research strategy¹, which was completed in 2010. Theoretical input came through a workshop on participatory Action Research with Peter Reason at Leeds University in January 2010, which was attended by Andy Goldring, Julia Wright and Tomas Remiarz on behalf of the Association. An online survey of practitioners focussing on the subject of polycultures, combined with a series of three participatory workshops in 2010 between February and May started the process of defining the field of enquiry, with interest in three distinct areas: annual polycultures, forest gardens and agroforestry. A working group went on to set up a separate participatory trial in 2011 to study annual polycultures², this forest garden trial was conceived as a 10-year project within the participatory research programme of the Permaculture Association. Funding came through an anonymous donation of £10,000, which specified that all participating forest gardens would have to be newly planted.

The trial was initially structured as follows:

- Year 1: Selection and initial planting of sites
- Year 3: Round 1 of data collection and initial evaluation
- Year 5: Round 2 of data collection and progress evaluation
- Year 10: Round 3 of data collection and final evaluation

with each milestone representing one iteration of the Action Research Cycle.

In the early stages, Andy Goldring (AG) and Tomas Remiarz (TR) were the driving forces behind pulling the project together. They were later joined by a series of interns – Celia Ashman in 2011, Barney Thompson and Jon Warmington in 2013. Based on the findings of the previous polycultures survey, a questionnaire for potential participants and a list of significant practical issues was drawn up, and then framed as research questions. As an incentive, participants were offered a grant of £500 towards the cost of their project in return for their agreement to participate in the design of the trial and in the monitoring and evaluation process.

The call for funding resulted in over 50 applications. From these, ten sites were selected in autumn 2010. ³ Initial plantings went ahead in winter 2010/11.

In late 2011 trial participants came together for a two-day workshop to discuss their aims and approach as participants of the project. During the discussions it became clear that there are three distinct user-types of forest gardens:

- private gardens
- community projects
- commercial enterprises

each relating to different sets of goals.

The report from the meeting in the PA newsletter “Permaculture Works” by Celia Ashman, project worker at the time, describes how we arrived at this conclusion:

¹ Available via the Permaculture Association's archive www.permaculture.org.uk

² For the results of the trial see <http://www.permaculture.org.uk/our-work/mixed-veg-gardening/mixed-veg-research-results-20120614>

³ See Appendix 1 for a list of participating projects

“We began discussion of the different yields forest gardens provide and what methods could be employed to measure them. One surprise was that three distinct interest groups within our participating projects emerged; depending on whether a project identifies itself as a private, community or commercial forest garden, the intentions behind it differ greatly, and therefore the expected yield types. A private garden in a backyard might be designed to produce a wide variety of different crops over a long time. For community projects, social yields like learning and people's involvement might be as important as what is actually harvested, whereas in a commercial forest garden guilds may be designed around a few major commercial crops. Different ways of recording these yields will be required for each group”

During the meeting, participants identified goals for their projects that were then grouped in order to arrive at a set of comparable goals for all projects. This process was not finished during the meeting, and was later picked up by the Association's interns, Celia Ashman and Barney Thompson.

A forest garden advisory group consisting of academics and practitioners was established in 2012, to give guidance and academic input into the trial. Its most significant contribution was the clarification of the trial's aims and objectives during a teleconference in February 2013.

Definition of aims and objectives ⁴

As described above, the project was initially based on a very loose set of objectives that was refined over the course of the first three years.

At the start of 2013, project worker Barney Thompson conducted an in-depth survey of all the documents relating to the project produced since its beginning in 2009, and used this to produce a statement of 3 aims and 14 objectives to be delivered in the life time of the project (by 2019). This document was then modified during the advisory group's teleconference and further refined by Tomas Remiarz in July 2014 .

The resulting project objectives can be grouped into two categories, which were included as meta-objectives:

M1: Investigate diversity and abundance of a wide range of social, environmental, productive and economic yields in different social settings over time

This includes measurement of inputs and outputs, crop yields, biodiversity and soil quality, as well as qualitative and (where possible) quantitative assessment of personal and community benefits.

M2: Facilitate participatory design of a long term FG research project, with outcomes at both operational research and project management levels

This involves development of user-friendly research methodologies and methods of sharing these methodologies and their results.

