

Figure 26 - Location of continuous stream monitoring station and stream salinity levels at stream monitoring sites.

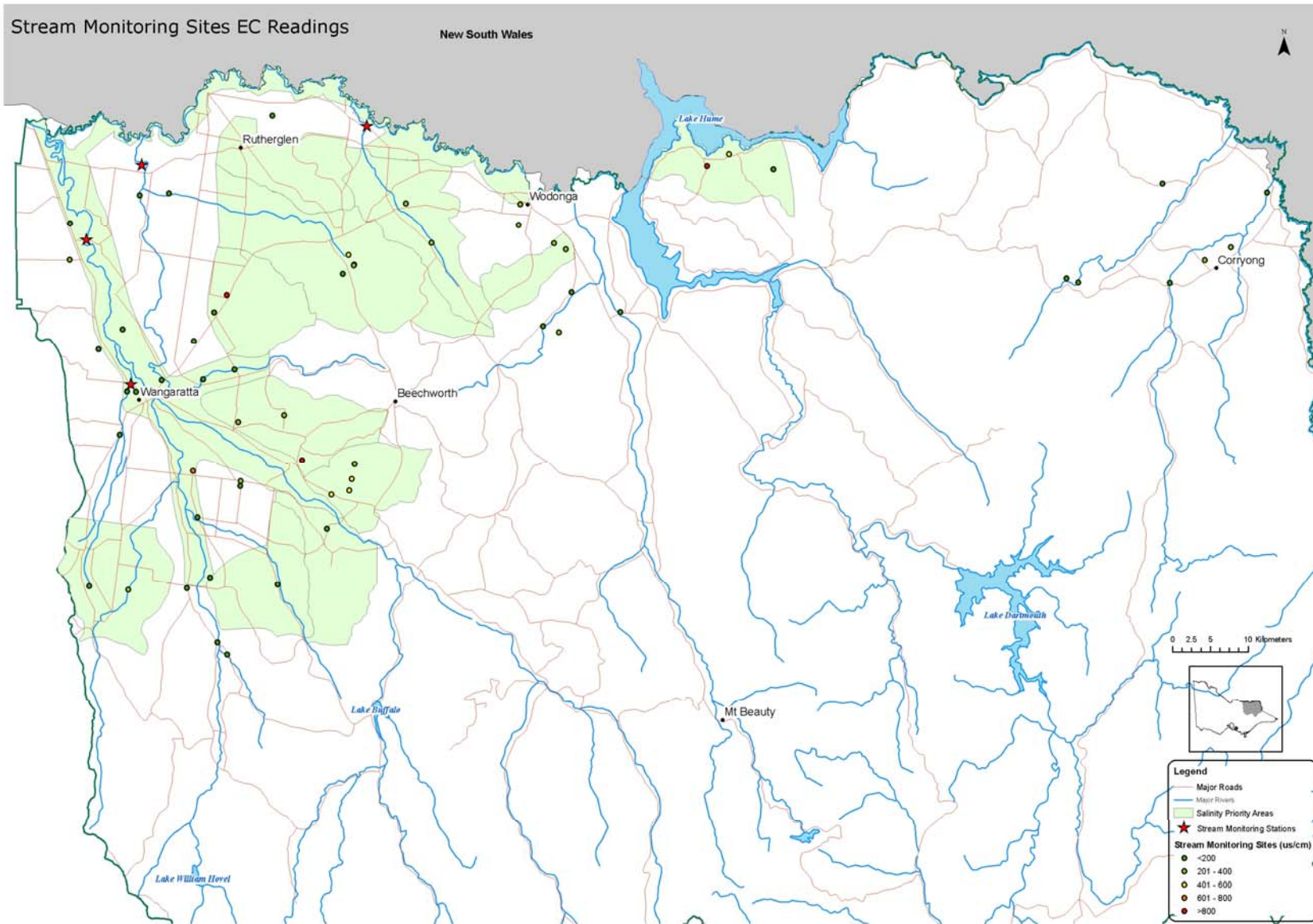


Table 27 – Salinity levels of stream monitoring sites in the region (Average Jan 05-Mar 06)

