

**Before a Hearings Panel of the Canterbury Regional Council**

**Under** Resource Management Act 1991

**In the matter** of applications for Regional Council Resource Consents to take and use water in the Upper Waitaki River Catchments

---

**BRIEF OF EVIDENCE OF EMILY MURRAY**

---

1. My name is Emily Murray and I live on Glenmore Station which is a high country gorge property bordering the western shores of Lake Tekapo and the Mt Cook National Park. I farm Glenmore with my husband Will who is the 4<sup>th</sup> generation of the Murray family to do so. We have 2 pre-school children Angus and Greta whom we hope one day will be interested in continuing to run this family business. Glenmore is 19,300 ha of pastoral lease with a small amount of freehold. Will and I own the stock and plant whilst renting the land and buildings from a family trust. We run 12,000 stock units. There are 7,000 merino breeding ewes including stud ewes, 3000 replacement hoggets, 400 red hinds, 100 hind fawns, 100 velveted stags, 380 breeding cows and 60 replacement heifers.
2. My parents-in-law Jim and Anne Murray first lodged an application to irrigate with the Waitaki Catchment Commission in November 1973. This application was approved and border dyke development of the dry stony river flats began. A renewal of this water right to divert, take and discharge from the Cass River was granted in 1980 and provided the security needed to increase the irrigated area as it stands today.
3. Our application to this hearing panel is to simply renew our water consent as our family did in 1980, and continue to irrigate as we have for over 35 years.
4. At 2,400 feet our homestead is one of highest in the country and certainly would be one of the 2 highest in the Mackenzie Basin. Therefore our growing season is about 6 weeks shorter than that of properties lower in the basin, i.e. Omarama and we feed all of our stock for 140 days per winter. Some winters two feet of snow can lie on the ground for 10-12 weeks; therefore snow in the winter is as much of a threat to Glenmore as drought is in the summer.
5. Working within the constraints of your environment is the key to farming successfully in the high country. Given these environmental restrictions, Glenmore has and always will be a store property. By *store* I mean we only winter our breeding stock and sell all of the progeny, not required for replacements, in the summer/autumn. Alternately, the key to a *finishing* property is to utilise early spring growth to grow out young stock to killable weights when there is a market premium. This cannot be achieved on Glenmore as our grass grows too late in the season due to the cold and needs to be either harvested for the winter or used to grow out our young stock.

6. Our irrigated area of 180 hectares comprises only 0.95% of the total property; however this is heavily relied upon to produce most of the 3000 tonnes of silage and 500 large rounds of hay that we require every year to feed all our stock for our long winter. Along with this primary role, we also utilise our irrigation for growing out our 2-tooths ewes to a weight suitable for mating, growing out sale rams and lambing our 2-tooths, which are our first lambers and need to be looked after. Another very important function of our irrigation is providing the flexibility required in a dry summer to reduce the stocking rate on our tussock country in order to protect this land from over-grazing.
7. Put simply, we would not be able to run a viable farming unit if it were not for our 180 hectares of irrigation. We have calculated that we could only run a quarter of the stock we do now without irrigation but our basic business costs would remain the same.
8. Our family have been farming Glenmore since 1918, and since the introduction of irrigation in the late '70's have employed a large number of permanent, casual and contract workers. We currently employ 2 full time shepherds, one of which has a wife and young family and we employ casual staff for 5 months of the year. We also utilise contractors at busy times such as silage making, scanning and shearing. Therefore our irrigation has a very real and positive flow on effect on the local economy and job opportunities. Our store stock are also sold locally, through local stock agents.
9. Due to the age of our border dyke system, water efficiency reasons and regional plans, we are now in a position where we will most likely be forced to convert to a spray system. Our preferred conversion option is for gravity fed centre pivots and guns which would involve installing an approximately 4km long 450mm pipe. This pipe would gravity feed 2 centre pivots covering an area of 119 hectares. We also plan to put in 2 hard hose guns which would water 61 hectares. This conversion would cover the same area that is currently border-dyked.
10. We have been quoted a total of \$7,300 per hectare to do this conversion to spray. This is just to complete the pipe work and install the irrigators. It does not include flattening our borders, ripping out fences and shelter belts, re-fencing, re-grassing and re-establishing shelter. Another consideration would be the change to the landscape.

