

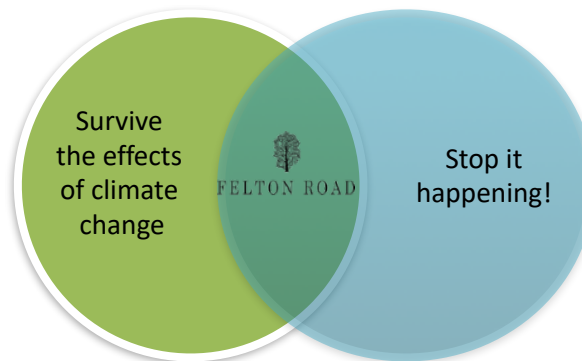


FELTON ROAD

Sustainability

Sustainability is the capacity to endure. Sustainable ecosystems are ones that are able to **maintain, support and persevere**. At Felton Road, sustainability is part of our essence. As an organic and biodynamic vineyard, with an intense desire to make wines that exhibit a strong sense of place, it has to be a core focus.

Today, we have to approach this with a two pronged strategy. The first is to recognise that climate change is real, is affecting everything around us and we need to develop a series of measures to maximise our ability to continue to make wines of the highest quality that reflect the essential nature of their place. The second is to search to find ways to prevent climate change in any way that we possibly can.



Within this document, we have outlined our sustainability principles and strategies, covering every aspect of our activities. While some are designed primarily to cope with climate change or fight climate change, many do both.

We cover policy; a listing of the individual initiatives that make up our sustainability programme at this time; detailed sub-sections enabling transparency regarding the initiatives where this is deemed necessary; then finally a summary of data sources. Note that our full carbon audit can be accessed at www.iwcawine.org



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It starts with policy...

This mission statement is adopted by the board of Felton Road as their overriding policy statement.

The mission of Felton Road

This company exists for the benefit of all stakeholders and not simply shareholders. That is a principle that overrides all others. 'Benefit' includes wellbeing, health and safety, not simply finance. A wider social responsibility extends this mandate to society and the maintenance of a charitable trust with a primary focus on the developing world is a core activity. A guide of the company investing at least 1% of turnover to wider social responsibility should be observed.

The company operates on a principle of honesty and openness. The deal is never more important than the integrity with which the deal is done. The same is true for relationships with all our stakeholders.

Excellence is achieved not just in the product we produce but in the way we produce it. High standards come from a belief in high standards as a generality.

We have committed to a zero growth policy since 2000, as we consider growth the single largest enemy of environmental responsibility, and we have been effectively producing at 100% of our limit since 2006. This year Blair and I briefly reviewed the wisdom of this policy and agreed that it was correct and should stay in place. It is a policy, not an inviolate law, but nevertheless it should require a fundamental change in circumstance to significantly change it.

It is self evident that the company needs to have sufficient financial success to amply reward the stakeholders, shareholders and social programmes, while also allowing for improvement to the equipment and facilities. But the pursuit of greater returns, which is the norm among companies, is not our required norm.

We are farmers, winegrowers and winemakers, distributing our finished wines globally. That should always be the fundament of the company. Other peripheral activities may be considered but only if they make a net contribution to this function.

It should be a given that a company that creates fine wines has an underlying commitment to the land that gives those wines. But the ecosystem doesn't understand boundaries and our commitment has to stretch as far as the global ecosystem does. That ecosystem stretches from humans to microbes and includes climate.

It may seem strange that a winery which is renowned for the quality of its wines has nothing set out in its mission regarding the quality of the wines. That is because the process that makes the wines renowned is intrinsic and not manufactured. Writing down that we will make great wines does not cause it to happen.

Our Land

Our organic and biodynamic philosophy helps create a more sustainable vineyard and winery, through a greater understanding of the interactions between the soils, microorganisms, plants and animals. The result is a healthy and balanced ecosystem.

