NEWSLETTER

MANUHERIKIA CATCHMENT WATER STRATEGY GROUP

CONTACTS
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03 443 1543

Gary Kelliher
Deputy Chairman
03 448 7869

August 2014

Update from the project manager:

July and August have been busy for me personally managing an additional project called Edward, who attended his first strategy group meeting earlier this month.

In terms of the Manuherikia Catchment Water Strategy Group's project, it has been a quieter period for me as Golders has been working on finalising its report in relation to the geotechnical and engineering aspects, including starting work on preliminary designs for Falls Dam. Golders has also been finalising potential flow scenarios for the catchment, which will be run through the hydrology model built by Aqualinc.

Aqualinc's hydrology model (schematically shown below) is a daily water balance that runs from June 1 1973 to May 31 2013 and is based on average daily flows.

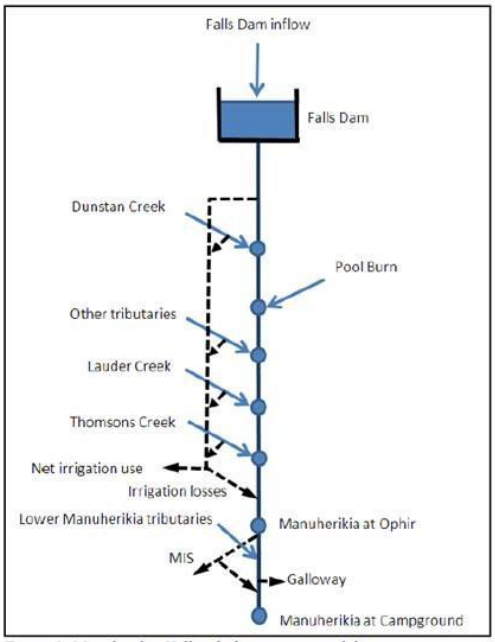

Figure 1: Manuherikia Valley daily time-step model

The model can predict flow in the main stem of the Manuherikia River at these six locations:

1. Downstream of Falls Dam;
2. Downstream of the Omakau main race intake;
3. Downstream of the Dunstan Creek confluence (note it also predicts flow in Dunstan Creek at the Manuherikia River confluence);
4. Ophir;
5. Downstream of the MIS intake;
6. At the camping ground.

The model will be used to understand a range of different flow scenarios, including various levels of irrigation demand and different minimum flow regimes, so we can understand what these might mean for flows at the locations detailed above.

This work is important as it provides an understanding of the current flows versus the potential new flows and what the effects might be, in terms of environmental outcomes and benefits, and irrigation outcomes and benefits.

In addition to Golders' work, AgResearch has been completing its nutrient assessments of the five case studies and we expect to have the preliminary reports by the end of August.

Compass Agribusiness has also been finalising the Farmax modelling for the case studies and will refine these once the nutrient management details are available from AgResearch. Catchment-wide scale-up of this work will then take place.

Finally this month, keep an eye on the MCWSG's website (www.mcwater.co.nz) as all the reports Golders has produced during the feasibility study to date will be uploaded to the website over the next few weeks. It is important to note that many of these reports are not complete standalone documents, therefore they can seem incomplete when you read them on their own. Many of the findings and conclusions will be brought together in the final feasibility study report, which is still to be prepared.

Kate Scott
Project manager
Manuherikia Catchment Water Strategy Group

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On-farm irrigation feasibility analysis:

- Significant irrigation decisions need to be made by most farming businesses within the Manuherikia, Ida Valley and Hawkdun irrigation scheme catchments by February next year;
- Better quality and more confident decisions can be made when quality information is available.

There are tools available which provide high quality information, to better understand existing farming businesses and what the opportunities and options are when considering system changes.

The key driver of any pastoral farming business is the amount of feed grown and when it grows, matched with your choice of what you feed this resource to.

Modelling an existing farm will accurately determine how much feed is grown, and what could be grown if changes to the irrigated or dryland system are made.

Once a farm model is set up, it allows different livestock and pastoral systems to be modelled, enabling informed decisions to be made around what livestock farming system will work from a financial perspective.

