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Factsheet

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Salinity in the Lockyer Valley **Managing** salinity

Healthy Land & Water

Salinity in the Lockyer Valley Managing salinity

Salinity can potentially impact on agricultural land, infrastructure, water quality and the environment. The table below summarises some impacts:

Agricultural production	Plants use more energy to extract water from salt affected soil, resulting in reduced yields or even plant death depending on the salt tolerance of the plant.
Soil erosion	Reduced plant yields can result in reduced surface cover and lead to more of the ground surface being exposed to erosive processes. Salt affected areas are often subject to periods of waterlogging, increasing the vulnerability of soils to erosion.
Water quality	Water with high salinity levels affects the taste of drinking water, the cost of treatment and the suitability for stock use and irrigation.
Freshwater ecology	Increased salt levels in streams affects the organisms that live in these environments and can change the composition and diversity of these habitats and impact on the food web.
Terrestrial biodiversity	Increased salt levels in streams affects the organisms that live in these environments and can change the composition and diversity of these habitats and impact on the food web.
Infrastructure	Salinity can result in road damage and instability and corrosion of concrete affecting the life span of bridges and houses.

Salinity extent

Salinity impacts vary in response to the balance of inputs (rainfall, irrigation and water storages) and outputs (evaporation, stream flow, plant transpiration and down-valley groundwater flow). The extent to which this balance is altered, determines the area of salt affected land and associated salinity impacts.

Tree clearing can cause watertables to rise and increase the area of land affected by salinity. Increased salinity levels in water affect its suitability for drinking, irrigation, stock use (Figure 1) and supporting aquatic life

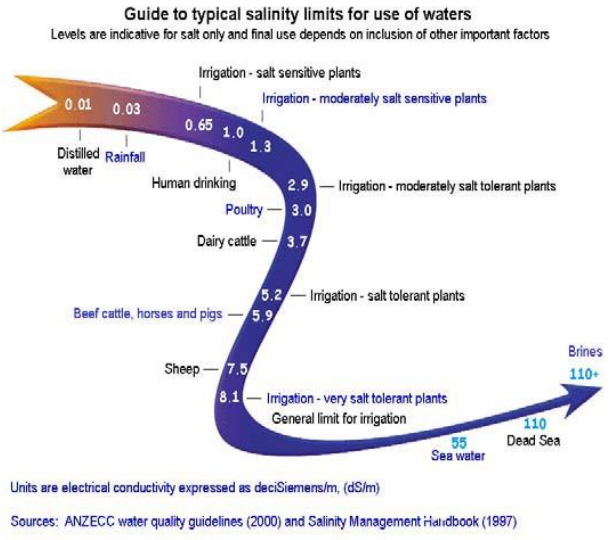

Figure 1: *A guide to varying levels of salinity for agricultural use of water.*

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Actions to manage salinity

Dealing with salinity involves balancing the volume of water entering the groundwater system (recharge), with the volume of water leaving the groundwater system (discharge), thereby managing the depth of the water table below the ground surface (Figure 2).

A landscape approach using a range of options, such as the ones outlined below, is required to maintain the watertable more than 1.5m below ground level:

- Plant, regenerate and maintain native vegetation in recharge, transmission and discharge zones.
- Encourage and promote the growth of deep-rooted tree species.
- Install bores upslope of discharge areas if flow rates are acceptable and water is of suitable quality (Figure 1) for alternative uses.
- Increase groundwater use in recharge areas by pumping water from bores and using drainage systems to redirect water to other storages.
- Install sub surface drainage where groundwater quality is acceptable (Figure 1).
- Seek advice on best irrigation practices for managing salinity.
- Maximise cropping opportunities and avoid leaving land in fallow over summer rainfall season.
- Avoid building dams at sites where the water table is high.
- Build roads along ridges where disruption to water tables will be minimal.
- Build houses (and wastewater disposal systems) well away from areas with high water tables.
- Distribute water evenly over large on-site disposal areas.
- Maintain a high percentage of grass cover (Figure 3) by managing grazing pressure.
- Mow your grass no shorter than 75mm in wet or affected areas to increase water use and minimise evaporative concentration.
- Minimise tracks and avoid bare areas.
- Plant salt tolerant plant species if growth of existing vegetation is affected.

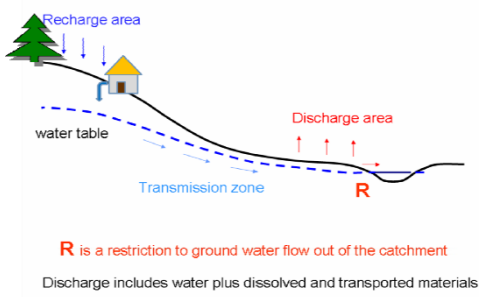

Figure 2: *The balance between recharge and discharge in conjunction with features in the landscape that restrict water movement influences the depth to the watertable and therefore the evaporative concentration of salts near the soil surface.*

Figure 3: *No bare soil can be seen when ground cover is 100%.*

For more information:
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