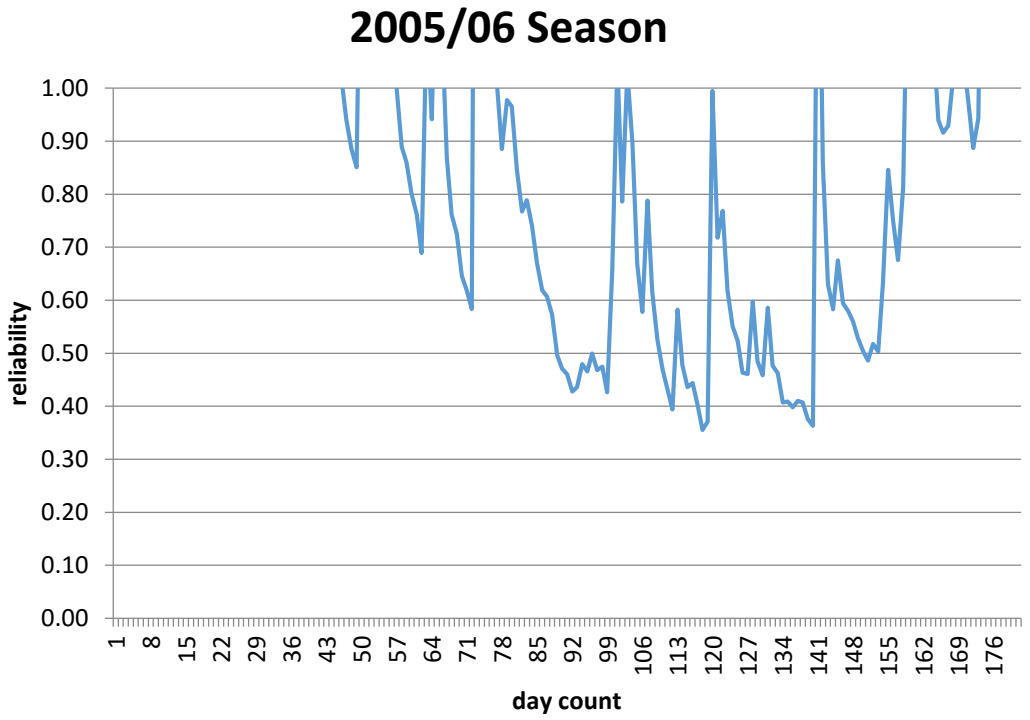
Tim Davis Submission

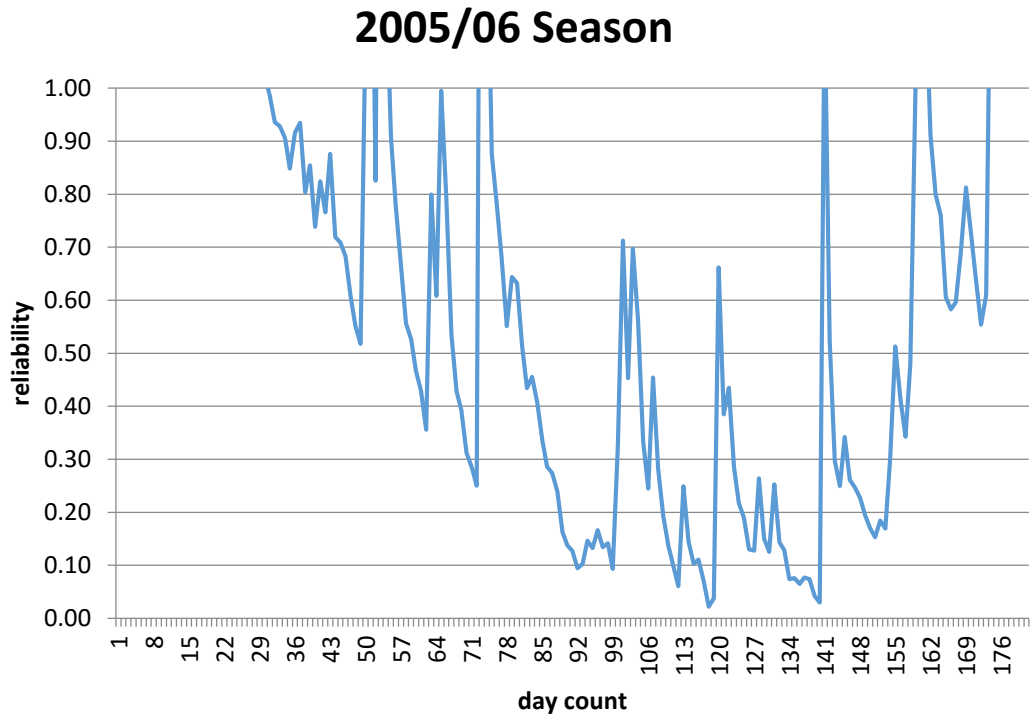
PPC5A – Lindis Integrated Water Management