These tools are both feed and financial models, including Farmax and feed budgeting tools, which are adapted to work with farming systems in Central Otago.

There are a number of farms within the Manuherikia catchment which have used these models to make big decisions with confidence around future land development.

For example, one property owner who recently completed this exercise will replace their existing irrigation system with pivot irrigation, develop new areas of irrigation and develop a large area of low hill country into lucerne to complement their irrigation development. These strategies will lead to a doubling of farm profit after interest and an overall increase in sheep numbers. This farmer can confidently make these investment decisions as a result of the biological and financial models created for the properties.

There are a number of professionals available to assist farmers, through the use of Farmax and farm budgeting tools/models. They include:

Peter Young/Mike Shields – Farm Consultants
Email: pyoung.fas@xtra.co.nz
Ph: 03 449 2040

Bruce McCorkindale/Simon Glennie – Abacusbio Ltd
Email: bmccorkindale@abacusbio.co.nz
Ph: 03 477 6375

Guy Blundell – Compass Agribusiness
Email: guy@compassagri.co.nz
Ph: 0275 428 196

Nicky Chisholm – Agfirst
Email: nicola.chisholm@agfirst.co.nz
Ph: 03 448 8028

Graeme Ogle –Rezrae Systems Ltd
Email: graeme.ogle@rezare.co.nz
Ph: 07 857 0823 / 027 557 0823

Summary:

- There is a limited amount of time to make some on-farm and life-changing decisions;
- Good quality information is required to make these decisions with confidence;
- Farm modelling tools are available to assist with the decision making;
- Financial returns can only be confidently worked out once the current pasture production model is established and livestock options are worked out, which are based on the extra feed grown;
- Developing a farm model for an individual farming business will significantly increase an individual farmer's, and their financier's, confidence about the economics of changing their farming system;
- Given the limited number of professionals available to work with farmers and the limited timeframe, it may be worth considering contacting one of them sooner rather than later to objectively work out your options.

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Update from the chairperson:

The Manuherikia Catchment Water Strategy Group is endeavouring to ensure all sectors of the community are informed of its project and are kept up to date.

Following is a summary of the meetings and seminars which have taken place during the past couple of months.

- About 100 people attended an "issues and options" forum on June 12;
- A nutrient management forum on June 24 attracted about 50 people;
- A busload of interested people were taken to North Otago on July 1 to visit farms connected to the North Otago Irrigation Company's scheme and to talk to the company's chief executive and its environmental officer;
- Central Otago District councillors, community board members and staff were taken on a bus trip on July 23 to familiarise themselves with the proposals (see councillor Barrie Wills' report on the field trip on page 4 and 5 of this newsletter);
- Two sessions to keep landowners' spouses up to date were held in Naseby and Wedderburn on July 28;
- A meeting with Young Farmers members was held on August 6;
- Members of the MCWSG's executive team have held several meetings with interested parties, on geotechnical matters, investment in the project, and the formation of one catchment-wide irrigation company.

Meetings, seminars and field days planned for the next few months (some of the dates are still to be confirmed) include:

- Pod meetings and farm visits in late August;
- A seminar for agribusiness professionals in Dunedin on September 4;
- Sessions for landowners' spouses in St Bathans, Ophir and Alexandra;
- Further pod meetings to update landowners on the results of the feasibility study and the updated costs;
- A meeting with the Department of Conservation;
- Forums for various sectors of the community;
- An on-farm field day to demonstrate the benefit of irrigation for sheep and beef farmers.

We will advertise the dates of these meetings, seminars and field days via future newsletters, email and the website (www.mcwater.co.nz).

Allan Kane
Chairperson
Manuherikia Catchment Water Strategy Group

See page 4 and 5 for a report by Central Otago District councillor Barrie Wills on a recent council field trip to the Manuherikia catchment …

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Central Otago District councillor Barrie Wills' report on a recent council tour of the Manuherikia catchment:

On July 23 about 15 Central Otago District Council staff and elected members representing both council and the community boards (pictured below) toured the Manuherikia and Ida valleys to familiarise themselves with proposals for a catchment-wide irrigation scheme.