| Site No | Name | Road/Description | Location | Average EC ($\mu\text{S/cm}$) |
|---------|-------------------------------------|------------------------------|---------------------|---------------------------------|
| NE001 | Corryong Creek | Lamberts Lane | Towong | 110 |
| NE002 | Corryong Drainage | Kiells Lane | Corryong | 243 |
| NE003 | Parish Lane Drainage | Parish Lane | Corryong | 375 |
| NE004 | Stoney Creek | Cudgewa North Rd | Cudgewa North | 110 |
| NE005 | Nariel Creek | Murray Valley Hwy | Colac Colac | 107 |
| NE006 | Cudgewa Creek | Nicholls Rd | Berringama | 121 |
| NE007 | Cudgewa Creek | Murray Valley Hwy | The Needles | 127 |
| NE008 | Kiewa River | Kiewa East Rd | Kiewa | 50 |
| NE009 | Yackandandah Creek 1 | Lindsay Rd | Staghorn Flat | 91 |
| NE010 | Gap Flat Creek | Allans Flat Rd | Allans Flat | 330 |
| NE011 | King River | Edi -Cheshunt Rd | Edi | 48 |
| NE012 | Whorouly Crk | Carboor Whorouly Rd | Whorouly | 117 |
| NE013 | Billabong Crk | Opp Nish Rd | Peechelba | 175 |
| NE014 | Burgoigee Crk (Upper) | Ferguson Lane | Murmungee | 325 |
| NE015 | North drain (wattle) | Ferguson Lane | Murmungee | 576 |
| NE016 | South Drain Sloped Spillway (gummy) | Ferguson Lane | Murmungee | 497 |
| NE017 | Burgoigee Crk (Lower) | Railtrail off Ovens HWY | Murmungee | 582 |
| NE018 | Woolshed Creek | Allans Lane | Milawa | 207 |
| NE019 | Horseshoe Creek 1 | Allans Lane | Milawa | 198 |
| NE020 | Boggy Creek | Wangaratta-Whitfield Rd | Moyhu | 94 |
| NE021 | Meadow Crk | Koorinal Park Lane | Meadow Crk | 147 |
| NE022 | Hurdle Crk (Upper) | Murphys Lane | Carboor | 93 |
| NE023 | Hurdle Crk (Lower) | Oxley Meadow Crk Rd | Docker | 175 |
| NE024 | Black Range Crk | Edi-Cheshunt Rd | Edi | 88 |
| NE025 | Yackandandah Creek 2 | Osbornes Flat Rd/Gap Flat Rd | Allans Flat | 86 |
| NE026 | Factory Crk | Moyhu Hansonville Rd | Hansonville | 382 |
| NE027 | Fifteen Mile Crk | Moyhu Hansonville Rd | Greta | 88 |
| NE028 | Horseshoe Creek 2 | Diffey Rd | Everton | 816 |
| NE029 | Fifteen Mile Crk | Arundels Lane | South Wangaratta | 50 |
| NE030 | Three Mile Creek | Williams Rds | Wangaratta | 163 |
| NE031 | Hodgson Crk (Upper) | Dickens Rd | Everton Upper | 201 |
| NE032 | Hodgson Crk (Lower) | River Rd | Tarrawingee | 211 |
| NE033 | Woolshed/Horseshoe 1 | Oxley Meadow Crk Rd | Oxley | 667 |

| | | | | |
|-------|------------------------|-------------------------------------|------------------|------|
| NE034 | Reedy Creek | Old Hume Hwy | Wangaratta | 82 |
| NE035 | One Mile Creek | Phillipson St near school | Wangaratta | 188 |
| NE036 | Reedy Creek | Rail trail Londrigan Tarrawingee Rd | Londrigan | 137 |
| NE037 | Reedy Creek | Carraragarmungee Estate Rd | Carraragarmungee | 120 |
| NE038 | Irishtowns Creek | Tungamah - Peechelba Rd | Peechelba | 207 |
| NE039 | Reedy creek | O'Keefe Road | Boorhaman | 52 |
| NE040 | Johnston Creek | Cemetery Rd | Talgarno | 933 |
| NE041 | Salty Dam drainage | Railway Rd | Boralma | 153 |
| NE042 | Diddah Diddah Crk | Taylor's Bridge Rd | Norong Central | 156 |
| NE043 | Black Dog Creek | Escort Bridge Rd | Norong Central | 190 |
| NE044 | Murdering Hut Crk | Egglestones Rd | Prentice North | 159 |
| NE045 | Forest Creek | Talgarno Rd | Talgarno | 404 |
| NE046 | Black Dog Creek | Black Dog Creek Rd | Chiltern | 426 |
| NE047 | Deep Creek | Martins Lane | Chiltern | 229 |
| NE048 | Buy Creek | Martins Lane | Chiltern | 212 |
| NE049 | Indigo | Mares Flat Rd | Barnawartha | 274 |
| NE050 | Cookinburra | Oats Gap Road | Barnawartha | 387 |
| NE051 | Pine Road Creek | Pine Rd | Chiltern | 120 |
| NE052 | Middle Creek | Baranduda Boulevard | Baranduda | 238 |
| NE053 | Baranduda Drainage | Baranduda Boulevard | Baranduda | 228 |
| NE054 | Huon Creek | Yarralumla Drive | Wodonga | 246 |
| NE055 | House Creek | Lawrence Street | Wodonga | 287 |
| NE056 | Wises Creek | Wises Creek Rod | Talgarno | 120 |
| NE057 | Benton's Hill Drainage | Old Hume Hwy | Springhurst | 2759 |
| NE058 | Campbell's Drainage | Railway Rd | Bowser | 58 |
| NE059 | N/A | | | |
| NE060 | Kings Culvert | Sessions Rd | North Wangaratta | 72 |

As previously mentioned Black Swamp is the most significant wetland within the region. It is listed on The Directory of Important Wetlands in Australia, and is located on the flood plain between the Murray and Ovens River (Environment Australia 2001). Wetlands within the catchment can be impacted by saline surface water as well as saline groundwater. Currently 356ha of wetlands within the region occur where the watertable is less than 3m (Table 28). The wetlands listed within table 25 do not include wetlands outside salinity priority areas particularly on the Riverine Plains such as the Black Swamp.

