Rainforest CRC Cooperative Research Centre for Tropical Rainforest Ecology and Management

CATCHMENT TO REEF JOINT RESEARCH PROGRAM

Task 1: Riparian zone performance: tools and protocols for assessment and monitoring, and development of guidelines for improvement

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A major management tool for improving water quality is manipulation of riparian and buffer zones - the river bank and its vegetation and drainage lines and sumps on farm - which are vital for bank stabilisation, shade, organic input, habitat for terrestrial and emerging aquatic fauna, and the filtering out of dissolved and suspended contaminants resulting from catchment land use. A pressing research need is to quantify these roles to facilitate riparian and buffer management activities aimed at controlling water quality and simultaneously sustaining processes vital for river ecosystem health. The very special nature of GBR and Wet Tropics catchment hydrology (rainfall quantity and intensity, and stream flow extremes, creating an outlier in Australia) demand assessment at this bioregional scale. In this task we will develop the tools to quantify the filtering role of riparian and buffer vegetation, providing the capacity to test the influence of major variables (hydrology, landform, soil type, land use, bank form, vegetation structure, floristics and width of the vegetated zone) and to provide guidelines for design of buffers and enhancing their performance.