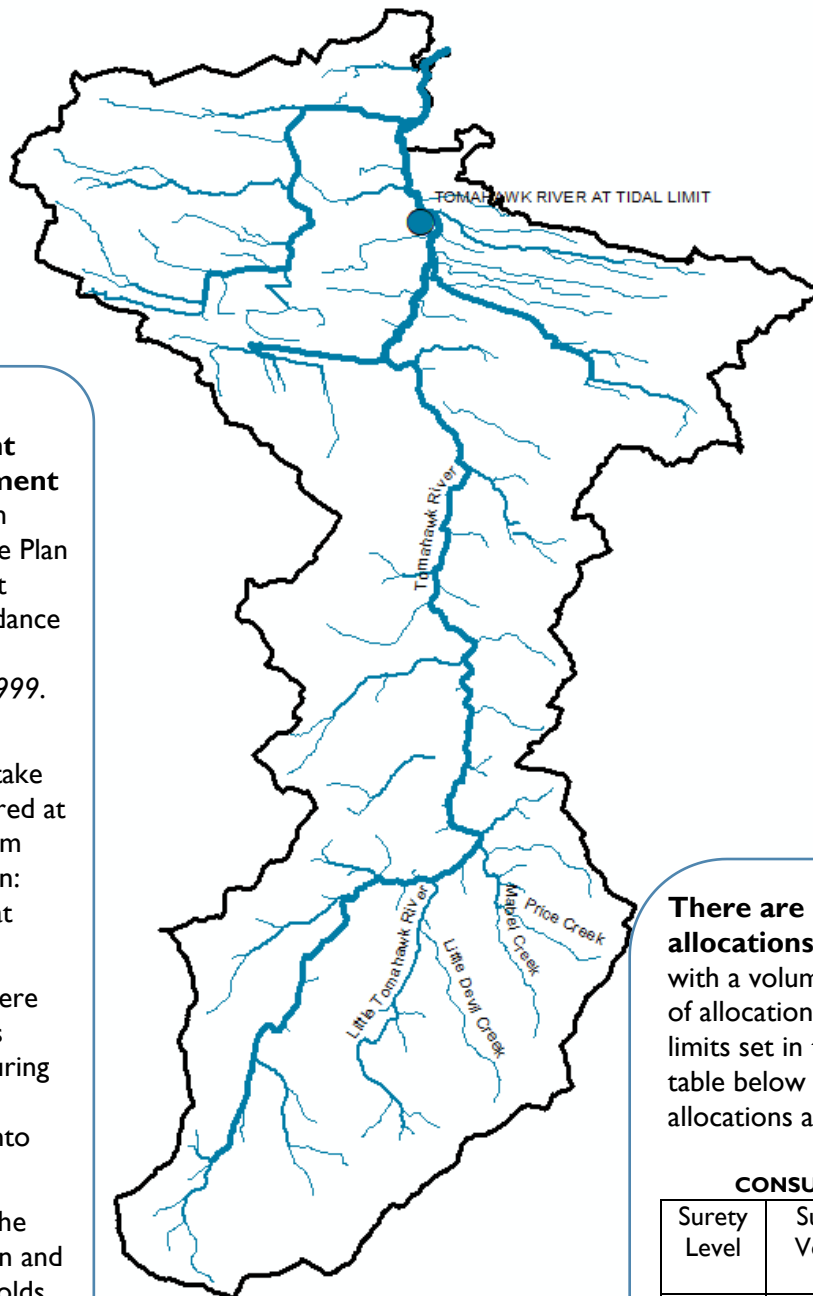


TOMAHAWK RIVER CATCHMENT ANNUAL REPORT 2022/23



The Tomahawk River Catchment Water Management Plan took effect in October 2012. The Plan is a legal document prepared in accordance with the *Water Management Act 1999*.

The Plan set out monthly cease to take thresholds, measured at the NRE Tas stream flow gauging station: Tomahawk River at Tidal Limit.

CTT thresholds were reviewed to assess access to water during winter and revised thresholds came into effect in 2017.

For full details of the current Water Plan and the revised thresholds go to the NRE Tas Water website.

The Tomahawk River catchment is located in the north-east of Tasmania and flows north approximately 29 km from Mount Horror to Ringarooma Bay. The catchment covers a total area of 170 km².

The river system is unregulated with a largely natural flow regime that shows a strong seasonal flow pattern (wetter in winter and drier in summer). The average annual water yield is 24,213 ML/year based on the historical flows at the Tomahawk upstream Tidal Limit stream flow gauge.

There are currently 13 water allocations across the Tomahawk catchment with a volume of 5,133 ML/year. The volume of allocation in the catchment has reached the limits set in the Water Management Plan. The table below details the consumptive allocations at Surety's 5 and 6.

