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Victorian Murray Floodplain Restoration Project Climate Change Stress Test

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Acknowledgement of the Traditional Owners of the Murray–Darling Basin

The Murray−Darling Basin Authority pays respect to the Traditional Owners and their Nations of the Murray−Darling Basin. We acknowledge their deep cultural, social, environmental, spiritual and economic connection to their lands and waters.

The guidance and support received from the Murray Lower Darling Rivers Indigenous Nations, the Northern Basin Aboriginal Nations and our many Traditional Owner friends and colleagues is very much valued and appreciated.

Aboriginal people should be aware that this publication may contain images, names or quotations of deceased persons.

Executive Summary

The analysis presented in this report represents an indication of how Murray River flows will differ when contrasting historical inflow driven river system model scenarios with those representing the impacts of climate change. It provides a broad imprecise indication of how the Victorian Murray Floodplain Restoration Project (VMFRP) will be impacted by a changing climate.

Source Murray Model (SMM) scenarios were developed following guidelines outlined in Guidelines for Assessing the Impacts of Climate Change on Water Availability in Victoria (DEWLP 2020) to contrast historical climate conditions with high impact 'dry' scenarios and low impact 'wet' scenarios.

The frequency of events relevant to each operating strategy are projected to decline. The impact is small for low impact climate change projections and large for high impact climate change projections. The low impact wet scenarios show a small number of summer events not present in other scenarios. The high impact dry climate scenarios show significant reductions in the number of events, the percentage of years with an event, median event duration, and significant increases in the 90th percentile duration between events.

Key messages

- The frequency of flow events either equivalent to operation or required to operate Victorian Murray Floodplain Restoration SDLAM projects is projected to decrease when the impact of changing climate is considered.
- The range in climate projections is large and uncertain. However, there is clear evidence of changing climate, including reduced River Murray inflows over the past 20 years.
- Climate change projections under a dry scenario demonstrate that the flows required to inundate the areas of floodplain proposed to be managed under the VMFRP will be substantially reduced in frequency and duration, well below the optimal ecological flood targets.
- The operational flexibility designed into VMFRP projects will be required to meet the challenges posed by a changing climate. If climate change projections of reduced flows eventuate, the ecological utility of SLDAM projects will increase as these environmental works enable the provision of water to these floodplain ecosystems, albeit at lower than desired frequency and duration.
- The modelling study undertaken for this report is based on the best available information. Even though the key messages presented in this report are not likely changed, it would be advisable to update the modelling assumptions used when better information becomes available.
- Explicit representation of the VMFRP projects with watering intervention behaviours in Source Murray model (SMM) will offer further insights into climate change impacts. This will also highlight interactions between different projects including use of limited environmental water allocation. This representation in SMM is currently being undertaken, but is not anticipated to be completed until 2023.

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Introduction

There is a pressing need for water planning processes to better incorporate projections of a future climate into decision making processes.

The MDBA is currently working towards developing a robust, consistent, and Basin-wide approach to representing future climate projections into river system models however this process is not expected to be finalised in the short term.

In terms of the Sustainable Diversion Limit Adjustment Mechanism (SDLAM), this will require all implemented projects to be represented in a modern modelling platform, i.e. the Source Murray Model (SMM). This is also not expected to be complete within the next 18 months.

In lieu of the Basin wide method to represent a changing climate and a fully modelled suite of SDLAM projects, the MDBA used currently available information to perform a stress test of the SDLAM Victorian Murray Floodplain Restoration Project (VMFRP) under a future climate to elucidate the projected impacts of climate change.

This report has been written to inform project proponents. The report presumes readers have a good working knowledge of the SDLAM and VMFRP projects.

Methods

The stress test approach involves considering a series of SMM scenarios that have been developed following the Guidelines for Assessing the Impacts of Climate Change on Water Availability in Victoria (DEWLP 2020). Consideration has also been given to future climate river flow projections produced for the MDBA by CSIRO using all available products and techniques to understand the full methodological domain of future river flow projections.

The lack of full representation of all SDLAM projects in the SMM means this stress test is only relevant to some elements of project operation into the future. In general terms, the change in frequency of flow events required to undertake the various operating strategies for each project can be assessed. However, the availability and deliverability of environmental water remains uncertain.

Source Murray Model Scenarios

Table 1: Model scenarios

Scenario Title	Short description
Without Development (WoD)	WoD scenario represents the current system without the operation of any water management infrastructure and historic climate sequence (1895–2009)
Basin Plan	Based on a latest water resource plan (WRP) version of model with following changes to represent environmental water holder behaviours: Commonwealth water recovered as of 2020 EEWD implemented Partially implemented SDLAM, i.e. subset of 36 SDLAM projects represented with historic climate sequence (1895–2009).
Post-1975 historic reference	scenario with 1975 – 2009 climate conditions which are extended to cover 114-year sequence using a decile probability exceedance approach. It is used as a base case to derive future climate projects.
Post-1997 historic reference	Step change scenario with 1997 – 2009 climate conditions extended to cover 114-year sequence using a decile probability exceedance approach.
2045 Wet	Basin Plan scenario with modified climate sequence to represent a low impact climate scenario centred at 2045
2045 Medium	Basin Plan scenario with modified climate sequence to represent a medium impact climate scenario centred at 2045
2045 Dry	Basin Plan scenario with modified climate sequence to represent a high impact climate scenario centred at 2045
2070 Wet	Basin Plan scenario with modified climate sequence to represent a low impact climate scenario centred at 2070
2070 Medium	Basin Plan scenario with modified climate sequence to represent a medium impact climate scenario centred at 2070
2070 Dry	Basin Plan scenario with modified climate sequence to represent a high impact climate scenario centred at 2070

Developing projected end of system flows using all tributary models and scaled inflow sequences was not feasible in the timeframe available to develop these scenarios, a combination of approaches was applied as detailed in Table 2.

Table 2: Treatments to represent a future climate in SMM scenarios

Tributary	Treatment
Murrumbidgee flow at Balranald	Scaled end-of-system flows
Inflow to Menindee	Scaled end-of-system flows
Goulburn flow at McCoys Bridge	Scaled inflows
Campaspe flow at Rochester	Scaled inflows
Loddon flow at South Appin	Scaled inflows
Murray inflows upstream of Doctors Point	Scaled end-of-system flows
Snowy release	Scaled end-of-system flows

It should be noted that the scaling method applied may be applicable for deriving runoff from unregulated catchments however there is a high likelihood that this approach does not produce a scientifically sound result for estimating the end of system flows from regulated systems which include flows at Balranald, inflows from Lower Darling and Snowy scheme releases. This caveat does not impact the work described in this report, but it will limit the applicability of this approach to understanding climate change impacts on other parts of the river system.

Potential impacts from the Murrumbidgee and Lower Darling systems of using the scaling method to modify their inflows to the Murray system should be noted. Sites downstream the Murrumbidgee junction (i.e. Hattah Lakes North, Belsar–Yungera, Lindsay Island, Wallpolla Island) will be most impacted. However, the assumptions around Snowy releases are relevant to all sites. How the Snowy scheme would behave in a drier and hotter climate is uncertain and this uncertainty is compounded by the Snowy 2.0 project. It is beyond the scope of the current study to forecast future Snowy scheme releases and therefore the current approach is treated as a best available until a better approach or knowledge becomes available.

In addition to the inflow treatments, climatic data is also scaled similarly. The SMM uses announced allocation levels and spills from headwater storages in each tributary to estimate environmental watering behaviours. For the Victorian tributaries, these are developed from the Victorian models. However, it is assumed no changes from the current conditions for the Murrumbidgee catchment.

Analysis

Analysis was undertaken on nine sites along the Murray River: Vinifera, Nyah, Burra Creek, Belsar–Yungera, Lindsay Island, Wallpolla Island, Hattah Lakes North, Guttrum and Benwell, and Gunbower. Each site was analysed for projected climate change impacts on event frequency, event seasonality, event duration and 90th percentile event interval.

For each site comparisons have been drawn between scenarios with historical and projected future climate inflows considering the frequency of events required for operation, their natural run-of-river flow equivalents and target inundation frequencies.

Flow rate and duration thresholds and frequency targets were based on operating strategies outlined in project business cases; this data has been summarised in Appendix A Site specific data. While distinct targets were chosen for the purpose of this analysis, it should be noted that the infrastructure will provide flexibility to deliver a wide range of environmental watering regimes.

A limitation of the analysis techniques used is that no events are counted in a year if the flow rate of a scenario remains over the threshold for more than a year. This predominately impacts the without development (WoD) scenario when analysing lower flow thresholds (e.g. fresh operating strategy) resulting in the frequency of events being underestimated for WoD. Accordingly, caution is required in interpreting WoD results.

Results

Full results for all sites are provided in Appendix B. This section focuses in on interpreting the results of the stress testing using the Burra Creek Floodplain Management project as an example.

As for all the nine project sites, there is no existing site representation in the Source Murray Model, the closest relevant model node is used as a proxy, in the case of the Burra Creek project, river flows downstream of Swan Hill.

Details of Burra Creek operating strategies are shown in Table 3: Burra Creek Operating Strategies.

Table 3: Burra Creek Operating Strategies

Operation Strategy	Flow to start operation (ML/d)	Duration	Optimal Frequency	Equivalent Natural Flow (ML/d)
Seasonal Fresh	20000	120 days (4 months)	90% (9 in 10 years)	20000
Intermediate	20000	30 days (1 month)	20% (2 in 10 years)	30000
Maximum	30000	14 days (2 weeks)	3% (infrequent operations expected)	35000

Climate Impacts – Operations

At Burra Creek, Figure 1 and Figure 2 show that the frequency of events relevant to each operating strategy are projected to significantly reduce under the dry 2045 and 2070 scenarios relative to the

other scenarios. The 2070 wet scenario also shows a decrease in frequency of opportunities for VMFRP works operation and frequency of natural flow equivalents relative to the Basin Plan scenario (historic climate conditions), albeit the reduction is far less significant than the dry scenario. In contrast results for the 2045 wet and Basin Plan scenario are comparable.

There are marked differences between scenarios in the achievement of target frequencies for optimal ecological flooding associated with each operating strategy. All scenarios, including without development (noting limitation of this analysis described previously), are well below the target frequency of 90% years for the 'seasonal fresh' operating strategy. The dry climate scenarios perform particularly poorly – 3% of years in 2045 dry scenario and 2% of years for 2070 dry scenario compared to 22% of years for the Basin Plan scenario. Notably, the 'intermediate' and 'maximum' operating strategy results show that operation of works enable achievement of the target frequency with the exceptions being the intermediate strategy under the 2070 dry scenario and the maximum strategy under both dry scenarios. In contrast, the natural flow equivalents (without works in place and operating to achieve the same level of inundation) for 'intermediate' and 'maximum' operating strategy are below target for all scenarios i.e. the Basin Plan scenario with historic climate conditions does not achieve target inundation frequency using run-of-river flows and climate change scenarios further reduce frequency of these flow events.

These results suggest that operation of VMFRP can greatly assist with achieving ecological flooding targets for areas of floodplain proposed to be managed. Under dry climate change projections, the ability to inundate floodplains using natural run-of-river flows will be greatly reduced. This analysis demonstrates that while works can assist with achieving greater frequency of events it still may not be possible to achieve desired ecological targets, particularly if dry climate scenario projections eventuate.

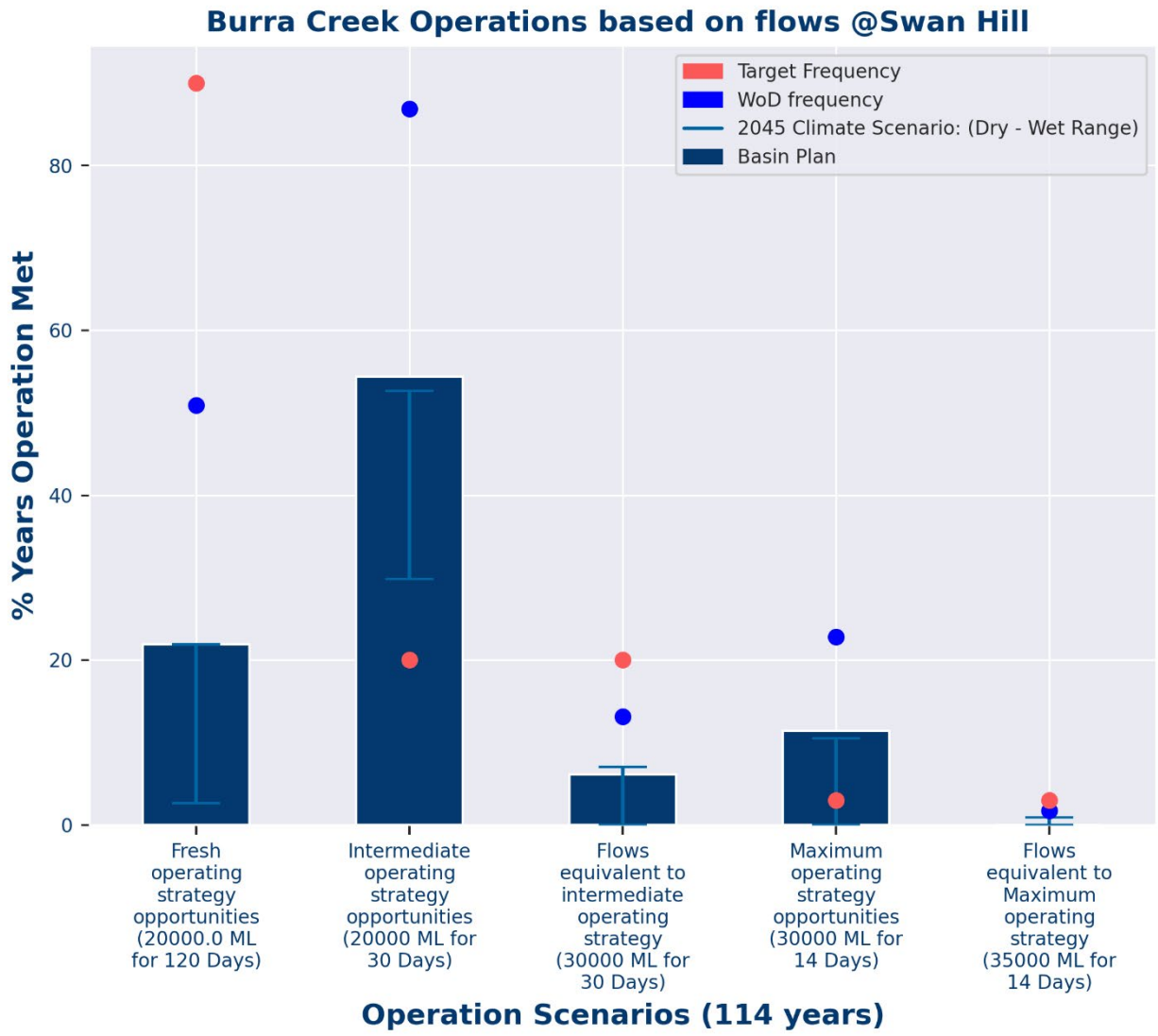

Figure 1: Burra Creek 2045 climate – frequency of events relevant to operating strategies

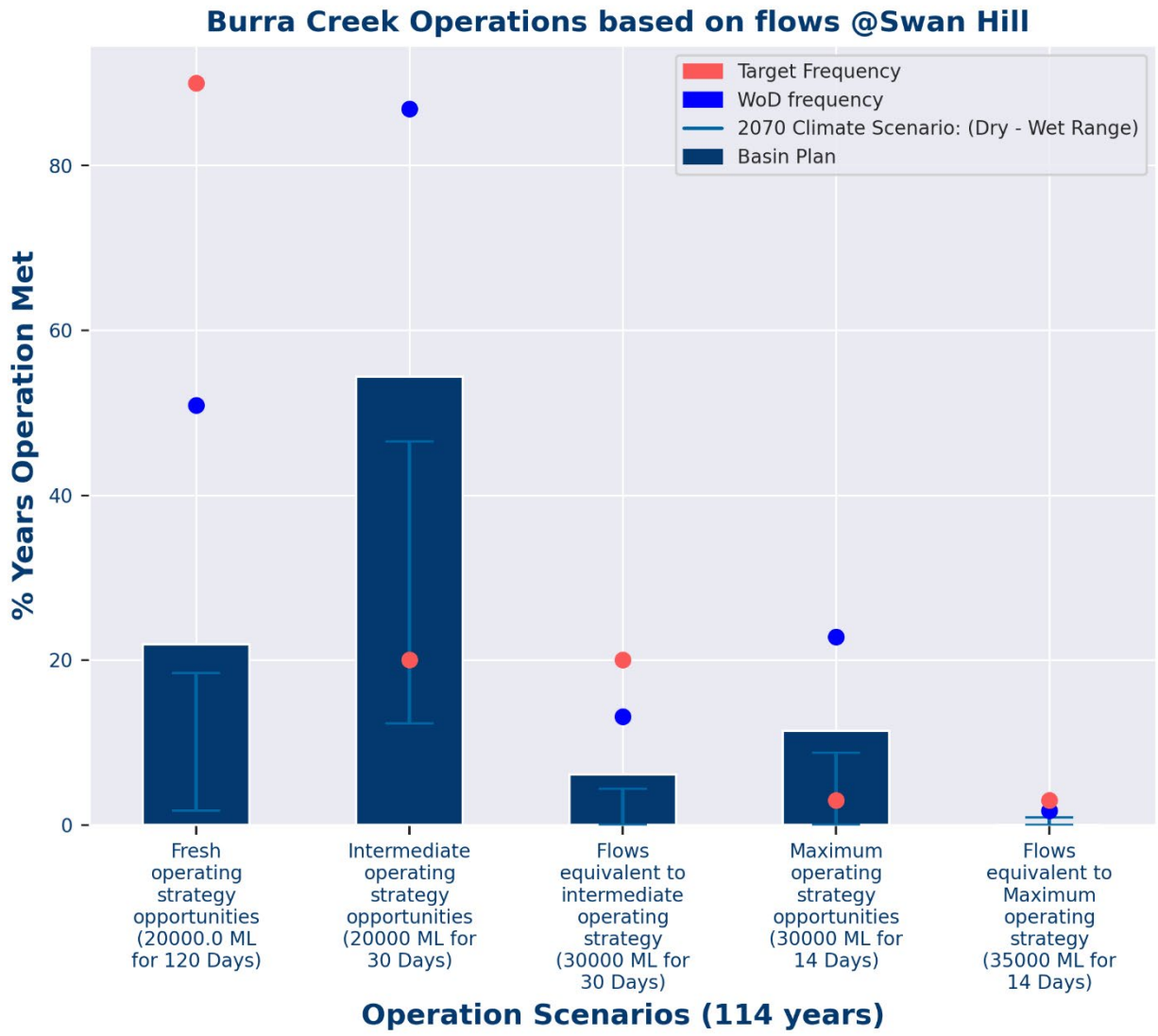

Figure 2: Burra Creek 2070 climate – frequency of events relevant to operating strategies

Climate Impacts – Seasonality

Figure 3 shows seasonality of events for Basin Plan scenario (1895–2009 historic climate conditions) while Figure 4 shows the same analysis for wet and dry future climate scenarios centred at 2045 & 2070.

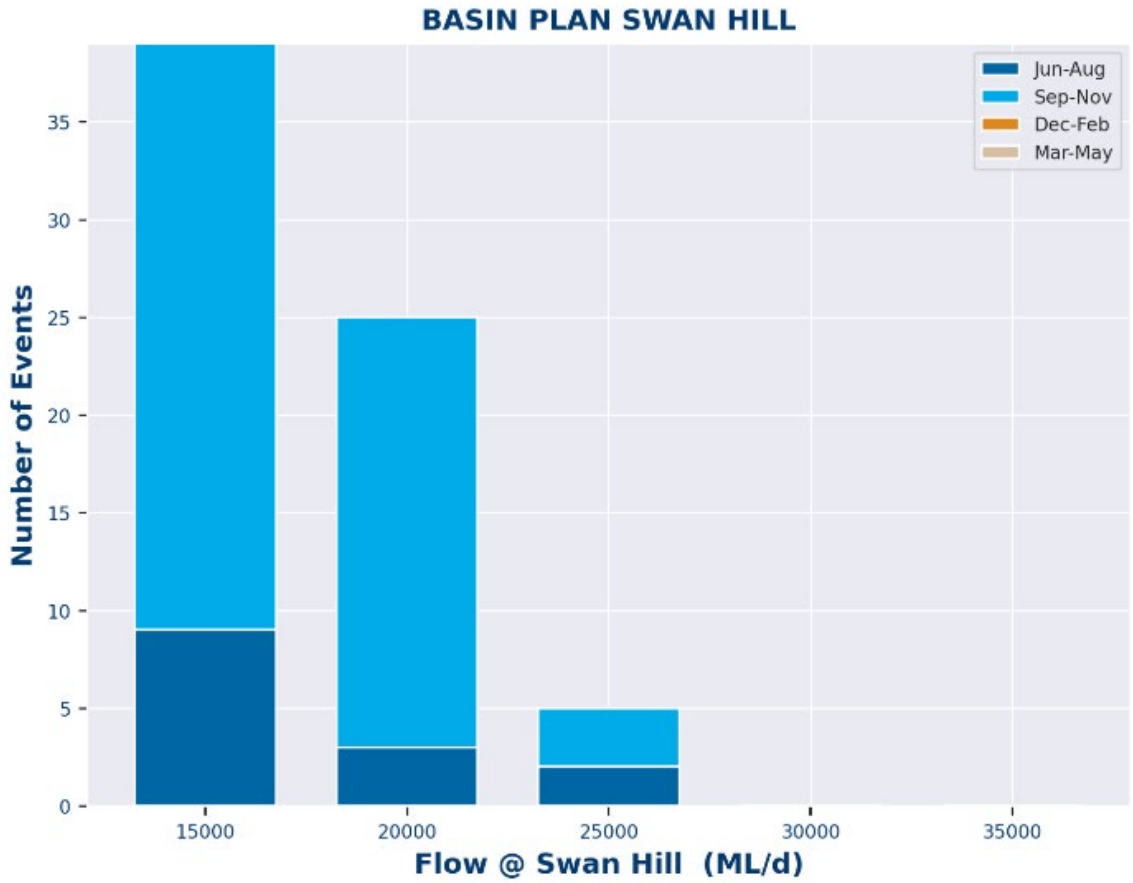

Figure 3: Burra Creek number and seasonality of events exceeding 120 days under Basin Plan scenario

It can be seen in Figure 4 that the dry climate scenarios show a significant reduction in the number of events. The wet climate scenarios do not show a significant overall reduction in the number of events. However, this analysis shows a seasonal shift with a small number of summer events not present in other scenarios.

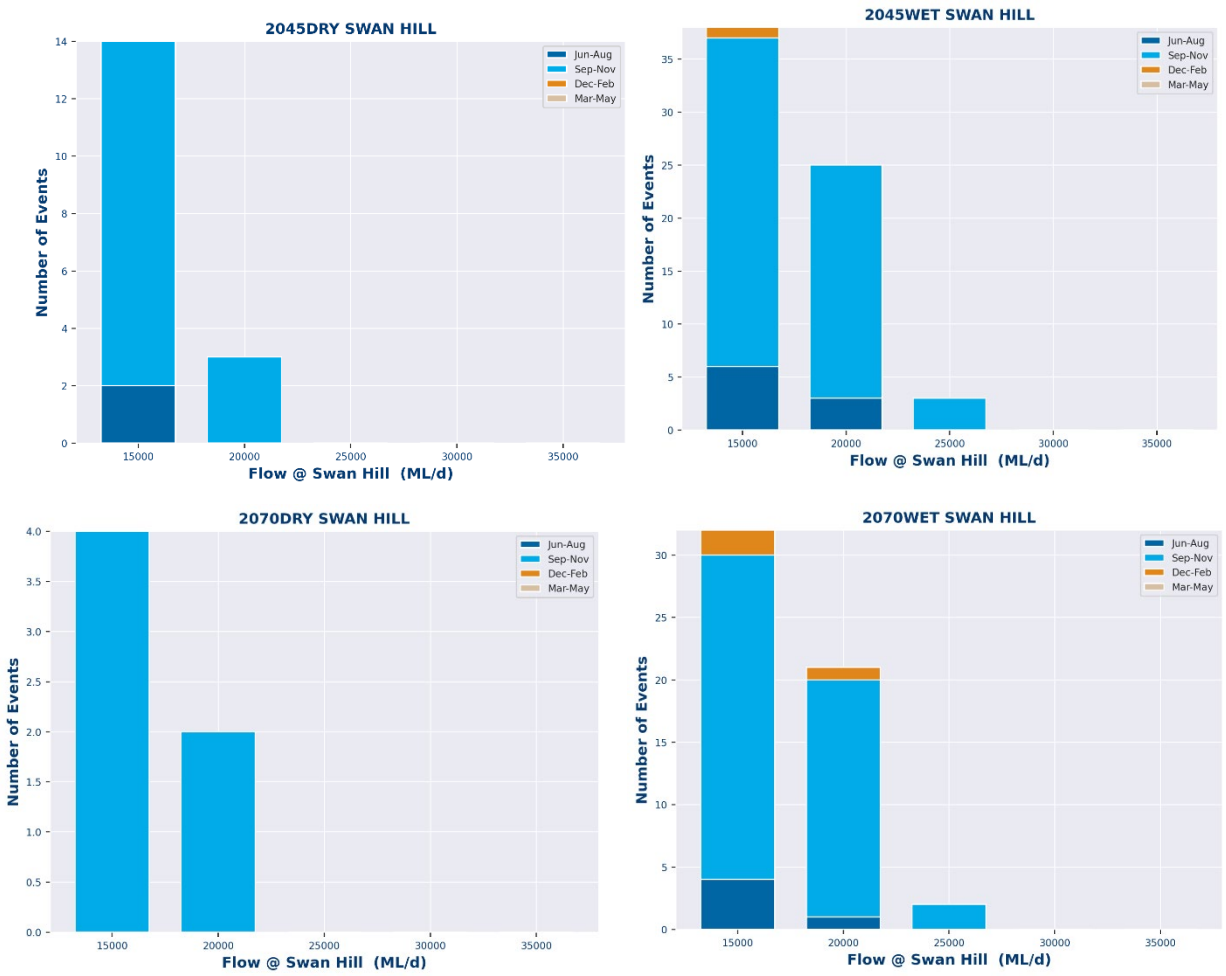

Figure 4: Burra Creek 2045 & 2070 wet & dry climate – seasonality of >120 day events

Climate Impacts – Event frequency and duration

Figure 5 shows the frequency of 14-day events across a range of flows for different scenarios. The Basin Plan and wet climate scenarios are similar while the high impact dry climate scenarios both show significant reductions in the number of events and the percentage of years with an event.

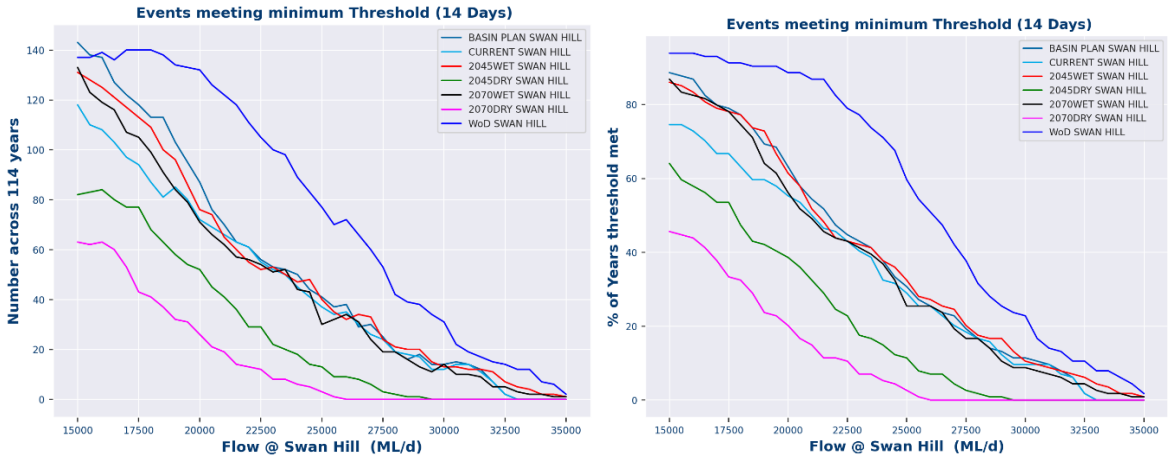

Figure 5: Burra Creek events achieved for a minimum of 14 days under different model scenarios over a range of flow thresholds

Figure 6 shows a similar trend for event durations and spells (duration interval between events) where the wet climate scenarios are similar to the Basin Plan scenario while the dry climate scenarios show a significant reduction in median event duration and significant increase in the 90th percentile duration between events. The 90th percentile duration is given by the point at which 90% of periods between events are shorter. The jaggedness towards the high end of the x-axis of the 90th percentile graph is due to very few data points being present for analysis.

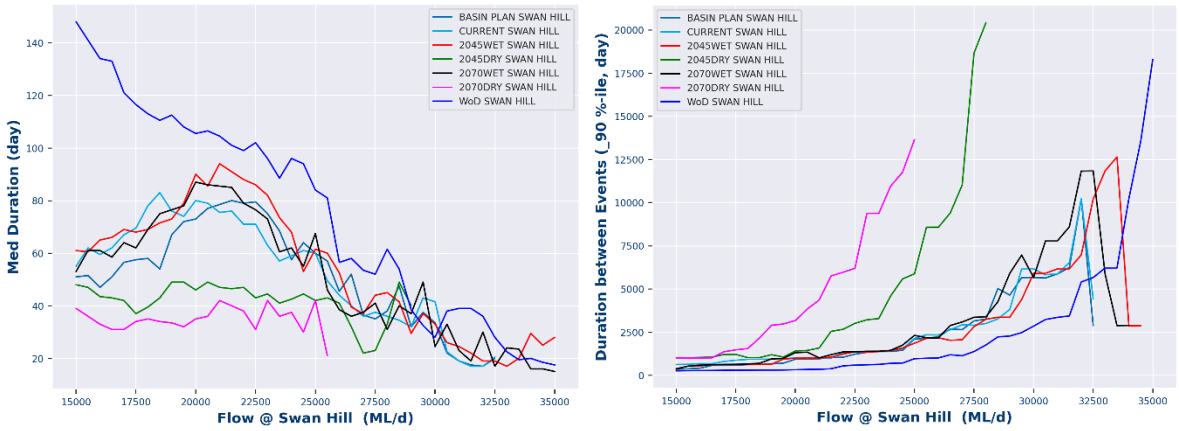

Figure 6: Burra Creek median duration and duration interval between events over a range of flow thresholds

Discussion

The analysis presented in this report suggest that the range of climate change projections are large when compared to historical climate conditions with the implications for River Murray flows and operation of VMFRP works being highly dependent on which scenario is assessed. A significant reduction in the frequency of events relevant to the operation of VMFRP projects can be anticipated under both future dry climate scenarios. The impact of reduced frequency is greatest for the 2070 dry scenario. Under a low impact wet scenario, the frequency of operation of VMFRP projects are projected to be similar to the Basin Plan scenario with historic climate conditions.

A similar result is evident when considering event duration and inter-event periods. While the direction of change for these metrics is clear the quantum of change is far more uncertain given the range in projections.

The wet climate scenarios analysed show a slight change in seasonality with summer events not present in other scenario however this result should be interpreted cautiously as it is driven by a small number of events in a simulation that extends for more than a century.

Projection Uncertainty

There are many products and techniques available to represent the impacts of a future climate in river system models, different combinations of products and techniques will produce different results so careful consideration of the information generated is warranted.

This analysis is based on the development of SMM runs based on the DEWLP guidelines, roughly 80% of model projections are captured by this method. It is worth noting that GCMs projections are not a random sample of plausible futures as the models are not independent of each other and only consider a particular global emissions scenario. The range of possible futures exceeds the range of futures projected by the climate models.

Previous work investigating the impacts of climate change on SDLAM constraints projects has demonstrated the range of potential future climate projections elucidated by various techniques.

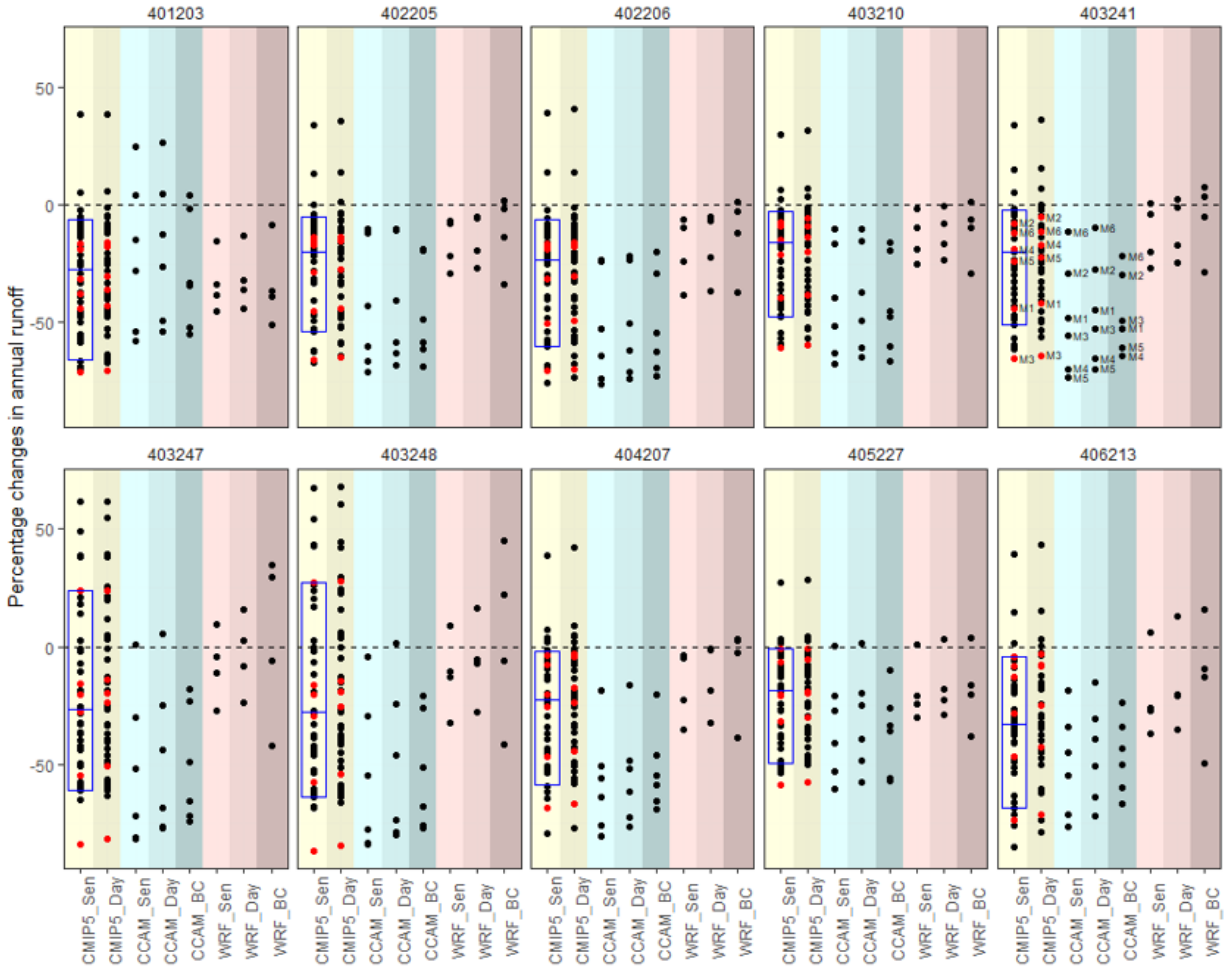

Figure 7 Projected percentage change in annual runoff for a selection of Upper Murray Catchments (CSIRO)

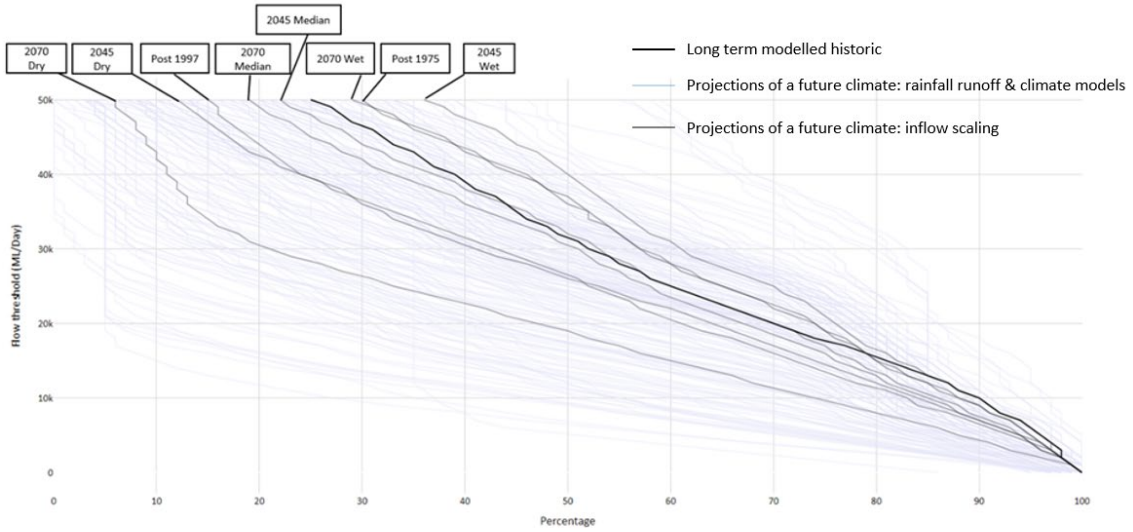

Figure 8 Percentage of years with flow threshold exceeded at Peechellba: ensemble members compared to scenarios developed by inflow scaling

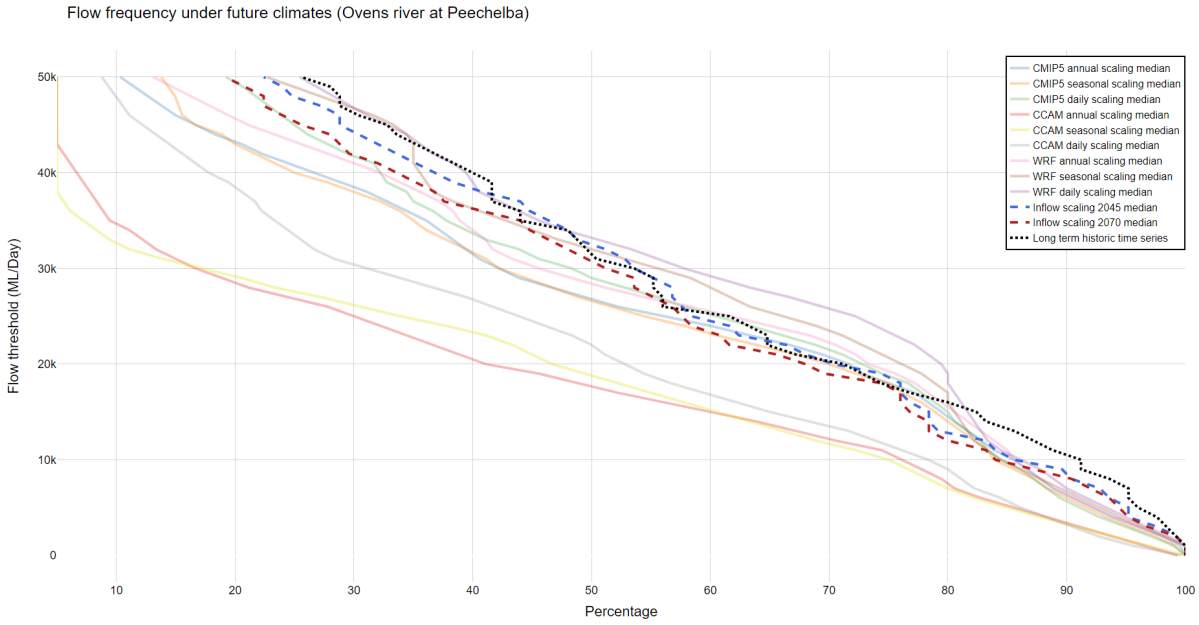

Figure 9: Percentage of years with flow threshold exceeded at Peechellba:- ensemble averages compared to medium impact scenarios developed by inflow scaling

Potential Extensions

The analysis presented in this report has been produced in a short timeframe based on the best available information. Even though the key messages presented in this report are not likely changed, it would be advisable to update the modelling assumptions when better information becomes available.

With existing data it could be extended to further consider the interaction of event duration and frequency, i.e. sensitivity testing the event frequency analysis with flow events of different durations.

However, given the caveats associated with the SMM scenarios analysed the development of more robust river system model scenarios is a more viable pathway to further elucidate the impacts of a changing climate of VMFRP SDLAM projects.

Explicit representation in the SMM of all projects will offer further insights into climate change impacts, particularly by highlighting interactions between different projects including competition for limited environmental water allocations. This representation in the SMM is not anticipated to be completed until 2023.

Conclusions

Climate change projections are uncertain, and the range of potential futures is large however there is clear evidence that the climate is changing with significant flow reduction having being observed in the River Murray over the past 20 years.

Climate change projections under dry scenarios demonstrate that the flows to inundate the areas of floodplain proposed to be managed under the VMFRP will be substantially reduced in frequency and duration, well below the optimal ecological flood targets.

If these projected changes eventuate, the ecological utility of SLDAM projects will increase as these environmental works enable the provision of water to these floodplain ecosystems albeit at lower than desired frequency and duration. They will provide the ability to maintain these as refugia during dry times that are projected to be increasingly frequent.

References

DELWP (2020). Guidelines for Assessing the Impact of Climate Change on Water Availability in Victoria. Final, November 2020, Department of Environment, Land, Water and Planning, Victoria.

Appendix A Site specific data

Site data given in the tables below was taken from the Mallee CMA Supply Measure business cases and used as the basis to form the graphs in Appendix B. The Sustainable Diversion Limit Adjustment Mechanism Reports and business cases (including MDBA summaries) can be found at www.mdba.gov.au/publications/mdba-reports/sustainable-diversion-limit-adjustment-mechanism-assessment.

Seasonality was not taken into account outside of site-specific seasonal event breakdown graphs in Appendix B.

Vinifera

Node used to represent flows to site: Swan Hill

Table 4: Vinifera operating strategy details

Operation Strategy	Flow to start operation (ML/d)	Duration	Optimal Frequency	Equivalent Natural Flow (ML/d)
Seasonal Fresh	13000	N/A*	N/A	13000
Intermediate	15000	120 days (4 months)	80% (8 in 10 years)	17500
Maximum	17500	60 days (2 months)	33% (1 in 3 years)	20000

*Note – where no data was available, a duration of 30 days was used

Nyah

Node used to represent flows to site: Swan Hill

Table 5: Nyah operating strategy details

Operation Strategy	Flow to start operation (ML/d)	Duration	Optimal Frequency	Equivalent Natural Flow (ML/d)
Seasonal Fresh	15000	N/A*	N/A	15000
Intermediate	17500	120 days (4 months)	80% (8 in 10 years)	20000
Maximum	20000	60 days (2 months)	33% (1 in 3 years)	25000

*Note – where no data was available, a duration of 30 was used

Burra Creek

Node used to represent flows to site: Swan Hill

Table 6: Burra Creek operating strategy details

Operation Strategy	Flow to start operation (ML/d)	Duration	Optimal Frequency	Equivalent Natural Flow (ML/d)
Seasonal Fresh	20000	120 days (4 months)	90% (9 in 10 years)	20000
Intermediate	20000	30 days (1 month)	20% (2 in 10 years)	30000
Maximum	30000	14 days (2 weeks)	3% (infrequent operations expected)	35000

Belsar–Yungera

Node used to represent flows to site: Boundary Bend

Table 7: Belsar–Yungera operating strategy details

Operation Strategy	Flow to start operation (ML/d)	Duration	Optimal Frequency	Equivalent Natural Flow (ML/d)
Seasonal Fresh	10000	90 days (3 months)	100% (Annually)	30000
Intermediate	30000	90 days (3 months)	80% (8 in 10 years)	50000
Maximum	50000	60 days (2 months)	50% (5 in 10 years)	90000

Analysis of 'Max+Lakes' operating strategy not included in scope of analysis

Lindsay Island

Node used to represent flows to site: US Lock 7

Table 8: Lindsay Island operating strategy details

Operation Strategy	Flow to start operation (ML/d)	Duration	Optimal Frequency	Equivalent Natural Flow (ML/d)
Seasonal Fresh	10000*	30 days	100% (Every year)	10000
Low	10000*	120 days (4 months)	50%	30000
Intermediate	10000*	90 days (3 months)	33%	50000
Maximum	10000*	60 days*	33%	80000*
Maximum plus pumping	10000*	40 days*	10%	100000*

* Values provided by VMFRP representatives

Wallpolla Island

Node used to represent flows to site: US Lock 9

Table 9: Wallpolla Island operating strategy details

Operation Strategy	Flow to start operation (ML/d)	• Duration	• Optimal Frequency	• Equivalent Natural Flow (ML/d)
Seasonal Fresh	10000*	120 days (4 months)	100% (Every year)	10000*
Intermediate	40000*	90 days (3 months)	50%	60000
Maximum	60000*	60 days (2 months)	33%	80000

*Values provided by VMFRP representatives

Hattah Lakes North

Separate modelling used to determine frequency of events at this site for operations graphs. The model results indicate whether Hattah TLM is operational or not. Chalka North scheme can be operational at the back of Hattah1 (smaller watering) and Hattah2 (maximum), but the Bitterang scheme can only piggyback on Hattah 2. Augmented intervention and forced intervention were both relevant for the Chalka North and Bitterang operations. This was the only site to use a baseline of Historical Climate as no EEWD/Basin Plan was provided in this modelling.

Table 10: Hattah Lakes North operating strategy details

Operation Strategy	Equivalent Natural Flow (ML/d)	Duration	Optimal Frequency
Red gum forest and woodland	80000	1 day	60% (6 in 10 years)
Black box woodland	120000	1 day	10% (1 in 10 years)

Guttrum and Benwell

Node used to represent flows to site: Barham

Table 11: Guttrum and Benwell operating strategy details

Operation Strategy	Equivalent Natural Flow (ML/d)	Duration *	Optimal Frequency *
Seasonal Fresh	21000	86 days	75%
Intermediate	23000	73 days	70%
Maximum	26000	80 days	50%

*Optimal frequency and duration taken from Gippel's analysis of ecological objectives under the Basin Plan (BP 2750)

Gunbower

Node used to represent flows to site: Torrumbarry

Table 12: Gunbower operating strategy details

Operation Strategy	Equivalent Natural Flow (ML/d)	Duration*	Optimal Frequency*
Seasonal Fresh	25000	76 days	70%
Intermediate	45000	55 days	30%
Maximum	50000	35 days	30%

*Optimal frequency and duration taken from Gippel's analysis of ecological objectives under the Basin Plan (BP 2750)

Appendix B Site Specific Results

Vinifera

Table 13: Vinfera – operations results

Percent	Fresh operating strategy opportunities (% years)	Intermediate operating strategy opportunities (% years)	Flows equivalent to intermediate operating strategy (%years)	Maximum operating strategy opportunities (% years)	Flows equivalent to maximum operating strategy (%years)
Basin Plan	89	34	28	49	43
2070 Dry	42	4	2	11	6
2070 Med	70	18	14	34	27
2070 Wet	82	28	23	48	40
2045 Dry	57	12	4	24	16
2045 Med	75	21	17	41	31
2045 Wet	81	33	25	52	44
Without Development	93	73	60	85	77
Target Frequency	-	80	80	33	33

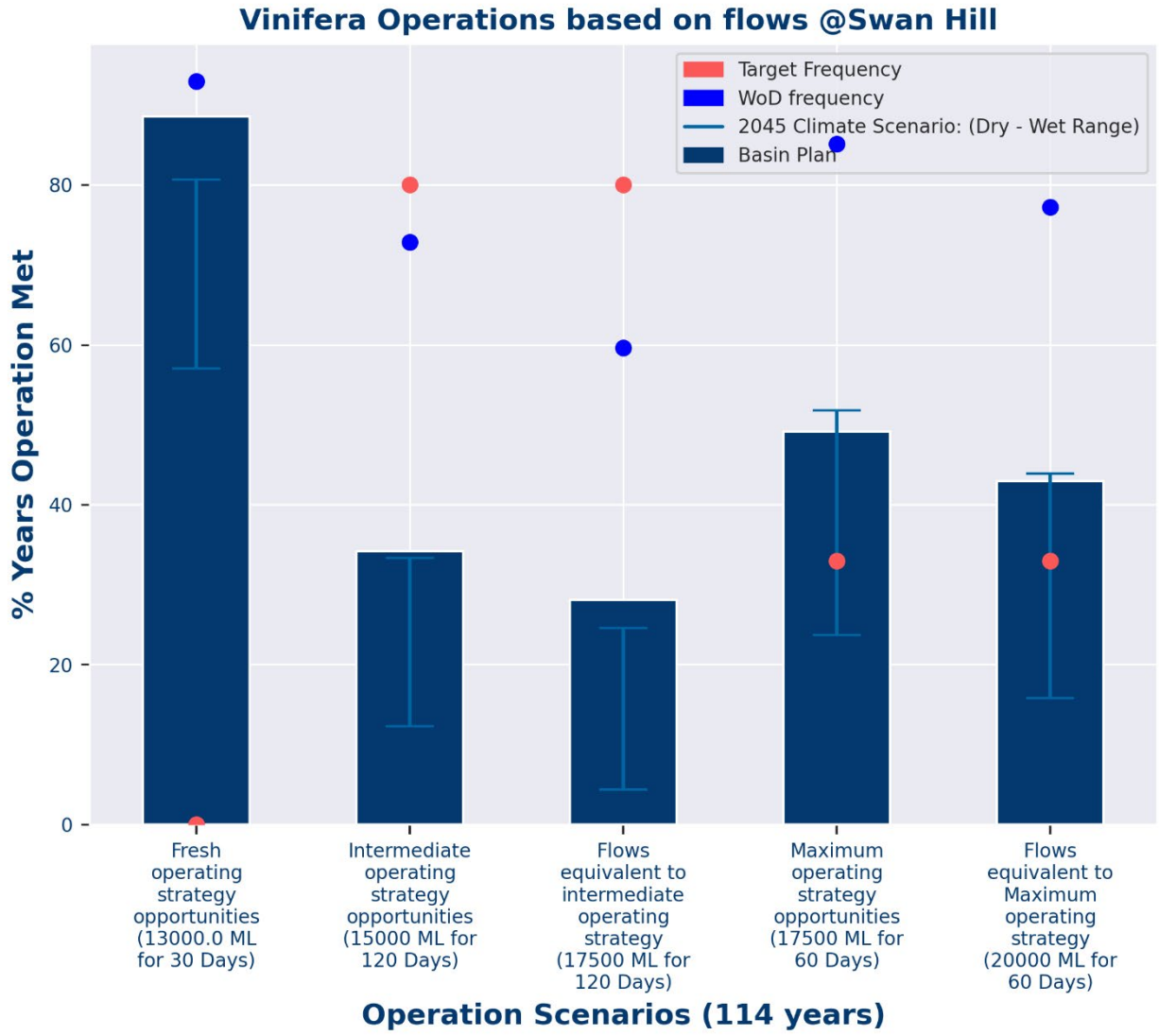

Figure 10: Vinifera 2045 climate – frequency of events relevant to operating strategies

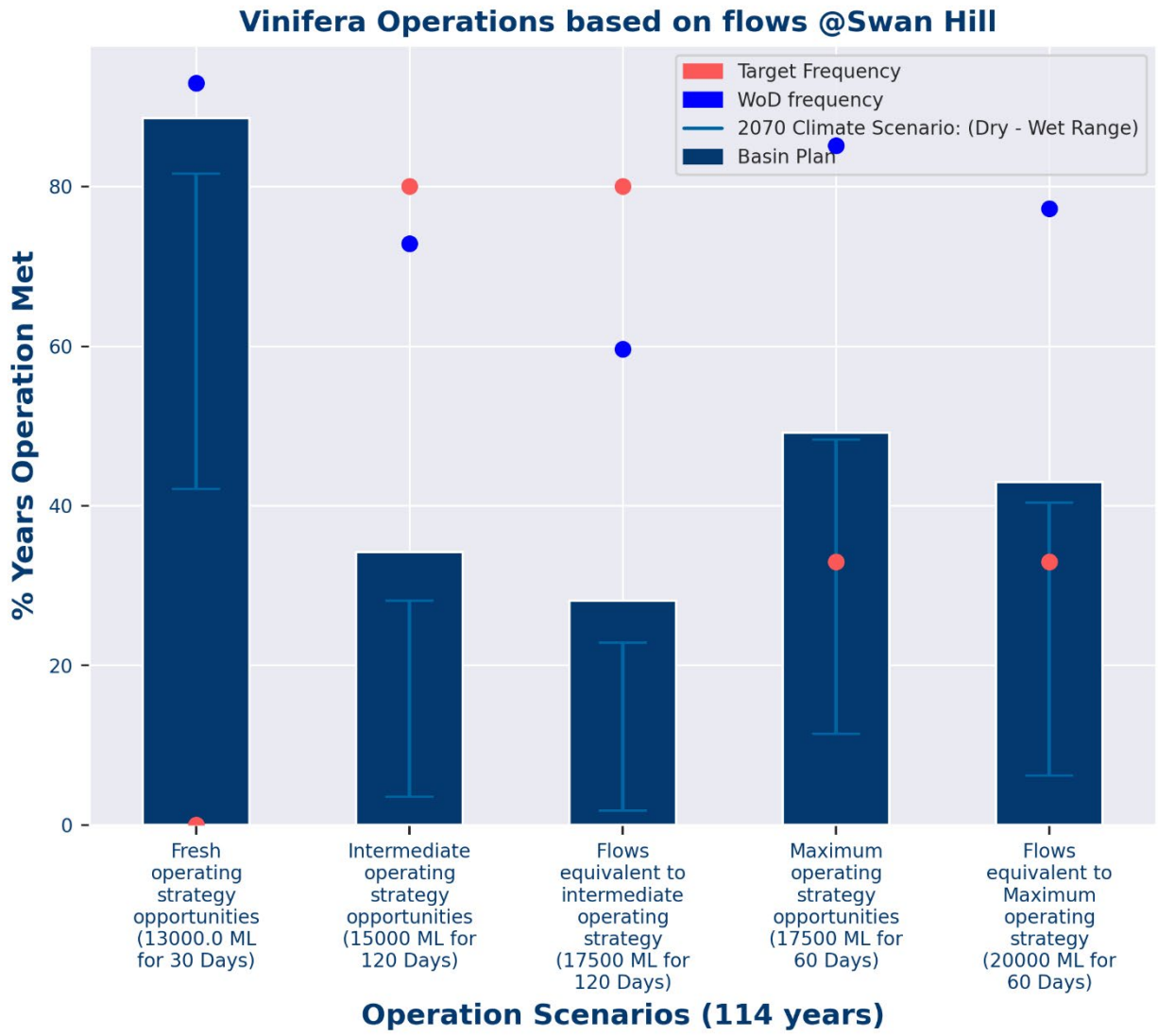

Figure 11: Vinifera 2070 climate – frequency of events relevant to operating strategies

Table 14: Vinifera – seasonality results

Number of Events (min 30 days duration)	June – August (number of events)	September – November (number of events)	December – February (number of events)	March – May (number of events)
Basin Plan >=10000 ML/day	49	80	7	2
Basin Plan >=15000 ML/day	29	68	4	1
Basin Plan >=20000 ML/day	21	46	0	0
Basin Plan >=25000 ML/day	7	22	0	0
Basin Plan >=30000 ML/day	1	6	0	0
2045 Wet >=10000 ML/day	28	85	9	2
2045 Wet >=15000 ML/day	17	73	4	0
2045 Wet >=20000 ML/day	12	50	1	0
2045 Wet >=25000 ML/day	5	22	1	0
2045 Wet >=30000 ML/day	0	8	0	0
2045 Dry >=10000 ML/day	17	77	3	0
2045 Dry >=15000 ML/day	7	50	0	0
2045 Dry >=20000 ML/day	4	32	0	0
2045 Dry >=25000 ML/day	0	8	0	0
2045 Dry >=30000 ML/day	0	0	0	0
2070 Wet >=10000 ML/day	30	79	8	1

Number of Events (min 30 days duration)	June – August (number of events)	September – November (number of events)	December – February (number of events)	March – May (number of events)
2070 Wet >=15000 ML/day	17	67	4	0
2070 Wet >=20000 ML/day	7	45	2	0
2070 Wet >=25000 ML/day	3	21	1	0
2070 Wet >=30000 ML/day	0	5	0	0
2070 Dry >=10000 ML/day	16	59	5	0
2070 Dry >=15000 ML/day	6	32	1	0
2070 Dry >=20000 ML/day	1	13	0	0
2070 Dry >=25000 ML/day	0	2	0	0
2070 Dry >=30000 ML/day	0	0	0	0

Figure 12: Vinifera Basin Plan – seasonality (min 30 day duration)

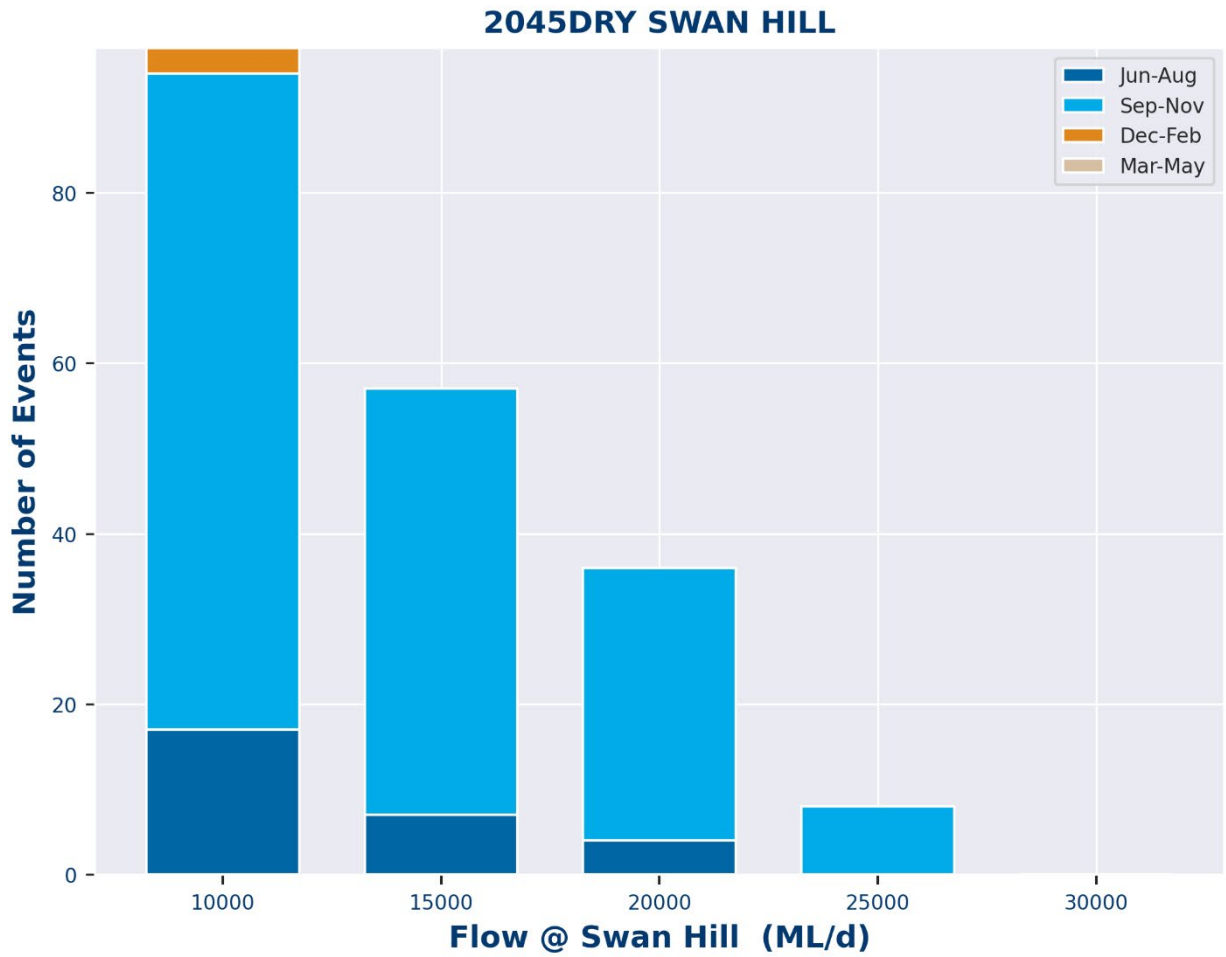

Figure 13: Vinifera 2045 dry climate – seasonality (min 30 days duration)

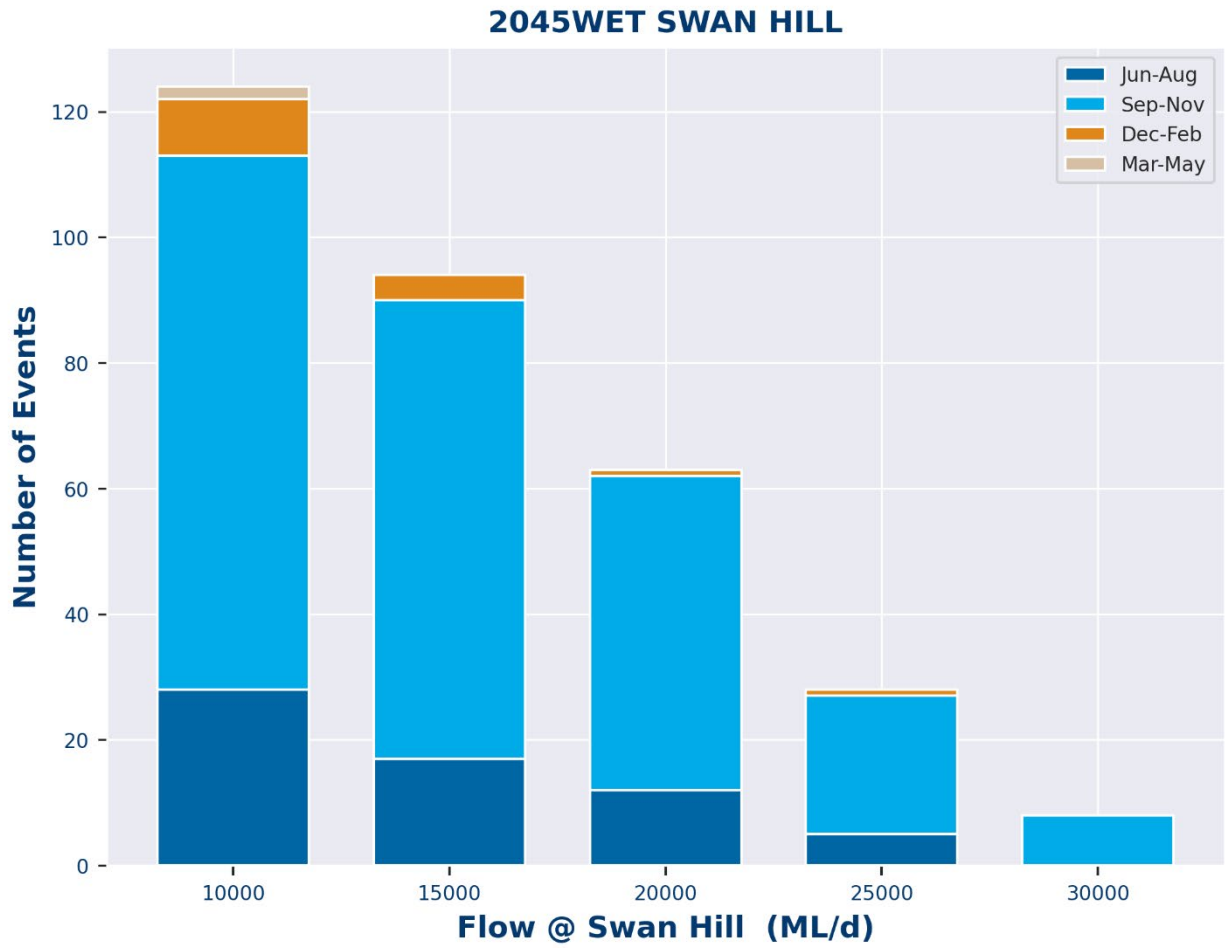

Figure 14: Vinifera 2045 wet climate – seasonality (min 30 day duration)

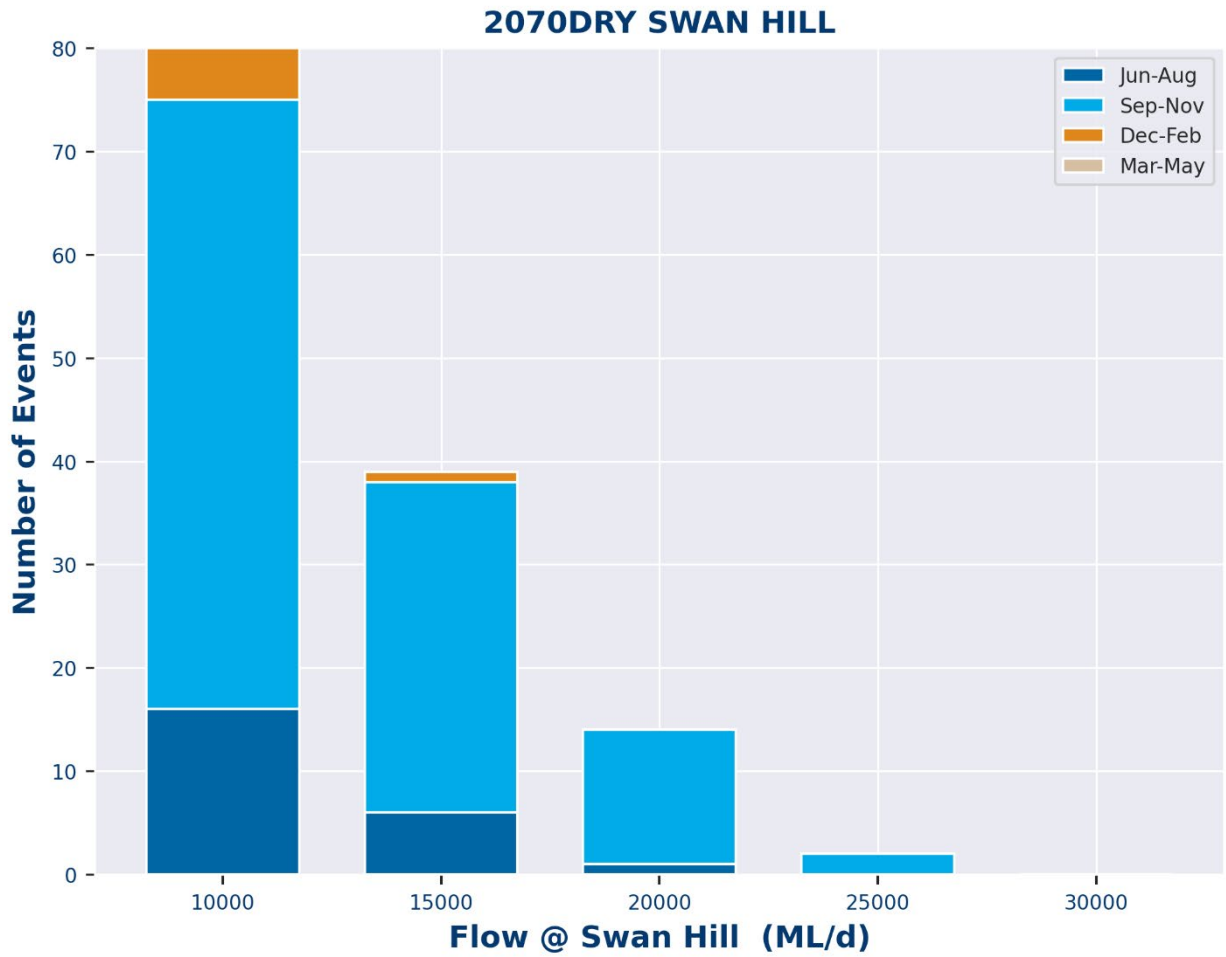

Figure 15: Vinifera 2070 dry climate – seasonality (min 30 day duration)

Figure 16: Vinifera 2070 wet climate – seasonality (min 30 day duration)

Table 15: Vinifera – event duration and spells results

Flow (ML/d)	No Event	%years	Med Duration (day)	90 %-ile Dry Period (day)	Model run	Min Duration (day)
10000	97	85	151	583.5	Basin Plan	60
10500	94	82	148.5	595.6	Basin Plan	60
11000	90	78	144.5	603.4	Basin Plan	60
11500	84	73	143	670.4	Basin Plan	60
12000	79	68	147	870	Basin Plan	60
12500	75	66	147	914.7	Basin Plan	60
13000	74	65	145	917	Basin Plan	60
13500	74	64	134	923.6	Basin Plan	60
14000	71	62	138	941.6	Basin Plan	60
14500	69	61	138	944.2	Basin Plan	60
15000	67	59	136	956	Basin Plan	60
15500	67	58	132	956.5	Basin Plan	60
16000	64	55	131.5	967.8	Basin Plan	60
16500	60	53	130.5	1070.2	Basin Plan	60
17000	59	52	130	1097.5	Basin Plan	60
17500	57	49	128	1292.5	Basin Plan	60

Flow (ML/d)	No Event	%years	Med Duration (day)	90 %-ile Dry Period (day)	Model run	Min Duration (day)
18000	55	48	127	1313.4	Basin Plan	60
18500	55	48	125	1334.3	Basin Plan	60
19000	53	46	121	1315.9	Basin Plan	60
19500	52	46	119	1320	Basin Plan	60
20000	49	43	120	1331.8	Basin Plan	60
20500	46	40	123.5	1341.4	Basin Plan	60
21000	44	39	123	1349.6	Basin Plan	60
21500	41	36	115	1361	Basin Plan	60
22000	38	33	113	1348.2	Basin Plan	60
22500	35	31	111	2262.2	Basin Plan	60
23000	33	29	105	2332.2	Basin Plan	60
23500	29	25	113	2413.7	Basin Plan	60
24000	24	21	109	2504.2	Basin Plan	60
24500	23	19	97	2526.2	Basin Plan	60
25000	21	18	85	3848.7	Basin Plan	60
25500	16	14	88	5508.8	Basin Plan	60
26000	13	11	76	5981.1	Basin Plan	60

Flow (ML/d)	No Event	%years	Med Duration (day)	90 %-ile Dry Period (day)	Model run	Min Duration (day)
26500	11	10	72	6246.3	Basin Plan	60
27000	9	8	66	8432	Basin Plan	60
27500	8	7	67.5	9205.8	Basin Plan	60
28000	5	4	84	11712.9	Basin Plan	60
28500	4	4	83	12509.4	Basin Plan	60
29000	4	4	73	12516.6	Basin Plan	60
29500	3	3	77	13328.4	Basin Plan	60
30000	3	3	76	13330.4	Basin Plan	60
10000	82	72	156	675	Current	60
10500	80	69	151	837.4	Current	60
11000	76	66	152	844	Current	60
11500	72	62	154	874	Current	60
12000	73	62	148	899	Current	60
12500	68	59	149.5	944.8	Current	60
13000	65	56	148	940.4	Current	60
13500	64	55	145.5	942.8	Current	60
14000	63	54	144	936.8	Current	60
14500	59	51	144	1078.3	Current	60
15000	56	48	143.5	1212	Current	60
15500	56	48	142	1213	Current	60
16000	54	46	141.5	1357.4	Current	60
16500	52	45	140.5	1312	Current	60

Flow (ML/d)	No Event	%years	Med Duration (day)	90 %-ile Dry Period (day)	Model run	Min Duration (day)
17000	50	43	142.5	1326.2	Current	60
17500	48	42	144.5	1339.8	Current	60
18000	48	42	141	1340.8	Current	60
18500	48	42	138	1343.8	Current	60
19000	47	41	135	1352	Current	60
19500	45	39	135	1366.3	Current	60
20000	43	38	133	1383.2	Current	60
20500	42	37	124	1394	Current	60
21000	40	35	117	1481.4	Current	60
21500	36	32	114	2218.8	Current	60
22000	34	30	111	2287.2	Current	60
22500	30	26	119	2391.2	Current	60
23000	28	25	118.5	2429.2	Current	60
23500	24	21	115	2502.4	Current	60
24000	22	18	103.5	3148	Current	60
24500	21	18	92	3199.3	Current	60
25000	19	16	87	4640.5	Current	60
25500	15	13	86	5649.2	Current	60
26000	12	11	78	6104	Current	60
26500	9	8	73	6906.8	Current	60
27000	7	6	79	10130	Current	60
27500	7	6	74	10142	Current	60
28000	5	4	84	11712.3	Current	60
28500	4	4	83	12509.4	Current	60
29000	3	3	79	13344.3	Current	60
29500	2	2	80	14122	Current	60
30000	2	2	78	14124	Current	60

Flow (ML/d)	No Event	%years	Med Duration (day)	90 %-ile Dry Period (day)	Model run	Min Duration (day)
10000	100	84	146	576.4	2045 Wet	60
10500	93	80	142	610.8	2045 Wet	60
11000	91	79	139	618.5	2045 Wet	60
11500	84	73	144	633.6	2045 Wet	60
12000	80	70	141.5	678.2	2045 Wet	60
12500	78	68	144	743.8	2045 Wet	60
13000	74	65	141.5	908.8	2045 Wet	60
13500	74	65	131.5	914.4	2045 Wet	60
14000	72	63	128.5	924	2045 Wet	60
14500	69	61	127	954.3	2045 Wet	60
15000	68	60	124.5	960.4	2045 Wet	60
15500	64	56	125	966.6	2045 Wet	60
16000	63	55	121	971.9	2045 Wet	60
16500	62	54	120.5	974	2045 Wet	60
17000	61	54	119	1005.7	2045 Wet	60
17500	59	52	117	1313.7	2045 Wet	60
18000	59	52	115	1315.8	2045 Wet	60

Flow (ML/d)	No Event	%years	Med Duration (day)	90 %-ile Dry Period (day)	Model run	Min Duration (day)
18500	59	52	114	1320.6	2045 Wet	60
19000	57	50	112	1160.5	2045 Wet	60
19500	52	46	116	1333	2045 Wet	60
20000	50	44	118	1339.4	2045 Wet	60
20500	46	40	117	1344.4	2045 Wet	60
21000	46	40	111	1348.8	2045 Wet	60
21500	41	36	113	1474.9	2045 Wet	60
22000	40	35	110.5	1578.2	2045 Wet	60
22500	38	33	108.5	2405.6	2045 Wet	60
23000	34	30	102.5	2456	2045 Wet	60
23500	32	28	98.5	2517	2045 Wet	60
24000	25	22	101	2980.6	2045 Wet	60
24500	22	19	98	3579	2045 Wet	60
25000	21	18	96	3613.1	2045 Wet	60
25500	18	16	90	3350	2045 Wet	60
26000	13	11	94	5856.4	2045 Wet	60
26500	13	11	79	5870.2	2045 Wet	60

Flow (ML/d)	No Event	%years	Med Duration (day)	90 %-ile Dry Period (day)	Model run	Min Duration (day)
27000	10	9	78	7659.8	2045 Wet	60
27500	8	7	77	9319	2045 Wet	60
28000	7	6	75	10122	2045 Wet	60
28500	7	6	72	10130.5	2045 Wet	60
29000	7	6	70	10135	2045 Wet	60
29500	6	5	68	10935.4	2045 Wet	60
30000	3	3	67	13331.2	2045 Wet	60
10000	84	74	129	645.6	2045 Med	60
10500	78	68	127	763	2045 Med	60
11000	76	67	121	812.8	2045 Med	60
11500	73	64	119	881.5	2045 Med	60
12000	70	61	115	945.4	2045 Med	60
12500	66	58	114.5	957	2045 Med	60
13000	63	55	111	970.6	2045 Med	60
13500	60	53	111.5	974	2045 Med	60
14000	58	51	112.5	988.6	2045 Med	60
14500	56	49	113	979.4	2045 Med	60

