Department of Water
Government of Western Australia

Media Statement

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Research shows drains combat Wheatbelt salinity but caution needed

Ongoing research by the Department of Water has found deep drains can be effective in helping counter salinity on farms in the Wheatbelt.

Preliminary findings from the Department's Engineering Evaluation Initiative (EEI) reveal that farmers need to be very clear from the start about what they want to achieve with drainage. Drains might not be effective in all cases; downstream impacts need to be considered; and ultimately, drains might be too costly an option.

"The department's Director of Water Resource Management John Ruprecht said departmental research indicated that drains planned and designed to suit local conditions and soil types can effectively lower water tables and allow protection or re-establishment of vegetation or crops.

Mr Ruprecht said the EEI study also found there could be problems with acid groundwater produced by drains in some areas, and that there are environmental risks associated with disposing of water from most drains.

The work forms part of the department's ongoing investigations into the use of engineering methods to counter salinity in the Wheatbelt, and was a priority project under the National Action Plan for Salinity and Water Quality, jointly funded by the Western Australian and Australian Governments.

Thirteen projects have been carried out under the initiative to investigate the effectiveness of engineering solutions to combat salinity in the Wheatbelt.

The projects investigated methods such as deep drainage, groundwater pumping, and farm-scale evaporation basins to help farmers better manage salinity at Dumbleyung, Tammin, Bodallin, Pithara, Morawa, and Beacon.

Research also evaluated the effect on receiving environments of acid and saline drain discharge, and the most effective methods of treating and managing the waters that come out of such drains and pumping projects.

"This has been a very thorough investigation into the effectiveness of drains to counter salinity," Mr Ruprecht said.

"It included drains up to three metres deep and extending for 22 kilometres, with water from two of the drains collected in evaporation ponds.

"There's no doubt that digging deep drains to counter salinity can work.

"At our Dumbleyung study site, for instance, monitoring showed that groundwater levels were lowered adjacent to the drain, and the water discharged by the drain was removing salt.

"The EEI has also demonstrated that when planned properly with a clear objective, drains can significantly lower the water table enough up to 250 metres away."

Mr Ruprecht said that unfortunately, digging drains was also expensive, and some farmers baulked against drainage as an option for managing salinity because of this high cost.

He said farmers needed to determine issues such as whether they wanted to lower the watertable across a catchment, or make specific saline sections of paddocks grow crops again, and where to dispose or manage the waters from a drain.

"Several thousand kilometres of deep and shallow drains have been constructed in the Wheatbelt in recent years, but until now, no-one has scientifically looked at how effective they are, what precautions should be taken, and the dangers involved in simply moving salty water from a salinity-affected farm further downstream or into a neighbour's land.

"This sort of salinity research and development is important to ensure that property owners can decide how best to spend their money and time to fix salinity on their land, without creating potentially worse problems downstream.

"One of the messages to arise from the EEI is that engineering solutions such as deep drainage are really only one tool in our toolbox when it comes to managing groundwater levels and fighting salinity."

The Engineering Evaluation Initiative is drawing to a close and four final reports on deep drainage are being compiled along with the findings of another nine EEI projects.

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