

River Murray Salinity Zoning



Salinity zoning uses a system of salinity credits and debits to offset the salinity impacts from irrigation developments.



River Murray Salinity Zoning

Fact Sheet 72



A salinity zoning policy has been developed to implement the salinity management provisions in the Water Allocation Plan for the River Murray Prescribed Watercourse (River Murray WAP).

The policy affects water allocation transfers, conversions from water (holding) to water (taking) allocations and variations of licences to change the land on which water can be used (to be referred to as licence transactions in this fact sheet). The salinity zoning policy ensures that South Australia's salinity management is in line with the Murray-Darling Basin Agreement salinity provisions.

This fact sheet explains salinity zoning, what the policy means to you and how the Department of Water, Land and Biodiversity Conservation (DWLBC) will process applications for licence transactions. The text of the actual salinity zoning policy is provided within the fact box, on page 6 of this fact sheet.

For more background information on River Murray salinity and reasons for introducing a salinity zoning policy, please refer to the Consultation Workbook "Managing Salinity in the River Murray in South Australia", which is available from the DWLBC Berri office or on the web at: http://www.dwlbc.sa.gov.au/files/consult_workbook.pdf

Fact Box:

The state government, under the *Natural Resources Management Act 2004* (which replaces the *Water Resources Act 1997*), generally prescribes water resources to ensure that water is used in a sustainable manner. Prescription means a water licence is required to take water from a resource. The *Natural Resources Management Act 2004* requires all water resources that have been prescribed to have a Water Allocation Plan (or WAP). The role of the WAP is to set the rules regarding the licensed allocation and use of the prescribed water resource.

1. What is the salinity zoning policy?

The River Murray WAP establishes specific principles regarding river salinity management. Licence transactions cannot occur where the use of the water will detrimentally affect, either directly or indirectly, the quality of water in the River Murray Prescribed Watercourse, through increases in salinity. The only exception is where the increase in salinity is offset by an agreement, undertaking or obligation for works, actions or practices to prevent increases in salinity (principles 22 and 54 of the River Murray WAP). Salinity zoning uses a system of salinity credits and debits to offset the salinity impacts from irrigation developments.

Under the Murray-Darling Basin Agreement, New South Wales, Victoria and South Australia maintain a salinity register, which records all actions that reduce or increase salt loads to the River. Actions that increase salt loads, such as new irrigation developments, result in a debit. Actions that decrease salt loads, such as new salt interception schemes, result in a credit. The register needs to be in surplus (credit) at all times.

The salinity zoning policy establishes salinity impact zones along the River Murray. These zones indicate areas of varying impact to the future salinity levels of the River Murray. The policy also introduces the rules for the approval of licence transactions and allocation of salinity credits within the zones.

Fact Box:

The table below indicates South Australia's current position on the Murray-Darling Basin Commission's (MDBC) salinity register. The table is correct as of 1 July 2004.

Credit or Debit affecting activity	30-year average impact
1988-2004 trades	9.4 EC debit
Qualco-Sunlands groundwater control scheme	4.8 EC credit
Irrigation efficiency improvements	6.8 EC credit
Rehabilitation of Loxton water supply infrastructure	2.9 EC credit
Total	5.1 EC credit

2. What are the salinity impact zones?

There are three salinity impact zones:

1. Low salinity impact zones – licence transactions will be approved provided the salinity impacts of the proposed water use can be offset by salinity credits that are available to South Australia.
2. High salinity impact zones – licence transactions can only occur provided the salinity impacts of the proposed licence transaction can be fully offset by the proponent (see point 11). An exemption applies to transactions for developments with significant commitment prior to 30 June 2003 at the specific location (see point 12), but such licence transactions are also subject to the availability of salinity credits to South Australia.
3. High salinity impact (Salt Interception) zones – licence transactions will be approved provided

the salinity impacts of the proposed water use can be managed within the available capacity of the salt interception scheme servicing that zone. If there is no capacity available in the scheme, this zone will be treated as a high salinity impact zone¹. The area where the *Groundwater (Qualco-Sunlands) Control Act 2000* applies is essentially a special case of a salt interception zone, where the Act specifies its own system of risk management allocations to ensure irrigation development remains within the capacity of the groundwater control scheme.

All of the above approvals are subject to all other River Murray WAP principles (including principles regarding water quality, floodplain impacts, water use efficiency and pumps on backwaters) being met.

