

# Water allocations in Unregulated River Systems

To complement the suite of water allocation guides for regulated river systems, this document pertains to unregulated river systems.

An unregulated river is defined in the Australian Water Information Dictionary as ‘a river where there is no entitlement system at all or where there is an entitlement system that does not allow orders to be placed for upstream release of a licensed allocation’. The latter applies in NSW.

Unlike regulated river systems, where headwater storages can capture water for subsequent ordering and delivery, unregulated rivers flow in response to rainfall and runoff. With Australian rivers typically having one of the most variable flow regimes in the world, unregulated waterways can experience extended dry periods of little or no flow, followed by large, damaging flood flows.

In NSW, water sharing plans establish the rules and priorities for the take of water from water sources in accordance with the *Water Management Act 2000*. A water sharing plan will define a surface water source as either, regulated or unregulated, and support the appropriate licensing regime.

Regulated river access licenses cannot be used in unregulated systems and vice-versa. While unregulated flow can occur in regulated systems when inflows exceed the capacity of infrastructure to capture and control flows, the reverse does not hold.

A licensing system provides the regulatory framework to manage the take of water from unregulated systems equitably and within sustainable limits. A licence entitles the holder to a share of the available water. Generally, there is a fixed number of extraction shares made available in each water source, however; depending on the licence category, unregulated river access shares can be bought and sold within systems, to meet changing development and demands in systems.



Figure 1. Unregulated River - Monaro Region of NSW

Typically, an unregulated river access licence specifies a threshold river level when pumping or diversion can commence, and when it must cease. In this way, access to water is determined by when there is sufficient natural flow (level) in the waterway. This contrasts with regulated systems where access to water can be controlled (regulated), underpinned by the volume held in storage.

During dry periods and low flows, water for irrigation is unlikely to be allowed from unregulated rivers, whereas high priority access, for example for domestic and stock purposes, may continue to lower levels of flow.

In the large Barwon-Darling system, there are different unregulated river access licence from A Class to C Class. An A Class license provides more reliable access because it allows take down to lower flow levels. These licenses might be held by those needing a reliable supply of water for say, vines, orchards, or other permanent plantings.

Conversely the C Class licenses can only be used to take water during high flows, which can be infrequent in unregulated systems. These licenses might be used to top-up on-farm storages. Attached to each license is a water account, with rules and limits specific to the water source. Water is not allowed to be taken from the river without a positive account balance.

Assessing available resource and allocating water in real-time during flow events for unregulated rivers is impractical. Therefore, while the rules are specific to each water sharing plan and each water source, unregulated river access licenses typically receive a full allocation; 100% of entitlement, credited to their water account at the start of each water year on 1 July. Water can usually remain in unregulated river access licence accounts (carryover) into a new year because account limits and annual use limits, not allocations, limit the volume of water that can be taken.

The allocation to unregulated river access licenses is therefore an administrative process, rather than being based on an available resource assessment. This is because the allocation; the water credited to the account, can only be accessed and realised if there is sufficient river flow (resource). In dry periods the account water goes unused if the river fails to reach required threshold levels.

Contrast this with regulated systems where an allocation (credit to an account) creates the expectation that the water is available in storage and will be delivered when required. Therefore, careful conservative assessment of resource availability is undertaken in regulated systems because over-allocation can be catastrophic; water users, relying on a delivery, could incur significant losses if their water cannot be delivered when needed.

There are provisions in water sharing plans to demonstrate sustainability by annually comparing the take of water from a water source with long-term average annual extraction limits. If growth-in-use is detected in a water source and take grows to exceed long-term limits, then allocations to licenses can be reduced until take is restored to within acceptable limits.

In the past, managing to an extraction limit has been difficult for most unregulated systems, due to the lack of data on water take by licence holders. NSW is currently implementing the roll out of meters on certain works under the non-urban metering program. Once sufficient metering data is available from this program, assessment against extraction limits will commence.

In addition, during severe water shortages, a reduced allocation can be provided to unregulated river access licenses, or water already allocated to accounts can be rendered inaccessible under a S324 Temporary Water Restriction Order, to improve water security for critical human and non-human needs.