

Fact sheet 1

Improving water quality at the edge of block.

A guide to help extension and NRM officers identify edge of block water quality management initiatives and how to implement them.

INTRODUCTION, BACKGROUND AND SUMMARY OF SERIES.



Introduction

Best Management Practice (BMP) guidelines (e.g. Smartcane BMP, Banana BMP, Hort 360) focus primarily on practices within the production footprint that will result in a reduction of sediment, nutrients and/or pesticides entering local waterways. This fact sheet series focuses specifically on **water quality initiatives** that can be done on the **“edge of block”** to further improve the quality of water leaving the farm. These edge of block initiatives complement, but do not replace the need for within-block BMP. Adoption of BMP is ideally undertaken before or in conjunction with edge of block initiatives within a farming system, as such, BMP should be considered before or in conjunction with any edge of block initiatives within a farming system.

This fact sheet series aims to provide a concise step by step guide for extension and NRM staff to help identify edge of block opportunities, with more detailed information on specific edge of block initiatives available on WetlandInfo (wetlandinfo.des.qld.gov.au) and search treatment systems or wetland rehabilitation.

NATURAL BASED ACTIONS → interventions or activities that utilise natural landscape processes (such as denitrification, filtration etc) to reduce pollutants

EDGE OF BLOCK → areas on the farm that are not under production or have low productivity value.

Water quality management initiatives focus on on-farm actions to improve water quality leaving the farm using both prevention (riparian buffers, vegetated drains) and treatment (treatment wetlands, bioreactors). Including this factsheet, there are a total of 5 factsheets in this series, walking the reader through a range of steps required to implementing a water quality management initiative at the edge of block.

Fact sheet 1

Introduction, background and summary of fact sheet series (this sheet)

Fact sheet 2

Nutrient, sediment and pesticide reduction on farms: Processes and examples

Fact sheet 3

On the farm: is there an opportunity for a water quality management initiative at your site?

Fact sheet 4

On the farm: techniques in discussing and choosing a water quality management action

Fact sheet 5

Designing and implementing your water quality management initiative!

Steps to planning, designing and implementing an edge of block action on a farm:

- 1 Undertake Walking the Landscape process (systematic and transparent science synthesis framework which integrates existing data with expert knowledge through hands-on workshops to create a common understanding among multidisciplinary teams) at a subcatchment scale to learn about the landscape and opportunities for water quality improvement (if possible). Refer to wetlandInfo.des.qld.gov.au and search Walking the Landscape for more information. Alternatively identify relevant NRM plans or priorities for the catchment/sub-catchment.
- 2 Review local scale water quality data and identify key areas which should be a focus for water quality management initiatives.
- 3 Conduct a farm visit and talk to farmer about farm issues and farm landscape, ideally through a mapping process to identify drainage lines, natural systems (wetlands, creeks, native veg), issues (drainage, water-logging, erosion) – refer to fact sheet 3
- 4 Confirm the type and scale of the project. Which pollutant are you addressing and how bad is it?
Sediment | DIN | Pesticide
- 5 Identify a potential site on the chosen farm and summarise edge of block possibilities / opportunities.
- 6 Conduct preliminary planning review to ensure any planning approvals for possibilities / opportunities are identified.
- 7 Visit site with technical specialist.
- 8 Secure landholder in-principle commitment to progress to design phase.
- 9 Seek approval within your organization and/or funding body to endorse site for detailed design.
- 10 Detailed design investigation (soil, hydrology, topographical survey) and landholder review/agreement. Submission of approval documents (if required).
- 11 Completion of design plans and construction cost estimates. Maintenance and monitoring plans commence.
- 12 Source construction contractors, and obtain written quotes for works.
- 13 Secure final approval from your organization &/or funding body to construct, obtain any other approvals.
- 14 Commence construction.
- 15 Manage construction process via strict hold points and supervision.
- 16 Maintain, monitor and evaluate, post construction.

How to use these factsheets

While these factsheets have been designed as a series, they can also be used independently depending on the knowledge of the extension officer, farmer or local community member.

These factsheets do not focus on:

- BMP guidelines or agronomic practices within the block,
- how to design an edge of block water quality initiative
- how to develop an understanding of the broader landscape process and the location of the farm within this broader landscape. For more information on whole of catchment planning, refer to WetlandInfo (search whole of catchment planning).

Rather, they have been designed to inform the reader where an “edge of block” management initiative might be appropriate and provide guidance on the general steps required to implement the idea.

Moving from the idea to the finished project

There are many steps to successfully implement a water quality management initiative on a farm (refer to pg2). It is beyond the scope of this fact sheet series to detail and discuss each of these steps, however it is likely that you are well into this process if you are reading this sheet!

Steps 1-2 are likely already complete, so you may just have to gather the information and talk to the farmer and some technical specialists.

This fact sheet series really focuses on **Steps 3-6**, which is all about being on the farm, discussing the problem / solution with the farmer/s and coming up with a basic “solution”

Steps 7-16 are all about moving from a solid idea to a finished project – a process that can take months to years depending on the complexity, location and how quick you need to complete the project.

“There are many steps to successfully implement a water quality management initiative on a farm.”



Potential funding options for your project

Implementing an edge of block action does not necessarily need to cost large amounts of money. Depending upon the farm and the areas available, there may be opportunities for significant nutrient or sediment reduction with minimal costs. Conversely, there may be opportunities on a farm for large projects which may require more funds to implement. Funding sources change from year to year, so it's best to contact your local Natural Resource Management body, farm industry group or other funding source for the most up to date information. In mid 2020, key funding regimes with a focus on edge of block actions for water quality improvement include:

- Great Barrier Reef Foundation
- Carbon and Reef credits
- Land Restoration Fund
- Queensland or Australian Government environment or water quality grants
- Local government environment levies or other environmental initiatives

Opportunities may exist in the future through water quality offsets.

Further reading / information

Your local Natural Resource Management regional body, state or local Government or Landcare group may have information or funding to assist. Specific information can be found here:

- **WetlandInfo** : Treatment systems - Online resource on a wide range of treatment systems for use within the agricultural landscape:
<http://bit.ly/TreatmentSystems>
- **WetlandInfo** : Wetland Management and Rehabilitation: <http://bit.ly/WetlandSiteManagement>
- **Smart Cane BMP**: Module 2: Irrigation and Drainage and Module 6: Natural Systems Management
- **Banana Best Management Practices Environmental Guideline (BMP)**
- **Development Assessment Mapping System and development assessment provisions**
<https://planning.dsdmip.qld.gov.au/>

Acknowledgements

This fact sheet series has been written by Mark Bayley, AWC with guidance from Leanne Carr, Herbert Cane Productivity Services Ltd (HCPSL) and Carla Wegscheidl, Department of Agriculture and Fisheries (DAF). The following people contributed by providing advice, information and technical review:

- Lawrence DiBella, Herbert River Catchment Landcare Group and HCPSL
- Michael Nash, Aquasea Enterprises
- Suzette Argent, Terrain NRM – Wet Tropics Major Integrated Project

- Megan Zahmel, HCPSL
- Mike Ronan, Department of Environment and Science
- Marcus Bulstrode, Terri Buono, Niall Connolly and Linda Souter, DAF

This fact sheet series has been developed as part of the Herbert River Catchment Landcare Group's Beyond the Block project funded by the Enhanced Extension Coordination in GBR project under the Queensland Government Reef Water Quality Program.