Restriction Impacts

Current Situation with 1500 l/s abstraction



750 l/s Minimum Flow with 1500 l/s abstraction



Winter Feed

- 28ha Fodder Beet, 9ha Swedes
- 800t DM feed produced
- Under 750 l/s min flow estimated 60 days of less water
- Cost to replace lost production $90 000
- Under 450 l/s min flow estimated 17 days of less water
- Loss of production considerably less due to intermittent restrictions
- Estimated cost @ 750 l/s on 37 ha greater than Berl estimates for entire catchment

Fattening Stock

Reliable Irrigation enables quicker finishing of stock

More kg of live-weight finished for comparable winter carrying capacity

Selling cattle store in a dry year when on severe restrictions could lead to a potential loss greater than $48 000

Will have to revert back to a two-year wintering system if high minimum flow imposed. Lead to a large drop in income.

Dryland Integration

Mid-altitude country with adequate rainfall

Dry effects on mid-altitude country. Overgrazing can do long-lasting damage

Impact of 750 l/s minimum flow on Longacre

Replacement of winter feed not grown - $90 000

Loss due to selling store cattle - $48 000

Cost to supplementary feed 2-tooth ewes - $52 000

Loss of income selling lambs store - $170 000

Total cost / loss of income $360 000

Comparing completely Dryland Property with Dryland +8% irrigation

Very similar properties

Same genetics for over 20 years

Only difference irrigation

Predict without irrigation, Longacre would run less stock than neighbour

Marginal GFI per irrigated ha $1640

	Neighbour	Longacre
Production KPIs		
Effective Area (ha)	3521	3340
Stock Units	8257	10132
Lambing %	70	74
Wool Kg/SU	4.1	5.25
Sheep Deaths %	6	5.9
Average Wool Price / Kg	14.89	14.4
Cow Calving	90	109
Cattle Death %	3	0.3
Financial KPIs		
Animal Health / SU	4.83	3.99
Fertilizer / SU	8.87	8.87
Feed / SU	4.97	6.93
GFI / SU	**99.65**	**126.52**
GFI / Ha	226	384
FWE / SU	40.3	68.55
FWE / GFI %	40	54
EFS / SU	59.36	65.8
EFS / Ha	**139.2**	**199.6**

Naturalised Flow Series

- Latest naturalised MALF at Ardgour 1745
- MALF at Lindis Peaks 1496
- Calculation of tributaries overstate contribution to main stem at low flow
- Low flow at Lindis Peaks 672
- Naturalised low flow between 732 – 778 l/s

