Namoi (SS21)

INITIAL SDL ASSESSMENT RESULT

The Authority is **confident** that the SDL reflects an environmentally sustainable level of take for this Unit and **proposes the SDL is maintained**.

It is recognised that the extent, nature of and planning for continued monitoring, evaluation and assessment is tailored by the New South Wales government for the management of local and site-specific areas of concern to maintain environmental outcomes.

It is important that the impacts of a changing climate continue to be actively considered for this Unit.

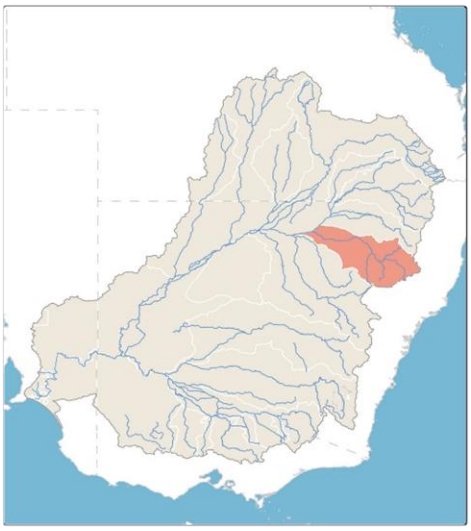

Figure 1: Namoi (SS21) SDL Resource Unit

The Authority is assessing whether the Sustainable Diversion Limit (SDL) for the Namoi SDL Resource Unit (the **Unit**) continues to support environmental outcomes and reflect an environmentally sustainable level of take (ESLT). This initial assessment refers only to outcomes in this Unit.

This Assessment Summary provides an overview of the factors which are relevant to that work and the Authority's initial view. The summary draws on three 'Lines of Enquiry', engaging with the likelihood that flow regimes support environmental outcomes, the Authority's confidence in that assessment, and the consequence of an at risk finding. Line of Enquiry 2 – full Basin Plan implementation – has been considered as the primary line of enquiry. Assumptions for each Line of Enquiry are documented in the *Summary of Assessment Approach* available on the MDBA website.

Information on the Lines of Enquiry and methodology used in this assessment is available in the *Summary of Assessment Approach* and the *SDL Assessment and Response Framework*. Information on the *Basin Plan Review Discussion Paper* and process for making a submission are also available on the MDBA website.

About this Unit (as at June 2024)

Ramsar sites	None
Contribution to Basin water	3.2% of the total water available in the Murray-Darling Basin
Key waterways	Namoi River (700km); Macdonald, Manilla, Peel, Mooki and Cockburn rivers,
Water storages	Keepit Dam (426 GL), Split Rock Dam (397 GL), Chaffey Dam (101 GL)
Significant groundwater connections	Upper Namoi Alluvium (GS47), Upper Namoi Tributary Alluvium (GS49), Manilla Alluvium (GS30, Peel Valley Alluvium (GS40)

While an accredited Water Resource Plan (WRP) relating to this Unit is not yet in place, the SDL has applied since 1 July 2019. Water resource management is currently governed by existing rules and arrangements made under NSW state legislation, with SDL accounting undertaken through transitional Basin Plan arrangements. Further information on water recovery for this SDL Resource

Unit is available at the Department of Climate Change, Energy, the Environment and Water's: Namoi Surface Water Recovery factsheet.

Current condition

Figure 2 below summarises the observed environmental condition in the Unit (as at June 2024).

The Authority assessed *waterbirds* to be in **poor** condition, whilst all other themes are considered to be in **moderate** condition. The Authority had a low level of confidence in the condition assessment of all themes.

In this Unit, *other species* is not a target objective and there is no monitoring data to support a condition assessment. Due to this, *other species* were not assessed in this Unit and as such are graded as Not Applicable (N/A).