Table 28- Summary of Depth to watertable affecting mapped wetlands in each salinity priority area.

| DTWT | | | | | | | |
|-------------------------|---------------|-----|-----|-----|-----|------|------|
| Priority Zone | Type | <1m | <2m | <3m | <4m | <5m | <10m |
| CARBOOR BOBINAWARRAH | Open water | | | | | 4 | 5 |
| | | | | | | 4 | 5 |
| CHILTERN | Deep marsh | | | 9 | 17 | 17 | 17 |
| | Meadow | | | 0 | 12 | 12 | 20 |
| | Open water | | | 9 | 25 | 25 | 27 |
| | Sewerage pond | | | 3 | 6 | 6 | 6 |
| | | | | 21 | 60 | 60 | 69 |
| EVERTON TARRAWINGEE | Meadow | | | | 3 | 14 | 14 |
| | Open water | | | | 8 | 8 | 9 |
| | | | | | 12 | 22 | 23 |
| GRETA | Meadow | | | | 2 | 48 | 75 |
| | Open water | | | 2 | 7 | 16 | 19 |
| | Shallow marsh | | | 0 | 13 | 13 | 13 |
| | | | | 2 | 23 | 77 | 108 |
| INDIGO VALLEY | Open water | | | | | 3 | 8 |
| | | | | | | 3 | 8 |
| MURMUNGEE | Meadow | | | 6 | 8 | 8 | 8 |
| | Shallow marsh | | | | 1 | 1 | 1 |
| | | | | 6 | 9 | 9 | 9 |
| RIVERINE PLAIN | Deep marsh | | 10 | 92 | 221 | 462 | 753 |
| | Meadow | | 18 | 53 | 148 | 222 | 479 |
| | Open water | | 3 | 104 | 115 | 275 | 453 |
| | Sewerage pond | | | 2 | 2 | 7 | 67 |
| | Shallow marsh | | | 6 | 30 | 78 | 225 |
| | | | 31 | 257 | 516 | 1045 | 1978 |
| RUTHERGLEN | Meadow | | | 3 | 4 | 7 | 79 |
| | Open water | | | 0 | 0 | 0 | 12 |
| | | | | 3 | 4 | 7 | 91 |
| SPRINGHURST | Open water | | 0 | 0 | 3 | 14 | 14 |
| | | | 0 | 0 | 3 | 14 | 14 |
| TALGARNO-WISES CREEK | Open water | | | 61 | 117 | 122 | 127 |
| | | | | 61 | 117 | 122 | 127 |
| WHOROULY | Meadow | | | 2 | 5 | 107 | 119 |
| | Open water | | | 1 | 4 | 9 | 9 |

| | | | | | | | |
|-------------|---------------|--|----|-----|-----|------|------|
| | Shallow marsh | | | 3 | 5 | 18 | 18 |
| | | | | 5 | 14 | 135 | 146 |
| Grand Total | | | 31 | 356 | 757 | 1498 | 2578 |

6.8.2 Overall Cost to this Asset

Costs of saline water on urban households annually is \$509,000, costs to commercial and industrial water users is \$704,000, with this predicted to rise in 2050 to \$1.7million and \$1million respectively (Wilson 2006). The economic evaluation in chapter 9 discusses this in more detail.

6.9 Threats to People Assets

People have not been identified as an asset threatened by salinity in the RCS. This plan takes a different view. There is a significant potential impact to people including the reduction of land value, aesthetic values, stigma of salinity, and additional expenditure on salinity management. There are approximately 180 landholders that have at least 1 area of land mapped as saline. Research undertaken in the Ovens Valley in to the efficacy of Department maps found that the expert maps may have failed to identify 61% of the areas affected by salinity (Curtis et al 2002). This was assuming that landholder could correctly identify a saline area. This plan aims to highlight the impact of salinity on the people in the region.

6.10 Threats to the Climate and Atmosphere Assets

A major driver for salinity in the region is climate variability associated with climate change. This plan does not investigate this issue in any detail, but highlights the potential for the implementation of this plan to be affected by climate variability.

Salinity could be considered to have an influence on local climate and atmosphere due to vegetation decline associated with high groundwater tables. A study in to tree decline in the North East found that over a 29 year period a 47% decline in isolated paddock trees had occurred (DPI 2003).