- 100% reliable water in Lindis 755 l/s at Ardgour Flow recorder

Opus Review

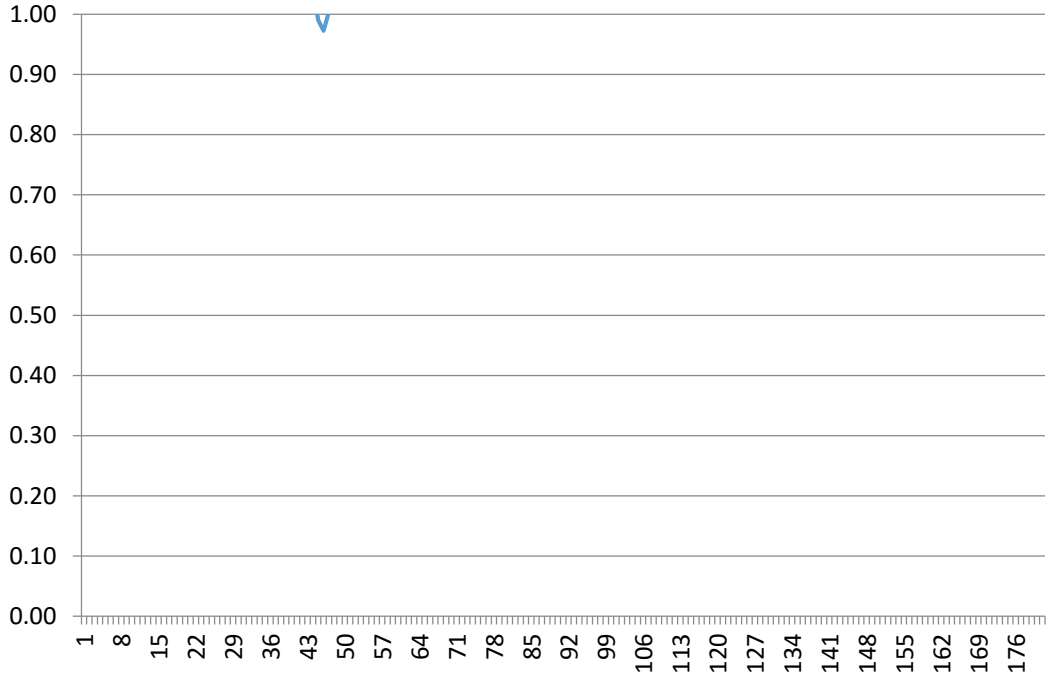
“The impact of a minimum flow regime would have a significant effect on both the number of days each irrigation season, and the duration of continuous periods when 100% supply security could not be met. The effect of any minimum flow requirement increases with the magnitude of that flow”

“The effects of a specific minimum flow are greatest when efficient irrigation systems are used to irrigate those areas of the Lindis Catchment which currently do not have access to alternative water sources”

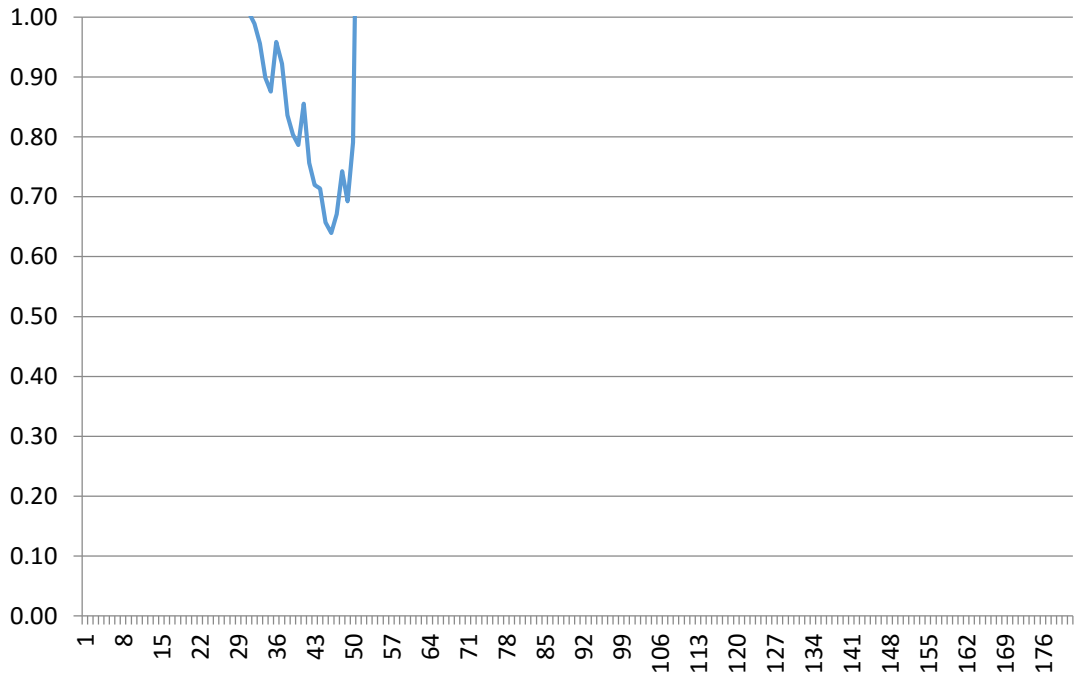
Reliable water reduces from 550 l/s to 0 l/s

