

Do we know what we are buying?

Developing a water quality metric for south-east Queensland

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Improving the way we use and manage rural land can reduce the sediments, nutrients and other pollutants entering the waterways of south-east Queensland. However, to help landowners and waterway managers make good decisions about cost-effective management interventions, we must first predict the extent to which a suite of management actions at the property level will reduce sediments and nutrients entering waterways.

A team of economists from the Department of Environment and Resource Management is developing a metric to help make these forecasts and support the Healthy Country project.

The water quality metric for south-east Queensland will allow decision-makers to assess the relationship between on-ground actions and consequent changes in delivered sediment loads.

The SEQ Water Quality Metric will also help planners and policy makers design policies and programs—including market-based instruments such as conservation tenders—to direct investment to the most effective restoration activities. Conservation tenders ask landholders to submit a management action plan and a bid for undertaking the actions. The actions that provide the greatest outcomes at the lowest price are then funded.

In developing the metric, the team has examined the three focal catchments of the Healthy Country project to understand the major causes of erosion and suitable management practices. The team then investigated the efficacy of management actions in addressing erosion and the change in sediment generation.

Compiling the metric

Figure 1 outlines the steps for assessing the change in sediment delivery

The water quality metric measures the changes in sediment generation by estimating the change from hillslope, gully and streambank erosion based on each property's physical characteristics and the efficacy rates of management actions. It then estimates the change in sediment delivery to the waterway from the specified erosion source. Weights can then be applied to reflect the relative importance of different sources of erosion in the sub catchment, or other funding priorities.

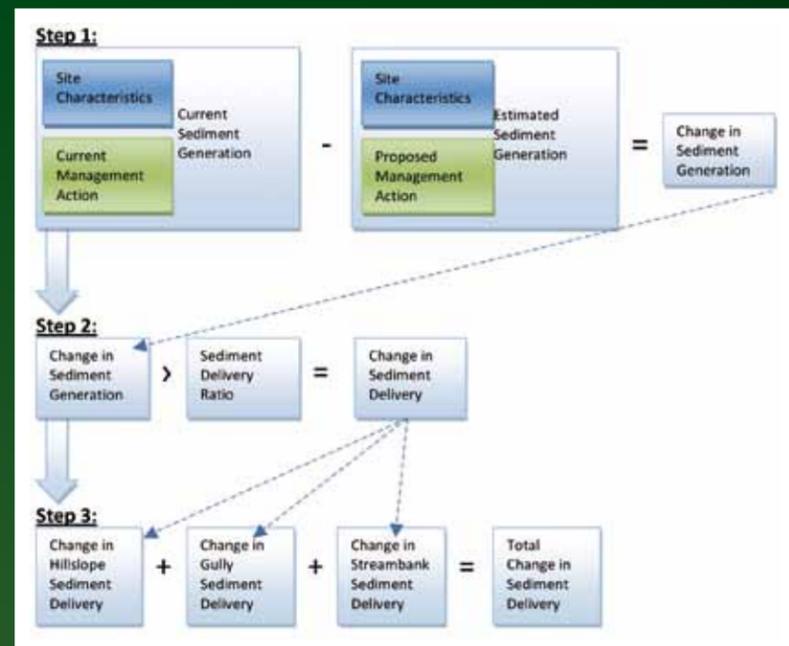


Figure 1: Steps for assessing the change in sediment delivery.

Testing the metric

An investment in suitable data at the property level is required before the water quality metric can become fully operational. Most of this data—such as mapping of gullies, digital elevation models and better soils data—will be collected as part of the Healthy Country monitoring and evaluation strategy.

An improved understanding and modelling of the efficacy of management actions—linked to site characteristics—will also provide greater rigour when comparing changes in sediment generation across landholders and management actions.

... Then we will know what we are truly buying.



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