

Snowy 2.0 Main Works

August - November 2024 Environmental Water Report

Prepared for Snowy Hydro Limited

February 2025

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Snowy Hydro Limited

E230052 RP4

February 2025

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19 February 2025

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TABLE OF CONTENTS

1	Introduction	1
1.1	Purpose of this report	1
1.2	Reporting period	2
1.3	Project updates	2
2	Existing environment	9
2.1	Climate	9
2.2	Drainage and catchments	11
2.3	Hydrogeology	12
2.4	Groundwater dependent ecosystems	13
3	Monitoring program	15
3.1	Overview	15
3.2	Trigger criteria	15
4	Conclusions	18
5	Recommendations	19
	References	20

Appendices

Appendix A	Groundwater level and quality trigger values
Appendix B	Groundwater quality trigger value groups
Appendix C	Groundwater level hydrographs

Tables

Table 1.1	Construction progress update	3
Table 2.1	Monthly rainfall observations between November 2023 and November 2024	9
Table 3.1	Conclusions from trigger exceedance reports	17
Table 5.1	Additional works required for ongoing monitoring and data acquisition	19
Table A.1	Level 1 conventional monitoring bores – Summary of installation and associated trigger values	
Table A.2	Level 1 shallow swamp piezometers – Summary of installation and associated trigger values	
Table A.3	Level 1 production bores – Summary of installation and associated trigger values	
Table A.4	Level 1 vibrating wire piezometers – Summary of installation and associated trigger values	

Table B.1 Groundwater quality trigger value groups

Figures

Figure 1.1	Groundwater monitoring network – Overview	4
Figure 1.2	Groundwater monitoring network - Tantangara and Zinc Ridge	5
Figure 1.3	Groundwater monitoring network – Gooandra	6
Figure 1.4	Groundwater monitoring network – Marica	7
Figure 1.5	Groundwater monitoring network – Lobs Hole	8
Figure 2.1	Monthly rainfall and cumulative deviation from mean rainfall at Cabramurra weather station (BoM: 072161)	11

1 Introduction

Snowy Hydro Limited (SHL) is constructing the Snowy 2.0 project (the project), forming an expansion of the existing Snowy Mountains Hydro-electric Scheme. The project will increase the generation capacity of the existing scheme by an additional 2,000 megawatts (MW), and at full capacity will provide approximately 350,000 MWh of large-scale energy storage to the National Electricity Market.

The project is predominantly located underground and will link the existing Tantangara (upstream) and Talbingo (downstream) reservoirs. Key features of the project include:

- a head-race tunnel (HRT) between the Tantangara Reservoir and the penstock tunnels, comprising an approximately 19 kilometer (km) long, concrete-lined tunnel
- penstock tunnels between the HRT and the power station, comprising six steel-lined tunnels conveying water to the generation units
- an underground power station, housing the power generation facility, contained within an underground excavation approximately 22 m (wide) by 50 m (high) by 250 m (long)
- ancillary access and passage tunnels, totalling approximately 20 km of tunnels, including a:
 - main access tunnel (MAT), providing personnel and equipment access to the power station
 - electrical, cabling and ventilation tunnel (ECVT), facilitating power transmission from the generator
- a tail-race tunnel (TRT) between the power station and Talbingo Reservoir, comprising an approximately 8 km long, concrete-lined tunnel
- intake and outlet structures at the Tantangara and Talbingo reservoirs, respectively.

SHL engaged Future Generation Joint Venture (FGJV, comprising Webuild, Clough and Lane) to deliver the project. In August 2023, the contract between SHL and FGJV was reset, which included a transfer of select environmental reporting obligations to be managed by SHL. This environmental water report (EWR) forms the fourth report undertaken by SHL following the contract reset.

1.1 Purpose of this report

This EWR has been prepared in accordance with the approved groundwater management plan (GMP), as collated by FGJV (document reference *S2-FGJV-ENV-PLN-0012*, (FGJV, 2020)) in accordance with Schedule 3, Condition 31 (d) of the critical state significant infrastructure approval for the project (DPIE, 2020a).

This EWR focuses on:

- providing an update of relevant project activities undertaken (i.e. potential groundwater affecting activities)
- provision of groundwater level hydrographs, with specific consideration for recent project activities and climate data
- a comparison of groundwater data to site-specific trigger values (SSTV's), as presented in the GMP.

This EWR will be uploaded to the Snowy 2.0 project website.

1.2 Reporting period

This EWR provides a groundwater update for the period between 7 August and 7 November 2024.

1.3 Project updates

1.3.1 Overview

The project area is divided into four construction areas, broadly comprising the key features of the project which interact/have the potential to interact with groundwater resources. Construction areas are indicated on Figure 1.1–Figure 1.5 and include:

- Tantangara to Zinc Ridge (refer Figure 1.2), encompassing:
 - the intake structure
 - a portion of the head-race tunnel
 - the head-race tunnel adit
- the Gooandra Plateau (refer Figure 1.3), encompassing the majority of the head-race tunnel
- Marica (refer Figure 1.4), encompassing:
 - a portion of the head-race tunnel
 - the MAT
 - the ECVT
 - an underground power station
 - a ventilation shaft to the underground power station
 - the head-race surge shafts
 - the tail-race surge shaft
 - a portion of the tail-race tunnel
- Lobs Hole (refer Figure 1.5), encompassing:
 - emplacement areas for spoil generated during construction
 - a portion of the tail-race tunnel
 - the outtake structure into the Talbingo Reservoir.

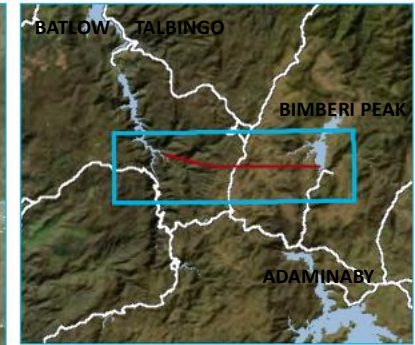
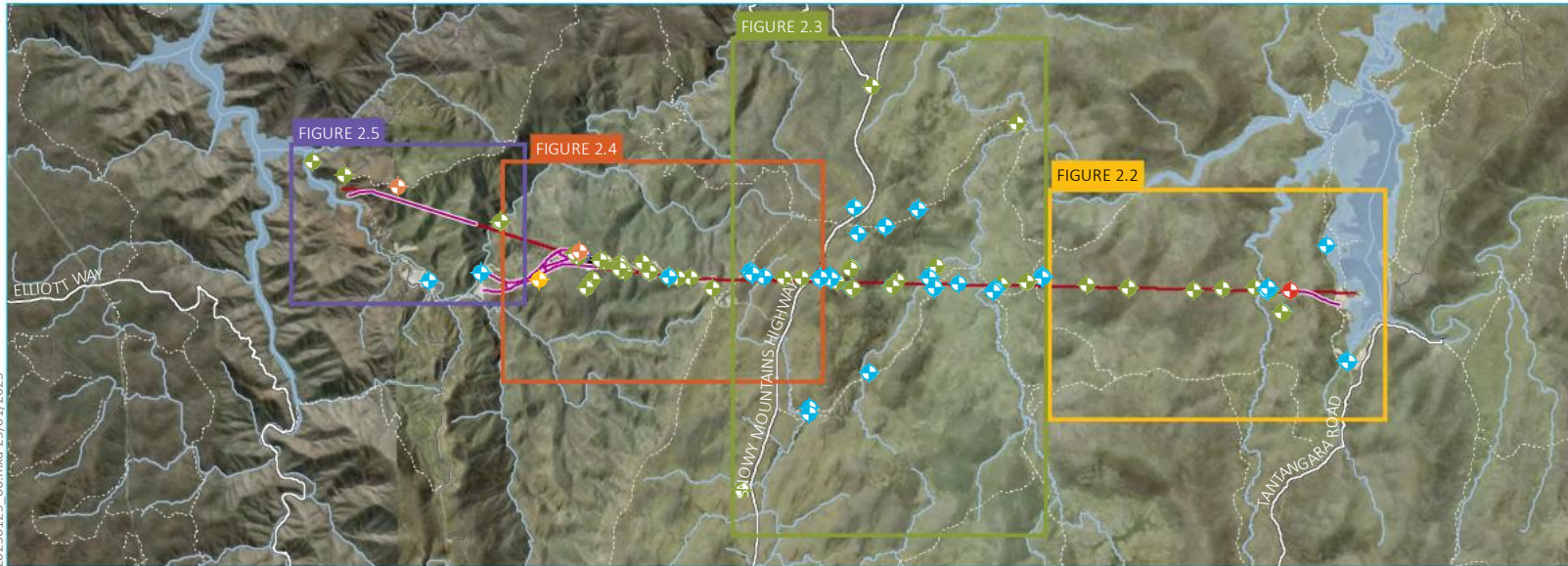
1.3.2 Project progress

Project progression is summarised in Table 1.1 and shown on Figure 1.1–Figure 1.5.

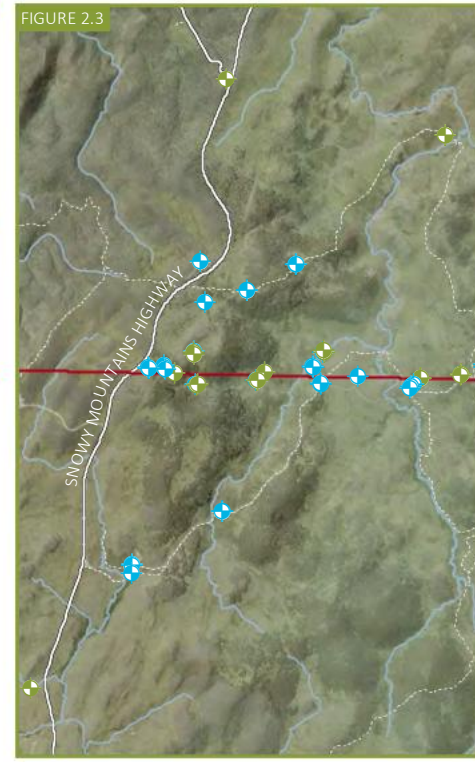
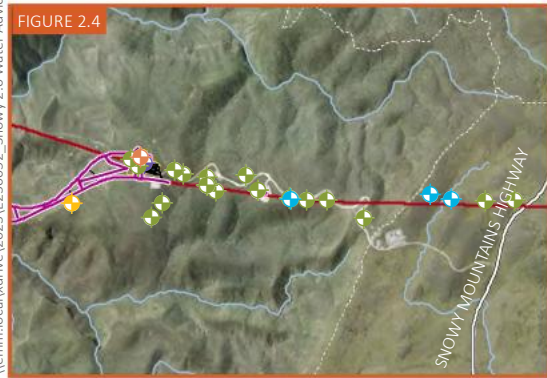
Table 1.1 Construction progress update

Area	Construction element	Status	Progress comments
Tantangara	Intake structure	Complete	-
	Head-race tunnel adit	In progress	TBM Florence excavated to approximately 1,690 m. Including completion of head-race adit inlet and ~280 m of headrace tunnel.
	Head-race tunnel	In progress	Excavated from 946–1,880 m.
The Plateau			
Marica	MAT	Complete	-
	ECVT	Complete	-
	Underground power station	In progress	Drilling and blasting of cross tunnels and passages underway.
	Ventilation shaft	Not commenced	-
	Head-race surge-shaft	In progress	Excavated to approximately 130 m depth.
	Tail-race surge shafts	Not commenced	-
	Tail-race tunnel	In progress	TBM Eileen was excavated from approximately 3,173–4,078 m during the reporting period. Excavation occurred from the junction with the tail race adit, progressing east towards Marica.
Lobs Hole	Tail-race tunnel adit	Complete	-
	Out-take structure	In progress	97% complete.
	Spoil emplacement areas	In progress	TBC

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- KEY**
- Monitoring network
 - Level 1 monitoring bore
 - Monitoring bore
 - Warning triggered, monitoring bore
 - Warning triggered, level 1 monitoring bore
 - Exceedance triggered, monitoring bore
 - Exceedance triggered, level 1 monitoring bore



- Excavated tunnel
 - Access tunnel
 - Construction tunnel
 - Hydraulic tunnel
- Existing environment
- Major road
 - Minor road
 - Vehicular track
 - Named watercourse
 - Named waterbody
- INSET KEY**
- Major road
 - Hydraulic tunnel

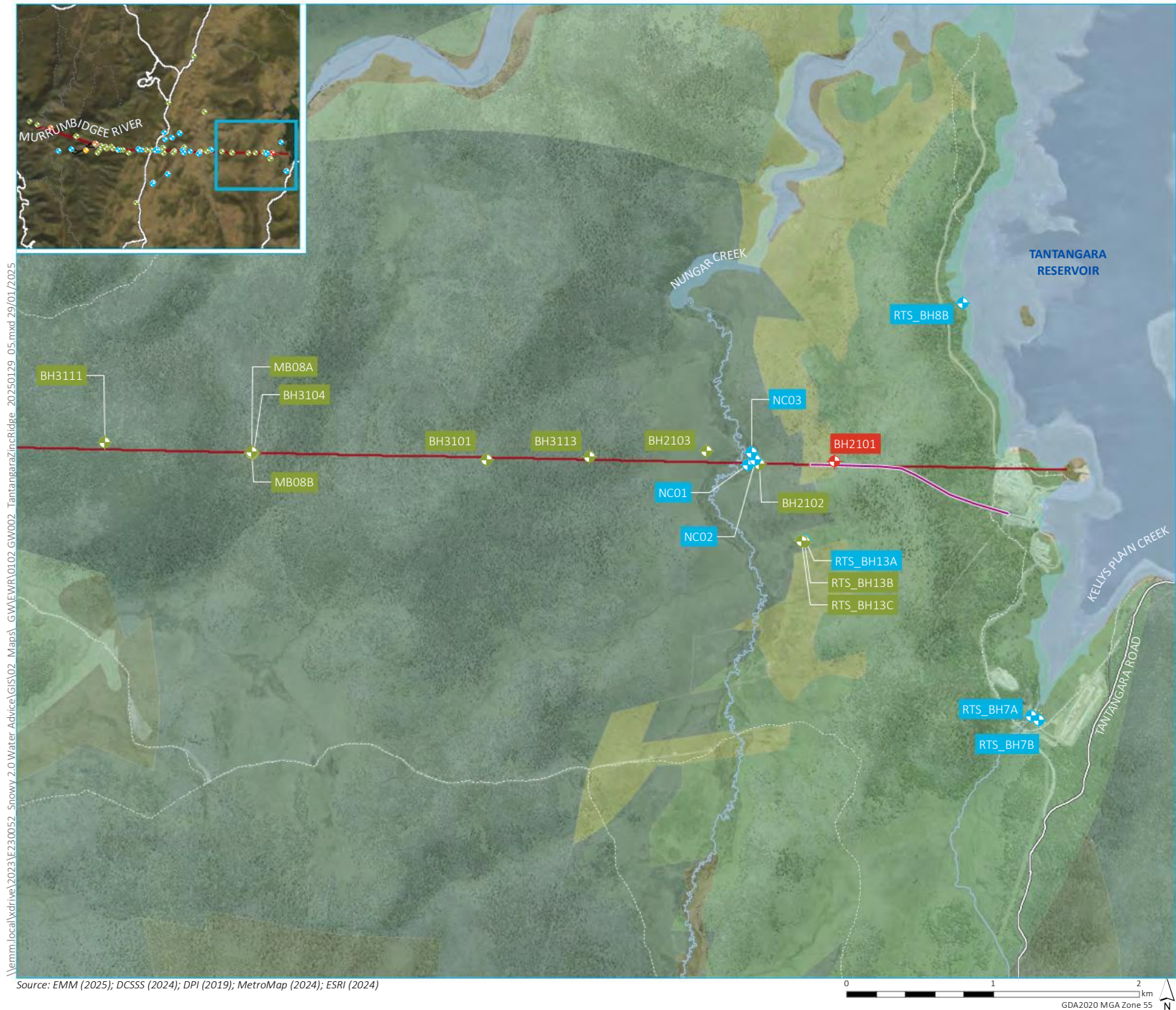
Groundwater monitoring network - Overview

Snowy 2.0 Main Works
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Figure 1.1



Source: EMM (2025); DCSSS (2024); MetroMap (2024); ESRI (2024)





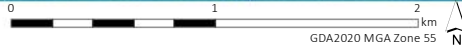
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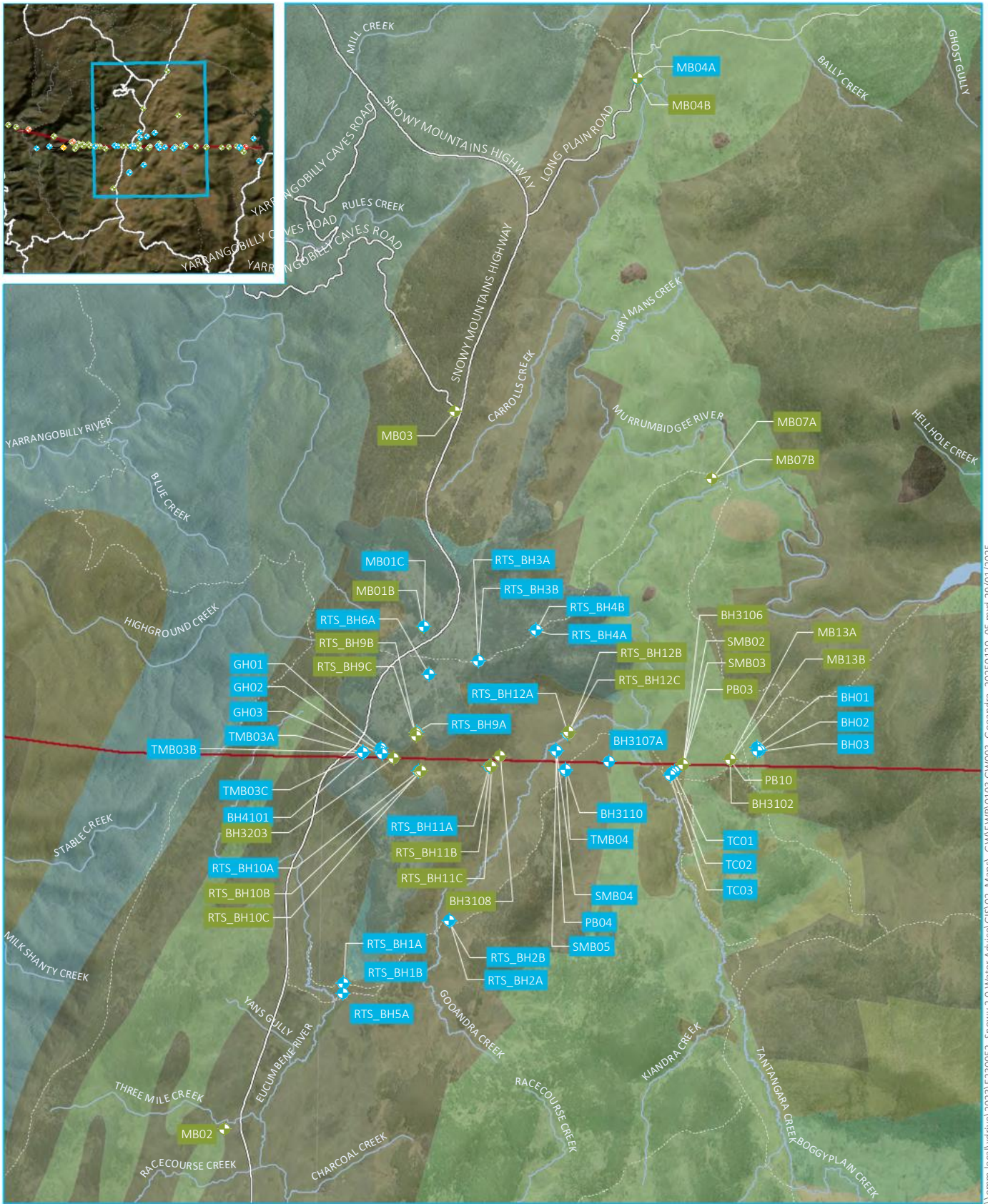
Source: EMM (2025); DCSSS (2024); DPI (2019); MetroMap (2024); ESRI (2024)

- Monitoring network**
- ◆ Level 1 monitoring bore
 - ◆ Monitoring bore
 - ◆ Exceedance triggered, level 1 monitoring bore
- Excavated tunnel
- Construction tunnel
- Hydraulic tunnel
- Existing environment**
- Major road
 - Minor road
 - Vehicular track
 - Named watercourse
 - Named waterbody
- Surface Geology**
- Adaminaby Group
 - Kellys Plain Volcanics
 - Peppercorn Formation
 - Tintangara Formation
 - Temperance Formation
- INSET KEY**
- Major road
- Monitoring network**
- ◆ Level 1 monitoring bore
 - ◆ Monitoring bore
 - ◆ Warning triggered, monitoring bore
 - ◆ Warning triggered, level 1 monitoring bore
 - ◆ Exceedance triggered, monitoring bore
 - ◆ Exceedance triggered, level 1 monitoring bore
 - Hydraulic tunnel

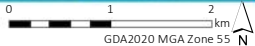
Groundwater monitoring network - Tintangara and Zinc Ridge

Snowy 2.0 Main Works
Q4 - 2024 Environmental Water Report
Figure 1.2





Source: EMM (2025); DCSSS (2024); DPI (2019); ESRI (2024)



KEY

- | | |
|-------------------------|-------------------------------------|
| Monitoring network | Surface Geology |
| Level 1 monitoring bore | Adaminaby Group |
| Monitoring bore | Boggy Plain Adamellite |
| Hydraulic tunnel | Boggy Plain Suite |
| Existing environment | Goandra Volcanics |
| Major road | Goobarragandra Volcanics |
| Minor road | Hell Hole Creek Adamellite |
| Vehicular track | Ravine Beds/Yarrangobilly Limestone |
| Named watercourse | Shaw Hill Gabbro |
| Named waterbody | Tantangara Formation |
| | Temperance Formation |

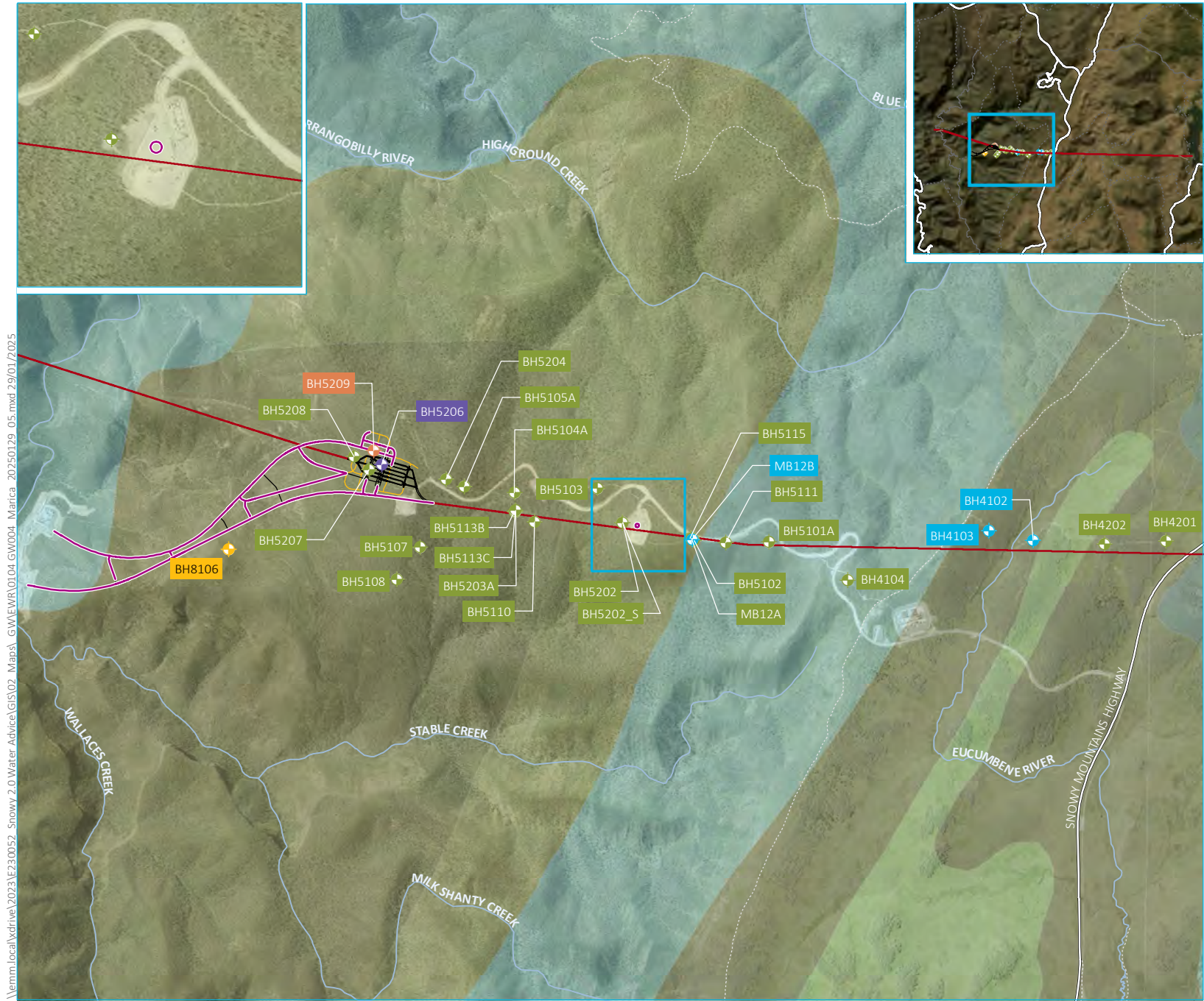
- INSET KEY**
- Major road
 - Monitoring network
 - Level 1 monitoring bore
 - Monitoring bore
 - Warning triggered, monitoring bore
 - Warning triggered, level 1 monitoring bore
 - Exceedance triggered, monitoring bore
 - Exceedance triggered, level 1 monitoring bore
 - Hydraulic tunnel

Groundwater monitoring network - Goandra

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Figure 1.3



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- KEY**
- Monitoring network
 - Level 1 monitoring bore
 - Monitoring bore
 - Warning triggered, monitoring bore
 - Warning triggered, level 1 monitoring bore
 - Exceedance triggered, monitoring bore
 - Excavated tunnel
 - Access tunnel
 - Construction tunnel
 - Hydraulic tunnel
- Existing environment**
- Major road
 - Vehicular track
 - Named watercourse
- Surface Geology**
- Alluvial sediments
 - Boraig Group
 - Byron range group
 - Cabramurra Basalt
 - Gooandra Volcanics
 - Goobarrangandra Volcanics
 - Ravine Beds/Yarrangobilly Limestone
 - Shaw Hill Gabbro
- INSET KEY**
- Major road
 - Monitoring network
 - Level 1 monitoring bore
 - Monitoring bore
 - Warning triggered, monitoring bore
 - Warning triggered, level 1 monitoring bore
 - Exceedance triggered, monitoring bore
 - Exceedance triggered, level 1 monitoring bore
 - Hydraulic tunnel

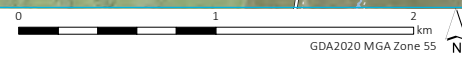
Groundwater monitoring network - Marica

Snowy 2.0 Main Works
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 Figure 1.4



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Source: EMM (2025); DCSSS (2024); DPI (2019); MetroMap (2024); ESRI (2024)



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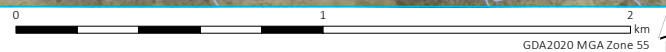
- KEY**
- Monitoring network**
- ◆ Level 1 monitoring bore
 - ◆ Monitoring bore
 - ◆ Exceedance triggered, monitoring bore
 - Excavated tunnel
 - Access tunnel
 - Construction tunnel
 - Hydraulic tunnel
- Existing environment**
- Minor road
 - Vehicular track
 - Named watercourse
 - Named waterbody
- Surface Geology**
- Boraig Group
 - Byron range group
 - Jackalass Slate
 - Ravine Beds/Yarrangobilly Limestone
 - Tumut Ponds Sepentinite
- INSET KEY**
- Major road
- Monitoring network**
- ◆ Level 1 monitoring bore
 - ◆ Monitoring bore
 - ◆ Warning triggered, monitoring bore
 - ◆ Warning triggered, level 1 monitoring bore
 - ◆ Exceedance triggered, monitoring bore
 - ◆ Exceedance triggered, level 1 monitoring bore
 - Hydraulic tunnel

Groundwater monitoring network - Lobs Hole

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Q4 - 2024 Environmental Water Report
Figure 1.5



Source: EMM (2025); DCSSS (2024); DPI (2019); MetroMap (2024); ESRI (2024)



GDA2020 MGA Zone 55

2 Existing environment

2.1 Climate

The project area has an alpine climate that is characterised by cool summers and cold, damp, and snowy winters. Rainfall occurs mainly in winter to early spring and generally increases with elevation. Summer and autumn are generally drier and experience greater variation in monthly rainfall. Summer rainfall is generally of higher intensity over a shorter duration than in winter.

Monthly rainfall data was sourced from the Bureau of Meteorology (BoM) climate data portal (BoM, 2024), at the Cabramurra climate station (station ID 072161), located approximately 23 km south of Lobs Hole at an elevation of 1,482 m AHD.

Climate data has been assessed over a 12 month period to give an indication of climate trends and cycles leading into the reporting period. Rainfall was generally below average for most months, with the exception of:

- November 2023 (19.9 mm above average)
- January 2024 (37 mm above average)
- April 2024 (2.9 mm above average)
- July 2024 (19.1 mm above average)
- September 2024 (39.8 mm above average).

Monthly rainfall is summarised in Table 2.1, for the previous year including the reporting period (7 August – 7 November 2024).

Table 2.1 Monthly rainfall observations between November 2023 and November 2024

Month/year	Monthly rainfall at Cabramurra weather station (mm)		Difference (mm) (Measured – Average)
	Measured	¹ Average	
November 2023	141.2	121.3	19.9
December 2023	80.6	89.8	-9.2
January 2024	114	77.0	37
February 2024	65	78.9	-13.9
March 2024	52.4	85.6	-33.2
April 2024	79.4	76.5	2.9
May 2024	29.6	91.8	-62.2
June 2024	103.8	123.8	-20
July 2024	133.6	114.5	19.1
August 2024	72.4	125.7	-53.3
September 2024	164.4	124.6	39.8
October 2024	71	110.2	-39.2

Table 2.1 Monthly rainfall observations between November 2023 and November 2024

Month/year	Monthly rainfall at Cabramurra weather station (mm)		Difference (mm) (Measured – Average)
	Measured	¹ Average	
November 2024	79.4	121.3	-41.9

Notes: 1. Observation period between December 1996 and November 2024.

Measured monthly rainfall and historical average monthly rainfall (based on data between December 1996 and November 2024) was used to undertake a cumulative deviation from mean (CDFM) analysis. CDFM analysis provides an indication of wet or dry periods, as inferred by an upward trend (wetter than average period) or downward trend (drier than average period).

CDFM analysis of monthly rainfall data at the Cabramurra weather station (BoM, 2024) indicates:

- wetter than average periods between:
 - December 2023 and January 2024
 - March and April 2024
 - June and July 2024
 - August and September 2024
- drier than average periods between:
 - November and December 2023
 - January and March 2024
 - April and June 2024
 - July and August 2024
 - September and November 2024.

Measured monthly rainfall, historical average monthly rainfall (based on data between December 1996 and November 2024) and CDFM results are presented on Figure 2.1.

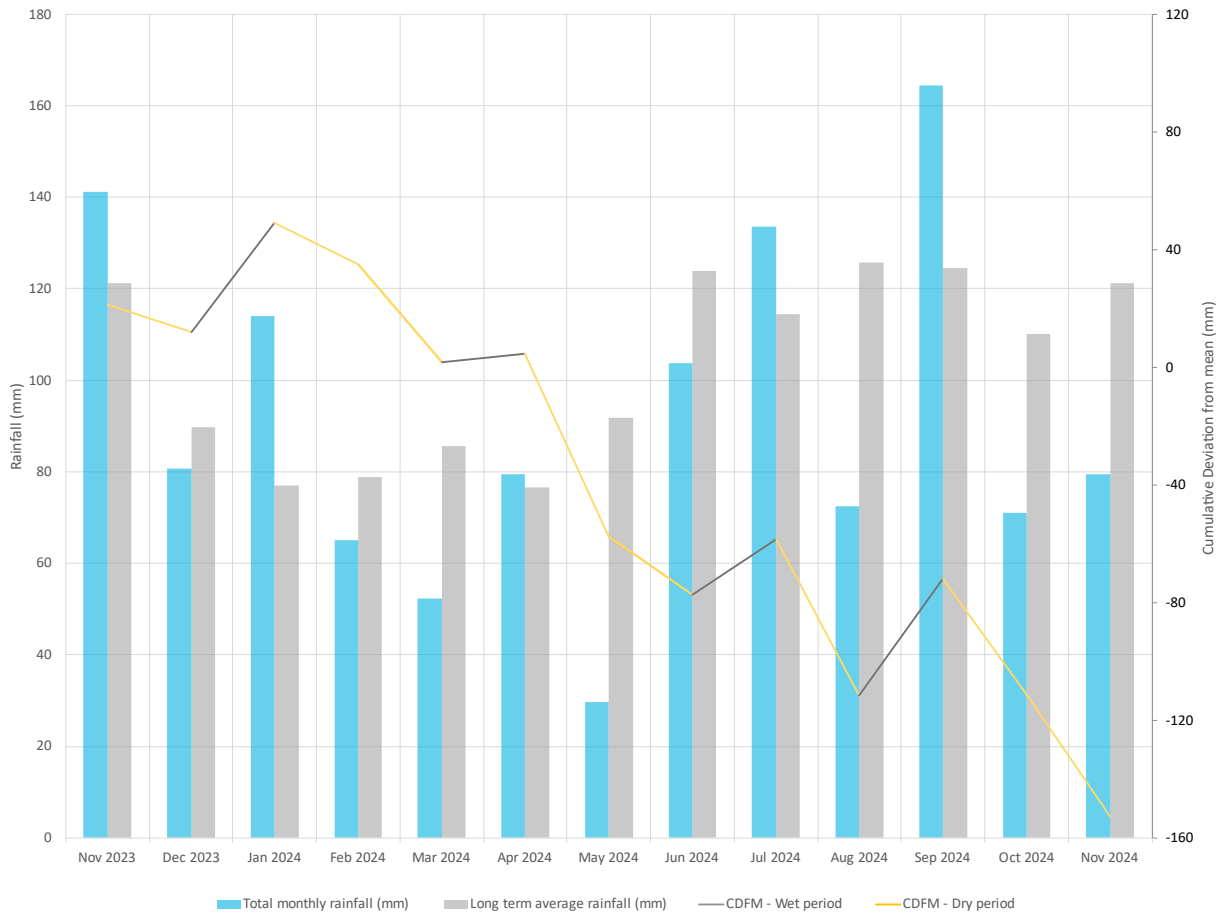


Figure 2.1 Monthly rainfall and cumulative deviation from mean rainfall at Cabramurra weather station (BoM: 072161)

2.2 Drainage and catchments

All watercourses are characterised as receiving baseflow from groundwater (referred to as gaining streams). The Long Plain Fault (LPF) forms the main topographic divide between the Ravine (west of the LPF) and the Plateau (east of the LPF).

Watercourses within the Ravine generally flow to the Talbingo Reservoir (west-ward) and watercourses within the Plateau generally flow to the Tantangara Reservoir (east-ward).

2.2.1 Ravine

Within the Ravine, the Yarrangobilly River is the major ephemeral watercourse that flows into Talbingo Reservoir, downstream of Lobs Hole. Its catchment has an area of 271 square kilometres (km²) that is wholly within the Kosciusko National Park (KNP). The Yarrangobilly River has a number of tributaries within the Ravine, including Wallaces Creek, Stable Creek, Sheep Station Creek and Highground Creek. The majority of annual stream flow occurs in late winter and early spring, which is typical for rivers in the Australian Alps.

2.2.2 Plateau

The Plateau is within the upper reaches of the Murrumbidgee and Eucumbene River catchments, wholly within the KNP. The headwaters of the Eucumbene River are in the western Plateau, and the river flows from the north of the Plateau in a south-easterly direction into Tantangara Reservoir.

A number of perennial waterways are present across the Plateau, that either flow north into the Murrumbidgee River or directly into Tantangara Reservoir, including Gooandra Creek, Tantangara Creek, Nungar Creek and Kellys Plains Creek.

2.3 Hydrogeology

The hydrogeological units of the project consist of the following:

- Alluvium, colluvium and weathered rock: these shallow units are generally recharged by moderate to high rainfall, flooding for alluvial areas and snow melt.
- Shallow weathered fractured rock: these units have low to moderate permeability and are recharged by moderate to high rainfall and snow melt (occurring when soil moisture conditions are exceeded).
- Deep fractured rock: recharged by infiltration of rainfall migrating from shallow groundwater systems. Permeability is generally lowest in the central section of the plateau and higher in the east and western areas of the plateau. There is downward flow of groundwater in recharge areas and upward flow in discharge areas.

Measurements from the baseline groundwater monitoring network vary from approximately 1,470 m AHD in the topographically elevated terrain associated with the Plateau, to approximately 570 m AHD in the topographically lower terrain near Lobs Hole. Groundwater levels may fall outside of this measured range in areas of higher relief and in some of the lower drainage lines, such as the interface between the Yarrangobilly River and Talbingo Reservoir where levels are likely at or close to surface levels of about 545 m AHD.

2.3.1 Ravine

Along the proposed power waterway alignment, groundwater levels within the Ravine Beds vary from approximately 1,325 m AHD in the topographically elevated terrain adjacent to the Plateau in the east, to approximately 570 m AHD in the topographically lower terrain near Lobs Hole. Groundwater flow direction is generally from east to west, with the Long Plain Fault area acting as a groundwater divide between the ravine and plateau areas.

Groundwater levels within the ravine do not typically show an obvious response to rainfall events or flow events within the Yarrangobilly River.

2.3.2 Plateau

Along the proposed headrace tunnel transect, groundwater levels vary from approximately 1,470 m AHD in the elevated areas to the west, to approximately 1,170 m AHD in the lower elevated area near Tantangara Creek. Overall, groundwater levels observed along the proposed tunnel alignment indicate that groundwater flow direction is generally west to east.

Groundwater levels within the plateau show a moderate to strong response to rainfall events, indicating a moderate to strong connection between surface and the regional groundwater system.

2.4 Groundwater dependent ecosystems

The following discussion regarding groundwater dependant ecosystems (GDE) has been extracted from the GMP (FGJV, 2020).

2.4.1 High priority groundwater dependant ecosystems

Based on the Water Sharing Plan for the Lachlan Fold Belt Murray Darling Basin Fractured Rock groundwater source (DPIE, 2020b), the nearest High Priority GDE is the Yarrangobilly Caves, located approximately 5 km north of the nearest infrastructure feature of the project.

2.4.2 Subterranean groundwater dependant ecosystems (Stygofauna)

A stygofauna assessment was undertaken as part of the environmental impact statement (EMM, 2019) and identified a total of five specimens, from two families, likely to be obligate (fully groundwater-dependent) stygofauna representatives.

A further 80 specimens from 5 groups, with potential to be obligate stygofauna representatives, were collected from 4 of the 11 fractured rock groundwater system monitoring locations sites and 4 of the 5 alpine bog and fen monitoring locations.

Limited stygofauna studies have been undertaken within fractured rock aquifers of the region, thus there is limited data for comparison. The stygofauna found in the aquifers in the Snowy 2.0 Project area are noted to be similar to those encountered in other fractured rock systems in New South Wales (NSW).

2.4.3 Aquatic groundwater dependant ecosystems

Aquatic GDEs are dependent on baseflow in non-perennial rivers and creeks. Across the project region, all rivers comprise both runoff and baseflow components as shallow groundwater tables are consistently above creek bed elevations. All creeks are therefore considered to support aquatic GDEs. In particular, plant community type (PCT) 300 occur along drainage lines on mid-slopes across the project area and PCTs 285, 299 and 302 occur in riparian zones and gullies where there is likely to be some near-surface expression of groundwater.

2.4.4 Terrestrial groundwater dependant ecosystems

Terrestrial GDEs include vegetation that access groundwater to maintain ecosystem function. These are classified according to their proportional (temporal) dependence on groundwater. Plant communities with varying degrees of groundwater dependence within the project area include:

- Entirely/obligate terrestrial groundwater dependant ecosystems, comprising:
 - PCT 637 – Alpine and sub-alpine peatlands, damp herbfields and fens, South Eastern Highlands Bioregion and Australian Alps Bioregion.
 - PCT 1225 – Sub-alpine grasslands of valley floors, southern South Eastern Highlands Bioregion and Australian Alps Bioregion.
- Facultative – proportional terrestrial groundwater dependant ecosystems, comprising:
 - PCT 285 – Broad-leaved Sally grass – sedge woodland on valley flats and swamps in the NSW South Western Slopes Bioregion and adjoining South Eastern Highlands Bioregion.
 - PCT 299 – Riparian Ribbon Gum – Robertsons Peppermint – Apple Box riverine very tall open forest of the NSW South Western Slopes Bioregion and South Eastern Highlands Bioregion.

- PCT 302 – Riparian Blakely's Red Gum – Broad-leaved Sally woodland – teatree – bottlebrush – wattle shrubland wetland of the NSW South Western Slopes Bioregion and South Eastern Highlands Bioregion.
- facultative – opportunistic terrestrial groundwater dependant ecosystems, comprising:
 - PCT 300 – Ribbon Gum – Narrow-leaved (Robertsons) Peppermint montane fern – grass tall open forest on deep clay loam soils in the upper NSW South Western Slopes Bioregion and western Kosciuszko escarpment.
 - PCT 303 – Black Sally grassy low woodland in valleys in the upper slopes subregion of the NSW South Western Slopes Bioregion and Western South Eastern Highlands Bioregion.
 - PCT 679 – Black Sallee – Snow Gum low woodland of montane valleys, South Eastern Highlands Bioregion and Australian Alps Bioregion.

3 Monitoring program

3.1 Overview

The GMP monitoring network comprises 136 monitoring locations, including:

- 57 conventional monitoring bores, facilitating groundwater level and chemistry monitoring at discrete intervals within the shallow and deeper groundwater systems.
- 35 shallow swamp piezometers, monitoring the shallow bogs and fens (typically associated with obligate GDE's, refer Section 2.4).
- Nine production bores, used for aquifer testing and/or water supply for the project.
- 35 VWP locations, totalling 105 VWP sensors, monitoring groundwater levels within/between deep and shallow groundwater systems.

Decommissioned/destroyed bores include:

- Nine conventional monitoring bores (MB12A, BH1115, BH1116, BH1117, BH7106, BH8101, BH8102, BH8105 and BH8108).
- One VWP (BH5114).
- Five shallow swamp piezometers (BP1–4 and RtS_BH8A).
- Three production bores (PB01, PB05 and EWPB3).

Bores proposed for decommissioning include:

- Two EPL monitoring bores (RSMB6 and RSMB7).
- Two production bores (PB06 and PB09).

The groundwater monitoring network is provided on Figure 1.1–Figure 1.5.

3.2 Trigger criteria

i Groundwater level trigger criteria

Groundwater level trigger values are presented in Section 6.4 of the GMP (FGJV, 2020) and have been applied to monitoring locations that are responding to project stressors. Groundwater level trigger values have been derived from the numerical model and baseline data, in accordance with the following methodology:

1. Maximum predicted groundwater drawdown (measured in metres) was extracted from the numerical model at nodes representing the relevant groundwater monitoring location.
2. An inferred minimum natural groundwater level (in metres above Australian height datum) was inferred from the baseline data set (comprising the data up to an observed drawdown response as a result of the project).
3. The maximum predicted groundwater drawdown was subtracted from the minimum natural groundwater level, resulting in an exceedance trigger level for groundwater drawdown (i.e. greater drawdown than predicted by the numerical model).

Groundwater level trigger values for VWP locations have been applied to the shallowest sensor at each location (i.e. providing the greatest measurement of water table fluctuation), noting project impacts (EMM, 2019) are predicted as a result of water table drawdown.

Groundwater trigger values for level 1 bores are presented in Table A.1–Table A.4 (attached as Appendix A).

ii Groundwater quality trigger criteria

Preference under the Australian and New Zealand Guidelines for Fresh and Marine Water Quality (ANZG, 2018) is given to site-specific guidelines determined through a comprehensive assessment of baseline data for a minimum period of two years (24 months).

Groundwater quality sampling was undertaken prior to project approval (EMM, 2021). Regular and routine water quality sampling is not a post-approval requirement, with samples only obtained in response to a groundwater level exceedance.

Groundwater quality trigger values are assigned to geological units intercepted by the project. Level 1 monitoring locations within each geological unit is presented in Table A.1–Table A.4 (attached as Appendix A). Representative groundwater quality trigger values, per geological unit, is presented in Table B.1 (attached as Appendix B).

3.2.2 Groundwater level criteria triggers

Groundwater level hydrographs (Appendix C) were reviewed to identify whether any bores triggered site specific trigger values (SSTV) listed in the GMP.

The following bores recorded groundwater levels that triggered SSTVs between 7 August and 7 November 2024:

Bores that triggered warning criteria:

- BH8106 (Level 1 bore).

Bores that triggered warning and exceedance criteria:

- BH2101 (Level 1 bore) – exceedance identified in manual water level reading.
- BH6104.

In accordance with Level 3a trigger level response under the Trigger Action Response Plan (TARP), a trigger notification report (TNR) was issued to the Department of Planning, Housing and Infrastructure (DPHI) on 25 June 2024 (BH6104) (EMM Consulting, 2024b) and 6 November 2024 (BH2101) (EMM Consulting, 2024c).

Subsequent trigger exceedance reports (TER) were submitted to Snowy Hydro to assess the impact of the exceedance. These are summarised in Table 3.1.

Table 3.1 Conclusions from trigger exceedance reports

Report Name	Conclusions
Trigger Exceedance Report – BH6104	<ul style="list-style-type: none"> • Nearby bores did not indicate regional groundwater drawdown propagation. • Impacts to sensitive groundwater receptors in the vicinity were considered negligible. • BH6104 is not a designated level 1 monitoring location. • Grouting efforts were effective in reducing groundwater inflow. • No further action is required.
Trigger Exceedance Report – BH2101	<ul style="list-style-type: none"> • Groundwater drawdown at BH2101 from 12 September onwards due to the excavation of the project headrace tunnel (TBM Florence). • Nearby bores suggested drawdown propagation along tunnel alignment. No data to confirm if the impact is more regional. • Bog and fen bores show no impact. • No clear correlation between probe drilling and recorded inflow. • Possible that secondary groundwater inflows pre dewatering are linked to dewatering at BH2101. • Grouting efforts were effective in reducing groundwater inflow. • As BH2101 is a level 1 bore, BH2101 and surrounding bores require quarterly water quality sampling for one year. • Recommendations included: <ul style="list-style-type: none"> – Groundwater levels are consistently monitored. – Water quality samples are collected. – Groundwater levels at NC01, NC02 and NC03 are reviewed weekly. – Groundwater model is recalibrated. – Engage an ecologist to ensure adequate strategies are in place to measure any potential impacts on Nungar Creek and PCT 637.

BH5206 exceeded 80% of its respective modelled drawdown. BH5209 exceeded 100% of modelled drawdown listed in the Snowy 2.0 approval. These drawdown levels are not included in the GMP and are only used internally as triggers to monitor impacts due to construction activities. These bores will be monitored closely over the next reporting period.

BH5107 and MB07B hydrographs showed water levels slightly below the exceedance trigger. Preliminary assessment has indicated the slow downward trend is due to faulty equipment. Further investigation is currently underway to determine the correct response.

4 Conclusions

Groundwater level data was assessed over the reporting period (7 August and 7 November 2024). Groundwater drawdown occurred within the Project area and triggered:

- warning criteria (i.e. greater than 80% of the drawdown listed in the GMP) at BH8106
- exceedance criteria (i.e. greater than 100% of the drawdown listed in the GMP) at BH2101
- previous exceedances at BH6104 continue to be monitored as required under the TER.

BH2101 exceedances were reported to DPHI and a subsequent TER report was submitted to Snowy Hydro, in summary:

- The TER indicated that drawdown from 12 September 2024 was induced by tunnel excavation activities, with drawdown propagation along the tunnel alignment.
- Bog and fen bores showed no impact and grouting efforts were successful in reducing inflows.
- It was recommended that groundwater levels at NC01, NC02 and NC03 are reviewed weekly, the groundwater model is recalibrated, and an ecologist should be engaged to ensure adequate strategies are in place to measure any potential impacts on Nungar Creek and PCT 637.

5 Recommendations

Table 5.1 provides a summary of recommendations for ongoing monitoring and data acquisition.

Table 5.1 Additional works required for ongoing monitoring and data acquisition

Bore ID	Status	Recommendation
BH6104	Operational	Collect a groundwater quality sample and compare against baseline data SSTV.
BH2101	Operational	As per the BH2101 TER (EMM Consulting, 2024c), collect quarterly groundwater quality samples and compare against baseline data SSTV for up to one year.
NC01	Operational	As per the BH2101 TER (EMM Consulting, 2024c), collect quarterly groundwater quality samples and compare against baseline data SSTV for up to one year.
NC02	Operational	As per the BH2101 TER (EMM Consulting, 2024c), collect quarterly groundwater quality samples and compare against baseline data SSTV for up to one year.
NC03	Operational	As per the BH2101 TER (EMM Consulting, 2024c), collect quarterly groundwater quality samples and compare against baseline data SSTV for up to one year.
BH3101	Telemetry infrastructure not established	Undertake manual data download.
BH5207	Sensor is potentially above water level	Check status of logging infrastructure.
BH6103	Telemetry infrastructure not established	Undertake manual data download.
BH7104	Telemetry infrastructure not established	Undertake manual data download.
MB08A	Telemetry infrastructure not established	Undertake manual data download.
MB08B	Telemetry infrastructure not established	Undertake manual data download.
PB06	Telemetry infrastructure not established	Undertake manual data download.
RSMB6	Telemetry infrastructure not established	Undertake manual data download.
RSMB7	Telemetry infrastructure not established	Undertake manual data download.
RSMB2	Telemetry infrastructure not established	Undertake manual data download.
RSMB8	Telemetry infrastructure not established	Undertake manual data download.
RSMB9	Telemetry infrastructure not established	Undertake manual data download.
TMB04	Telemetry infrastructure not established	Undertake manual data download.
TMB5A	Telemetry infrastructure not established	Undertake manual data download.
TMB5B	Telemetry infrastructure not established	Undertake manual data download.
BH5107	Possible logger drift	Check status of logging infrastructure.
MB07B	Possible logger drift	Check status of logging infrastructure.

References

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Appendix A

Groundwater level and quality trigger values

Table A.1 Level 1 conventional monitoring bores – Summary of installation and associated trigger values

Target formation	Bore ID	Ground level (mAHD)	Total depth (mbgl)	Screened interval (mbgl)		Target lithology	Groundwater level trigger (mAHD)		Groundwater quality trigger value
				Top	Bottom		Warning	Exceedance	Group (refer Table B.1)
Ravine Beds	BH8101	610.0	68.4	53.4	65.4	Siltstone	-	-	Ravine Beds West
	RSMB6	581.0	40.0	31.0	40.0	Siltstone/sandstone	-	-	-
	RSMB7	581.0	40.0	31.0	40.0	Siltstone/sandstone	-	-	-
	RSMB8	583.0	40.0	31.0	40.0	Siltstone/sandstone	-	-	-
	RSMB9	583.0	40.0	31.0	40.0	Siltstone/sandstone	-	-	-
	MB12B	1,330.5	180.0	149.0	179.0	Siltstone	-	-	Ravine Beds East
Byron Range Group	RSMB2	570.0	30.0	27.0	30.0	Siltstone/sandstone	-	-	-
Cabramurra Basalt	RtS_BH3A	1,467.0	50.0	40.0	49.0	Basalt	-	-	-
	RtS_BH4A	1,427.0	78.0	68.0	77.0	Basalt	-	-	-
Gooandra Volcanics	BH3110	1,346.0	257.3	165.9	177.9	Diorite	-	-	-
	MB01C	1,464.0	52.0	45.0	51.0	Volcanics	-	-	Gooandra Volcanics
	MB11A	1,485.0	7.5	17.0	23.0	Weathered basalt	-	-	Gooandra Volcanics
	SMB04	1,342.0	180.0	170.0	179.0	Chloritic schist	-	-	Gooandra Volcanics
	SMB05	1,342.0	50.0	40.0	49.0	Basalt	-	-	Gooandra Volcanics
	TMB02A	1,470.0	15.0	11.0	14.0	Weathered basalt	-	-	Gooandra Volcanics
	TMB02B	1,472.0	200.0	191.0	197.0	Chloritic schist	-	-	Gooandra Volcanics

Table A.1 Level 1 conventional monitoring bores – Summary of installation and associated trigger values

Target formation	Bore ID	Ground level (mAHD)	Total depth (mbgl)	Screened interval (mbgl)		Target lithology	Groundwater level trigger (mAHD)		Groundwater quality trigger value
				Top	Bottom		Warning	Exceedance	Group (refer Table B.1)
	TMB03A	1,478.0	34.0	29.5	32.5	Weathered basalt	-	-	Gooandra Volcanics
	TMB03B	1,478.0	150.0	141.0	147.0	Chloritic schist	-	-	Gooandra Volcanics
	TMB04	1,346.0	200.0	191.0	197.0	Basalt	-	-	Gooandra Volcanics
	RtS_BH1A	1,390.0	50.0	40.0	48.0	Chloritic schist	-	-	-
	RtS_BH1B	1,390.0	316.0	308.0	314.0	Chloritic schist	-	-	-
	RtS_BH2A	1,396.0	50.0	42.0	48.0	Basalt	-	-	-
	RtS_BH2B	1,396.0	314.0	306.0	312.0	Chloritic schist	-	-	-
	RtS_BH3B	1,466.0	316.4	309.0	315.0	Chloritic schist	-	-	-
	RtS_BH4B	1,427.0	150.0	143.0	149.0	Chloritic schist	-	-	-
Temperance Formation	MB04A	1,330.0	30.0	23.0	29.0	Basalt	-	-	Temperance Formation
Kellys Plains Volcanics	BH2101	1,314.0	169.9	154.6	166.6	Siltstone	-	-	-
	RtS_BH7B	1,236.0	49.0	41.0	47.0	Siltstone	-	-	-
	RtS_BH8B	1,228.0	65.0	57.0	63.0	Siltstone	-	-	-
	BH1117	1,241.1	65.0	51.9	60.9	-	-	-	-

Table A.2 Level 1 shallow swamp piezometers – Summary of installation and associated trigger values

Target formation	Bore ID	Ground level (mAHD)	Total depth (mbgl)	Screened interval (mbgl)		Target lithology	Groundwater level trigger (mAHD)		Groundwater quality trigger
				Top	Bottom		Warning	Exceedance	Group (refer Table B.1)
Surficial sediments	GH01	1,456.0	1.0	0.5	1.0	Alluvium/colluvium	-	-	Plateau bogs/fens
	GH02	1,456.0	0.9	0.5	0.9	Alluvium/colluvium	-	-	Plateau bogs/fens
	GH03	1,456.0	0.6	0.3	0.6	Alluvium/colluvium	-	-	Plateau bogs/fens
	TC01	1,324.0	1.0	0.6	1.0	Alluvium/colluvium	-	-	Plateau bogs/fens
	TC02	1,322.0	1.1	0.7	1.1	Alluvium/colluvium	-	-	Plateau bogs/fens
	TC03	1,321.0	0.8	0.5	0.8	Alluvium/colluvium	-	-	Plateau bogs/fens
	BH01	1,351.0	0.4	0.2	0.4	Alluvium/colluvium	-	-	Plateau bogs/fens
	BH02	1,352.0	0.9	0.6	0.9	Alluvium/colluvium	-	-	Plateau bogs/fens
	BH03	1,350.0	0.7	0.5	0.7	Alluvium/colluvium	-	-	Plateau bogs/fens
	NC01	1,237.0	0.8	0.5	0.8	Alluvium/colluvium	-	-	-
	NC02	1,237.0	1.1	0.8	1.1	Alluvium/colluvium	-	-	-
	NC03	1,237.0	1.0	0.7	1.0	Alluvium/colluvium	-	-	-
	RtS_BH5A	1,384.0	0.9	0.6	0.9	Alluvium/colluvium	-	-	-
	RtS_BH6A	1,448.0	1.4	1.1	1.4	Alluvium/colluvium	-	-	-
	RtS_BH7A	1,231.0	1.3	1.0	1.3	Alluvium/colluvium	-	-	-
RtS_BH8A	1,219.0	2.6	2.1	2.6	Alluvium/colluvium	-	-	-	

Table A.2 Level 1 shallow swamp piezometers – Summary of installation and associated trigger values

Target formation	Bore ID	Ground level (mAHD)	Total depth (mbgl)	Screened interval (mbgl)		Target lithology	Groundwater level trigger (mAHD)		Groundwater quality trigger
				Top	Bottom		Warning	Exceedance	Group (refer Table B.1)
	RtS_BH9A	1,458.0	1.0	0.7	1.0	Alluvium/colluvium	-	-	-
	RtS_BH10A	1,420.0	1.2	0.9	1.2	Alluvium/colluvium	-	-	-
	RtS_BH11A	1,353.0	1.2	0.9	1.2	Alluvium/colluvium	-	-	-
	RtS_BH12A	1,316.0	1.2	0.9	1.2	Alluvium/colluvium	-	-	-

Notes: Grey text indicates decommissioned or inactive locations.

Table A.3 Level 1 production bores – Summary of installation and associated trigger values

Target formation	Bore ID	Ground level (mAHD)	Total depth (mbgl)	Screened interval (mbgl)		Target lithology	Groundwater level trigger (mAHD)		Groundwater quality trigger
				Top	Bottom		Warning	Exceedance	Group (refer Table B.1)
Gooandra Volcanics	PB04	1341.0	200.0	185.0	200.0	Chloritic schist	-	-	Gooandra Volcanics
	TMB03C	1478.0	250.0	237.0	249.0	Chloritic schist	-	-	Gooandra Volcanics
Tantangara Formation	PB01	1231.5	60.0	30.0	60.0	Dacite	-	-	Tantangara Formation
Ravine Beds	PB05	614.3	50.0	100.0	100.0	Siltstone/sandstone	-	-	Ravine Beds West

Notes: Grey text indicates decommissioned or inactive locations.

Table A.4 Level 1 vibrating wire piezometers – Summary of installation and associated trigger values

Target formation	Bore ID	Ground level (mAHD)	Total depth (mbgl)	Sensor depth (mbgl)			Target lithology	Groundwater level trigger (mAHD)	
				Deep sensor depth (mbgl)	Intermediate sensor depth (mbgl)	Shallow sensor depth (mbgl)		Warning	Exceedance
Byron Range Group	BH8106	1,096.0	673.0	669.0	431.0	-	Siltstone, sandstone	695.0	658.1
Gooandra Volcanics	BH3107A	1,324.0	241.0	1,191.1	1,124.3	-	Siltstone/sandstone	-	-
	BH4101	1,479.0	1,100.0	883.9	729.6	542.5	Meta-rhyolite	-	-
	BH4102	1,460.0	534.0	455.6	374.3	246.3	Gneiss, phyllite	-	-
	BH4103	1,471.0	388.0	335.6	232.2	139.5	Metatuff, tuff, gneiss	-	-

Appendix B

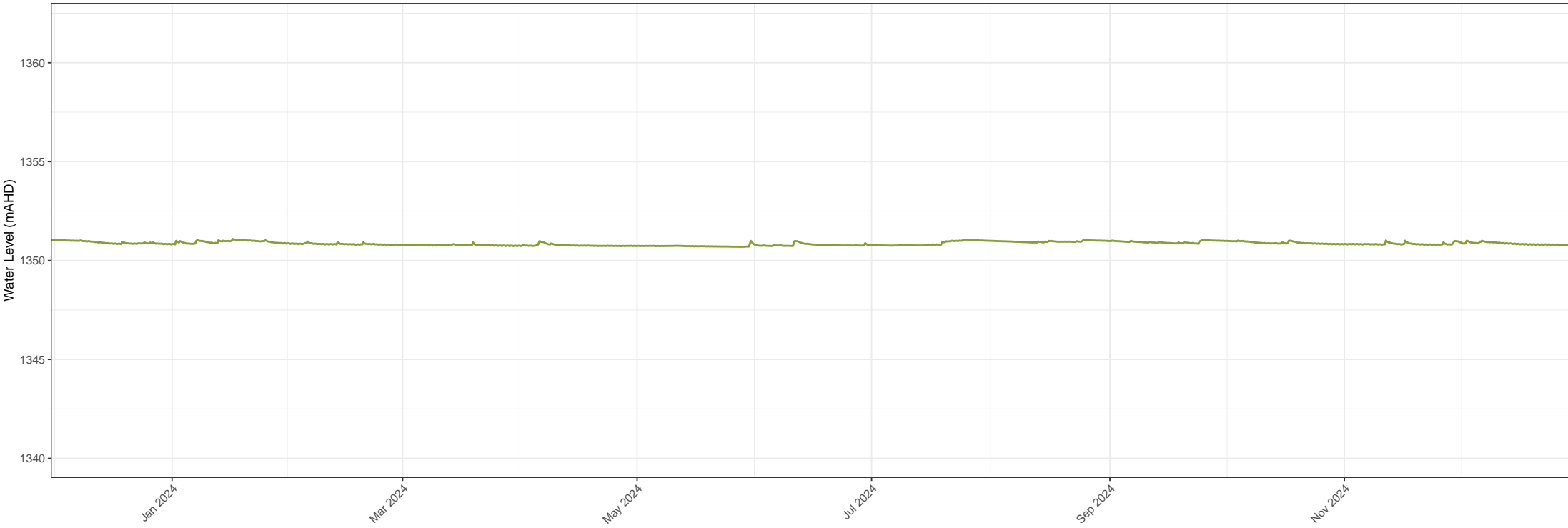
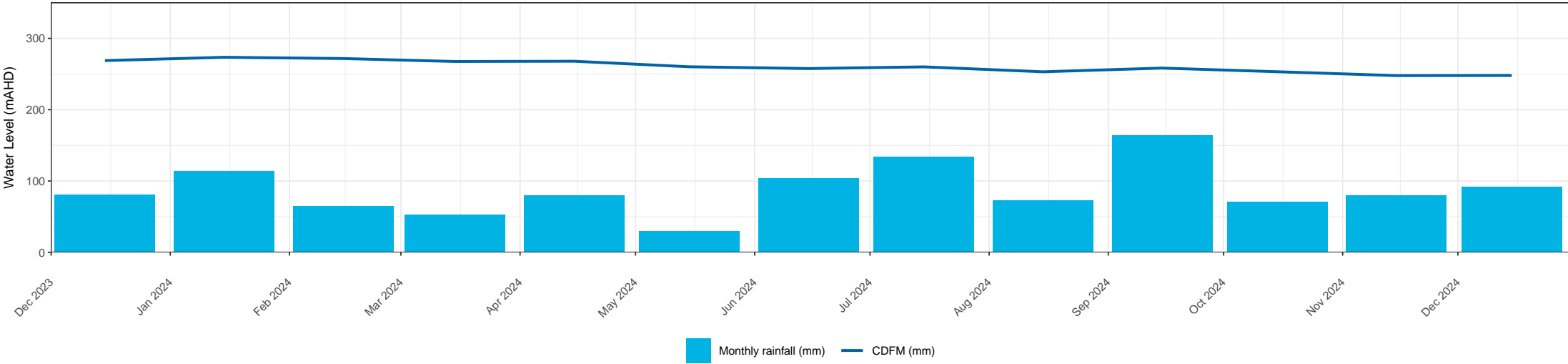
Groundwater quality trigger value groups

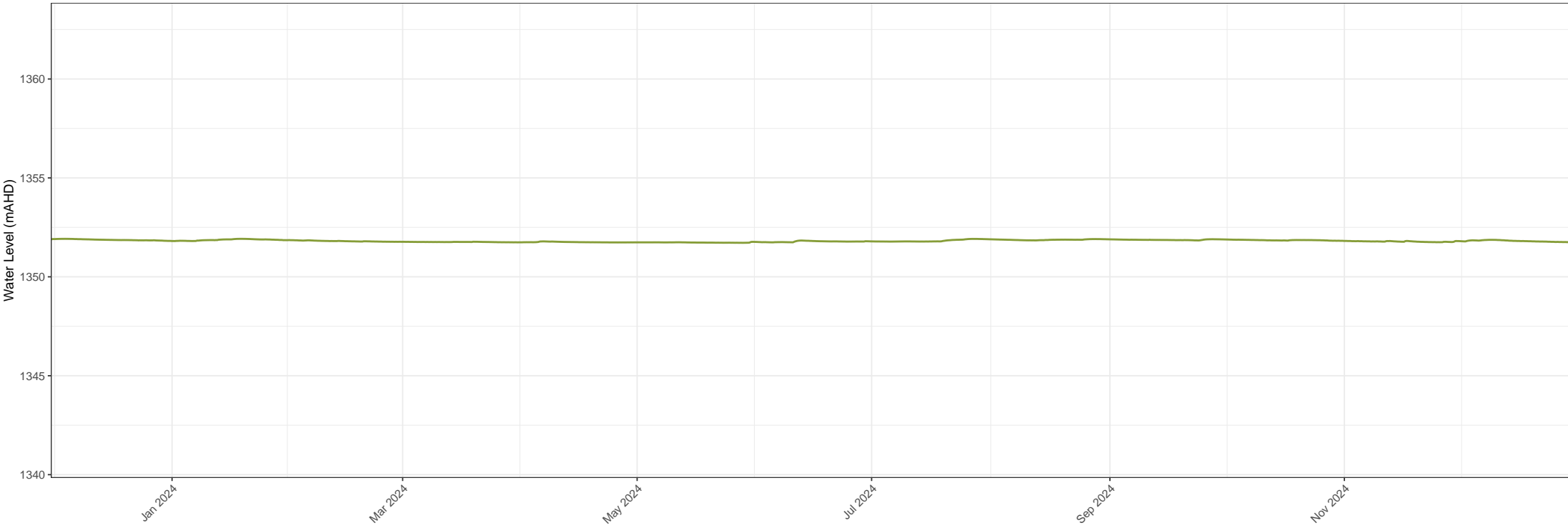
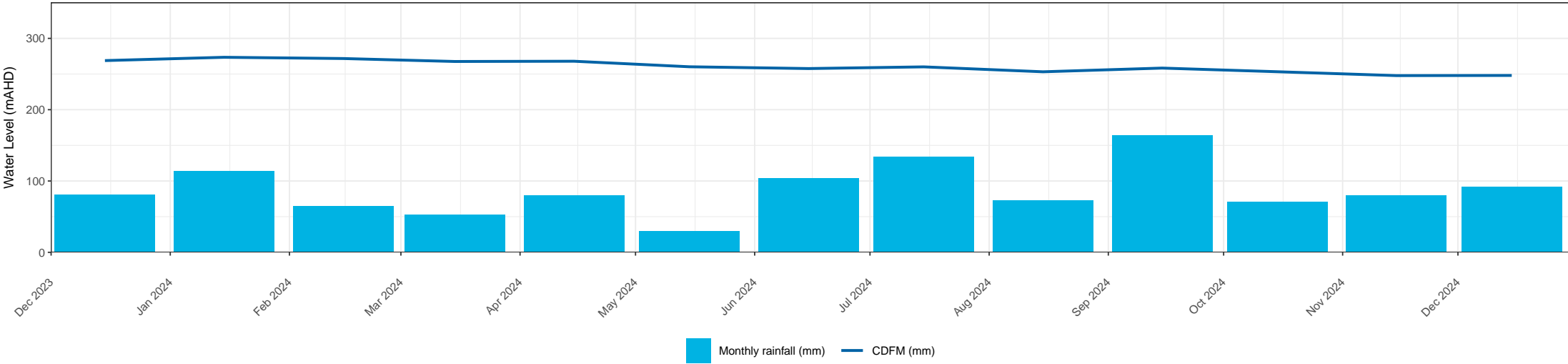
Table B.1 Groundwater quality trigger value groups

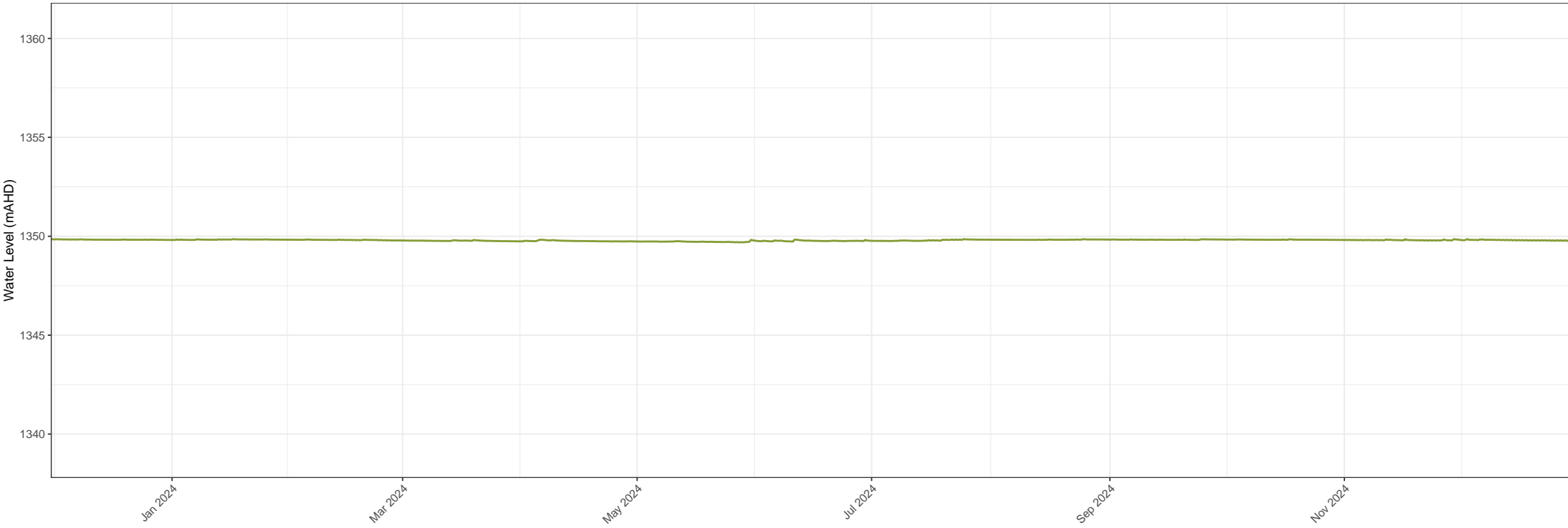
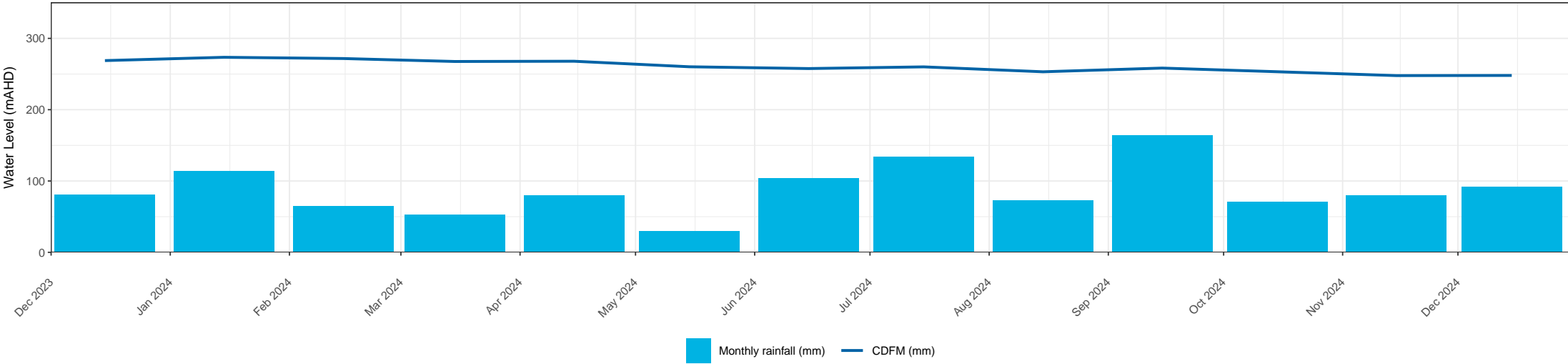
Analyte	Unit	Gooandra Volcanics	Temperance Formation	Boggy Plain Suite	Tantangara Formation	Kellys Plain Volcanics	Tertiary basalt	Plateau bogs/fens	Ravine Beds East	Ravine Beds West	Boraig Group	Yarrangobilly Caves
Field Parameters												
Electrical conductivity	µS/cm	30–350	SSTV	30–350	30–350	30–350	30–350	30–350	30–350	SSTV	30–350	30–350
pH	-	6.5–8.0	6.5–8.0	6.5–8.0	6.5–8.0	6.5–8.0	6.5–8.0	SSTV	6.5–8.0	6.5–8.0	6.5–8.0	6.5–8.0
Analytical results – nutrients												
Total nitrogen	µg/L	0.25	0.25	SSTV	0.25	0.25	0.25	SSTV	0.25	0.25	0.25	0.25
Reactive phosphorus	µg/L	0.015	0.015	0.015	0.015	0.015	0.015	0.015	0.015	0.015	0.015	0.015
Analytical results – metals (dissolved)												
Aluminium (Al)	µg/L	0.027	0.027	SSTV	0.027	0.027	0.027	SSTV	0.027	0.027	0.027	SSTV
Copper (Cu)	µg/L	SSTV	SSTV	SSTV	0.001	0.001	SSTV	0.001	0.001	0.001	SSTV	SSTV
Iron (Fe)	µg/L	0.34	0.34	0.34	0.34	0.34	0.34	SSTV	0.34	0.34	0.34	0.34
Lead (Pb)	µg/L	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
Manganese (Mn)	µg/L	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2
Nickel (Ni)	µg/L	0.008	0.008	0.008	0.008	0.008	0.008	0.008	0.008	0.008	0.008	0.008
Silver (Ag)	µg/L	0.000026	0.000026	0.000026	0.000026	0.000026	0.000026	0.000026	0.000026	0.000026	0.000026	0.000026
Zinc (Zn)	µg/L	SSTV	SSTV	SSTV	0.00246	0.00246	SSTV	SSTV	0.00246	0.00246	SSTV	0.002

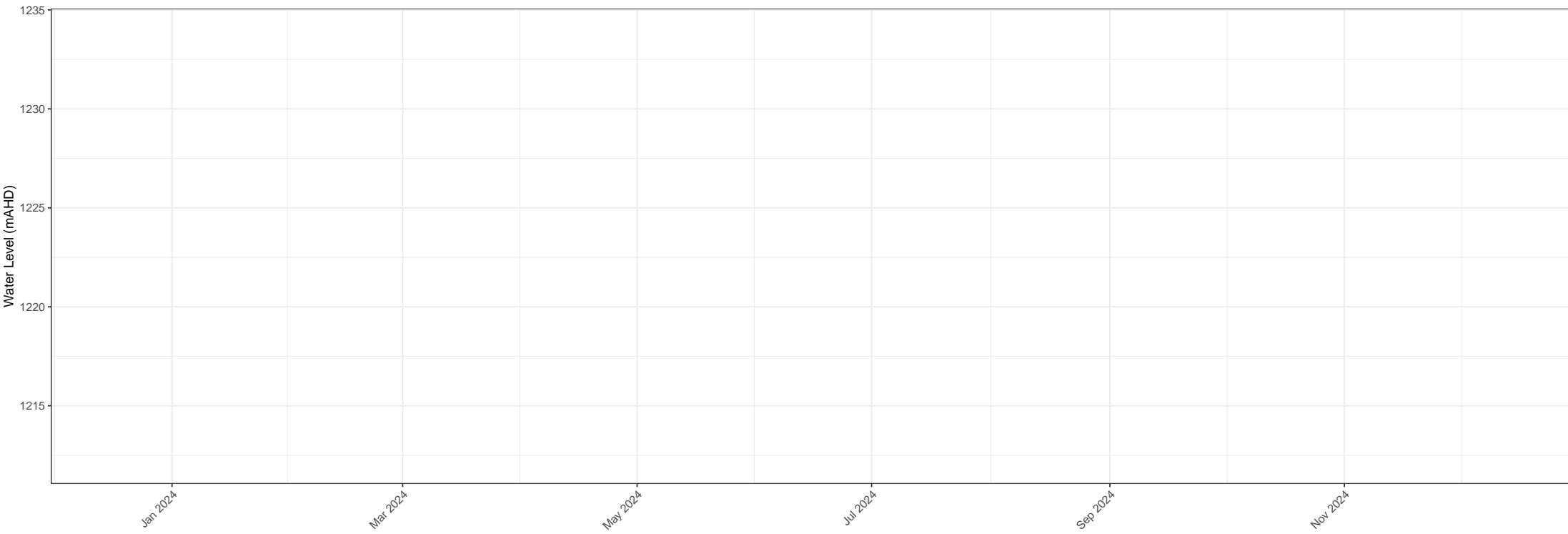
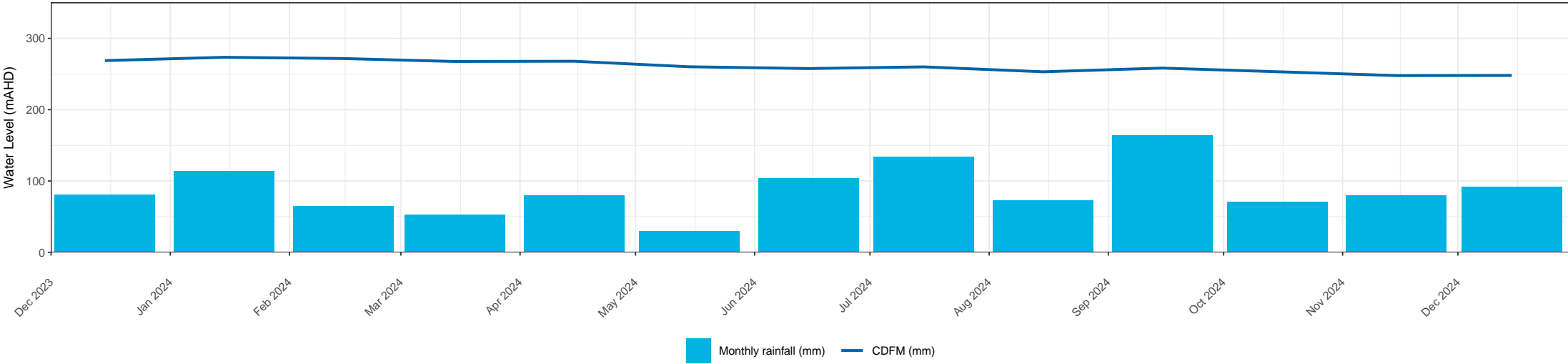
Appendix C

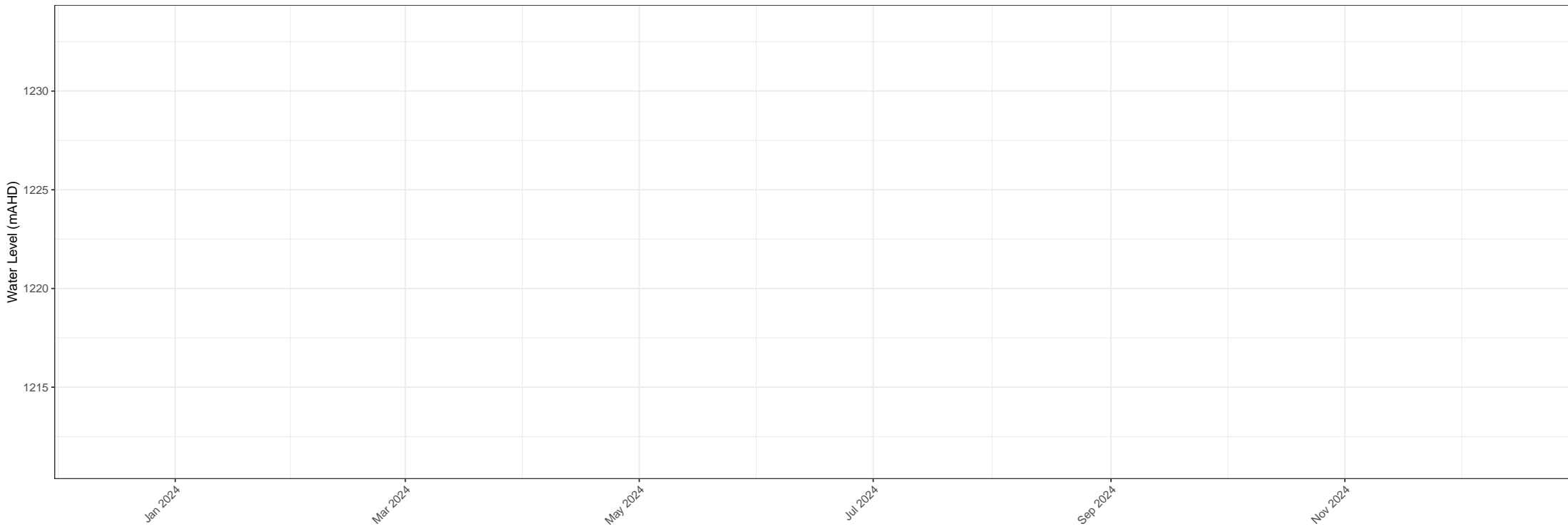
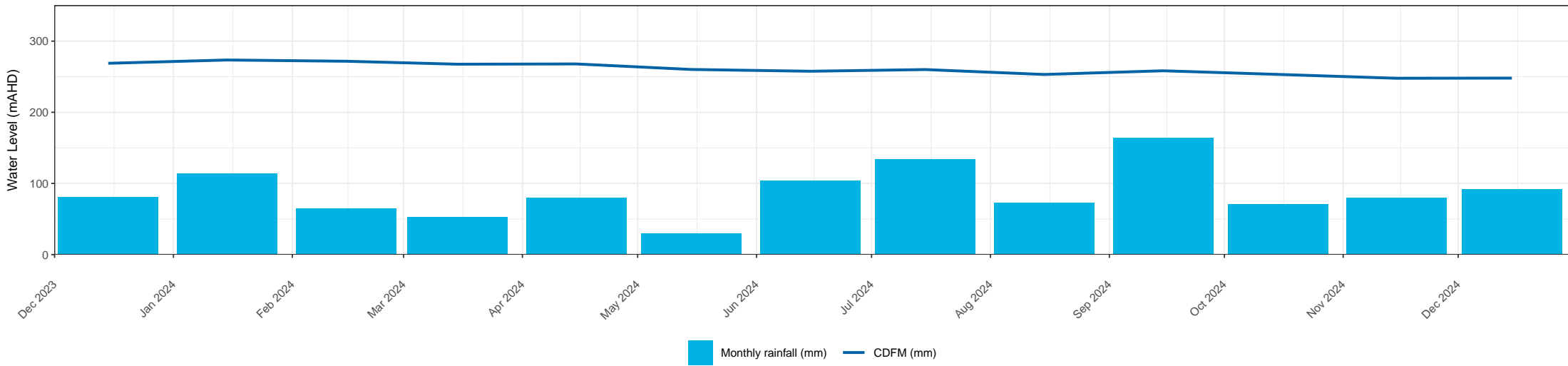
Groundwater level hydrographs