6.11 Threats to Downstream Assets

As previously mentioned approximately 180,000 tonnes of salt is exported annually from the North East in the River system, which is predicted to increase to approximately 240,000 tonnes of salt a year (Table 23). This currently relates to an impact in salinity levels in the Murray River of 30EC (Table 23). There are insufficient resources to investigate threats to downstream assets apart from recognising those stated within the MDBC Basin Salinity Strategy 2001-2015.

6.12 Specific Assets Threatened by Rising Watertables and Salinity in Salinity Priority Areas

Originally salinity priority areas were identified within the catchment based on the occurrence of salinity, these priority areas can now directly be related to where assets are most threatened by salinity within the region (Table 29). In addition to the six assets identified in the RCS it is also possible to consider the downstream assets threatened by each priority area.

Table 29 – Specific assets threatened by salinity in each salinity priority area.

| Priority Area | CMU | Land | Inland Water | Biodiversity | People | Built Infrastructure | Climate and Atmosphere | Down Stream Assets |
|--|-----------------------------------|--|--|--|---|--|---|---|
| Indigo Valley, and Wodonga – Baranduda | Lower Kiewa, Mid Kiewa, Mid Ovens | <p>Dryland Pastures, high value horticulture crops and forestry (firewood plantations etc)</p> <ul style="list-style-type: none"> • 88Ha of agricultural land with <2m depth to watertable • 137Ha of agricultural land with <3m depth to watertable • 3744Ha of agricultural land with <5m depth to watertable • 131Ha of land salinity mapped • Soil health/structure decline in saline discharge areas. Increased potential for soil erosion on bare ground associated with class 2 & 3 saline discharge areas • Lifestyle farming threatened in areas associated with high water tables and saline discharge. | <ul style="list-style-type: none"> • Water quality, water use and riparian health of • Indigo Creek (middle reaches where the stream is not deeply incised), • Middle Creek , • Cookinburra Creek (lower reaches), • Farm Dams receiving saline water from discharge sites. • Groundwater bores and wells– accessing water in the area between middle Indigo to the Hume Freeway • Spring feed dams in the middle Indigo area at the break of slope | <p>Threatened/Endange red EVCs Threatened species Wetlands on private land Scattered and individual trees.</p> | <p>While there are no direct impacts on people recognised there are a number of social and economic implications such as:</p> <ul style="list-style-type: none"> • Economic stress on families (loss of production). • Reduced land values • Stigma of salinity • Aesthetic /Landscape • Additional expenditure on salinity management. • Time – to control manage salinity • Additional issue for community (eg Landcare Groups) in planning. • Need for technology/information. | <ul style="list-style-type: none"> • Urban development of agricultural land surrounding Wodonga in low areas of the landscape with high watertables. • Roads, especially the Hume Freeway and Murray Valley Hwy - 129km road with DTWT<4m, • Utilities infrastructure especially underground services where high watertables exist eg. Telstra • Existing buildings in areas of high watertables • Hot water services (where saline groundwater resources used exceeds 1600EC) • Melbourne-Sydney Rail 8.1 km railway line DTWT <4m • Potential deterioration to the 50 monitoring bores when watertables | <p>Death of trees as a result of salinity or high watertables can potentially reduce carbon sink.</p> | <p>Salt load contribution impacts on water use and assets down stream in the Murray & Kiewa Rivers. Potential saline groundwater affecting use of water resources. House Creek, Huon Creek, Felltimber Creek water quality.</p> |

| | | | | | | | | |
|----------|-------------------|--|--|--|---|--|---|---|
| | | | | | | <ul style="list-style-type: none"> become artesian. Potential Increased cost in construction in areas of high saline water tables Gardens and amenities where saline water is used. | | |
| Talgarno | Lower Mitta Mitta | <p>Dryland Pastures particularly in lower parts of the landscape.</p> <ul style="list-style-type: none"> 5Ha of agricultural land with <2m depth to watertable 634Ha of agricultural land with <3m depth to watertable 1759Ha of agricultural land with <5m depth to watertable 7Ha of land salinity mapped Soil health/structure decline in saline discharge areas. Increased potential for soil erosion on bare ground associated with class 2 & 3 saline discharge areas Lifestyle farming threatened in areas associated with high water tables and saline discharge. | <ul style="list-style-type: none"> Water quality, water use and riparian health of Johnston Creek and Forest Creek (lower reaches) Direct flow of saline water from discharge sites and groundwater in to Hume Weir especially from areas between Bellbridge and Talgarno. Along with saline inflows from waterways. Farm Dams receiving saline water from discharge sites. Groundwater bores and wells- accessing water in along the Talgarno | Threatened/endangered EVCs Threatened species Wetlands on private land Scattered and individual trees | <p>While there are no direct impacts on people recognised there are a number of social and economic implications such as:</p> <ul style="list-style-type: none"> Economic stress on families (loss of production). Reduced land values Stigma of salinity Aesthetic /landscape Additional expenditure on salinity management. Time - to control manage salinity Additional issue for community (eg Landcare Groups) in planning. Need for technology/information. | <ul style="list-style-type: none"> Hot water services (where saline groundwater resources used exceeds 1600EC) Utilities infrastructure especially underground services where high watertables exist eg. Telstra Potential damage to 7 DPI monitoring bores. Gardens and amenities where saline water is used. Roads sealed and unsealed - 29km road DTWT <4m. | Death of trees as a result of salinity potentially reduces carbon sink. | Salt load contribution into Hume Weir and down stream Murray River. |