Wine has the unique ability to taste of a place. That introduces a different requirement of sustainability: it is not about merely sustaining the greater world, but also of somehow keeping a specific site true to taste. And since we do not know what it is that creates that magic “somewhereness” we have to assume that any external influence could be a hazard. Now we have a different reason to be organic: bringing in chemicals from outside and putting them on the land and plants will bring a “somewhere-elseness” into our “somewhereness”. But would that only apply to chemicals? Could organic inputs also affect the uniqueness of site?



1. Compost

For some years now we have been carefully thinking about protecting our unique expression of place. We have set aside land for growing pea straw, wheat straw and other crops for growing green material for compost making. This eliminates the need to bring in compost supplies from outside our properties, making our compost more unique and specific to our land. We have only allowed the natural indigenous yeasts of our land and winery to be used in our winemaking, as our microbial population must also be part of that “somewhereness”. Perhaps the most extreme step is that our pressings and stems from winemaking are sent back to make compost separately for each vineyard. So, when a Cornish Point wine is pressed, those pressings are delivered back to Cornish Point to be composted there, so that they don’t get mixed into another vineyard and somehow dilute the uniqueness of that site.

Is this over the top daftness? The problem is we don’t know, and will never know, whether this is important or not. But, if it is important and we ignore it, then we can never undo our actions.

Compost Sites

At each vineyard site, we have a separate compost heap that is only to be used at that particular vineyard, to ensure a sense of site and terroir is retained in some way at each location. Staff recycle all food scraps into the compost bins which are located at each vineyard site.



2. Biodynamic viticulture

Today, Biodynamic viticulture and land management sits alongside organic requirements and also regenerative farming requirements. We are having to redefine how we integrate viticulture into regenerative needs.

Traditionally, during the spring and summer months, several species of cover crops are sown in every second row in the vineyard. The mix of planting includes peas and triticale (a wheat and rye corn cross). Every tenth row is a mixed flowering species, which includes species like phacelia, buckwheat, rape, mustard and radish; to attract beneficial insects and increase insect biodiversity. Cover crops assist in regulating vine growth, water and wind erosion, weed control, help to improve and maintain soil fertility and the nutrient value, enhance soil structure, stability and water-holding capacity. Lastly, they enhance biological diversity and activity in the root zone, therefore providing a healthy habitat for beneficial insects and microorganisms. Now we have to learn to do all this without the traditional tillage required. Being in a desert environment (less than 400mm of rain per year), we need to irrigate, so we are introducing a second channel of irrigation set 300mm underground enabling us to run a supply separately to the surface and the vine roots. This will enable us to have separate strategies for cover sward and vines. But that is 150km of irrigation to install underground, despite our being a very small estate (34 hectares of vines). We have already introduced cross slot drilling technology that enables us to drill seeds without turning the soil. Routine mowing is replaced with crimping, and spray technology is moving to drones, enabling us to spray sulphur without crushing the sward.

We are delaying a move to electric tractors, partly due to a lack of suitable solutions, but, in an era of little to no tillage, will we actually need tractors as the standard machinery for our vineyard work?



The old way, and the new



Autonomous Drone for sulphur spray applications

Biodynamic Preparations

As Felton Road is an organic and biodynamic certified vineyard, we follow a lunar calendar and a set of guidelines that are associated with biodynamic practice. We believe biodynamics is highly beneficial as a sustainable way of farming, as its core values and beliefs centre around care for the environment and land. Biodynamic “preps” are used to enhance soil health and vine growth and livelihood, and are dispersed in the vineyard at certain times depending on the lunar calendar.

The Voodoo Lounge



The Voodoo Lounge is where our biodynamic preparations are made and stored. Cow horns from our Highland cattle are stuffed with cow manure and buried in the ground over winter. After a specific period of time (according to the lunar calendar), the dung is removed from the horn and mixed vigorously with water to create a highly energised and microbially enriched potion that is hand sprinkled onto the vineyard to provide nutrients to the microorganisms and eventually the vines.

Earthworms

Earthworms are a valuable animal at Felton Road, due to the benefits that they provide to soil health and fertility. Our sustainable viticultural practices encourage earthworm populations to improve and maintain healthy soil biodiversity.