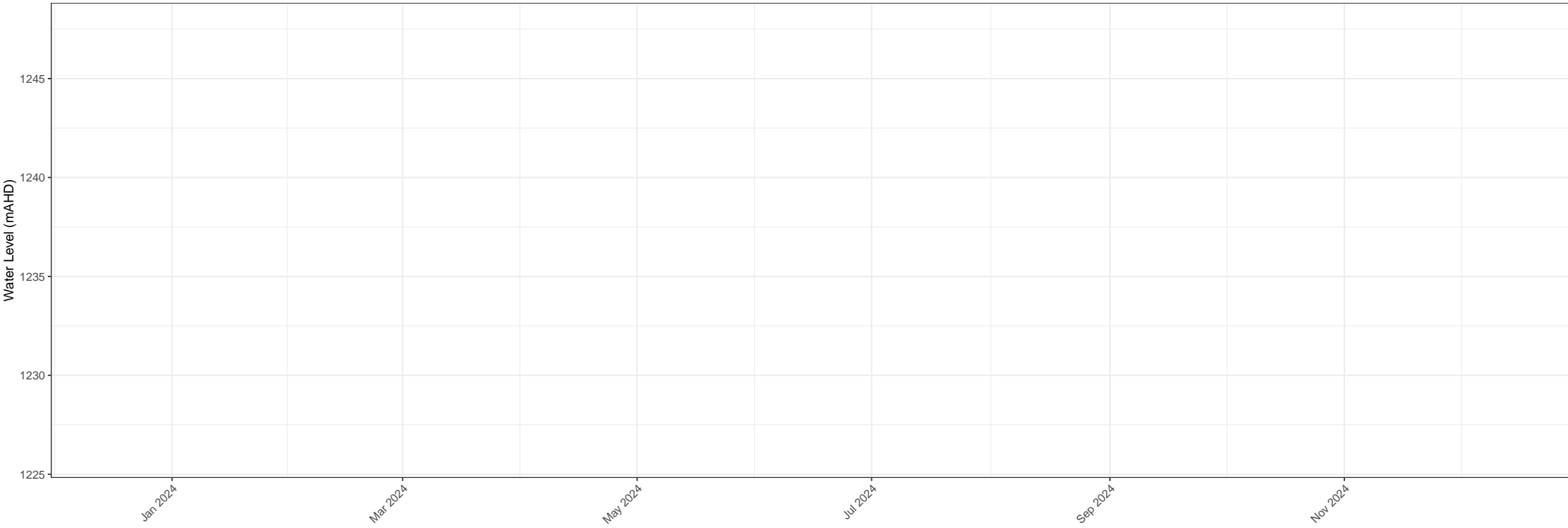
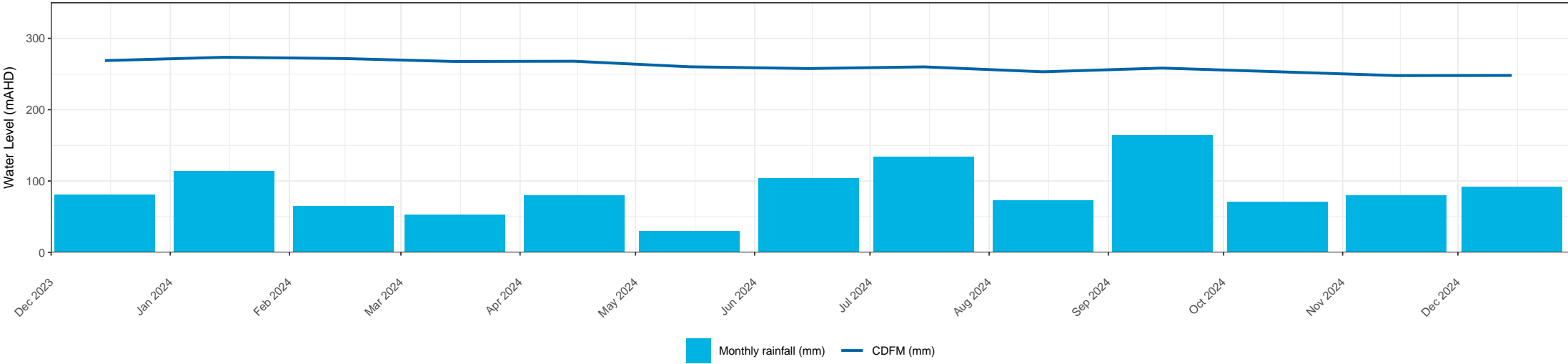






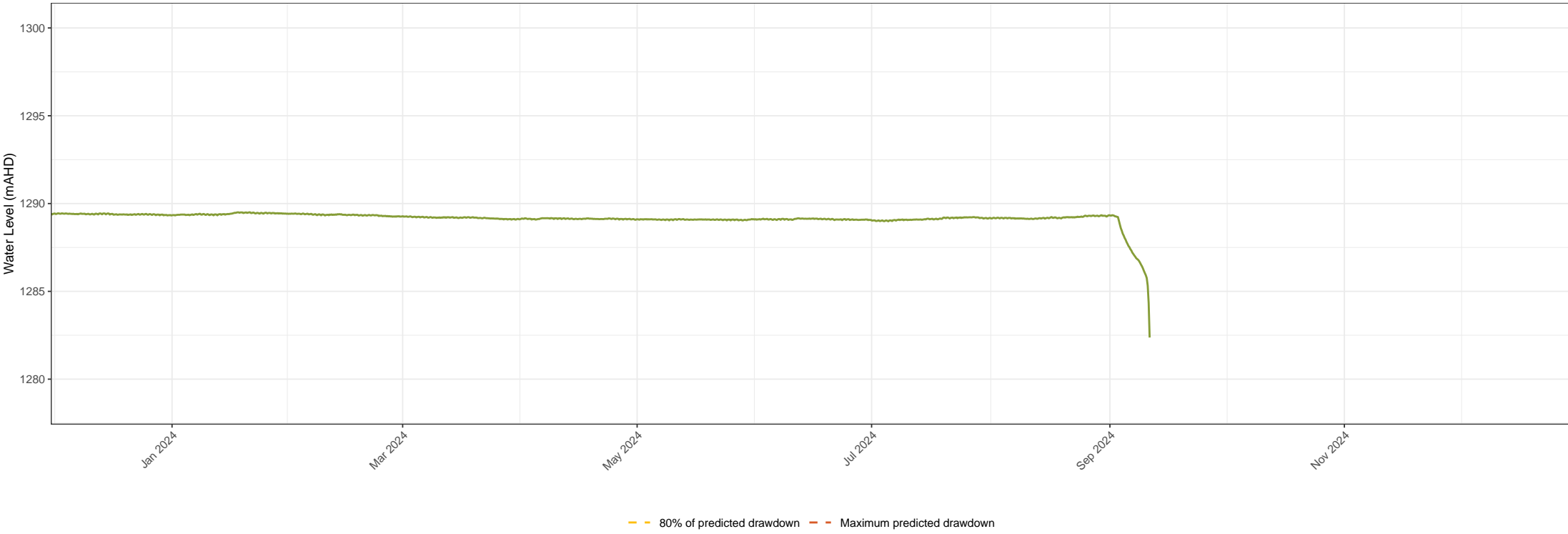
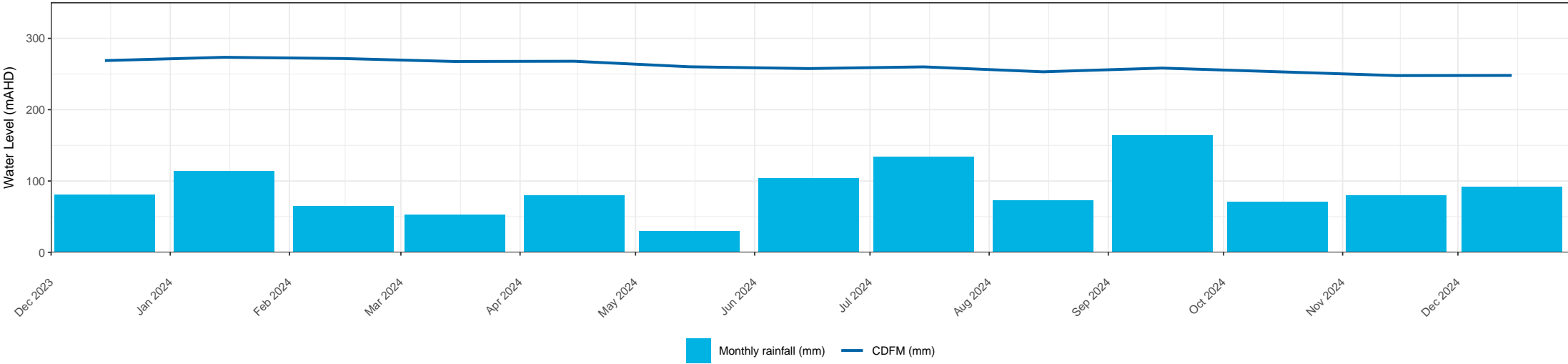




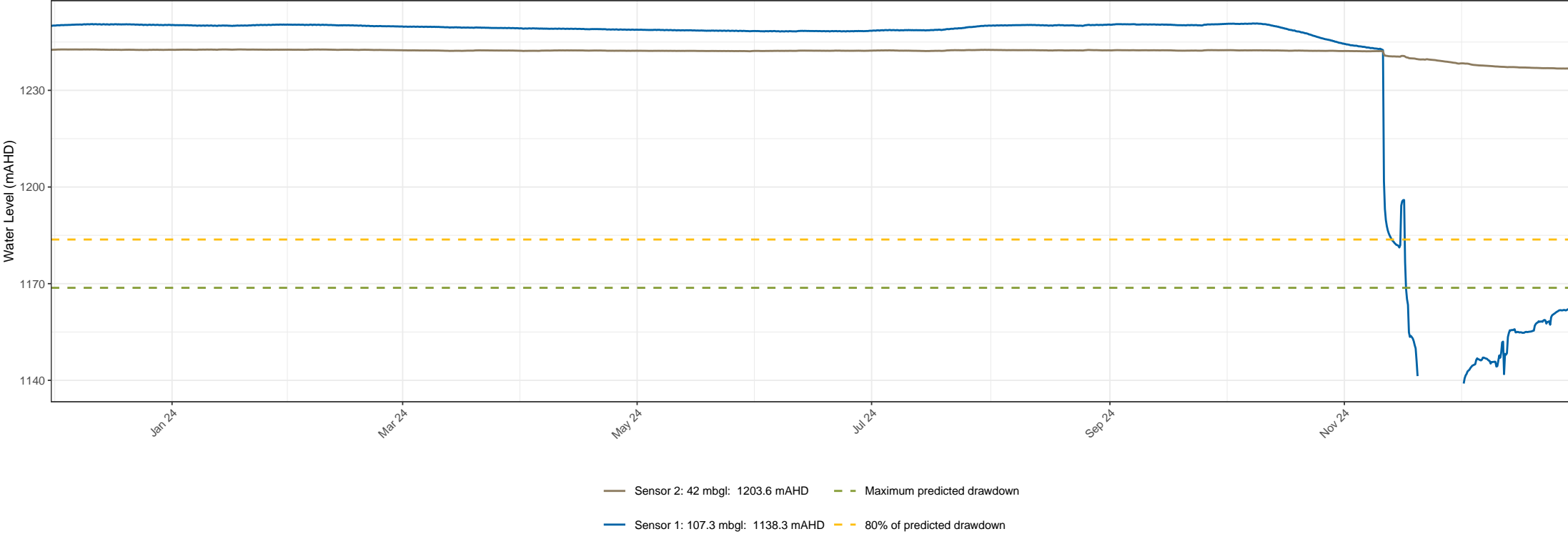
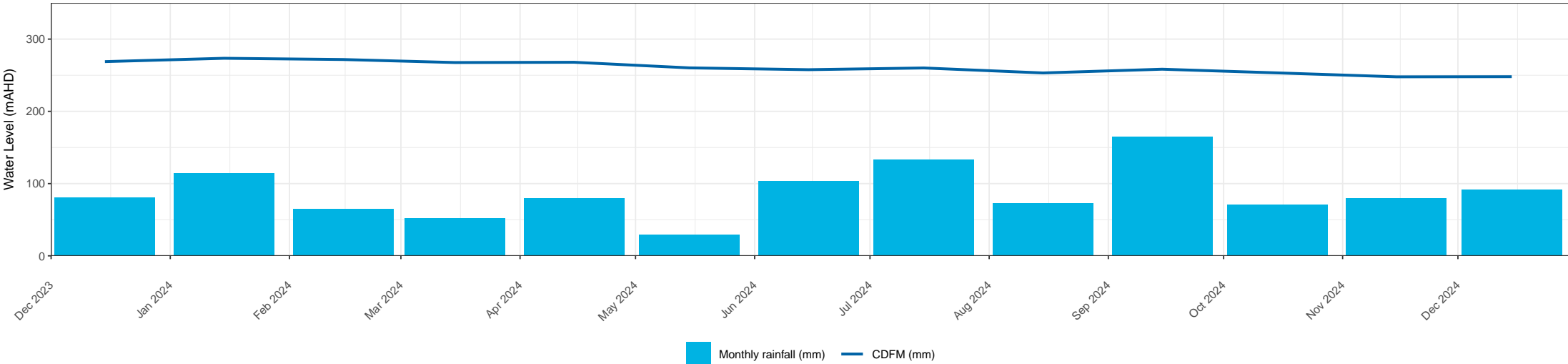


Decommissioned

BH1117 groundwater level times series data
 Snowy 2.0 – Snowy Hydro Limited
 Groundwater monitoring and management
 Figure A– BH1117



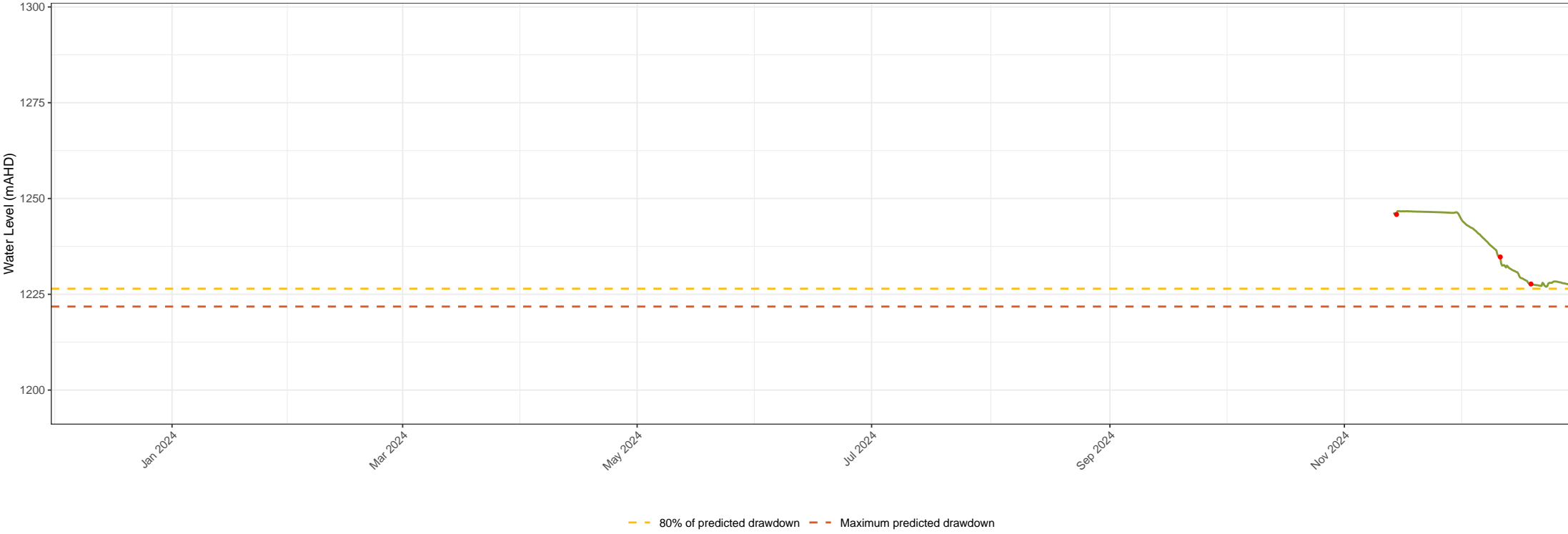
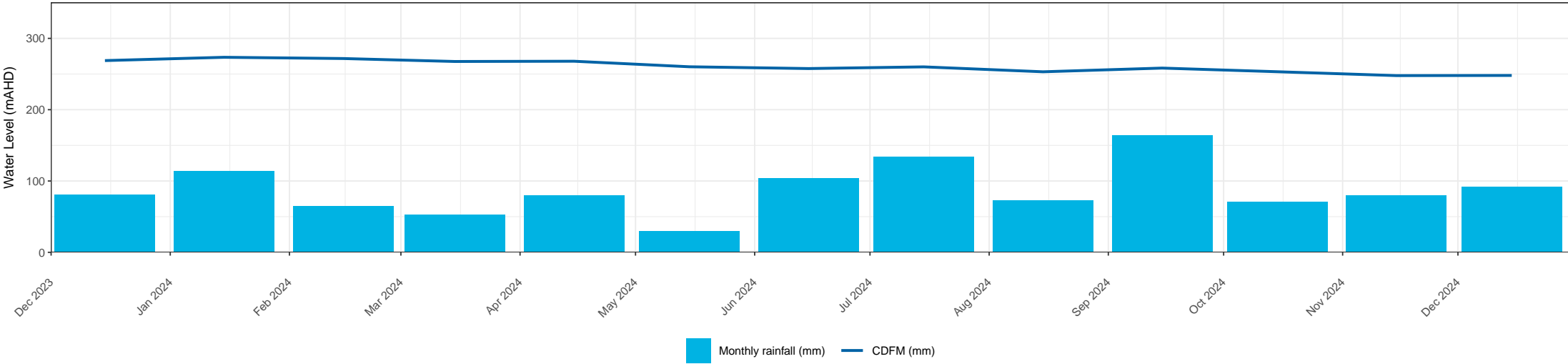
BH2101 groundwater level times series data
 Snowy 2.0 – Snowy Hydro Limited
 Groundwater monitoring and management
 Figure A– BH2101



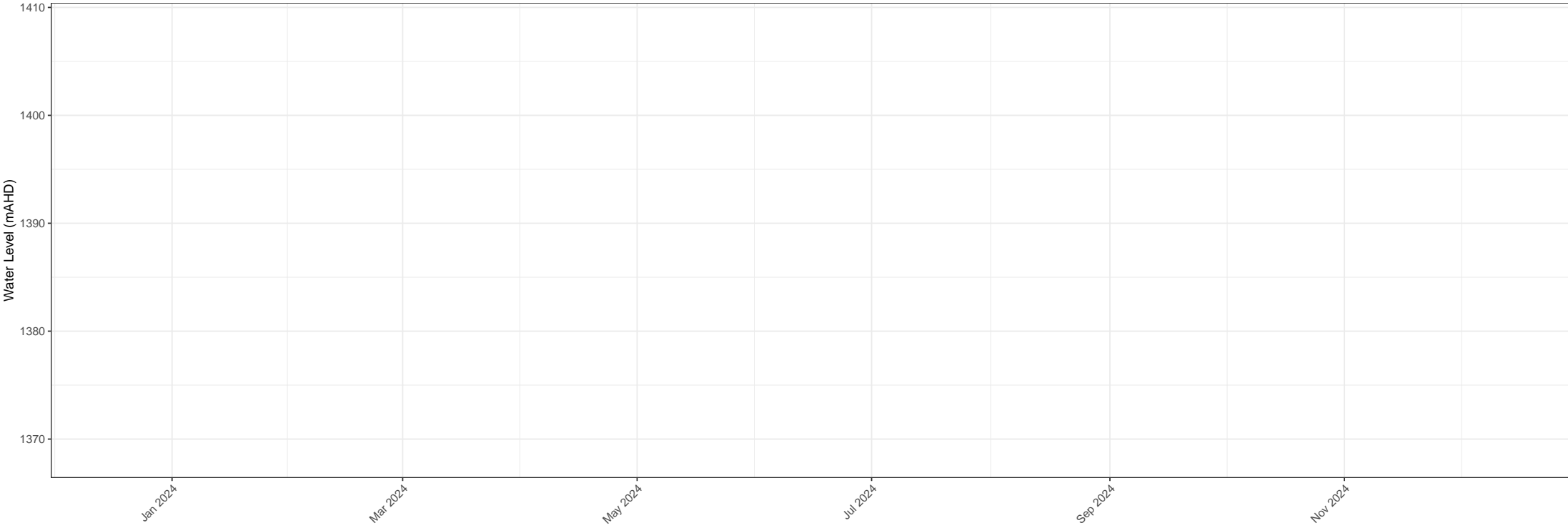
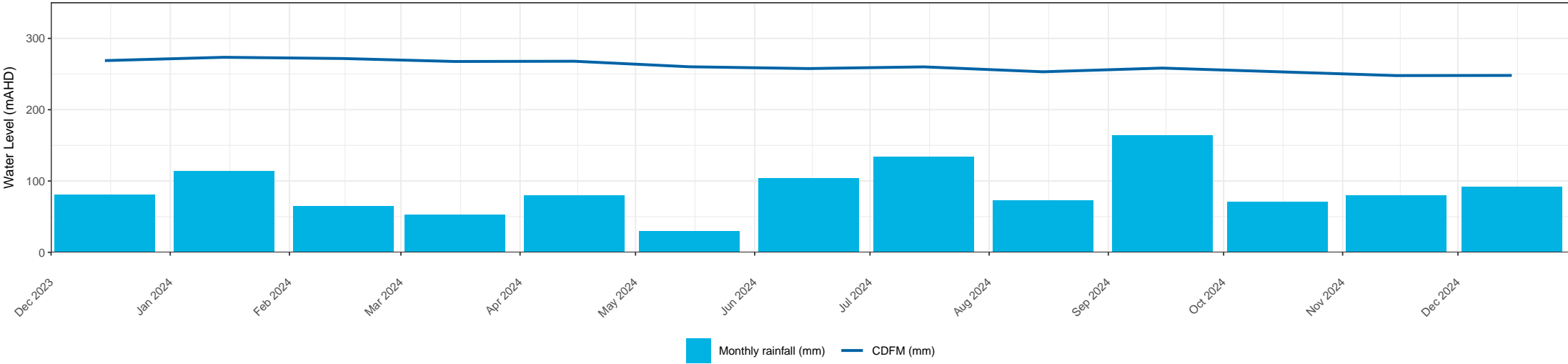
Notes

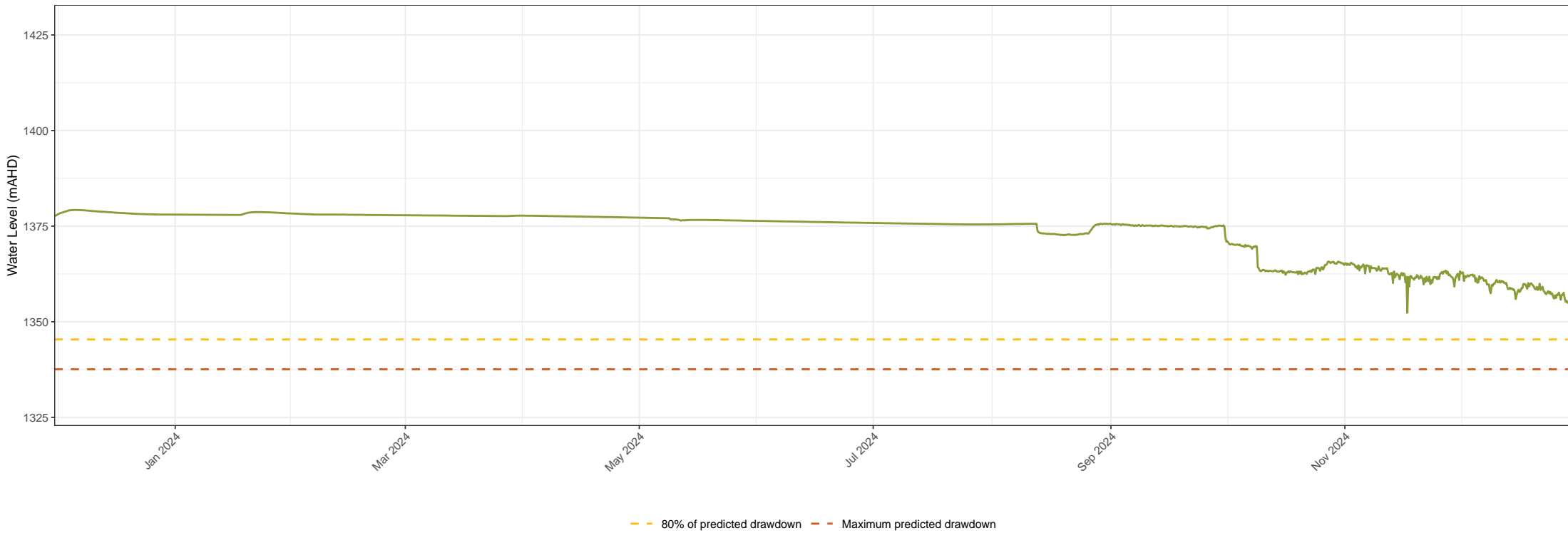
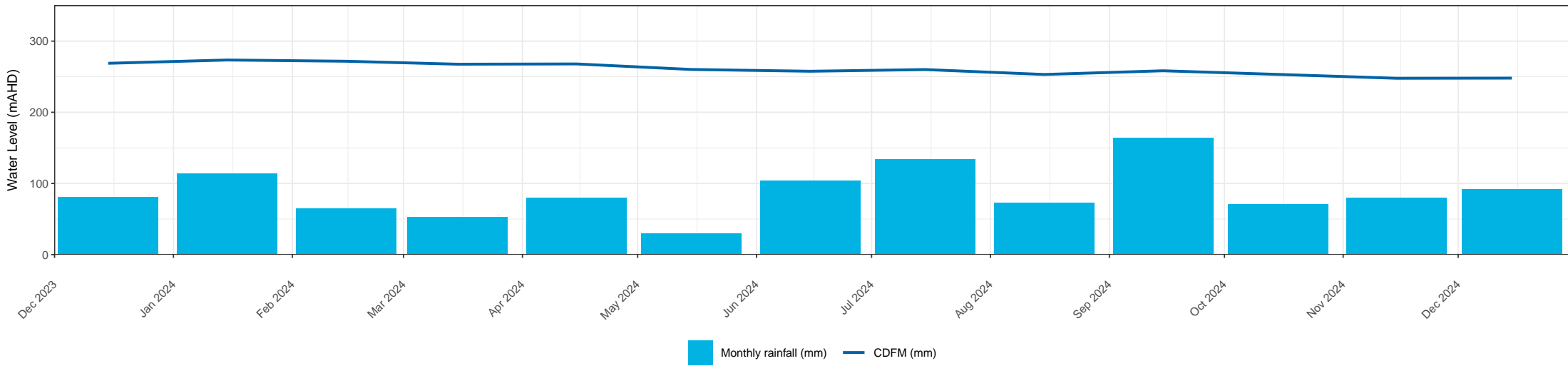
— Sensor 2: 42 mbgl: 1203.6 mAHD - - - Maximum predicted drawdown
 — Sensor 1: 107.3 mbgl: 1138.3 mAHD - - - 80% of predicted drawdown

BH2102 groundwater level times series data
 Snowy Hydro 2.0 – Snowy Hydro Limited
 Groundwater monitoring and management
 Figure A– BH2102

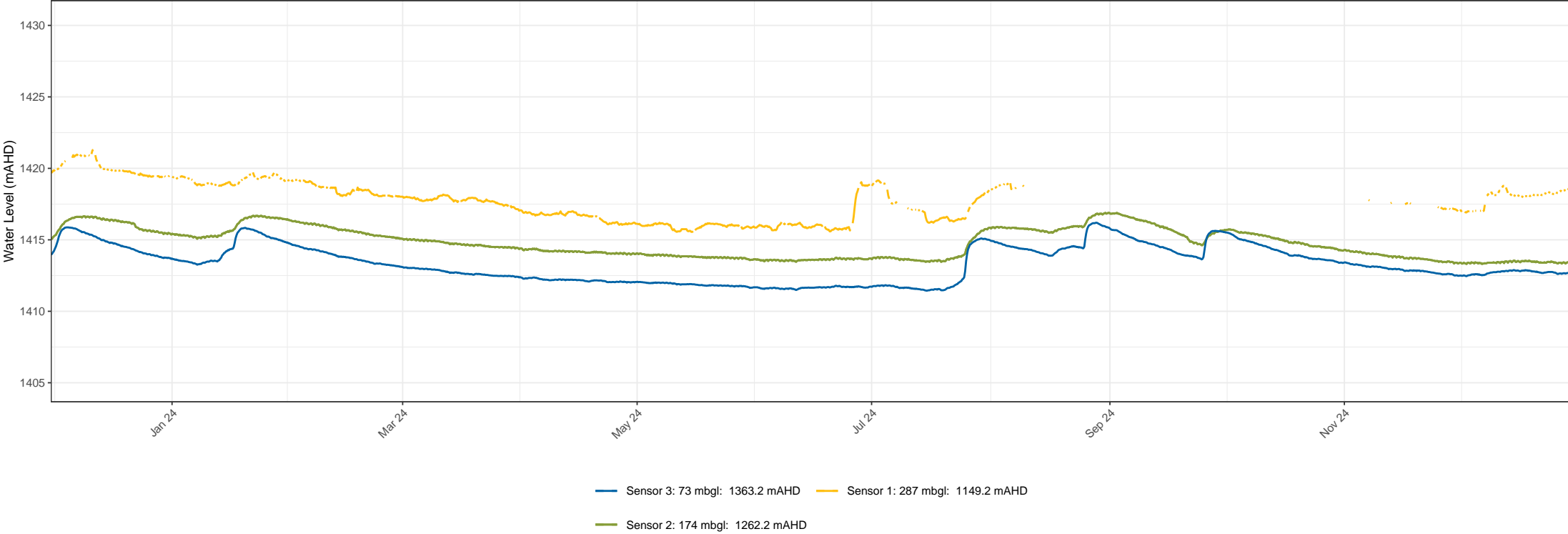
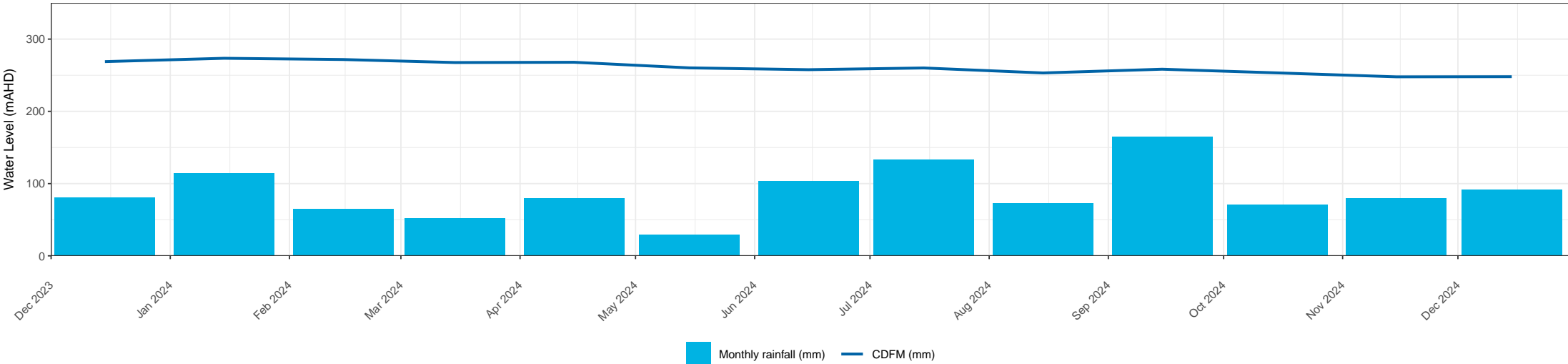


BH2103 groundwater level times series data
 Snowy 2.0 – Snowy Hydro Limited
 Groundwater monitoring and management
 Figure A– BH2103



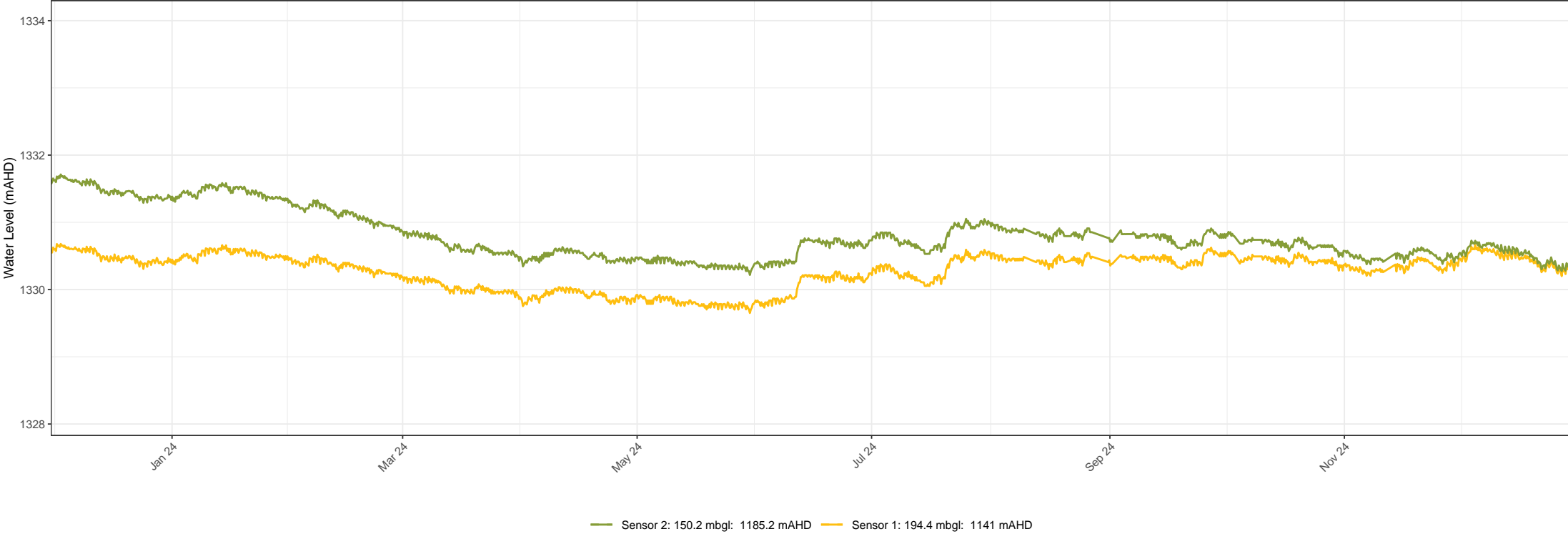
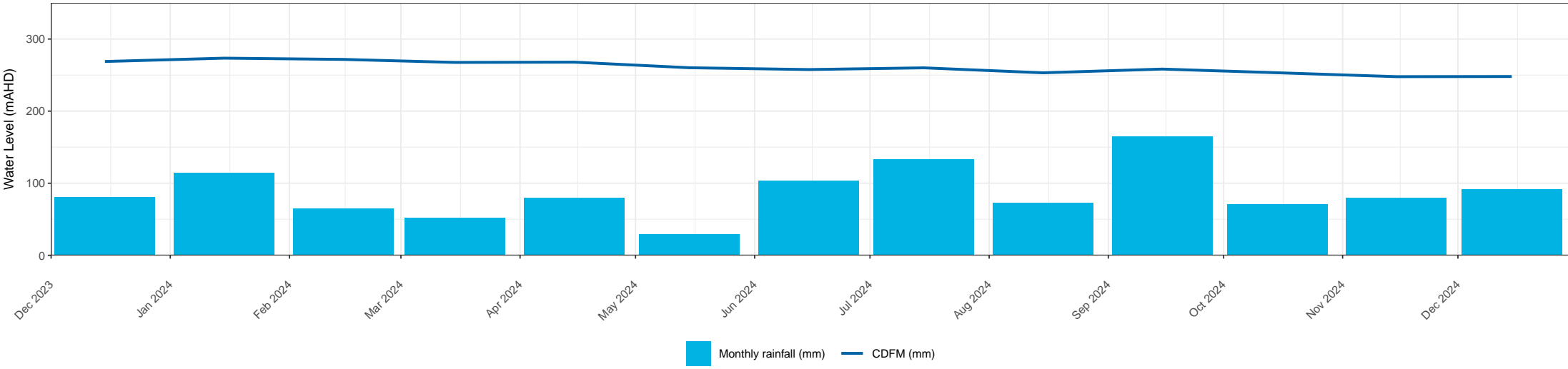


BH3102 groundwater level times series data
 Snowy 2.0 – Snowy Hydro Limited
 Groundwater monitoring and management
 Figure A– BH3102



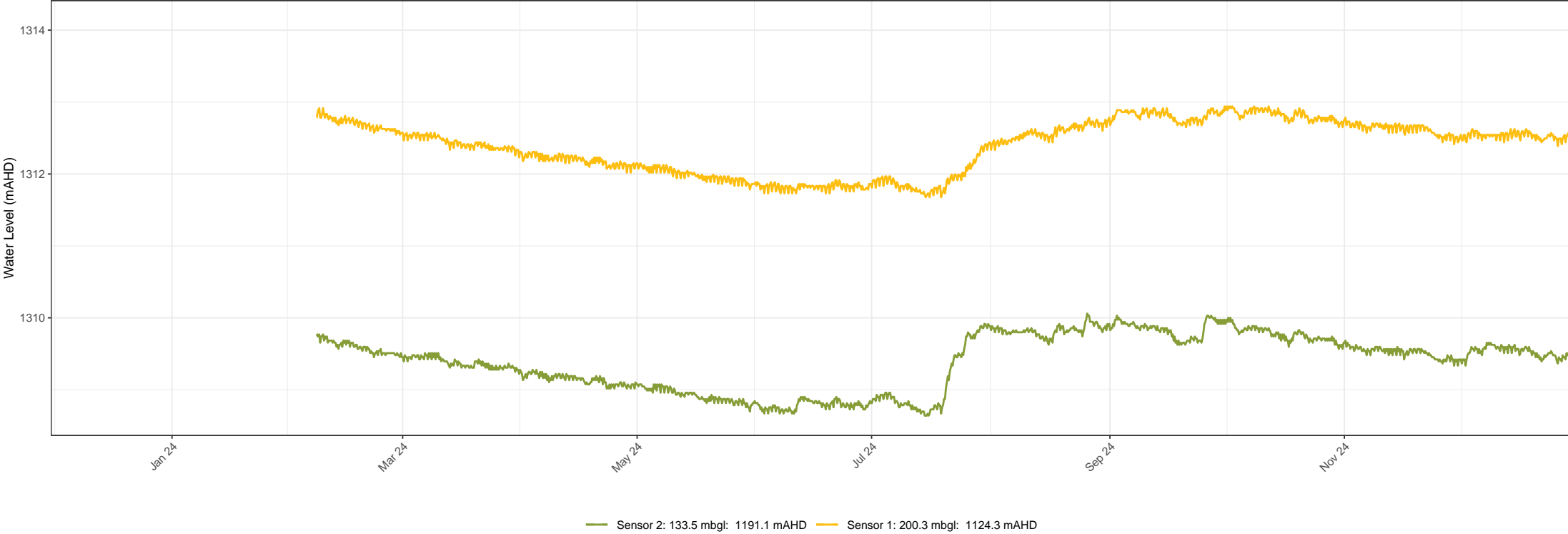
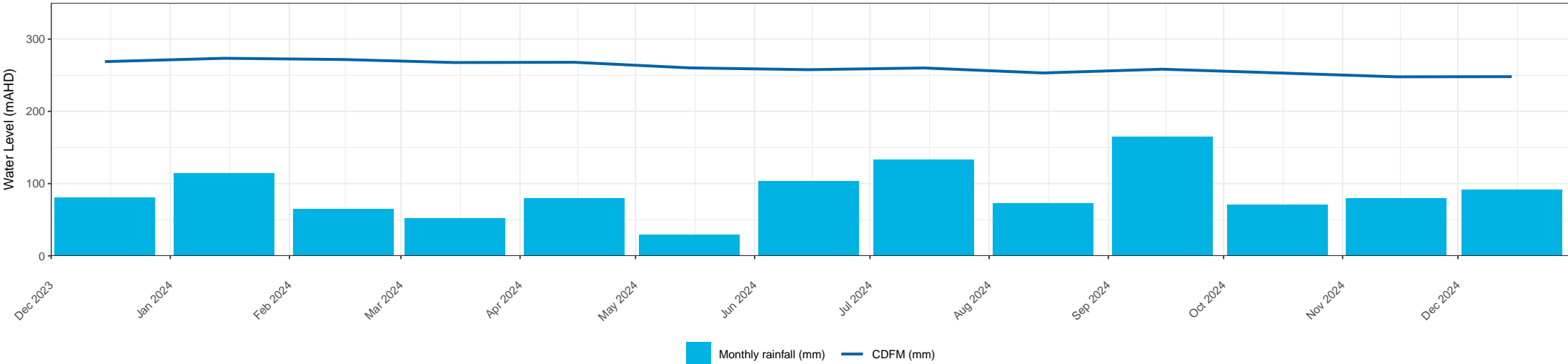
Notes

BH3104 groundwater level times series data
 Snowy Hydro 2.0 – Snowy Hydro Limited
 Groundwater monitoring and management
 Figure A– BH3104



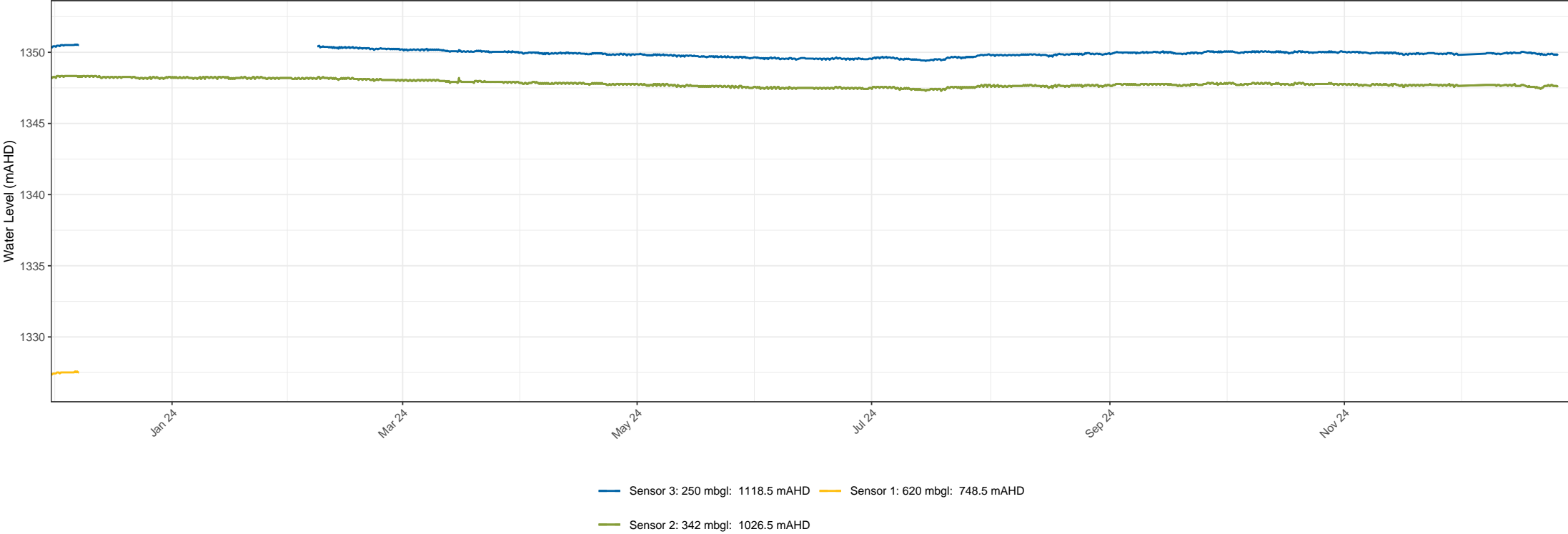
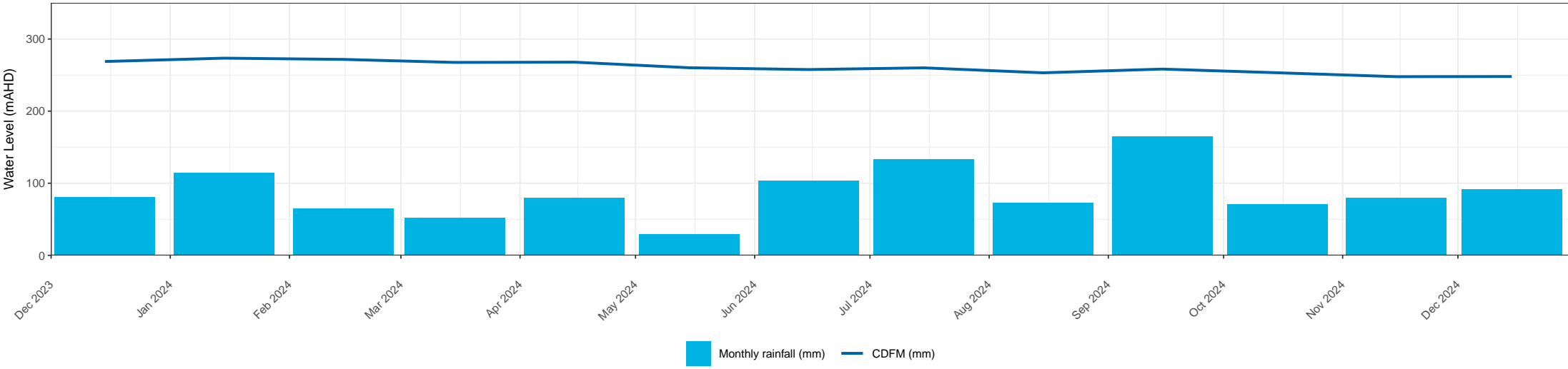
Notes

BH3106 groundwater level times series data
 Snowy Hydro 2.0 – Snowy Hydro Limited
 Groundwater monitoring and management
 Figure A– BH3106



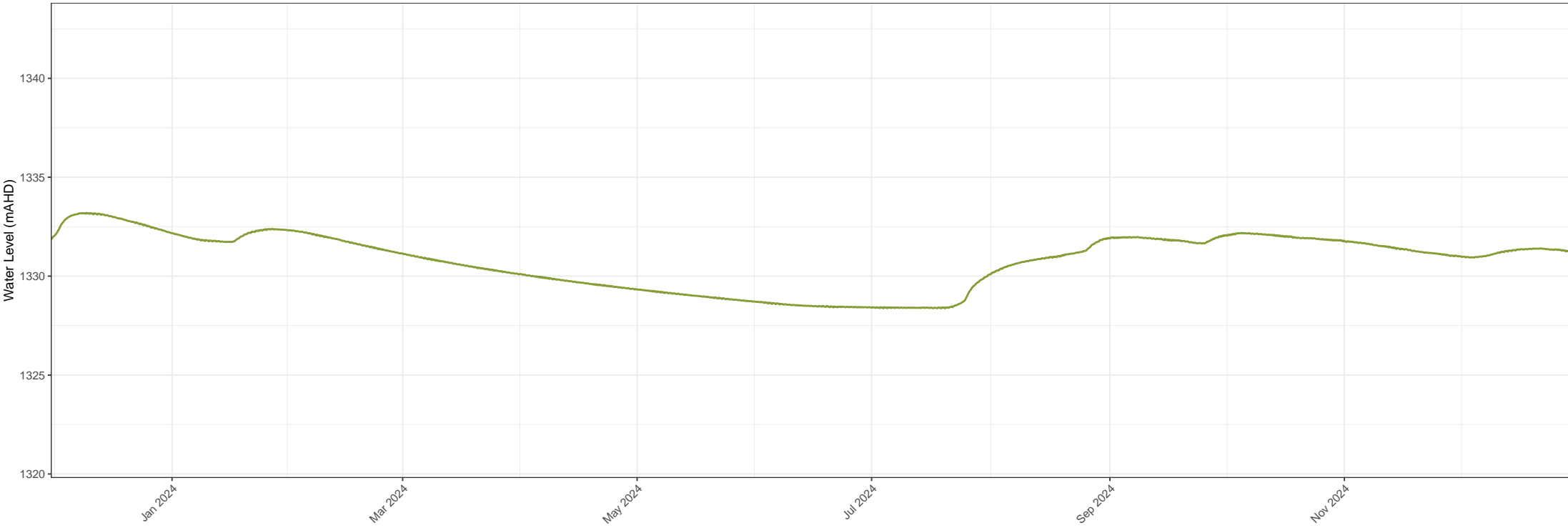
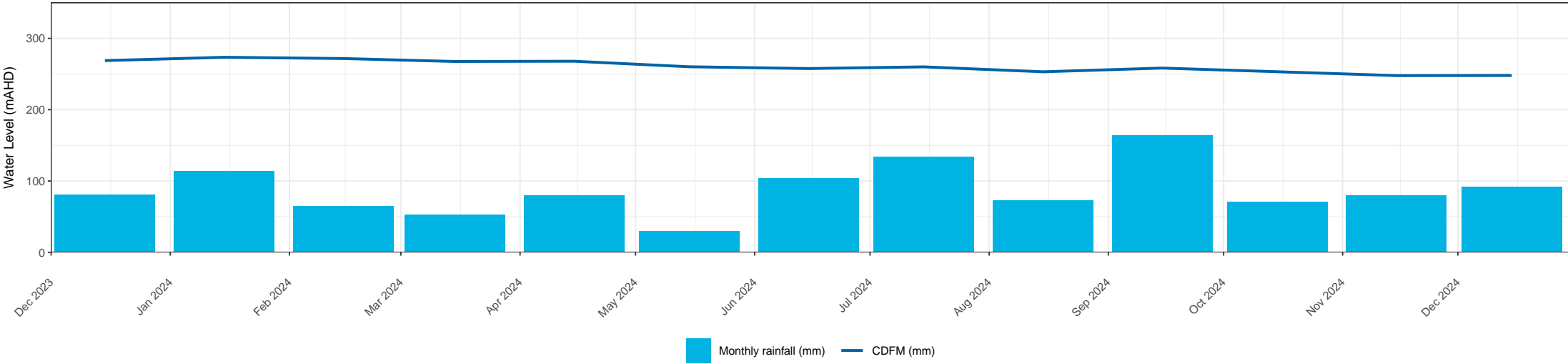
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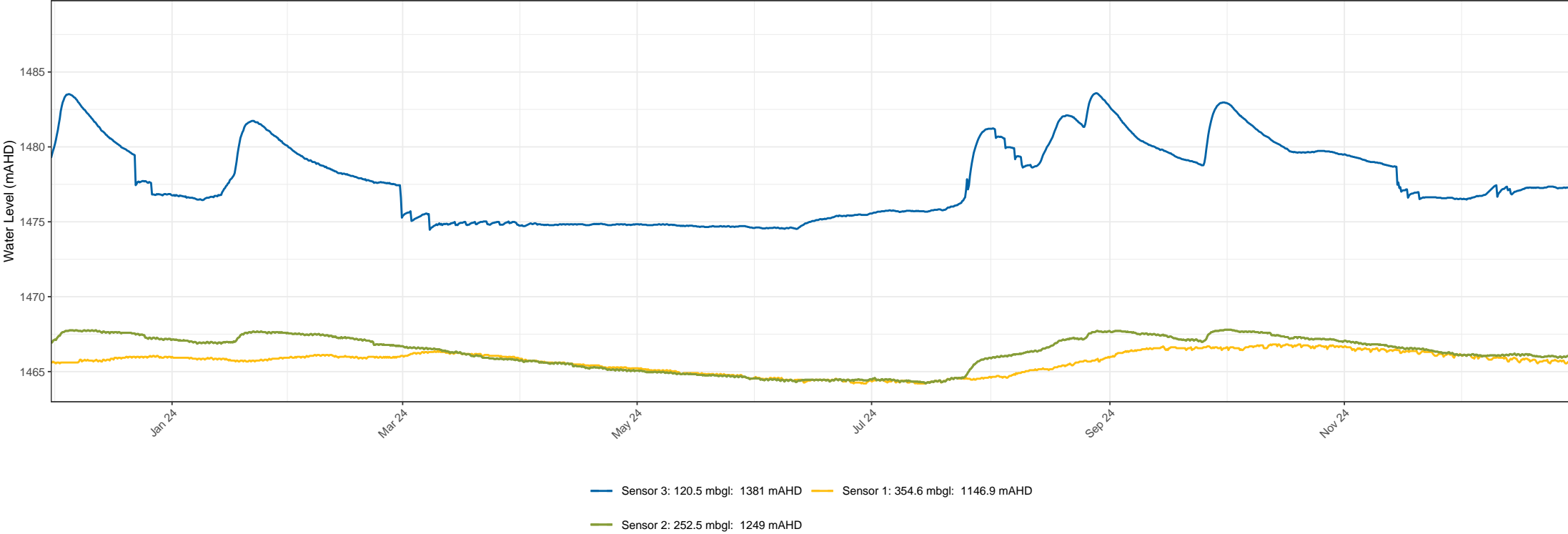
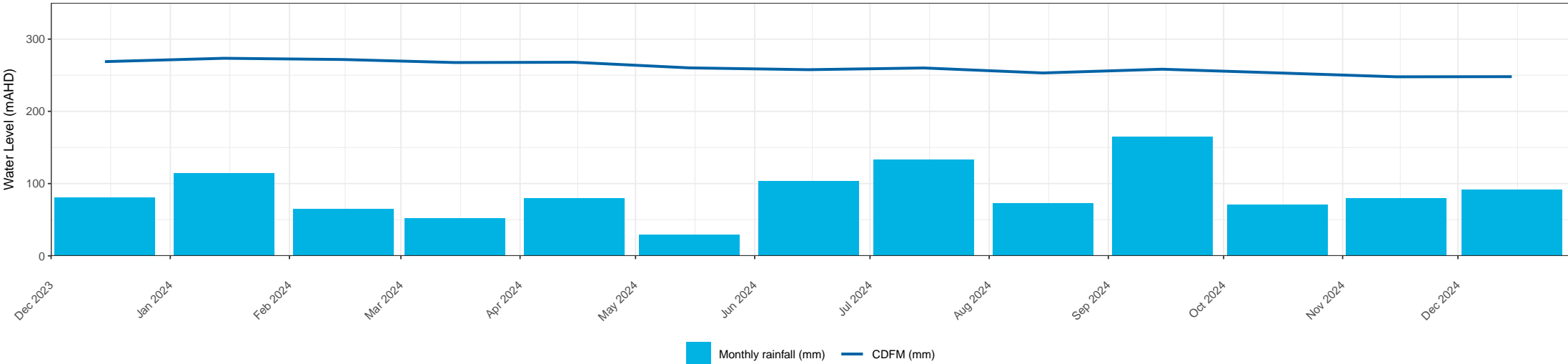
BH3107A groundwater level times series data
 Snowy Hydro 2.0 – Snowy Hydro Limited
 Groundwater monitoring and management
 Figure A– BH3107A



Notes

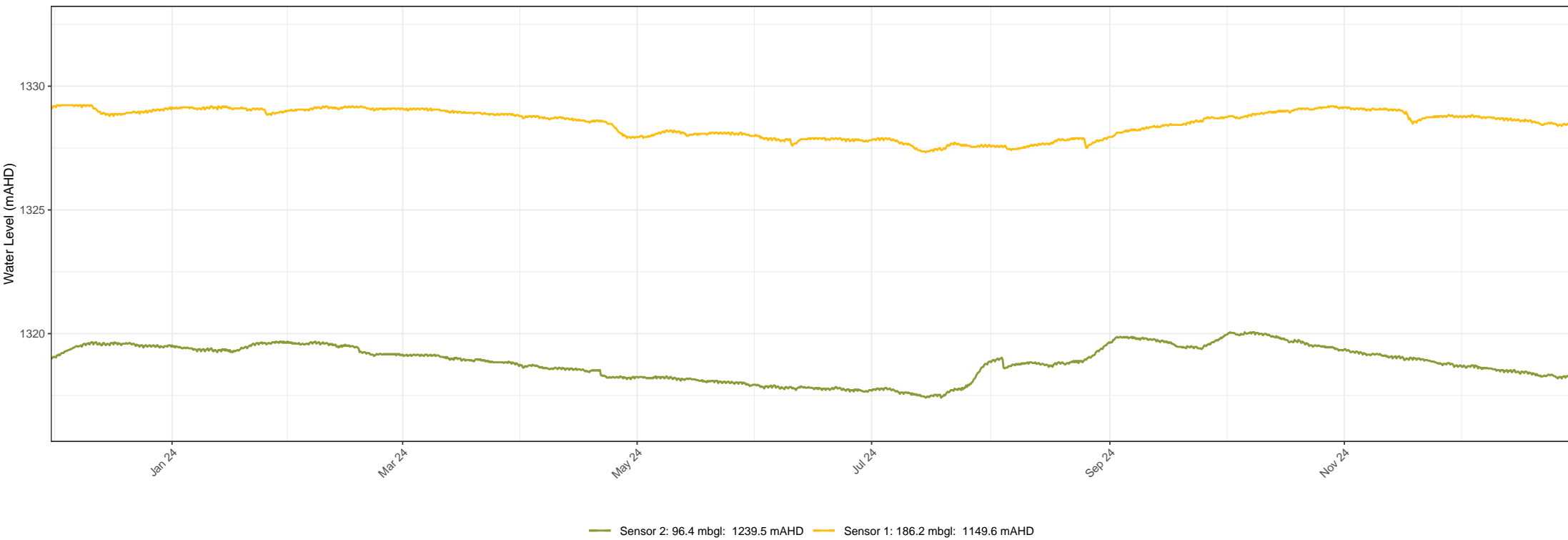
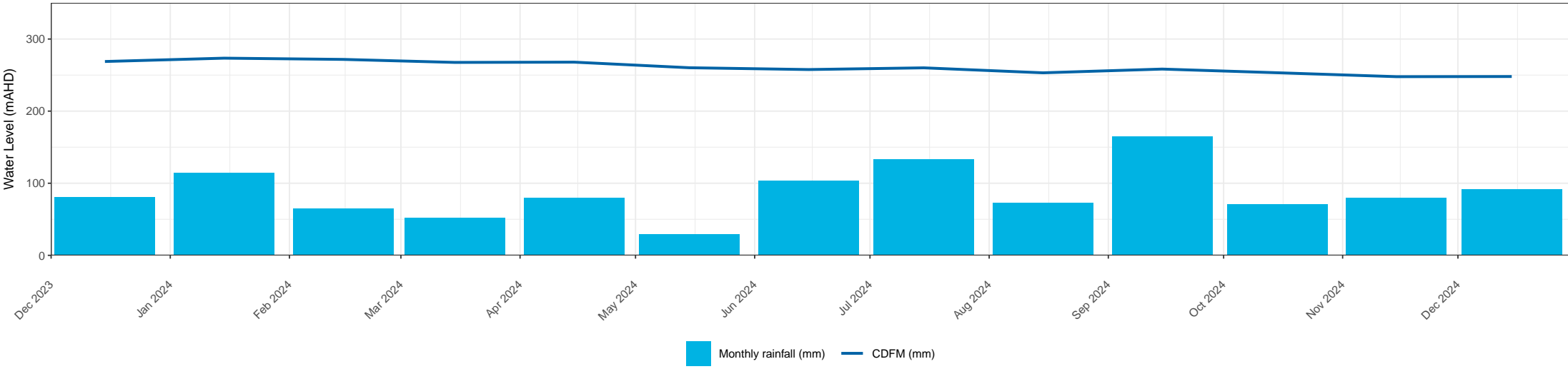
BH3108 groundwater level times series data
 Snowy Hydro 2.0 – Snowy Hydro Limited
 Groundwater monitoring and management
 Figure A– BH3108





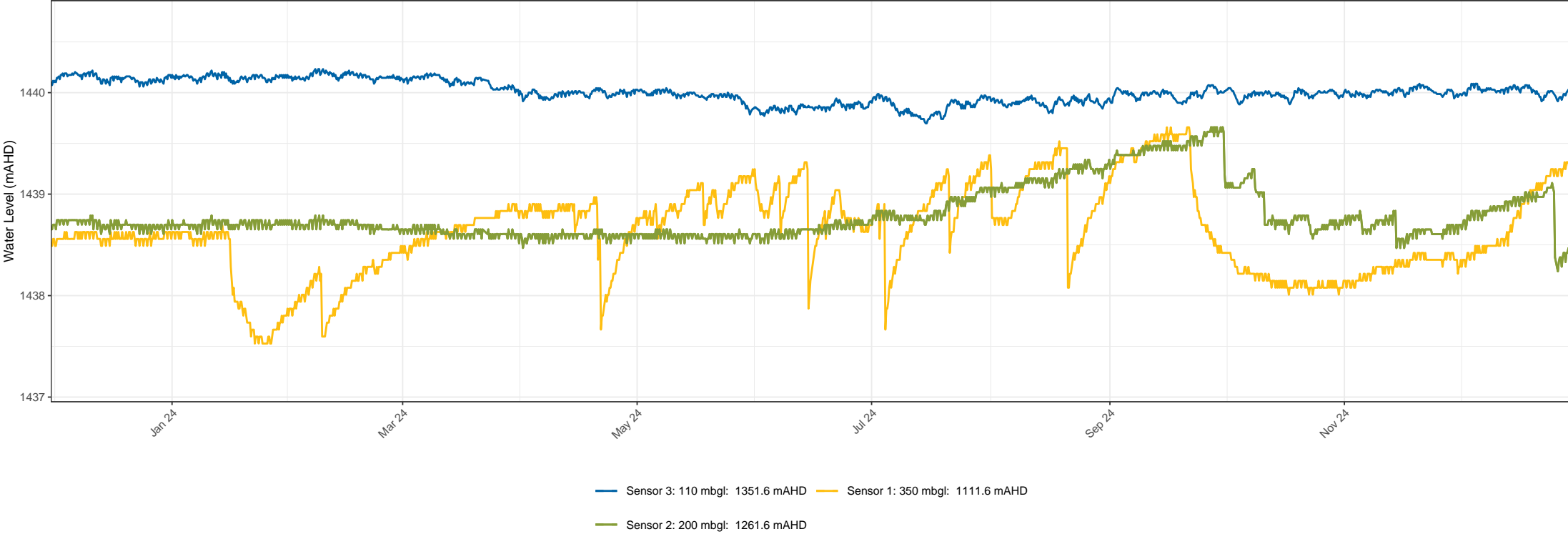
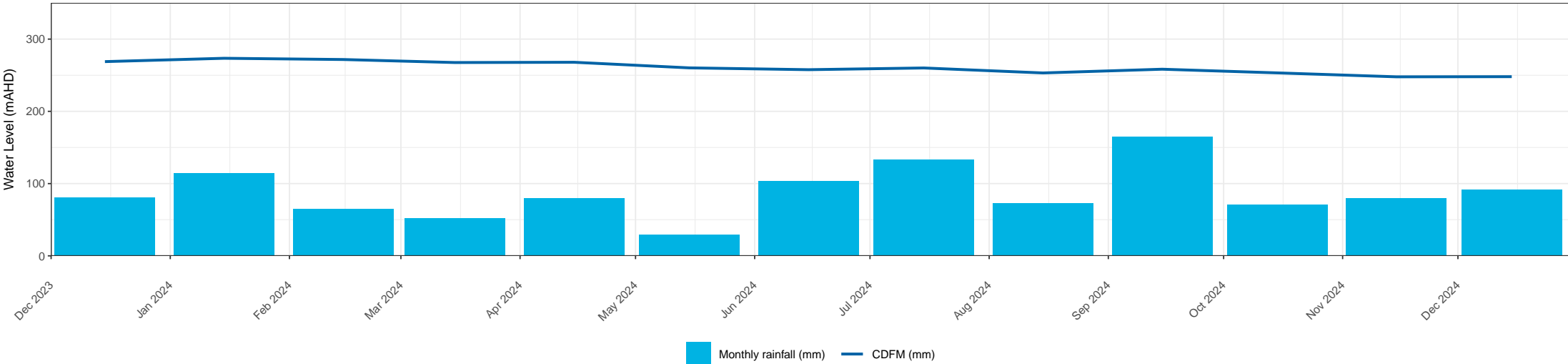
Notes

BH3111 groundwater level times series data
 Snowy Hydro 2.0 – Snowy Hydro Limited
 Groundwater monitoring and management
 Figure A– BH3111



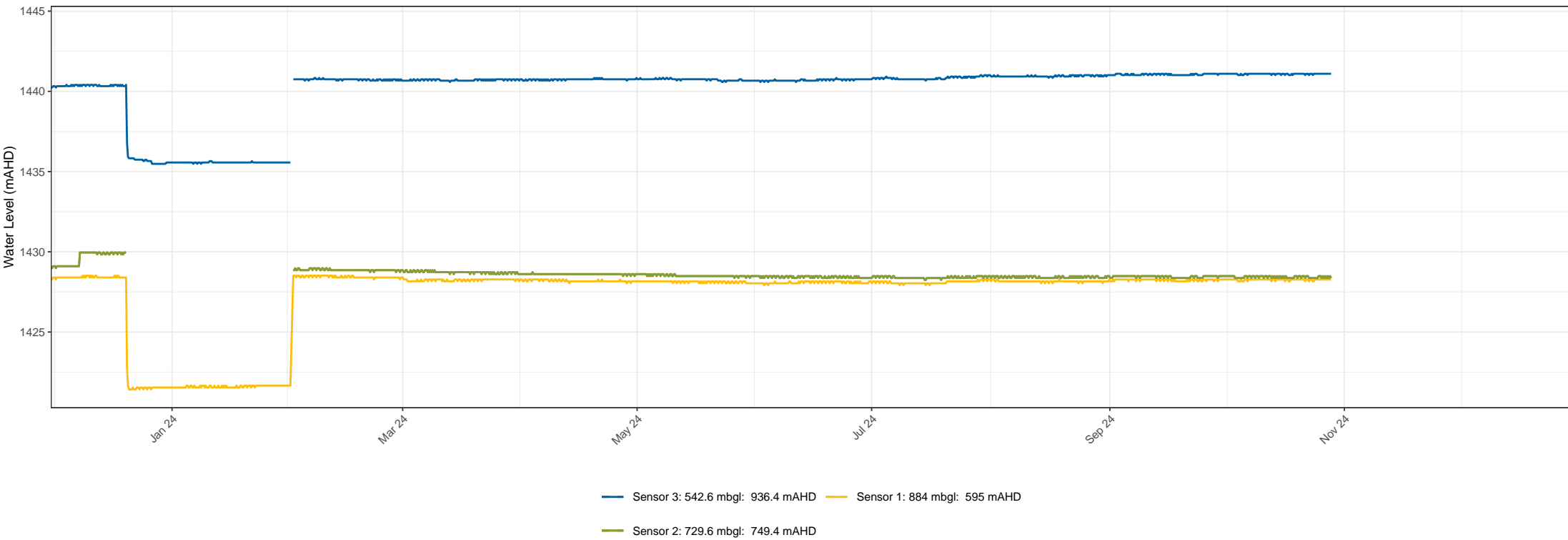
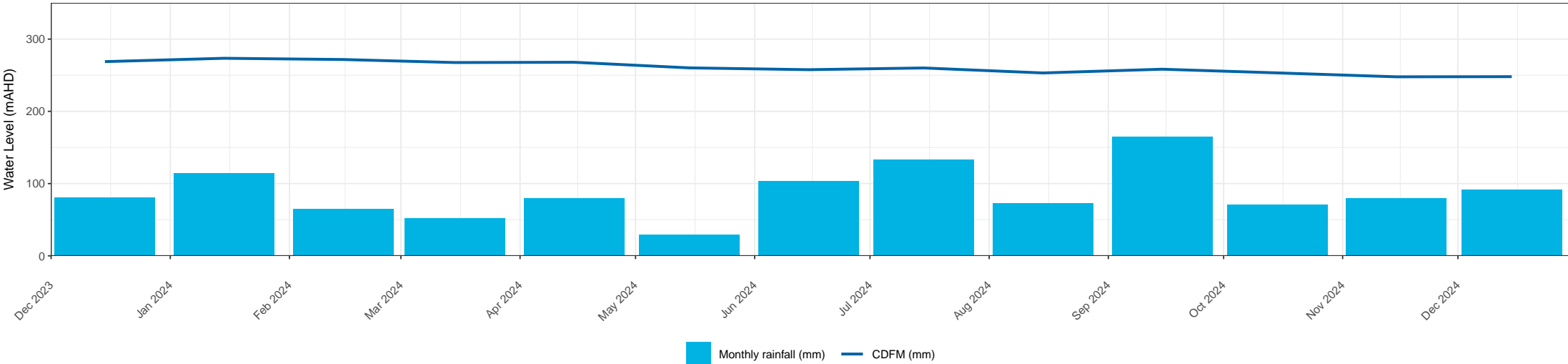
Notes

BH3113 groundwater level times series data
 Snowy Hydro 2.0 – Snowy Hydro Limited
 Groundwater monitoring and management
 Figure A– BH3113



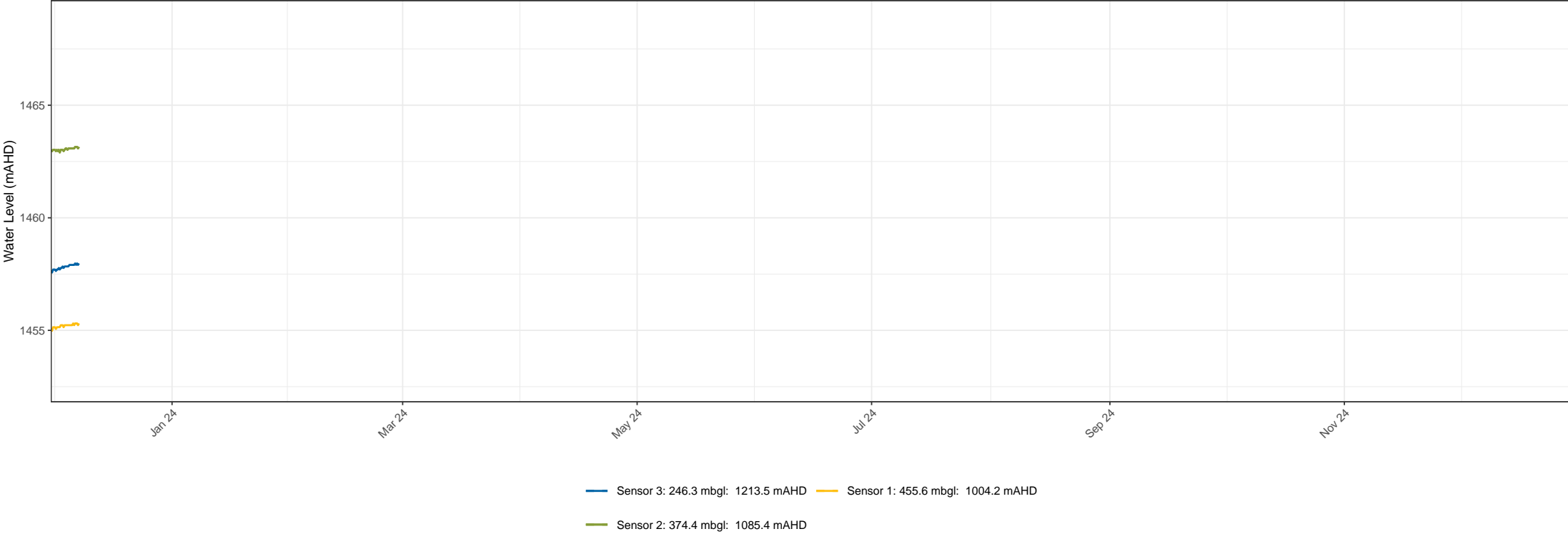
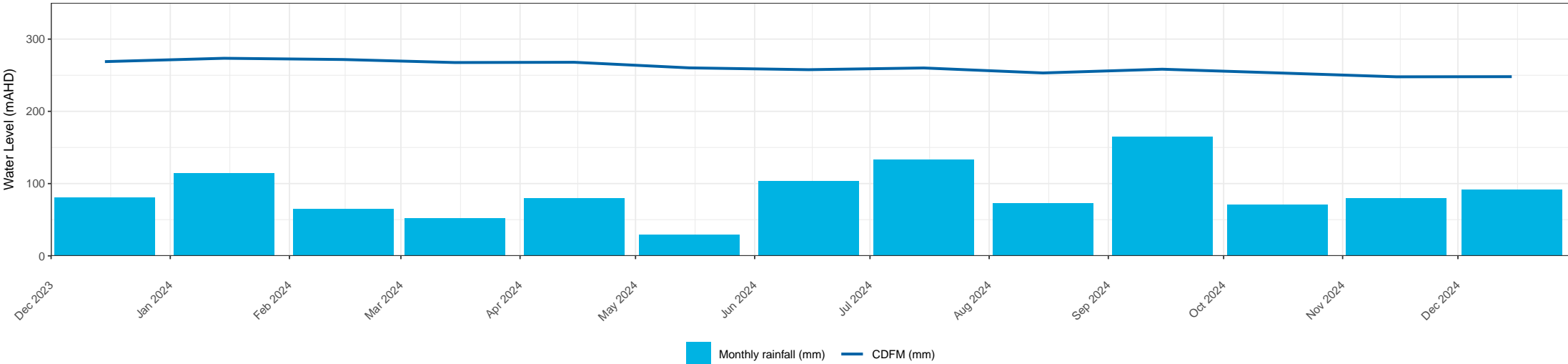
Notes

BH3203 groundwater level times series data
 Snowy Hydro 2.0 – Snowy Hydro Limited
 Groundwater monitoring and management
 Figure A– BH3203



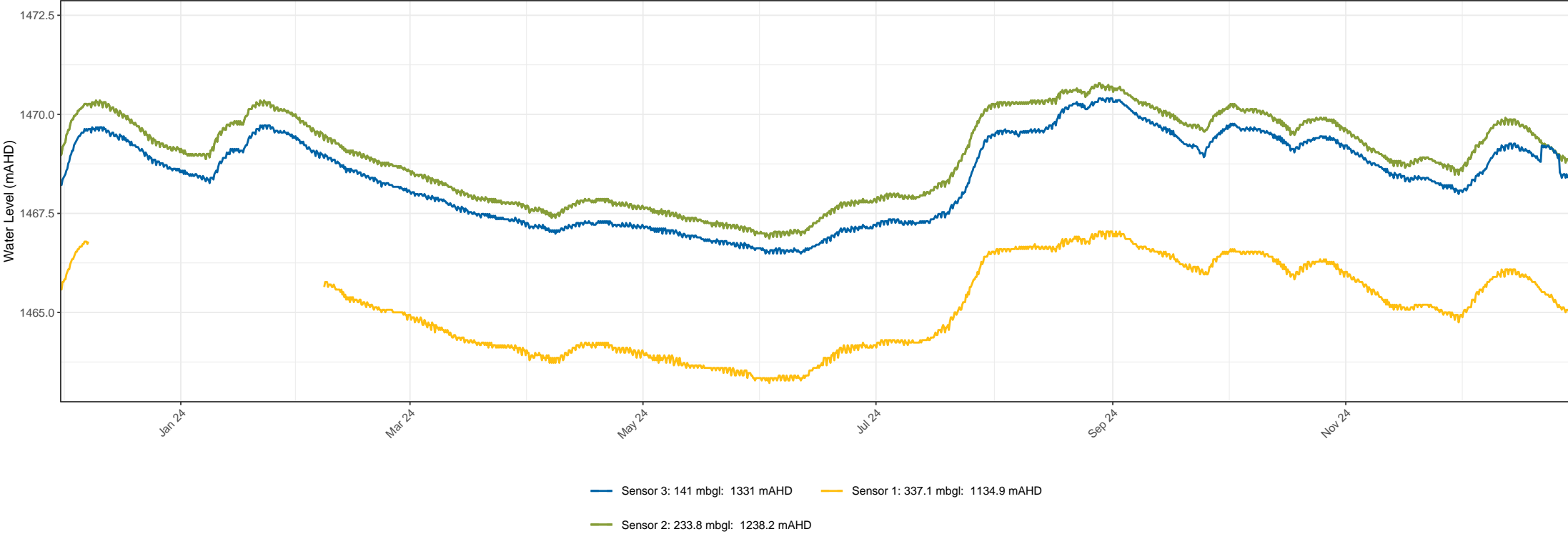
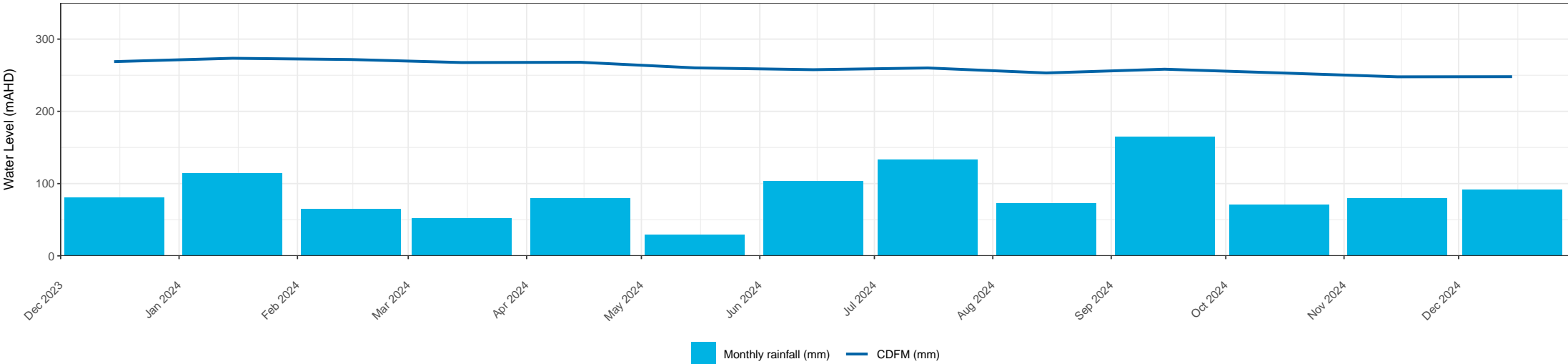
Notes

BH4101 groundwater level times series data
 Snowy Hydro 2.0 – Snowy Hydro Limited
 Groundwater monitoring and management
 Figure A– BH4101



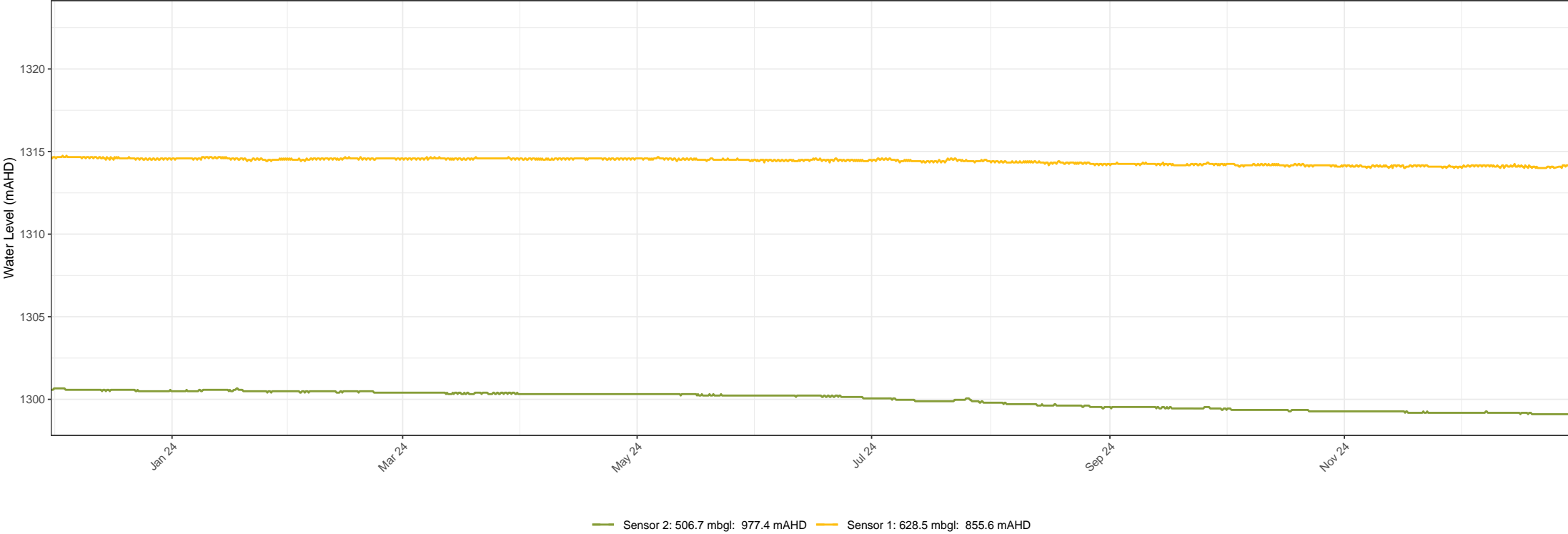
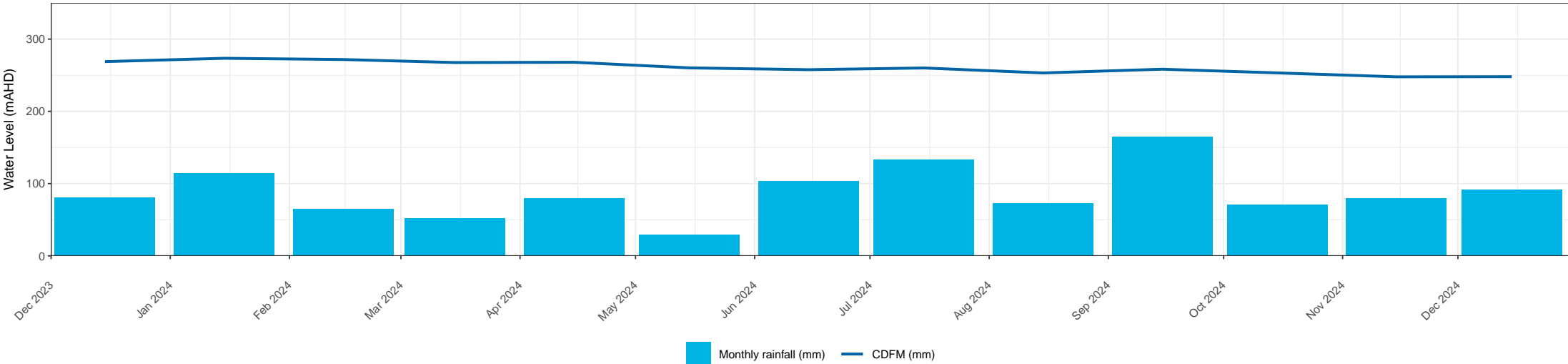
Notes

