

Supplementary material

Monitoring changes in soil salinity and sodicity to depth, at a decadal scale, in a semiarid irrigated region of Australia

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Determination of salinity and sodicity ratings

To simplify the interpretation of the EC maps, soil salinity ratings provided by Hazelton and Murphy (2007) were used, and are shown in Table S1. The ratings and EC values for soils with different proportions of clay is shown, but 40-60% clay content would be a representative range for most of the soils in the study area. This allowed the magnitude of soil salinity at the various depths to be easily interpreted, and also simplifies the identification of areas that contain crop-limiting salinity levels. For cotton production, an EC value of greater than 1.0 dS/m can be regarded as limiting (Hazelton and Murphy 2007). Information from Hazelton and Murphy (2007) was similarly used to guide the selection of legend values for the ESP maps, as can be seen in Table S2. Any soil with an ESP value >6% could be considered sodic, and thus detrimental impacts on soil structure are likely to occur upon wetting (Table S2).

Table S1. Soil salinity ratings for soils of varied proportions of clay, and the legend values used in the salinity maps in this study – adapted from Hazelton and Murphy (2007)

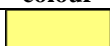











Soil salinity rating	10-20% Clay	20-40% Clay	40-60% Clay	60-80% Clay	Legend range (EC dS/m)	Legend colour
Very low	<0.07	<0.09	<0.12	<0.15	0-0.10	
Low	0.07-0.15	0.09-0.19	0.12-0.24	0.15-0.30	0.10-0.25	
Medium	0.15-0.34	0.19-0.45	0.24-0.56	0.30-0.70	0.25-0.50	
High	0.34-0.63	0.45-0.76	0.56-0.96	0.70-1.18	0.50-1.00	
Very high	0.63-0.93	0.76-1.21	0.96-1.53	1.18-1.87	1.00-1.50	
Extreme	>0.93	>1.21	>1.53	>1.87	>1.50	

Table S2. Soil sodicity ratings and the legend values used in the sodicity maps in this study – adapted from Hazelton and Murphy (2007)

Soil sodicity rating	Legend range (%)	Legend colour
Non-sodic	0-2	
Non-sodic	2-4	
Marginally-sodic	4-6	
Sodic	6-10	
Highly sodic	10-15	
Extremely sodic	>15	

References

Hazelton P, Murphy B (2007) ‘Interpreting soil test results - What do all the numbers mean?’ (CSIRO Publishing: Collingwood, Australia)