Having been refined to this point, these aims and objectives provide the basis for the workplans in year 5 and 10, and any additional work. With hindsight, the lack of clearly stated aims and objectives for the first phase of the project has hampered our ability to develop methodologies and gather data in a systematic fashion. A lot of the data therefore lacks sharpness of focus. With aims and objectives now in place we hope that the quality of data will be much improved in the remaining stages of the trial.

⁴ For a full and current list as of July 2014, see Appendix 2

Year 3 study - overview

For the first half of the year, the project was led by Barney Thompson, who worked closely with Chris Warburton Brown (Research Coordinator) and the newly-formed Forest Garden Advisory Group.

After clarification of the overall goals of the trial programme, the goals for the subsequent information gathering process were set as:

(A) Adopt a broad exploratory approach in (i) developing and trialling practicable and usable methodology for capturing yields and (ii) recording other outcomes, in order to guide the remainder of the project

(B) Focus on the participants' aspirations, knowledge and experience in informing this process

This was to be achieved through telephone interviews and site visits to all 10 forest gardens in the project, with an emphasis on collecting data that would shape the future direction of the project. Barney completed all of the telephone interviews and a couple of site visits, but unfortunately he then became unwell and had to leave the project in July.

His replacement Jon Warmington was able to visit all but one of the remaining sites and compile detailed site reports, but left soon after due to family reasons. As a result, detailed analysis of the telephone interviews and site visits has only now been carried out, resulting in this report.

Scope of the study

Total source material generated in 2013:

- 8 site visit reports
- 8 telephone reports and check lists
- 2 site visit check lists

Of the 10 sites involved in the study,

- 6 sites had both phone contact and visit in person
- 2 sites had visits without separate phone interviews (Edibles and Black Mountain)
- 2 sites had phone interviews but no personal visits (Quadrangle and Steward Wood)
- 1 site (Vallis Veg) left the trial after the initial planting phase

Wide range of situations:

- central urban to very rural
- private and community spaces
- size from back garden to several acres
- spread across England – clusters in Yorkshire, South east, South west

All sites were planted between 2008 and 2010

Results of the Year 3 study

Successes⁵

mentioned by participants can be grouped into three broad categories.

Six of ten sites explicitly state their satisfaction with the **progress of site establishment**. A number of them give examples of how they have addressed a variety of site-specific challenges, such as exposure to winds, soil conditions and steep slopes. To date, one participant (SCW) has significantly deviated from their original plan and considers changing the space to a chicken forage area. This change of plan may represent a learning opportunity, showing how the system as implemented so far responds to such repurposing.

A strong suit of most projects involved is **learning and community involvement**. Asked for their successes, five sites list learning and skills development for volunteers, both informal through working in the FG and formal through courses and other events. At least two sites provide an opportunity for first exposure to the forest garden concept for people. In a number of cases, the Forest garden is used as a case study and learning resource, both during courses on site and elsewhere.

Personal enjoyment or quality of life is a third strand of success, with several participants calling their forest garden a “pleasant place to be/relax”.

Weaknesses

can be grouped into 3 broad categories. The most commonly cited set of challenges are the **site conditions**, with climatic factors featuring most prominently. Harsh winters, wet summers and wind have detrimentally affected plant survival and crop yields on at least five sites. Two participants experienced periods of drought and one lost a number of plants during prolonged waterlogging. Other site-specific challenges included soil quality limiting the range of usable plants, damage to trees and other plants through rabbits and other herbivores, and access and fencing difficulties on steep slopes.

A common management issue concerns **weed control, ground preparation and ground cover establishment**. Five participants specified this as a weakness or challenge, with lack of adequate ground preparations, choice of inadequate mulch material or techniques and a lack of sufficient mulch material provided as further detail.

Challenges beyond the site boundary included the distance of participants' home to the forest garden site (2 cases), planning restrictions (1) and sourcing plants (3) that are affordable, from local sources and available at the right time.

Community and educational benefits⁶

Within this section, there is strong evidence that forest gardens can be beneficial to a wide range of individuals and groups as a place for learning, community interaction and recreation. Of the 10 projects, 9 gave examples of groups or individuals visiting the site to get involved in site management and/or learning activities. Most site owners saw this as an integral and mutually beneficial part of their own forest garden practice.

Challenges regarding education and community involvement were cited by two rural projects, with

⁵ For a detailed breakdown of successes and weaknesses from site visits and interviews, see Appendix 3

⁶ For a detailed breakdown, see Appendix 4

one citing the lack of a close community, and the other a lack of networking as well as external influences, i.e. a struggle to get planning permission. However, the former site also gave examples of existing community links while the latter site identified a potential and desire to make the site more accessible to community and educational activities.