11. Given the size of this outlay, we require absolute certainty from ECan that our water consent, if granted, is secured long-term. The huge amount which we will have to borrow is a very real threat to our family farming business. The financial success of this conversion, particularly given our short growing season, is fully dependent on good store prices. Although we cannot capitalise on finishing our young stock, we do anticipate an ongoing demand for store stock, given the opportunity of those properties lower in the basin to irrigate.
12. Finally I just want to cover the conservation initiatives that have been happening on Glenmore in recent times. These projects have grown from our family's belief that we can farm in a sustainable manner, whilst maintaining and enhancing environmental values on our property. From our own observations and the odd photograph we are in no doubt that the property is in good heart, but we are working with various groups in order to scientifically prove this. Some of this work has been initiated by us; some has been motivated by Tenure Review, while others have come about from being asked to be a case study property for various research e.g. Canterbury University students.
13. We, as a family have fenced off a 30 hectare buffer zone at the head of Lake Alexandrina to ensure no stock enter the wildlife reserve there. We have also fenced off many creeks and completed riparian planting in some areas. We have a 1000 hectare QEII covenant protecting over 23 kettle tarns created by glacial retreat. We allow the Department of Conservation 10 month-a-year access for black stilt and other research projects. More recently, we have run tests our irrigation water at the take and discharge points to monitor nutrient levels. These results are very low and can be viewed in our hearing evidence.
14. Further to our own work, the following is a summary of the research projects that have been undertaken or are currently being undertaken on Glenmore. Whilst not directly related to irrigation this research is focused on sustaining native biodiversity within the context of the whole property and has been developed with strong input from Dr David Norton who is part of the Rural Ecology Research Group at Canterbury University, whom you will hear from later in the hearing.

### **Environmental Monitoring**

15. Environmental monitoring at Glenmore was established in 2005 as part of the ARGOS (Agriculture Research Group on Sustainability) programme and involves

extensive ongoing monitoring of land cover, aquatic systems and soil across the whole property.

16. Along with this ongoing monitoring, we also have the following studies taking place on Glenmore in association with various research groups:

16.1 How grazing can limit mouse-ear hawkweed flowering

16.2 Influence of management inputs of plant biodiversity

16.3 Barriers to restoration success

16.4 Small-scale vegetation patterns in short-tussock grassland

16.5 Hawkweed invasion in summer grazing country

16.6 Rabbit and hare diet

16.7 Relative impacts of hares and sheep in summer grazing country

16.8 Spatial habitat use of merinos

17. You would have also seen in our evidence a copy of our comprehensive 5 year farm management plan that we have compiled with Dr David Norton.

18. None of these studies are directly related to our irrigation; however I have outlined them here today to illustrate a very real and significant role of irrigation that is often overlooked. Our 180 hectares of irrigation allows us to take much greater care of the remaining 19,000 hectares of Glenmore. The research I have touched on is revealing some very positive results and we cannot lose site of the fact that this is due, in a large part, to the flexibility and production provided by our irrigation. Additionally, most of our irrigated area was originally dry, stony river flats that were prone to erosion from our extremely strong winds. Today, these same areas have deep, rich soils and grass cover which eliminate any threat of erosion. Whilst the primary focus of any irrigation is intensification and production, we must also celebrate the merits of irrigation as a very effective conservation tool in caring for native biodiversity elsewhere on the property and eliminating erosion.

19. In conclusion I would like to point out that when making your decision commissioners, on our applications to irrigate, you have to take into account the entire property, the various roles irrigation plays within a farming business and the follow-on effect to the wider community. Irrigation is absolutely paramount in ensuring the future viability of Glenmore as it provides us with the ability to produce large quantities of winter feed, grow out young stock and protect tussock grasslands during the dry summer periods. But this is only the beginning of what irrigation achieves for the Mackenzie District and New Zealand as a whole.
  
20. It is not rocket science. The world needs fed. We must therefore be progressive in our approach to ensure that each property before this hearing irrigates their relatively small amount of land in a sustainable manner. Yes, we must look after our land and water, but we must also allow our properties to produce and ensure our farming businesses are viable.