

AQUALINC



Takaka Catchment

Flow & Water Quality Scenario Modelling (Update)

Julian Weir

Andrew Fenemor

Joseph Thomas

GROUNDWATER

IRRIGATION

RESOURCE CONSENTS

FARM ENVIRONMENT PLANS

EFFLUENT MANAGEMENT

WATER MANAGEMENT

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New Scenario

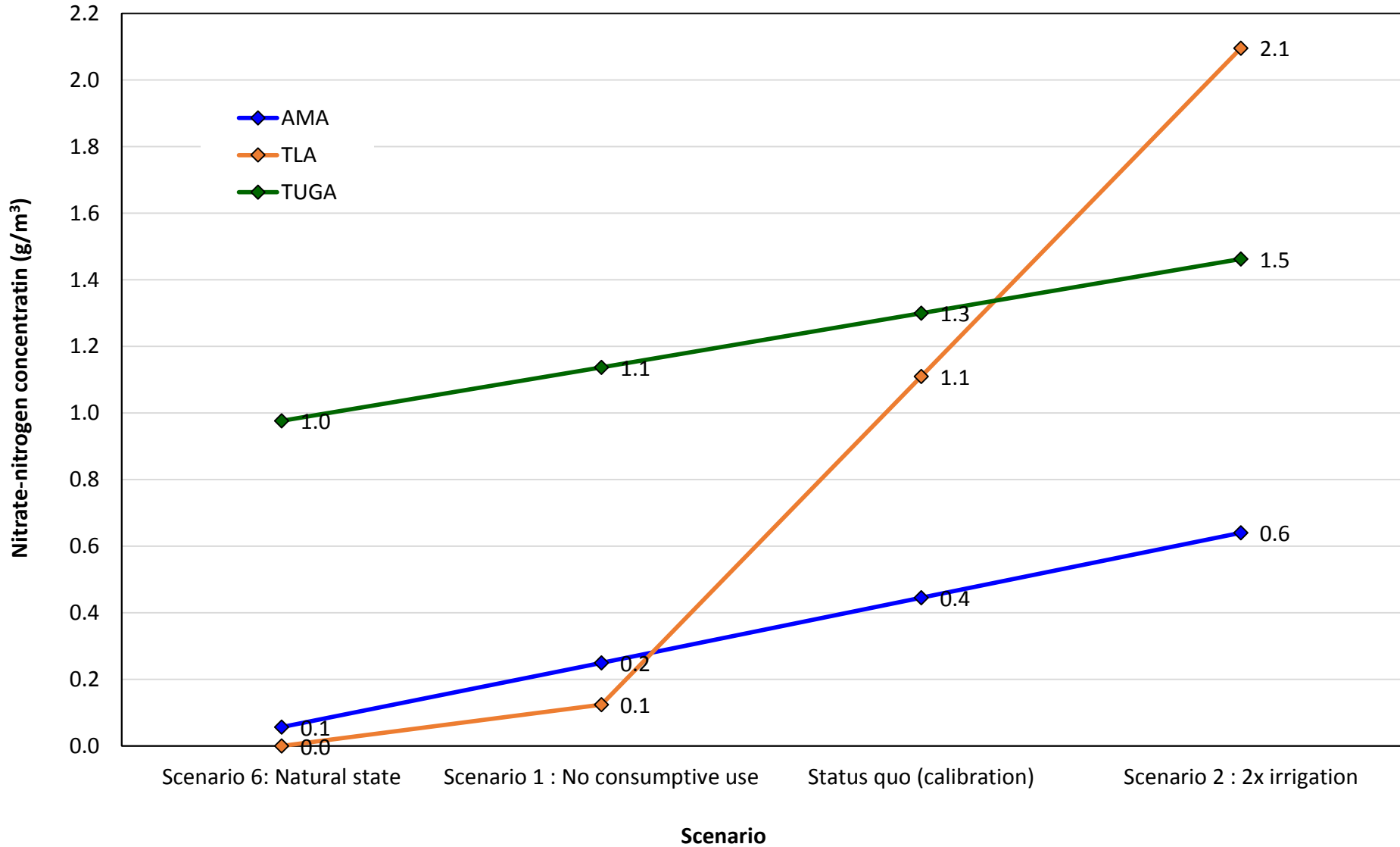


- Scenario 6: Natural State

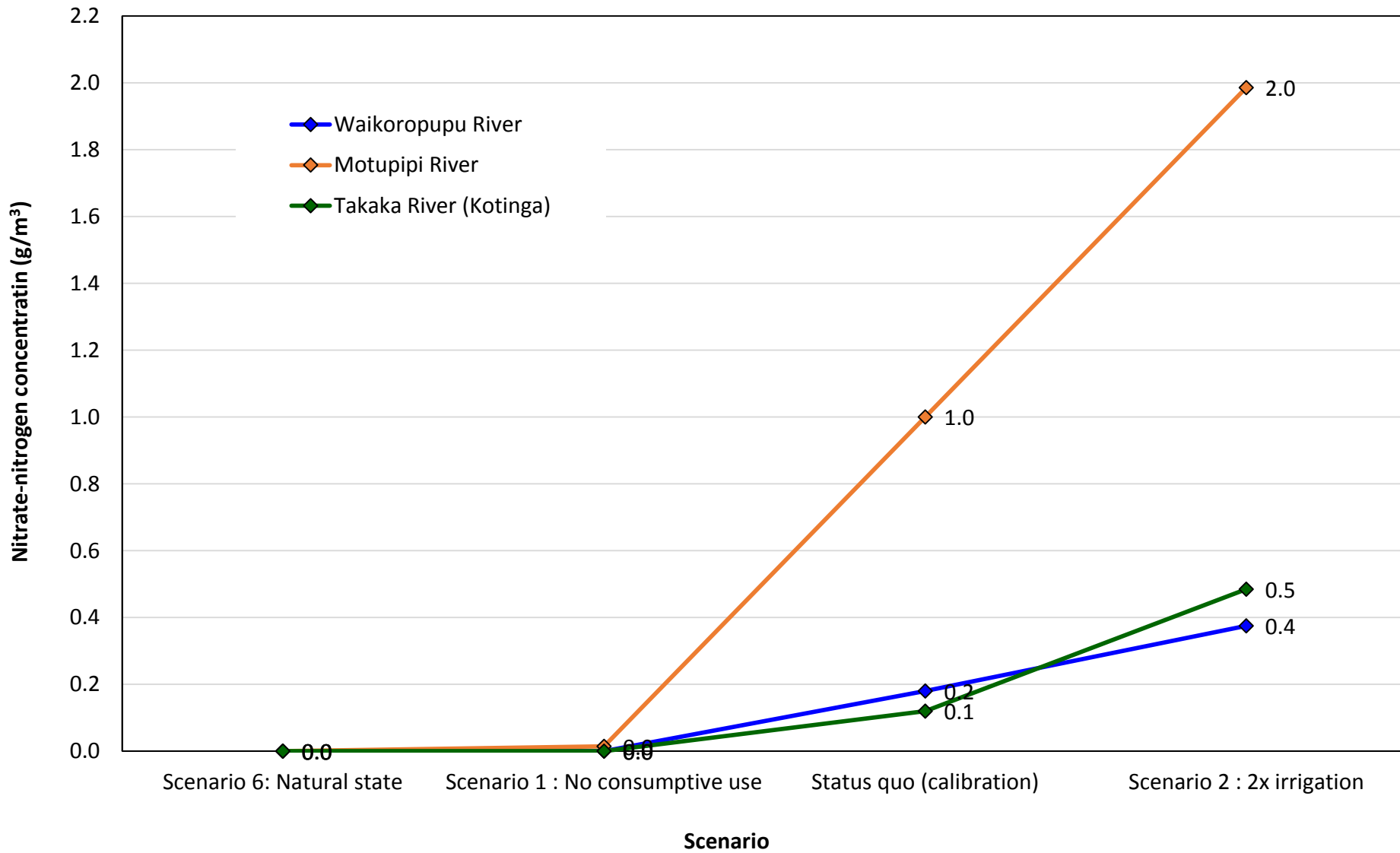
Approximate natural state of environment

- No Cobb Dam
- All land cover is forestry
- No consumptive use

Groundwater Concentrations



Surface Water Concentrations



River Flows

River flow statistics for the period 1990-2014 (unless otherwise stated)

River	Measured	Status Quo (Calibration)	Scenario 1 (No Consumptive)	Scenario 2 (Double Irrigation)	Scenario 3 (GW Supplied)	Scenario 4 (No Cobb Dam)	Scenario 5 (Waingaro River)	Scenario 6 (Natural State)	Scenario 7 (???)	
		Average (l/s)								
Main Spring	9,910 (synthesised by TDC)	9,580	9,700	9,460	9,300	8,860	9,200	7,980		
Fish Creek	3,390	3,120	3,180	3,070	3,000	2,870	2,990	2,530		
Spring River	10,135	10,000	10,130	9,860	9,700	9,390	9,680	8,520		
Motupipi River	470 (weedy) (2006-2014)	380	400	360	310	370	380	300		
Paynes Ford	12,100 (synthesised)	12,040	11,790	12,470	11,890	11,290	11,630	10,490		
Kotinga (calculated)	33,440	31,480	31,230	31,910	31,330	30,730	11,630	29,930		
		7-day MALF (l/s)								
Main Spring	7,290 (synthesised by TDC)	7,290	7,430	7,110	6,990	6,500	6,910	5,830		
Fish Creek	570	540	660	430	370	290	430	230		
Spring River	5,510	5,640	5,820	5,340	5,190	4,890	5,310	4,530		
Motupipi River	210 (weedy) (2006-2014)	240	270	210	150	230	240	190		
Paynes Ford	140 (synthesised)	90	100	60	60	0	30	0		
Kotinga (calculated)	3,580	3,050	3,040	3,020	3,010	2,710	30	2,680		