A lot of conjecture and consternation has been expressed in recent months regarding land use intensification in Central Otago, particularly relating to the ingress of dairying/dairy winter feed provision. This was a catalyst for the CODC's recent land use intensification forum, and local involvement in other irrigation and water quality workshops, which have hopefully allayed many of those concerns.

From my perspective as a councillor, it was a valuable outing which helped provide an overview of the proposed scheme, from the supply points in the upper Manuherikia River catchment/Falls Dam and Idaburn; the storage and distribution of that water in both valleys, and the on-farm utilisation of irrigation.

The narratives provided by Allan Kane, Gary Kelliher and Kate Scott, from the Manuherikia Catchment Water Strategy Group, were extensive and thorough, which provided surety that this scheme is well researched and, prospective costings aside, has every chance of succeeding, providing the economics, once finalised, can be accommodated by the local community.

In the recent MCWSG newsletter it was interesting to note a comparison drawn with the Opuha irrigation scheme near Fairlie.

Opuha is certainly successful now, but it did have a rather rough start due to an unexpected flood. During commissioning of Opuha Dam, I led a diving team working on the intake structure and penstock pipe which, in retrospect, were an engineering nightmare – four dives to 25-plus metres just to remove the screen, park it, pick up the plug and put it in place. Sealing it for remedial work inside the pipe was virtually impossible, despite several more dives, as the plug never fitted properly. Another four dives were then needed to reverse the process. The moral of this story is to get the system design right from the outset.

Looking at the proposal as a pastoral/ environmental scientist, technological advances in the effective application of irrigation water are welcomed. Compared to the old method of wild-flooding paddocks, new pivot systems are much more efficient, albeit at a considerable initial capital cost.

It was also satisfying to find that much of the potential land use intensification associated with the proposed scheme will be through traditional farming methods, not solely dairying and the connotations that has for our waterways and, more importantly in my view, potential groundwater contamination.

The long-term provision of stock and crop shelter, much of which is being removed to make way for centre pivots, is an issue that will need addressing.

For me it also highlights the importance of adequate protection of the tussock grassland hill and high country, which forms the catchment supply for this proposed irrigation scheme. Without a comprehensive, diverse and vigorous indigenous vegetation cover on those hills, irrigation schemes in our valleys will be of questionable long-term sustainability. Historically those tussock grasslands have been burned to provide stock forage and have suffered from pest animal exploitation; latterly they have been subjected to over-sowing and top-dressing programmes which alter the soil chemistry in favour of exotic plants which then compete with indigenous species and improve production but effect biodiversity, and they are now threatened by invasion from weedy plants like *Hieracium*, briar rose and wilding conifers. *Cont. on page 5…*

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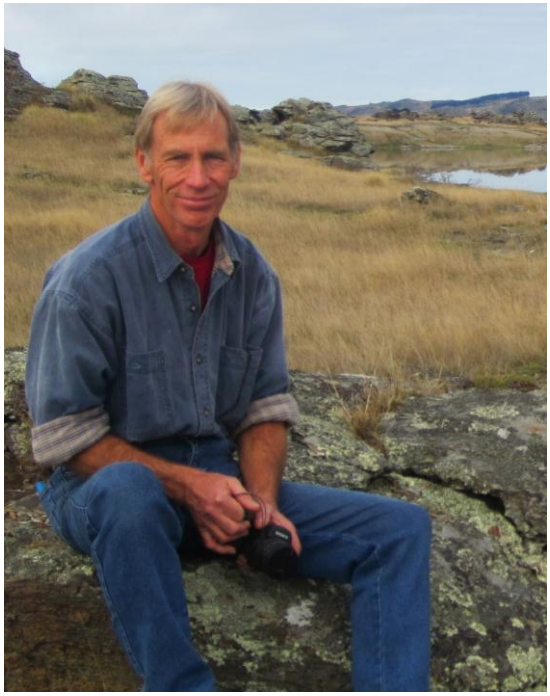
As a scientist involved in monitoring soil, vegetation and land use resources on several high county stations in Central Otago, in collaboration with the landowners, it would be good to see planning for this proposal eventually expand beyond the immediate down-country economics and impact, taking cognisance of and promoting monitoring and responsible resource management of the wider catchment condition. As a councillor with our District Plan under review, the challenge will be to achieve a workable balance between sustainable resource and land use management, and continued economic vibrancy in our region.



