

Cornwall Orchard Network 11th May 2024

Notes from Presentations and Orchard & Wildlife Question time Panel

(Notes from SP & ML)

1. Andrew Ormerod, The multiple value of orchards

Andrew spoke on the value of orchards with reference to Blossom Day celebrations held around the last week of April <https://www.orchardnetwork.org.uk/orchard-blossom-day>. This year Andrew was involved in a blossom event at Kestle Barton orchard.

Historically in Japan cherry orchard celebrations occur each year and are part of Japanese heritage & culture, more is being done to encourage this across the UK thanks to the annual blossom celebrations promoted by the UK Orchard Network.

The importance of supporting and protecting older orchards was emphasised, not just planting new ones, which is happening in good numbers. We know about the huge number of orchards that have already been scrubbed out, but this continues with some older orchards which need protecting, and managing. Traditional Orchards (fruit and nut trees planted on vigorous rootstocks managed in a low intensity way, planted in low densities) have Biodiversity Action Plan status (BAP). Andrew referenced a number of orchard surveys including in Hereford, where the survey highlighted the wide value of orchards to the community, the local economy AND biodiversity; and Haye Farm Orchard at St Veep.

2. Derek Green from Budding Nature CIC - Orchard ecology, flora and fauna

Budding Nature help the public engage with nature.

How can we use orchards to improve biodiversity?

Derek went through some helpful definitions: Ecology; Habitat; Community; Ecosystem (larger scale than an individual orchard, orchards occur within larger eco-systems), rather than an orchard having it's own ecosystem.

Orchard food webs: If support the lower levels of the food web, it will automatically support the higher levels in turn.

e.g. Birds in the tit family – each variety feed on different sized invertebrates, so a host of different variety of invertebrates is necessary.

Other orchard species interactions:

- lichen
- pollination
- mammals: if encourage mammals, then you encourage bumble bees because bumble bees often use the nests abandoned by small mammals
- rose gall
- cabbage white caterpillar larvae eat the caterpillar insides, parasitic wasps (sometimes used for biological control)
- honey bees competing for pollen with other bees. 270 species of wild bee in the UK, many of which

are in decline. BUT there are also smaller wasps and flies in decline that have more impact in terms of being active pollinators. So consider how to attract all of this diversity, not JUST honey bees.

There is a pollinator crisis - pollinators are being wiped out on an industrial scale

Metapopulations

- For species survival, connection between populations is vital.
- Marking areas of nature e.g. 'Nature reserves' is unhelpful, because it sections it off, both from other nature spaces, and also from humans, so humans consider nature as something separate – and only where it is marked as 'there'. This sectioning off of nature results in populations unconnected with one another.

Important to talk about NATURE RECOVERY, rather than nature conservation.

We can do 4 things:

1. Improve the state of our existing nature spaces
2. Increase no. of nature spaces
3. Enlarge nature spaces
4. Connect nature spaces

Orchards can play a part in increasing the number of biodiverse spaces and can help to connect these spaces with each other again.

Improving biodiversity in an orchard

- Using knowledge of what is present, monitoring and surveying, rather than in haphazard way.
- We want to improve orchard biodiversity BUT this doesn't mean filling an orchard with a multitude of diverse habitats from everywhere that it becomes a miniature version of the wider landscape. It can be distinct to an orchard space and what it offers. Need to see how the orchard sits within the wider landscape and not just duplicate what is there in surrounds already.

e.g. Ivy is fantastic for biodiversity and a great late summer insect food – but if there are patches on the trees in the woodland that surround your orchard already then that will support those species.

Budding Nature run pollinator bee walks to help teach skills for identifying species that visit. If you can id then you are able to monitor your site.

- Carry out surveys to record what is already present prior to making changes
- Monitor what happens by recording and regular surveys
- Seek funding for orchard volunteers to carry out orchard surveys and biodiversity studies including training where necessary.

The following organisations all run species i.d. sessions to help you learn more if needed.