BH4102 groundwater level times series data
 Snowy Hydro 2.0 – Snowy Hydro Limited
 Groundwater monitoring and management
 Figure A– BH4102



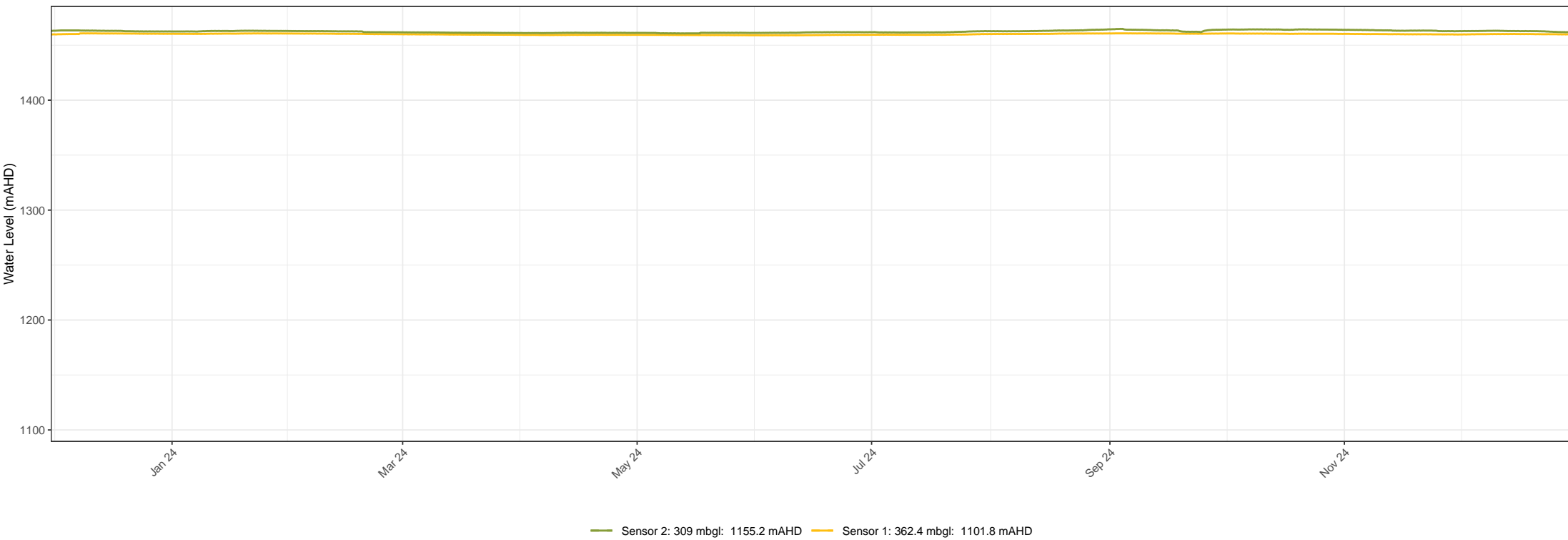
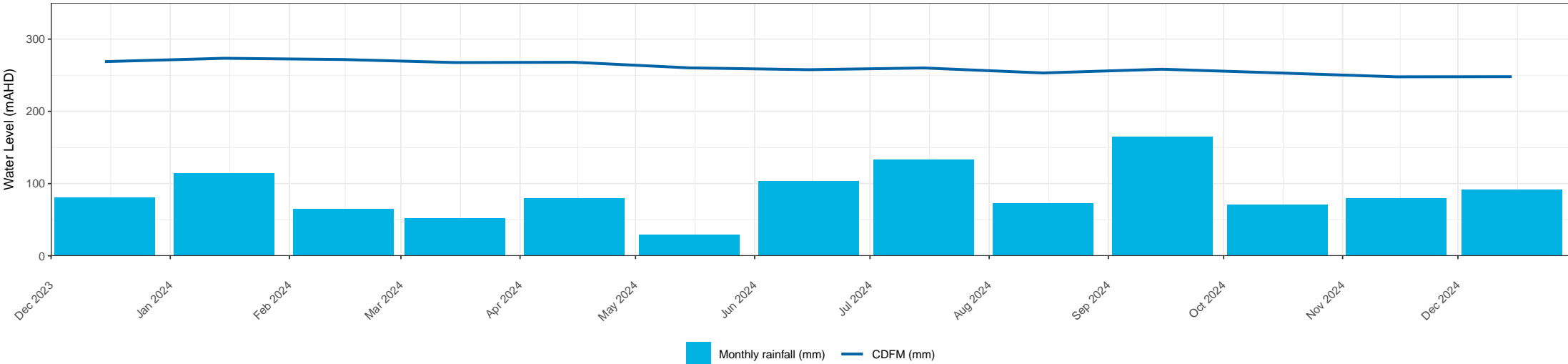
Notes

BH4103 groundwater level times series data
 Snowy Hydro 2.0 – Snowy Hydro Limited
 Groundwater monitoring and management
 Figure A– BH4103



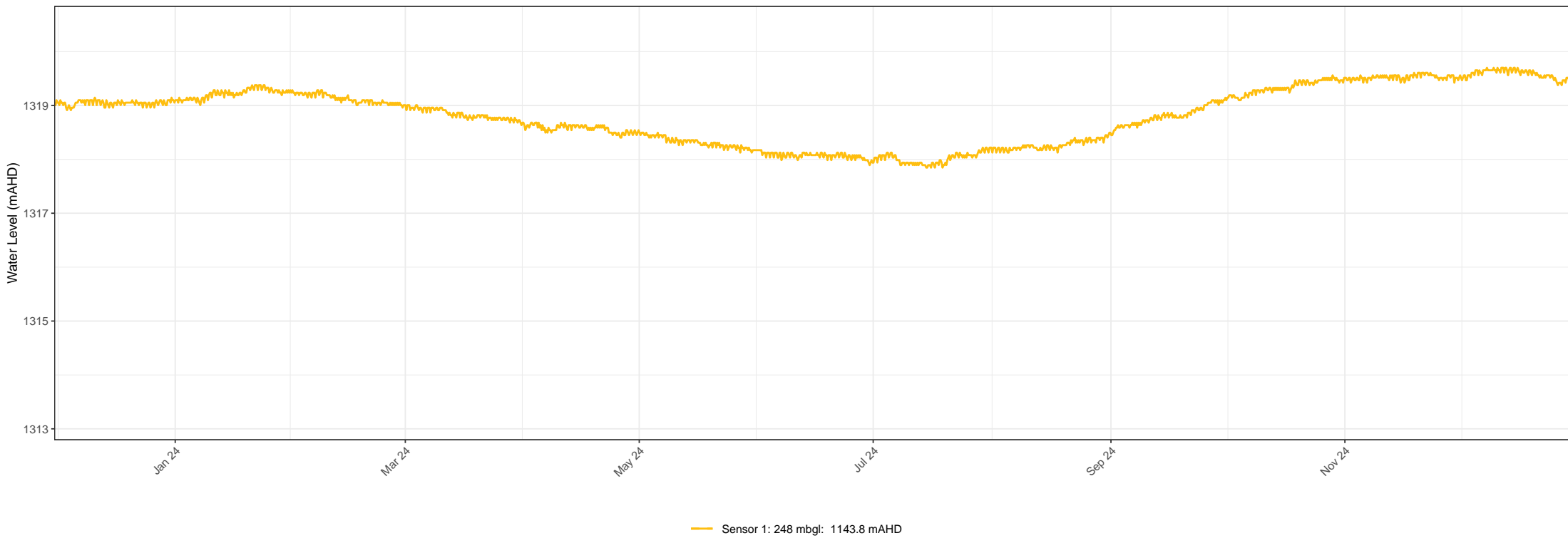
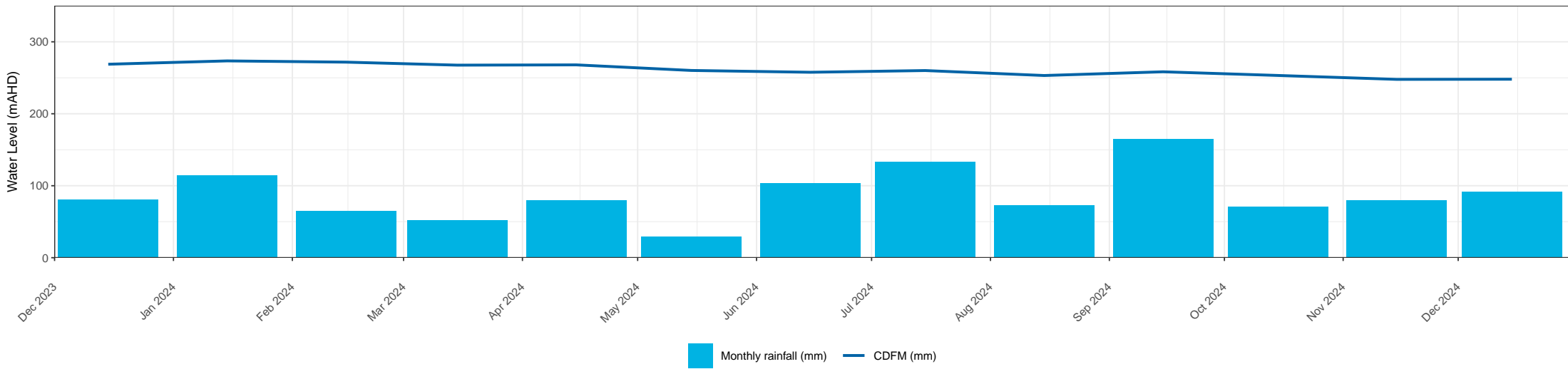
Notes

BH4104 groundwater level times series data
 Snowy Hydro 2.0 – Snowy Hydro Limited
 Groundwater monitoring and management
 Figure A– BH4104



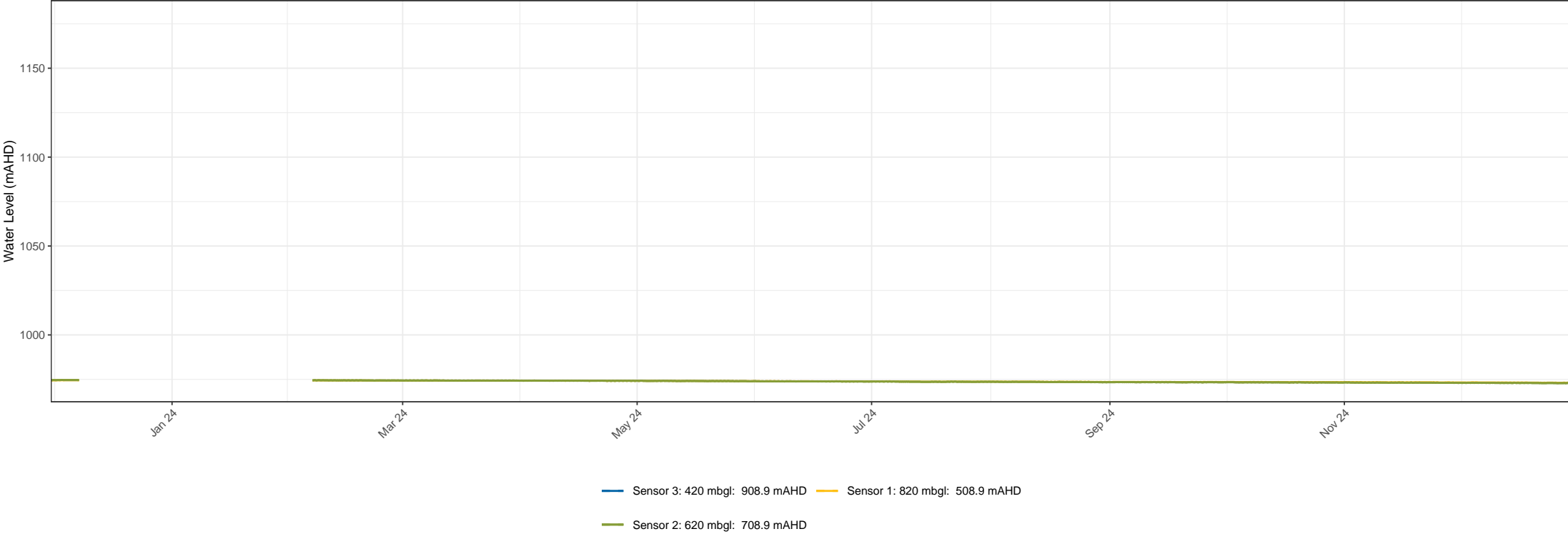
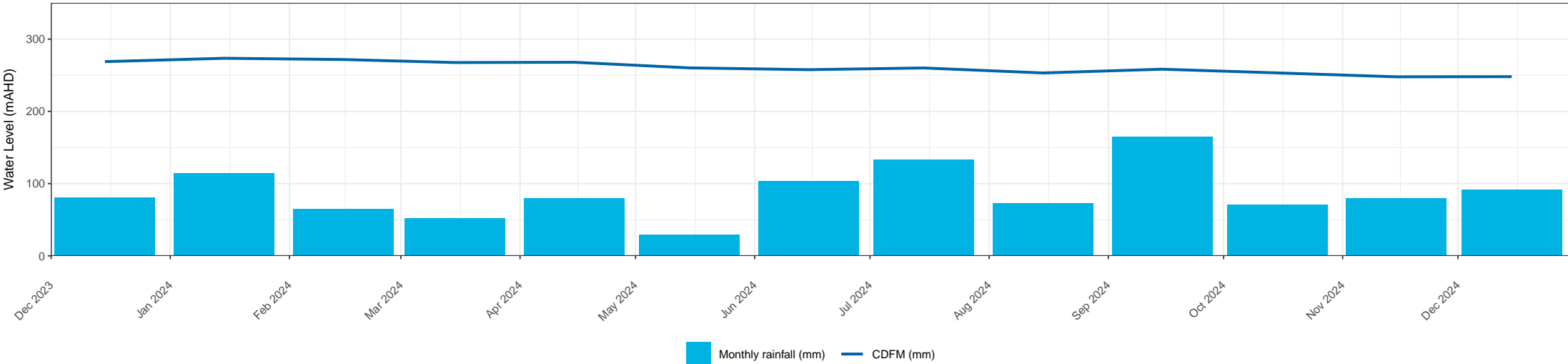
Notes

BH4201 groundwater level times series data
 Snowy Hydro 2.0 – Snowy Hydro Limited
 Groundwater monitoring and management
 Figure A– BH4201



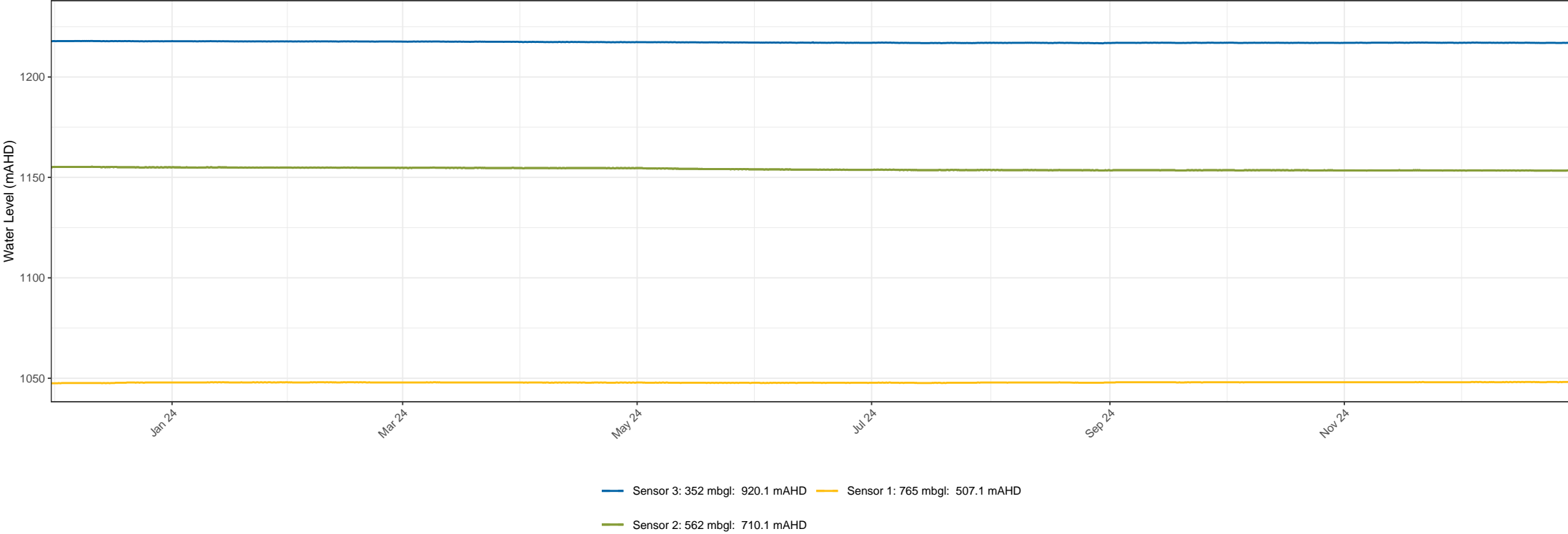
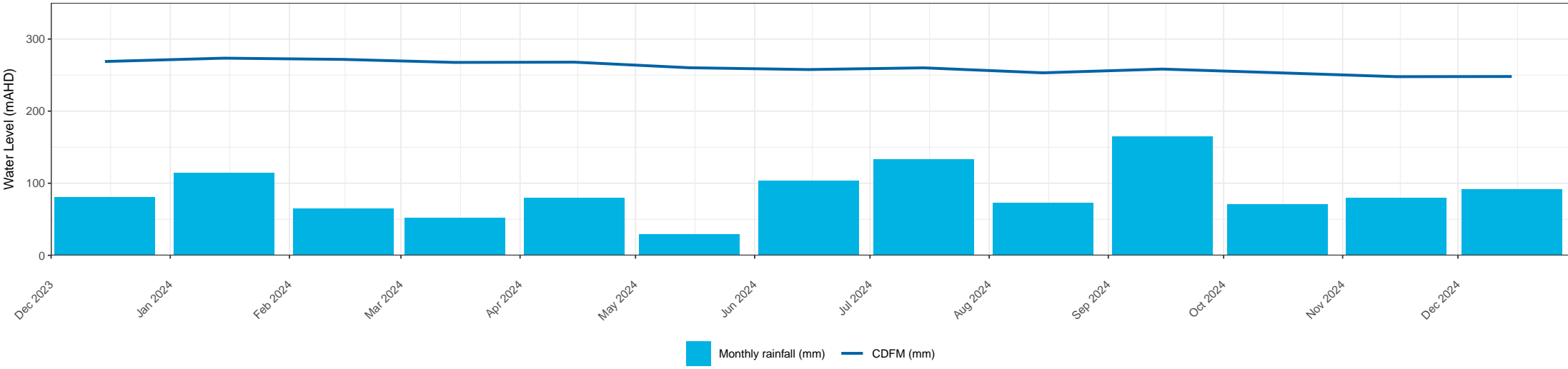
Notes

BH5101 groundwater level times series data
 Snowy Hydro 2.0 – Snowy Hydro Limited
 Groundwater monitoring and management
 Figure A– BH5101



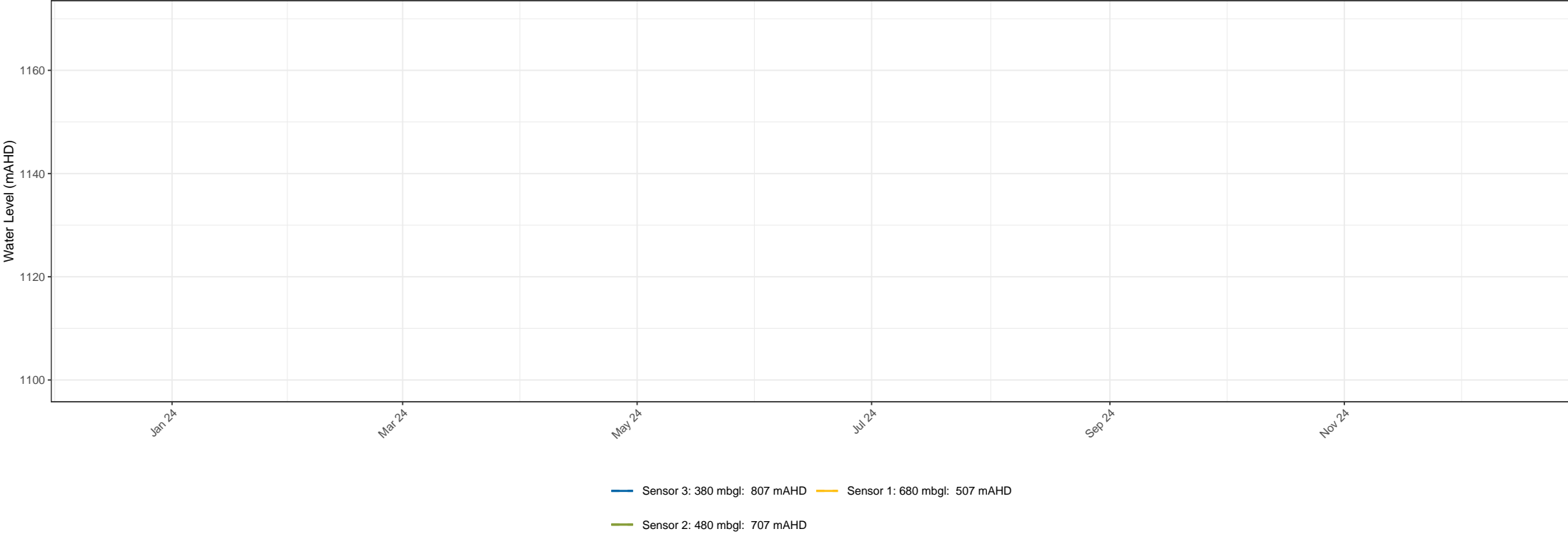
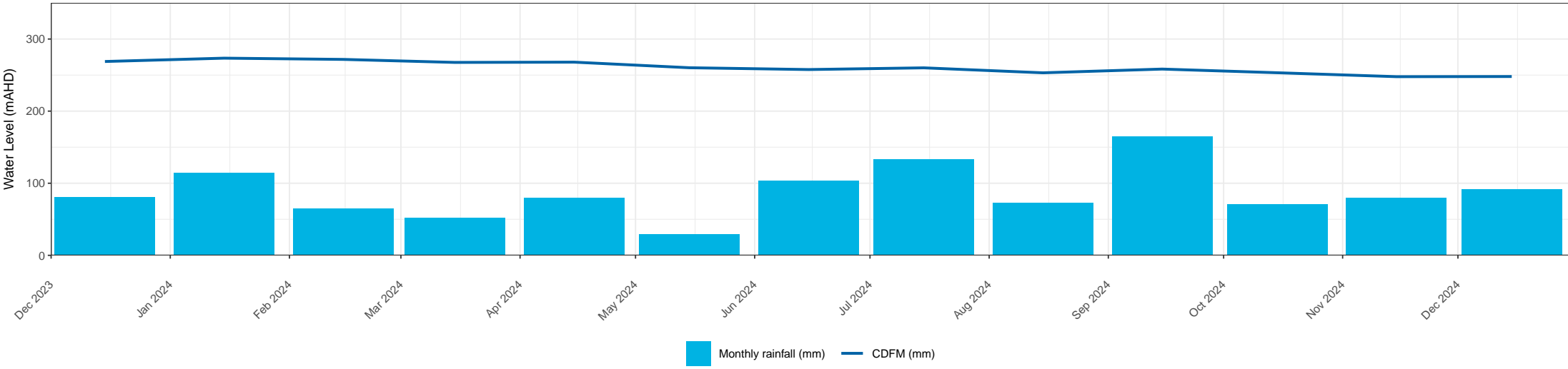
Notes

BH5102 groundwater level times series data
 Snowy Hydro 2.0 – Snowy Hydro Limited
 Groundwater monitoring and management
 Figure A– BH5102



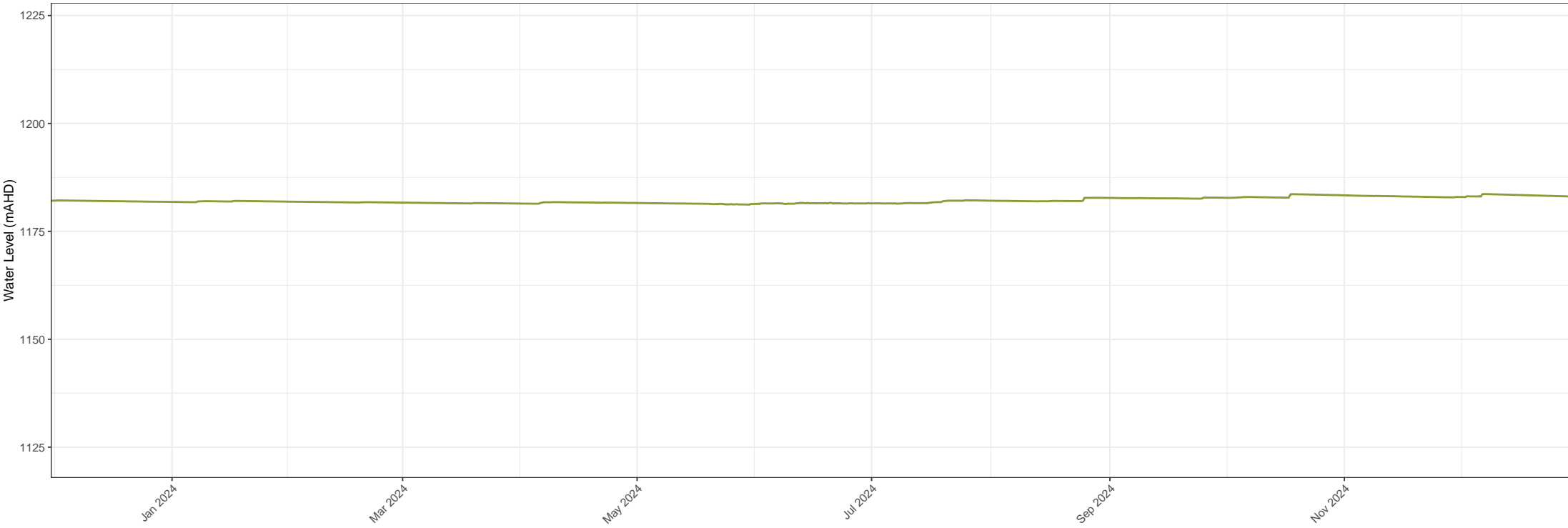
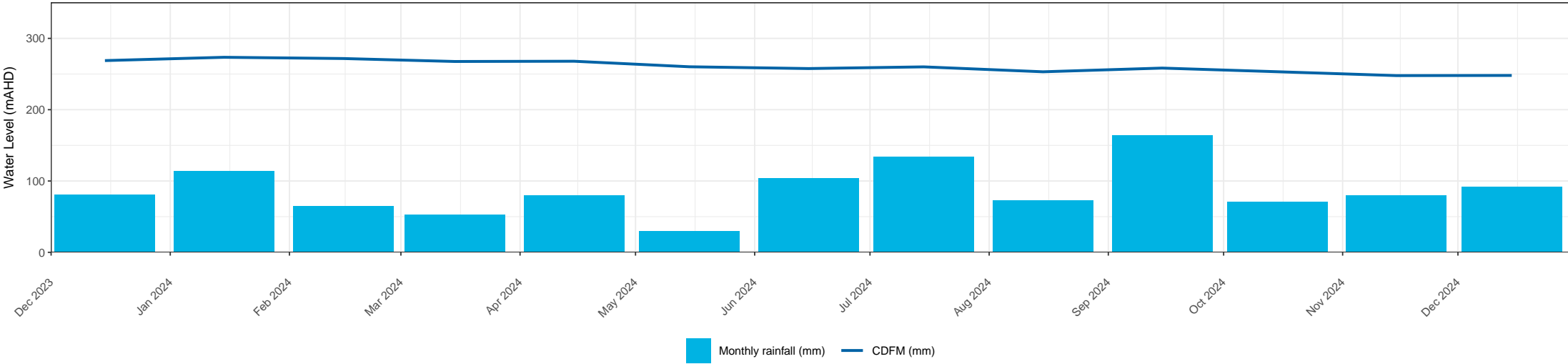
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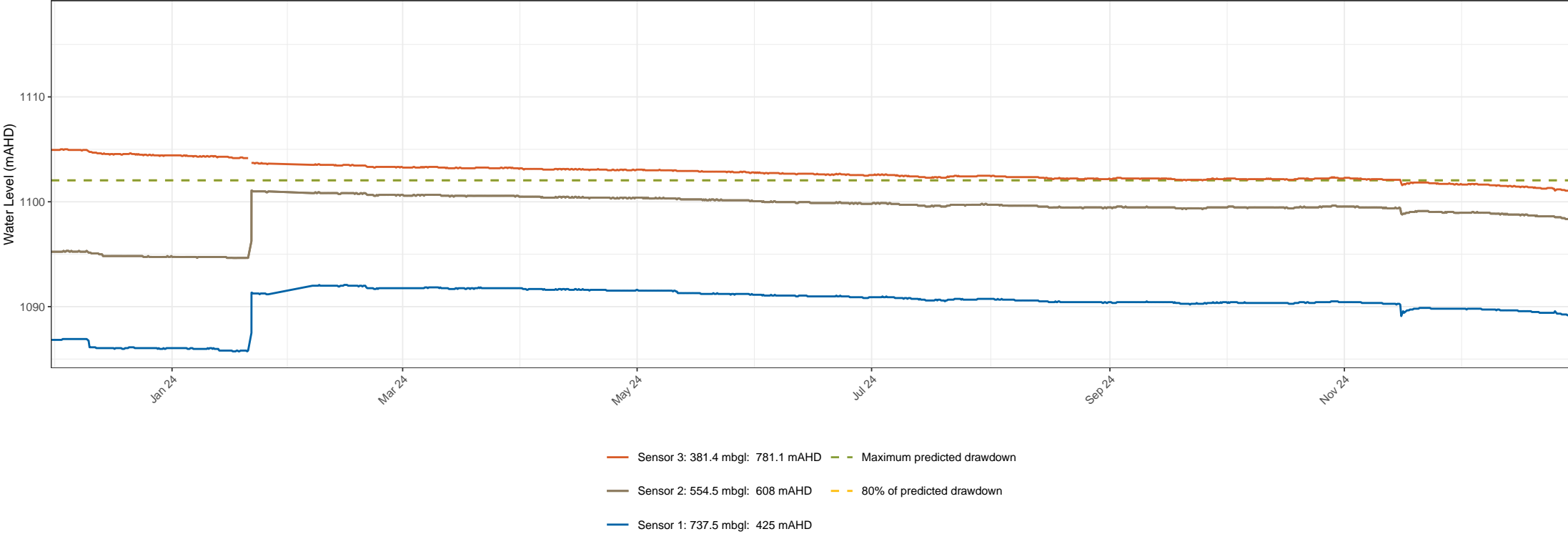
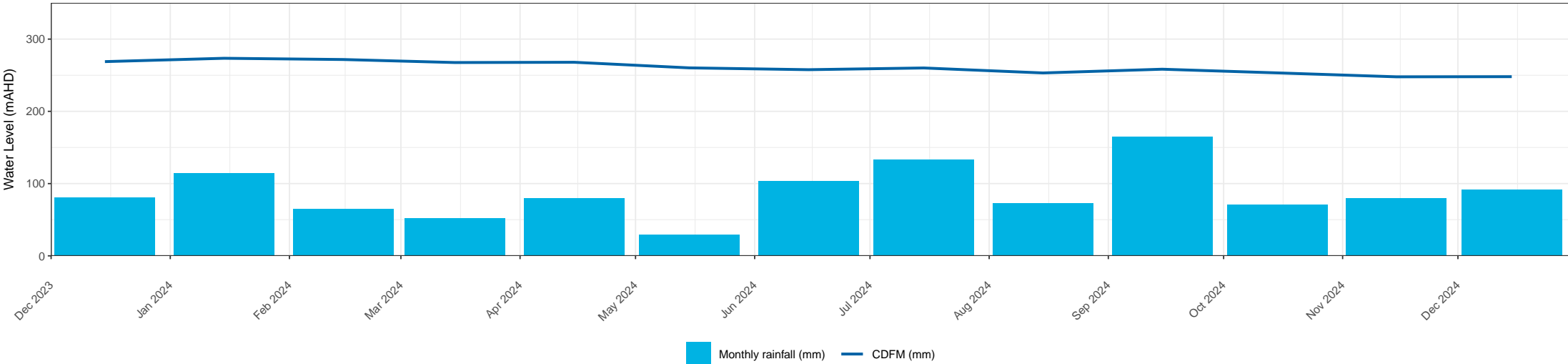
BH5103 groundwater level times series data
 Snowy Hydro 2.0 – Snowy Hydro Limited
 Groundwater monitoring and management
 Figure A– BH5103



Notes

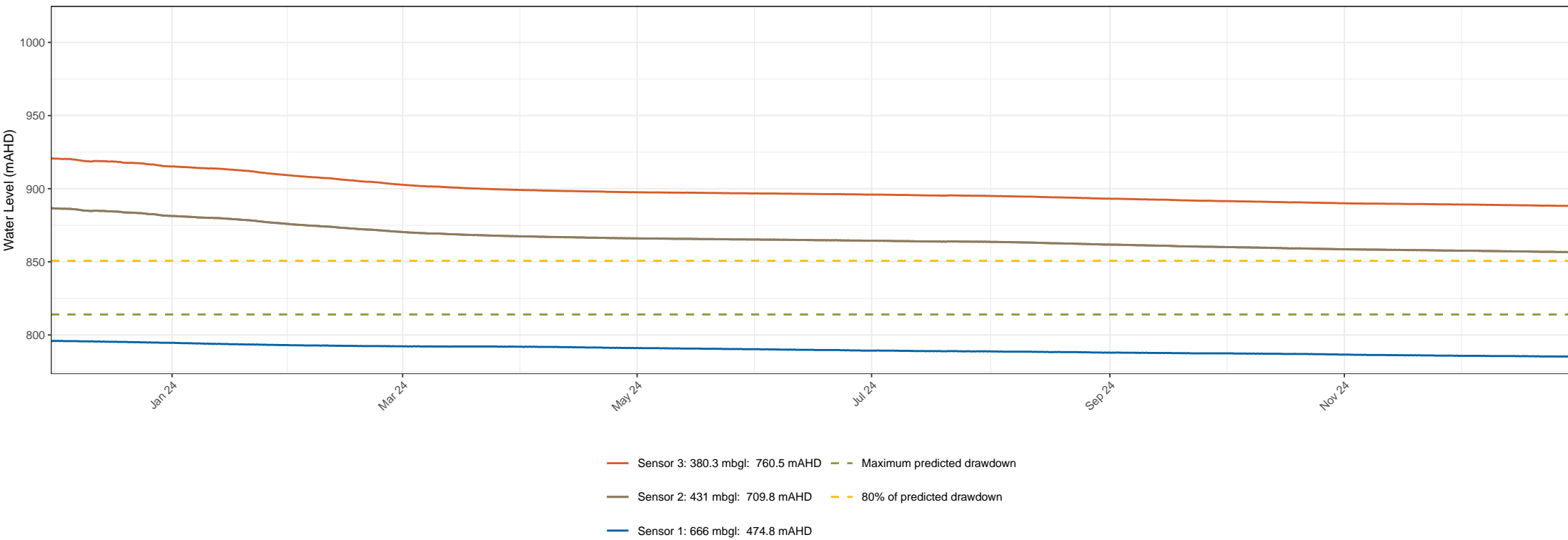
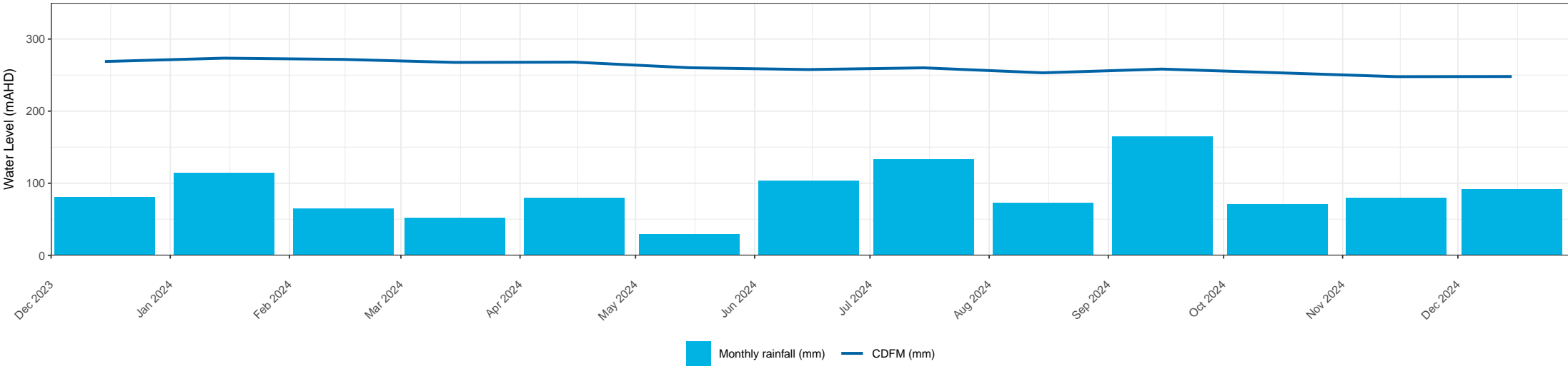
BH5104 groundwater level times series data
 Snowy Hydro 2.0 – Snowy Hydro Limited
 Groundwater monitoring and management
 Figure A– BH5104





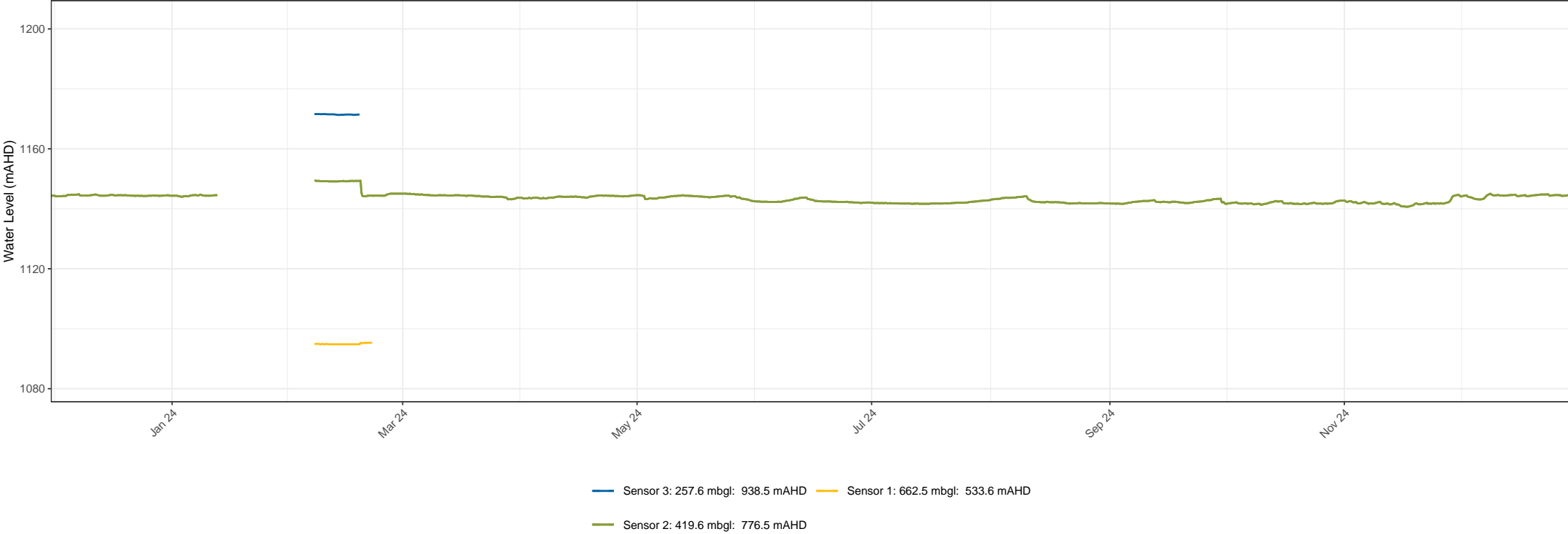
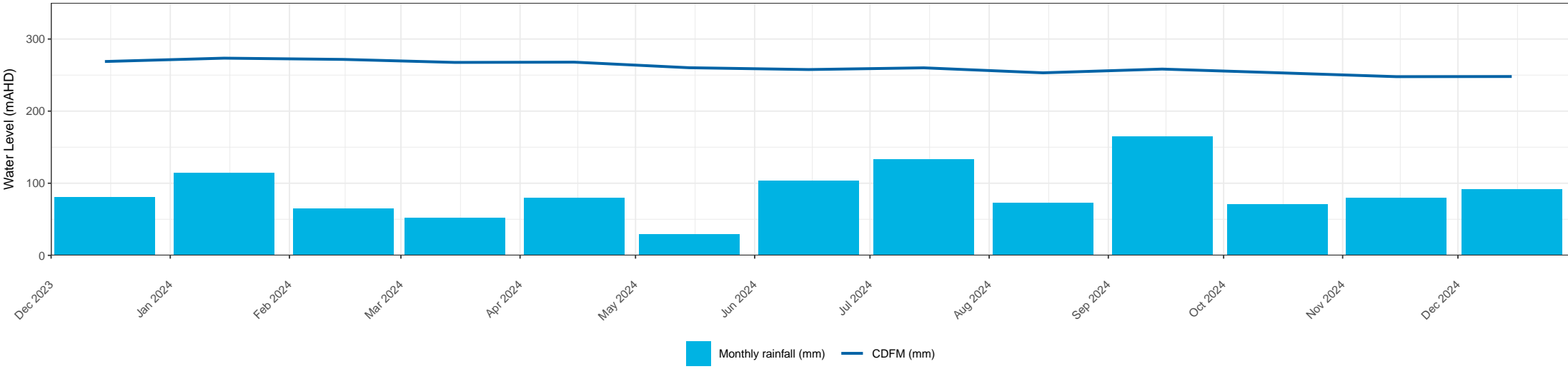
Notes

BH5107 groundwater level times series data
 Snowy Hydro 2.0 – Snowy Hydro Limited
 Groundwater monitoring and management
 Figure A– BH5107



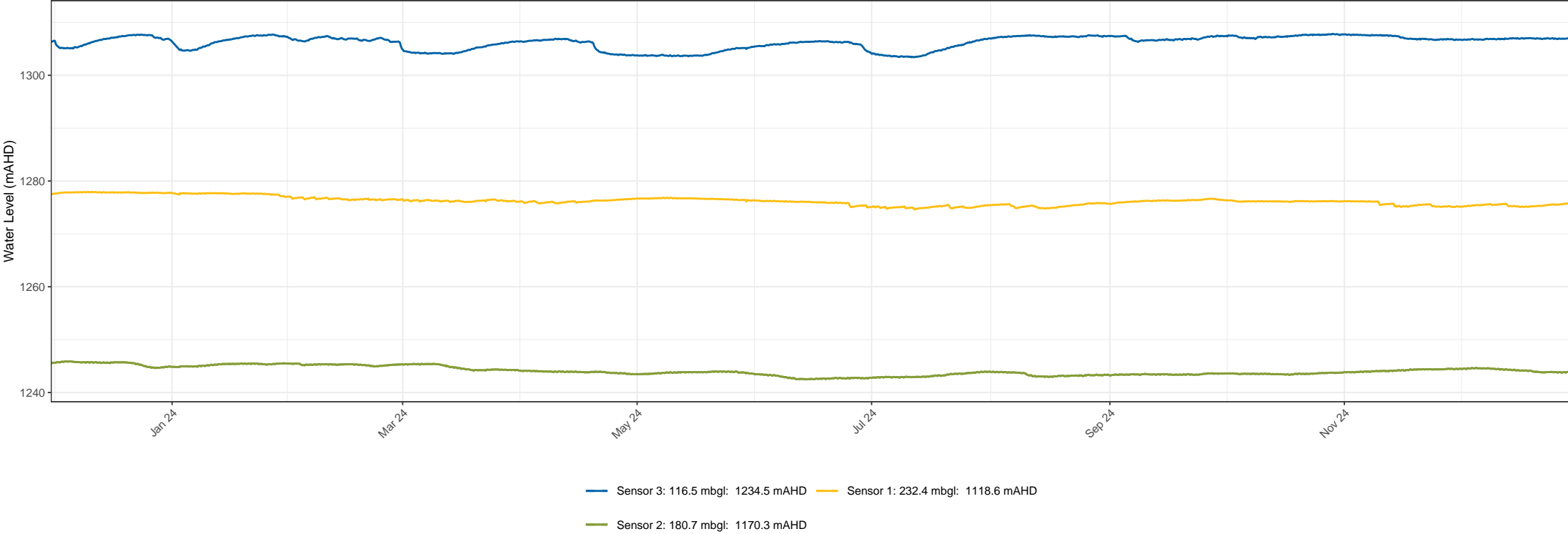
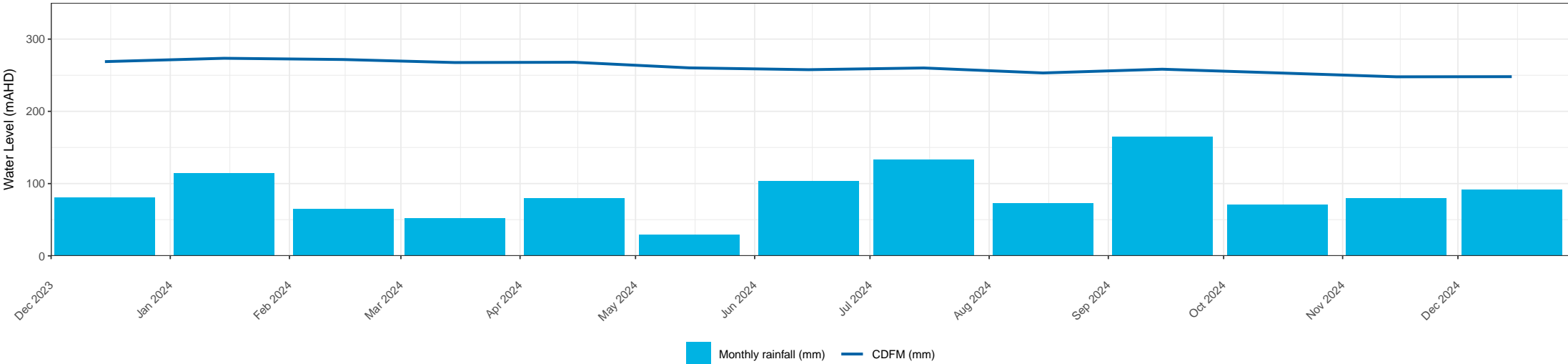
Notes

BH5108 groundwater level times series data
 Snowy Hydro 2.0 – Snowy Hydro Limited
 Groundwater monitoring and management
 Figure A– BH5108



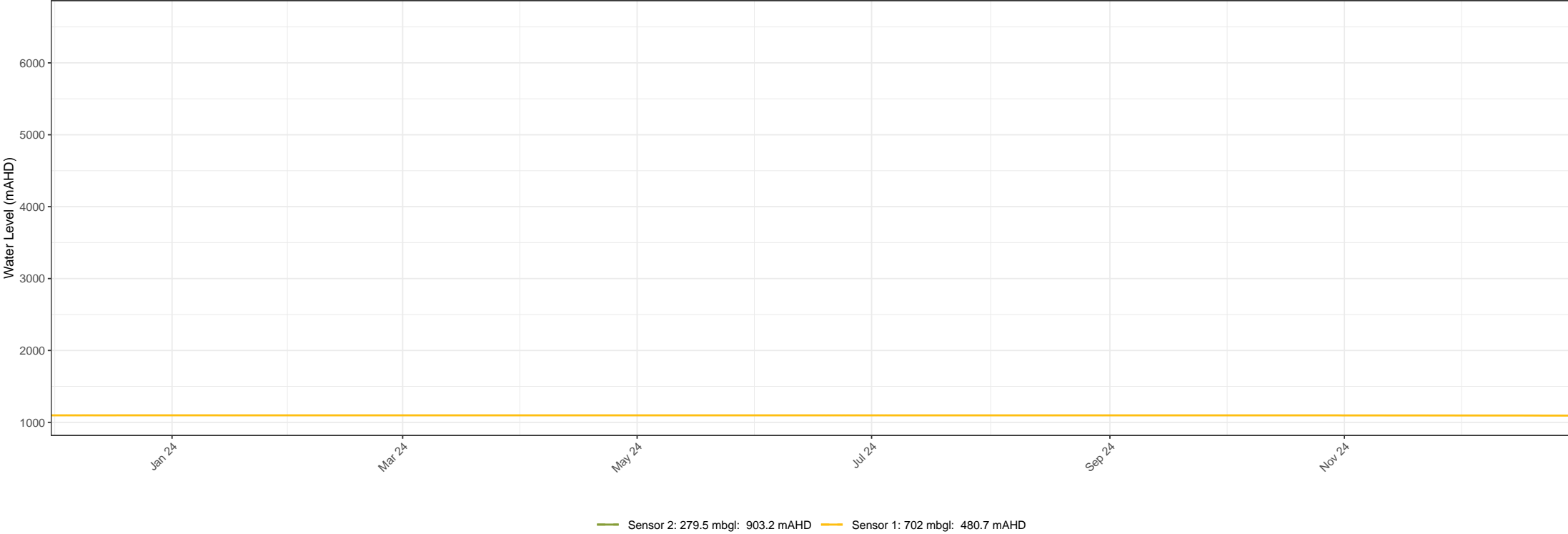
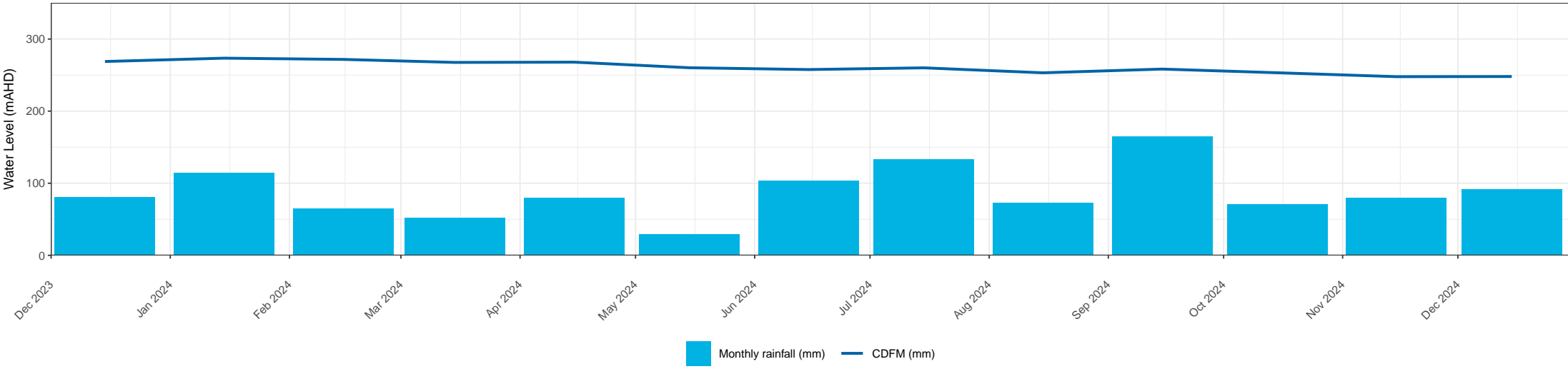
Notes

BH5110 groundwater level times series data
 Snowy Hydro 2.0 – Snowy Hydro Limited
 Groundwater monitoring and management
 Figure A– BH5110



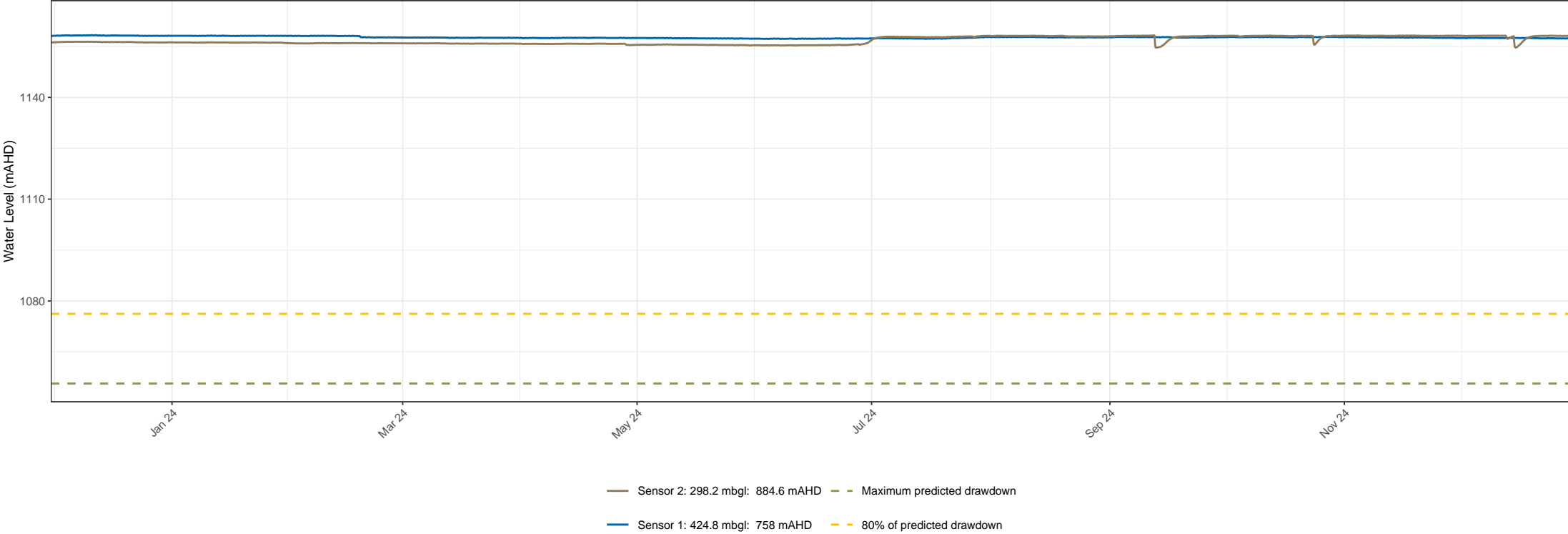
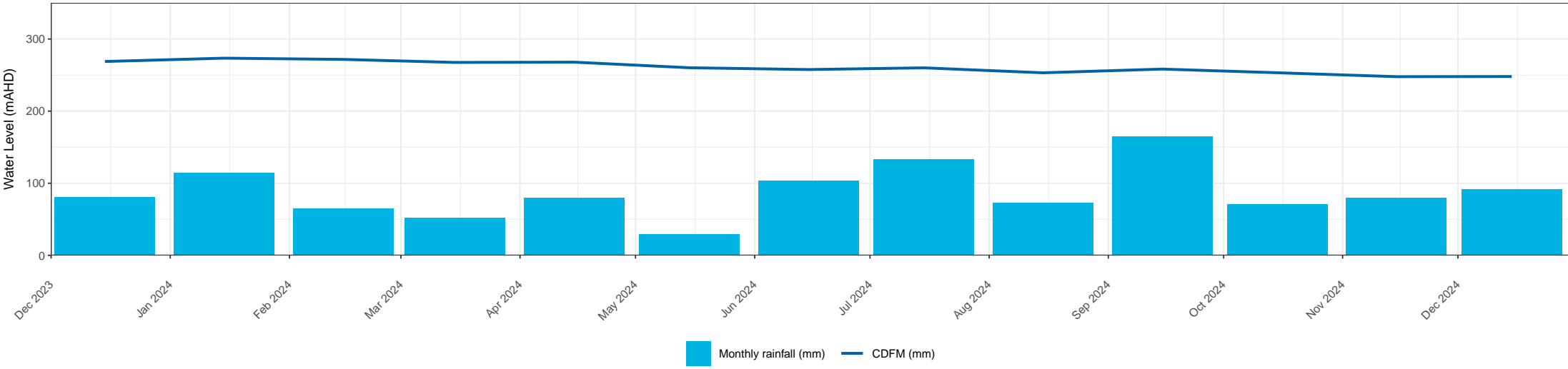
Notes

BH5111 groundwater level times series data
 Snowy Hydro 2.0 – Snowy Hydro Limited
 Groundwater monitoring and management
 Figure A– BH5111



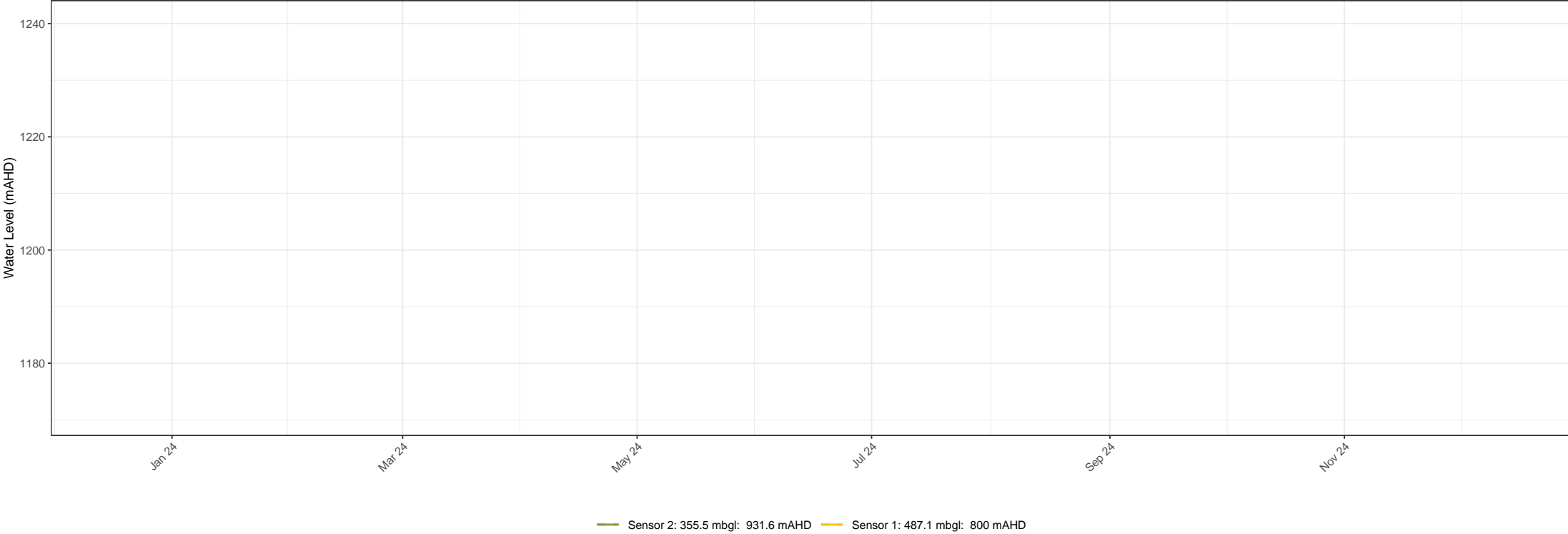
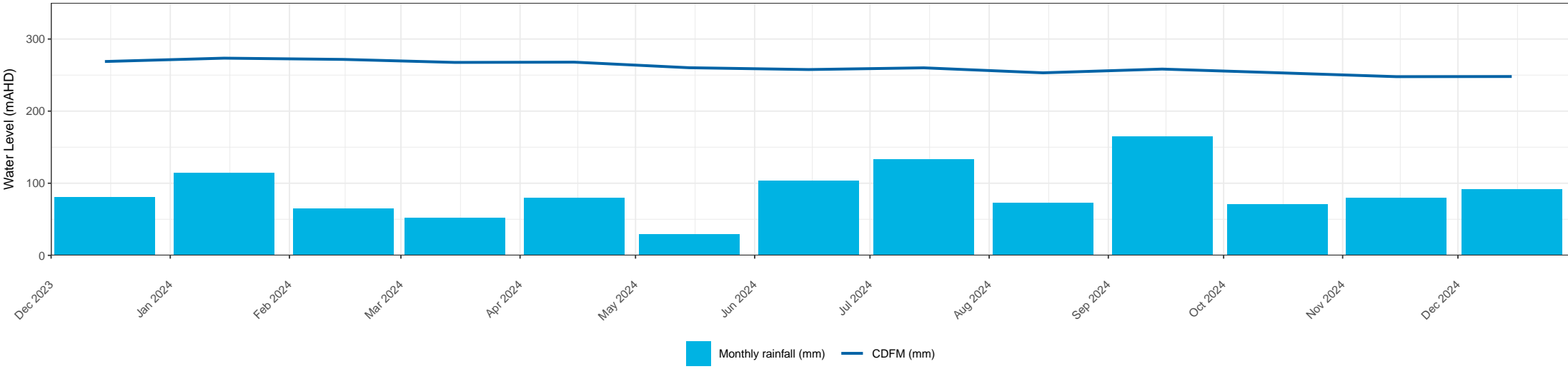
Notes

BH5113B groundwater level times series data
 Snowy Hydro 2.0 – Snowy Hydro Limited
 Groundwater monitoring and management
 Figure A– BH5113B



Notes

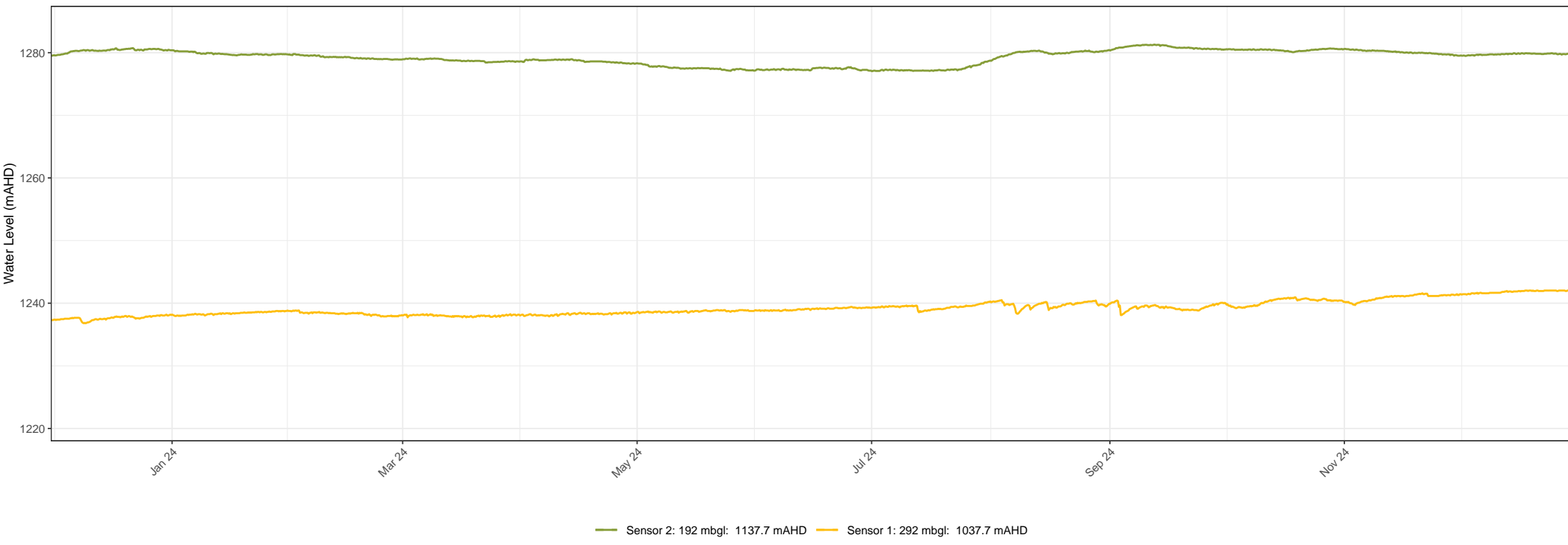
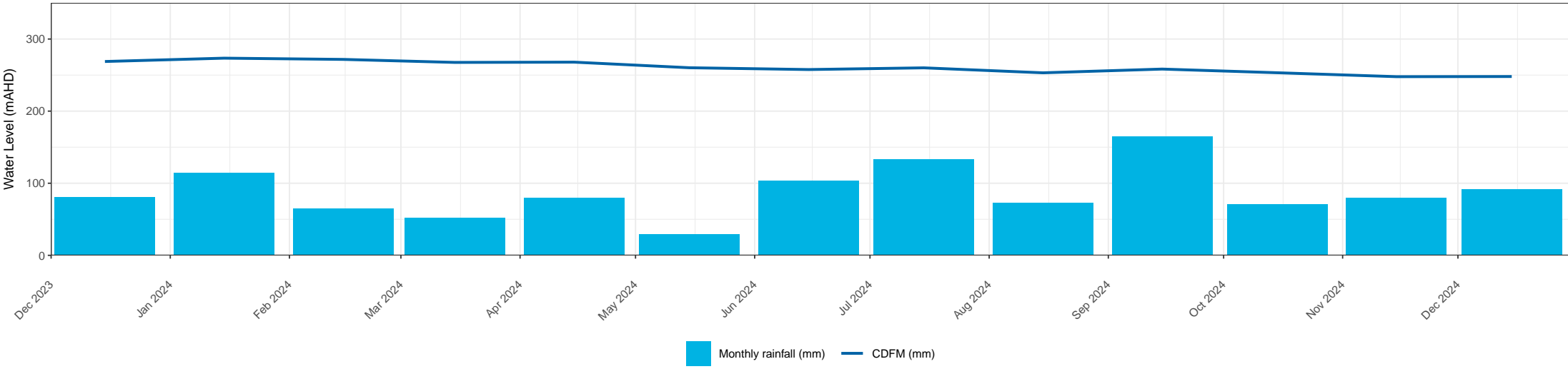
BH5113C groundwater level times series data
 Snowy Hydro 2.0 – Snowy Hydro Limited
 Groundwater monitoring and management
 Figure A– BH5113C



Notes

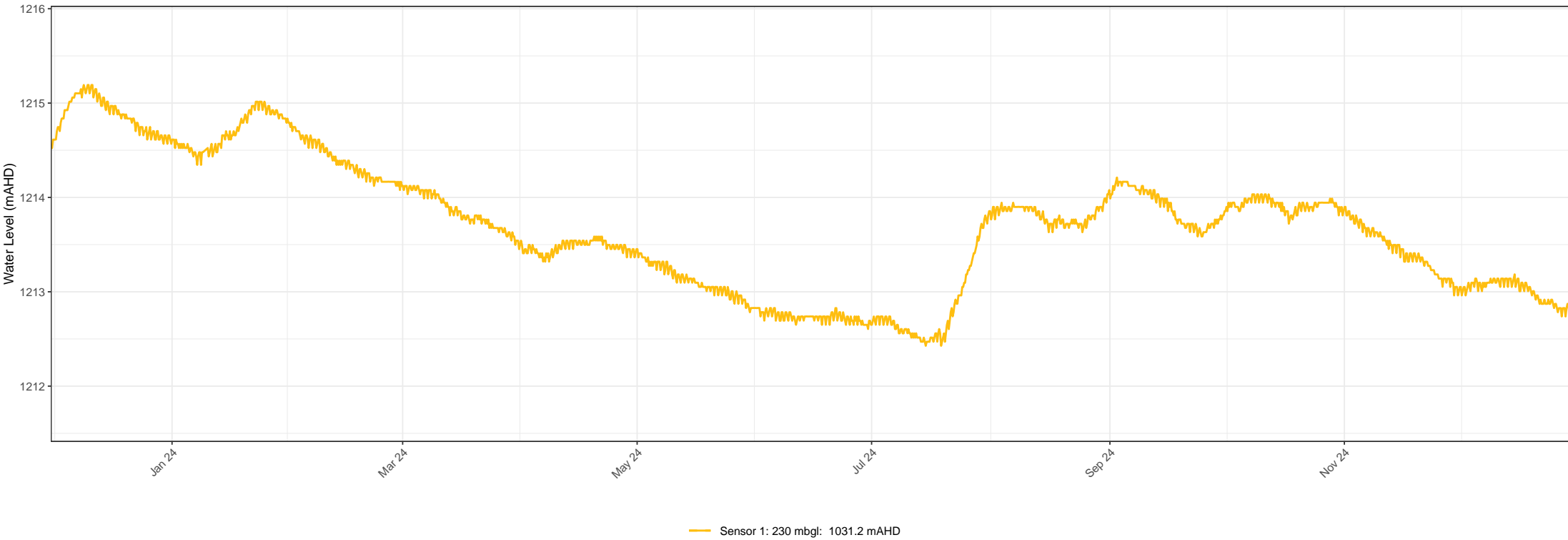
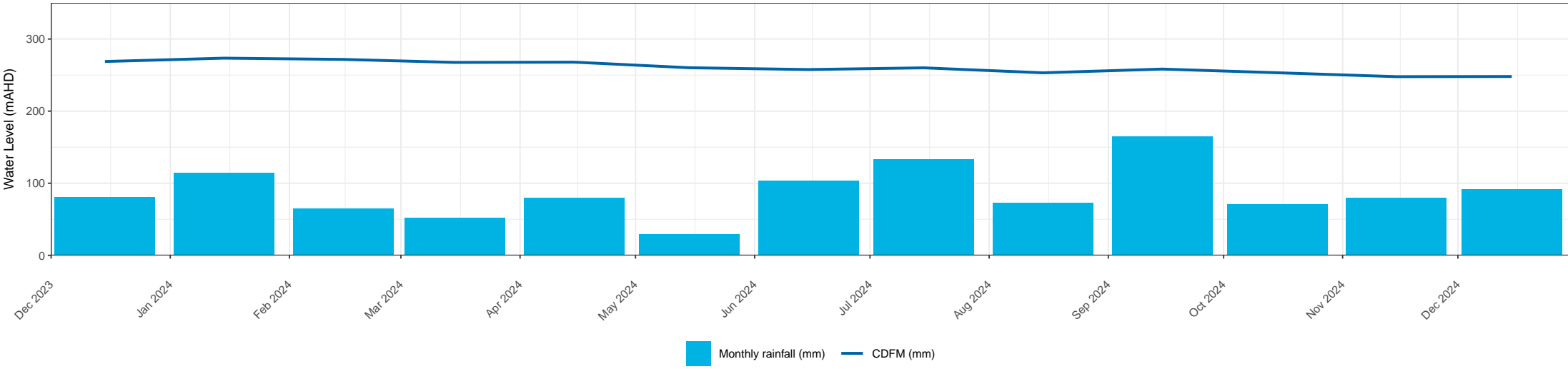
Decommissioned

BH5114 groundwater level times series data
 Snowy Hydro 2.0 – Snowy Hydro Limited
 Groundwater monitoring and management
 Figure A– BH5114



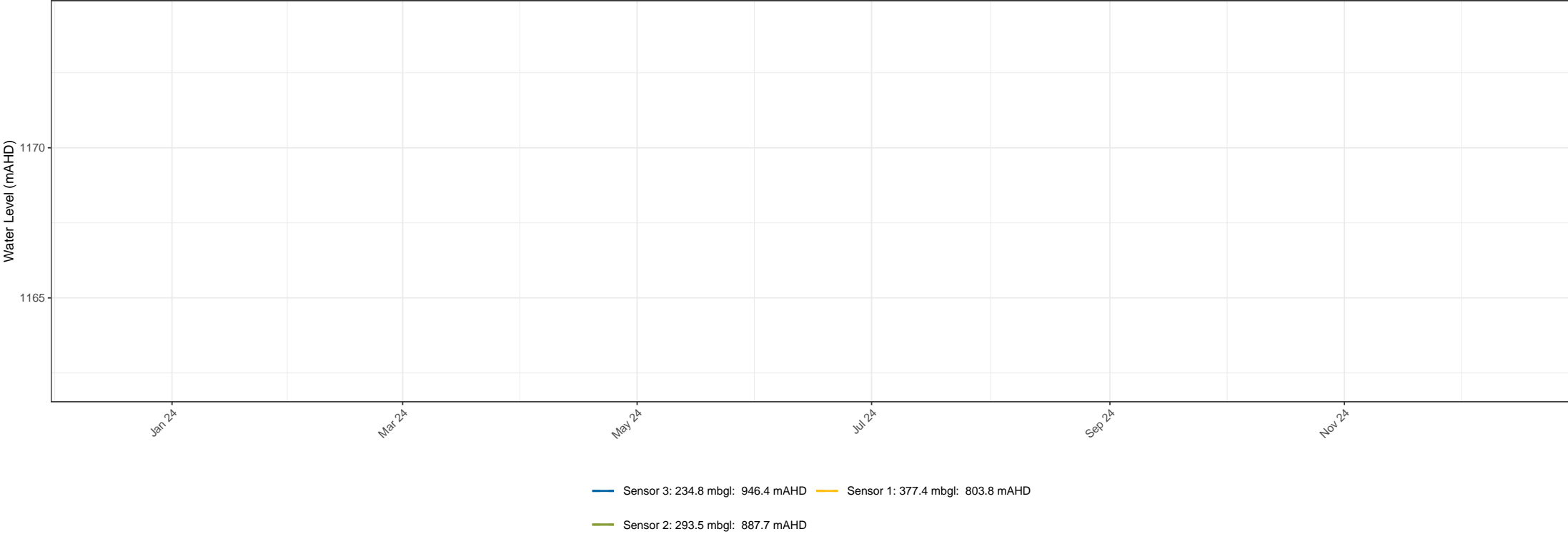
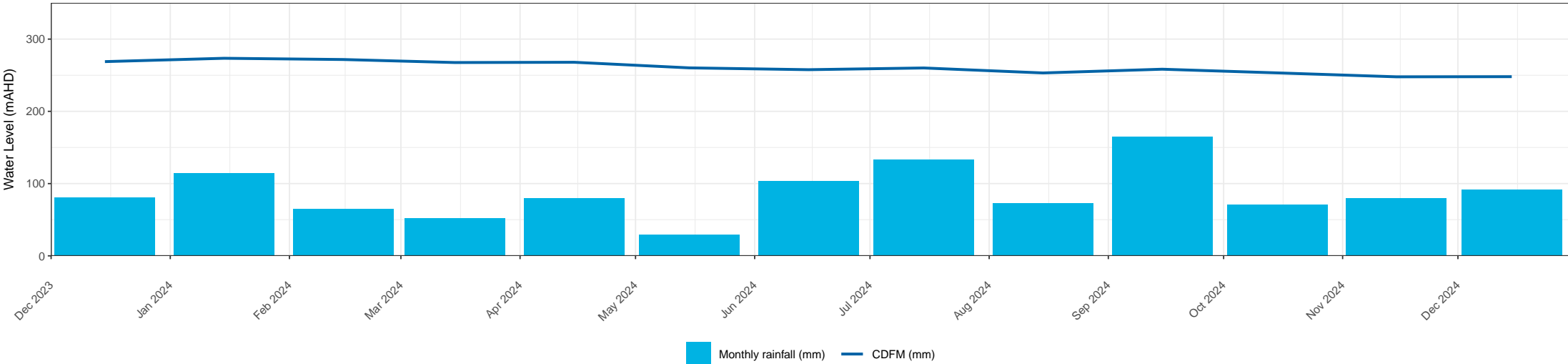
Notes

BH5115 groundwater level times series data
 Snowy Hydro 2.0 – Snowy Hydro Limited
 Groundwater monitoring and management
 Figure A– BH5115



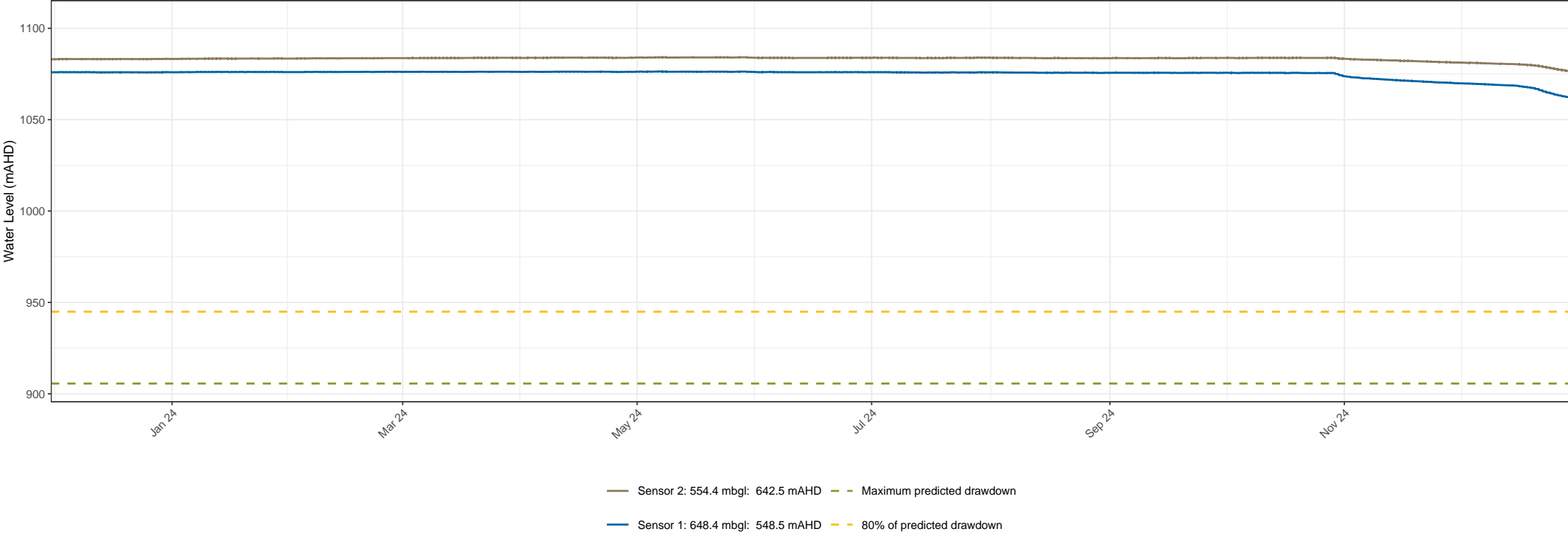
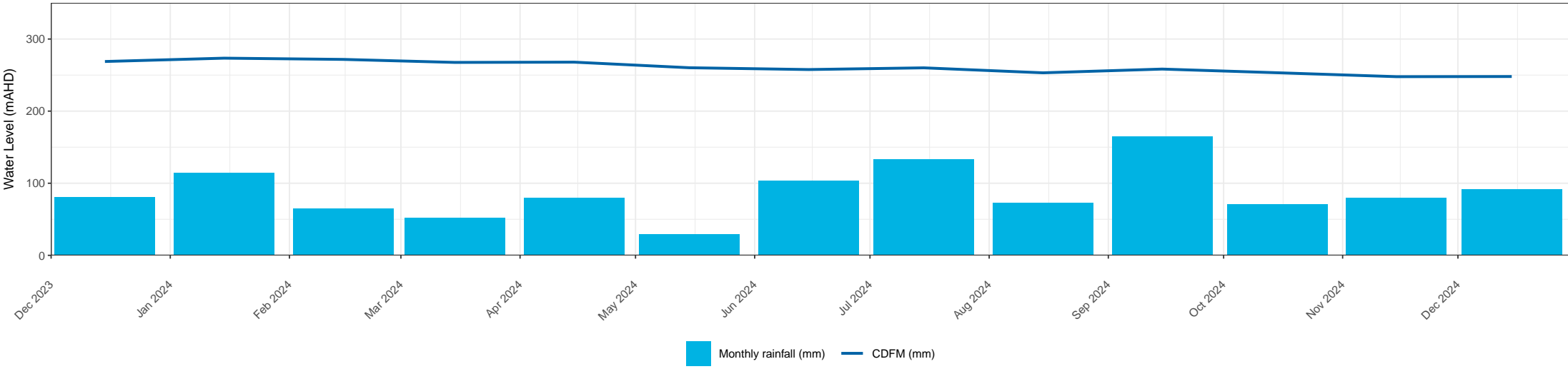
Notes

BH5202 groundwater level times series data
 Snowy Hydro 2.0 – Snowy Hydro Limited
 Groundwater monitoring and management
 Figure A– BH5202