CONSUMPTIVE WATER ALLOCATION

Surety Level	Summer Vol.(ML)	Winter Vol. (ML)	Overall Vol. (ML)
S 5	134	3,564	3,698
S 6	0	1,435	1,435
Total	134	4,999	5,133

CATCHMENT LAND USE

Approximately 28% of the catchment is under production native forests and plantation forestry. A further 36% is used for agricultural purposes, with the remaining area supporting a diversity of land uses including urban areas and conservation land. The town of Tomahawk sits at the outlet of the catchment. The land use layer was last updated in 2019.

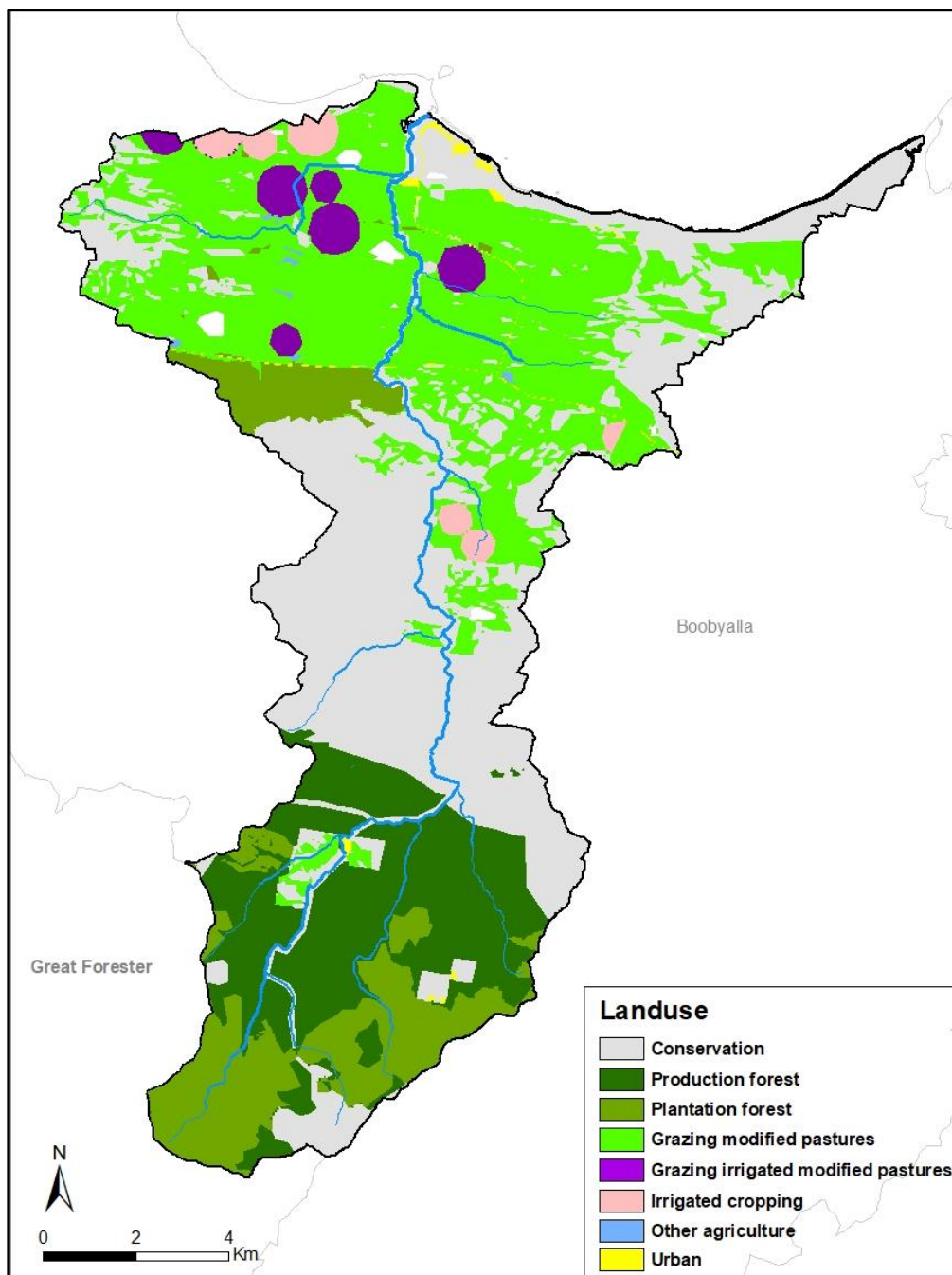


Figure 1. Tomahawk River catchment land use

RIVER HEALTH

Waterbugs are used globally to monitor the health of rivers as they are sensitive to pressures on river systems (e.g. poor water quality, sedimentation). River health monitoring by NRE Tas focuses on the composition of waterbug (macroinvertebrate) communities on the riverbed; however, other values that are not monitored can also contribute to the health of rivers (e.g. water plants, fish, riverbank vegetation).