Biodiversity⁷

Answers in this sections were focused on animal diversity, as plants and fungi are very much seen as part of the site design whereas wildlife arrives in response to the conditions created by the planting.

The responses given can be seen as a cautious indication that forest gardens have the potential to increase the wildlife value of a site and of an area. Five out of seven respondents noted a significant increase in wildlife, with one describing the improvement as “dramatic”. Insect numbers and diversity increased on five sites, while three also reported an increase in sightings of birds. Other notable observations were birds of prey (2 sites) and reptiles (1 site).

For one project sited in established woodland the displacement of native plants by introduced exotics was a concern and design consideration.

Documentation⁸

There is currently no unified approach to record keeping between the participating projects. Some records are being kept, but in differing areas and in different ways. This will make any comparison of data between them at this point difficult and in some cases impossible. Several participants remarked that gathering data for many of the parameters was “too early” in year 3, considering the early stage of development of their forest garden. This poses the question of how yields and other benefits can be maximised in those early years, and what temporary uses could be made of the space during this period.

However all of the projects expressed a willingness to keep records, especially on yields, if given a clear format for this. Most of the projects also have extensive photo records of site development and all have a baseline survey of soil and biodiversity.

The development of recording methodologies for a number of key parameters is included in the list of objectives for this study. Recording methodologies for some yields and inputs, for soil and biodiversity are currently being developed by the Permaculture Association's participatory research programme. We hope that by 2015 these methodologies will be available for data gathering by the participants of this trial.

Recommendations

Participants were asked to give their recommendations to other would-be forest gardeners. Reflecting the early stage that the participating projects are in, responses fell into two categories:

Design

- General recommendations on the design process, especially advice to keep the design simple and start small

- Specific design advice on site layout, especially on windbreaks

- Thoughts on budgeting and cost-saving strategies

Site establishment

- Protection from wind and herbivores

- Weed control and ground cover establishment

- Site layout

7 For a detailed breakdown, see Appendix 5

8 For a detailed breakdown, see Appendix 6

Discussion and conclusions

Year 3 objectives

As stated above the key objectives set out for the year 3 study were

- (A) Adopt a broad exploratory approach in
 - i) developing and trialling practicable and usable methodology for capturing yields
 - ii) recording other outcomes, in order to guide the remainder of the project
- (B) Focus on the participants' aspirations, knowledge and experience in informing this process

Discussion of achievements

(A) Adopt a broad exploratory approach in

- (i) developing and trialling practicable and usable methodology for capturing yields

This area is now being developed through a participatory trial of recording methodologies for crop yields, biodiversity and soil parameters. A more detailed description can be found in the section on participatory research below.

- (ii) recording other outcomes, in order to guide the remainder of the project

The chief outcome of the project has been the learning by and for the participants themselves, some of which has been shared in this report. While not generalisable at this point, they provide valuable hints for further research into successful forest garden establishment.

Substantial progress in terms of establishing a baseline of information on forest gardens has been made through a collaborative study led by Tomas Remiarz and involving the Permaculture Association and Permanent Publications. The results of this study will significantly influence the further stages of this project. A brief summary of proposed next steps can be found in the summary at the end of this report.

(B) Focus on the participants' aspirations, knowledge and experience in informing this process

The interviews and site visits recorded a number of reflections on successes and weaknesses of the projects to date, as well as their effects on biodiversity and community. These are further discussed in the section on forest gardens below.

On forest gardens

Meta-objective 1: Investigate diversity and abundance of a wide range of social, environmental, productive and economic yields in different social settings over time

This includes measurement of inputs and outputs, crop yields, biodiversity and soil quality, as well as qualitative and (where possible) quantitative assessment of personal and community benefits.

The results of the year-3 site visits and phone interviews provide some qualitative evidence of biodiversity benefits, and qualitative as well as quantitative evidence of community and educational benefit. Data regarding yields and sales, inputs and output is currently too thin to allow any conclusions.

The year 3 study did not follow the distinction of user types between private, community and commercial sites. This may have resulted in some loss of learning about the implication of this distinction. However, some further data analysis based on this distinction may bring up additional findings. It would be desirable for people involved in the year 5 and year 10 reviews to pay attention to this distinction when developing their methodology.

