

# Clyde River Water Quality Report

Climate Smart Pilots March 22, 2023

www.farmdecisiontech.net.au

#### **Foreword**

#### **Funding**

This work has been produced by the NSW Primary Industries Climate Change Research Strategy funded by the NSW Climate Change Fund.

#### **NSW Department of Primary Industries Disclaimer**

This is a research trial and pilot project, and you should not rely solely on the information or advice provided in these reports.

## **Feedback and Questions**

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# 1 Salinity

#### 1.1 Weekly

### **Weekly Minimum and Maximum Salinity**

These values represent the absolute minimum and maximum recorded values from Buoys within each harvest area.



Units represent parts per thousand (ppt). This is equivalent to both g/kg and g/L.

Source: FarmDecisionTECH • Created with Datawrapper

Figure 1: These values represent the highest and lowest salinity reading a buoy has recorded in each of the harvest areas in the past week.

# 7-Day Salinity Average Trend

Average daily salinity at each buoy throughout the Clyde River.

Waterfall Moonlight Rocky Point									
Rocky Point									
	Friday	Saturday	Sunday	Monday	Tuesday	Wednesday	Thursday		
Rocky Point	21.9 pp	28.3 ppt	29.9 ppt	31.0 ppt	31.3 ppt	31.8 ppt	34.7 ppt		
Waterfall Creek	26.7 ppt	28.0 ppt	28.7 ppt	29.5 ppt	29.7 ppt	29.9 ppt	32.2 ppt		
Angry Man Point	18.9 ppt	25.7 ppt	26.4 ppt	27.1 ppt	27.4 ppt	28.0 ppt	30.5 ppt		
Chinamans Point	24.4 ppt	25.3 ppt	25.8 ppt	26.7 ppt	26.9 ppt	27.5 ppt	29.7 ppt		
Waterfall	Waterfall								
	Friday	Saturday	Sunday	Monday	Tuesday	Wednesday	Thursday		
Big Island West	21.8 ppt	23.4 ppt	23.9 ppt	24.5 ppt	24.5 ppt	24.8 ppt	27.1 ppt		
Double Bay	20.8 ppt	22.7 ppt	23.2 ppt	23.5 ppt	23.1 ppt	23.5 ppt	24.8 ppt		
Buckenbowra Creek	18.9 ppt	19.7 ppt	20.3 ppt	21.1 ppt	21.0 ppt	21.4 ppt	23.5 ppt		
Moonlight									
	Friday	Saturday	Sunday	Monday	Tuesday	Wednesday	Thursday		
Snapper Point	29.3 ppt	30.8 ppt	31.5 ppt	32.2 ppt	32.5 ppt	32.9 ppt	35.1 ppt		
Moonlight	17.6 ppt	29.7 ppt	30.4 ppt	30.9 ppt	31.0 ppt	31.5 ppt	33.2 ppt		
Wray Street	20.8 pp	27.0 ppt	29.0 ppt	30.7 ppt	31.1 ppt	31.5 ppt	33.2 ppt		
Budd Island North	12.7 ppt	3.6 ppt	5.3 ppt	10.2 ppt	17.9 ppt	23.8 ppt	28.2 ppt		

Units represent parts per thousand (ppt). This is equivalent to both g/kg and g/L.

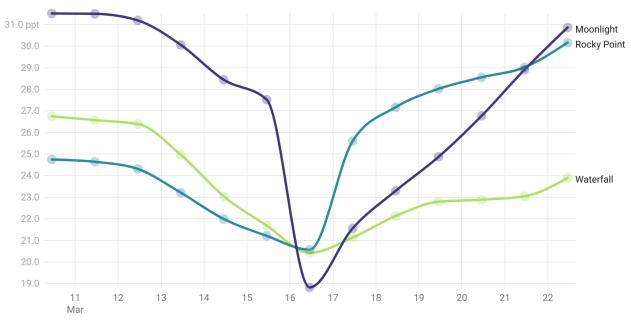
Source: FarmDecisionTECH  $\cdot$  Created with Datawrapper

Figure 2: This figure represents the daily average salinity of each of the buoys contained within a harvest area. Its designed to reduce the impact of tides and provide the general trend of salinity over the past week for specific locations within harvest areas.