Vineyard Posts

Our older blocks of vines were originally planted with CCA (Copper, Chromium and Arsenic) treated timber posts. This treated timber has a longer life than that of other timbers, therefore protecting New Zealand forestry by reducing the need. However, in recent years and in accordance with organic certification requirements, metal posts have been used in all re-plantings and new vineyard developments. These posts have a significantly longer life and therefore energy costs are reduced as they do not need to be replaced as often.



3. Our Hillsides

Briar and Goats



The steep slopes that surround the Elms vineyard are covered with Sweet Briar, a wild rose that was originally introduced for rose hips (as a source of vitamin C for the gold-mining settlers) but, just as with broom or gorse, Sweet Briar began to take over the hillsides of Bannockburn rapidly. With around 25 hectares of these steep slopes, we needed a solution to manage the spread of the Sweet Briar rose. The local norm of burning or spraying the wild rose with harsh chemicals was not an option for us; we needed a more sustainable and

environmentally friendly approach. The answer came with African Boer goats. These intelligent and hardy animals love roses (as anybody who has had a goat in their garden will testify) and will eat them in preference to the grass or other plants. Today we have about a 50 strong herd. They pretty much self-manage, needing a bit of feed supplement in winter and a watchful eye when kidding, but otherwise take care of themselves. Each year we have about 20-25 kids, plenty for keeping the herd strength up, and giving us a year-round supply of fantastic meat (think the best lamb you have ever had, but a lot leaner).

Highland Cattle

With the addition of wastewater and goat manure mix to the grassy hillsides, we have increased soil fertility and grass growth to run a few head of highland cattle, as the goats are not overly keen on a grass-only diet. These cattle not only help to keep the hillsides neat, they supply us with their horns for making our biodynamic preparations. Their manure is also collected for making Preparation 500 and CPP (Cow Pat Pit). So essentially, a scrubby piece of Central Otago hillside has become a productive beef and goat farm that is not merely low impact: it is positive impact; enhancing the sustainability and ecosystems on our vineyard property and improving the land for future generations.



Chickens

A flock of chickens naturally cultivate and fossick under and in the vine rows and provide a constant supply of fresh, free range organic eggs. Their movable house allows them to cover an extensive range of the vineyard area. They also make intriguing companions for the vineyard workers particularly at times of cultivation and weed removal that exposes easily obtained natural food source for them.



4. Environmental Biodiversity and Responsibility

Native Plant Restoration

Various plantings surrounding the vineyard and winery are primarily in native species (with many areas dedicated exclusively to native species) to help restore the indigenous plant and tree species of Central Otago. These shrub and tree species help support and attract indigenous populations of native birds, lizards and insects, with the flowers, nectar, berries and shelter that they provide. We are actively working to replant public land around us to native species.



Kārearea

Felton Road has helped raise and release three native New Zealand falcons (Kārearea) which have, along with the other animals that we have here at Felton Road, contributed to our sustainable culture and environmental sensitivity. These endangered native falcons feed on the rabbits, a pest known to the region, and also keep the birds away from the vineyard reducing bird damage to the grapes.

Life in the Waterways

The clean and clear water that fills our waterways and dams has proved to be a good environment for other wildlife, including trout, which are found in our irrigation dam. Clean waterways and dams are incredibly important to us and our sustainability principles. Our water flows from springs in the high mountains above us, carried to our door by an old gold-miners water-race dug 150 years ago. While we are in a desert mesoclimate we have two of New Zealand's largest rivers running alongside our property. These are fed from a water table in the West of our Island which is the third wettest



catchment in the world, raining up to 8 metres of rain a year. Thus water flows in unique abundance into our sparsely populated country.

Vegetable Gardens

Every spring we plant our own vegetable gardens and polytunnel with a wide range of vegetables. It is most satisfying to have harvest lunches for up to 50 people where so much of the produce has come off our own land. Rabbit and hare from the hillsides are complimented with our own goat and beef meat.