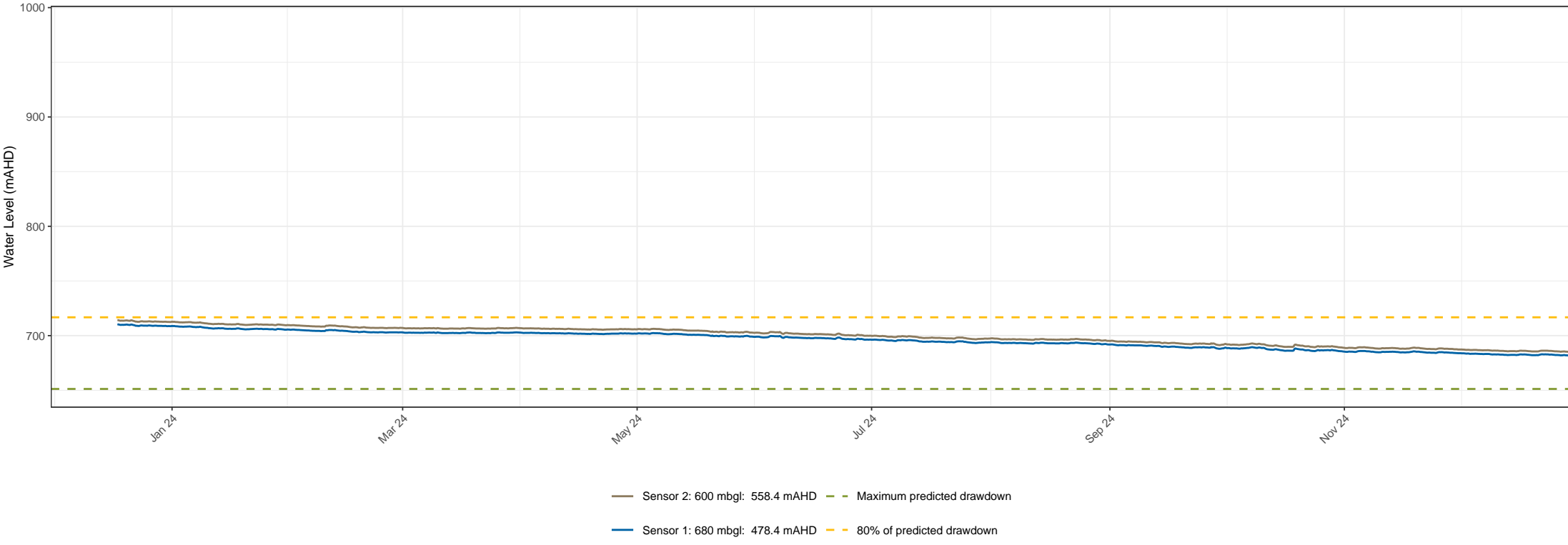
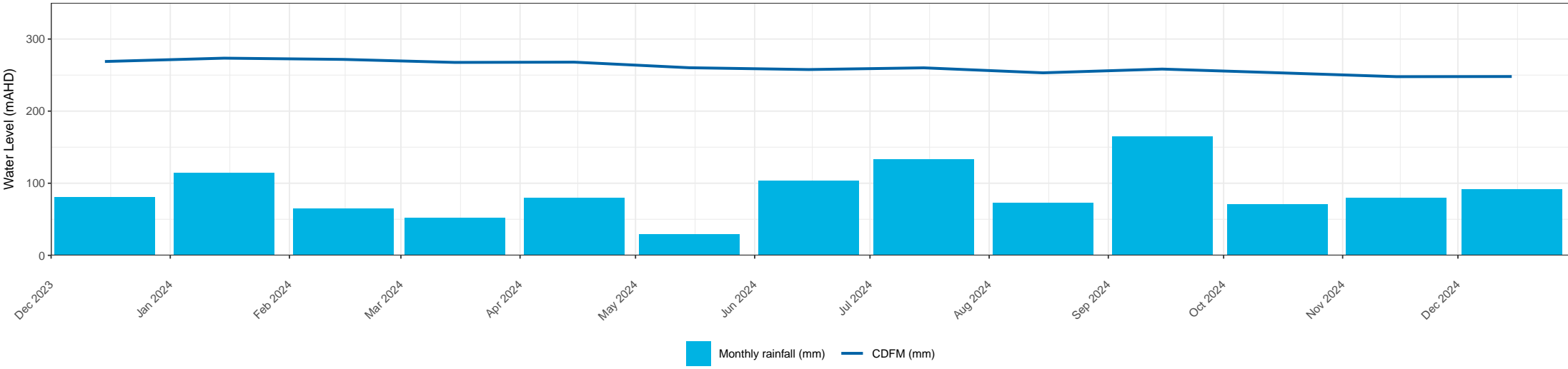
Notes

BH5203A groundwater level times series data
 Snowy Hydro 2.0 – Snowy Hydro Limited
 Groundwater monitoring and management
 Figure A– BH5203A



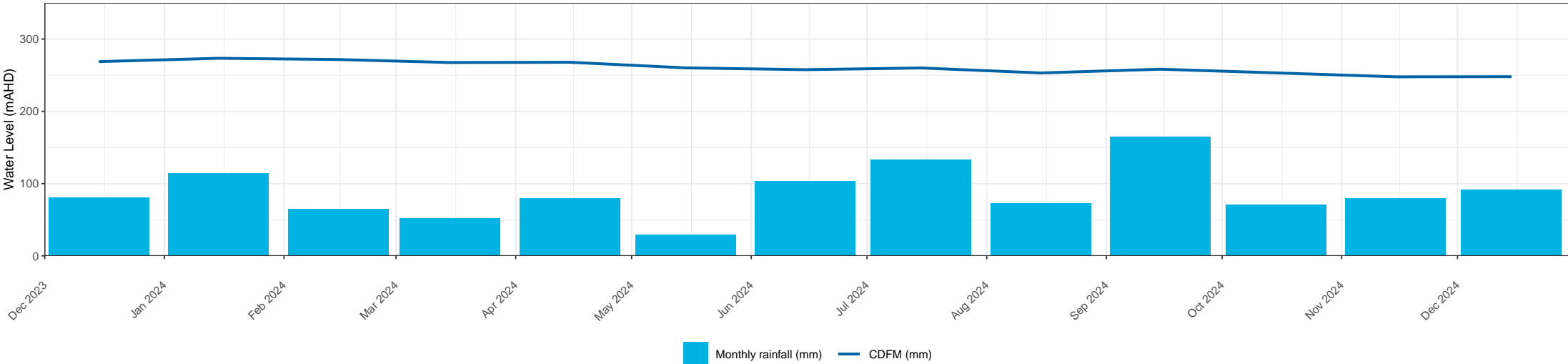
Notes

BH5204 groundwater level times series data
 Snowy Hydro 2.0 – Snowy Hydro Limited
 Groundwater monitoring and management
 Figure A– BH5204



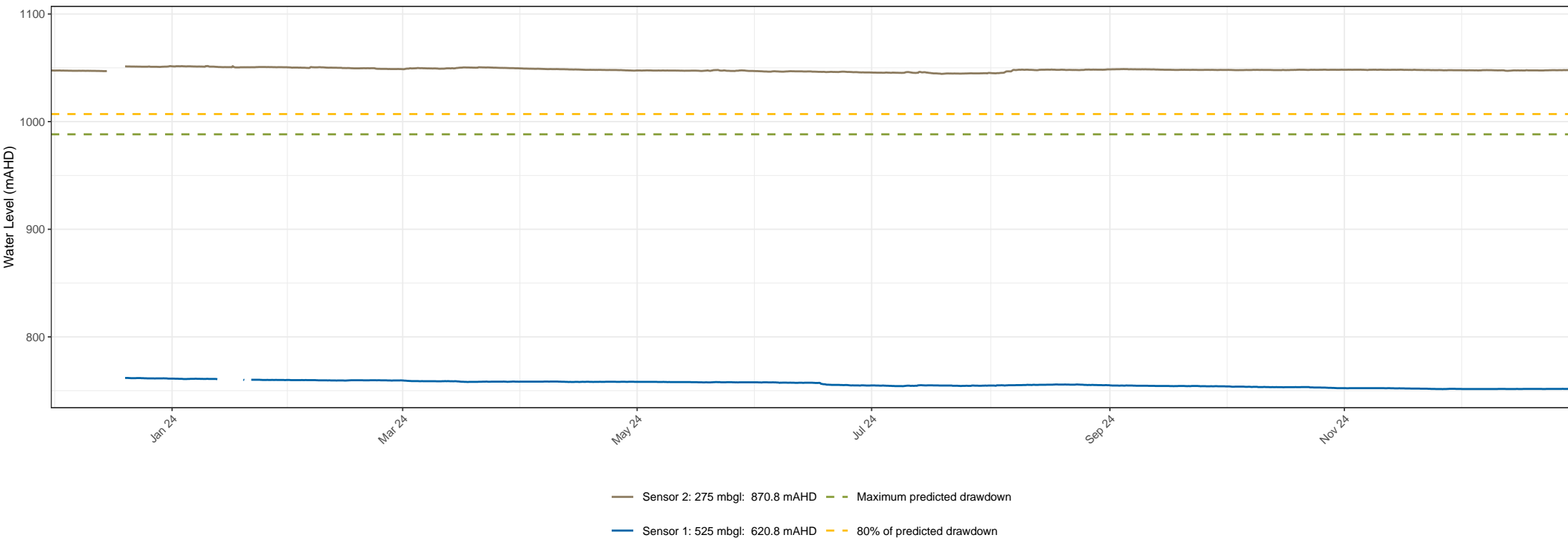
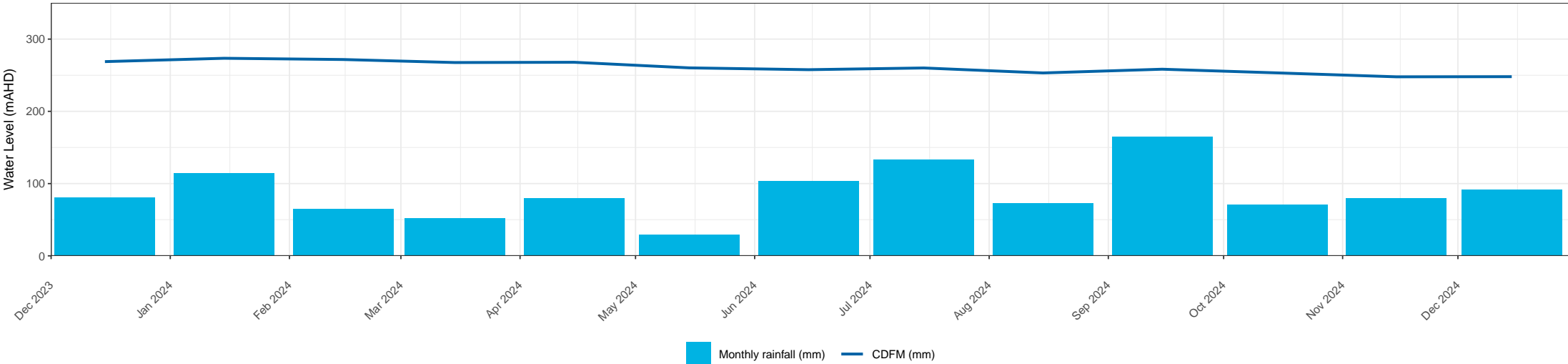
Notes

BH5206 groundwater level times series data
 Snowy Hydro 2.0 – Snowy Hydro Limited
 Groundwater monitoring and management
 Figure A– BH5206



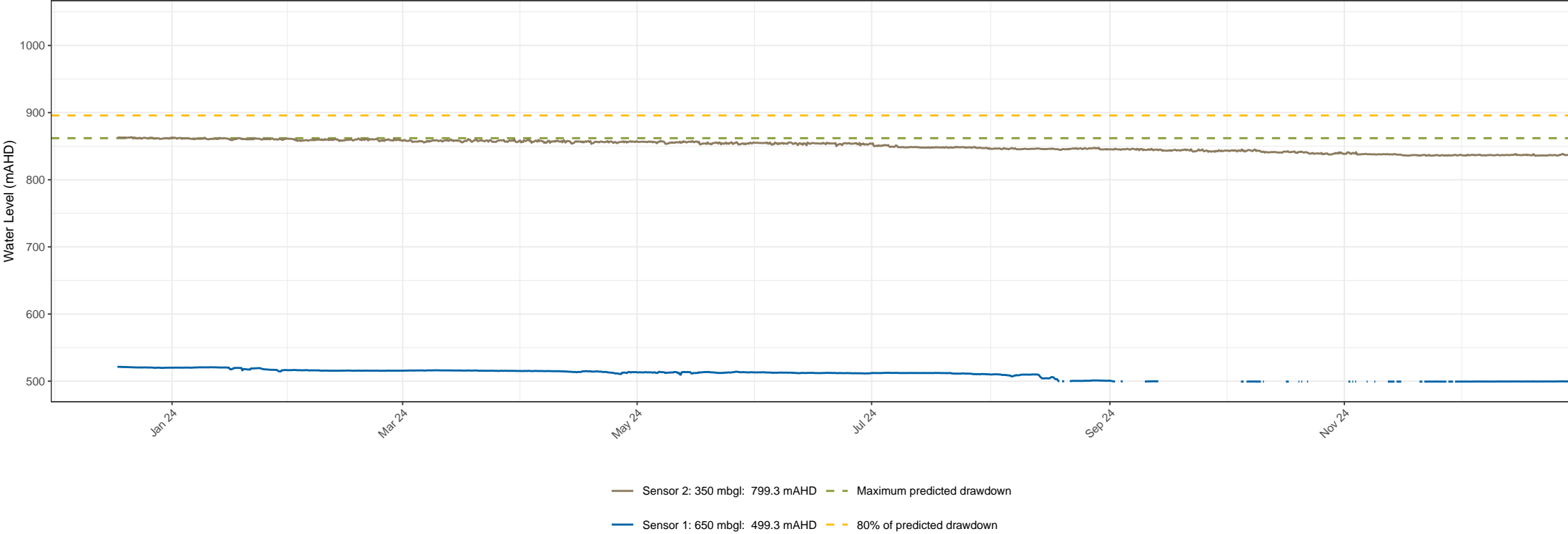
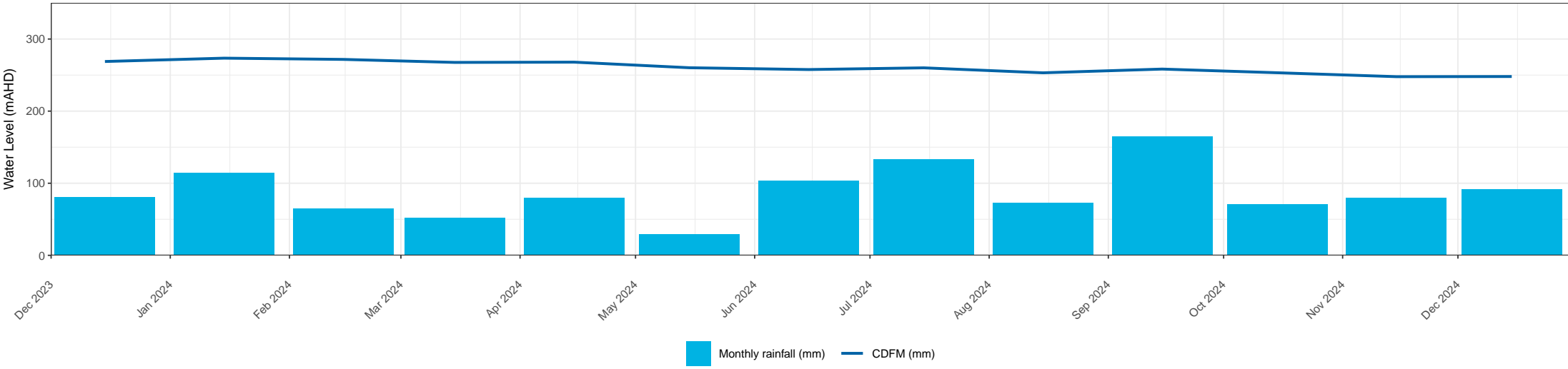
Notes

BH5207 groundwater level times series data
 Snowy Hydro 2.0 – Snowy Hydro Limited
 Groundwater monitoring and management
 Figure A– BH5207



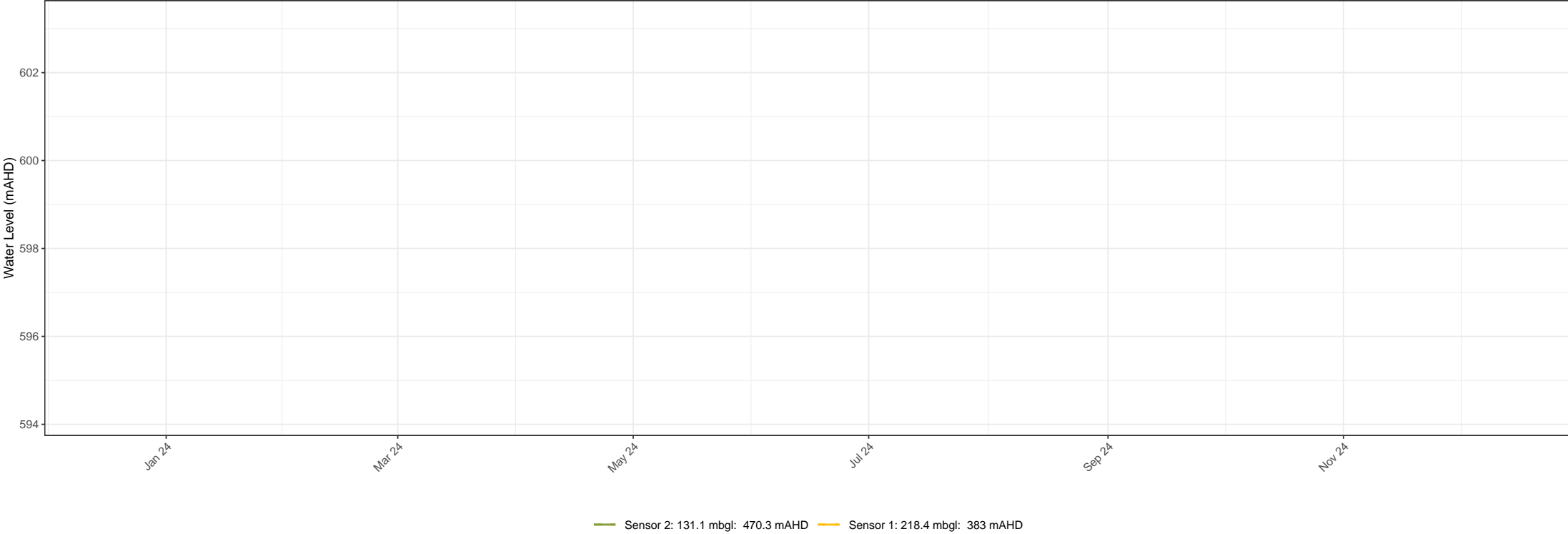
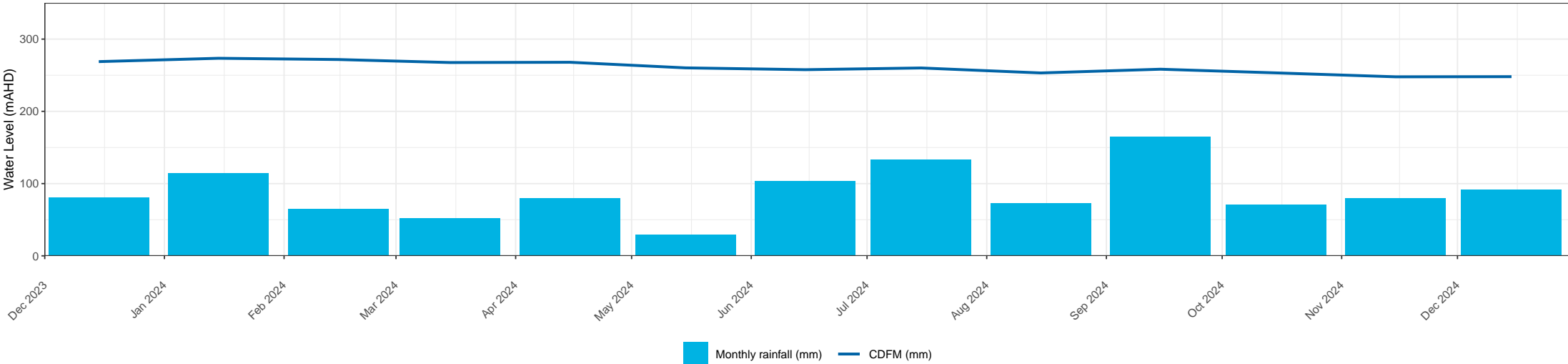
Notes

BH5208 groundwater level times series data
 Snowy Hydro 2.0 – Snowy Hydro Limited
 Groundwater monitoring and management
 Figure A– BH5208



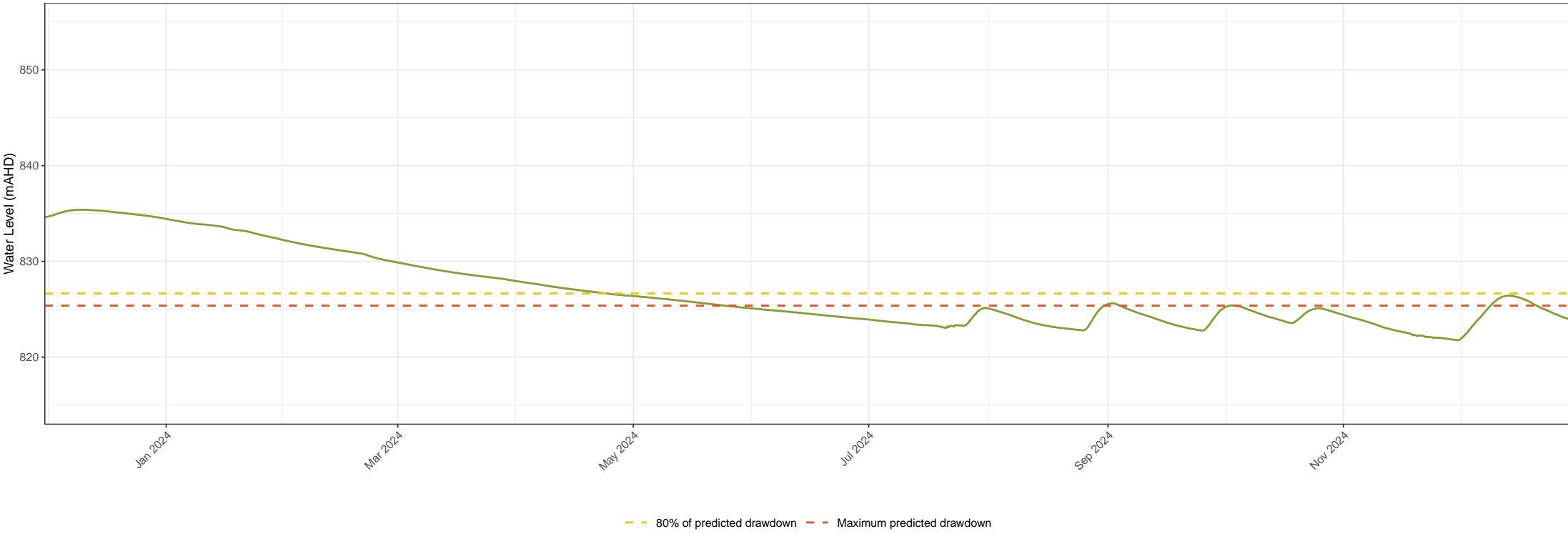
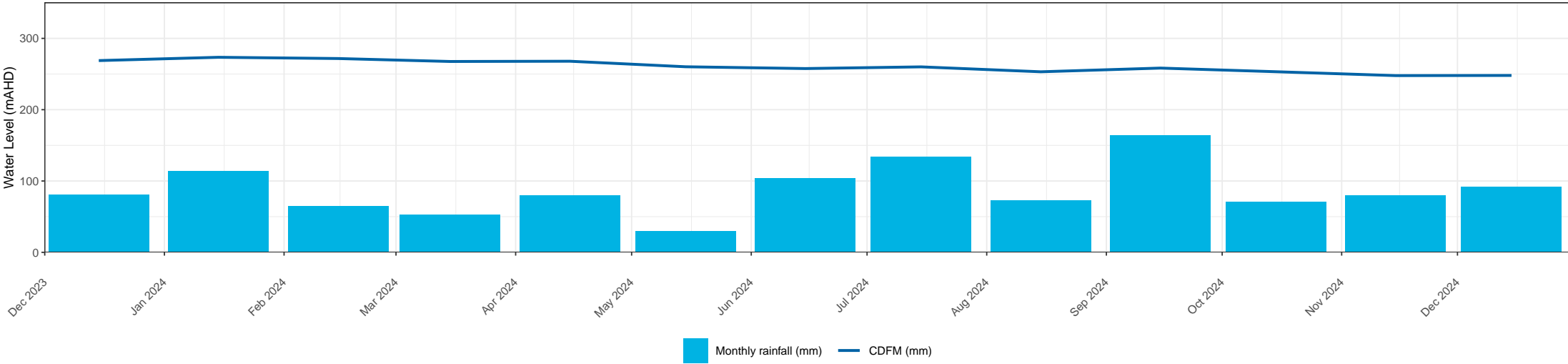
Notes

BH5209 groundwater level times series data
 Snowy Hydro 2.0 – Snowy Hydro Limited
 Groundwater monitoring and management
 Figure A– BH5209

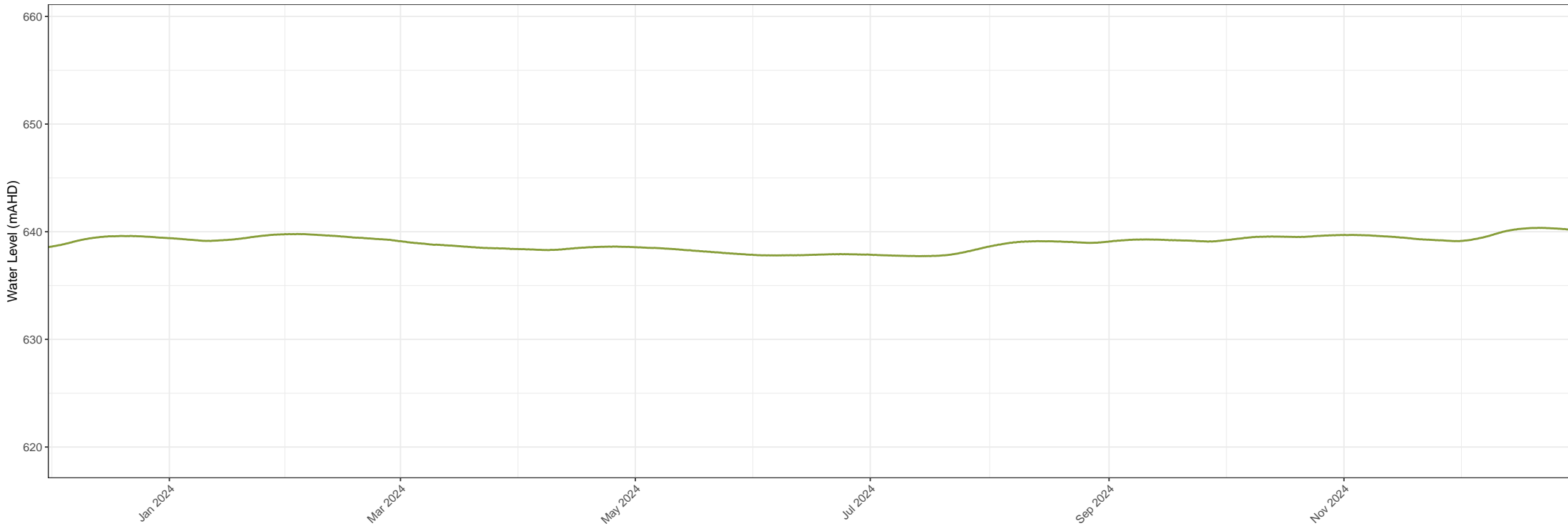
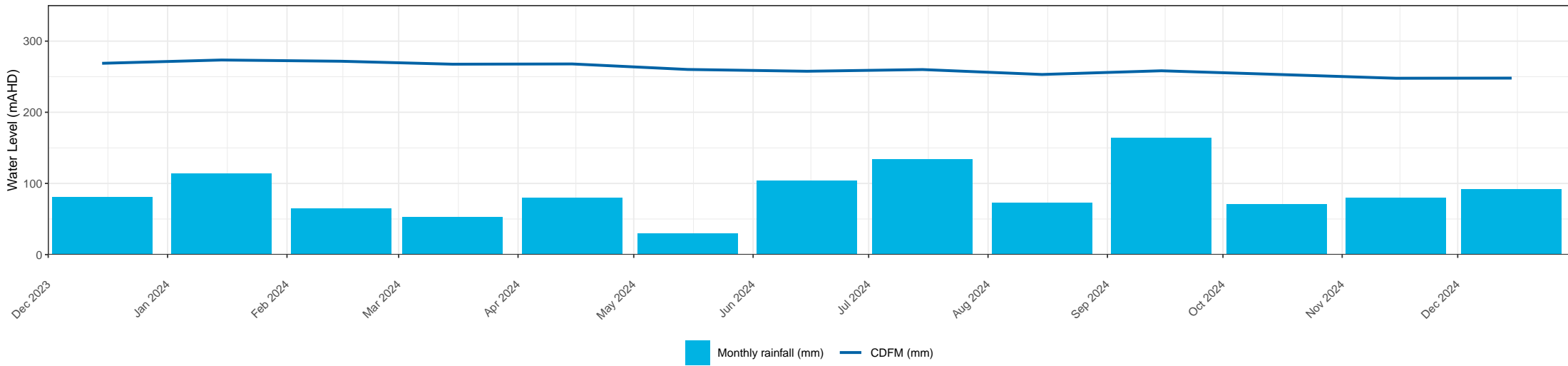


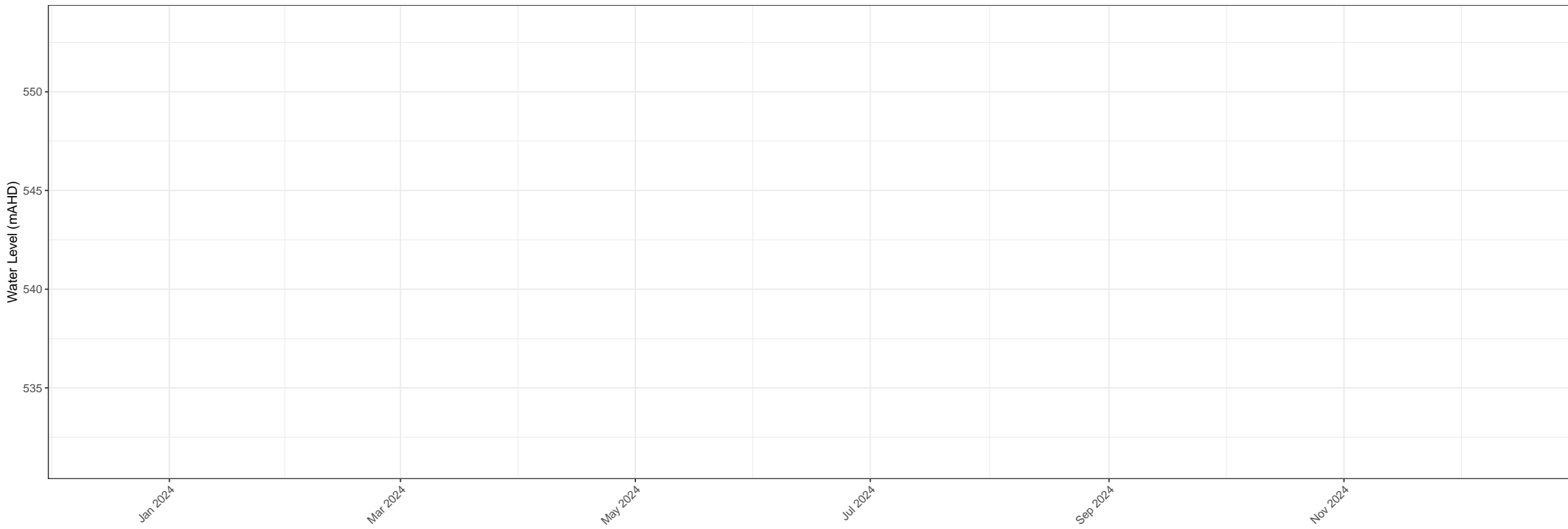
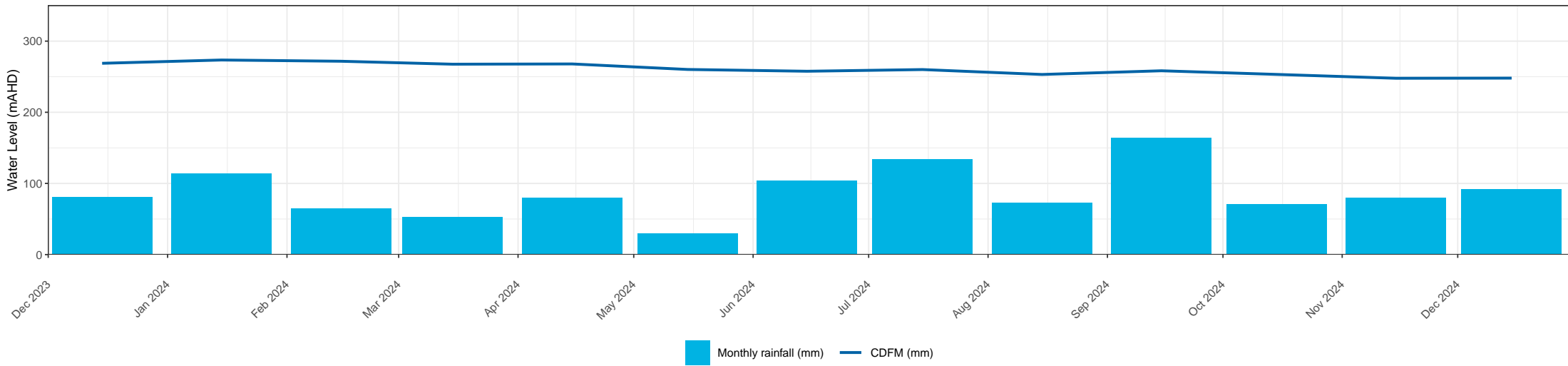
Notes

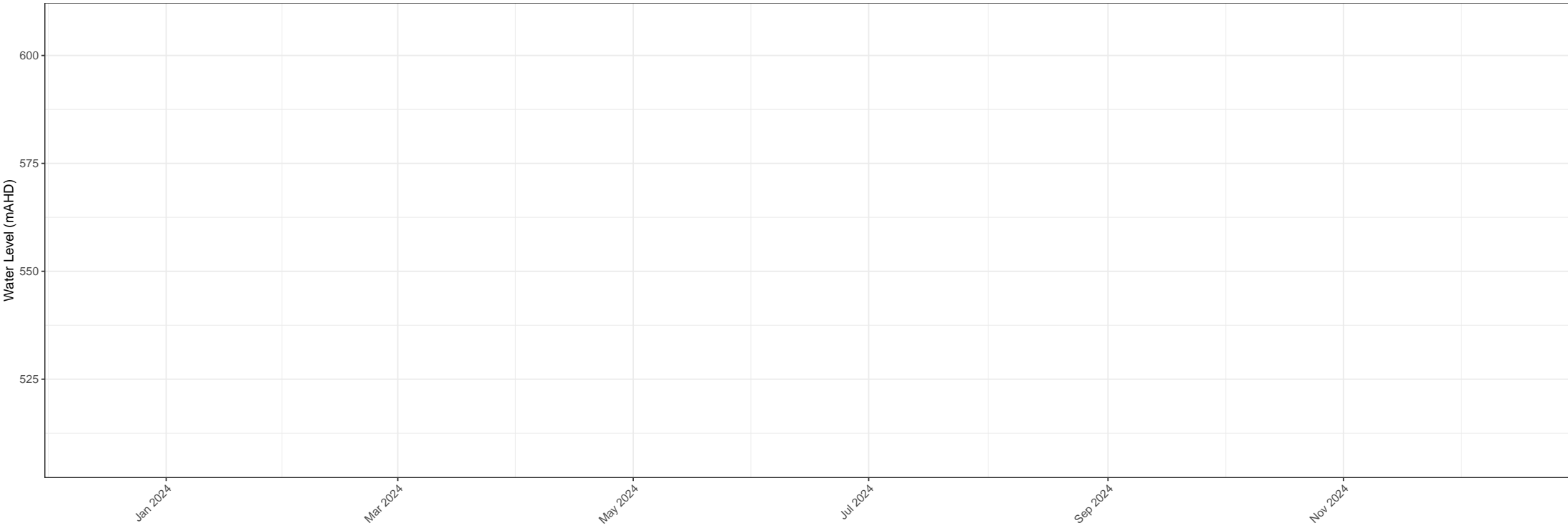
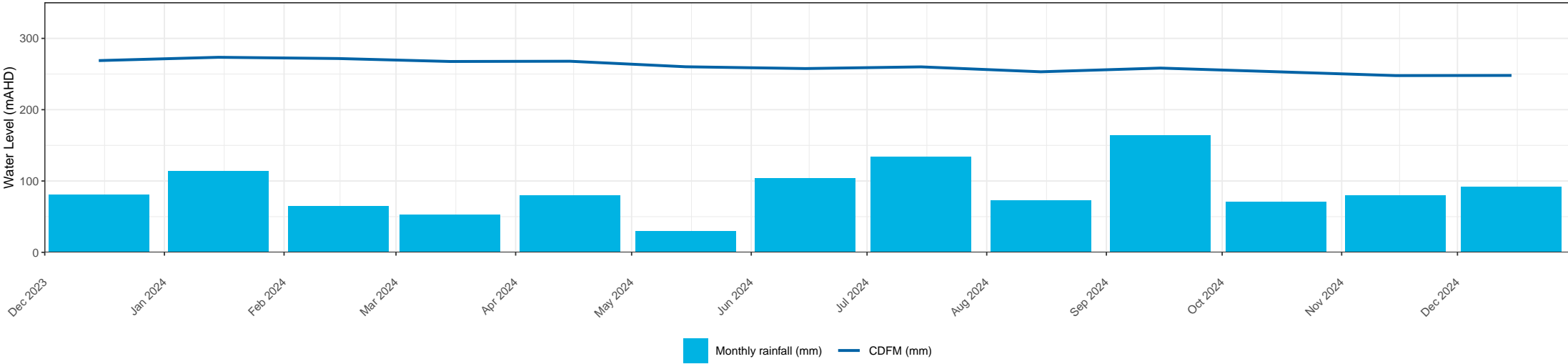
BH6103 groundwater level times series data
 Snowy Hydro 2.0 – Snowy Hydro Limited
 Groundwater monitoring and management
 Figure A– BH6103

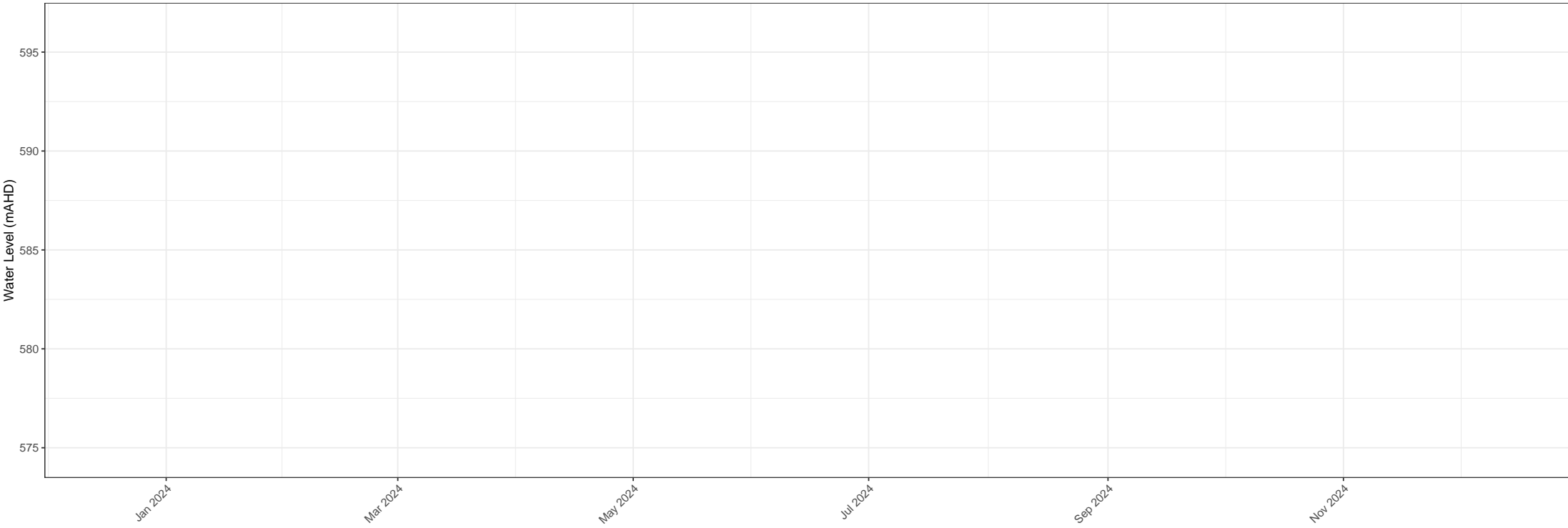
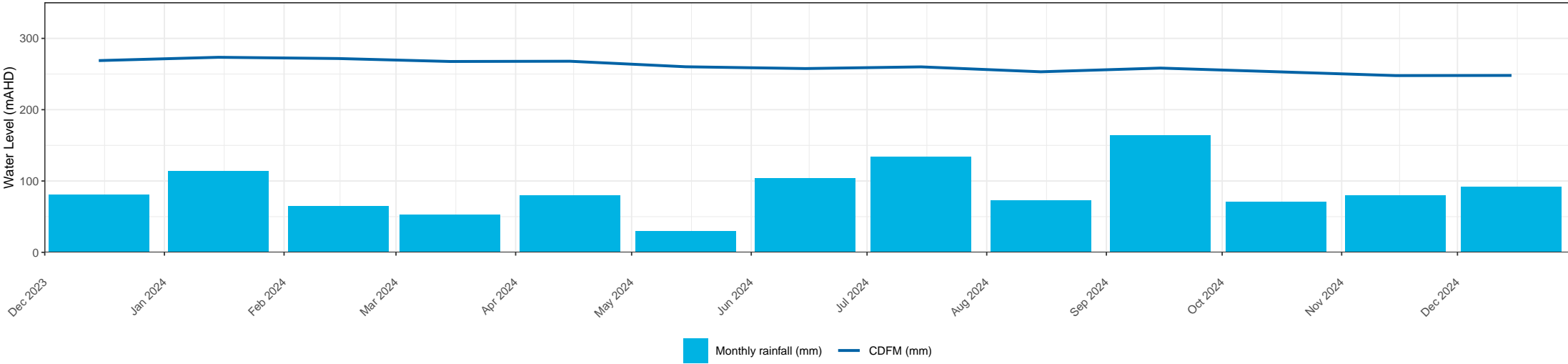


BH6104 groundwater level times series data
 Snowy 2.0 – Snowy Hydro Limited
 Groundwater monitoring and management
 Figure A– BH6104



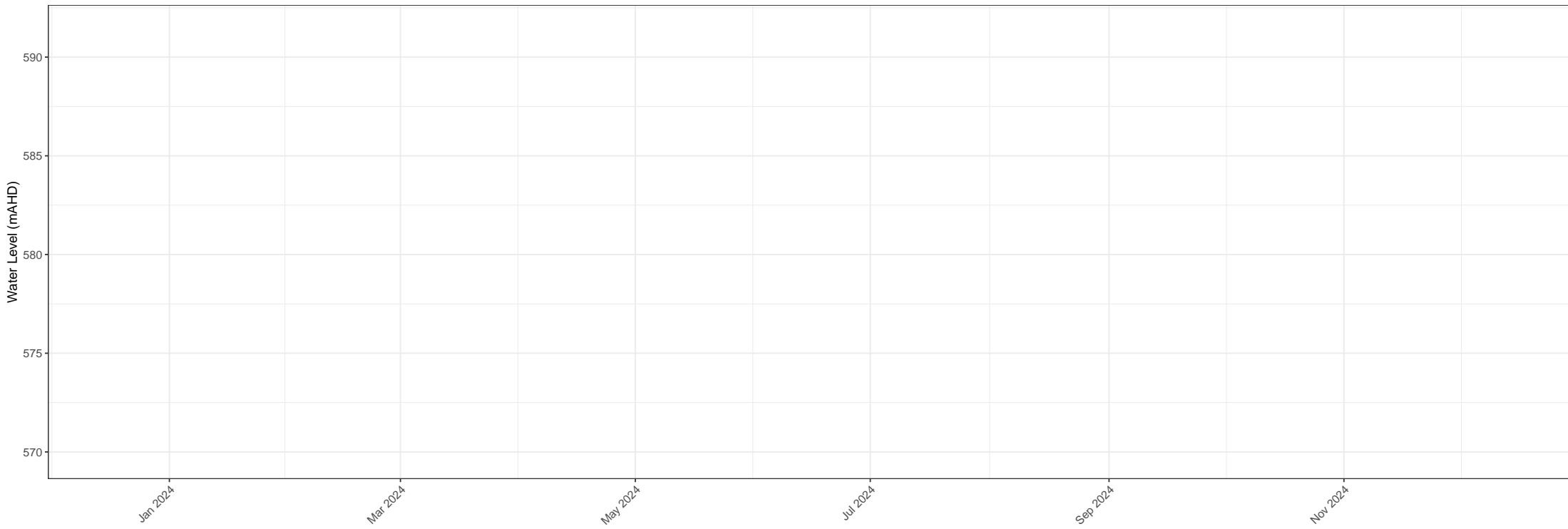
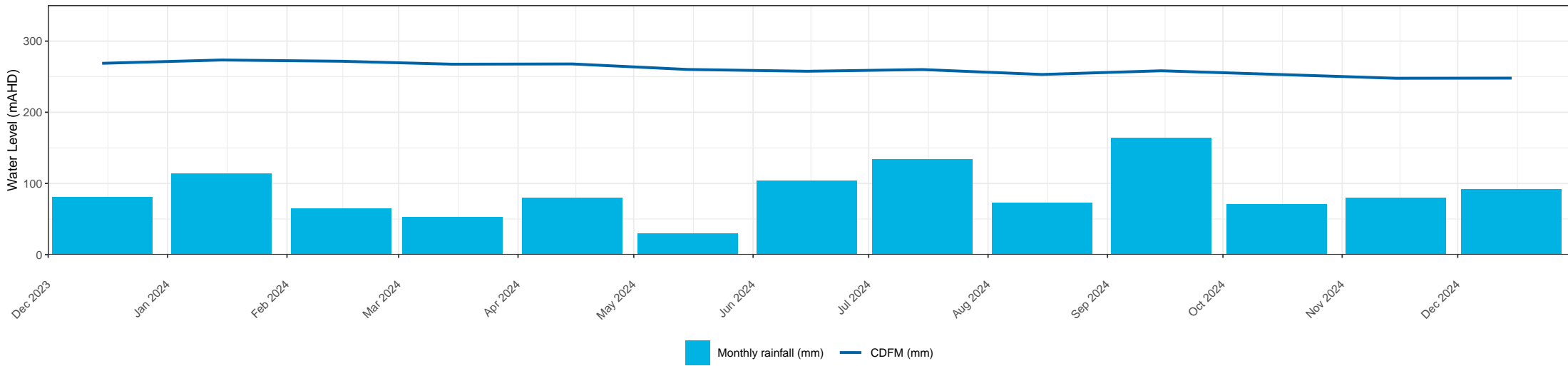


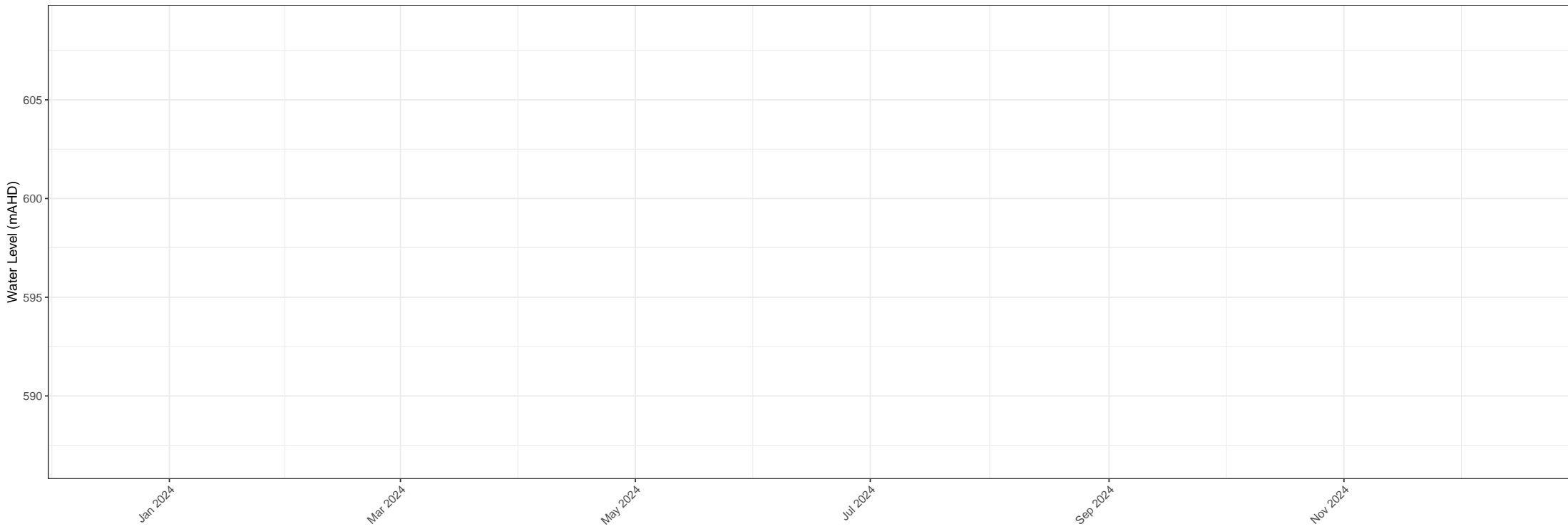
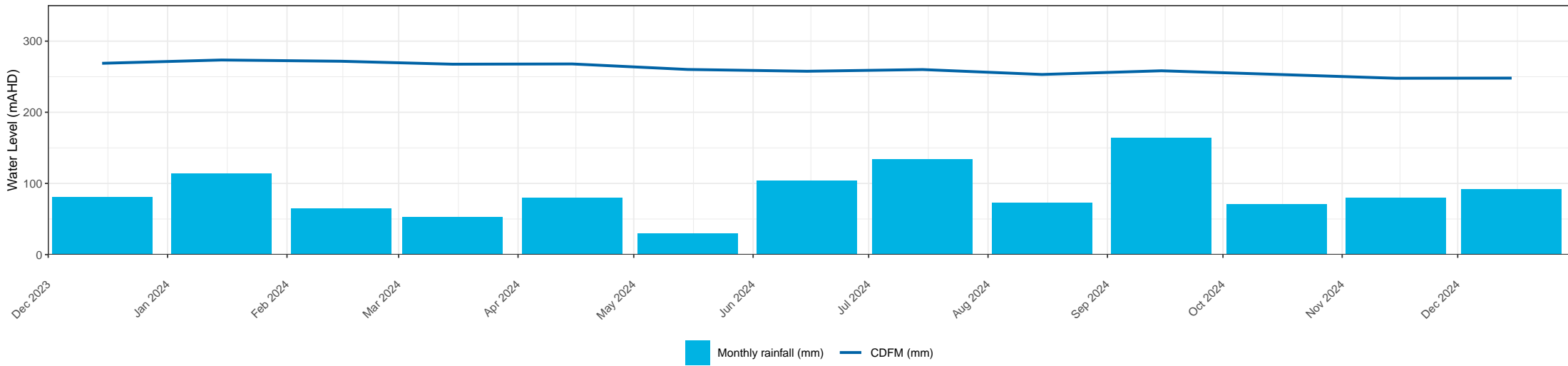


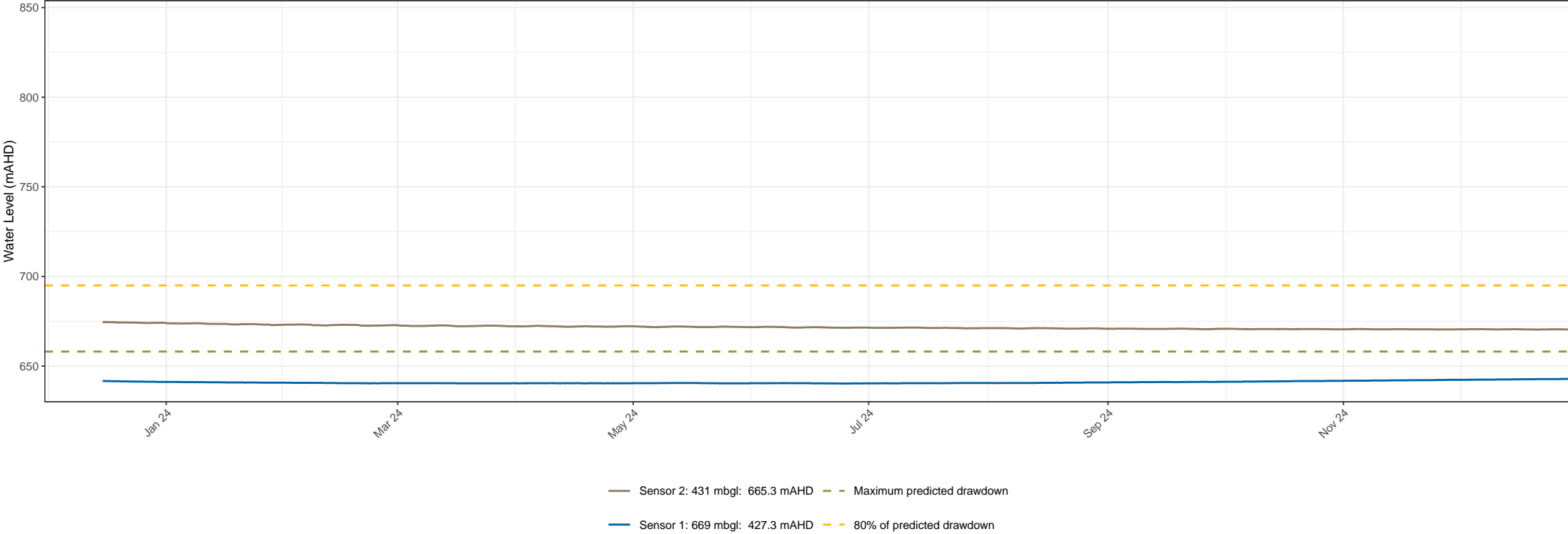
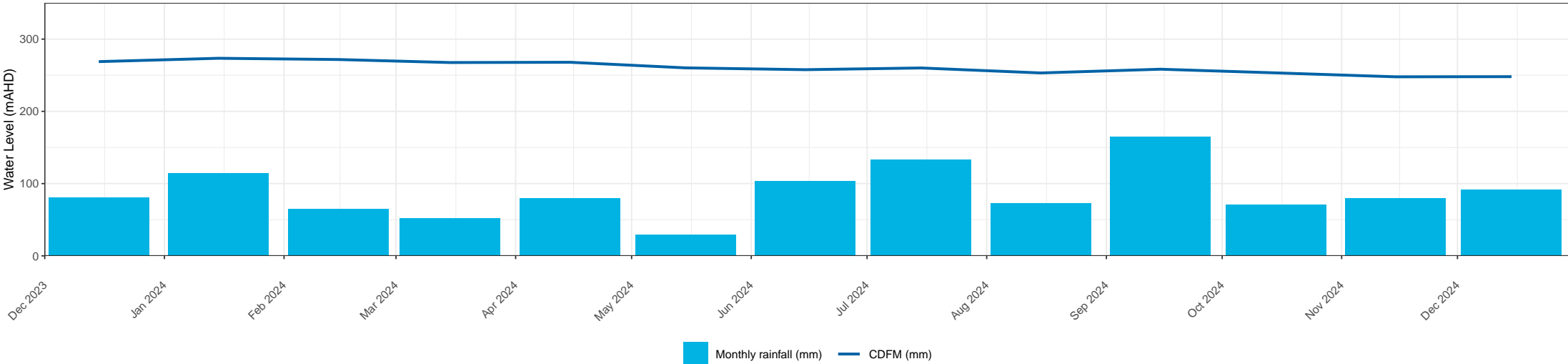


Decommissioned

BH8101 groundwater level times series data
 Snowy 2.0 – Snowy Hydro Limited
 Groundwater monitoring and management
 Figure A– BH8101

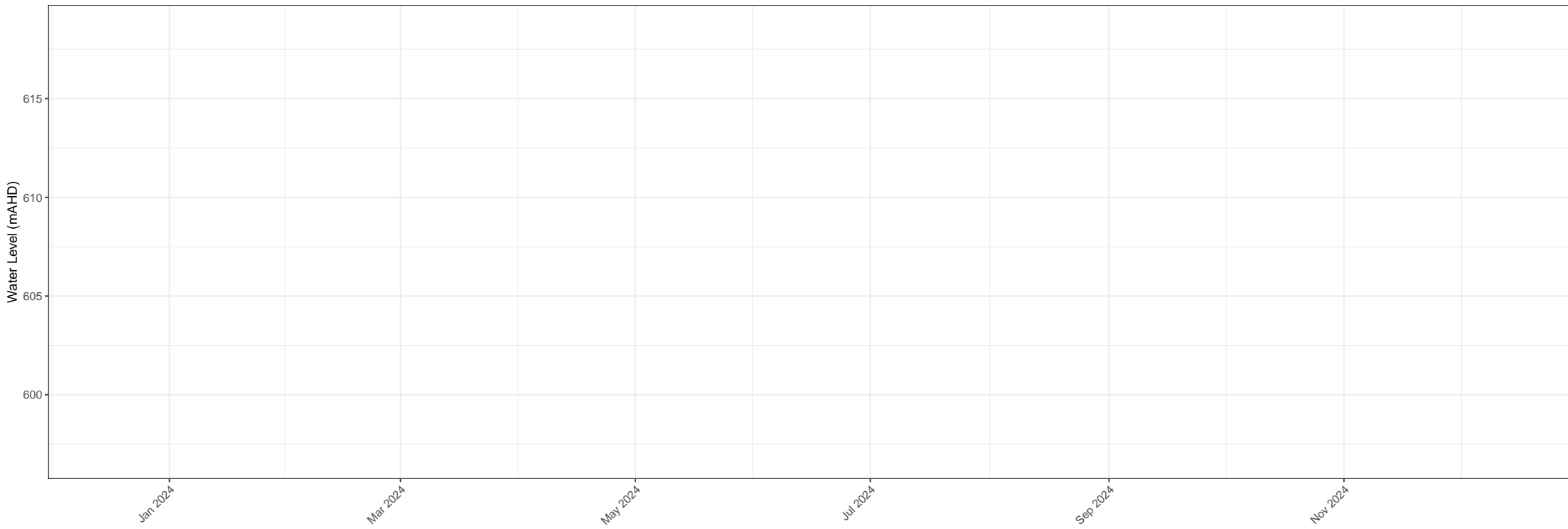
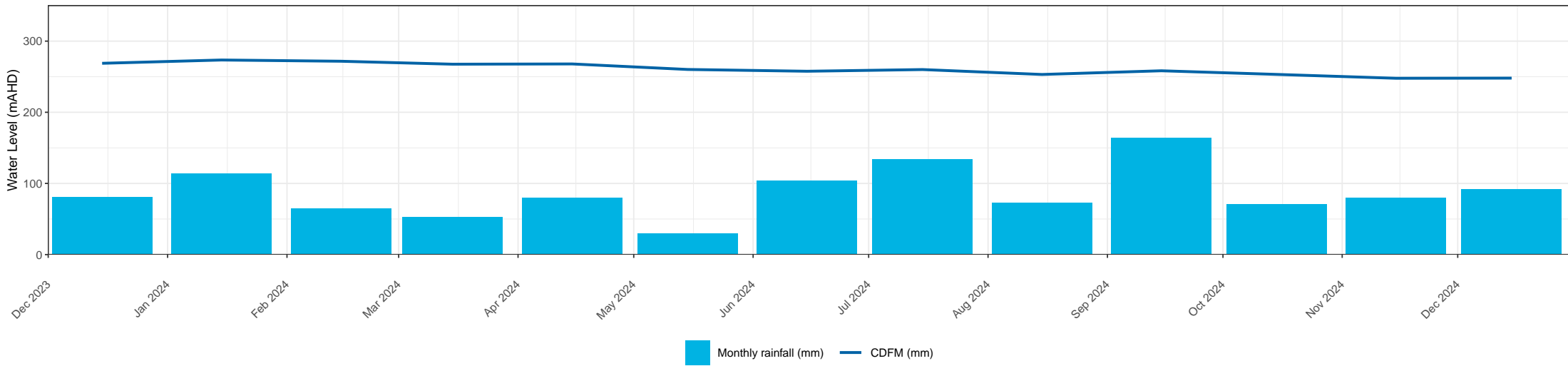


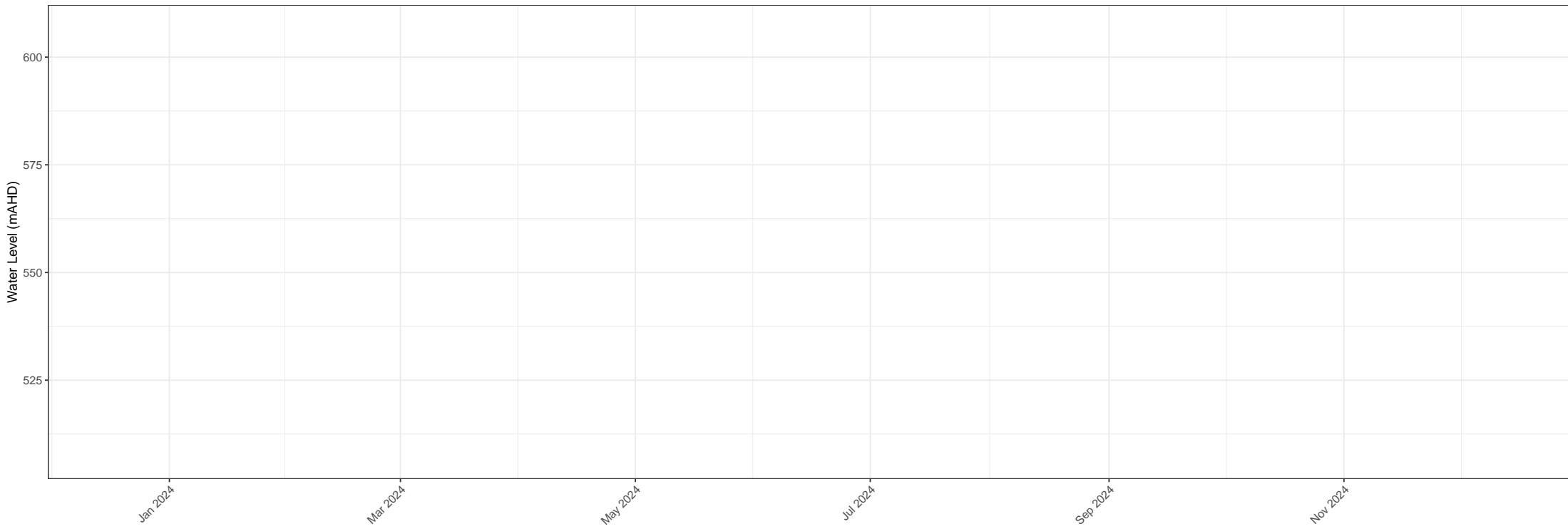
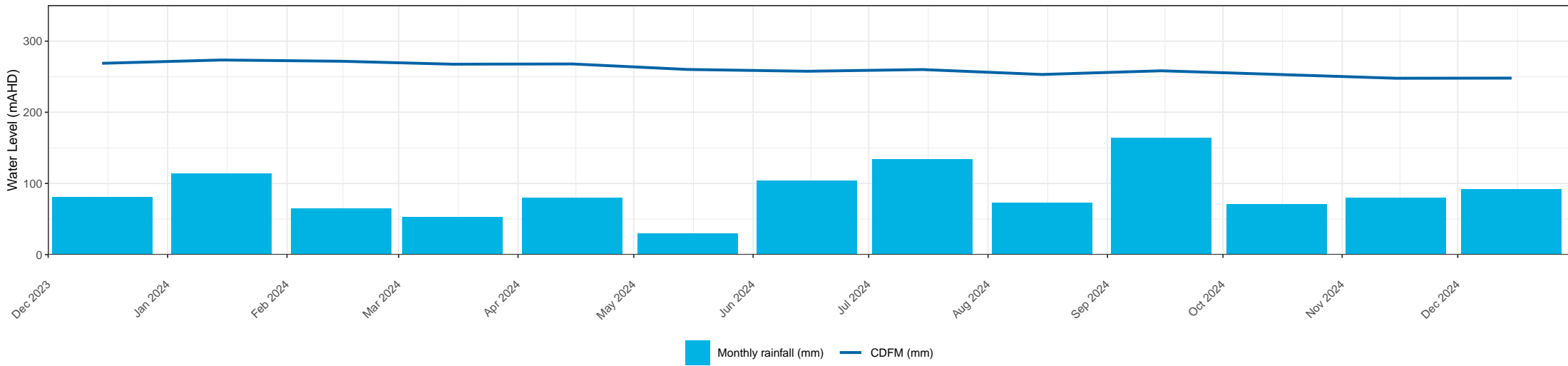


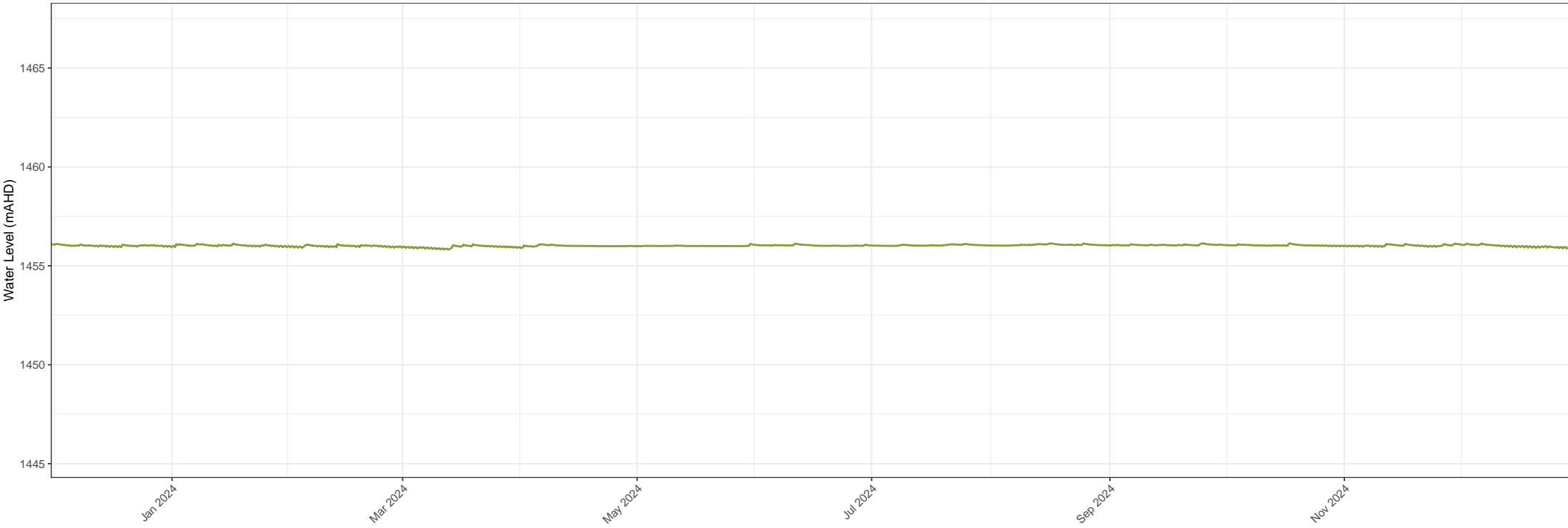
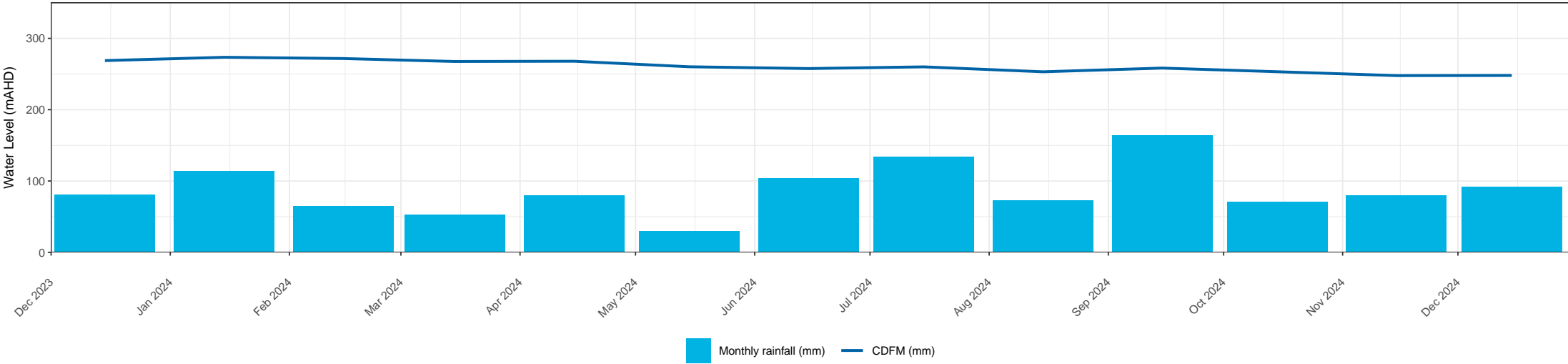


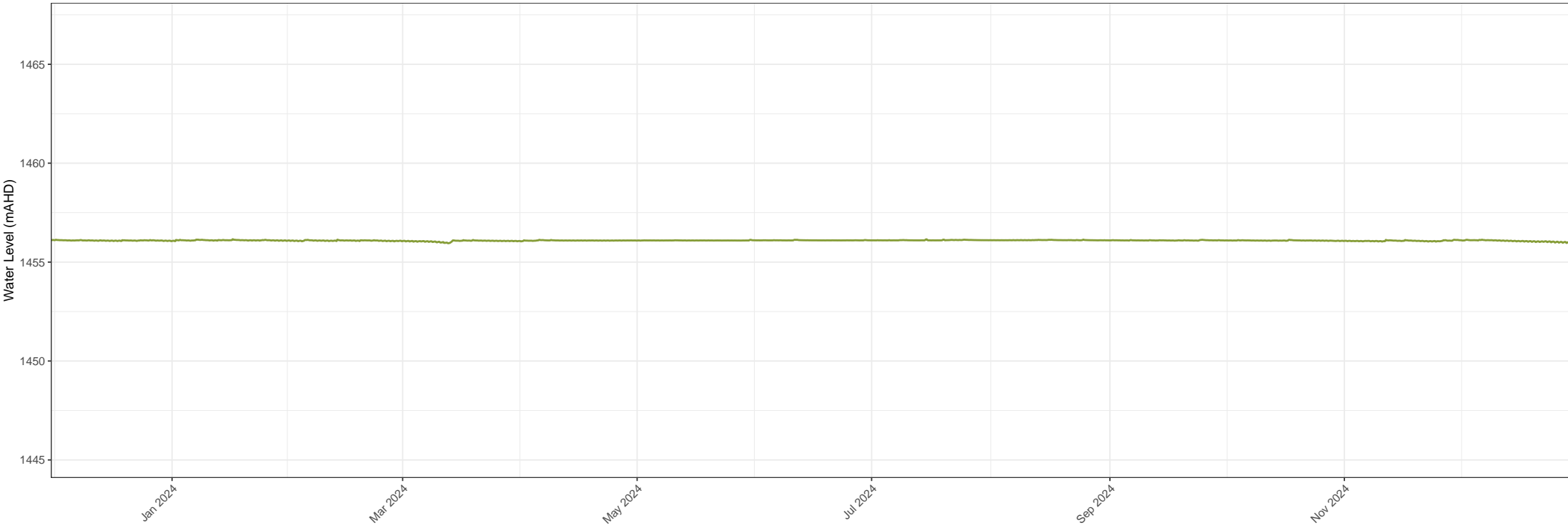
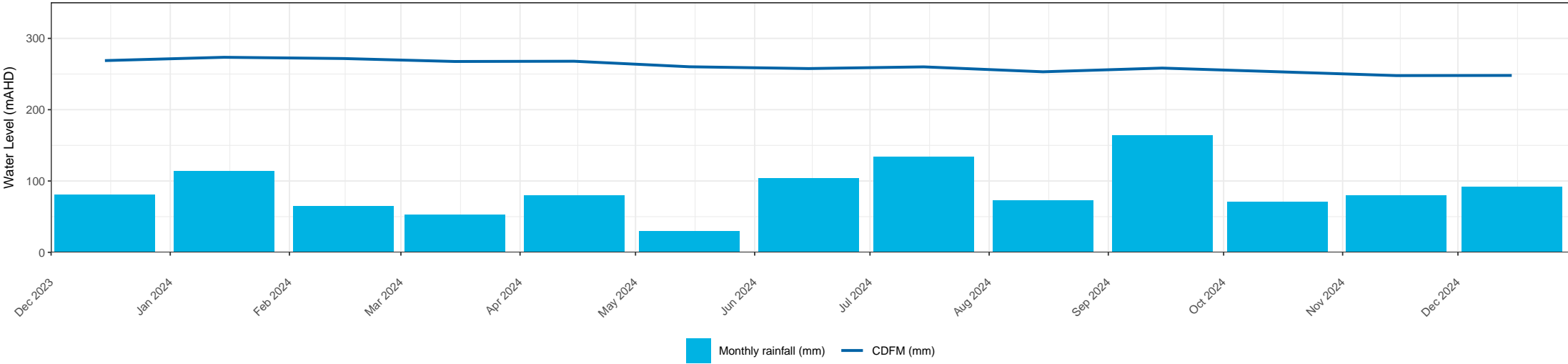
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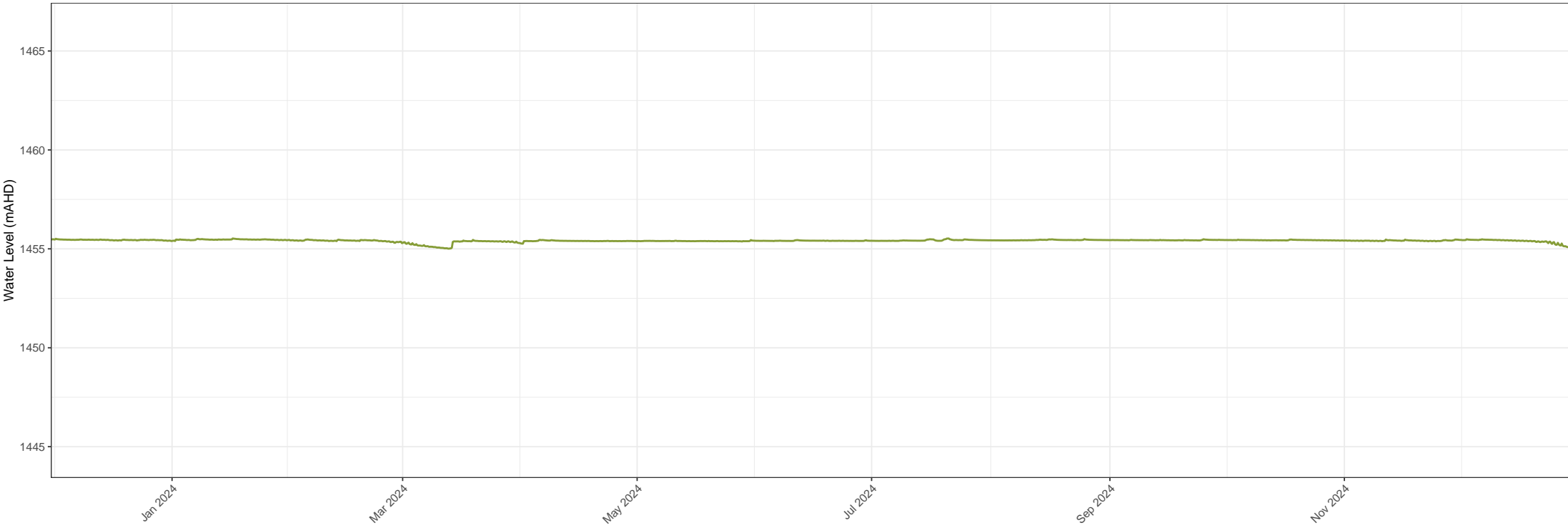
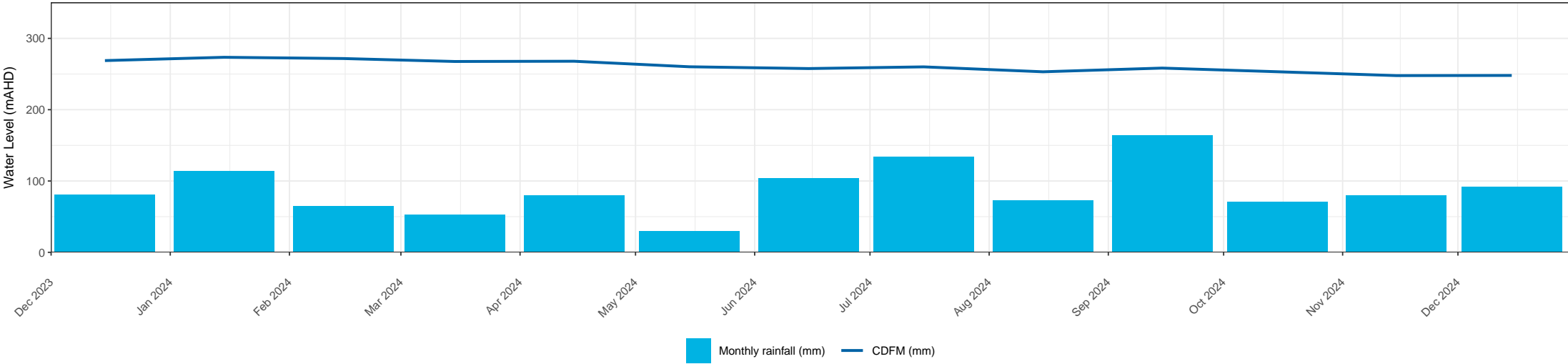
BH8106 groundwater level times series data
 Snowy Hydro 2.0 – Snowy Hydro Limited
 Groundwater monitoring and management
 Figure A– BH8106

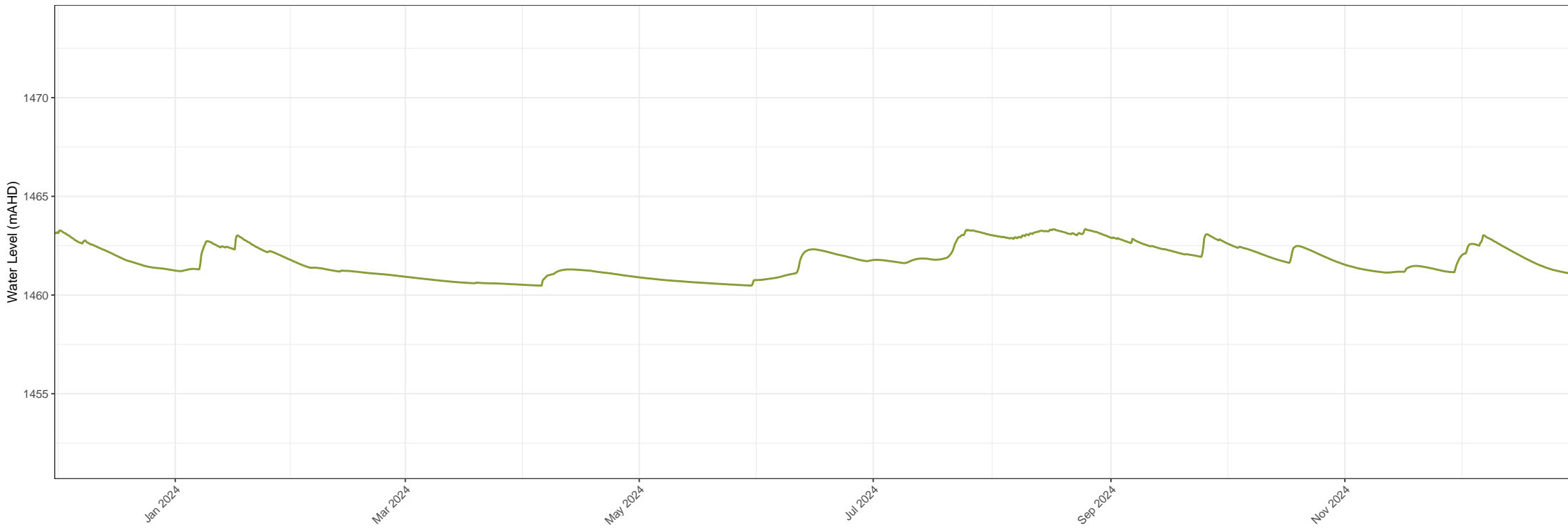
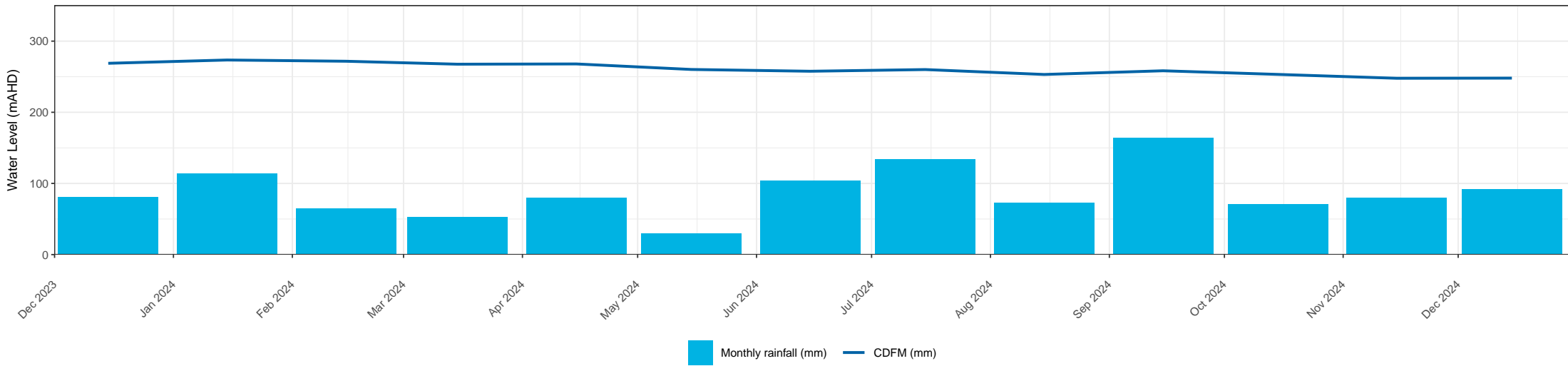