Flow (ML/d)	No Event	%years	Med Duration (day)	90 %-ile Dry Period (day)	Model run	Min Duration (day)
15000	54	47	113	1253.8	2045 Med	60
15500	53	46	112	1289.3	2045 Med	60
16000	51	45	110	1326.1	2045 Med	60
16500	50	44	107	1330.8	2045 Med	60
17000	49	43	105	1334.4	2045 Med	60
17500	47	41	103	1363	2045 Med	60
18000	45	39	103	1376	2045 Med	60
18500	41	36	113	1439	2045 Med	60
19000	40	35	113	1475.8	2045 Med	60
19500	37	32	112	1554.5	2045 Med	60
20000	35	31	110	1638	2045 Med	60
20500	35	31	105	1640.5	2045 Med	60
21000	32	28	102	2385	2045 Med	60
21500	30	26	101	2414.2	2045 Med	60
22000	27	24	98	2854	2045 Med	60
22500	20	18	96	4325.4	2045 Med	60
23000	17	15	97	4991.5	2045 Med	60

Flow (ML/d)	No Event	%years	Med Duration (day)	90 %-ile Dry Period (day)	Model run	Min Duration (day)
23500	16	14	93	5515.2	2045 Med	60
24000	13	11	90	5991.6	2045 Med	60
24500	12	11	86.5	6111	2045 Med	60
25000	11	10	82	6883.7	2045 Med	60
25500	9	8	75	8422.5	2045 Med	60
26000	7	6	75	10115.5	2045 Med	60
26500	7	6	73	10120	2045 Med	60
27000	7	6	71	10125	2045 Med	60
27500	5	4	69	11823.3	2045 Med	60
28000	4	4	63.5	12752.2	2045 Med	60
28500	2	2	79	14140	2045 Med	60
29000	1	1	90		2045 Med	60
29500	0	0			2045 Med	60
30000	0	0			2045 Med	60
10000	70	61	115	951	2045 Dry	60
10500	66	57	111	953.2	2045 Dry	60
11000	61	53	111	971	2045 Dry	60

Flow (ML/d)	No Event	%years	Med Duration (day)	90 %-ile Dry Period (day)	Model run	Min Duration (day)
11500	60	52	105	976.6	2045 Dry	60
12000	55	47	101	993	2045 Dry	60
12500	51	44	100	1031.5	2045 Dry	60
13000	44	38	101	1386.6	2045 Dry	60
13500	41	36	101	1424.2	2045 Dry	60
14000	40	35	99	1456.4	2045 Dry	60
14500	35	31	103	2082.3	2045 Dry	60
15000	35	31	102	2082.6	2045 Dry	60
15500	34	30	98	2181.6	2045 Dry	60
16000	32	27	94	2512	2045 Dry	60
16500	31	26	96	2578.4	2045 Dry	60
17000	30	25	89.5	2646	2045 Dry	60
17500	28	24	90.5	3121.8	2045 Dry	60
18000	27	23	93	3189	2045 Dry	60
18500	26	23	91.5	3256.6	2045 Dry	60
19000	24	21	90.5	4293.8	2045 Dry	60
19500	23	20	89	4476.6	2045 Dry	60

Flow (ML/d)	No Event	%years	Med Duration (day)	90 %-ile Dry Period (day)	Model run	Min Duration (day)
20000	18	16	89	5233	2045 Dry	60
20500	18	16	85	5236.8	2045 Dry	60
21000	15	13	84	5668.7	2045 Dry	60
21500	13	11	84	5989.4	2045 Dry	60
22000	12	11	81.5	6110	2045 Dry	60
22500	11	10	75	6381.3	2045 Dry	60
23000	6	5	83.5	10902.8	2045 Dry	60
23500	6	5	80.5	10905.4	2045 Dry	60
24000	6	5	74.5	10910.4	2045 Dry	60
24500	5	4	75	11712.6	2045 Dry	60
25000	3	3	93	13348.9	2045 Dry	60
25500	3	3	87	13359.4	2045 Dry	60
26000	1	1	76		2045 Dry	60
26500	1	1	63		2045 Dry	60
27000	0	0			2045 Dry	60
27500	0	0			2045 Dry	60
28000	0	0			2045 Dry	60

Flow (ML/d)	No Event	%years	Med Duration (day)	90 %-ile Dry Period (day)	Model run	Min Duration (day)
28500	0	0			2045 Dry	60
29000	0	0			2045 Dry	60
29500	0	0			2045 Dry	60
30000	0	0			2045 Dry	60
10000	93	81	138	589.5	2070 Wet	60
10500	90	79	134.5	624	2070 Wet	60
11000	87	76	134	657	2070 Wet	60
11500	79	69	135	884.6	2070 Wet	60
12000	76	67	130.5	892	2070 Wet	60
12500	75	66	127	896.9	2070 Wet	60
13000	71	62	129	927.6	2070 Wet	60
13500	68	60	128	937.4	2070 Wet	60
14000	66	58	124.5	957	2070 Wet	60
14500	66	58	121	958.6	2070 Wet	60
15000	64	56	119.5	961	2070 Wet	60
15500	63	55	115	962.5	2070 Wet	60
16000	62	54	113.5	967	2070 Wet	60

Flow (ML/d)	No Event	%years	Med Duration (day)	90 %-ile Dry Period (day)	Model run	Min Duration (day)
16500	57	50	117	1311.5	2070 Wet	60
17000	56	49	117	1173	2070 Wet	60
17500	55	48	117	1211.9	2070 Wet	60
18000	53	46	116	1276.4	2070 Wet	60
18500	50	44	119	1060.2	2070 Wet	60
19000	48	42	123	1335.8	2070 Wet	60
19500	47	41	121	1340	2070 Wet	60
20000	46	40	114.5	1343.6	2070 Wet	60
20500	44	39	110	1353.4	2070 Wet	60
21000	43	38	107	1358.5	2070 Wet	60
21500	39	34	113	1691.7	2070 Wet	60
22000	37	32	102	2202	2070 Wet	60
22500	34	30	98.5	2482.8	2070 Wet	60
23000	31	27	96	2549.8	2070 Wet	60
23500	26	23	99.5	3056.8	2070 Wet	60
24000	24	21	98.5	3051.2	2070 Wet	60
24500	21	18	90	3702.6	2070 Wet	60

Flow (ML/d)	No Event	%years	Med Duration (day)	90 %-ile Dry Period (day)	Model run	Min Duration (day)
25000	18	16	88	4140.8	2070 Wet	60
25500	14	12	93	5608.2	2070 Wet	60
26000	12	11	80.5	6113	2070 Wet	60
26500	9	8	77	8518.1	2070 Wet	60
27000	7	6	77	10116	2070 Wet	60
27500	7	6	73	10119.5	2070 Wet	60
28000	7	6	68	10128	2070 Wet	60
28500	7	6	66	10137	2070 Wet	60
29000	4	4	69	12531.4	2070 Wet	60
29500	3	3	65	13331.7	2070 Wet	60
30000	1	1	61		2070 Wet	60
10000	83	72	129	648.8	2070 Med	60
10500	80	70	117.5	729.8	2070 Med	60
11000	72	63	124.5	933	2070 Med	60
11500	70	61	117.5	946.6	2070 Med	60
12000	65	56	119	959.9	2070 Med	60
12500	63	54	116	963.2	2070 Med	60

Flow (ML/d)	No Event	%years	Med Duration (day)	90 %-ile Dry Period (day)	Model run	Min Duration (day)
13000	62	54	112	975	2070 Med	60
13500	60	52	107	995.4	2070 Med	60
14000	55	47	113	996.9	2070 Med	60
14500	53	46	112	1287.2	2070 Med	60
15000	51	44	112	1035.2	2070 Med	60
15500	47	40	110	1362	2070 Med	60
16000	45	39	107	1368	2070 Med	60
16500	45	39	106	1370	2070 Med	60
17000	40	35	110	1456.6	2070 Med	60
17500	39	34	112	1495	2070 Med	60
18000	38	33	107.5	1537.8	2070 Med	60
18500	35	31	109	1648.3	2070 Med	60
19000	34	30	109	1686.2	2070 Med	60
19500	33	29	108	1724.1	2070 Med	60
20000	31	27	104	2545.7	2070 Med	60
20500	29	25	101	2813.6	2070 Med	60
21000	27	24	96	3177.5	2070 Med	60

Flow (ML/d)	No Event	%years	Med Duration (day)	90 %-ile Dry Period (day)	Model run	Min Duration (day)
21500	24	21	90	3315.2	2070 Med	60
22000	21	18	85	3778.2	2070 Med	60
22500	18	16	85	4597.6	2070 Med	60
23000	17	15	80	4851	2070 Med	60
23500	14	12	81	5875.4	2070 Med	60
24000	13	11	78	5995.6	2070 Med	60
24500	9	8	75	8505.1	2070 Med	60
25000	8	7	72	9312.8	2070 Med	60
25500	7	6	69	10113.5	2070 Med	60
26000	7	6	66	10119	2070 Med	60
26500	7	6	64	10122	2070 Med	60
27000	4	4	77	12736.2	2070 Med	60
27500	3	3	80	14054.6	2070 Med	60
28000	2	2	93.5	14123	2070 Med	60
28500	2	2	86	14128	2070 Med	60
29000	0	0			2070 Med	60
29500	0	0			2070 Med	60

Flow (ML/d)	No Event	%years	Med Duration (day)	90 %-ile Dry Period (day)	Model run	Min Duration (day)
30000	0	0			2070 Med	60
10000	45	39	105	1380.5	2070 Dry	60
10500	45	39	101	1385.7	2070 Dry	60
11000	40	33	93	1378	2070 Dry	60
11500	37	32	97	1487.5	2070 Dry	60
12000	33	28	99	1987.3	2070 Dry	60
12500	29	25	100	2591.7	2070 Dry	60
13000	26	22	99.5	3248.6	2070 Dry	60
13500	23	19	99	3572.3	2070 Dry	60
14000	20	18	104	3806.8	2070 Dry	60
14500	19	17	102	4785.1	2070 Dry	60
15000	19	17	97	4792.4	2070 Dry	60
15500	18	16	98	5112	2070 Dry	60
16000	15	13	100	5762.7	2070 Dry	60
16500	14	12	97	5882.8	2070 Dry	60
17000	13	11	98	6004.5	2070 Dry	60
17500	13	11	93	6008.6	2070 Dry	60

Flow (ML/d)	No Event	%years	Med Duration (day)	90 %-ile Dry Period (day)	Model run	Min Duration (day)
18000	12	11	90.5	6129	2070 Dry	60
18500	12	11	86.5	6144	2070 Dry	60
19000	10	9	85	6962.8	2070 Dry	60
19500	8	7	83.5	7402.2	2070 Dry	60
20000	7	6	80	7776.5	2070 Dry	60
20500	6	5	75	8028.8	2070 Dry	60
21000	5	4	69	11816.3	2070 Dry	60
21500	4	4	91.5	12576.4	2070 Dry	60
22000	3	3	114	13339.9	2070 Dry	60
22500	2	2	88	14102	2070 Dry	60
23000	2	2	82.5	14110	2070 Dry	60
23500	2	2	78.5	14116	2070 Dry	60
24000	1	1	89		2070 Dry	60
24500	1	1	83		2070 Dry	60
25000	1	1	64		2070 Dry	60
25500	0	0			2070 Dry	60
26000	0	0			2070 Dry	60

Flow (ML/d)	No Event	%years	Med Duration (day)	90 %-ile Dry Period (day)	Model run	Min Duration (day)
26500	0	0			2070 Dry	60
27000	0	0			2070 Dry	60
27500	0	0			2070 Dry	60
28000	0	0			2070 Dry	60
28500	0	0			2070 Dry	60
29000	0	0			2070 Dry	60
29500	0	0			2070 Dry	60
30000	0	0			2070 Dry	60
10000	109	95	203	233.5	WoD	60
10500	108	94	199	243	WoD	60
11000	107	93	198	262	WoD	60
11500	107	92	195	263.5	WoD	60
12000	107	91	195	265.5	WoD	60
12500	106	91	192	270.2	WoD	60
13000	102	89	188.5	312	WoD	60
13500	102	89	184.5	315	WoD	60
14000	102	89	181.5	317	WoD	60
14500	102	89	181	319	WoD	60
15000	103	89	173	317.4	WoD	60
15500	102	89	169.5	322	WoD	60
16000	103	89	162	320.3	WoD	60
16500	103	88	159	322.4	WoD	60

Flow (ML/d)	No Event	%years	Med Duration (day)	90 %-ile Dry Period (day)	Model run	Min Duration (day)
17000	102	88	156.5	327	WoD	60
17500	99	85	159	489.8	WoD	60
18000	97	82	158	553.5	WoD	60
18500	94	81	157.5	561.8	WoD	60
19000	92	79	156.5	579	WoD	60
19500	91	78	155	592.5	WoD	60
20000	90	77	152.5	596.6	WoD	60
20500	87	75	152	605.5	WoD	60
21000	82	72	156	630	WoD	60
21500	78	68	152	649	WoD	60
22000	76	67	147	664.4	WoD	60
22500	70	61	143.5	932.2	WoD	60
23000	67	59	137	942	WoD	60
23500	64	56	131.5	953	WoD	60
24000	58	51	128	1091	WoD	60
24500	55	48	123	979.3	WoD	60
25000	50	44	118.5	1337.4	WoD	60
25500	44	39	112	1390.6	WoD	60
26000	34	30	113	2101	WoD	60
26500	33	28	99	2478.1	WoD	60
27000	28	24	95.5	2637.6	WoD	60
27500	23	20	91	3203.3	WoD	60
28000	22	19	82	3251	WoD	60
28500	16	14	74.5	4823	WoD	60
29000	13	11	74	6004.3	WoD	60
29500	10	9	75.5	6652.2	WoD	60
30000	8	7	74.5	7313.2	WoD	60

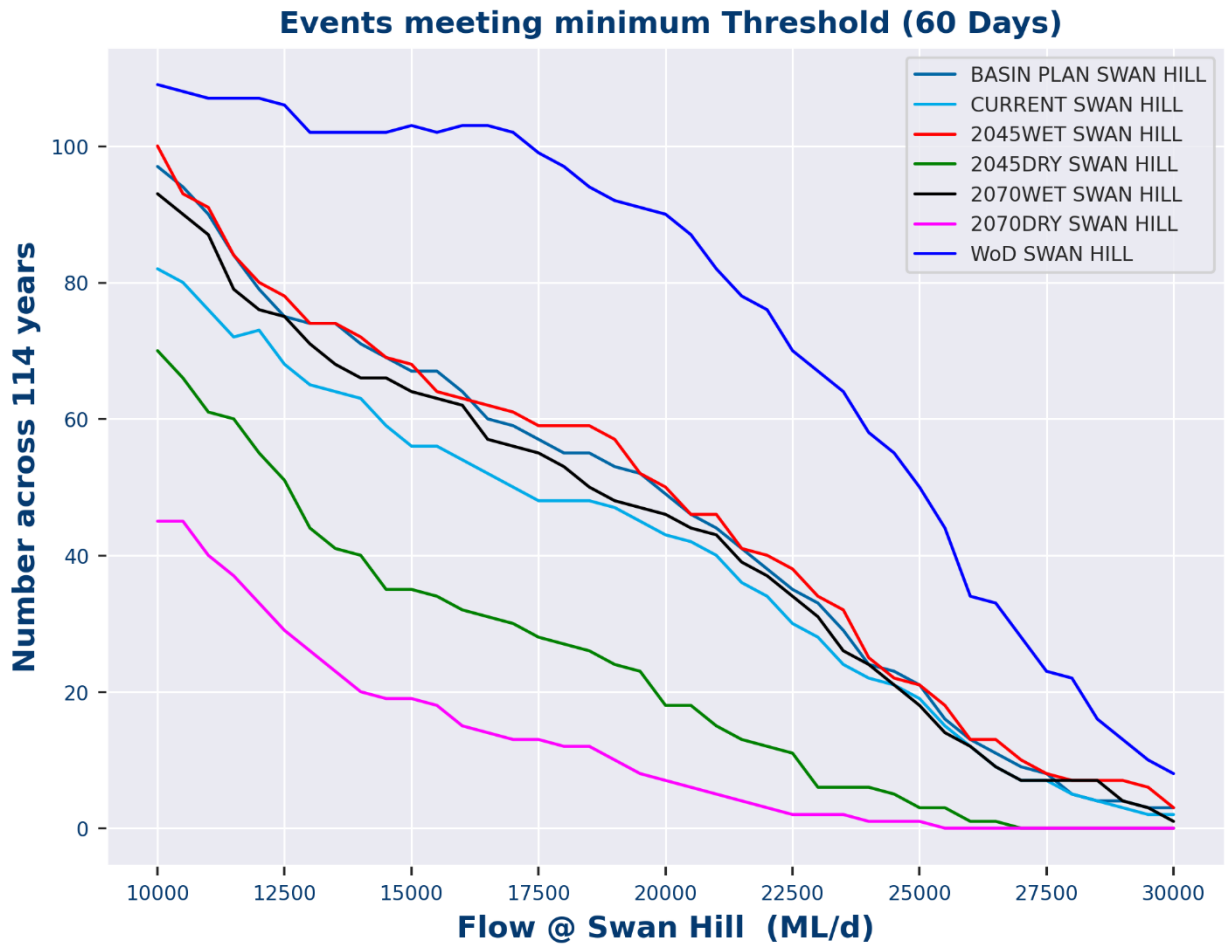

Figure 17: Vinifera – number of events

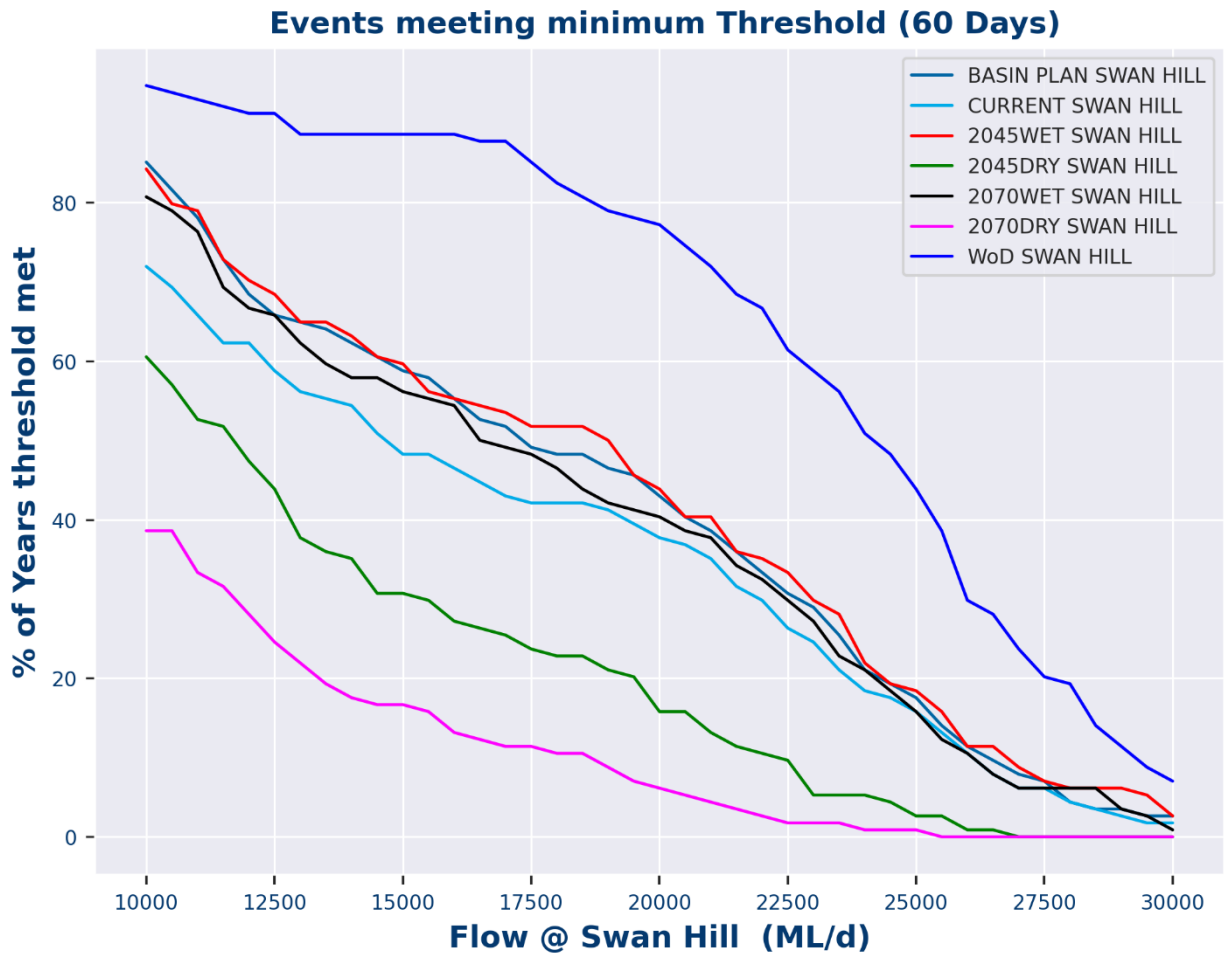

Figure 18: Vinifera – % of years with events

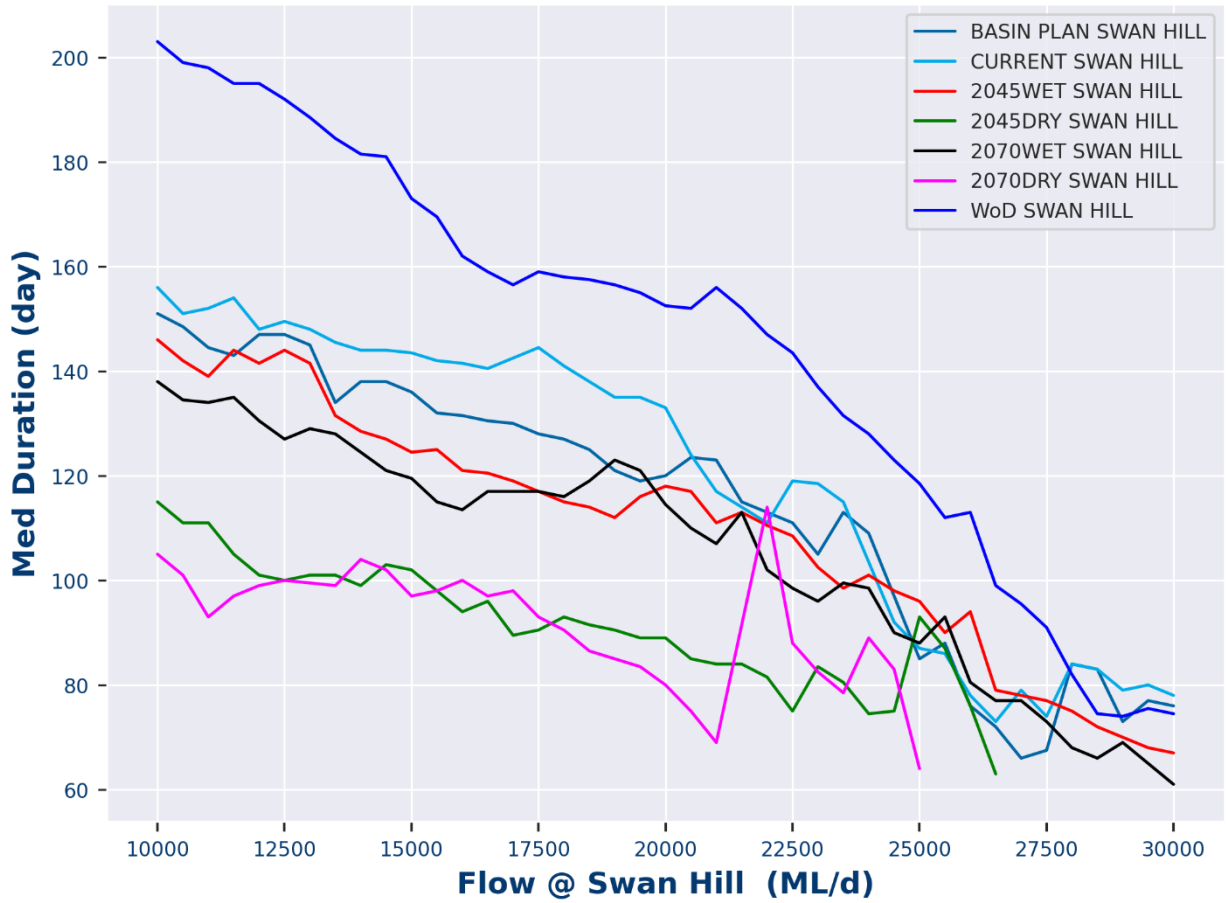

Figure 19: Vinifera – median event duration

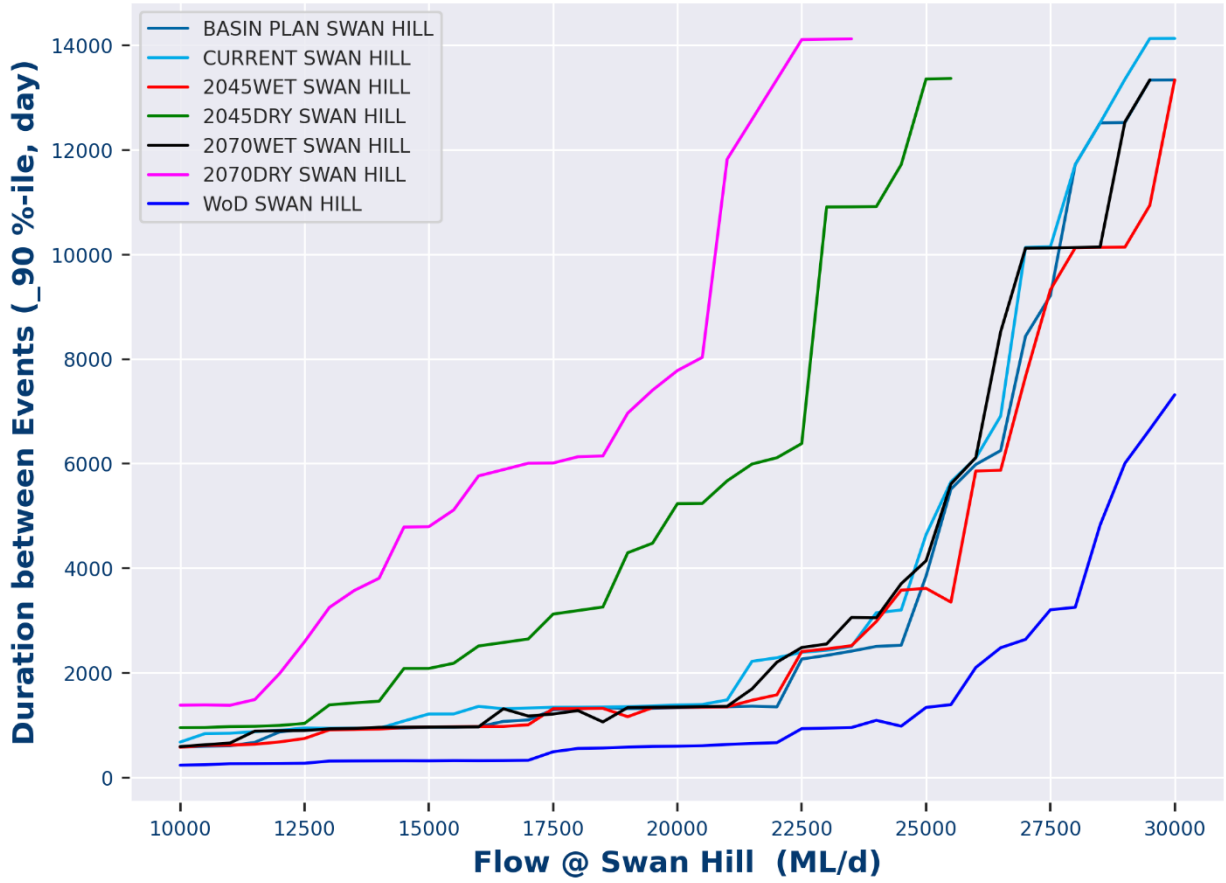

Figure 20: Vinifera – 90th percentile duration between events

Nyah

Table 16: Nyah – operations results

Percent	Fresh operating strategy opportunities (% years)	Intermediate operating strategy opportunities (% years)	Flows equivalent to intermediate operating strategy (%years)	Maximum operating strategy opportunities (% years)	Flows equivalent to maximum operating strategy (%years)
Basin Plan	76	28	22	43	18
2070 Dry	32	2	2	6	1
2070 Med	59	14	8	27	7
2070 Wet	72	23	18	40	16
2045 Dry	49	4	3	16	3
2045 Med	65	17	11	31	10
2045 Wet	75	25	22	44	18
Without Development	91	60	51	77	44
Target Frequency	0	80	80	33	33

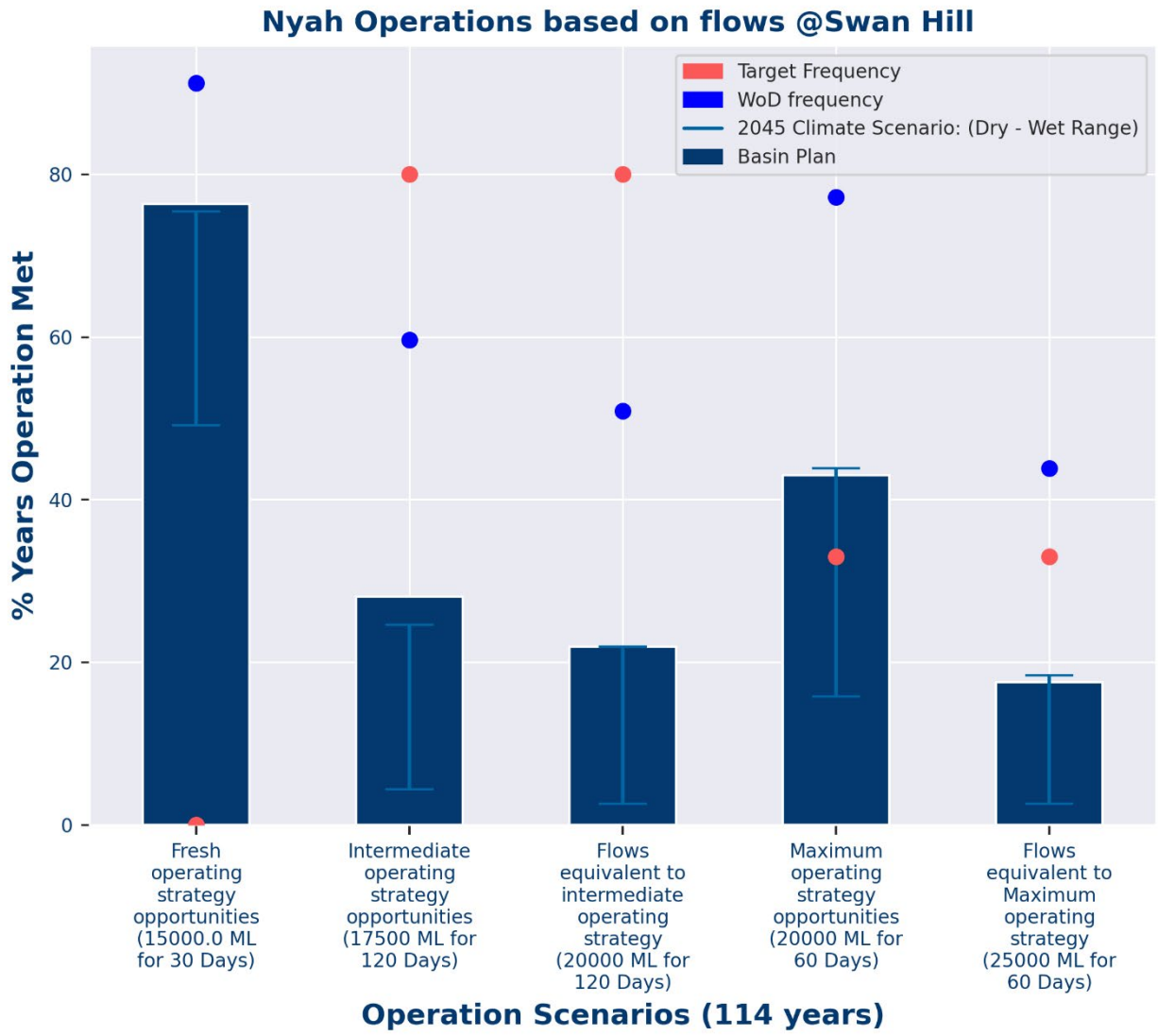

Figure 21: Nyah 2045 climate – frequency of events relevant to operating strategies

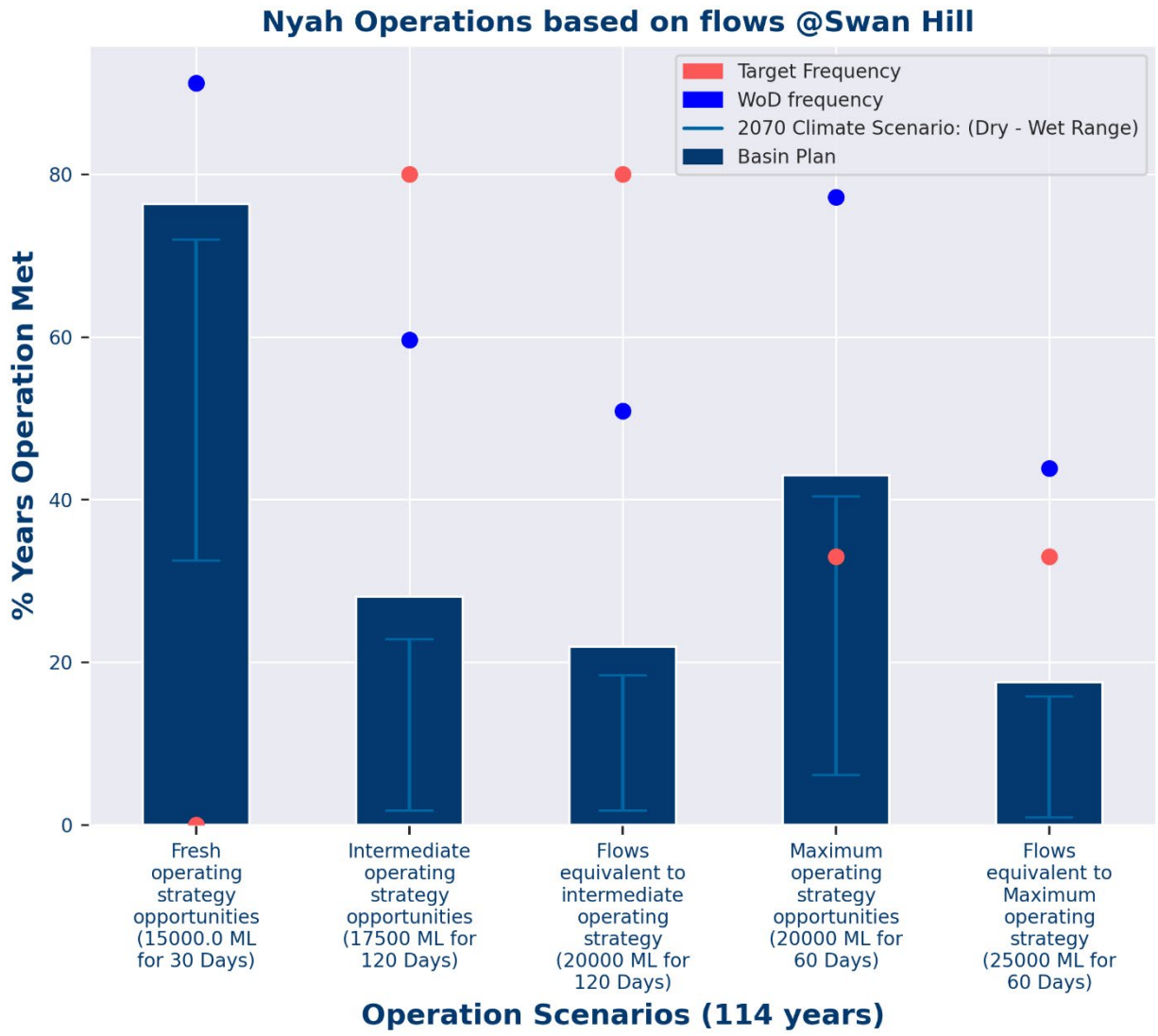

Figure 22: Nyah 2070 climate – frequency of events relevant to operating strategies

Table 17: Nyah – seasonality results

Number of Events (min 30 day duration)	June – August (number of events)	September – November (number of events)	December – February (number of events)	March – May (number of events)
Basin Plan >=15000 ML/day	29	68	4	1
Basin Plan >=20000 ML/day	21	46	0	0
Basin Plan >=25000 ML/day	7	22	0	0
Basin Plan >=30000 ML/day	1	6	0	0
Basin Plan >=35000 ML/day	0	0	0	0
2045 Wet >=15000 ML/day	17	73	4	0
2045 Wet >=20000 ML/day	12	50	1	0
2045 Wet >=25000 ML/day	5	22	1	0
2045 Wet >=30000 ML/day	0	8	0	0
2045 Wet >=35000 ML/day	0	0	0	0
2045 Dry >=15000 ML/day	7	50	0	0
2045 Dry >=20000 ML/day	4	32	0	0
2045 Dry >=25000 ML/day	0	8	0	0
2045 Dry >=30000 ML/day	0	0	0	0
2045 Dry >=35000 ML/day	0	0	0	0
2070 Wet >=15000 ML/day	17	67	4	0

Number of Events (min 30 day duration)	June – August (number of events)	September – November (number of events)	December – February (number of events)	March – May (number of events)
2070 Wet >=20000 ML/day	7	45	2	0
2070 Wet >=25000 ML/day	3	21	1	0
2070 Wet >=30000 ML/day	0	5	0	0
2070 Wet >=35000 ML/day	0	0	0	0
2070 Dry >=15000 ML/day	6	32	1	0
2070 Dry >=20000 ML/day	1	13	0	0
2070 Dry >=25000 ML/day	0	2	0	0
2070 Dry >=30000 ML/day	0	0	0	0
2070 Dry >=35000 ML/day	0	0	0	0

Figure 23: Nyah Basin Plan climate – seasonality (min 30 day duration)

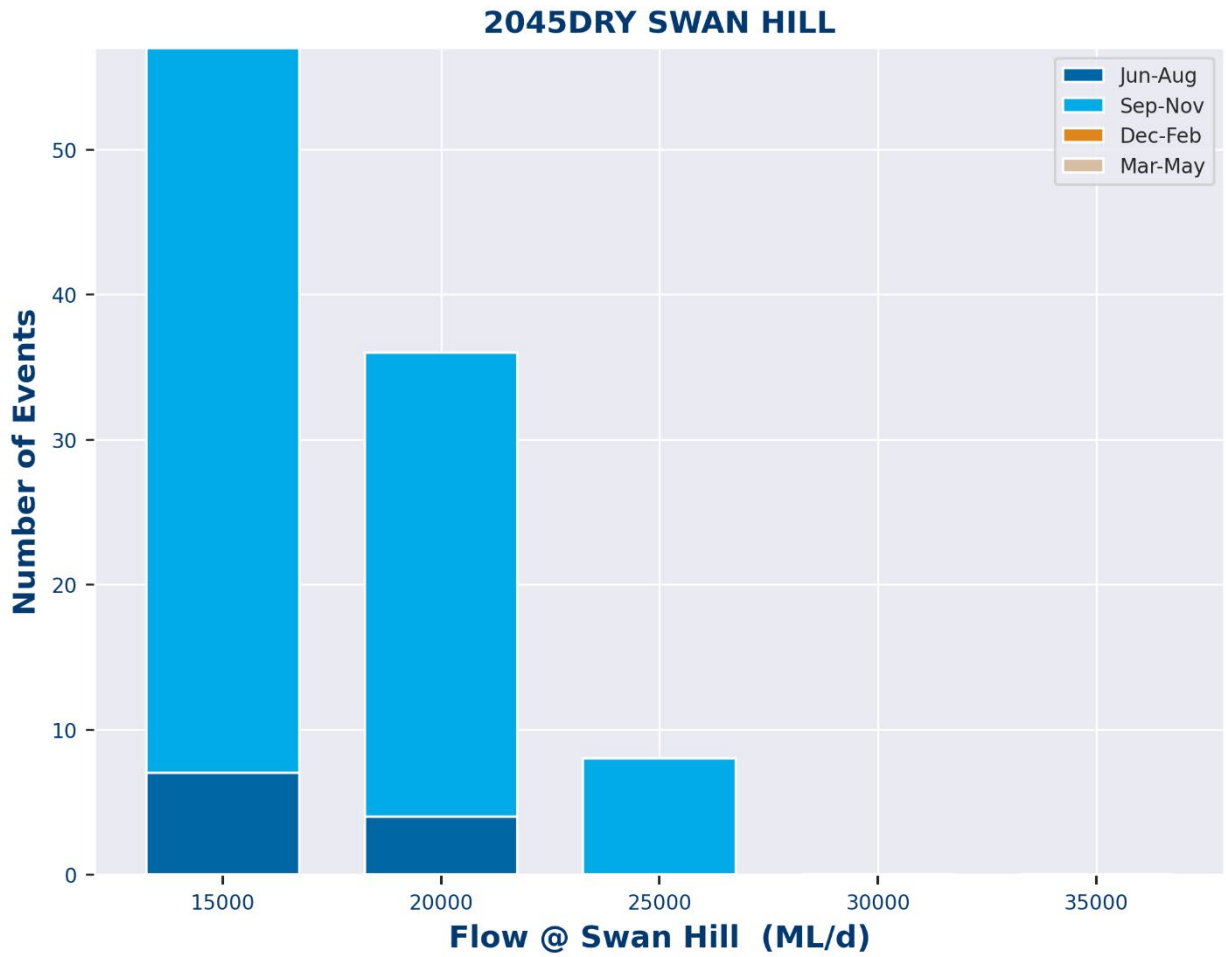

Figure 24: Nyah 2045 dry climate – seasonality (min 30 day duration)

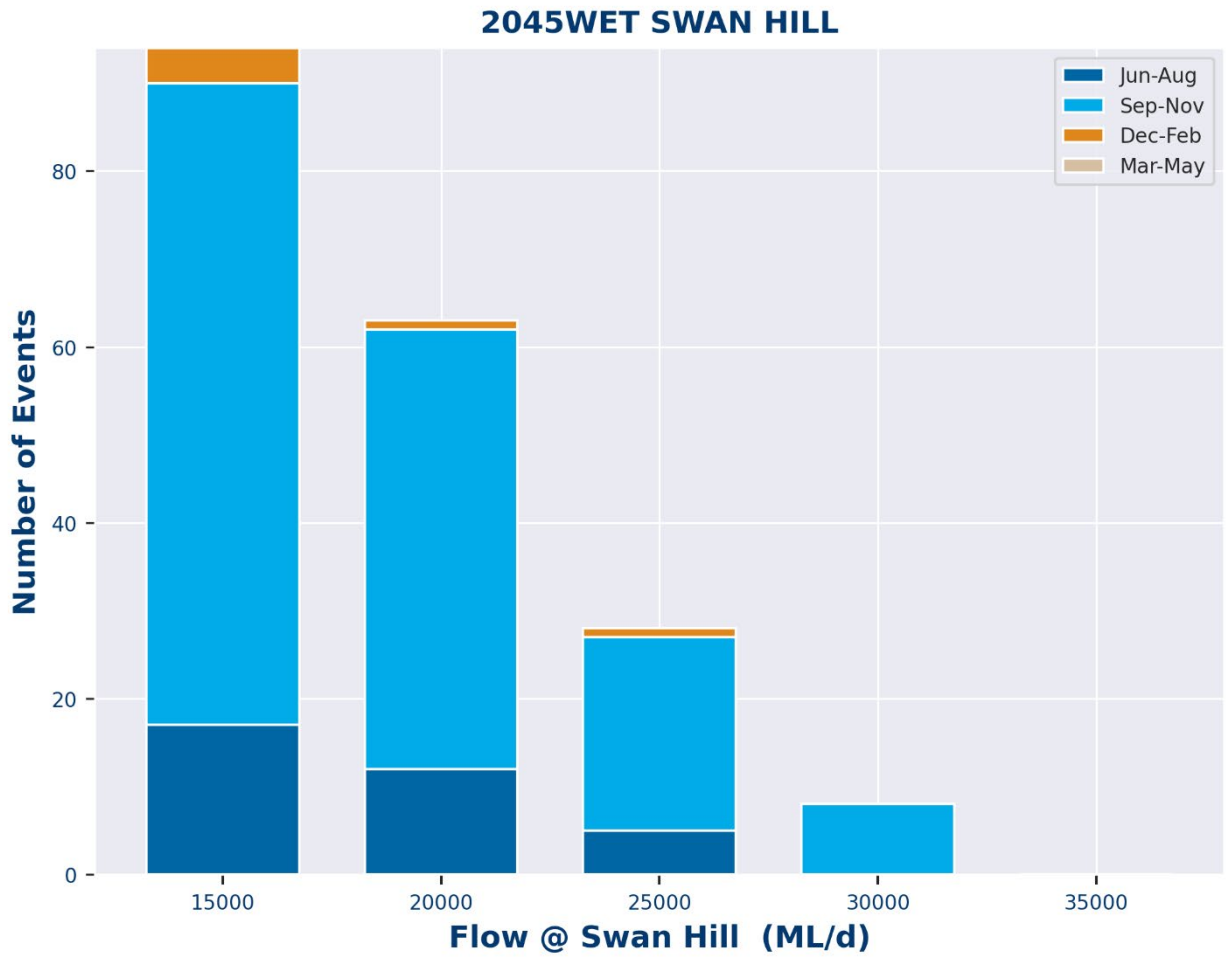

Figure 25: Nyah 2045 wet climate – seasonality (min 30 day duration)

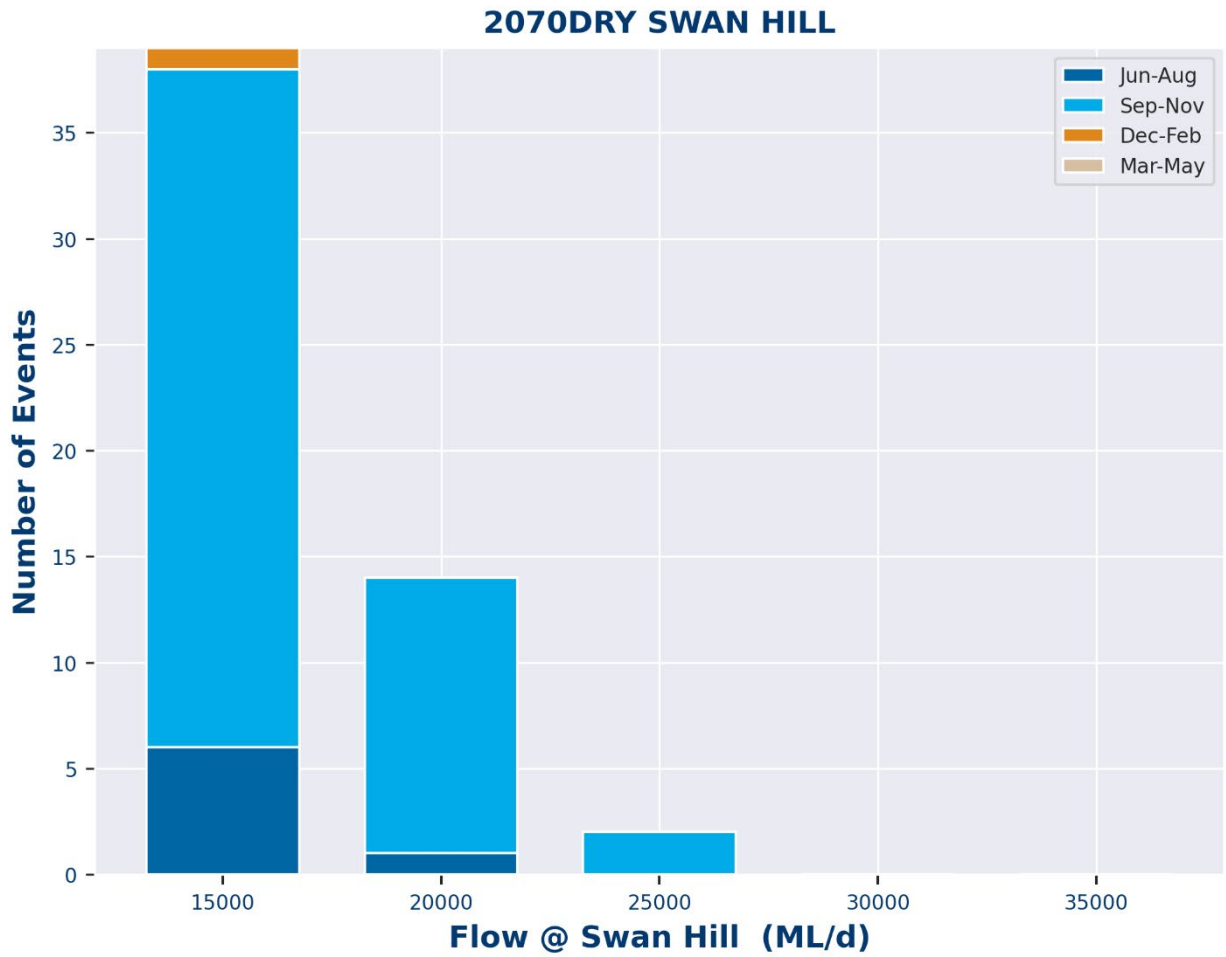

Figure 26: Nyah 2070 dry climate – seasonality (min 30 day duration)

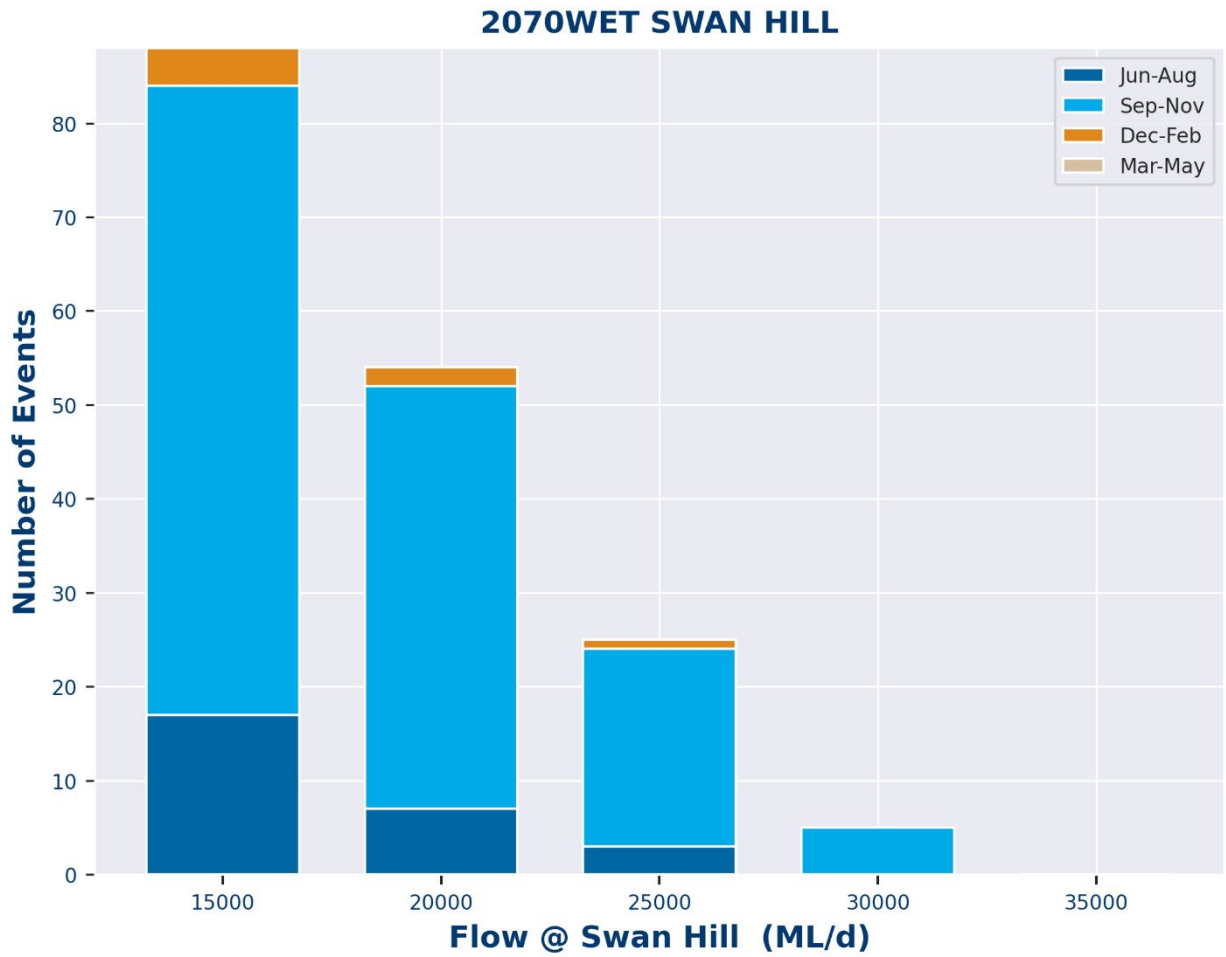

Figure 27: Nyah 2070 wet climate – seasonality (min 30 day duration)

Table 18: Nyah – event duration and spells results

Flow (ML/d)	No Event	%years	Med Duration (day)	90 %-ile Dry Period (day)	Model run	Min Duration (day)
15000	67	59	136	956	Basin Plan	60
15500	67	58	132	956.5	Basin Plan	60
16000	64	55	131.5	967.8	Basin Plan	60
16500	60	53	130.5	1070.2	Basin Plan	60
17000	59	52	130	1097.5	Basin Plan	60
17500	57	49	128	1292.5	Basin Plan	60
18000	55	48	127	1313.4	Basin Plan	60
18500	55	48	125	1334.3	Basin Plan	60
19000	53	46	121	1315.9	Basin Plan	60
19500	52	46	119	1320	Basin Plan	60
20000	49	43	120	1331.8	Basin Plan	60
20500	46	40	123.5	1341.4	Basin Plan	60
21000	44	39	123	1349.6	Basin Plan	60
21500	41	36	115	1361	Basin Plan	60
22000	38	33	113	1348.2	Basin Plan	60
22500	35	31	111	2262.2	Basin Plan	60
23000	33	29	105	2332.2	Basin Plan	60
23500	29	25	113	2413.7	Basin Plan	60
24000	24	21	109	2504.2	Basin Plan	60
24500	23	19	97	2526.2	Basin Plan	60
25000	21	18	85	3848.7	Basin Plan	60
25500	16	14	88	5508.8	Basin Plan	60
26000	13	11	76	5981.1	Basin Plan	60
26500	11	10	72	6246.3	Basin Plan	60
27000	9	8	66	8432	Basin Plan	60

Flow (ML/d)	No Event	%years	Med Duration (day)	90 %-ile Dry Period (day)	Model run	Min Duration (day)
27500	8	7	67.5	9205.8	Basin Plan	60
28000	5	4	84	11712.9	Basin Plan	60
28500	4	4	83	12509.4	Basin Plan	60
29000	4	4	73	12516.6	Basin Plan	60
29500	3	3	77	13328.4	Basin Plan	60
30000	3	3	76	13330.4	Basin Plan	60
30500	2	2	67.5	14126	Basin Plan	60
31000	0	0			Basin Plan	60
31500	0	0			Basin Plan	60
32000	0	0			Basin Plan	60
32500	0	0			Basin Plan	60
33000	0	0			Basin Plan	60
33500	0	0			Basin Plan	60
34000	0	0			Basin Plan	60
34500	0	0			Basin Plan	60
35000	0	0			Basin Plan	60
15000	56	48	143.5	1212	Current	60
15500	56	48	142	1213	Current	60
16000	54	46	141.5	1357.4	Current	60
16500	52	45	140.5	1312	Current	60
17000	50	43	142.5	1326.2	Current	60
17500	48	42	144.5	1339.8	Current	60
18000	48	42	141	1340.8	Current	60
18500	48	42	138	1343.8	Current	60
19000	47	41	135	1352	Current	60

Flow (ML/d)	No Event	%years	Med Duration (day)	90 %-ile Dry Period (day)	Model run	Min Duration (day)
19500	45	39	135	1366.3	Current	60
20000	43	38	133	1383.2	Current	60
20500	42	37	124	1394	Current	60
21000	40	35	117	1481.4	Current	60
21500	36	32	114	2218.8	Current	60
22000	34	30	111	2287.2	Current	60
22500	30	26	119	2391.2	Current	60
23000	28	25	118.5	2429.2	Current	60
23500	24	21	115	2502.4	Current	60
24000	22	18	103.5	3148	Current	60
24500	21	18	92	3199.3	Current	60
25000	19	16	87	4640.5	Current	60
25500	15	13	86	5649.2	Current	60
26000	12	11	78	6104	Current	60
26500	9	8	73	6906.8	Current	60
27000	7	6	79	10130	Current	60
27500	7	6	74	10142	Current	60
28000	5	4	84	11712.3	Current	60
28500	4	4	83	12509.4	Current	60
29000	3	3	79	13344.3	Current	60
29500	2	2	80	14122	Current	60
30000	2	2	78	14124	Current	60
30500	2	2	67.5	14126	Current	60
31000	0	0			Current	60
31500	0	0			Current	60

Flow (ML/d)	No Event	%years	Med Duration (day)	90 %-ile Dry Period (day)	Model run	Min Duration (day)
32000	0	0			Current	60
32500	0	0			Current	60
33000	0	0			Current	60
33500	0	0			Current	60
34000	0	0			Current	60
34500	0	0			Current	60
35000	0	0			Current	60
15000	68	60	124.5	960.4	2045 Wet	60
15500	64	56	125	966.6	2045 Wet	60
16000	63	55	121	971.9	2045 Wet	60
16500	62	54	120.5	974	2045 Wet	60
17000	61	54	119	1005.7	2045 Wet	60
17500	59	52	117	1313.7	2045 Wet	60
18000	59	52	115	1315.8	2045 Wet	60
18500	59	52	114	1320.6	2045 Wet	60
19000	57	50	112	1160.5	2045 Wet	60
19500	52	46	116	1333	2045 Wet	60
20000	50	44	118	1339.4	2045 Wet	60
20500	46	40	117	1344.4	2045 Wet	60
21000	46	40	111	1348.8	2045 Wet	60
21500	41	36	113	1474.9	2045 Wet	60
22000	40	35	110.5	1578.2	2045 Wet	60
22500	38	33	108.5	2405.6	2045 Wet	60
23000	34	30	102.5	2456	2045 Wet	60
23500	32	28	98.5	2517	2045 Wet	60

Flow (ML/d)	No Event	%years	Med Duration (day)	90 %-ile Dry Period (day)	Model run	Min Duration (day)
24000	25	22	101	2980.6	2045 Wet	60
24500	22	19	98	3579	2045 Wet	60
25000	21	18	96	3613.1	2045 Wet	60
25500	18	16	90	3350	2045 Wet	60
26000	13	11	94	5856.4	2045 Wet	60
26500	13	11	79	5870.2	2045 Wet	60
27000	10	9	78	7659.8	2045 Wet	60
27500	8	7	77	9319	2045 Wet	60
28000	7	6	75	10122	2045 Wet	60
28500	7	6	72	10130.5	2045 Wet	60
29000	7	6	70	10135	2045 Wet	60
29500	6	5	68	10935.4	2045 Wet	60
30000	3	3	67	13331.2	2045 Wet	60
30500	2	2	63	20392	2045 Wet	60
31000	1	1	65		2045 Wet	60
31500	1	1	62		2045 Wet	60
32000	1	1	60		2045 Wet	60
32500	0	0			2045 Wet	60
33000	0	0			2045 Wet	60
33500	0	0			2045 Wet	60
34000	0	0			2045 Wet	60
34500	0	0			2045 Wet	60
35000	0	0			2045 Wet	60
15000	54	47	113	1253.8	2045 Med	60
15500	53	46	112	1289.3	2045 Med	60

Flow (ML/d)	No Event	%years	Med Duration (day)	90 %-ile Dry Period (day)	Model run	Min Duration (day)
16000	51	45	110	1326.1	2045 Med	60
16500	50	44	107	1330.8	2045 Med	60
17000	49	43	105	1334.4	2045 Med	60
17500	47	41	103	1363	2045 Med	60
18000	45	39	103	1376	2045 Med	60
18500	41	36	113	1439	2045 Med	60
19000	40	35	113	1475.8	2045 Med	60
19500	37	32	112	1554.5	2045 Med	60
20000	35	31	110	1638	2045 Med	60
20500	35	31	105	1640.5	2045 Med	60
21000	32	28	102	2385	2045 Med	60
21500	30	26	101	2414.2	2045 Med	60
22000	27	24	98	2854	2045 Med	60
22500	20	18	96	4325.4	2045 Med	60
23000	17	15	97	4991.5	2045 Med	60
23500	16	14	93	5515.2	2045 Med	60
24000	13	11	90	5991.6	2045 Med	60
24500	12	11	86.5	6111	2045 Med	60
25000	11	10	82	6883.7	2045 Med	60
25500	9	8	75	8422.5	2045 Med	60
26000	7	6	75	10115.5	2045 Med	60
26500	7	6	73	10120	2045 Med	60
27000	7	6	71	10125	2045 Med	60
27500	5	4	69	11823.3	2045 Med	60
28000	4	4	63.5	12752.2	2045 Med	60

Flow (ML/d)	No Event	%years	Med Duration (day)	90 %-ile Dry Period (day)	Model run	Min Duration (day)
28500	2	2	79	14140	2045 Med	60
29000	1	1	90		2045 Med	60
29500	0	0			2045 Med	60
30000	0	0			2045 Med	60
30500	0	0			2045 Med	60
31000	0	0			2045 Med	60
31500	0	0			2045 Med	60
32000	0	0			2045 Med	60
32500	0	0			2045 Med	60
33000	0	0			2045 Med	60
33500	0	0			2045 Med	60
34000	0	0			2045 Med	60
34500	0	0			2045 Med	60
35000	0	0			2045 Med	60
15000	35	31	102	2082.6	2045 Dry	60
15500	34	30	98	2181.6	2045 Dry	60
16000	32	27	94	2512	2045 Dry	60
16500	31	26	96	2578.4	2045 Dry	60
17000	30	25	89.5	2646	2045 Dry	60
17500	28	24	90.5	3121.8	2045 Dry	60
18000	27	23	93	3189	2045 Dry	60
18500	26	23	91.5	3256.6	2045 Dry	60
19000	24	21	90.5	4293.8	2045 Dry	60
19500	23	20	89	4476.6	2045 Dry	60
20000	18	16	89	5233	2045 Dry	60

Flow (ML/d)	No Event	%years	Med Duration (day)	90 %-ile Dry Period (day)	Model run	Min Duration (day)
20500	18	16	85	5236.8	2045 Dry	60
21000	15	13	84	5668.7	2045 Dry	60
21500	13	11	84	5989.4	2045 Dry	60
22000	12	11	81.5	6110	2045 Dry	60
22500	11	10	75	6381.3	2045 Dry	60
23000	6	5	83.5	10902.8	2045 Dry	60
23500	6	5	80.5	10905.4	2045 Dry	60
24000	6	5	74.5	10910.4	2045 Dry	60
24500	5	4	75	11712.6	2045 Dry	60
25000	3	3	93	13348.9	2045 Dry	60
25500	3	3	87	13359.4	2045 Dry	60
26000	1	1	76		2045 Dry	60
26500	1	1	63		2045 Dry	60
27000	0	0			2045 Dry	60
27500	0	0			2045 Dry	60
28000	0	0			2045 Dry	60
28500	0	0			2045 Dry	60
29000	0	0			2045 Dry	60
29500	0	0			2045 Dry	60
30000	0	0			2045 Dry	60
30500	0	0			2045 Dry	60
31000	0	0			2045 Dry	60
31500	0	0			2045 Dry	60
32000	0	0			2045 Dry	60
32500	0	0			2045 Dry	60

Flow (ML/d)	No Event	%years	Med Duration (day)	90 %-ile Dry Period (day)	Model run	Min Duration (day)
33000	0	0			2045 Dry	60
33500	0	0			2045 Dry	60
34000	0	0			2045 Dry	60
34500	0	0			2045 Dry	60
35000	0	0			2045 Dry	60
15000	64	56	119.5	961	2070 Wet	60
15500	63	55	115	962.5	2070 Wet	60
16000	62	54	113.5	967	2070 Wet	60
16500	57	50	117	1311.5	2070 Wet	60
17000	56	49	117	1173	2070 Wet	60
17500	55	48	117	1211.9	2070 Wet	60
18000	53	46	116	1276.4	2070 Wet	60
18500	50	44	119	1060.2	2070 Wet	60
19000	48	42	123	1335.8	2070 Wet	60
19500	47	41	121	1340	2070 Wet	60
20000	46	40	114.5	1343.6	2070 Wet	60
20500	44	39	110	1353.4	2070 Wet	60
21000	43	38	107	1358.5	2070 Wet	60
21500	39	34	113	1691.7	2070 Wet	60
22000	37	32	102	2202	2070 Wet	60
22500	34	30	98.5	2482.8	2070 Wet	60
23000	31	27	96	2549.8	2070 Wet	60
23500	26	23	99.5	3056.8	2070 Wet	60
24000	24	21	98.5	3051.2	2070 Wet	60
24500	21	18	90	3702.6	2070 Wet	60

Flow (ML/d)	No Event	%years	Med Duration (day)	90 %-ile Dry Period (day)	Model run	Min Duration (day)
25000	18	16	88	4140.8	2070 Wet	60
25500	14	12	93	5608.2	2070 Wet	60
26000	12	11	80.5	6113	2070 Wet	60
26500	9	8	77	8518.1	2070 Wet	60
27000	7	6	77	10116	2070 Wet	60
27500	7	6	73	10119.5	2070 Wet	60
28000	7	6	68	10128	2070 Wet	60
28500	7	6	66	10137	2070 Wet	60
29000	4	4	69	12531.4	2070 Wet	60
29500	3	3	65	13331.7	2070 Wet	60
30000	1	1	61		2070 Wet	60
30500	0	0			2070 Wet	60
31000	0	0			2070 Wet	60
31500	0	0			2070 Wet	60
32000	0	0			2070 Wet	60
32500	0	0			2070 Wet	60
33000	0	0			2070 Wet	60
33500	0	0			2070 Wet	60
34000	0	0			2070 Wet	60
34500	0	0			2070 Wet	60
35000	0	0			2070 Wet	60
15000	51	44	112	1035.2	2070 Med	60
15500	47	40	110	1362	2070 Med	60
16000	45	39	107	1368	2070 Med	60
16500	45	39	106	1370	2070 Med	60

Flow (ML/d)	No Event	%years	Med Duration (day)	90 %-ile Dry Period (day)	Model run	Min Duration (day)
17000	40	35	110	1456.6	2070 Med	60
17500	39	34	112	1495	2070 Med	60
18000	38	33	107.5	1537.8	2070 Med	60
18500	35	31	109	1648.3	2070 Med	60
19000	34	30	109	1686.2	2070 Med	60
19500	33	29	108	1724.1	2070 Med	60
20000	31	27	104	2545.7	2070 Med	60
20500	29	25	101	2813.6	2070 Med	60
21000	27	24	96	3177.5	2070 Med	60
21500	24	21	90	3315.2	2070 Med	60
22000	21	18	85	3778.2	2070 Med	60
22500	18	16	85	4597.6	2070 Med	60
23000	17	15	80	4851	2070 Med	60
23500	14	12	81	5875.4	2070 Med	60
24000	13	11	78	5995.6	2070 Med	60
24500	9	8	75	8505.1	2070 Med	60
25000	8	7	72	9312.8	2070 Med	60
25500	7	6	69	10113.5	2070 Med	60
26000	7	6	66	10119	2070 Med	60
26500	7	6	64	10122	2070 Med	60
27000	4	4	77	12736.2	2070 Med	60
27500	3	3	80	14054.6	2070 Med	60
28000	2	2	93.5	14123	2070 Med	60
28500	2	2	86	14128	2070 Med	60
29000	0	0			2070 Med	60

Flow (ML/d)	No Event	%years	Med Duration (day)	90 %-ile Dry Period (day)	Model run	Min Duration (day)
29500	0	0			2070 Med	60
30000	0	0			2070 Med	60
30500	0	0			2070 Med	60
31000	0	0			2070 Med	60
31500	0	0			2070 Med	60
32000	0	0			2070 Med	60
32500	0	0			2070 Med	60
33000	0	0			2070 Med	60
33500	0	0			2070 Med	60
34000	0	0			2070 Med	60
34500	0	0			2070 Med	60
35000	0	0			2070 Med	60
15000	19	17	97	4792.4	2070 Dry	60
15500	18	16	98	5112	2070 Dry	60
16000	15	13	100	5762.7	2070 Dry	60
16500	14	12	97	5882.8	2070 Dry	60
17000	13	11	98	6004.5	2070 Dry	60
17500	13	11	93	6008.6	2070 Dry	60
18000	12	11	90.5	6129	2070 Dry	60
18500	12	11	86.5	6144	2070 Dry	60
19000	10	9	85	6962.8	2070 Dry	60
19500	8	7	83.5	7402.2	2070 Dry	60
20000	7	6	80	7776.5	2070 Dry	60
20500	6	5	75	8028.8	2070 Dry	60
21000	5	4	69	11816.3	2070 Dry	60

Flow (ML/d)	No Event	%years	Med Duration (day)	90 %-ile Dry Period (day)	Model run	Min Duration (day)
21500	4	4	91.5	12576.4	2070 Dry	60
22000	3	3	114	13339.9	2070 Dry	60
22500	2	2	88	14102	2070 Dry	60
23000	2	2	82.5	14110	2070 Dry	60
23500	2	2	78.5	14116	2070 Dry	60
24000	1	1	89		2070 Dry	60
24500	1	1	83		2070 Dry	60
25000	1	1	64		2070 Dry	60
25500	0	0			2070 Dry	60
26000	0	0			2070 Dry	60
26500	0	0			2070 Dry	60
27000	0	0			2070 Dry	60
27500	0	0			2070 Dry	60
28000	0	0			2070 Dry	60
28500	0	0			2070 Dry	60
29000	0	0			2070 Dry	60
29500	0	0			2070 Dry	60
30000	0	0			2070 Dry	60
30500	0	0			2070 Dry	60
31000	0	0			2070 Dry	60
31500	0	0			2070 Dry	60
32000	0	0			2070 Dry	60
32500	0	0			2070 Dry	60
33000	0	0			2070 Dry	60
33500	0	0			2070 Dry	60

Flow (ML/d)	No Event	%years	Med Duration (day)	90 %-ile Dry Period (day)	Model run	Min Duration (day)
34000	0	0			2070 Dry	60
34500	0	0			2070 Dry	60
35000	0	0			2070 Dry	60
15000	103	89	173	317.4	WoD	60
15500	102	89	169.5	322	WoD	60
16000	103	89	162	320.3	WoD	60
16500	103	88	159	322.4	WoD	60
17000	102	88	156.5	327	WoD	60
17500	99	85	159	489.8	WoD	60
18000	97	82	158	553.5	WoD	60
18500	94	81	157.5	561.8	WoD	60
19000	92	79	156.5	579	WoD	60
19500	91	78	155	592.5	WoD	60
20000	90	77	152.5	596.6	WoD	60
20500	87	75	152	605.5	WoD	60
21000	82	72	156	630	WoD	60
21500	78	68	152	649	WoD	60
22000	76	67	147	664.4	WoD	60
22500	70	61	143.5	932.2	WoD	60
23000	67	59	137	942	WoD	60
23500	64	56	131.5	953	WoD	60
24000	58	51	128	1091	WoD	60
24500	55	48	123	979.3	WoD	60
25000	50	44	118.5	1337.4	WoD	60
25500	44	39	112	1390.6	WoD	60

Flow (ML/d)	No Event	%years	Med Duration (day)	90 %-ile Dry Period (day)	Model run	Min Duration (day)
26000	34	30	113	2101	WoD	60
26500	33	28	99	2478.1	WoD	60
27000	28	24	95.5	2637.6	WoD	60
27500	23	20	91	3203.3	WoD	60
28000	22	19	82	3251	WoD	60
28500	16	14	74.5	4823	WoD	60
29000	13	11	74	6004.3	WoD	60
29500	10	9	75.5	6652.2	WoD	60
30000	8	7	74.5	7313.2	WoD	60
30500	7	6	72	10122.5	WoD	60
31000	4	4	75.5	12515	WoD	60
31500	2	2	90.5	14102	WoD	60
32000	2	2	68.5	14124	WoD	60
32500	1	1	60		WoD	60
33000	0	0			WoD	60
33500	0	0			WoD	60
34000	0	0			WoD	60
34500	0	0			WoD	60
35000	0	0			WoD	60