WINERY

1. Waste Minimisation and Recycling

Lees Recycling

We dispute the concept of winery waste: the by-products of winemaking are all valuable. Of these the two largest are marc and lees. Lees are a mixture of sediments left over from winemaking, and consist mainly of dead yeast and tartaric and malic acid. It isn't particularly hostile stuff, but acids are a problem in any waste system, so winery waste management systems are designed to deal with this mixture. It takes a lot of money to build a waste management system and a lot of energy to run it, so, in a perfect world, we'd do without one. But is it possible to do that? We have demonstrated that it is.

Our solution is simple: don't throw anything away. Nothing whatsoever goes down our drains unless we have failed to find a better use for it. And since almost all waste has some form of value, there is a better use out there. Lees, for example, get separated into fine lees (the more liquid stuff) and the solid gunk. The solids are composted. It might be tricky to compost something this acidic for some wineries, but as we make well over 100 tonnes of compost a year anyway, the lees solids are literally a drop in the manure heap. That leaves the more liquid stuff to deal with. Each year it goes to a beautiful wood fired copper still and is distilled into "Fine": the term for brandy distilled from wine lees. Roughly a thousand litres of lees yields about 100 litres of wonderful brandy.

After over 10 years of aging in French oak using a "solera" type system, it is ready to bottle. What better way to recycle something that most regard as an industrial waste product?



Vineyard and Winery Waste

The entire vineyard and winery operation, 75ha of land total (34 ha of grape vines) and 150,000 average annual bottle production, relies almost exclusively on one domestic size wheelie bin for non-recyclable waste emptied fortnightly. By being careful when ordering materials to ensure that products do not arrive with non-recyclable packaging, our landfill waste stream can be less than the average family.

2. Waste Water

All coarse solids such as seeds, skins and stems, are collected in screens fitted to all winery drains; these solids are then added to the compost. The winery waste water is chemically analysed at periodic intervals, to ensure it is within required parameters set by our waste water discharge permit. This waste water is then sprinkled on the steep slopes above our vineyards and, in particular,

the more fertile south-facing slopes. These slopes, facing away from the fierce Central Otago summer sun (and drying wind), can then grow grass which is available for the grazing animals.

3. Energy Efficiency

Solar Panels at Felton Road

Installation of a 118-panel solar photovoltaic (PV) array was completed in 2019. Depending on the time of year, the 32-kilowatt solar system is expected to supply most, or the entirety, of the winery's daily energy needs. The winery's primary power requirement is cooling and refrigeration in the winery and wine cellars, winery equipment over harvest and running the offices. The peak solar generation period is designed to match our peak summer load for additional cooling in the cellars and wine storage area. One may ask what the point is of installing solar on South Island New Zealand, where 100% of power generation is renewable. The answer is that there is a cable that carries any surplus power to North Island, where there are carbon fueled stations. So electricity we don't use can be used further North.



Any excess power generated by the system is supplied back to the grid.

During the night and any time of the day when there is not enough power generated by the panels, electricity from the grid tops up the supply. Our electricity supply is from a local community owned electricity company (profits are distributed back to the community) that operates a nearby small hydro power station that is 100% renewable energy.

The winery has replaced its ICE powered car fleet with electric vehicles (supplemented by one hybrid for heavy vineyard use). We have a staff scheme to support the purchase of electric vehicles and supply free recharging from our solar through 4 recharge points, also available to customers and visitors. We have started using specialist electric vehicles in the vineyard for routine tasks.

Our well-insulated underground cellars provide an ideal stable temperature environment for aging the wines. This reduces the energy requirement in maintaining appropriate temperatures. We try to

utilise the natural seasonal temperature changes as much as possible e.g. We open the cellar doors in the spring time to warm the cellars to encourage the secondary or malolactic fermentation to occur.

We have humidification systems to ensure that we limit the evaporative losses of wine. Why spend all that energy, time and money growing and making the wine, only to then have it evaporate from the barrels? In Central Otago, with our low humidity, evaporative losses are significant and we can reduce this loss from about 6% to 3%, which is a significant saving.

A modern and efficient refrigeration system captures the heat that is generated from the cooling system that can then go on to be used as free energy for heating requirements in the winery.