Theme	Flows and connectivity	Ecosystem functions	Waterbirds	Native fish	Native vegetation	Other species
Grade						
Confidence	●○○	●○○	●○○	●○○	●○○	N/A

Figure 2. Environmental condition assessment in the Unit. Across each theme environmental condition is graded as *Very Poor, Poor, Moderate, Good* or *Very Good* (as indicated by segments) and confidence in this grading is assessed as *Low, Medium* or *High* (as indicated by dots). Other species refers to animals including frogs, platypuses and turtles.

Environmental outcomes under a fully implemented Basin Plan

Table 1 presents a compilation of:

- the *likelihood* that flows will support environmental outcomes for the five surface water themes for this Unit; and
- the Authority's *confidence* in that assessment, i.e. low (L), medium (M) or high (H) surety of the finding.

Theme	The *likelihood* that the pattern and volume of flow will support the objectives for each ecological theme							
	Line of enquiry	Very unlikely	Unlikely	About as likely as not	More likely than not	Likely	Very likely	Confidence
Flows and connectivity	LoE 1				●			●●○
	LoE 2				●			●●○
Ecosystem functions	LoE 1				●			●●○
	LoE 2				●			●●○
Waterbirds	LoE 1		●					●●○
	LoE 2		●					●●○
Native fish	LoE 1				●			●○○
	LoE 2				●			●○○
Native vegetation	LoE 1				●			●●○
	LoE 2				●			●●○
Other species	LoE 1							N/A
	LoE 2							

Table 1: Initial likelihood assessment of the flows supporting the objectives for ecological themes in Unit. Note: LoE 1 refers to Line of Enquiry 1 - current Basin Plan implementation and LoE 2 refers to Line of Enquiry 2 - full Basin Plan implementation. Other species refers to animals including frogs, platypuses and turtles.

Under both Line of Enquiry 1 and Line of Enquiry 2 it is assessed as **unlikely** that the flow requirements are supporting objectives for *waterbirds*, and that there is a **medium** level of confidence in that assessment.

Outcomes for all other themes have been identified as **more likely than not** to be supported by the pattern and volume of flow under Lines of Enquiry 1 and 2, with low or medium confidence, and are considered 'not at risk'.

Consequence assessment

Condition and likelihood assessments (Figure 2 and Table 1) indicate potential risks to *waterbirds*. A consequence assessment, primarily considering Line of Enquiry 2, has been undertaken for this theme (Table 2).

Theme	Nature of impact	Spatial scale of impact	Impact on key values	Final Rating
Waterbirds	Insufficient floodplain and wetland habitat inundation and resulting habitat loss, leading to reduced waterbird abundance and diversity.	**Low** – local or site scale	**No**- the Basin-wide Environmental Watering Strategy (BWS) has not identified any important environmental assets for waterbirds in this catchment.	**LOW**

Table 2: Consequence assessment results.

Waterbirds are highly mobile and often respond to prevailing climatic conditions by moving between wetland habitats to support their life cycle needs. Certain wetlands in the Basin are very important for waterbird abundance, breeding and species richness, and for this purpose the Basin-wide Environmental Watering Strategy has identified 28 sites of Basin significance for waterbirds.

While local habitats exist, none of the 28 sites of Basin significance are located in this Unit.

Many of the waterbird habitat sites in this Unit are located in the downstream reaches of the system. Due to the relatively deep channel in these reaches, floodplain wetland habitats are generally inundated only during high and unregulated flow conditions. Actively managing water to reach and inundate the floodplains is therefore beyond the influence of Held Environmental Water in this area and they are strongly reliant on planned environmental water rules which share water amongst users and the environment during unregulated flow events.

Drivers of impact

In this Unit, *waterbirds* have been rated as **low** in the consequence assessment. This initial assessment has identified a risk that flow is not supporting *waterbirds* outcomes, but this risk is not consequential for the Basin Plan. Other risks to *waterbirds* (such as connectivity, water quality

and habitat loss) are described in the *Discussion Paper* and will be further explored with stakeholders during the Basin Plan Review consultation process. The Authority will test this assessment and the relative contribution of different drivers to this result.

Environmental outcomes under a climate impacted future

For a description of anticipated climate impacts across the Basin see the *Summary of Assessment Approach* available on the MDBA website.