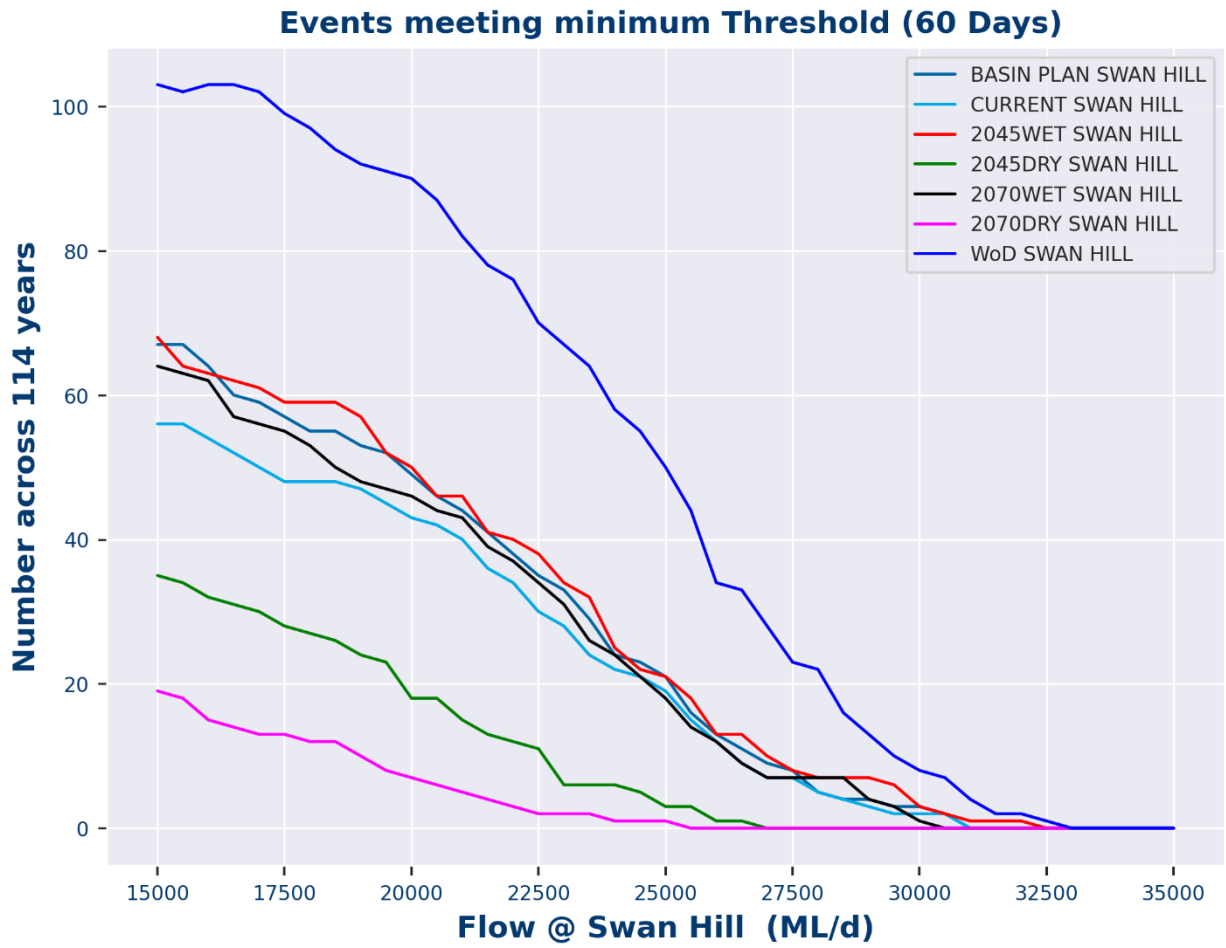

Figure 28: Nyah – number of events

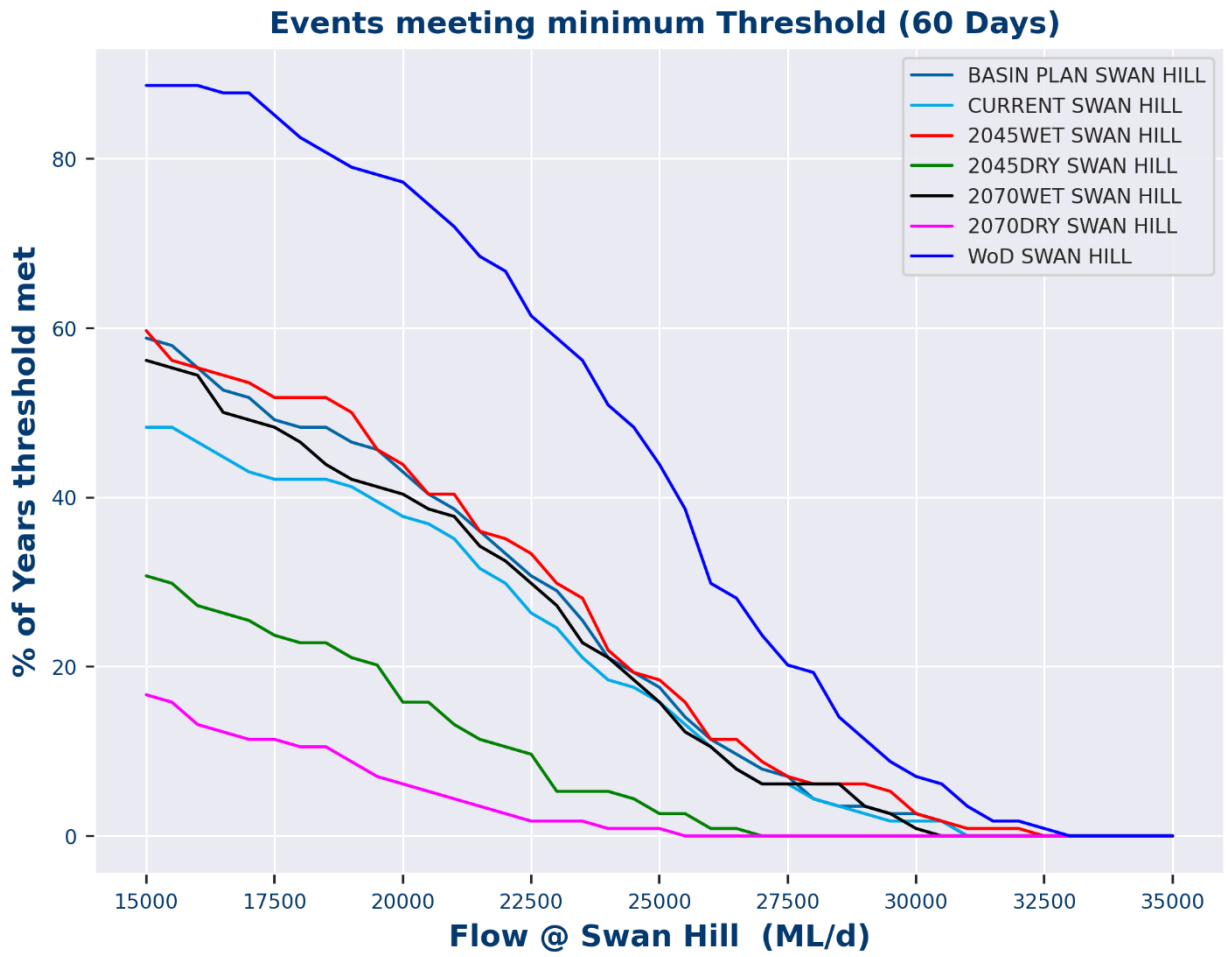

Figure 29: Nyah – % of years with events

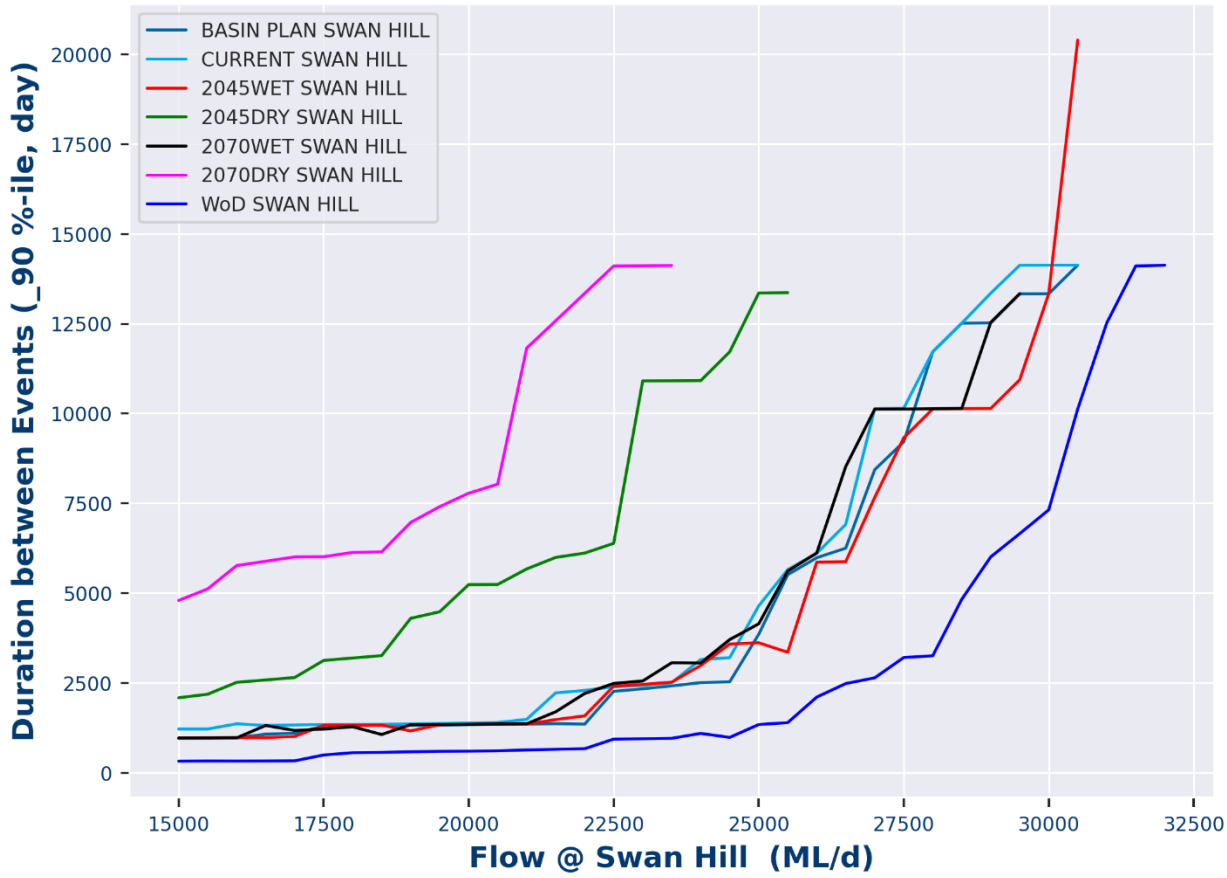

Figure 30: Nyah – 90th percentile duration between events

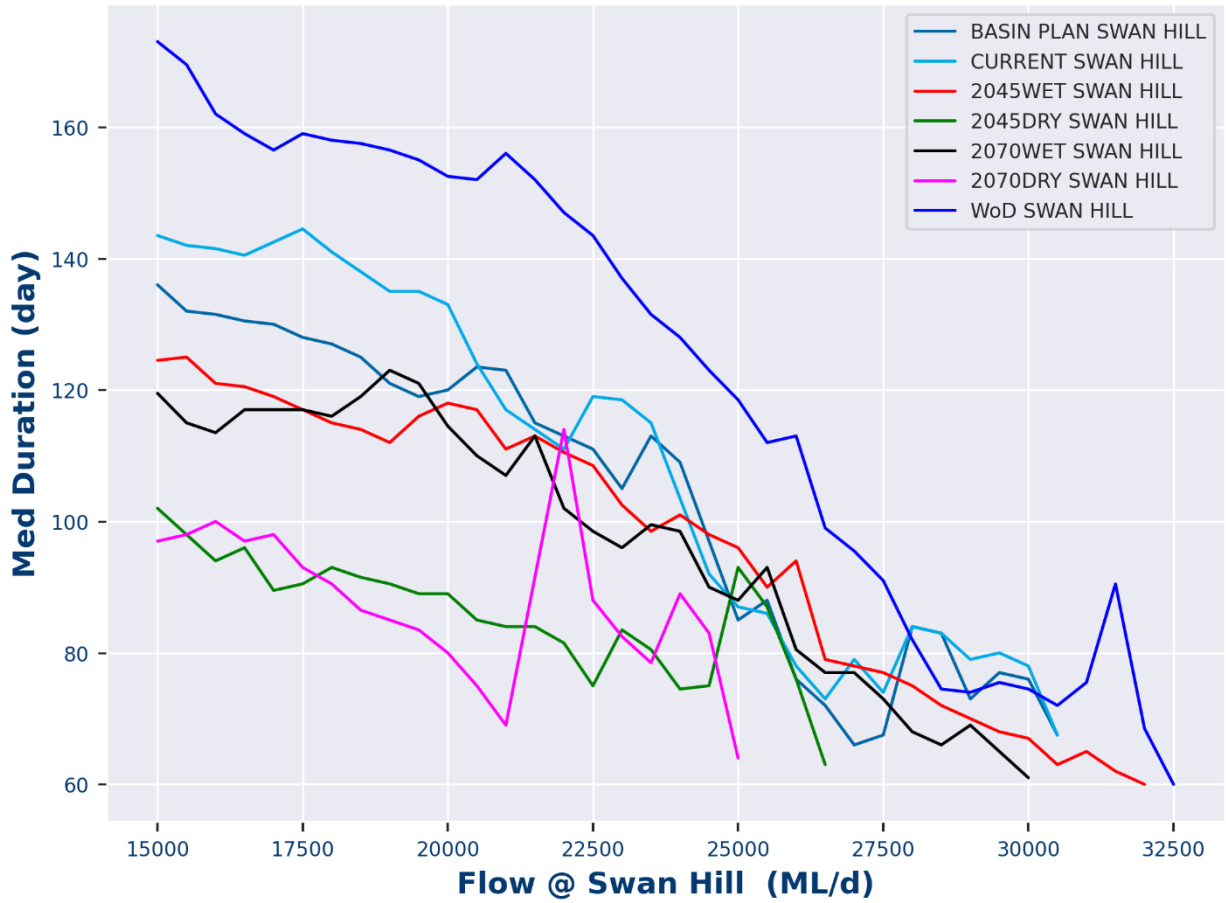

Figure 31: Nyah – median event duration

Burra Creek

Table 19: Burra Creek – operations results

Percent	Fresh operating strategy opportunities (% years)	Intermediate operating strategy opportunities (% years)	Flows equivalent to intermediate operating strategy (%years)	Maximum operating strategy opportunities (% years)	Flows equivalent to maximum operating strategy (%years)
Basin Plan	22	54	6	11	0
2070 Dry	2	12	0	0	0
2070 Med	8	40	2	4	0
2070 Wet	18	46	4	9	1
2045 Dry	3	30	0	0	0
2045 Med	11	43	4	5	0
2045 Wet	22	53	7	11	1
Without Development	51	87	13	23	2
Target Frequency	90	20	20	3	3

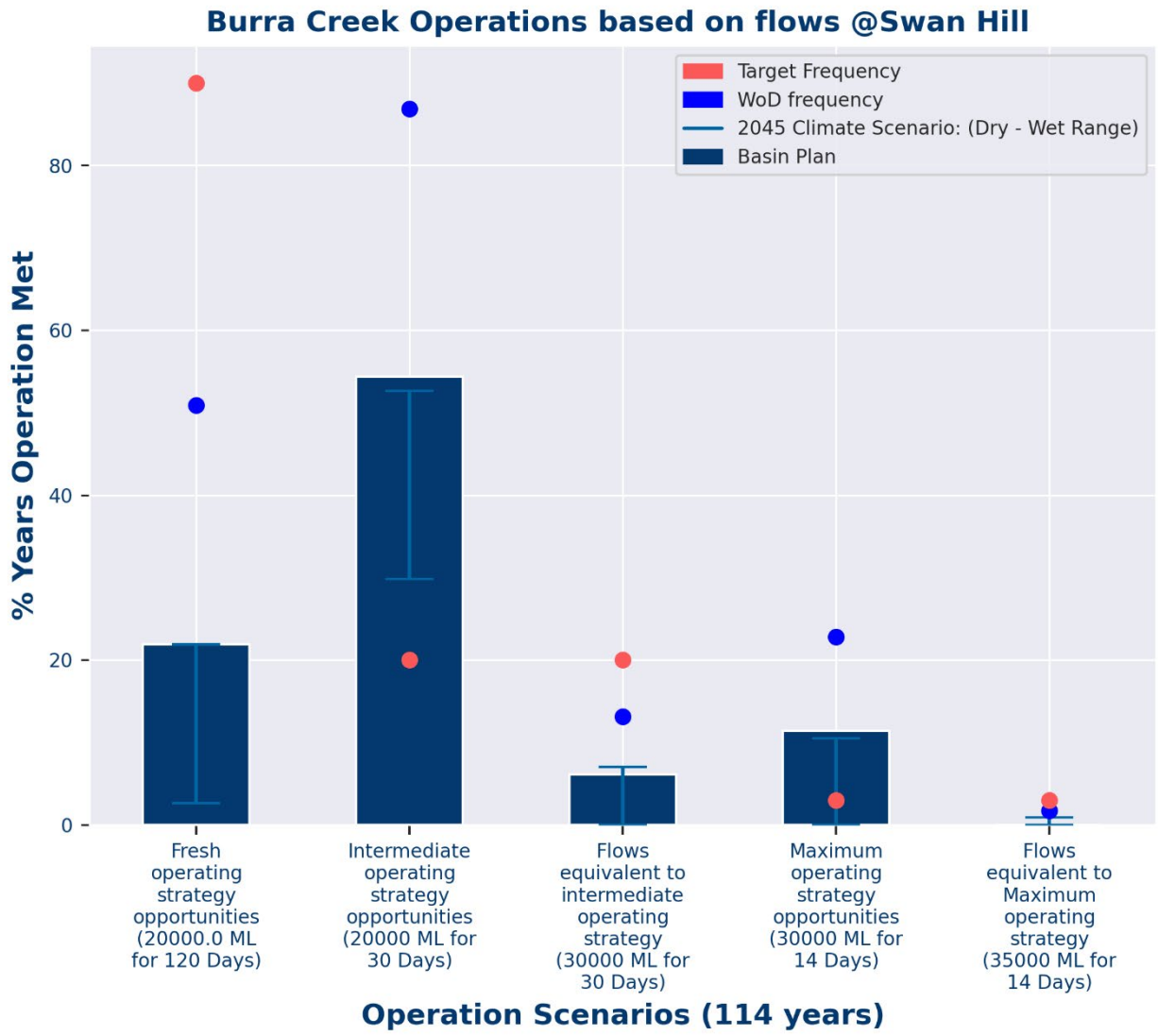

Figure 32: Burra Creek 2045 climate – frequency of events relevant to operating strategies

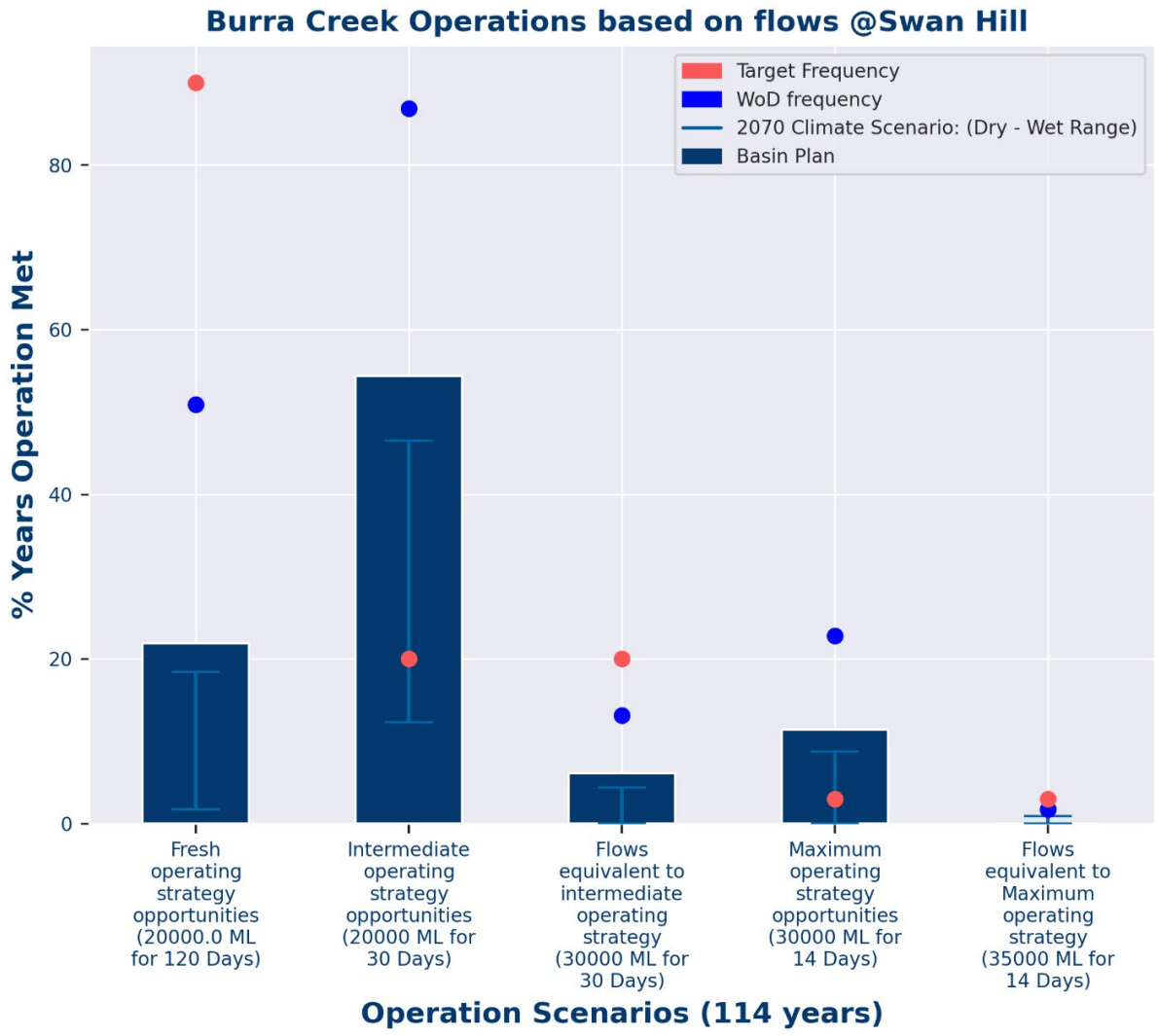

Figure 33: Burra Creek 2070 climate – frequency of events relevant to operating strategies

Table 20: Burra Creek – sesaonality results

Number of Events (min 120 day duration)	June – August (number of events)	September – November (number of events)	December – February (number of events)	March – May (number of events)
Basin Plan >=15000 ML/day	9	30	0	0
Basin Plan >=20000 ML/day	3	22	0	0
Basin Plan >=25000 ML/day	2	3	0	0
Basin Plan >=30000 ML/day	0	0	0	0
Basin Plan >=35000 ML/day	0	0	0	0
2045 Wet >=15000 ML/day	6	31	1	0
2045 Wet >=20000 ML/day	3	22	0	0
2045 Wet >=25000 ML/day	0	3	0	0
2045 Wet >=30000 ML/day	0	0	0	0
2045 Wet >=35000 ML/day	0	0	0	0
2045 Dry >=15000 ML/day	2	12	0	0
2045 Dry >=20000 ML/day	0	3	0	0
2045 Dry >=25000 ML/day	0	0	0	0
2045 Dry >=30000 ML/day	0	0	0	0
2045 Dry >=35000 ML/day	0	0	0	0
2070 Wet >=15000 ML/day	4	26	2	0

Number of Events (min 120 day duration)	June – August (number of events)	September – November (number of events)	December – February (number of events)	March – May (number of events)
2070 Wet >=20000 ML/day	1	19	1	0
2070 Wet >=25000 ML/day	0	2	0	0
2070 Wet >=30000 ML/day	0	0	0	0
2070 Wet >=35000 ML/day	0	0	0	0
2070 Dry >=15000 ML/day	0	4	0	0
2070 Dry >=20000 ML/day	0	2	0	0
2070 Dry >=25000 ML/day	0	0	0	0
2070 Dry >=30000 ML/day	0	0	0	0
2070 Dry >=35000 ML/day	0	0	0	0

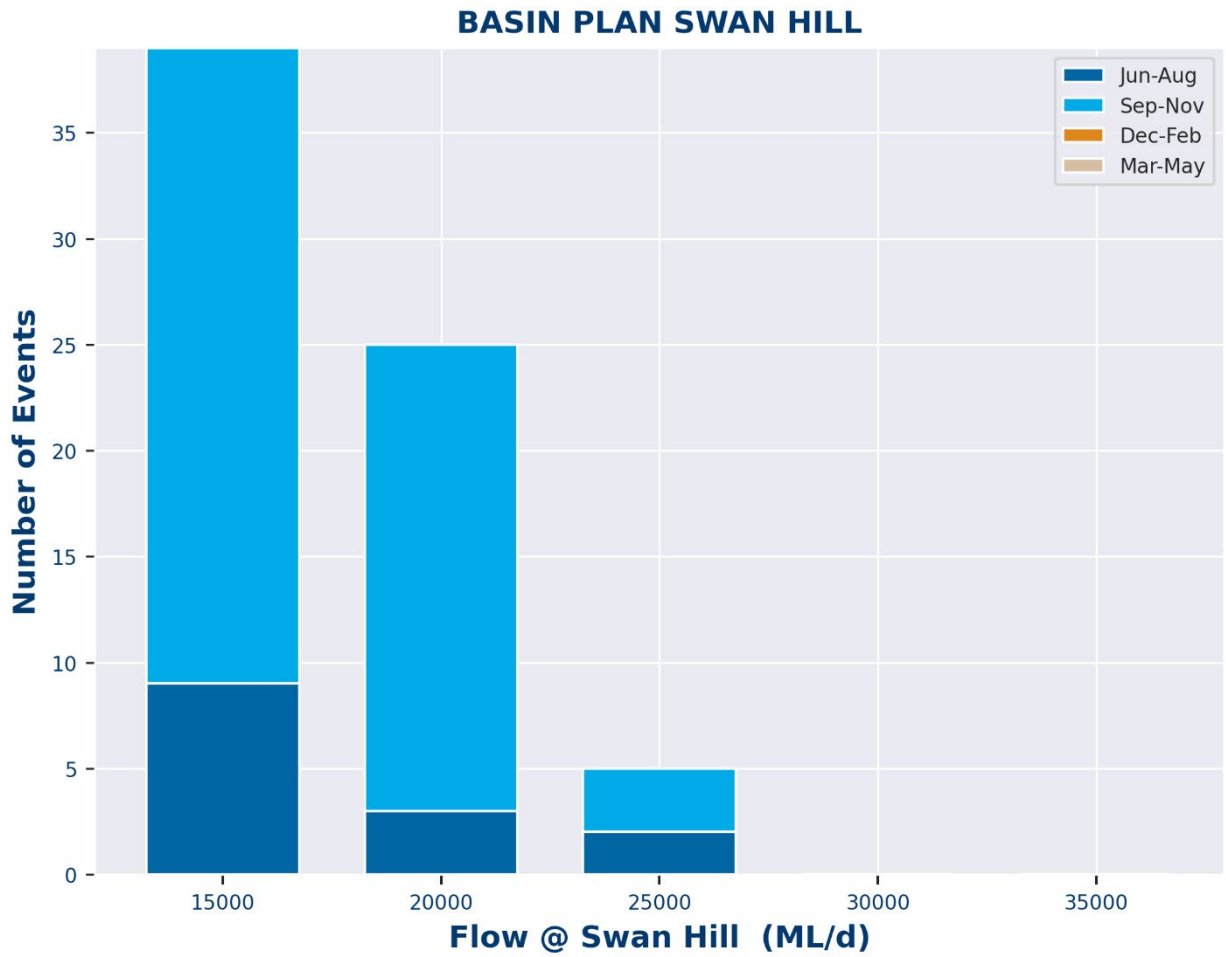

Figure 34: Burra Creek Basin Plan climate – seasonality (min 120 day duration)

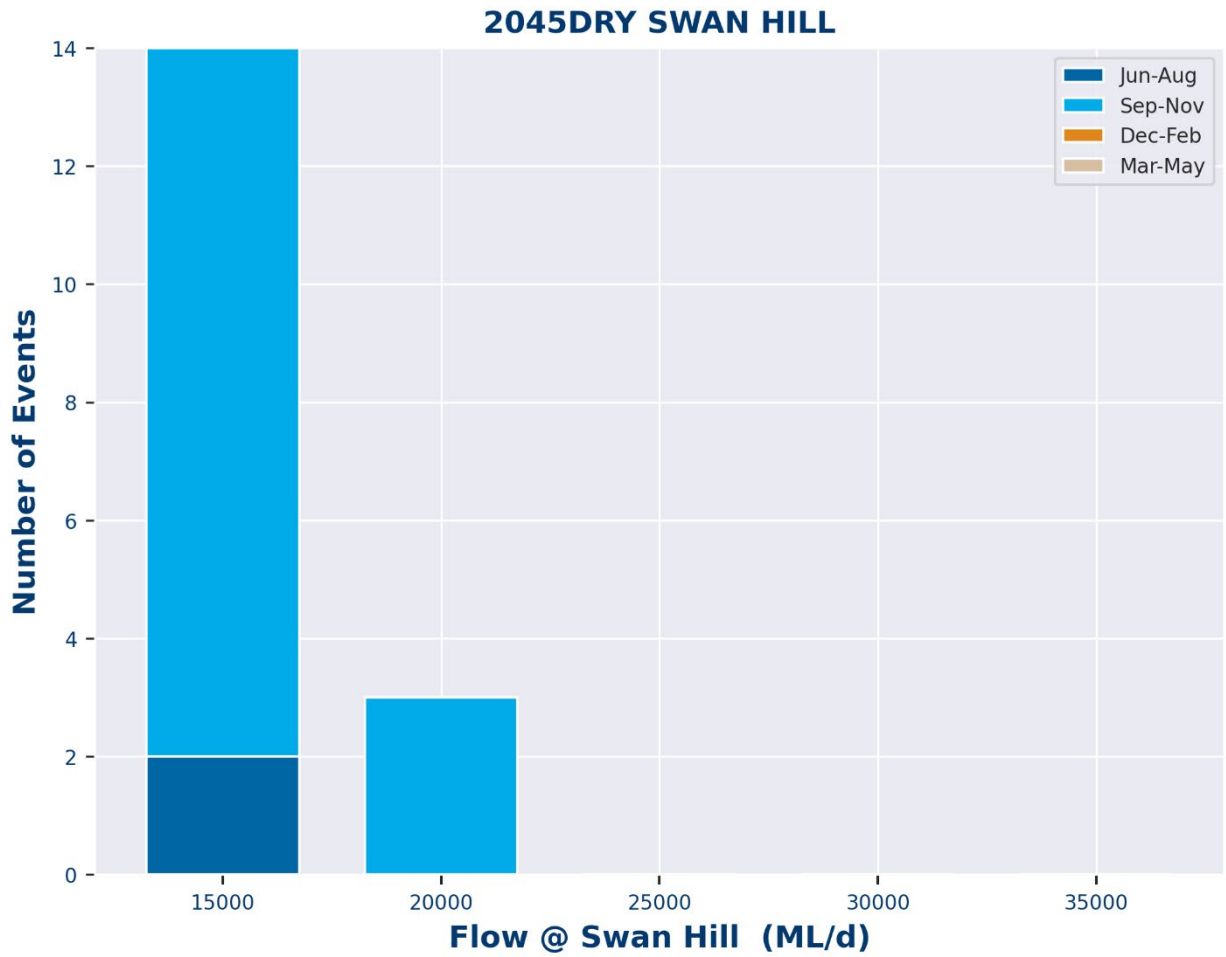

Figure 35: Burra Creek 2045 dry climate – seasonality (min 120 day duration)

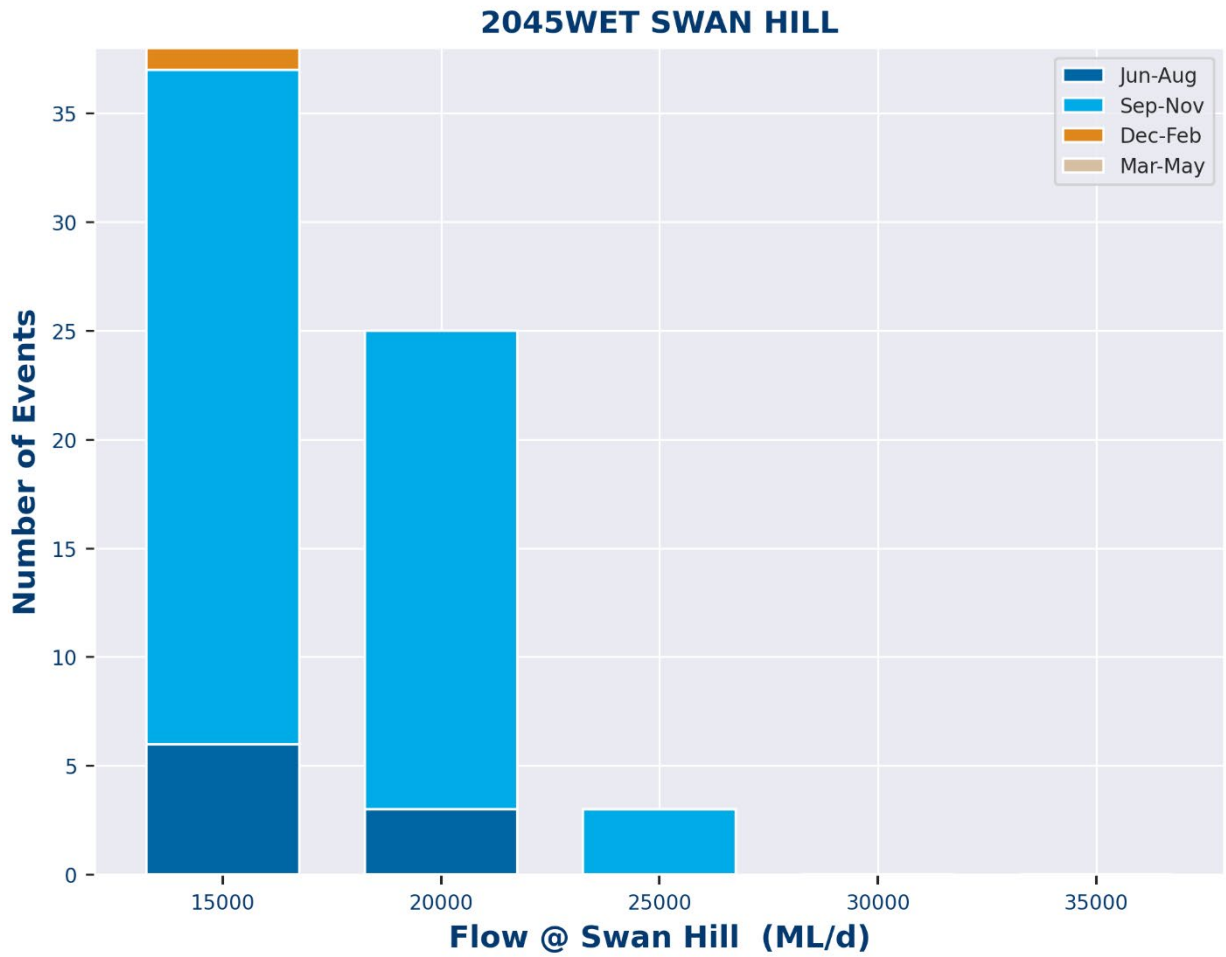

Figure 36: Burra Creek 2045 wet climate – seasonality (min 120 day duration)

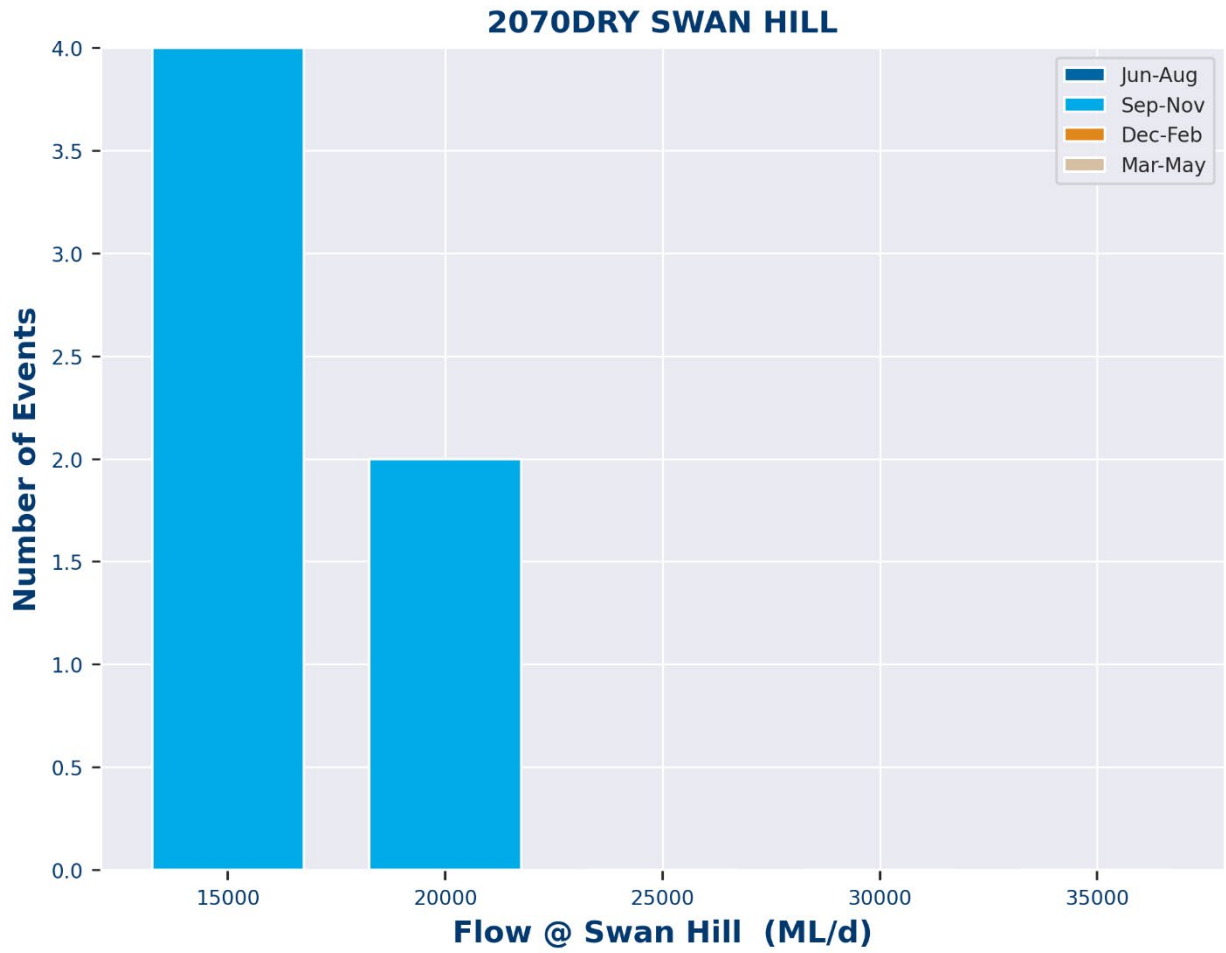

Figure 37: Burra Creek 2070 dry climate – seasonality (min 120 day duration)

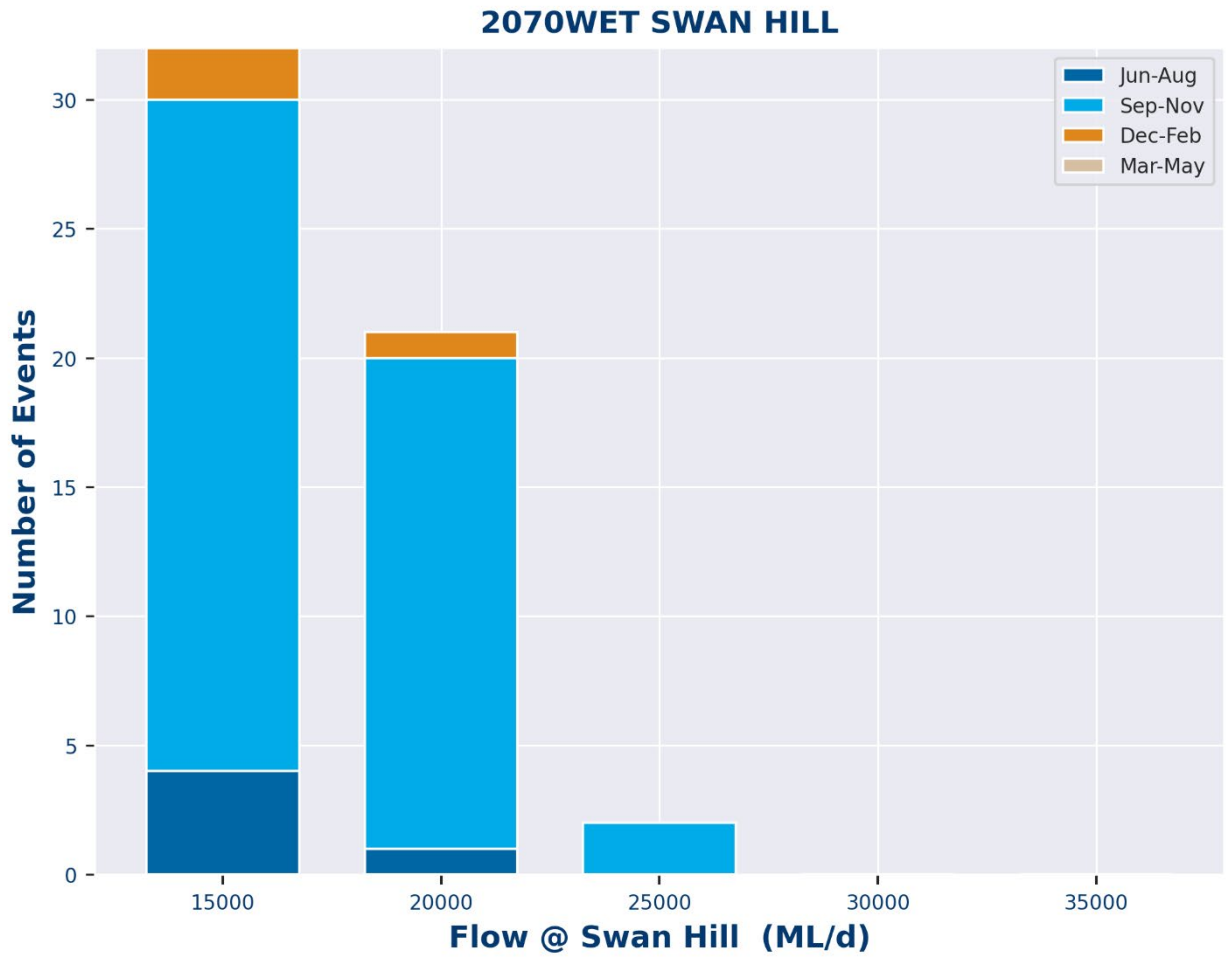

Figure 38: Burra Creek 2070 wet climate – seasonality (min 120 day duration)

Table 21: Burra Creek – event duration and spells results

Flow (ML/d)	No Event	%years	Med Duration (day)	90 %-ile Dry Period (day)	Model run	Min Duration (day)
15000	143	89	51	351	Basin Plan	14
15500	138	88	51.5	366.8	Basin Plan	14
16000	137	87	47	405	Basin Plan	14
16500	127	82	51	567.5	Basin Plan	14
17000	122	80	56.5	571	Basin Plan	14
17500	118	79	57.5	575.6	Basin Plan	14
18000	113	77	58	611.1	Basin Plan	14
18500	113	74	54	618.5	Basin Plan	14
19000	103	69	67	663.3	Basin Plan	14
19500	95	68	72	696.5	Basin Plan	14
20000	87	63	73	924	Basin Plan	14
20500	76	58	77	938.6	Basin Plan	14
21000	70	54	78.5	954.4	Basin Plan	14
21500	63	52	80	1015.5	Basin Plan	14
22000	61	47	79	1038.3	Basin Plan	14
22500	56	45	79.5	1219.2	Basin Plan	14
23000	53	43	75	1326.7	Basin Plan	14
23500	52	41	68.5	1371	Basin Plan	14
24000	50	38	57.5	1375.6	Basin Plan	14
24500	44	33	64	1439.6	Basin Plan	14
25000	41	31	60	2093.1	Basin Plan	14
25500	37	27	57	2135.5	Basin Plan	14
26000	38	25	45.5	2224.6	Basin Plan	14
26500	29	24	52	2670.5	Basin Plan	14
27000	30	23	36.5	2635.6	Basin Plan	14

Flow (ML/d)	No Event	%years	Med Duration (day)	90 %-ile Dry Period (day)	Model run	Min Duration (day)
27500	25	19	35	3144.2	Basin Plan	14
28000	19	17	38	3246.6	Basin Plan	14
28500	16	14	47.5	5013.4	Basin Plan	14
29000	18	13	32	4636	Basin Plan	14
29500	14	11	37.5	5653.4	Basin Plan	14
30000	14	11	33.5	5655.8	Basin Plan	14
30500	15	11	22	5630.5	Basin Plan	14
31000	14	10	19	5862	Basin Plan	14
31500	12	8	17.5	6234	Basin Plan	14
32000	7	6	17	10218.5	Basin Plan	14
32500	2	2	20	2876	Basin Plan	14
33000	0	0			Basin Plan	14
33500	0	0			Basin Plan	14
34000	0	0			Basin Plan	14
34500	0	0			Basin Plan	14
35000	0	0			Basin Plan	14
15000	118	75	55	617.2	Current	14
15500	110	75	62	628.2	Current	14
16000	108	73	59.5	667.4	Current	14
16500	103	70	62	664.9	Current	14
17000	97	67	67	794.5	Current	14
17500	94	67	69.5	866.4	Current	14
18000	87	63	78	919.5	Current	14
18500	81	60	83	925.5	Current	14
19000	85	60	76	927.4	Current	14

Flow (ML/d)	No Event	%years	Med Duration (day)	90 %-ile Dry Period (day)	Model run	Min Duration (day)
19500	80	58	74	956	Current	14
20000	72	55	80	996	Current	14
20500	69	54	79	966.5	Current	14
21000	66	50	75.5	1013.8	Current	14
21500	63	46	76	997.4	Current	14
22000	61	46	71	1299.5	Current	14
22500	55	43	71	1346.2	Current	14
23000	52	40	63	1367	Current	14
23500	50	39	57	1374.8	Current	14
24000	45	32	59	1428.4	Current	14
24500	41	32	61	1521.4	Current	14
25000	37	29	60	2130	Current	14
25500	34	25	49.5	2340	Current	14
26000	35	25	44	2327.1	Current	14
26500	30	23	40	2630.2	Current	14
27000	26	20	36	2919.6	Current	14
27500	24	18	37.5	2892.2	Current	14
28000	19	17	36	2994.4	Current	14
28500	18	16	34.5	3260.4	Current	14
29000	17	12	32	3805.5	Current	14
29500	12	10	43	6159	Current	14
30000	12	10	41.5	6162	Current	14
30500	14	10	22.5	5808.4	Current	14
31000	14	10	19	5863	Current	14
31500	11	7	17	6522	Current	14

Flow (ML/d)	No Event	%years	Med Duration (day)	90 %-ile Dry Period (day)	Model run	Min Duration (day)
32000	7	6	17	10218	Current	14
32500	2	2	20.5	4418	Current	14
33000	0	0			Current	14
33500	0	0			Current	14
34000	0	0			Current	14
34500	0	0			Current	14
35000	0	0			Current	14
15000	131	86	61	382.8	2045 Wet	14
15500	128	85	60.5	523.4	2045 Wet	14
16000	125	83	65	542.1	2045 Wet	14
16500	121	81	66	601.7	2045 Wet	14
17000	117	79	69	612.5	2045 Wet	14
17500	113	78	68	618.2	2045 Wet	14
18000	109	77	69	621.3	2045 Wet	14
18500	100	74	71.5	629	2045 Wet	14
19000	96	73	73	631	2045 Wet	14
19500	86	67	79	937.6	2045 Wet	14
20000	76	61	90	982.8	2045 Wet	14
20500	74	58	85.5	1004.6	2045 Wet	14
21000	65	52	94	994.2	2045 Wet	14
21500	60	48	91	1043.6	2045 Wet	14
22000	55	44	88	1222.3	2045 Wet	14
22500	52	43	86	1359	2045 Wet	14
23000	53	42	82	1333.9	2045 Wet	14
23500	50	41	73.5	1373.2	2045 Wet	14

Flow (ML/d)	No Event	%years	Med Duration (day)	90 %-ile Dry Period (day)	Model run	Min Duration (day)
24000	47	38	68	1423	2045 Wet	14
24500	48	36	53	1575	2045 Wet	14
25000	40	32	61.5	1852.2	2045 Wet	14
25500	35	28	60	2131.5	2045 Wet	14
26000	32	27	52.5	2167	2045 Wet	14
26500	34	25	39.5	2019.8	2045 Wet	14
27000	33	25	37	2054.7	2045 Wet	14
27500	24	20	44	2812.2	2045 Wet	14
28000	21	18	45	3241	2045 Wet	14
28500	20	17	41.5	3353.8	2045 Wet	14
29000	20	17	29.5	3356.8	2045 Wet	14
29500	15	13	37	4385.8	2045 Wet	14
30000	13	11	33	5898.8	2045 Wet	14
30500	13	10	26	5903.6	2045 Wet	14
31000	12	9	24.5	6156	2045 Wet	14
31500	12	8	22	6159	2045 Wet	14
32000	11	7	19	6967.5	2045 Wet	14
32500	7	6	19	10206	2045 Wet	14
33000	5	4	17	11830	2045 Wet	14
33500	4	4	20	12638.2	2045 Wet	14
34000	2	2	29.5	2860	2045 Wet	14
34500	2	2	25	2866	2045 Wet	14
35000	1	1	28		2045 Wet	14
15000	114	81	57.5	589.2	2045 Med	14
15500	113	79	54	599.4	2045 Med	14

Flow (ML/d)	No Event	%years	Med Duration (day)	90 %-ile Dry Period (day)	Model run	Min Duration (day)
16000	107	75	55	630	2045 Med	14
16500	102	73	55.5	661	2045 Med	14
17000	100	70	55	663.8	2045 Med	14
17500	96	68	56.5	684.6	2045 Med	14
18000	87	67	61	699.5	2045 Med	14
18500	83	62	58	966.3	2045 Med	14
19000	78	59	61.5	992.2	2045 Med	14
19500	68	53	64	996.4	2045 Med	14
20000	62	49	67	1003	2045 Med	14
20500	59	46	70	1137	2045 Med	14
21000	56	45	73	1236.8	2045 Med	14
21500	51	41	65	1377.3	2045 Med	14
22000	48	39	60	1400.8	2045 Med	14
22500	48	36	53	1435.6	2045 Med	14
23000	48	36	45.5	1438.4	2045 Med	14
23500	39	32	52	1563.3	2045 Med	14
24000	35	28	45	2151.3	2045 Med	14
24500	31	25	43	2427.6	2045 Med	14
25000	23	20	56	3178	2045 Med	14
25500	24	19	44	3080.4	2045 Med	14
26000	21	18	42	3247.3	2045 Med	14
26500	20	17	36	3327.6	2045 Med	14
27000	15	13	36	5386.9	2045 Med	14
27500	13	11	41	6037.6	2045 Med	14
28000	11	9	56	6922.6	2045 Med	14

Flow (ML/d)	No Event	%years	Med Duration (day)	90 %-ile Dry Period (day)	Model run	Min Duration (day)
28500	11	9	46	6926.5	2045 Med	14
29000	9	8	43	8566.6	2045 Med	14
29500	9	6	28	8580.3	2045 Med	14
30000	8	5	30	9383	2045 Med	14
30500	7	5	31	10200	2045 Med	14
31000	5	4	26	11817.9	2045 Med	14
31500	4	4	19	5828.2	2045 Med	14
32000	2	2	15	6189	2045 Med	14
32500	1	1	14		2045 Med	14
33000	0	0			2045 Med	14
33500	0	0			2045 Med	14
34000	0	0			2045 Med	14
34500	0	0			2045 Med	14
35000	0	0			2045 Med	14
15000	82	64	48	1006	2045 Dry	14
15500	83	60	47	1012.1	2045 Dry	14
16000	84	58	43.5	1026.8	2045 Dry	14
16500	80	56	43	1046.2	2045 Dry	14
17000	77	54	42	1200.5	2045 Dry	14
17500	77	54	37	1203	2045 Dry	14
18000	68	47	39.5	1015.4	2045 Dry	14
18500	63	43	43	1019.6	2045 Dry	14
19000	58	42	49	1187.6	2045 Dry	14
19500	54	40	49	1047	2045 Dry	14
20000	52	39	46	1402	2045 Dry	14

Flow (ML/d)	No Event	%years	Med Duration (day)	90 %-ile Dry Period (day)	Model run	Min Duration (day)
20500	45	36	49	1432.2	2045 Dry	14
21000	41	32	47	1573.2	2045 Dry	14
21500	36	29	46.5	2538.2	2045 Dry	14
22000	29	25	47	2655	2045 Dry	14
22500	29	23	43	3000.2	2045 Dry	14
23000	22	18	44.5	3208	2045 Dry	14
23500	20	17	41	3279.6	2045 Dry	14
24000	18	15	42.5	4592.4	2045 Dry	14
24500	14	12	44.5	5577.2	2045 Dry	14
25000	13	11	42	5867.9	2045 Dry	14
25500	9	8	43	8555.4	2045 Dry	14
26000	9	7	41	8559.9	2045 Dry	14
26500	8	7	32	9390.6	2045 Dry	14
27000	6	4	22	11001.8	2045 Dry	14
27500	3	3	23	18663	2045 Dry	14
28000	2	2	33	20419	2045 Dry	14
28500	1	1	49		2045 Dry	14
29000	1	1	40		2045 Dry	14
29500	0	0			2045 Dry	14
30000	0	0			2045 Dry	14
30500	0	0			2045 Dry	14
31000	0	0			2045 Dry	14
31500	0	0			2045 Dry	14
32000	0	0			2045 Dry	14
32500	0	0			2045 Dry	14

Flow (ML/d)	No Event	%years	Med Duration (day)	90 %-ile Dry Period (day)	Model run	Min Duration (day)
33000	0	0			2045 Dry	14
33500	0	0			2045 Dry	14
34000	0	0			2045 Dry	14
34500	0	0			2045 Dry	14
35000	0	0			2045 Dry	14
15000	133	87	53	349.5	2070 Wet	14
15500	123	83	61	524.9	2070 Wet	14
16000	119	82	61	584	2070 Wet	14
16500	116	82	58.5	608.6	2070 Wet	14
17000	107	80	64	621	2070 Wet	14
17500	105	78	62	629.9	2070 Wet	14
18000	99	75	69	650.1	2070 Wet	14
18500	91	71	75	690.5	2070 Wet	14
19000	84	64	76.5	945	2070 Wet	14
19500	79	61	78	976.4	2070 Wet	14
20000	71	56	87	1303.7	2070 Wet	14
20500	66	52	86	1334.8	2070 Wet	14
21000	62	49	85.5	1003	2070 Wet	14
21500	57	46	85	1187	2070 Wet	14
22000	56	44	79	1350	2070 Wet	14
22500	54	43	76.5	1361.8	2070 Wet	14
23000	51	41	73	1384.3	2070 Wet	14
23500	52	39	60.5	1386	2070 Wet	14
24000	44	37	62	1438.4	2070 Wet	14
24500	43	32	55	1741.7	2070 Wet	14

Flow (ML/d)	No Event	%years	Med Duration (day)	90 %-ile Dry Period (day)	Model run	Min Duration (day)
25000	30	25	67.5	2304.4	2070 Wet	14
25500	32	25	46	2169	2070 Wet	14
26000	34	25	38.5	2151.6	2070 Wet	14
26500	31	24	36	2878.5	2070 Wet	14
27000	24	19	37.5	3078.6	2070 Wet	14
27500	19	17	41	3354	2070 Wet	14
28000	19	17	31	3380.2	2070 Wet	14
28500	16	14	40	4254	2070 Wet	14
29000	13	11	37	5900.3	2070 Wet	14
29500	11	9	49	6953.3	2070 Wet	14
30000	14	9	24.5	5657.6	2070 Wet	14
30500	10	8	33	7777.6	2070 Wet	14
31000	10	7	23	7779.6	2070 Wet	14
31500	9	6	19	8592.5	2070 Wet	14
32000	5	4	30	11818	2070 Wet	14
32500	5	4	17	11831.2	2070 Wet	14
33000	3	3	24	5854	2070 Wet	14
33500	2	2	23.5	2869	2070 Wet	14
34000	2	2	16	2882	2070 Wet	14
34500	1	1	16		2070 Wet	14
35000	1	1	15		2070 Wet	14
15000	108	73	55	675	2070 Med	14
15500	105	69	52	681.1	2070 Med	14
16000	102	68	50	690	2070 Med	14
16500	95	64	56	985	2070 Med	14

Flow (ML/d)	No Event	%years	Med Duration (day)	90 %-ile Dry Period (day)	Model run	Min Duration (day)
17000	91	61	53	996.2	2070 Med	14
17500	82	60	57	1000	2070 Med	14
18000	77	56	56	1024.5	2070 Med	14
18500	73	54	59	1035.6	2070 Med	14
19000	68	53	60	1364.6	2070 Med	14
19500	64	49	61	1043.2	2070 Med	14
20000	59	45	60	1140.8	2070 Med	14
20500	53	41	67	1329.2	2070 Med	14
21000	51	40	64	1376.5	2070 Med	14
21500	53	38	48	1398.2	2070 Med	14
22000	48	34	48.5	1422.2	2070 Med	14
22500	44	33	51	1710.2	2070 Med	14
23000	37	31	57	1978	2070 Med	14
23500	32	25	56.5	2861	2070 Med	14
24000	28	23	51	2886.4	2070 Med	14
24500	23	20	55	2926.2	2070 Med	14
25000	23	18	51	3145.7	2070 Med	14
25500	21	18	35	3248.1	2070 Med	14
26000	17	15	37	4851	2070 Med	14
26500	12	11	60.5	6148	2070 Med	14
27000	11	9	50	6807.1	2070 Med	14
27500	11	9	46	6809.3	2070 Med	14
28000	9	8	44	8127.1	2070 Med	14
28500	7	6	44	10152.5	2070 Med	14
29000	8	5	25.5	9366.2	2070 Med	14

Flow (ML/d)	No Event	%years	Med Duration (day)	90 %-ile Dry Period (day)	Model run	Min Duration (day)
29500	5	4	30	11806.1	2070 Med	14
30000	5	4	27	11807	2070 Med	14
30500	5	4	23	11809	2070 Med	14
31000	3	3	20	14146.9	2070 Med	14
31500	1	1	14		2070 Med	14
32000	0	0			2070 Med	14
32500	0	0			2070 Med	14
33000	0	0			2070 Med	14
33500	0	0			2070 Med	14
34000	0	0			2070 Med	14
34500	0	0			2070 Med	14
35000	0	0			2070 Med	14
15000	63	46	39	1005.7	2070 Dry	14
15500	62	45	36	995	2070 Dry	14
16000	63	44	33	990.1	2070 Dry	14
16500	60	41	31	1007.2	2070 Dry	14
17000	53	38	31	1357.9	2070 Dry	14
17500	43	33	34	1464.6	2070 Dry	14
18000	41	32	35	1540.8	2070 Dry	14
18500	37	29	34	2159.5	2070 Dry	14
19000	32	24	33.5	2893	2070 Dry	14
19500	31	23	32	2965.7	2070 Dry	14
20000	26	20	35	3165.4	2070 Dry	14
20500	21	17	36	3829.5	2070 Dry	14
21000	19	15	42	4351.8	2070 Dry	14

Flow (ML/d)	No Event	%years	Med Duration (day)	90 %-ile Dry Period (day)	Model run	Min Duration (day)
21500	14	11	40	5743.8	2070 Dry	14
22000	13	11	38	5960.4	2070 Dry	14
22500	12	11	31	6189	2070 Dry	14
23000	8	7	42	9358.6	2070 Dry	14
23500	8	7	36	9362.8	2070 Dry	14
24000	6	5	37.5	10952.4	2070 Dry	14
24500	5	4	30	11753.2	2070 Dry	14
25000	3	3	42	13643.9	2070 Dry	14
25500	1	1	21		2070 Dry	14
26000	0	0			2070 Dry	14
26500	0	0			2070 Dry	14
27000	0	0			2070 Dry	14
27500	0	0			2070 Dry	14
28000	0	0			2070 Dry	14
28500	0	0			2070 Dry	14
29000	0	0			2070 Dry	14
29500	0	0			2070 Dry	14
30000	0	0			2070 Dry	14
30500	0	0			2070 Dry	14
31000	0	0			2070 Dry	14
31500	0	0			2070 Dry	14
32000	0	0			2070 Dry	14
32500	0	0			2070 Dry	14
33000	0	0			2070 Dry	14
33500	0	0			2070 Dry	14

Flow (ML/d)	No Event	%years	Med Duration (day)	90 %-ile Dry Period (day)	Model run	Min Duration (day)
34000	0	0			2070 Dry	14
34500	0	0			2070 Dry	14
35000	0	0			2070 Dry	14
15000	137	94	148	254	WoD	14
15500	137	94	141	264	WoD	14
16000	139	94	134	270	WoD	14
16500	136	93	133	273.8	WoD	14
17000	140	93	121	282.2	WoD	14
17500	140	91	116.5	285.8	WoD	14
18000	140	91	113	286.8	WoD	14
18500	138	90	110.5	293.2	WoD	14
19000	134	90	112.5	296.4	WoD	14
19500	133	90	108	301	WoD	14
20000	132	89	105.5	317	WoD	14
20500	126	89	106.5	330	WoD	14
21000	122	87	104.5	341	WoD	14
21500	118	87	101	373.2	WoD	14
22000	111	82	99	538.9	WoD	14
22500	105	79	102	583.9	WoD	14
23000	100	77	96	600.8	WoD	14
23500	98	74	88.5	623.2	WoD	14
24000	89	71	96	686.6	WoD	14
24500	83	68	94	701	WoD	14
25000	77	60	84	956.5	WoD	14
25500	70	54	81	980.2	WoD	14

Flow (ML/d)	No Event	%years	Med Duration (day)	90 %-ile Dry Period (day)	Model run	Min Duration (day)
26000	72	51	56.5	998	WoD	14
26500	66	47	58	1183	WoD	14
27000	60	42	53.5	1124	WoD	14
27500	53	38	52	1370.1	WoD	14
28000	42	32	61.5	1750	WoD	14
28500	39	28	54	2216.9	WoD	14
29000	38	25	38.5	2266.4	WoD	14
29500	34	24	32.5	2467.6	WoD	14
30000	31	23	28	2840.4	WoD	14
30500	22	17	38	3226	WoD	14
31000	19	14	39	3347.6	WoD	14
31500	17	13	39	3429	WoD	14
32000	15	11	36	5397.5	WoD	14
32500	14	11	28	5652.6	WoD	14
33000	12	8	22.5	6207	WoD	14
33500	12	8	19.5	6210	WoD	14
34000	7	6	20	10236	WoD	14
34500	6	4	18.5	13587.8	WoD	14
35000	2	2	17.5	18293	WoD	14

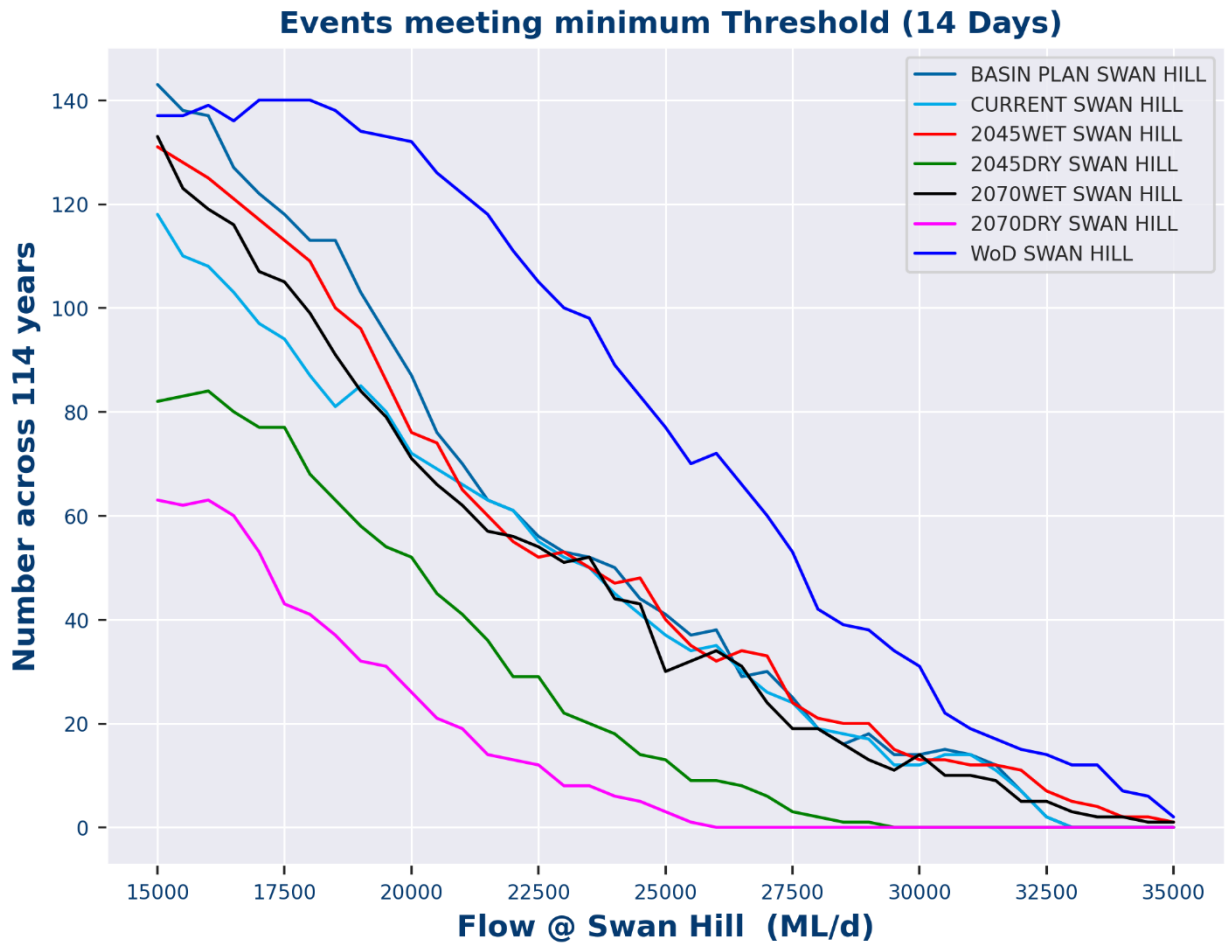

Figure 39: Burra Creek – number of events

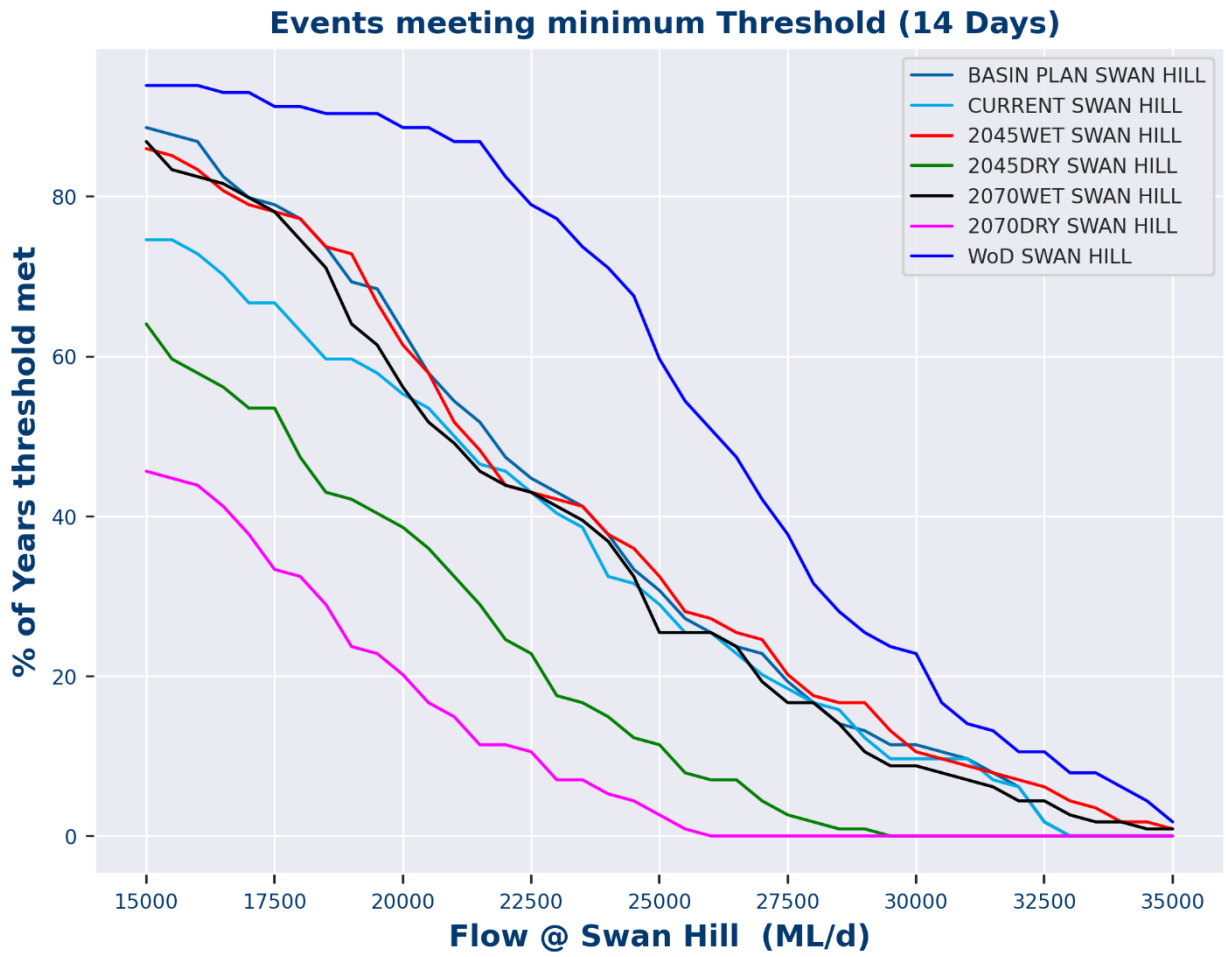

Figure 40: Burra Creek – % of years with events

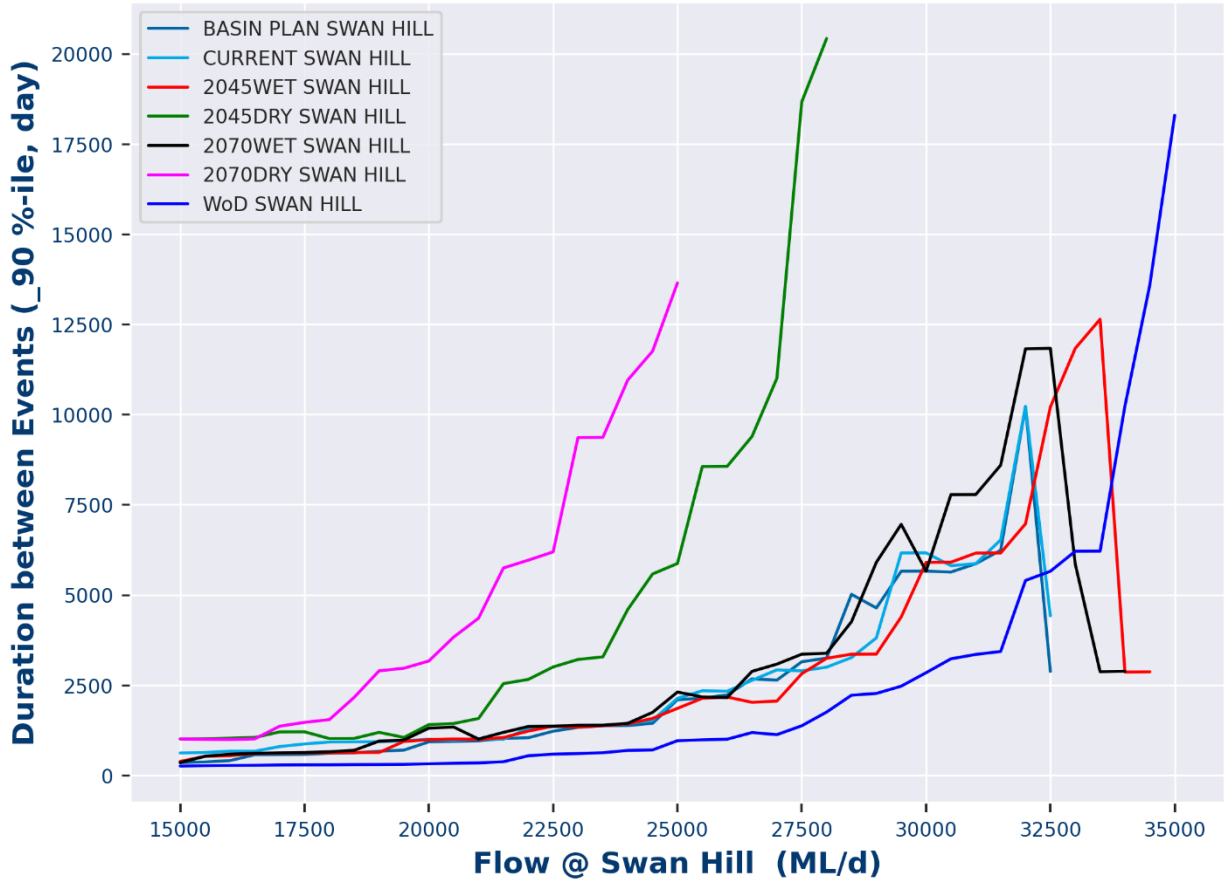

Figure 41: Burra Creek – 90th percentile duration between events

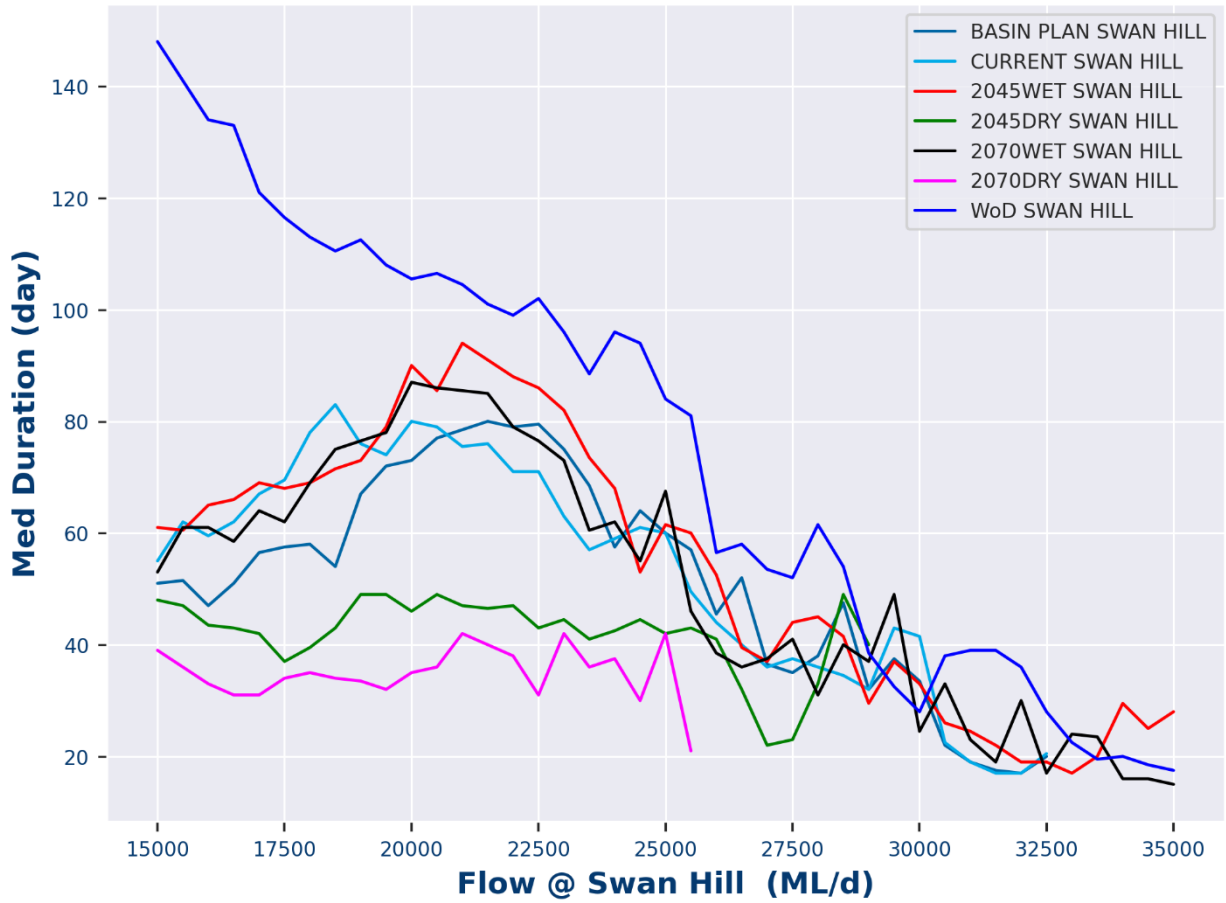

Figure 42: Burra Creek – median event duration

Belsar–Yungera

Table 22: Belsar–Yungera – operations results

Percent	Fresh operating strategy opportunities (% years)	Flows equivalent to fresh operating strategy (%years)	Intermediate operating strategy opportunities (% years)	Flows equivalent to intermediate operating strategy (%years)	Maximum operating strategy opportunities (% years)	Flows equivalent to maximum operating strategy (%years)
Basin Plan	90	42	42	15	23	4
2070 Dry	59	6	6	1	2	0
2070 Med	88	26	26	4	11	2
2070 Wet	91	38	38	16	23	6
2045 Dry	83	18	18	3	4	0
2045 Med	89	32	32	7	13	4
2045 Wet	93	39	39	18	25	5
Without Development	87	74	74	35	43	11
Target Frequency	100	100	80	80	50	50