Since 2018, river health has been monitored by NRE Tas in the lower Tomahawk River immediately upstream of the river’s estuary. The results indicate that the lower reaches of the river are in good to excellent condition, with health scores (O/E scores) equating to band A (equivalent to reference condition) and band X (above reference condition) being recorded at this site.

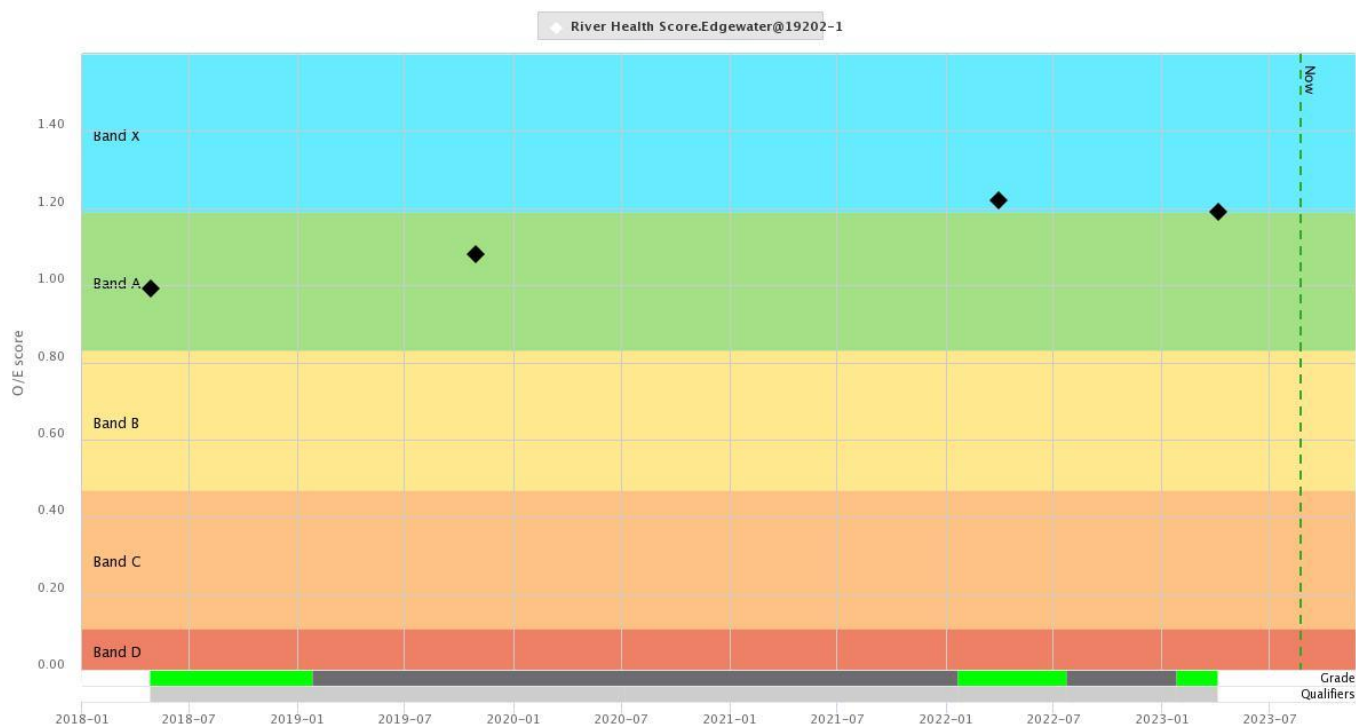


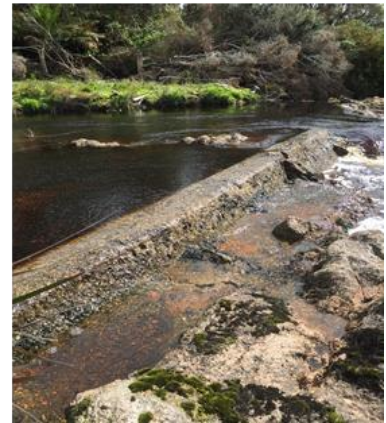
Figure 2. River Health Observed/Expected score at the Tomahawk River upstream Tidal Limit site, whole of record.

HYDROLOGY SUMMARY

The following pages show plots of long-term streamflow (full period of available record), short term flow and rainfall (last 5 water years), and last years flow, rainfall and restriction data, split into winter (May 2022 – November 2022) and summer (December 2022 – April 2023) seasons.

Over the period from May 2022 to April 2023:

- Annual yield was well above the long-term average.
- Annual rainfall at the Bureau's (BoM) Tomahawk at Carisbrooke gauge was average, however the upstream gauge Tomahawk at Wyambi recorded 35% more rainfall over the same period.
- The largest flood event across the whole period of available record occurred on the 14th October 2022.
- The climate drivers included La Nina and negative IOD conditions during 2022, which eased in early 2023 and shifted to an El Nino watch by March 2023.
- There were no water restrictions in the catchment over winter. During summer, restrictions were applied for the first half of January and in late March.



