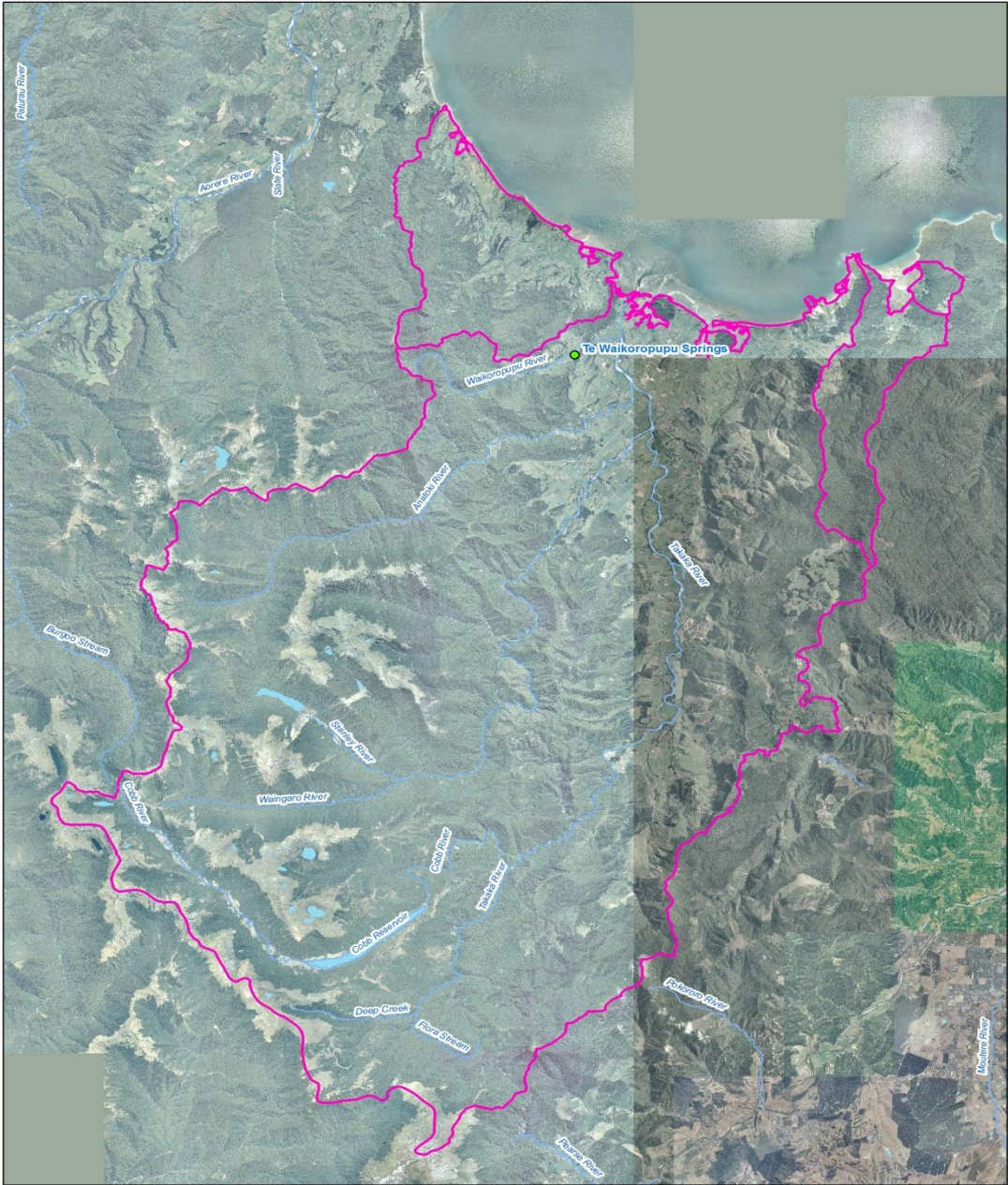


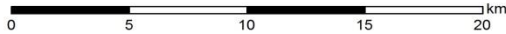
Arthur Marble Aquifer
&
Te Waikoropupu Springs
Recap