The map (on page 7 of this fact sheet) shows the extent of the salinity impact zones. More detailed maps are available at DWLBC offices or on the DWLBC website, at: <http://www.dwlbc.sa.gov.au/murray/salinity/zoning.html>

3. Are all licences and licence transactions affected?

The policy does not apply to existing licences unless a licence transaction is required, either to or from the licence. The salinity zoning policy applies to transfers of water to taking allocations, conversions from holding to taking allocations and variations of licences to change the land on which the water can be used (occurring after 30 June 2003). Any licence transactions that occurred prior to the 30 June 2003 are not affected by the salinity zoning policy.

The following licence transactions are also not affected by the salinity zoning provisions:

- > Water transfers to holding allocations.
- > A transfer of a water licence (including its entire allocation) to another person, where only a change of ownership/name is required (eg no locational change in water use).
- > Temporary water transfers that are required (in a year of water restrictions) to top up the authorised level of water use to the same level as the water (taking) allocation.

4. Will the salinity zone boundaries change in the future?

The salinity zoning policy is designed to provide certainty to developers about locations where licence transactions for irrigation can continue without salinity impediments. It is therefore not intended to review the boundary between high and low salinity impact zones in the short-term. The current zones will be the starting point for salinity management provisions in the River Murray WAP as part of its review, due in July 2007.

The boundaries of salt interception areas may be reviewed from time to time, for example as new schemes come on line, or the operation of schemes is reviewed.

5. How do I know what zone my proposed development is in?

The map (at the back of this fact sheet) indicates the extent of the salinity impact zones. More detailed zone maps are available, and are designed to assist in identifying parcels of land in relation to the zone boundaries. The detailed zone maps are available for viewing at DWLBC offices, or on the DWLBC website, at: www.dwlbc.sa.gov.au/murray/salinity/zoning.html

Alternatively, if the developer can provide a property description (ie Certificate of Title, Section and/or Allotment and Hundred and/or Plan) or GPS coordinates to the DWLBC, advice on where the property is situated in relation to the zone boundaries will be provided.

¹ There are also areas protected by salt interception schemes that are in the low salinity impact zone. These areas are referred to as low salinity impact (salt interception) zones and licence transactions are approved and offset with either the salt interception scheme capacity or salinity credits, available to SA.

For additional details phone the DWLBC Berri office on: (08) 8595 2053, or the DWLBC Murray Bridge office on: (08) 8535 6050.

6. How are the salinity credits assessed and allocated?

Salinity credit allocation is based on a standard assessment of salinity impacts (debits), which would arise from the water use of the proposed licence transaction. A computerised hydrogeological model (which has been accredited by the Murray-Darling Basin Commission) is used to evaluate irrigation, drainage, local geology and groundwater salinity at the location of the proposed licence transaction. The assessment will determine the salinity debits created by the proposed development, which therefore indicates the amount of salinity credits required to offset the salinity debits.

- > Salinity credits will be made available to developers for the purpose of licence transactions that transfer water into, or within, the low salinity impact zone.
- > A licence transaction into, or within, a high salinity impact (salt interception) zone will only proceed if the salt interception scheme has sufficient capacity.
- > Salinity credits will not be made available to licence transactions into or within a high salinity impact zone unless the developer needs the water for a development to which he/she was legally committed

or had committed significant financial or other resources at the specific site prior to 30 June 2003.

- > Salinity credits are strictly subject to availability and are issued on a first-come first-served basis, in order of receipt of complete applications. South Australia does not have a limitless supply of salinity credits, and has an obligation under Schedule C of the Murray-Darling Basin Agreement to keep the salinity register in surplus at all times.

There is the option of provisional reservation of salinity credits in certain circumstances, prior to a formal application for a licence transaction:

- > When a prior commitment claim has been approved, salinity credits will be reserved for the total volume of the approved claim, subject to credit availability.
- > To provide certainty for investment purposes, credits can be reserved for planned developments in the low salinity impact zone and in high salinity impact (salt interception) zones, upon receipt of a detailed proposal outlining location, type of crop, volume of water and timeline for the development. Reservation of credits does not mean an approval of a licence transaction and is not transferable to any other person or entity (with the exception of a transfer through deceased estates).

The duration of the reservation will be determined on a case-by-case basis, depending on the development proposal, the type of zone and the availability and demand for credits in that zone.