Inasmuch as any trends can be said to show up in such a small sample of sites, these are the main ones:

- Forest gardens can be grouped into three distinct user categories – private, community and commercial. There is some overlap between the categories. The categories correspond to different sets of goals.
- Site establishment is seen as good or at least satisfactory by most participating projects, despite setbacks relating to a variety of factors.
- Ground cover establishment and weed control are critical but difficult aspects of forest gardening.
- Forest gardens have successfully been used as an educational and community resource.
- Biodiversity can be positively affected by forest gardens.

Despite the small number of sites, the variation between them is considerable in terms of size, user type and location. Due to the small sample size and great variation in site characteristics we may not be able to draw many generalisable conclusions about the viability of forest gardens from this ten-year study, but it can move us closer to understanding the possibilities and constraints of participatory research into forest gardens, especially if linked to other research efforts in this field. In order to maximise the benefits of this study, a more systematic approach to gathering data is needed for the remaining phases of the trial.

On participatory research

As a first foray of the Permaculture Association into participatory research, this has been a rich learning experience so far. Many valuable mistakes have been made, highlighting gaps in resources and knowledge on an individual and organisational level. We hope that the projects involved, the PA and the wider permaculture community will incorporate lessons learnt from them into future projects as well as the continuation of this trial itself.

The trial so far has highlighted how difficult it is for practitioners to consistently contribute to a research project. Face to face and telephone contact was seen as very valuable, both in the participatory workshop in 2011 and during the phone interviews and site visits of 2013. The cost of this, together with the lack of personal and organisational funds, has not allowed any additional direct contact.

There has been little academic oversight of the project, and none during its initial stages. This resulted in a lack of rigour regarding the formation of goals, research questions and hypotheses. No clear goals were defined at the beginning of the project. As a result, aims, objectives and methodology changed several times over the first three years after the start of the project. We hope that the formation of goals in year 3 and development of recording methodologies by the Association will result in better and clearer data for the remainder of the project.

The recruitment of research interns and a research co-ordinator gave the project much needed momentum and stability. However, interns conducting the study had limited knowledge of forest gardens, and were therefore not always able to pick up on the most relevant information during site visits and interviews. In addition, personnel changes throughout the duration of the project resulted in delays and loss of information during handover periods. A stronger link between office and academic interns and practitioners in an advisory capacity might help to address this weakness.

The steering group was intended to provide continuity in the absence of a dedicated member of staff, but none of the steering group members were able to devote sufficient time to the project to provide this continuity. Communication among the group and with staff members has been scant.

Four years after the beginning of the trial, research is much more embedded in the culture and structure of the PA. A number of resources have been and are being created in participatory project running parallel with this one. These include:

The permaculture research handbook for practitioners

<http://www.permaculture.org.uk/sites/default/files/page/document/smallhandsmall.pdf>

This is the result of a three-year participatory process involving members and staff of the Permaculture Association. It sets out the process of research in relation to the permaculture design process, and gives an overview of every step within it as well as links to further resources.

Methodologies for measuring and recording yields, biodiversity and soil quality

<https://www.permaculture.org.uk/research/soil-yield-and-biodiversity-tests-project>

This is a combination of methodologies developed by staff and members of the Association, and by allied networks such as OPAL.

Permaculture International Research Network (PIRN)

<http://www.permaculture.org.uk/research/4-international-research-network>

As one of the few permaculture organisations worldwide with a dedicated research programme, the Association took the initiative to undertake an international survey of existing and required permaculture research. This four-stage survey yielded hundreds of responses and resulted in the setting up of PIRN. The network will facilitate knowledge exchange, peer-group support, access to journals and books, literature reviews and databases. It will provide a place for practitioners and academics to access other people's research and a place to share research findings.

These new resources will be available for developing methodologies, gathering and evaluating data in year 5 of the forest garden project in 2015, as well as for other research programmes by and with practitioners of permaculture and related land-use practices.

Summary and outlook

In 2010, the Permaculture Association embarked on its participatory research programme. This forest garden trial is the first attempt of putting this approach into practice in a long-term project. In an organisation with no previous culture and experience of research, many skills and resources had to be developed during the process rather than being available from the outset. As well as producing some indicative data on forest gardens, the process of research has highlighted important knowledge and skills gaps that are being addressed within this and other participative projects of the Association.

