

Padthaway WAP Stakeholder Advisory Group Minutes

Meeting No. 4, Tuesday 4 February 2020, 2:00 – 4:00 pm
Farmer's Leap, 41 Hodgsons Road, Padthaway, SA 5271

Objectives

- Detail the Padthaway model scenario results
- Discuss the Resource Condition Trigger (RCT) and Resource Condition Limit (RCL) options for adaptive water management
- Discuss licensee salinity monitoring project

Attendees:

Group Attendees – Kerry DeGaris (Group Chair, SE NRM Board), Scott Longbottom, Tim Hoare, Krysteen McElroy, John Summers, Phil Brown.

Staff Attendees – Sue Botting (Team Leader, Water Policy and Planning, NRSE), Cameron Wood (Senior Hydrogeologist, DEW), Ryan Judd (Senior Project Officer, Water Policy and Planning, NRSE), David Williamson (Team Leader, Water Licencing).

Apology – Carolyn Brown.

Welcome and agenda

The Chair welcomed everyone and discussed the proposed agenda. Thanked advisory group members and staff for their attendance.

Minutes

Previous minutes from meeting 3 confirmed as true and correct, subject to correction of Attendees List (Scott Longbottom recorded as both present and an apology).

Action outcomes to note

- Action 2.3 – Completed.
- Action 2.5 – Completed. Presented in Meeting 4.
- Action 2.6 – On-going.
- Action 3.1 – Completed.
- Action 3.2 – Completed. Presented in Meeting 4.
- Action 3.3 – Completed. Presented in Meeting 4.
- Action 3.4 – Completed.
- Action 3.5 – Completed. Presented in Meeting 4.
- Action 3.6 – On-going.
- Action 3.7 – On-going.
- Action 3.8 – Completed. Presented in Meeting 4.
- Action 3.9 – Completed. Presented in Meeting 4.

Groundwater modelling

Cameron Wood presented updated salinity information and modelled scenarios.

Key Points:

- Salinity modelling has been improved but level of confidence remains moderate (~50:50).
- Examples of modelled salinity in some wells was a much improved fit with measured data but did not quite capture trends in many wells. Note: The example wells used were those presented in previous modelling reports.
- There is no spatial pattern to the level of confidence in the modelled representation suggesting no apparent correlation between salinity and landuse / topography.
- Scenario combinations of extraction levels (full and average) and rainfall (average and reduced) were modelled.
- Historical records indicate full allocation has only been reached once however metering data at that time may not be accurate.
- Example salinity well (good fit) doesn't show much difference between the scenarios.
- The scenarios are variable for through-flow from ranges to flats but show a slight increase over time.
- Remaining work:
 - Report on model.
 - External peer review.
 - Any further information required by the group and how it can be presented.

ACTION: Forward updated salinity modelling and groundwater modelling scenarios presentation to the Group.

Discussion:

- How to manage for water quality and what modelling work / monitoring is needed to improve the model to allow for active management.
- Questions raised included:
 - What modelling work / monitoring is needed to improve the model to allow for active management of water quality?
CW: Due to the high variability of salinity in the landscape it will be challenging to model it more accurately.
 - Does the increased flowthrough from the ranges assist the flow from the flats to the west?
CW: Yes. Although it is important to maintain the flow out of the flats to keep the salt moving but with increased pumping, flow out of the flats is reduced.
 - How does recharge in ranges compare to recharge on the flats?
CW: About 50:50.
 - Does the model take into account groundwater flows beyond the boundaries of the PWA.
CW: The model domain extends 10km beyond the PWA boundary and the model sets up a "regional groundwater flow" coming in. This is modelled as a constant.
 - Do increases in water levels still relate to land clearance?
CW: CSIRO modelling indicates land clearance will influence water levels through to 2030+.

Group requested information

Ryan Judd presented information requested by the Group in previous meetings.

Discussion:

- Heat maps of water extraction (not groundwater level)
 - Extraction highly variable but more stable in last 5 years.
 - There is a high proportion of stable salinity levels.
 - No obvious pattern of salinity and extraction.
 - Does this mean that water extraction is not affecting salinity levels?
- Delivery supplement is a significant proportion of Total Allocation and is included in allocation in modelling.
 - If DS is handed back then Total Allocation should also be reduced.
- Divided allotments
 - There are a number of licenses that extend across both the Flats and Ranges management areas.
 - The water extraction points and use on these allotments are likely to be consistent over time.

ACTION: Forward heat mapping and other information to the Group.

ACTION: Licencing to check that if DS has been returned that Total Allocation has also been reduced, and to confirm the current Total Allocation volume.

Resource management options

Ryan Judd discussed options for setting resource condition limits (RCL) and triggers (RCT) for groundwater levels, hydraulic gradient and salinity.

