



ECOLLABORATION
RESILIENT LANDSCAPES - RESILIENT COMMUNITIES

Evaluation of Education Program

Everyone's Environment Grant
2015 to 2018



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2 August 2018



Executive Summary

This report has been developed to provide feedback to the Department of Environment and Science on ECOllaboration's environmental education service to schools as part of the organisation's Everyone's Environment Grant.

The success of the education program has been determined by the booking data collected and feedback from teachers and students. Eighty school excursions were undertaken with students and teachers through SE Queensland focussing on environmental issues primarily around catchment management.

Feedback has been positive with students and teachers learning about what occurs in the real world by local experts. The program will continue to expand based on this analysis.

The program also aimed at educating the general community and businesses about the litter problem in the rivers of the Sunshine Coast and the plight of the endangered Water Mouse.

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1.0 Introduction

ECollaboration's ECO Education Program is a boutique education program that delivers environmental education services to schools throughout south east Queensland.

The purpose of this report is to summarise the delivery and outcomes of the service from April 2015 to March 2018 as part of ECollaboration's reporting to the Department of Environment and Science Everyone's Environment Grant.

This report will summarise the various aspects of the service and the outcomes achieved throughout the three years of operation via data collected via booking information, feedback from the schools and anecdotal evidence.

2.0 History

ECollaboration (formerly Maroochy Waterwatch) has a long history of environmental education in a very ad hoc manner with developing and coordinating various community education programs based on the level of support from funding bodies and government priorities. These workshops and events have ranged from educational displays at various community events to holding specific educational events on a variety of topics from plant propagation, weed identification, basket weaving to goats for land management as examples.

Being catchment managers with a long history in water quality knowledge, an opportunity presented itself in the primary and secondary education field to deliver expert tours that were linked to curriculum and to market this service to the school community with a view of incorporating the visual symptoms of unhealthy waterways with marine debris accumulation and the plight of the endangered Water Mouse when visiting the lower estuaries.

This grant also builds upon the extensive education programs to the general public building an awareness of the Water Mouse through ad hoc encounters with community members, guest speaker engagements and attendance at community events.

3.0 School Based Education Program

3.1 Marketing

Although we had a list of schools from previous engagements, to further develop this service we needed to develop a comprehensive list of schools. A database was established with every public and private school general contact information in SE Queensland and Frazer Coast from the Department of Education's website. We also tried to generate contact details for heads of science or geography departments.

A website was also established that we could use for marketing purposes, www.ecoeducationservice.org.au and marketing brochures developed outlining our services. An email address was also created for general enquiry at info@ecoeducationservice.org.au.

Towards the end of each school term and at the beginning of each term, an email was sent to all schools on the distribution list. During the program this was further refined as we better understood schools needs and getting school admin to pass the email on to the appropriate teacher or head of department.

3.2 Bookings

Schools initially contact us by email or phone. In developing the excursions we generally need to talk to the teacher directly in order to link it to curriculum and to find out about the subject needs. Upon booking information was gathered on class size, teacher details, the structure of the excursion and any other information recorded.

A booking database was also developed to capture the information and to allocate resources required. We were able to track enquiry through to final booking through this system.

3.3 Delivery

The bookings generated were largely from upper high school grades in subjects including geography, marine science, humanities, science, chemistry and biology. On occasion there was also bookings from primary schools, outside school care and holiday programs.

Class sizes varied from 100 to 10 with the majority of activities excursions and the occasional incursion to teach in class. The delivery of excursions were primarily in the Noosa, Maroochy, Mooloolah and Pine Rivers catchments generally over one day but on occasion over two days.

Topics and activities covered included water quality and data comparison, water supply and security including conversations around desalination and reuse, water treatment, stormwater, land uses and their impacts, weeds and natural area management, transects over different landforms, citizen

science and its role in catchment management, food security and water sensitive urban design. When visiting the estuarine area of a catchment the issues around litter and its management and the role of mangroves and the endangered water mouse are also explored.

The one issue around delivering education programs to schools is that it has to be linked to curriculum. For science based subjects it usually has to consist collecting data for comparison. Messages about litter and the Water Mouse need to be expertly woven into the knowledge base whilst delivering the curriculum.