River Flows

River flow statistics for the period 1990-2014 (unless otherwise stated)

River	Measured	Status Quo (Calibration)	Scenario 1 (No Consumptive)	Scenario 2 (Double Irrigation)	Scenario 3 (GW Supplied)	Scenario 4 (No Cobb Dam)	Scenario 5 (Waingaro River)	Scenario 6 (Natural State)	Scenario 7 (???)	
		Zero-flow days (average/year)								
Main Spring	0 (synthesised by TDC)	0	0	0	0	0	0	0		
Fish Creek	0	2	0	5	7	9	4	9		
Spring River	0	0	0	0	0	0	0	0		
Motupipi River	0 (weedy) (2006-2014)	0	0	0	0	0	0	0		
Paynes Ford	41 (synthesised)	41	40	52	47	109	59	113		
Kotinga (calculated)	0	0	0	0	0	0	59	0		

River Flows

River flow statistics for the period 1990-2014 (unless otherwise stated)

River	Measured	Status Quo (Calibration)	Scenario 1 (No Consumptive)	Scenario 2 (Double Irrigation)	Scenario 3 (GW Supplied)	Scenario 4 (No Cobb Dam)	Scenario 5 (Waingaro River)	Scenario 6 (Natural State)	Scenario 7 (???)
1 in 5 year low flow (l/s) (2005/06 season) (approximate)									
Main Spring	6,385 (synthesised by TDC)	6,595	6,750	6,385	6,280	5,855	6,210	5,340	
Fish Creek	70	80	270	90	85	80	50	45	
Spring River	4,430	4,710	4,935	4,355	4,220	4,080	4,380	3,890	
Motupipi River	180 (weedy) (2006-2014)	205	235	175	115	200	200	170	
Paynes Ford	0 (synthesised)	0	0	0	0	0	0	0	
Kotinga (calculated)	2,690	2,190	2,160	2,180	2,170	2,100	0	2,100	
1 in 10 year low flow (l/s) (2009/10 season) (approximate)									
Main Spring	5,985 (synthesised by TDC)	6,280	6,440	6,060	5,960	5,565	5,900	5,110	
Fish Creek	35	40	195	50	50	50	20	25	
Spring River	4,005	4,330	4,565	3,965	3,830	3,750	4,000	3,620	
Motupipi River	165 (weedy) (2006-2014)	190	215	155	100	180	180	150	
Paynes Ford	0 (synthesised)	0	0	0	0	0	0	0	
Kotinga (calculated)	2,330	1,890	1,860	1,890	1,890	1,870	0	1,870	

Groundwater Levels

Groundwater level statistics for the period 1990-2014 (unless otherwise stated)

Aquifer	Site	Measured	Status Quo (Calibration)	Scenario 1 (No Consumptive)	Scenario 2 (Double Irrigation)	Scenario 3 (GW Supplied)	Scenario 4 (No Cobb Dam)	Scenario 5 (Waingaro River)	Scenario 6 (Natural State)	Scenario 7 (???)	
			Average (m amsl)								
AMA	Pupu Main Spring	15.8 (synthesised by TDC)	15.9	16.0	15.8	15.7	15.4	15.6	14.7		
	Savage	33.1	33.7	33.7	33.7	33.6	32.2	32.9	29.9		
	Sowman	38.3	35.1	35.1	35.1	35.0	33.6	34.3	31.1		
TLA	Cserney	12.0	11.7	12.3	11.5	9.7	11.5	11.6	9.5		
TUGA	Fire Station	7.2	7.4	7.3	7.7	7.2	6.8	7.0	6.1		
	TDC Office	6.8	6.8	6.7	7.1	6.6	6.2	6.4	5.6		
			Minimum (m amsl)								
AMA	Pupu Main Spring	14.4 (synthesised by TDC)	15.1	15.2	14.9	14.8	14.5	14.7	13.8		
	Savage	21.0	20.6	20.8	20.4	20.5	19.7	19.8	18.0		
	Sowman	19.7	19.8	20.0	19.6	19.7	19.0	19.0	17.4		
TLA	Cserney	6.8	6.1	6.7	5.1	3.4	5.9	5.9	5.4		
TUGA	Fire Station	6.4	6.6	6.5	6.9	6.3	5.8	6.2	5.3		
	TDC Office	6.4	6.1	6.0	6.3	5.9	5.6	5.8	5.1		