

Main themes, discussions and comments

(Compiled from Cardrona Minimum Flow Workshop #3– 11 June 2013)

Purpose of the meeting:

- To present a summary of the hydrology and instream ecology of the Cardrona River and Wanaka Basin-Cardrona Gravel Aquifer.
- To present to the community three regime options for managing the surface water and connected groundwater resources of the Cardrona Catchment.
- To present to the community two regime options for managing the groundwater resources of the Wanaka Basin-Cardrona Gravel Aquifer
- To discuss with the community the presented regime options for surface and ground water with the community and other stakeholders

Presentation by ORC staff

Discussion topics:

Groundwater

- Q: People present at the meeting want to know whether ORC has convincing evidence that the groundwater levels in the Wanaka Basin-Cardrona Gravel Aquifer are going up or down overtime.
- A. The data that has been sourced since 1996 indicates that there is no clear trend that points towards a change in groundwater levels. However, if more groundwater from the Wanaka Basin-Cardrona Gravel Aquifer is being allocated there is a real danger that the abstraction will start to affect the groundwater resource.
- Q: If ORC keeps on allocating water from the Wanaka Basin-Cardrona Gravel Aquifer how long will it take before a declining trend in the groundwater levels becomes noticeable?
- A. Any trend towards a declining groundwater table is likely to become noticeable within the next five years. Each year that more water is being allocated from the aquifer there will be less recovery.
- Q: If the community accepts the proposed management regime, would the groundwater resource develop/grow? Will the proposed management regime protect or enhance the aquifer?
- A. The adoption of the proposed management regime is likely to result in the growth or enhancement of the resource.
- Q: Does the ORC hold any data or evidence on groundwater depletion? Is there a record that illustrates the major problems that occur when aquifers become depleted or dry?

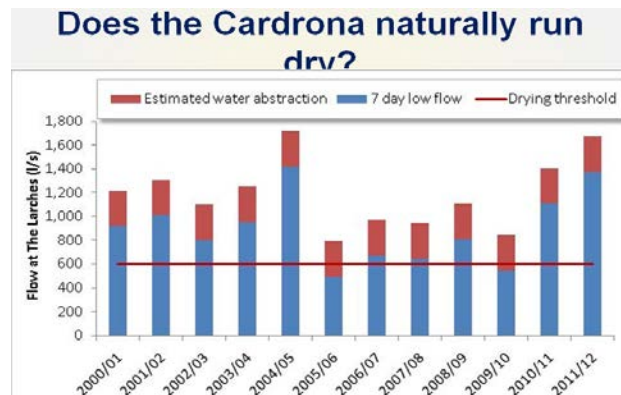
- A. No, the ORC currently has no historic data that clearly shows this. The ORC has to rely on community feedback to get a better understanding of the risk or consequences of groundwater depletion. This is a problem.
- Q: What would be the impact on existing groundwater permit holders if the community would adopt Option 1 or 2 for managing the Wanaka Basin-Cardrona Gravel Aquifer?
- A. The right of consent renewal preserves allocation
- Q: Is the line marking the edge of the water take restriction zone (following Morris Rd/Boundary Rd) in Option 2 for managing the Wanaka Basin-Cardrona Gravel Aquifer a political line?
- A. This boundary line is not cast in stone. It is indicative and could be moved. However, the current boundary line is indicative of a geological change in the area. Computer groundwater models help with defining boundaries and with modelling seasonal changes.
- Q: Do the models used by ORC show the maximum drop in groundwater level the aquifer could drop down to? Would the Clutha/Mata-Au provide for recharge?
- A. The aquifer is very steep and only the North-eastern part of the aquifer is influenced by surface flow level in the Clutha/Mata-Au. Generally, the portion of the aquifer that is dominated by the Clutha/Mata-Au only extends 100 to 200m from the banks of the Clutha. If the groundwater level in the aquifer would drop down to a level where the Clutha/Mata-Au starts to influence groundwater levels at a further distance, groundwater levels would be so low that Bullock Creek would no longer flow.
- Q. Does the high recharge area draw water from the sensitive area?
- A. No, the high recharge area does not draw water from the sensitive area within the Wanaka Basin-Cardrona Gravel Aquifer. The computer modelling has confirmed that the Cardrona River looks after the groundwater system in the Wanaka Basin-Cardrona Gravel Aquifer.
- Q: How much groundwater is currently allocated through groundwater take consents in the sensitive zone of the Wanaka Basin-Cardrona Gravel Aquifer?
- A. 2 million m³/yr
- Q: Are all groundwater takes from the Wanaka Basin-Cardrona Gravel Aquifer currently consented?
- A. All irrigation takes should be operating under a resource consent. Groundwater takes for domestic use do not need resource consent for the taking of water. These takes only require resource consent to establish a bore.

Q: How well do the proposed groundwater management regimes provide for an increase in demand for groundwater from the aquifer? Wanaka residents may want to reserve some capacity for future growth of residential activity on the Wanaka Flats?

A. Individual private takes don't need consent and are permitted. Community bores would require resource consent to take water, but they don't take much water. Combined public water supply is a District Council responsibility.

Surface water

Q: Can you clarify the slide in the presentation that shows when the Cardrona River runs dry?



A: Blue: measured river flow & Red: average combined water take. Combined the blue and red pillars show the estimated natural flow.

Participant recounts how in the 1970's the irrigation went off for a couple of days and the river went dry. The river is now in a completely different state than it used to be. The catchment used to be covered with forest, but is no longer in a natural state. Changes to land use are difficult to control. The term "natural flow" is misleading. The term "unirrigated flow" may be a more appropriate.

Q: How much information is there on spawning / hatching in the main stem?

A: There are still a lot of unknowns. Fry may be present in the main stem. However, temperature, water depth, flow velocity all has an impact on fish.

Q: We need more information, more work needs to be done on it.

A. Trade off. There is some uncertainty but we need to make a decision.

Irrigators state that there is farming along the middle reaches of the river, but that there is also a healthy fish population in this section of the river.

Meeting runs to an end.

Agreement made to come back later in June 2013 with a follow-up workshop.