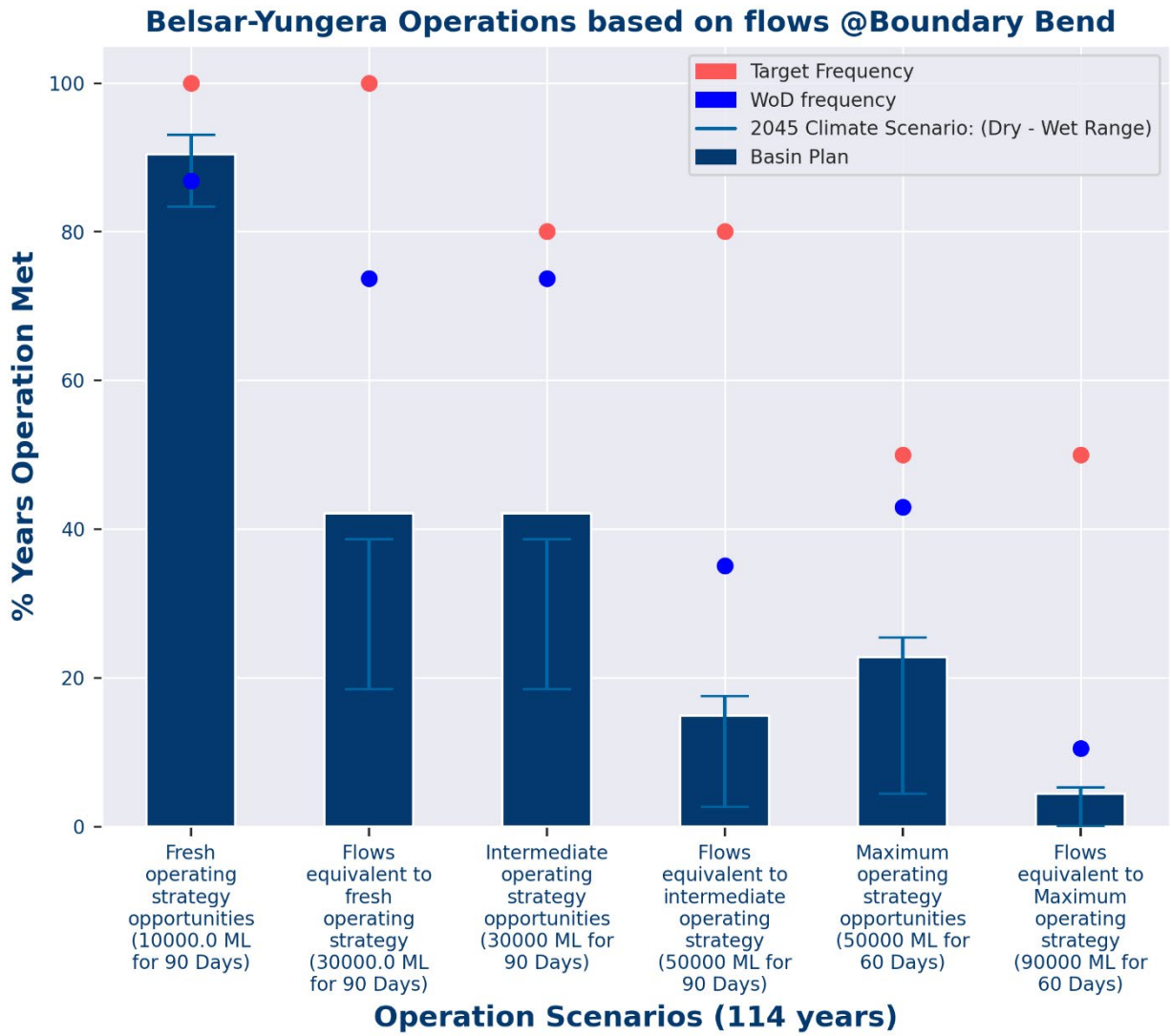

Figure 43: Belsar–Yungera 2045 climate – frequency of events relevant to operating strategies

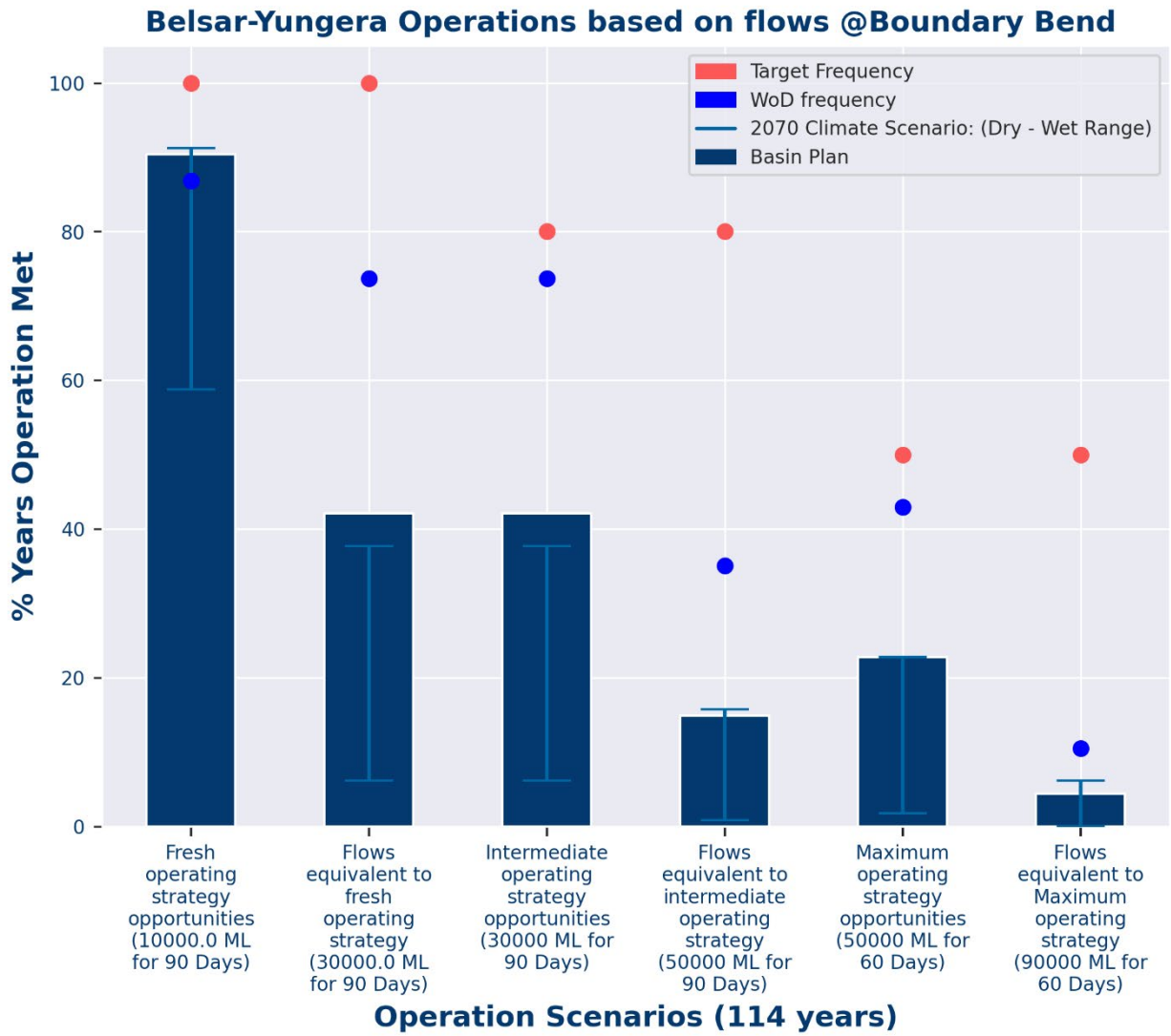

Figure 44: Belsar–Yungera 2045 climate – frequency of events relevant to operating strategies

Table 23: Belsar–Yungera – seasonality results

Number of Events (min 90 day duration)	June – August (number of events)	September – November (number of events)	December – February (number of events)	March – May (number of events)
Basin Plan >=10000 ML/day	29	73	4	0
Basin Plan >=30000 ML/day	11	36	1	0
Basin Plan >=50000 ML/day	3	14	0	0
Basin Plan >=70000 ML/day	2	4	0	0
Basin Plan >=90000 ML/day	1	2	0	0
2045 Wet >=10000 ML/day	19	82	6	0
2045 Wet >=30000 ML/day	5	37	2	0
2045 Wet >=50000 ML/day	3	17	0	0
2045 Wet >=70000 ML/day	2	6	0	0
2045 Wet >=90000 ML/day	1	3	0	0
2045 Dry >=10000 ML/day	22	69	6	1
2045 Dry >=30000 ML/day	3	18	0	0
2045 Dry >=50000 ML/day	1	2	0	0
2045 Dry >=70000 ML/day	0	0	0	0
2045 Dry >=90000 ML/day	0	0	0	0
2070 Wet >=10000 ML/day	20	81	4	0
2070 Wet >=30000 ML/day	7	34	2	0
2070 Wet >=50000 ML/day	3	14	1	0
2070 Wet >=70000 ML/day	1	4	0	0
2070 Wet >=90000 ML/day	1	2	0	0
2070 Dry >=10000 ML/day	17	43	7	0
2070 Dry >=30000 ML/day	1	5	1	0
2070 Dry >=50000 ML/day	1	0	0	0
2070 Dry >=70000 ML/day	0	0	0	0
2070 Dry >=90000 ML/day	0	0	0	0

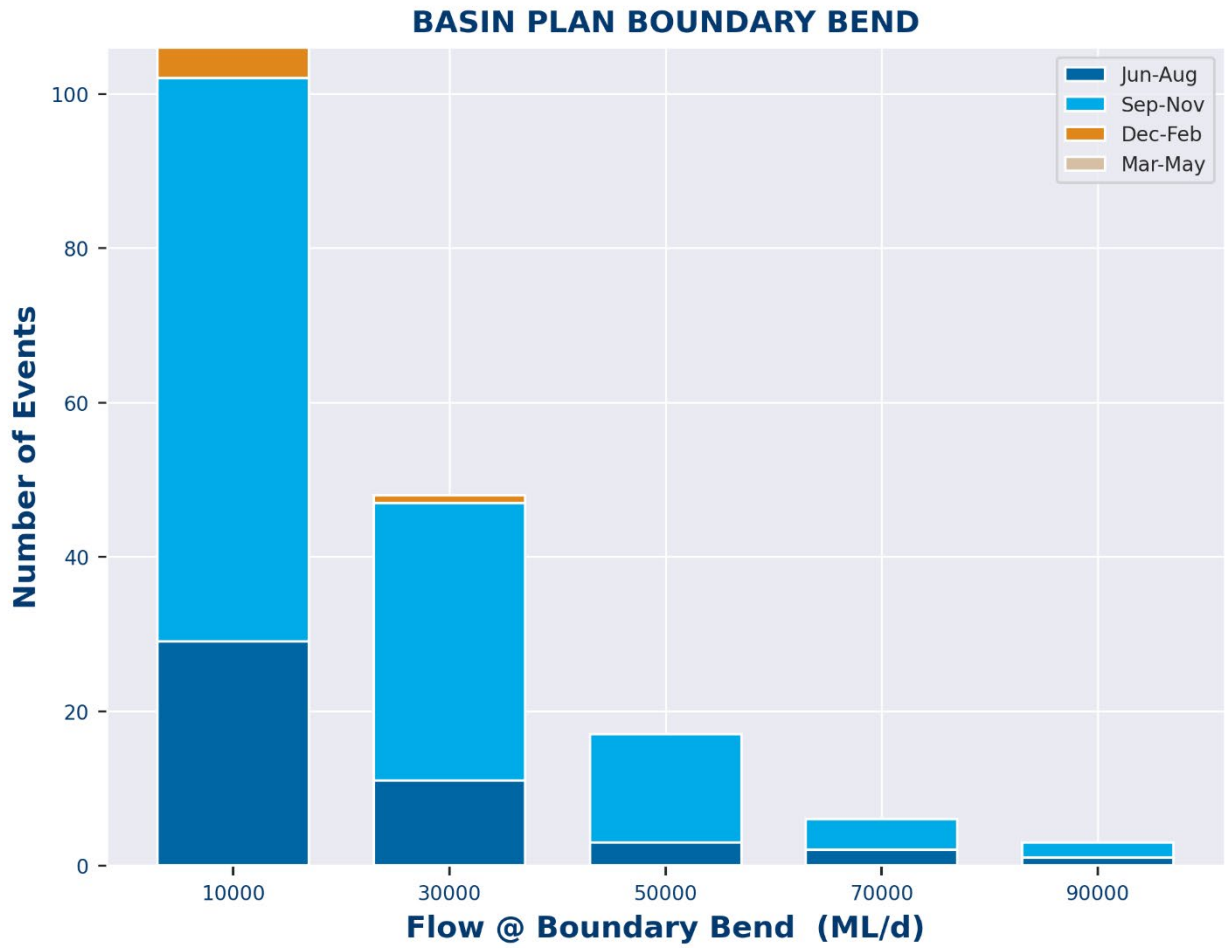

Figure 45: Belsar–Yungera Basin Plan climate – seasonality (min 90 day duration)

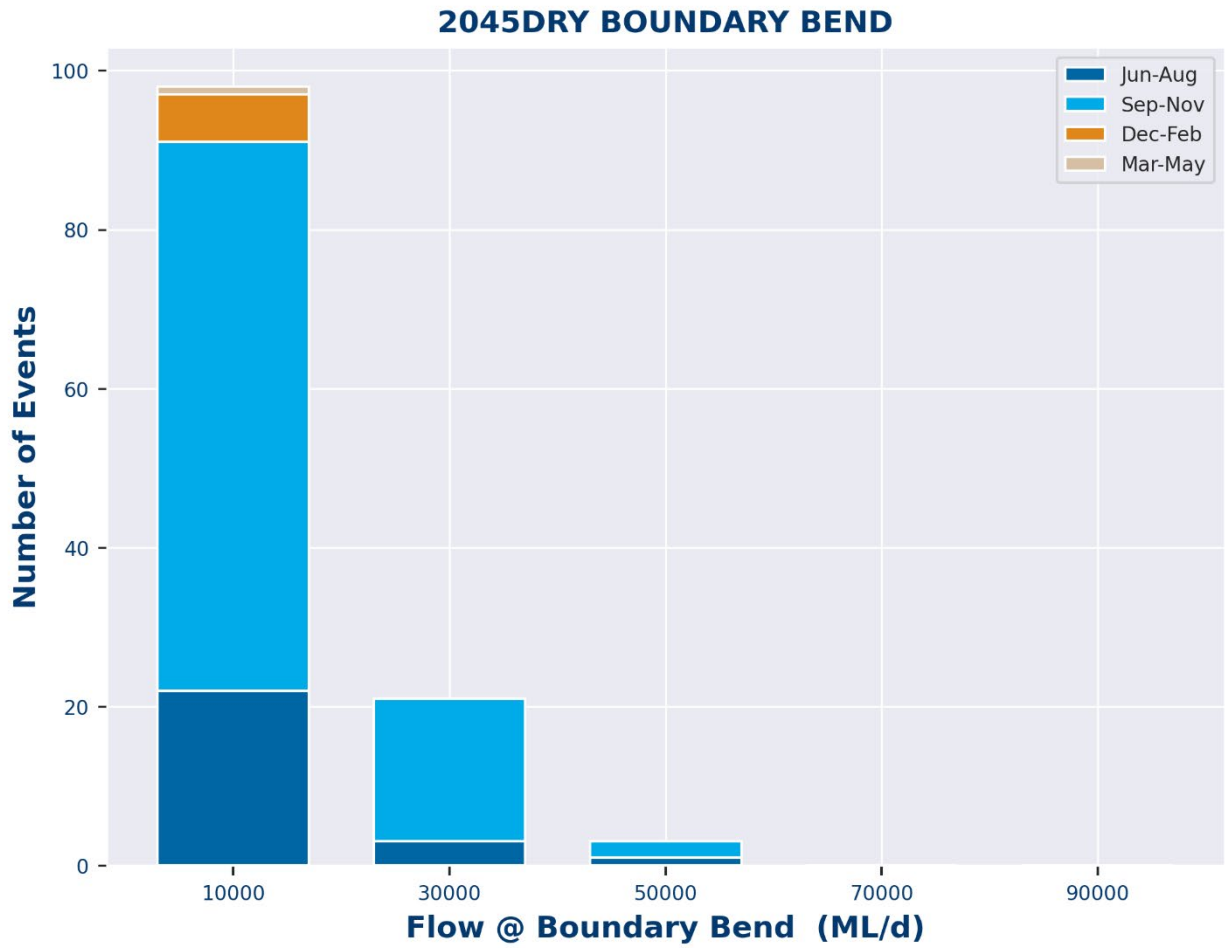

Figure 46: Belsar–Yungera 2045 dry climate – seasonality (min 90 day duration)

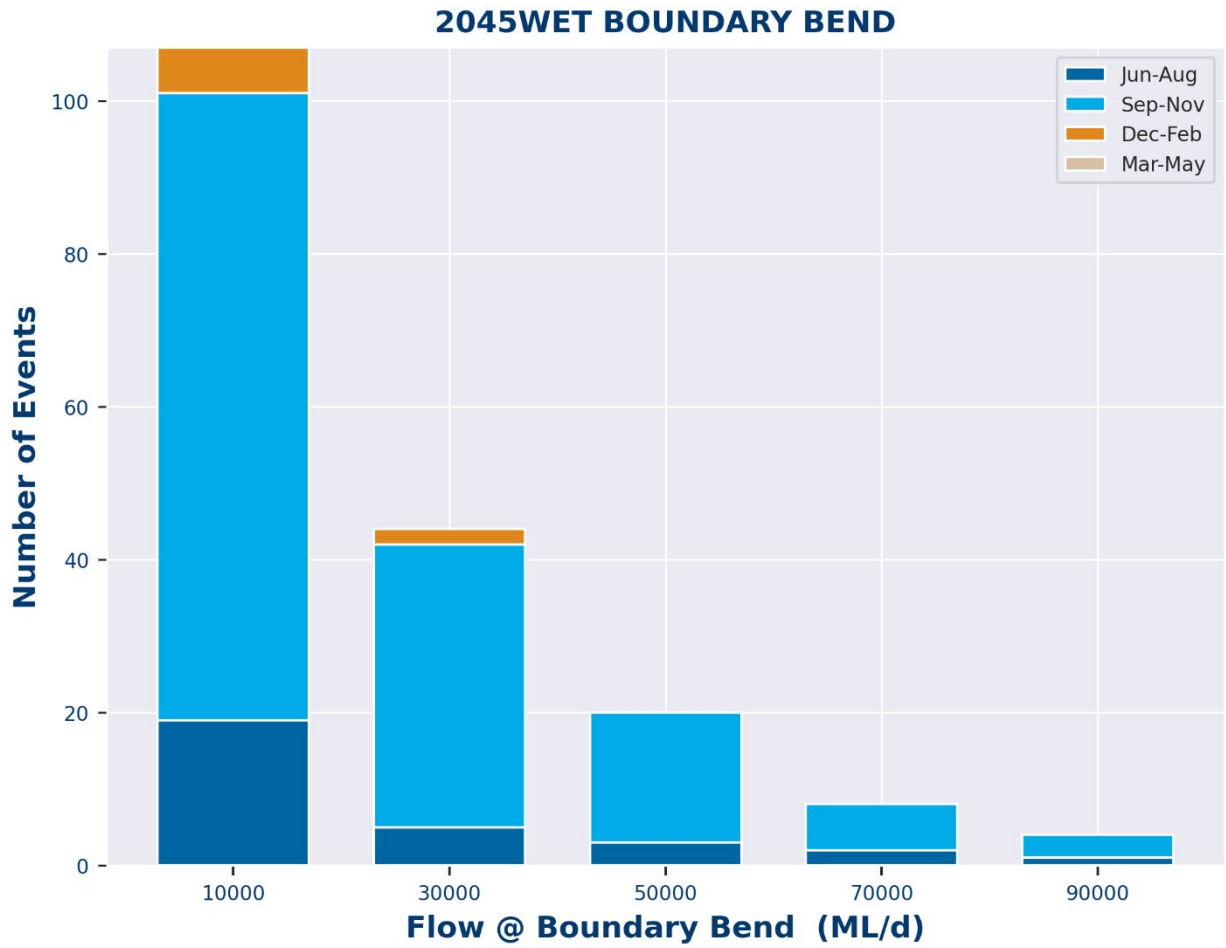

Figure 47: Belar-Yungera 2045 wet climate – seasonality (min 90 day duration)

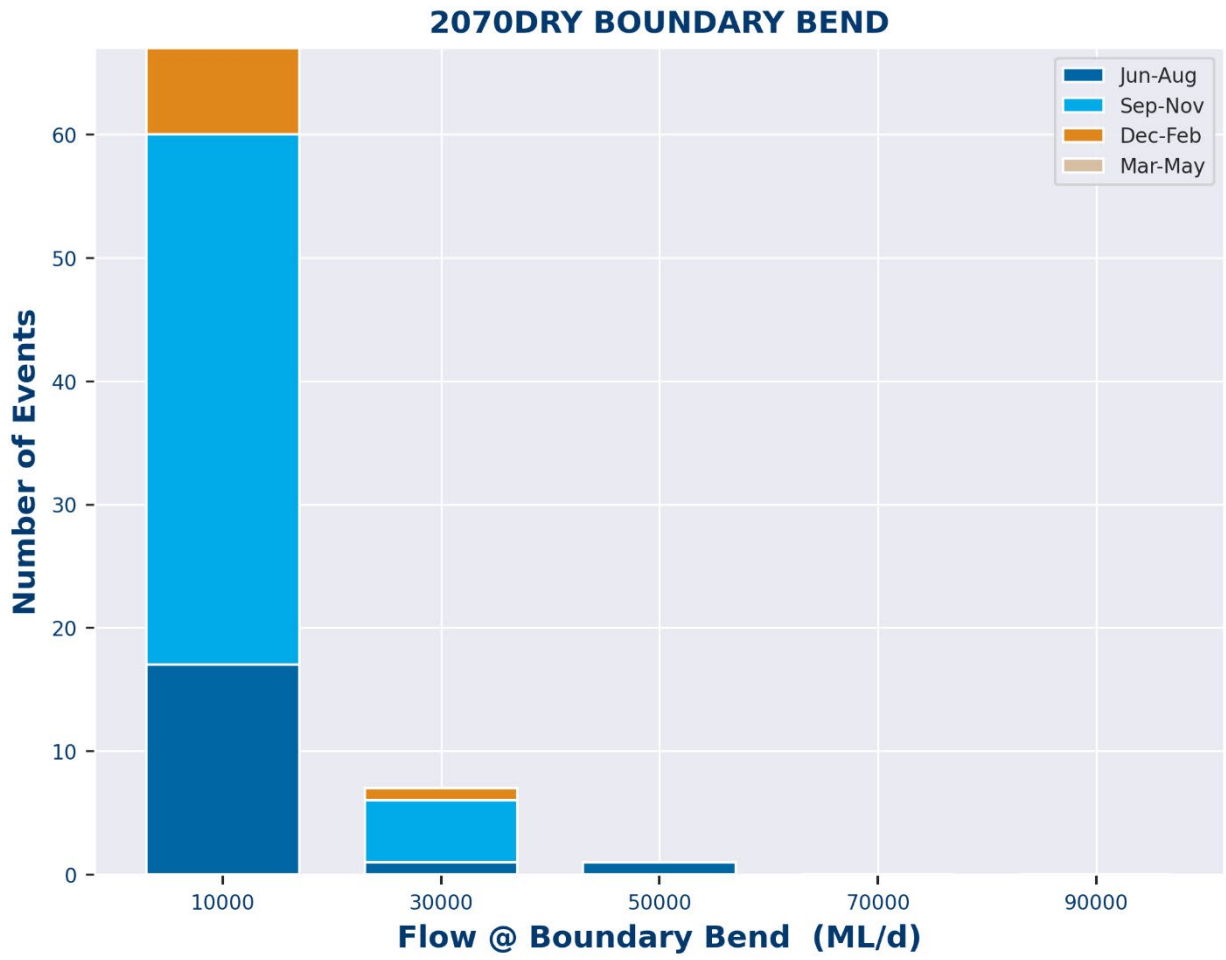

Figure 48: Belsar–Yungera 2070 dry climate – seasonality (min 90 day duration)

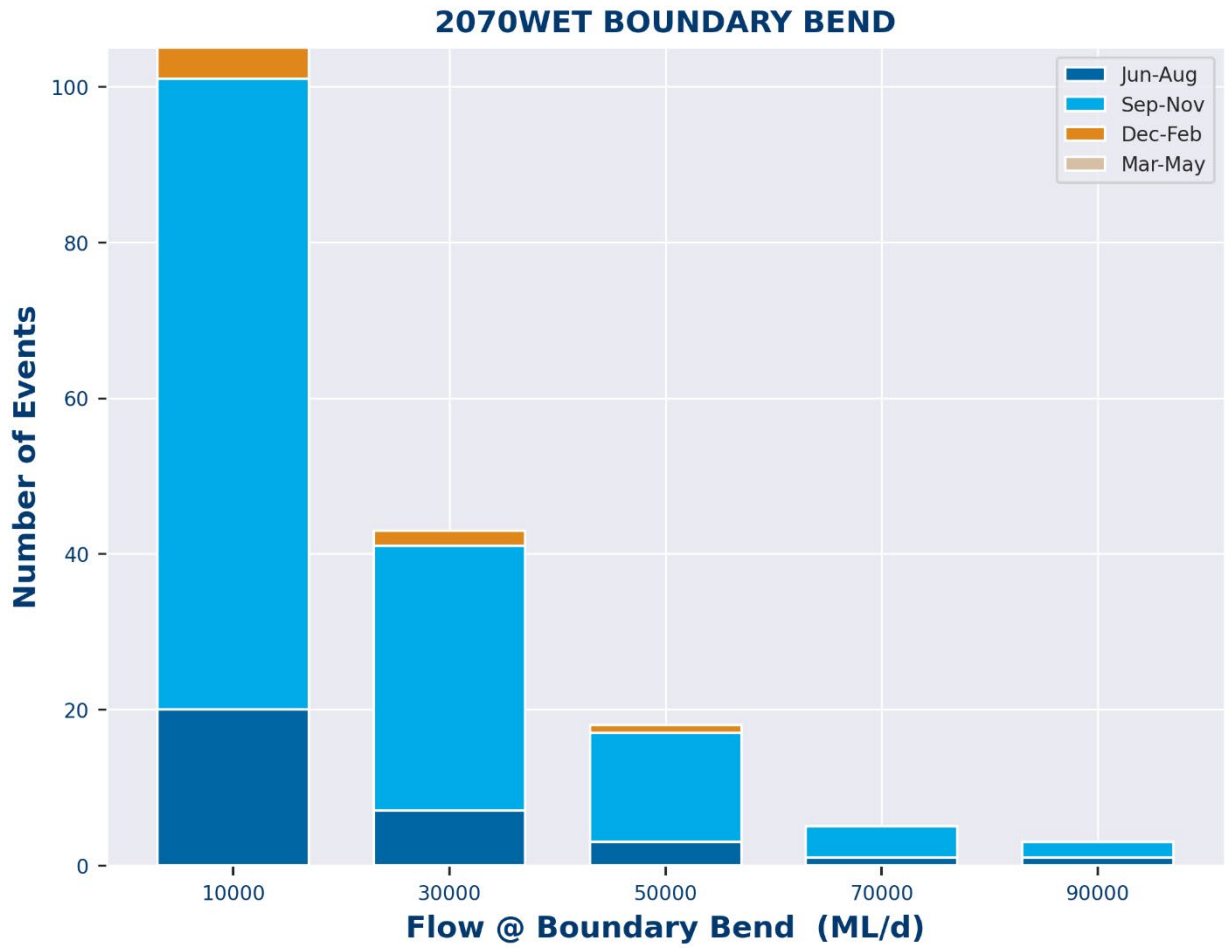

Figure 49: Belsar Yungera 2070 wet climate – seasonality (min 90 day duration)

Table 24: Belsar–Yungera – event duration and spells results

Flow (ML/d)	No Event	%years	Med Duration (day)	90 %-ile Dry Period (day)	Model run	Min Duration (day)
10000	118	95	188	217	Basin Plan	60
12000	113	94	174	273.1	Basin Plan	60
14000	104	89	170.5	295.8	Basin Plan	60
16000	98	85	164.5	528.4	Basin Plan	60
18000	90	78	157	602.8	Basin Plan	60
20000	83	72	151	674.3	Basin Plan	60
22000	81	69	144	858.9	Basin Plan	60
24000	73	63	142	916.9	Basin Plan	60
26000	68	58	133	937.4	Basin Plan	60
28000	63	54	129	993.6	Basin Plan	60
30000	57	49	134	1330.5	Basin Plan	60
32000	54	47	132.5	1340.6	Basin Plan	60
34000	48	42	126.5	1505	Basin Plan	60
36000	47	41	121	1541.5	Basin Plan	60
38000	42	37	126	1717	Basin Plan	60
40000	41	36	109	1761.9	Basin Plan	60
42000	39	34	107	2110.1	Basin Plan	60
44000	35	31	110	2292.9	Basin Plan	60
46000	31	27	112	2454.4	Basin Plan	60
48000	27	24	111	2783.5	Basin Plan	60
50000	26	23	105	3056.2	Basin Plan	60
52000	20	18	106.5	3798.6	Basin Plan	60
54000	20	18	102	3803	Basin Plan	60
56000	20	18	100	3807.4	Basin Plan	60

Flow (ML/d)	No Event	%years	Med Duration (day)	90 %-ile Dry Period (day)	Model run	Min Duration (day)
58000	17	15	98	4848.5	Basin Plan	60
60000	16	14	93	5516.8	Basin Plan	60
62000	15	13	94	5665.3	Basin Plan	60
64000	14	12	89	5814.2	Basin Plan	60
66000	11	10	115	6554.1	Basin Plan	60
68000	11	10	113	6555.9	Basin Plan	60
70000	10	9	113.5	6701.6	Basin Plan	60
72000	7	6	127	7003	Basin Plan	60
74000	7	6	124	7005	Basin Plan	60
76000	7	6	112	7006	Basin Plan	60
78000	7	6	112	7007.5	Basin Plan	60
80000	6	5	116	7808.2	Basin Plan	60
82000	6	5	116	7808.6	Basin Plan	60
84000	6	5	114.5	7809.6	Basin Plan	60
86000	6	5	104	7834	Basin Plan	60
88000	6	5	92	7836.6	Basin Plan	60
90000	5	4	118	8250.8	Basin Plan	60
10000	121	93	177	283.7	Current	60
12000	103	86	167	459.3	Current	60
14000	92	79	167	572	Current	60
16000	85	73	147	675	Current	60
18000	78	68	148.5	865	Current	60
20000	73	62	146	890.7	Current	60
22000	66	56	144.5	910.8	Current	60
24000	59	50	144	1111.7	Current	60

Flow (ML/d)	No Event	%years	Med Duration (day)	90 %-ile Dry Period (day)	Model run	Min Duration (day)
26000	55	46	142	1347.4	Current	60
28000	55	46	132	1355.5	Current	60
30000	53	45	128	1367.5	Current	60
32000	49	43	117	1469.6	Current	60
34000	45	39	122	1599.3	Current	60
36000	41	35	116	2102.1	Current	60
38000	38	33	114.5	2106.4	Current	60
40000	35	31	118	2111.1	Current	60
42000	32	28	115	2112	Current	60
44000	28	25	115	2685	Current	60
46000	26	23	106.5	2850.4	Current	60
48000	22	19	106.5	3177	Current	60
50000	22	19	99	3180	Current	60
52000	20	18	99	3793.6	Current	60
54000	17	15	98	4648.5	Current	60
56000	16	14	92	4655	Current	60
58000	15	13	86	4661.1	Current	60
60000	14	12	88.5	5809	Current	60
62000	13	11	92	6265.6	Current	60
64000	12	11	103	6447	Current	60
66000	10	9	114.5	6698.8	Current	60
68000	10	9	107.5	6702.2	Current	60
70000	8	7	119	6917.8	Current	60
72000	7	6	125	7007.5	Current	60
74000	7	6	111	7009	Current	60

Flow (ML/d)	No Event	%years	Med Duration (day)	90 %-ile Dry Period (day)	Model run	Min Duration (day)
76000	7	6	110	7011	Current	60
78000	6	5	114.5	7811.4	Current	60
80000	6	5	114.5	7811.8	Current	60
82000	6	5	113.5	7812.2	Current	60
84000	6	5	112	7813.8	Current	60
86000	5	4	118	8245.5	Current	60
88000	5	4	117	8247.9	Current	60
90000	5	4	116	8251	Current	60
10000	118	97	200.5	218	2045 Wet	60
12000	113	94	183	263.5	2045 Wet	60
14000	106	90	172	323	2045 Wet	60
16000	102	86	154	495	2045 Wet	60
18000	94	81	143	583.2	2045 Wet	60
20000	88	75	134.5	618.4	2045 Wet	60
22000	83	71	132	675.1	2045 Wet	60
24000	76	65	133.5	921.2	2045 Wet	60
26000	72	62	127	958	2045 Wet	60
28000	67	58	133	978	2045 Wet	60
30000	59	52	133	986.8	2045 Wet	60
32000	53	46	126	1297.3	2045 Wet	60
34000	48	42	125.5	1491.4	2045 Wet	60
36000	44	39	122	1636	2045 Wet	60
38000	43	38	118	2022.8	2045 Wet	60
40000	41	36	115	2101.4	2045 Wet	60
42000	38	33	116.5	1669.2	2045 Wet	60

Flow (ML/d)	No Event	%years	Med Duration (day)	90 %-ile Dry Period (day)	Model run	Min Duration (day)
44000	35	31	117	1974	2045 Wet	60
46000	32	28	108	3185	2045 Wet	60
48000	30	26	106.5	3253.2	2045 Wet	60
50000	29	25	103	3287.9	2045 Wet	60
52000	26	23	105	3389.8	2045 Wet	60
54000	24	21	105	3500	2045 Wet	60
56000	24	21	101	3503.6	2045 Wet	60
58000	20	18	103	3794.2	2045 Wet	60
60000	19	17	102	4650.9	2045 Wet	60
62000	18	16	98	4656.2	2045 Wet	60
64000	18	16	94	4658	2045 Wet	60
66000	17	15	93	5377	2045 Wet	60
68000	16	14	94	5523.8	2045 Wet	60
70000	15	13	95	5757.2	2045 Wet	60
72000	14	12	90.5	5875	2045 Wet	60
74000	12	11	94	6449	2045 Wet	60
76000	10	9	92.5	6902	2045 Wet	60
78000	8	7	102.5	7354.6	2045 Wet	60
80000	8	7	100.5	7356	2045 Wet	60
82000	8	7	89	7372	2045 Wet	60
84000	8	7	87.5	7373.8	2045 Wet	60
86000	7	6	92	10115	2045 Wet	60
88000	6	5	105.5	10859.8	2045 Wet	60
90000	6	5	105.5	10861.8	2045 Wet	60
10000	123	93	167	243.6	2045 Med	60

Flow (ML/d)	No Event	%years	Med Duration (day)	90 %-ile Dry Period (day)	Model run	Min Duration (day)
12000	111	91	151	296.3	2045 Med	60
14000	100	87	140.5	543.8	2045 Med	60
16000	87	75	139	613	2045 Med	60
18000	82	70	130	665	2045 Med	60
20000	74	64	125.5	939.8	2045 Med	60
22000	67	59	127	970.5	2045 Med	60
24000	60	53	123.5	986.2	2045 Med	60
26000	55	48	122	1352.2	2045 Med	60
28000	47	41	121	1357	2045 Med	60
30000	42	37	119	1373	2045 Med	60
32000	41	36	112	1448.3	2045 Med	60
34000	39	34	105	1574.8	2045 Med	60
36000	31	27	107	2837.9	2045 Med	60
38000	28	25	107	3330.4	2045 Med	60
40000	27	24	103	3388.5	2045 Med	60
42000	24	21	103	3506	2045 Med	60
44000	20	18	102	4643.8	2045 Med	60
46000	17	15	98	4659	2045 Med	60
48000	16	14	96.5	4666.8	2045 Med	60
50000	15	13	93	5670.2	2045 Med	60
52000	15	13	90	5672.5	2045 Med	60
54000	13	11	89	5967.6	2045 Med	60
56000	10	9	88	6642.8	2045 Med	60
58000	8	7	86.5	7376	2045 Med	60
60000	7	6	85	10117	2045 Med	60

Flow (ML/d)	No Event	%years	Med Duration (day)	90 %-ile Dry Period (day)	Model run	Min Duration (day)
62000	7	6	83	10119.5	2045 Med	60
64000	6	5	98.5	10861.2	2045 Med	60
66000	6	5	96.5	10863	2045 Med	60
68000	6	5	94	10865.2	2045 Med	60
70000	6	5	92	10868	2045 Med	60
72000	6	5	89	10869.6	2045 Med	60
74000	5	4	100	11800.5	2045 Med	60
76000	5	4	97	11802.6	2045 Med	60
78000	5	4	95	11804.3	2045 Med	60
80000	5	4	93	11806.3	2045 Med	60
82000	4	4	102	12572.2	2045 Med	60
84000	4	4	100	12574.4	2045 Med	60
86000	4	4	98	12577.2	2045 Med	60
88000	4	4	96	12578.8	2045 Med	60
90000	4	4	74	12583.8	2045 Med	60
10000	115	89	153	294.4	2045 Dry	60
12000	98	83	141	554.4	2045 Dry	60
14000	85	74	135	634.1	2045 Dry	60
16000	73	63	128	917.4	2045 Dry	60
18000	66	58	118	965.4	2045 Dry	60
20000	57	49	111	987.5	2045 Dry	60
22000	46	40	111.5	1567.6	2045 Dry	60
24000	43	38	109	1669.3	2045 Dry	60
26000	41	36	103	2109.2	2045 Dry	60
28000	34	30	103	2433.8	2045 Dry	60

Flow (ML/d)	No Event	%years	Med Duration (day)	90 %-ile Dry Period (day)	Model run	Min Duration (day)
30000	30	26	100.5	2918.4	2045 Dry	60
32000	26	23	93	4212	2045 Dry	60
34000	21	18	95	4727	2045 Dry	60
36000	19	17	84	4881	2045 Dry	60
38000	17	15	78	5387	2045 Dry	60
40000	13	11	81	5971.1	2045 Dry	60
42000	10	9	80.5	6696.2	2045 Dry	60
44000	7	6	81	7738.5	2045 Dry	60
46000	6	5	97	8001	2045 Dry	60
48000	5	4	116	8263.3	2045 Dry	60
50000	5	4	114	8268.4	2045 Dry	60
52000	5	4	111	8273.8	2045 Dry	60
54000	4	4	104.5	12563.6	2045 Dry	60
56000	4	4	102	12566.6	2045 Dry	60
58000	4	4	99	12569.6	2045 Dry	60
60000	3	3	103	13333.8	2045 Dry	60
62000	3	3	100	13336.1	2045 Dry	60
64000	3	3	97	13339.2	2045 Dry	60
66000	3	3	88	13344	2045 Dry	60
68000	3	3	84	13346.2	2045 Dry	60
70000	3	3	81	13348.4	2045 Dry	60
72000	3	3	77	13350.8	2045 Dry	60
74000	2	2	74	14107	2045 Dry	60
76000	2	2	70.5	14109	2045 Dry	60
78000	1	1	66		2045 Dry	60

Flow (ML/d)	No Event	%years	Med Duration (day)	90 %-ile Dry Period (day)	Model run	Min Duration (day)
80000	1	1	60		2045 Dry	60
82000	0	0			2045 Dry	60
84000	0	0			2045 Dry	60
86000	0	0			2045 Dry	60
88000	0	0			2045 Dry	60
90000	0	0			2045 Dry	60
10000	122	96	185	227	2070 Wet	60
12000	113	93	167	303.6	2070 Wet	60
14000	106	87	155	392.8	2070 Wet	60
16000	98	84	152	587.4	2070 Wet	60
18000	92	80	138.5	594	2070 Wet	60
20000	84	72	138	665.6	2070 Wet	60
22000	79	68	133	760.6	2070 Wet	60
24000	74	64	130	924.4	2070 Wet	60
26000	65	57	135	966.2	2070 Wet	60
28000	62	54	131	1001	2070 Wet	60
30000	59	52	126	1000.4	2070 Wet	60
32000	49	43	127	1439.1	2070 Wet	60
34000	46	40	126	1564.8	2070 Wet	60
36000	44	39	120	1637.2	2070 Wet	60
38000	42	37	117.5	2102	2070 Wet	60
40000	39	34	112	1576.9	2070 Wet	60
42000	38	33	109.5	1672.2	2070 Wet	60
44000	34	30	110	2022	2070 Wet	60
46000	28	25	108	3338	2070 Wet	60

Flow (ML/d)	No Event	%years	Med Duration (day)	90 %-ile Dry Period (day)	Model run	Min Duration (day)
48000	27	24	105	3381.5	2070 Wet	60
50000	26	23	100	3424.8	2070 Wet	60
52000	23	20	109	3543.4	2070 Wet	60
54000	22	19	105	3585	2070 Wet	60
56000	18	16	105	4658	2070 Wet	60
58000	18	16	99.5	4659.6	2070 Wet	60
60000	18	16	97	4661.6	2070 Wet	60
62000	17	15	94	4667	2070 Wet	60
64000	15	13	85	5670.9	2070 Wet	60
66000	14	12	87	5817.6	2070 Wet	60
68000	13	11	87	6266.8	2070 Wet	60
70000	11	10	87	6560.8	2070 Wet	60
72000	10	9	83	6907.4	2070 Wet	60
74000	9	8	85	7138.7	2070 Wet	60
76000	9	8	83	7140.6	2070 Wet	60
78000	9	8	82	7141.9	2070 Wet	60
80000	9	8	81	7143.5	2070 Wet	60
82000	7	6	90	10115	2070 Wet	60
84000	7	6	89	10117	2070 Wet	60
86000	7	6	87	10118.5	2070 Wet	60
88000	7	6	87	10120	2070 Wet	60
90000	7	6	86	10122	2070 Wet	60
10000	122	91	167	235	2070 Med	60
12000	110	88	150	311.4	2070 Med	60
14000	98	85	140	561.8	2070 Med	60

Flow (ML/d)	No Event	%years	Med Duration (day)	90 %-ile Dry Period (day)	Model run	Min Duration (day)
16000	86	75	134	605.8	2070 Med	60
18000	78	68	132.5	930.4	2070 Med	60
20000	72	62	128.5	953	2070 Med	60
22000	60	52	125.5	1095.8	2070 Med	60
24000	53	46	123	1359.6	2070 Med	60
26000	50	43	122	1430.2	2070 Med	60
28000	44	39	116.5	1634.6	2070 Med	60
30000	41	36	112	2107.2	2070 Med	60
32000	39	34	107	2113.9	2070 Med	60
34000	32	28	110	2506	2070 Med	60
36000	29	25	104	2946.1	2070 Med	60
38000	28	25	99	3326	2070 Med	60
40000	26	23	95	3395	2070 Med	60
42000	22	19	87	3587	2070 Med	60
44000	16	14	93	4667.2	2070 Med	60
46000	14	12	91	6077	2070 Med	60
48000	14	12	83.5	6086.8	2070 Med	60
50000	13	11	81	6270.8	2070 Med	60
52000	10	9	76.5	6681.8	2070 Med	60
54000	8	7	77	7486.8	2070 Med	60
56000	8	7	74.5	7490	2070 Med	60
58000	6	5	95	8021.8	2070 Med	60
60000	6	5	93	8024	2070 Med	60
62000	5	4	114	11795	2070 Med	60
64000	5	4	113	11797.4	2070 Med	60

Flow (ML/d)	No Event	%years	Med Duration (day)	90 %-ile Dry Period (day)	Model run	Min Duration (day)
66000	5	4	112	11799.1	2070 Med	60
68000	5	4	110	11801.5	2070 Med	60
70000	5	4	107	11803.6	2070 Med	60
72000	5	4	103	11804.6	2070 Med	60
74000	4	4	107.5	12639.4	2070 Med	60
76000	3	3	117	13326.6	2070 Med	60
78000	3	3	115	13329.4	2070 Med	60
80000	3	3	113	13331.8	2070 Med	60
82000	3	3	111	13334.2	2070 Med	60
84000	3	3	110	13335.7	2070 Med	60
86000	2	2	96.5	14092	2070 Med	60
88000	2	2	92.5	14094	2070 Med	60
90000	2	2	90	14094	2070 Med	60
10000	97	78	128	596.5	2070 Dry	60
12000	75	63	125	923	2070 Dry	60
14000	62	52	122.5	1352	2070 Dry	60
16000	50	44	131.5	1670	2070 Dry	60
18000	43	37	129	1645.8	2070 Dry	60
20000	37	32	117	2125	2070 Dry	60
22000	32	28	112	2154	2070 Dry	60
24000	30	25	101.5	3539.8	2070 Dry	60
26000	24	20	95.5	3233.2	2070 Dry	60
28000	17	15	99	5335	2070 Dry	60
30000	17	15	83	5338.5	2070 Dry	60
32000	13	11	87	6302.2	2070 Dry	60

Flow (ML/d)	No Event	%years	Med Duration (day)	90 %-ile Dry Period (day)	Model run	Min Duration (day)
34000	9	8	97	7144.1	2070 Dry	60
36000	6	5	106.5	7985.2	2070 Dry	60
38000	5	4	116	8250.5	2070 Dry	60
40000	5	4	88	8269.7	2070 Dry	60
42000	5	4	78	8280.9	2070 Dry	60
44000	4	4	93.5	8541.6	2070 Dry	60
46000	3	3	83	13333.8	2070 Dry	60
48000	2	2	89	14093	2070 Dry	60
50000	2	2	84	14098	2070 Dry	60
52000	2	2	78	14104	2070 Dry	60
54000	2	2	72	14110	2070 Dry	60
56000	2	2	67.5	14114	2070 Dry	60
58000	1	1	69		2070 Dry	60
60000	1	1	66		2070 Dry	60
62000	1	1	62		2070 Dry	60
64000	0	0			2070 Dry	60
66000	0	0			2070 Dry	60
68000	0	0			2070 Dry	60
70000	0	0			2070 Dry	60
72000	0	0			2070 Dry	60
74000	0	0			2070 Dry	60
76000	0	0			2070 Dry	60
78000	0	0			2070 Dry	60
80000	0	0			2070 Dry	60
82000	0	0			2070 Dry	60

Flow (ML/d)	No Event	%years	Med Duration (day)	90 %-ile Dry Period (day)	Model run	Min Duration (day)
84000	0	0			2070 Dry	60
86000	0	0			2070 Dry	60
88000	0	0			2070 Dry	60
90000	0	0			2070 Dry	60
10000	103	88	242	189.8	WoD	60
12000	107	94	234	203	WoD	60
14000	110	95	214	217.8	WoD	60
16000	109	95	206	235.8	WoD	60
18000	107	92	199	246	WoD	60
20000	106	91	193.5	269.6	WoD	60
22000	104	89	187	271.8	WoD	60
24000	102	88	180	291	WoD	60
26000	104	87	170	442.2	WoD	60
28000	102	86	162	481	WoD	60
30000	98	83	159	555	WoD	60
32000	91	79	155	596	WoD	60
34000	86	75	151	615.6	WoD	60
36000	84	73	145.5	626	WoD	60
38000	75	66	143	669.4	WoD	60
40000	70	61	138.5	922.6	WoD	60
42000	65	57	137	948.8	WoD	60
44000	60	53	134.5	978.2	WoD	60
46000	57	49	132	1177	WoD	60
48000	52	45	128	1373	WoD	60
50000	49	43	121	1469.9	WoD	60

Flow (ML/d)	No Event	%years	Med Duration (day)	90 %-ile Dry Period (day)	Model run	Min Duration (day)
52000	46	40	119	1567.4	WoD	60
54000	46	40	115	1570	WoD	60
56000	45	39	113	1604.5	WoD	60
58000	43	38	110	1671.3	WoD	60
60000	39	34	108	1688.6	WoD	60
62000	37	32	105	1908	WoD	60
64000	34	30	103	2094.4	WoD	60
66000	31	27	102	2135.8	WoD	60
68000	29	25	93	2515	WoD	60
70000	24	21	94.5	2852.8	WoD	60
72000	20	18	113	3516	WoD	60
74000	18	16	108	3535	WoD	60
76000	17	15	105	4124	WoD	60
78000	16	14	101	4234.8	WoD	60
80000	16	14	98.5	4236.8	WoD	60
82000	13	11	98	5984.4	WoD	60
84000	13	11	92	5986.5	WoD	60
86000	13	11	89	5989.5	WoD	60
88000	13	11	86	5990.7	WoD	60
90000	12	11	89	6457	WoD	60

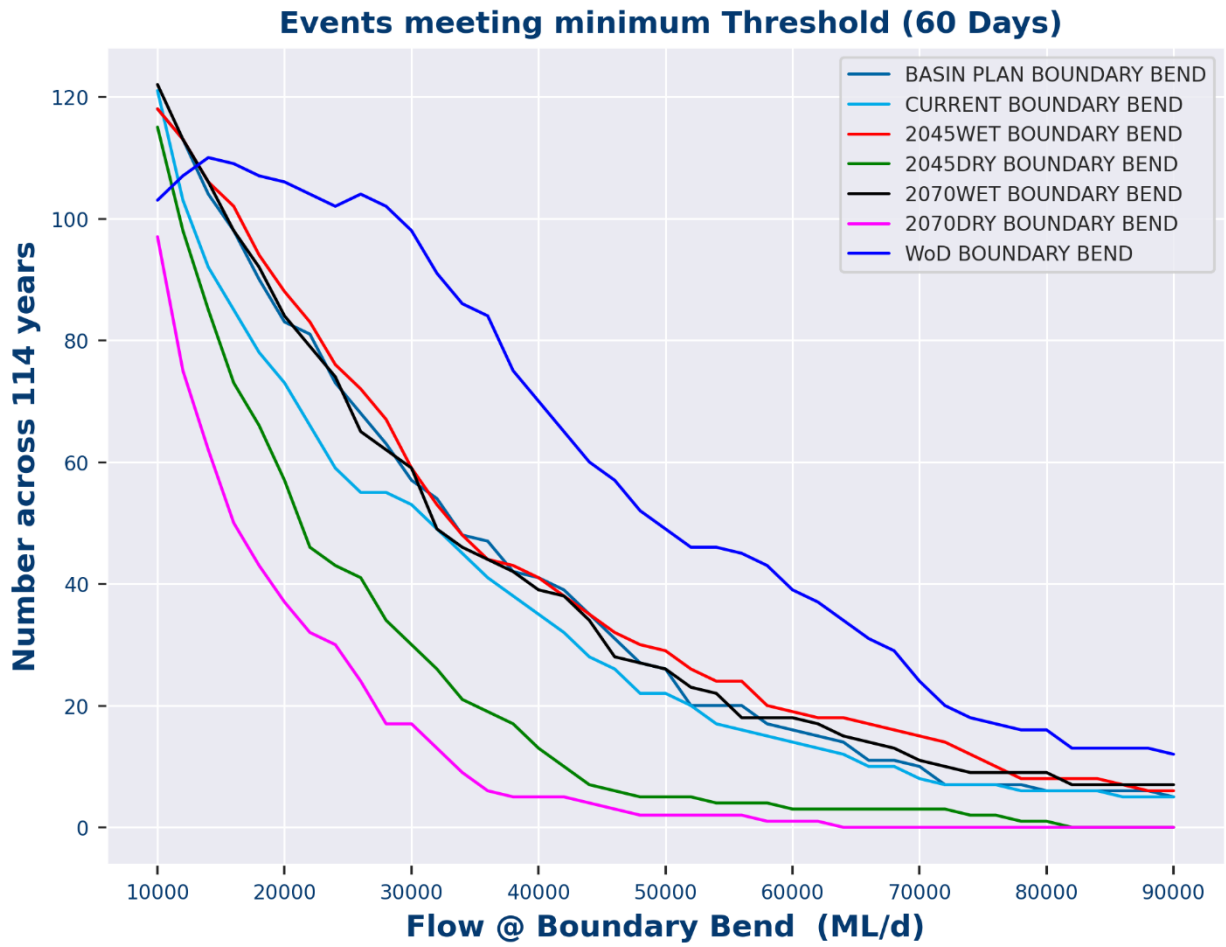

Figure 50: Belsar–Yungera – number of events

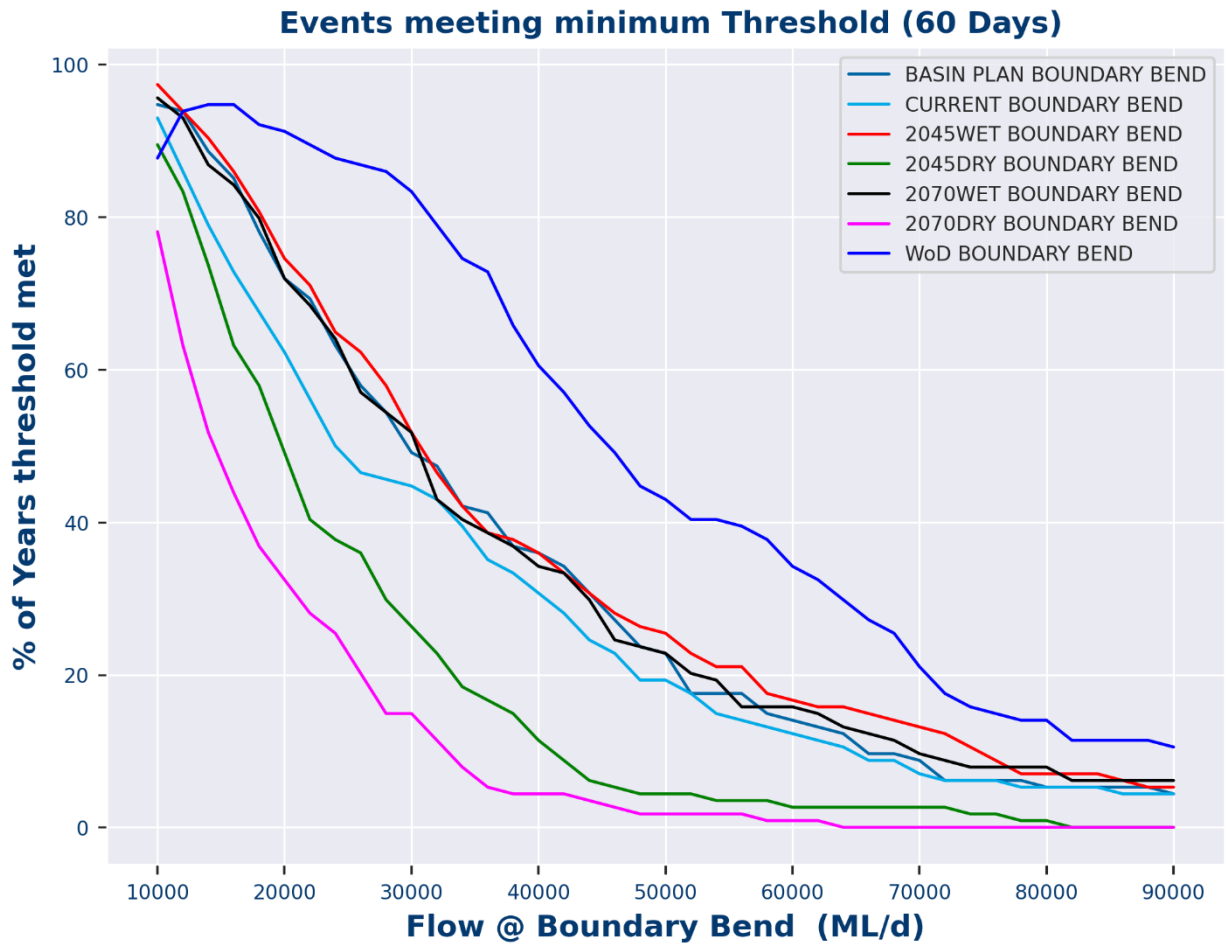

Figure 51: Belsar–Yungera – perentage of years with an event

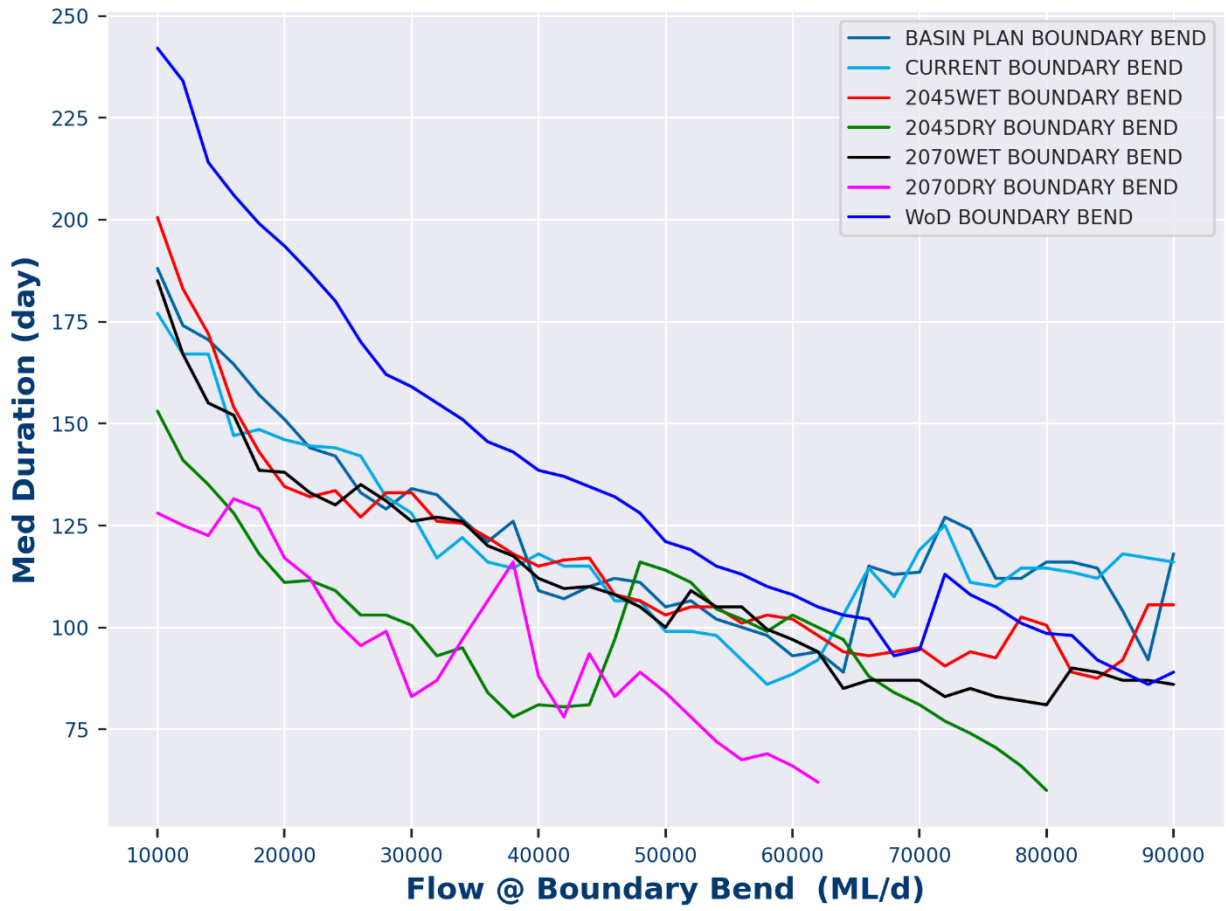

Figure 52: Belsar–Yungera – median event duration

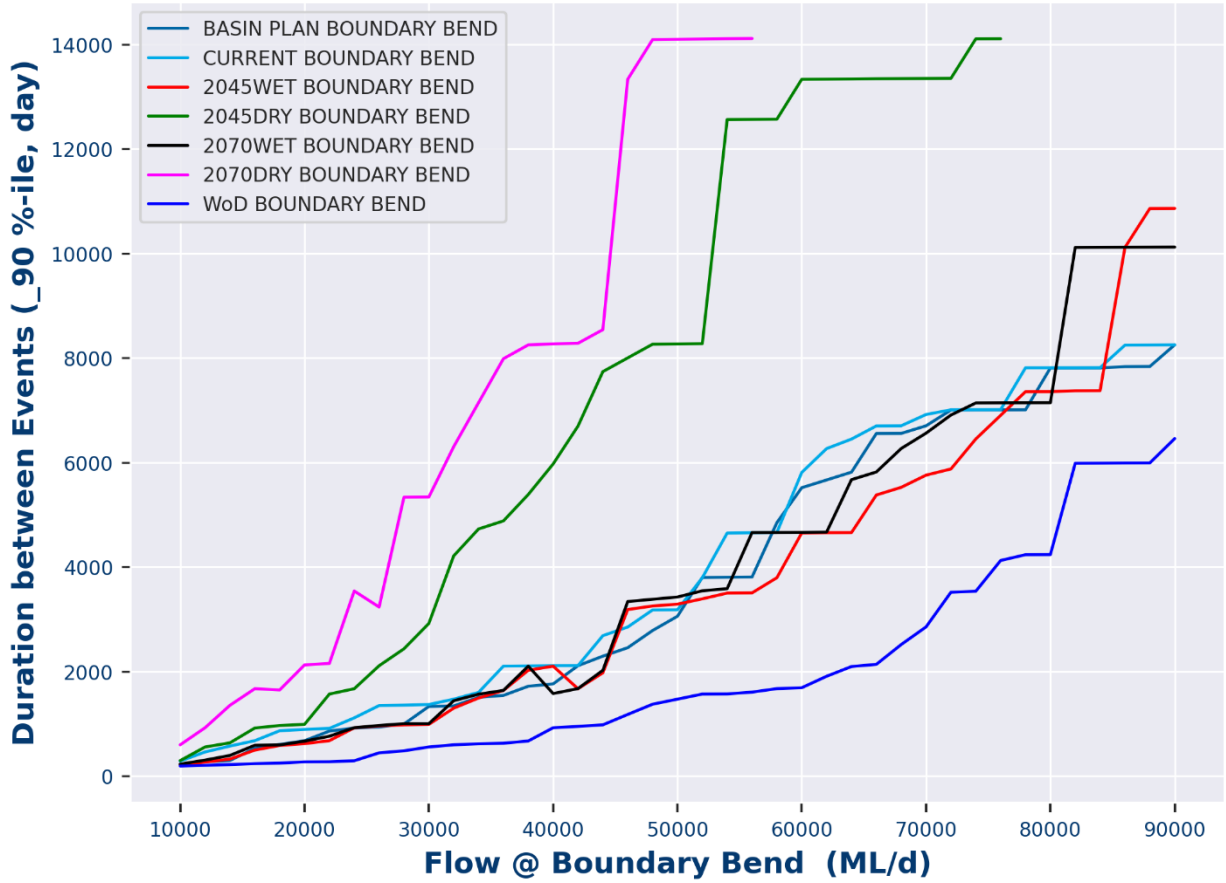

Figure 53: Belsar–Yungera – 90th percentile duratin bewteen events

Lindsay Island

Table 25: Lindsay Island – operations results

Percent	Fresh operating strategy opportunities (% years)	Low operating strategy opportunities (% years)	Flows equivalent to low operating strategy (%years)	Intermediate operating strategy opportunities (% years)	Flows equivalent to intermediate operating strategy (%years)	Maximum operating strategy opportunities (% years)	Flows equivalent to maximum operating strategy (%years)	Maximum plus pumping operating strategy opportunities (% years)	Flows equivalent to maximum plus pumping operating strategy (%years)
Basin Plan	92	66	21	76	5	83	3	90	3
2070 Dry	69	21	2	32	1	44	0	66	0
2070 Med	87	46	7	58	3	72	1	81	1
2070 Wet	88	56	24	68	8	81	3	84	3
2045 Dry	82	37	3	51	1	66	1	77	0
2045 Med	89	47	10	62	3	74	2	84	2
2045 Wet	89	58	22	70	8	81	4	87	3

Percent	Fresh operating strategy opportunities (% years)	Low operating strategy opportunities (% years)	Flows equivalent to low operating strategy (%years)	Intermediate operating strategy opportunities (% years)	Flows equivalent to intermediate operating strategy (%years)	Maximum operating strategy opportunities (% years)	Flows equivalent to maximum operating strategy (%years)	Maximum plus pumping operating strategy opportunities (% years)	Flows equivalent to maximum plus pumping operating strategy (%years)
Without Development	82	77	59	80	29	80	9	82	7
Target Frequency	100	80	80	33	33	33	33	10	10

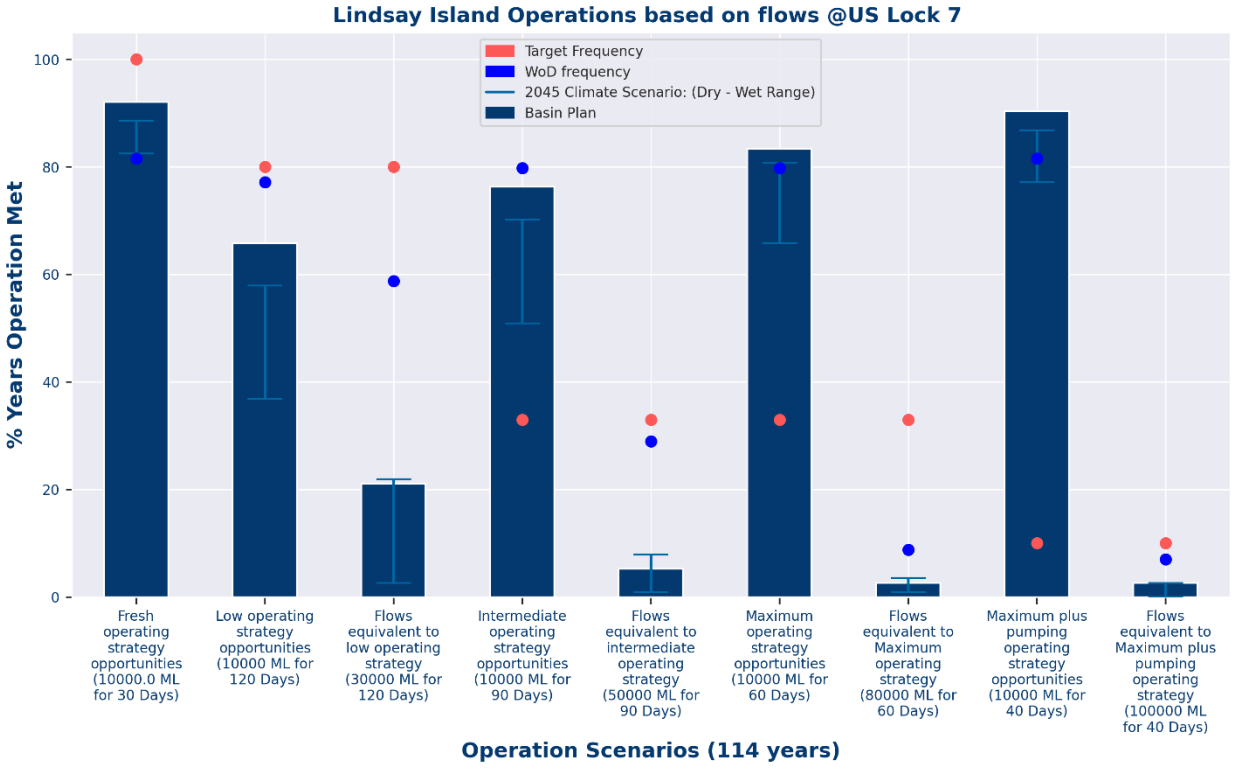

Figure 54: Lindsay Island 2045 climate – frequency of events relevant to operating strategies

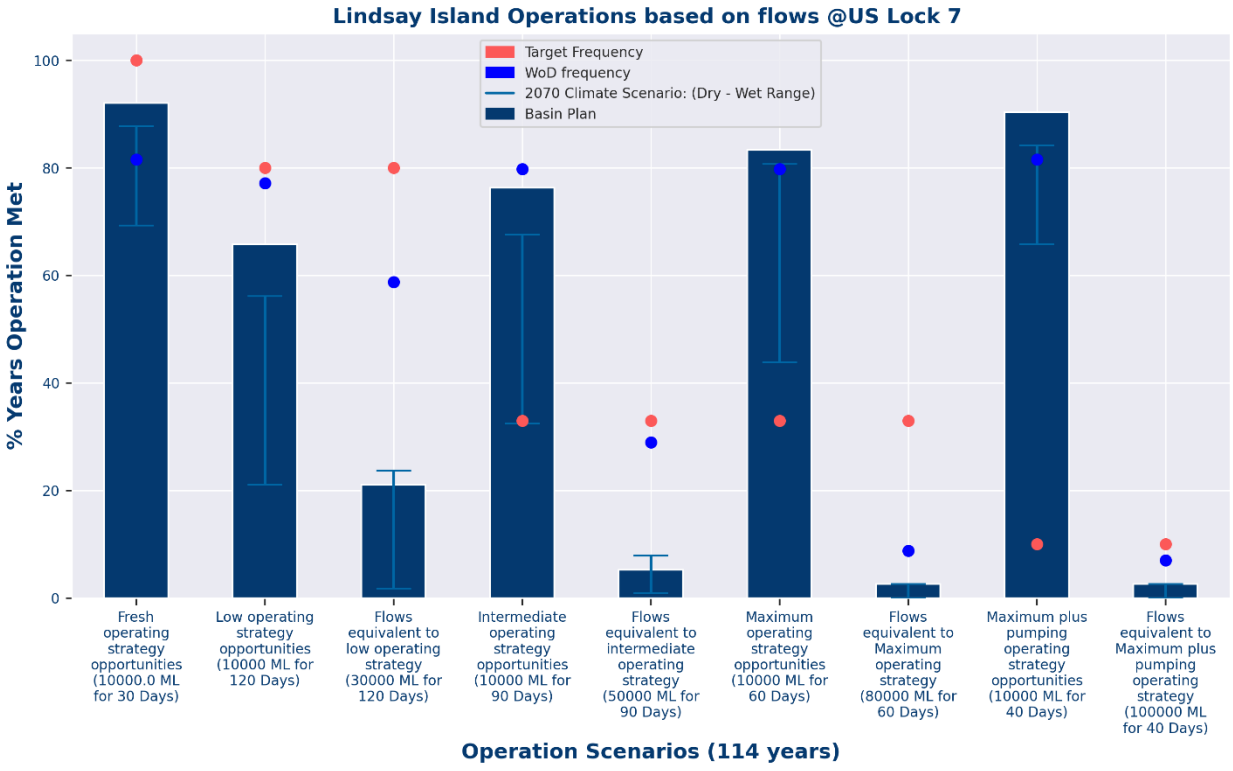

Figure 55: Lindsay Island 2070 climate – frequency of events relevant to operating strategies

Table 26: Lindsay Island – seasonality results

Number of Events (min 30 day duration)	June – August (number of events)	September – November (number of events)	December – February (number of events)	March – May (number of events)
Basin Plan >=10000 ML/day	32	71	20	14
Basin Plan >=35000 ML/day	11	30	7	1
Basin Plan >=60000 ML/day	2	8	2	0
Basin Plan >=85000 ML/day	2	4	2	0
Basin Plan >=110000 ML/day	1	0	1	0
2045 Wet >=10000 ML/day	25	81	10	15
2045 Wet >=35000 ML/day	7	37	7	1
2045 Wet >=60000 ML/day	3	17	2	1
2045 Wet >=85000 ML/day	2	7	1	0
2045 Wet >=110000 ML/day	1	2	0	0
2045 Dry >=10000 ML/day	26	73	11	5
2045 Dry >=35000 ML/day	2	11	2	0
2045 Dry >=60000 ML/day	0	1	1	0
2045 Dry >=85000 ML/day	0	1	0	0
2045 Dry >=110000 ML/day	0	0	0	0

Number of Events (min 30 day duration)	June – August (number of events)	September – November (number of events)	December – February (number of events)	March – May (number of events)
2070 Wet >=10000 ML/day	28	75	14	10
2070 Wet >=35000 ML/day	6	32	7	1
2070 Wet >=60000 ML/day	3	15	3	2
2070 Wet >=85000 ML/day	1	4	1	0
2070 Wet >=110000 ML/day	1	3	0	0
2070 Dry >=10000 ML/day	28	57	8	3
2070 Dry >=35000 ML/day	0	4	0	0
2070 Dry >=60000 ML/day	0	1	0	0
2070 Dry >=85000 ML/day	0	0	0	0
2070 Dry >=110000 ML/day	0	0	0	0

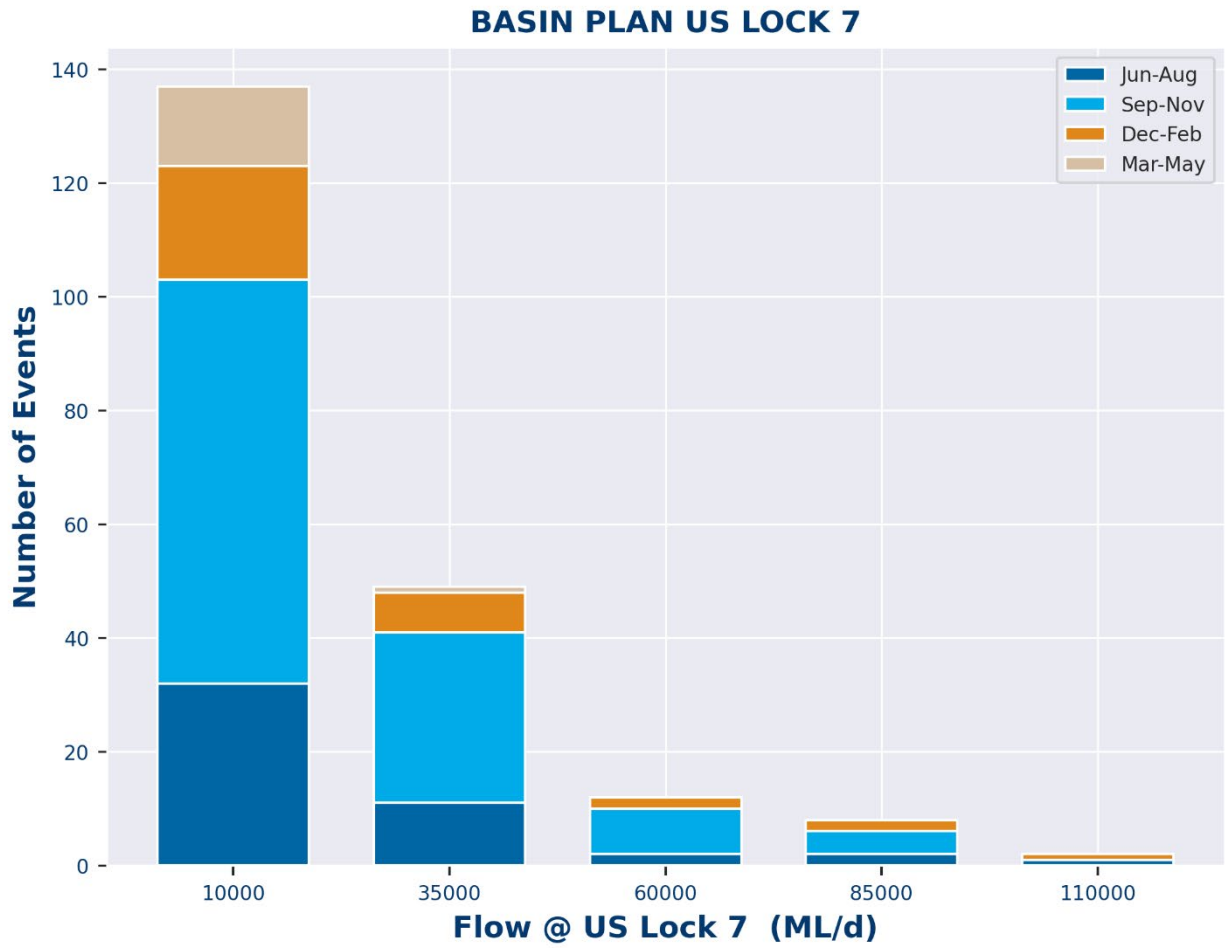

Figure 56: Lindsay Island Basin Plan climate – seasonality (min 30 day duration)

