



Sound environmental management is good business

CAWTHRON MARLBOROUGH ENVIRONMENT AWARDS

2021

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JUDGES' REPORT

FARMING

MT OLIVER FARM

INTERVIEWED	Murray and Tanya Frost
DATE	November 19, 2020
JUDGES	Chris Beech, Pete Anderson, Penny Wardle

INTRODUCTION

Mt Oliver is a family dairy farm at the head of the Mahakipawa Arm of Pelorus Sound, near Linkwater. Murray and Tanya Frost milk 415 cows with help from two full-time staff members who live on the property.

The farm was very rundown when the Frosts bought it eight years ago. It had minimal fencing, very poor browntop-dominant pastures with weeds, no irrigation and a leaking effluent pond. None of the multiple streams were fenced despite the farm being in an environmentally sensitive area adjoining an estuary and Mt Cawte Scenic Reserve. There were few water troughs and cows were drinking from streams. It did not comply with Marlborough District Council rules or Fonterra standards.



The farm was in such a poor state that Fonterra agreed to treat the Frosts' takeover as a new conversion, giving them more time to comply with environmental standards. They have ticked all the compliance boxes as they develop, bringing every aspect of the operation up to or beyond requirements. All waterways have been fenced, effluent treatment dramatically upgraded and a low volume irrigation system which applies water and effluent as fertiliser has been installed.

The judges were impressed that rather than resisting compliance standards, the Frosts accept them as their bottom line. Undaunted by the size of the task, they have made steady progress to the point where they now use income gained from a considerable increase in cow numbers and production to fund improvements.

The family loves the environment where they farm and live, enjoying fishing in the Sounds and hunting. This motivates them to farm in an environmentally responsible way.

GENERAL INFORMATION

Murray worked his way up to farm ownership by shearing and bought a small farm in Rai Valley before pooling resources with Tanya and buying a dairy farm on the West Coast. They sold this to purchase Mt Oliver. The family also owns a 44 ha runoff block at nearby Kaiuma, which the judges did not visit.

This is a family business that also involves daughter Sophie, who runs chickens, sells eggs, and raises calves with her brother Troy. He also does a lot of possum control on the farm. Tanya and Troy raise dairy heifer calves and a few beef cross calves until weaning.

Grazeable hectares have been significantly increased following the removal of gorse, willow and other weeds from waterways, planting of fodder crops and pasture. Paddocks have been developed along the boundary with the Scenic Reserve where kanuka has been sprayed.

Having increased their herd from 220 to 415, the Frosts are focused on annual production which has risen from 79,000 kg of milk solids to 182,000 kg (438 kg/cow).

Winter fodder crops have been an important step in pasture development into productive ryegrass. Murray accepts that this may no longer be possible under Government's NES for Freshwater rules and is trialling conservation tillage - spraying off pasture with Roundup then direct-drilling seed.

Raphno (Pallaton Raphno) - a kale-radish hybrid developed in New Zealand – provides four to five grazings. Murray expects this will replace separate sowings of winter and summer fodder crops.

An on-farm quarry is being developed for pit metal/rock for consolidating tracks and laneways.

When the Frosts bought the farm, effluent ponding and runoff were a problem. The effluent pond leaked and was too small so sometimes had to be pumped out when soil was at field capacity. A travelling irrigator applied effluent at a high rate and frequently broke down, risking run-off into streams. There were not enough water troughs and cows drank from the unfenced streams. The cowshed and yards were too small. Several major creek crossings were not culverted.

The old water scheme had a lot of leakages meaning pumps were going constantly. This was highlighted by the \$200 a month saved in electricity used in pumping since a new scheme was built. The Frosts put in two gravity-fed water schemes to fill the troughs that were installed to keep cattle out of the waterway.

A new effluent pond has a polymer liner, holding 2.6 million litres of green water.

The travelling irrigator has been replaced with K-line irrigators (pods) which apply water and effluent at a low rate over 70 ha during dry weather when soils will take up moisture and nutrients. Low spots are avoided to prevent pooling.

Stock/vehicle crossings have been culverted, included many through ephemeral streams. Ten kilometres of fencing has created an ungrazed buffer alongside the network of streams, some tidal, which run through the property into the estuary. This reduces runoff of sediment and nutrients (manure and fertiliser).

Gaps in fencing between the farm and Mt Cawte Scenic Reserve have been fixed.

The cow shed has been extended from a 24-aside herringbone to 40-aside and yards have also been extended, reducing cowshed effluent runoff and water used.



First calvers are on 1x/day milking for a month before mating, resulting in higher conception rates.