## 1.2 Fortnightly

# **Fortnightly Salinity Average Trend**

12-hourly average salinity for each harvest area.



Units represent parts per thousand (ppt). This is equivalent to both g/kg and g/L. Source: FarmDecisionTECH  $\cdot$  Created with Datawrapper

Figure 3: This figure represents the daily average salinity of all buoys contained within a harvest area. Its designed to reduce the impact of tides and provide the general trend of salinity over the past week.

### **Fortnightly Average Salinity Trend**

Comparison between this weeks average salinity and the average salinity last week. Left pointing arrow means salinity is decreasing, right pointing means salinity is increasing.



Units represent parts per thousand (ppt). This is equivalent to both g/kg and g/L.

Source: FarmDecisionTECH • Created with Datawrapper

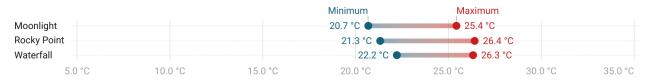
Figure 4: This figure demonstrates the average difference in salinity for this week compared with the prior week. It displays a longer term, general trend to see if salinity is increasing, stabilising or decreasing.

# 2 Water Temperature

#### 2.1 Weekly

#### **Weekly Minimum and Maximum Water Temperature**

These values represent the absolute minimum and maximum recorded values from Buoys within each harvest area.



Source: FarmDecisionTECH · Created with Datawrapper

Figure 5: These values represent the highest and lowest temperature reading a buoy has recorded in each of the harvest areas in the past week.

# 7-Day Temperature Average Trend

Average daily temperature at each buoy throughout the Clyde River.

Waterfall Moonlight Rocky Point								
Rocky Point								
	Friday	Saturday	Sunday	Monday	Tuesday	Wednesday	Thursday	
Waterfall Creek	23.8 °C	23.9 °C	24.5 °C	24.2 °C	23.5 °C	23.3 °C	23.1 °C	
Chinamans Point	23.9 °C	24.0 °C	24.3 °C	24.1 °C	23.6 °C	23.3 °C	23.3 °C	
Angry Man Point	23.8 °C	24.0 °C	24.3 °C	24.1 °C	23.6 °C	23.3 °C	23.2 °C	
Rocky Point	23.7 °C	23.9 °C	24.2 °C	24.0 °C	23.4 °C	23.2 °C	23.0 °C	
Waterfall								
	Friday	Saturday	Sunday	Monday	Tuesday	Wednesday	Thursday	
Double Bay	24.0 °C	24.0 °C	24.4 °C	24.4 °C	24.0 °C	23.8 °C	23.5 °C	
Big Island West	23.9 °C	24.0 °C	24.4 °C	24.3 °C	23.8 °C	23.6 °C	23.4 °C	
Buckenbowra Creek	24.0 °C	24.2 °C	24.5 °C	24.2 °C	23.7 °C	23.4 °C	23.3 °C	
Moonlight								
	Friday	Saturday	Sunday	Monday	Tuesday	Wednesday	Thursday	
Snapper Point	23.6 °C	23.8 °C	24.1 °C	23.9 °C	23.3 °C	23.1 °C	23.1 °C	
Budd Island North	23.5 °C	23.7 °C	24.1 °C	23.8 °C	23.3 °C	23.1 °C	23.0 °C	
Moonlight	23.4 °C	23.6 °C	23.9 °C	23.8 °C	23.2 °C	23.1 °C	22.9 °C	
Wray Street	23.5 °C	23.6 °C	23.9 °C	23.7 °C	23.2 °C	23.0 °C	23.0 °C	

Temperature is displayed in degrees Celsius (°C)
Source: FarmDecisionTECH • Created with Datawrapper

Figure 6: This figure represents the daily average temperature of each of the buoys contained within a harvest area. Its designed to reduce the impact of tides and provide the general trend of temperature over the past week for specific locations within harvest areas.

# 2.2 Fortnightly

# **Fortnightly Average Temperature Trend**

12-hourly average temperature for each harvest area.