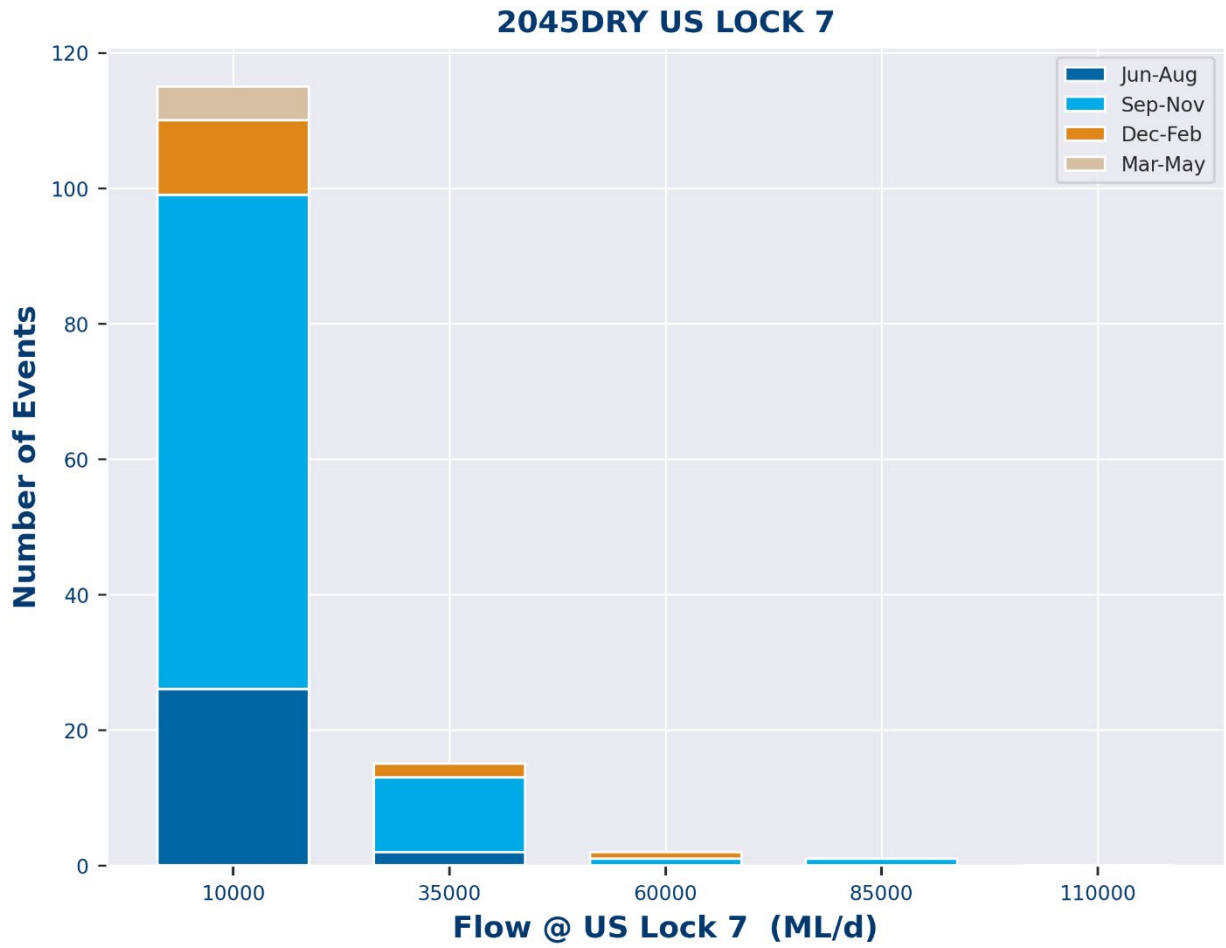

Figure 57: Lindsay Island 2045 dry climate – seasonality (min 30 day duration)

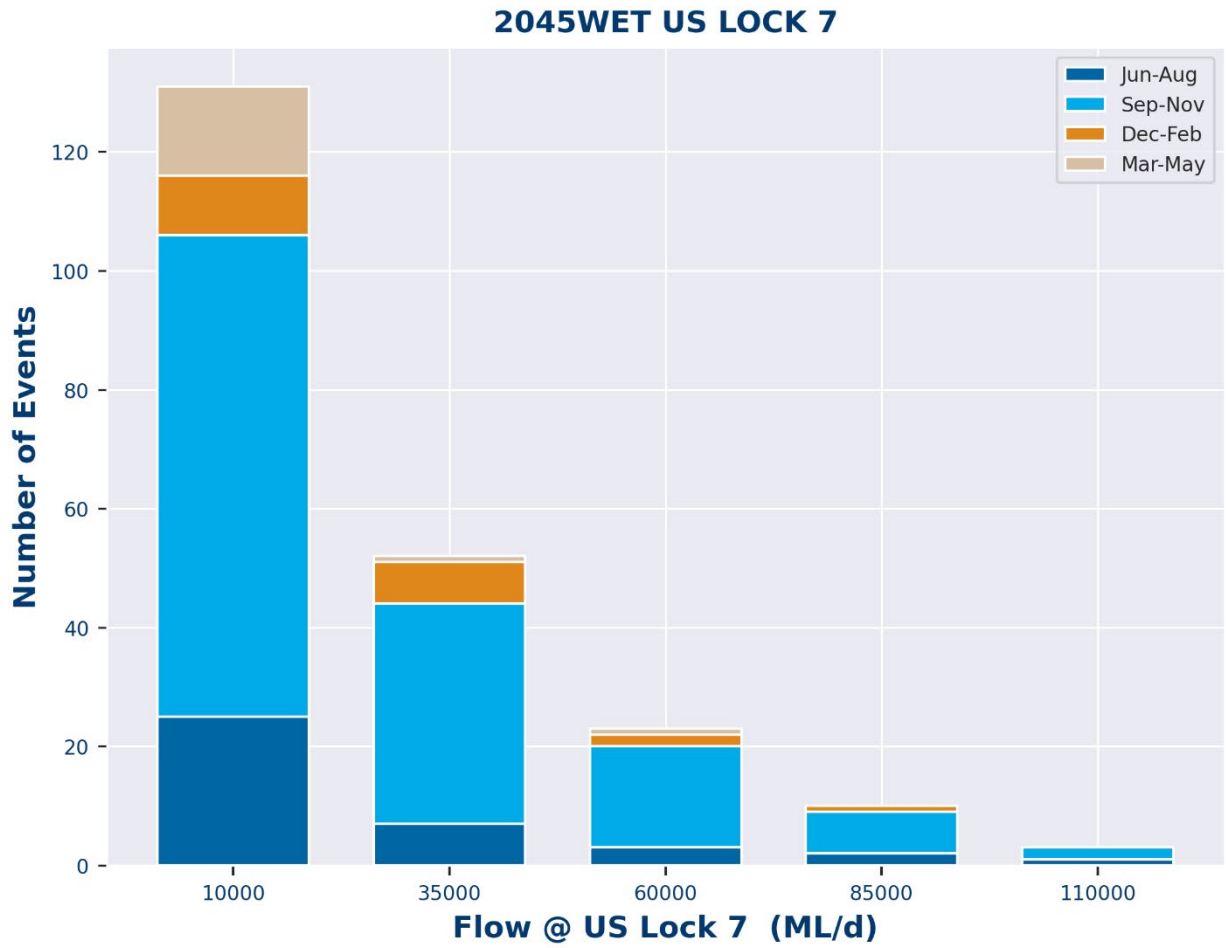

Figure 58: Lindsay Island 2045 wet climate – seasonality (min 30 day duration)

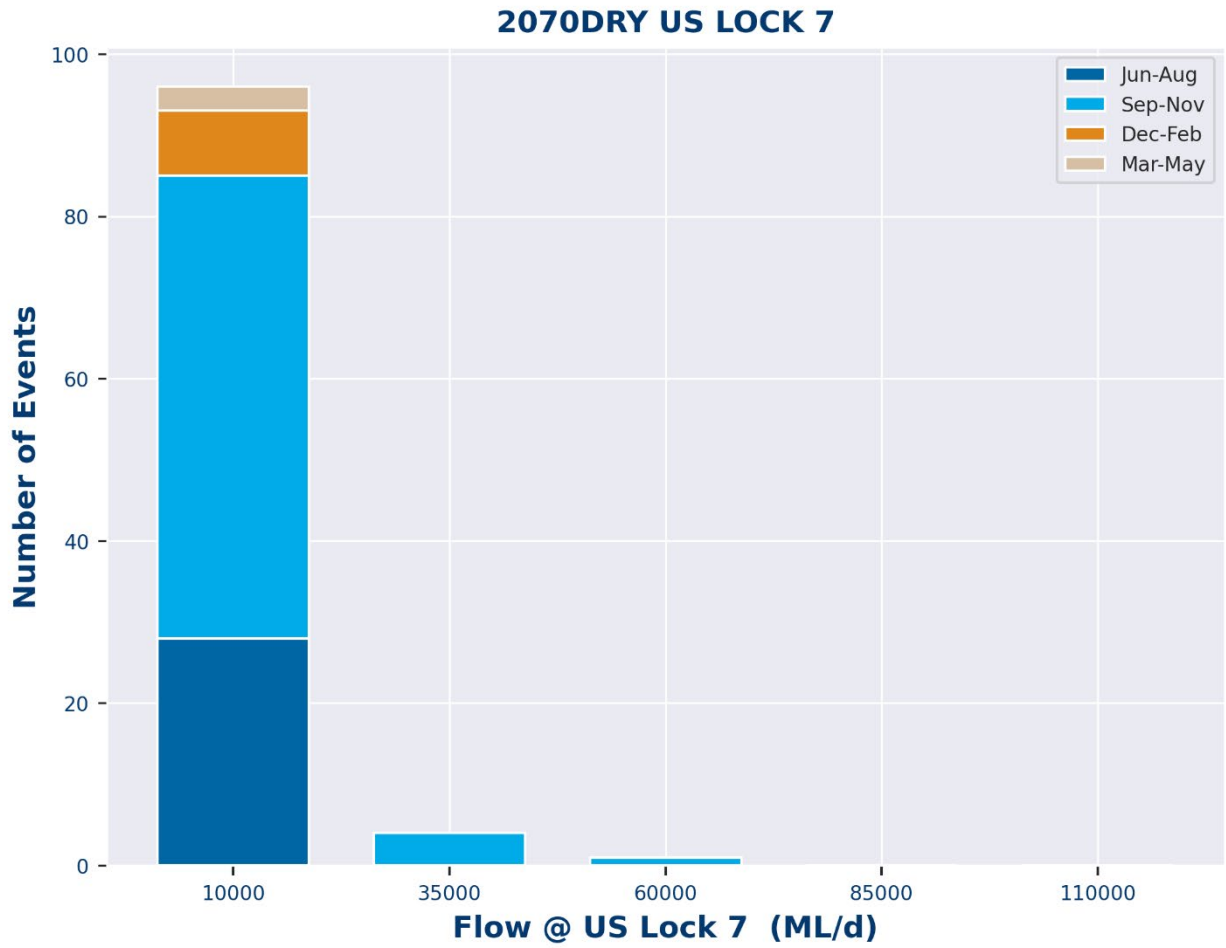

Figure 59: Lindsay Island 2070 dry climate – seasonality (min 30 day duration)

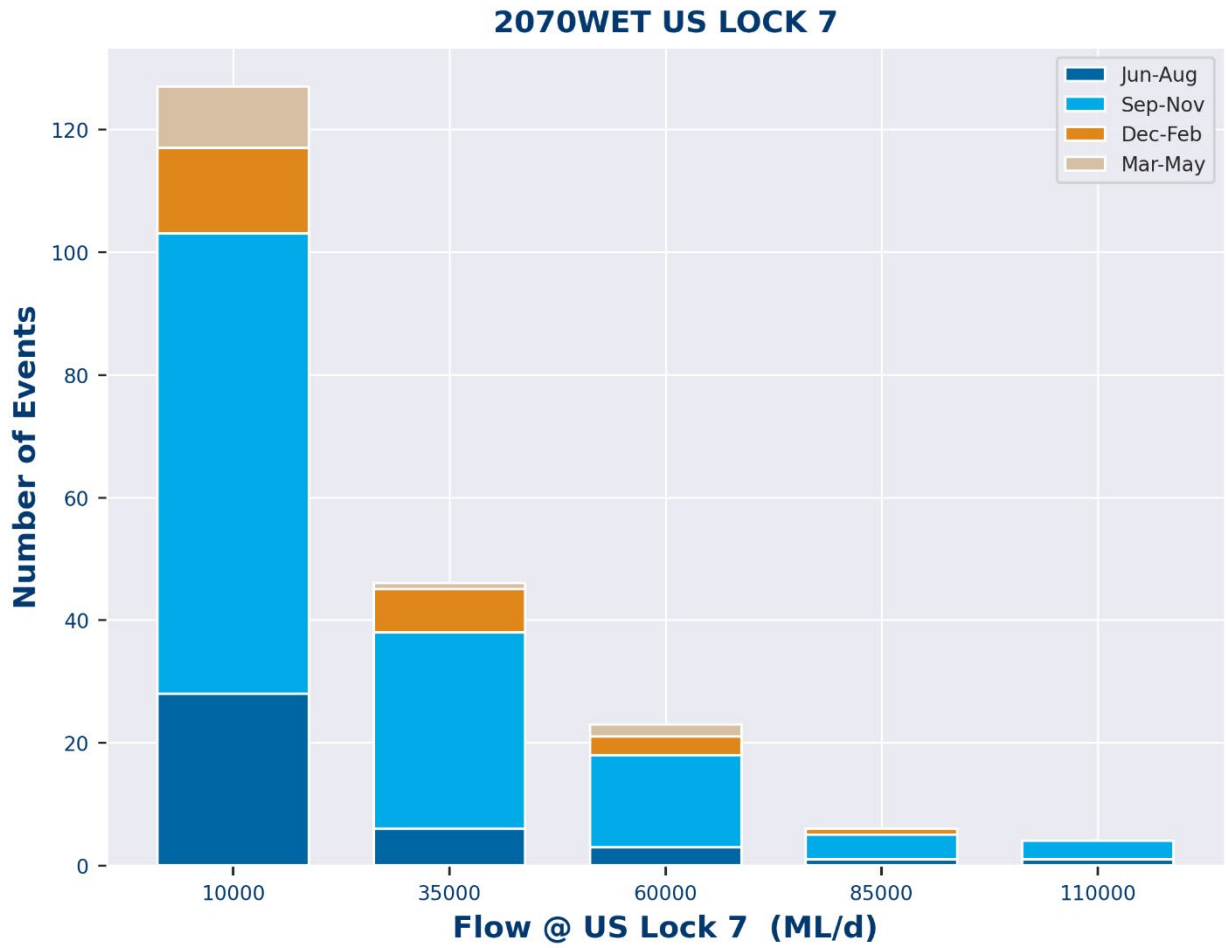

Figure 60: Lindsay Island 2070 wet climate – seasonality (min 30 day duration)

Table 27: Lindsay Island – event duration and spells results

Flow (ML/d)	No Event	%years	Med Duration (day)	90 %-ile Dry Period (day)	Model run	Min Duration (day)
10000	102	83	164.5	499	Basin Plan	60
12500	96	82	153	560.4	Basin Plan	60
15000	86	73	143	652.4	Basin Plan	60
17500	80	69	138.5	723.8	Basin Plan	60
20000	77	68	140	917.5	Basin Plan	60
22500	66	57	128.5	956	Basin Plan	60
25000	60	53	123.5	1050	Basin Plan	60
27500	54	47	122	983	Basin Plan	60
30000	46	39	122.5	1567	Basin Plan	60
32500	45	37	113	1614.5	Basin Plan	60
35000	35	30	117	2301.7	Basin Plan	60
37500	31	26	111	2465.4	Basin Plan	60
40000	26	22	97	3105	Basin Plan	60
42500	20	18	88.5	4095.4	Basin Plan	60
45000	15	12	86	5428.4	Basin Plan	60
47500	14	11	84.5	5809.4	Basin Plan	60
50000	10	9	115.5	6392.8	Basin Plan	60
52500	9	8	113	6540.5	Basin Plan	60
55000	8	7	118.5	6887.8	Basin Plan	60
57500	8	7	116	6889.8	Basin Plan	60
60000	7	6	120	7004	Basin Plan	60
62500	7	6	115	7008	Basin Plan	60
65000	7	6	104	7035.5	Basin Plan	60
67500	5	4	119	8214.8	Basin Plan	60
70000	5	4	117	8215.8	Basin Plan	60

Flow (ML/d)	No Event	%years	Med Duration (day)	90 %-ile Dry Period (day)	Model run	Min Duration (day)
72500	4	4	120	8499	Basin Plan	60
75000	3	3	123	13282.1	Basin Plan	60
77500	3	3	120	13284.1	Basin Plan	60
80000	3	3	117	13287	Basin Plan	60
82500	3	3	115	13288.9	Basin Plan	60
85000	3	3	113	13291	Basin Plan	60
87500	3	3	111	13292.9	Basin Plan	60
90000	3	3	109	13294.9	Basin Plan	60
92500	3	3	107	13295.9	Basin Plan	60
95000	3	3	105	13297.9	Basin Plan	60
97500	3	3	103	13302.3	Basin Plan	60
100000	2	2	146.5	14060	Basin Plan	60
102500	2	2	144	14062	Basin Plan	60
105000	2	2	129	14063	Basin Plan	60
107500	2	2	127.5	14064	Basin Plan	60
110000	2	2	125.5	14066	Basin Plan	60
10000	86	73	164.5	613.6	Current	60
12500	76	66	153.5	791.4	Current	60
15000	73	62	148	865.3	Current	60
17500	66	58	147	936.4	Current	60
20000	59	52	141	955.5	Current	60
22500	53	46	135	1298.5	Current	60
25000	53	45	121	1653.7	Current	60
27500	46	39	119	1771	Current	60
30000	42	36	115.5	2033	Current	60

Flow (ML/d)	No Event	%years	Med Duration (day)	90 %-ile Dry Period (day)	Model run	Min Duration (day)
32500	36	31	114.5	2112.4	Current	60
35000	32	26	112	2344	Current	60
37500	26	22	93.5	3092.6	Current	60
40000	23	20	87	3575.7	Current	60
42500	19	17	81	3915	Current	60
45000	17	14	79	4848	Current	60
47500	11	9	115	6248.6	Current	60
50000	8	7	121	6888.6	Current	60
52500	8	7	118	6890.2	Current	60
55000	8	7	116	6891.6	Current	60
57500	8	7	113	6894	Current	60
60000	7	6	116	7009	Current	60
62500	7	6	109	7012.5	Current	60
65000	5	4	117	8215.8	Current	60
67500	5	4	117	8217.5	Current	60
70000	5	4	115	8219.9	Current	60
72500	4	4	119.5	12523.4	Current	60
75000	3	3	122	13284.1	Current	60
77500	3	3	119	13286.1	Current	60
80000	3	3	117	13288.2	Current	60
82500	3	3	115	13289.2	Current	60
85000	3	3	113	13291.2	Current	60
87500	3	3	112	13292.2	Current	60
90000	3	3	110	13294.2	Current	60
92500	3	3	109	13295.2	Current	60

Flow (ML/d)	No Event	%years	Med Duration (day)	90 %-ile Dry Period (day)	Model run	Min Duration (day)
95000	3	3	107	13297.2	Current	60
97500	2	2	148.5	14058	Current	60
100000	2	2	147	14059	Current	60
102500	2	2	146	14061	Current	60
105000	2	2	129	14061	Current	60
107500	2	2	127	14063	Current	60
110000	2	2	125.5	14064	Current	60
10000	100	81	160.5	527.4	2045 Wet	60
12500	92	76	152.5	589	2045 Wet	60
15000	85	71	149	610.2	2045 Wet	60
17500	85	71	137	687.2	2045 Wet	60
20000	74	65	137	926.4	2045 Wet	60
22500	67	59	134	951.5	2045 Wet	60
25000	59	52	134	967.5	2045 Wet	60
27500	51	45	142	1375.2	2045 Wet	60
30000	47	41	132	1533	2045 Wet	60
32500	46	39	115.5	1700.8	2045 Wet	60
35000	38	32	116	1838.8	2045 Wet	60
37500	33	28	108	2792.2	2045 Wet	60
40000	32	27	98	2856	2045 Wet	60
42500	27	23	89	3549	2045 Wet	60
45000	23	19	92	3582.3	2045 Wet	60
47500	17	14	95	4808	2045 Wet	60
50000	17	14	91	4812.5	2045 Wet	60
52500	15	12	91	5749.3	2045 Wet	60

Flow (ML/d)	No Event	%years	Med Duration (day)	90 %-ile Dry Period (day)	Model run	Min Duration (day)
55000	13	11	90	5983.9	2045 Wet	60
57500	12	11	96	6102	2045 Wet	60
60000	12	11	94	6105	2045 Wet	60
62500	10	9	100	6673	2045 Wet	60
65000	8	7	97	6906.6	2045 Wet	60
67500	7	6	94	7586	2045 Wet	60
70000	6	5	105.5	7818.4	2045 Wet	60
72500	5	4	117	11578.9	2045 Wet	60
75000	4	4	122	12517.4	2045 Wet	60
77500	4	4	118.5	12521	2045 Wet	60
80000	4	4	117	12523.6	2045 Wet	60
82500	4	4	114	12527.2	2045 Wet	60
85000	3	3	115	13288	2045 Wet	60
87500	3	3	110	13293.5	2045 Wet	60
90000	3	3	107	13296.5	2045 Wet	60
92500	3	3	105	13298.5	2045 Wet	60
95000	3	3	103	13300.5	2045 Wet	60
97500	3	3	101	13304.9	2045 Wet	60
100000	3	3	77	13306.2	2045 Wet	60
102500	3	3	75	13307.4	2045 Wet	60
105000	3	3	73	13308.5	2045 Wet	60
107500	3	3	71	13309.5	2045 Wet	60
110000	3	3	69	13311.5	2045 Wet	60
10000	88	74	136.5	605.6	2045 Med	60
12500	80	69	132.5	688	2045 Med	60

Flow (ML/d)	No Event	%years	Med Duration (day)	90 %-ile Dry Period (day)	Model run	Min Duration (day)
15000	73	63	126	965.1	2045 Med	60
17500	69	59	123	974.1	2045 Med	60
20000	59	52	129	992.5	2045 Med	60
22500	54	46	120	1271	2045 Med	60
25000	46	39	115	1580.8	2045 Med	60
27500	38	32	115.5	1672.2	2045 Med	60
30000	33	27	101	2838.5	2045 Med	60
32500	26	23	99	3395.6	2045 Med	60
35000	23	20	92	3580.7	2045 Med	60
37500	17	15	85	4821	2045 Med	60
40000	13	11	81	5849.3	2045 Med	60
42500	11	10	75	6261	2045 Med	60
45000	7	6	90	10110.5	2045 Med	60
47500	7	6	84	10116	2045 Med	60
50000	6	5	95	10863.6	2045 Med	60
52500	5	4	107	11765.5	2045 Med	60
55000	4	4	115	12518.4	2045 Med	60
57500	4	4	110	12522.2	2045 Med	60
60000	4	4	106	12525.2	2045 Med	60
62500	3	3	108	13289.4	2045 Med	60
65000	3	3	85	13290.9	2045 Med	60
67500	3	3	82	13298.7	2045 Med	60
70000	2	2	127.5	14069	2045 Med	60
72500	2	2	125	14071	2045 Med	60
75000	2	2	123	14073	2045 Med	60

Flow (ML/d)	No Event	%years	Med Duration (day)	90 %-ile Dry Period (day)	Model run	Min Duration (day)
77500	2	2	120	14075	2045 Med	60
80000	2	2	116.5	14078	2045 Med	60
82500	2	2	115	14080	2045 Med	60
85000	2	2	112.5	14082	2045 Med	60
87500	2	2	110	14085	2045 Med	60
90000	1	1	158		2045 Med	60
92500	1	1	156		2045 Med	60
95000	1	1	142		2045 Med	60
97500	1	1	137		2045 Med	60
100000	1	1	134		2045 Med	60
102500	1	1	130		2045 Med	60
105000	1	1	126		2045 Med	60
107500	1	1	122		2045 Med	60
110000	1	1	120		2045 Med	60
10000	79	66	122	928.2	2045 Dry	60
12500	68	55	114.5	965.8	2045 Dry	60
15000	55	47	110	1010.3	2045 Dry	60
17500	47	41	110	1549	2045 Dry	60
20000	43	38	105	1674.5	2045 Dry	60
22500	37	32	103	2115	2045 Dry	60
25000	28	24	96.5	2992.2	2045 Dry	60
27500	20	17	89	3653.4	2045 Dry	60
30000	17	14	84	4479	2045 Dry	60
32500	10	9	85	6872	2045 Dry	60
35000	10	9	73	6880.2	2045 Dry	60

Flow (ML/d)	No Event	%years	Med Duration (day)	90 %-ile Dry Period (day)	Model run	Min Duration (day)
37500	7	6	71	7595.5	2045 Dry	60
40000	3	3	115	13279.9	2045 Dry	60
42500	3	3	104	13291.5	2045 Dry	60
45000	3	3	93	13306.9	2045 Dry	60
47500	3	3	83	13313.7	2045 Dry	60
50000	3	3	79	13319.2	2045 Dry	60
52500	2	2	115	14081	2045 Dry	60
55000	1	1	153		2045 Dry	60
57500	1	1	148		2045 Dry	60
60000	1	1	141		2045 Dry	60
62500	1	1	131		2045 Dry	60
65000	1	1	123		2045 Dry	60
67500	1	1	117		2045 Dry	60
70000	1	1	108		2045 Dry	60
72500	1	1	98		2045 Dry	60
75000	1	1	87		2045 Dry	60
77500	1	1	77		2045 Dry	60
80000	1	1	69		2045 Dry	60
82500	1	1	65		2045 Dry	60
85000	0	0			2045 Dry	60
87500	0	0			2045 Dry	60
90000	0	0			2045 Dry	60
92500	0	0			2045 Dry	60
95000	0	0			2045 Dry	60
97500	0	0			2045 Dry	60

Flow (ML/d)	No Event	%years	Med Duration (day)	90 %-ile Dry Period (day)	Model run	Min Duration (day)
100000	0	0			2045 Dry	60
102500	0	0			2045 Dry	60
105000	0	0			2045 Dry	60
107500	0	0			2045 Dry	60
110000	0	0			2045 Dry	60
10000	100	81	155	552.2	2070 Wet	60
12500	93	76	150	607	2070 Wet	60
15000	83	70	145	688.2	2070 Wet	60
17500	84	70	139	687.8	2070 Wet	60
20000	75	63	134	899.4	2070 Wet	60
22500	65	57	135	909.7	2070 Wet	60
25000	58	51	134.5	987.4	2070 Wet	60
27500	47	40	139	1531.5	2070 Wet	60
30000	47	40	129	1534	2070 Wet	60
32500	45	38	113	1967.9	2070 Wet	60
35000	37	32	113	1894.5	2070 Wet	60
37500	33	28	105	2810.2	2070 Wet	60
40000	30	25	97.5	2572.4	2070 Wet	60
42500	27	23	83	3352.5	2070 Wet	60
45000	19	17	94	4290.4	2070 Wet	60
47500	18	15	96.5	4555	2070 Wet	60
50000	16	13	93.5	5632.8	2070 Wet	60
52500	13	11	92	5984.7	2070 Wet	60
55000	13	11	89	5986.7	2070 Wet	60
57500	11	9	86	6454.5	2070 Wet	60

Flow (ML/d)	No Event	%years	Med Duration (day)	90 %-ile Dry Period (day)	Model run	Min Duration (day)
60000	10	8	89	6584.4	2070 Wet	60
62500	9	8	92	6793.5	2070 Wet	60
65000	7	6	91	7597	2070 Wet	60
67500	7	6	89	7599.5	2070 Wet	60
70000	6	5	94	7981.4	2070 Wet	60
72500	5	4	116	11755.3	2070 Wet	60
75000	5	4	114	11758	2070 Wet	60
77500	4	4	116	12518.6	2070 Wet	60
80000	3	3	116	13279.7	2070 Wet	60
82500	3	3	112	13283.5	2070 Wet	60
85000	3	3	110	13285.3	2070 Wet	60
87500	3	3	105	13288.2	2070 Wet	60
90000	3	3	102	13292.9	2070 Wet	60
92500	3	3	100	13294.9	2070 Wet	60
95000	3	3	75	13299.4	2070 Wet	60
97500	3	3	73	13300.6	2070 Wet	60
100000	3	3	71	13302.6	2070 Wet	60
102500	2	2	132	14059	2070 Wet	60
105000	2	2	130.5	14061	2070 Wet	60
107500	2	2	129	14062	2070 Wet	60
110000	2	2	128	14063	2070 Wet	60
10000	87	72	133	630	2070 Med	60
12500	79	66	130	926.7	2070 Med	60
15000	72	61	122	956	2070 Med	60
17500	67	56	120	978.5	2070 Med	60

Flow (ML/d)	No Event	%years	Med Duration (day)	90 %-ile Dry Period (day)	Model run	Min Duration (day)
20000	57	48	124	1165	2070 Med	60
22500	48	41	119.5	1340	2070 Med	60
25000	42	36	116.5	2105	2070 Med	60
27500	38	32	102.5	2119.2	2070 Med	60
30000	30	25	96	2912.6	2070 Med	60
32500	25	22	90	3562.8	2070 Med	60
35000	18	16	92	4554	2070 Med	60
37500	13	11	85	5846.8	2070 Med	60
40000	12	11	79.5	6109	2070 Med	60
42500	9	8	67	6798.5	2070 Med	60
45000	6	5	89	10996.8	2070 Med	60
47500	4	4	134.5	12596.8	2070 Med	60
50000	3	3	129	13275.6	2070 Med	60
52500	3	3	121	13280.2	2070 Med	60
55000	3	3	117	13284.1	2070 Med	60
57500	3	3	112	13287	2070 Med	60
60000	3	3	107	13290.6	2070 Med	60
62500	3	3	82	13297.9	2070 Med	60
65000	2	2	127.5	14069	2070 Med	60
67500	2	2	122	14073	2070 Med	60
70000	2	2	119	14075	2070 Med	60
72500	2	2	116	14078	2070 Med	60
75000	2	2	113.5	14079	2070 Med	60
77500	1	1	161		2070 Med	60
80000	1	1	159		2070 Med	60

Flow (ML/d)	No Event	%years	Med Duration (day)	90 %-ile Dry Period (day)	Model run	Min Duration (day)
82500	1	1	155		2070 Med	60
85000	1	1	143		2070 Med	60
87500	1	1	138		2070 Med	60
90000	1	1	136		2070 Med	60
92500	1	1	132		2070 Med	60
95000	1	1	128		2070 Med	60
97500	1	1	125		2070 Med	60
100000	1	1	121		2070 Med	60
102500	1	1	118		2070 Med	60
105000	1	1	116		2070 Med	60
107500	1	1	113		2070 Med	60
110000	1	1	111		2070 Med	60
10000	51	44	112	1044.7	2070 Dry	60
12500	42	36	119.5	1686	2070 Dry	60
15000	34	30	108.5	2144.8	2070 Dry	60
17500	28	24	104	3539.8	2070 Dry	60
20000	25	22	90	3561.3	2070 Dry	60
22500	13	11	99	4912.7	2070 Dry	60
25000	10	9	94.5	5247	2070 Dry	60
27500	8	7	81	7360.8	2070 Dry	60
30000	6	5	98.5	7979.6	2070 Dry	60
32500	4	4	133.5	8496	2070 Dry	60
35000	3	3	146	13288.1	2070 Dry	60
37500	2	2	121	14049	2070 Dry	60
40000	1	1	156		2070 Dry	60

Flow (ML/d)	No Event	%years	Med Duration (day)	90 %-ile Dry Period (day)	Model run	Min Duration (day)
42500	1	1	131		2070 Dry	60
45000	1	1	114		2070 Dry	60
47500	1	1	106		2070 Dry	60
50000	1	1	92		2070 Dry	60
52500	1	1	80		2070 Dry	60
55000	1	1	71		2070 Dry	60
57500	1	1	64		2070 Dry	60
60000	0	0			2070 Dry	60
62500	0	0			2070 Dry	60
65000	0	0			2070 Dry	60
67500	0	0			2070 Dry	60
70000	0	0			2070 Dry	60
72500	0	0			2070 Dry	60
75000	0	0			2070 Dry	60
77500	0	0			2070 Dry	60
80000	0	0			2070 Dry	60
82500	0	0			2070 Dry	60
85000	0	0			2070 Dry	60
87500	0	0			2070 Dry	60
90000	0	0			2070 Dry	60
92500	0	0			2070 Dry	60
95000	0	0			2070 Dry	60
97500	0	0			2070 Dry	60
100000	0	0			2070 Dry	60
102500	0	0			2070 Dry	60

Flow (ML/d)	No Event	%years	Med Duration (day)	90 %-ile Dry Period (day)	Model run	Min Duration (day)
105000	0	0			2070 Dry	60
107500	0	0			2070 Dry	60
110000	0	0			2070 Dry	60
10000	99	80	265	179.3	WoD	60
12500	100	85	252	199.4	WoD	60
15000	100	87	232	218	WoD	60
17500	103	88	205	234.7	WoD	60
20000	101	87	203	286.5	WoD	60
22500	101	87	196	300.8	WoD	60
25000	99	85	188	487.8	WoD	60
27500	95	82	179	526.9	WoD	60
30000	90	79	169	600.2	WoD	60
32500	86	75	158	615	WoD	60
35000	77	67	142	637	WoD	60
37500	67	58	141	941.5	WoD	60
40000	61	52	131	988.1	WoD	60
42500	52	45	126.5	1324	WoD	60
45000	48	41	120	1486.2	WoD	60
47500	45	39	111	1740.2	WoD	60
50000	40	35	106.5	2104.2	WoD	60
52500	35	31	102	2284.4	WoD	60
55000	32	28	98	2822	WoD	60
57500	27	24	94	2883	WoD	60
60000	21	18	108	3499.3	WoD	60
62500	20	18	96.5	3512.4	WoD	60

Flow (ML/d)	No Event	%years	Med Duration (day)	90 %-ile Dry Period (day)	Model run	Min Duration (day)
65000	15	13	114	5329	WoD	60
67500	15	13	94	5333.3	WoD	60
70000	14	12	92.5	5586.4	WoD	60
72500	13	11	83	5839.3	WoD	60
75000	10	9	89.5	6661.2	WoD	60
77500	10	9	86	6663.4	WoD	60
80000	10	9	81.5	6666.4	WoD	60
82500	9	8	71	6782.2	WoD	60
85000	9	8	69	6783.2	WoD	60
87500	6	5	101.5	7126	WoD	60
90000	5	4	111	8227.8	WoD	60
92500	5	4	109	8230.2	WoD	60
95000	5	4	106	8233.6	WoD	60
97500	3	3	111	13282.1	WoD	60
100000	3	3	109	13284	WoD	60
102500	3	3	107	13285.2	WoD	60
105000	3	3	104	13288	WoD	60
107500	2	2	141.5	14048	WoD	60
110000	2	2	139.5	14050	WoD	60

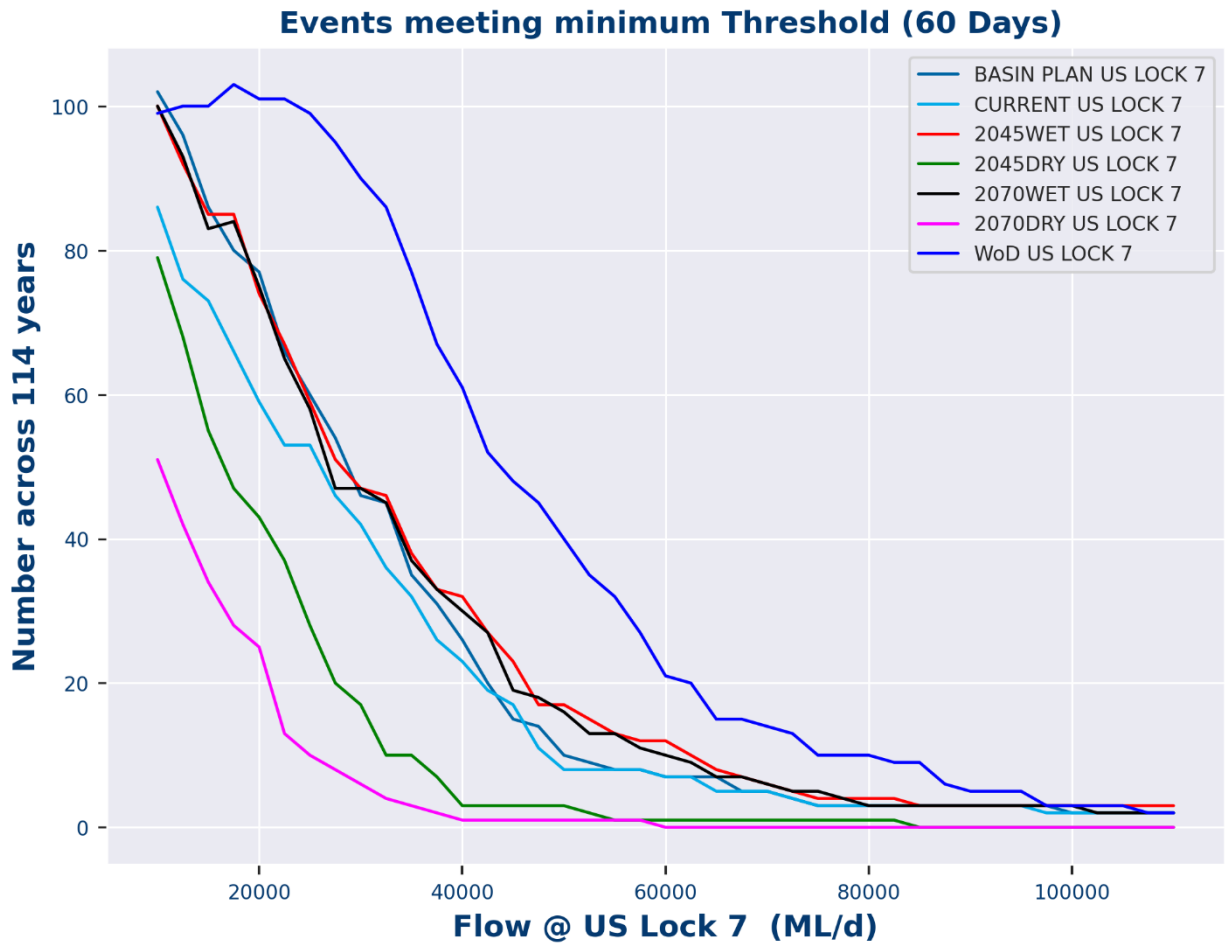

Figure 61: Lindsay Island – number of events

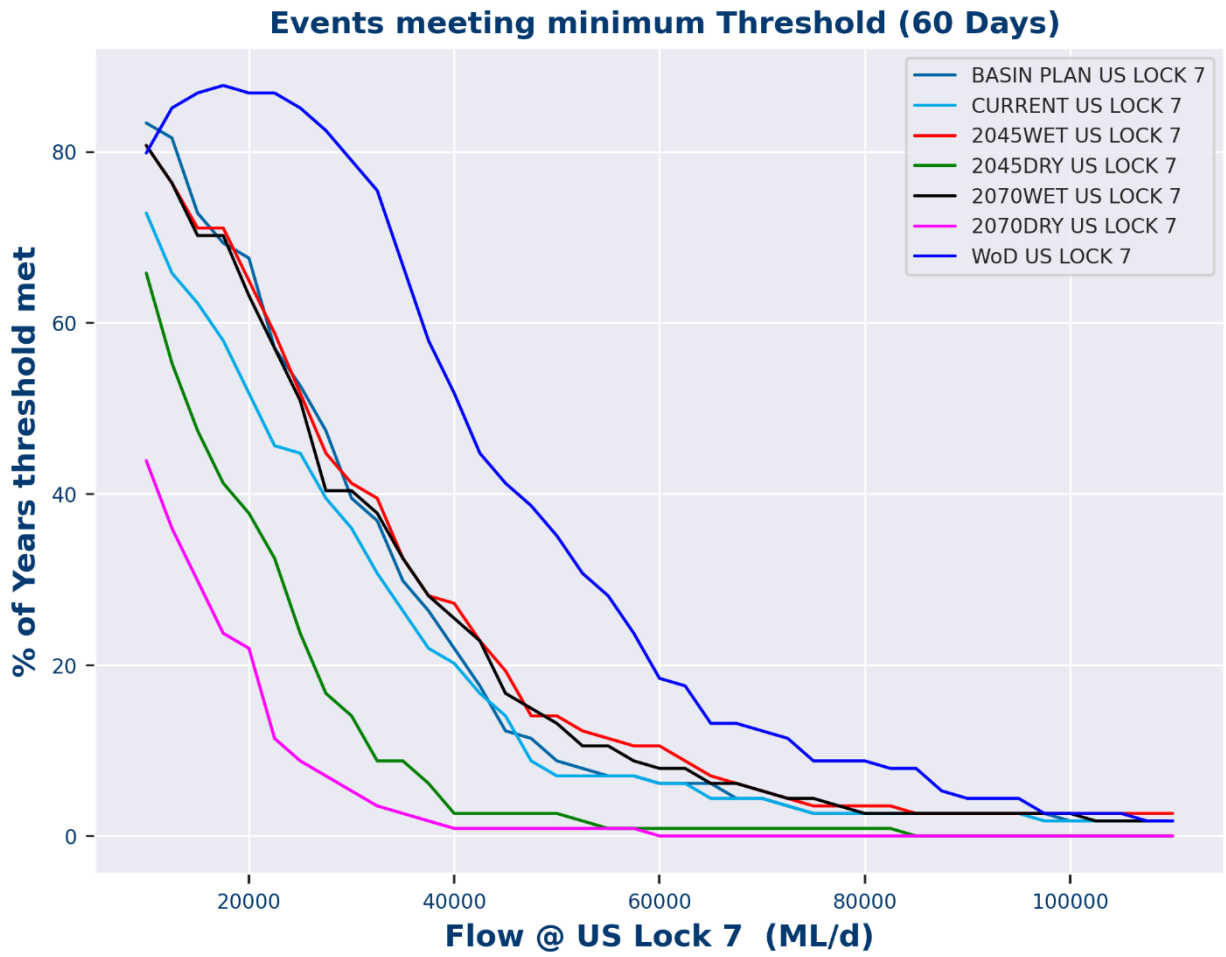

Figure 62: Lindsay Island – percentage of years with an event

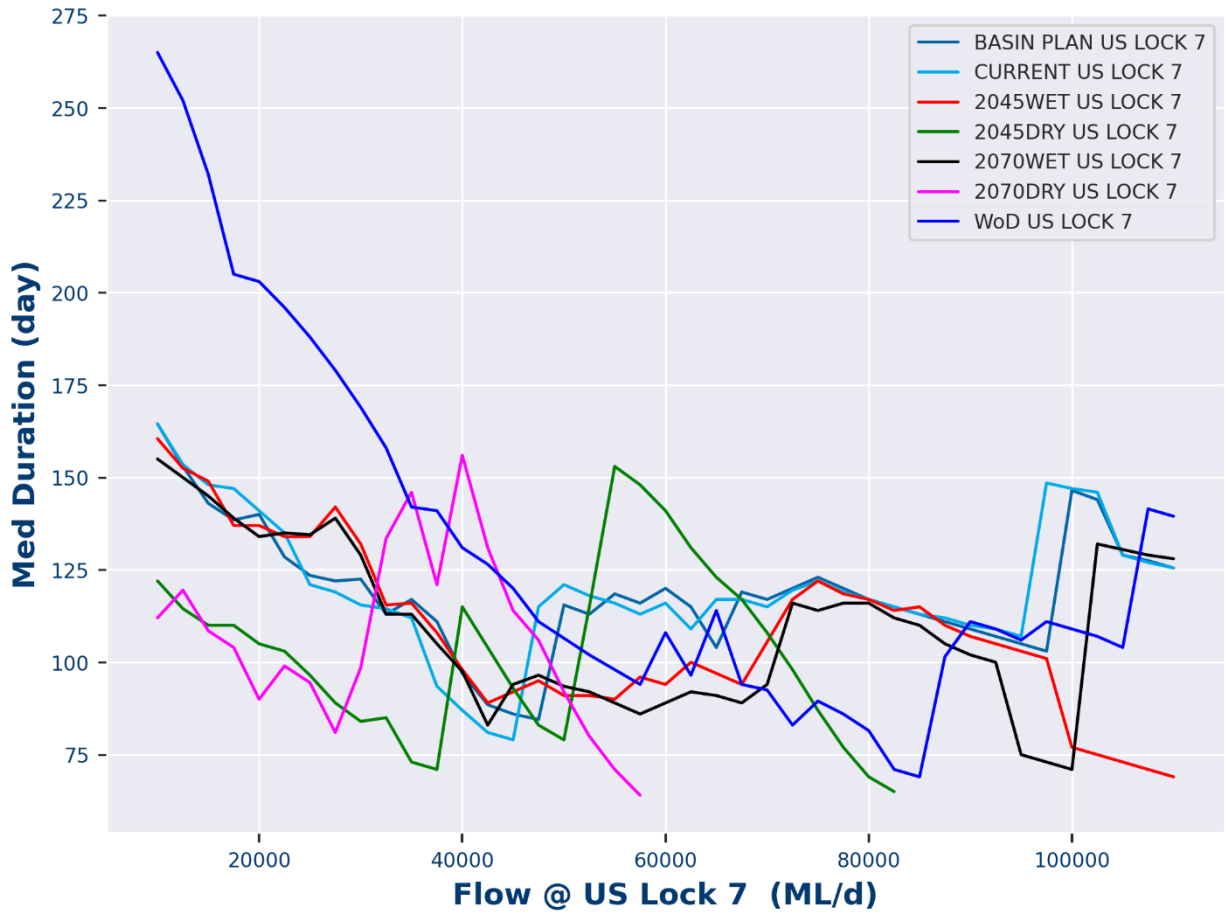

Figure 63: Lindsay Island – median event duration

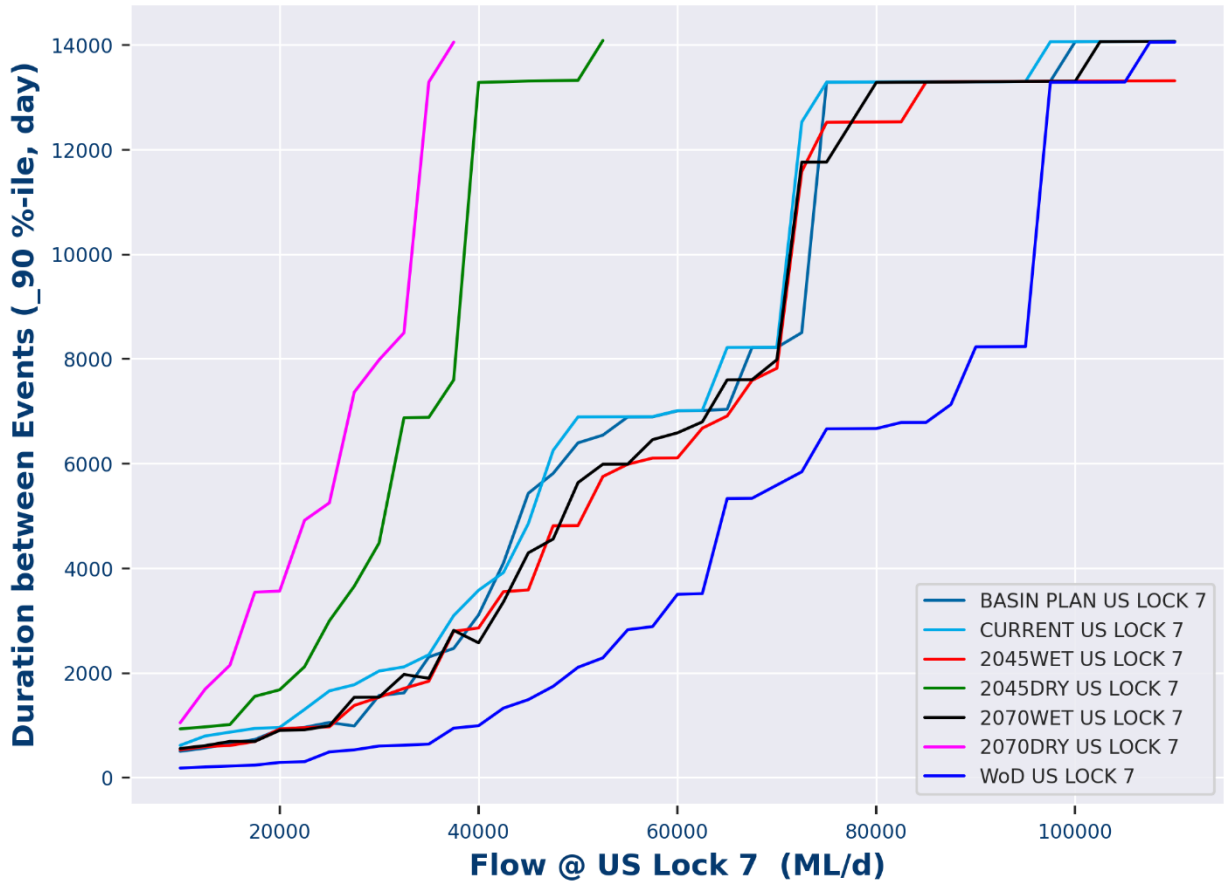

Figure 64: Lindsay Island – 90th percentile duration between events

Wallpolla Island

Table 28: Wallpolla Island – operations results

Percent	Fresh operating strategy opportunities (% years)	Intermediate operating strategy opportunities (% years)	Flows equivalent to intermediate operating strategy (%years)	Maximum operating strategy opportunities (% years)	Flows equivalent to maximum operating strategy (%years)
Basin Plan	68	22	5	9	5
2070 Dry	21	2	1	1	0
2070 Med	48	8	3	4	2
2070 Wet	56	25	8	14	6
2045 Dry	39	3	1	3	1
2045 Med	48	11	3	5	3
2045 Wet	60	25	8	14	8
Without Development	77	54	29	36	13
Target Frequency	100	50	50	33	33

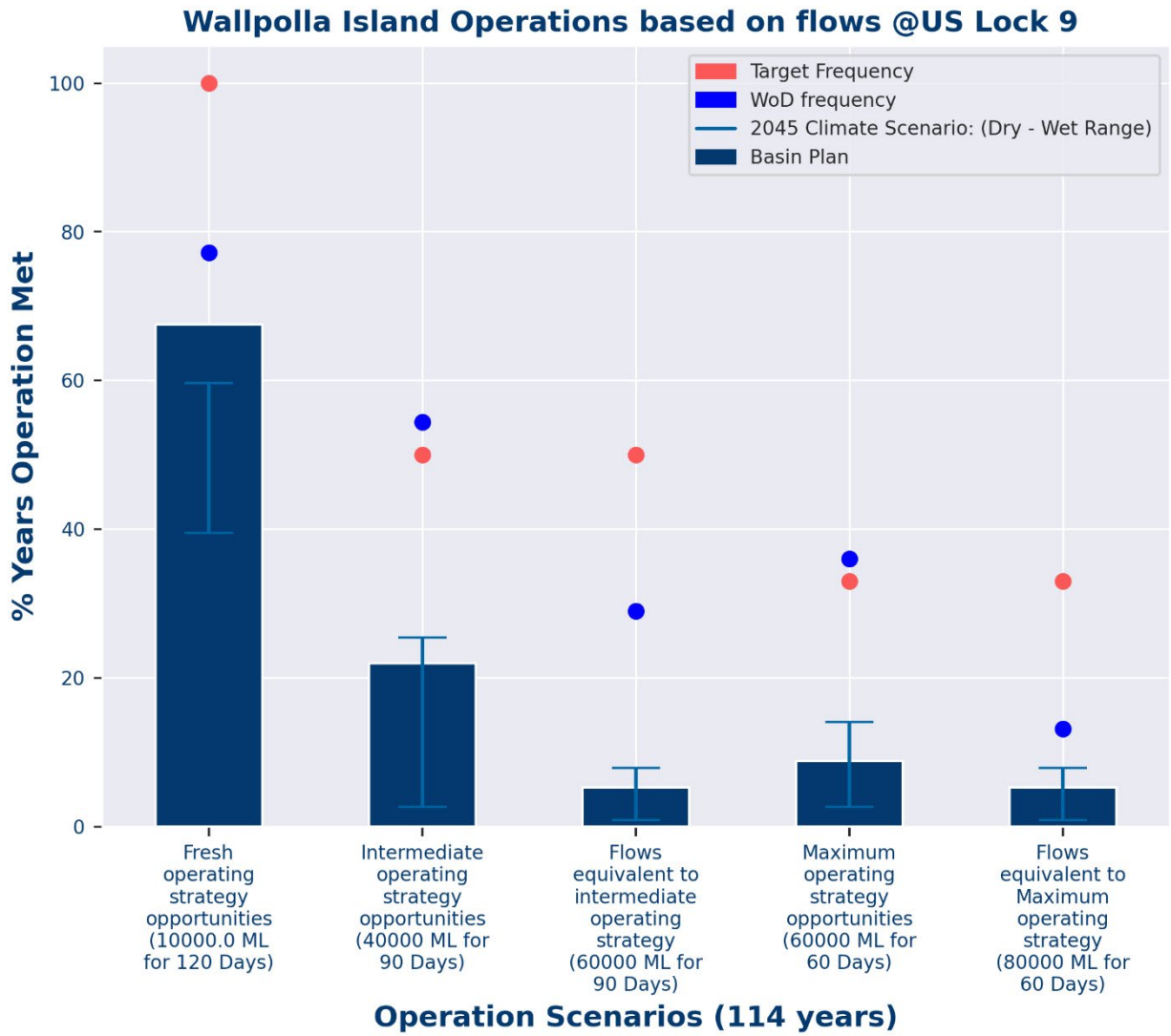

Figure 65: Wallpolla Island 2045 climate – frequency of events relevant to operating strategies

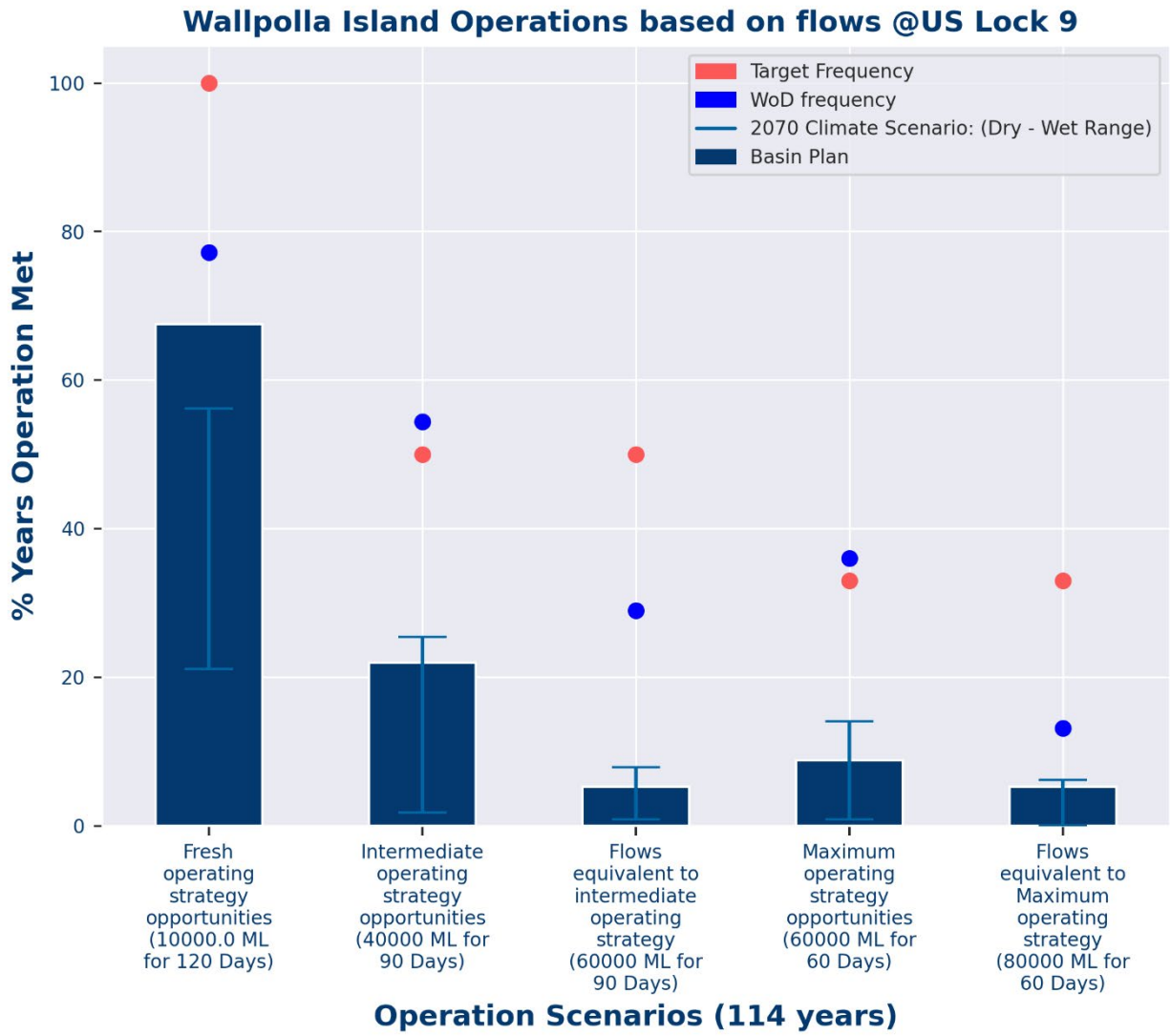

Figure 66: Wallpolla Island climate – frequency of events relevant to operating strategies

Table 29: Wallpolla Island – seasonality results

Number of Events (min 120 day duration)	June – August (number of events)	September – November (number of events)	December – February (number of events)	March – May (number of events)
Basin Plan >=10000 ML/day	22	47	8	0
Basin Plan >=30000 ML/day	5	20	4	0
Basin Plan >=50000 ML/day	2	4	0	0
Basin Plan >=70000 ML/day	1	3	0	0
Basin Plan >=90000 ML/day	1	1	0	0
2045 Wet >=10000 ML/day	12	48	7	1
2045 Wet >=30000 ML/day	4	23	5	1
2045 Wet >=50000 ML/day	2	6	1	0
2045 Wet >=70000 ML/day	1	2	0	0
2045 Wet >=90000 ML/day	1	1	0	0
2045 Dry >=10000 ML/day	11	29	5	0
2045 Dry >=30000 ML/day	1	2	1	0
2045 Dry >=50000 ML/day	1	0	0	0
2045 Dry >=70000 ML/day	1	0	0	0
2045 Dry >=90000 ML/day	0	0	0	0
2070 Wet >=10000 ML/day	12	43	8	1

Number of Events (min 120 day duration)	June – August (number of events)	September – November (number of events)	December – February (number of events)	March – May (number of events)
2070 Wet >=30000 ML/day	4	22	4	1
2070 Wet >=50000 ML/day	1	4	2	0
2070 Wet >=70000 ML/day	1	2	0	0
2070 Wet >=90000 ML/day	1	1	0	0
2070 Dry >=10000 ML/day	6	17	1	0
2070 Dry >=30000 ML/day	0	3	0	0
2070 Dry >=50000 ML/day	0	1	0	0
2070 Dry >=70000 ML/day	0	0	0	0
2070 Dry >=90000 ML/day	0	0	0	0

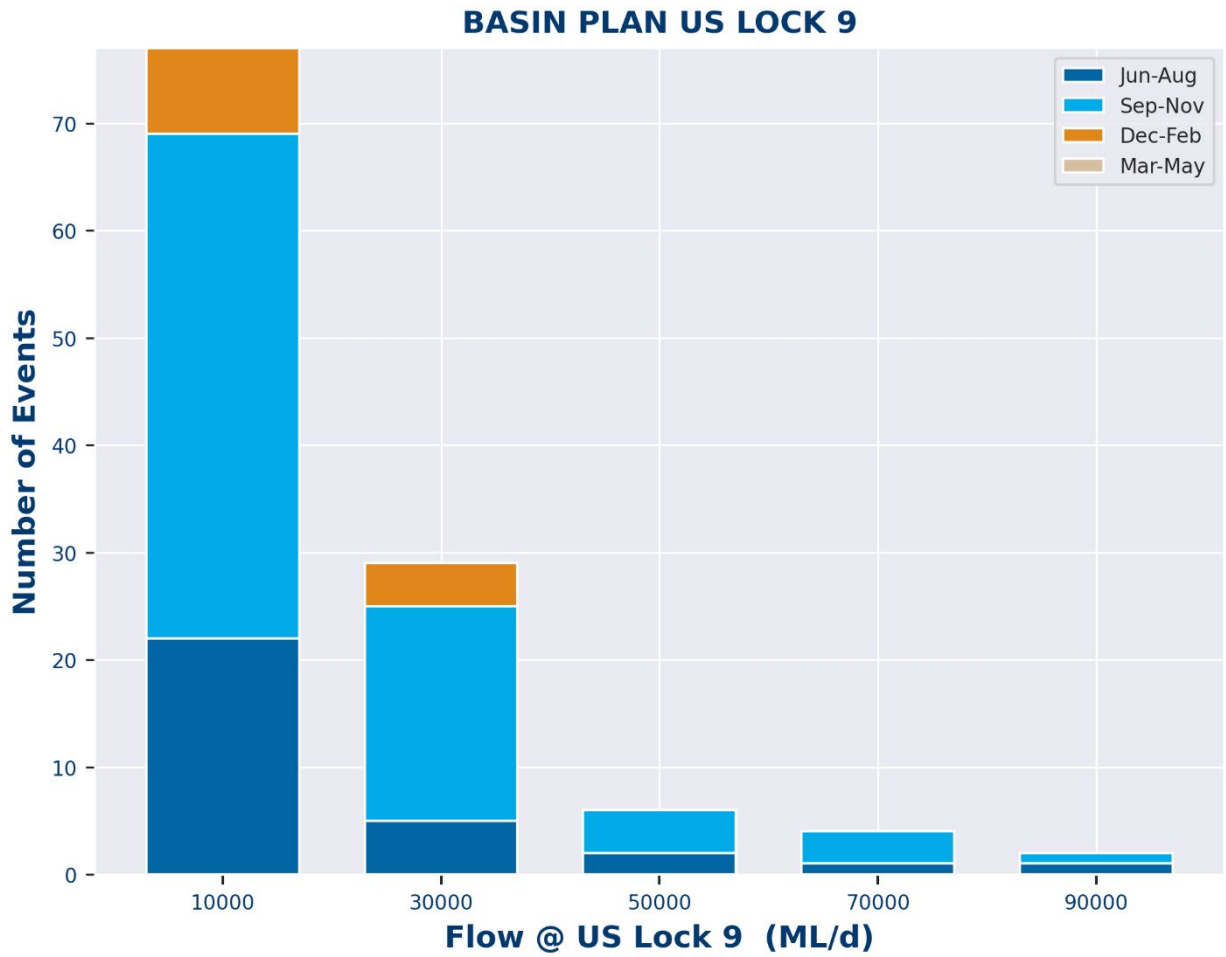

Figure 67: Wallpolla Island Basin Plan climate – seasonality (min 120 day duration)

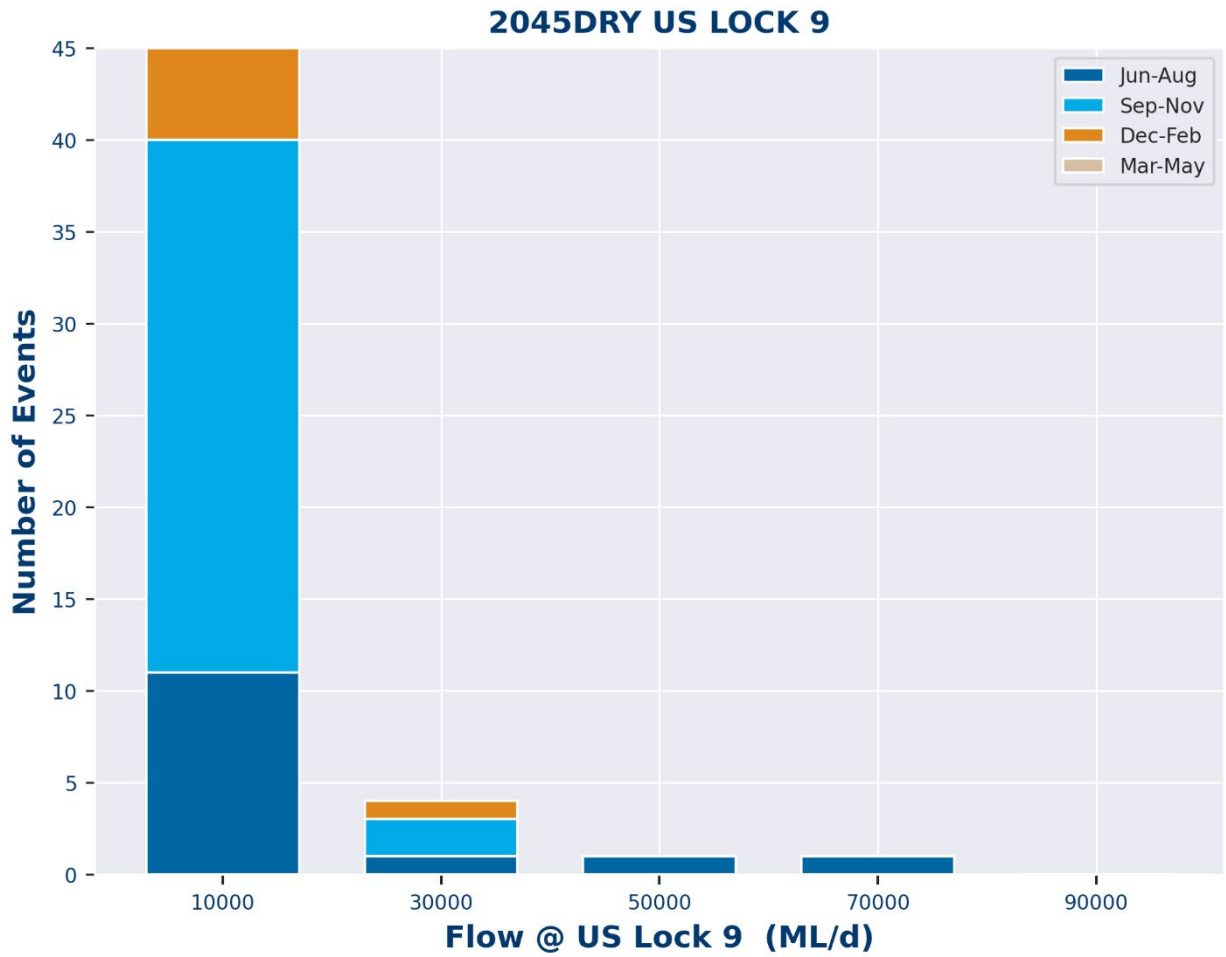

Figure 68: Wallpolla Island 2045 dry climate – seasonality (min 120 day duration)

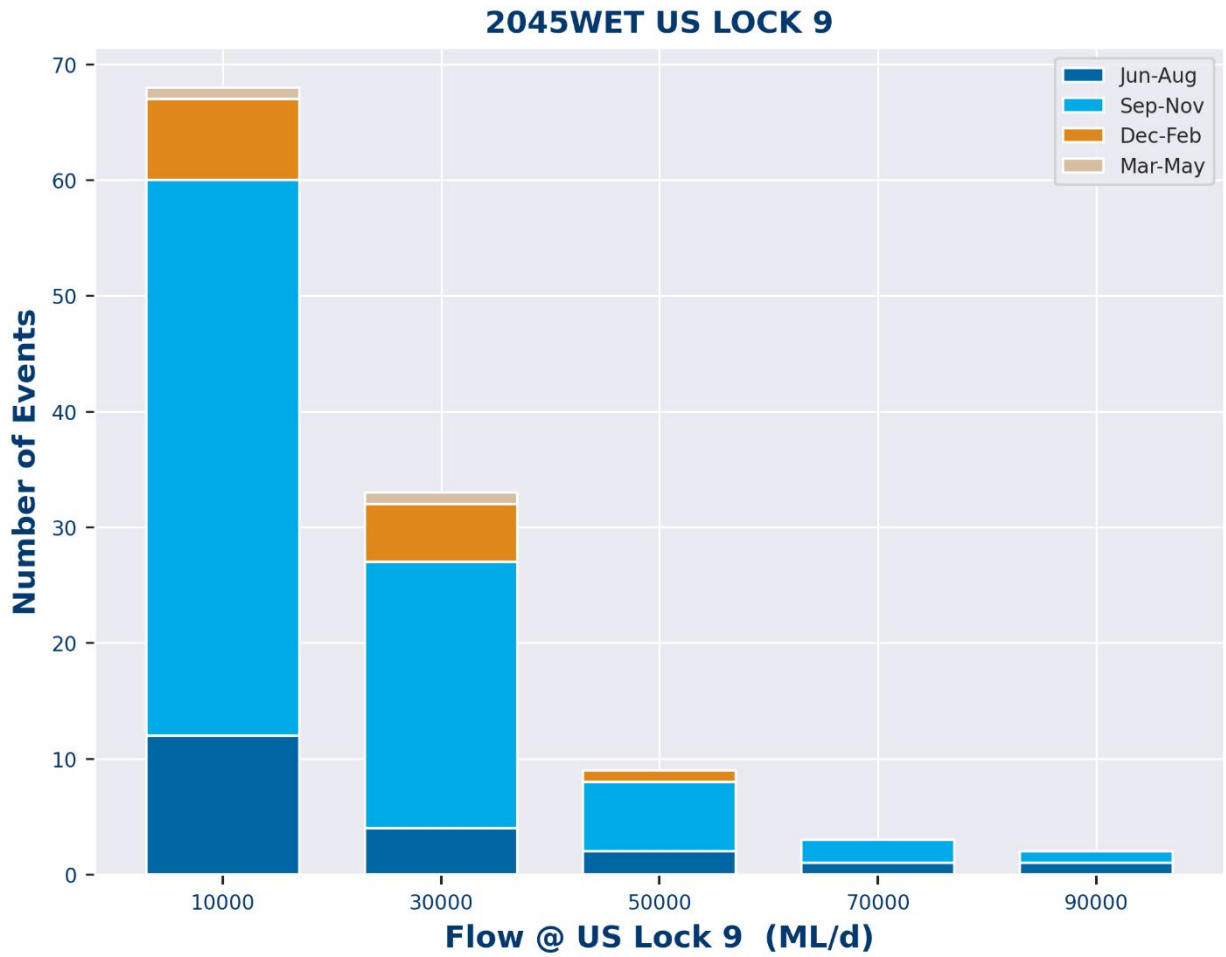

Figure 69: Wallpolla Island 2045 wet climate – seasonality (min 120 day duration)

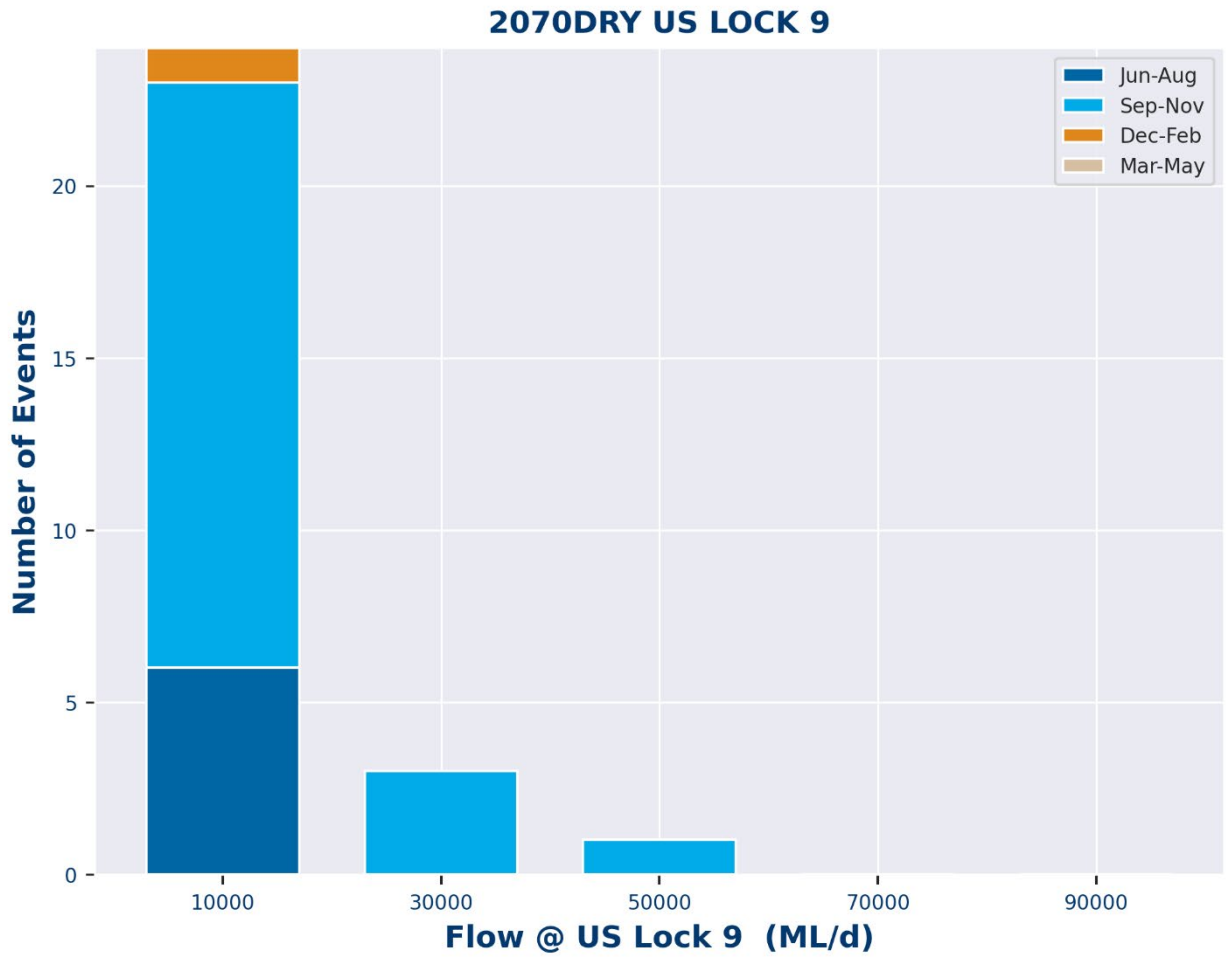

Figure 70: Wallpolla Island 2070 dry climate – seasonality (min 120 day duration)