7. What happens if my proposed licence transaction is situated across two different zones?

If a proposed licence transaction location (Certificate of Title or Certificate of Lease location) is partially within the high salinity impact zone, the whole application will be assessed as though it were within the high salinity impact zone, regardless of the other zone(s) that it lies within. If this causes issues for progressing a licence transaction, potential options/alternatives should be discussed with the DWLBC. A proposal can be varied to avoid the high salinity impact zone. If a developer were to choose this option, he/she would be legally obliged to only use water on the part of the property that is not within the high salinity impact zone.

8. What if I think the zone boundary is incorrect?

The salinity assessment model uses the best available hydrogeological information. However, it is possible that a detailed and localised hydrogeological investigation may reveal a specific site which is considered to be in the high salinity impact zone,

would in fact have a salinity impact equal to, or less than, what would be expected if the same development occurred in a low salinity impact zone. A developer may initiate detailed hydrogeological investigations at his/her own cost to demonstrate that the impact of irrigation at a specific site is equivalent to a low salinity impact zone location. Zoning will not be adjusted on the basis of claimed irrigation management practices or drainage rates. The salinity zoning evaluation and assessment methodology is not open for variation.

9. Will licence transactions into, or within, low salinity impact zones always get approved?

The South Australian Government is committed to ensuring that there are sufficient salinity credits available to allow licence transactions in low salinity impact zones to proceed, by continuing investment in salt interception and assisting irrigation communities to reduce drainage below existing irrigation areas. However, the availability of credits at all times cannot be guaranteed. In the unlikely event that South Australia fully allocates available salinity credits in a particular year, a licence transaction in the low salinity impact zone may be refused or delayed. All approvals are subject to other River Murray WAP principles being met.



10. Will licence transactions into, or within, high salinity impact zones always be refused?

No. Licence transfers proposed in high salinity impact locations will be approved (subject to other River Murray WAP principles being met) if the salinity impacts of the development can be offset (see point 11) or if there is proof of significant commitment to the development at the proposed site prior to 30 June 2003 (see point 12).

11. How can I offset my salinity impacts if I am in a high salinity impact zone?

The salinity zoning policy outlines that a proposal to offset salinity impacts can involve changes in use or management of other water allocations within the same zone, or any other scheme that will reduce salinity levels in the River Murray. Offset proposals need to generate credits for the Murray-Darling Basin

salinity registers and must be enforceable through licence conditions or other methods.

- > The proponent may transfer a water (taking) allocation in a high salinity impact zone within SA to another location in the high salinity impact zone. The impacts of the new irrigation development can be offset by the reduction of salinity impacts at the original location through ceasing irrigation or reducing demand through changed practices, therefore providing a salinity credit. This offset option only applies to permanent water trades. The licensee selling the water (taking) allocation will forfeit the opportunity to bring additional water onto the property under a prior commitment claim.
- > DWLBC encourages commitment to greater irrigation efficiency. Salinity debits are calculated assuming that only 10 percent of the water volume applied plus rainfall combined results in drainage (in accordance with Murray-Darling Basin Commission protocols).

Claims for smaller drainage rates cannot be accepted as an offset for the purposes of approving a licence transaction. It is possible that irrigation efficiency may become a source of salinity credits for existing irrigation developments in the future.

- > DWLBC encourages any other innovative salinity offset solutions. However it is strongly advised that any potential offset solutions are discussed with the DWLBC at the earliest possible stage, so that the potential salinity benefit can be assessed prior to investment in the proposed solution.

12. How do I prove prior commitment?

The salinity zoning policy water to be transferred for use within a high salinity impact zone up to a quantity determined by the responsible Minister to meet the future requirements of a development, project or other undertaking to which the developer was legally committed or had committed significant financial or other

resources at the proposed site prior to 30 June 2003 (subject to the availability of salinity credits and other River Murray WAP principles being met).

Significant evidence of commitment prior to 30 June 2003 needs to be provided by the developer, and needs to clearly link to the proposed development location for which the licence transaction is sought. Further information regarding the suitability of evidence can be obtained from the DWLBC Berri Office on: (08) 8595 2053.

An independently chaired assessment panel will consider the prior commitment evidence and provide recommendations to the Minister responsible for administering the River Murray WAP, regarding the validity of a submission.

A prior commitment claim may be lodged before the corresponding licence transaction. This provides the added security that should the claim be approved, salinity credits may be reserved to offset the salinity impacts generated by the licence transaction (pending the actual water transfer or other licence transaction).