For further information contact your local Regional Water Management Officer
at the Department of Natural Resources and Environment Tasmania:

Phone: 1300 368 550

Email: Water.Operations@nre.tas.gov.au

nre.tas.gov.au/water

October 2023

Full flow record, 1968 - 2023

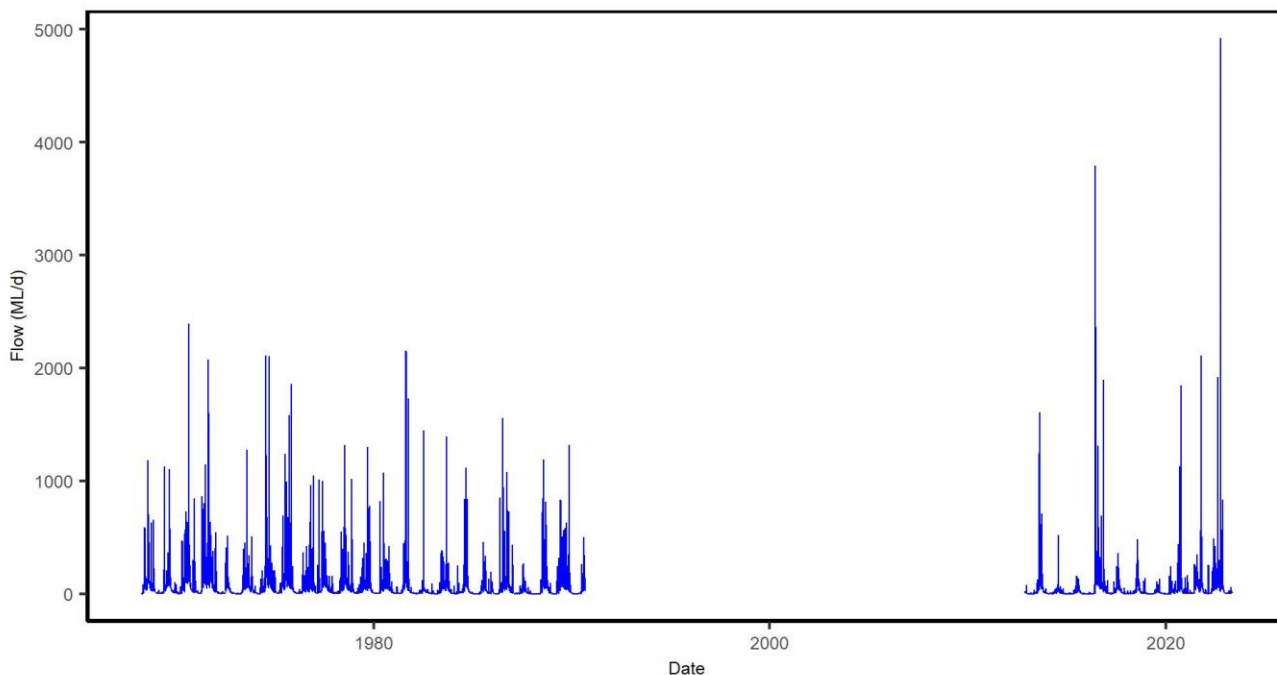


Figure 3. Mean daily flow at the Tomahawk River at Tidal Limit streamflow gauging station, whole of record.