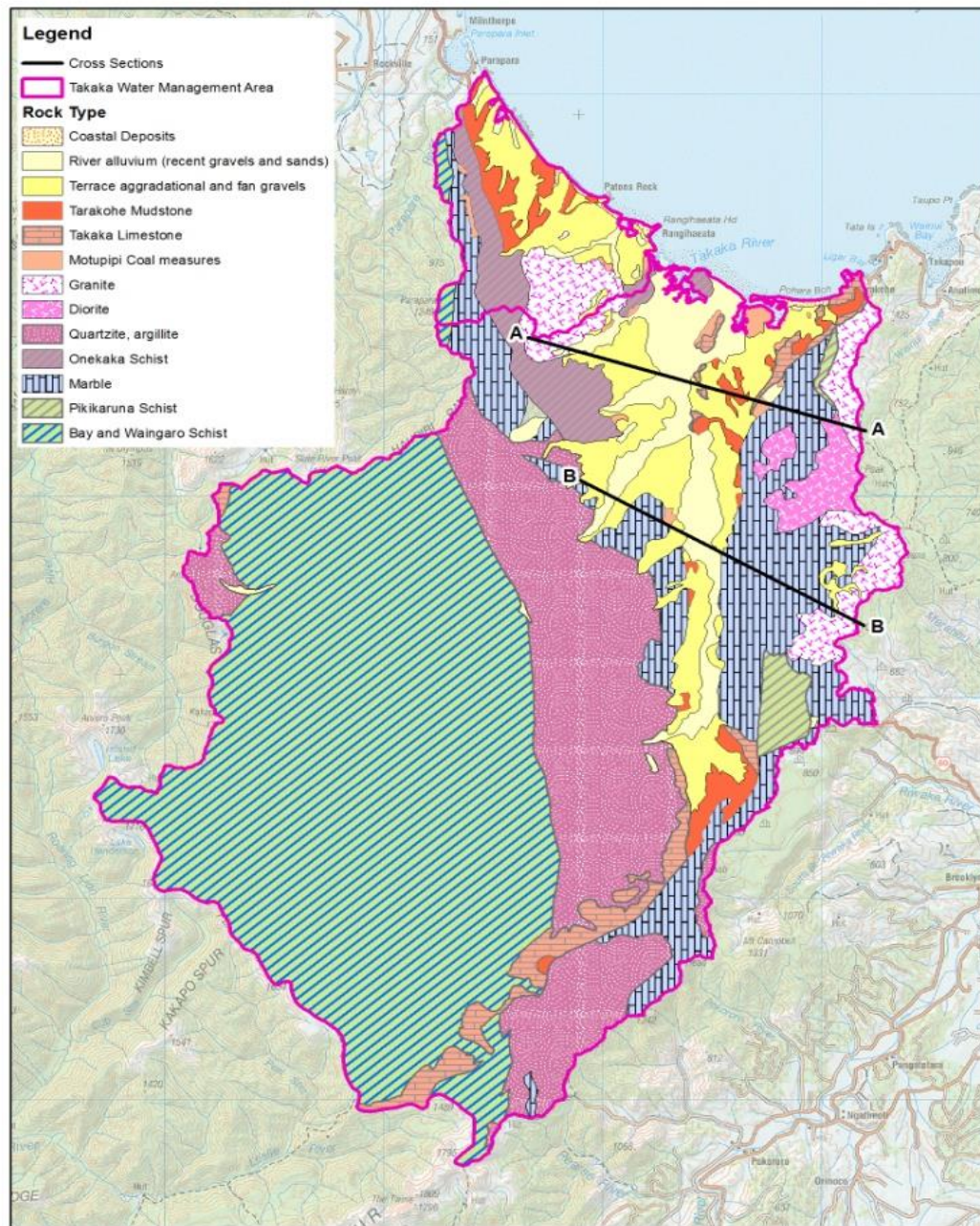
J Thomas

6 November 2015



Takaka Water Management



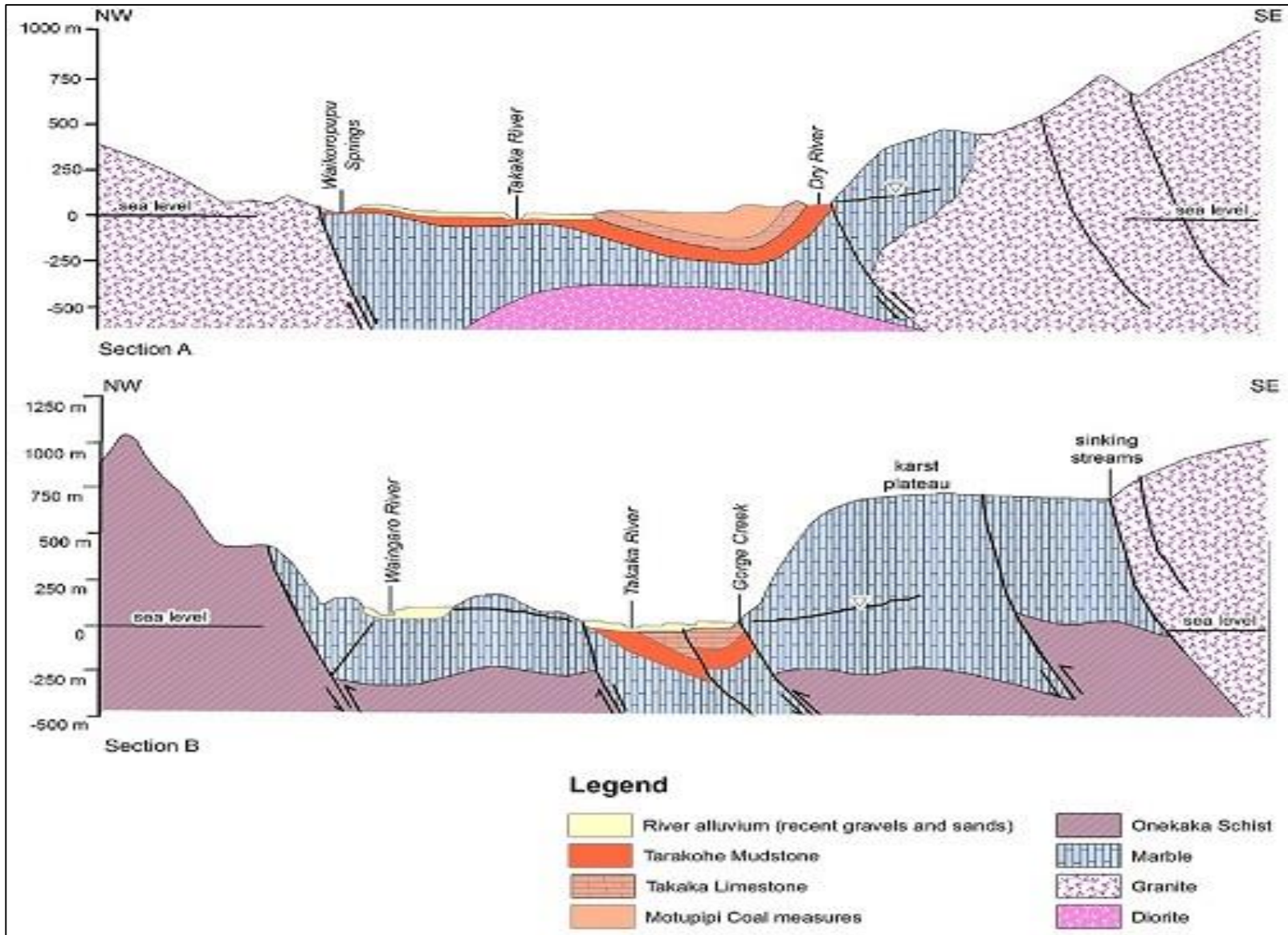


Geology - Takaka Water Management Area



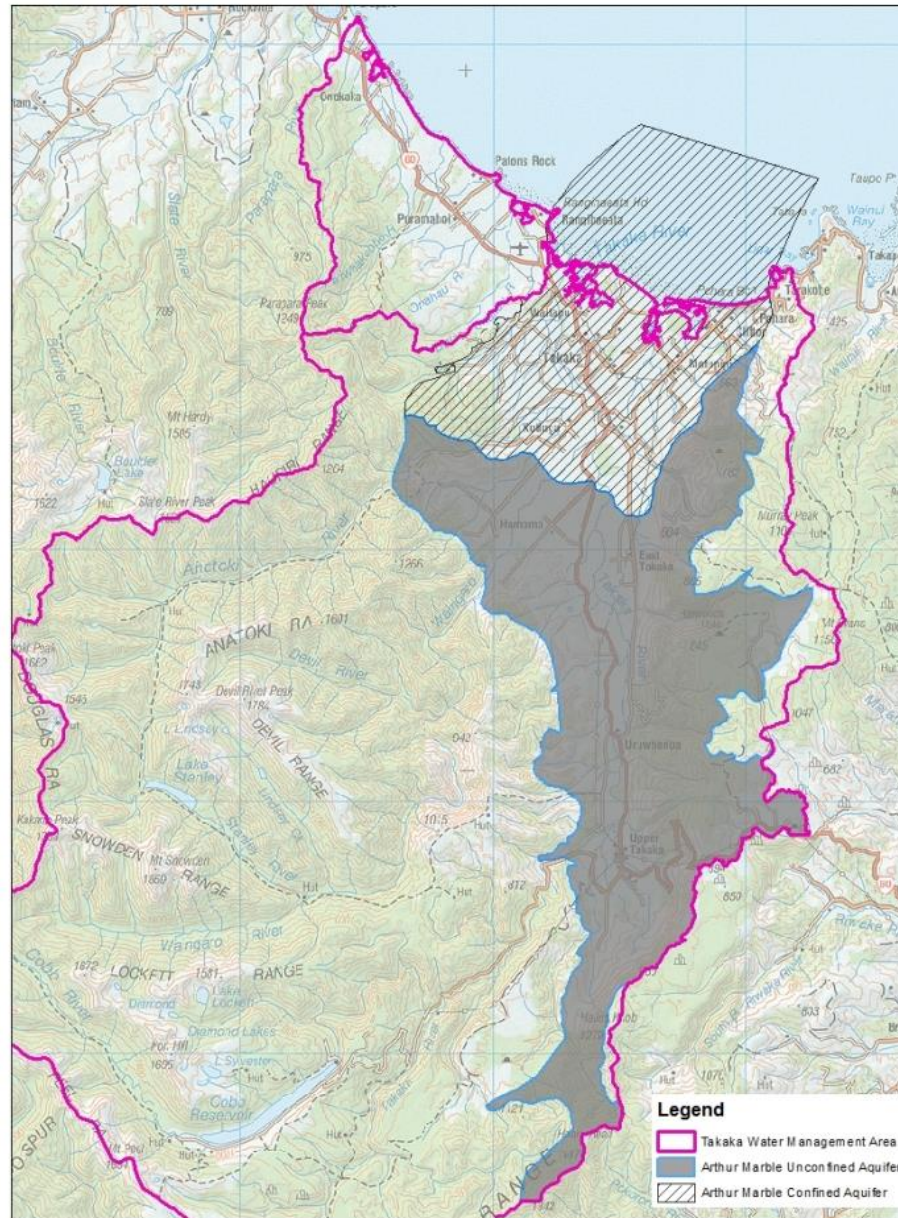
July 2013

Underground Geology

