Revegetation in the Herbert catchment: Just makes sense!

After years of water inundation and Hymenachne infestations David knew he needed to do something to change what was happening on this part of his farm.

Sugarcane farmer David Guazzo took the opportunity to get a one kilometre section of stream bank revegetated at Cattle Creek, south of Ingham.

Figure 1: Guazzo Farm before riparian revegetation (June 2010)

Fortunately for David, and several other landholders in the Ingham district, the Herbert River Catchment Landcare Group (HRCLG) had already secured funding through Terrain NRM's Systems Repair program to address local catchment priorities. This program was established in 2009 under the Australian Government's Reef Rescue Grants Program.

Why is riparian vegetation important?

Good riparian vegetation prevents stream bank erosion and scouring of adjacent paddocks, that can occur due to high velocity and overbank flows during the tropical wet season events in Far North Queensland. Large trees also provide shade to areas of open water, retarding aquatic weed growth and keeping the water significantly cooler. This increases dissolved oxygen (DO) concentrations, essential to support fish and other aquatic biodiversity. Wide, healthy riparian zones often improve instream hydrology during floods and can also assist in the removal of pollutants such as sediment, nitrogen and phosphorus by capturing these before they enter waterways.

Figure 2: Same section of upper Cattle Ck stream bank in 2020 (Note: dead log on the left is the tree from Figure 1, and still no riparian vegetation on the opposite bank)

Why working with others is important?

In upper Cattle Creek, the systematic control of invasive weeds such as Hymenachne, Salvinia and Water Hyacinth was conducted by Hinchinbrook Shire Council (HSC) under a co-contribution arrangement with landholders in this system, to regularly clear and maintain areas of open water. These efforts to reduce the proliferation of invasive species and establish a riparian zone on the northern side of the creek would help shade out the weeds and reduce the amount of chemical control required into the future.

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Ongoing maintenance

Despite the establishment of good riparian vegetation in some parts of upper Cattle Creek, annual weed control is still required under the co-contribution arrangements set up by the HRCLG some 10 years ago. Thanks to landholders like David, the amount of chemical spraying required in areas of good riparian vegetation is often lower. Nonetheless, the fact that all landholders adjacent to upper Cattle Creek continue to contribute financially to the weed control program, demonstrates the value of this systematic and collaborative approach to all.

Selecting trees

As part of the initial species selection for this revegetation site, as per best practice, every attempt was made at the time to deliver a variety of native flora occurring naturally in this system. However, 2011 to 2014 was a particularly wet period in the Herbert district, and many of the species that would normally survive were simply drowned out during the establishment phase (first 1-2 years). As a result, there is now a bias towards the more wet tolerant species as they have matured.

Now that there is a well-established canopy and habitat for birds and other animals to frequent, it is likely the diversity of flora will continue to improve as seeds get dispersed and changes in seasons favor the recruitment of new species over time.

Appropriate use of selective herbicides, instead of broad-spectrum herbicides, can also support a greater diversity and number of plant species within riparian zones.

Additional Benefits

In addition to the obvious benefits already described. Having well established riparian areas have also proven to benefit farmers by reducing pests. Weed seeds (particularly that of grasses) provide a necessary protein source for rats, which can cause significant damage to sugarcane crops. With the inclusion of some tall trees such as Eucalypts and Melaleucas, predatory birds such as owls, kites and eagles use these as roosting sites, where they are likely to take advantage of any pests in the area, which greatly assists in their control.

Figure 3: Well established riparian vegetation at Cattle Ck 9 years after planting. Notice the tall trees, perfect roosting sites for predatory birds.

Take home messages

In a recent follow up with David Guazzo about his experience at Cattle Creek and the riparian revegetation project, he said:

"It's been great, I really enjoy going down there now, it's much easier to manage and there are certainly no disadvantages in planting trees."

David is just one of several landholders that have revegetated their streambanks with great success. To get involved or find out more about riparian zones on your property, please contact the Herbert River Catchment Landcare Group, the Hinchinbrook Shire Council or HCPSL.

Visit wetlandinfo.des.qld.gov.au (search rehabilitation) for more information on riparian rehabilitation.

This case study was developed by Michael Nash in partnership with Herbert River Catchment Landcare Group and Herbert Cane Productivity Services with funding from the Department of Agriculture and Fisheries, under the Queensland Reef Water Quality Program.

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