Discussion:

- Previous RCL set around 2004 water levels based on anecdotal reports of lower yields at that time. Starting to impinge on these and need to reconsider a sustainable limit. RCL proposed at 2m below the June 2004 levels.
- Hydraulic gradient needs to be maintained.
- Causes of salinity rise still undefined and reductions may not improve salinity issues.
- Specific issues noted included:
 - How many years in last ten years has the proposed groundwater level RCL been hit?
CW: Two years out of ten.
 - What would the proposed RCLs look like in future scenarios?
 - Current WAP does not identify management actions to be implemented should groundwater level RCL be reached. Group agreed to identify what management actions should be implemented if an RCT or RCL was triggered.
 - Management actions in response to RCTs and RCLs should apply to all licenses within the management zone.
 - Group noted need to ensure the WAP does not create knee-jerk reactions but gives appropriate time for licenses to plan and adapt their operations.
 - Also noted the need to manage for a worst-case scenario.
 - Alternative groundwater level RCL suggestion 1: RCL as a percentage variation from the average.

- Alternative groundwater level RCL suggestion 2: Three year rolling RCL using 2009 limits with action in fifth year if 50% of wells in the management zone exceeded RCL. Annual notification to licensees of groundwater levels in relation to RCL, and RCL protocol.
- The Group agreed that salinity was most appropriately managed by licensees self-regulating and adapting water management practices. Data needs to be provided to inform their understanding of condition and trends of the groundwater resource.
- Annual reporting is useful but could be improved with more specific data. Trend, averages and near-real time localised information are useful.
- The number of monitoring wells needs to be maintained or possibly improved to meet notification requirements of RCTs and RCLs.

SAG DECISION: Resource condition triggers and limits will not be set for salinity.

SAG DECISION: A resource condition limit to maintain the hydraulic gradient of groundwater from the Padthaway Range to the Padthaway Flats will be used.

ACTION: Investigate suggested alternatives for groundwater level resource condition triggers and limits.

ACTION: Consult with relevant DEW teams to review annual reporting to better inform licensees of Padthaway salinity and groundwater levels and trends.

Licensee salinity monitoring project

Ryan Judd provided further detail on a Citizen Science licensee salinity monitoring program.

Discussion:

- Note: Limited opportunity for discussion. The Group advised they would review the presentation out-of-session and discuss at the next meeting.

ACTION: Forward salinity monitoring project presentation to the group.

Next steps

- Groundwater level resource condition limits discussion.
- Licensee salinity monitoring project.
- Unbundling discussion requested.

Next meeting date

- Next meeting date: 5 March 2020 2:00 pm – 4:00 pm.

Close of meeting

Meeting closed at 4:15pm.

The Chair thanked the stakeholders and staff for attending.

**Padthaway WAP Stakeholder Advisory Group
Action Table**

Action	Padthaway WAP Stakeholder Advisory Group Actions	Status	Meeting 4 Update
2.6	Prepare and distribute to the Group an explanation / example of the application of the three year rolling average SPR carry-over.	On-going	Held open
3.6	Consider alternative wording to “Resource Condition Triggers”.	On-going	Held open
3.7	Consult with DEW re feasibility of providing more tailored water quality and level data and trends directly to licensees.	On-going	Held open
3.8	Confirm requested information for RCT and RCL discussion.	On-going	Held open
3.9	Ryan to present further information on the Citizen Science salinity monitoring project.	On-going	Held open
4.1	Forward updated salinity modelling and groundwater modelling scenarios presentation to the Group.	On-going	
4.2	Forward heat mapping and other information to the Group.	On-going	
4.3	Licencing to check that if DS has been returned that Total Allocation has also been reduced, and to confirm the current Total Allocation volume.	On-going	
4.4	Investigate suggested alternatives for groundwater level resource condition triggers and limits.	On-going	
4.5	Consult with relevant DEW teams to review annual reporting to better inform licensees of Padthaway salinity and groundwater levels and trends.	On-going	
4.6	Forward salinity monitoring project presentation to the group.	On-going	

Action Table – Closed Items

Action	Padthaway WAP Stakeholder Advisory Group Actions	Status
1.1	Amend Terms of Reference	Complete
1.2	Unbundling presentation for meeting 2	Complete
1.3	Forward both Daniela and Cameron's meeting 1 presentations to SAG members	Complete
2.1	Forward unbundling presentation to the Group	Complete
2.2	Confirm requested information regarding delivery supplements and the current sustainable limit and allocations	Complete
2.3	Available water extraction, rainfall and salinity data for the last ten years to be compiled and forwarded to the group	Complete
2.4	Forward presentation on the current Padthaway Water Allocation Plan to the Group.	Complete
2.5	Confirm requested information regarding transfers, carry-overs and divided allotments.	Complete
2.7	Terms of Reference to be amended, as discussed, and distributed to the Group.	Complete
3.1	Forward Groundwater Modelling and Resource Condition Limits (RCLs) presentation to the Group.	Complete
3.2	Further information on flow from the ranges to the flats to be provided.	Complete
3.3	Further information required on modelled salinity output confidence levels, with respect to landuse and spatial patterns, and potential areas to improve the model.	Complete
3.4	Contact PIRSA (Mel Fraser) to investigate current or potential soil salinity monitoring projects of relevance.	Complete
3.5	Scenarios to be run for average extraction, full allocation and reduced rainfall.	Complete
3.8	Confirm requested information for RCT and RCL discussion.	Complete
3.9	Ryan to present further information on the Citizen Science salinity monitoring project.	Complete