75th Quartile flow, MALF year, 2010/11 Season

Current situation with demand at 1500 l/s

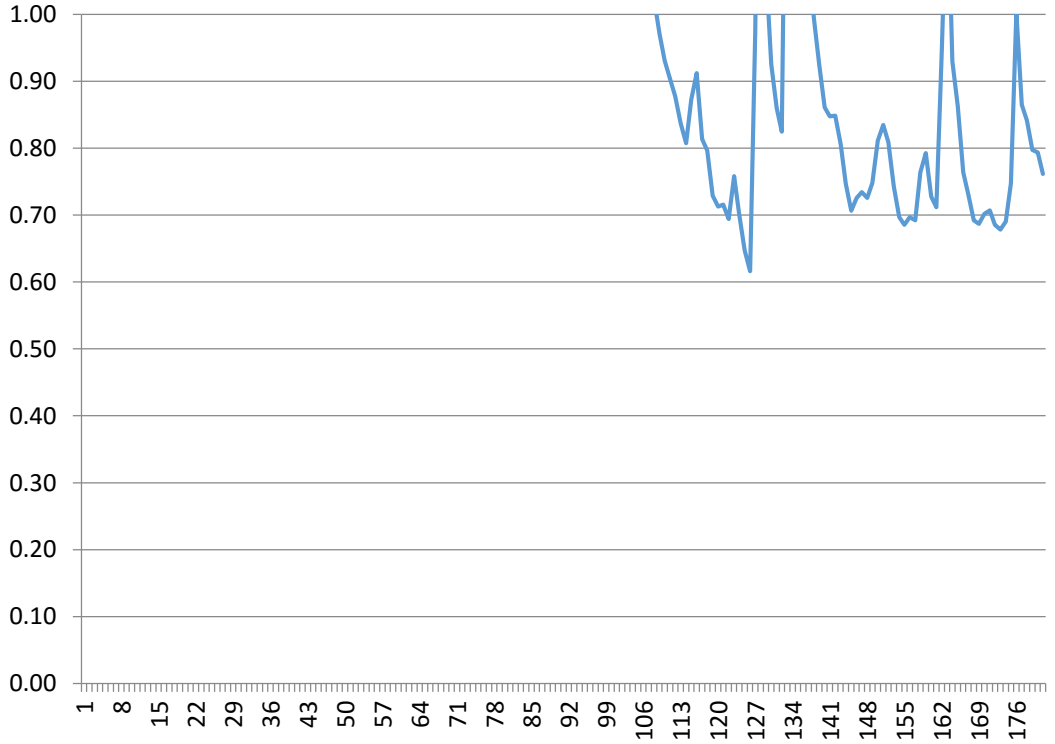


750 minimum flow with demand at 1500 l/s

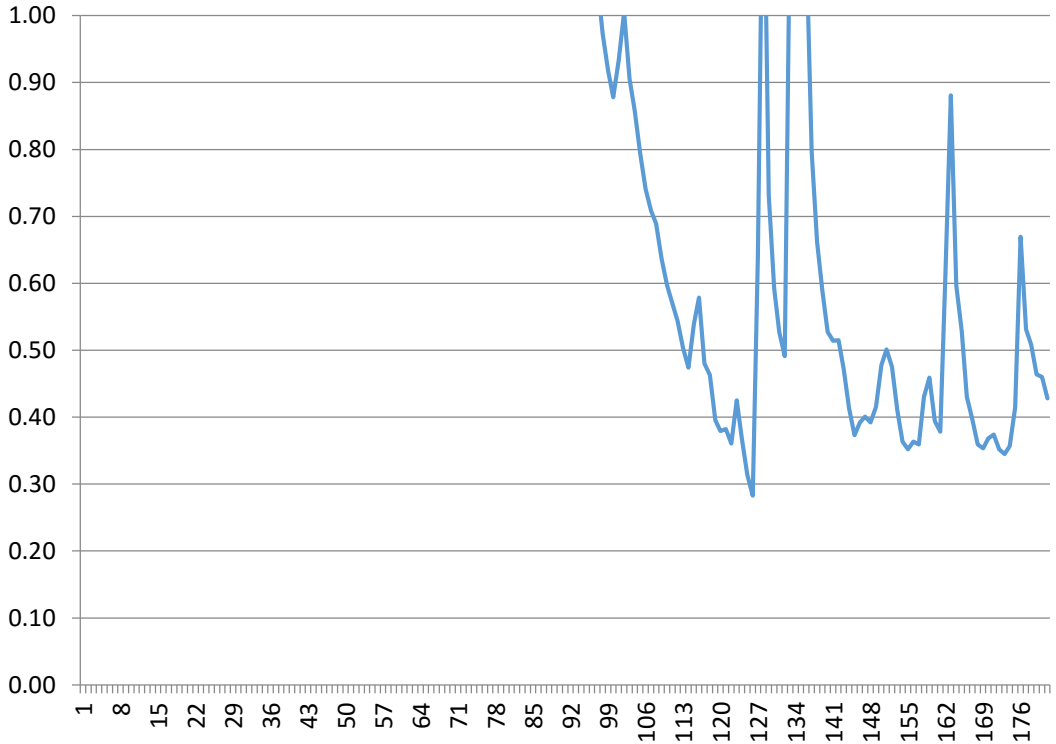