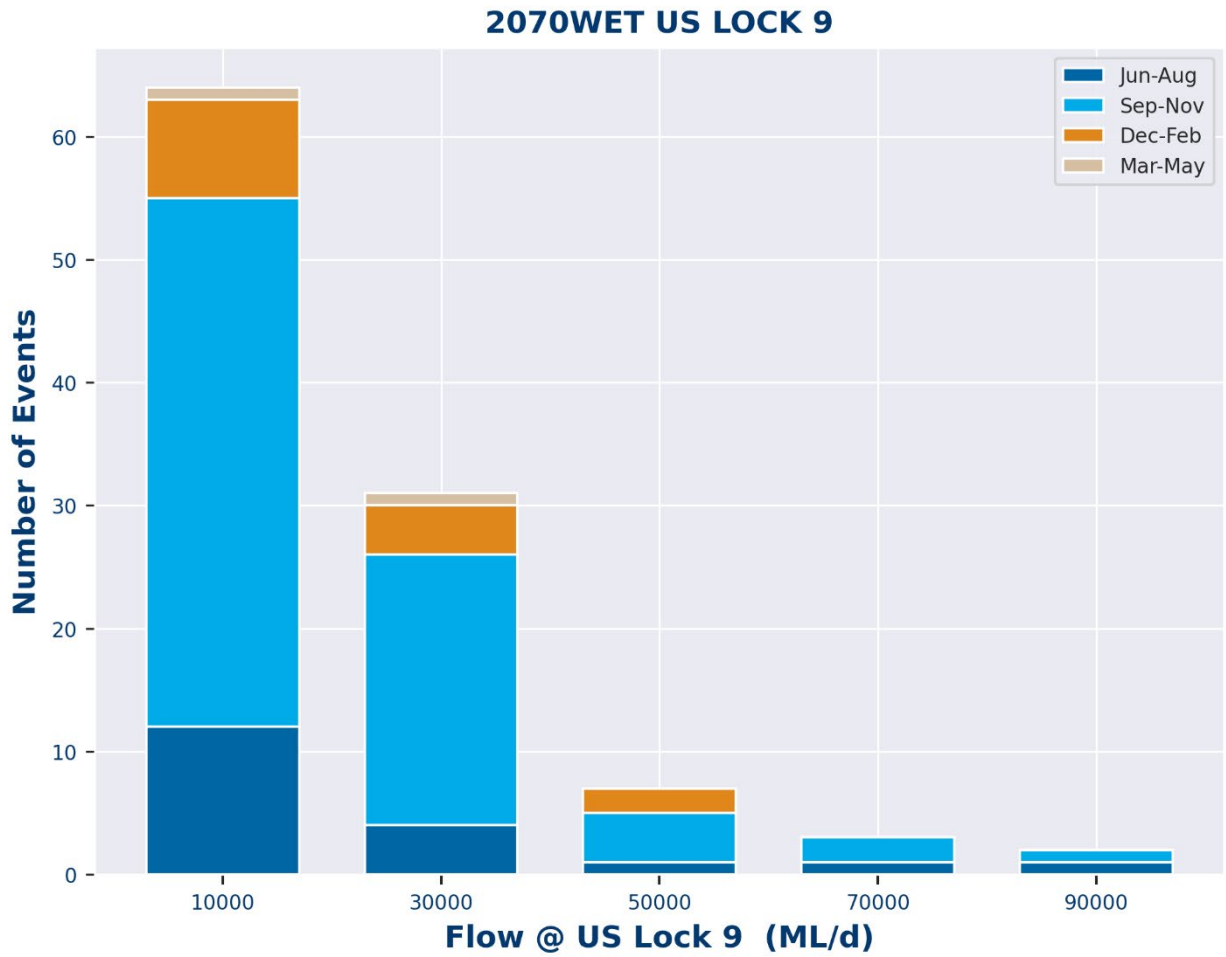

Figure 71: Wallpolla Island 2070 wet climate – seasonality (min 120 day duration)

Table 30: Wallpolla Island – event duration and spells results

Flow (ML/d)	No Event	%years	Med Duration (day)	90 %-ile Dry Period (day)	Model run	Min Duration (day)
10000	100	84	167	497.6	Basin Plan	60
12000	97	82	158	554	Basin Plan	60
14000	90	75	149.5	604.6	Basin Plan	60
16000	86	74	143	636	Basin Plan	60
18000	81	70	136	703.2	Basin Plan	60
20000	79	69	140	766.7	Basin Plan	60
22000	68	60	139.5	937.6	Basin Plan	60
24000	65	56	128	957.3	Basin Plan	60
26000	61	54	125	1009.8	Basin Plan	60
28000	58	51	123.5	978.2	Basin Plan	60
30000	54	47	121.5	984	Basin Plan	60
32000	48	41	122	1488	Basin Plan	60
34000	46	39	117.5	1570.6	Basin Plan	60
36000	45	37	113	1614.2	Basin Plan	60
38000	42	36	116.5	1734	Basin Plan	60
40000	33	28	121	2342.4	Basin Plan	60
42000	32	27	112.5	2377	Basin Plan	60
44000	30	25	107.5	2929	Basin Plan	60
46000	27	23	101	2983	Basin Plan	60
48000	25	21	94	3226.5	Basin Plan	60
50000	23	20	84	3514.3	Basin Plan	60
52000	17	15	92	4845	Basin Plan	60
54000	15	12	91	5426.4	Basin Plan	60
56000	14	11	87.5	5806.4	Basin Plan	60
58000	14	11	84.5	5809.4	Basin Plan	60

Flow (ML/d)	No Event	%years	Med Duration (day)	90 %-ile Dry Period (day)	Model run	Min Duration (day)
60000	10	9	117	6392.8	Basin Plan	60
62000	9	8	115	6539.2	Basin Plan	60
64000	9	8	113	6541.2	Basin Plan	60
66000	8	7	119.5	6887.4	Basin Plan	60
68000	8	7	117.5	6888.8	Basin Plan	60
70000	8	7	116	6889.8	Basin Plan	60
72000	7	6	121	7003.5	Basin Plan	60
74000	7	6	119	7004.5	Basin Plan	60
76000	7	6	116	7007	Basin Plan	60
78000	7	6	105	7033	Basin Plan	60
80000	6	5	112	7806	Basin Plan	60
82000	5	4	119	8213.4	Basin Plan	60
84000	5	4	119	8214.8	Basin Plan	60
86000	5	4	117	8215.4	Basin Plan	60
88000	5	4	116	8216.4	Basin Plan	60
90000	4	4	121	8496.6	Basin Plan	60
10000	87	74	162	602.5	Current	60
12000	80	68	152.5	703	Current	60
14000	76	66	150.5	796	Current	60
16000	71	62	146	889.9	Current	60
18000	67	59	144	923	Current	60
20000	61	54	143	951.6	Current	60
22000	58	50	139	1090.8	Current	60
24000	53	46	135	1299.5	Current	60
26000	54	46	123	1266	Current	60

Flow (ML/d)	No Event	%years	Med Duration (day)	90 %-ile Dry Period (day)	Model run	Min Duration (day)
28000	50	43	121.5	1694.4	Current	60
30000	46	39	119.5	1772	Current	60
32000	43	37	117	2000.4	Current	60
34000	40	34	114	2105	Current	60
36000	36	31	115	2110.8	Current	60
38000	34	29	117	2096.6	Current	60
40000	32	26	111	2345	Current	60
42000	32	25	96.5	2346	Current	60
44000	26	22	92	3094.2	Current	60
46000	24	20	89	3565.2	Current	60
48000	21	18	87	3692.8	Current	60
50000	19	17	84	3912.7	Current	60
52000	18	15	82	4590.8	Current	60
54000	17	14	80	4845	Current	60
56000	14	11	87	5808.2	Current	60
58000	11	9	115	6247.7	Current	60
60000	8	7	122	6887.2	Current	60
62000	8	7	120.5	6888.6	Current	60
64000	8	7	118	6890.2	Current	60
66000	8	7	116.5	6891.6	Current	60
68000	8	7	114.5	6893	Current	60
70000	8	7	112.5	6894.4	Current	60
72000	7	6	116	7009	Current	60
74000	7	6	113	7010.5	Current	60
76000	7	6	109	7013	Current	60

Flow (ML/d)	No Event	%years	Med Duration (day)	90 %-ile Dry Period (day)	Model run	Min Duration (day)
78000	6	5	112.5	7128.4	Current	60
80000	5	4	118	8215.8	Current	60
82000	5	4	117	8216.8	Current	60
84000	5	4	117	8217.5	Current	60
86000	5	4	115	8219.2	Current	60
88000	5	4	114	8220.2	Current	60
90000	5	4	114	8241.9	Current	60
10000	100	82	166	508.2	2045 Wet	60
12000	93	79	155	578.4	2045 Wet	60
14000	91	75	149	592.5	2045 Wet	60
16000	86	73	147	643.6	2045 Wet	60
18000	85	72	137	687.9	2045 Wet	60
20000	78	68	134.5	924.2	2045 Wet	60
22000	70	61	136	935	2045 Wet	60
24000	67	59	134	952	2045 Wet	60
26000	60	53	136	974.4	2045 Wet	60
28000	59	51	137	970.9	2045 Wet	60
30000	51	45	141	1375.3	2045 Wet	60
32000	47	41	136	1532	2045 Wet	60
34000	47	41	117	1539	2045 Wet	60
36000	45	39	119	1708.1	2045 Wet	60
38000	43	37	113	2056.4	2045 Wet	60
40000	38	32	115.5	1838.2	2045 Wet	60
42000	36	31	115	1933.4	2045 Wet	60
44000	32	27	109	2846	2045 Wet	60

Flow (ML/d)	No Event	%years	Med Duration (day)	90 %-ile Dry Period (day)	Model run	Min Duration (day)
46000	32	27	100.5	2854	2045 Wet	60
48000	31	26	94	2923.5	2045 Wet	60
50000	29	25	90	3285	2045 Wet	60
52000	25	22	92	3563.5	2045 Wet	60
54000	24	21	91.5	3573.8	2045 Wet	60
56000	20	17	98	4034.8	2045 Wet	60
58000	17	14	96	4807.5	2045 Wet	60
60000	17	14	92	4811.5	2045 Wet	60
62000	15	12	93	5748	2045 Wet	60
64000	15	12	91	5749.3	2045 Wet	60
66000	13	11	91	5983.9	2045 Wet	60
68000	12	11	97	6101	2045 Wet	60
70000	12	11	96	6102	2045 Wet	60
72000	12	11	94	6104	2045 Wet	60
74000	11	10	102	6556.5	2045 Wet	60
76000	10	9	100	6672.4	2045 Wet	60
78000	10	9	97	6673.8	2045 Wet	60
80000	9	8	97	6791.8	2045 Wet	60
82000	7	6	95	7585.5	2045 Wet	60
84000	7	6	93	7587	2045 Wet	60
86000	7	6	93	7589.5	2045 Wet	60
88000	6	5	105	7819.4	2045 Wet	60
90000	6	5	103.5	7832	2045 Wet	60
10000	91	76	136	600.3	2045 Med	60
12000	84	72	131.5	645.6	2045 Med	60

Flow (ML/d)	No Event	%years	Med Duration (day)	90 %-ile Dry Period (day)	Model run	Min Duration (day)
14000	77	67	130	926.5	2045 Med	60
16000	75	64	123	960.3	2045 Med	60
18000	68	59	124	975.4	2045 Med	60
20000	62	54	124	965	2045 Med	60
22000	56	49	124	1196.8	2045 Med	60
24000	55	47	118	1237.9	2045 Med	60
26000	51	44	115	1347.5	2045 Med	60
28000	43	37	111	1320	2045 Med	60
30000	38	32	114.5	1672	2045 Med	60
32000	33	28	112	2825.9	2045 Med	60
34000	28	24	102.5	3324.6	2045 Med	60
36000	26	23	100	3395.2	2045 Med	60
38000	23	20	96	3575.9	2045 Med	60
40000	23	20	92	3581.7	2045 Med	60
42000	20	18	88	4049.6	2045 Med	60
44000	16	14	87	5078	2045 Med	60
46000	13	11	83	5848.2	2045 Med	60
48000	12	11	82.5	6107	2045 Med	60
50000	12	11	78.5	6109	2045 Med	60
52000	11	10	73	6262.3	2045 Med	60
54000	9	8	74	8071.3	2045 Med	60
56000	7	6	88	10112.5	2045 Med	60
58000	7	6	85	10115.5	2045 Med	60
60000	6	5	96	10862	2045 Med	60
62000	5	4	109	11763.8	2045 Med	60

Flow (ML/d)	No Event	%years	Med Duration (day)	90 %-ile Dry Period (day)	Model run	Min Duration (day)
64000	5	4	107	11765.5	2045 Med	60
66000	4	4	116	12517.4	2045 Med	60
68000	4	4	113.5	12519.2	2045 Med	60
70000	4	4	110	12522.2	2045 Med	60
72000	4	4	107	12524.2	2045 Med	60
74000	4	4	102.5	12527.6	2045 Med	60
76000	4	4	99.5	12530.2	2045 Med	60
78000	3	3	90	13289.6	2045 Med	60
80000	3	3	84	13291.8	2045 Med	60
82000	3	3	82	13294.8	2045 Med	60
84000	3	3	81	13307.7	2045 Med	60
86000	2	2	129	14068	2045 Med	60
88000	2	2	127	14070	2045 Med	60
90000	2	2	125	14072	2045 Med	60
10000	79	66	123	845.6	2045 Dry	60
12000	73	60	121	949.8	2045 Dry	60
14000	59	51	115	996.3	2045 Dry	60
16000	54	47	108	1016.8	2045 Dry	60
18000	51	45	105	1425.7	2045 Dry	60
20000	47	41	104	1550	2045 Dry	60
22000	43	38	103	1675.3	2045 Dry	60
24000	37	32	102	2115.5	2045 Dry	60
26000	33	28	97	2837.3	2045 Dry	60
28000	26	23	92.5	3063	2045 Dry	60
30000	20	17	88.5	3653.6	2045 Dry	60

Flow (ML/d)	No Event	%years	Med Duration (day)	90 %-ile Dry Period (day)	Model run	Min Duration (day)
32000	19	16	82	3651.1	2045 Dry	60
34000	14	12	84	5589.8	2045 Dry	60
36000	10	9	85.5	6871	2045 Dry	60
38000	10	9	76	6877.8	2045 Dry	60
40000	10	9	73	6881.2	2045 Dry	60
42000	7	6	72	7590.5	2045 Dry	60
44000	6	5	93	7973.6	2045 Dry	60
46000	4	4	117	12513.6	2045 Dry	60
48000	3	3	113	13283.7	2045 Dry	60
50000	3	3	107	13287.6	2045 Dry	60
52000	3	3	102	13293.6	2045 Dry	60
54000	3	3	97	13303	2045 Dry	60
56000	3	3	92	13308	2045 Dry	60
58000	3	3	83	13313.7	2045 Dry	60
60000	3	3	80	13317	2045 Dry	60
62000	2	2	119.5	14078	2045 Dry	60
64000	2	2	114	14082	2045 Dry	60
66000	1	1	154		2045 Dry	60
68000	1	1	150		2045 Dry	60
70000	1	1	147		2045 Dry	60
72000	1	1	141		2045 Dry	60
74000	1	1	136		2045 Dry	60
76000	1	1	130		2045 Dry	60
78000	1	1	123		2045 Dry	60
80000	1	1	122		2045 Dry	60

Flow (ML/d)	No Event	%years	Med Duration (day)	90 %-ile Dry Period (day)	Model run	Min Duration (day)
82000	1	1	118		2045 Dry	60
84000	1	1	115		2045 Dry	60
86000	1	1	111		2045 Dry	60
88000	1	1	107		2045 Dry	60
90000	1	1	104		2045 Dry	60
10000	100	81	154.5	534.6	2070 Wet	60
12000	97	78	150	579.5	2070 Wet	60
14000	91	74	145	641.8	2070 Wet	60
16000	87	72	141	652	2070 Wet	60
18000	86	71	135	681.8	2070 Wet	60
20000	77	66	137	926	2070 Wet	60
22000	70	60	130.5	929.4	2070 Wet	60
24000	64	56	135.5	935.2	2070 Wet	60
26000	58	51	137.5	985.8	2070 Wet	60
28000	53	46	140	1019.8	2070 Wet	60
30000	47	40	138	1532.5	2070 Wet	60
32000	47	40	132	1534	2070 Wet	60
34000	47	40	119	1535	2070 Wet	60
36000	46	39	112.5	1694.8	2070 Wet	60
38000	41	35	110	2108	2070 Wet	60
40000	38	32	106.5	1855	2070 Wet	60
42000	35	30	106	2634.6	2070 Wet	60
44000	33	28	102	2811.1	2070 Wet	60
46000	31	26	101	2453.3	2070 Wet	60
48000	29	25	94	2690.6	2070 Wet	60

Flow (ML/d)	No Event	%years	Med Duration (day)	90 %-ile Dry Period (day)	Model run	Min Duration (day)
50000	28	24	83.5	3319.6	2070 Wet	60
52000	25	21	82	3568.2	2070 Wet	60
54000	21	18	96	3774.8	2070 Wet	60
56000	18	15	100.5	4548.6	2070 Wet	60
58000	18	15	96.5	4554.6	2070 Wet	60
60000	17	14	94	5515	2070 Wet	60
62000	15	12	94	5749.4	2070 Wet	60
64000	13	11	92	5984.6	2070 Wet	60
66000	13	11	89	5986.7	2070 Wet	60
68000	12	10	87.5	6105	2070 Wet	60
70000	11	9	86	6454.5	2070 Wet	60
72000	10	8	89.5	6584	2070 Wet	60
74000	10	8	88	6584.6	2070 Wet	60
76000	9	8	93	6792.8	2070 Wet	60
78000	8	7	95	6911.8	2070 Wet	60
80000	7	6	91	7597	2070 Wet	60
82000	7	6	90	7598.5	2070 Wet	60
84000	7	6	89	7600.5	2070 Wet	60
86000	7	6	87	7603	2070 Wet	60
88000	6	5	93	7983.2	2070 Wet	60
90000	5	4	116	11755.3	2070 Wet	60
10000	92	75	133.5	593	2070 Med	60
12000	81	67	130	924.3	2070 Med	60
14000	78	66	126	931	2070 Med	60
16000	73	61	122	955.4	2070 Med	60

Flow (ML/d)	No Event	%years	Med Duration (day)	90 %-ile Dry Period (day)	Model run	Min Duration (day)
18000	67	56	121	978.5	2070 Med	60
20000	59	51	120	1001.6	2070 Med	60
22000	54	46	125.5	1269.4	2070 Med	60
24000	47	40	121	1520	2070 Med	60
26000	44	38	120	1936.6	2070 Med	60
28000	42	36	109	2107	2070 Med	60
30000	38	32	103	2118.6	2070 Med	60
32000	31	26	101	2873.9	2070 Med	60
34000	29	25	96	2957.4	2070 Med	60
36000	24	21	92	3569.2	2070 Med	60
38000	21	18	87	3837.1	2070 Med	60
40000	18	16	91	4554.6	2070 Med	60
42000	14	12	88	5588.2	2070 Med	60
44000	13	11	83	5847.8	2070 Med	60
46000	12	11	82.5	6108	2070 Med	60
48000	12	11	74.5	6109	2070 Med	60
50000	10	9	69.5	6678.8	2070 Med	60
52000	8	7	69	6917.6	2070 Med	60
54000	6	5	91.5	10995.2	2070 Med	60
56000	6	5	87.5	10998.8	2070 Med	60
58000	4	4	135	12596.8	2070 Med	60
60000	4	4	120	12598.8	2070 Med	60
62000	3	3	126	13277.3	2070 Med	60
64000	3	3	121	13280.2	2070 Med	60
66000	3	3	118	13282.1	2070 Med	60

Flow (ML/d)	No Event	%years	Med Duration (day)	90 %-ile Dry Period (day)	Model run	Min Duration (day)
68000	3	3	114	13285.1	2070 Med	60
70000	3	3	111	13288	2070 Med	60
72000	3	3	108	13290.7	2070 Med	60
74000	3	3	87	13294.1	2070 Med	60
76000	2	2	139	14052	2070 Med	60
78000	2	2	133	14062	2070 Med	60
80000	2	2	126.5	14070	2070 Med	60
82000	2	2	124	14072	2070 Med	60
84000	2	2	122	14074	2070 Med	60
86000	2	2	120	14075	2070 Med	60
88000	2	2	118	14077	2070 Med	60
90000	2	2	116.5	14077	2070 Med	60
10000	53	46	113	973.6	2070 Dry	60
12000	45	39	113	1492.8	2070 Dry	60
14000	42	35	117	1686	2070 Dry	60
16000	40	34	96.5	1773.8	2070 Dry	60
18000	32	27	98	3520	2070 Dry	60
20000	27	24	95	3549.5	2070 Dry	60
22000	23	20	87	3573.4	2070 Dry	60
24000	14	11	91	4882.4	2070 Dry	60
26000	11	9	94	5096.4	2070 Dry	60
28000	9	8	92	6808.7	2070 Dry	60
30000	8	7	80.5	7361.2	2070 Dry	60
32000	7	6	83	7723	2070 Dry	60
34000	4	4	137.5	8489.8	2070 Dry	60

Flow (ML/d)	No Event	%years	Med Duration (day)	90 %-ile Dry Period (day)	Model run	Min Duration (day)
36000	4	4	134	8494.8	2070 Dry	60
38000	4	4	130	8501	2070 Dry	60
40000	3	3	128	13291.5	2070 Dry	60
42000	2	2	125.5	14046	2070 Dry	60
44000	2	2	120	14050	2070 Dry	60
46000	2	2	115	14053	2070 Dry	60
48000	1	1	154		2070 Dry	60
50000	1	1	134		2070 Dry	60
52000	1	1	125		2070 Dry	60
54000	1	1	118		2070 Dry	60
56000	1	1	112		2070 Dry	60
58000	1	1	106		2070 Dry	60
60000	1	1	95		2070 Dry	60
62000	1	1	88		2070 Dry	60
64000	1	1	79		2070 Dry	60
66000	1	1	72		2070 Dry	60
68000	1	1	67		2070 Dry	60
70000	1	1	62		2070 Dry	60
72000	0	0			2070 Dry	60
74000	0	0			2070 Dry	60
76000	0	0			2070 Dry	60
78000	0	0			2070 Dry	60
80000	0	0			2070 Dry	60
82000	0	0			2070 Dry	60
84000	0	0			2070 Dry	60

Flow (ML/d)	No Event	%years	Med Duration (day)	90 %-ile Dry Period (day)	Model run	Min Duration (day)
86000	0	0			2070 Dry	60
88000	0	0			2070 Dry	60
90000	0	0			2070 Dry	60
10000	99	80	266	178.6	WoD	60
12000	101	85	255	192.3	WoD	60
14000	98	85	235	218.2	WoD	60
16000	100	86	218	220.8	WoD	60
18000	103	88	205	235.7	WoD	60
20000	101	86	204	259.9	WoD	60
22000	101	87	197	258.8	WoD	60
24000	101	87	195	300.7	WoD	60
26000	100	87	189.5	328.4	WoD	60
28000	97	84	183	502	WoD	60
30000	96	82	178	521.6	WoD	60
32000	91	79	173	595.7	WoD	60
34000	89	77	164	609.9	WoD	60
36000	87	76	159	615.5	WoD	60
38000	83	73	149	619.8	WoD	60
40000	76	66	141	639.2	WoD	60
42000	70	61	139.5	700.6	WoD	60
44000	67	58	139	942.5	WoD	60
46000	63	54	134	938.1	WoD	60
48000	61	52	129	1004.9	WoD	60
50000	53	46	129	996.5	WoD	60
52000	51	44	125	1327.4	WoD	60

Flow (ML/d)	No Event	%years	Med Duration (day)	90 %-ile Dry Period (day)	Model run	Min Duration (day)
54000	50	43	120	1334.4	WoD	60
56000	46	39	119	1679.8	WoD	60
58000	45	39	112	1739.5	WoD	60
60000	42	36	107.5	1781	WoD	60
62000	38	33	105.5	2105.4	WoD	60
64000	36	32	101.5	2107.6	WoD	60
66000	32	28	98.5	2821	WoD	60
68000	30	26	95.5	2865.4	WoD	60
70000	27	24	93	2884	WoD	60
72000	21	18	108	3499.3	WoD	60
74000	20	18	97.5	3510.4	WoD	60
76000	20	18	96.5	3513.6	WoD	60
78000	19	17	99	3904.7	WoD	60
80000	15	13	96	5331	WoD	60
82000	15	13	93	5332.3	WoD	60
84000	14	12	95.5	5584.4	WoD	60
86000	13	11	98	5835.3	WoD	60
88000	13	11	94	5837.3	WoD	60
90000	13	11	83	5839.3	WoD	60

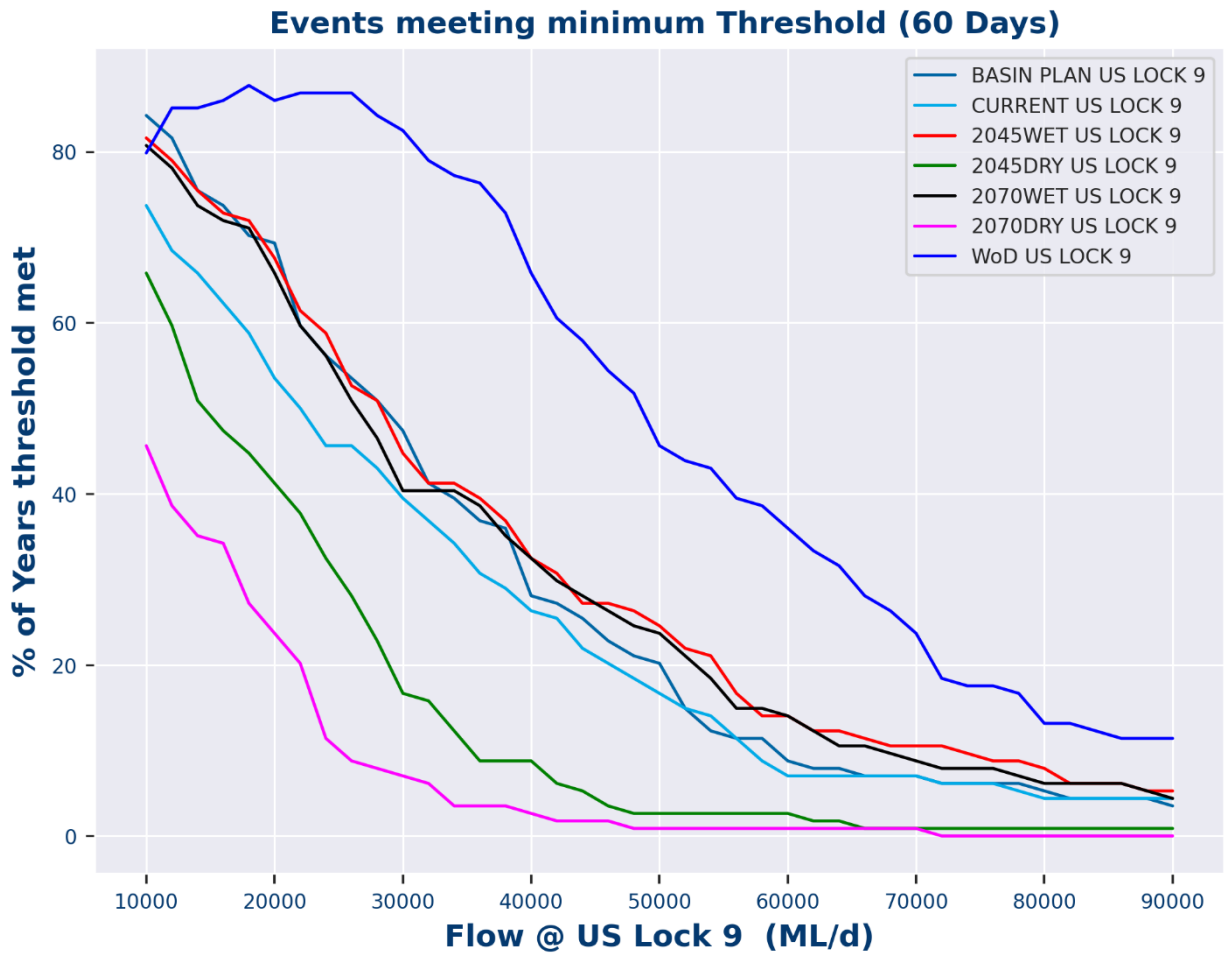

Figure 72: Wallpolla Island – percentage of years with an event

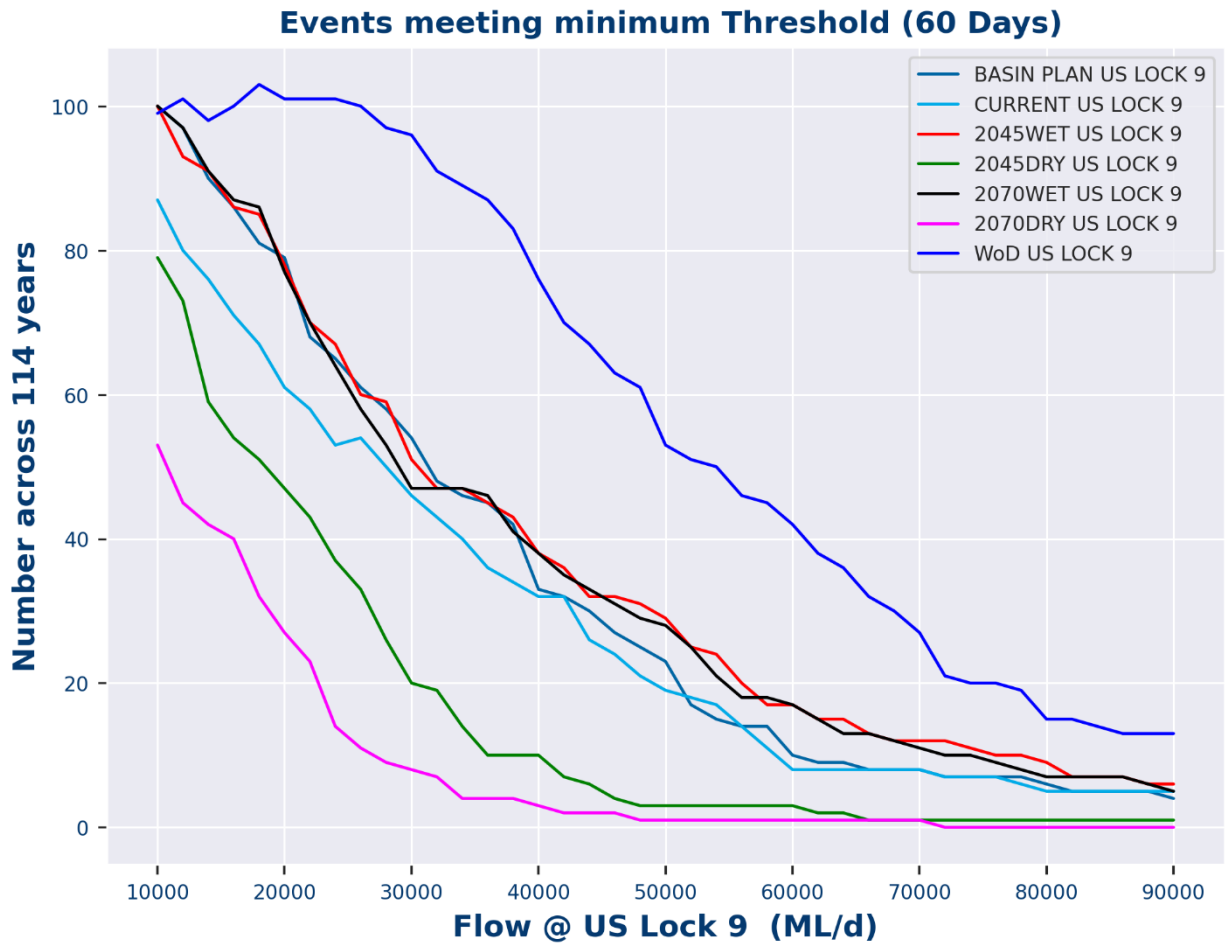

Figure 73: Wallpolla Island – number of events

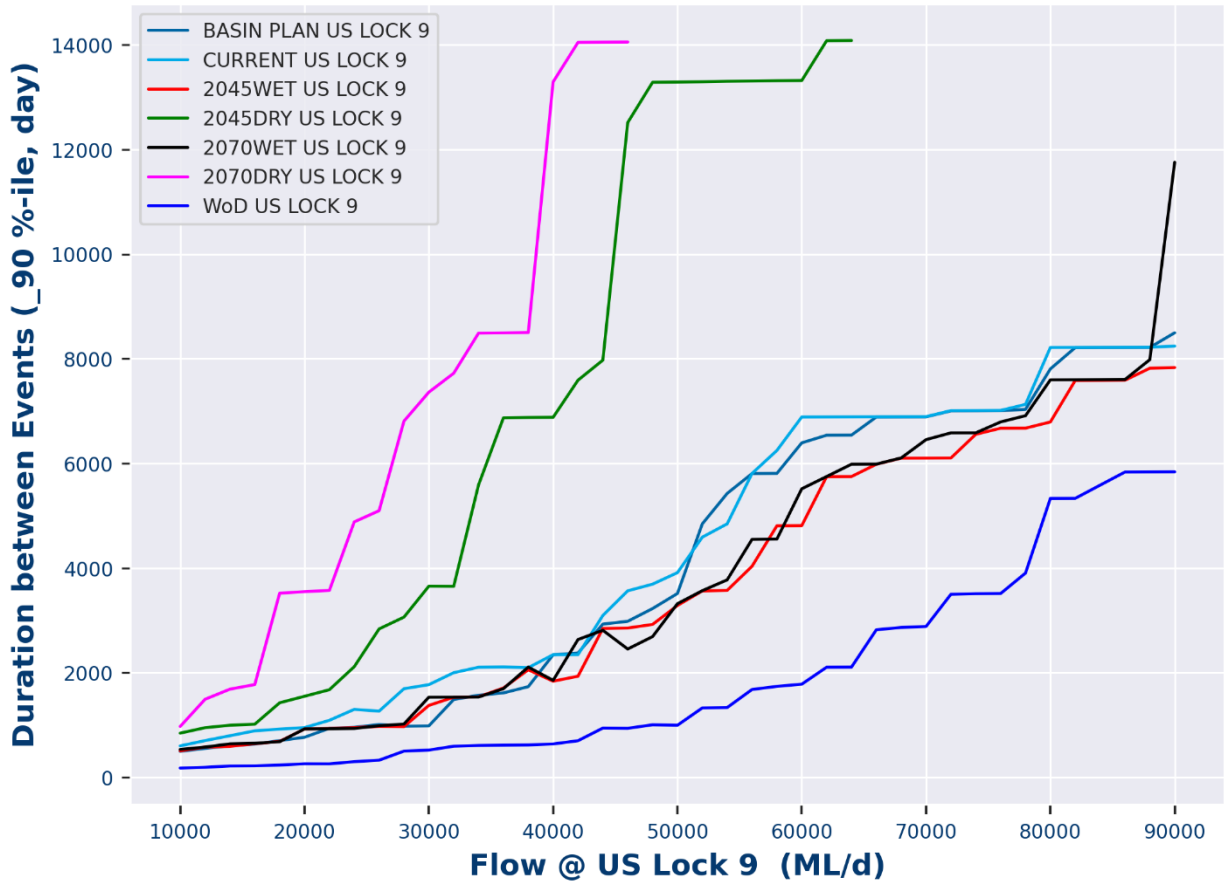

Figure 74: Wallpolla Island – 90th percentile duration between events

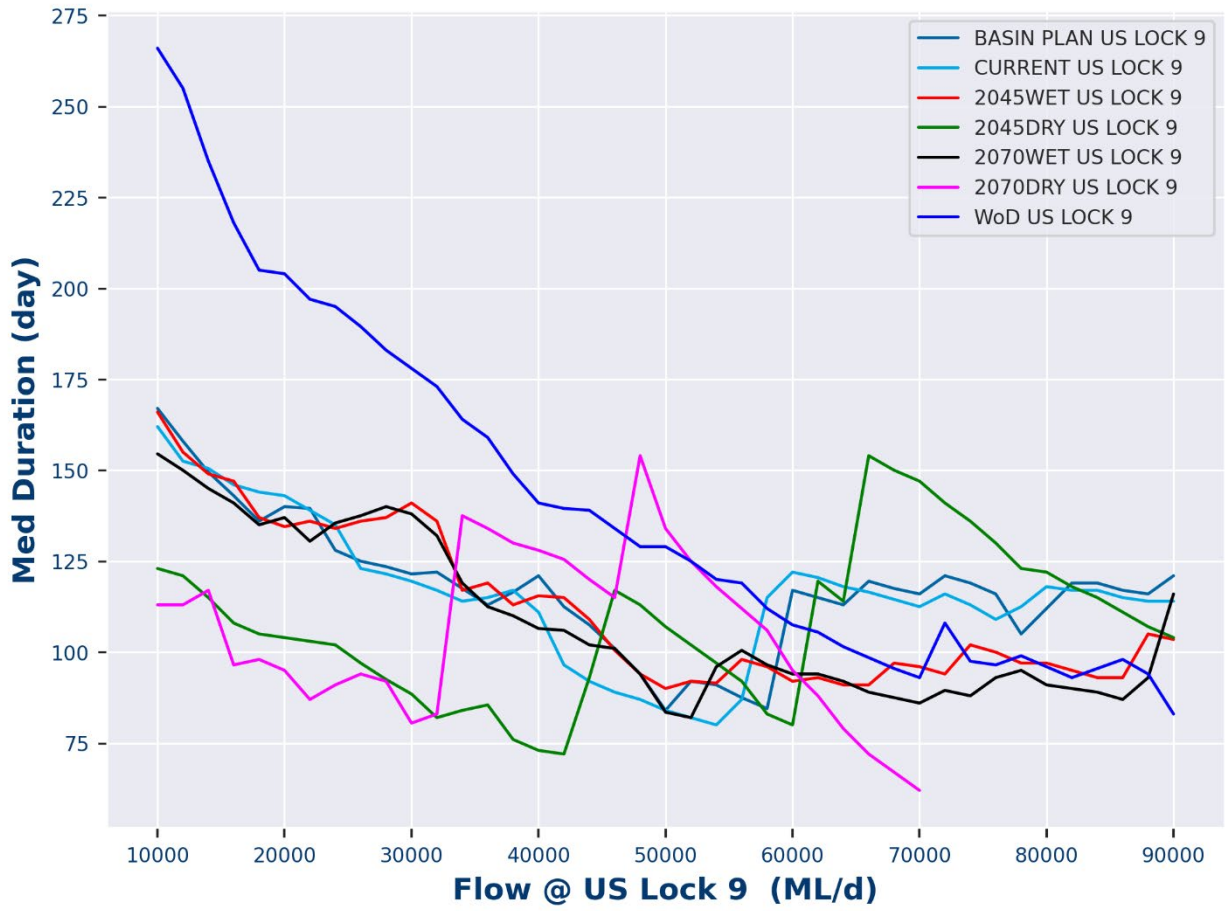

Figure 75: Wallpolla Island – median event duration

Hattah Lakes North

Table 31: Hattah Lakes North – operations results

Percent	Fresh operating strategy opportunities (% years)	Flows equivalent to fresh operating strategy (%years)	Intermediate operating strategy opportunities (% years)	Flows equivalent to intermediate operating strategy (%years)
Basin Plan	55	29	32	29
2070 Dry	44	4	10	4
2070 Wet	53	29	32	29
2045 Dry	43	13	14	13
2045 Wet	54	33	34	33

For Hattah Lakes North, operating strategy opportunities are calculated by asssing the time series of Hattah Lakes TLM works operating in the Source Murry Model.

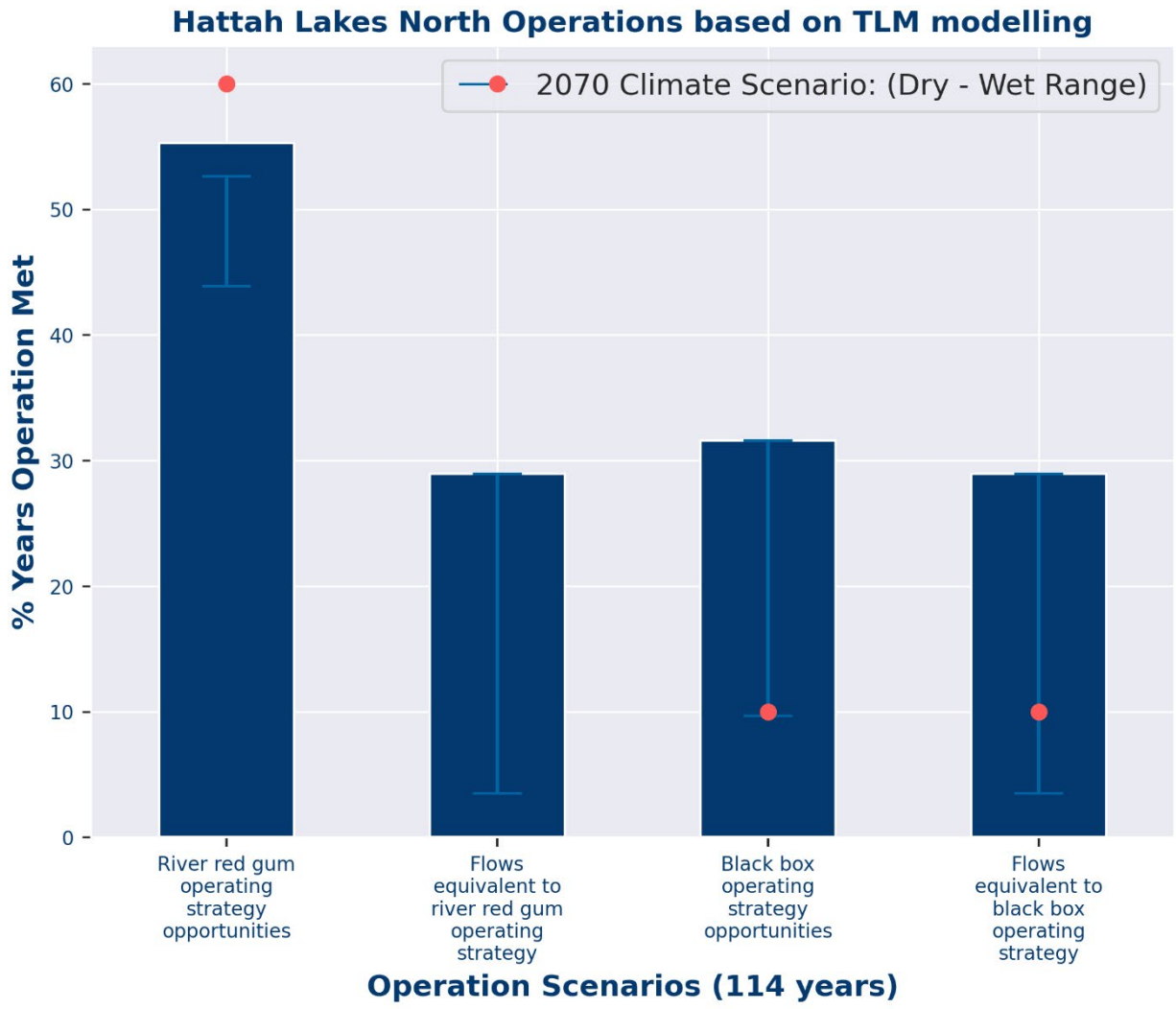

Figure 76: Hattah Lakes North 2070 climate – frequency of events relevant to operating strategies. The cloumns represent results for the Basin Plan scenario and red dots represent optimal frequcies.

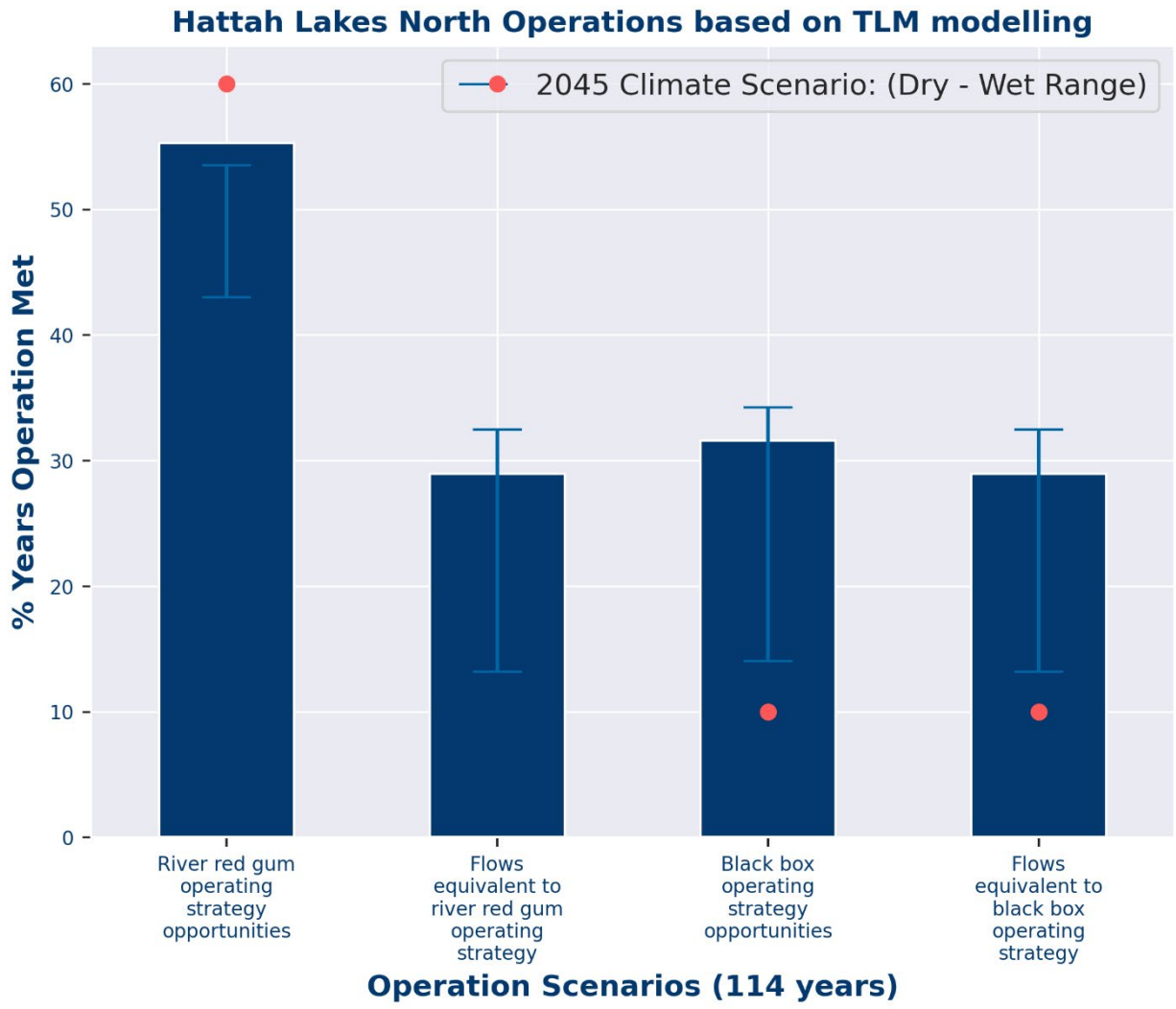

Figure 77: Hattah Lakes North 2045 climate – frequency of events relevant to operating strategies. The cloumns represent results for the Basin Plan scenario and red dots represent optimal frequcies.

Table 32: Hattah Lakes North – seasonality results

Number of Events (min 30 day duration)	June – August (number of events)	September – November (number of events)	December – February (number of events)	March – May (number of events)
Basin Plan >=80000 ML/day	4	11	0	0
Basin Plan >=100000 ML/day	2	9	0	0
Basin Plan >=120000 ML/day	1	7	0	0
Basin Plan >=140000 ML/day	1	2	0	0
Basin Plan >=160000 ML/day	1	1	0	0
2045 Wet >=80000 ML/day	3	14	0	0
2045 Wet >=100000 ML/day	2	9	0	0
2045 Wet >=120000 ML/day	1	6	0	0
2045 Wet >=140000 ML/day	1	4	0	0
2045 Wet >=160000 ML/day	1	3	0	0
2045 Dry >=80000 ML/day	1	1	0	0
2045 Dry >=100000 ML/day	0	0	0	0
2045 Dry >=120000 ML/day	0	0	0	0
2045 Dry >=140000 ML/day	0	0	0	0
2045 Dry >=160000 ML/day	0	0	0	0
2070 Wet >=80000 ML/day	3	11	1	0

Number of Events (min 30 day duration)	June – August (number of events)	September – November (number of events)	December – February (number of events)	March – May (number of events)
2070 Wet >=100000 ML/day	2	8	0	0
2070 Wet >=120000 ML/day	1	6	0	0
2070 Wet >=140000 ML/day	1	3	0	0
2070 Wet >=160000 ML/day	1	1	0	0
2070 Dry >=80000 ML/day	0	0	0	0
2070 Dry >=100000 ML/day	0	0	0	0
2070 Dry >=120000 ML/day	0	0	0	0
2070 Dry >=140000 ML/day	0	0	0	0
2070 Dry >=160000 ML/day	0	0	0	0

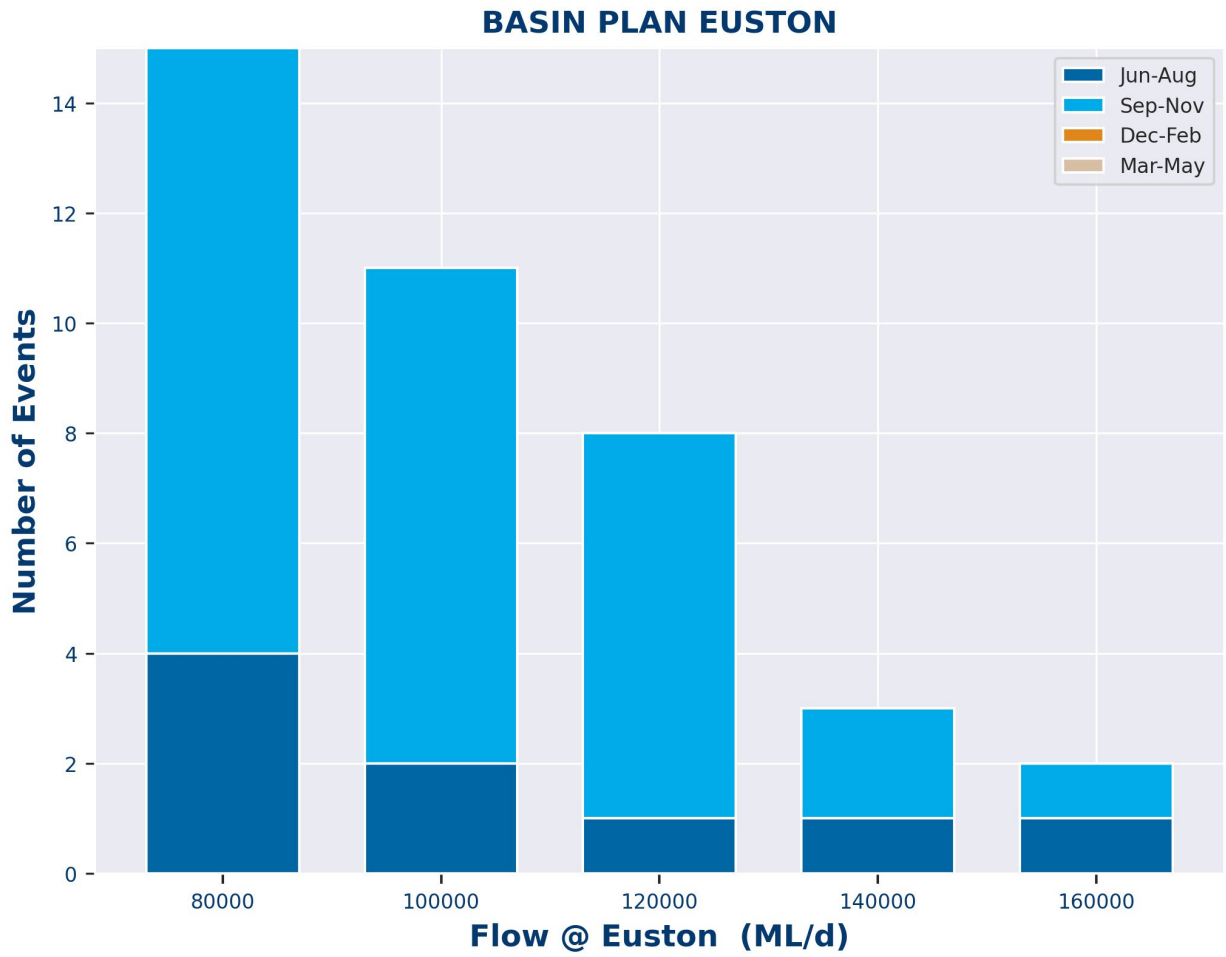

Figure 78: Hattah Lakes North Basin Plan climate – seasonality (min 30 day duration)

Figure 79: Hattah Lakes North 2070 wet climate – seasonality (min 30 day duration)

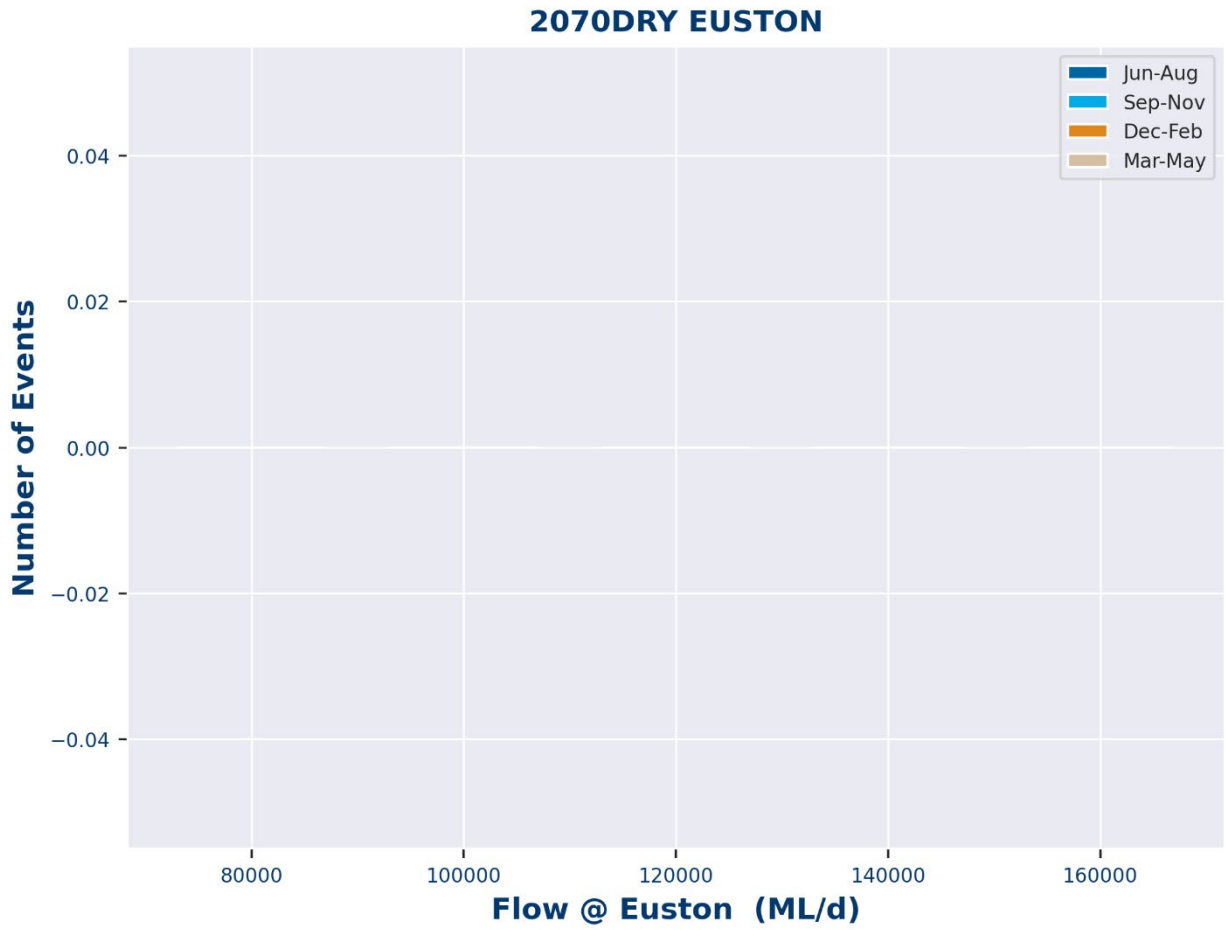

Figure 80: Hattah Lakes North 2070 dry climate – seasonality (min 30 day duration)

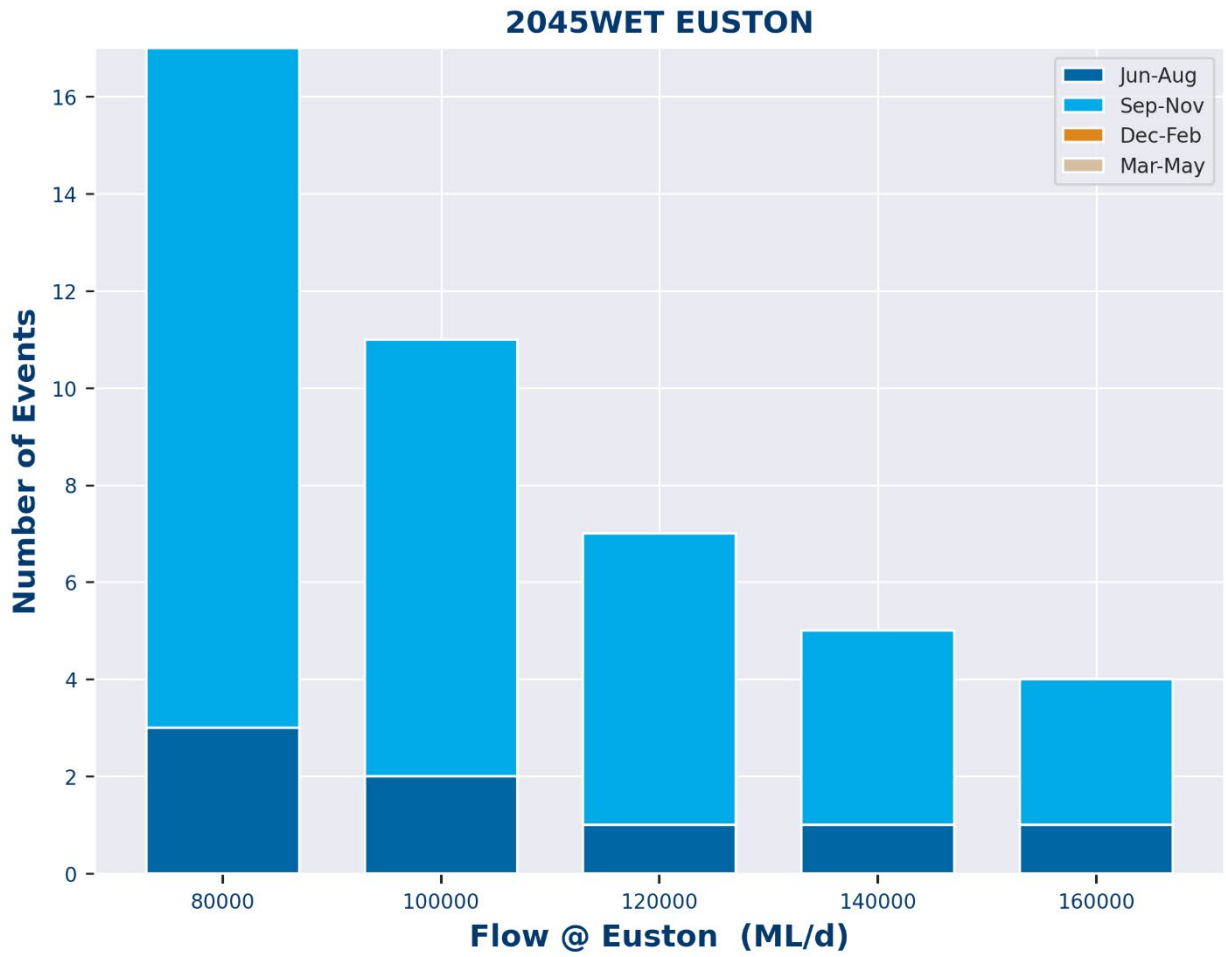

Figure 81: Hattah Lakes North 2045 wet climate – seasonality (min 30 day duration)

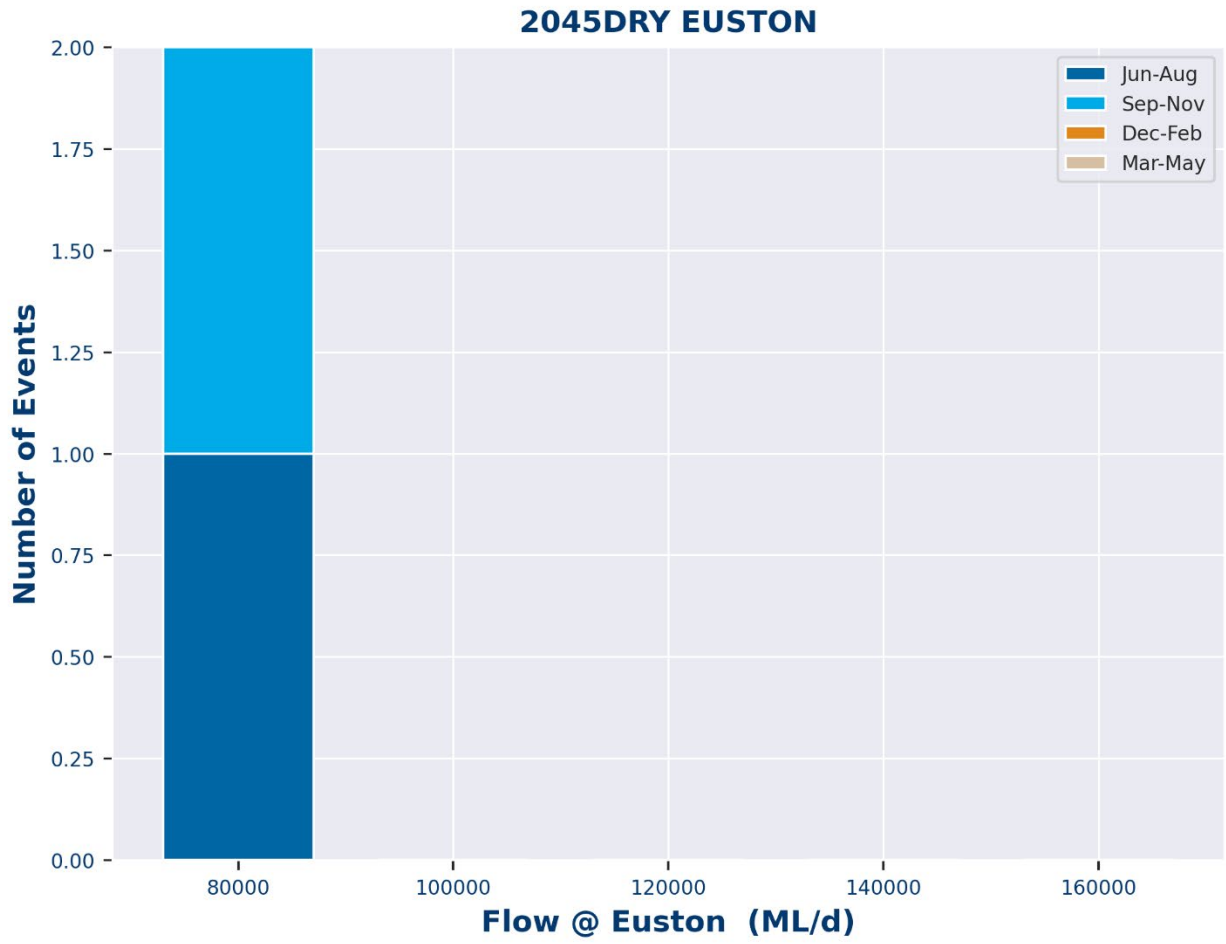

Figure 82: Hattah Lakes North 2045 dry climate – seasonality (min 30 day duration)

Table 33: Hattah Lakes North – event duration and spells results

Flow (ML/d)	No Event	%years	Med Duration (day)	90 %-ile Dry Period (day)	Model run	Min Duration (day)
80000	23	18	47	4594.6	Basin Plan	14
82000	22	17	46	4704	Basin Plan	14
84000	20	15	47.5	4858.4	Basin Plan	14
86000	19	14	49	5111.3	Basin Plan	14
88000	19	13	48	5113.3	Basin Plan	14
90000	19	13	47	5114.3	Basin Plan	14
92000	17	12	46	5217	Basin Plan	14
94000	18	12	43.5	5167	Basin Plan	14
96000	18	12	42.5	5169	Basin Plan	14
98000	18	12	42	5169.4	Basin Plan	14
100000	18	12	41	5170.6	Basin Plan	14
102000	16	12	41.5	5273	Basin Plan	14
104000	17	12	40	5223.5	Basin Plan	14
106000	16	12	39	5288.8	Basin Plan	14
108000	14	11	40	5398	Basin Plan	14
110000	13	11	39	5456.1	Basin Plan	14
112000	13	11	39	5460.6	Basin Plan	14
114000	13	11	38	5463.4	Basin Plan	14
116000	12	10	38.5	6509	Basin Plan	14
118000	11	9	38	6623.6	Basin Plan	14
120000	10	9	37	6751.4	Basin Plan	14
122000	11	9	35	6632.7	Basin Plan	14
124000	11	9	33	6634.6	Basin Plan	14
126000	10	9	30	6757	Basin Plan	14

Flow (ML/d)	No Event	%years	Med Duration (day)	90 %-ile Dry Period (day)	Model run	Min Duration (day)
128000	10	9	29.5	6759	Basin Plan	14
130000	9	7	32	6879.2	Basin Plan	14
132000	9	7	31	6880.2	Basin Plan	14
134000	9	7	26	6881.9	Basin Plan	14
136000	9	7	24	6882.9	Basin Plan	14
138000	9	7	22	6883.9	Basin Plan	14
140000	9	7	21	6885.3	Basin Plan	14
142000	8	7	24.5	7028.8	Basin Plan	14
144000	8	7	23.5	7030.8	Basin Plan	14
146000	8	6	28	7031.4	Basin Plan	14
148000	7	6	27	7148.5	Basin Plan	14
150000	8	6	23.5	7034.6	Basin Plan	14
152000	7	5	25	7150	Basin Plan	14
154000	6	4	24	10266.8	Basin Plan	14
156000	7	4	22	9652.5	Basin Plan	14
158000	6	4	22.5	10269	Basin Plan	14
160000	6	4	21	10270.4	Basin Plan	14
80000	23	18	47	3513.3	Current	14
82000	23	18	46	3515.1	Current	14
84000	22	16	45	3621	Current	14
86000	20	15	45.5	3889.8	Current	14
88000	20	15	44	3890.8	Current	14
90000	21	15	40	3757.9	Current	14
92000	20	14	39	4099.8	Current	14
94000	20	14	36.5	4101	Current	14

Flow (ML/d)	No Event	%years	Med Duration (day)	90 %-ile Dry Period (day)	Model run	Min Duration (day)
96000	19	14	41	4209	Current	14
98000	19	14	41	4211	Current	14
100000	17	12	41	5224.5	Current	14
102000	18	12	39.5	5174	Current	14
104000	17	12	39	5237	Current	14
106000	17	12	38	5239	Current	14
108000	15	11	38	5349	Current	14
110000	12	11	40.5	6498	Current	14
112000	12	11	39.5	6502	Current	14
114000	12	11	38	6505	Current	14
116000	11	10	38	6627.9	Current	14
118000	10	9	37.5	6749.6	Current	14
120000	10	9	36.5	6751.6	Current	14
122000	10	9	34.5	6752.6	Current	14
124000	10	9	34	6754.4	Current	14
126000	10	9	33	6756.2	Current	14
128000	11	9	27	6638.6	Current	14
130000	11	9	30	6640.5	Current	14
132000	10	8	29	6761	Current	14
134000	10	8	27	6761.8	Current	14
136000	10	8	24.5	6762.8	Current	14
138000	10	8	23	6764.8	Current	14
140000	10	8	22	6765.6	Current	14
142000	8	7	24.5	7029.8	Current	14
144000	8	7	23	7030.8	Current	14

Flow (ML/d)	No Event	%years	Med Duration (day)	90 %-ile Dry Period (day)	Model run	Min Duration (day)
146000	8	6	28.5	7032	Current	14
148000	9	6	24	6918.7	Current	14
150000	8	6	21.5	7035.6	Current	14
152000	8	6	20	7036.2	Current	14
154000	8	6	19	7037.8	Current	14
156000	9	6	18	6925.5	Current	14
158000	8	6	16.5	7042.8	Current	14
160000	5	4	20	9227.8	Current	14
80000	29	22	38	2570.9	2045 Wet	14
82000	27	21	38	3379.5	2045 Wet	14
84000	25	20	40	3448.5	2045 Wet	14
86000	24	18	34	3485	2045 Wet	14
88000	22	17	39.5	3551	2045 Wet	14
90000	19	15	42	4023.9	2045 Wet	14
92000	16	13	49	4527.8	2045 Wet	14
94000	16	13	48	4529.4	2045 Wet	14
96000	16	13	46.5	4530.4	2045 Wet	14
98000	14	11	52.5	5911	2045 Wet	14
100000	15	11	47	5795.2	2045 Wet	14
102000	15	11	46	5796.6	2045 Wet	14
104000	16	11	42	5680	2045 Wet	14
106000	15	11	43	6017.7	2045 Wet	14
108000	14	11	45	6169	2045 Wet	14
110000	14	11	42	6170	2045 Wet	14
112000	14	11	38.5	6171.8	2045 Wet	14

Flow (ML/d)	No Event	%years	Med Duration (day)	90 %-ile Dry Period (day)	Model run	Min Duration (day)
114000	13	11	37	6322.8	2045 Wet	14
116000	13	11	35	6323.8	2045 Wet	14
118000	13	11	33	6325.8	2045 Wet	14
120000	12	11	37.5	6494	2045 Wet	14
122000	11	10	43	6620.7	2045 Wet	14
124000	12	10	34	6501	2045 Wet	14
126000	12	10	32.5	6503	2045 Wet	14
128000	11	10	36	6652.9	2045 Wet	14
130000	11	10	25	6654	2045 Wet	14
132000	9	8	41	8395.2	2045 Wet	14
134000	8	7	46.5	9443.2	2045 Wet	14
136000	8	7	45.5	9444.2	2045 Wet	14
138000	9	7	39	8720.3	2045 Wet	14
140000	8	6	43.5	9454.8	2045 Wet	14
142000	7	6	48	10181	2045 Wet	14
144000	7	5	37	10183	2045 Wet	14
146000	6	5	49	10908.8	2045 Wet	14
148000	6	5	49	10910.2	2045 Wet	14
150000	5	4	62	11849.7	2045 Wet	14
152000	5	4	61	11851.7	2045 Wet	14
154000	6	4	38.5	11099	2045 Wet	14
156000	6	4	32.5	11109	2045 Wet	14
158000	6	4	31	11109.4	2045 Wet	14
160000	6	4	30	11111.4	2045 Wet	14
80000	8	7	64	9429.6	2045 Med	14

Flow (ML/d)	No Event	%years	Med Duration (day)	90 %-ile Dry Period (day)	Model run	Min Duration (day)
82000	8	7	63	9432.2	2045 Med	14
84000	8	7	62.5	9446	2045 Med	14
86000	8	7	61	9448.2	2045 Med	14
88000	8	7	60.5	9451.4	2045 Med	14
90000	6	5	72	11063.8	2045 Med	14
92000	6	5	62.5	11072	2045 Med	14
94000	6	5	61.5	11073.8	2045 Med	14
96000	6	5	59.5	11076.6	2045 Med	14
98000	7	5	54	10323	2045 Med	14
100000	7	5	53	10325.5	2045 Med	14
102000	7	5	37	10328	2045 Med	14
104000	7	5	35	10332	2045 Med	14
106000	6	5	42	11101.8	2045 Med	14
108000	5	4	51	11854.7	2045 Med	14
110000	5	4	49	11857.3	2045 Med	14
112000	4	4	58.5	12685	2045 Med	14
114000	4	4	57	12687.4	2045 Med	14
116000	4	4	56.5	12688.2	2045 Med	14
118000	4	4	46.5	12693.6	2045 Med	14
120000	4	4	44	12695	2045 Med	14
122000	4	4	41.5	12697.2	2045 Med	14
124000	4	4	34.5	12698.6	2045 Med	14
126000	4	4	32.5	12700	2045 Med	14
128000	3	3	35	14064.8	2045 Med	14
130000	3	3	34	14065.8	2045 Med	14

Flow (ML/d)	No Event	%years	Med Duration (day)	90 %-ile Dry Period (day)	Model run	Min Duration (day)
132000	3	3	33	14066	2045 Med	14
134000	3	3	30	14068	2045 Med	14
136000	3	3	28	14068.2	2045 Med	14
138000	3	3	24	14070.3	2045 Med	14
140000	3	3	21	14070.7	2045 Med	14
142000	3	3	20	14072.9	2045 Med	14
144000	3	3	20	14073.1	2045 Med	14
146000	2	2	35.5	27706	2045 Med	14
148000	2	2	34.5	27708	2045 Med	14
150000	2	2	22	27708	2045 Med	14
152000	2	2	15.5	27710	2045 Med	14
154000	1	1	15		2045 Med	14
156000	0	0			2045 Med	14
158000	0	0			2045 Med	14
160000	0	0			2045 Med	14
80000	4	4	30.5	12615	2045 Dry	14
82000	3	3	39	13402.7	2045 Dry	14
84000	3	3	37	13406.2	2045 Dry	14
86000	2	2	39	14118	2045 Dry	14
88000	2	2	36	14119	2045 Dry	14
90000	2	2	33	14120	2045 Dry	14
92000	2	2	27.5	14122	2045 Dry	14
94000	2	2	24	14123	2045 Dry	14
96000	2	2	20	14125	2045 Dry	14
98000	2	2	16.5	14126	2045 Dry	14

Flow (ML/d)	No Event	%years	Med Duration (day)	90 %-ile Dry Period (day)	Model run	Min Duration (day)
100000	1	1	15		2045 Dry	14
102000	0	0			2045 Dry	14
104000	0	0			2045 Dry	14
106000	0	0			2045 Dry	14
108000	0	0			2045 Dry	14
110000	0	0			2045 Dry	14
112000	0	0			2045 Dry	14
114000	0	0			2045 Dry	14
116000	0	0			2045 Dry	14
118000	0	0			2045 Dry	14
120000	0	0			2045 Dry	14
122000	0	0			2045 Dry	14
124000	0	0			2045 Dry	14
126000	0	0			2045 Dry	14
128000	0	0			2045 Dry	14
130000	0	0			2045 Dry	14
132000	0	0			2045 Dry	14
134000	0	0			2045 Dry	14
136000	0	0			2045 Dry	14
138000	0	0			2045 Dry	14
140000	0	0			2045 Dry	14
142000	0	0			2045 Dry	14
144000	0	0			2045 Dry	14
146000	0	0			2045 Dry	14
148000	0	0			2045 Dry	14