Table 3 presents a summary of the anticipated environmental impacts of climate change for the Unit by reference to the likelihood of flow regimes being met for the five environmental themes. The shaded bars represent the plausible range of future climates, and the black dots represent the anticipated likelihood under a median (50th percentile) future climate scenario.

Theme	The *likelihood* that the pattern and volume of flow will support the objectives for each ecological theme							
	Line of enquiry	Very unlikely	Unlikely	About as likely as not	More likely than not	Likely	Very likely	Confidence
Flows and connectivity	LoE 3 (~2030s)				●			●○○
	LoE 3 (~2050s)				●			●○○
Ecosystem functions	LoE 3 (~2030s)				●			●○○
	LoE 3 (~2050s)				●			●○○
Waterbirds	LoE 3 (~2030s)			●				●○○
	LoE 3 (~2050s)			●				●○○
Native fish	LoE 3 (~2030s)				●			●○○
	LoE 3 (~2050s)				●			●○○
Native vegetation	LoE 3 (~2030s)				●			●○○
	LoE 3 (~2050s)				●			●○○
Other species	LoE 3 (~2030s)							N/A
	LoE 3 (~2050s)							

Table 3: Assessment of the flows supporting the objectives for ecological themes at 2030 and 2050 levels of global warming in the Unit. Note: LoE 3 (~2030) refers to Line of Enquiry 3 - plausible future 2030 hydroclimate sequences and LoE 3 (~2050) refers to Line of Enquiry 3 - plausible future 2050 hydroclimate sequences. Confidence in this grading is assessed as *Low, Medium* or *High*. Other species refers to animals including frogs, platypuses and turtles.

The results in Table 3 indicate that there is a substantial range in the plausible ecological impacts of climate change for this Unit, such that the precise impacts will depend on the nature of the future climate, demonstrated by the wide range of possibilities across themes.

The 2025 Sustainable Yields demonstrated that the northern Basin is virtually certain to be hotter in the future. It is uncertain if long-term average rainfall will increase or decrease, but it is very likely that annual rainfall will become more variable leading to more severe and more frequent extreme droughts and floods. The 2025 MDB Outlook demonstrated that the ecosystem impacts will vary from theme to theme — for example, at the Basin-scale some native plant communities will expand, while others will shrink; native fish and waterbirds could face increased challenges due to habitat decline.

For this Unit, a consistent finding across the plausible range is that *waterbirds* objectives are anticipated to be the most exposed to climate change and are unlikely to be supported under future climate scenarios for this Unit. This is consistent with the findings for Lines of Enquiry 1 and 2.

However as noted under the consequence assessment this impact is not considered to be of Basin-scale significance.

Initial Assessment

On the balance of all three Lines of Enquiry, **the Authority is confident that the SDL reflects an environmentally sustainable level of take and is supporting the Basin Plan's environmental outcomes under full implementation conditions.** The *waterbirds* theme was found to be at risk at a local scale, but this risk is not consequential for the Basin Plan. This is an initial assessment and will be further explored with stakeholders during the Basin Plan Review consultation process.

As Basin Plan implementation is still underway, the MDBA has made assumptions about water recovery under the 450GL program and how it will be implemented in the northern Basin (see the *Summary of Assessment Approach*). The analysis demonstrates that additional water recovery in the northern Basin (beyond the recovery status as of June 2024) would yield improved environmental benefits in this Unit.

Consideration of response

The Authority recognises that ongoing monitoring, evaluation and assessment will be important, as will planning for and supporting delivery of environmental watering events to maintain environmental outcomes.

Whilst this assessment has not identified any at-risk themes that are consequential for the Basin Plan, the Discussion Paper engages with well-known challenges at a sub-Basin and Basin scale including river connectivity and the connection between rivers and their floodplains, water delivery challenges and physical constraints, native fish decline and the impacts of invasive species. The risks of a changing climate continue to be actively considered in the Basin.

Evidence

The standard evidence sources used for this assessment are described in the *Summary of Assessment Approach*, which is available on the MDBA website.