- Budding Nature
<https://www.buddingnature.co.uk/>

- Environmental Records Centre for Cornwall and the Isles of Scilly (ERCCIS)
<https://erccis.org.uk/>
- Cornwall Wildlife Trust
<https://www.cornwallwildlifetrust.org.uk/>

Questions:

Q. Cornish bee –black bee & honey bees

- Everything in balance - by surveying first and monitoring the influence of any introduced species on biodiversity levels.

Issues with introducing honey bees:

1 x hive = 40,000 honey bees

- Honey bees are generalists – they feed on many types of flower/pollen,
- Important to ensure you have information to make an informed decision if you wish to introduce honey bees, or indeed other major impact to the environment on other species.
- If it's an ecologically diverse orchard, then it can support all these different species of pollinator
- Consider why you want a hive, some are sold with the idea that hives improve biodiversity – which is not true.

Q. Lichen on fruit trees – Is it beneficial and how long to establish/how to encourage?

Lichen is indicative of good air quality and fungal spores are everywhere, will just appear and establish on trees over time. Very slow growing.

Q. What can we do?

- Get involved in nature recovery
- A focus on nature recovery around us everywhere, rather than 'nature' being in just places like 'conservation sites' separate from where we live. But nature is in our garden, the verges along the street, urban and rural spaces, and ensuring that nature has a way of joining together – connecting spaces of nature,
- Cornwall Wildlife Trust now promote nature connectivity and nature recovery.
- Cornwall Council has a Local Nature Recovery plan and are also motivated to make change and share learning. All need to work together to ensure this is implemented.
- 'Nature recovery communities' could help to work together to connect spaces up.

Orchard & Wildlife Question time panel - Notes

This session served to further expand on and hopefully close a few discussions from the morning that we hadn't had time to answer.

Orchard or wildlife panellists: Laura Fox (Environmental Records Centre for Cornwall & Isles of Scilly), Conor Kendrew (Farming & Woodland Advisor, Cornwall Wildlife Trust), James Fergusson (Some Interesting Apples & Vagrant Cider), Maggie Freegard (Cornwall Beekeepers), Melissa Ralph (Urban Green Shoots, Cormac), Derek Green (Budding Nature), Sally Luker (Budding Nature) Andrew Ormerod (Economic Botanist and Orchard Enthusiast) Nick Waitz (Treverbyn)

Mulching It was a 'no' to cardboard from James, as this encourages certain rodents, particularly voles to nest, which, in turn like to nibble on roots and shoots and damage trees.

Addition to notes: ROC uses cardboard under woodchip to successful ends and has not experienced any rodent nibbling roots issues... so far.... Mulch mats do a similar job, but obviously a cost involved. Using woodchip mulch alone lasts a much shorter time than cardboard with a woodchip layer over that too. Ramial woodchip being the best for fruit trees if you have willow onsite, that's ideal. We've also used sheep's wool which is often going free, it does the job, but our preference is woodchip – also free from tree surgeons to community run spaces, or at cost for a truckful from The Green Waste Company, nr Hayle.

Why do we mulch? Both for nutrition and for weed suppression. Hay or grass clippings will retard certain overgrowth of green shoots over fruit on apple trees.

Comfrey – can be grown under the trees, scythed, and then just left in situ to feed the trees. Advice was to look at planting green manure crops that can double as mulches – comfrey as this example and these can be cut straight onto the base of the trees.

Some trees do better in grassy places than others. Hazel species particularly struggle in grassy settings.