Full record of yields in water years 1968 - 2022

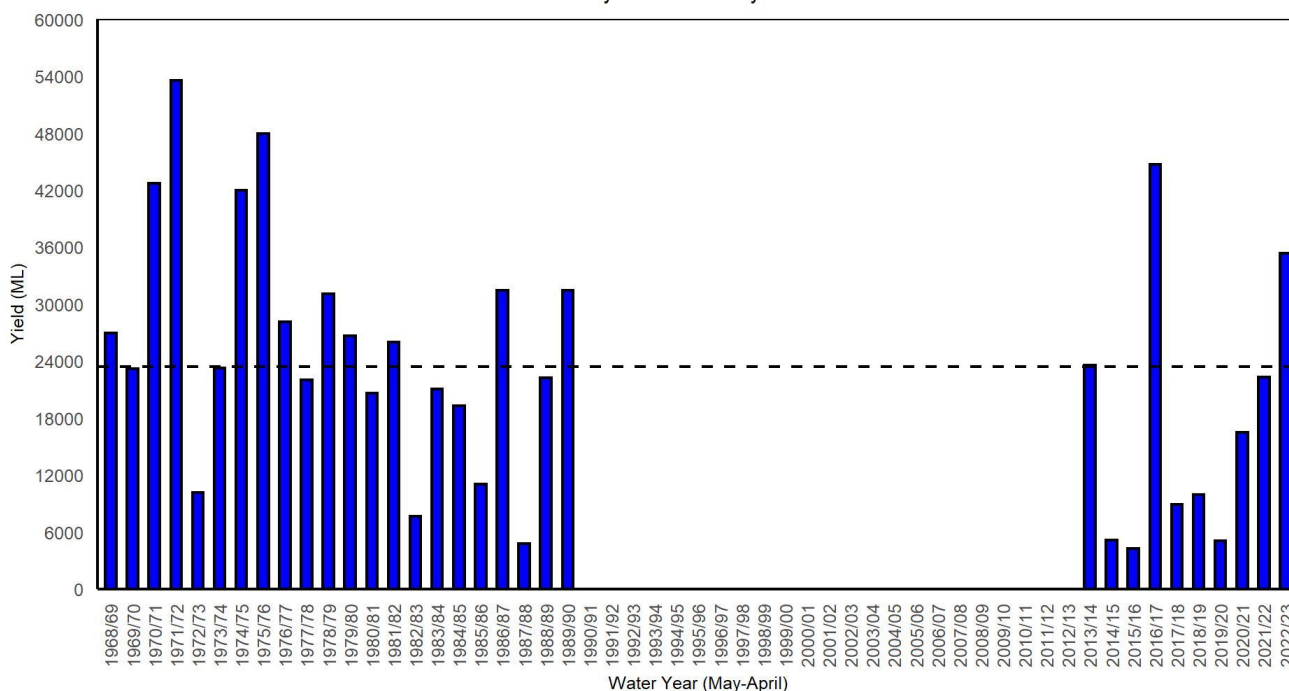


Figure 4. Yields in the Tomahawk River at the Tidal Limit streamflow gauging station. Water years with <95% of the daily flow record available are excluded. The long-term mean yield is shown as the dashed horizontal black line (24,213 ML).

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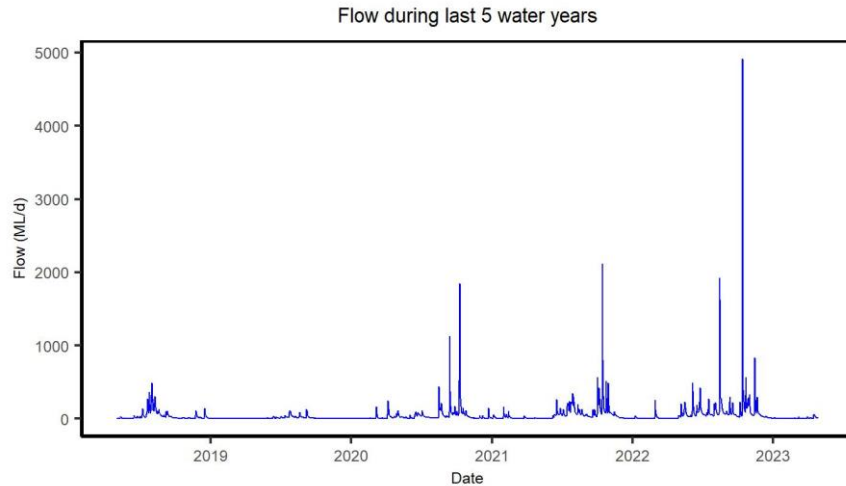


Figure 5. Mean daily flow in the Tomahawk River at the Tidal Limit streamflow gauging station for the last five years.

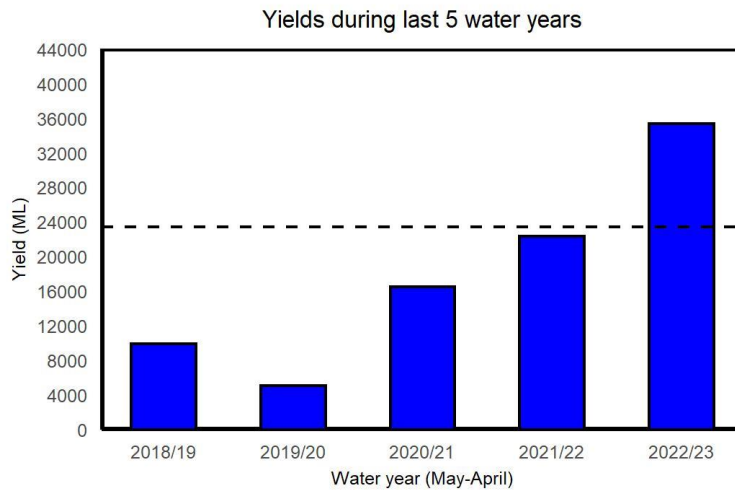


Figure 6. Yields in the Tomahawk River at the Tidal Limit streamflow gauging station for the last five years. The long-term mean yield is shown as the dashed horizontal black line (24,213 ML).