As well as environmental improvements, the Frosts demonstrate strong community values, including:

- Employing local contractors whenever possible. This influenced the selection of Renwick-based Liquid Action to install irrigation as this company was happy to use sub-contractors from the Linkwater area.
- Contractors are given a safety induction before going on the property.
- Employees are put through AgITO training.
- Mutually beneficial relationships have been developed with DOC – their neighbours – and Marlborough Lines which manages powerlines which run through the property.
- Everyone living and working on the farm became a “bubble” during the Covid lockdown. Anyone living off-farm did not come to work.

THE JUDGES WERE IMPRESSED BY

- The Frosts took advantage of Farm Environment Plans offered by the Marlborough District Council which helped with planning subdivision, fencing of waterways and effluent application and irrigation. Environmental compliance has improved as the farm develops.
- Engagement with Te Hoiere/Pelorus Catchment Restoration project. This community project involving iwi, Marlborough District Council, DOC, Ministry for the Environment and the wider community aims to improve water quality in catchments running



into the Havelock Estuary and Mahakipawa Arm of Pelorus Sound. Mt Oliver Farm has requested water quality testing as part of the project.

- Effluent management goes above and beyond compliance standards with solid and liquid waste regarded as a resource.
- Stormwater runoff from the dairy shed is diverted on to pasture for most of the year but in summer (when effluent pond levels are low) the diversion is shut, and liquid directed into the effluent pond for use in irrigation.
- Effluent is pumped from the sump up through a slope-screen which separates solids – collected in the shed below – and liquids stored in an effluent pond. Solids are collected until conditions are dry, then worked into soil during paddock development or spread on maize paddocks. Liquid effluent is irrigated on to paddocks.
- The 2.6 million litre effluent pond gives up to 75 days of storage
- A poorly maintained travelling irrigator has been replaced with K-line irrigators (pods) which apply water and effluent at a low rate over 70 ha.
- If application from K-lines exceeds 28 litres/second Murray gets a text alert so he can check for the problem.
- Water, not effluent, is applied close to the estuary.
- Stock/vehicle crossings of streams and many ephemeral water courses have been culverted. Nova-flow has been installed in some, covered with rocks and soil and grassed over. This mitigates soil damage by livestock and vehicles while helping prevent dirty udders and stuck vehicles.
- Ground has been contoured to direct leachate from silage into pasture and away from waterways.
- The whole farm is soil-tested every two years. Soil fertility – both Olsen P and pH – have been improved by use of targeted fertiliser. Lime is from Marlborough mussel shells purchased locally.
- Direct drilling into sprayed-off pastures is being tried this year as an alternative to working up the soil
- Silage is made rather than baleage so there is less plastic. The small amount used (including pit covers) is recycled through Plasback.
- Silage is wilted before collection to minimise liquid runoff from silage pits.
- Murray's 84-year-old father has propagated and planted seedlings (mostly native including kowhai, akeake, and pittosporum) along waterways.
- Gorse, willow, barberry and other weeds have been removed from waterways.
- Old vehicles and arsenic-contaminated chemical containers were removed from a dump site in a stream where it enters the estuary.
- Recycled grape posts used in fencing.

SUMMARY

Mt Oliver is a tidy, well planned property, compliant with Marlborough District Council and Fonterra best practice guides. Murray and Tanya describe this as their “forever farm”. They have invested considerable energy and money into a place which is both a business and home.

This is a hard-working family committed to sustainable farming, with strong community values. They work as a team, all playing a role in the business. They appreciate the environment for the wonderful view from their home and opportunities to enjoy fishing and hunting, as well as the satisfaction and income provided by responsible farming.

Environmental performance has improved as the size of the herd and per head production has increased, boosting both environmental and economic bottom lines.

SUGGESTIONS

- Races, tracks and trough areas all need attention. Current conditions will cause nutrient run-off and cause foot health issues. Apply rock then pit metal from the farm quarry to tracks, followed by rolling. Use the same method around troughs where there is pugging and pooling of water.
- The next step is to increase biodiversity. There are some wonderful kahikatea trees on the farm and plenty of fenced off waterways still to be planted. Draw up a planting plan with Murray's father, focused on planting native species that grow in this environment. This will create shelter and attract birds. For funding, apply to Marlborough District Council's Working for Nature scheme when it reopens in November 2021.

<https://www.marlborough.govt.nz/our-community/grants-and-awards/working-for-naturemahimo-te-taiao>

- Include more legumes in the pasture – top-flowering annual clovers like balansa and Persian or the sub-clover antis might work well in more mixed swards on the property, being persistent in dry conditions. More legume-based pastures would enable reduced applications of N fertiliser.
- Try to move away from Palm Kernel extract as a source of fibre and nutrient.
- Check out DOC's “Revegetating Estuaries” fact sheet, with links to Tasman and Waimea estuary revegetation programs.

<https://www.doc.govt.nz/nature/habitats/estuaries/our-estuaries/revegetating-estuaries/>

- Follow through on your aspiration to reduce nitrogen fertiliser.