Four years on from the beginning of the trial, research is now firmly embedded in the work of the organisation. This in itself can be counted as a success, and a contribution to making permaculture a more rigorous area of practice. The results of this trial will help to inform future research into forest gardens and other permaculture systems, and the process itself continues to deliver valuable lessons about how to approach participatory research into permaculture systems.

Proposed future work

In year 5 of the forest garden trial (2015), the ten trial sites will test the recording of yields, biodiversity and soil test results using the methodology developed by the Association. In addition, phone questionnaires and site visits for all ten sites will be conducted.

Research methodologies created by the Association will be published and made available to forest garden practitioners.

To increase the sample size for systematic research, an ongoing forest garden baseline survey will be created and maintained, based on the previous collaborative survey by Tomas Remiarz, incorporating feedback from respondents and lessons learnt in analysing the data

To improve the continuity of data, an annual follow-up survey will be created for all respondents to the baseline survey. This survey will gather key information about site development in regular intervals.

Data generated by both surveys will be held on a database by the Permaculture Association, with summary data accessible to the public and further detail made accessible to participants, and to researchers on request.

To increase the capacity to analyse & disseminate gathered data, the results of both surveys will be logged on the PA's CiviCRM database

The results of the surveys and trials and the lessons learnt from them will be shared via a handbook for practitioners, through academic publications, interactive online resources and a conference bringing together forest gardeners, ecologists and landscape designers.

Appendix 1 – List of projects

The two or three-letter code before each project is used throughout the report for easy identification.

BM - Black Mountain Development Project, Southfield School, Bradford/ Community, 8 acres beside schools

Bri - Bridewell, Barnstaple, Devon/ Commercial. 0.5 acres, part of 11 acre site w/ commercial orchard

Ed - Edibles, West Slaithwaite, Huddersfield/ Community

IR - Residential Suburban Garden, Ilford, Essex/ Private, 2 adjacent back gardens

Ker - Kerswell Forest garden, Cullompton, Devon/ Private, 3 acre FG,

OT - Oak Tree Low Carbon Farm, nr. Ipswich/ Commercial, 2.5 acres, part of a 12 acre CSA site.

Qua - The Quadrangle, Shoreham, Kent/ Community, 2 acre site, not visited

RC - Rifleman Cottage, Faversham, Kent/ Private, 0.33 acres as part of 6 acre woodland site including a commercial orchard

SCF - Stepney City Farm, Stepney, London/ Community, 0.25 acre on 2 acre city farm.

SCW - Steward Community Woodland, Moretonhampstead, Devon/ Private, 0.33 acre in a 32 acre woodland, not visited

Appendix 2 – Aims and Objectives

(as of July 2014)

This second version has been amended following the FGWG teleconference.

In spring 2013, ahead of the Year 3 round of site visits and interviews, project worker Barney Thompson conducted an in-depth survey of all the documents relating to the project produced since its beginning in 2009. He used this to produce a statement of 3 aims and 14 objectives to be delivered in the life time of the project. This list was further refined by Tomas Remiarz in July 2014, during the analysis of data gathered in 2013.

This document compiles the various documents pertaining to the Permaculture Association's aims and objectives for the Forest Gardens Trials. These will be used to guide the methodology developed in order to achieve them. These are the 10-year aims for the full duration of the project.

Source Documents consulted to draw up this definitive list of aims and objectives are:

- (A) *Research questions 12-03-20.doc*
 - (B) *Research questions 12-02-29.doc*
 - (C) *Forest Gardens Project Summary.doc*
 - (D) *Aims and Objectives_v2.odt*
 - (E) *Aims and Objectives.doc*
 - (F) *Forest Garden Project Research questions.doc*
- (all archived with the Permaculture Association)

Aims

- *To improve the ability of the Permaculture Association (PA), project participants and other forest gardens practitioners to design and undertake research into forest gardens systems.*
- *Through the process of achieving the above, to better enable project participants and other forest gardens practitioners to achieve their personal goals.*
- *To improve understanding of forest garden systems in different social settings.*
-

Note: M1-M3 are meta-objectives, relating to all or several of objectives 1-11.

