

Drainage Reform Plan

Peel-Harvey Coastal Catchment

Executive Summary



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A report by Ironbark Environmental

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Disclaimer: Ideas presented in this report are those of the Peel-Harvey Catchment Council and the author. The inclusion of Western Australian Government and Australian Government logos in no way suggests this report represents official government positions. All reasonable efforts have been taken by the author to ensure that the technical and statistical information provided in this report is accurate.

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Executive Summary: Volumes One and Two

This study has been commissioned by the Peel-Harvey Catchment Council to review how improved drainage management could reduce nutrient inputs into the Peel-Harvey Estuary and lower-river reaches. It complements other catchment management initiatives, including the Peel-Harvey Water Quality Recovery Program, designed to address nutrient management in the Peel region and greater Peel-Harvey catchment.

Volume One provides a background to the nature of the region's drainage system and discusses a proposal to reform the way its management could be governed.

Volume Two provides a summary of best management practices that have been trialled, or proposed for use in the region that may provide water quality benefits as part of wider sustainability objectives. These practices are mindful of the need to maintain a level of drainage service whilst making use of our ever-decreasing water resources.

The Region's modified drainage system increases the amount of nutrients entering the estuary by:

- 1. Reducing the nutrient filtering capacity of the region's natural wetlands; and**
- 2. Acting as one of the major transport routes for nutrients and sediment entering the Estuary.**

Reviewing the management of the drainage system offers a significant opportunity to do something about the problem.

The study applies to the catchment's waterways within the Peel-Harvey EPP catchment and which are often located within Gazetted Drainage Districts. These waterways have been either constructed, significantly modified from natural channels, or still have a high level of naturalness. The term 'drain' is used to describe waterways that have been constructed or have been significantly modified from natural waterways.

There are 1330 kilometres of waterways (artificial and natural) in the Peel-Harvey coastal plain catchment, including 1014 km of waterways which make up the Mundijong, Waroona & Harvey Gazetted Drainage Districts. These gazetted waterways are managed by the State Government's drainage service provider, the Water Corporation.

Management of sediment and vegetation in the bed of the region's drainage system may provide a significant opportunity to reduce nutrients entering the estuary. It is estimated that of the 870 tonnes of phosphorus that enters the drainage system on an annual basis, only 140 tonnes make it to the estuary. Seven hundred and thirty (730) tonnes of phosphorus are therefore contained within the sediments and vegetation in the bed of the waterway channels each year. A ten percent improvement in the attenuation capacity of the drainage system could halve the amount of phosphorus entering the estuarine system and approach Environmental Protection Policy targets.

Changes are required to be made to management of all components of the region's drainage system. The key opportunity in the feeder waterways (usually privately owned non-gazetted waterways,) is to avoid fertilizer spread and control stock access to the waterway corridor via fencing. The key opportunity on lower reaches (usually the gazetted waterways) is to manage the waterway's sediments and conveyance functions.

This study is based on managing all of the drainage system for multiple objectives: water conveyance, sediment and nutrient management, as well as ecosystem values, increased on-farm use, and social values. Accordingly, the PHCC strongly encourages the Economic Regulation Authority of WA and the Department of Water to review the conditions under which the State Government's drainage service provider operates. This review should seek to include performance criteria in the licence related to the control of sediments and drain cleaning practices. Additionally, future contracts or licences for the management of gazetted drains should also engage landowners who discharge to or otherwise benefit from the gazetted drainage system. This should be undertaken with a view to setting basic standards of drainage management, such as fencing and controlled access to drainage corridors.

The PHCC recommends that reform of drainage system management should involve:

- a) the establishment of a regional drainage management policy, with clear management objectives for water quality and conveyance;
- b) collection of fundamental regional drainage information on the current capacity of the system, and other high-level information related to conveyance and water quality;
- c) the preparation of Sub-Catchment Drainage Management Plans (SCDMP) for up to four (4) sub-catchments within the region;
- d) establishment of a Regional Drainage Advisory Committee, to oversee the preparation of SCDMPs, management of drainage service provider contracts/licences, and review of performance. The membership of the Committee should be representative of the stakeholder interests in the Region's drainage system;
- e) greater ability to work with the State Government's drainage service provider to encourage management for water quality and water quantity
- f) the letting of new contracts/review of licences to undertake drainage service provision;
- g) establishment of a permanent Healthy Peel Drains for Clean Water Scheme to provide long-term, secure technical and financial support to landowners to implement drainage BMPs; and
- h) a review of the 72-hour rule to confirm or establish a new base water conveyance objective;

The report provides an emphasis on the preparation of Sub-Catchment Drainage Management Plans (SCDMPs) to guide the operations of drainage service providers. SCDMPs should draw on regionally-collected information of channel capacity and system assets, and where possible, locally collected information on channel stability and condition. They will recommend new routine maintenance schedules for the drainage system and identify high priority areas within each sub-catchment where other significant BMPs may be implemented.

A regionally-based drainage management advisory committee should be established to direct the reform process with the support of the Department of Water. This committee will need to be given formal roles and responsibilities, possibly as a Water Resource Management Committee, via a State Environmental Policy or through the proposed Peel-Harvey Catchment governance structure being considered by State Government.



The cost implications of reformed drainage management will only be partly be met through the State Government's Coastal Drainage Program. Major up-front costs, such as surveying the Gazetted Drainage system for channel capacity and asset condition will need to be separately funded, possibly as part of the drainage service provider's licence. Establishment of Sub-Catchment Drainage Management Plans will also require additional funding. New maintenance schedules may involve changes to current practices with minor cost implications, but the cost-effectiveness of the more significant BMPs is unknown.

The ultimate goal of drainage management in the Peel Region is to have on-ground management of waterway corridors that meets water conveyance and sediment management objectives. Some management practices described in this report can be immediately adopted in the gazetted drainage system and on farms with relatively little change to current practices. A number of these modified management practices, such as a banded clearing technique, may also be the most cost-effective or improving nutrient management.

This study forms one part of the Catchment Council's catchment management initiatives. Improved drainage management is a component of integrated catchment management. And in a drying climate, consideration needs to be given to how we can keep water in the landscape so that we can safely make better use of this limited resource.

The PHCC believes that after a process of consultation and negotiation between Government and the community, this plan should be used as a guide by the Department of Water to reform management of the gazetted drainage system and also bring about changes to the management of privately managed drains. The PHCC also hopes that the proposals in this report are used by the Department of Water to reform drainage policy in the Peel-Harvey Coastal Catchment.

A summary of the report's recommendations are provided below.

High priority actions

The following recommendations are considered by the Peel-Harvey Catchment Council to be of highest priority requiring action within two years. Some of these recommendations could be implemented through broader initiatives of the Department of Water.

1. A controlled trial in the catchment of modified gazetted drainage management practices to commence within two years of report endorsement. Given the diversity of channel and land use scenarios, the trial should be designed as a comprehensive 3-5 year project.
2. That a Draft Regional Drainage Policy be in place within two years of endorsement of this report, and that an interim Regional Drainage Advisory Committee is functional within six months of the Policy being in place. The policy should be reviewed after five years of operation, in light of the above controlled trial.
3. Trial preparation of at least one Sub-Catchment Drainage Management Plan to commence within two years of report endorsement. A project outline is provided in Section 14.1
4. That a public review and assessment of the drainage system's effectiveness be conducted. This is to include an assessment of the current needs of the landowners and the environment and whether these needs are being met in a cost-effective manner.
5. Surveying of the gazetted drainage system to establish current conveyance capacities to be completed within 2 years of report endorsement.

