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**Government
of South Australia**

Department of Water,
Land and Biodiversity
Conservation

River Murray Salinity Zoning

Fact sheet 72



This fact sheet broadly addresses the following questions:

- What is the salinity zoning policy?
- How and to whom does the salinity zoning policy apply?
- How are salinity credits assessed and assigned?
- Which zones and which licence transactions are affected?
- What is prior commitment approval and who can apply for it?
- How are licence transactions within the high salinity impact zone offset?

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 or expand the land that the licence refers to (to be collectively referred to as licence transactions in this fact sheet). In addition to implementing the salinity requirements of the River Murray WAP, 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 can be found at: www.dwlbc.sa.gov.au/policy_booth/1122341998/salinityzoning.doc

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 internet at: www.dwlbc.sa.gov.au/files/consult_workbook.pdf

What is the salinity zoning policy?

The River Murray WAP establishes specific principles regarding river management, including salinity management principles. 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 assignment of salinity credits within the zones.

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 will only be approved provided the salinity impacts of the proposed water use can be fully offset by the proponent. An exemption applies to transactions for developments with significant commitment prior to 30 June 2003 at the specific location, but such licence transactions are also subject to the availability of salinity credits to South Australia.

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.

- The South Australian Government owns all salinity credits. Assignment of salinity credits does not mean a transfer of ownership of salinity credits.

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.

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 should be discussed with 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. Similarly,

if a proposed location is partially within the high salinity impact (salt interception) zone and the low salinity impact zone, the whole application will be assessed as though it were within the high salinity impact (salt interception) zone.

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.

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. If 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.

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

No. Licence transfers proposed in high salinity impact zones will be approved (subject to other River Murray WAP

principles being met) if the salinity impacts of the development can be offset or if there is proof of significant commitment to the development at the proposed site prior to 30 June 2003.

How do I prove prior commitment?

The salinity zoning policy states that for water to be transferred or converted for use within the high salinity impact zone (without a salinity offset), 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).

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. Salinity 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 South Australia to another location in the high salinity impact zone. For the purpose of processing licence transactions, every megalitre of water (taking) allocation is assumed to have the same impact within the



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. Figure 1 shows the extent of the salinity impact zones. More detailed maps are available at DWLBC offices or on the DWLBC website, at: www.dwlbc.sa.gov.au/murray/salinity/zoning.html

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 or expand the land that the licence refers to (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.

¹There 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 South Australia.

- 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.

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, when it is updated.

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.

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

Figure 1 indicates the extent of the salinity impact zones. More detailed salinity 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.

For additional details, phone the DWLBC Berri office on: (08) 8595 2053.

How are the salinity credits assessed and assigned?

Salinity credit assignment is based on a standard assessment of salinity impacts (debits), which would arise from the water use of the proposed licence transaction. A model (which has been accredited by the Murray-Darling Basin Commission) is used to evaluate irrigation, drainage, hydrogeology 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 assigned 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 credit capacity.
- Salinity credits will not be assigned 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 assigned on a first-come first-served basis, in order of receipt of complete applications. South Australia does

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 November 2006.

Credit or Debit affecting activity	30-year average impact
1988-2006 trades	10.1 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	4.4 EC credit

high salinity impact zone (regardless of where the allocation is used). It is therefore assumed that transferring a water (taking) allocation from one location within the high salinity impact zone to another will ensure an offset of salinity impacts.

- DWLBC encourages commitment to greater irrigation efficiency. Salinity debits are calculated assuming that only 10 percent of the water volume applied plus rainfall 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.
- 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 (and ongoing) salinity benefit can be assessed prior to investment in the proposed solution.

How do I register a salinity offset?

If a water (taking) allocation is converted from within the high salinity impact zone into a water (holding) allocation OR if a water (taking) allocation is sold out of the high salinity impact zone, it is possible to register a salinity offset on either the buyer or seller's licence. The salinity offset entitles the licensee to convert or transfer the same volume of water (taking) allocation back into the high salinity impact zone as was previously converted or transferred out.

The buyer and the seller involved in a transfer must together decide which party will register the salinity offset, as it cannot be claimed by both parties and can not be split.

Salinity offsets must be registered at the time of transfer. The option to register salinity offsets will be built into new iterations of the relevant water licensing forms.

Can I sell my registered salinity offsets to a third party?

No. Salinity offsets cannot be transferred to a third party, unless a whole of licence transfer occurs. Salinity offset transfers to third parties

may be possible in the future, however legislative change will be required.

Can I purchase a water (taking) allocation from outside the High salinity impact zone for use within the zone?

Yes, in the following three circumstances:

- If the licensee has an approved Prior Commitment, water can be transferred into the high salinity impact zone without a salinity offset.
- If the licensee has previously converted a water (taking) allocation from within the high salinity impact zone into a water (holding) allocation and registered the salinity offset on the licence, a water (taking) allocation may be permitted into the high salinity impact zone up to the value of the registered salinity offset.
- If the licensee has previously sold a water (taking) allocation out of the high salinity impact zone and registered the salinity offset on the licence, a water (taking) allocation may be permitted into the high salinity impact zone up to the value of the registered salinity offset.

Can I convert a water (holding) allocation to a water (taking) allocation in the high salinity impact zone?

Yes, if a salinity offset was registered against the licence when the water (holding) allocation was originally purchased or converted.