25th Quartile flow, 06/07 Season Reliability

Current Situation with demand at 1500 l/s

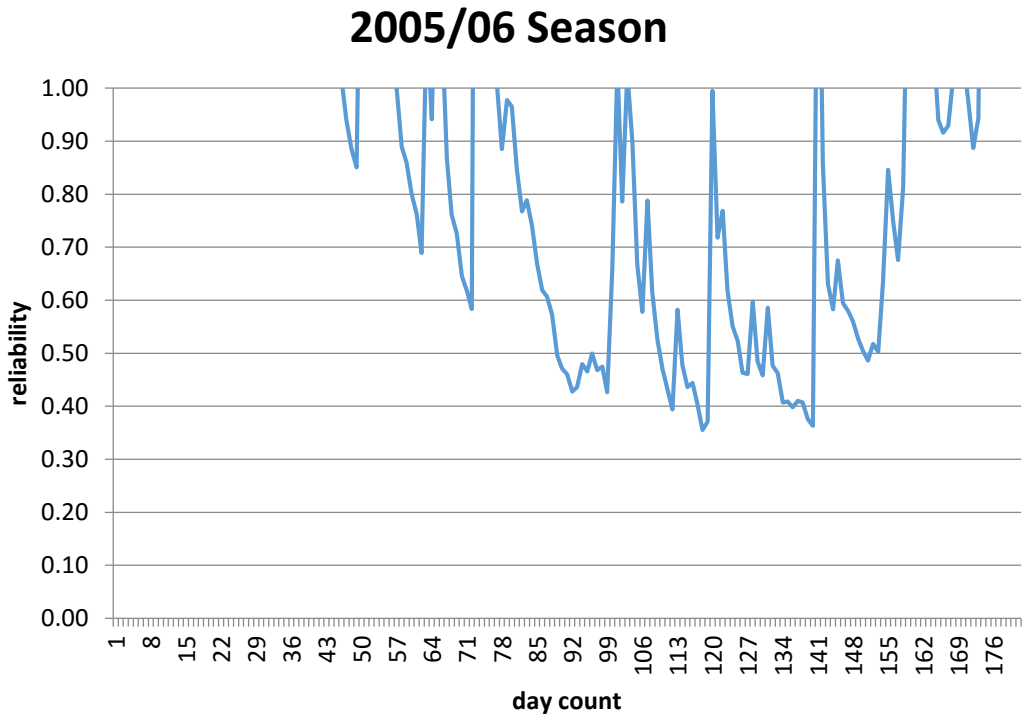


750 l/s minimum flow with demand at 1500 l/s



Worst year, 05/06. Similar this year.