| | | | | | | | | |
|---------------------|-------------------------|--|---|---|---|---|--|---|
| | | | <ul style="list-style-type: none"> peninsula Spring feed dams in the area at the break of slope | | | | | |
| Everton-Tarrawingee | Lower Ovens, Mid Ovens. | <p>Dryland pastures, high value horticulture crops, viticulture, and forestry (firewood plantations etc).</p> <ul style="list-style-type: none"> 723Ha of agricultural land with <2m depth to watertable 585Ha of agricultural land with <3m depth to watertable 388Ha of agricultural land with <5m depth to watertable 67Ha of land salinity mapped Soil health/structure decline in saline discharge areas. Increased potential for soil erosion on bare ground associated with class 2 & 3 saline discharge areas Lifestyle farming threatened in areas associated with high water tables and saline discharge. | <p>Water quality, water use and riparian health of Hodgsons Creek and Horseshoe Creek (lower reaches). Ovens River – inflows of saline water and discharge along riparian zone. , Saline groundwater supplies especially for Everton township.</p> <ul style="list-style-type: none"> Farm Dams receiving saline water from discharge sites. Groundwater bores and wells– accessing water in the Everton Upper/Everton/Tarrawingee areas. Spring feed dams in the area at the break of slope | <p>Threatened/endangered EVCs Threatened species Wetlands on private land Scattered and individual tree</p> | <p>While there are no direct impacts on people recognised there are a number of social and economic implications such as:</p> <ul style="list-style-type: none"> Economic stress on families (loss of production). Reduced land values Stigma of salinity Aesthetic /landscape Additional expenditure on salinity management. Time – to control manage salinity Additional issue for community (eg Landcare Groups) in planning. Need for technology/information. | <ul style="list-style-type: none"> Utilities infrastructure especially underground services where high watertables exist eg. Telstra Hot water services (where saline groundwater resources used exceeds 1600EC) Beechworth-Wangaratta Road and other roads sealed and unsealed – 36km road DTWT <4m Potential deterioration to the 31 monitoring bores when watertables become artesian. 6.8km rail trail <4m especially Everton Upper. | <p>Death of trees as a result of salinity potentially reduces carbon sink.</p> | <ul style="list-style-type: none"> Salt load contribution impacts on water use and water users assets down stream Ovens (Heritage River) & Murray Rivers. Wangaratta water supply (Potential as increasing salinity levels in times of low flows. Saline groundwater affecting use of shallow water resources in the Ovens Basin. |

| Priority Area | CMU | Land | Inland Water | Biodiversity | People | Built Infrastructure | Climate and Atmosphere | Down Stream Assets |
|----------------------|----------|--|--|--|--|---|--|---|
| Greta | Mid King | <p>Grazing, Cropping, Viticulture, Horticulture, Farm forestry</p> <ul style="list-style-type: none"> • 96Ha of agricultural land with <2m depth to watertable • 3992Ha of agricultural land with <3m depth to watertable • 4179Ha of agricultural land with <5m depth to watertable • 77Ha of land salinity mapped • Soil health/structure decline in saline discharge areas. Increased potential for soil erosion on bare ground associated with class 2 & 3 saline discharge areas • Lifestyle farming threatened in areas associated with high water tables and saline discharge. | <p>Water quality, water use and riparian health of Fifteen Mile Creek (lower reaches) and Factory Creek,</p> <ul style="list-style-type: none"> • Farm Dams receiving saline water from discharge sites. • Groundwater bores and wells (accessing water in the Greta South and Hansonville). • Spring feed dams in the area at the break of slope | <p>Threatened /endangered EVCs Threatened species Wetlands on private land Scattered and Individual trees.</p> | <p>While there are no direct impacts on people recognised there are a number of social and economic implications such as:</p> <ul style="list-style-type: none"> • Economic stress on families (loss of production). • Reduced land values • Stigma of salinity • Aesthetic /landscape • Additional expenditure on salinity management. • Time – to control manage salinity • Additional issue for community (eg Landcare Groups) in planning. • Need for technology/information | <ul style="list-style-type: none"> • Utilities infrastructure especially underground services where high watertables exist eg. Telstra • Hot water services (where saline groundwater resources used exceeds 1600EC) • Roads in areas of high watertables eg 15 Mile Creek Road • Potential deterioration to the 28 monitoring bores when watertables become artesian. • Roads sealed and unsealed – 142km road DTWT <4m. | <p>Death of trees as a result of salinity potentially reduces carbon sink.</p> | <p>Salt load contribution impacts on water use and assets down stream in the King & Ovens (Heritage River) Rivers and 15-Mile Creek. Potential saline groundwater affecting use of water resources.</p> |
| Carboor-Bobinawarrah | Mid King | <p>Grazing, Cropping, Viticulture, Horticulture, farm forestry, Forestry</p> <ul style="list-style-type: none"> • 166Ha of agricultural land with <2m depth to watertable • 838Ha of agricultural land with <3m depth to watertable | <p>Water quality, water use and riparian health of Hurdle Creek and Meadow Creeks (especially lower reaches).</p> <ul style="list-style-type: none"> • Farm Dams receiving saline water from | <p>Threatened/endangered EVCs Threatened species Wetlands on private land Scattered and Individual trees</p> | <p>While there are no direct impacts on people recognised there are a number of social and economic implications such as:</p> <ul style="list-style-type: none"> • Economic stress on families (loss of production). • Reduced land values | <ul style="list-style-type: none"> • Hot water services (where saline groundwater resources used exceeds 1600EC) • Utilities infrastructure especially underground services where high watertables exist | <p>Death of trees as a result of salinity potentially reduces carbon sink.</p> | <p>Salt load contribution impacts on water use and assets down stream in the Ovens (Heritage River) & King Rivers. Potential saline groundwater affecting use of</p> |