	Objective	Output	Comments
M1	<i>Investigate diversity and abundance of a wide range of yields (social, environmental, productive, economic) in different social settings over time</i>	Understanding of yields, and methodologies to record them	See objectives 3-7 Bigger sample size needed for 'different social settings'? 'Appreciative enquiry' approach in year 3. Questionnaire and data collection in year 5 and 10.
M2	<i>Facilitate participatory design of a long term FG research project, with outcomes at both operational research and project management levels</i>	Long-term forest garden study	See objectives 2,7,8,10,11 Extend to larger scale follow up projects and scope funding.
M3	<i>Develop testable hypotheses and test them</i>	Hypotheses and answers	Social, environmental, productive and economic yields at each level
1	<i>Projects define their own goals for year 10</i>	Goals	Fitting in with ours.
2	<i>Develop effective and user friendly research methodologies</i>	Methodologies	Other PA projects (see below) Use in year 5

3	<i>Explore methods to investigate overall input:output ratio (compared to other types of gardens)</i>	Methods, Data	Methodology trial PA → Use in year 5
4	<i>Methods of recording yields investigated in year 3 and effective methods developed for year 5</i>	Methods, Data	Methodology trial PA → Use in year 5
5	<i>Investigate biodiversity impacts</i>	Methods, Data	Tests being trialled. → Use in year 5
6	<i>Investigate impacts on soil quality</i>	Methods, Data	Tests being trialled. → Use in year 5
7	<i>Record perceived benefits and aspirations of practitioners and other participants. Compare these with actual (quality and quantity of) yields</i>	Testable & tested goals	Testing assumptions (their original motivation, their impressions of current state of FG etc.) 1) Qualitative assessment (goals and perceived achievements) → Year 5 2) Quantitative assessment (goals, perceived achievements and actual yields)
8	<i>Involve practitioners in the design of the research project at all stages</i>	Participation	Ensure practitioners' questions and aspirations are addressed and their expertise and methods best utilised, starting in year 3.
9	<i>Gain better understanding of which planting and maintenance patterns lead to high yields</i>	Pattern understanding	Larger sample size needed, including older sites. → Baseline survey, annual survey (Methodology to be developed) → Year 5
10	<i>Ongoing communication of research progress</i>	Communication	Liaise regularly with RAB working group and participants. Share and discuss results with wider network (e.g. Martin Crawford).
11	<i>A participative approach to researching complex cropping systems using FG's as an example in place and we can evaluate its effectiveness</i>	Participatory research methodologies	See 6/7 – extend to other poly-culture systems. → Baseline survey, annual survey

Appendix 3 – Successes & Weaknesses

identified by participants during site visits and telephone interviews in 2013.

Successes

Site establishment and design

Low maintenance - half day/ month IR
windbreaks and nitrogen fixers Ker
thorough planning Ker
creating warm microclimates Ker
Major earthworks (terracing) completed Bri
use of old car/truck tyres Bri
Adapting to a challenging site Bri
plant diversity Ed, Il,

early yields

yields of produce IR, Ker
variety of flavours IR
walnuts from 2011, still eating in 2013 RC

Social

educational attraction SCF, Ed, BM,
exposure of forest gardens to new audiences SCF, BM
volunteers through CSA OT
volunteers from local organisations OT
community resource Ed
collaboration between schools/ community groups/ residents BM
Use of forest garden as a course resource (on site and elsewhere) SCF, Ed, IR
personal enjoyment SCW,

Weaknesses/ Challenges

Site conditions, design and establishment

watering trees OT, RC
waterlogging Ed
dealing with winds OT, Ed, Bri
tree damage – rabbits RC
Lack of pollinators Ed
weeds OT, SCF, BM, Qua
ground cover establishment OT, SCF, RC, Ed, Qua
spacing of plants too dense SCF
fencing difficult on steep slopes Bri

Social

restricted community involvement Ker
no planning permission Ker
isolation/ strain on personal relationships Ker
Limited time for maintenance IR
vandalism BM
edibles consumed incidentally by site users BM
no continuity of external funding BM
Lack of money to continue planting SCW

Appendix 4 - Community

Extracted from 2013 site visit reports, except SCW & Qua (phone interviews)

Students/volunteers involved in site management IR, OT, SCF, RC, BM, Ed, Qua

Students/volunteers giving input into site design IR, SCF

local volunteers

from specific groups Bri, OT, SCF, RC, BM, Qua

Transition (2), Health groups, CSR, residents groups, housing association

individuals OT, SCF, BM, Ed, Qua

regular volunteers SCF, Ed, Qua

SCF: 40 volunteers in total, up to 10 regular

local amenity resource BM

educational events SCF, RC, Ed, SCW

PDCs RC, Ed, SCW

short courses SCF, Qua

schools involvement BM, Ed

BM: Haycliffe school, 300 children; (special needs); 1 secondary school, 7 primary schools

