

1.7 Buchanan's Creek at Fletcher's Bridge (NZMS 260 J40:630-019)

1.7.1 Description

Buchanans Creek at Fletcher's Bridge is a lowland spring-fed stream with vegetation dominating the instream bed substrate. Pastoral grasses are the dominant riparian vegetation, although stream shading is small at 10%. This site experiences relatively stable flows and low flood disturbance. High levels of macrophyte cover are present and there is very little periphyton cover.

The headwaters of this spring-fed stream can dry up in the summer, providing only intermittent aquatic habitat. Flow at Buchanans Creek was lower in May than in March, the hydrology differing to other foothills streams. The flows at Buchanans Creek are strongly driven by groundwater levels and rainwater runoff.

The invertebrates at this site are those expected to be present in a lowland stream (molluscs and crustaceans).

Kingett Mitchell did not find any specific fish species through the use of electric fishing. However they have provided a list of species known to be present as identified by the (NZFTU), these are:

- Longfin eel
- Shortfin eel
- Common bully
- Inanga
- Adult brown trout

Buchanan's Creek at Fletcher's Bridge provides an ideal habitat for native Inanga.

1.7.2 Local knowledge

Members of the local advisory group presented the following information to assist the Technical Panel:

- There is quite a lot of silt in the creek.
- In the 1986 flood, the Waitao River was running down Buchanan's Creek. The flow is very consistent at this section of Buchanan's Creek. Muddish also exist in the headwaters of the creek.
- When there is a high flow in the Waitao, there is definitely a high flow at Buchanan's Creek.
- Waitao River flows are connected to the flows at Buchanan's Creek.

1.7.3 Current abstractions

As at 20 June 2006, the consents database showed one permit to take surface water from Buchanan's Creek at Fletcher's Bridge, as detailed below:

Consent Number	Consent Holder	Consented take (L/s)	Current Minimum Flow (L/s)
CRC972243	WJ Fletcher and Sons Limited	45	112

As at 20 June 2006, the consents database showed five permits to take groundwater from Buchanan's Creek at Fletcher's Bridge, as detailed below:

Consent Number	Consent Holder	Consented take (L/s)	Stream Depletion Connection	Current Minimum Flow (L/s)
CRC990379	Calthness farms Limited	30	-	112
CRC972242	WJ Fletcher and Stephen Scarlett	45	Moderate	-

	Sons Limited			
CRC0000848	Mr Samuel Small	30	Moderate	112
CRC950626	Mrs Lillian Elizabeth Campbell	11	Moderate	-

1.7.4 Ranking of objective criteria

Kingett Mitchell and members of the Technical Panel have assessed the relative importance of the instream values identified in Objective WQN1 (a)-(h) as follows:

Value	Ranking	Panel Member
Natural character	L	Pflugger
Trout	M	Burrell
Native fish	M-H	Burrell
Mahinga kai	H	Te Runanga o Waihao
Mauri	H	Te Runanga o Waihao
Wahi tapu & Wahi taonga	H	Te Runanga o Waihao
Indigenous vegetation	L	Partridge
General amenity	L	Pflugger

1.7.5 Flow suggestions

Site Flow Information (L/s)		Suggested Minimum Flows (L/s)			
Gauged	7 Day MALF	Burrell	Duncan	Partridge	Pflugger
276	233	100	No suggestion	100	150
		No suggestion			
		Tangata Whenua			