| | | | | | | | | |
|----------|---------------------|---|---|--|--|--|---|--|
| | | <ul style="list-style-type: none"> 4257Ha of agricultural land with <5m depth to watertable 78Ha of land salinity mapped Soil health/structure decline in saline discharge areas. Increased potential for soil erosion on bare ground associated with class 2 & 3 saline discharge areas Lifestyle farming threatened in areas associated with high water tables and saline discharge. Lifestyle farming threatened | <p>discharge sites.</p> <ul style="list-style-type: none"> Groundwater bores and wells (accessing water in the Bobinawarra East area). Spring feed dams in the area at the break of slope | | <ul style="list-style-type: none"> Stigma of salinity Aesthetic /landscape Additional expenditure on salinity management. Time - to control manage salinity Additional issue for community (eg Landcare Groups) in planning. Need for technology/information | <ul style="list-style-type: none"> eg. Telstra Carboor-Everton Road and Kneebones Gap Rd and other Roads sealed and unsealed - 50km road DTWT <4m. Potential deterioration to the 24 monitoring bores when watertables become artesian. | | water resources. |
| Whorouly | Mid King, Mid Ovens | <p>While there is no mapped saline discharge areas in this priority area the threat to Grazing, Viticulture, Horticulture, farm forestry, Forestry in the low parts of the landscape remains:</p> <ul style="list-style-type: none"> 580Ha of agricultural land with <3m depth to watertable 4219Ha of agricultural land with <5m depth to watertable Soil health/structure decline in developing saline discharge areas. | <p>Limited potential loss of water quality, water use and riparian zone. Some information exists on groundwater supplies, springs, wells, farm dams and Whorouly Creek but the threat is unknown.</p> | Threatened/endangered EVCs Threatened species Wetlands on private land Scattered and Individual trees | <p>While there are no direct impacts on people recognised there are a number of social and economic implications. These are unknown for this priority area.</p> <ul style="list-style-type: none"> | <ul style="list-style-type: none"> Hot water services (where saline groundwater resources used exceeds 1600EC) Potential damage to 5 Monitoring Bores/5 State Monitoring bores Roads sealed and unsealed - 31km road DTWT <4m. | Death of trees as a result of salinity potentially reduces carbon sink. | Little information is known for this area. Potential salt load contribution impacts on water use and assets down stream in the Ovens River (Heritage River) and Whorouly. Potential saline groundwater affecting use of water resources. |
| Chiltern | Lower | Agricultural Land -Broad | Water quality, | Threatened/endang | While there are no | <ul style="list-style-type: none"> Hot water services | Death of trees | Salt load |