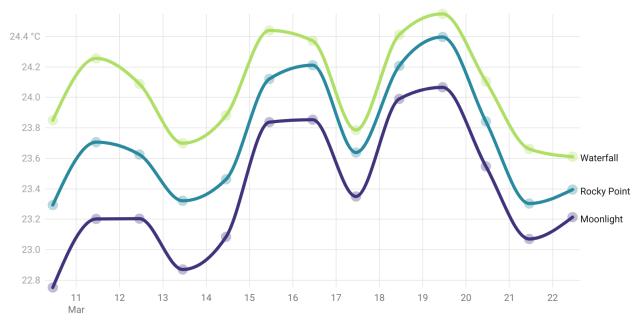


Figure 7: This figure represents the daily average temperature of all buoys contained within a harvest area. Its designed to reduce the impact of tides and provide the general trend of temperature over the past week.

#### **Fortnightly Average Temperature Trend**

Comparison between this weeks average temperature and the average temperature last week.

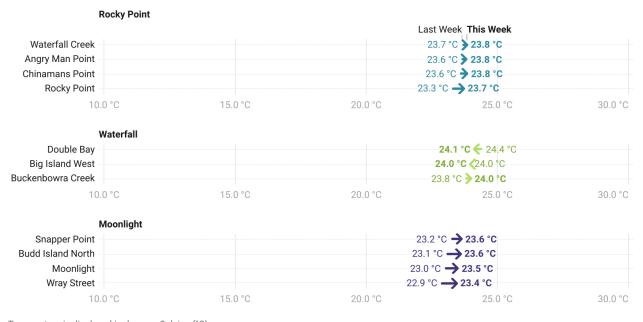


Figure 8: This figure demonstrates the average difference in temperature for this week compared with the prior week. It displays a longer term, general trend to see if temperature is increasing, stabilising or decreasing.

#### 2.3 Historical

# **Historical and Current Average Monthly Water Temperature**

Monthly average water temperature from historical (1967-73) and recent (2020-22). Measured close to the Clyde River entrance.

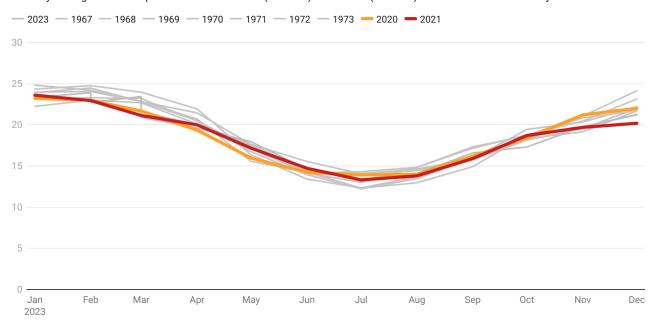


Figure 9: Monthly average water temperature from historical (1967-73) and recent (2020-22). Measured close to the Clyde River entrance.

# **Historical and Current Maximum Monthly Water Temperature**

Monthly maximum water temperature from historical (1967-73) and recent (2020-22) years. Measured close to the Clyde River entrance.



Figure 10: Monthly maximum water temperature from historical (1967-73) and recent (2020-22). Measured close to the Clyde River entrance.

# **Historical and Current Minimum Monthly Water Temperature**

Monthly minimum water temperature from historical (1967-73) and recent (2020-22) years. Measured close to the Clyde River entrance.



Figure 11: Monthly minimum water temperature from historical (1967-73) and recent (2020-22). Measured close to the Clyde River entrance.

# 3 Precipitation

#### 3.1 Weekly

# 7-Day Clyde River Precipitation

Daily total precipitation. Weather station is located on Budd Island.

0.0 mm	0.0 mm	0.0 mm	0.0 mm	0.0 mm	0.0 mm
Mar 18	19	20	21	22	23

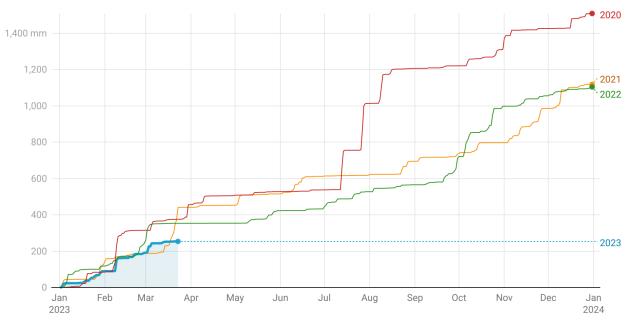
 $Precipitation \ is \ measured \ in \ millimeters \ (mm). \ 1 \ mm \ of \ rainfall \ is \ equal \ to \ 1 \ litre \ of \ water \ per \ meter \ squared.$  Source: FarmDecisionTECH  $\cdot$  Created with Datawrapper

Figure 12: Daily total precipitation at Budd Island for the past week.