1.7.6 Staff recommendations

(a) Environmental minimum flows

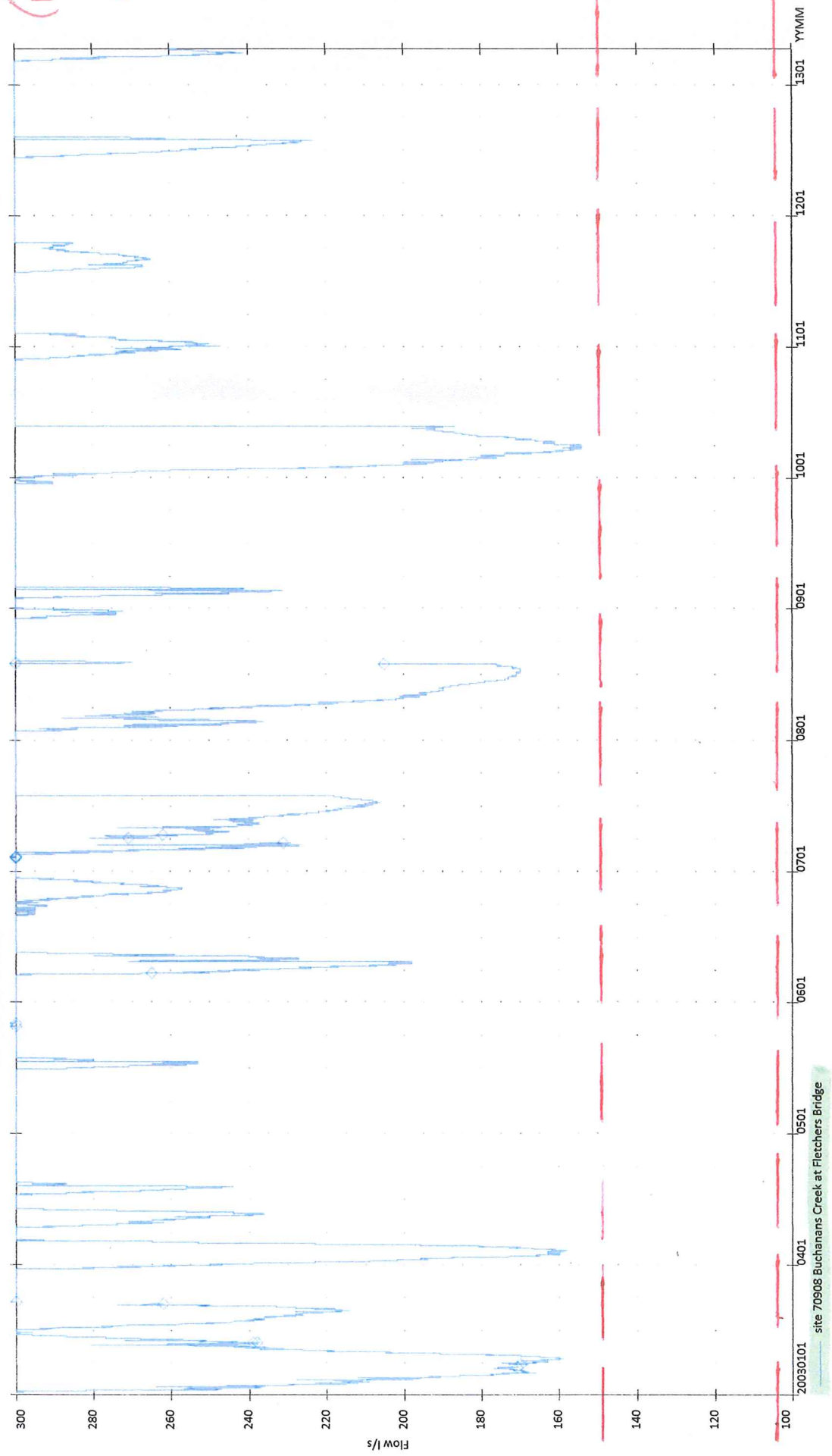
The suggested minimum flows put forward for Buchanan's Creek at Fletcher's Bridge range from 100-150 L/s. The instream values for this creek are ranked from low to high importance.

Te Runanga o Waihao have ranked Buchanan's Creek as being of high cultural value. The Punatarakao Stream/Buchanan's Creek has significant mahinga kai values with the ability to repatriate some of the species that were once resident in the system. The Punatarakao Wetland Trust is restoring the once major kai resource in the hope that the mauri will be enhanced. In terms of wahi tapu and wahi taonga this area is recorded as a silent file. Tangata whenua did not provide a minimum flow suggestion.

Burrell suggested a minimum flow of 100 L/s, the lowest flow recommended out of all Technical Panel members. The trout fishery has a medium ranking and the native fishery is described as being of medium to high value. He is unsure whether the minimum flow site caters for some of the higher ecological values present upstream. Burrell did not find any specific fish species, however the New Zealand Freshwater Fish Database (NZFFD) identifies several native fish species and locals have previously identified Canterbury Mudfish to be present.

Flow in Buchanan's Creek @ Fletchers Bridge 2001-2013

(permanent
~~hydrograph~~
recorder)



Min flow on many existing consents = 112 l/s
Min flow in PLWRP = 150 l/s

[illegible]

FIGURE 1 : LOCATION OF BORE J40/0154