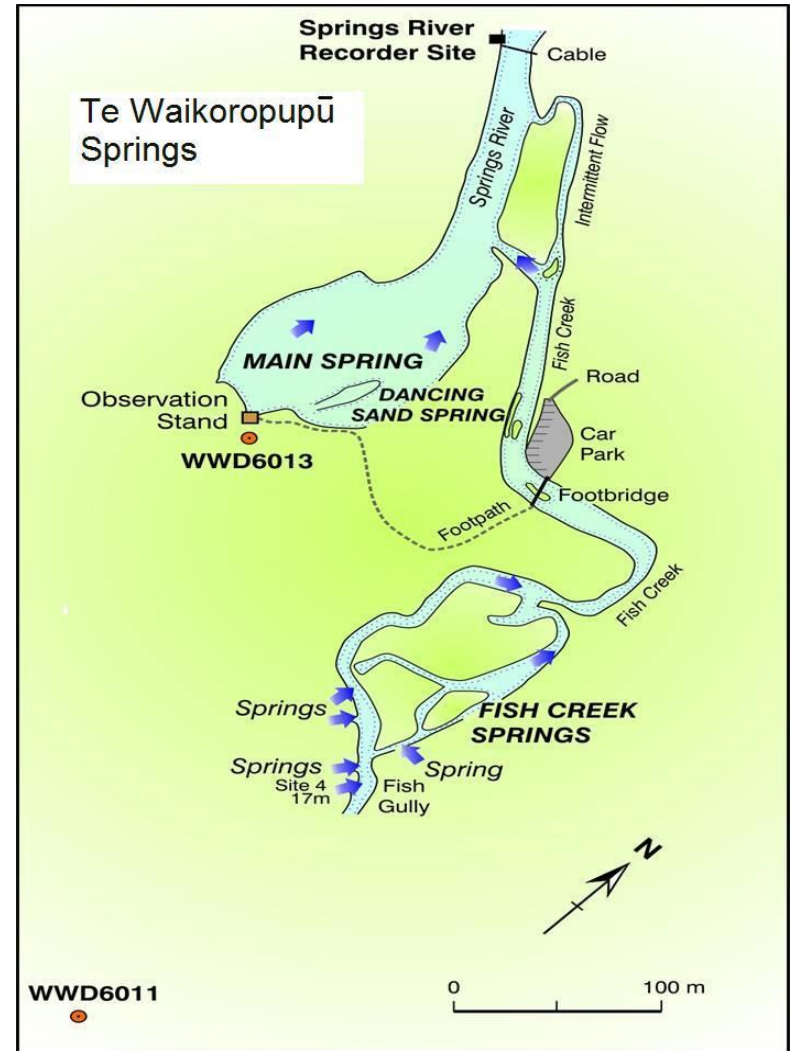


Background Map:

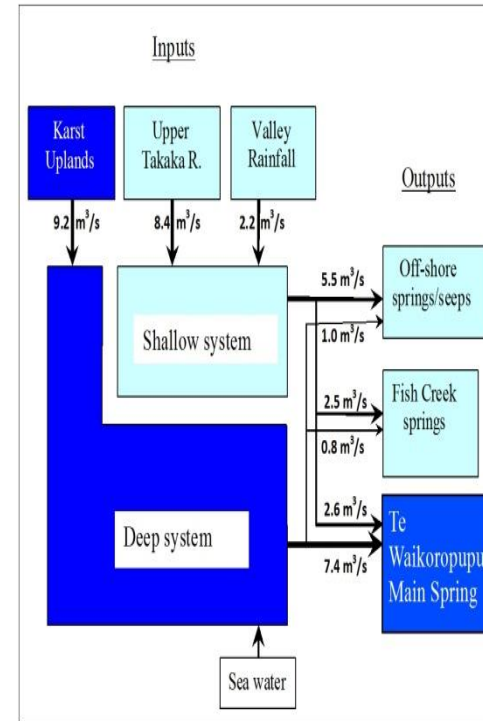
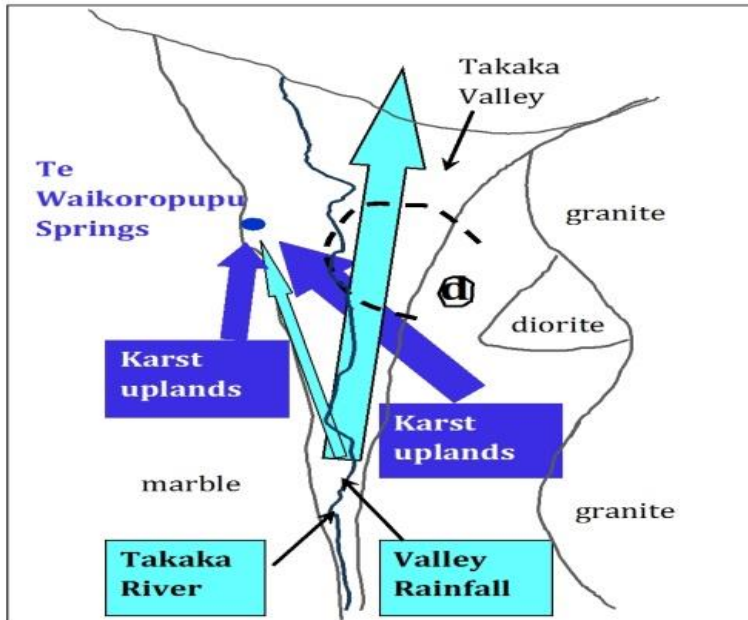
Unconfined &
Confined Aquifers –
Arthur Marble
Aquifer



Te Waikoropupu Springs



Te Waikoropupu Springs



Conceptual model of flow in the Arthur Marble Aquifer

Flow Outputs at Te Waikoropupu and Fish Creek Springs

| Recorder Site | Mean | Median | 7 day low flow (l/s) | | | Analysis Period |
|--------------------------------------|------|--------|----------------------|--------|---------|-----------------|
| | | | MALF | 5 year | 10 year | |
| Fish Creek Spring | 3450 | 3546 | 665 | 127 | - | 1985-2015 |
| GW 6013 - Te Waikoropupu Main Spring | 9800 | 9840 | 7661 | 6806 | 6515 | 1999-2015 |