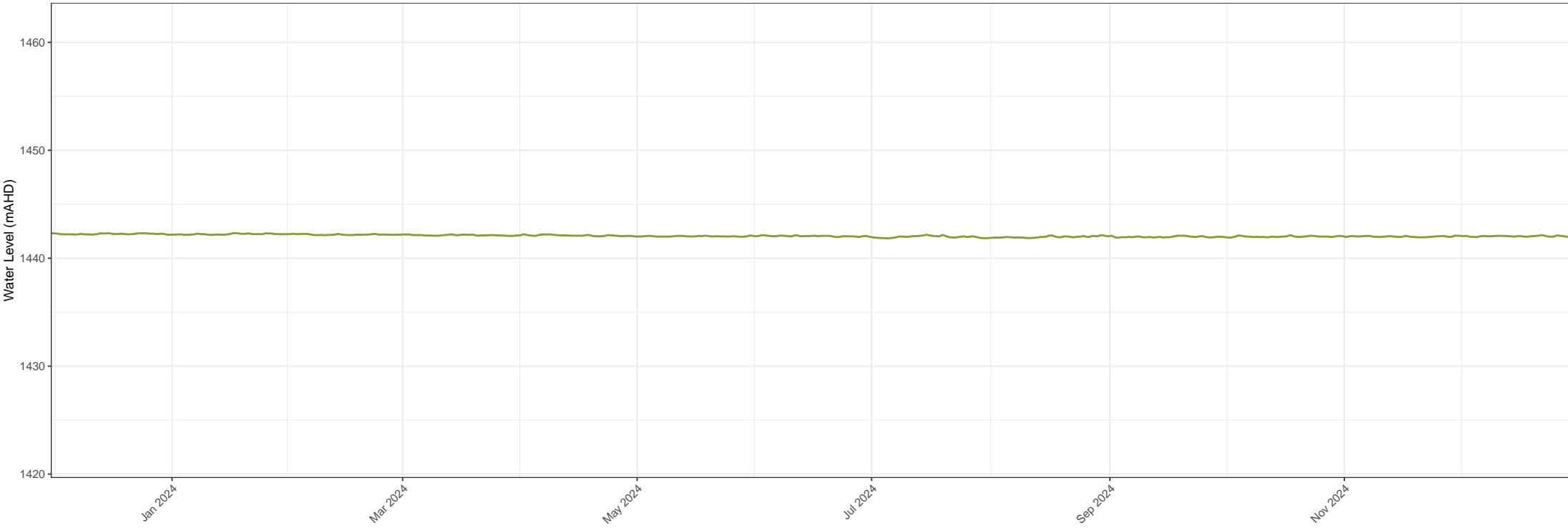
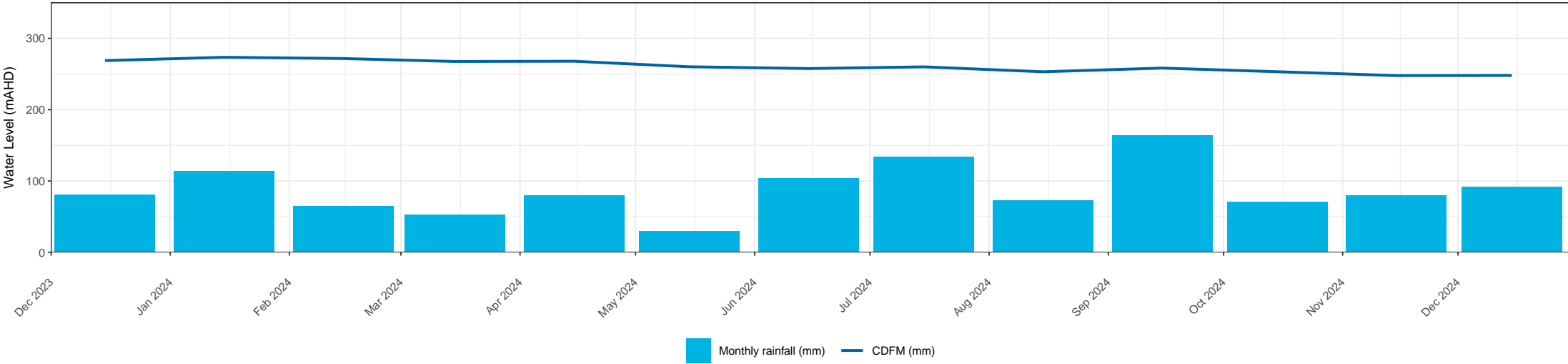




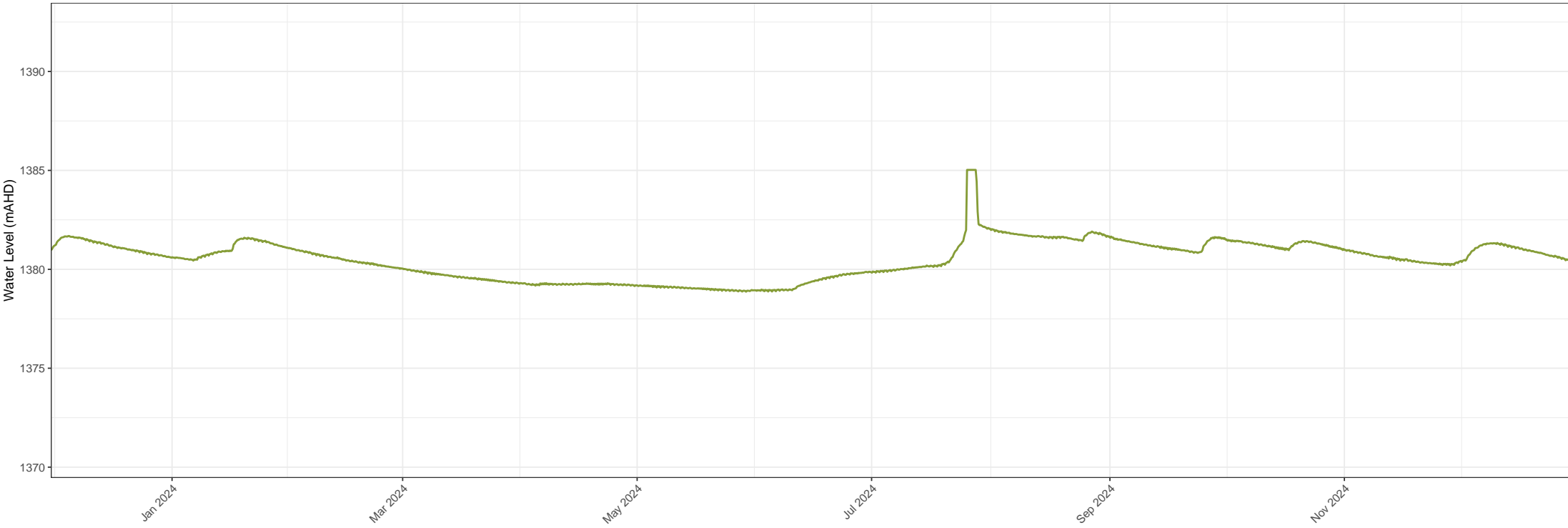
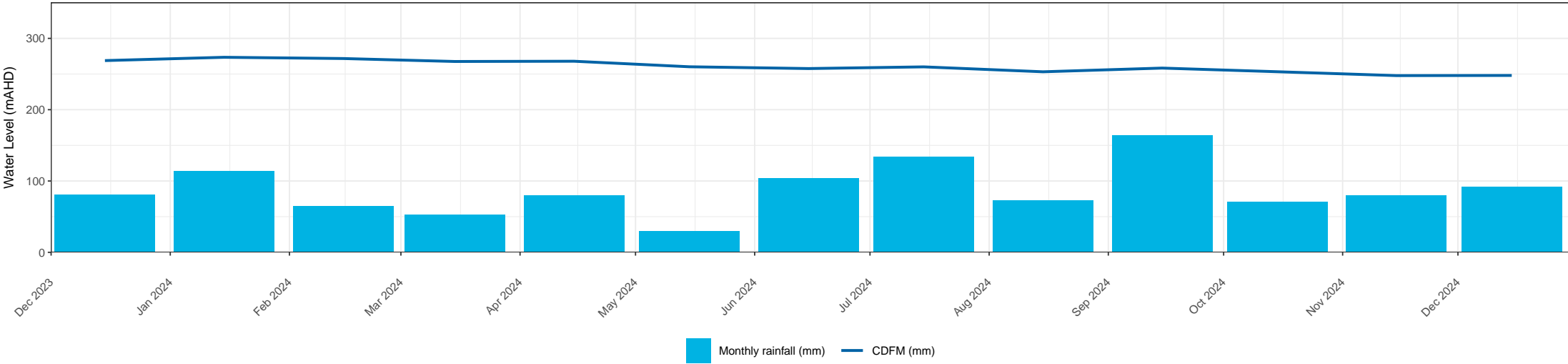




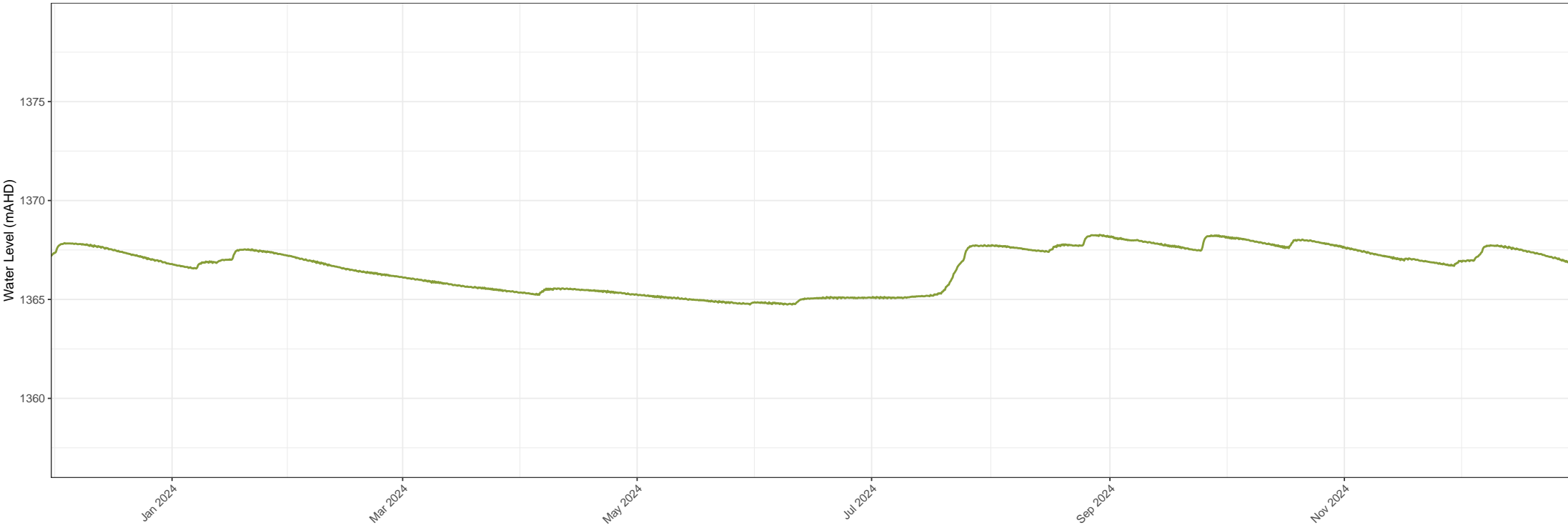
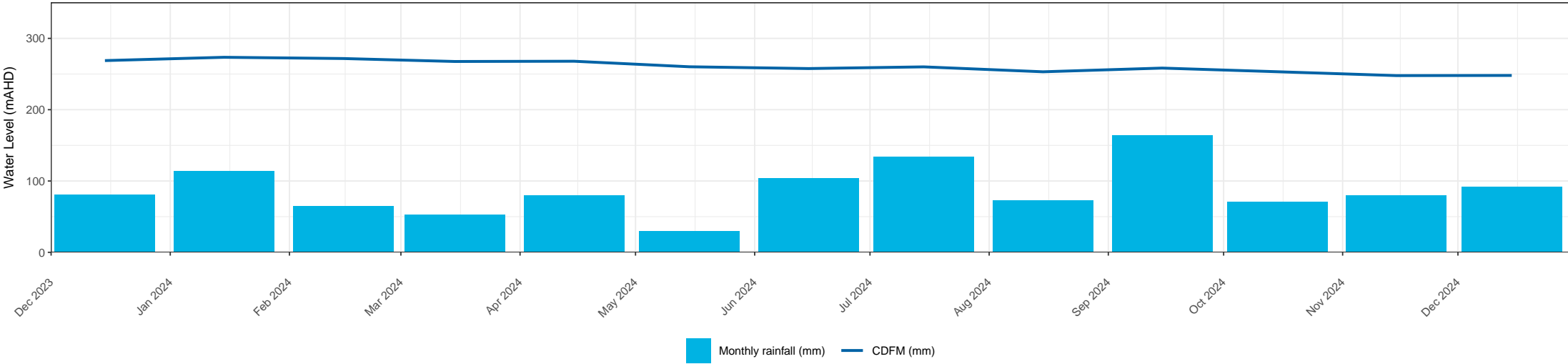




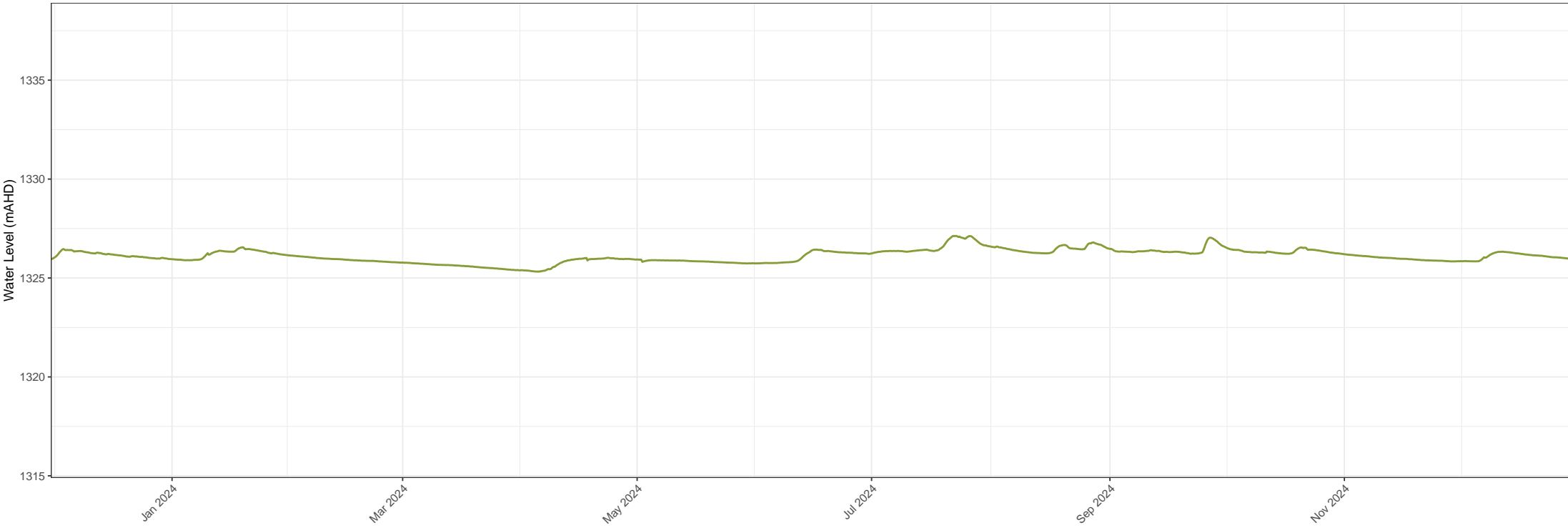
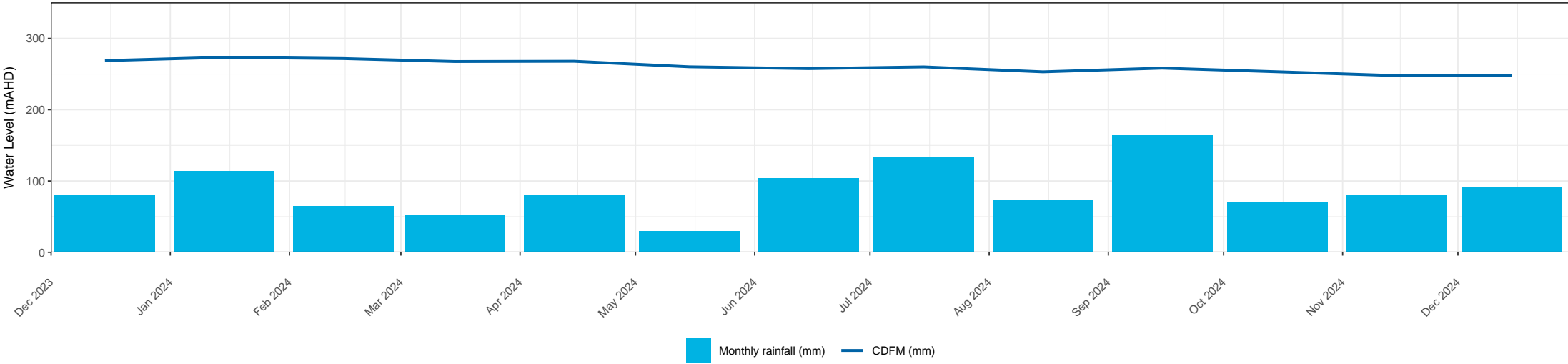
MB01C groundwater level times series data
 Snowy 2.0 – Snowy Hydro Limited
 Groundwater monitoring and management
 Figure A– MB01C



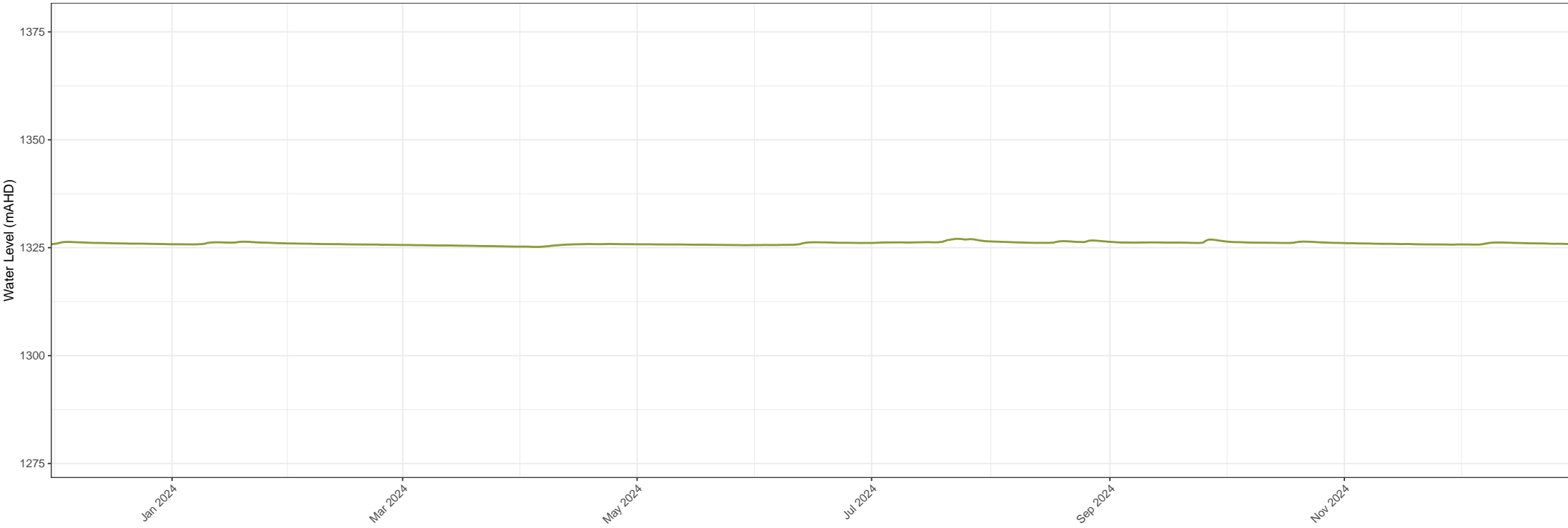
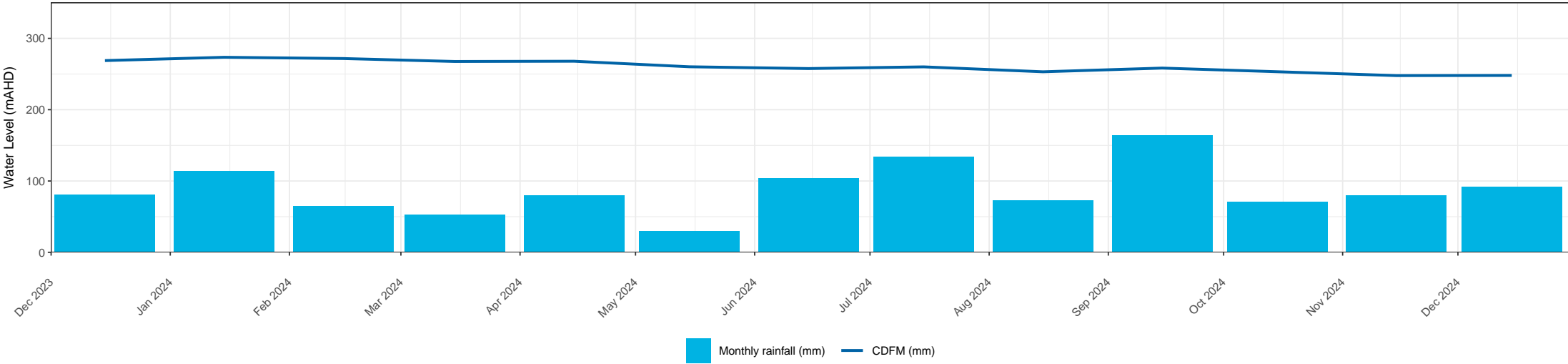
MB02 groundwater level times series data
 Snowy 2.0 – Snowy Hydro Limited
 Groundwater monitoring and management
 Figure A– MB02

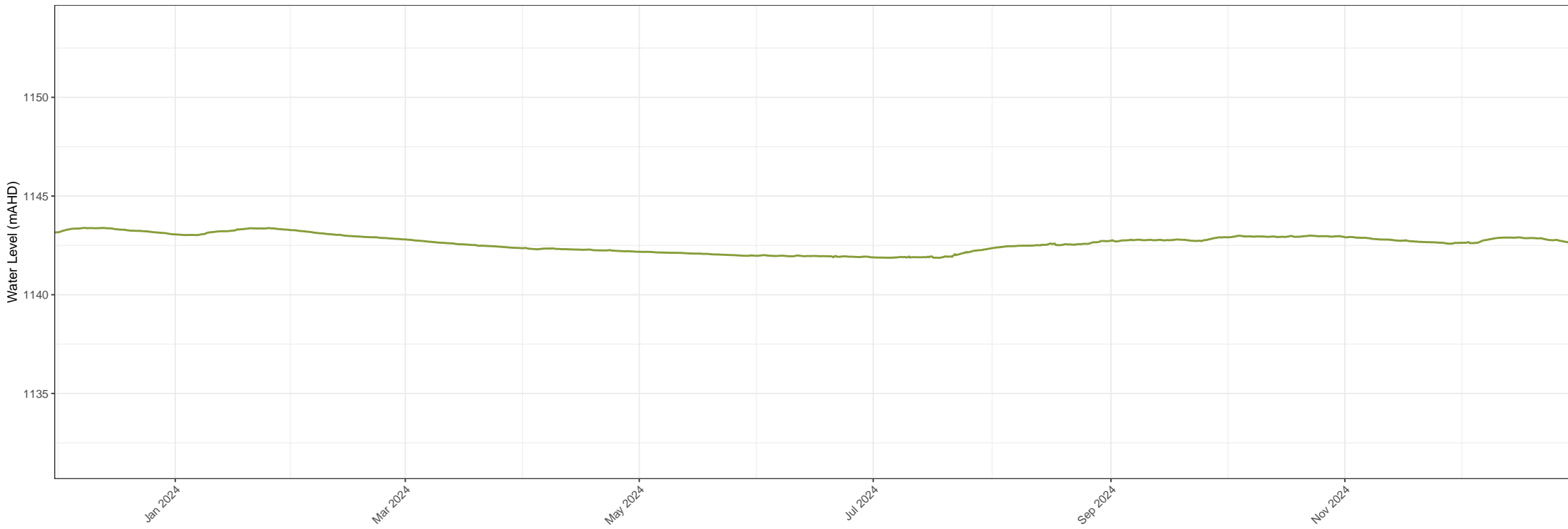
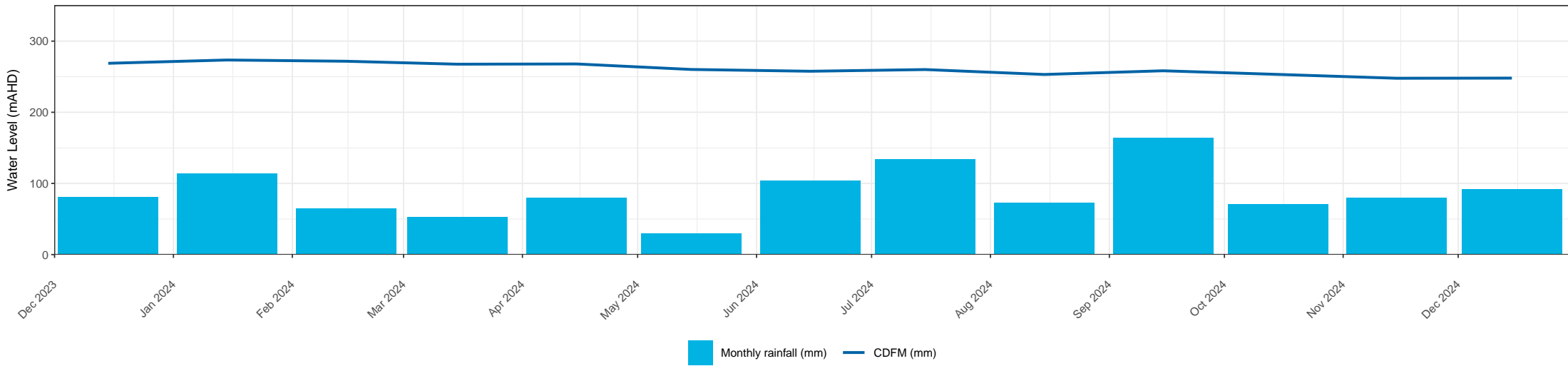


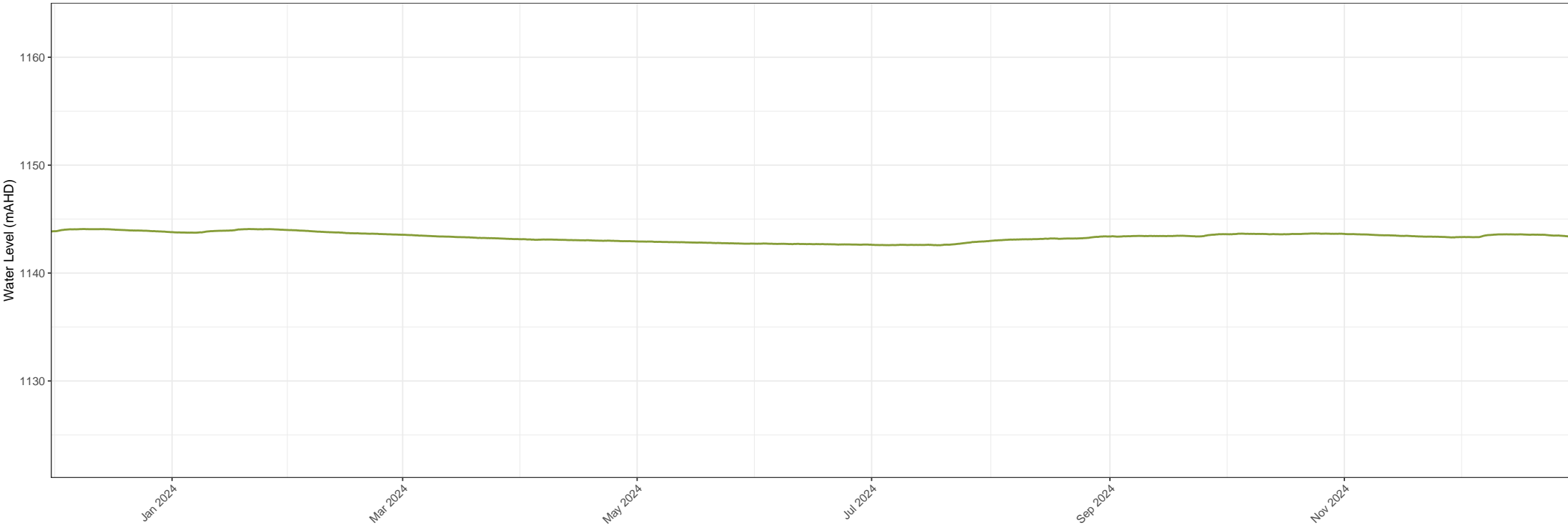
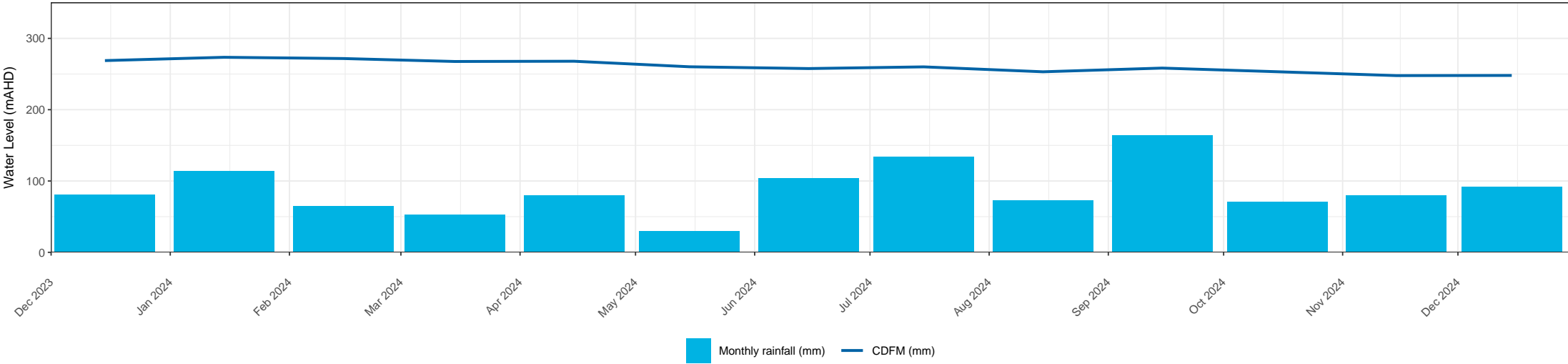
MB03 groundwater level times series data
 Snowy 2.0 – Snowy Hydro Limited
 Groundwater monitoring and management
 Figure A– MB03

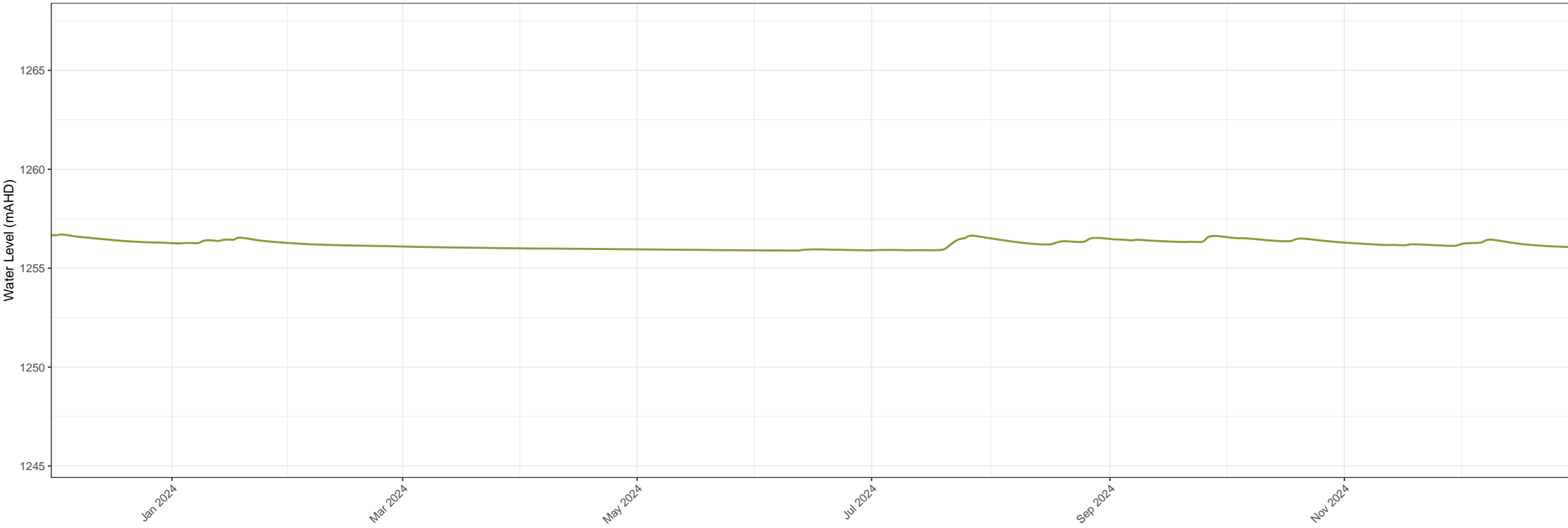
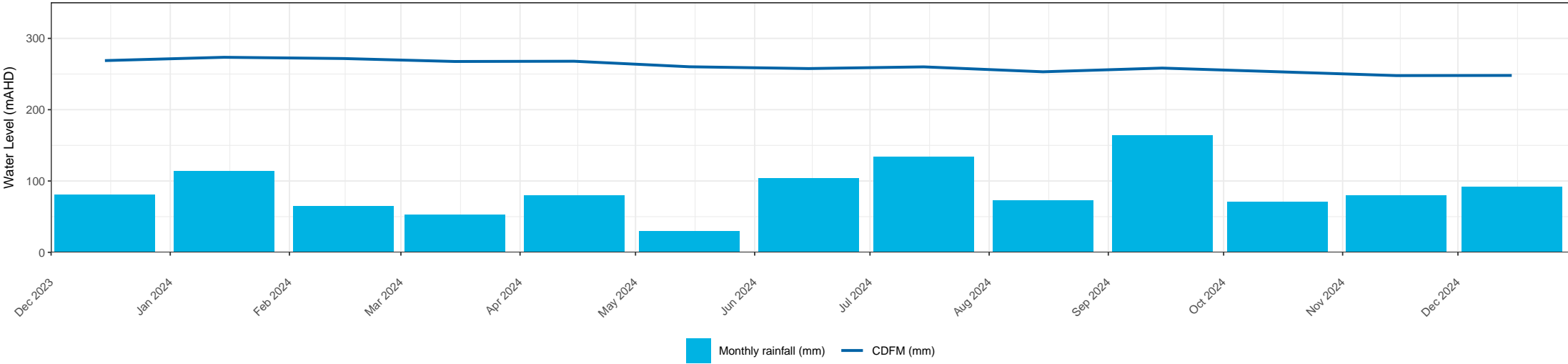


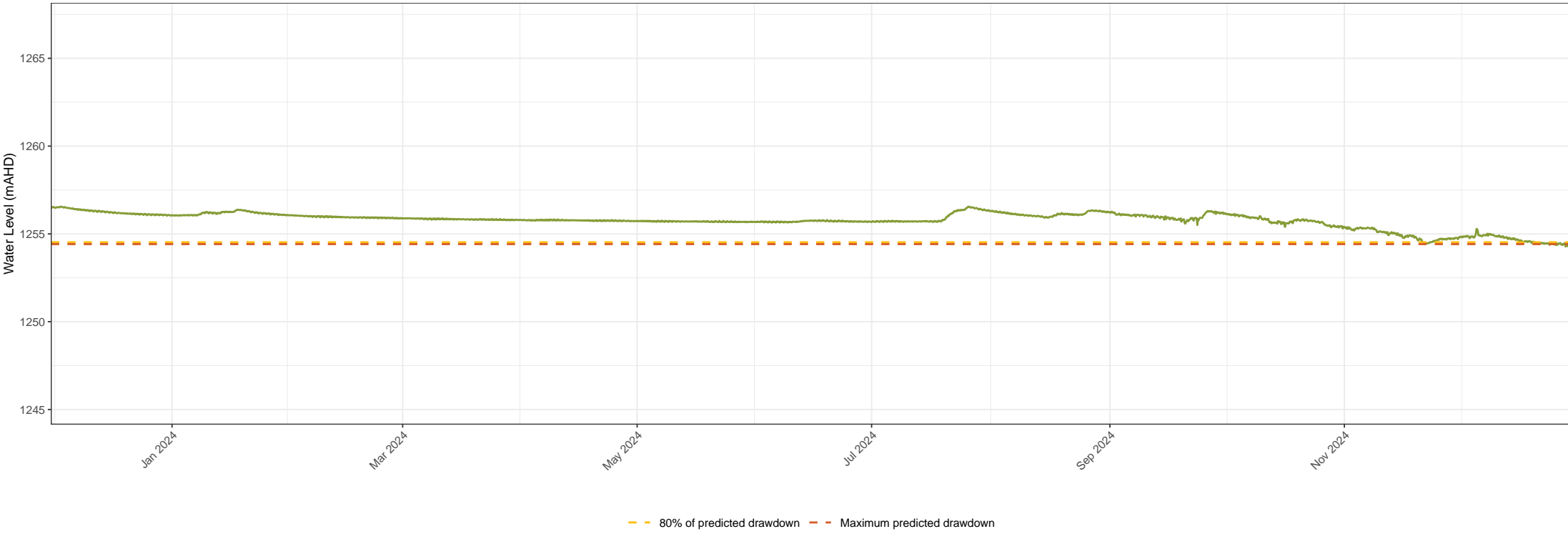
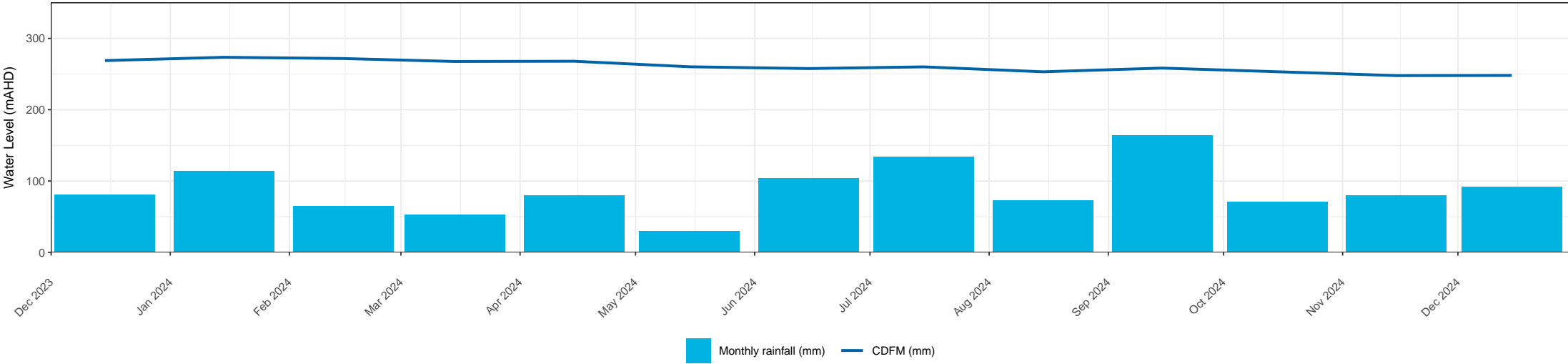
MB04A groundwater level times series data
 Snowy 2.0 – Snowy Hydro Limited
 Groundwater monitoring and management
 Figure A– MB04A



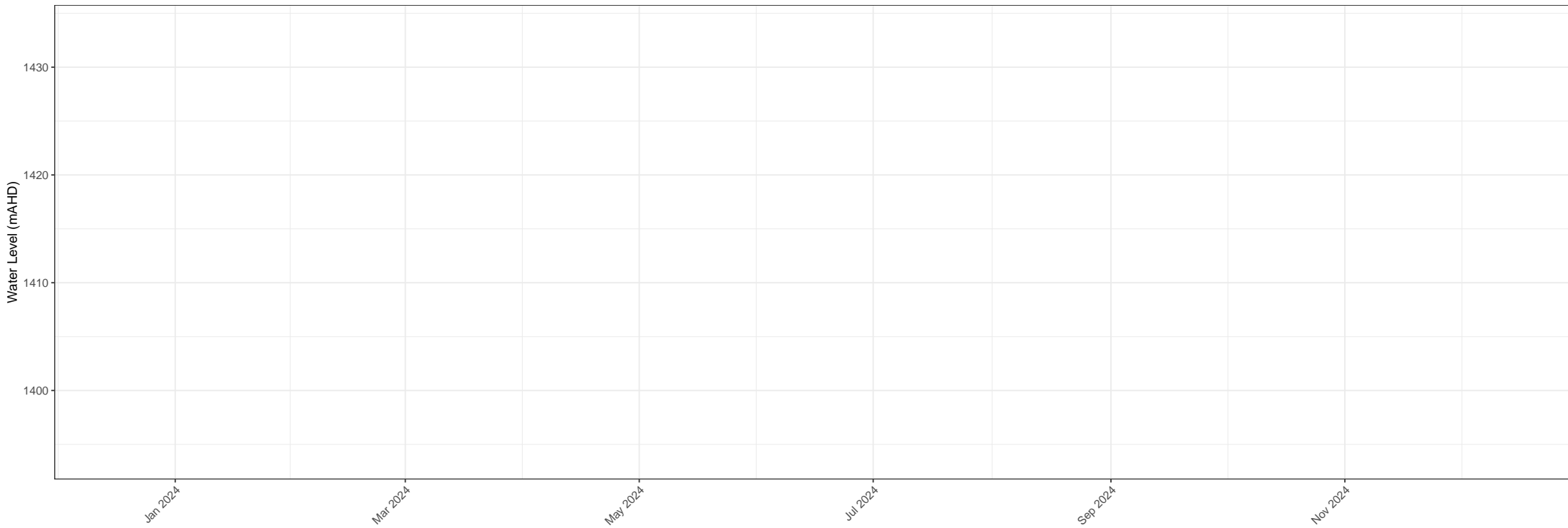
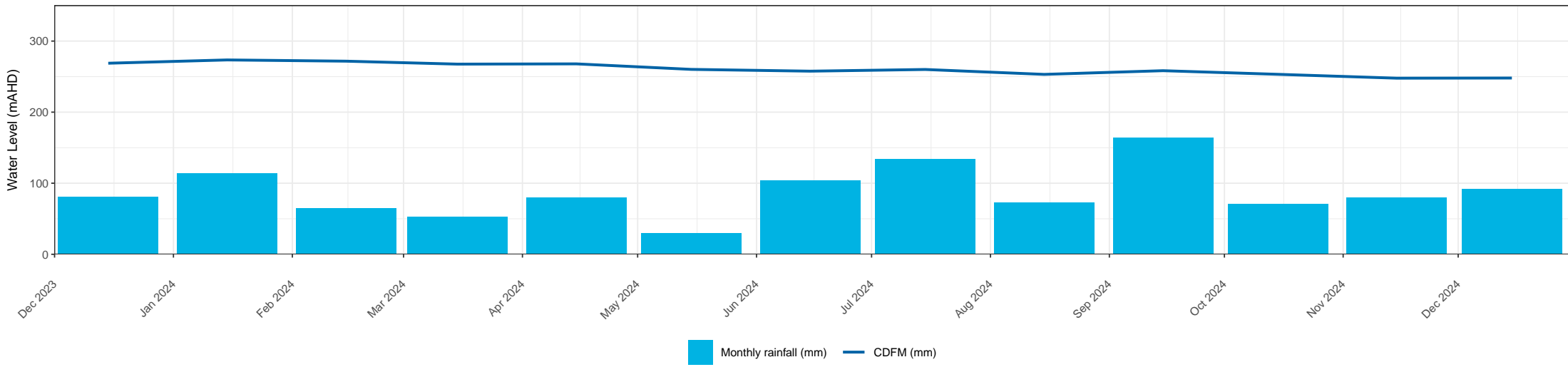


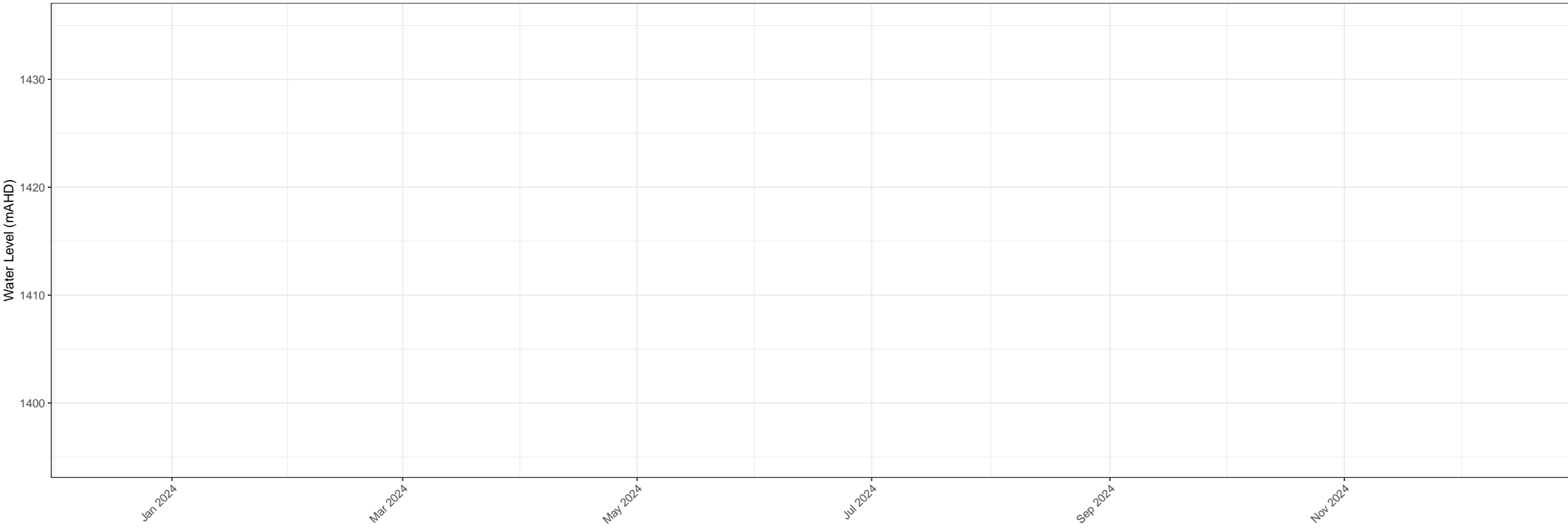
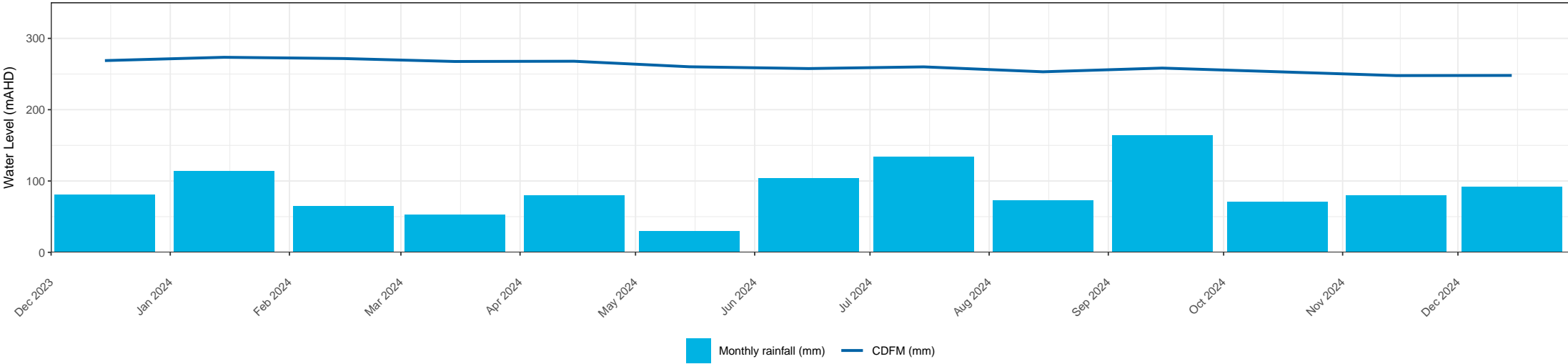


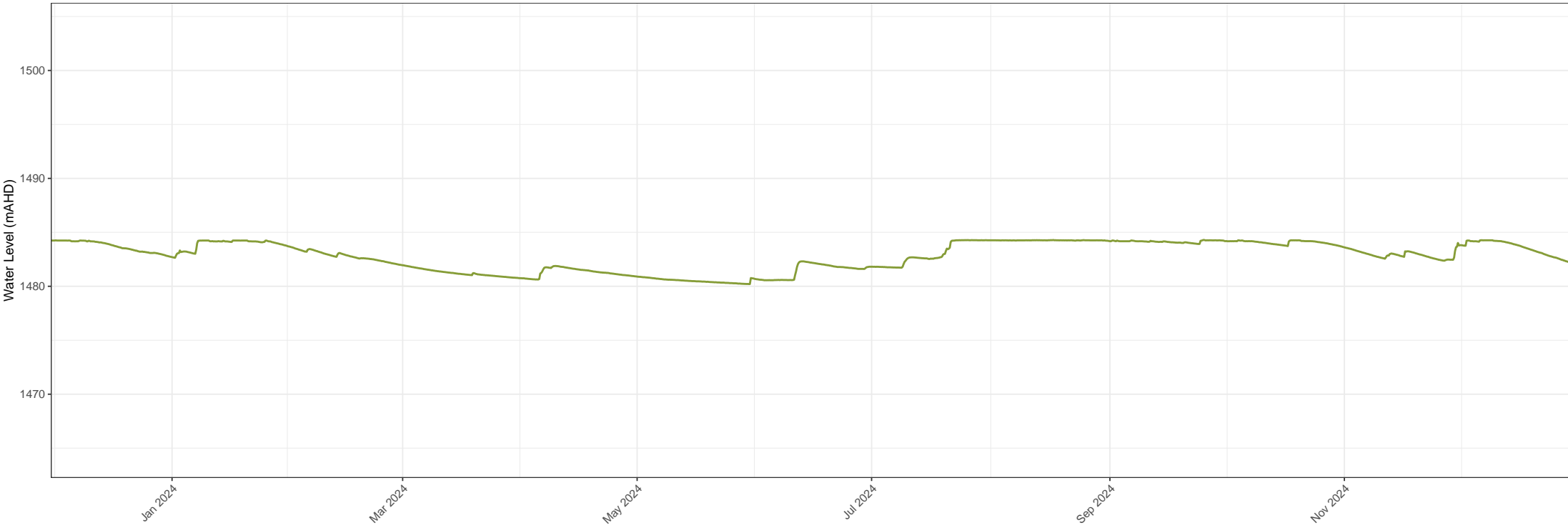
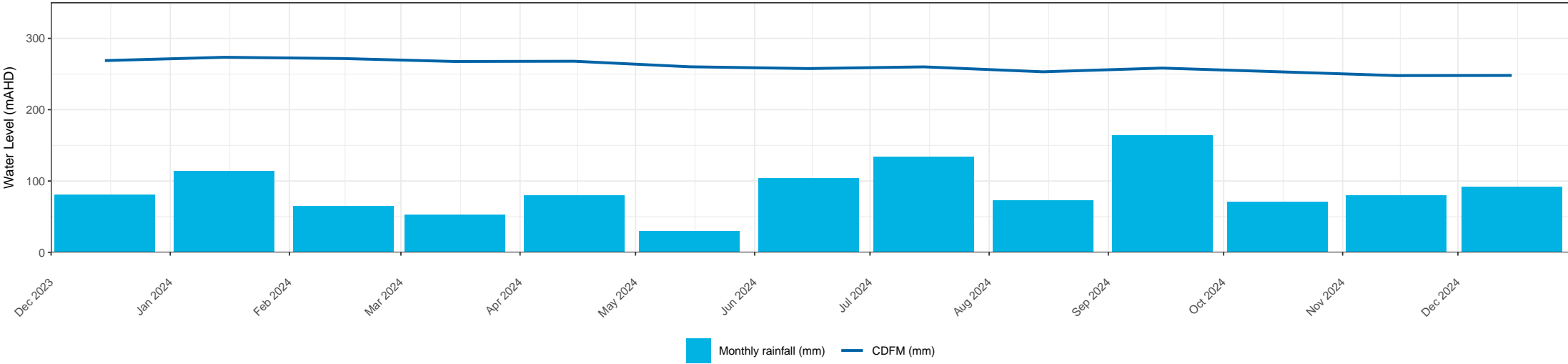


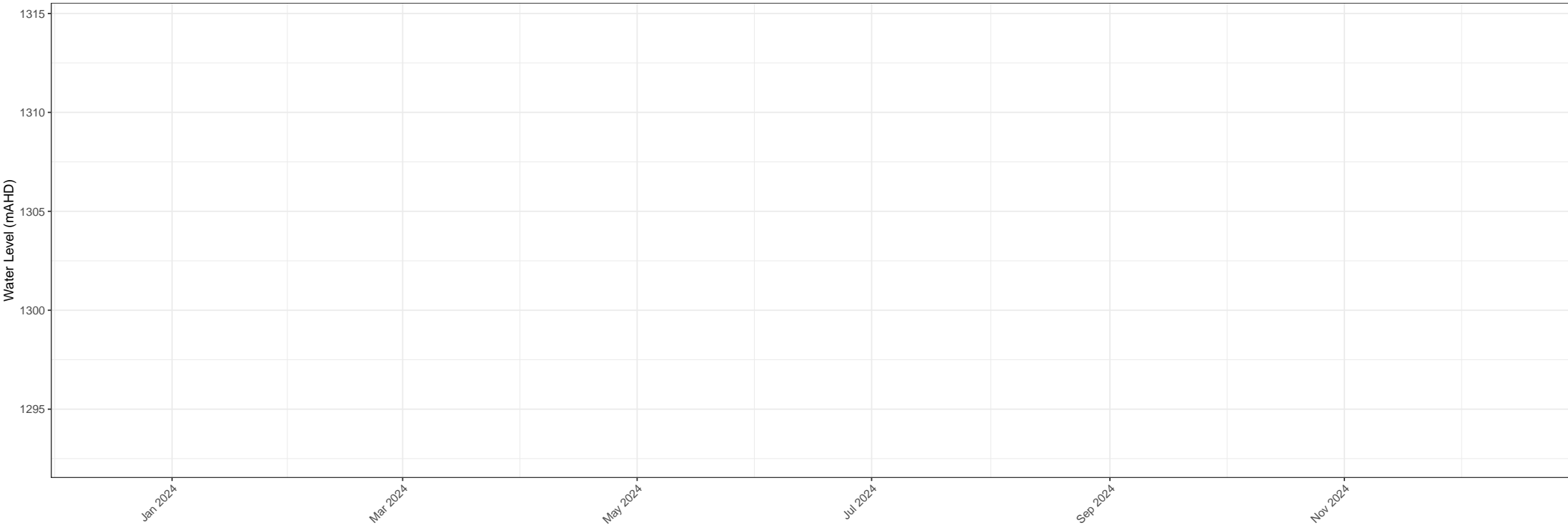
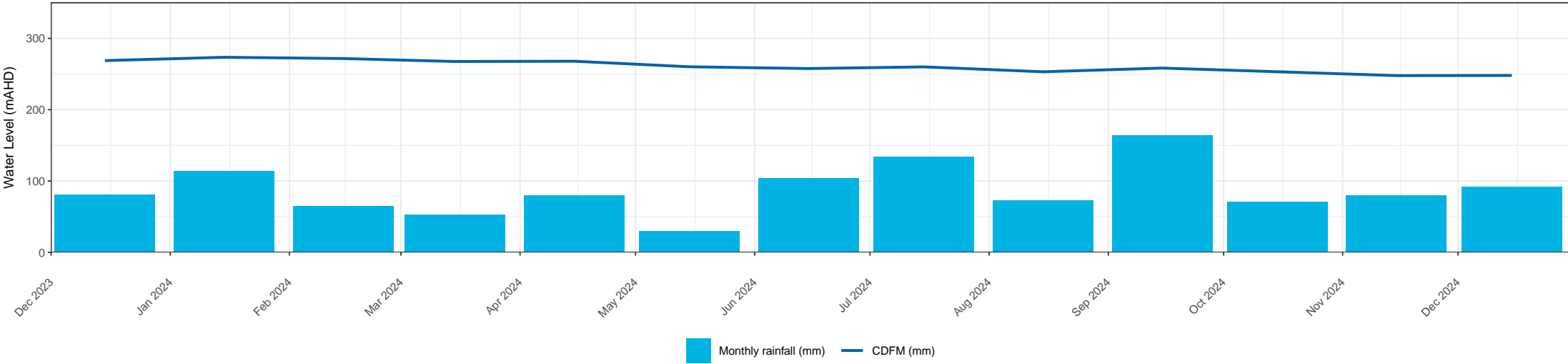


MB07B groundwater level times series data
 Snowy 2.0 – Snowy Hydro Limited
 Groundwater monitoring and management
 Figure A– MB07B



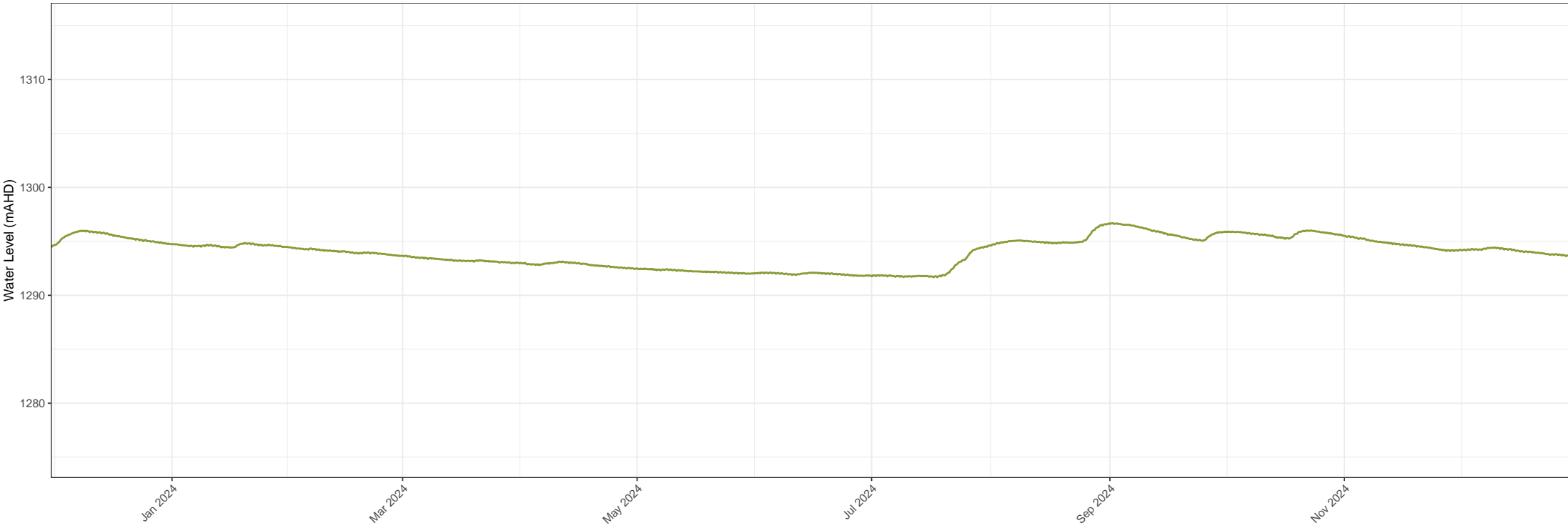
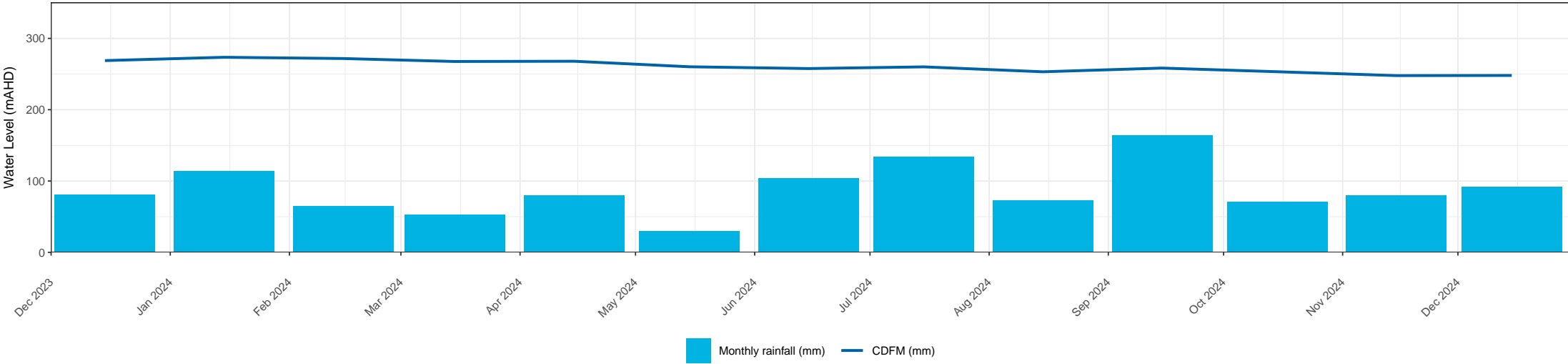


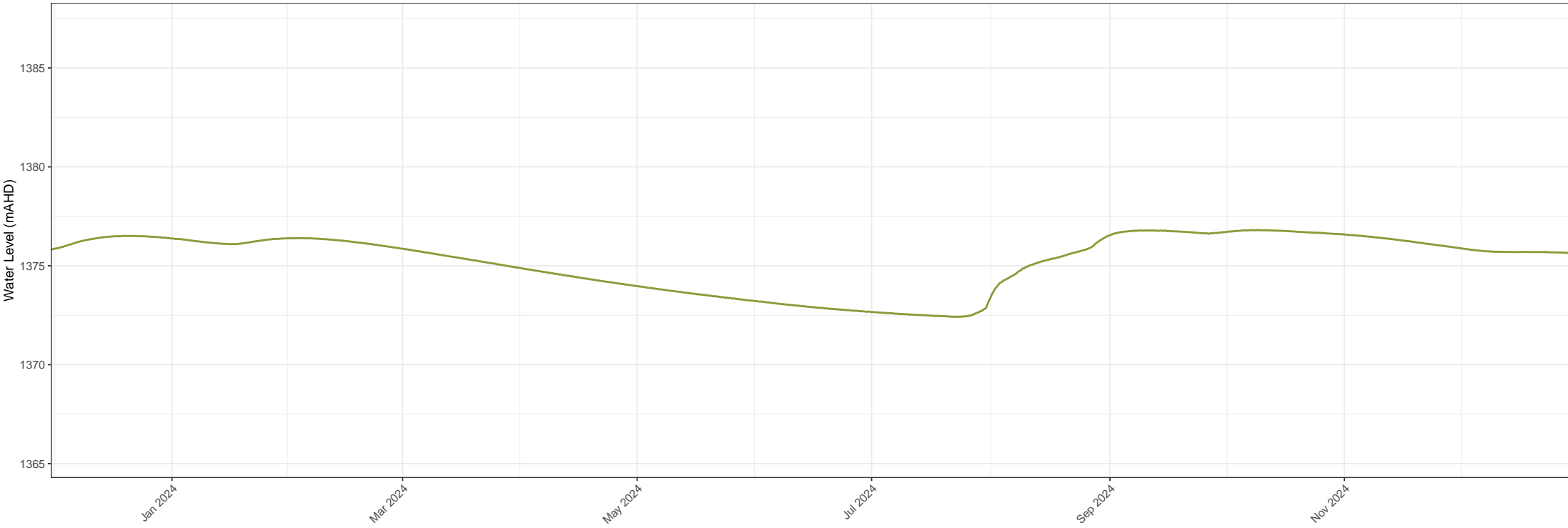
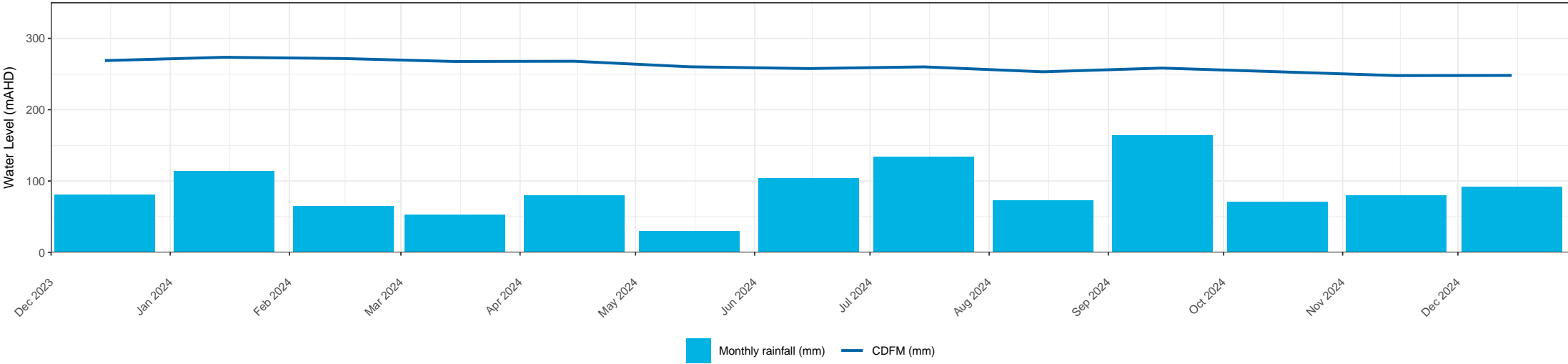


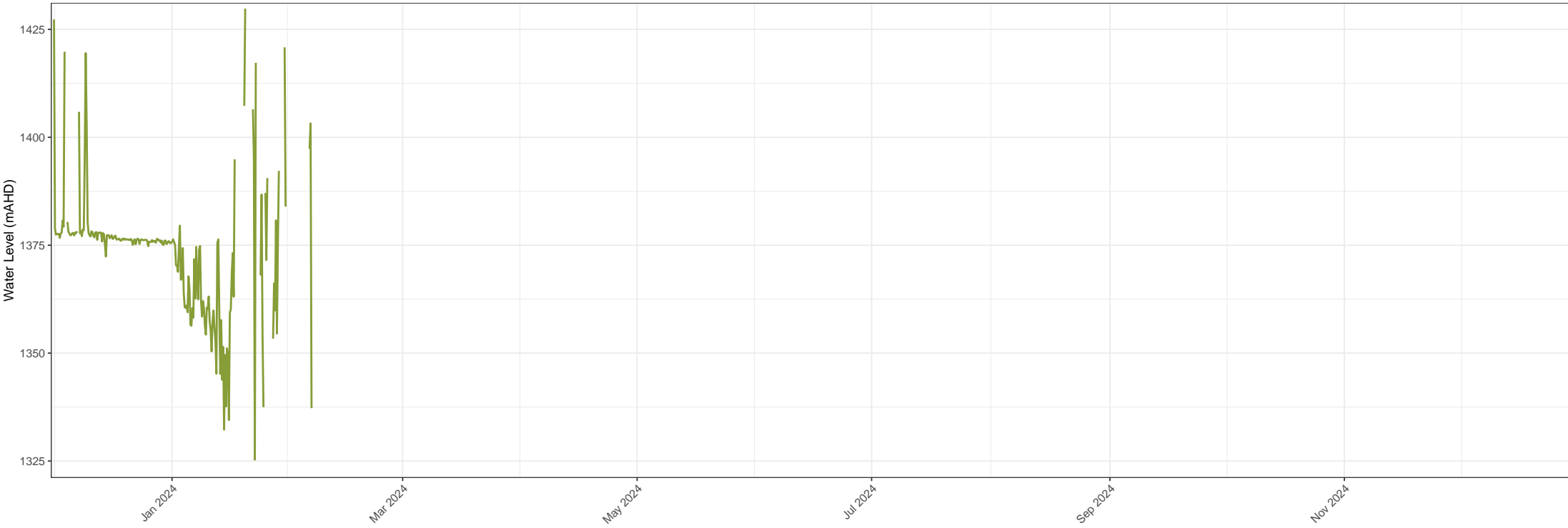
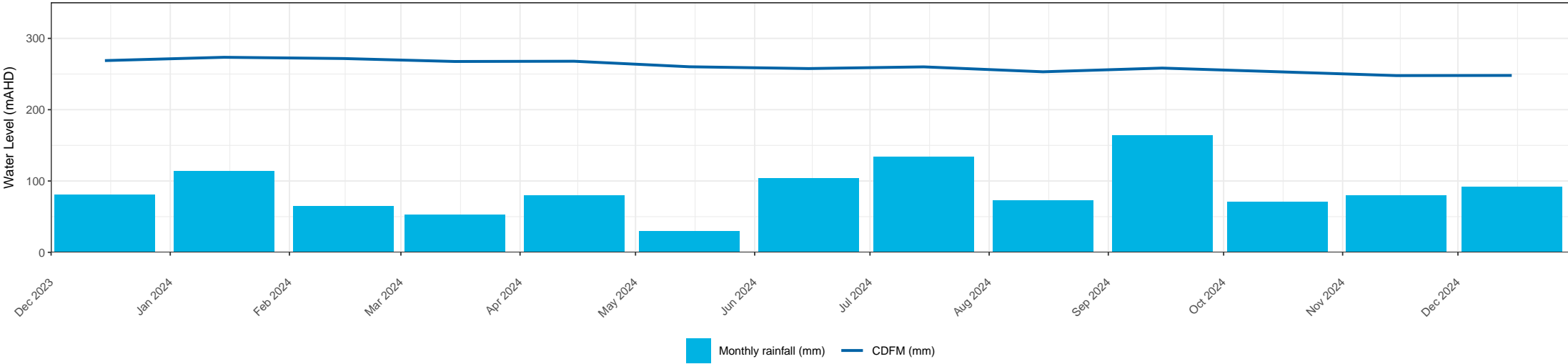


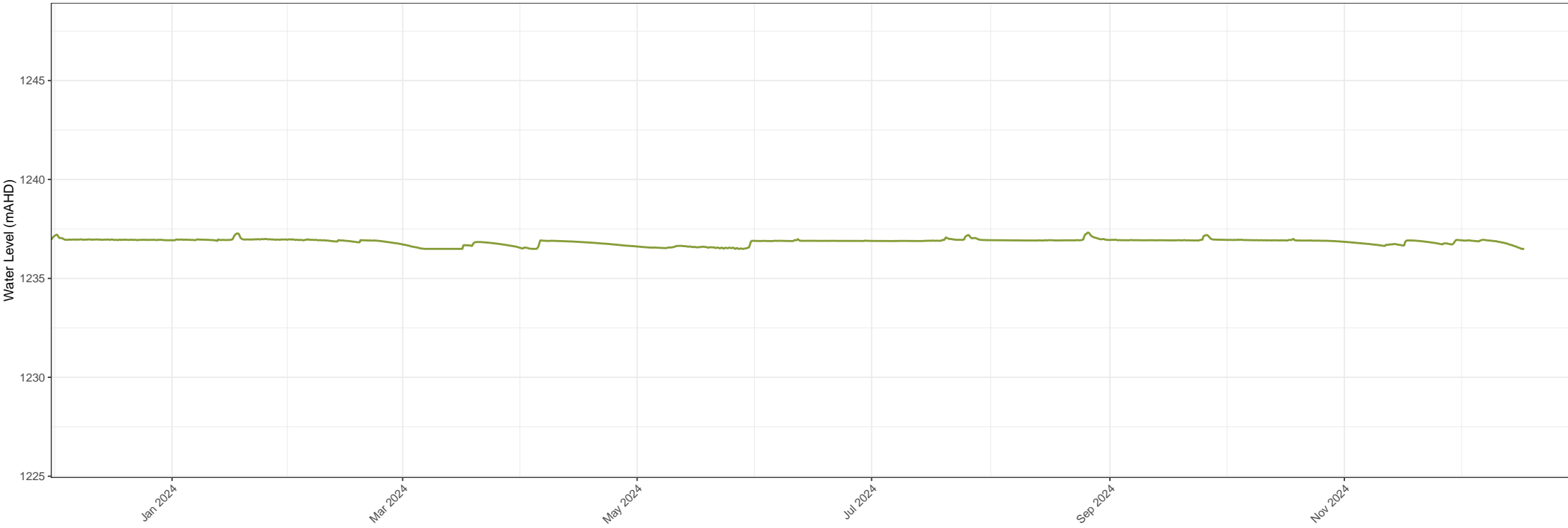
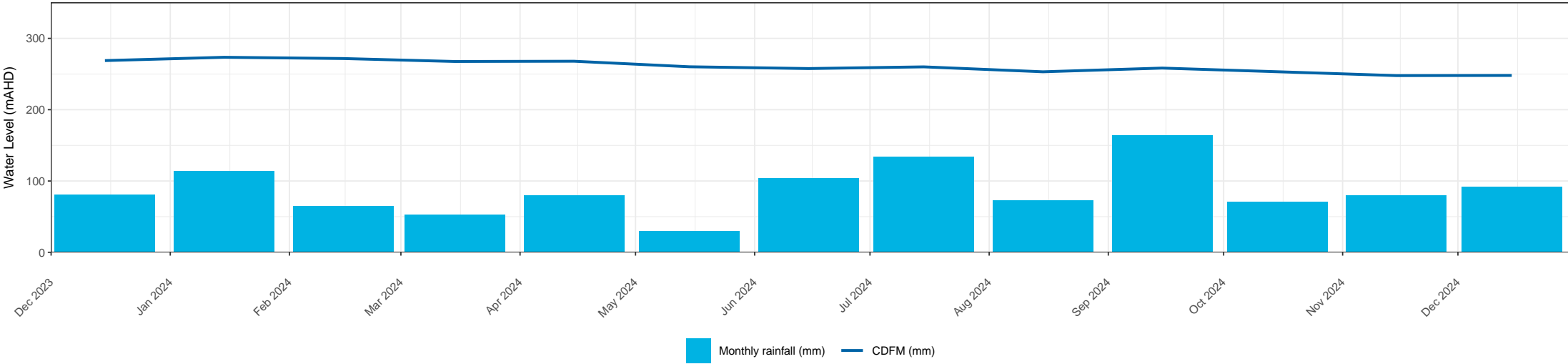
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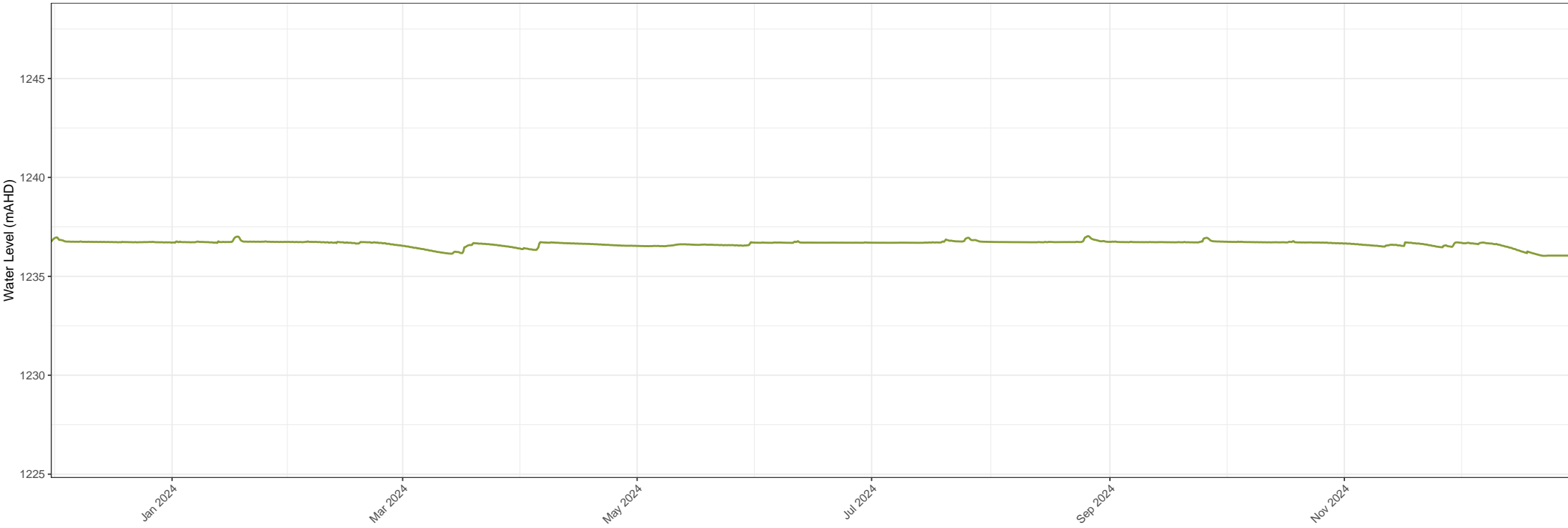
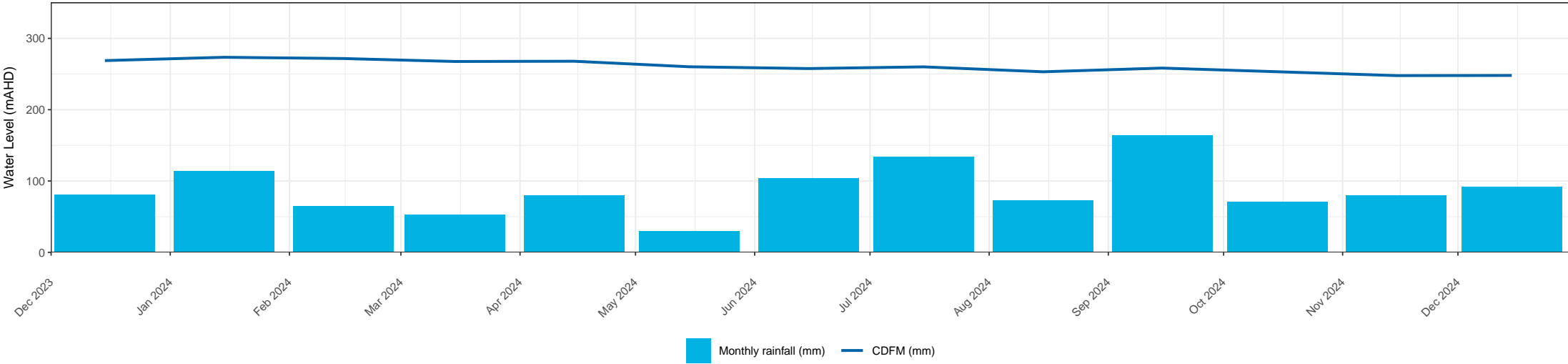
MB12A groundwater level times series data
 Snowy 2.0 – Snowy Hydro Limited
 Groundwater monitoring and management
 Figure A– MB12A