Flow (ML/d)	No Event	%years	Med Duration (day)	90 %-ile Dry Period (day)	Model run	Min Duration (day)
150000	0	0			2045 Dry	14
152000	0	0			2045 Dry	14
154000	0	0			2045 Dry	14
156000	0	0			2045 Dry	14
158000	0	0			2045 Dry	14
160000	0	0			2045 Dry	14
80000	22	17	47.5	3216	2070 Wet	14
82000	21	16	36	3401.5	2070 Wet	14
84000	19	14	48	3748.9	2070 Wet	14
86000	15	12	60	5782.3	2070 Wet	14
88000	15	11	57	5784.3	2070 Wet	14
90000	15	11	57	5786.7	2070 Wet	14
92000	15	11	55	5789.4	2070 Wet	14
94000	15	11	43	5791.8	2070 Wet	14
96000	15	11	39	5793.5	2070 Wet	14
98000	14	11	46	6164.2	2070 Wet	14
100000	13	11	52	6316	2070 Wet	14
102000	13	11	50	6317.1	2070 Wet	14
104000	13	11	49	6318	2070 Wet	14
106000	13	11	46	6319.9	2070 Wet	14
108000	13	11	45	6320.9	2070 Wet	14
110000	13	11	43	6321.9	2070 Wet	14
112000	12	11	44	6474	2070 Wet	14
114000	12	11	42.5	6475	2070 Wet	14
116000	12	11	41.5	6494	2070 Wet	14

Flow (ML/d)	No Event	%years	Med Duration (day)	90 %-ile Dry Period (day)	Model run	Min Duration (day)
118000	12	11	40	6497	2070 Wet	14
120000	13	10	30	6347.6	2070 Wet	14
122000	13	10	25	6349.7	2070 Wet	14
124000	12	10	26.5	6539	2070 Wet	14
126000	11	10	33	6666.7	2070 Wet	14
128000	9	8	31	8416.6	2070 Wet	14
130000	7	6	47	10324	2070 Wet	14
132000	6	5	54	11081.8	2070 Wet	14
134000	6	5	52	11084	2070 Wet	14
136000	6	5	51	11087.8	2070 Wet	14
138000	6	5	47.5	11090.8	2070 Wet	14
140000	6	5	45.5	11092.8	2070 Wet	14
142000	6	5	43.5	11094	2070 Wet	14
144000	6	5	33.5	11103.2	2070 Wet	14
146000	6	5	31	11105.4	2070 Wet	14
148000	6	5	30	11108.6	2070 Wet	14
150000	6	5	28.5	11110.4	2070 Wet	14
152000	5	4	33	11863.4	2070 Wet	14
154000	4	4	37	12619	2070 Wet	14
156000	4	4	35.5	12621	2070 Wet	14
158000	4	4	35	12621.2	2070 Wet	14
160000	3	3	37	13372.1	2070 Wet	14
80000	6	5	67.5	11062.2	2070 Med	14
82000	6	5	62	11068.2	2070 Med	14
84000	6	5	60.5	11070.2	2070 Med	14

Flow (ML/d)	No Event	%years	Med Duration (day)	90 %-ile Dry Period (day)	Model run	Min Duration (day)
86000	7	5	56	10319.5	2070 Med	14
88000	6	5	56.5	11076	2070 Med	14
90000	7	5	35	10324.5	2070 Med	14
92000	7	5	28	10327	2070 Med	14
94000	7	5	26	10330	2070 Med	14
96000	6	4	37.5	11084.8	2070 Med	14
98000	5	4	51	11850.4	2070 Med	14
100000	5	4	50	11852.3	2070 Med	14
102000	4	4	58.5	12678	2070 Med	14
104000	4	4	57.5	12679.6	2070 Med	14
106000	3	3	65	14045.6	2070 Med	14
108000	3	3	61	14048	2070 Med	14
110000	3	3	57	14049.2	2070 Med	14
112000	3	3	53	14051.3	2070 Med	14
114000	3	3	51	14052.4	2070 Med	14
116000	3	3	48	14054.4	2070 Med	14
118000	3	3	47	14055.5	2070 Med	14
120000	3	3	43	14057.6	2070 Med	14
122000	3	3	40	14059.6	2070 Med	14
124000	3	3	39	14060.6	2070 Med	14
126000	3	3	35	14062.8	2070 Med	14
128000	3	3	32	14063.9	2070 Med	14
130000	3	3	29	14065.9	2070 Med	14
132000	3	3	25	14067.2	2070 Med	14
134000	3	3	22	14068.4	2070 Med	14

Flow (ML/d)	No Event	%years	Med Duration (day)	90 %-ile Dry Period (day)	Model run	Min Duration (day)
136000	3	3	19	14070.5	2070 Med	14
138000	3	3	16	14071.7	2070 Med	14
140000	2	2	20	27710	2070 Med	14
142000	1	1	15		2070 Med	14
144000	0	0			2070 Med	14
146000	0	0			2070 Med	14
148000	0	0			2070 Med	14
150000	0	0			2070 Med	14
152000	0	0			2070 Med	14
154000	0	0			2070 Med	14
156000	0	0			2070 Med	14
158000	0	0			2070 Med	14
160000	0	0			2070 Med	14
80000	0	0			2070 Dry	14
82000	0	0			2070 Dry	14
84000	0	0			2070 Dry	14
86000	0	0			2070 Dry	14
88000	0	0			2070 Dry	14
90000	0	0			2070 Dry	14
92000	0	0			2070 Dry	14
94000	0	0			2070 Dry	14
96000	0	0			2070 Dry	14
98000	0	0			2070 Dry	14
100000	0	0			2070 Dry	14
102000	0	0			2070 Dry	14

Flow (ML/d)	No Event	%years	Med Duration (day)	90 %-ile Dry Period (day)	Model run	Min Duration (day)
104000	0	0			2070 Dry	14
106000	0	0			2070 Dry	14
108000	0	0			2070 Dry	14
110000	0	0			2070 Dry	14
112000	0	0			2070 Dry	14
114000	0	0			2070 Dry	14
116000	0	0			2070 Dry	14
118000	0	0			2070 Dry	14
120000	0	0			2070 Dry	14
122000	0	0			2070 Dry	14
124000	0	0			2070 Dry	14
126000	0	0			2070 Dry	14
128000	0	0			2070 Dry	14
130000	0	0			2070 Dry	14
132000	0	0			2070 Dry	14
134000	0	0			2070 Dry	14
136000	0	0			2070 Dry	14
138000	0	0			2070 Dry	14
140000	0	0			2070 Dry	14
142000	0	0			2070 Dry	14
144000	0	0			2070 Dry	14
146000	0	0			2070 Dry	14
148000	0	0			2070 Dry	14
150000	0	0			2070 Dry	14
152000	0	0			2070 Dry	14

Flow (ML/d)	No Event	%years	Med Duration (day)	90 %-ile Dry Period (day)	Model run	Min Duration (day)
154000	0	0			2070 Dry	14
156000	0	0			2070 Dry	14
158000	0	0			2070 Dry	14
160000	0	0			2070 Dry	14
80000	59	39	39	1368.2	WoD	14
82000	58	39	39.5	1381	WoD	14
84000	56	39	39.5	1390	WoD	14
86000	57	37	38	1408	WoD	14
88000	55	35	36	1409.4	WoD	14
90000	53	34	37	1410.9	WoD	14
92000	49	32	36	1567.4	WoD	14
94000	47	32	37	1635.5	WoD	14
96000	48	32	32.5	1682.2	WoD	14
98000	42	30	35	2098	WoD	14
100000	41	29	34	2101.6	WoD	14
102000	38	28	34.5	2128.6	WoD	14
104000	38	28	31.5	2129	WoD	14
106000	33	24	32	2447.5	WoD	14
108000	32	23	32	2484	WoD	14
110000	32	23	30.5	2485	WoD	14
112000	30	23	32	2501.8	WoD	14
114000	30	23	29	2503.8	WoD	14
116000	30	23	27	2504.6	WoD	14
118000	28	21	27	2831.6	WoD	14
120000	27	20	24	3085.5	WoD	14

Flow (ML/d)	No Event	%years	Med Duration (day)	90 %-ile Dry Period (day)	Model run	Min Duration (day)
122000	26	19	24	3115.6	WoD	14
124000	26	19	22.5	3117.2	WoD	14
126000	24	18	21.5	3175.8	WoD	14
128000	21	17	28	3376.7	WoD	14
130000	19	17	32	3661.8	WoD	14
132000	18	15	27.5	4285.4	WoD	14
134000	17	15	28	4347.5	WoD	14
136000	14	12	33	4906.4	WoD	14
138000	14	11	37.5	4907.6	WoD	14
140000	13	11	36	4939.8	WoD	14
142000	11	9	34	5127.2	WoD	14
144000	10	8	34.5	5958.8	WoD	14
146000	10	8	32.5	5959.8	WoD	14
148000	10	7	31.5	5962.4	WoD	14
150000	10	7	27.5	5963.4	WoD	14
152000	9	6	30	7209.9	WoD	14
154000	9	6	29	7210.2	WoD	14
156000	8	6	34.5	7468.4	WoD	14
158000	7	6	28	7691.5	WoD	14
160000	6	5	34	8072.4	WoD	14

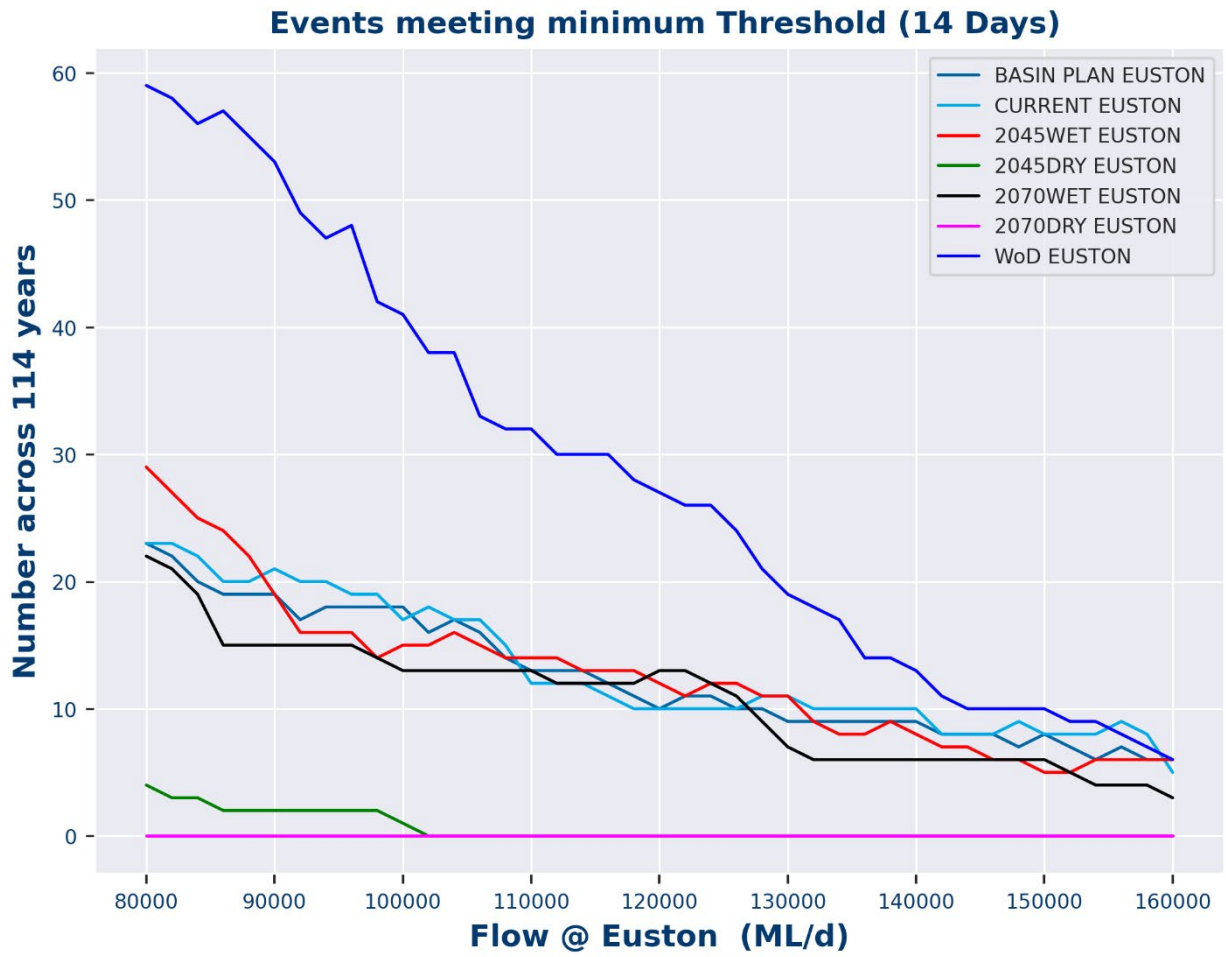

Figure 83: Hattah Lakes North – number of events

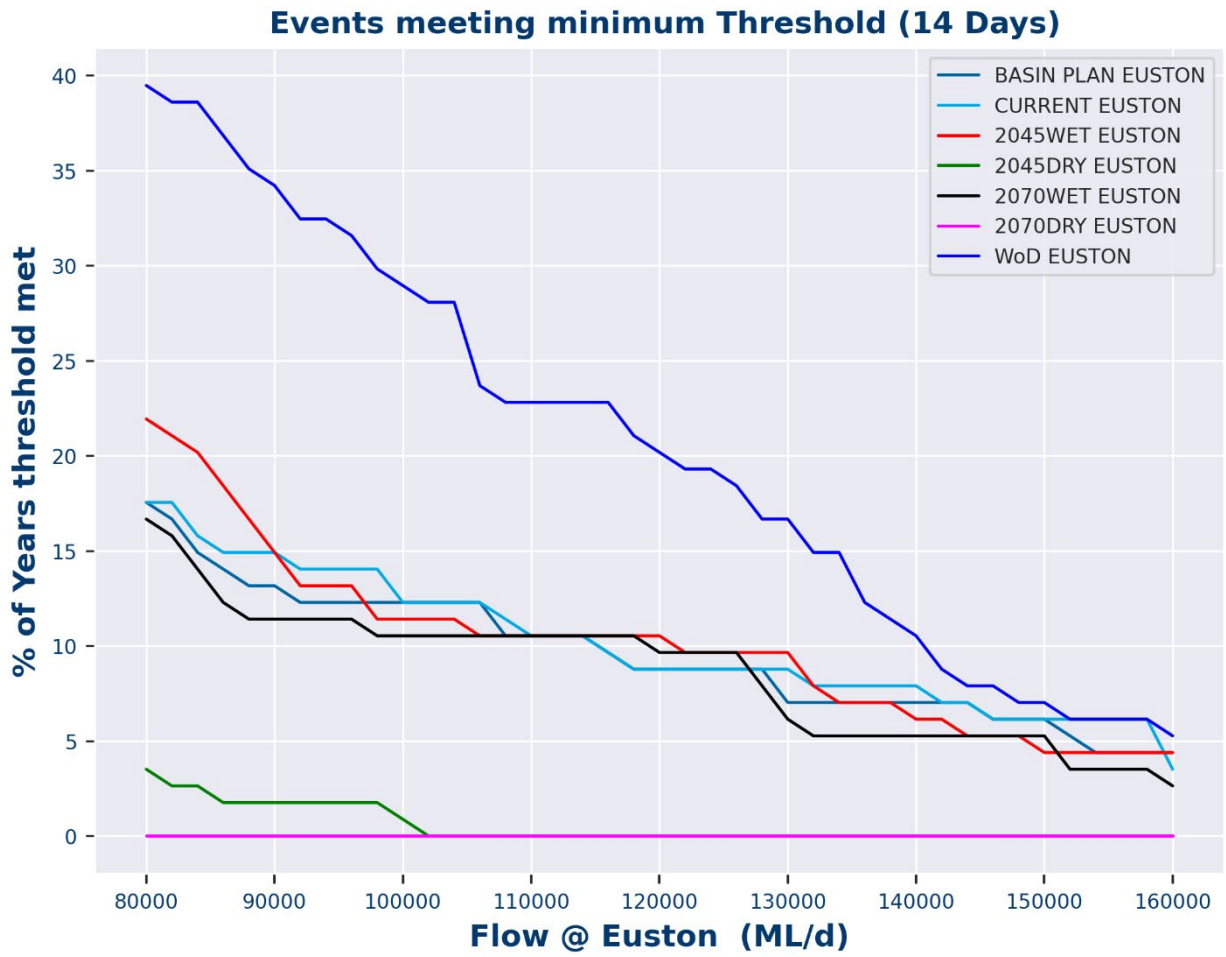

Figure 84: Hattah Lakes North – percentage of years with an events

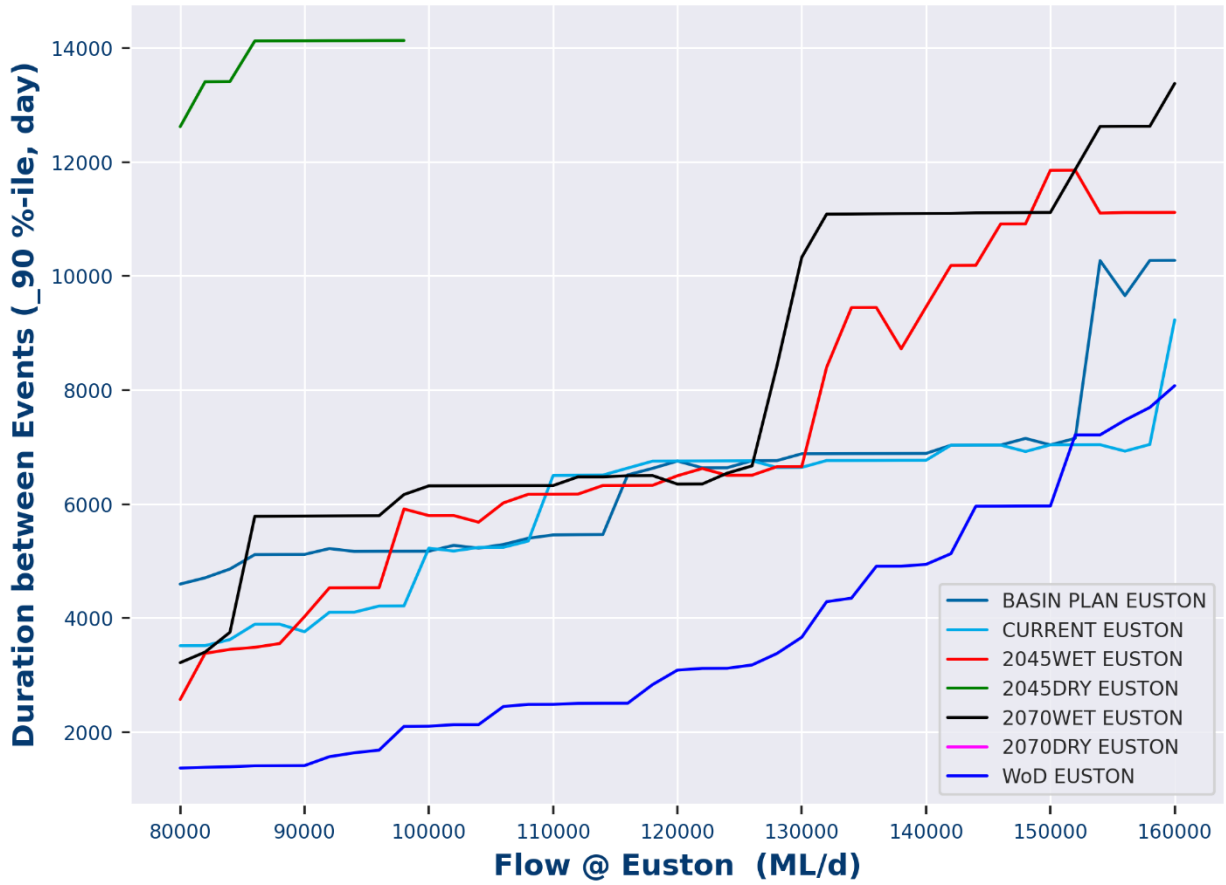

Figure 85: Hattah Lakes North – 90th percentile duration between events

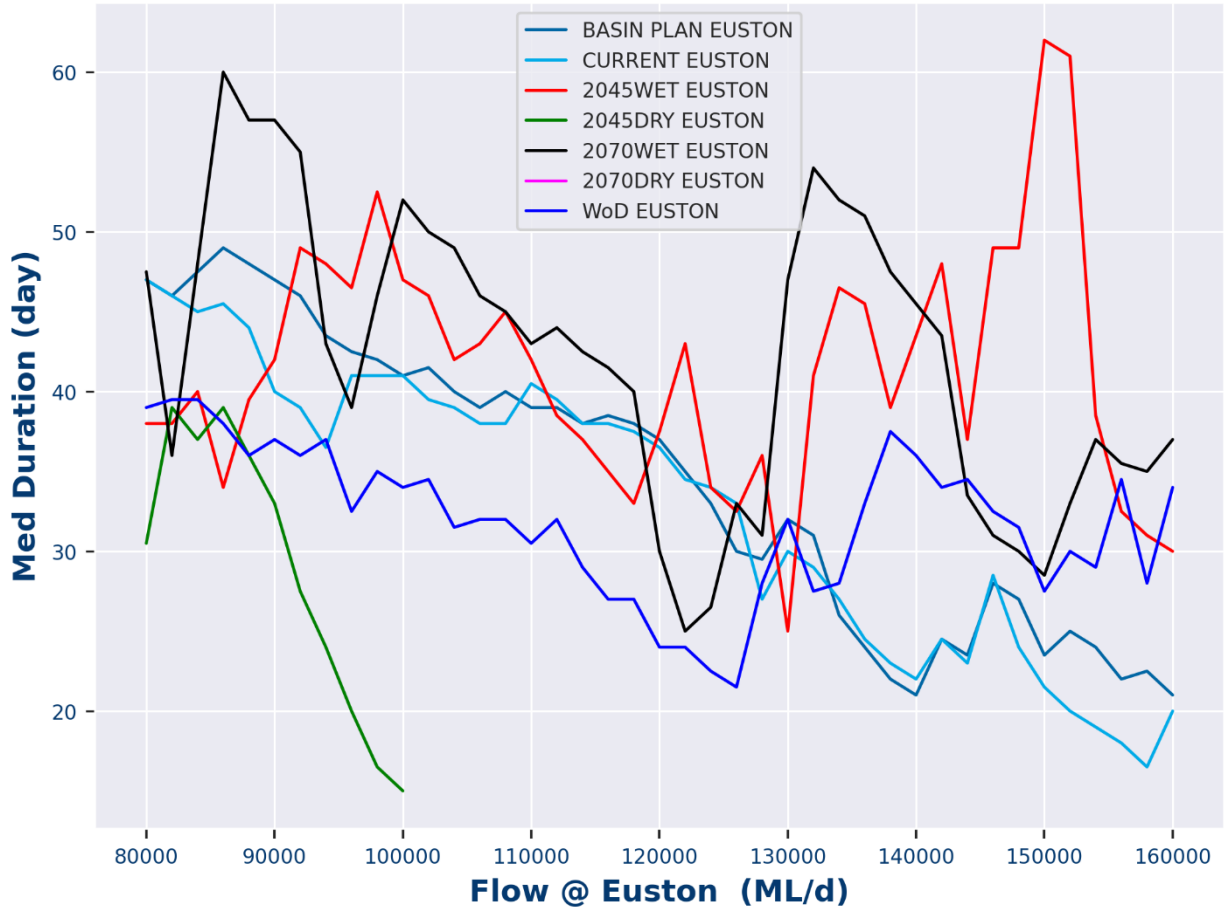

Figure 86: Hattah Lakes North – median event duration

Guttrum and Benwell

Table 34: Guttrum and Benwell – operations results

Percent	Flows equivalent to fresh operating strategy (%years)	Flows equivalent to intermediate operating strategy (%years)	Flows equivalent to maximum operating strategy (%years)
Basin Plan	29	30	18
2070 Dry	3	2	1
2070 Med	17	16	7
2070 Wet	30	28	18
2045 Dry	9	8	3
2045 Med	21	18	9
2045 Wet	32	32	21
Without Development	61	57	38
Target Frequency	75	70	50

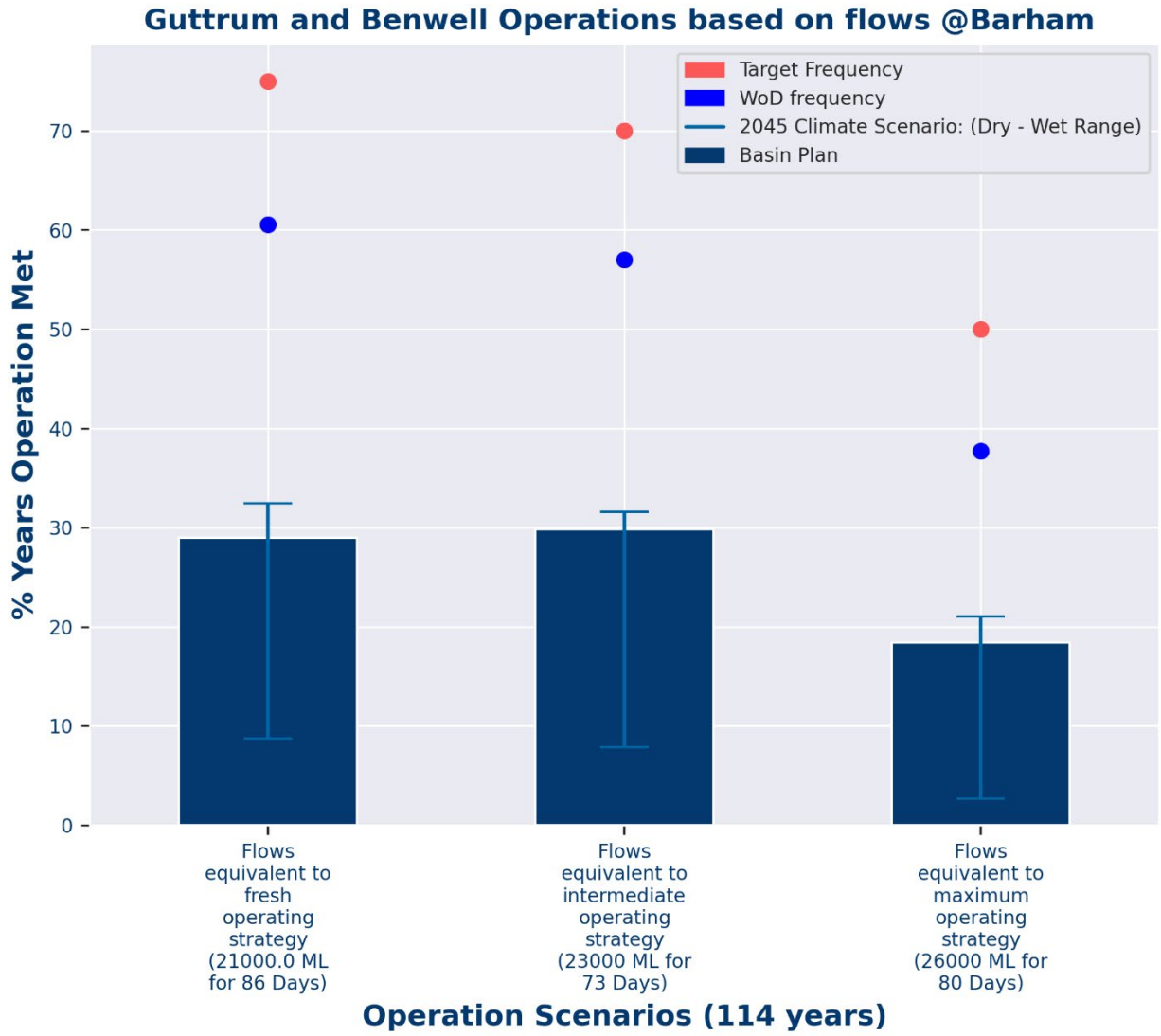

Figure 87: Guttrum and Benwell 2045 climate – frequency of events relevant to operating strategies

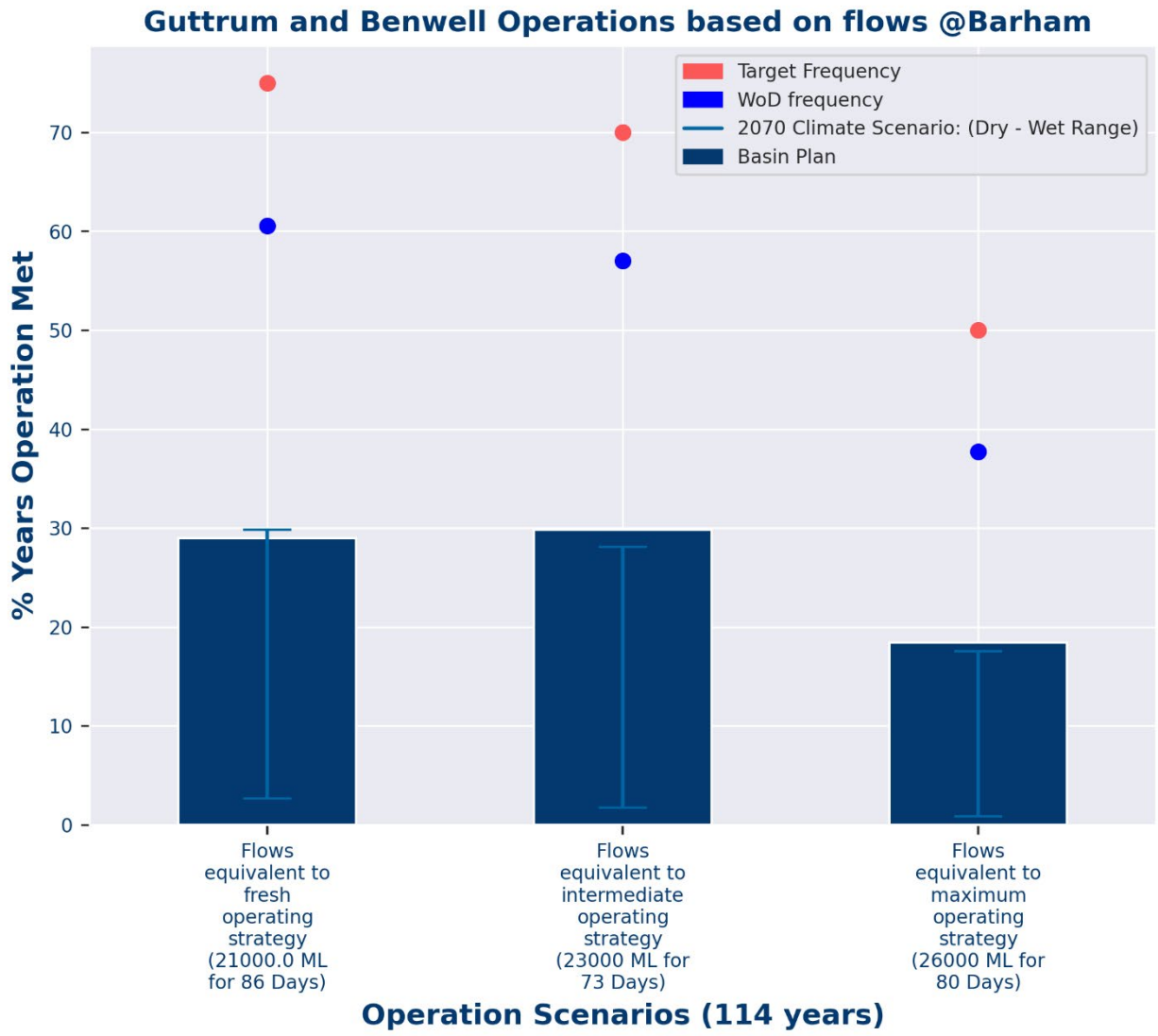

Figure 88: Guttrum and Benwell 2070 climate – frequency of events relevant to operating strategies

Table 35: Guttrum and Benwell – seasonality results

Number of Events (min 86 day duration)	June – August (number of events)	September – November (number of events)	December – February (number of events)	March – May (number of events)
Basin Plan >=21000 ML/day	9	24	0	0
Basin Plan >=23000 ML/day	8	23	0	0
Basin Plan >=25000 ML/day	5	18	0	0
Basin Plan >=27000 ML/day	4	14	0	0
Basin Plan >=29000 ML/day	3	8	0	0
2045 Wet >=21000 ML/day	10	25	2	0
2045 Wet >=23000 ML/day	8	22	2	0
2045 Wet >=25000 ML/day	4	19	1	0
2045 Wet >=27000 ML/day	4	16	1	0
2045 Wet >=29000 ML/day	2	11	0	0
2045 Dry >=21000 ML/day	3	7	0	0
2045 Dry >=23000 ML/day	1	3	0	0
2045 Dry >=25000 ML/day	1	2	0	0
2045 Dry >=27000 ML/day	1	2	0	0
2045 Dry >=29000 ML/day	0	1	0	0
2070 Wet >=21000 ML/day	7	26	1	0

Number of Events (min 86 day duration)	June – August (number of events)	September – November (number of events)	December – February (number of events)	March – May (number of events)
2070 Wet >=23000 ML/day	4	21	1	0
2070 Wet >=25000 ML/day	3	17	1	0
2070 Wet >=27000 ML/day	2	14	1	0
2070 Wet >=29000 ML/day	0	6	0	0
2070 Dry >=21000 ML/day	0	3	0	0
2070 Dry >=23000 ML/day	0	2	0	0
2070 Dry >=25000 ML/day	0	1	0	0
2070 Dry >=27000 ML/day	0	0	0	0
2070 Dry >=29000 ML/day	0	0	0	0

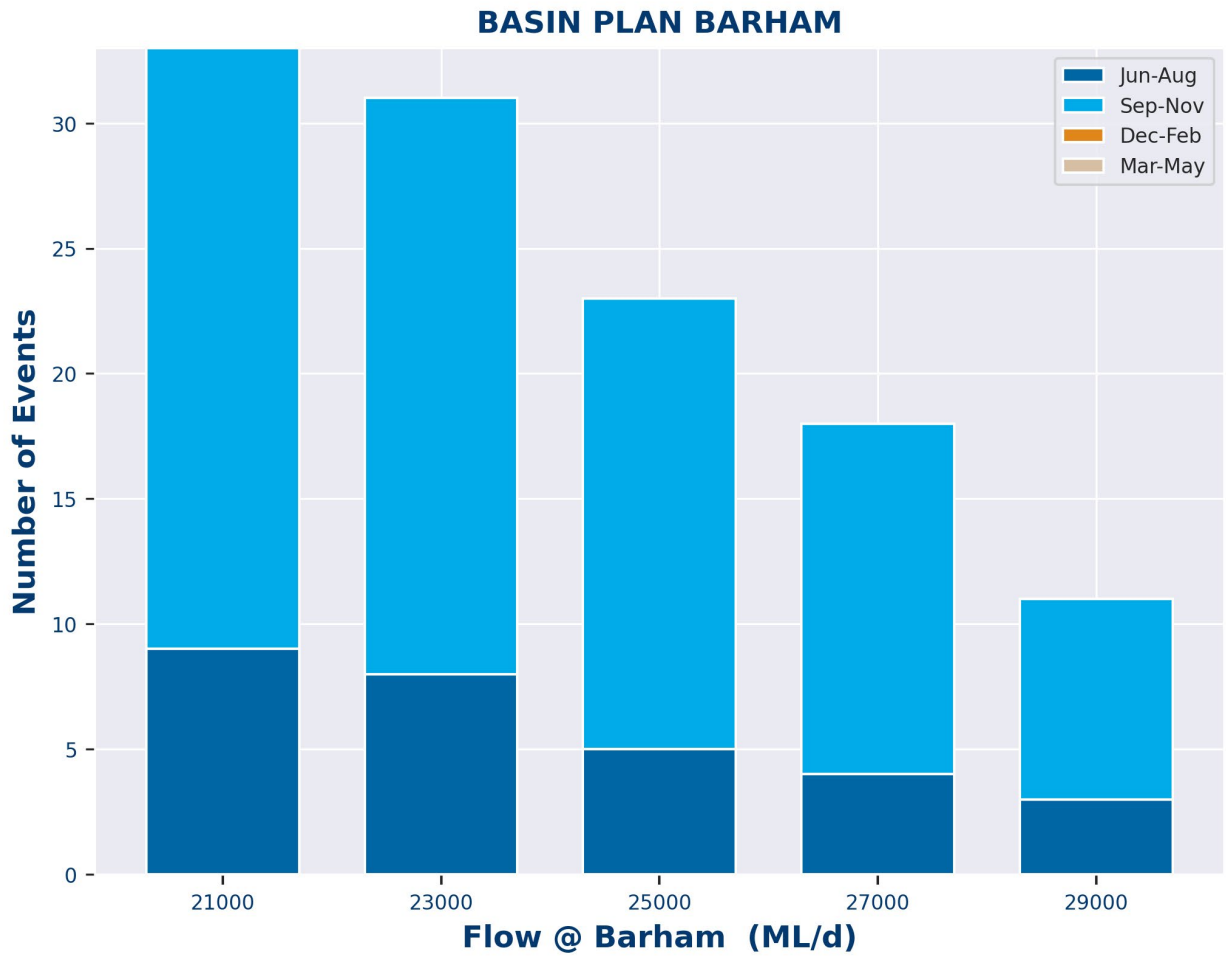

Figure 89: Guttrum and Benwell Basin Plan climate – seasonality (min 86 day duration)

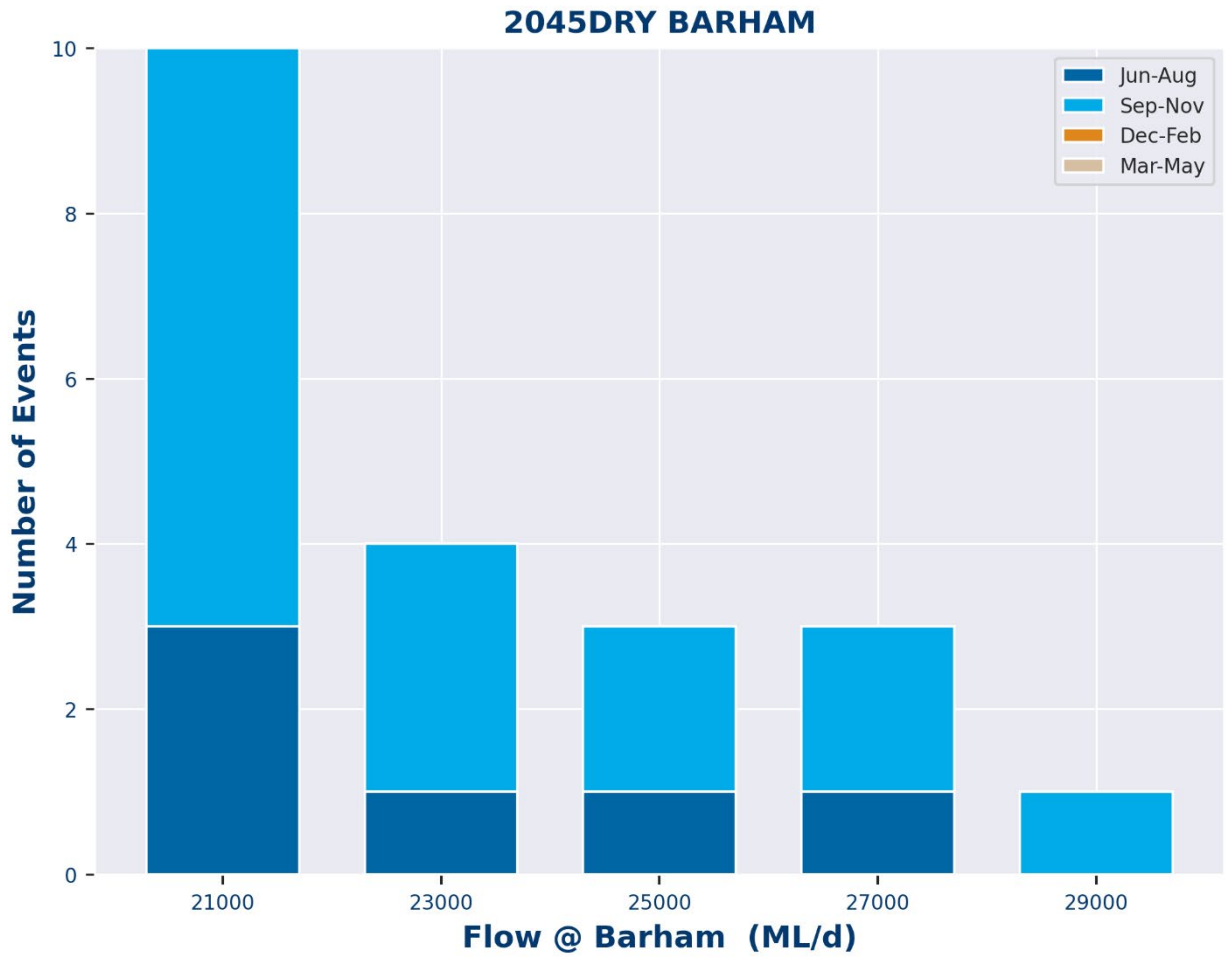

Figure 90: Guttrum and Benwell 2045 dry climate – seasonality (min 86 day duration)

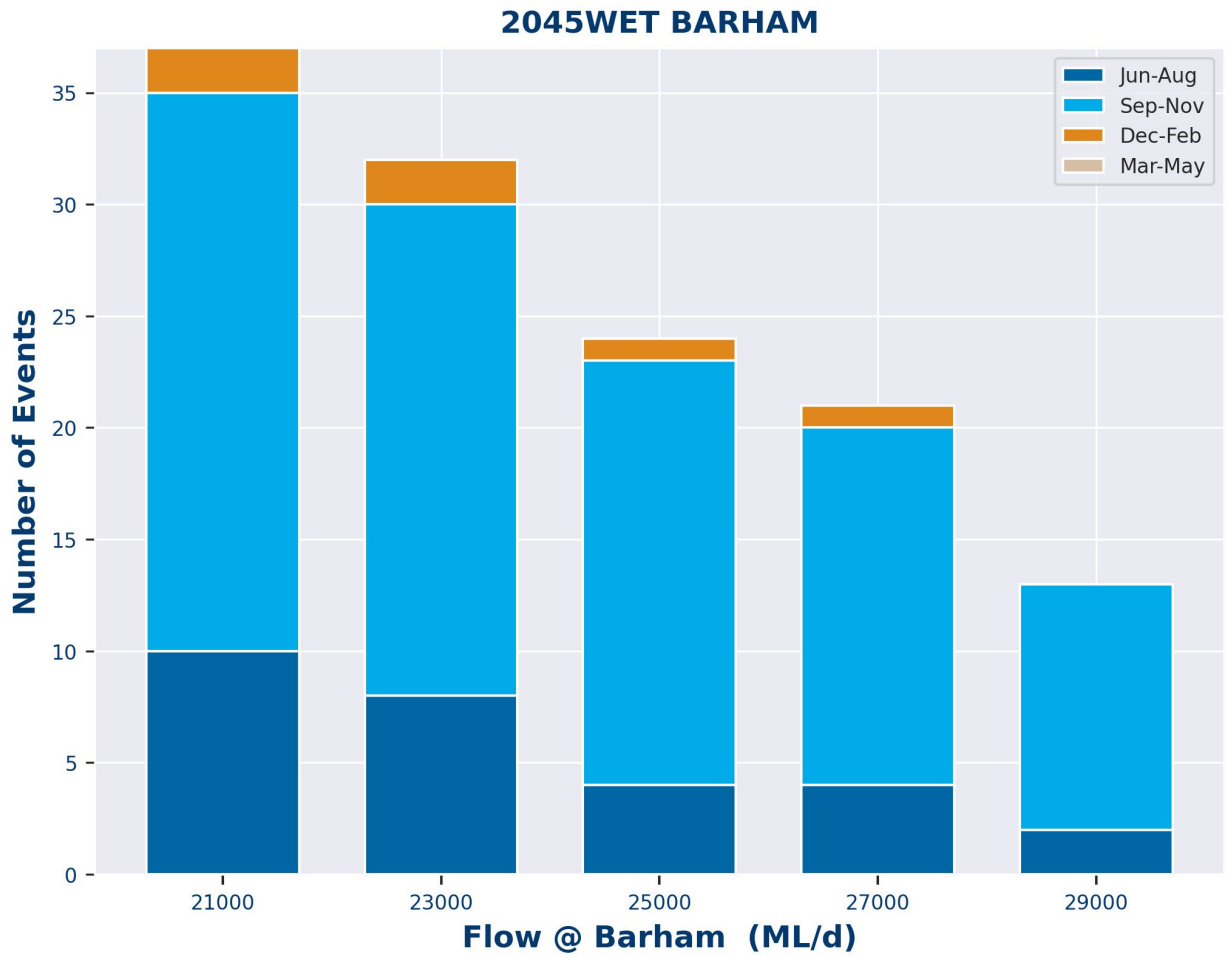

Figure 91: Guttrum and Benwell 2045 wet climate – seasonality (min 86 day duration)

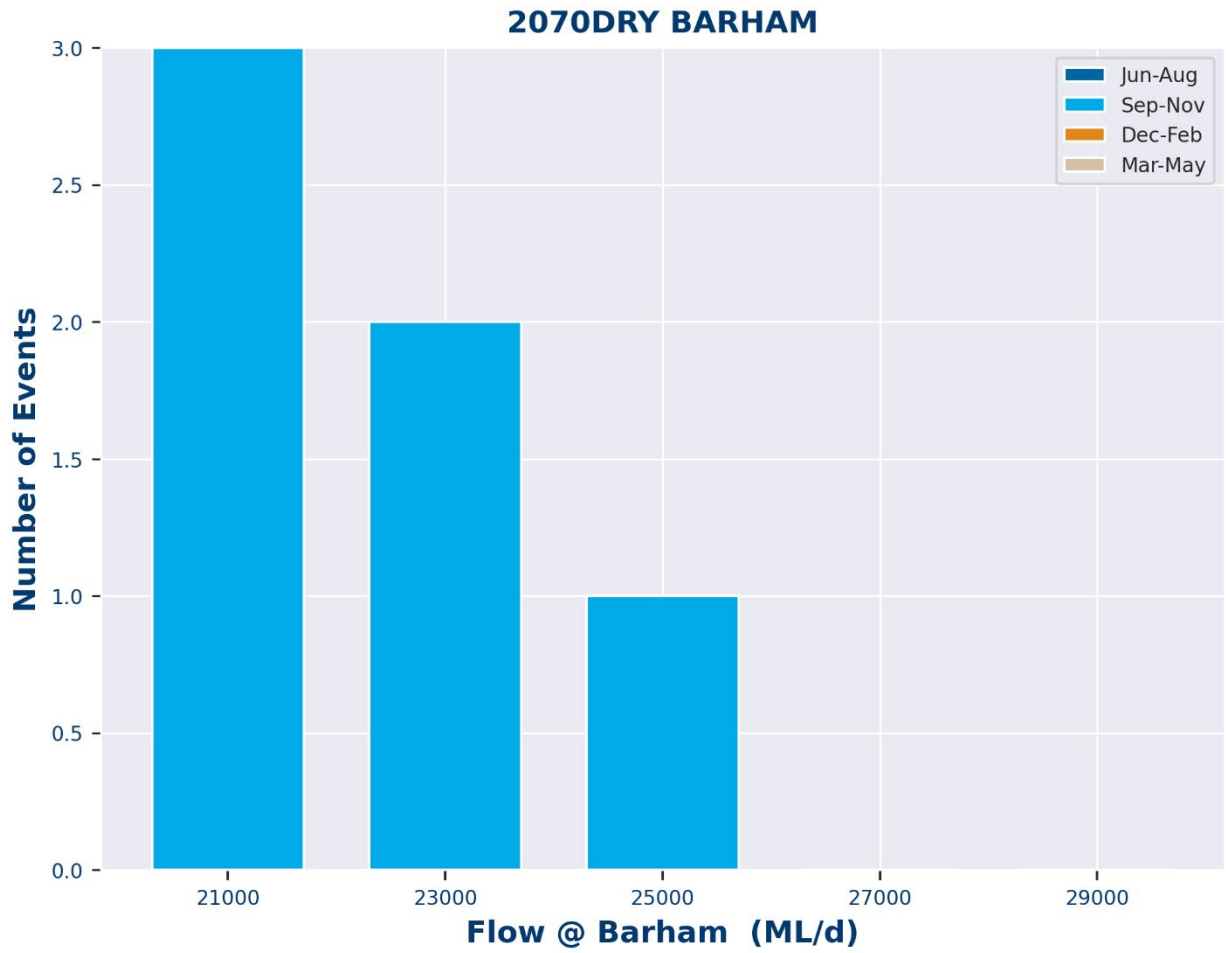

Figure 92: Guttrum and Benwell 2070 dry climate – seasonality (min 86 day duration)

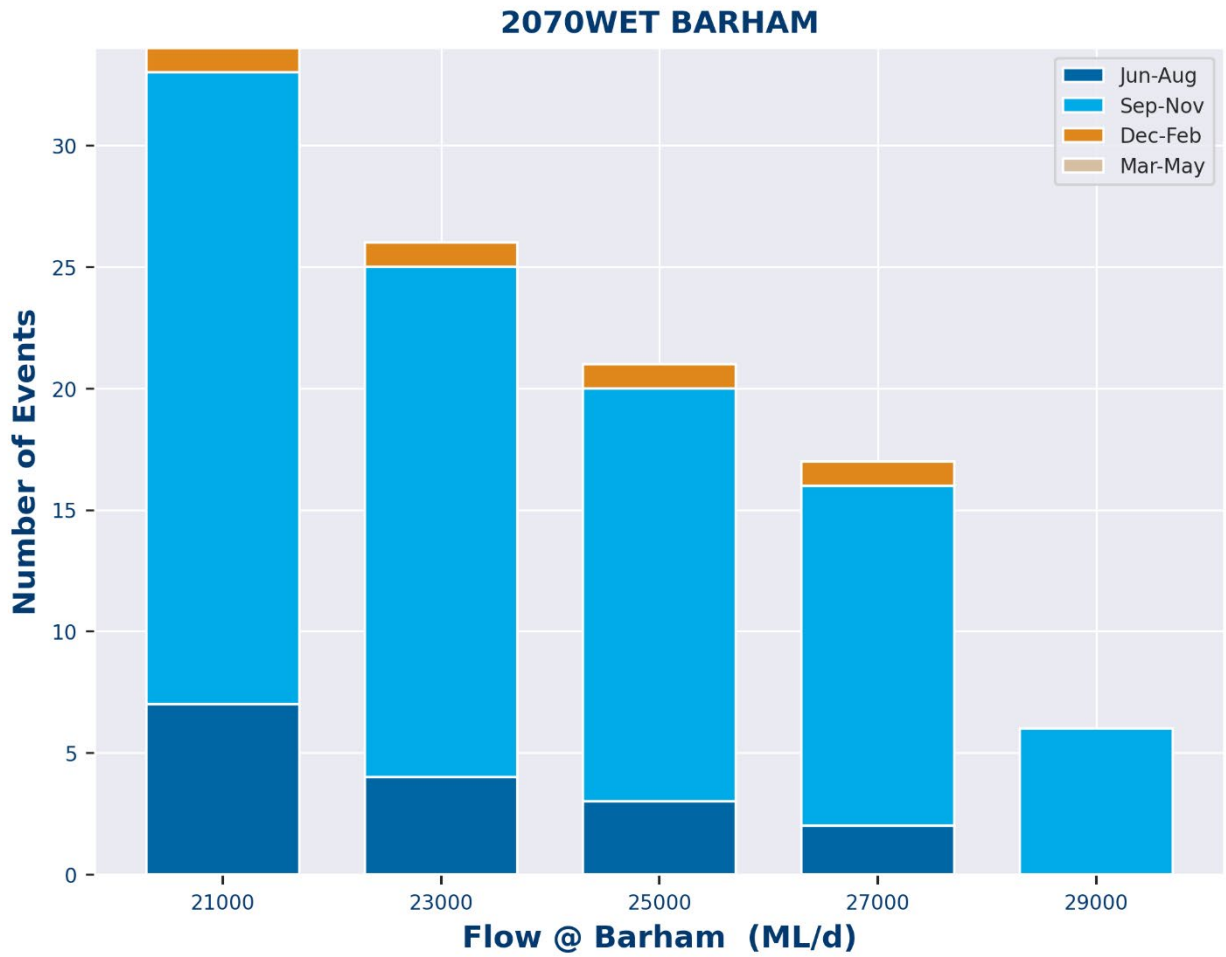

Figure 93: Guttrum and Benwell 2070 wet climate – seasonality (min 86 day duration)

Table 36: Guttrum and Benwell – event duration and spells results

Flow (ML/d)	No Event	%years	Med Duration (day)	90 %-ile Dry Period (day)	Model run	Min Duration (day)
21000	34	30	139	2277.8	Basin Plan	80
21200	34	30	139	2278.6	Basin Plan	80
21400	34	30	137	2278.8	Basin Plan	80
21600	33	29	137	2311.9	Basin Plan	80
21800	33	29	132	2312.8	Basin Plan	80
22000	33	29	131	2313.5	Basin Plan	80
22200	32	28	134	2350	Basin Plan	80
22400	32	28	133.5	2351	Basin Plan	80
22600	32	28	133	2351	Basin Plan	80
22800	32	28	133	2352	Basin Plan	80
23000	31	27	130	2368.2	Basin Plan	80
23200	30	26	131.5	2471	Basin Plan	80
23400	30	26	131	2471	Basin Plan	80
23600	30	26	127.5	2475	Basin Plan	80
23800	30	26	126.5	2475.8	Basin Plan	80
24000	30	26	125.5	2476.8	Basin Plan	80
24200	30	26	125	2476.8	Basin Plan	80
24400	29	25	125	2484.2	Basin Plan	80
24600	28	25	123	2430.2	Basin Plan	80
24800	27	24	123	2674.5	Basin Plan	80
25000	25	22	123	2737.9	Basin Plan	80
25200	25	22	123	2739.3	Basin Plan	80
25400	25	22	119	2739.6	Basin Plan	80
25600	25	22	118	2741	Basin Plan	80

Flow (ML/d)	No Event	%years	Med Duration (day)	90 %-ile Dry Period (day)	Model run	Min Duration (day)
25800	24	21	117.5	2770	Basin Plan	80
26000	21	18	121	2866	Basin Plan	80
26200	19	17	121	4336.9	Basin Plan	80
26400	19	17	117	4342.7	Basin Plan	80
26600	19	17	116	4342.7	Basin Plan	80
26800	18	16	116	4827	Basin Plan	80
27000	18	16	116	4827.4	Basin Plan	80
27200	16	14	113.5	5380.2	Basin Plan	80
27400	16	14	112.5	5383.6	Basin Plan	80
27600	16	14	108.5	5385.6	Basin Plan	80
27800	14	12	110.5	6395.6	Basin Plan	80
28000	12	11	116.5	7549	Basin Plan	80
28200	11	10	123	7586.2	Basin Plan	80
28400	11	10	122	7586.3	Basin Plan	80
28600	11	10	122	7598.1	Basin Plan	80
28800	11	10	116	7600.8	Basin Plan	80
29000	11	10	116	7601.8	Basin Plan	80
21000	36	32	131	1933.4	Current	80
21200	35	31	131	1955.3	Current	80
21400	34	30	129.5	1978.6	Current	80
21600	31	27	129	2360.6	Current	80
21800	31	27	129	2361.7	Current	80
22000	31	27	128	2361.7	Current	80
22200	31	27	128	2361.9	Current	80
22400	30	26	128.5	2578	Current	80

Flow (ML/d)	No Event	%years	Med Duration (day)	90 %-ile Dry Period (day)	Model run	Min Duration (day)
22600	30	26	128	2578.2	Current	80
22800	30	26	126.5	2579.8	Current	80
23000	30	26	126	2581	Current	80
23200	29	25	126	2609.6	Current	80
23400	28	25	127	2638.8	Current	80
23600	27	24	128	2667.5	Current	80
23800	26	23	127	3006	Current	80
24000	25	22	126	3039.5	Current	80
24200	24	21	125	3073.6	Current	80
24400	22	19	127	3140	Current	80
24600	22	19	126	3140	Current	80
24800	21	18	126	3187.3	Current	80
25000	20	18	126.5	3674	Current	80
25200	20	18	125.5	3674	Current	80
25400	20	18	124.5	3675.8	Current	80
25600	19	17	124	3716.3	Current	80
25800	19	17	118	3716.6	Current	80
26000	19	17	117	3717.2	Current	80
26200	19	17	117	3717.5	Current	80
26400	18	16	117	3758.6	Current	80
26600	17	15	113	4864	Current	80
26800	17	15	112	4865	Current	80
27000	17	15	111	4865	Current	80
27200	17	15	110	4868	Current	80
27400	15	13	109	5612.6	Current	80

Flow (ML/d)	No Event	%years	Med Duration (day)	90 %-ile Dry Period (day)	Model run	Min Duration (day)
27600	13	11	114	6778.3	Current	80
27800	11	10	120	6237.1	Current	80
28000	10	9	121.5	6388	Current	80
28200	9	8	123	6784.1	Current	80
28400	7	6	123	7003.5	Current	80
28600	7	6	121	7011.5	Current	80
28800	7	6	116	7044	Current	80
29000	7	6	116	7045.5	Current	80
21000	38	33	134.5	1650.2	2045 Wet	80
21200	37	32	134	2048.5	2045 Wet	80
21400	37	32	134	2048.5	2045 Wet	80
21600	37	32	132	2049.5	2045 Wet	80
21800	37	32	132	2050	2045 Wet	80
22000	37	32	131	2050	2045 Wet	80
22200	37	32	129	2051.5	2045 Wet	80
22400	36	32	129	2057	2045 Wet	80
22600	35	31	129	2257.4	2045 Wet	80
22800	34	30	128	2290.6	2045 Wet	80
23000	33	29	128	2324.8	2045 Wet	80
23200	33	29	127	2324.8	2045 Wet	80
23400	32	28	128.5	2359	2045 Wet	80
23600	32	28	127	2360	2045 Wet	80
23800	32	28	123	2361	2045 Wet	80
24000	32	28	122.5	2362	2045 Wet	80
24200	32	28	121	2362	2045 Wet	80

Flow (ML/d)	No Event	%years	Med Duration (day)	90 %-ile Dry Period (day)	Model run	Min Duration (day)
24400	31	27	123	3213.8	2045 Wet	80
24600	31	27	122	3215.8	2045 Wet	80
24800	30	26	121	3248.4	2045 Wet	80
25000	29	25	119	3280.8	2045 Wet	80
25200	27	24	121	3380	2045 Wet	80
25400	27	24	120	3380.5	2045 Wet	80
25600	26	23	121	3419.2	2045 Wet	80
25800	24	21	121	3496.8	2045 Wet	80
26000	24	21	120.5	3497.8	2045 Wet	80
26200	22	19	120.5	3575	2045 Wet	80
26400	21	18	118	3680.6	2045 Wet	80
26600	21	18	117	3681.6	2045 Wet	80
26800	21	18	116	3682.7	2045 Wet	80
27000	21	18	115	3682.8	2045 Wet	80
27200	21	18	112	3684.7	2045 Wet	80
27400	20	18	110	3791.2	2045 Wet	80
27600	19	17	107	3896.8	2045 Wet	80
27800	19	17	106	3898.1	2045 Wet	80
28000	18	16	109	4004.2	2045 Wet	80
28200	17	15	112	4109	2045 Wet	80
28400	17	15	111	4110	2045 Wet	80
28600	16	14	106.5	4217.8	2045 Wet	80
28800	16	14	100.5	4218.8	2045 Wet	80
29000	15	13	95	4534.8	2045 Wet	80
21000	26	23	114.5	3397.4	2045 Med	80

Flow (ML/d)	No Event	%years	Med Duration (day)	90 %-ile Dry Period (day)	Model run	Min Duration (day)
21200	26	23	112.5	3402.8	2045 Med	80
21400	25	22	112	3441.1	2045 Med	80
21600	22	19	115.5	3555	2045 Med	80
21800	21	18	116	3686.2	2045 Med	80
22000	21	18	112	3688	2045 Med	80
22200	21	18	111	3688.1	2045 Med	80
22400	20	18	110.5	3792.6	2045 Med	80
22600	20	18	107.5	3792.8	2045 Med	80
22800	19	17	108	4633.1	2045 Med	80
23000	18	16	106	5212.6	2045 Med	80
23200	18	16	105	5213	2045 Med	80
23400	18	16	105	5213.6	2045 Med	80
23600	18	16	103	5214.8	2045 Med	80
23800	17	15	103	5361	2045 Med	80
24000	16	14	101	5507.8	2045 Med	80
24200	16	14	99	5508.2	2045 Med	80
24400	15	13	99	5655.6	2045 Med	80
24600	14	12	99	5802.2	2045 Med	80
24800	14	12	98.5	5803.2	2045 Med	80
25000	14	12	98.5	5804	2045 Med	80
25200	14	12	96.5	5805.4	2045 Med	80
25400	13	11	99	5952.2	2045 Med	80
25600	12	11	100	6099	2045 Med	80
25800	10	9	103	6624	2045 Med	80
26000	10	9	101.5	6626.6	2045 Med	80

Flow (ML/d)	No Event	%years	Med Duration (day)	90 %-ile Dry Period (day)	Model run	Min Duration (day)
26200	9	8	103	8307.2	2045 Med	80
26400	9	8	103	8308.2	2045 Med	80
26600	9	8	101	8308.9	2045 Med	80
26800	9	8	98	8310.3	2045 Med	80
27000	9	8	96	8311.3	2045 Med	80
27200	9	8	95	8312.6	2045 Med	80
27400	8	7	93	9245	2045 Med	80
27600	8	7	93	9257.4	2045 Med	80
27800	8	7	92.5	9259.8	2045 Med	80
28000	7	6	92	10506.5	2045 Med	80
28200	6	5	93.5	11283.4	2045 Med	80
28400	5	4	92	11581.2	2045 Med	80
28600	5	4	91	11582.8	2045 Med	80
28800	5	4	90	11584.4	2045 Med	80
29000	5	4	87	11586.3	2045 Med	80
21000	11	10	95	6285.2	2045 Dry	80
21200	11	10	93	6286.1	2045 Dry	80
21400	11	10	93	6287	2045 Dry	80
21600	11	10	92	6288	2045 Dry	80
21800	10	9	92	6476.8	2045 Dry	80
22000	10	9	91	6477.8	2045 Dry	80
22200	10	9	90	6479.8	2045 Dry	80
22400	8	7	88	6858.2	2045 Dry	80
22600	8	7	87.5	6859.2	2045 Dry	80
22800	7	6	87	7569.5	2045 Dry	80

Flow (ML/d)	No Event	%years	Med Duration (day)	90 %-ile Dry Period (day)	Model run	Min Duration (day)
23000	6	5	98	10887	2045 Dry	80
23200	6	5	97	10889	2045 Dry	80
23400	6	5	95	10891.8	2045 Dry	80
23600	6	5	94	10892.8	2045 Dry	80
23800	5	4	104	11795.1	2045 Dry	80
24000	5	4	104	11796.1	2045 Dry	80
24200	4	4	125.5	12556.2	2045 Dry	80
24400	3	3	149	13315.7	2045 Dry	80
24600	3	3	149	13316.6	2045 Dry	80
24800	3	3	148	13317.6	2045 Dry	80
25000	3	3	147	13318.6	2045 Dry	80
25200	3	3	147	13318.6	2045 Dry	80
25400	3	3	146	13319.6	2045 Dry	80
25600	3	3	145	13320.6	2045 Dry	80
25800	3	3	144	13320.7	2045 Dry	80
26000	3	3	144	13321.7	2045 Dry	80
26200	3	3	144	13321.7	2045 Dry	80
26400	3	3	142	13325.5	2045 Dry	80
26600	3	3	140	13326.6	2045 Dry	80
26800	3	3	135	13328.1	2045 Dry	80
27000	3	3	115	13328.2	2045 Dry	80
27200	3	3	111	13329.2	2045 Dry	80
27400	3	3	108	13332.1	2045 Dry	80
27600	3	3	102	13334.2	2045 Dry	80
27800	3	3	100	13338.1	2045 Dry	80

Flow (ML/d)	No Event	%years	Med Duration (day)	90 %-ile Dry Period (day)	Model run	Min Duration (day)
28000	2	2	111	14098	2045 Dry	80
28200	2	2	106.5	14106	2045 Dry	80
28400	2	2	104	14110	2045 Dry	80
28600	2	2	100.5	14111	2045 Dry	80
28800	2	2	90	14111	2045 Dry	80
29000	2	2	86	14116	2045 Dry	80
21000	36	32	129	2056.8	2070 Wet	80
21200	36	32	128.5	2058	2070 Wet	80
21400	36	32	124	2058.4	2070 Wet	80
21600	35	31	125	2064.6	2070 Wet	80
21800	34	30	127	2071.2	2070 Wet	80
22000	32	28	131	2369	2070 Wet	80
22200	32	28	129.5	2369	2070 Wet	80
22400	32	28	127	2373	2070 Wet	80
22600	31	27	126	3213.9	2070 Wet	80
22800	31	27	124	3214.8	2070 Wet	80
23000	31	27	124	3215.8	2070 Wet	80
23200	30	26	122	3247.6	2070 Wet	80
23400	29	25	120	3281	2070 Wet	80
23600	29	25	119	3282.7	2070 Wet	80
23800	28	25	119	3343.4	2070 Wet	80
24000	28	25	118	3343.4	2070 Wet	80
24200	28	25	116	3344	2070 Wet	80
24400	26	23	116.5	3423.2	2070 Wet	80
24600	24	21	116	3502.4	2070 Wet	80

Flow (ML/d)	No Event	%years	Med Duration (day)	90 %-ile Dry Period (day)	Model run	Min Duration (day)
24800	23	20	115	3541.8	2070 Wet	80
25000	22	19	114.5	3581	2070 Wet	80
25200	21	18	113	3686.7	2070 Wet	80
25400	21	18	113	3686.8	2070 Wet	80
25600	20	18	113	3791.8	2070 Wet	80
25800	20	18	111.5	3792.8	2070 Wet	80
26000	20	18	111	3793.6	2070 Wet	80
26200	20	18	109.5	3793.8	2070 Wet	80
26400	19	17	108	3899	2070 Wet	80
26600	19	17	106	3900	2070 Wet	80
26800	18	16	105.5	4005	2070 Wet	80
27000	18	16	104	4007.4	2070 Wet	80
27200	18	16	101.5	4008.8	2070 Wet	80
27400	17	15	101	5368.5	2070 Wet	80
27600	16	14	100	5514.6	2070 Wet	80
27800	16	14	95	5516.2	2070 Wet	80
28000	16	14	94.5	5517.4	2070 Wet	80
28200	15	13	95	5667.3	2070 Wet	80
28400	14	12	94.5	5871.4	2070 Wet	80
28600	13	11	93	5989.4	2070 Wet	80
28800	11	10	91	6369.2	2070 Wet	80
29000	11	10	89	6372.1	2070 Wet	80
21000	21	18	110	3688.5	2070 Med	80
21200	21	18	108	3692.3	2070 Med	80
21400	21	18	107	3692.4	2070 Med	80

Flow (ML/d)	No Event	%years	Med Duration (day)	90 %-ile Dry Period (day)	Model run	Min Duration (day)
21600	20	18	107.5	3799.8	2070 Med	80
21800	20	18	105.5	3800.6	2070 Med	80
22000	20	18	101	3800.8	2070 Med	80
22200	19	17	100	3907.9	2070 Med	80
22400	19	17	98	3908.6	2070 Med	80
22600	16	14	97	5091.2	2070 Med	80
22800	16	14	96.5	5093.4	2070 Med	80
23000	16	14	95.5	5094.4	2070 Med	80
23200	16	14	95	5094.8	2070 Med	80
23400	16	14	93.5	5095.4	2070 Med	80
23600	16	14	93	5096.4	2070 Med	80
23800	15	13	93	5347.5	2070 Med	80
24000	15	13	92	5347.8	2070 Med	80
24200	15	13	91	5348.1	2070 Med	80
24400	14	12	91	5964.2	2070 Med	80
24600	11	10	90	6361.8	2070 Med	80
24800	11	10	89	6363.9	2070 Med	80
25000	11	10	88	6364.8	2070 Med	80
25200	10	9	87	6629.4	2070 Med	80
25400	8	7	90	7271.2	2070 Med	80
25600	8	7	87.5	7272.2	2070 Med	80
25800	8	7	86	7273.8	2070 Med	80
26000	8	7	85	7274.2	2070 Med	80
26200	8	7	84.5	7275.2	2070 Med	80
26400	6	5	94.5	10882	2070 Med	80

Flow (ML/d)	No Event	%years	Med Duration (day)	90 %-ile Dry Period (day)	Model run	Min Duration (day)
26600	4	4	136.5	12840.6	2070 Med	80
26800	4	4	136	12841.8	2070 Med	80
27000	4	4	135	12843	2070 Med	80
27200	4	4	134	12843.8	2070 Med	80
27400	3	3	168	13308.5	2070 Med	80
27600	3	3	168	13308.7	2070 Med	80
27800	3	3	165	13310.6	2070 Med	80
28000	3	3	163	13311.8	2070 Med	80
28200	3	3	160	13312.1	2070 Med	80
28400	3	3	159	13313.1	2070 Med	80
28600	3	3	155	13315.1	2070 Med	80
28800	3	3	151	13316.1	2070 Med	80
29000	3	3	144	13318.7	2070 Med	80
21000	3	3	125	13353.7	2070 Dry	80
21200	2	2	142	14071	2070 Dry	80
21400	2	2	142	14071	2070 Dry	80
21600	2	2	141.5	14071	2070 Dry	80
21800	2	2	140.5	14072	2070 Dry	80
22000	2	2	138	14074	2070 Dry	80
22200	2	2	136	14077	2070 Dry	80
22400	2	2	134.5	14079	2070 Dry	80
22600	2	2	131.5	14084	2070 Dry	80
22800	2	2	131	14084	2070 Dry	80
23000	2	2	128.5	14086	2070 Dry	80
23200	2	2	126.5	14088	2070 Dry	80

Flow (ML/d)	No Event	%years	Med Duration (day)	90 %-ile Dry Period (day)	Model run	Min Duration (day)
23400	2	2	126.5	14088	2070 Dry	80
23600	2	2	125	14090	2070 Dry	80
23800	2	2	121.5	14095	2070 Dry	80
24000	2	2	120	14097	2070 Dry	80
24200	1	1	106		2070 Dry	80
24400	1	1	105		2070 Dry	80
24600	1	1	103		2070 Dry	80
24800	1	1	101		2070 Dry	80
25000	1	1	100		2070 Dry	80
25200	1	1	97		2070 Dry	80
25400	1	1	97		2070 Dry	80
25600	1	1	95		2070 Dry	80
25800	1	1	94		2070 Dry	80
26000	1	1	90		2070 Dry	80
26200	1	1	89		2070 Dry	80
26400	1	1	88		2070 Dry	80
26600	1	1	87		2070 Dry	80
26800	1	1	85		2070 Dry	80
27000	1	1	83		2070 Dry	80
27200	1	1	83		2070 Dry	80
27400	1	1	82		2070 Dry	80
27600	1	1	81		2070 Dry	80
27800	0	0			2070 Dry	80
28000	0	0			2070 Dry	80
28200	0	0			2070 Dry	80

Flow (ML/d)	No Event	%years	Med Duration (day)	90 %-ile Dry Period (day)	Model run	Min Duration (day)
28400	0	0			2070 Dry	80
28600	0	0			2070 Dry	80
28800	0	0			2070 Dry	80
29000	0	0			2070 Dry	80
21000	70	61	158	873.8	WoD	80
21200	69	61	156	903.9	WoD	80
21400	69	61	155	911.9	WoD	80
21600	69	61	152	913.6	WoD	80
21800	67	59	155	951	WoD	80
22000	67	59	154	952	WoD	80
22200	65	57	152	949.4	WoD	80
22400	65	57	151	951.4	WoD	80
22600	64	56	148.5	952.8	WoD	80
22800	63	55	148	954	WoD	80
23000	63	55	145	954	WoD	80
23200	61	54	147	955.4	WoD	80
23400	61	54	146	956.4	WoD	80
23600	59	52	145	958.2	WoD	80
23800	59	52	144	958.9	WoD	80
24000	57	50	144	1114	WoD	80
24200	56	49	142	1145.6	WoD	80
24400	55	48	142	1180.9	WoD	80
24600	55	48	141	1180.9	WoD	80
24800	51	45	140	1280.6	WoD	80
25000	49	43	138	1317.6	WoD	80

Flow (ML/d)	No Event	%years	Med Duration (day)	90 %-ile Dry Period (day)	Model run	Min Duration (day)
25200	48	42	138.5	1321.4	WoD	80
25400	45	39	137	1328.6	WoD	80
25600	43	38	137	1334.1	WoD	80
25800	43	38	136	1336.7	WoD	80
26000	43	38	130	1352.6	WoD	80
26200	41	36	134	1370.6	WoD	80
26400	41	36	133	1371.6	WoD	80
26600	41	36	126	1382.6	WoD	80
26800	40	35	126	1438.4	WoD	80
27000	38	33	126	1523.2	WoD	80
27200	37	32	128	1885	WoD	80
27400	36	32	123	1916.8	WoD	80
27600	35	31	116	1948.1	WoD	80
27800	34	30	117.5	2060.6	WoD	80
28000	30	26	119	2379	WoD	80
28200	28	25	120.5	2488.6	WoD	80
28400	27	24	119	2492.5	WoD	80
28600	23	20	115	3137.4	WoD	80
28800	22	19	115.5	3484	WoD	80
29000	21	18	113	3489.6	WoD	80