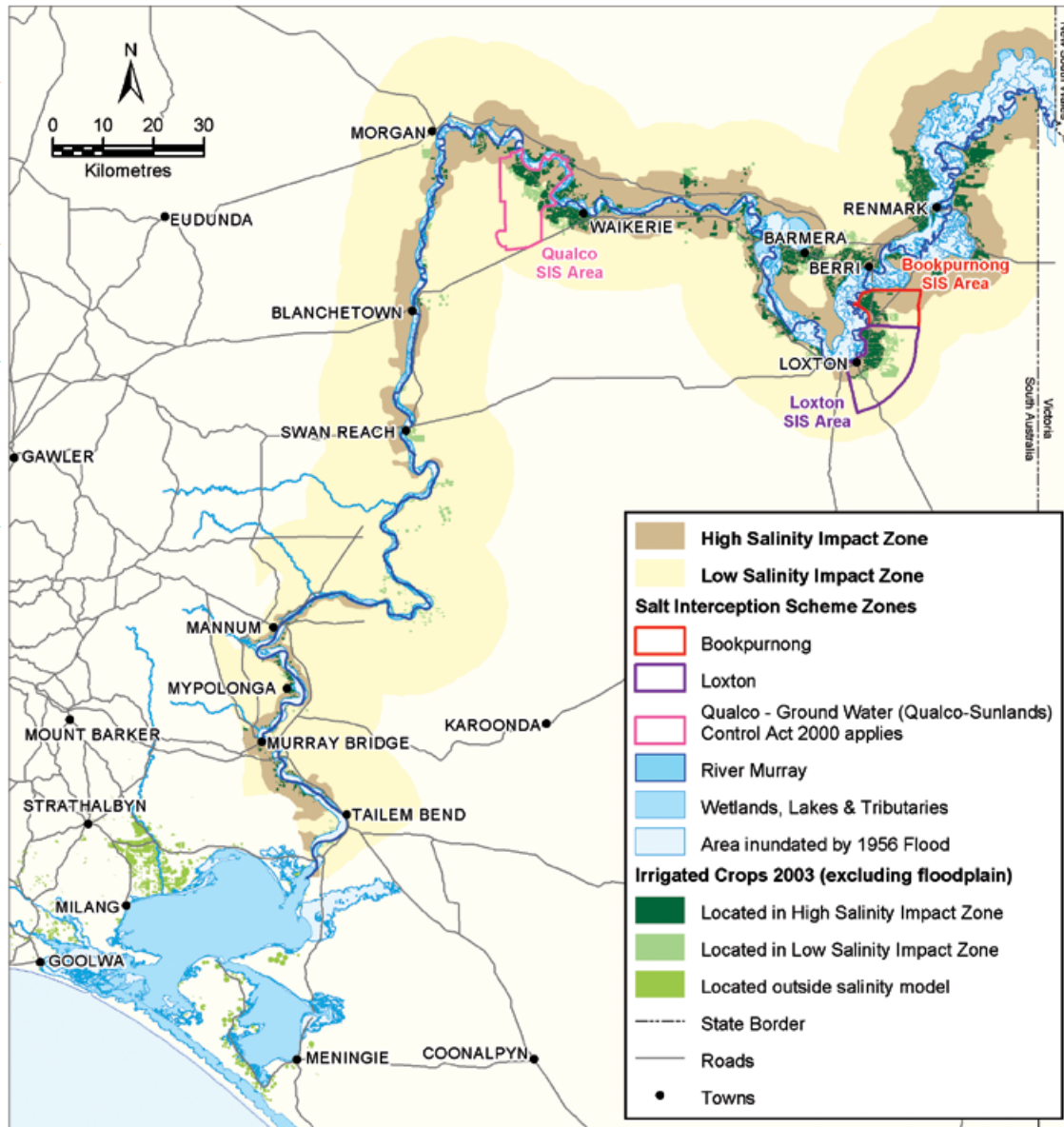
If I sold or leased a water (taking) allocation out of the high salinity impact zone, can I purchase an allocation from outside the high salinity impact zone at a later stage?

Yes, if the salinity offset was registered on the licence when the water (taking) allocation was originally sold or leased out of the high salinity impact zone.

If the water (taking) allocation is being leased from a property, a water (taking) allocation up to the same volume may be leased back to the property, for a time period that is equal to or less than the duration of the lease from the property.

Glossary of frequently used terms:

- **Salinity Register** - Under the Murray-Darling Basin Agreement, NSW, Vic and SA maintain a salinity register, which records all actions that reduce or increase salt loads to the River. Each of the States is required to maintain the register in surplus (credit) at all times.
- **Salinity Debit** - Actions that increase salt loads, such as new irrigation developments, result in a debit on the salinity register.
- **Salinity Credit** - Actions that decrease salt loads, such as new salt interception schemes, result in a credit on the salinity register.
- **Salinity Offset** - A salinity offset is an agreement, undertaking or obligation for works, actions or practices to prevent increases in salinity, therefore allowing a debit causing development to occur. A salinity offset needs to be approved by DWLBC and registered against the licence. A salinity offset counteracts the effect of a salinity debit within a certain zone for the duration of the debit.
- **Salinity Impact Zones** - The high, low and high salinity impact (salt interception) zones indicate areas of varying impact to the future salinity levels of the River Murray. Each of these zones has rules that govern the approval of licence transactions and allocation of salinity credits within the zones.
- **Licence Transaction** - For the purposes of this fact sheet, licence transaction is the collective term for water allocation transfers, conversions from water (holding) to water (taking) allocations and variations of licences to change or expand the land that the licence refers to.
- **Prior Commitment** - Significant evidence of commitment to develop at the proposed site prior to 30 June 2003. Evidence of prior commitment will be assessed by the Prior Commitment Assessment Panel.



Produced by Department of Water Land and Biodiversity Conservation
 Data Source Salinity Impact Areas - derived from SIMPACTIII 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

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Figure 1: Map of the River Murray Salinity Impact Zones.



For further information

The River Murray WAP is available on the (former) River Murray Catchment Water Management Board's website, at: 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: www.dwlbc.sa.gov.au/murray/salinity/zoning.html

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