



3. Managed Aquifer Recharge in the draft Adelaide Plains Water Allocation Plan

The term Managed Aquifer Recharge (MAR) refers to the intentional draining and discharging of water to aquifers for subsequent recovery and use or for environmental benefit. The draft Adelaide Plains Water Allocation Plan (draft WAP) contains proposed principles or 'rules' that are specific to MAR activities.

The licensing instruments utilised for MAR activities are slightly different to those used for native groundwater and are explained in more detail below. Information on how other licences under the draft WAP will function is provided in more detail in the related information sheet 'Water Licensing under the draft Adelaide Plains Water Allocation Plan'.

MAR Consumptive Pool

- The draft WAP establishes a single consumptive pool for all MAR operations. This is known as the Managed Aquifer Recharge Consumptive Pool and, being an administrative pool established for a particular purpose, it extends across the entire Adelaide Plains.
- The MAR Consumptive Pool is the water that is available for MAR allocations, due to the recharge activities that have previously occurred.

MAR Water Licence

- The draft WAP proposes that MAR licences would be issued in relation to the MAR Consumptive Pool to enable the recovery of water which has previously been recharged into an aquifer.

MAR Entitlement

- The draft WAP proposes that a MAR entitlement would reflect the 'available balance' of the relevant MAR scheme.
- The available balance would be based on the volume of water drained or discharged under a relevant permit or authorisation in the previous 10 water use years, minus any volume that has subsequently been extracted over that same period.

MAR Allocation

- A MAR allocation would be issued for a single water use year and would reflect the maximum volume that could be extracted in that year.
- The allocation would generally be the lesser of the available balance or the 'maximum annual recovery volume' specified on the water licence.
- The maximum annual recovery volume is the volume of water which can be recovered from the resource at the locations of extraction specified for the MAR licence which does not cause adverse impacts to the resource or existing users.
- The maximum annual recovery volume is determined based on the risk management and monitoring plan for the MAR scheme.



- If there is a need to take more water than the maximum annual recovery volume for a particular year, a MAR allocation can potentially be increased up to the available balance. However, the MAR operator will be required to demonstrate that taking water at a higher rate would not impact on existing users, result in undesirable impacts to the groundwater resource or, if applicable, impact on any ecosystems dependent on the groundwater resource.

MAR Rules

The following factors would be taken into account when issuing MAR entitlements and allocations:

- MAR water allocations must be taken from the same aquifer into which the water was drained or discharged, and from well/s located within the same spatial extent as the corresponding native groundwater consumptive pool that aligns with the location and aquifer within which the draining or discharge occurred;
- the MAR licence holder must operate in accordance with a risk management and monitoring plan approved by the Minister, and must report the injection and recovery volumes in a manner approved by the Minister;
- if a MAR operator also has a licence for a native groundwater entitlement, the MAR allocation will be considered to be taken last - this enables any allocation which is not used to be banked for future use; and
- other general principles in the draft WAP, such as those relating to buffer zones or the management and maintenance of wells, apply equally to both native groundwater and MAR licences.

Transfer of MAR Allocations

The draft WAP proposes that all or part of a MAR allocation could be transferred to another water user, noting that:

- transfer applications would be subject to the same assessment criteria as would be used for the transfer of native groundwater allocations (see related information sheet 'Transferring Water under the draft Adelaide Plains Water Allocation Plan');
- in addition to these assessment criteria, the draft WAP proposes that a transferred MAR allocation must be taken from well/s located within the same spatial extent as the corresponding native groundwater consumptive pool that aligns with the location and aquifer within which the drain or discharge activities occurred;
- other important factors that will be considered in the assessment of a transfer application are the effects of continued draining or discharging into an aquifer, without subsequent extraction from the same location. These include:
 - effects on the ability of other water users to access water
 - hydraulic impacts on aquifers
 - surface and near-surface waterlogging
 - increases in the height of water tables



- water quality and stream baseflows
 - impacts on infrastructure;
- after a transfer of MAR allocation, the volume transferred would be assumed to have been used in its entirety, and would be subtracted from the MAR water access entitlement's available balance.