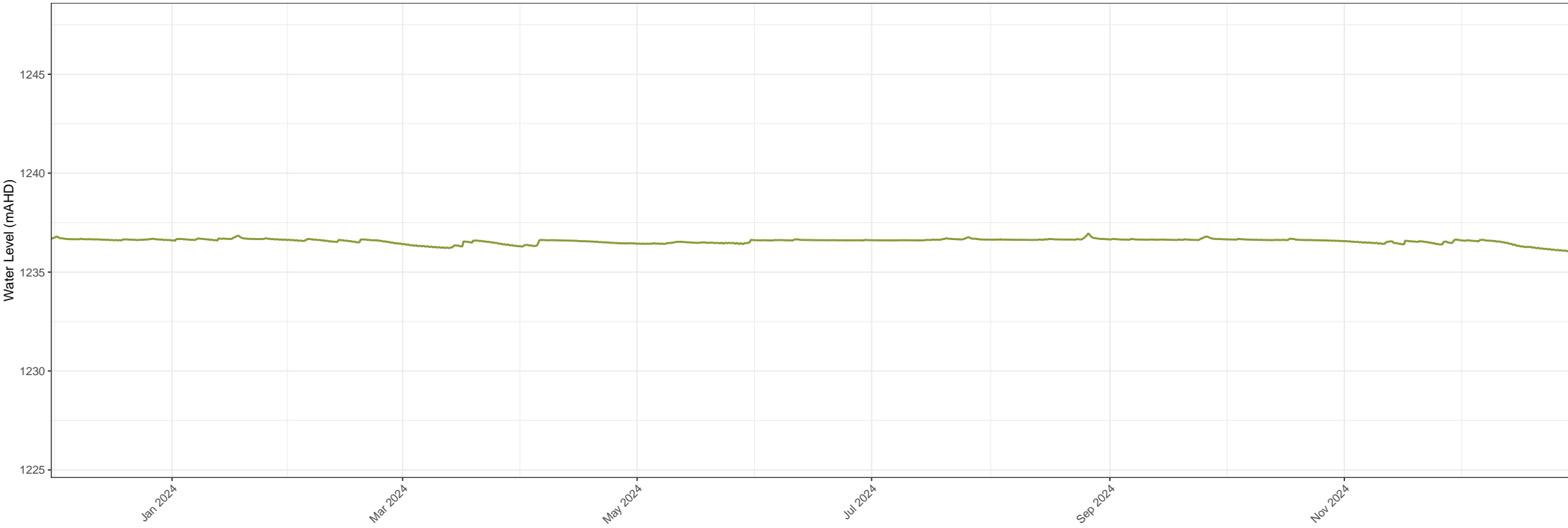
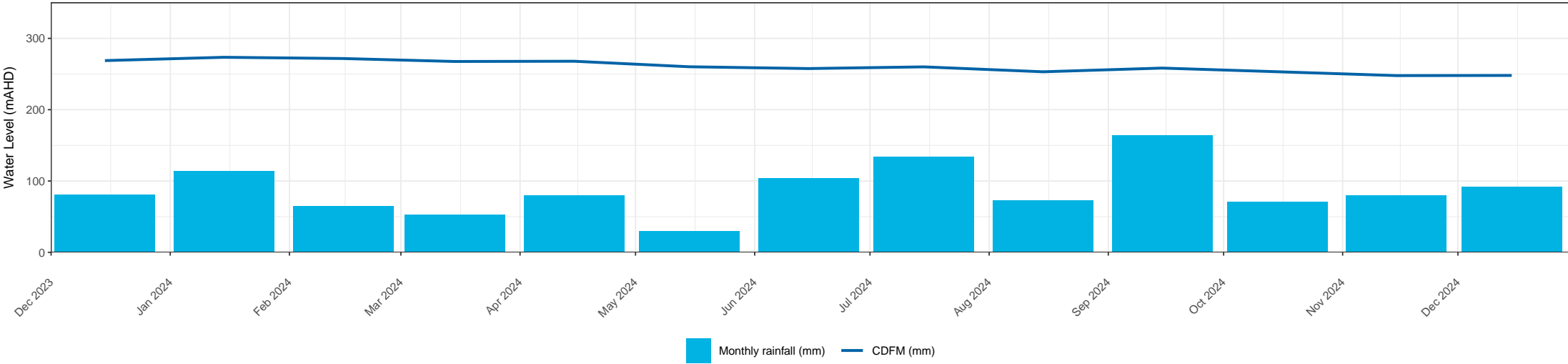




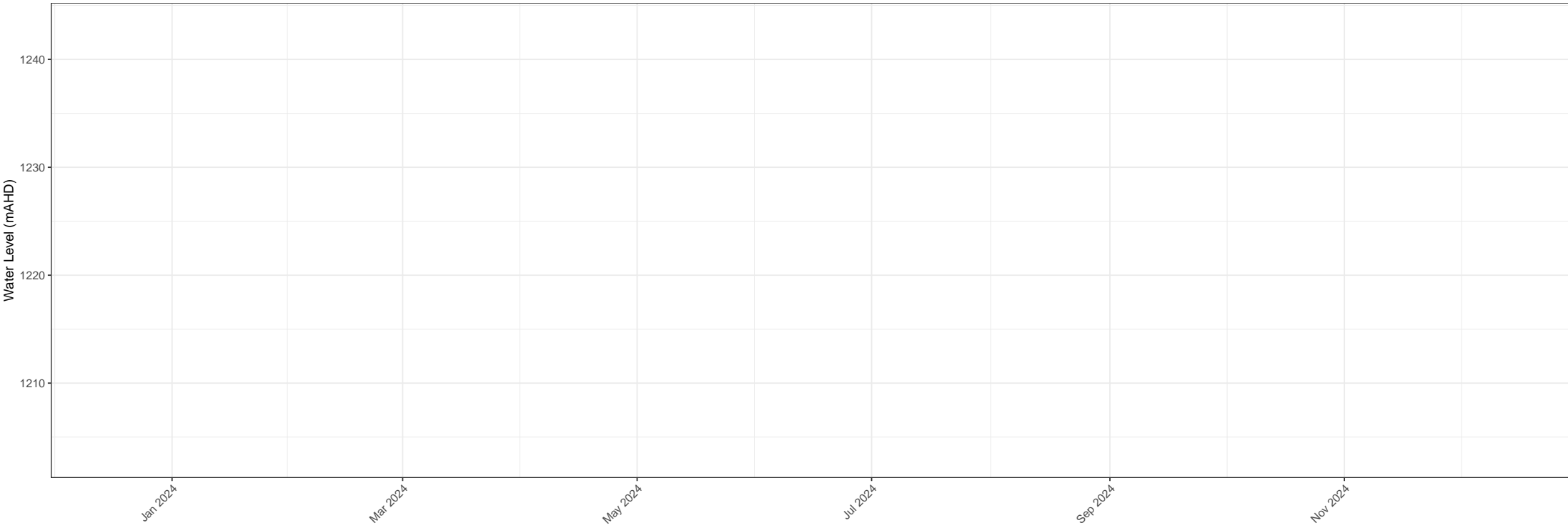
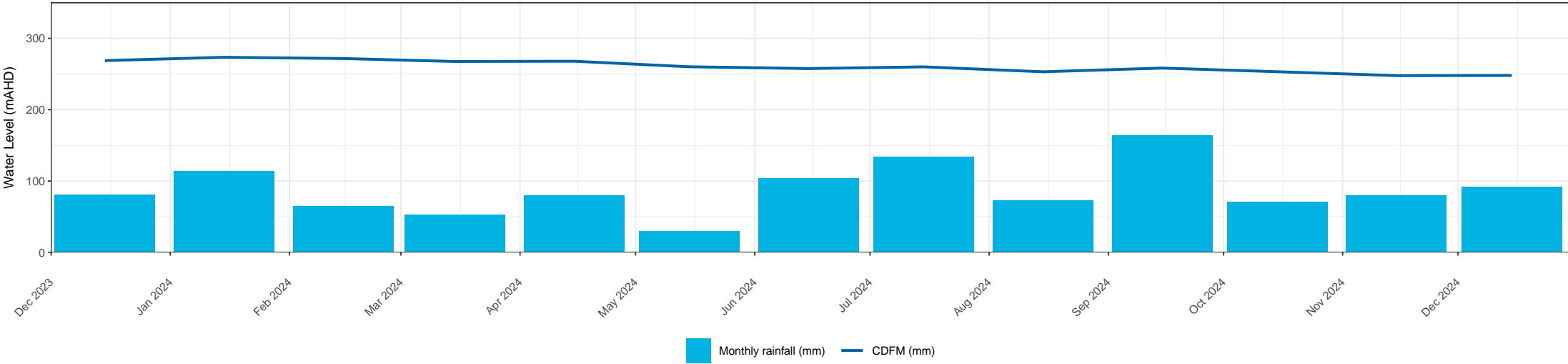






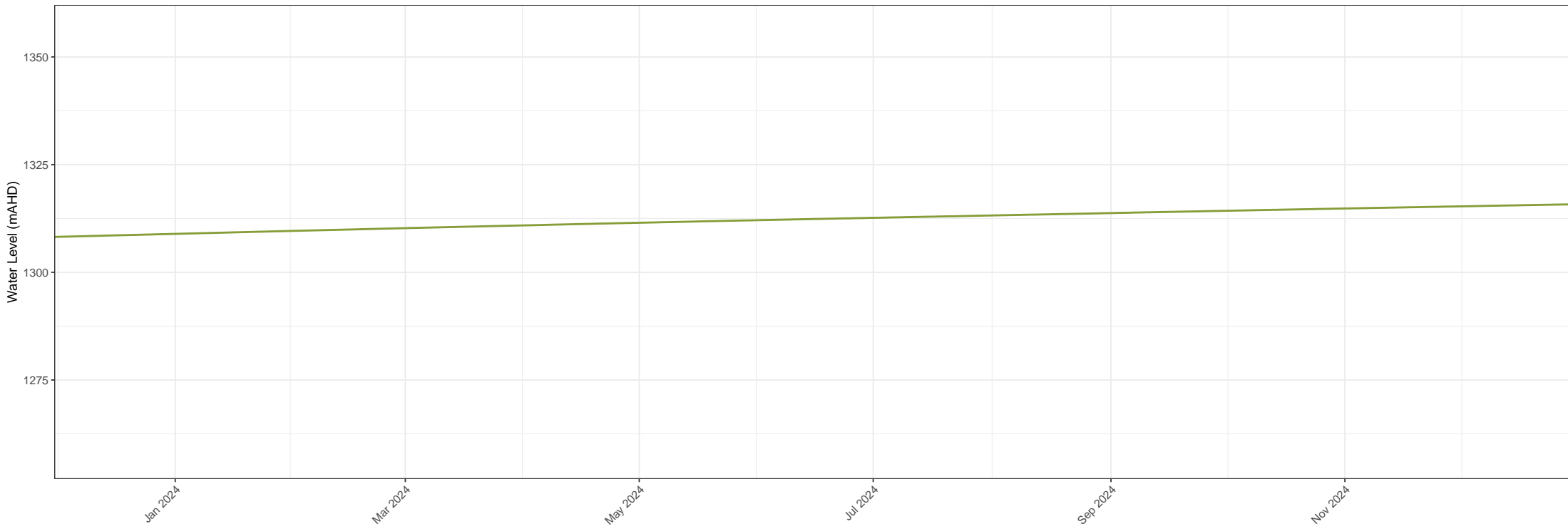
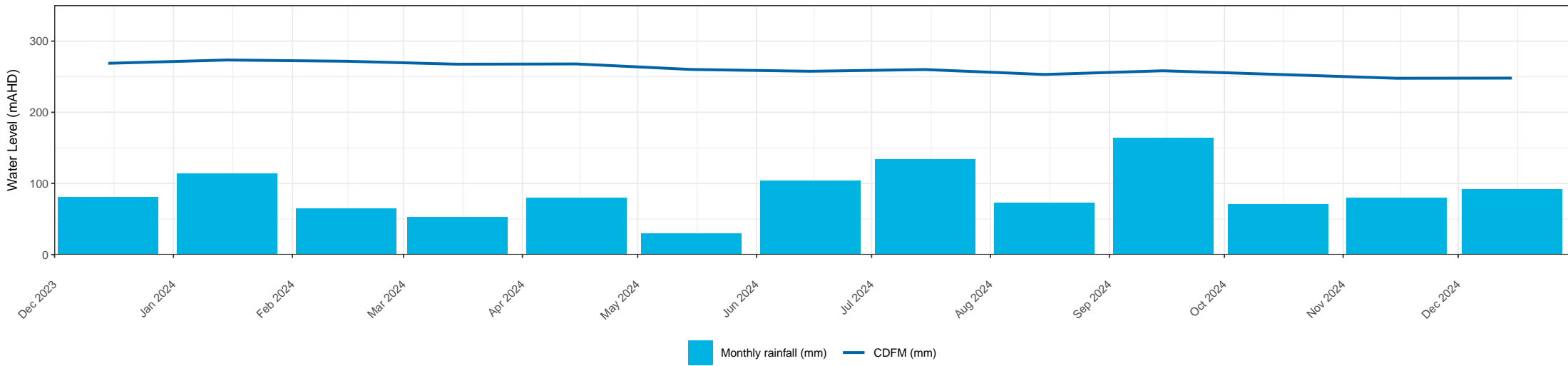


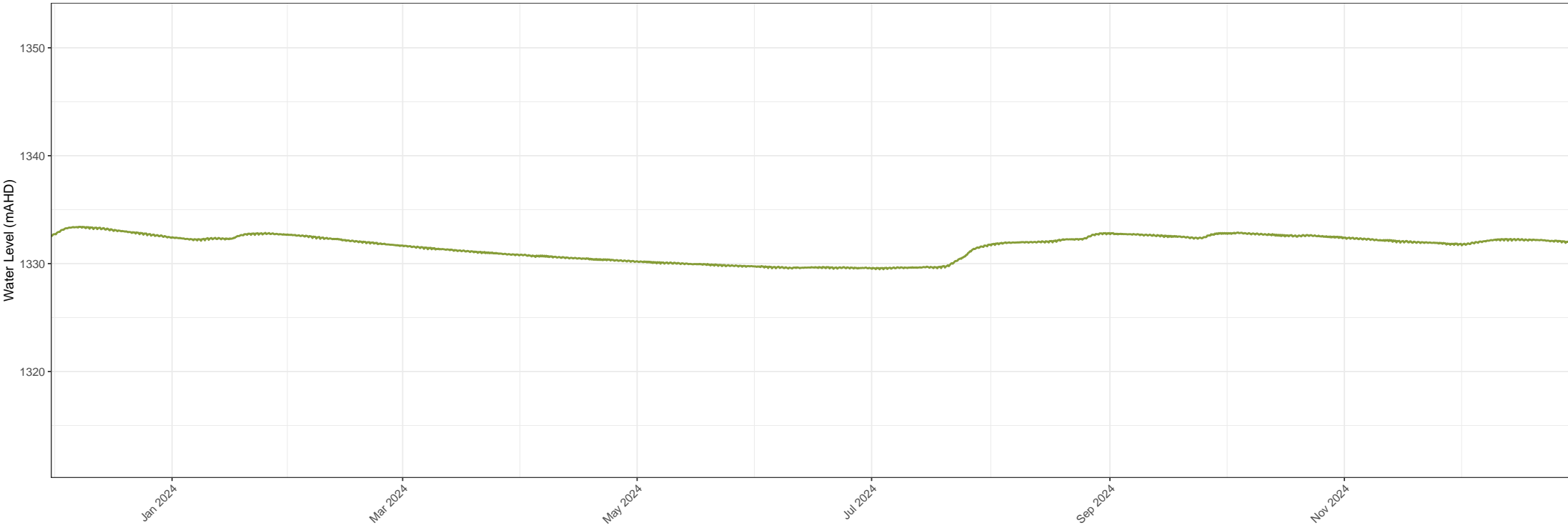
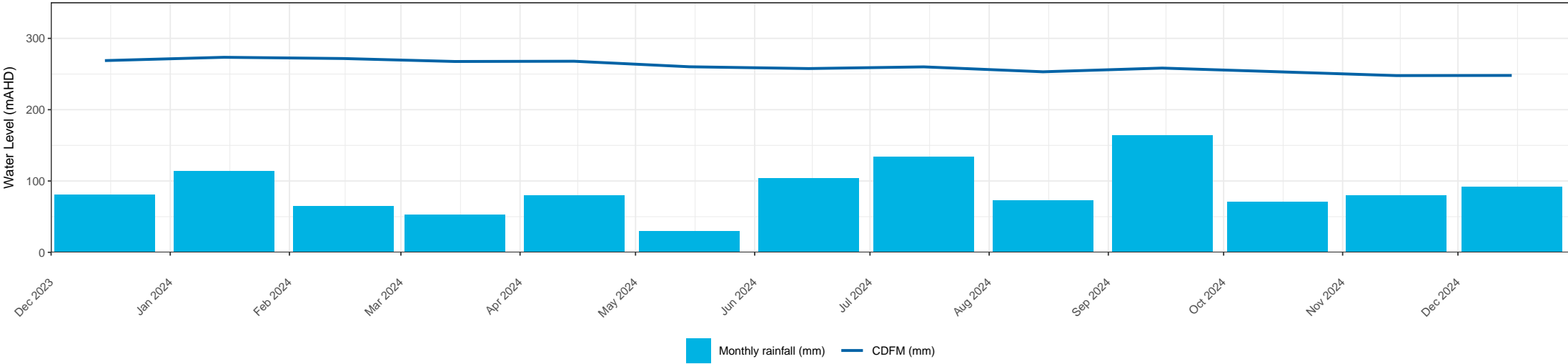
NC03 groundwater level times series data
 Snowy 2.0 – Snowy Hydro Limited
 Groundwater monitoring and management
 Figure A– NC03

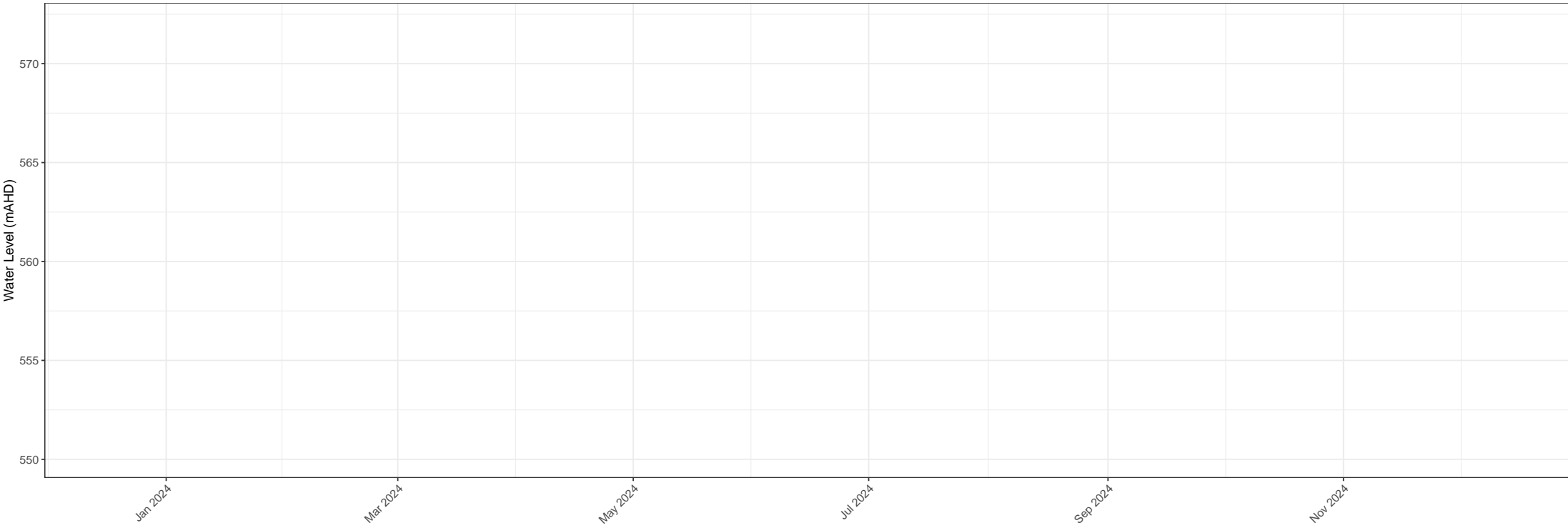
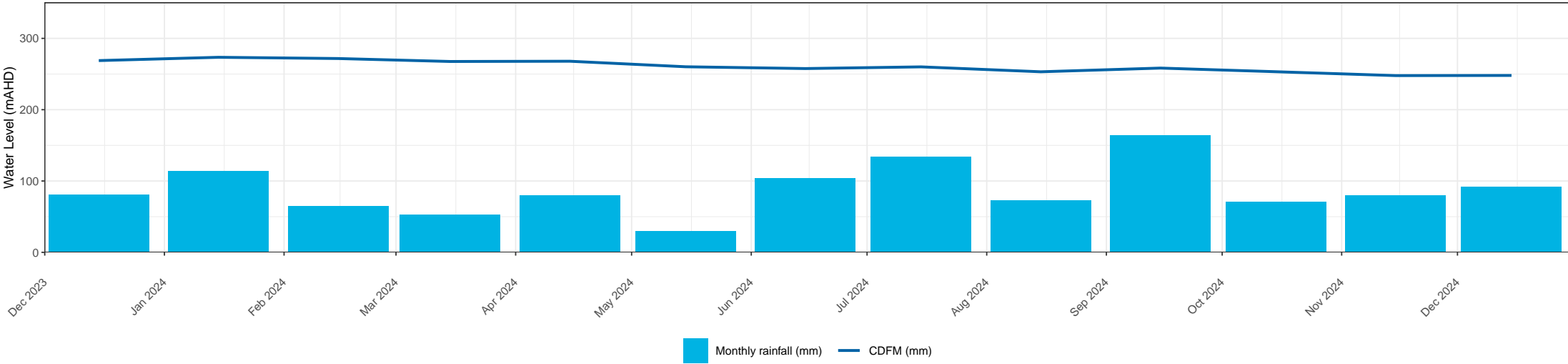


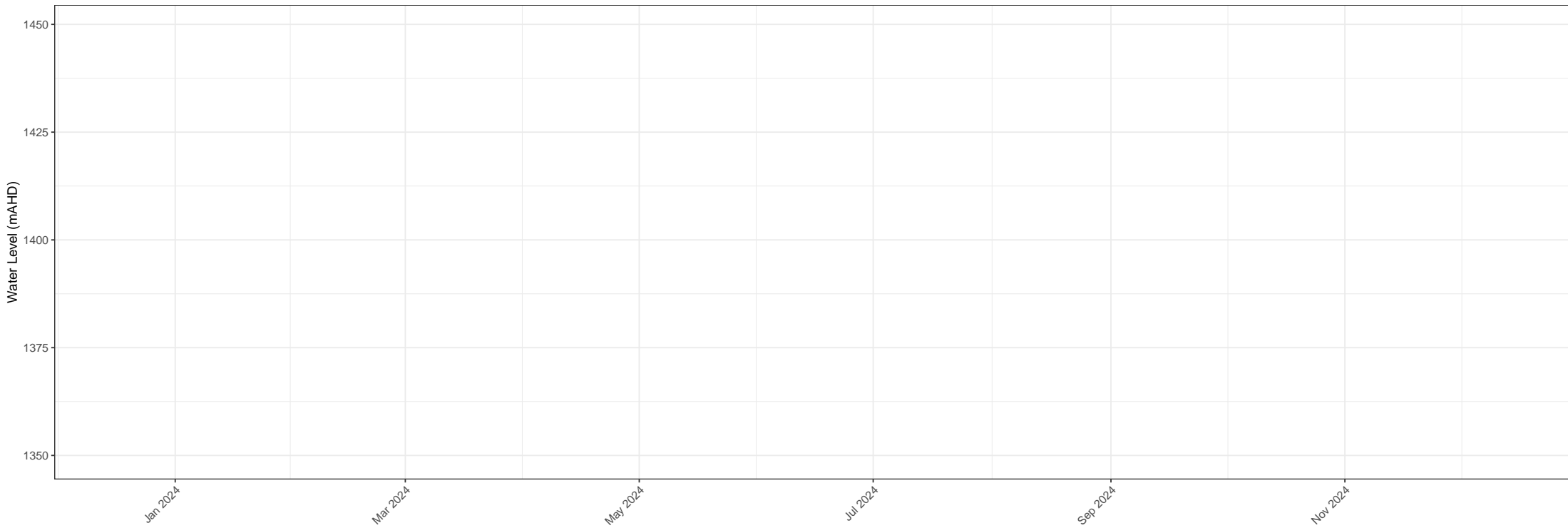
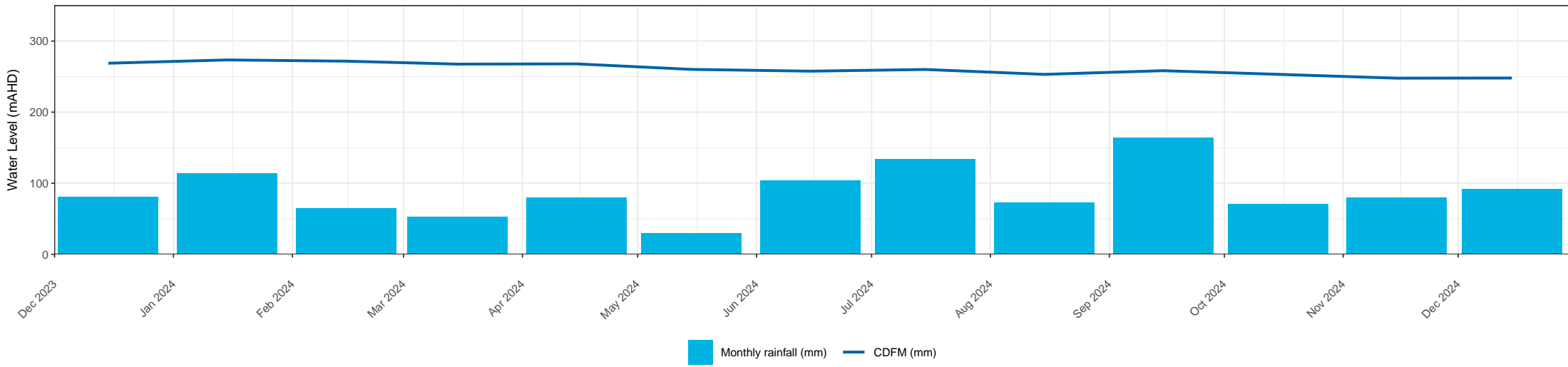
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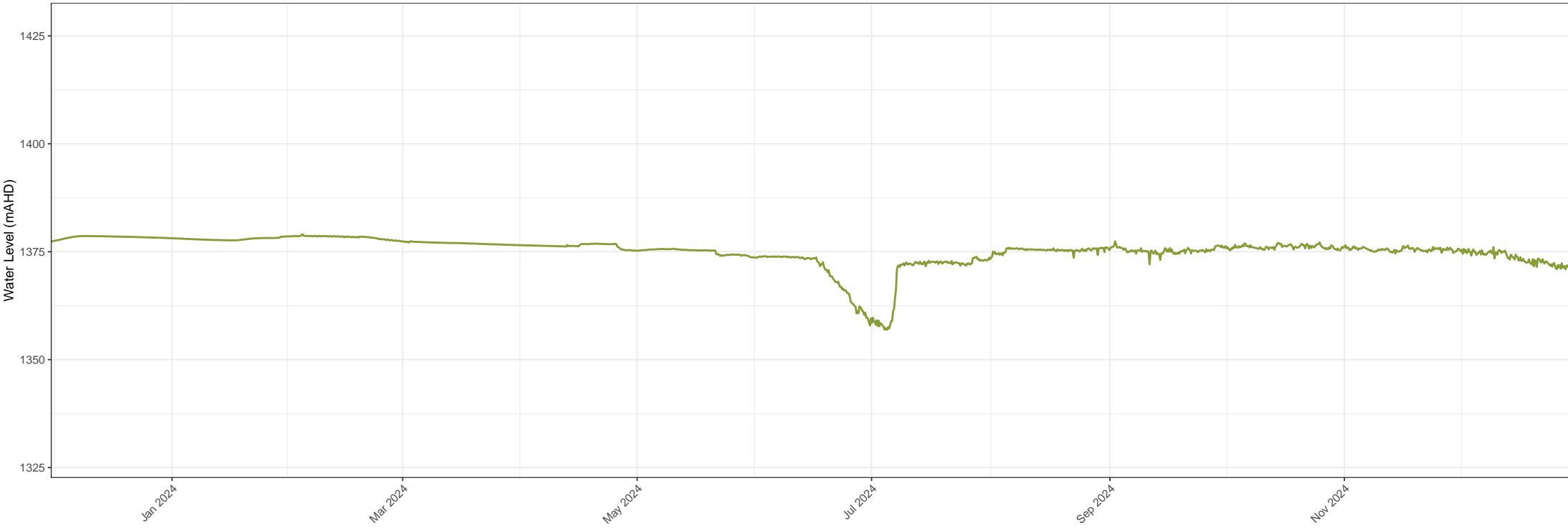
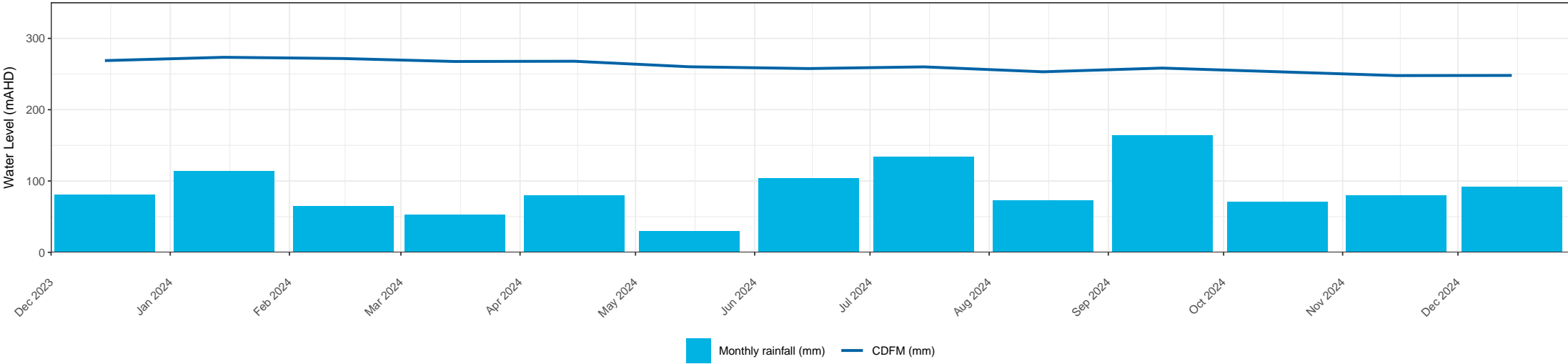
PB01 groundwater level times series data
 Snowy 2.0 – Snowy Hydro Limited
 Groundwater monitoring and management
 Figure A– PB01

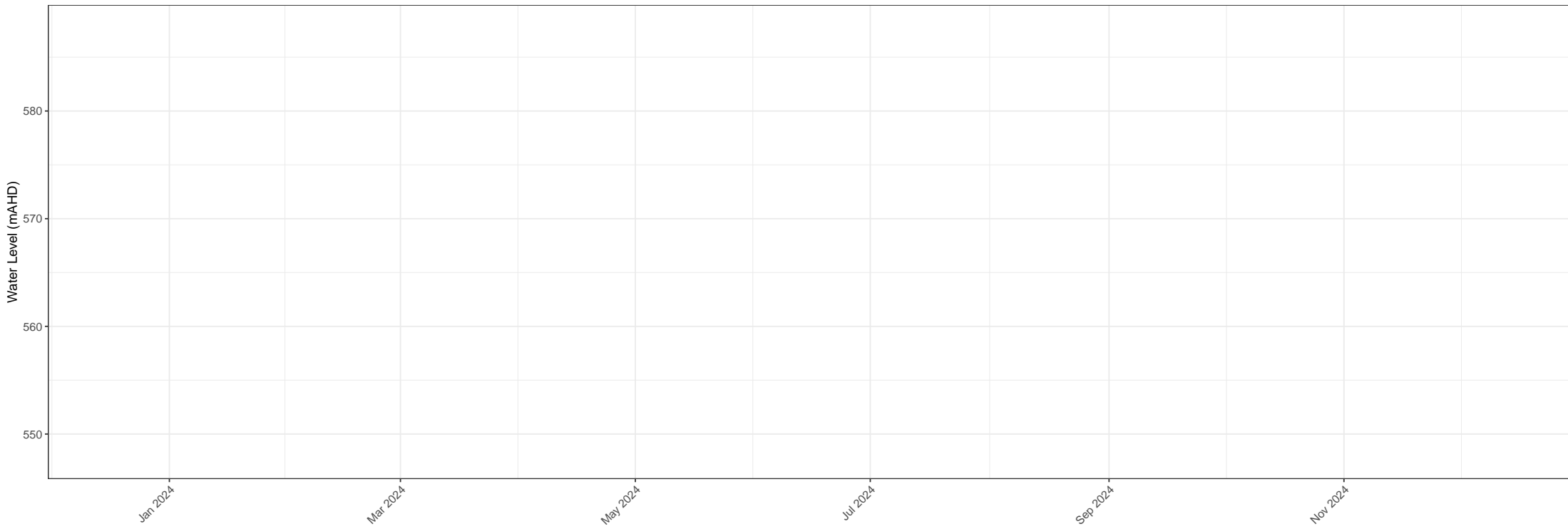
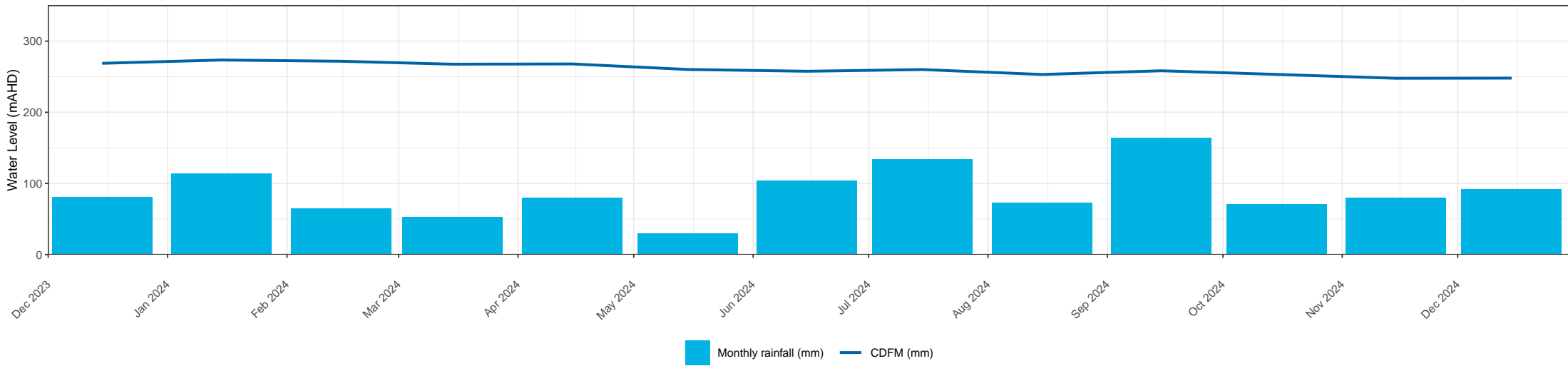


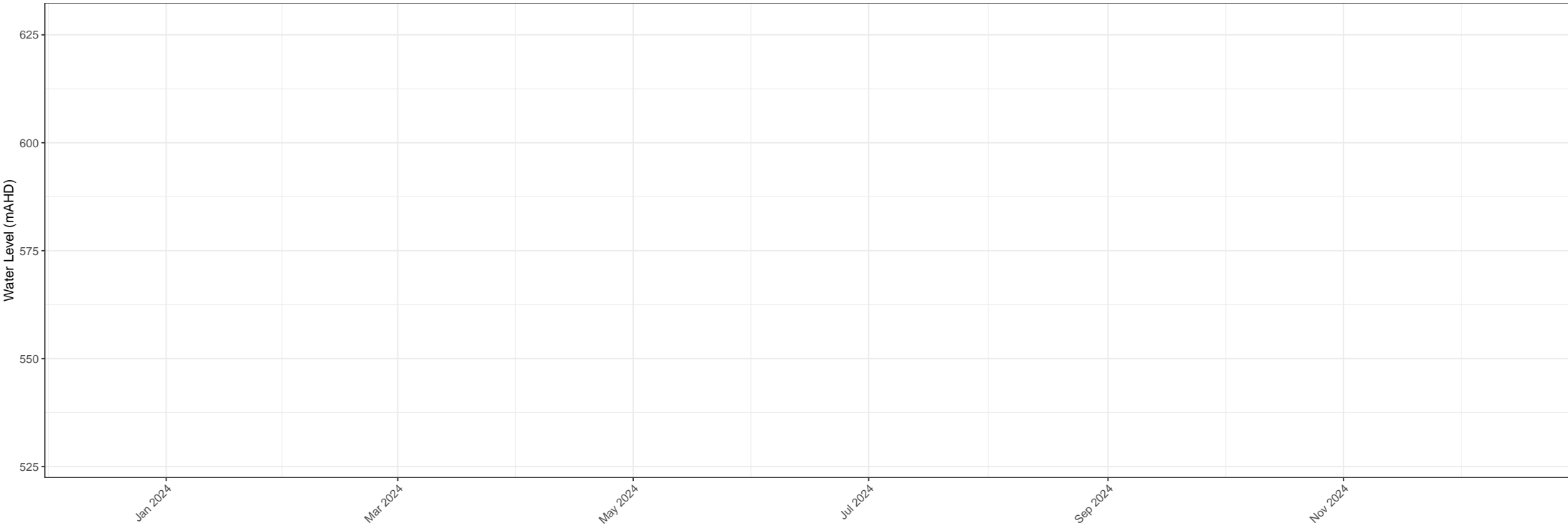
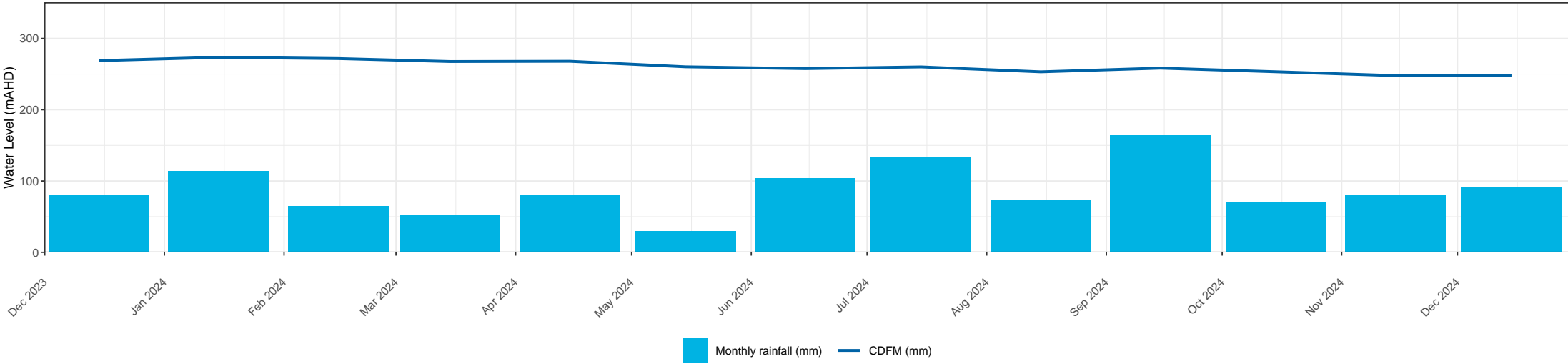


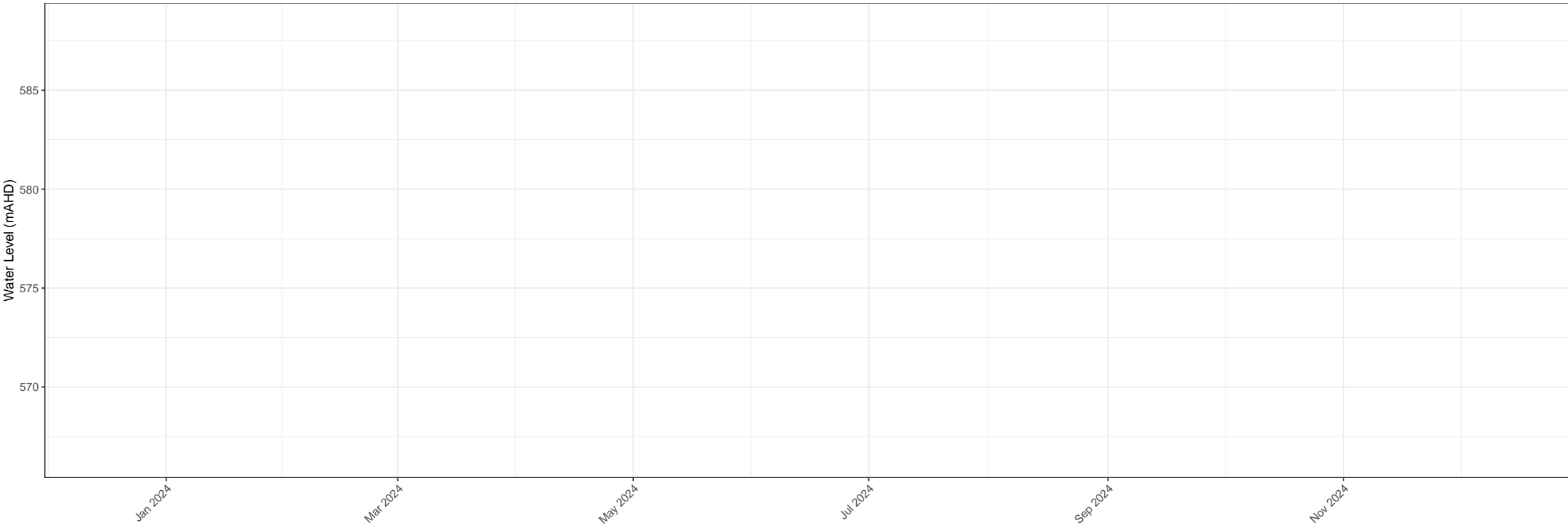
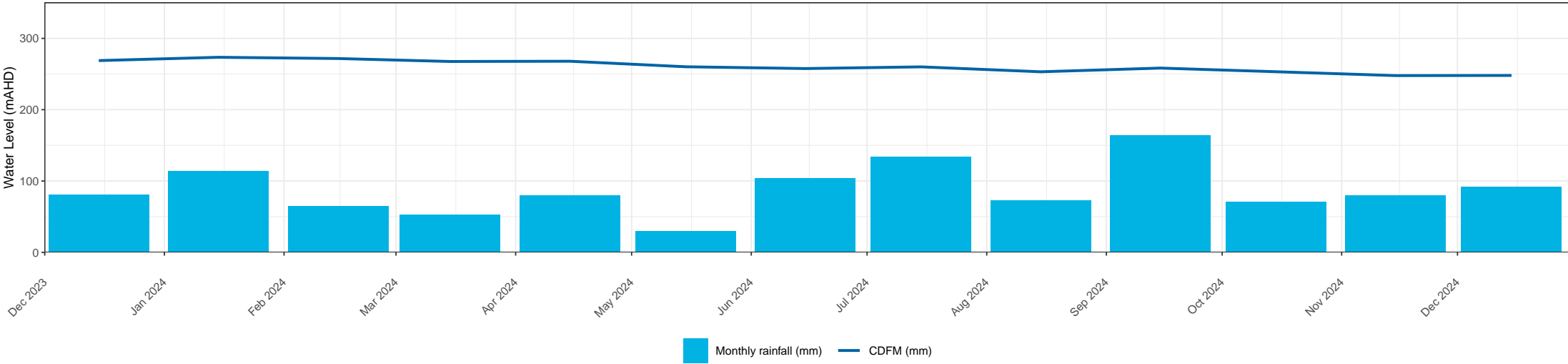


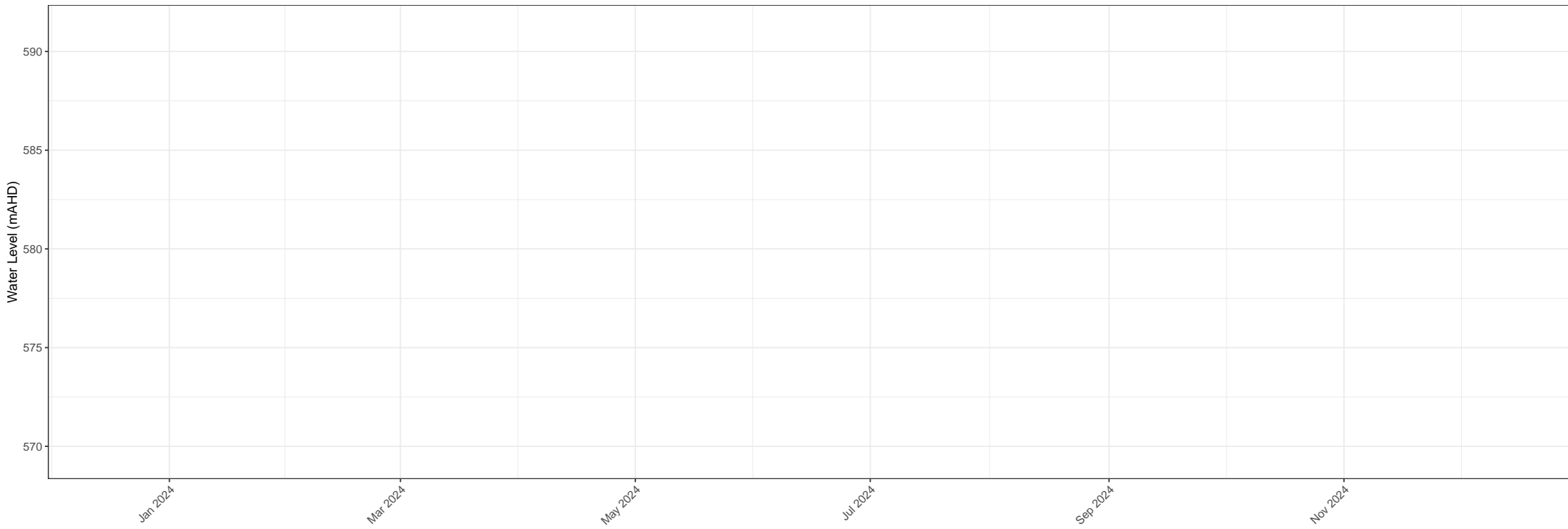
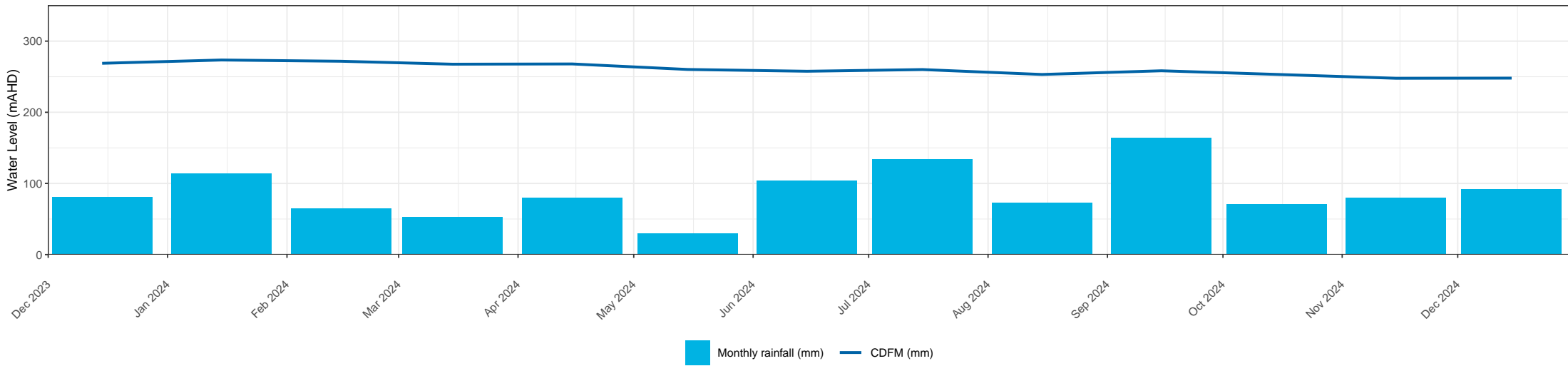


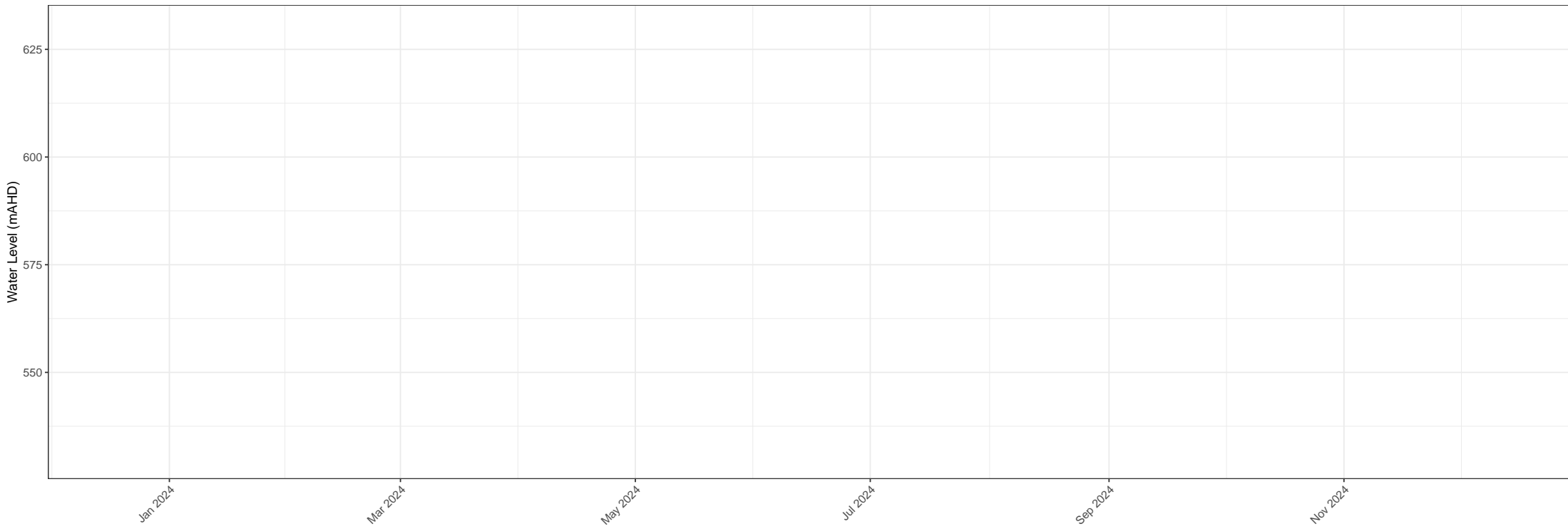
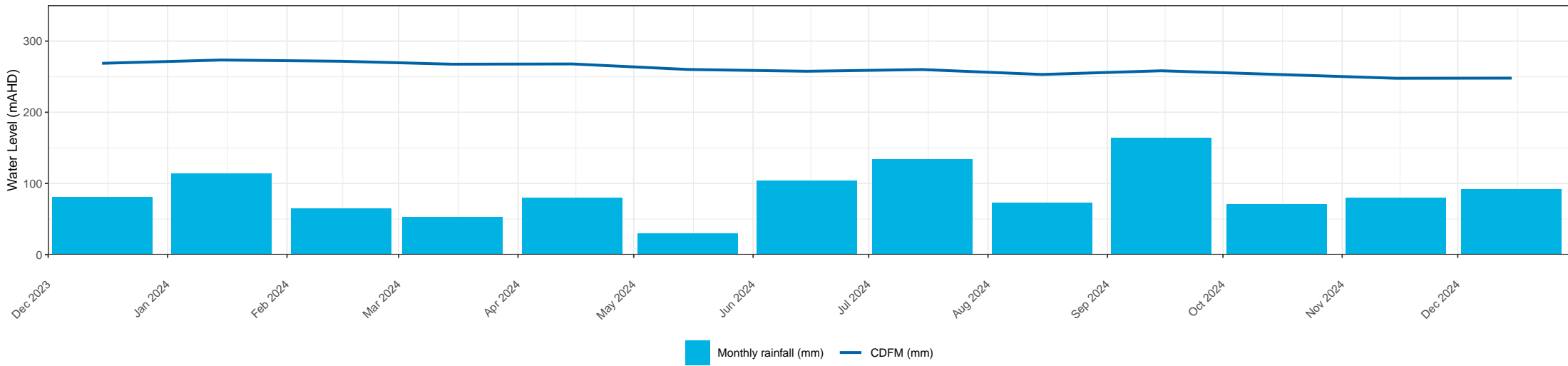


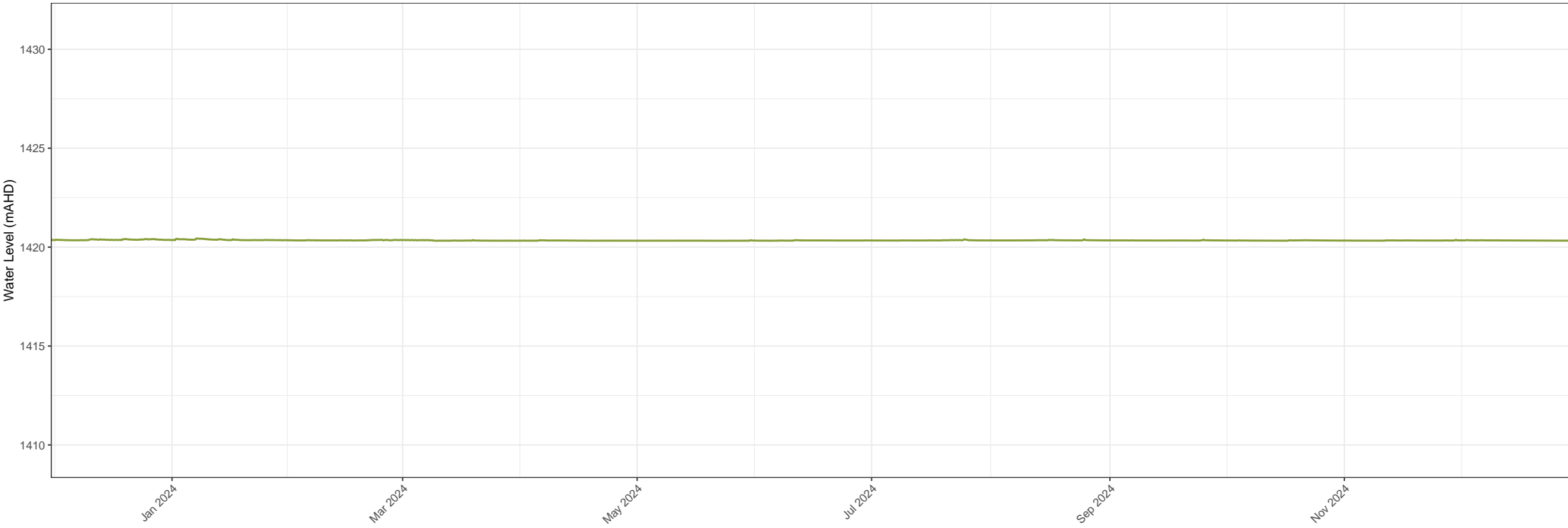
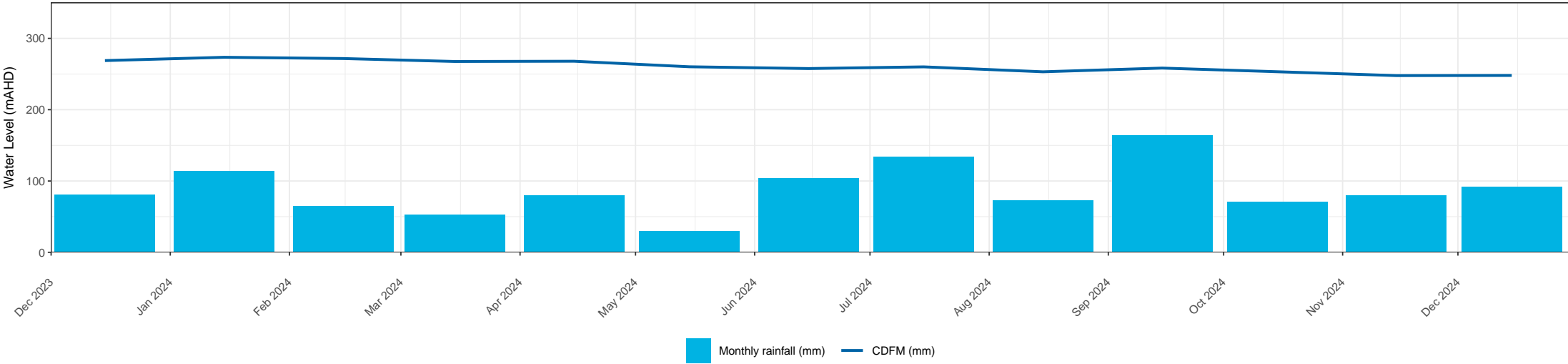




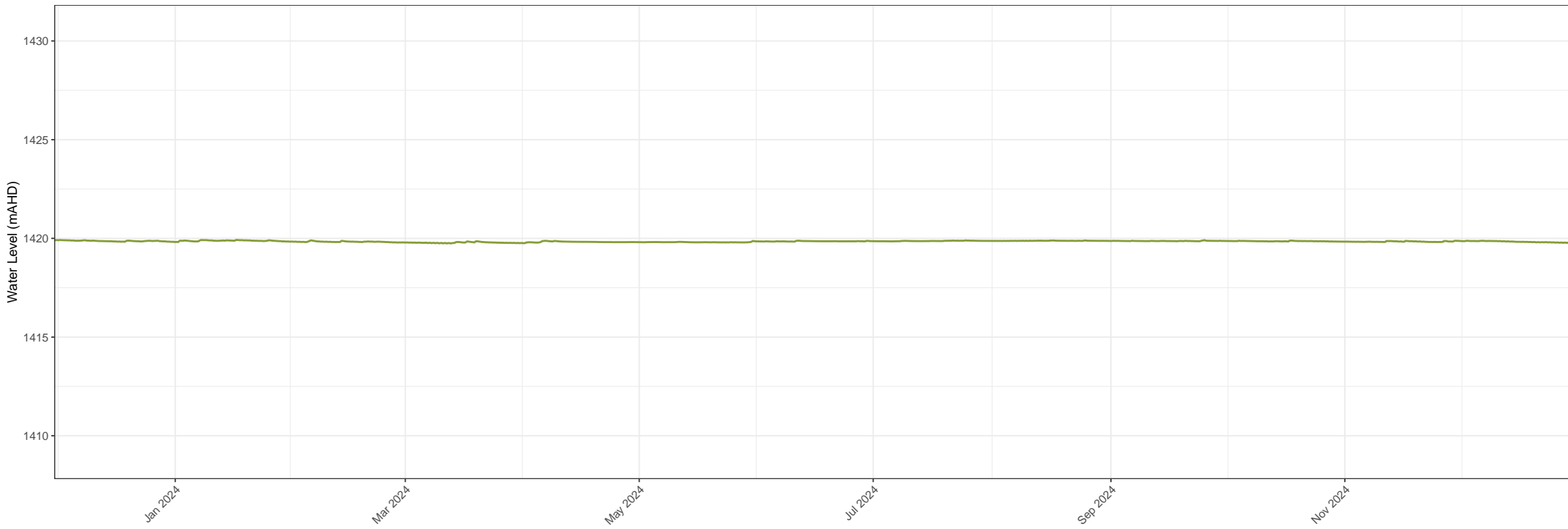
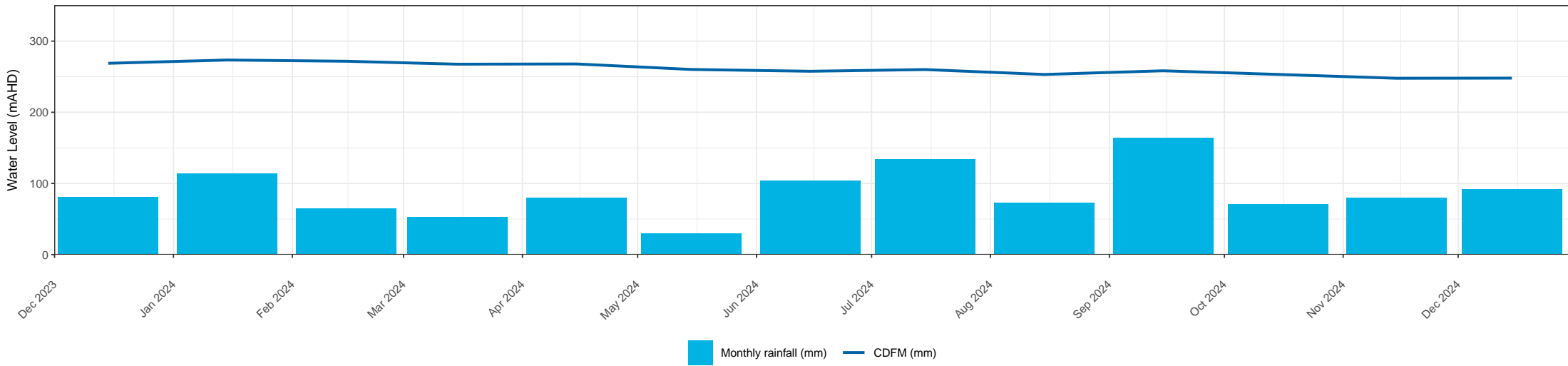


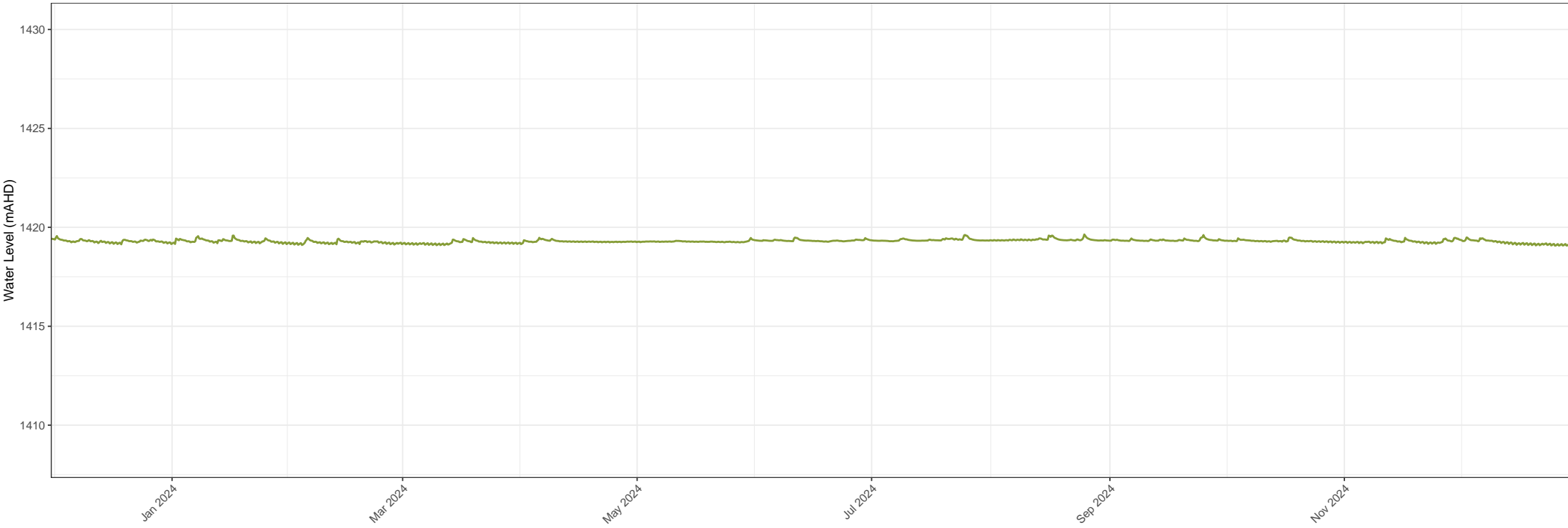
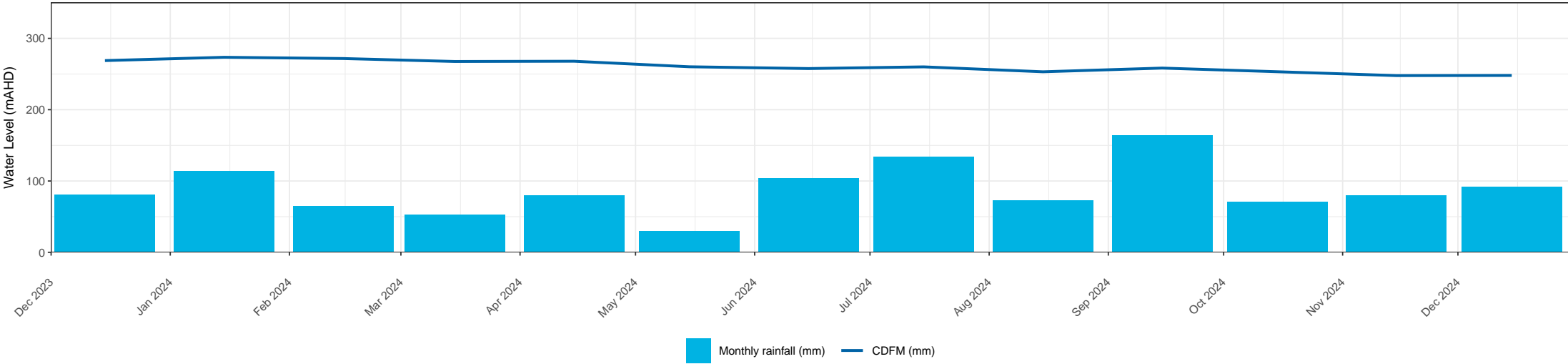


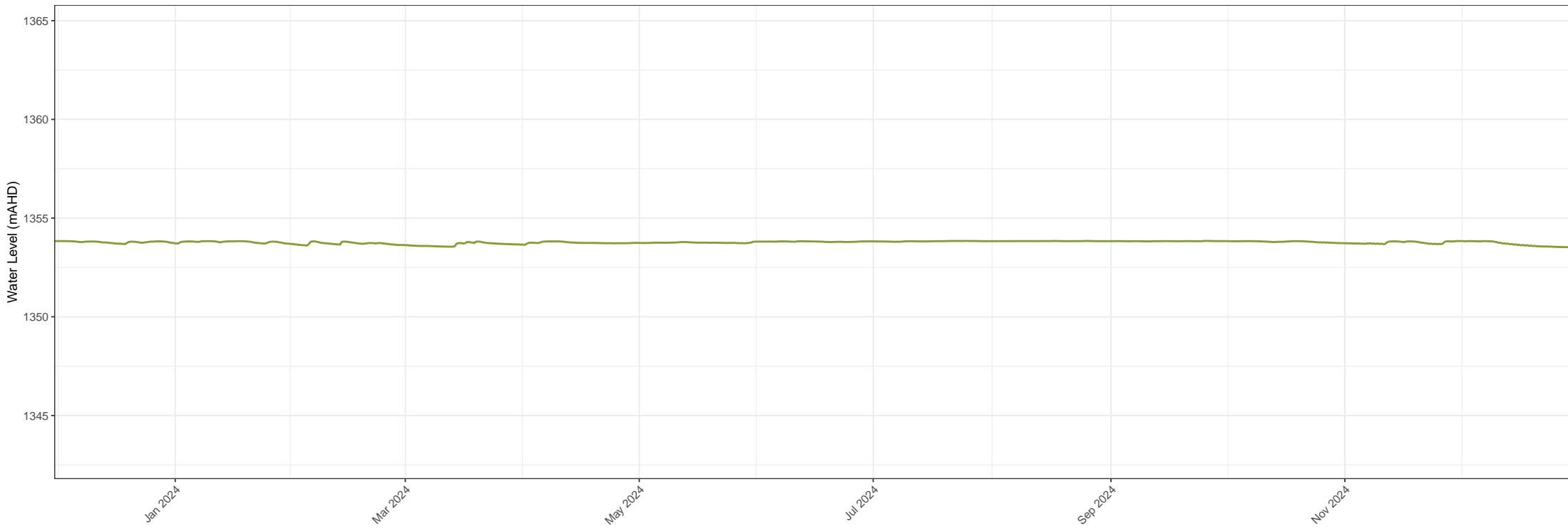
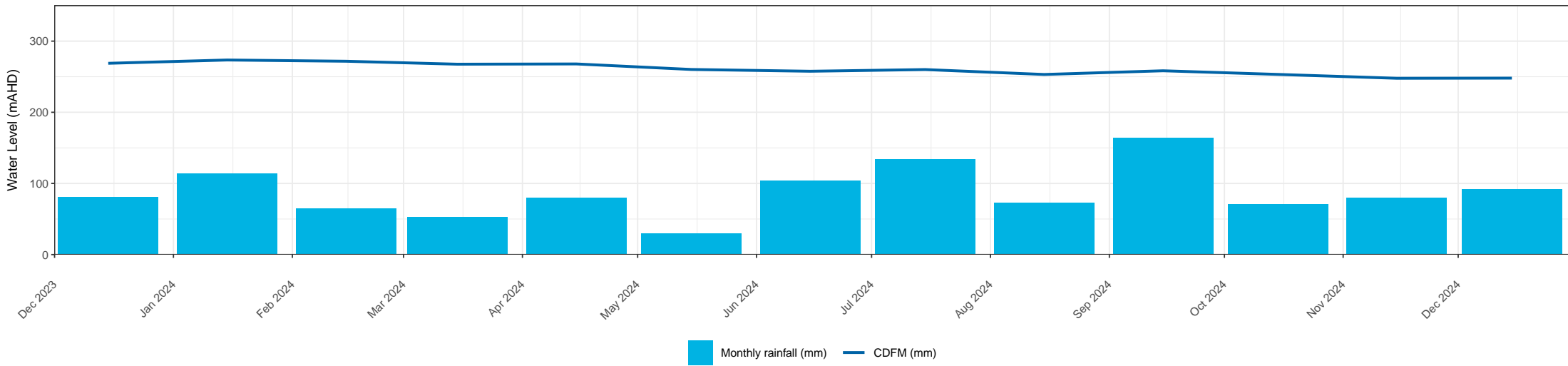


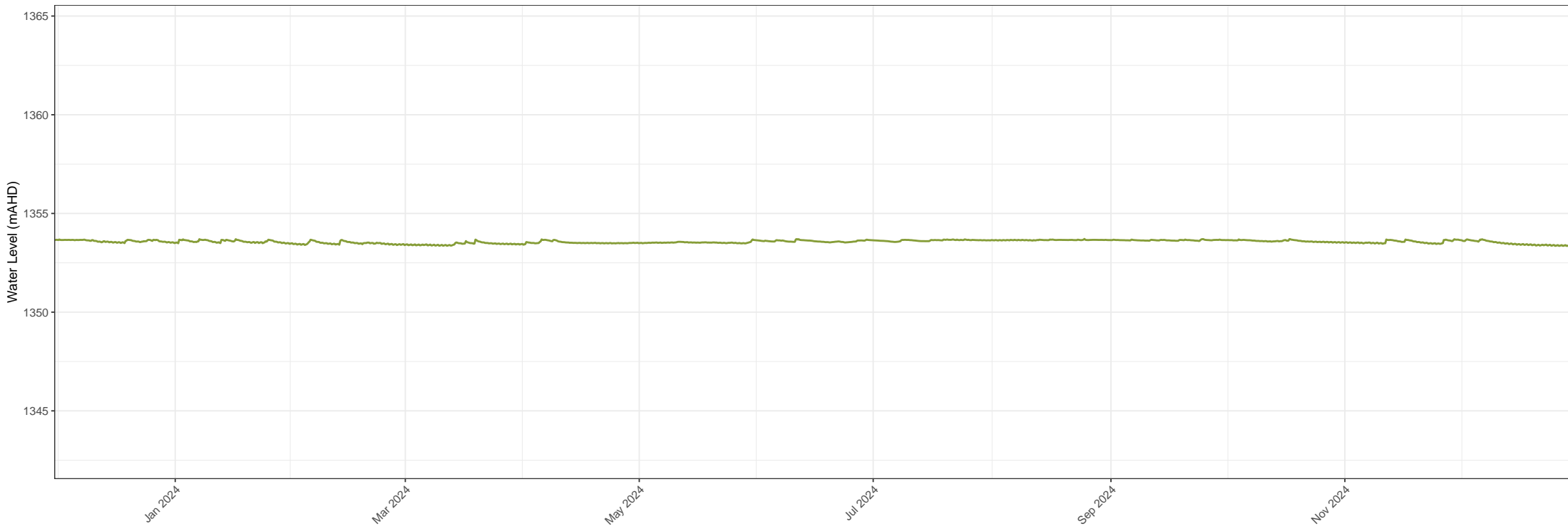
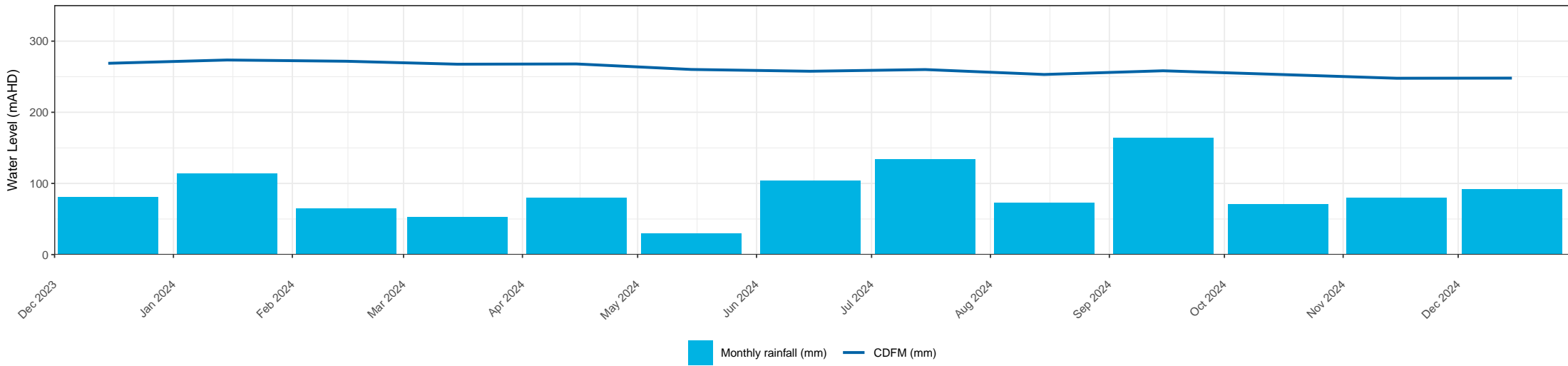


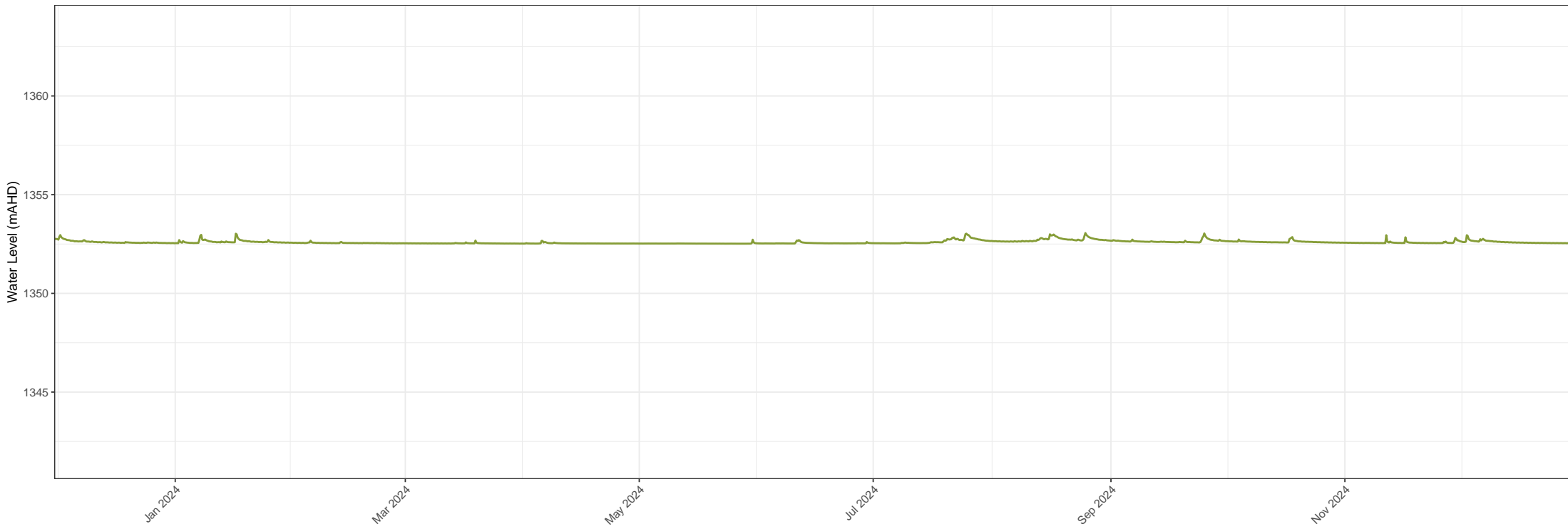
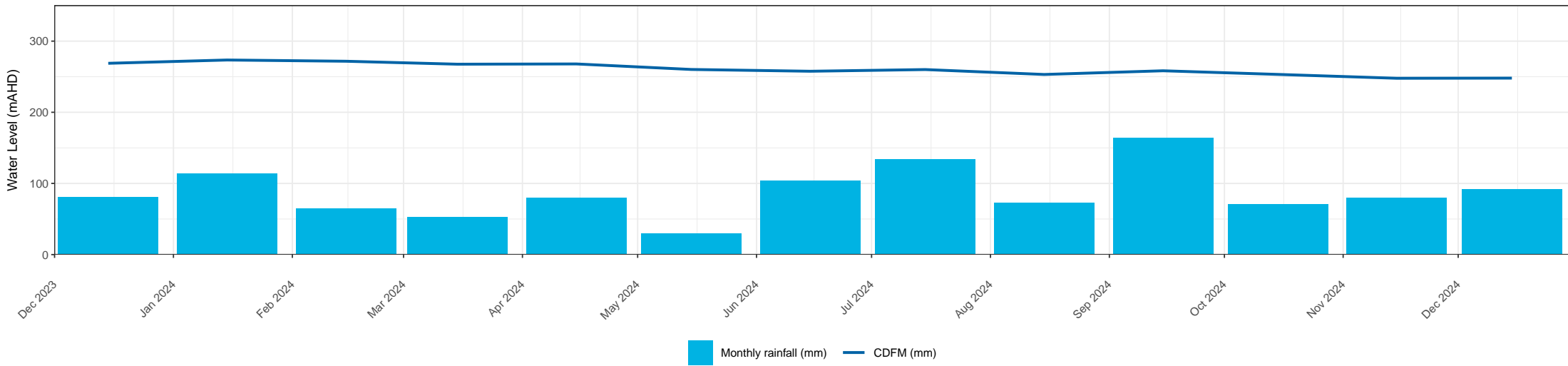
RtS_BH10A groundwater level times series data
 Snowy 2.0 – Snowy Hydro Limited
 Groundwater monitoring and management
 Figure A– RtS_BH10A

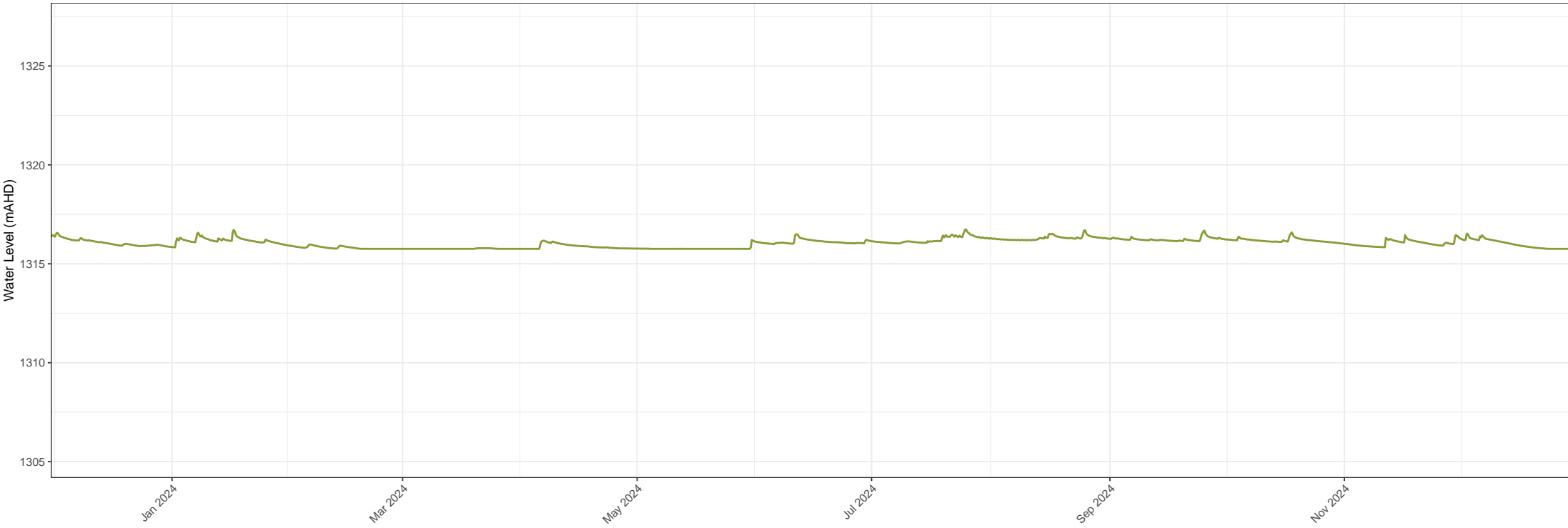
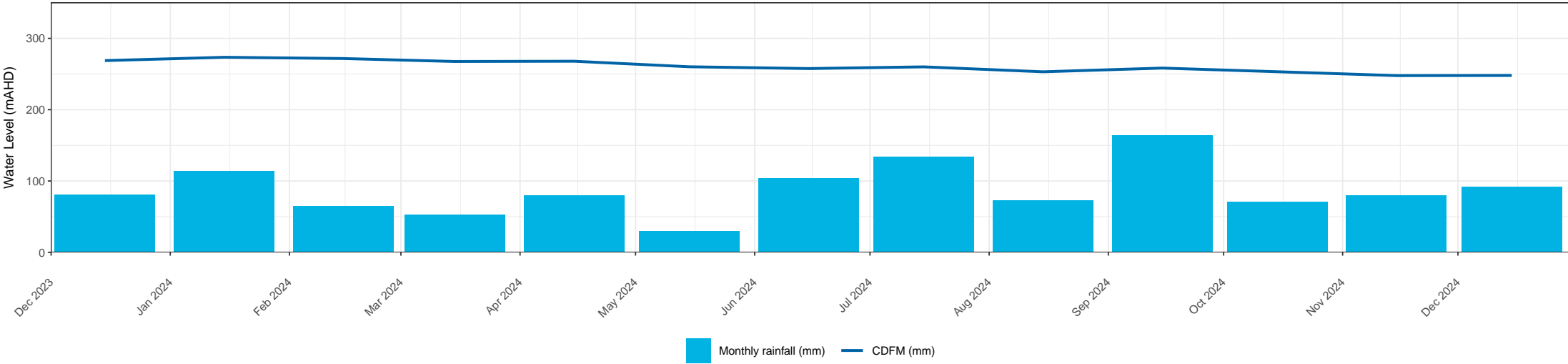


