Technical theme: Relationships – people and communities

From little things, big things grow

Donna-marie Audas
Project Manager, Queensland Wetlands Program

Abstract

Wetlands are often seen as swampy undesirable places, best suited for clearing and filling for urban development. This is particularly true of Queensland's coastal wetlands. How do you raise awareness and understanding of the important role wetlands play in our coastal environment?

The Queensland Wetlands Program (QWP) has approached this problem by developing education tools for primary school students that encourage an early understanding of what is a wetland, how it works, its values, the threats and what can be done to protect it. The Program's education resources include a wetland interactive tool, a virtual wetland assessment tool and curriculum, a 10-week intensive school programme and a wetland story-thread. The intensive school program was implemented in three schools in 2008.

The intensive school unit saw students spend 10 weeks visiting local wetlands. It was a combination of classroom learning and field work that allowed students to touch and feel wetlands, reinforcing their lessons about the natural, cultural, economic and social values of wetlands. Through partnerships with landholders, government and wetland experts these students were exposed to the importance of managing wetlands.

The schools involved in this project continue to raise awareness about wetlands with their peers. Two of the schools showcased their learnings at an international conference. Phase two of the Queensland Wetlands Program in 2009 will see the opportunity for more schools to bring wetlands into the classroom and take students outside into wetlands.

As the saying goes, from little things BIG things grow…

Planting the seed

The challenge when undertaking community awareness to protect and conserve wetlands is that the general community do not understand the critical role wetlands play in keeping the Great Barrier Reef "great".

Wetlands are often are often seen as swampy undesirable places, best suited for clearing and filling for urban development. People's perception must change to understand that wetlands are essential to healthy coastal ecosystems and a healthy Great Barrier Reef.

Using children as the referent learning group was considered the ideal way to get changed behaviour. There was recognition by the Queensland Wetlands Program of the need to build awareness, understanding and knowledge about wetlands and to make wetland learnings part of their classroom curriculum. The children were provided with the information that could change the way they regarded wetlands -

spreading the message about the importance of healthy wetlands and ultimately protecting and conserving wetlands into the future.

The project needed a number of things to be successful: a classroom teacher that would be willing to champion the development of a field-based wetland curriculum and get wetlands into classrooms (not literally!); and, a supportive school environment which allowed students to learn by doing and building skills and knowledge to develop partnerships with local experts to assist the students on their wetland journey.

The Program working group had highlighted the need to educate and inform the community. Townsville Central State School (TCSS) was supportive of the program and the Year 7 teacher Ms Kacey Constantine offered to work on the project. The project was challenging for Ms Constantine as she had to develop the field-based unit from scratch. The Great Barrier Reef Marine Park Authority (GBRMPA) had had already developed a 10-week Wetland-Newspapers In Education (NIE) series which had a teaching document that could be form the foundation of the curriculum. TCSS had an advantage of having a wetland area in the school playground which would allow the students to easily test the skills they were learning in the classroom. The ultimate success of the project was to build partnerships; every government and non-government organisation approached were keen to be involved.

Starting to sprout

Initial meetings identified the focus of the unit as *'taking the children on the journey of a water droplet from the upper catchment to the marine environment'*. The unit aimed to develop resource assessment techniques (soil, vegetation, water quality, planning, politics and legislation, social and economic) to asses wetlands/waterways within the local catchment area and report on the findings. Ms Constantine used the lessons, messages and reflections to build a comprehensive 10-week curriculum unit that can now be implemented in other Queensland schools. It was critical that the curriculum allowed students to:

- build on GBRMPA's Wetland Reef Beat series
- develop key understanding of the interconnected nature of the environment and humankind
- appreciate the balance for development and the environment
- apply skills in the processes of field assessment
- have a greater understanding of the role a catchment management plays in the students' environs
- enjoy and learn about wetlands

Having a goal for the students to work toward was essential. With the help of our partners, we organised a two-day canoe trip where the children applied the skills they are learnt over the 10 weeks.