Flow Statistics for Fish Creek and Te Waikoropupu Springs

Where does the water Come from and go - AMA

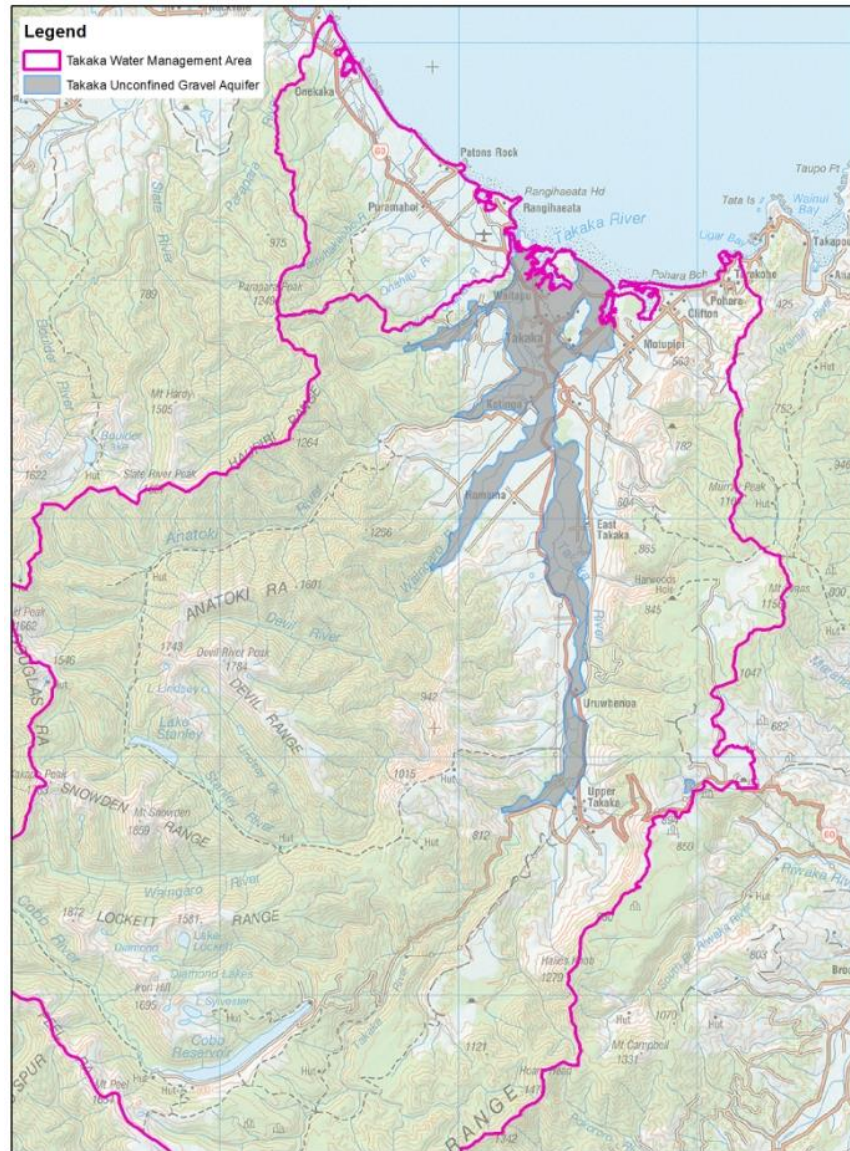
| Recharge Source | Mean Flow (l/s) | | | | % of Total Flow |
|------------------------|-----------------|--------------|------------------|---------------|-----------------|
| | Main Spring | Fish Springs | Offshore Springs | Total | |
| Karst Uplands | 7,400 | 830 | 970 | 9,200 | 46.6% |
| Upper Takaka River | 1,850 | 1,650 | 4,850 | 8,350 | 42.3% |
| Takaka Valley Rain | 750 | 820 | 630 | 2,200 | 11.1% |
| Total mean flow | 10,000 | 3,300 | 6,450 | 19,750 | |

Mean Flows to and from the Arthur Marble Aquifer

Think of the whole AMA with
Te Waikoropupu being a key
part – outflow of water through
the AMA out to sea also has
significance.

Background Map:

Takaka Unconfined Gravel Aquifer



Background
Map:
Takaka Limestone
Aquifer