| | | | | | | | | |
|--|-------------------------------|--|---|---|---|--|---|--|
| | Ovens, Lower Kiewa, Mid Kiewa | <p>acre cropping, Grazing, Viticulture, Horticulture.</p> <ul style="list-style-type: none"> • 3719Ha of agricultural land with <3m depth to watertable • 3381Ha of agricultural land with <5m depth to watertable • 2.7Ha of land salinity mapped • Soil health/structure decline in saline discharge areas. Increased potential for soil erosion on bare ground associated with class 2 & 3 saline discharge areas • Lifestyle farming threatened in areas associated with high water tables and saline discharge. • Soil health/structure • Chiltern National Park | <p>water use and riparian health of Black Dog, Bye & Deep Creeks,</p> <ul style="list-style-type: none"> • Farm Dams receiving saline water from discharge sites. • Groundwater bores and wells (accessing water in the low parts of the landscape, up stream of the Hume Freeway). • Spring feed dams in the area at the break of slope | <p>ered EVCs Threatened species Wetlands on private land Scattered and Individual trees</p> | <p>direct impacts on people recognised there are a number of social and economic implications such as:</p> <ul style="list-style-type: none"> • Economic stress on families i.e., loss of production. • Reduced land values • Stigma of salinity • Aesthetic /landscape • Additional expenditure on salinity management. • Time - to control manage salinity • Additional issue for community (eg Landcare Groups) in planning. • Need for technology/information | <p>(where saline groundwater resources used exceeds 1600EC) Utilities infrastructure especially underground services where high watertables exist eg. Telstra</p> <ul style="list-style-type: none"> • Potential deterioration to the 14 DPI monitoring bores when watertables become artesian. Also state bores. • Roads sealed and unsealed -185km road DTWT <4m. • Melbourne-Sydney Rail - 19.4km railway line DTWT <4m. | <p>as a result of salinity potentially reduces carbon sink.</p> | <p>contribution impacts on water use and assets down stream in the Murray River & Black Dog Creek. Potential saline groundwater affecting use of water resources</p> |
|--|-------------------------------|--|---|---|---|--|---|--|

| Priority Area | CMU | Land | Inland Water | Biodiversity | People | Built Infrastructure | Climate and Atmosphere | Down Stream Assets |
|---------------|--------------------------|---|--|---|--|---|--|--|
| Rutherglen | Lower Kiewa, Lower Ovens | <p>Agricultural Land – Grazing, Broad acre & Viticulture</p> <ul style="list-style-type: none"> • 18Ha of agricultural land with <2m depth to watertable • 2046 of agricultural land with <3m depth to watertable • 1319Ha of agricultural land with <5m depth to watertable • 17.7Ha of land salinity mapped with very high groundwater salinity (18000EC). • Soil health/structure decline in saline discharge areas. Increased potential for soil erosion on bare ground associated with class 2 & 3 saline discharge areas • Lifestyle farming threatened in areas associated with high water tables and saline discharge. | <p>Water quality, water use and riparian health of Murdering Hut Creek and other minor streams.</p> <ul style="list-style-type: none"> • Farm Dams receiving saline water from discharge sites. • Groundwater bores and wells (accessing water in the undulating hill country and the plains). Groundwater salinity is often very high eg 18000EC. • Spring feed dams in the area at the break of slope | <p>Threatened/endangered EVCs Threatened species Wetlands on private land Scattered and Individual trees</p> | <p>While there are no direct impacts on people recognised there are a number of social and economic implications such as:</p> <ul style="list-style-type: none"> • Economic stress on families i.e., loss of production. • Reduced land values • Stigma of salinity • Aesthetic /landscape • Additional expenditure on salinity management. • Time – to control manage salinity • Additional issue for community (eg Landcare Groups) in planning. • Need for technology/information | <ul style="list-style-type: none"> • Hot water services (where saline groundwater resources used exceeds 1600EC) • Utilities infrastructure especially underground services where high watertables exist eg. Telstra • Carlyle Road, Murray Valley Hwy and other Roads sealed and unsealed – 101km road DTWT <4m. • Potential deterioration to the 14 DPI monitoring bores when watertables become artesian. (25 state bores) • 0.4km railway line DTWT <4m. | <p>Death of trees as a result of salinity potentially reduces carbon sink.</p> | <p>Salt load contribution impacts on water use and assets down stream in the Murray River. Potential saline groundwater affecting use of water resources.</p> |
| Springhurst | Lower Ovens | <p>Broad acre Cropping, Grazing, (limited Dairying),</p> <ul style="list-style-type: none"> • 1003 of agricultural land with <3m depth to watertable • 3913Ha of agricultural land with <5m depth to watertable • 53Ha of land salinity mapped • Soil | <p>Water quality, water use and riparian health of Diddah Diddah, Daddah Daddah Creeks, Clear Creek, Reedy Creek, Sleeping Dog Creek and some unnamed streams and drains.</p> <ul style="list-style-type: none"> • Farm Dams | <p>Threatened/endangered EVCs Threatened species Wetlands on private land 47% loss in scattered and individual trees over 29 years.</p> | <p>While there are no direct impacts on people recognised there are a number of social and economic implications such as:</p> <ul style="list-style-type: none"> • Economic stress on families (loss of production). • Reduced land values • Stigma of salinity • Aesthetic | <ul style="list-style-type: none"> • Hot water services (where saline groundwater resources used exceeds 1600EC) • Utilities infrastructure especially underground services where high watertables exist eg. Telstra • Hume Freeway, and | <p>Death of trees as a result of salinity potentially reduces carbon sink.</p> | <p>Salt load contribution impacts on water use and assets down stream in the Diddah Diddah, Daddah Daddah, Reedy, Whim and Black Dog Creeks and Black Swamp (wetland of National</p> |