The Townsville Bulletin newspaper was funded by the QWP to run the GBRMPA 10-week Wetland-Newspaper in Education series in the 1st term of 2007, which was launched on World Wetlands Day February 2, 2007. A competition was run to encourage other schools in the Townsville region to be involved in the series. Other newspapers in the Great Barrier Reef Catchment were also running the NIE series so we had a lot of students being exposed to wetlands.

Political and media support

The school curriculum was supported by the Australian and Queensland government. The program was launched by former Minister for the Environment the Hon Lindy Nelson-Carr MP, Federal Member for Herbert Peter Lindsay and Education Queensland representative Mr Greg Dickman. The MC for the launch was local radio celebrity Mr Steve Price who gave the students a "mission" to learn more about wetlands and become wetland warriors. This all took place on World Wetlands Day, February 2, 2007. This event and the many field trips generated lots of media coverage and the students appeared on the television, in the paper and on the radio. Students wore specially designed t-shirts, backpacks and hats that carried the Queensland Wetlands Program logo, giving them a sense of belonging and importance.

Germinating partnerships and linking with community

This is the highlight of the story. We needed experts to mentor the students and help them learn about wetlands from a range of different perspectives. Every government and non-government organisation was more than happy to get involved. Each week, a professional was invited into the classroom to lecture on their role before taking the students into the field to teach about practical resource assessment techniques. These included, soil, vegetation, waterquality and macroinvertebrates identification and sampling.

The Townsville City Council Creek to Coral Program gave students an understanding of where they live and their role in the catchment, taking them on a catchment tour from Mt Stuart to Rowes Bay. Students had a guided tour to talk about how the water droplet flowed from the upper catchment to the marine environment. They were able to see first hand the challenges for the water droplet, including how urban development in the catchment had changed the flows and inputs and pressures. We stopped numerous times to test water quality, investigate and sample macroinvertebrates, identify weeds and pests, and discuss the adjacent landuse and impacts of this on the water droplet's journey.

Students learnt how to taste soil with the help of Dr Mal Lorimer from the Department of Environment and Resource Management. Dr Lorimer offered to teach the students about the soil and vegetation, explaining the importance of riparian vegetation. Students sampled the soil, keyed out the vegetation and were able to get an understanding of what plants were associated with wetlands.

Mr Vern Veitch from the Australian Centre for Tropical Freshwater Research spoke to the students about fish, including Tilapia *Oreochromis and Sarotherodon spp* which are declared noxious in Queensland. Students were astounded to know that the female fish brood the babies in their mouths making it essential to dispose of tilapia properly.

Mr Richard Pepper from Conservation Volunteers Australia outlined how rehabilitating a wetland site benefited not just the landholder but increased the quality of water flowing to the Great Barrier Reef. Students were able to see first hand how the history of the area and settlement patterns had resulted in the introduction of pest species which now had to be removed to ensure rehabilitation could take place. The students also assisted in planting trees in the catchment.

Students travelled to Ingham's Tyto Wetland visitor centre to tour the many interconnected lagoons that make up this system. They were taken around the wetland by Mr Vince Vitale, an active environmentalist and local sugar cane farmer. Mr Vitale stressed the importance of working with the environment and thinking long-term when developing the land. The students were exposed to the issues that management face in trying to provide a healthy ecosystem for flora and fauna as well as trying to raise awareness about the importance of wetlands. Students were astounded that the wetland was right at the doorstep of some residences houses. They enjoyed the wallaby's but were quick to realise that the encroachment of urban areas had forced these animals to come to the watered playing fields adjacent to the wetlands to feed and were posing issues for the community. The students understood that planning was a major wetland issue that did not just involve local government—rather, it is a whole of community concern.

As part of our trip to Ingham the students went to Mungulla wetlands on the Herbert River floodplain. They were taken on a tour by Mr Jacob Cassidy of the Mungulla Aboriginal Business Corporation, and shown that in the past the area has been cleared and intensively farmed and was now showing lack of riparian vegetation and infestation of Hymenachne, a weed of national significance. Mr Cassidy talked to the students about management options for the land and the use of fire, grazing and spraying to control weeds. Mrs Naomii Phillips from terrain (the wet tropics natural resource management group) talked about how changed land use practices throughout the catchment influenced the lower reaches, and how difficult it is to restore connectivity and ecosystem health without a whole of catchment approach. Communities need to work together to fix a catchment 'upstream – downstream' are linked and impacts on adjacent land do flow on to the marine environment.