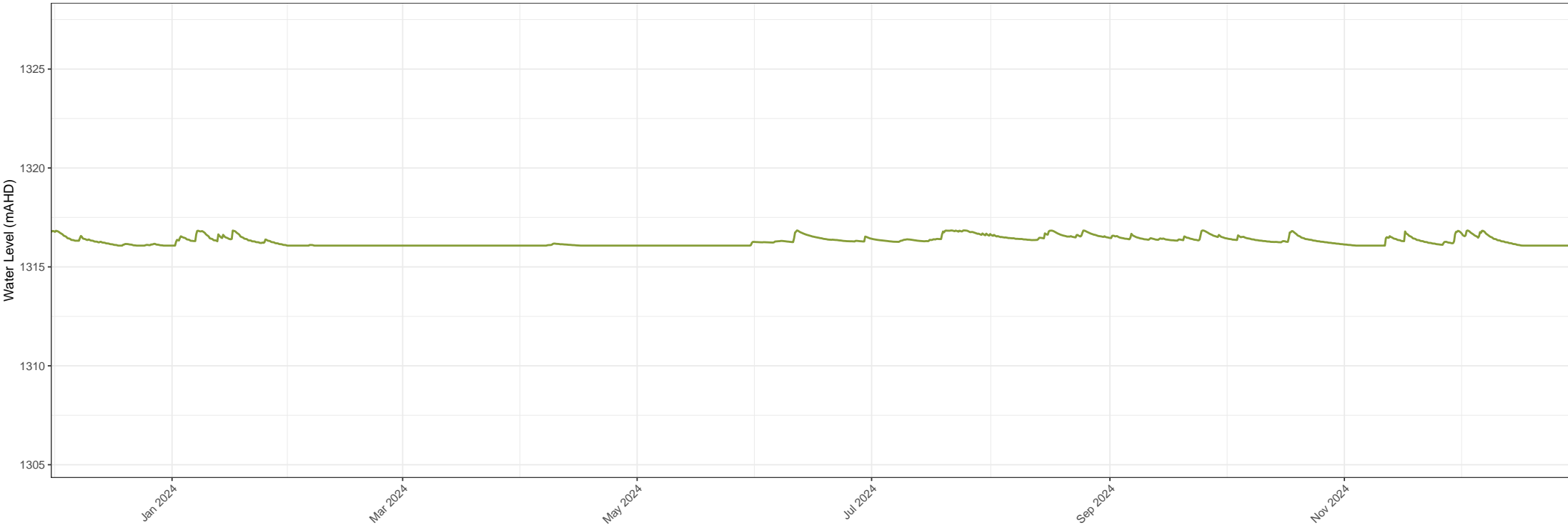
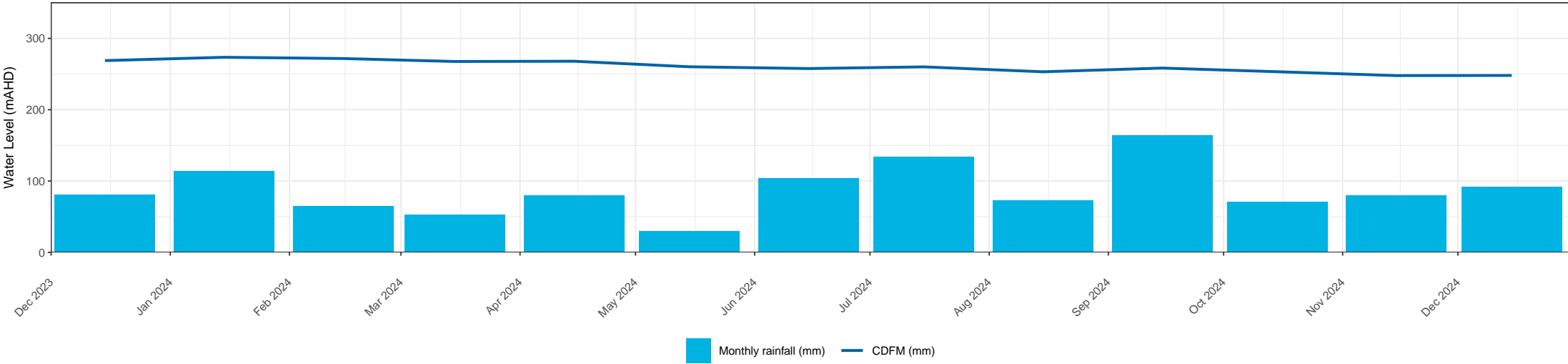


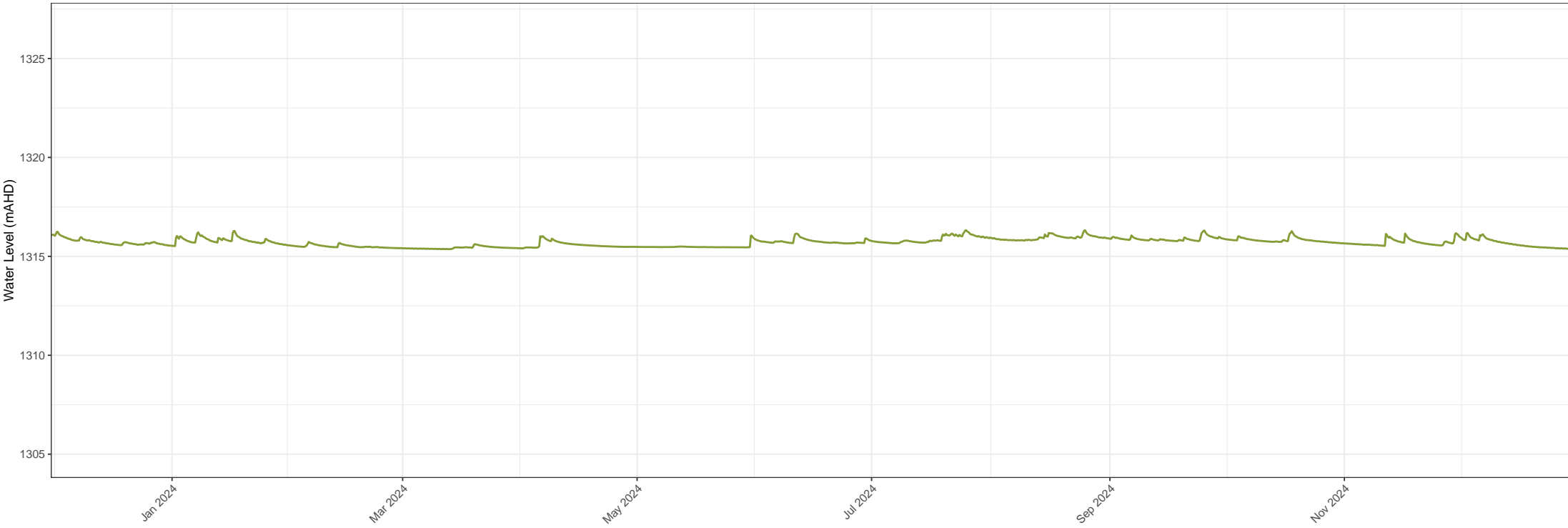
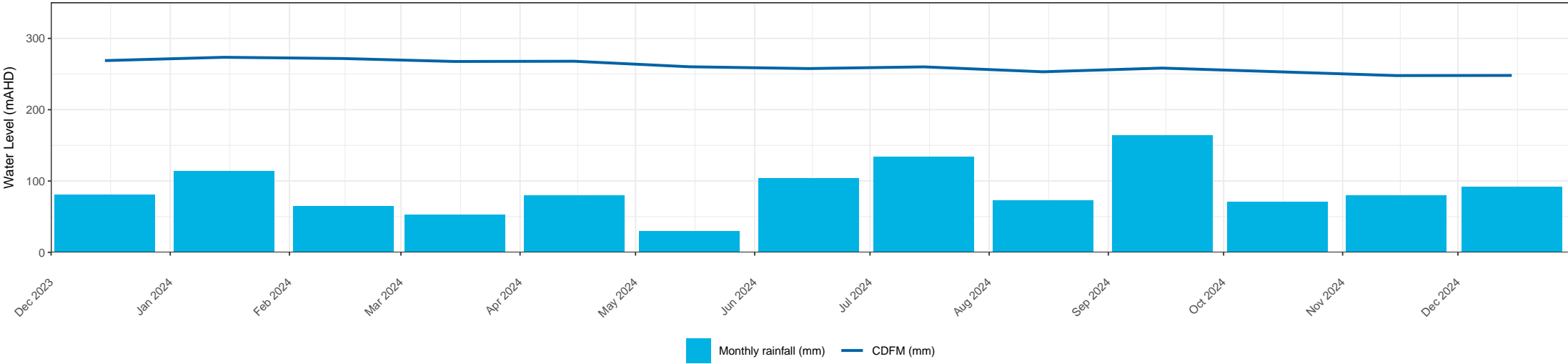


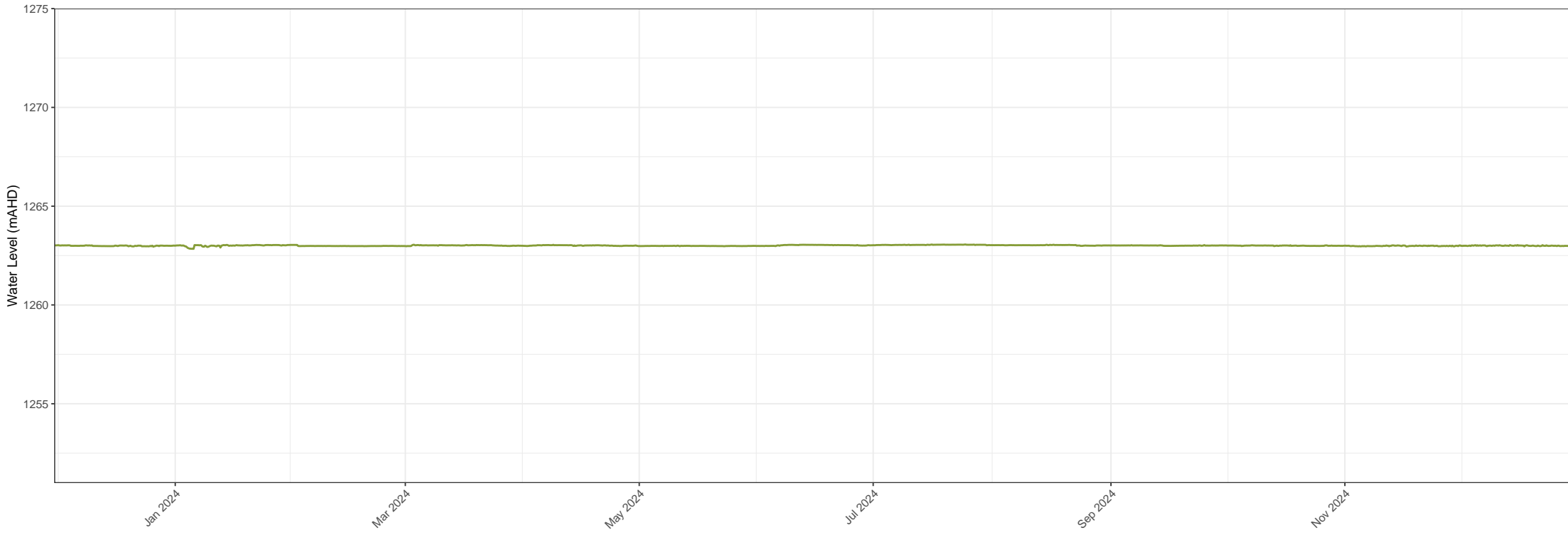
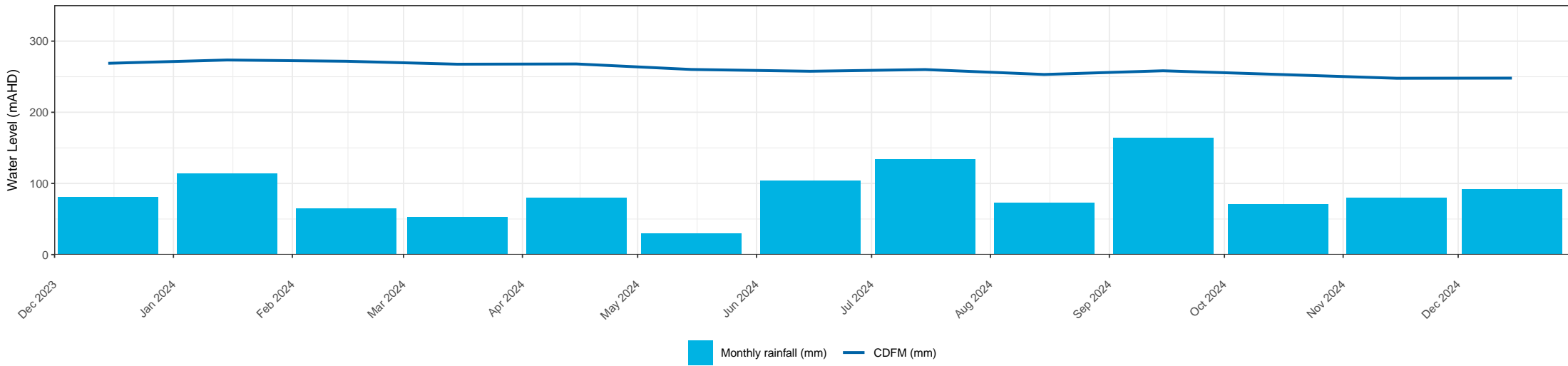


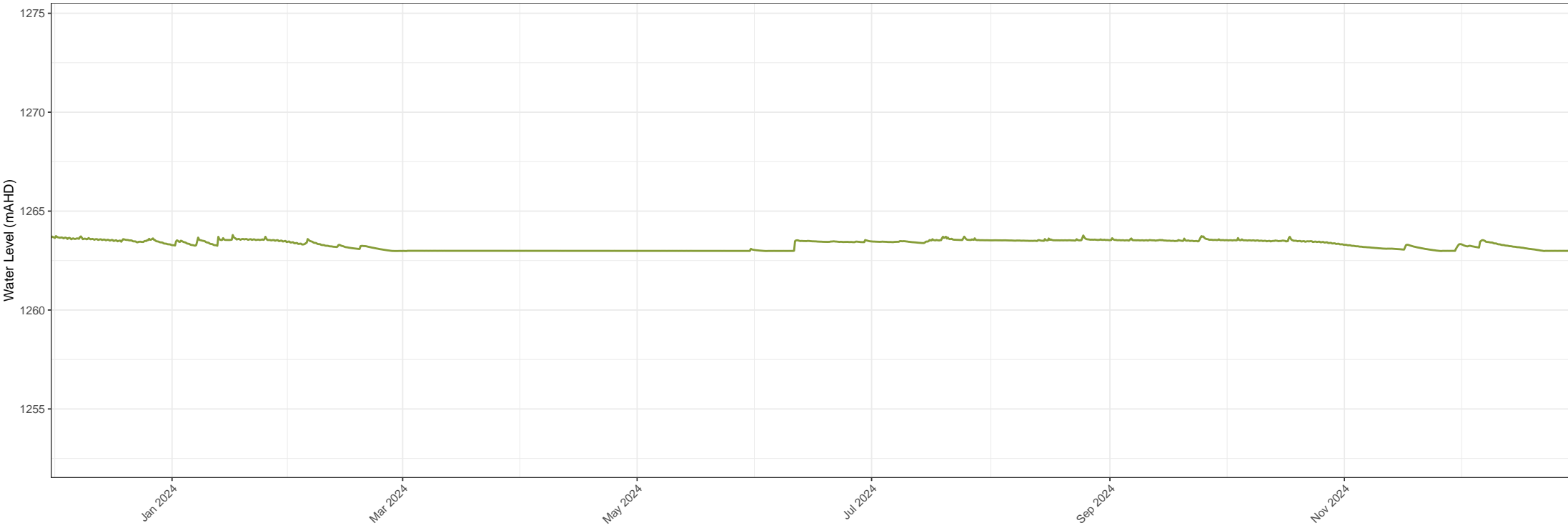
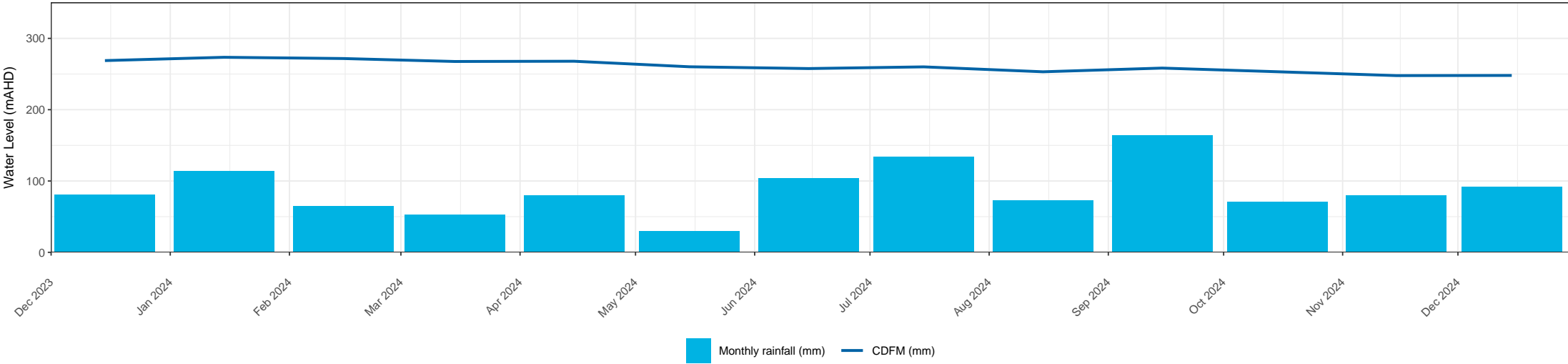


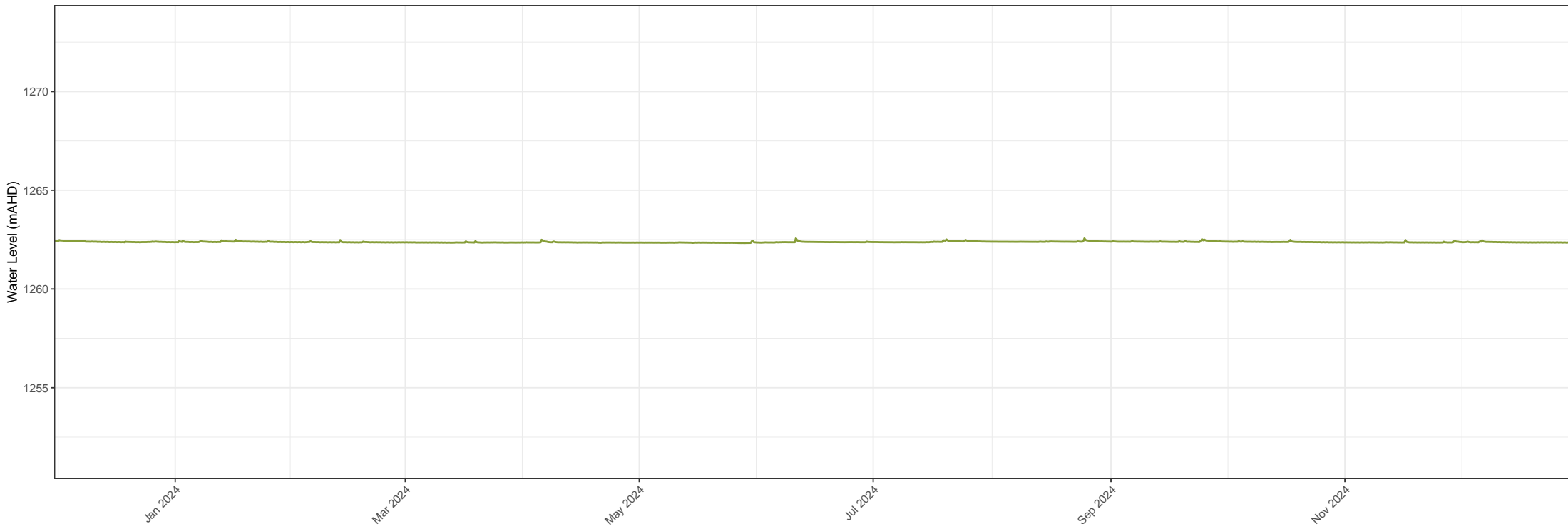
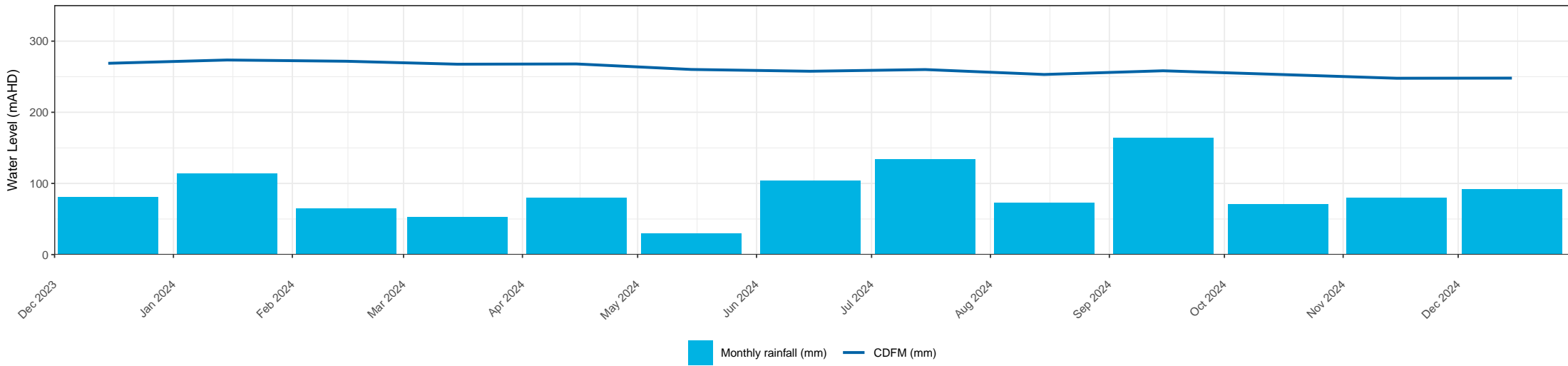


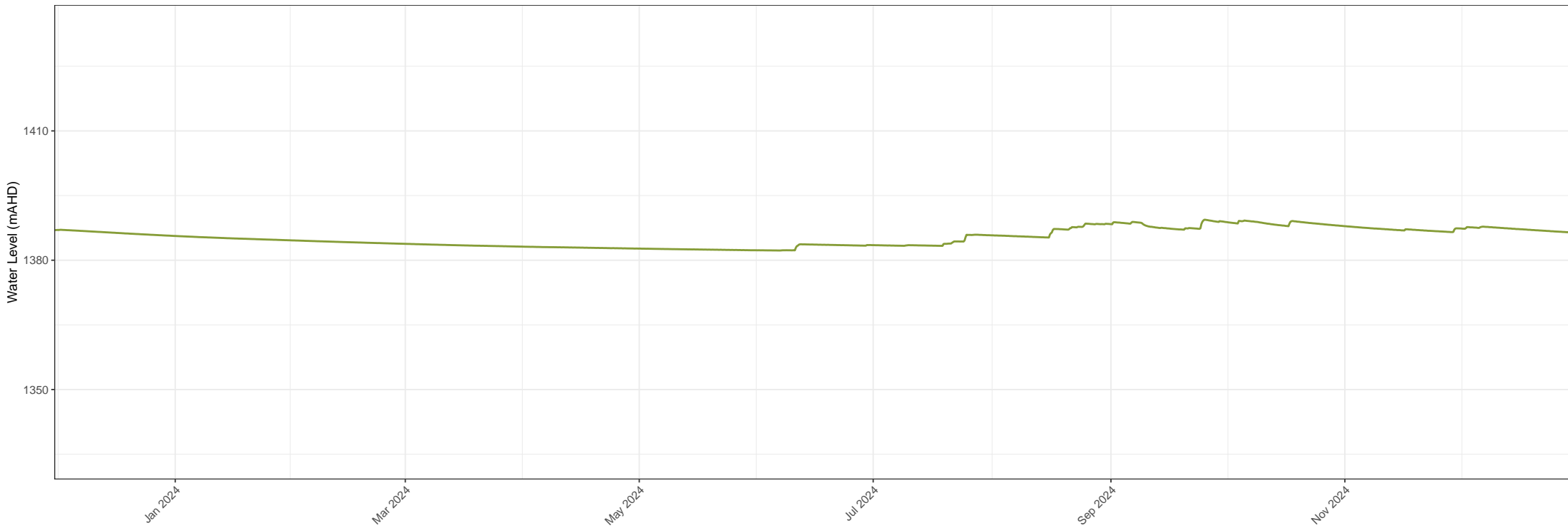
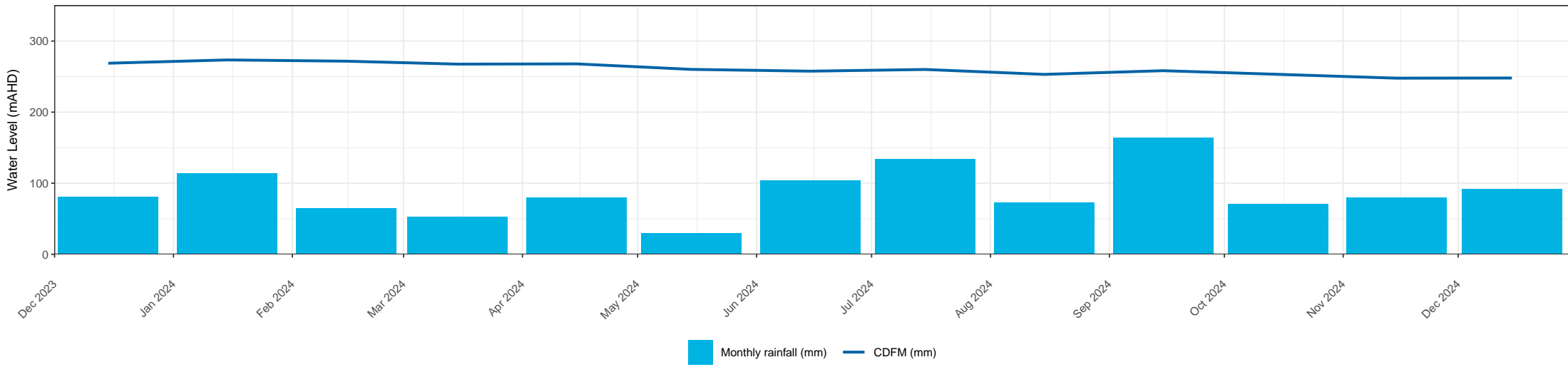




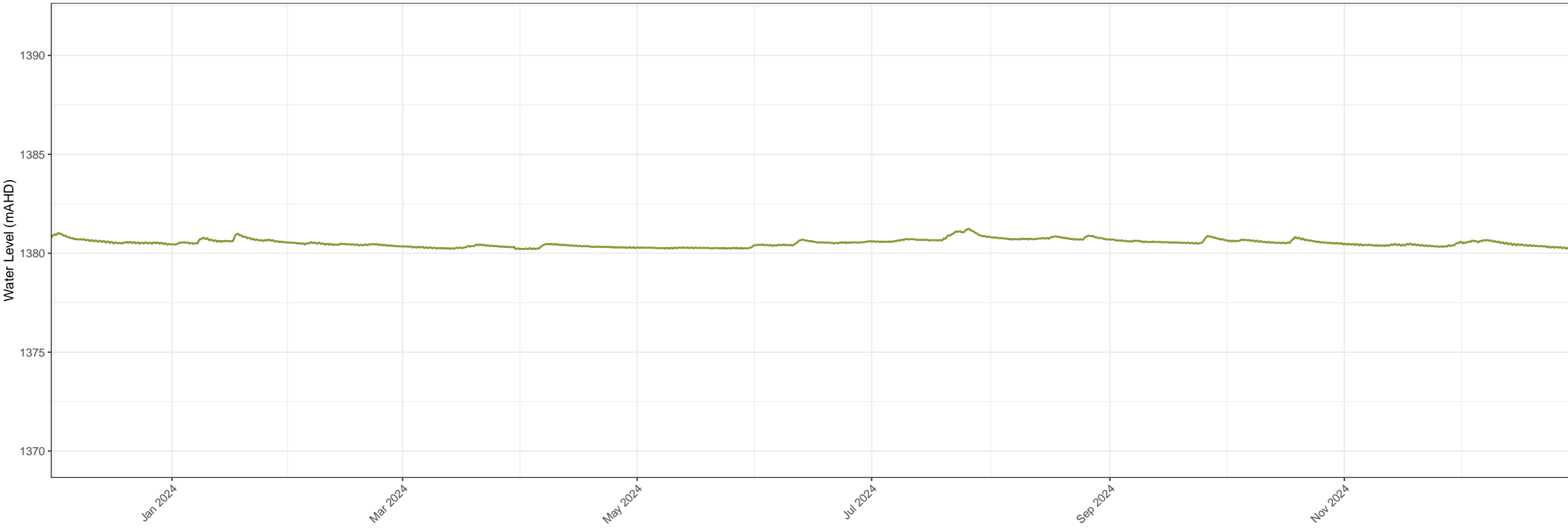
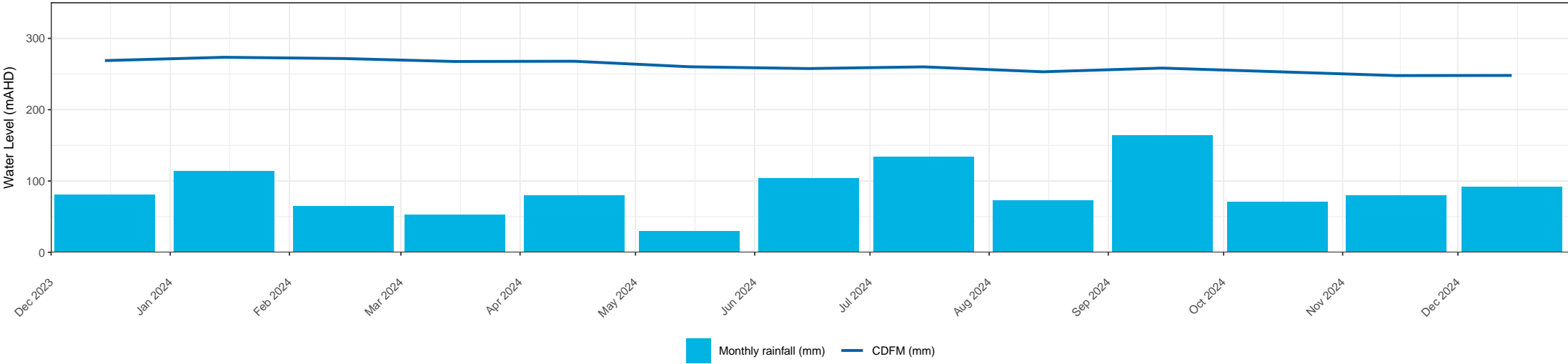






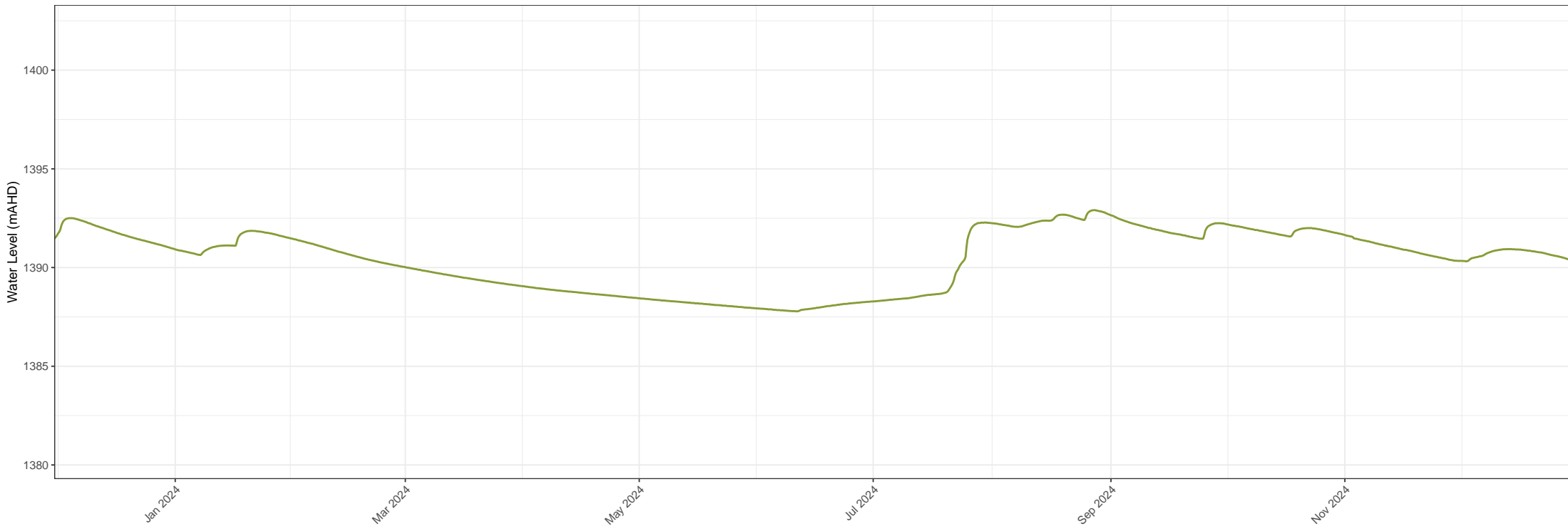
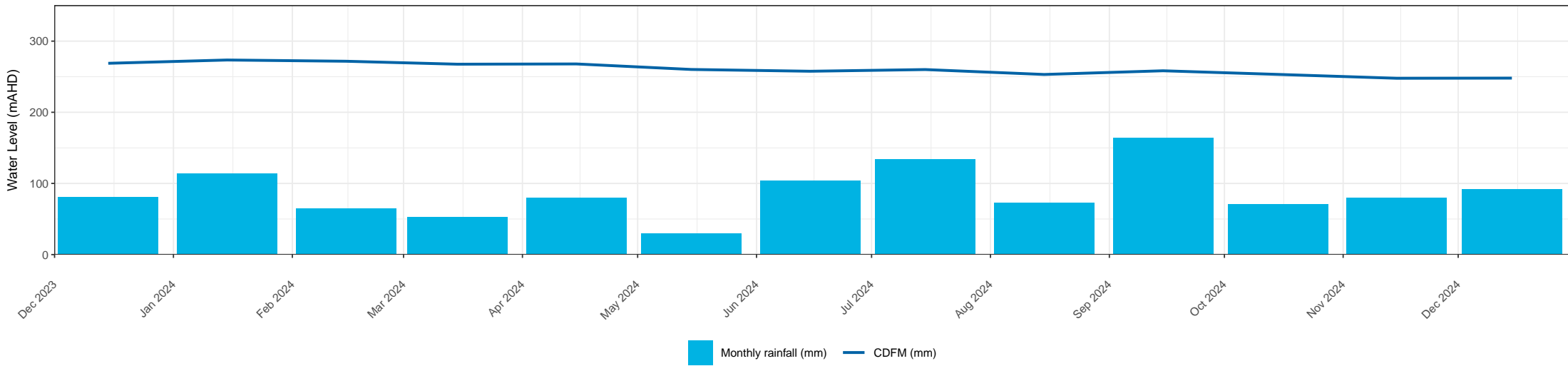


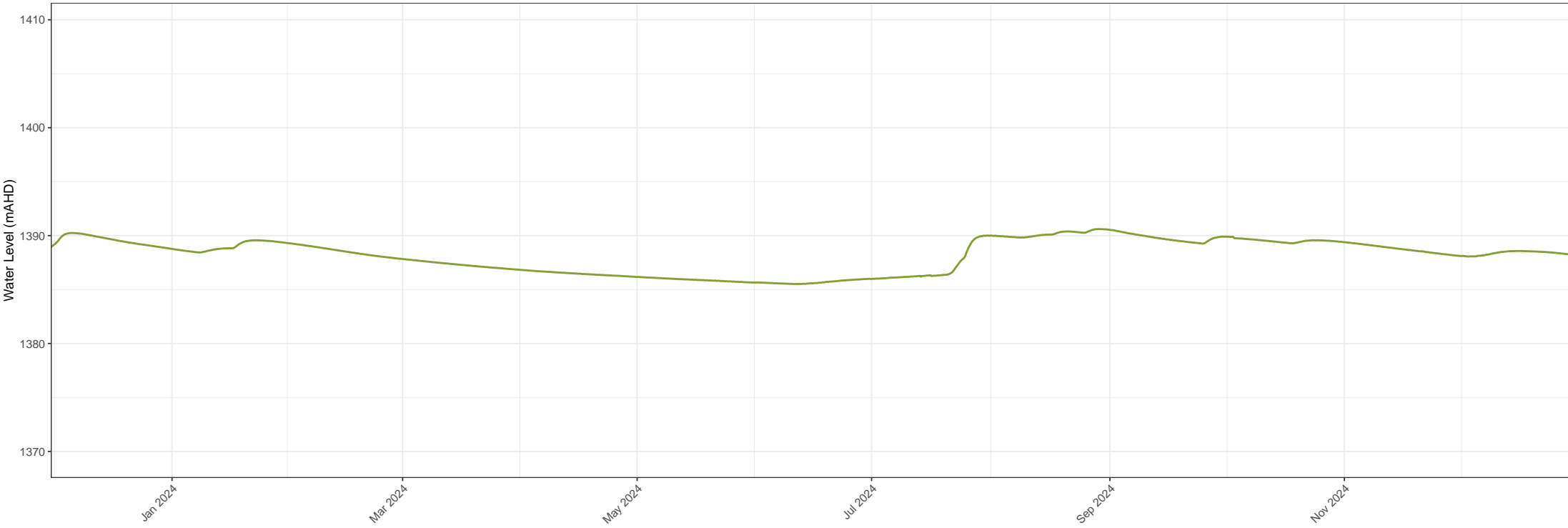
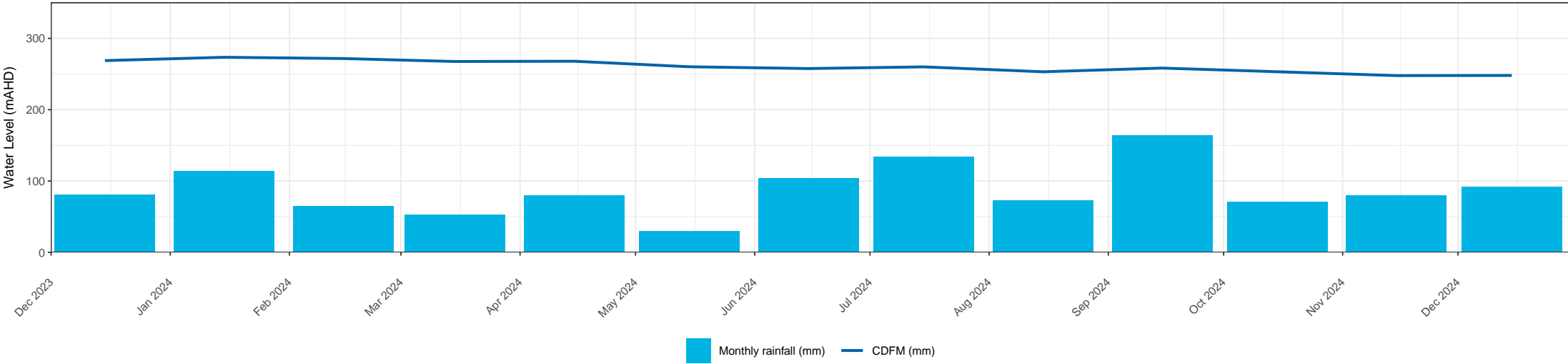
RtS_BH1A groundwater level times series data
 Snowy 2.0 – Snowy Hydro Limited
 Groundwater monitoring and management
 Figure A– RtS_BH1A



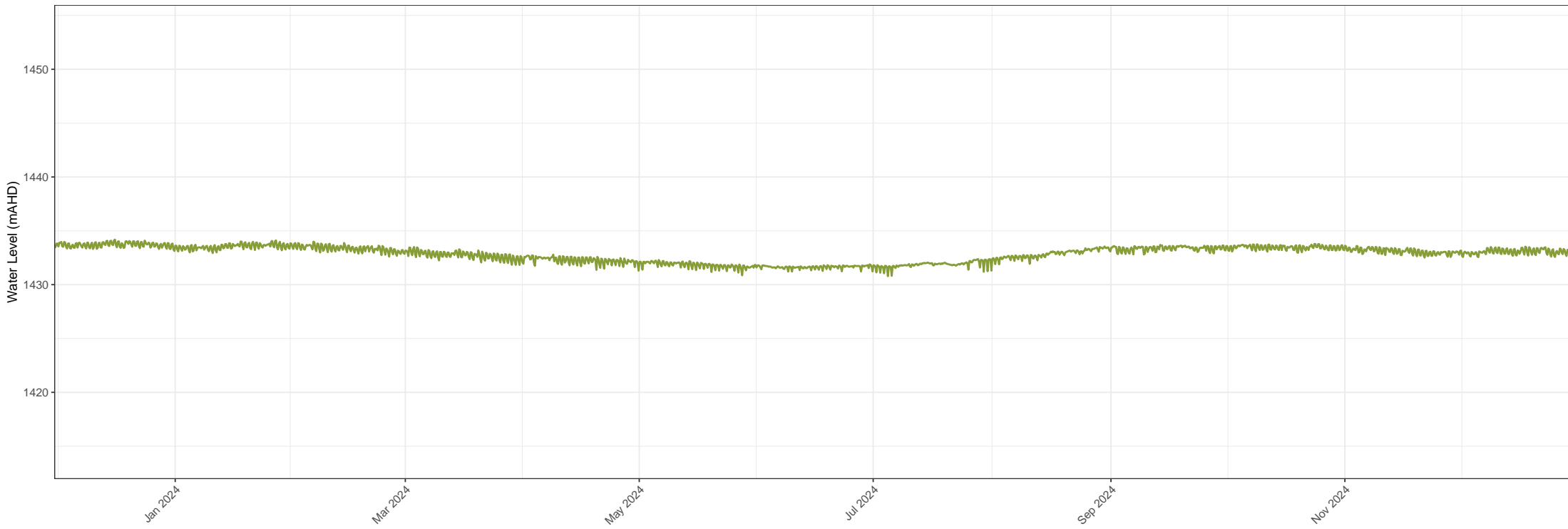
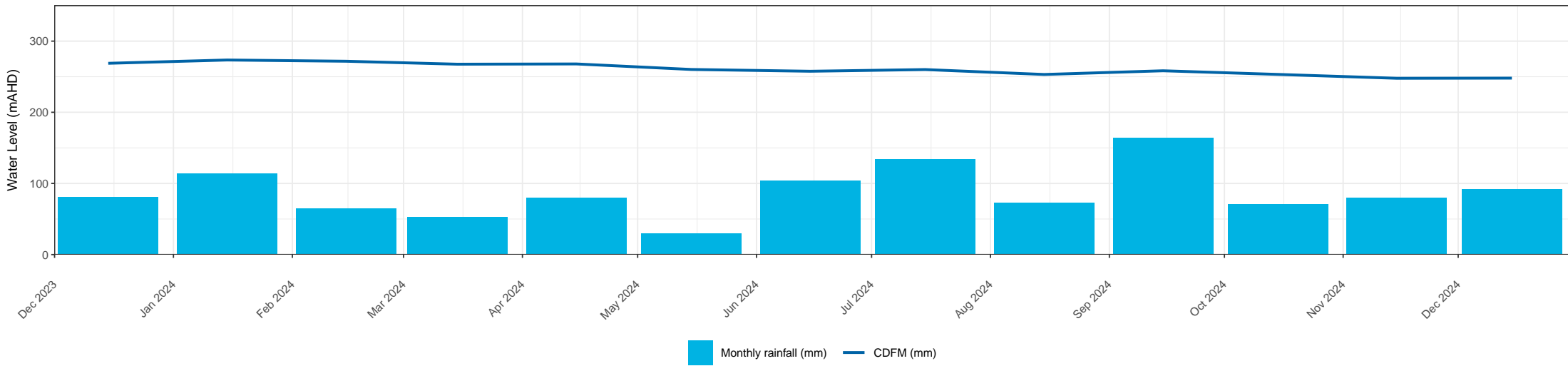
RtS_BH1B groundwater level times series data
 Snowy 2.0 – Snowy Hydro Limited
 Groundwater monitoring and management
 Figure A– RtS_BH1B

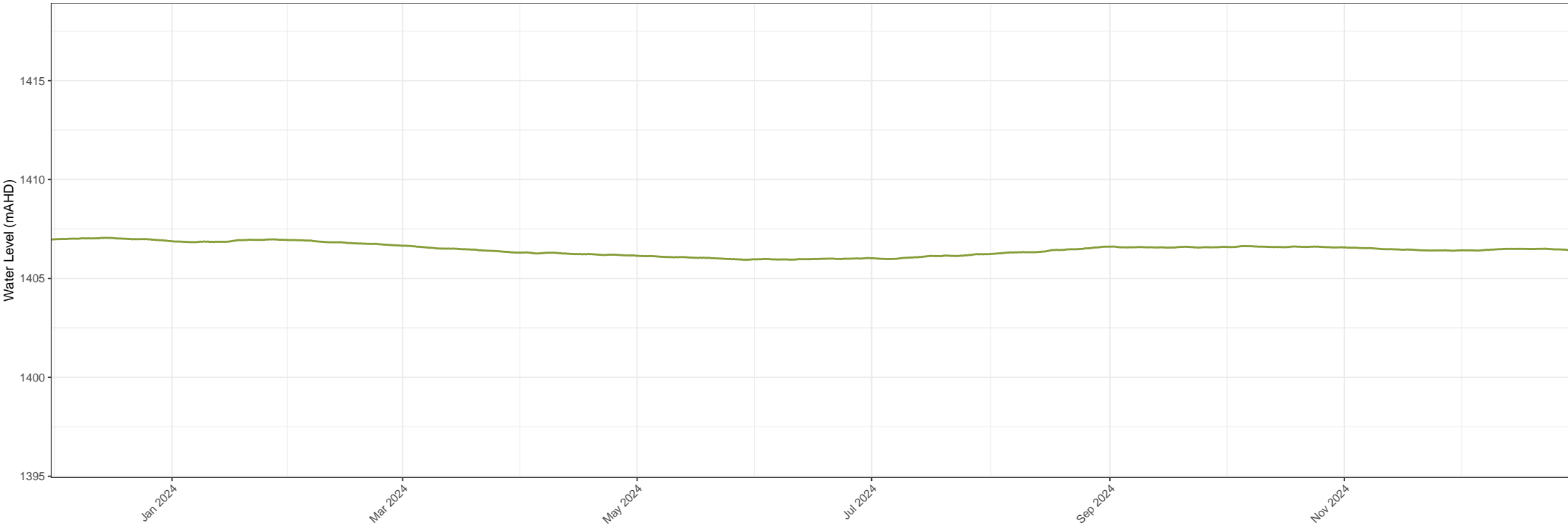
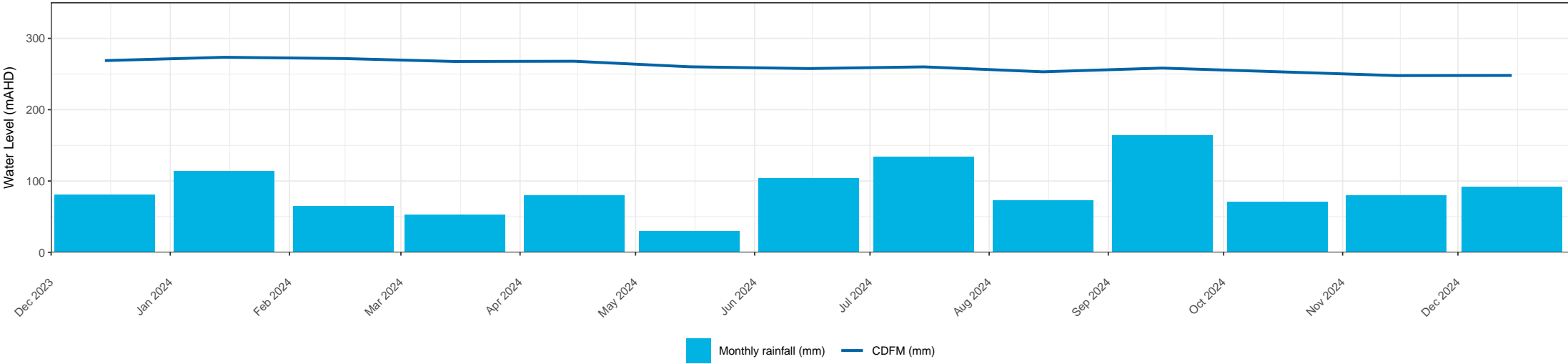




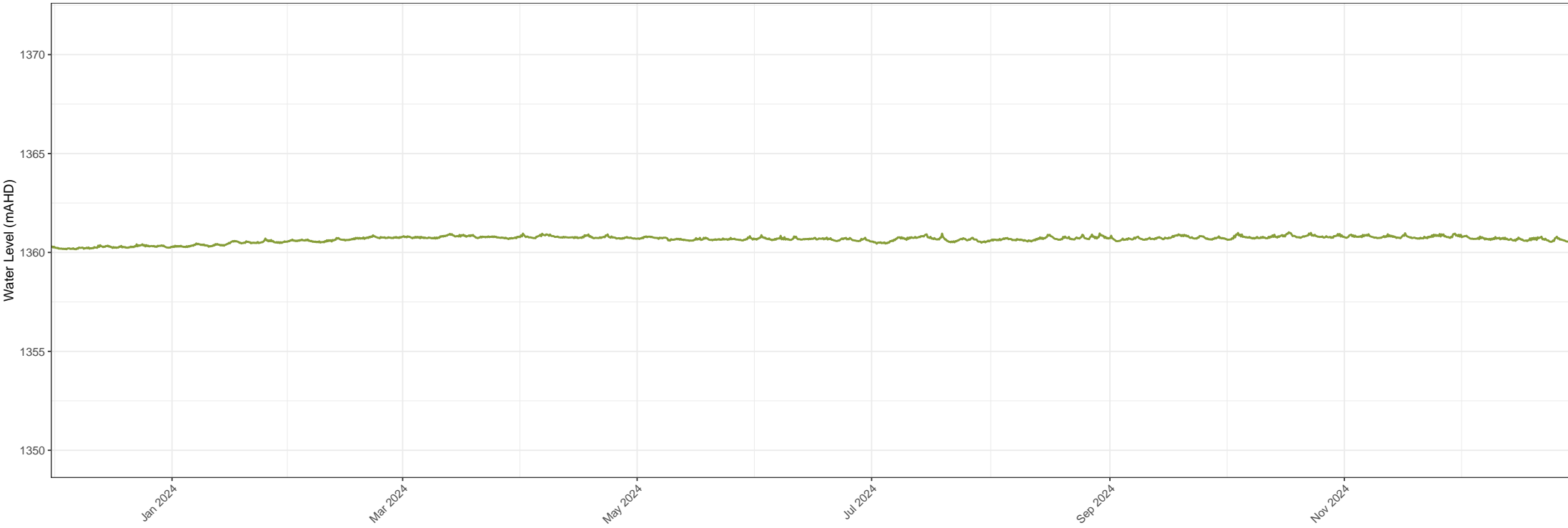
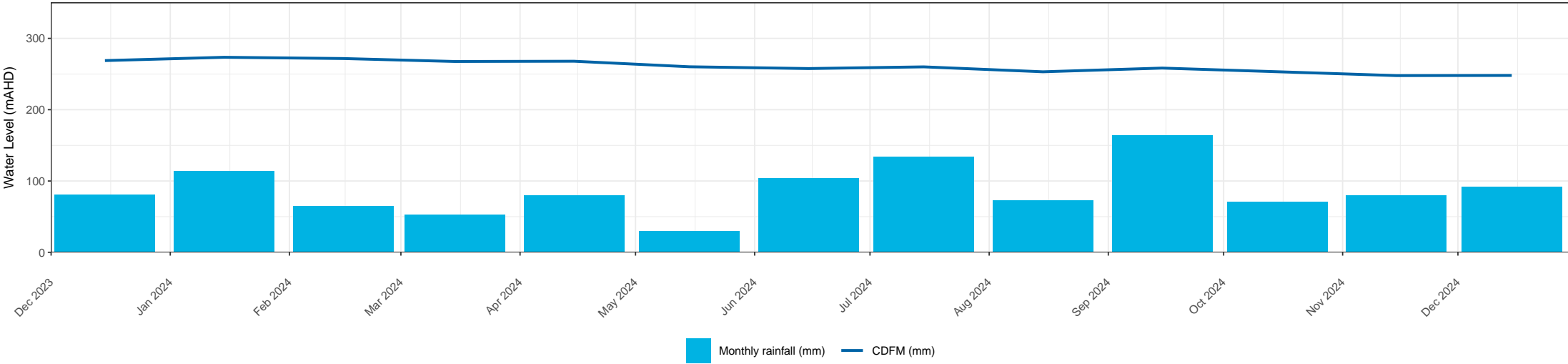


RtS_BH2B groundwater level times series data
 Snowy 2.0 – Snowy Hydro Limited
 Groundwater monitoring and management
 Figure A– RtS_BH2B



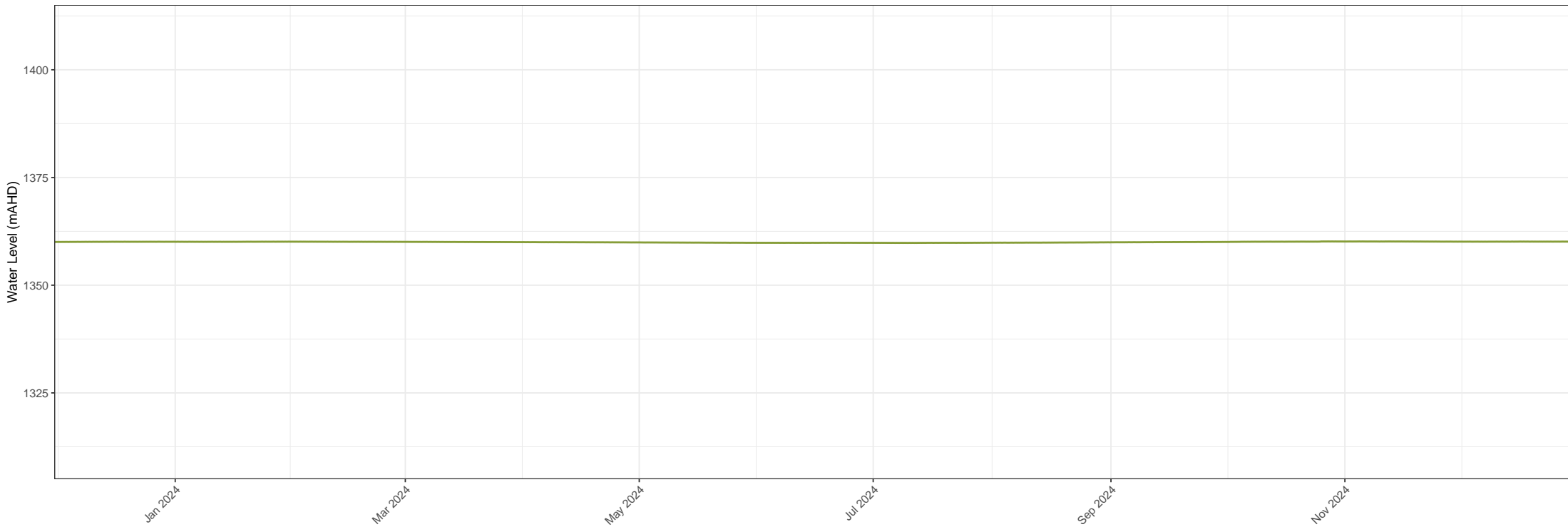
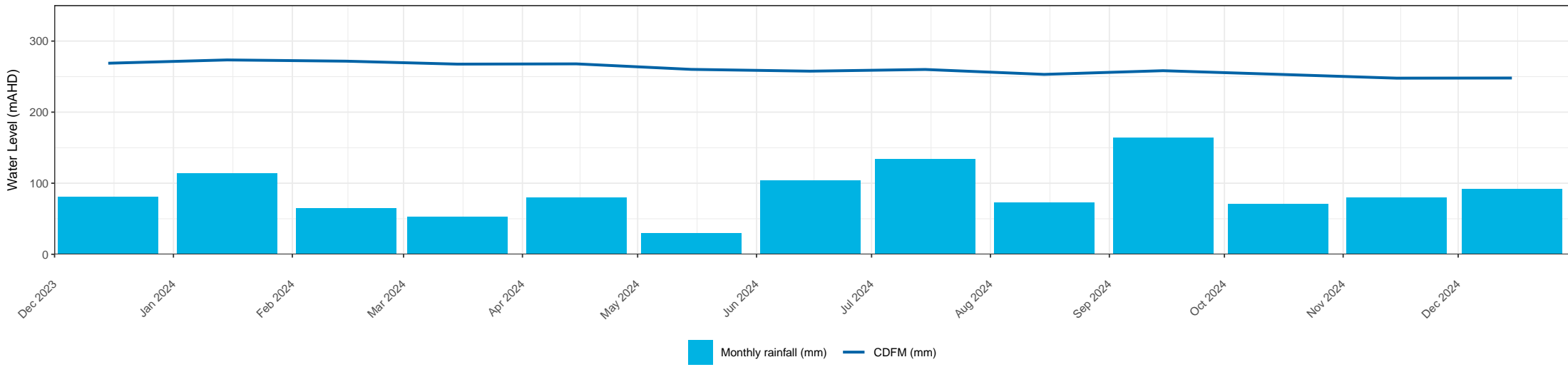


RtS_BH3B groundwater level times series data
 Snowy 2.0 – Snowy Hydro Limited
 Groundwater monitoring and management
 Figure A– RtS_BH3B

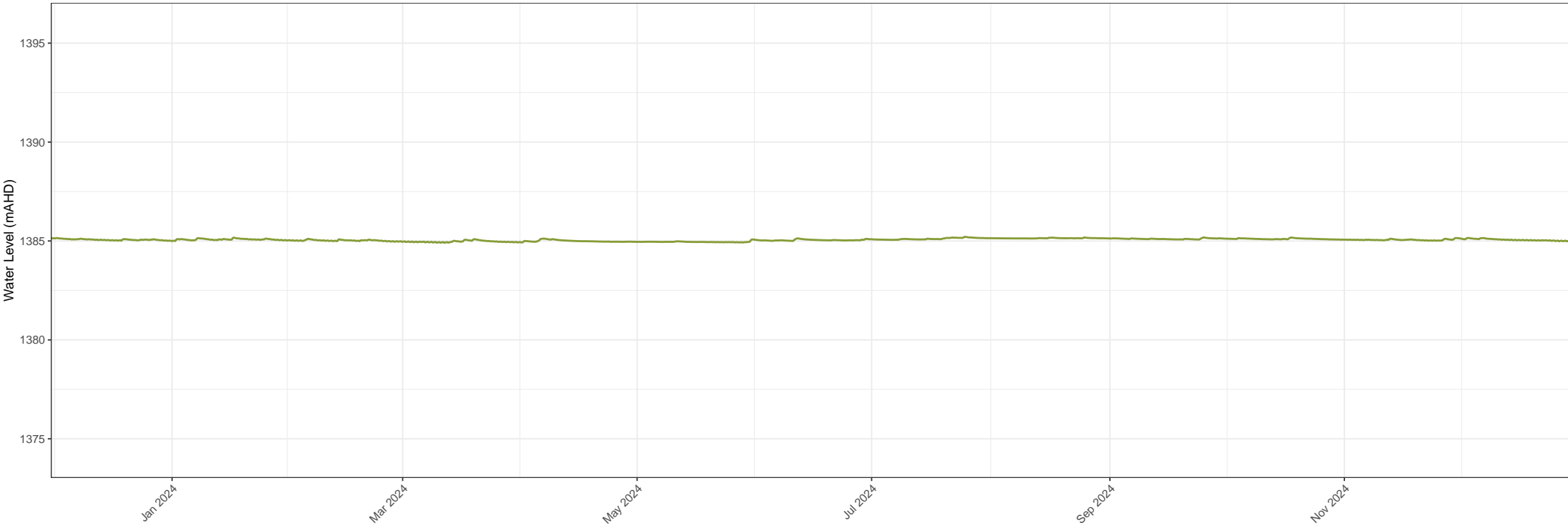
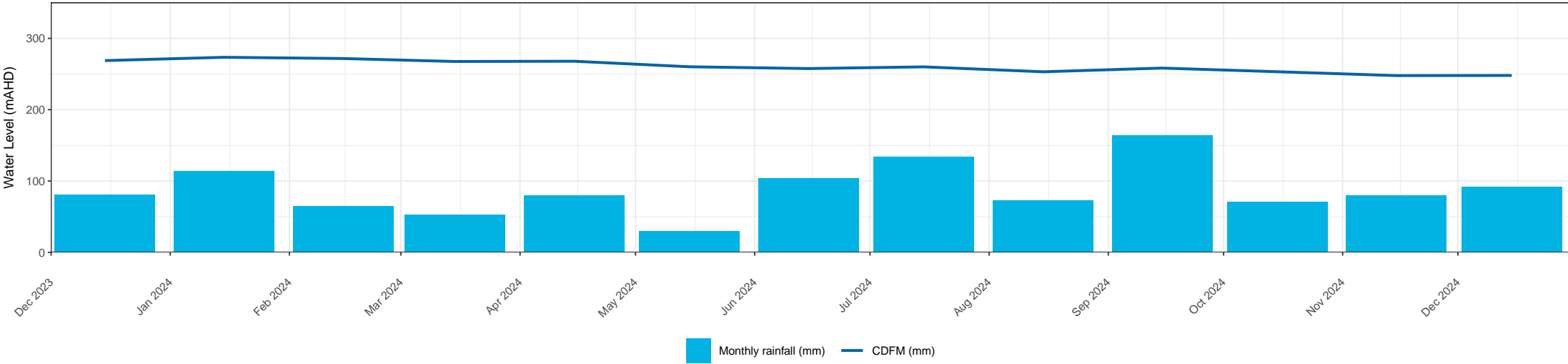


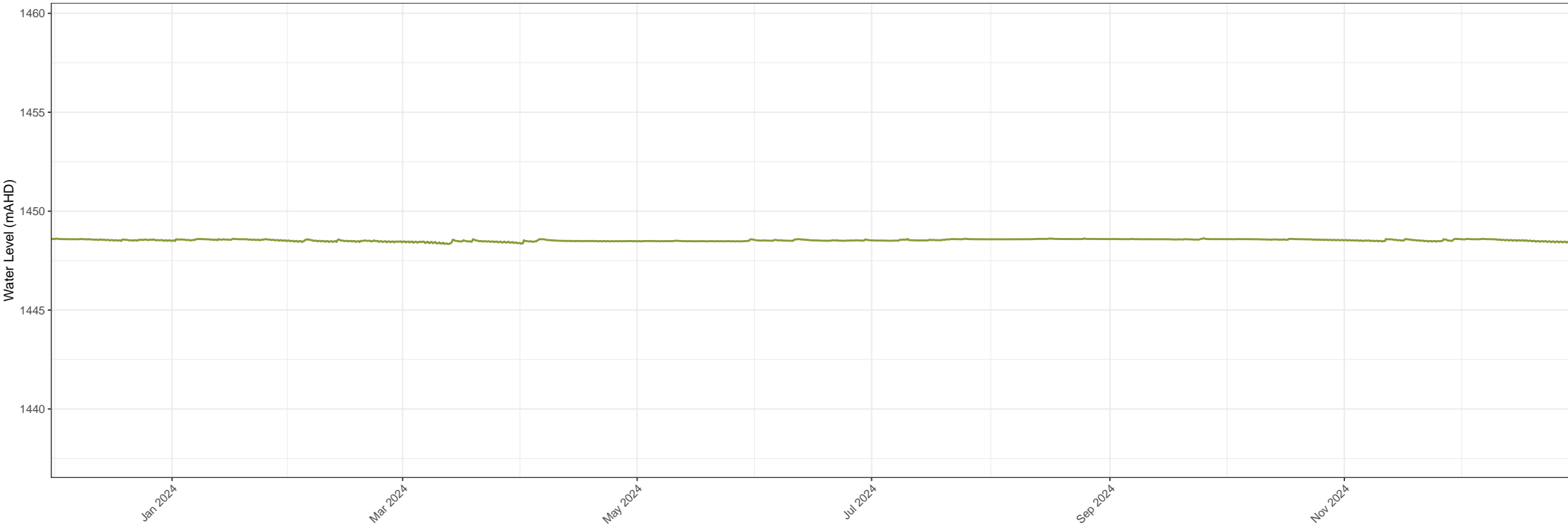
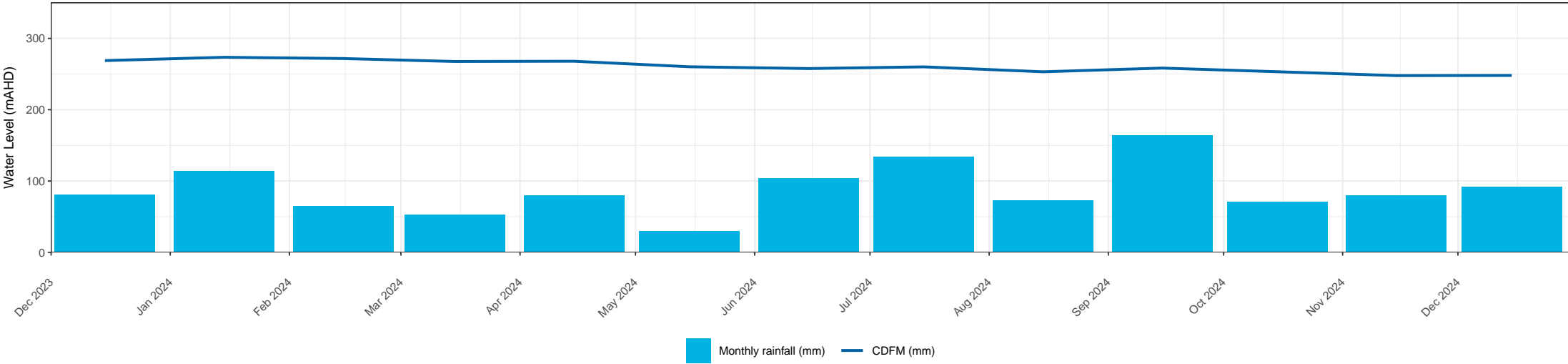
RtS_BH4A groundwater level times series data
 Snowy 2.0 – Snowy Hydro Limited
 Groundwater monitoring and management
 Figure A– RtS_BH4A

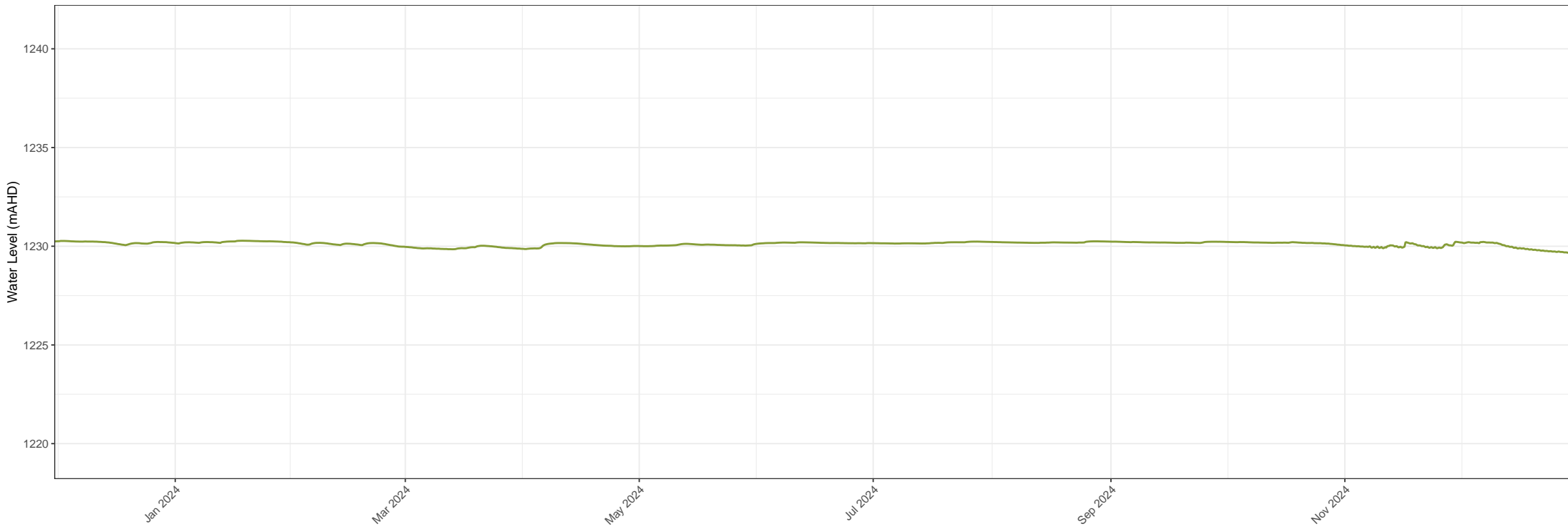
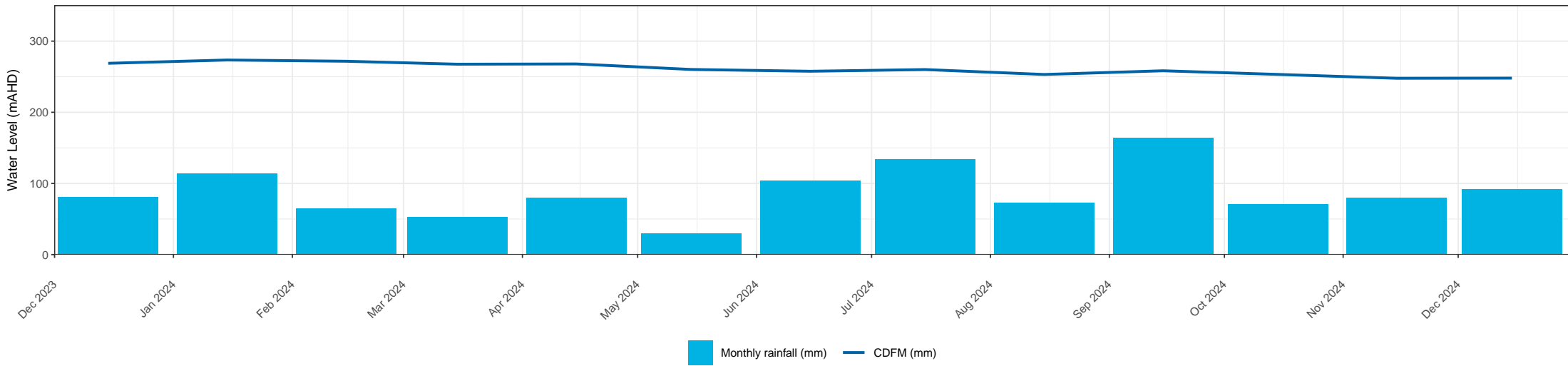




RtS_BH4B groundwater level times series data
 Snowy 2.0 – Snowy Hydro Limited
 Groundwater monitoring and management
 Figure A– RtS_BH4B

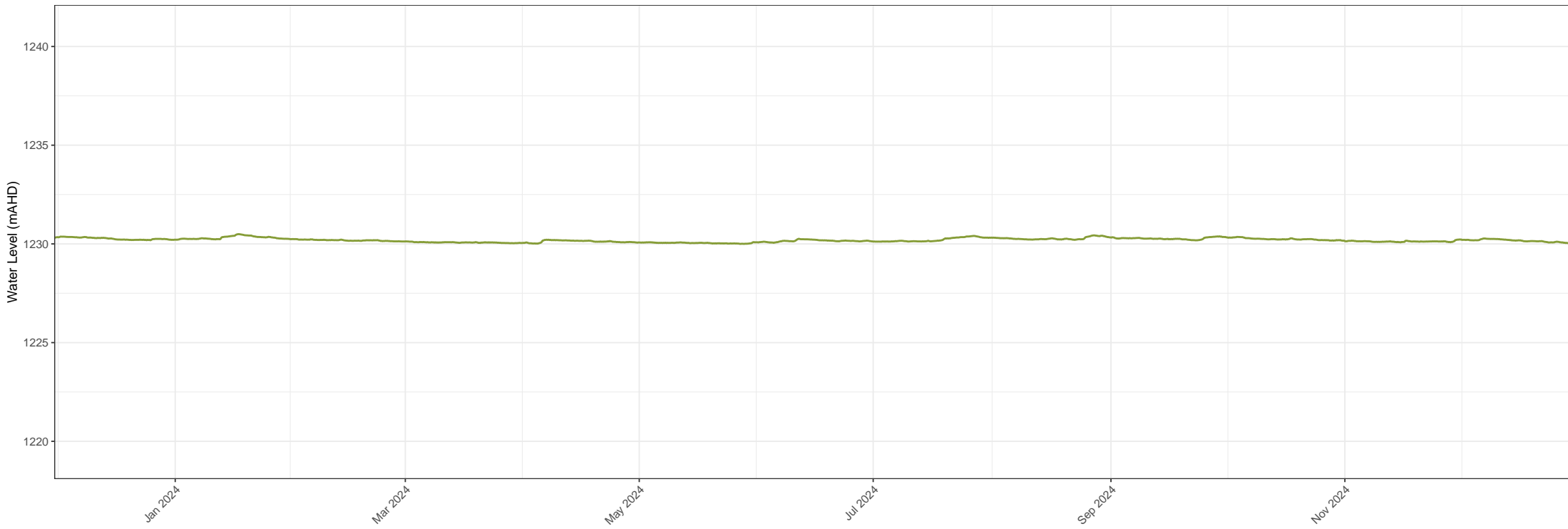
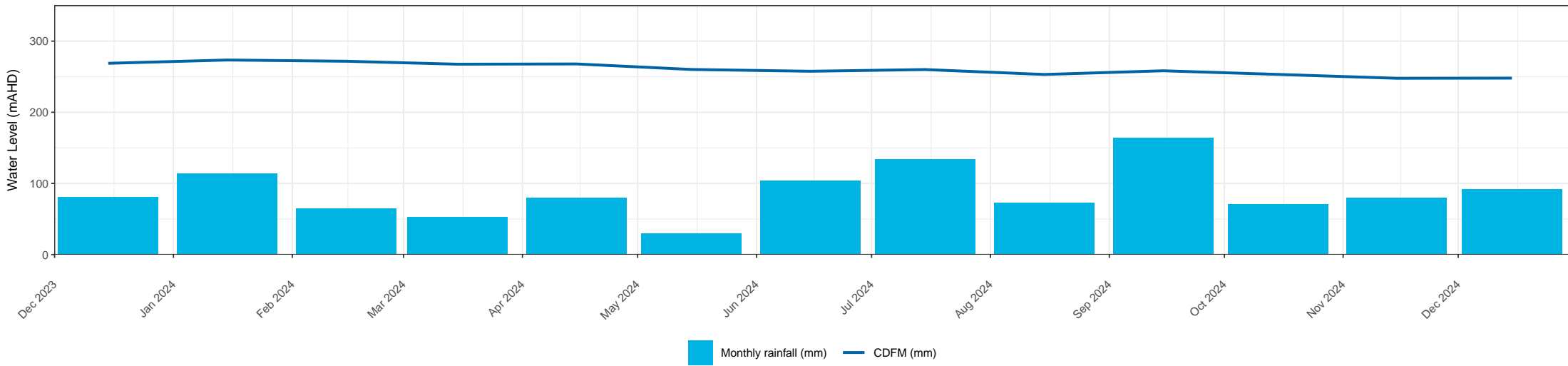




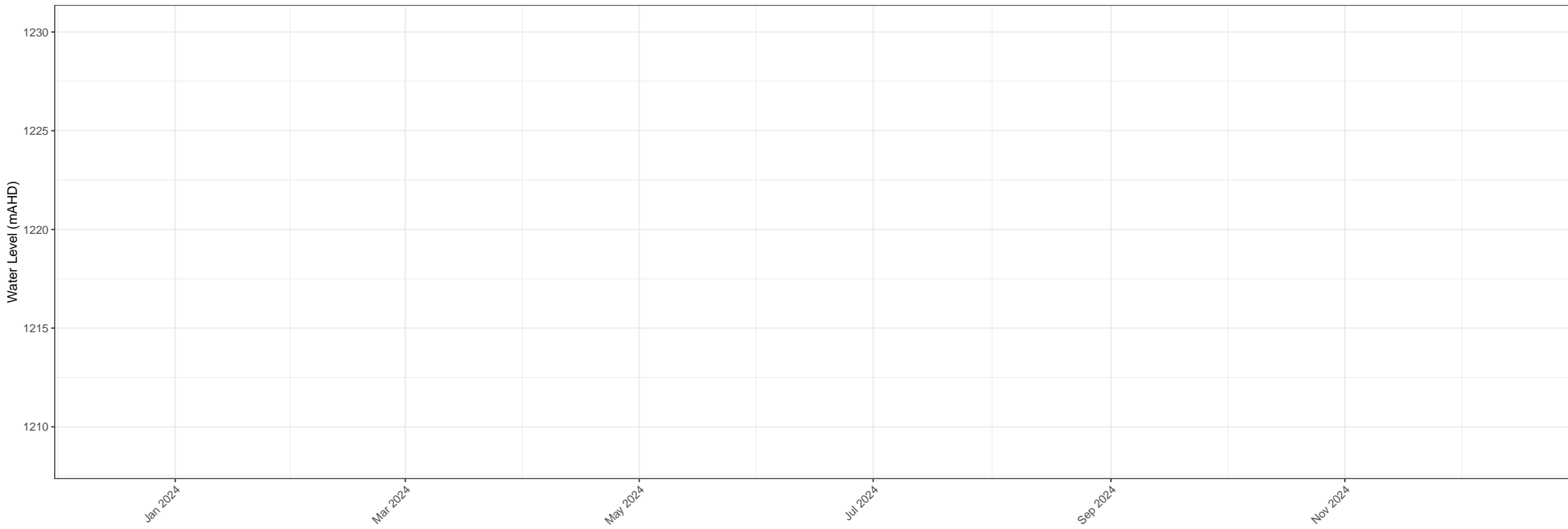
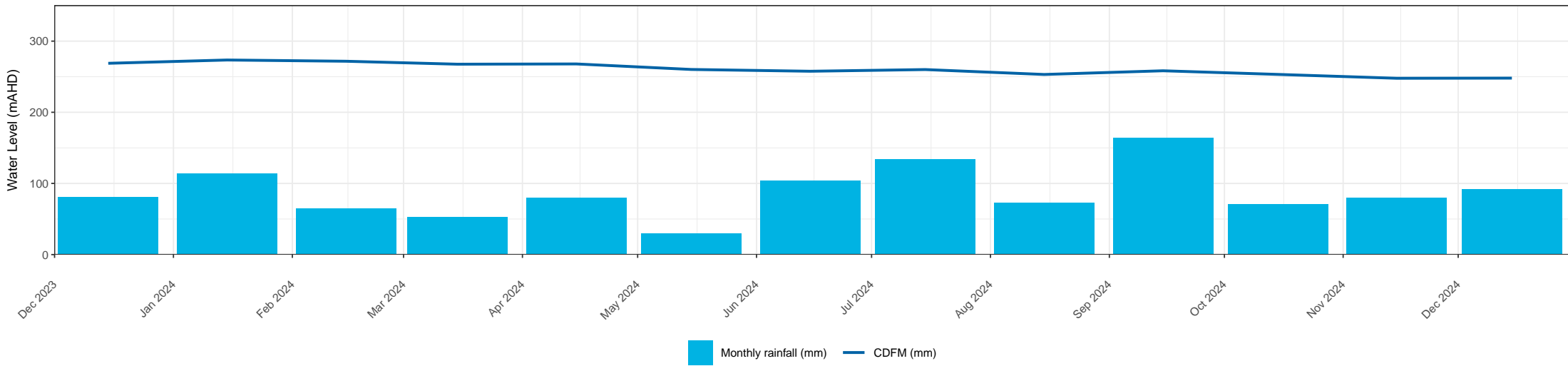