Hazel nut harvests? Harvest before they are ripe? Not able to answer this, but the tip with nut harvests is to put in water and those that float are empty! (Meike)

Grafting Grafting bramley onto a dwarfing rootstock, very close the ground, so the rootstock allows the bramley itself to root in. (Bramley is a very vigorous grower and generally speaking is grafted onto a vigorous rootstock so it doesn't out compete the rootstock and cannot grow on its own wood)

Natural Farming (Rupert feeding back from this workshop held at Mount Pleasant Eco Park last yr and St Ives Community Orchard this yr) that bare-root trees will always have tap root cut and that this will permanently affect the trees growth. Generally, bare-root trees will be undercut before lifting to make lifting easier. Conor suggests that the jury is out on whether this tap root disturbance will have such a long-term effect. There will be hormonal changes within the tree to accommodate this loss and help recovery.

Helen Browning's Organics & Eastbrook Farm Helen Browning's Organic field experiments with different kind of mulches, but where a heavy woodchip mulch was laid, the growth on the trees was good.

More on Helen Browning's experiments in permaculture & trees within farm systems:

<https://helenbrowningorganic.co.uk/eastbrook-farm/agroforestry-orchards/>

For a tour with Helen Browning around the Eastbrook farm where the fruit tree experiments are happening: <https://www.youtube.com/watch?v=pEDO5JmZFYg&t=45s>

Jo Homan (from The Orchard Project) is experimenting with edibles and fruit trees also at Edible Eastbrook here: <https://edibleeastbrook.org.uk/>

Shelter Belts for Exposed Sites Conor: Maximum benefit over minimum width and ensure that there is a mix of deciduous and evergreen so it is permeable; this will ensure that wind is filtered and reduced rather than blocked. Suggested species? Scots Pine, Holly, Privet & Willow. The effectiveness is 5 x it's height outwards.

Meike: Forest for Cornwall will fund UK native nitrogen fixing plants only, including Italian alder where the conditions make this a good choice (for very poor soils etc.). Look at function over form and whether the species has the potential to invade. Some species will fix nitrogen: Alder sp., Eleagnus sp including *Ebbingei* (not native to UK, not funded by CC).

Melissa: Is a Forest Garden better for Biodiversity than an orchard? Generally agreed that diversity is key. Use of *Malus sylvestris* in planting schemes is generally favoured and a mix of nuts, quince, medlar, stone fruit & apples will be more diverse by species choice alone, even before thinking about interplanting with understorey & ground cover species. There will also be a benefit to allowing pioneer species to take hold and plant into them. This will serve as protection for the orchard. Brambles came up as a case in point; a nightmare to handle and eradicate and (Nick) not great for chipping! BUT they do provide protection for young trees. Conor suggested using a scaffold plank to walk across the brambles into a planting space then walk back out so that the young tree has support & protection – saves on plastic!

Newquay Orchard was said to have a good species selection for their Forest Garden and worth taking a look at.

Terry: Funding. What's still available? Meike: Forest for Cornwall are still funding orchards. Woodland Trust are still providing free native trees. For the Tree & Woodland Fund you must buy the trees first, then claim back.

How often and for how long should you water a new orchard? Obviously guided to some degree by the weather, but generally all newly planted trees should be monitored and watered as necessary for up to 3 years. (Conor) avoid wilting point: it can be hard to recover the tree once it has gone beyond a recoverable wilting point.

Rootstocks? The never-ending debate between M25 and MM111?? Choose as large a rootstock as you have the land for and give trees plenty of space. Still no conclusive evidence to say that MM111 is better in Cornwall than M25 but is it supposedly better able to cope with poorer, stonier ground.

Both Connor & James favoured additions of Webbs Cobb for nuts and Wild Plum as local as you can find.

Ken & Addy Fern (Plants for a Future - <https://pfaf.org/user/>), have a 40-year-old forest garden and have never harvested nuts due to these being consumed by wildlife first! Do you intervene? Many people do trap squirrels in nut orchards.

Undergrazing? Are there any species that will not destroy orchard trees? Shropshire Sheep were introduced at the orchard event at Haye Farm last Autumn as they do not generally damage the trees.

