**Rakaia Water Quality Meeting**

**11 July 2017**

**Agencies Represented:**

NZ Salmon Anglers Association, TrustPower, Environment Canterbury (incl. Regional Infrastructure Committee), Fish and Game.

**SUMMARY NOTES:**

* Is the Water Conservation Order (WCO) achieving its aims?
* Expected outcomes lacking for some interests
* Definition of the minimum flow is unclear
* The complex hydrological system was noted
* Now more water users
* greater number of takes – this makes it harder to manage
* Lack of transparency
* It appears takes are still happening despite minimum flows having been reached
* Lack of an overall strategy
* There is a need to pull all the different threads and associated impacts/opportunities together
* Impacts from the loss of the sports fishery
* A WCO review is not considered necessary right now
* Due to risks, costs and uncertainty

**QUANTITY**

* Concerns over hydro generation e.g., more high bank use over the summer – leading to fish entrainment
* River Diversions - Avoca, Harper, Wilberforce – along with irrigator private takes
* Minimum flows
* Are WCO requirements being met?
* A clear explanation of the regime is requested (that includes a visual display of the linkages)
* Contextual changes
* Climate change – are the flows that were agreed to 30 years ago sufficient now?
* How are the minimum flows going to maintained in future?

* Gorge flow regime
* Does not take account of flows at SH1, and the effects from groundwater abstraction and associated significant land use change
* Measuring down river losses – new information is required to understand these losses
* Groundwater levels and modelling
* Required to better explain the changing hydrological dynamics
* More water being taken in the winter
* Increasing winter low flows
* Consent Monitoring and Compliance
* More focus needed in this area!
* Main losses at the Main South Road Bridge and the Mouth (Bill could you please elaborate here please?)

**WATER QUALITY**

* Beneficiaries of the WCO – who is benefiting i.e. is the WCO doing enough to protect recreational and environmental interests? How are the wider public, regional economies and commercial businesses etc benefitting.
* Harper Diversions
* Prompted quite a lot of discussion – turbidity problems making the lake appear dirty at the top end, along with a shallower delta and associated boat access issues.
* Flood Patterns leading to riverbed substrate changes
* More fine shingle rather than larger cobbles
* River form and character changes – e.g., loss of some side braids etc
* Less sediment removal, more building up in places.
* Want better monitoring of temperature, dissolved oxygen, PH and Phormidium (toxic algae) particularly in the mid to lower stretches of the river
* Ecological impacts
* Not enough attention given to the reduction of important small to medium flow levels
* Delayed salmonid runs – due to changes in temperature and flow levels
* Spawning grounds seeing agricultural impacts from increasingly more intensive land use
* Braided river bird impacts from water quality changes
* Recreation and Amenity
* Swimming quality is dropping
* Angler observations noting changes
* Kayakers and other interests to consider

**OTHER ISSUES**

* Access
* blocked by diversions
* Harper example
* SH1 (North side near golf club)
* Top End of Coleridge
* Capture of the water from the Harper, Wilberforce and Evoca rivers into Coleridge. Harper Diversion
* Silting up of the top end of Coleridge
* Boat ramp, loss of access and camping
* Some efforts to improve these issues by TrustPower noted
* WCO
* Some discussion about the WCO amendments under the ECan Act
* re-litigation discussed but not favoured
* Water Balance Model
* Could be helpful to understand the movement of water through the catchment and the effects of different management regimes/ interventions
* Murray Higson Modelling noted (can anyone elaborate on these findings?)
* Flooding of the North Huts
* Low flows combined with a rough sea is threatening some of these huts
* River Morphology
* More silt
* More fine shingle
* Less changes to the river bed than would be considered to occur naturally
* Land Use Practices
* High country intensification creep
* Spray and pray type practices
* Removal of riparian vegetation and increasing impacts from more heavy stock numbers (winter grazing etc)
* Braided River Land Grab (encroachment)
* Associated grazing practices in sensitive near-stream environments
* Fish Screens
* Mouth Closures a real risk
* Native fish habitat and populations threatened

**INFORMATION GAPS**

* WCO
* explanation of minimum flows, how are minimum flows calculated and monitored? Who is responsible for ensuring they are maintained?
* Consent conditions – are these being actively managed and monitored?
* NZSAA want a worked example starting at the inlet into Lake Coleridge down to mouth, of when and under what conditions water is being removed from the Rakaia River and how this relates to the WCO, and consent conditions.
* NZSAA want an explanation of why the Rakaia River continues to go below the minimum flow while water extraction continues. It appears that Trustpower are not releasing water from Coleridge to ensure that the Rakaia River doesn’t get below the minimum flow.
* Important numbers in terms of total water take permitted etc
* Coleridge
* Water release processes
* Numbers comparative to takes on CPW etc (currently not clear)
* Water Balance Model
* Visual presentation
* MIKE SHE modelling approach
* Assessment of the summer flow regime/ long term rain data and groundwater trends
* Is this still adequate for the fishery
* Especially as the fishery is now under strain
* Monitoring Review
* Especially from the gorge down
* Changes in biodiversity and river structure due to low flows
* Silting up of the river beds
* We want to understand lower river impacts
* NZSAA want a maximum water temperature set at 19 C after which all water abstraction from the Rakaia River will stop
* NZSAA want to see a minimum dissolved oxygen level of 9 mg/l set for the Rakaia River after which all water abstraction on the Rakaia River will stop
* Over -Reliance on old science
* This needs updating
* Review effectiveness of current management
* Compliance Review
* Better environmental Indicators needed – information gaps and trends

**NEXT STEPS**

* **Identify priority information**
* **Making the information on flows readily available to the public**
* **Establish expected outcomes for the Rakaia River:** 
  + **The deed and intent of the WCO need to be reflected in consent conditions and compliance activities**
  + **An effective environmental monitoring program, from the source to the sea, needs to implemented to ensure that all the attributes identified in the WCO and agreed to in an environment court, are maintained and enhanced.**
  + **The Rakaia River should not go below the minimum flow at any time**
  + **The Rakaia River mouth should never close**
  + **All the tributaries of the Rakaia River, including the spawning streams, should have an adequate flow to maintain biodiversity, as per the Hay report, and be free of contamination resulting from poor farm practices**
  + **All the native fish, salmon and trout are to remain in the river. Any fish that are removed need to be returned unharmed or replaced.**
  + **Access to the river be maintained and expanded where possible**
* **Strategy for compliance and enforcement monitoring**
* **Rakaia Trust Funds – Rehabilitation and maintenance**

**- spawning grounds**

**- lower river estuary/hapua**

**- tributaries**

* **Communication – critical for this to be in “plain speak”**
* **Intent of rules / policies etc**
* **Irrigators understanding of their requirements and potential impacts**
* **Notify NZSAA of actions**
* **Are current expected practices being met?**
* **Best practices**
* **Taking a pre-cautionary approach**
* **Develop a Memorandum of Understanding between parties in relation to the above objectives**