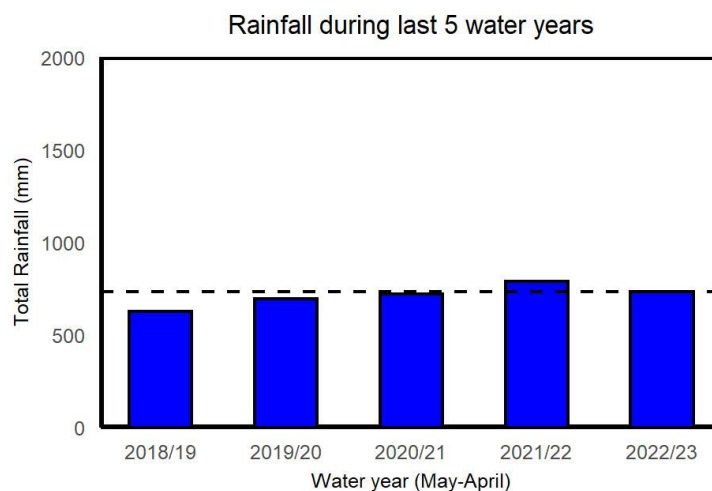


Figure 7. Total rainfall at the Tomahawk (Carisbrooke) BoM weather station during the last five water years. The long-term (1965-2022) mean total rainfall (731 mm) is shown as the black horizontal dashed line.

Rainfall, low flows and restriction periods during winter 2022/2023

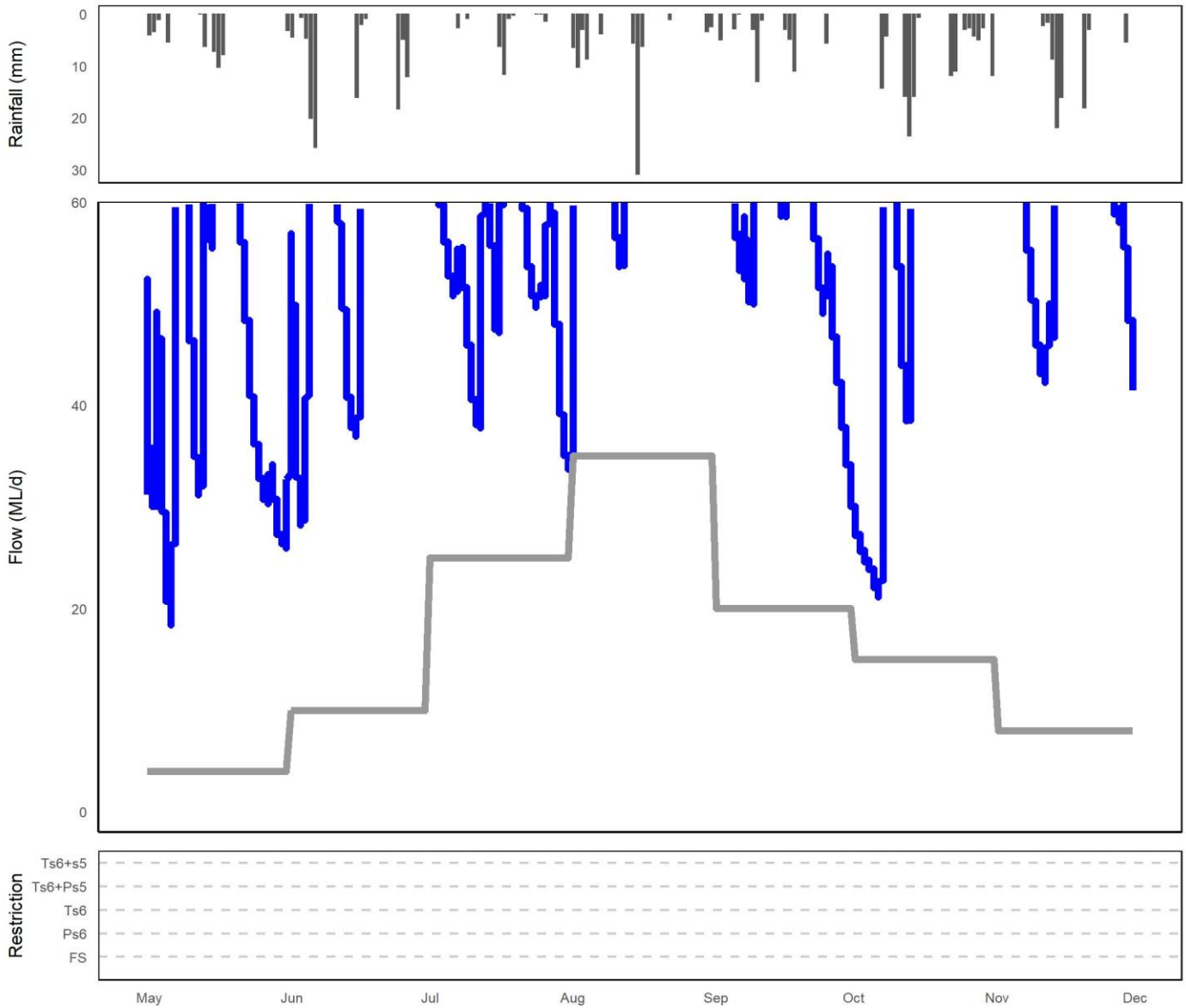


Figure 8. Summary of rainfall, low flows and restrictions in the Tomahawk catchment during winter (May-November) 2022.