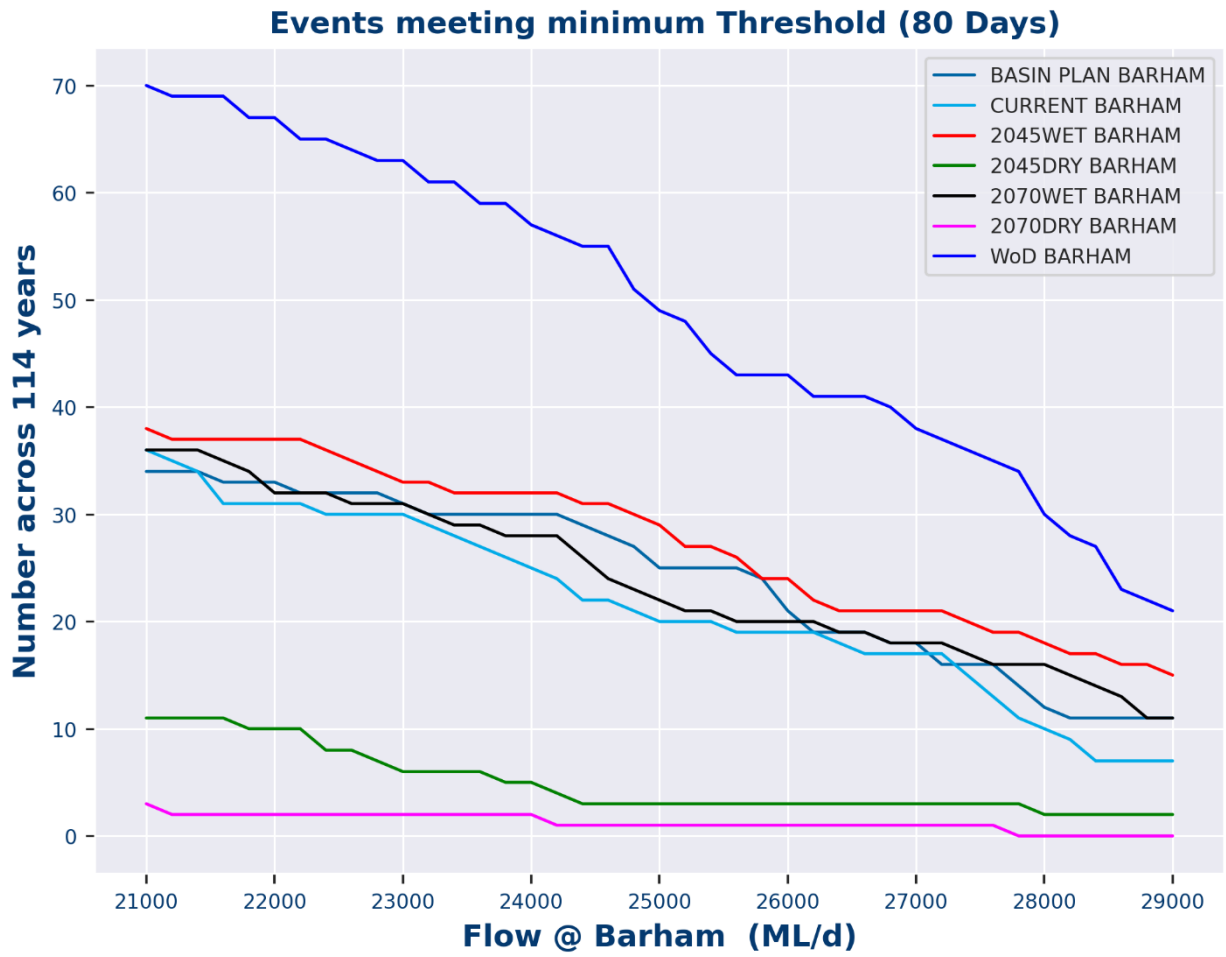

Figure 94: Guttrum and Benwell – number of events

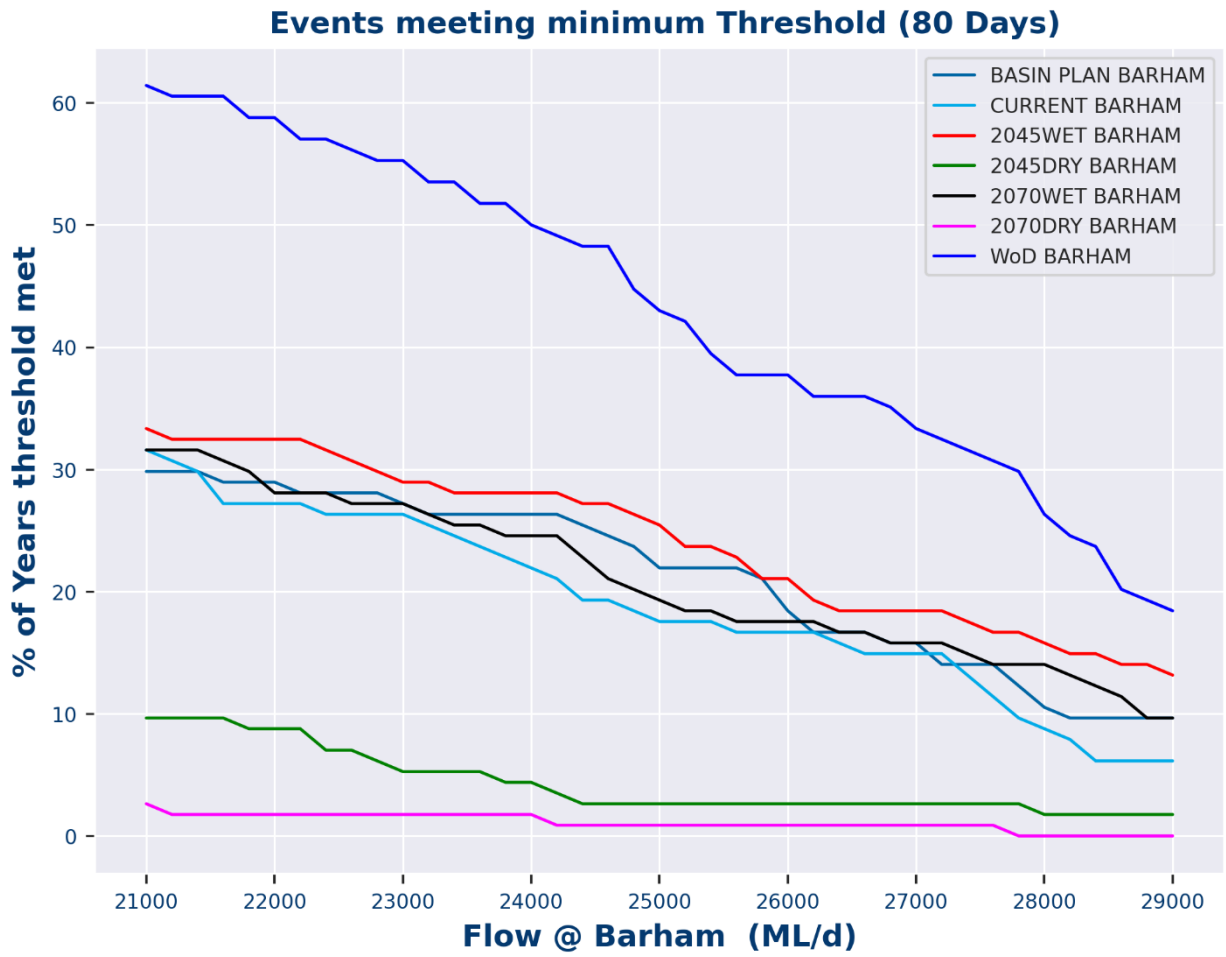

Figure 95: Guttrum and Benwell – percentage of years with an event

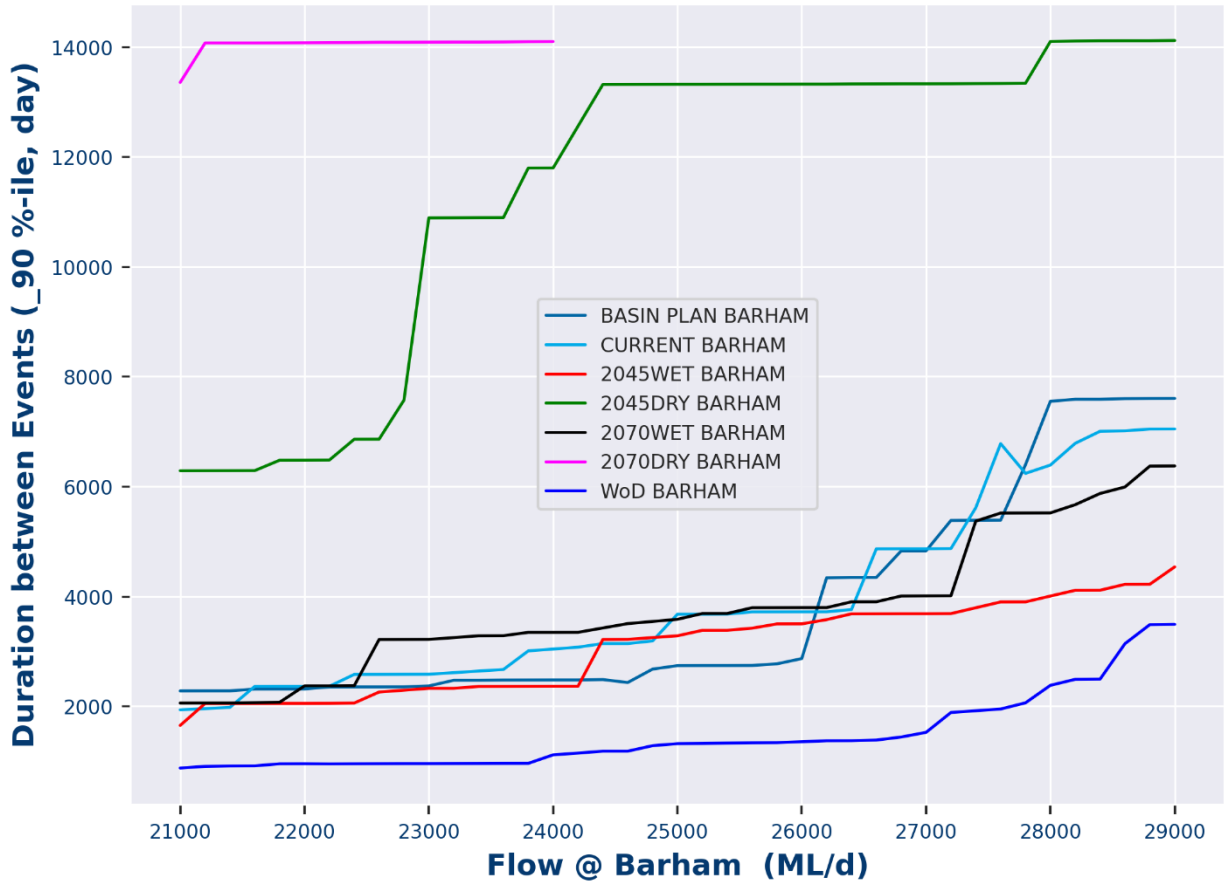

Figure 96: Guttrum and Benwell – 90th percentile duration between events

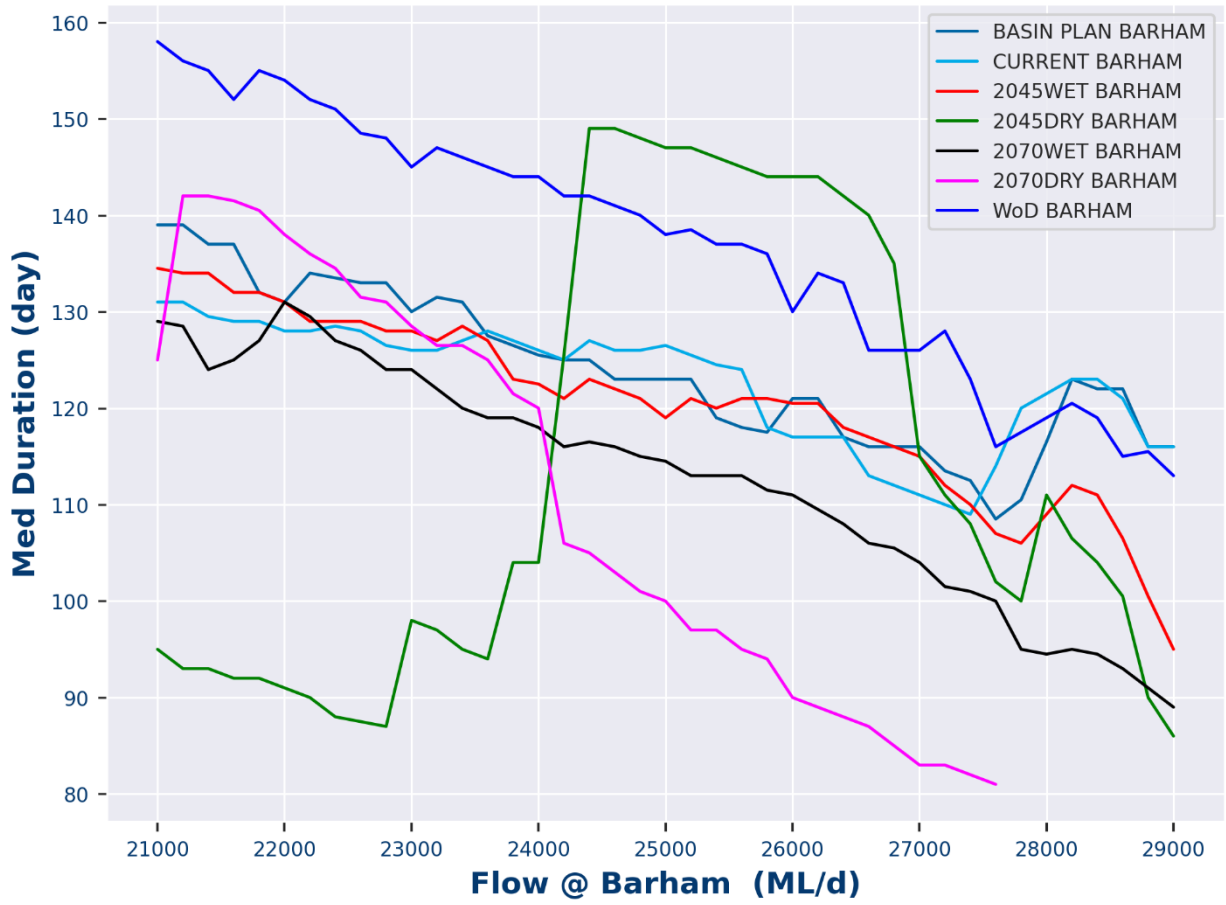

Figure 97: Guttrum and Benwell – median event duration

Gunbower

Table 37: Gunbower – operations results

Percent	Flows equivalent to fresh operating strategy (%years)	Flows equivalent to intermediate operating strategy (%years)	Flows equivalent to maximum operating strategy (%years)
Basin Plan	26	10	12
2070 Dry	2	0	0
2070 Med	14	4	4
2070 Wet	25	7	8
2045 Dry	7	2	0
2045 Med	16	5	4
2045 Wet	31	11	11
Without Development	56	19	24
Target Frequency	70	30	30

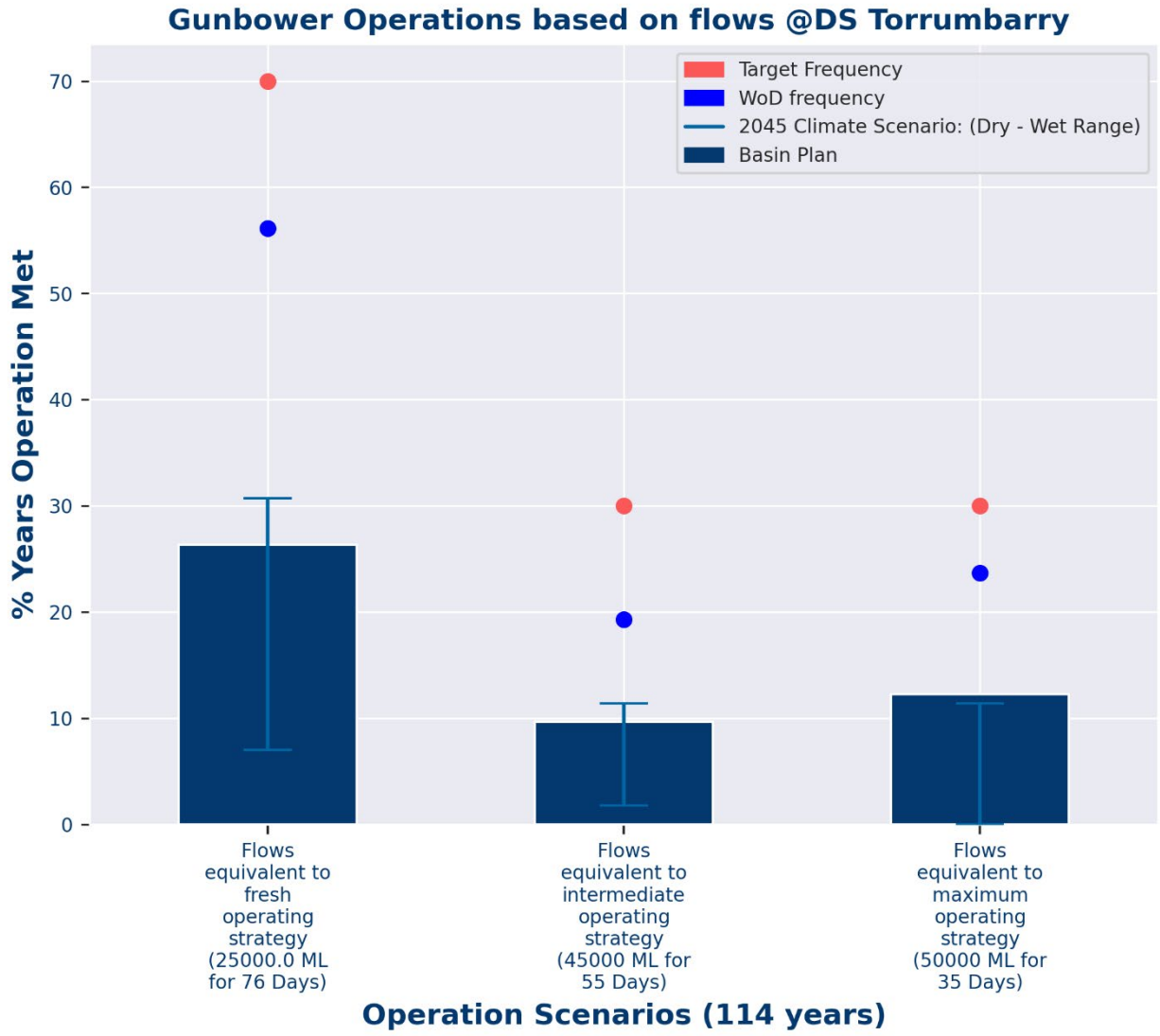

Figure 98: Gunbower 2045 climate – frequency of events relevant to operating strategies

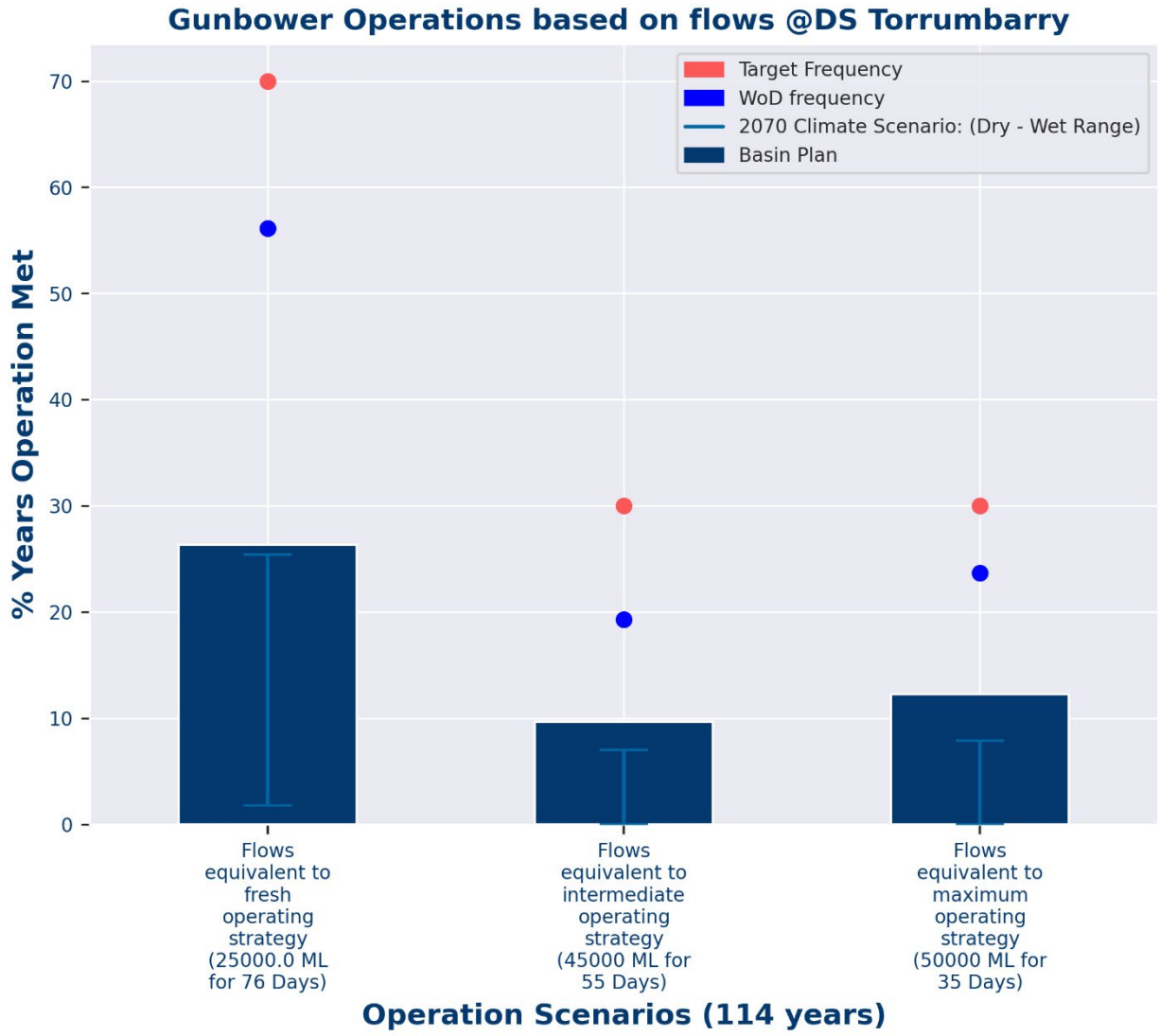

Figure 99: Gunbower 2070 climate – frequency of events relevant to operating strategies

Table 38: Gunbower – seasonality results

Number of Events	June – August (number of events)	September – November (number of events)	December – Feburary (number of events)	March – May (number of events)
Basin Plan >=25000 ML/day	9	20	0	1
Basin Plan >=35000 ML/day	6	9	0	0
Basin Plan >=45000 ML/day	5	2	0	0
Basin Plan >=55000 ML/day	2	0	0	0
Basin Plan >=65000 ML/day	0	0	0	0
2045 Wet >=25000 ML/day	8	27	0	0
2045 Wet >=35000 ML/day	4	15	0	0
2045 Wet >=45000 ML/day	2	8	0	0
2045 Wet >=55000 ML/day	1	1	0	0
2045 Wet >=65000 ML/day	0	0	0	0
2045 Dry >=25000 ML/day	3	5	0	0
2045 Dry >=35000 ML/day	1	2	0	0
2045 Dry >=45000 ML/day	0	0	0	0
2045 Dry >=55000 ML/day	0	0	0	0
2045 Dry >=65000 ML/day	0	0	0	0
2070 Wet >=25000 ML/day	6	23	0	0

Number of Events	June – August (number of events)	September – November (number of events)	December – Feburary (number of events)	March – May (number of events)
2070 Wet >=35000 ML/day	4	13	0	0
2070 Wet >=45000 ML/day	1	4	0	0
2070 Wet >=55000 ML/day	1	0	0	0
2070 Wet >=65000 ML/day	0	0	0	0
2070 Dry >=25000 ML/day	1	1	0	0
2070 Dry >=35000 ML/day	1	0	0	0
2070 Dry >=45000 ML/day	0	0	0	0
2070 Dry >=55000 ML/day	0	0	0	0
2070 Dry >=65000 ML/day	0	0	0	0

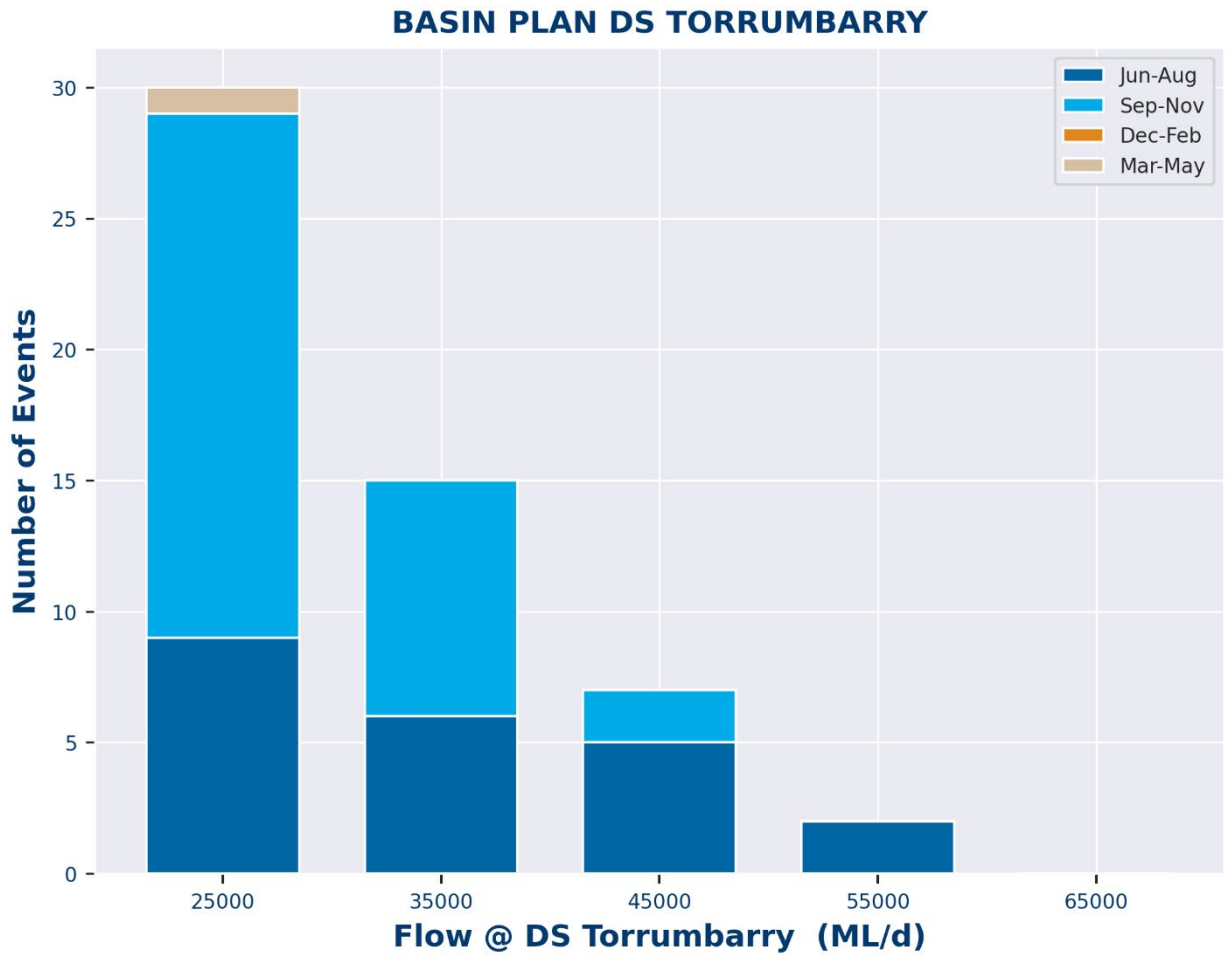

Figure 100: Gunbower Basin Plan climate – seasonality (min 76 day duration)

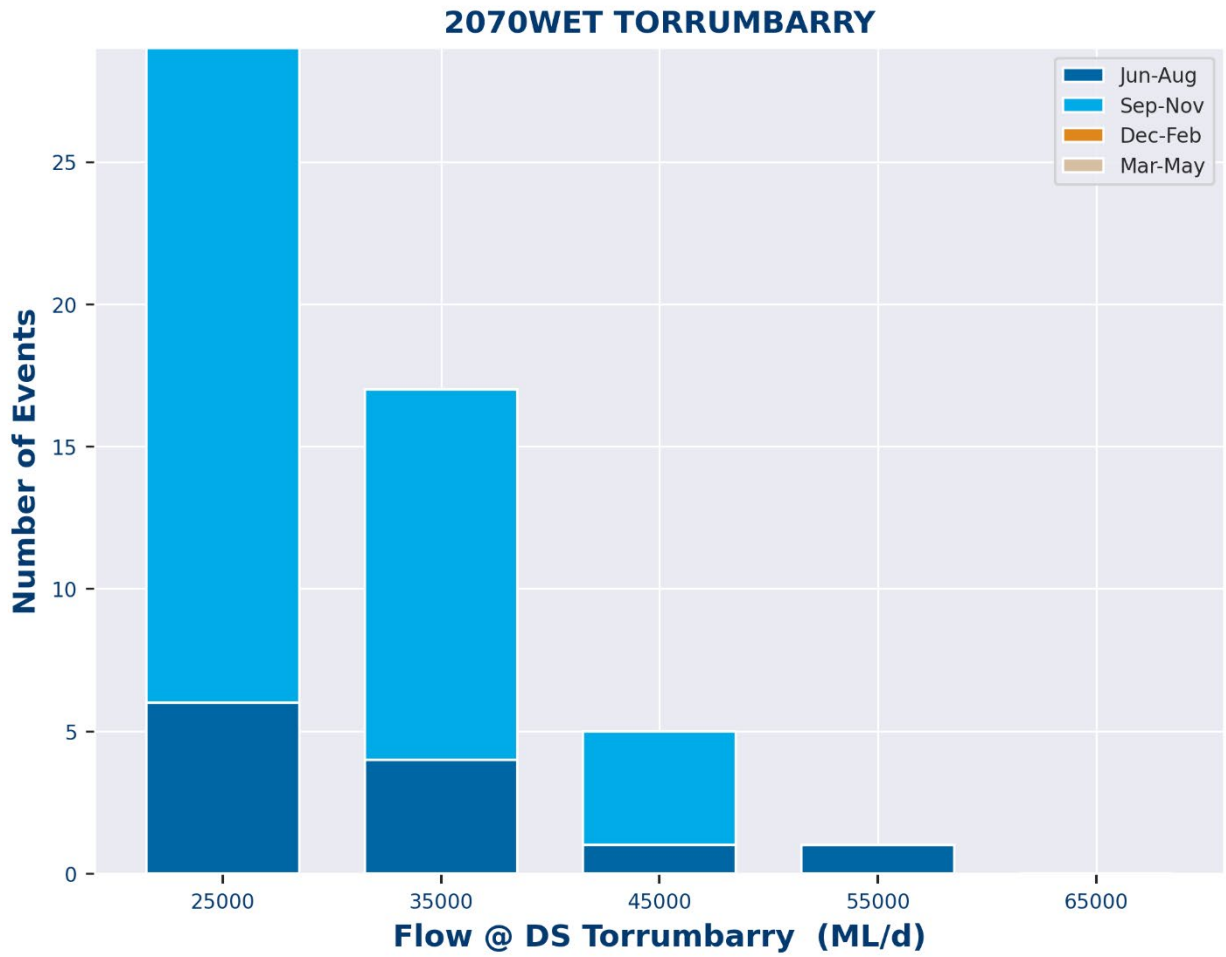

Figure 101: Gunbower 2070 wet climate – seasonality (min 76 day duration)

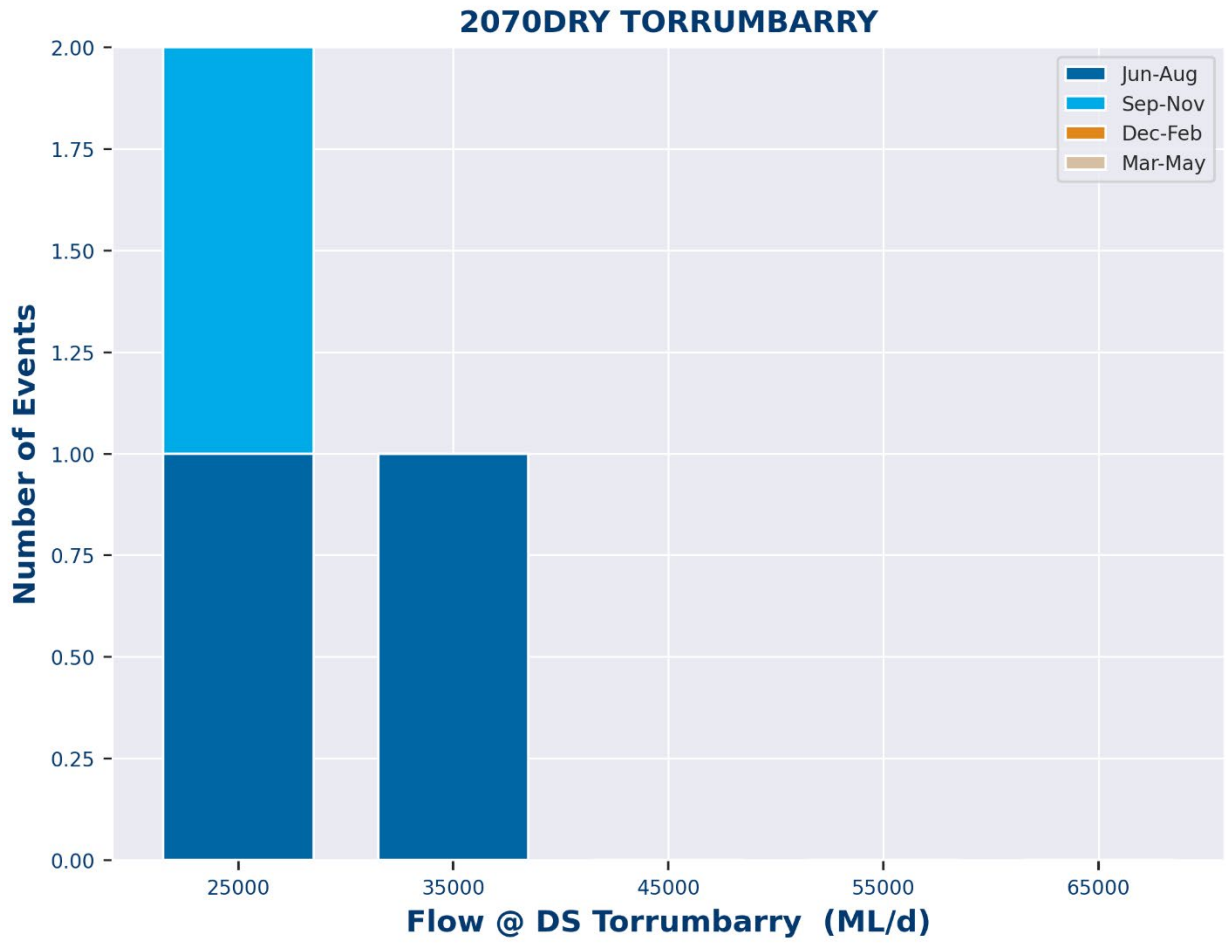

Figure 102: Gunbower 2070 dry climate – seasonality (min 76 day duration)

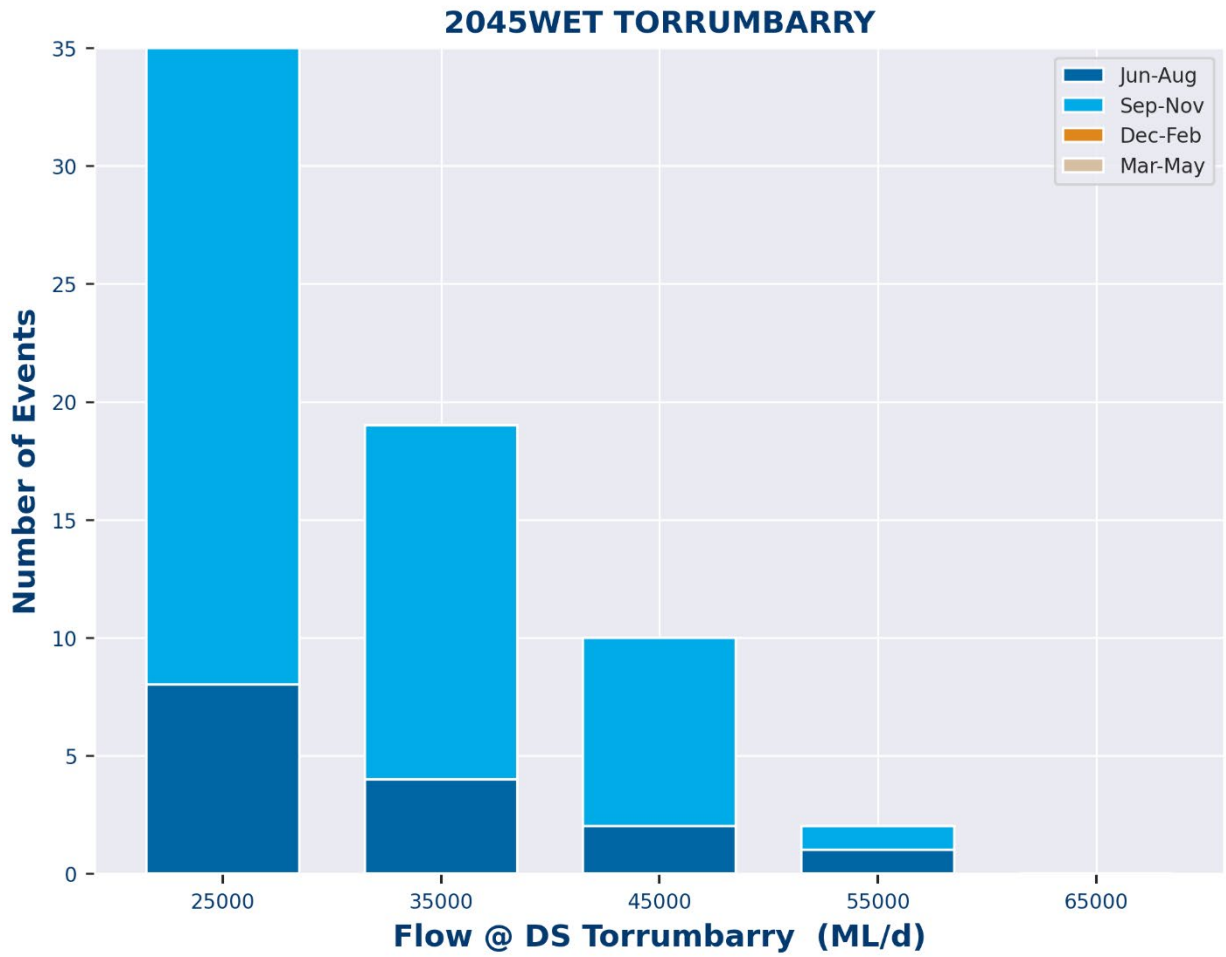

Figure 103: Gunbower 2045 wet climate – seasonality (min 76 day duration)

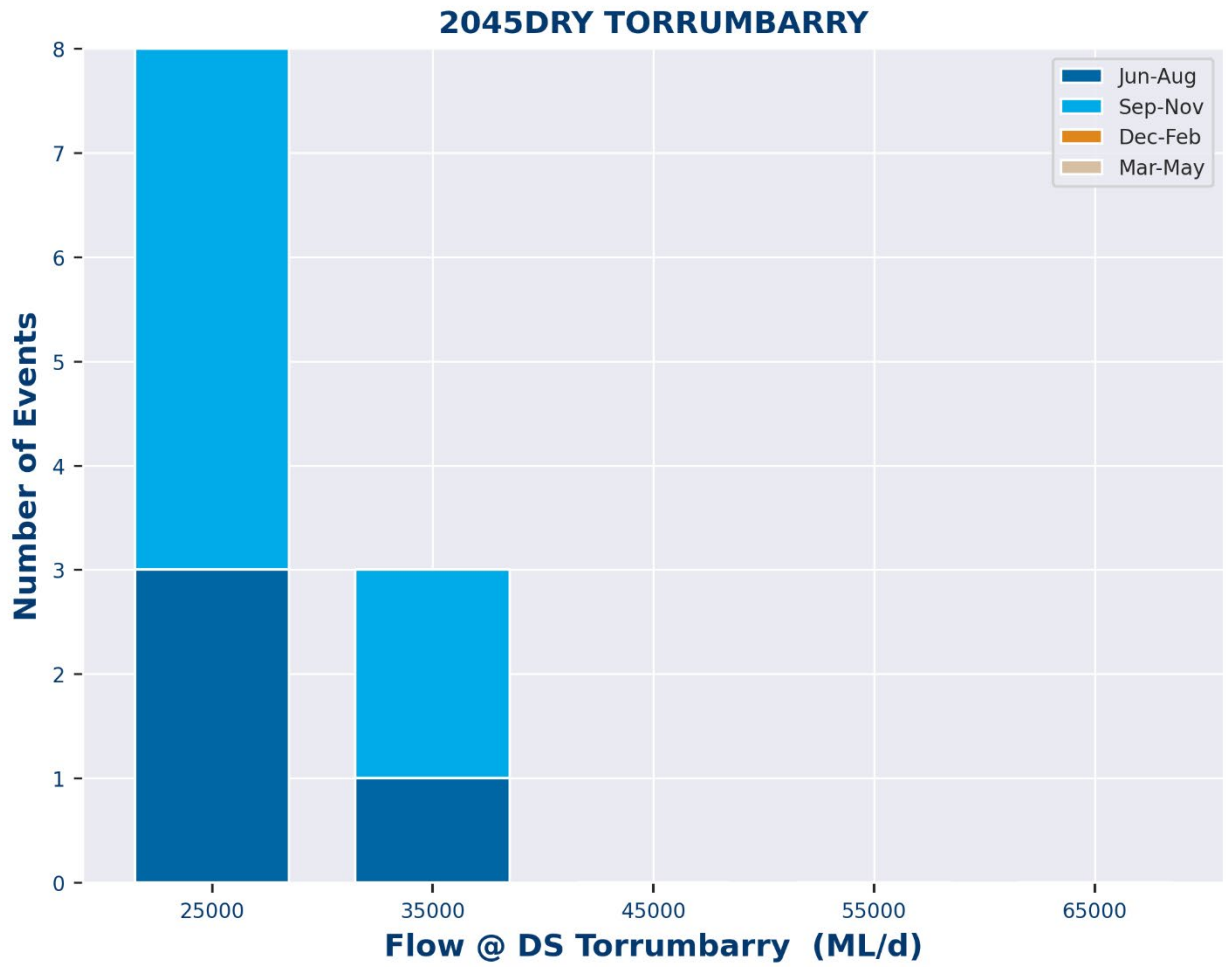

Figure 104: Gunbower 2045 dry climate – seasonality (min 76 day duration)

Table 39: Gunbower – event duration and spells results

Flow (ML/d)	No Event	%years	Med Duration (day)	90 %-ile Dry Period (day)	Model run	Min Duration (day)
25000	50	43	98	1340.8	Basin Plan	35
26000	48	40	96.5	1160.4	Basin Plan	35
27000	46	39	93.5	1229	Basin Plan	35
28000	46	38	87.5	1385.8	Basin Plan	35
29000	41	34	90	2045.9	Basin Plan	35
30000	41	33	83	2047.8	Basin Plan	35
31000	38	32	73.5	2076.4	Basin Plan	35
32000	36	31	76.5	2095.2	Basin Plan	35
33000	34	29	75	2313.2	Basin Plan	35
34000	31	25	71	2480.7	Basin Plan	35
35000	31	25	71	2481.7	Basin Plan	35
36000	29	25	74	2497.2	Basin Plan	35
37000	29	25	68	2567	Basin Plan	35
38000	28	24	67	2508.6	Basin Plan	35
39000	27	23	66	2539	Basin Plan	35
40000	23	20	69	3161.9	Basin Plan	35
41000	22	19	71	3635	Basin Plan	35
42000	21	18	62	4026.3	Basin Plan	35
43000	21	18	61	4026.6	Basin Plan	35
44000	22	17	58.5	3870	Basin Plan	35
45000	19	15	57	4454.3	Basin Plan	35
46000	20	15	52.5	4314.6	Basin Plan	35
47000	18	15	52	4607.8	Basin Plan	35
48000	18	15	46.5	4625	Basin Plan	35

Flow (ML/d)	No Event	%years	Med Duration (day)	90 %-ile Dry Period (day)	Model run	Min Duration (day)
49000	18	15	43.5	4628.4	Basin Plan	35
50000	15	12	45	5966	Basin Plan	35
51000	12	11	44.5	6511	Basin Plan	35
52000	11	10	45	7107	Basin Plan	35
53000	9	8	44	8375.2	Basin Plan	35
54000	5	4	58	11839.7	Basin Plan	35
55000	4	4	62	13108.2	Basin Plan	35
56000	3	3	50	14052.3	Basin Plan	35
57000	1	1	41		Basin Plan	35
58000	0	0			Basin Plan	35
59000	0	0			Basin Plan	35
60000	0	0			Basin Plan	35
61000	0	0			Basin Plan	35
62000	0	0			Basin Plan	35
63000	0	0			Basin Plan	35
64000	0	0			Basin Plan	35
65000	0	0			Basin Plan	35
25000	46	37	86	1421.2	Current	35
26000	43	35	91	1438.2	Current	35
27000	37	32	97	2074.5	Current	35
28000	36	30	95.5	2260	Current	35
29000	34	29	94	2309.2	Current	35
30000	35	29	85	2286.6	Current	35
31000	34	28	79	2510.8	Current	35
32000	33	28	73	2532.7	Current	35

Flow (ML/d)	No Event	%years	Med Duration (day)	90 %-ile Dry Period (day)	Model run	Min Duration (day)
33000	30	25	79.5	2554.6	Current	35
34000	29	25	77	2555.9	Current	35
35000	25	22	78	2768.3	Current	35
36000	25	22	69	2783.9	Current	35
37000	24	21	66	2816.6	Current	35
38000	22	18	66	3251	Current	35
39000	21	18	64	3477.9	Current	35
40000	21	18	64	3479.7	Current	35
41000	21	17	60	3792.9	Current	35
42000	20	16	59	4319.2	Current	35
43000	20	16	55.5	4319.2	Current	35
44000	19	15	56	4464.5	Current	35
45000	19	15	55	4465.2	Current	35
46000	18	15	48	4612.4	Current	35
47000	16	13	48.5	5304.4	Current	35
48000	16	13	48	5314.2	Current	35
49000	15	12	43	5768.9	Current	35
50000	12	11	45.5	6510	Current	35
51000	12	11	44	6511	Current	35
52000	10	9	45	6753.4	Current	35
53000	9	8	44	8375.5	Current	35
54000	6	5	65	11076	Current	35
55000	4	4	61.5	13107.8	Current	35
56000	3	3	55	14052.3	Current	35
57000	1	1	41		Current	35

Flow (ML/d)	No Event	%years	Med Duration (day)	90 %-ile Dry Period (day)	Model run	Min Duration (day)
58000	0	0			Current	35
59000	0	0			Current	35
60000	0	0			Current	35
61000	0	0			Current	35
62000	0	0			Current	35
63000	0	0			Current	35
64000	0	0			Current	35
65000	0	0			Current	35
25000	47	41	112	1363.5	2045 Wet	35
26000	46	40	107.5	1369.6	2045 Wet	35
27000	44	39	104	1379.6	2045 Wet	35
28000	42	37	105.5	1385	2045 Wet	35
29000	44	37	93.5	1414.6	2045 Wet	35
30000	41	36	95	1525.4	2045 Wet	35
31000	40	34	100.5	1621.4	2045 Wet	35
32000	38	33	97	1951.8	2045 Wet	35
33000	36	32	98.5	2091	2045 Wet	35
34000	36	32	92.5	2103.6	2045 Wet	35
35000	35	31	93	2467	2045 Wet	35
36000	33	29	93	2497.8	2045 Wet	35
37000	30	26	93	2514.8	2045 Wet	35
38000	30	25	92	2517.6	2045 Wet	35
39000	29	25	92	2521.9	2045 Wet	35
40000	27	24	92	2525	2045 Wet	35
41000	25	22	90	2483.7	2045 Wet	35

Flow (ML/d)	No Event	%years	Med Duration (day)	90 %-ile Dry Period (day)	Model run	Min Duration (day)
42000	26	22	82.5	2472.8	2045 Wet	35
43000	23	19	90	3440.4	2045 Wet	35
44000	23	18	88	3582.7	2045 Wet	35
45000	21	17	65	3839.7	2045 Wet	35
46000	20	16	64.5	4981	2045 Wet	35
47000	19	15	60	5136.9	2045 Wet	35
48000	14	12	70	5553.6	2045 Wet	35
49000	15	12	51	5270.4	2045 Wet	35
50000	14	11	57	5719	2045 Wet	35
51000	11	10	65	6911.7	2045 Wet	35
52000	10	9	62	7985.2	2045 Wet	35
53000	7	6	62	10162.5	2045 Wet	35
54000	6	5	56.5	11080.8	2045 Wet	35
55000	4	4	68	13120.8	2045 Wet	35
56000	3	3	64	13645.6	2045 Wet	35
57000	0	0			2045 Wet	35
58000	0	0			2045 Wet	35
59000	0	0			2045 Wet	35
60000	0	0			2045 Wet	35
61000	0	0			2045 Wet	35
62000	0	0			2045 Wet	35
63000	0	0			2045 Wet	35
64000	0	0			2045 Wet	35
65000	0	0			2045 Wet	35
25000	35	30	85	2480	2045 Med	35

Flow (ML/d)	No Event	%years	Med Duration (day)	90 %-ile Dry Period (day)	Model run	Min Duration (day)
26000	34	28	78	2494.8	2045 Med	35
27000	34	28	75.5	2496.2	2045 Med	35
28000	30	25	71.5	3015.2	2045 Med	35
29000	30	25	69	3029.2	2045 Med	35
30000	27	24	68	3225	2045 Med	35
31000	23	20	77	3482.3	2045 Med	35
32000	22	19	75.5	3550	2045 Med	35
33000	21	18	75	3806.4	2045 Med	35
34000	21	18	67	3809.2	2045 Med	35
35000	19	17	67	4322.3	2045 Med	35
36000	19	17	67	4324.3	2045 Med	35
37000	18	16	71.5	4581.4	2045 Med	35
38000	16	14	75	5531.6	2045 Med	35
39000	15	13	74	5679.5	2045 Med	35
40000	13	11	69	6002.6	2045 Med	35
41000	11	10	68	6892.3	2045 Med	35
42000	11	10	66	6900.8	2045 Med	35
43000	10	9	67	7669	2045 Med	35
44000	9	8	66	8442.7	2045 Med	35
45000	8	7	66	9433.2	2045 Med	35
46000	8	7	65.5	9437	2045 Med	35
47000	7	6	63	10308	2045 Med	35
48000	6	5	65.5	11071.6	2045 Med	35
49000	5	4	66	11941.5	2045 Med	35
50000	5	4	62	11945.9	2045 Med	35

Flow (ML/d)	No Event	%years	Med Duration (day)	90 %-ile Dry Period (day)	Model run	Min Duration (day)
51000	5	4	61	11952.8	2045 Med	35
52000	5	4	60	11959.4	2045 Med	35
53000	4	4	62.5	12683	2045 Med	35
54000	4	4	52	12690.2	2045 Med	35
55000	2	2	35.5	13540	2045 Med	35
56000	0	0			2045 Med	35
57000	0	0			2045 Med	35
58000	0	0			2045 Med	35
59000	0	0			2045 Med	35
60000	0	0			2045 Med	35
61000	0	0			2045 Med	35
62000	0	0			2045 Med	35
63000	0	0			2045 Med	35
64000	0	0			2045 Med	35
65000	0	0			2045 Med	35
25000	23	20	62	3445	2045 Dry	35
26000	20	18	59	3926.4	2045 Dry	35
27000	20	18	55	3931.6	2045 Dry	35
28000	19	17	53	4326.1	2045 Dry	35
29000	18	16	53	4587.2	2045 Dry	35
30000	18	16	46.5	4597.8	2045 Dry	35
31000	13	11	58	5933.8	2045 Dry	35
32000	11	10	60	6913.5	2045 Dry	35
33000	10	9	59	7737.8	2045 Dry	35
34000	9	8	60	8539.7	2045 Dry	35

Flow (ML/d)	No Event	%years	Med Duration (day)	90 %-ile Dry Period (day)	Model run	Min Duration (day)
35000	7	6	52	10128.5	2045 Dry	35
36000	7	6	51	10131.5	2045 Dry	35
37000	5	4	86	11820.5	2045 Dry	35
38000	5	4	79	11824.7	2045 Dry	35
39000	5	4	75	11829.4	2045 Dry	35
40000	5	4	65	11835.2	2045 Dry	35
41000	5	4	45	11847.9	2045 Dry	35
42000	4	4	55	12679.2	2045 Dry	35
43000	3	3	71	13397.5	2045 Dry	35
44000	3	3	70	13399	2045 Dry	35
45000	2	2	70.5	14116	2045 Dry	35
46000	2	2	68.5	14117	2045 Dry	35
47000	2	2	52.5	14119	2045 Dry	35
48000	1	1	64		2045 Dry	35
49000	0	0			2045 Dry	35
50000	0	0			2045 Dry	35
51000	0	0			2045 Dry	35
52000	0	0			2045 Dry	35
53000	0	0			2045 Dry	35
54000	0	0			2045 Dry	35
55000	0	0			2045 Dry	35
56000	0	0			2045 Dry	35
57000	0	0			2045 Dry	35
58000	0	0			2045 Dry	35
59000	0	0			2045 Dry	35

Flow (ML/d)	No Event	%years	Med Duration (day)	90 %-ile Dry Period (day)	Model run	Min Duration (day)
60000	0	0			2045 Dry	35
61000	0	0			2045 Dry	35
62000	0	0			2045 Dry	35
63000	0	0			2045 Dry	35
64000	0	0			2045 Dry	35
65000	0	0			2045 Dry	35
25000	47	40	91	1389.5	2070 Wet	35
26000	47	40	89	1401.5	2070 Wet	35
27000	42	37	92.5	1430	2070 Wet	35
28000	40	34	89	1798.4	2070 Wet	35
29000	37	32	94	2119.5	2070 Wet	35
30000	36	31	93.5	2520.8	2070 Wet	35
31000	33	29	93	2523.5	2070 Wet	35
32000	33	29	92	2525.4	2070 Wet	35
33000	31	27	91	2598.8	2070 Wet	35
34000	27	24	95	3033.5	2070 Wet	35
35000	27	24	94	3037	2070 Wet	35
36000	27	24	93	3039.5	2070 Wet	35
37000	26	23	91.5	3284.2	2070 Wet	35
38000	25	21	90	3354.2	2070 Wet	35
39000	22	18	90	4645	2070 Wet	35
40000	22	18	89	4648	2070 Wet	35
41000	23	18	69	4468.5	2070 Wet	35
42000	22	18	66.5	4686	2070 Wet	35
43000	20	16	56.5	4979.4	2070 Wet	35

Flow (ML/d)	No Event	%years	Med Duration (day)	90 %-ile Dry Period (day)	Model run	Min Duration (day)
44000	16	13	65	5550.6	2070 Wet	35
45000	15	13	55	5701	2070 Wet	35
46000	14	12	60	5558	2070 Wet	35
47000	14	12	58.5	5565.2	2070 Wet	35
48000	14	12	46.5	5568.6	2070 Wet	35
49000	12	11	51.5	6147	2070 Wet	35
50000	9	8	60	8724.6	2070 Wet	35
51000	6	5	58	11071	2070 Wet	35
52000	6	5	53.5	11081.8	2070 Wet	35
53000	6	5	49.5	11087.8	2070 Wet	35
54000	5	4	60	11960.2	2070 Wet	35
55000	3	3	38	14080.9	2070 Wet	35
56000	1	1	39		2070 Wet	35
57000	0	0			2070 Wet	35
58000	0	0			2070 Wet	35
59000	0	0			2070 Wet	35
60000	0	0			2070 Wet	35
61000	0	0			2070 Wet	35
62000	0	0			2070 Wet	35
63000	0	0			2070 Wet	35
64000	0	0			2070 Wet	35
65000	0	0			2070 Wet	35
25000	33	26	74	2830.4	2070 Med	35
26000	29	25	71	3067.3	2070 Med	35
27000	28	25	73	3138	2070 Med	35

Flow (ML/d)	No Event	%years	Med Duration (day)	90 %-ile Dry Period (day)	Model run	Min Duration (day)
28000	28	25	68.5	3146.2	2070 Med	35
29000	25	22	68	3345.7	2070 Med	35
30000	24	21	65.5	3339.8	2070 Med	35
31000	22	19	69	3547	2070 Med	35
32000	20	18	70	4059.2	2070 Med	35
33000	20	18	64.5	4060.8	2070 Med	35
34000	19	17	59	4318.7	2070 Med	35
35000	17	15	56	4688.5	2070 Med	35
36000	17	15	53	4690	2070 Med	35
37000	16	14	49	4977.6	2070 Med	35
38000	14	12	56	5549.4	2070 Med	35
39000	13	11	46	5837.6	2070 Med	35
40000	10	9	61.5	7665.6	2070 Med	35
41000	7	6	68	10102	2070 Med	35
42000	6	5	76.5	11033.2	2070 Med	35
43000	6	5	72.5	11038.8	2070 Med	35
44000	6	5	66.5	11046.6	2070 Med	35
45000	6	5	65	11054	2070 Med	35
46000	6	5	63	11064.2	2070 Med	35
47000	6	5	55.5	11071.4	2070 Med	35
48000	5	4	62	11940.4	2070 Med	35
49000	4	4	81.5	13084.2	2070 Med	35
50000	4	4	67	13085.4	2070 Med	35
51000	4	4	64	13086.4	2070 Med	35
52000	3	3	66	14035.4	2070 Med	35

Flow (ML/d)	No Event	%years	Med Duration (day)	90 %-ile Dry Period (day)	Model run	Min Duration (day)
53000	3	3	63	14038.8	2070 Med	35
54000	3	3	59	14044.5	2070 Med	35
55000	1	1	53		2070 Med	35
56000	1	1	38		2070 Med	35
57000	0	0			2070 Med	35
58000	0	0			2070 Med	35
59000	0	0			2070 Med	35
60000	0	0			2070 Med	35
61000	0	0			2070 Med	35
62000	0	0			2070 Med	35
63000	0	0			2070 Med	35
64000	0	0			2070 Med	35
65000	0	0			2070 Med	35
25000	8	7	55	7441.6	2070 Dry	35
26000	6	5	55	11073.8	2070 Dry	35
27000	7	5	53	10324.5	2070 Dry	35
28000	7	5	52	10332	2070 Dry	35
29000	6	4	48.5	11090.2	2070 Dry	35
30000	6	4	45	11095.4	2070 Dry	35
31000	5	4	45	11852.6	2070 Dry	35
32000	5	4	43	11855	2070 Dry	35
33000	4	4	51	12684.6	2070 Dry	35
34000	3	3	60	13616.5	2070 Dry	35
35000	3	3	60	13617.5	2070 Dry	35
36000	2	2	69.5	14122	2070 Dry	35

Flow (ML/d)	No Event	%years	Med Duration (day)	90 %-ile Dry Period (day)	Model run	Min Duration (day)
37000	2	2	68	14124	2070 Dry	35
38000	2	2	66	14124	2070 Dry	35
39000	1	1	75		2070 Dry	35
40000	1	1	70		2070 Dry	35
41000	1	1	48		2070 Dry	35
42000	0	0			2070 Dry	35
43000	0	0			2070 Dry	35
44000	0	0			2070 Dry	35
45000	0	0			2070 Dry	35
46000	0	0			2070 Dry	35
47000	0	0			2070 Dry	35
48000	0	0			2070 Dry	35
49000	0	0			2070 Dry	35
50000	0	0			2070 Dry	35
51000	0	0			2070 Dry	35
52000	0	0			2070 Dry	35
53000	0	0			2070 Dry	35
54000	0	0			2070 Dry	35
55000	0	0			2070 Dry	35
56000	0	0			2070 Dry	35
57000	0	0			2070 Dry	35
58000	0	0			2070 Dry	35
59000	0	0			2070 Dry	35
60000	0	0			2070 Dry	35
61000	0	0			2070 Dry	35

Flow (ML/d)	No Event	%years	Med Duration (day)	90 %-ile Dry Period (day)	Model run	Min Duration (day)
62000	0	0			2070 Dry	35
63000	0	0			2070 Dry	35
64000	0	0			2070 Dry	35
65000	0	0			2070 Dry	35
25000	89	75	129	624	WoD	35
26000	86	73	126	671.8	WoD	35
27000	82	69	125	683	WoD	35
28000	80	67	116	913.6	WoD	35
29000	80	65	102.5	914.6	WoD	35
30000	78	63	98.5	931.8	WoD	35
31000	77	62	93	964	WoD	35
32000	72	60	100	985	WoD	35
33000	69	58	101	987.9	WoD	35
34000	64	53	98.5	1274	WoD	35
35000	60	48	99	1353.4	WoD	35
36000	59	46	85	1352.8	WoD	35
37000	58	46	80	1354.8	WoD	35
38000	58	46	68	1360.4	WoD	35
39000	58	45	63	1361.4	WoD	35
40000	54	43	61.5	1363.8	WoD	35
41000	52	42	59	1366	WoD	35
42000	48	39	59.5	1383	WoD	35
43000	47	39	57	1389	WoD	35
44000	44	36	55	1387.4	WoD	35
45000	45	36	55	1387	WoD	35

Flow (ML/d)	No Event	%years	Med Duration (day)	90 %-ile Dry Period (day)	Model run	Min Duration (day)
46000	41	34	66	1714.2	WoD	35
47000	38	31	65.5	1733.4	WoD	35
48000	37	30	65	1922.5	WoD	35
49000	36	28	58	2215.8	WoD	35
50000	30	24	57	2834.6	WoD	35
51000	27	21	50	3034	WoD	35
52000	23	19	50	3216.2	WoD	35
53000	22	17	44	3639	WoD	35
54000	17	15	45	4910	WoD	35
55000	12	11	47.5	6160	WoD	35
56000	7	6	44	10314.5	WoD	35
57000	2	2	46	23304	WoD	35
58000	0	0			WoD	35
59000	0	0			WoD	35
60000	0	0			WoD	35
61000	0	0			WoD	35
62000	0	0			WoD	35
63000	0	0			WoD	35
64000	0	0			WoD	35
65000	0	0			WoD	35

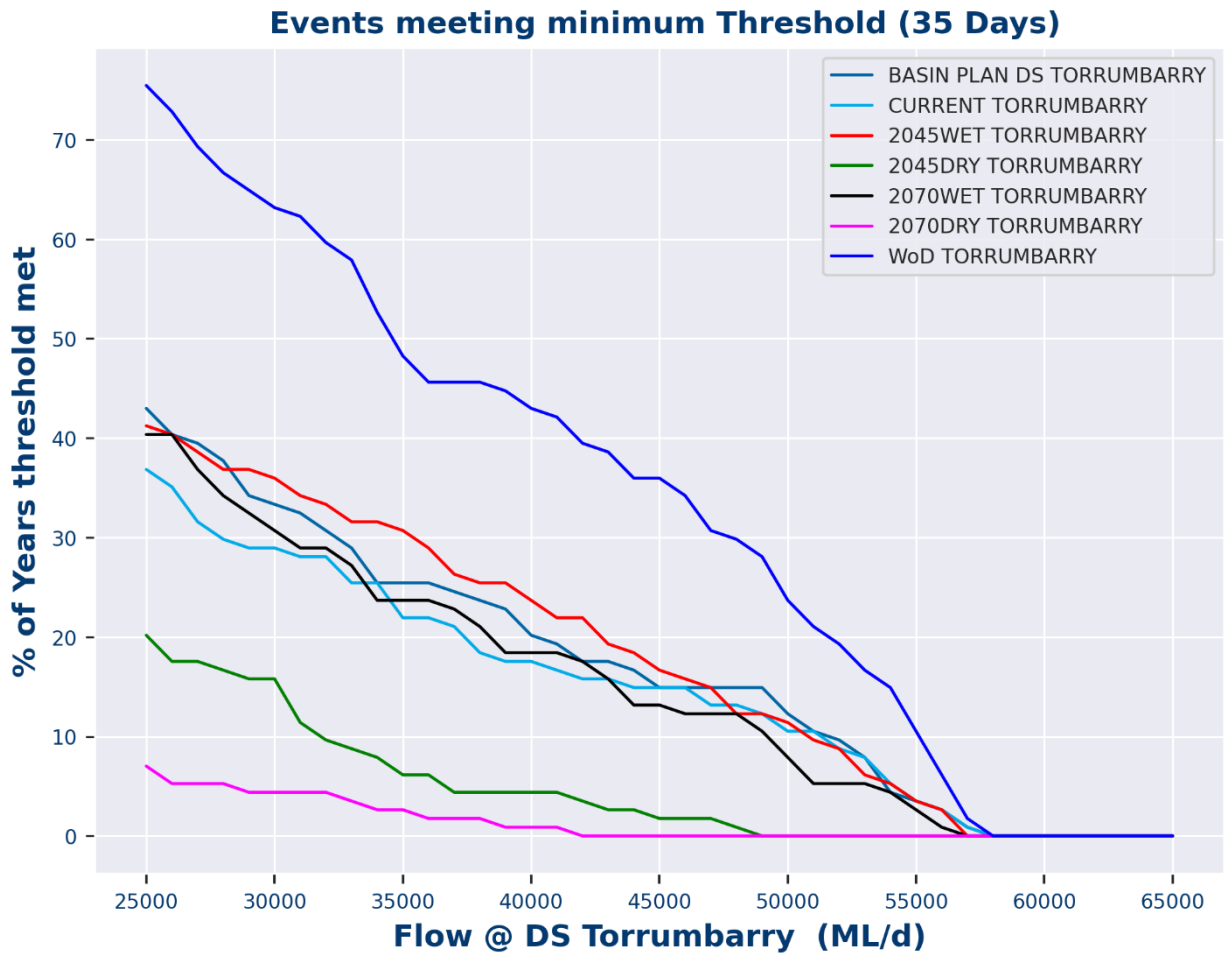

Figure 105: Gunbower – percentage of years with an event

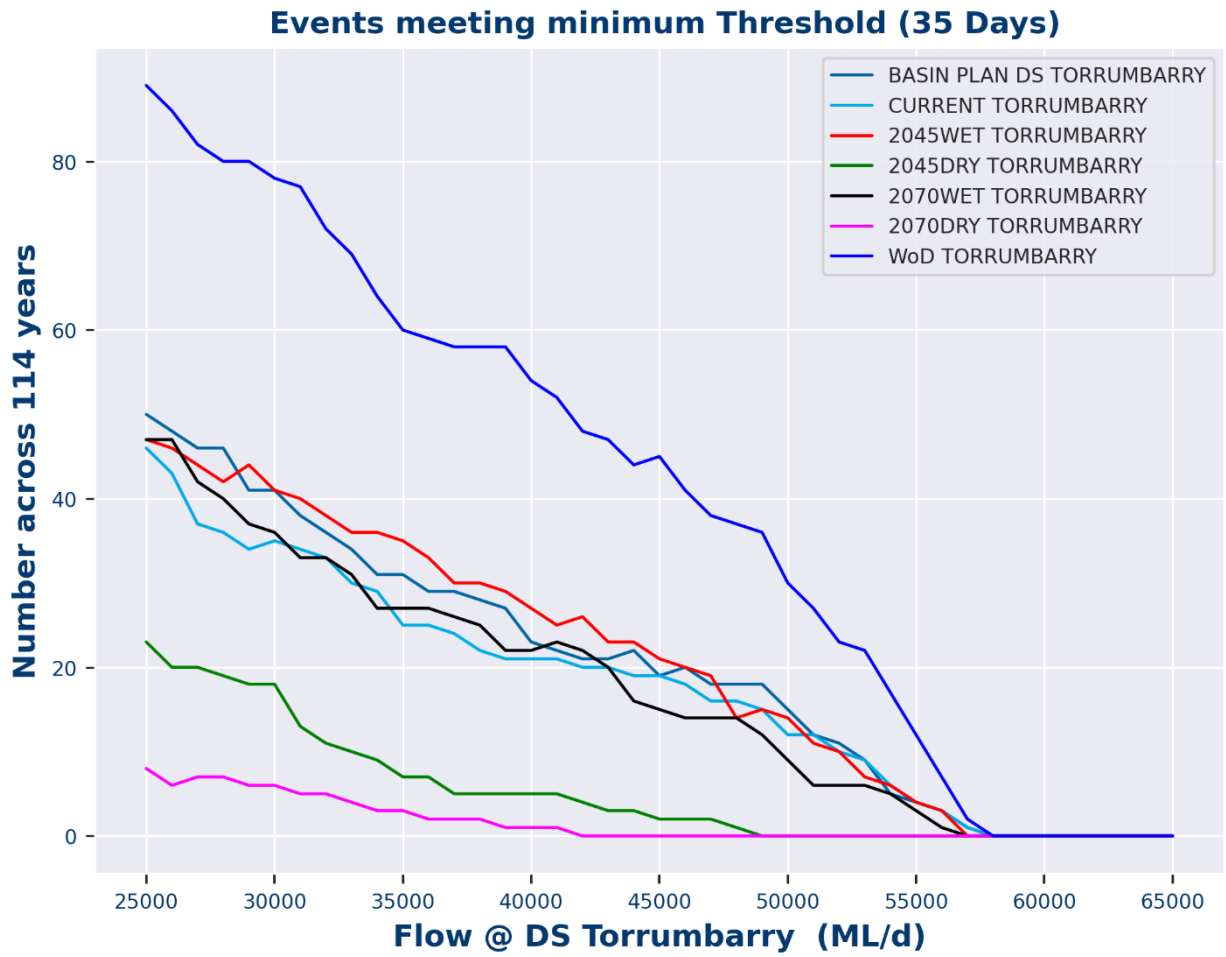

Figure 106: Gunbower – number of events

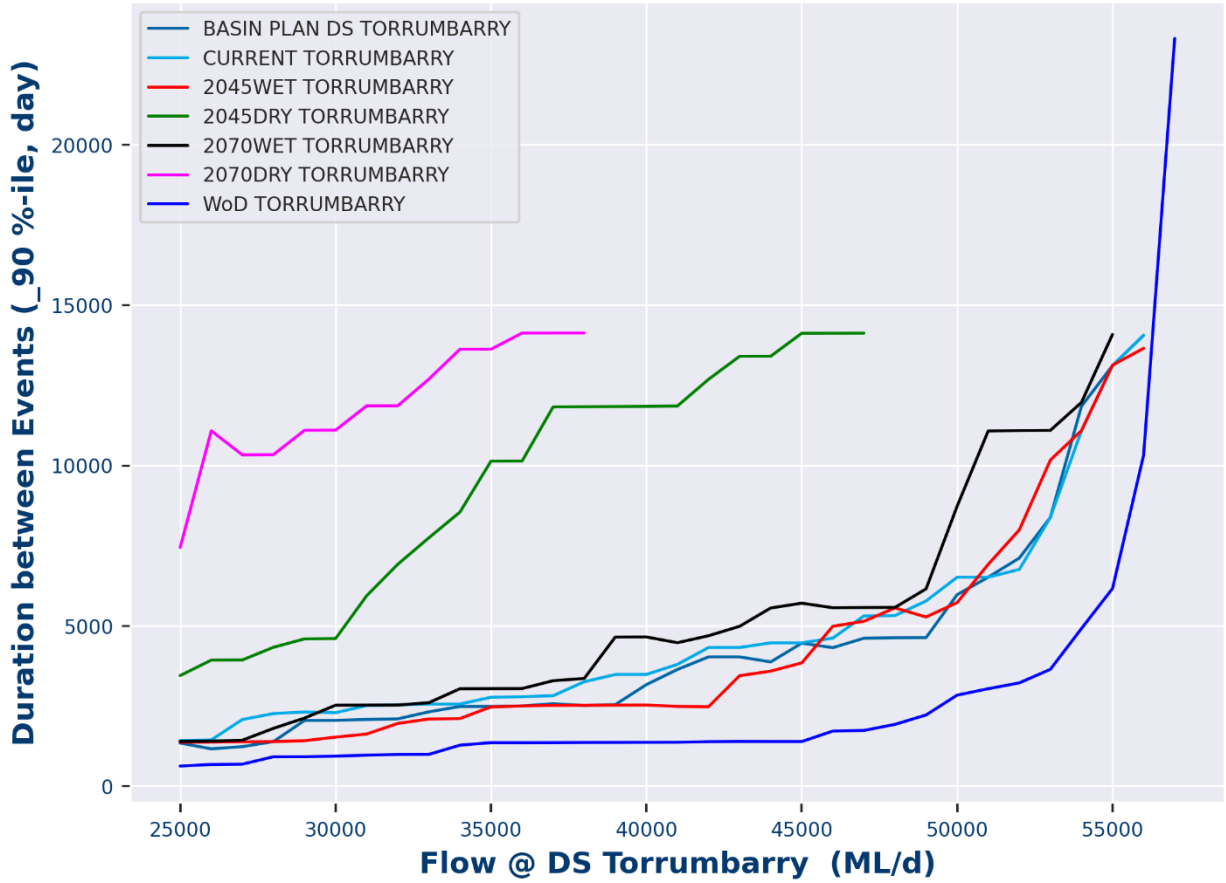

Figure 107: Gunbower – 90th percentile duration between events

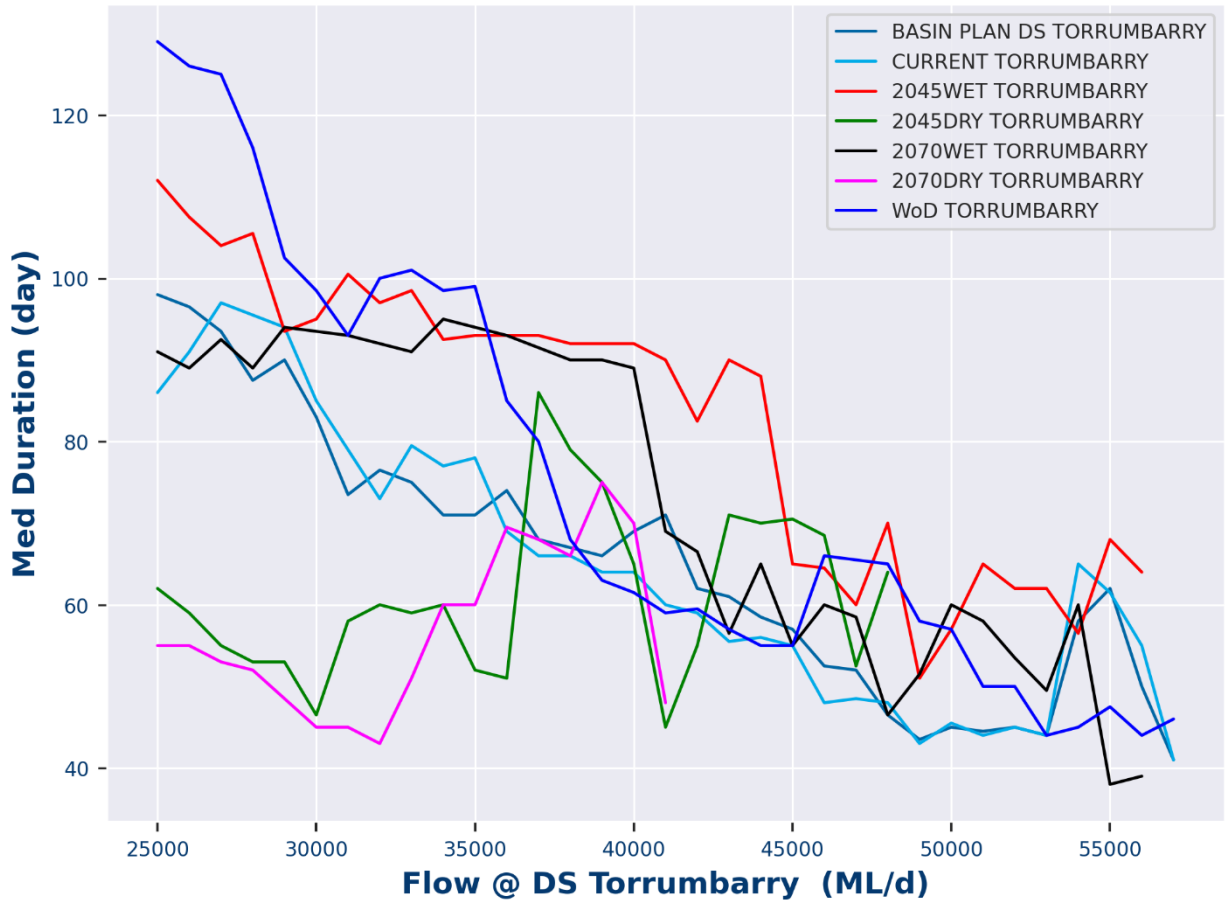

Figure 108: Gunbower – median event duration

Office locations – *First Nations Country*
Adelaide – *Kaurna Country*
Canberra – *Ngunnawal Country*
Goondiwindi – *Bigambul Country*
Griffith – *Wiradjuri Country*
Mildura – *Latji Latji Country*
Murray Bridge – *Ngarrindjeri Country*
Toowoomba – *Jarowair and Wakka Wakka Country*
Wodonga – *Dhudhuroa Country*

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