Further information

The River Murray WAP is available on the River Murray Catchment Water Management Board's website, at: http://www.rivermurray.sa.gov.au/about/pdfs/wap_final_lowres.pdf

The detailed zone maps and a description of the salinity zoning policy are available on the DWLBC website, at: <http://www.dwlbc.sa.gov.au/murray/salinity/zoning.html>

If you wish to speak to DWLBC staff administering the salinity zoning policy, please contact DWLBC Berri (phone: 08 8595 2053) or DWLBC Murray Bridge (phone 08 8535 6050).

Fact Box: The Salinity Zoning Policy

Salinity zoning policy for administration of Principles 54 and 22 of the Water Allocation Plan and taking account of Schedule C of the Murray-Darling Basin Agreement.

Applications for grant or variation of water licence, or for transfer of licence or water allocation in River Murray Prescribed Watercourse.

Transfers of licences and water allocations - Principle 54 of the WAP

Principle 54 reads: *Despite principle 53(i) water may be transferred for irrigation notwithstanding that such use may detrimentally affect, by increasing salinity, the quality of water in the River Murray Prescribed Watercourse if the increase in salinity is offset by an agreement, undertaking or obligation for works actions or practices to prevent increases in salinity (including drainage management, infrastructure, salinity mitigation infrastructure or revegetation to control irrigation recharge).*

For the purposes of principle 54:

Transfer into or within low salinity impact zone

Water may be transferred for use within a low salinity impact zone if the salinity impacts of the proposed use are determined by the Minister to be offset by salinity credits that are in the opinion of the Minister, after taking into account the advice of the Minister administering the *Murray-Darling Basin Act 1993*, available to the State of South Australia for the purposes of the Murray-Darling Basin Agreement.

Transfer into or within high salinity impact (salt interception) zone

- a) Water may be transferred for use within a high salinity impact (salt interception) zone if the salinity impacts of the proposed use are determined by the Minister to be within the available capacity of a salt interception scheme servicing that zone.
- b) Where the salinity impacts of the proposed use are determined by the Minister to be in excess of the available capacity of a salt interception scheme, the policy for the high salinity impact zone applies as if the high salinity impact (salt interception) zone were a high salinity impact zone.

Transfer into or within high salinity impact zone

Water may be transferred for use within a high salinity impact zone:

- i) if:
 - (A) the salinity impacts of the proposed use are determined by the Minister to be offset by the impacts of a proposal by the applicant regarding:
 1. changes in use or management of other allocation used within the same zone; or
 2. any other scheme which will reduce salinity levels in the River Murray; and
 - (B) the effects of the applicant's proposal include generating salinity credits that in the opinion of the Minister, after taking into account the advice of the Minister administering the *Murray-Darling Basin Act 1993*, are or will be available to the State of South Australia for the purposes of the Murray-Darling Basin Agreement, and which are sufficient to offset the salinity impact of the use; and
 - (C) fulfilment of and compliance with the proposal is secured by licence conditions or other method as determined by the Minister;
- or
- ii) up to a quantity determined by the Minister to meet the future requirements of the applicant for water for a development, project or other undertaking to which he or she was legally committed or in respect of which he or she had committed significant financial or other resources at the proposed site prior to 30 June 2003, if the salinity impacts of the proposed use are determined by the Minister to be offset by salinity credits that are in the opinion of the Minister, after taking into account the advice of the Minister administering the *Murray-Darling Basin Act 1993*, available to the State of South Australia for the purposes of the Murray-Darling Basin Agreement.

Water allocation (including variation and conversion) – Principle 22(i) of the WAP

Principle 22(i) states:

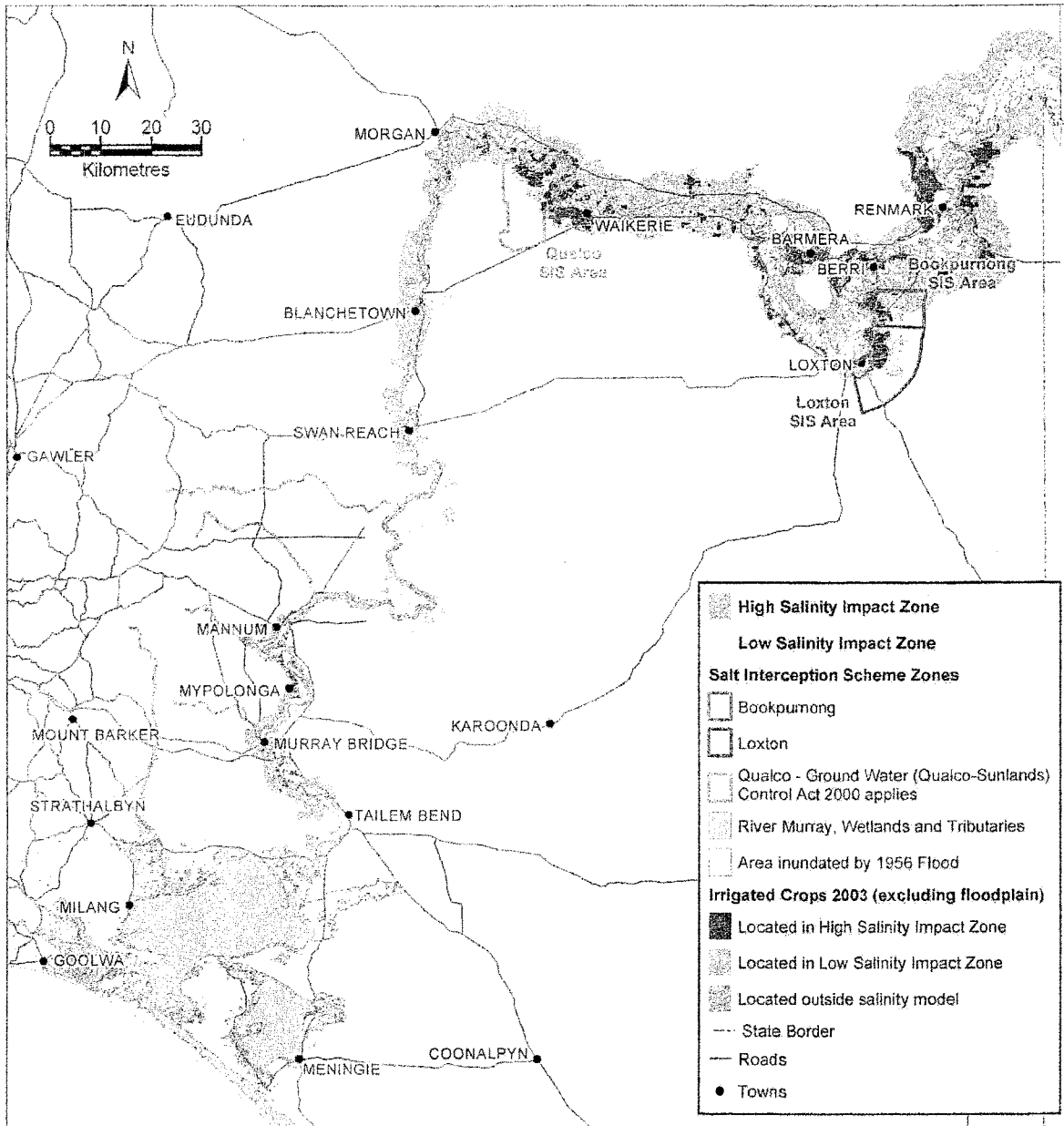
Despite principle 21, water allocated after 1 January 1988 may be taken and used for irrigation notwithstanding that such use may detrimentally affect, by increasing salinity, the quality of water in the River Murray Prescribed Watercourse if the increase in salinity is offset by an agreement, undertaking or obligation for works actions or practices to prevent increases in salinity (including drainage management, infrastructure, salinity mitigation infrastructure or revegetation to control irrigation recharge).

For the purposes of principle 22(i), a water allocation made to give effect to:

- a transfer of a water allocation from another State of Australia
- a variation of licence at the request of the licensee to change the location of use of a water allocation
- a conversion of the whole or part of a water (holding) allocation to a water (taking) allocation

will be considered in accordance with the policies for the administration of Principle 54 of the WAP (see above), as if it were a transfer of the whole or part of the water allocation of a water licence.

River Murray Salinity Impact Zones



Government of South Australia
 Department of Water, Land and Biodiversity Conservation



Government of South Australia
 Department for Environment and Heritage

Produced by Department of Water Land and Biodiversity Conservation
Data Source Salinity Impact Areas - derived from SIMPACTII model, DEH 2003
 Irrigated Crops 2003 - Drafted from 1:20,000 colour aerial photography - DEH 2003
 1956 Flood Level - Drafted from 1:10,000 aerial photography - DEH 1989
 River Murray, Wetlands, Roads, Towns and State Border- DEH
Projection Transverse Mercator
Datum Geocentric Datum of Australia, 1994
Grid Map Grid of Australia, Zone 54
Compiled June 2005

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