Using geese and other poultry and rotating them around orchards can work well, but generally moving animals through a space rather than permanent access is beneficial. Horses do a lot of damage with compaction but there is some good Equiculture research into how to best manage grasslands for the land and the horses. Dave Oates from Rosuick Farm, on the Lizard (Camels - <https://rosuick.co.uk/>) and Steve Evans (can anyone provide links for this? Is it <https://www.arborfarm.co.uk/?>)

Traditional sward (Meike, help what's the term 'Schtrollt'?) The benefits of managed permanent swards. Longer grass promotes structural & species diversity compared to a cut lawn. It holds and manages more rainfall and provides habitats for many more species of invertebrates.

Derek: Stop criminalising 'Scrub'! We use the term 'scrub bashing' as though it is an enemy to be eradicated but it serves a vital function in the natural transformation of habitats from grassland to forest. Species that enjoy the scrub 'habitat' like brambles & ivies are incredibly valuable for wildlife. You can rotate scrubby areas by rotational clearance that keeps wildlife 'corridors'.

Keval Farm planted orchard into brambles.

Added note by ML: Trenoweth Community Orchard is also planted into brambles and scrub mixed in between. Managing it well so far, seems ok, though obviously more work to prevent trees from being swamped by others, though they are also protected somewhat (sheltered from wind, plus protected from people/dog damage) but does run the risk of becoming very overgrown quickly if the volunteer group were ever to disband. Discussion with visitors is necessary to explain, plus volunteers so they understand the management approach. Need to put up sign.

St. Day – are needing to knock the bracken back so it doesn't take over.

Introduce yellow rattle where possible, to reduce the vigour of grasses.

How do we balance the need for nutrition for our fruit trees and lower nutrition for wildflowers?

Melissa – lack of nutrients for wildflowers is a bit of a myth, but a slightly lower nutrient weight will reduce the vigour of some grasses. Introducing herb layers (7-10 species that can prevail in grasslands) will add nutrients. Adding cultures for fungal species such as mycorrhizae at time of

planting ensures better nutrient exchanges for trees. Additions of green mulches (ask Nick for any more details on this!) biochar will also increase nutrient availability (Nick?! Info please ☐ ☐)

Cormac (Melissa) they talk about the wildlife heroes such as Ivy, Long Grass & Bramble and they talk at workshops about 'thinking like the wildlife' imagine you are that creature that wants to survive in the meadow or orchard setting. She also talks about 'Wildlife Meadows' rather than 'Wildflower Meadows'.

Gorse? Conor is trialling Montpellier broom as a green manure as an easier to handle shrub layer than gorse.

What is an indicator species? Derek is doing some work on this in partnership with the Cornwall Wildlife Trust and this information will come out to everyone at some point soon!

A few final thoughts

- An orchard is a whole agrosystem – engagement is on all levels and observations need to be similar.
- Strip mowing will encourage invertebrates and ensure they have habitat to move on to.
- Meike – an orchard requires a lot of love and TLC. Michelle agreed & stated the importance of maintenance and work beyond just the planting stage.
- Andrew Ormerod – the phrase 'leave space for a swallow to fly through' when pruning (Dave Redman)– an alternative to space to throw your hat through.
- Maggie Freegard – the competition between honeybees and solitary bees. There is a need for balance between these species and to ensure the needs of the orchard are looked at and bees introduced in healthy proportions, so as not to negatively impact upon the solitary bee populations. The 'black' bee is proving to have some resilience over verova mite.

Patience Don't forget to look at what's there before redesigning or replanting. Nature is already doing some fabulous things and if we are to encourage and enrich biodiversity in our own spaces, we need to be observant about what is already there before jumping in and making changes – observe and monitoring helps to inform what decisions we make.

UK Orchard Network Cornwall Orchard Network is a member of the UK Orchard Network that meet quarterly, often on zoom. A few people participating today have attended a UK Orchard Network meeting. Michelle proposed that if we ensure we always have someone linked to the Cornwall Orchard Network attending, and alternating if helpful, and then a rep from Cornwall can share notes with the rest of the Cornwall network.