Ed: GCSE programme – learning about propagation, edible perennials

private visits Ed

community events Qua

600 people altogether – including weddings & a film festival

external funding SCF

Challenges

lack of local community

rural site Bri

lack of networking Ker

no planning permission Ker

Potential

organised educational events Ker

community involvement Ker

local open gardens Ker

Appendix 5 - Biodiversity

Extracted from 2013 site visit reports, except SCW & Quadrangle (phone interviews)

improvement OT, Ker, Bri

dramatic OT

no/ doubtful changes RC, SCW

insects Ker, Bri, IR, OT, SCF

Ladybirds SCF

bees SCF, IR

butterflies OT, Ker, IR

dragonflies Bri

spiders IR

pest predators SCF, Bri, IR

worms OT

mice, voles Ker

reptiles Bri

Bri: slow worms, reptiles, lizards

birds OT, Ker, IR

birds of prey OT, Ker

pond SCF, Ker, Bri, IR

concern over displacing native plants SCW

Appendix 6 – Project documentation, overview

Data gathered by each site.

	Bride well	Oak Tree	Black Mount	Riflem an	Kers well	Suburb an	Stepne y	Edibles	Stewar d	Quadr angle
Accounts	n	y	y	n	n	n	y	y	y	n
Sales of edibles	y	n	n	n	n	n	y	y	n	n
Sales on non-edibles	y	n	n	n	n	n	y	y	n	n
Purchases of edibles	y	y	y	y	y	n	y	y	y	y
Purchase of non-edibles	y	y	y	y	n	n	n	y	y	y
Visitor income	n	n	n	n	n	n	n	n	n	y
Event income	n	n	n	n	n	n	y	n	n	y
Staff/vol expenses	n	n	n	n	n	n	n	n	n	y
Staff/vol hours	y	n	y	y	n	n	y	y	y	y
Visitors	n	y	y	n	n	n	n	y	n	y
Event type	n	y	y	n	n	n	y	n	n	y
Accredited learning	n	n	y	n	n	n	n	y	n	n
B/diversity	n	n	y	n	n	n	n	n	y	y
Soil	y	y	n	n	y	n	y	n	y	y
Inputs	y	y	n	n	n	n	y	n	y	n
Outputs	n	n	n	n	n	n	y	n	y	n
Amount of edibles	y	n	n	y	n	n	n	n	n	n
Amount of non-edibles	y	n	n	y	n	n	n	n	n	n
Funding applications	n	n	n	n	n	n	y	n	n	n
Journal etc.	y	n	y	n	n	n	n	n	n	blog
Other	photos	Photos design	Site plan			photos	photos	designs	photos	archive

Appendix 7 - Recommendations for other forest garden practitioners

By trial participants, taken from site visit records.

Design – general

Work from patterns and designs

don't be too ambitious in the size of your site. Smaller projects are easier to manage

Keep the design simple to prevent running into unnecessary difficulties

Have a good balance between complexity and simplicity. Ecosystems can be very complex but management of ecosystems is easier the simpler they are

Design - specifics

Make sure you understand the land and micro-climates of the site and plan accordingly

start with your windbreaks - careful observation and planning of windbreaks provides a better growing environment

the android app iGeology provides information on local bedrock and soil etc.

windfinder.com provides data on wind in your area

results can be overlaid onto basemap

Financial

budget properly as trees are expensive

save money by grafting and using cuttings

source plants locally or relocate plants from other areas of the site

Site establishment

ensure there is adequate protection from rabbits and other pests

think about fencing and how to make it as long lasting and sturdy as possible

good windbreaks help the progress of the site in the long term

make sure your site has an adequate means of irrigation

Site establishment – ground preparations

ensure good ground preparations, do not rush into planting

decent ground preparation helps the progress of the site in the long term

black sheeting prevent weeds from re-establishing themselves following natural fertilisers

put in ground covering layer early on to ensure weeds cannot re-establish themselves

Site establishment - layout

ensure correct spacing is achieved for when the trees are fully mature

designate an area of the site for growing and generating living mulch

Other

join Forest Gardens Network (not stated which)