Electricity usage is carefully monitored and all practical steps are taken to reduce power usage. The winery was designed and built into the hillside enabling gravity to be used for most winery operations. This results in electricity savings as activities such as pumping is greatly reduced.

4. Sensitivity with Packaging

Lightweight Glass

The single greatest carbon input in our viticulture and winemaking is glass. We have for a number of years adopted the use of lighter weight wine bottles to further our sustainable and environmental sensitivity. These lighter weight bottles weigh 417 grams, which is 22% less than our previous bottle (which was already relatively lightweight). Many “premium” wineries use glass bottles that are significantly heavier – up to double the weight of our current bottle. (We even weighed one empty bottle at 1200g!) Our bottles are made in New Zealand from around 65% recycled glass, so we are able to save considerable amounts in shipping costs, (further reduced by using seafreight to move them from the furnace to a local port) not to mention the reduced energy requirement for manufacturing and recycling. The energy required for shipping and distribution of bottled wine is therefore lowered, further reducing our carbon footprint. At an annual production of around 150,000 bottles, these savings are indeed significant.



No Excessive Packaging

Our wine is not dressed up in wooden boxes, with decorative straw and tissue paper. We use cardboard boxes made from recycled materials (33-100% recycled content and water-based ink) which are used again where possible (our cellar door stock is normally packed in reused cartons, for example) and can be recycled to minimise and even eliminate any waste. We recently stopped using green coloured cases, reverting to natural craft colouring to reduce ink use. The large cardboard boxes that our screwcaps are delivered in are sent to a local moving company to be reused again before being recycled. It is important to us that we try to minimise our carbon footprint in every way possible. The dividers on our bottle pallets are passed on to a local trucking company for reuse.



Screwcaps

All of our wines are sealed with screwcaps which are made from aluminium - a product that is infinitely recyclable. When compared to the carbon cost of using a natural product like cork, aluminium screwcaps have significant advantages. They are made in Australia which is closer than shipping corks from Portugal and the failure rate of this closure is virtually nil, compared with the 3 – 10% (and significantly worse as wine ages) failure rate of corks. When the energy and carbon cost is calculated on all the faulty or undrinkable bottles, aluminium screwcaps look very favourable. In addition, almost all cork closed bottles utilise a foil made of tin or aluminium to “dress” the bottle. The screwcaps that we use are 20% lighter than our previous tin foil.

International Wineries for Climate Action: IWCA

Felton Road are Silver members of IWCA. Membership requires carbon auditing to ISO14064 also meeting their own rigorous auditing rules. Members have to have submitted and had approved plans to further reduce their carbon emissions with a credible plan to achieve zero, without the use of offsets, by 2050. Felton Road is currently scheduling a plan to reach true zero in the 2030's.

5. Distribution and sales

We are a small winery in a remote part of New Zealand. Distribution will always be energy intensive, as will all the scope 3 transportation issues, simply because we are a long way from most resources.

All wine is now moved by seafreight. We realised that almost all our DTC sales, both domestic and international, could involve airfreight. We introduced a ban on airfreight delivery for all wine sales, bringing in a new system of logistics using only sea and road. This means that DTC sales can carry up to a 6 month wait for delivery in the most extreme cases as we often have to wait for appropriate seasonal conditions to safely move wine to some destinations. The drop in sales has been marginal, and nearly all customers have been supportive. We don't fly samples to overseas distributors, though there is an exception made of one small delivery of newly bottled wines headed to Europe for critics and distributors to taste to meet deadlines.

European sales (we supply around 25 European markets) are largely now handled using a mixture of high speed train and Tesla, with Nigel spending the European summer in that region to conduct any sales trips with minimal flying.

The current global situation is making container travel for wine an increasing game of Russian Roulette. With the Suez out of action due to conflict, Panama severely restricted due to lack of rainfall, (and the alarming rise in sea temperatures to over 30C in the Caribbean), the Horn of Africa presents its own climatic threats in the Northern Hemisphere summer months, as does the risk of movement across the USA or Canada by rail. We have avoided the use of Reefer containers for our main European shipments to date using liners and below waterline storage. We may need to move to Reefer to escape the challenges we currently see.