Top plot: daily rainfall (Tomahawk (Carisbrooke) BoM site).

Middle plot: instantaneous flow (<60 ML/d) Tomahawk River at the Tidal Limit station (compliance flow site).

Bottom plot: days when restrictions were in place.

NOTE: Refer to the last page for a 'legend' and description on how to interpret these plots

Table 1. Restriction levels and total days at each level for the winter period (214 days: May - November 2022).

Restriction Type	Days at restriction level in 2021/22	Days at restriction level in 2022/23
Total Surety 6 + Total Surety 5	23	0

Rainfall, low flows and restriction periods during summer 2022/2023

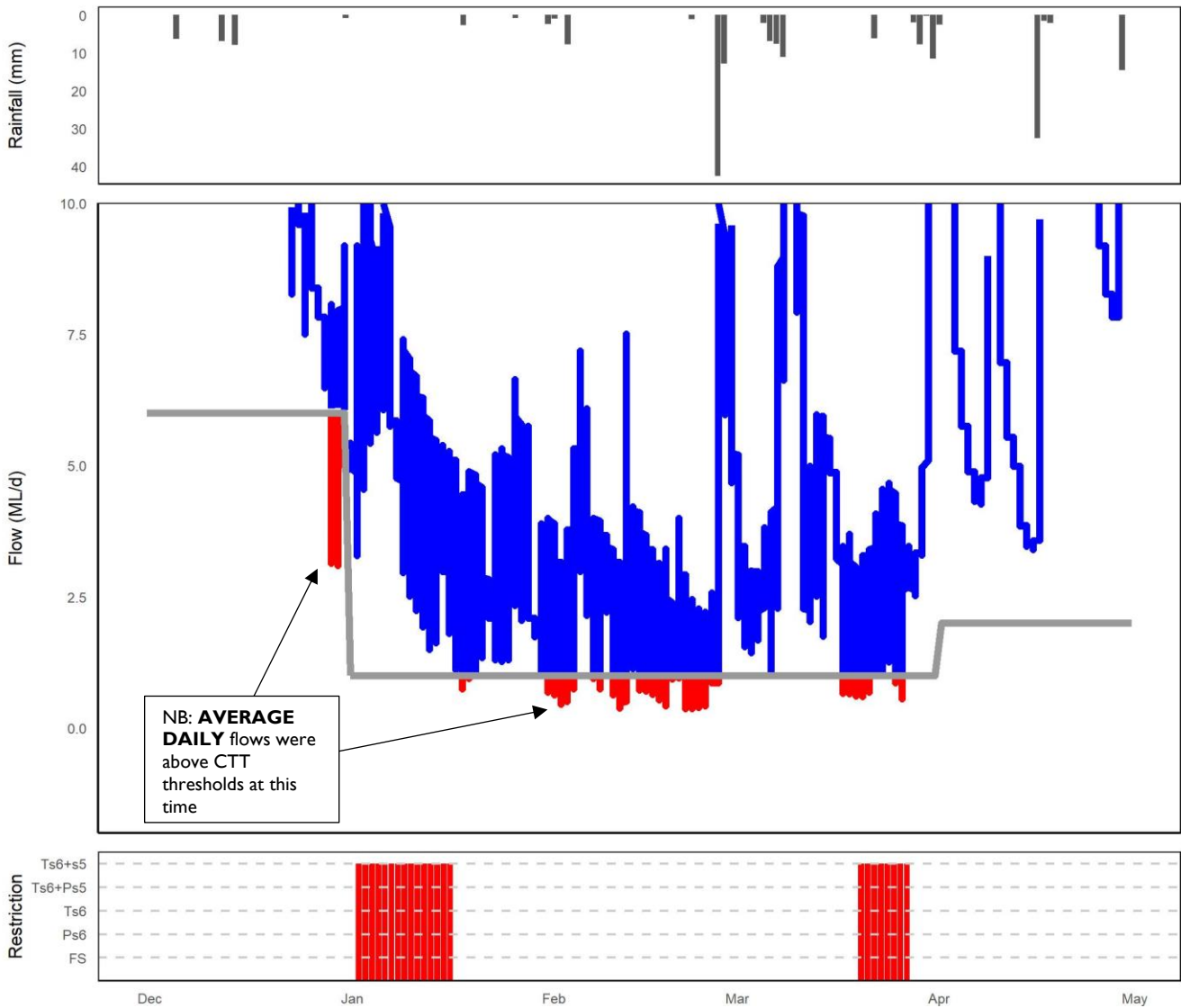


Figure 9. Summary of rainfall, low flows and restrictions in the Tomahawk catchment during summer 2022/23 (Dec-April).