Barrie Wills, PhD.
Central Otago District councillor and Central Environmental Services

Farming in Central Otago:

The New Zealand Grassland Association national conference is being held in Central Otago from November 5 to 7. The theme is "Central Otago – A World of Difference: Farming in a Land of Extremes."

Paper presentations will be held at the Cellar Door in Alexandra each morning.

There will be a field trip on the afternoon of Wednesday November 5 to Greenfield's Hills Creek property. The key topics will be the Greenfield model, dryland pasture development processes and results, and utilisation of extra feed grown. The speakers include Warren Taylor, Kevin Smith, Hamish Cameron and Derrick Moot.

The next stop will be Ida Valley Station, where the key topics will be whole farm systems and integration of different land classes, the challenge of maintaining marginal hill country, legume options, and intensive development of lower country. The speakers include the Paterson family, Graeme Ogle, Denis Fastier and Dave Anderson.

The field trip on the afternoon of Thursday November 6 is to Willowbank (Nine Mile Station's irrigated block) at Tarras. The key topics will be matching feed supply and demand, nutrient management, irrigation and soils, the economics of different land use options, and integration of Willowbank and Nine Mile Station. The speakers include Nine Mile Station representatives, Peter Young and the Otago Regional Council.

This is a great opportunity to discuss real issues with industry leaders and to explore ideas to improve your own enterprise. You can register for the conference from the end of August via the website www.grassland.org.nz.

Vanessa Hore
Chairperson of the local organising committee

See page 6 for profiles of Manuherikia Catchment Water Strategy Group members…

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Profiles of members of the Manuherikia Catchment Water Strategy Group:

Kate Scott is the Manuherikia Catchment Water Strategy Group's project manager. She is also the managing director of BTW South, a surveying, planning and engineering firm with offices in Cromwell, where Kate is based, and Gore.

Kate has a degree in geography and political science from Wellington's Victoria University. She is a resource management planner who has mainly worked in the private sector, including the mining, oil, gas and dairying industries, with the latter involving work on irrigation projects.

Kate also manages several contracts with Land Information New Zealand (LINZ), which involves a variety of work in valuable high country landscapes. She is a member of the New Zealand Institute of Management (NZIM) and the Resource Management Law Association of New Zealand (RMLA).

Kate grew up on a farm in Taranaki and moved to Central Otago eight years ago. She lives at Bannockburn with her husband, Scott Levings, and two young sons.

Outside of work Kate is involved in a range of sports, including squash, tennis, mountain-biking and snow sports. Occasionally you will find her behind the wheel of Scott's 1981 Toyota Starlet rally car, nicknamed the Orange Roughy.

Kate said she is proud of what the MCWSG has achieved to date. "The only option we have is to come up with something that works best for everyone. I think we've made really good progress. We've got really good engagement from a wide variety of sectors, including interest groups, farmers, irrigators and regional and district authorities. Getting the information out so everyone can make a decision is a really important part."

Gerald Dowling is a member of the Manuherikia Catchment Water Strategy Group's executive team. He is the secretary of the Hawkdun Idaburn Irrigation Company.

Gerald and his wife Angela have 1000 hectares in the Ranfurly-Naseby area. One of their sons, Philip, who is one of their six children, now farms the property. They farm sheep and beef and also winter dairy cows and grow young dairy heifers.

Gerald said the Central Otago District struggled to fund the services its residents and visitors required, and the local economy relied on a productive agricultural industry.

Irrigating appropriate parts of the district was important for its economic wellbeing, Gerald said, and the MCWSG's study of catchment-wide water use options was the "best opportunity in my working lifetime" to help the district prosper.

If the project went ahead, it would result in better environmental protection than was currently in place, Gerald said, as spray irrigators applied less water to the land than flood irrigation, reducing the risk of runoff or seepage into waterways. Gerald's off-farm hobbies include curling.

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