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| | | <p>health/structure decline in saline discharge areas. Increased potential for soil erosion on bare ground associated with class 2 & 3 saline discharge areas</p> <ul style="list-style-type: none"> Lifestyle farming threatened in areas associated with high water tables and saline discharge. | <p>receiving saline water from discharge sites.</p> <ul style="list-style-type: none"> Groundwater bores and wells (accessing water in the break of slope). Spring feed dams in the area. | | <p>/landscape</p> <ul style="list-style-type: none"> Additional expenditure on salinity management. Time - to control manage salinity Additional issue for community (eg Landcare Groups). Need for technology/information | <p>other Roads sealed and unsealed - 64.8km road DTWT <4m</p> <ul style="list-style-type: none"> Potential deterioration to the 64 DPI monitoring bores when watertables become artesian. (50 state bores) Melbourne-Sydney Rail - 5.3km railway line DTWT <4m. | | Significance) Potential saline groundwater affecting use of water resources. |
| Murmungee Murmungee continued | Mid Ovens | <p>Dryland Pastures & Broad acre cropping</p> <ul style="list-style-type: none"> 25.5Ha of land salinity mapped Lifestyle farming threatened 381 of agricultural land with <3m depth to watertable 3158Ha of agricultural land with <5m depth to watertable Soil health/structure decline in saline discharge areas. Increased potential for soil erosion on bare ground associated with class 2 & 3 saline discharge areas Lifestyle farming threatened in areas associated with high water tables and saline discharge. | <p>Water quality, water use and riparian health of Burgois Creek.</p> <ul style="list-style-type: none"> Farm Dams receiving saline water from discharge sites. Groundwater bores and wells (accessing water in the break of slope) Spring feed dams in the area. | Threatened/endangered EVCs Threatened species Wetlands on private land Riparian zones Scattered and isolated trees | <p>While there are no direct impacts on people recognised there are a number of social and economic implications such as:</p> <ul style="list-style-type: none"> Economic stress on families i.e., loss of production. Reduced land values Stigma of salinity Aesthetic /landscape Additional expenditure on salinity management. Time - to control manage salinity Additional issue for community (eg Landcare Groups) in planning. Need for technology/information | <ul style="list-style-type: none"> Hot water services (where saline groundwater resources used exceeds 1600EC) Utilities infrastructure especially underground services where high watertables exist eg. Telstra Potential deterioration to the 30 DPI monitoring bores when watertables become artesian Ovens Hwy and roads sealed and unsealed - 38.8km roads DTWT <4m. 6.1 km railtrail DTWT <4m. | Death of trees as a result of salinity potentially reduces carbon sink. | Salt load contribution impacts on water use and assets down stream in the Ovens River (heritage). Potential saline groundwater affecting use of water resources. |
| Riverine Plain | Lower Kiewa, Lower Ovens, Mid | Dryland Pastures & Irrigated pastures, broad acre cereal crops, Viticulture, Horticulture. | Water quality decline and limiting use of water and riparian | Threatened EVCs Threatened species Wetlands on private land & public | While there are no direct impacts on people recognised there are a number of | <ul style="list-style-type: none"> Hot water services (where saline groundwater resources used | Death of trees as a result of salinity potentially | Potential saline groundwater affecting use of water resources |

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| | King, Mid Ovens | <ul style="list-style-type: none"> • 658Ha of land salinity mapped • 4918 of agricultural land with <3m depth to watertable • 10502Ha of agricultural land with <5m depth to watertable • Soil health/structure decline in saline discharge areas. Increased potential for soil erosion on bare ground associated with class 2 & 3 saline discharge areas especially associated with the stream terraces. • Lifestyle farming threatened in areas associated with high water tables and saline discharge. | <p>health Black Dog Creek (lower reaches), and Reedy Creek (lower reaches),</p> <ul style="list-style-type: none"> • Farm Dams receiving saline water from discharge sites. • Groundwater bores and wells (accessing water in the shallow groundwater zone). | <p>Riparian zone of Ovens, Murray & King Rivers Heritage listed Lower Ovens River including Parks managed areas.</p> | <p>social and economic implications such as:</p> <ul style="list-style-type: none"> • Economic stress on families i.e., loss of production. • Reduced land values • Stigma of salinity /landscape • Additional expenditure on salinity management. • Time - to control manage salinity • Additional issue for community (eg Landcare Groups) in planning. • Need for technology/information | <p>exceeds 1600EC)</p> <ul style="list-style-type: none"> • Urban development of agricultural land surrounding Wangaratta-lower terraces • Roads - Hume Freeway, Roads sealed and unsealed - 184km roads DTWT <4m. • Utilities infrastructure especially services underground where high watertables exist • Potential deterioration to the 41 DPI monitoring bores when watertables become artesian (17 Sate bores) • Melbourne-Sydney Rail - 3.9km railway line DTWT <4m. | <p>reduces carbon sink.</p> | <p>Potential saline groundwater has capacity to impact on the lower Ovens Heritage River. Salt load contribution impacts on water use and assets down stream in the Murray River (inc Lake Mulwala).</p> |
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