Current Situation with 1500 l/s abstraction



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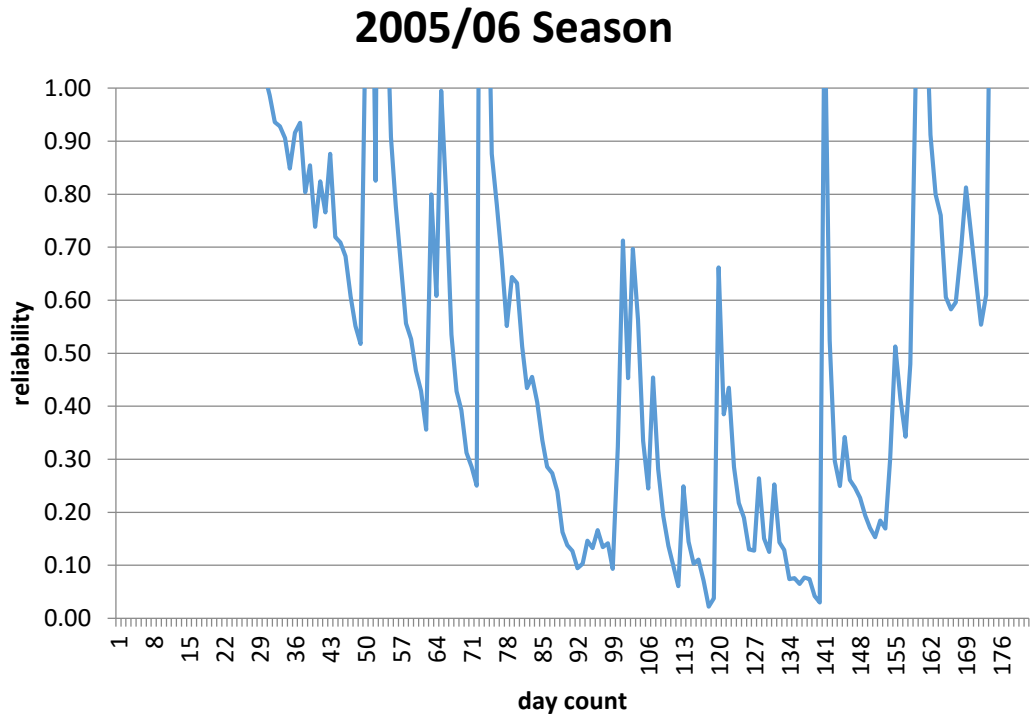

Economic Impact

- Loss of water at 450 l/s minimum flow is 250 l/s
- Irrigates 430 ha, 100% reliable
- Gross Margin Analysis average return $2531 / ha
- Loss of $1.819 million to Central Otago District
- Loss of $2.444 million to Wider Otago Region

750 l/s Minimum Flow

- Loss of 550 l/s
- 948ha irrigation, 100% reliable
- Local community loss of $2.205 million
- Loss of $4.009 Million to Central Otago
- Loss of $5.387 Million to Wider Otago Region
- Annual Figures

Berl Analysis

- Uses ‘restriction’ or ‘no restriction’ for modelling
- No account of degree of reliability left
- Gross Margin Loss of $100 000 on-farm
- Makes no economic sense, especially given cost to irrigate

- Brief provided to downplay any cost of reduction in flows to irrigators? ORC have not met legislative requirements

Values

- Upstream from Cluden largely unaltered
- Cluden Creek to Ardgour, opportunity to make a significant difference
- Cost to change takes between 2-3000/ha. $3m + investment
- Below SH8 is where contentious issue is
- Value’s limited due to natural character

Values in the Lindis

Swimming/Paddling/Wading/Camping

Natural Character

Connectivity

Water Quality

Water Temperature

Low-flow stepped flow

- Aim to increase reliability
- Some compromise needed from all sides
- Operative when flows drop below 1000 l/s at Lindis Peaks
- Guarantee flows below SH8 bridge to protect values up until that point
- Likely 150-200 l/s be made available
- Occur on average less than one year in Five
- Cost to provide equivalent storage $2.7 million

Primary Allocation Block

- ORC proposes 1000 l/s
- Current primary allocation 2300 l/s.
- Is the policy a sinking lid? Is it legally possible to allocate more primary allocation than in the primary allocation block?
- ORC have promised this is possible
- Primary Allocation Block should more closely align with likely demand
- Large amounts invested in efficient irrigation already, under assumption primary allocation will be given

Conclusion

- 450 l/s minimum flow
- A drought flow, set when Lindis Peaks drops below 1000 l/s, guaranteeing flows below SH8 Bridge
- A primary allocation of 1500 l/s, with sinking lid
- Catchment to include all those who currently take water from the Lindis
- Transition provisions