We monitor all visits to the winery for carbon: All cellar door visitors are questioned as to their journey to us and their onward one. We check their vehicle type and make a log of the carbon cost of that visit. We ban visitors to the winery from using helicopters, (a surprisingly frequent method in this region).

Other Sustainable Initiatives:

- ❖ **Glass** - All glass bottles used at the winery are recycled. Even the beer we drink at harvest time (it takes a lot of beer to make good wine) is from kegs to minimise the use of glass.
- ❖ **Cardboard and Paper** - All cardboard and paper is recycled. All pay-slips are electronic. Note and scrap paper is from previously used paper.
- ❖ **Plastic** - All plastic materials are recycled.
- ❖ **Non-Recyclable Waste** - The winery has a domestic sized wheelie bin that is collected only once every two weeks. Staff are all instructed to sort and recycle all possible recyclable waste.
- ❖ **Food Waste** - All food waste and coffee grinds (winemakers can drink a lot of coffee...!) is composted on site.
- ❖ **Unsolicited Mailings** - All duplicate, unsolicited or unnecessary mailings to the winery are stopped to reduce waste and unnecessary postage.
- ❖ **Buy Local** – We are in a remote location which makes us particularly aware of the need to source as locally as possible, minimising carbon transport costs.
- ❖ **Heating** - Trunks from the old vines that have been replaced, as well as trees on the vineyards, are retained, then burnt in the two fireplaces of the winery to heat both the cellar door and the apartment. Any surplus wood from our land can be converted to Biochar.

Staff & Social Policy

Biodynamics as a philosophy requires an equal level of care to everything in our environment and that includes the people who work for us. Every employer should be a benefit to the local community. That includes not just offering jobs, but also creating flexibility so that our need for good people can fit the needs of the people locally. We are proud of the way we have managed to support local, sometimes retired people, by matching their skills and hours to our needs. At the other end of the age range, we have worked hard to bring young talent into the region. These young people are mostly from vineyard areas in Northern Europe, America or Asia and either from winegrowing families or recent graduates of viticulture and oenology studies. This provides us with enthusiastic, talented and dedicated staff to carry out our viticultural and winemaking operations to the highest standard, while creating an export of international awareness of the region and what it has to offer.

We are committed to paying all our staff truly sustainable wages. We commit to a minimum of a living wage rate independently set by Aotearoa New Zealand Living Wage (<https://www.livingwage.org.nz/lw24>), even with part time or junior staff.

We have a strong emphasis on providing a safe working environment and have been accredited with ACC's (Accident Compensation Commission) highest level of workplace safety management systems.

We encourage local and overseas training for our staff and also regularly receive field trips from New Zealand and International learning institutions.



Charitable trust and work

Felton Road operates a charitable trust which receives a portion of our profits annually and contributes to a variety of charities in the developing world. In addition, every year, large format bottles and older vintages, as well as other donated auction prizes, are donated to a significant range of charity auctions in New Zealand and around the world. These rare bottles are eagerly sought by wine enthusiasts resulting in the value of our donations being magnified significantly.

Certifications

Felton Road are certified by the following independent bodies:

BioGro New Zealand: Organic certification number 5877 www.biogro.co.nz

Demeter New Zealand: Biodynamic certification number 141 www.biodynamic.org.nz

SWNZ: Sustainable certification: <https://www.nzwine.com/en/sustainability/>

IWCA: International Wineries for Climate Action: Silver member, www.iwcawine.org, member 015

Toitu New Zealand: Carbon certified, scopes 1, 2 and 3 to ISO 14064 and IWCA standards. <https://www.toitu.co.nz/> current emissions at last audit (2022) were 2.42Kg/Litre CO₂E

Felton Road is a certified B Corp, scoring 103.3 points at the last assessment, (threshold to be a B Corp is 80 points). <https://www.bcorporation.net>. <https://www.bcorporation.net/en-us/find-a-b-corp/company/felton-road-wines-ltd/>