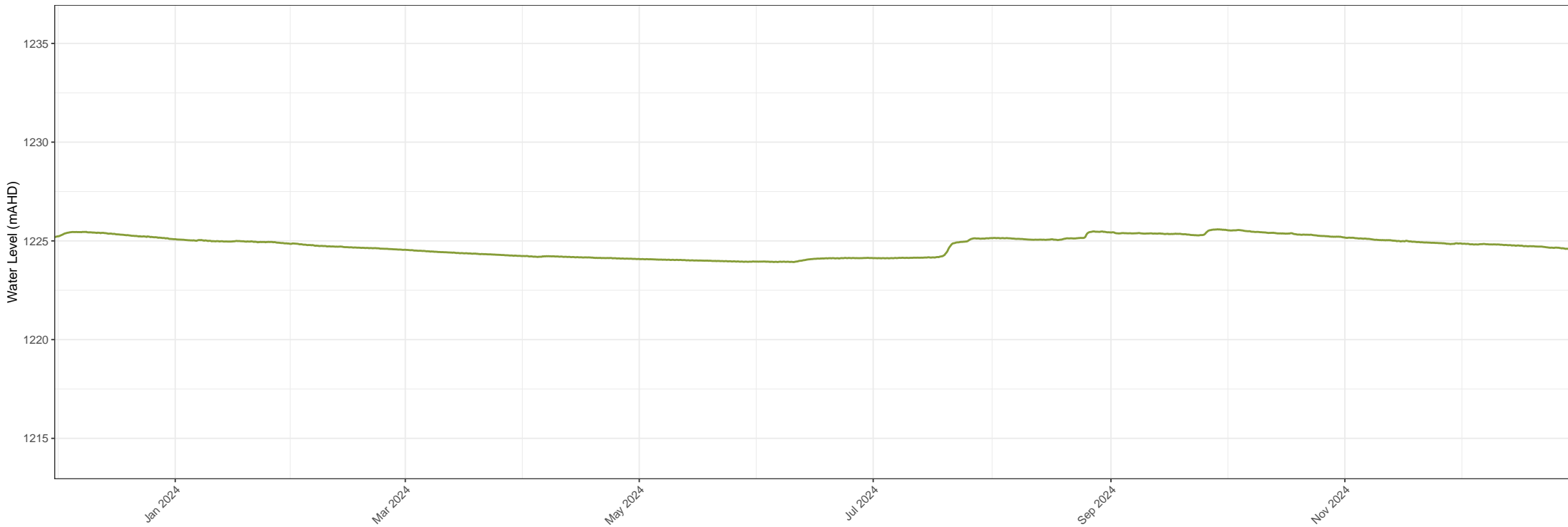
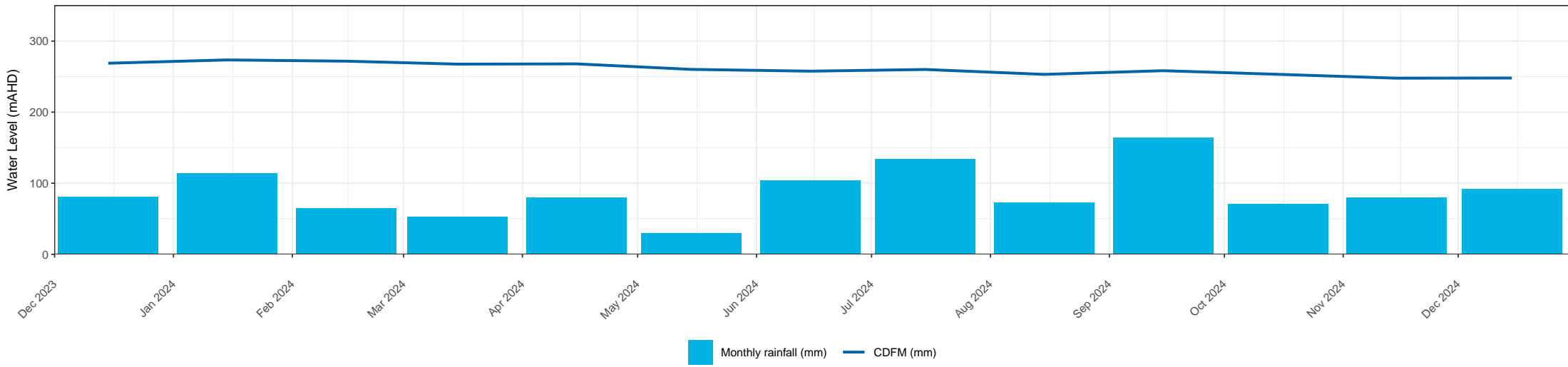
RtS_BH7A groundwater level times series data
 Snowy 2.0 – Snowy Hydro Limited
 Groundwater monitoring and management
 Figure A– RtS_BH7A





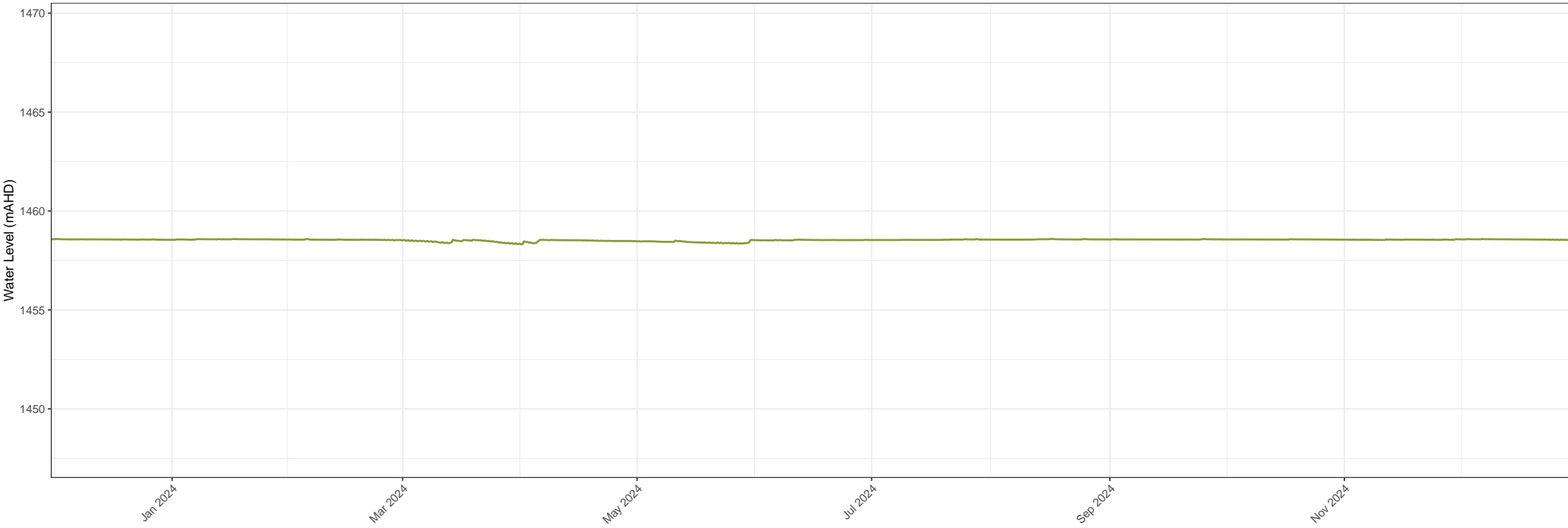
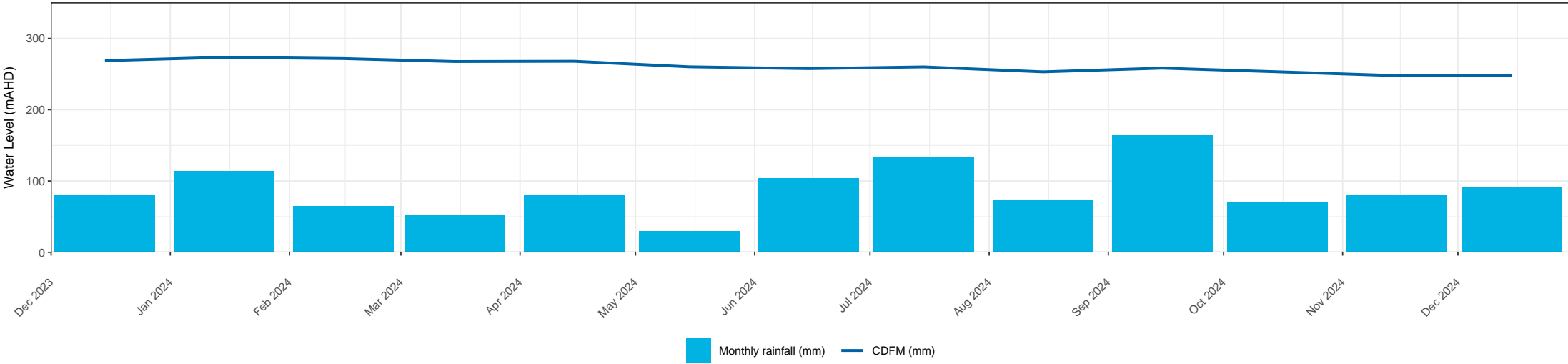
RtS_BH7B groundwater level times series data
 Snowy 2.0 – Snowy Hydro Limited
 Groundwater monitoring and management
 Figure A– RtS_BH7B



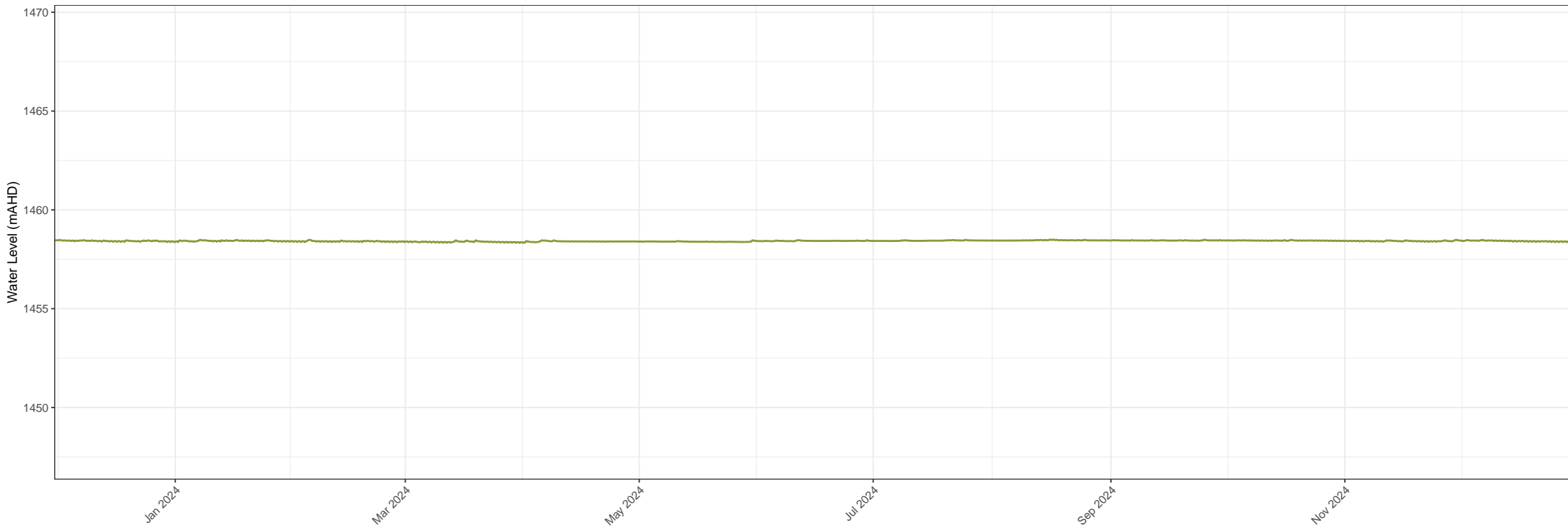
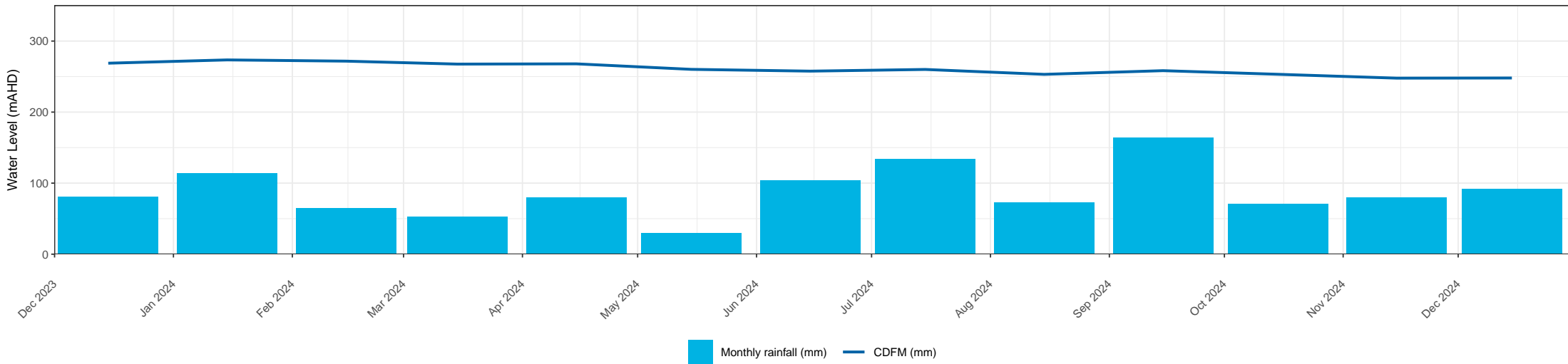


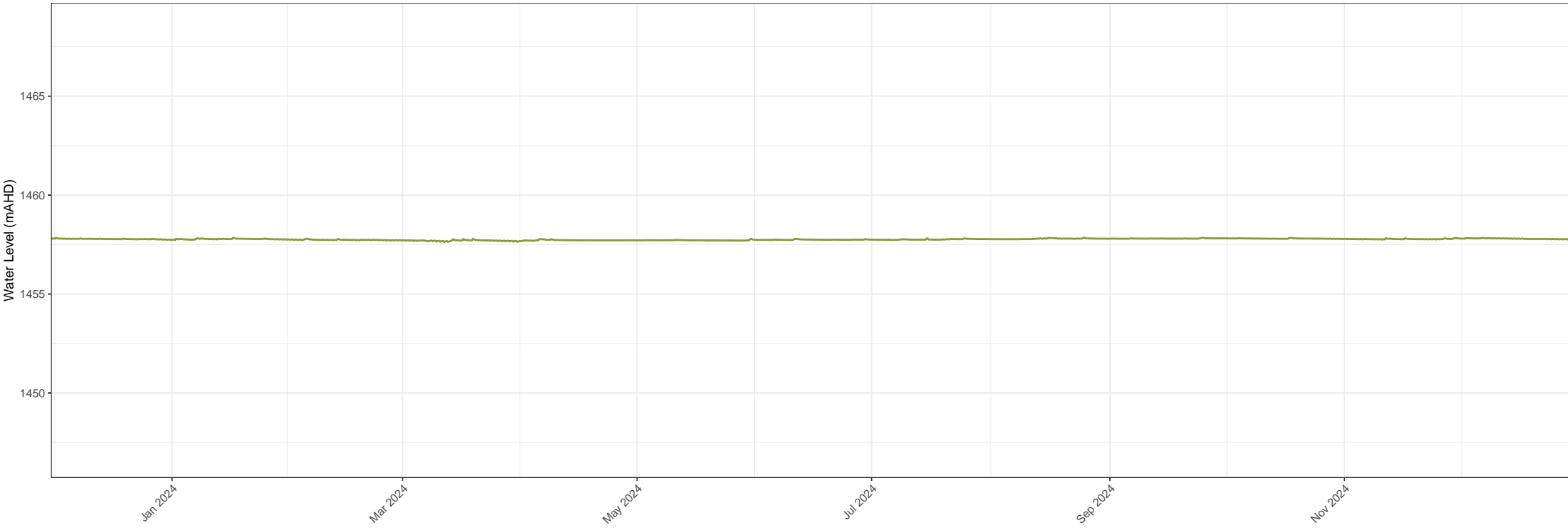
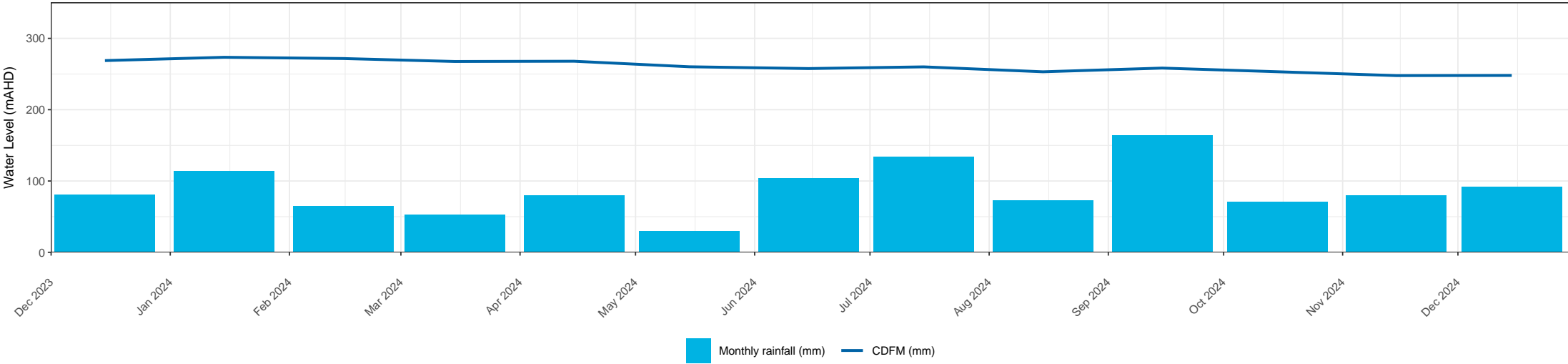
RtS_BH8B groundwater level times series data
 Snowy 2.0 – Snowy Hydro Limited
 Groundwater monitoring and management
 Figure A– RtS_BH8B

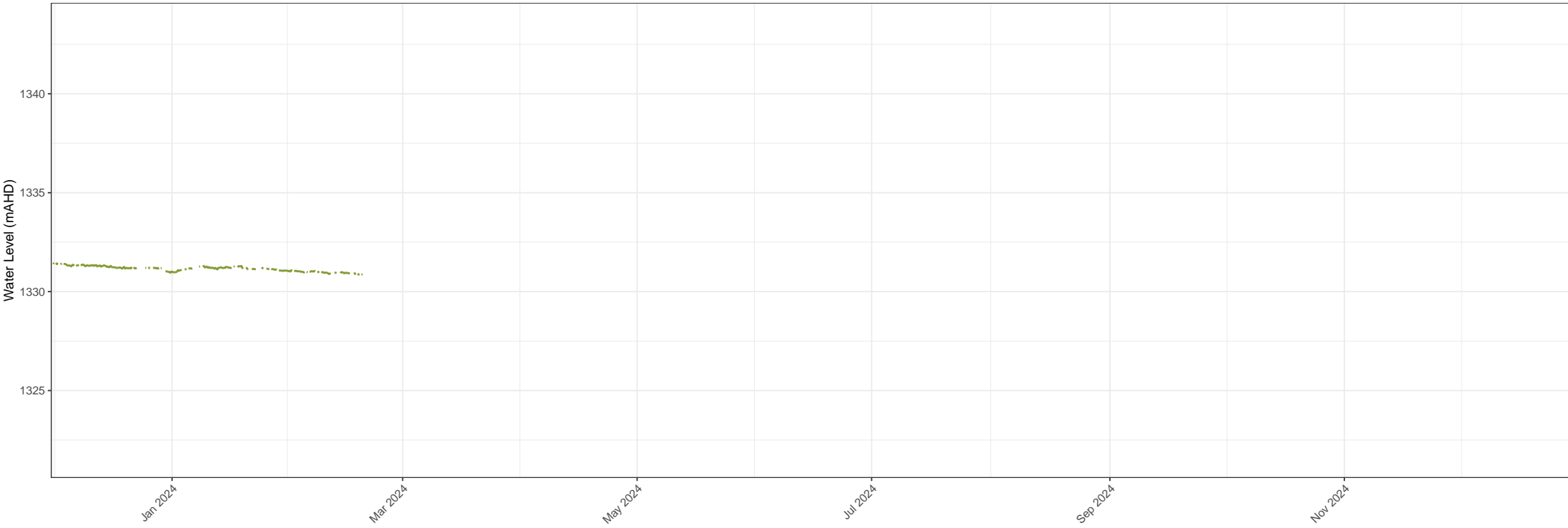
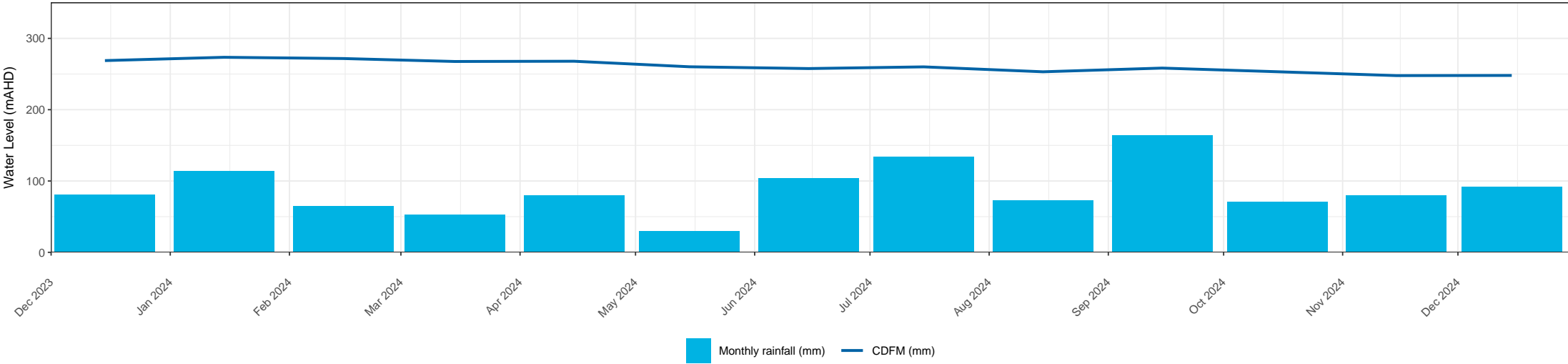


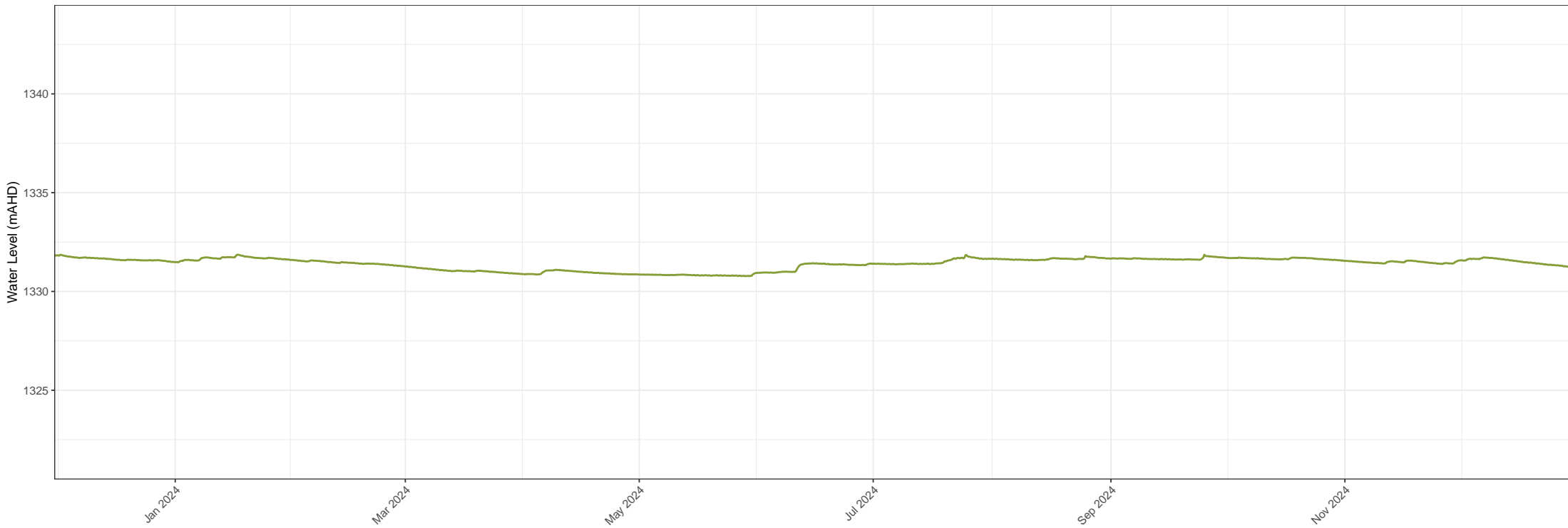
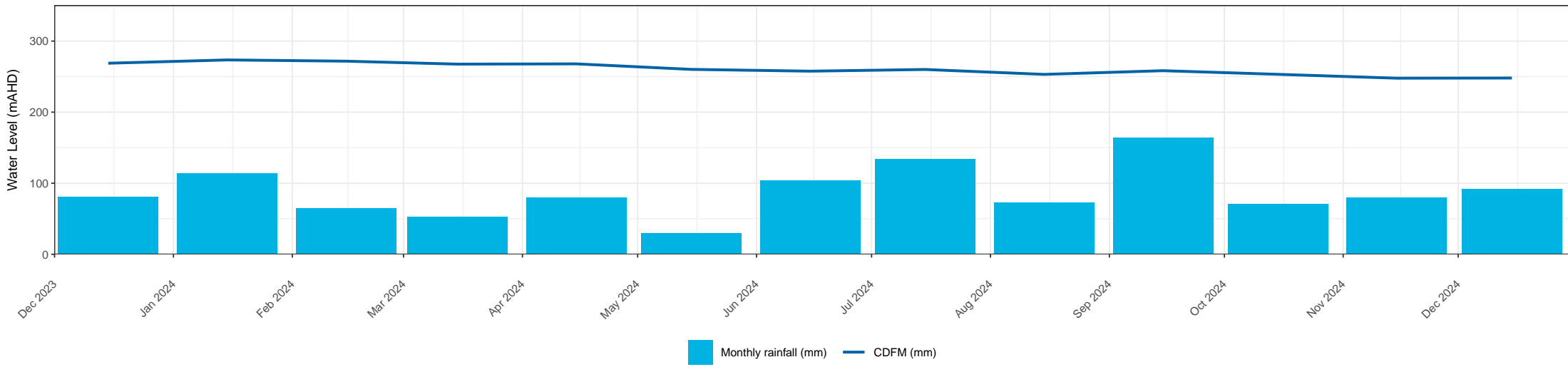


RtS_BH9A groundwater level times series data
 Snowy 2.0 – Snowy Hydro Limited
 Groundwater monitoring and management
 Figure A– RtS_BH9A

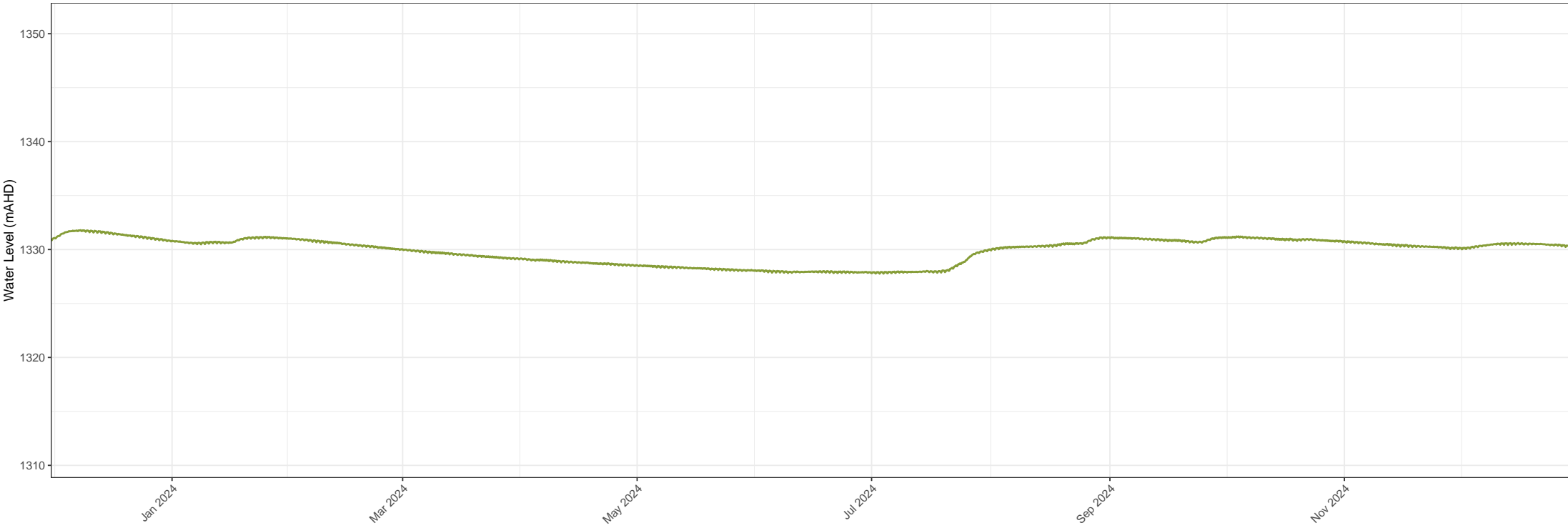
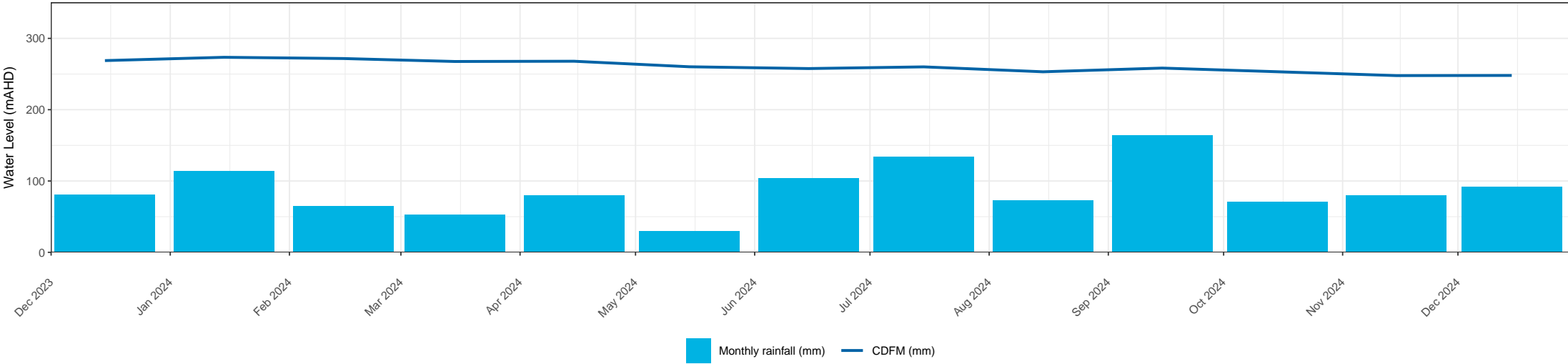


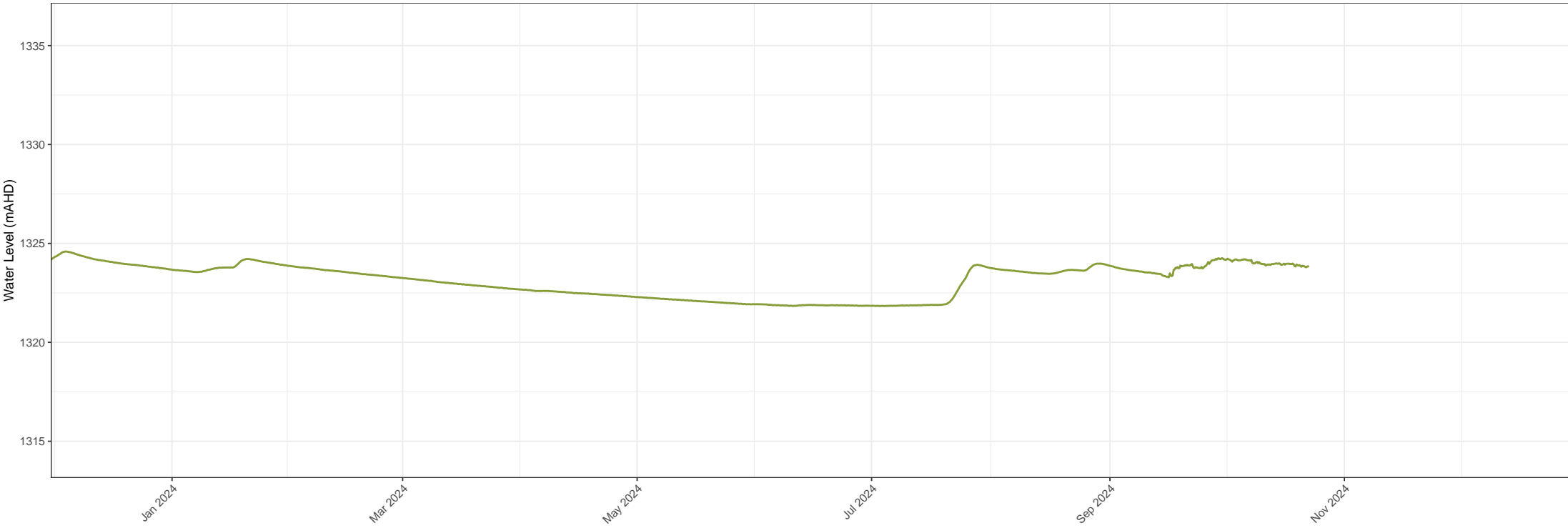
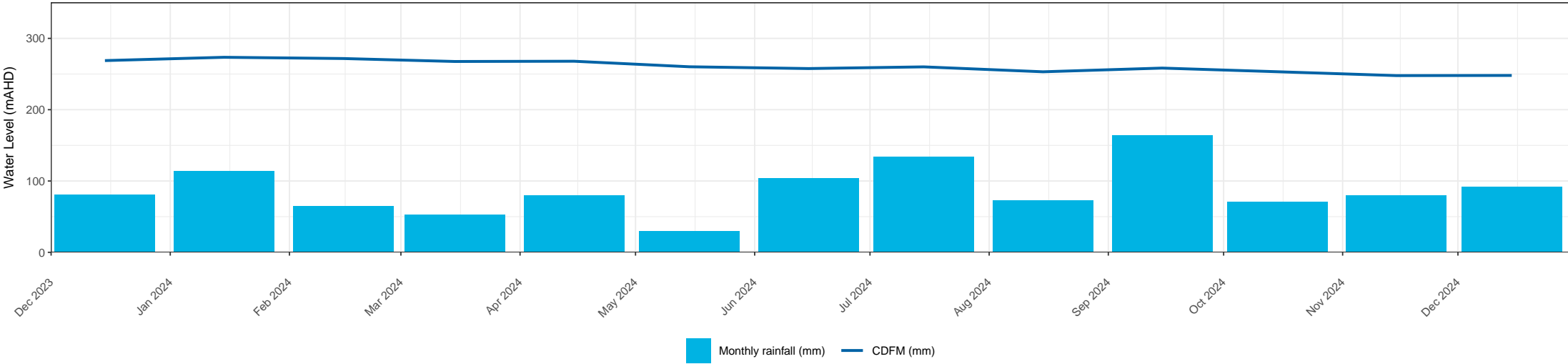




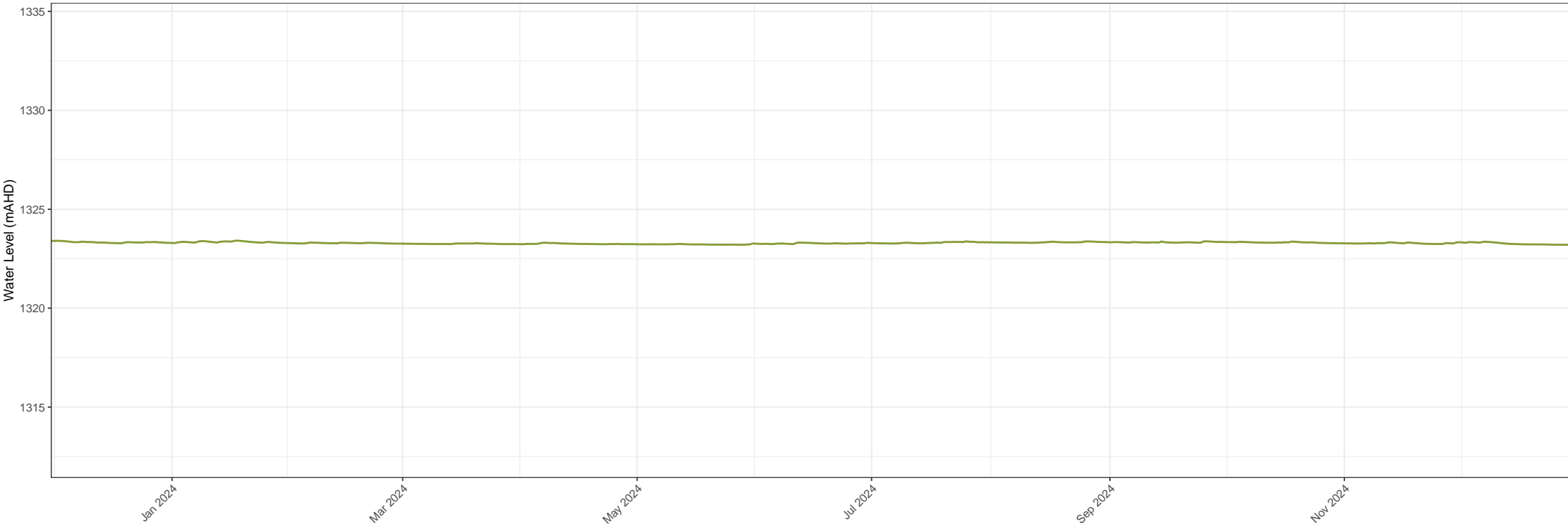
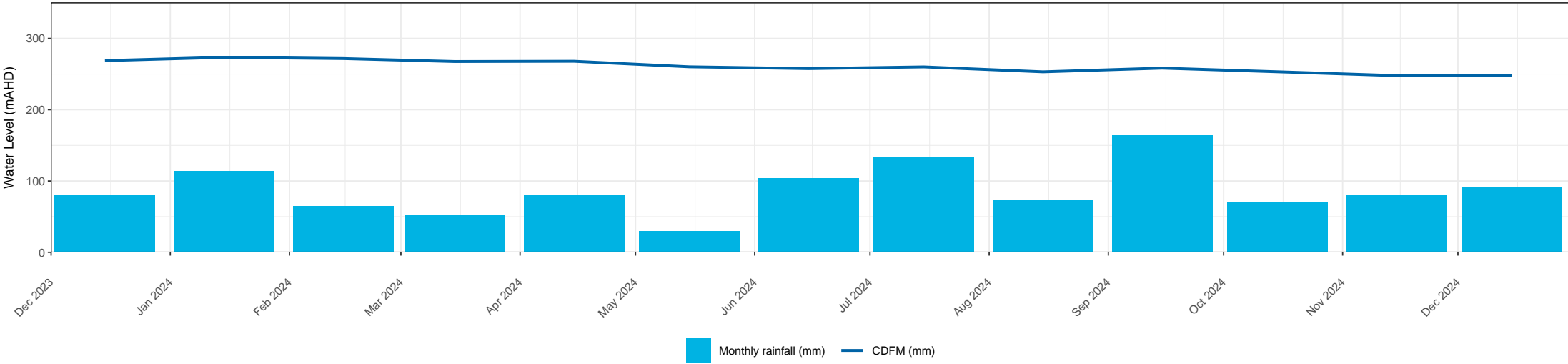


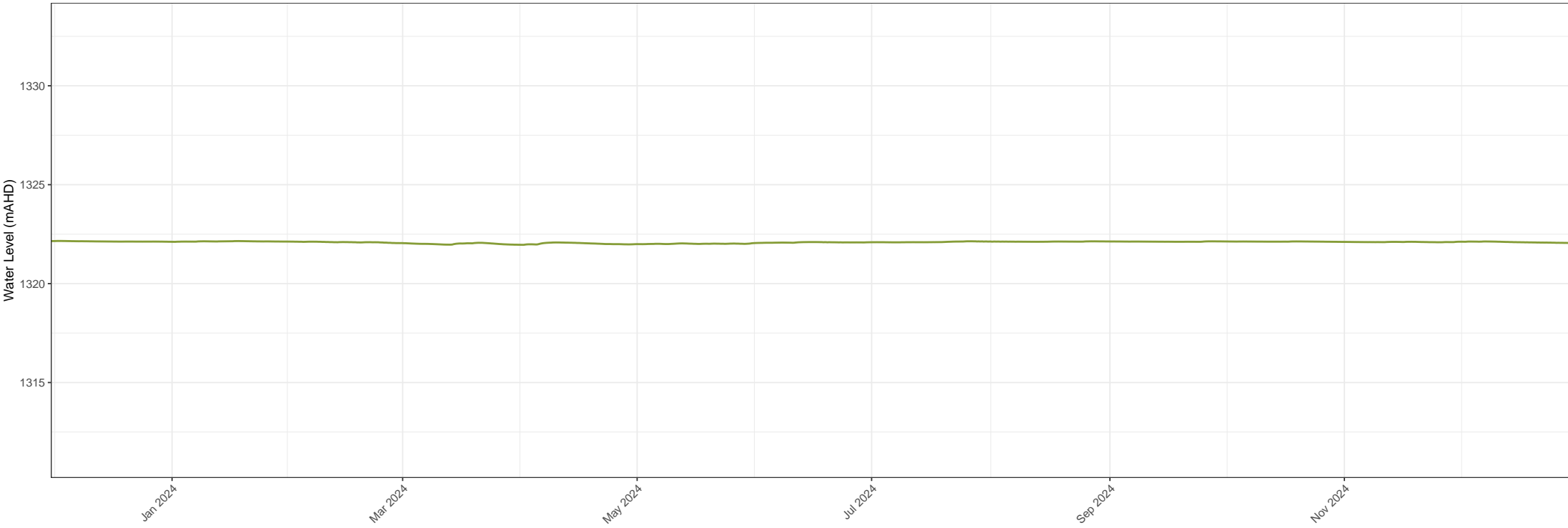
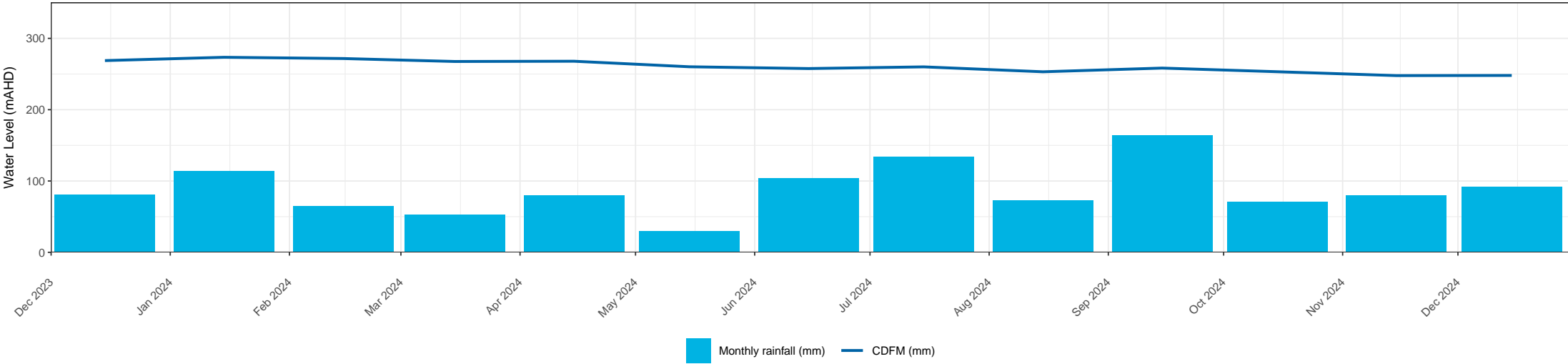
SMB03 groundwater level times series data
 Snowy 2.0 – Snowy Hydro Limited
 Groundwater monitoring and management
 Figure A– SMB03

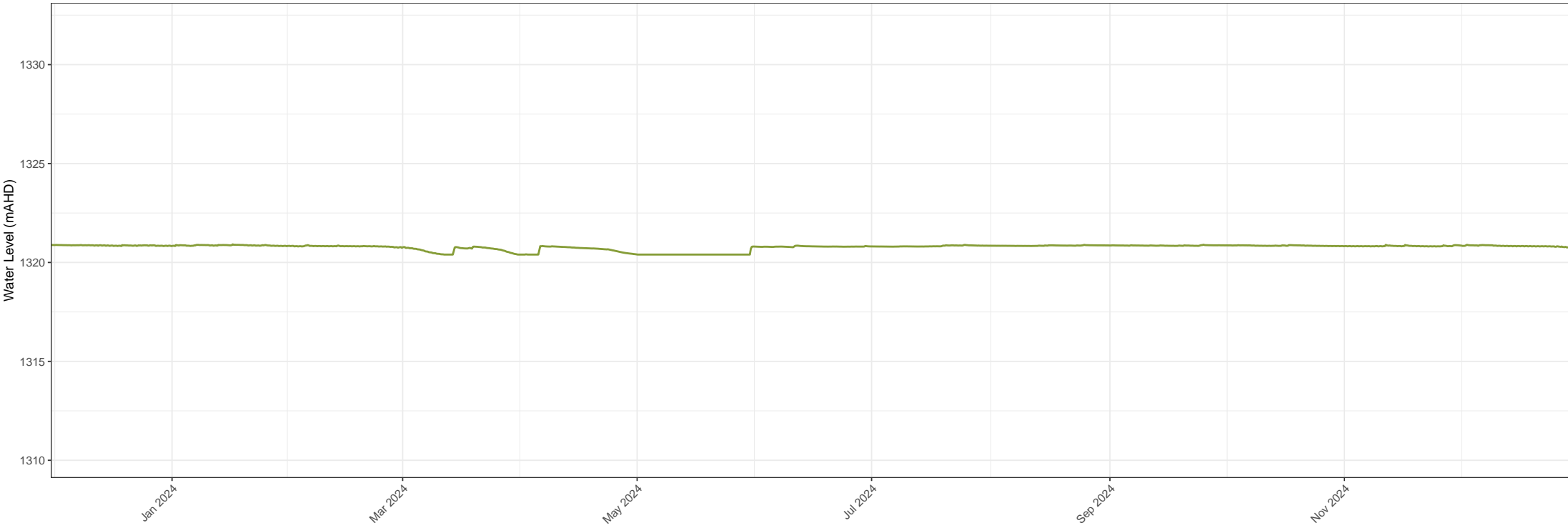
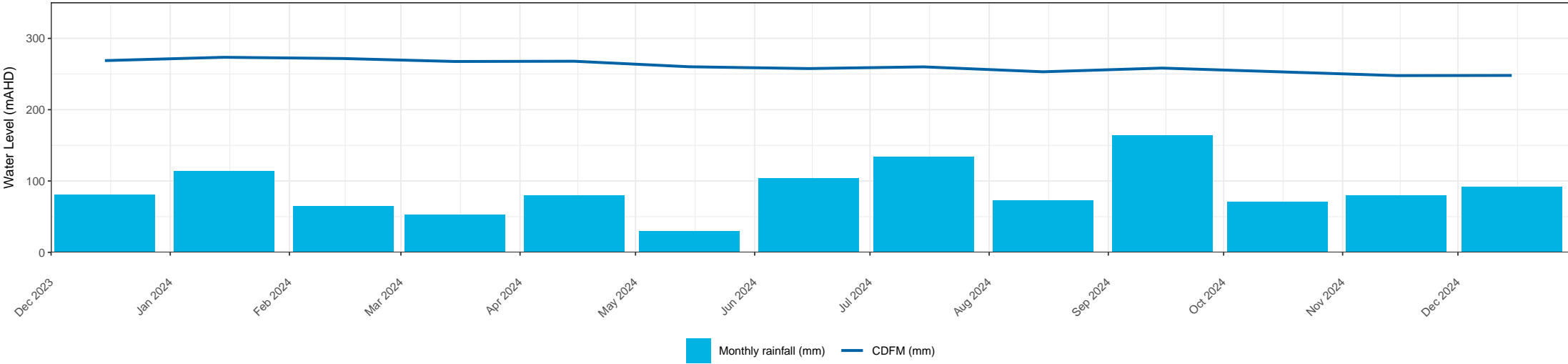


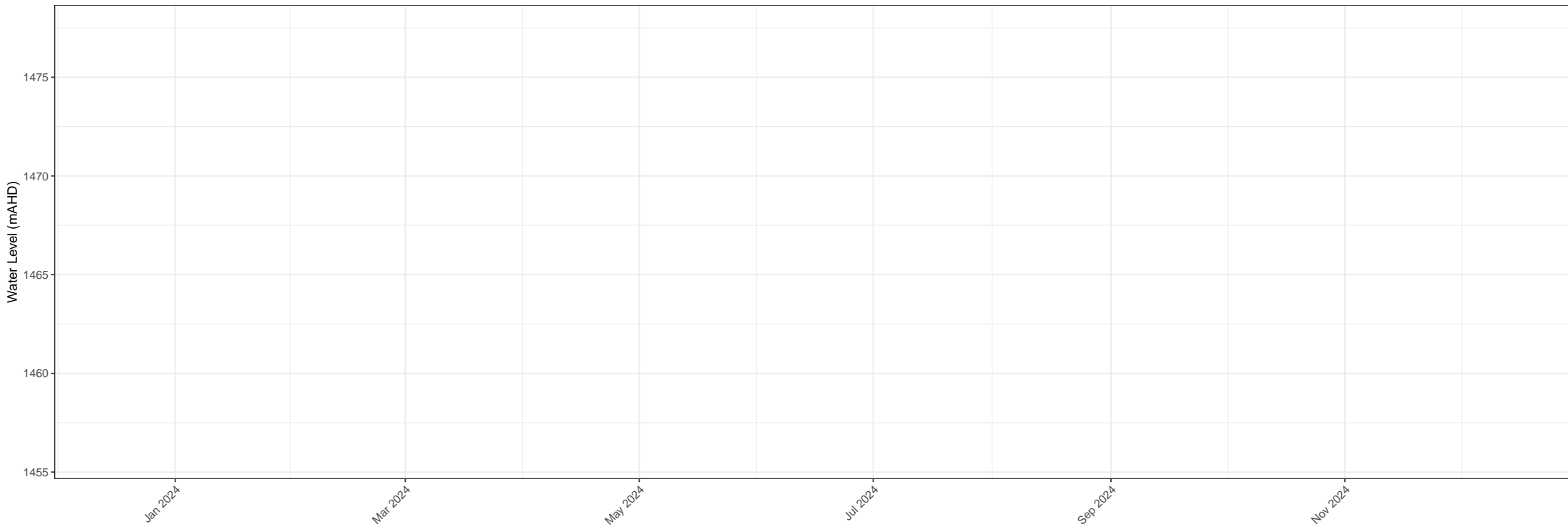
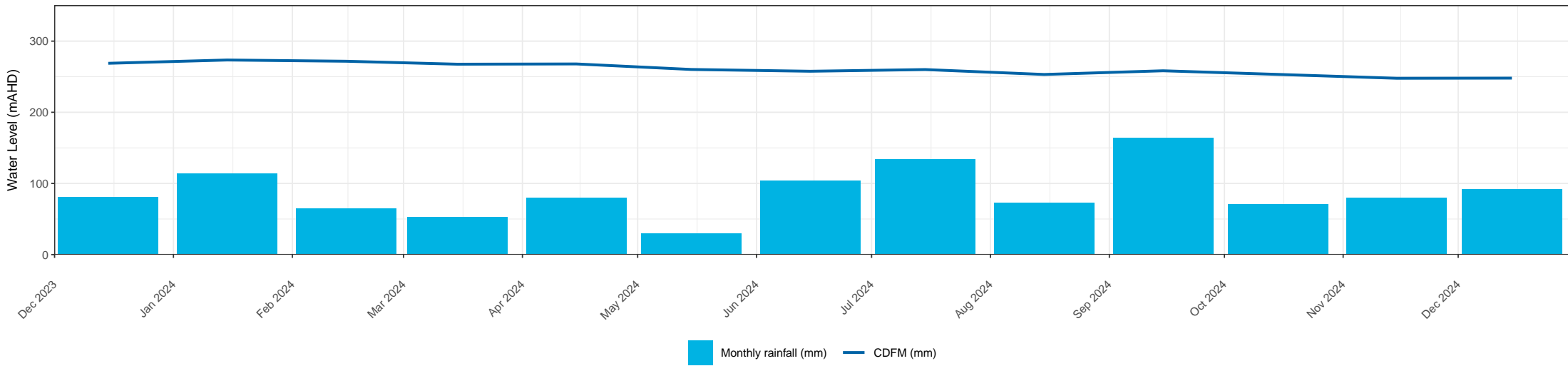


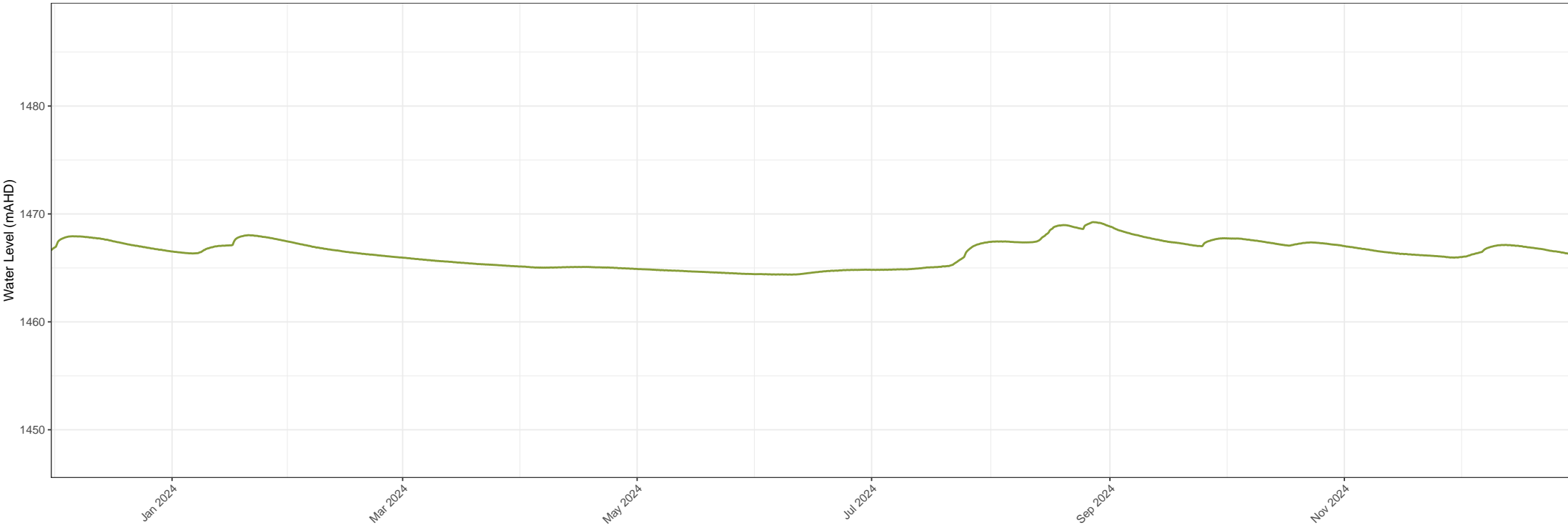
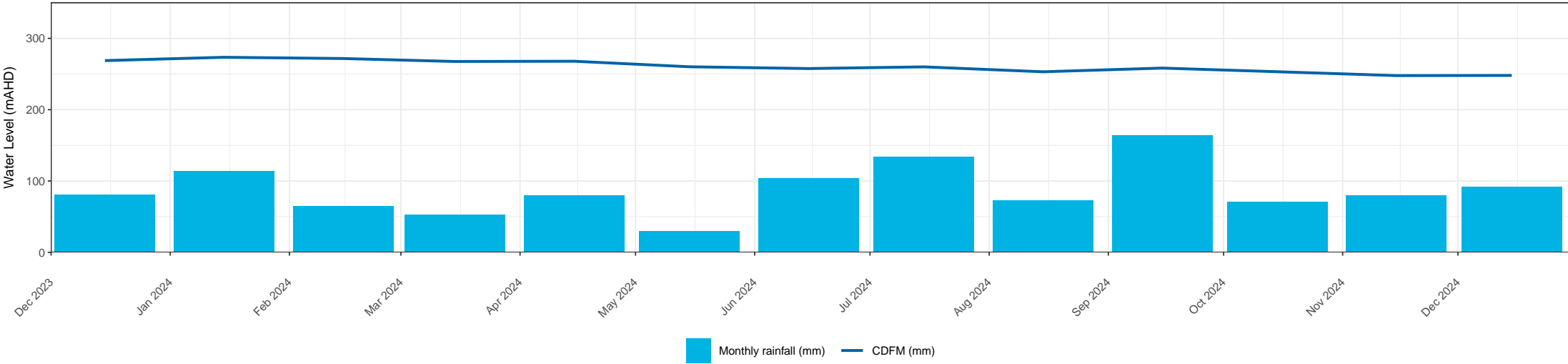
SMB05 groundwater level times series data
 Snowy 2.0 – Snowy Hydro Limited
 Groundwater monitoring and management
 Figure A– SMB05



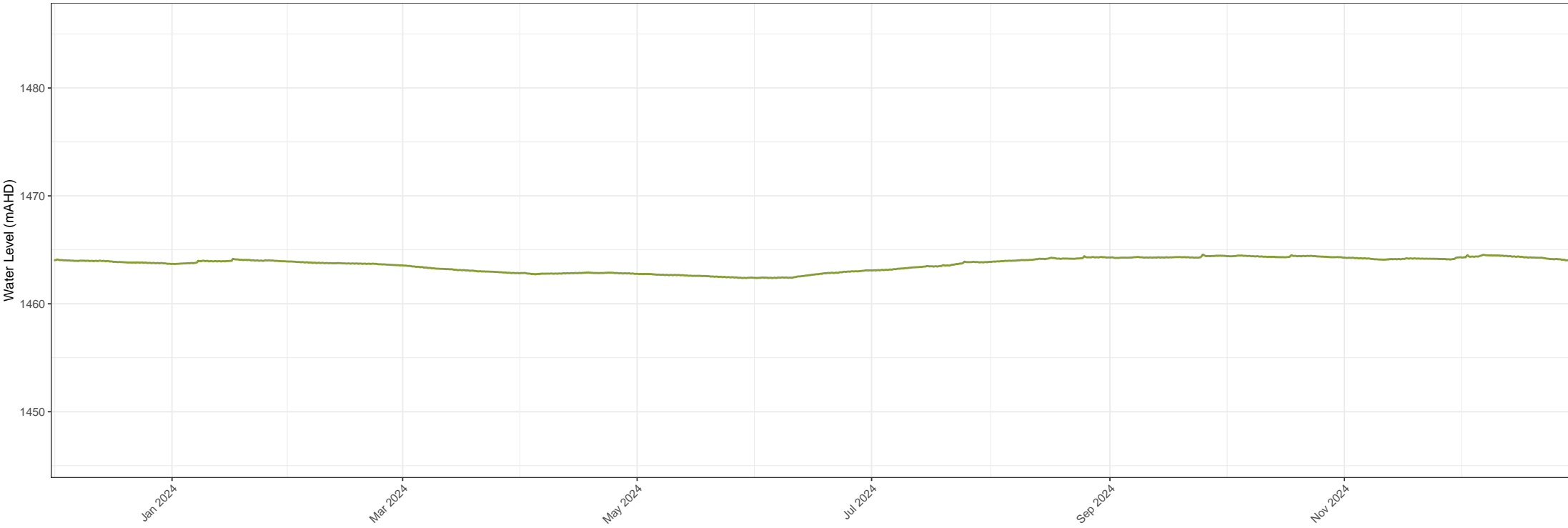
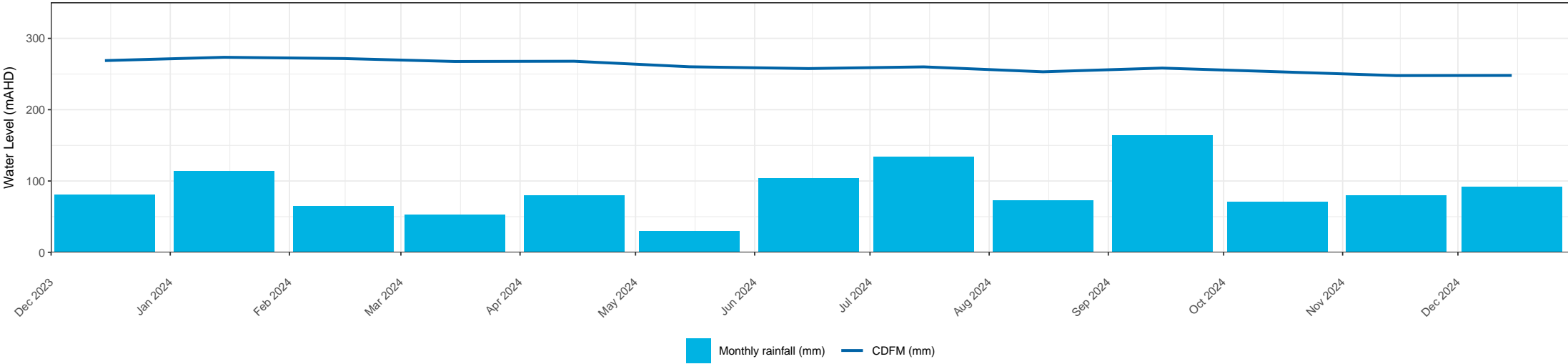


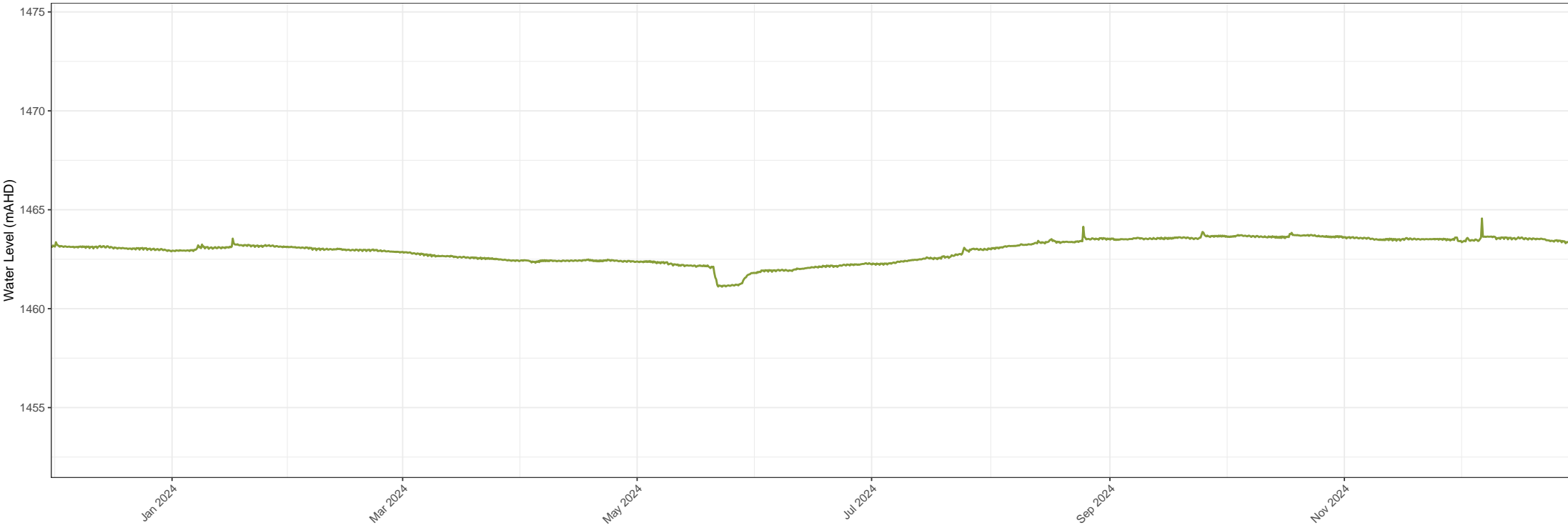
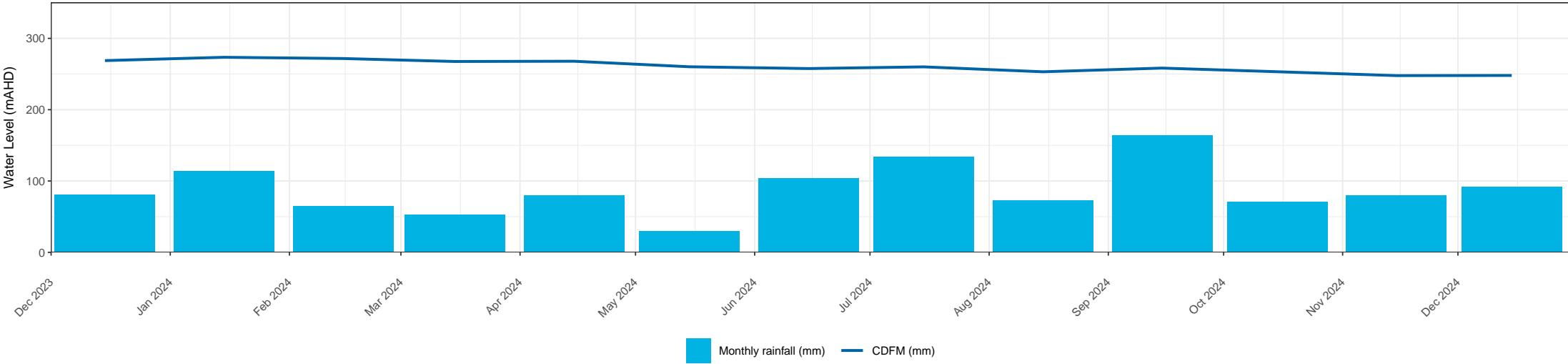


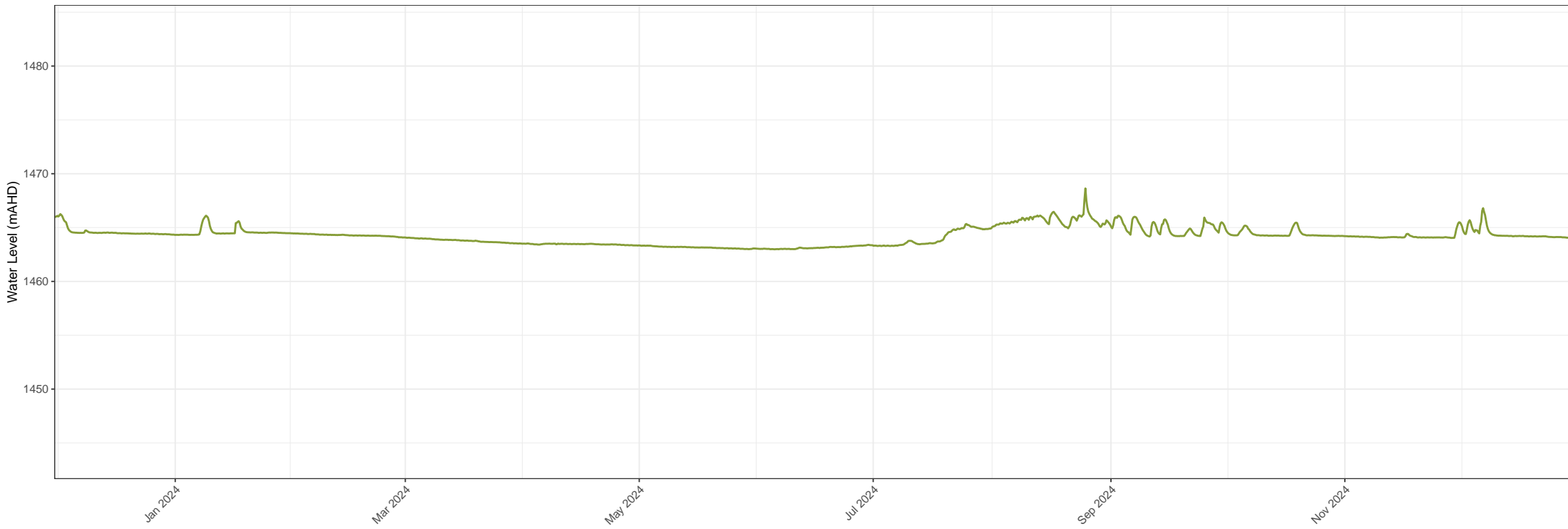
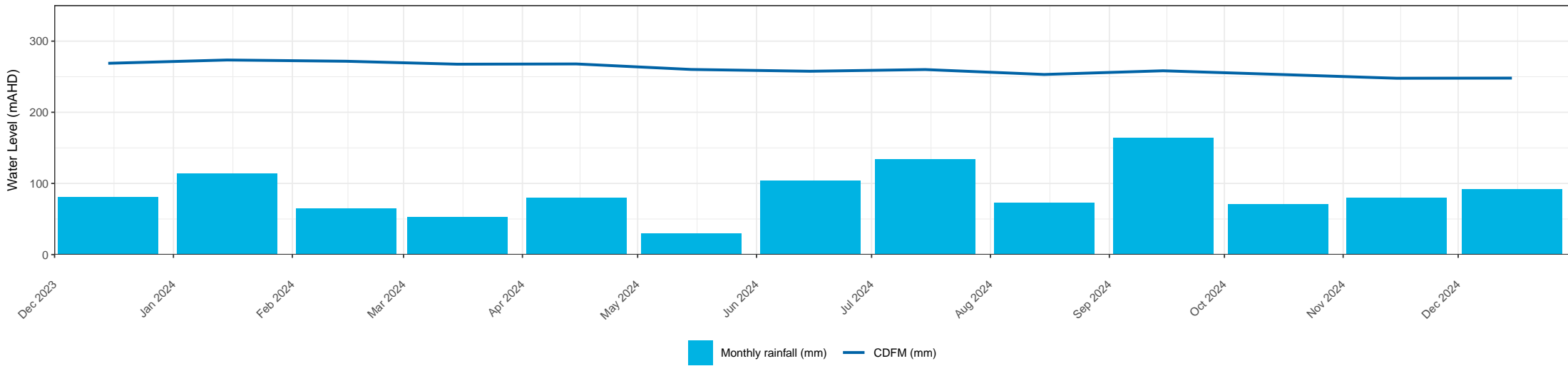


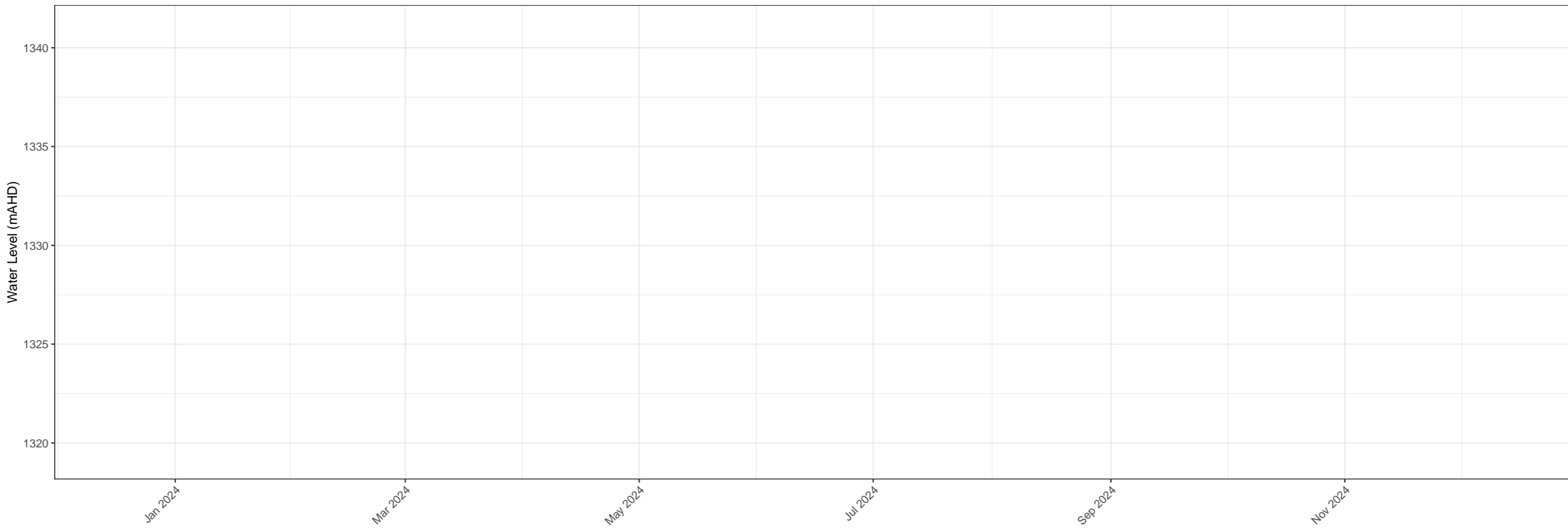
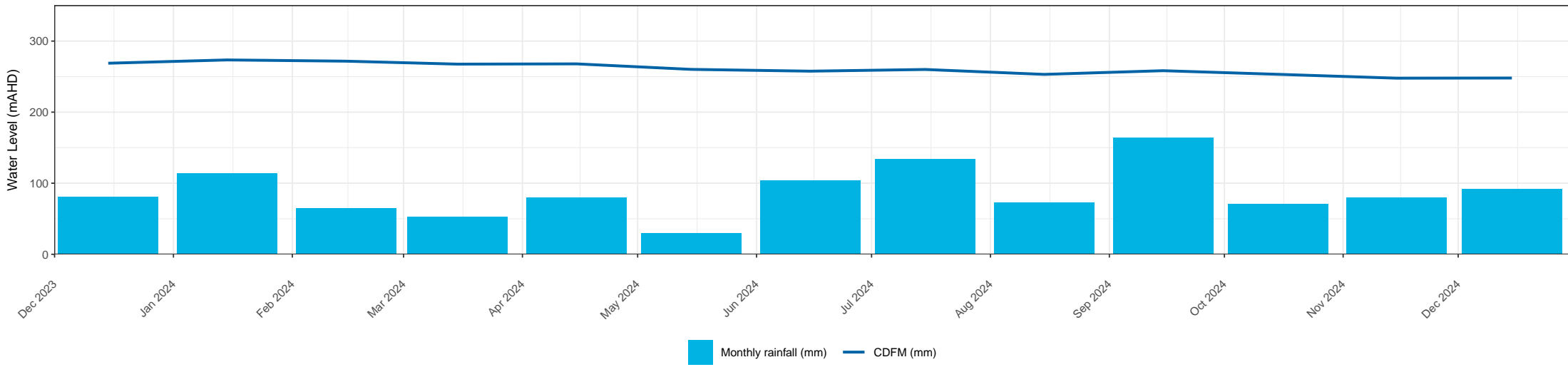


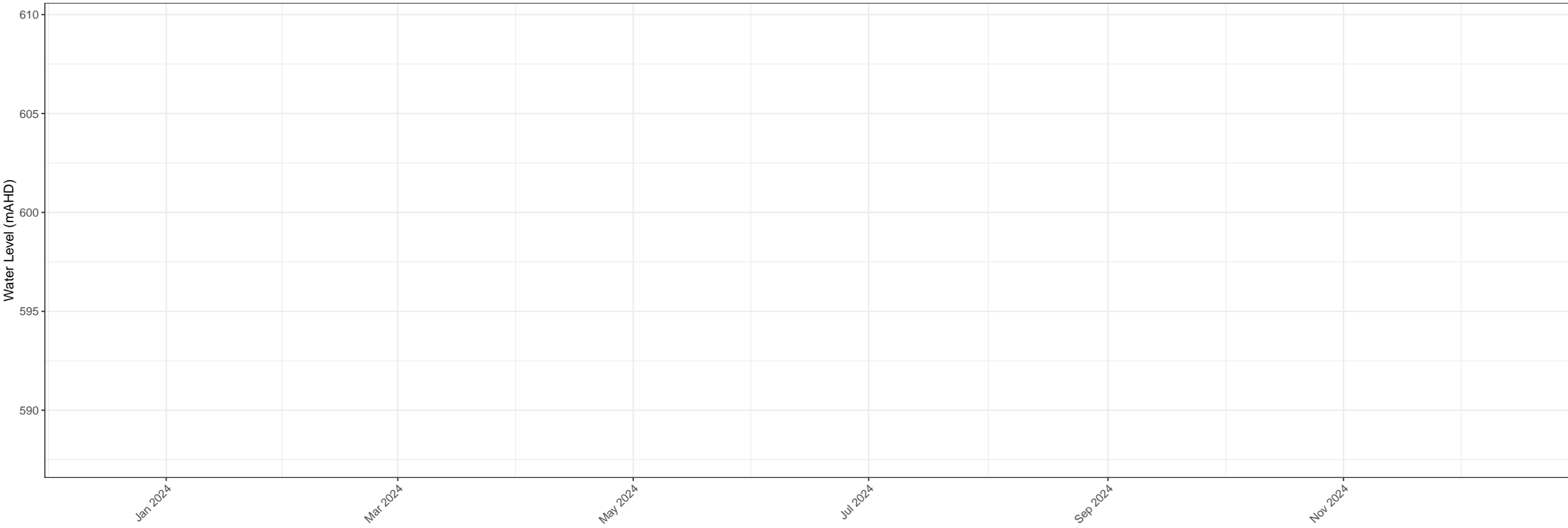
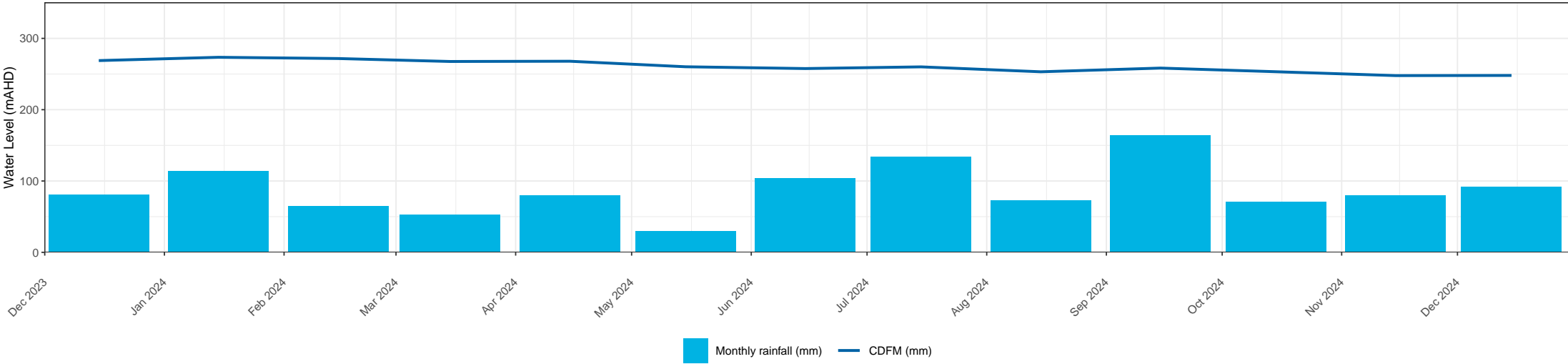
TMB02B groundwater level times series data
 Snowy 2.0 – Snowy Hydro Limited
 Groundwater monitoring and management
 Figure A– TMB02B

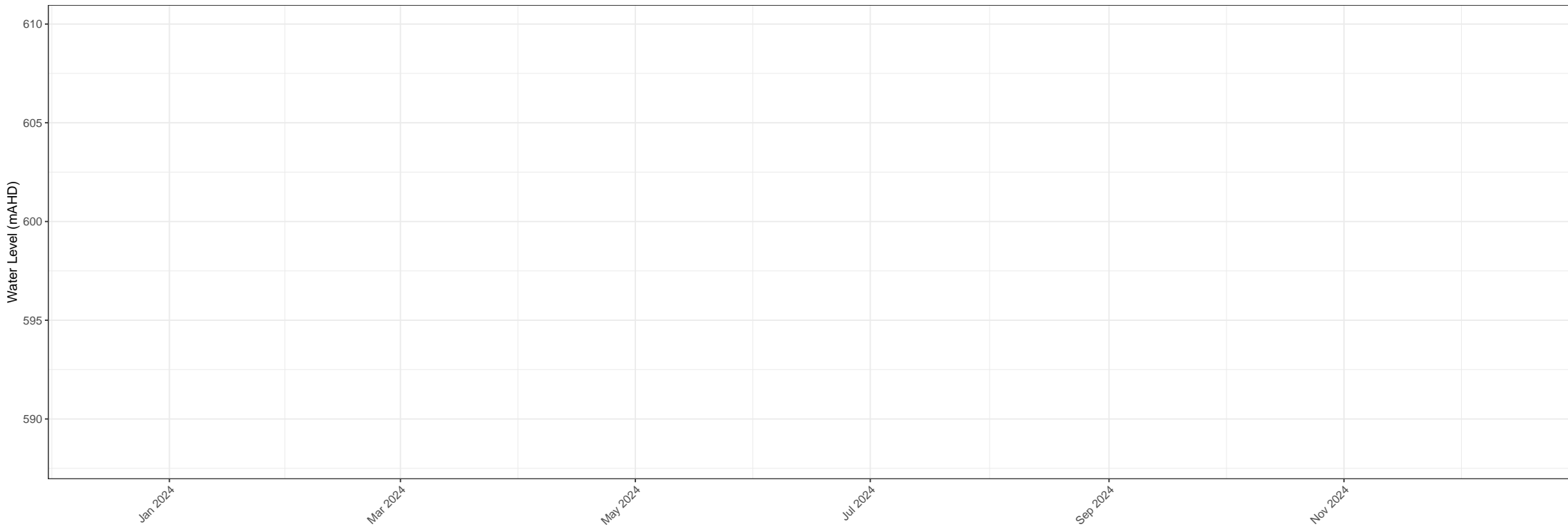
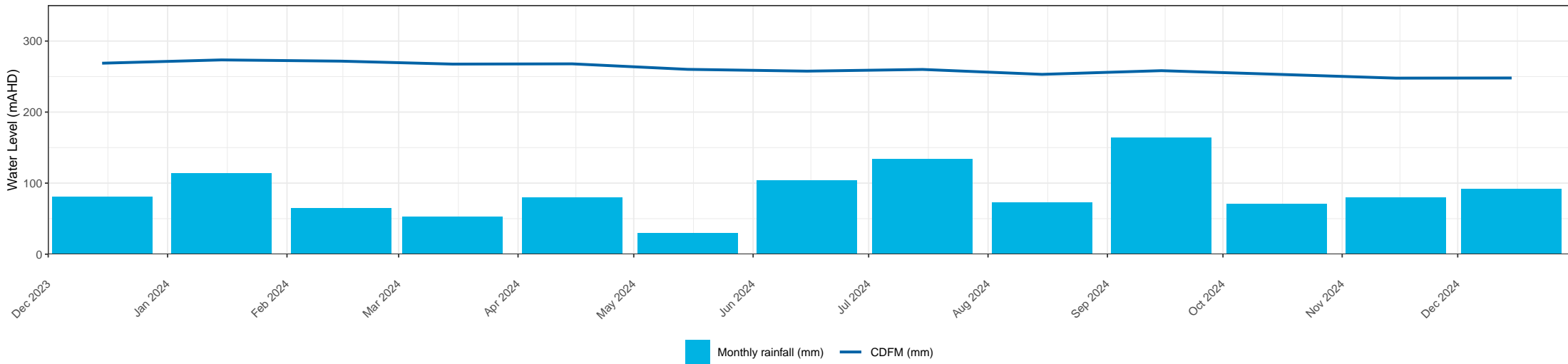












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