#### 3.2 Yearly

# **Year-to-Date Precipitation**

Accumulation of rainfall since the start of the year. Other years are shown in reference to this year.



Rainfall is displayed in millimetres (mm).

Created with Datawrapper

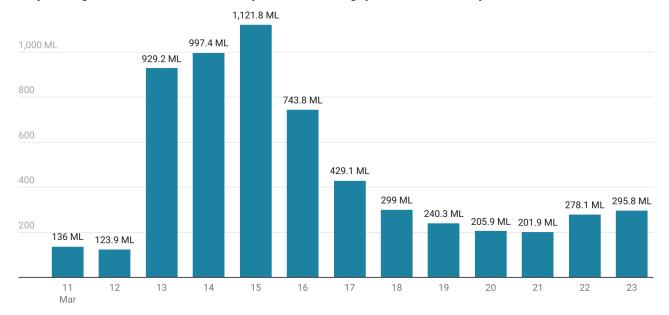
Figure 13: Compares this years total precipitation against previous years.

# 4 Flow Rate from Tributaries

#### 4.1 Fortnightly

# **Brooman Tributary Fortnightly Discharge rate**

Daily discharge rate totals for Brooman Tributary. This station is roughly 20 km North of the Clyde River.



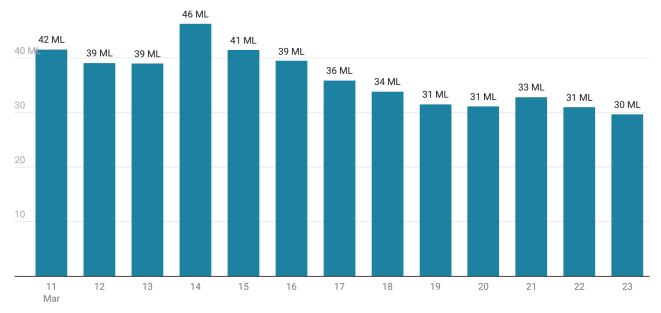
Values represent megalitres per day (ML/day). A mega litre is equal to 1 million litres. Data: © State of New South Wales through WaterNSW. Quality Codes: 140 = Current rating - may be subject to change, 145 = Telemetry system added point, 255 = Dataset not complete

Source: FarmDecisionTECH • Created with Datawrapper

Figure 14: Fortnightly (daily total) water discharge from Brooman.

# **Buckenbowra Tributary Fortnightly Discharge rate**

Daily discharge rate totals for Buckenbowra Tributary. This station is roughly 8 km West of the Clyde River.



Values represent megalitres per day (ML/day). A mega litre is equal to 1 million litres. Quality Codes: 140 = Best available data, 145 = Data under review, 255 = Dataset not complete

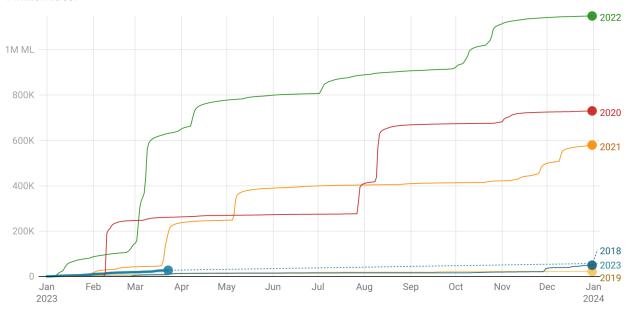
Chart: © State of New South Wales through WaterNSW  $\bullet$  Created with Datawrapper

Figure 15: Fortnightly (daily total) water discharge from Buckenbowra.

#### 4.2 Yearly

# **Cumulative Daily Discharge-Rate Brooman**

Cumulative daily water flow for each year from Brooman into the Clyde River. Units represent mega litres (ML). One ML is equal to 1 million litres.



Data: © State of New South Wales through WaterNSW Chart: FarmDecisionTECH • Created with Datawrapper

Figure 16: Compares this years total water discharge against previous years. Drought years (2018 and 2019) are shown for comparison.