Top plot: daily rainfall (Tomahawk (Carisbrooke) BoM site).

Middle plot: instantaneous flow (<10 ML/d) Tomahawk River at the Tidal Limit station (compliance flow site).

Bottom plot: days when restrictions were in place.

NOTE: Refer to the last page for a 'legend' and description on how to interpret these plots

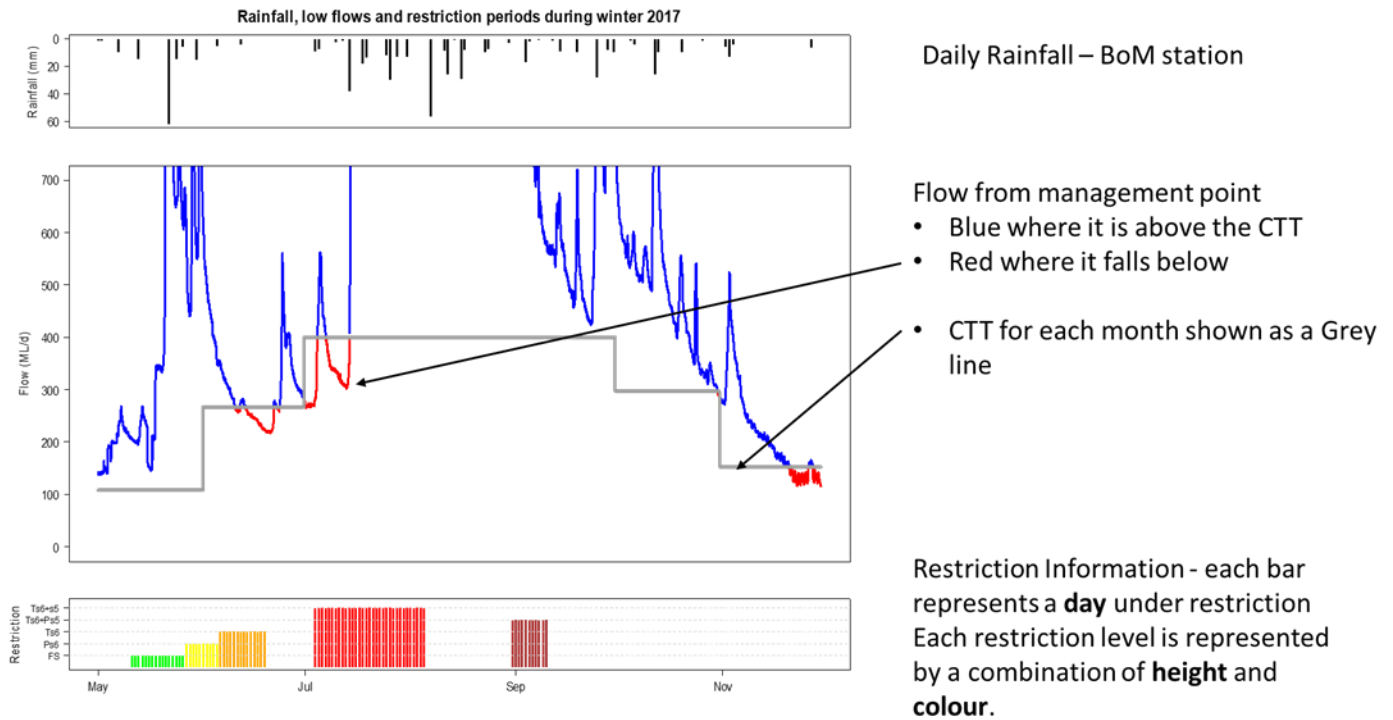
Table 2. Restriction levels and total days at each level for the summer period (151 days: Dec 2022 – April 2023).

Restriction Type	Days at restriction level in 2021/22	Days at restriction level in 2022/23
Total Surety 6 + Total Surety 5	35	23

EXAMPLE ONLY

Rainfall, flow and restriction plot legend

NOTE: This is a hypothetical example to assist in interpreting the plots in the main body of this document.



Flow Restriction definitions:

FS = flow sharing (only some catchments), shown in GREEN

Ps6 = partial surety 6 ban, shown in YELLOW

Ts6 = total surety 6 ban, shown in ORANGE

Ts6+Ps5 = total surety 6 and partial surety 5 ban, shown in BROWN

Ts6+s5 = total surety 5 and 6 ban, shown in RED

EXAMPLE ONLY

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October 2023