

Attribute [Key: green = suggested priority attributes for WaterWheel] (F)=suggested originally by FLAG, (S)=Suggested originally by staff Attributes sorted as Environmental (Pressure-State-Response), Economic, Socio-Cultural	Data Sources	Ecosystem Health (compulsory)	Cultural and Spiritual Values	Fishing and Food Gathering	Natural Form & Character	Recreation (secondary contact compulsory)	Municipal/Domestic Water Supply (Source Water)	Livelihood and Economic Use	Hydro-electric Power Generation	Comments
Dissolved Oxygen	TDC measurements	Motupipi River [known problems] (S)								
E.coli (breaches of recreation standards)	TDC summer bathing beach surveys					Takaka River at Paynes Ford (S/F), TWMC (F/S), Lower Anatoki River (S), Motupipi River (F), Pohara Creek (F) [popular freshwater and freshwater affected swimming sites]		TWMC (S), Pohara Creek (F) [tourism - default to that used under Recreation]		Duplication and overlap - Water Wheel to default to recreation value, but acknowledge this aspect also of importance to tourism industry.
E.coli (human consumption)	TDC water supply monitoring and quarterly surveys			Watercress harvest locations (F) [known harvest locations -risk to human health]			Alluvial Groundwaters (S) [used for untreated water takes]			Duplication and overlap - Water Wheel to default to most sensitive situation.
Freshwater fish - <i>food species</i> - abundance and diversity (observed over expected for specific species or fish communities, eg whitebait, eel, trout)	TDC and DOC fish surveys/river models for expected populations			Waitapu Estuary?(S), Motupipi River (where?) (S/F), Takaka at Paynes Ford (F), TWMC (F) [known mahinga kai locations - which species?]						
Freshwater fish [native] abundance and diversity (Observed/Over Expected)	TDC and DOC fish surveys/river models for expected populations	Onekaka River as proxy for N Takaka streams [very high diversity observed] (S)								
Macro-invertebrate indices (eg MCI)	TDC and research results	Takaka River at Kotinga [has MCI data record](S), Takaka River at Paynes Ford (S/F) [no appreciable difference to kotinga], Motupipi River (F), TWMC (F)								
Nitrates	TDC monitoring	Motupipi River (F)	Te Waikoropu Springs [iconic - for retention of low nitrate levels] (S)							Duplication and overlap - Water Wheel to default to most sensitive situation
Numbers of days any part of Takaka River main stem is dry (change in dry days per year)	Modelled from Harwoods flow and water takes							Takaka River (S) [affects surface water takes?]	Cobb Dam [???] (S)	
Periphyton (% Bed Cover, number of exceedances of guidelines)	TDC monitoring	Motupipi River, Paynes Ford [known problems] (S)				Takaka River at Paynes Ford (S/F), Lower Anatoki River (S), Motupipi River (F), TWMC (S) [popular swimming sites]				Duplication and overlap - Water Wheel to default to most sensitive situation
Riparian Vegetation Assessment (lowland perennial rivers/streams)	TDC aerial photography	Powell Creek (S), TWMC (S) [known problems exacerbated by poor shading]			TWMC (S), Motupipi River (F)					Duplication and overlap - Water Wheel to default to most sensitive situation
Stream Habitat Score (eg Multi-Value Assessment)	TDC monitoring	Motupipi River (S) [known problems] TWMC (F)			Motupipi River (F), Takaka River at Paynes Ford (F), TWMC (F)					Duplication and overlap - Water Wheel to default to most sensitive situation
Visual Water Clarity (change in black disc)	TDC monitoring		TWMC (F)			Paynes Ford(S), Lower Anatoki River(S), TWMC (F) [popular swimming sites]				Duplication and overlap - Water Wheel to default to most sensitive situation
Environmental flow regime needed to protect ecosystem health (e.g. % of MALF allocated)	Research recommendations	Onekaka River [key for protecting high fish diversity] (S)								
Surface water environmental flow limits (e.g. water take rationing trigger, or minimum flow)	TDC consent or plan conditions	Takaka River at Paynes Ford (F)	Te Waikoropu Springs [iconic -for protection of spring flow] (S)		Takaka River at Paynes Ford (F)					Flow statistics will differ between water bodies.
Groundwater level limits (e.g. water take rationing trigger, seawater intrusion trigger or minimum flow)	TDC consent or plan conditions						Motupipi River (F), Takaka River at Paynes Ford (F), TWMC (F)	TWMC (S)		
Irrigable area - % of area for which irrigation water is already allocated	TDC consent records; Takaka Irrigators Collective assessed irrigable area							TWMC (S)		
Number of people (FTE) employed in primary production and related industries	Stats Dept census data							TWMC (S)		
Average kilowatts generated annually	Trustpower and small hydro records								TWMC , Cobb, Waikoropu, Onekaka (S)	
Number [density] of human-made structures in or adjacent to water body	TDC aerial photography				TWMC (S)					
Water allocated/water allocation limit [or (eg) % of MALF or groundwater recharge allocated]	TDC consent records								TWMC (S/F), Takaka at Harwoods (S), Takaka River at Paynes Ford (F),	
Security of supply for water takes and uses (e.g. % of use period under restrictions, change in MALF averaged across the named creeks - below takes, change in SOS in WMZ with 3 lowest SOS)	TDC data						Eastern Takaka Catchments - named creeks? TWMC (S/F) [used for water takes]	TWMC (S/F), Motupipi River (F), Takaka River at Paynes Ford (F)		
Angler days - number of days per year for a specified river	Fish & Game periodic angler surveys			Takaka River [trout fishing] (S)						
Number and spread of sites with safe public access	Public access commission; TDC cadastral maps			TWMC (S) [with default to most sensitive value]		TWMC (S) [with default to most sensitive value]		(TWMC (S) [tourism-with default to most sensitive value])		Duplication and overlap - Water Wheel to default to most sensitive situation
Assessment of Mauri (eg Cultural Health Index)	Tiakiina te Taiao; Ngati Tama		Takaka River at Paynes Ford (F), TWMC (F)	Motupipi River (F), Takaka River at Paynes Ford (F)						Duplication and overlap - Water Wheel to default to most sensitive situation
Public participation and satisfaction index for Takaka Water resources	TDC survey							TWMC (S)		This could be applicable across other 'social' related values
Social Indicator(s) (to be confirmed)	TDC survey or data		Motupipi River (F), Takaka River at Paynes Ford (F)							