Pulling it together—harvest

A culmination of the 10-week course was the two-day canoe trip. This would not have been possible without the partnerships formed throughout the unit, as well as the the Loam Island Scouts and the Girl Guides. These community groups provided us with the canoes to make the field component possible. Mr Mark Mangles from the Loam Island Scout group taught the students about how to safely use a canoe.

TCSS is a Reef Guardian School and as part of this program they offered to mentor Stuart State School to assist them in becoming a Reef Guardian School. Students were able to use the facilities at Stuart School, camping in the library between the canoe trip days to collate information, go fish spotting and rest.

Federal Member for Herbert Mr Peter Lindsay launched the student's canoe trip and the Federal Member for Dawson Diane Kelly joined us for the second leg of the canoe trip and got to experience first hand the Stuart Creek wetland system. Students were supported by most of the experts that had taught them throughout the term. They had first hand assistance for the field trip and were able to ask questions and give a valuable insight to these professional. Steve McGuire a local member of Rotary and a member of the Local Marine Advisory Group came to lend a hand and learn from the students. He was most impressed by the way they worked together and showed leadership throughout the canoe trip.

Students were divided into groups to sample water, soil, vegetation, macroinvertebrates, record the adjacent landuse and the location of each of these sample sites. This information wascollated by the students for a reach of the Ross River, a modified river system and a near natural environment Stuart Creek just south of Townsville. Students were buzzing with questions and many had answers – they were out tasting, feeling and being one in the wetland. Learning by doing.

Figure 1: Making the trip down Stuart Creek – Putting it together

At the completion of the trip, the students gave a presentation to their families, members of the community and all those who at had helped implement the course. It was a powerful way to spread the message further and help the plight of wetlands.

Next step-replanting

In 2008, the curriculum field unit was piloted at two state schools— Rasmussen State School (RSS) in Townsville and Tewantin State School near Noosa in south-east Queensland. The feedback from these two pilots has been used to inform and update the curriculum in preparation to provide it to all schools in Queensland and Australia.

A further educational product incorporating wetlands sustainability education has been created for students in lower-to-mid primary by Pullenvale Environment Centre – a wetland Storythread. The Storythread focuseson the memories and experiences of a woman named Rosie who used to live and play in Mundy Creek in Townsville.

The Pullenvale Storythread approach has been developed as an innovative pedagogical approach to environmental education. In its simplest form, Storythread is a way of telling exciting stories about people and their strong connections to place.

At a deeper level, Storythread functions as a powerful environmental narrative that encourages students and teachers to engage emotionally and intellectually with the world around them.

Students from TCSS and RSS presented their learnings at the International Coastal Conference held in Townsville in October 2008. They took the next step of this process - teaching other students about the importance of wetlands through a number of media. The students were able to spread the message in this forum while learning about the other components of the coastal environment. They were also able to network with other students from international and national schools and make key contacts.

This year, 2009, will see the expansion of the wetland curriculum and Storythread to more schools in the Great Barrier Reef catchment. Schools have been invited to register their interest in using the curriculum … and the wetland journey will begin again.

Take home messages

- ✓ ***Learn by doing***—Students are the future and they are open to learning about the environment around them. Allowing them to build on their experiences and take them home and out into the community spreads the message further than imaged.

- ✓ ***Think outside the square***—think big and you will succeed. Take a challenge and generate excitement about the environment.

- ✓ ***Build partnerships***—don't be afraid to ask for help.

- ✓ Experts need to engage ***with community and schools to spread the message***, students were more than happy to learn when they felt valued and part of the process.

Acknowledgments

Queensland Wetlands Program
Townsville Central State School
Great Barrier Reef Marine Park Authority
Conservation Volunteers Australia
Australian Centre for Tropical Freshwater Research
Education Queensland
Department of the Environment and Resource Management
Townsville City Council
Scouts and Girl Guides
Rotary
Townsville Bulletin
Stuart State School
Rasmussen State School
Tewantin State School
Pullenvale Environment Centre