In total since Jan 2016 we have delivered over 61 individual excursions and incursions to schools within the education catchment to over 2180 students. The service is growing with continual marketing and bookings with our ability to present relevant information to the schools from local experts.

From 2016 onwards, the location of excursions, list of schools and number of students engaged can be viewed in Appendix 1 (missing collated data from April 2015 to Dec 2015). It can be assumed that overall we have delivered 80 individual excursion to approximately 3000 students.

3.4 Feedback

After each session we try to garner feedback from the teachers in order to better our service delivery. Feedback is generally positive with the teachers learning along with the students. Below is some of the feedback

'I had some excellent feedback today from the Geo teacher. His Geography class scored an unprecedented score of A Grades with approximately 3/4 of the class getting an A for their assignments (one student wrote a 25000 word assignment).

He puts it down to having a local professional with knowledge that teachers do not have and the mode of delivery (Narangba Valley State High 2017)'

'It was a terrific learning experience for all involved and we were fortunate and grateful to be accompanied by very experienced people in their fields of expertise. Check out some of the photos below.' Head of Science at a local High School

http://www.pacificlutheran.qld.edu.au/index.php?/news_and_events/latest_news/year_11_biology_field_work

(Pacific Lutheran School 2016)'

'Thank you so much for your help with Riverside Christian College last week! I am not sure if Danae has passed on the feedback, but the group said the program was amazing! (Kingfisher Bay Resort 2015)'

'I didn't think learning about water quality was going to be interesting but I found the topics you covered really interesting (Unity College 2017)'

'great range of field sites to show human interactions within the catchment. The girls enjoyed the water quality testing - might be worth considering some macroinvertebrates for next time. Good to meet a landholder. Great to see some land management strategies which have an impact on waterways (Glennie School 2015)'

'Thanks for conducting such an informative excursion yesterday for the Agnew School Science students. They learnt a great deal and now have a far better understanding of the influences that affect water quality in our local streams (Agnew School 2015)'

'Hey thanks for a great experience Janine. You made it all so easy. The kids loved ya. (Caloundra Christian College 2017)'

'Good evening Jacqui, Thank you so much for your input into our Field Study today. You are clearly an expert in your field, with an excellent capacity to relate to students and extend them through your skilful questioning. I learnt a good deal which will prove invaluable as we venture into the written part of the exercise. This is a talented class and I look forward to seeing where their study of Petrie Creek leads them when it comes to evaluating the proposals offered in their assessment. Best wishes for your sessions at Woodford. (Nambour Christian College 2016)'

4.0 General Community Education

Throughout the three years of this program we have undertaken an education and awareness strategy into the general community to inform them about the litter problem in the rivers and the plight of the endangered water mouse.

This started with the development of a simple brochure so that people could understand more about the habitat needs of the water mouse and how to identify the presence of the mouse based on scats and the mounds it makes in the mangroves. This brochure was available in our office and out in the field on the boat for general enquiries, was circulated to the water monitoring network and also available online for download. Copies were also given to the school programs. Appendix 2 is a copy of the brochure.

Our relationship with the media resulted in two media events highlighting the program that we were able to capture. The news interview on the 9th March 2017 is available on request as it is a 162MB file.

We also posted regular articles about our litter hauls to our various Facebook and Twitter sites. (We never figured out how to tag the Dept in the posts).

The greatest education opportunities that actually engaged people was talking to them directly about the litter problems and the mouse. One of our passionate volunteers rang in each week in regards to businesses and activities on the Mooloolah marina and the litter problems. He also kept an eye on micro litter on the beaches and at the source in a large shopping centre car park. At one point we were ready to engage with the business, but they got approval for redevelopment and we will look at engaging with them when it is complete. It was envisaged that we would engage other businesses, but as the program continued we realised businesses were too far removed from the problem in location and that it was better to spend time in addressing the general community about problem. Through osmosis, businesses will be reached.

In talking to various community members about the litter problem, we had several comments about the availability of the data. Although the litter surveys are uploaded to the Australian Marine Debris Initiative website, we have since found the information is not available to the general public, just sites of cleanup are viewable. Even though our reports are available for the general public, our monthly reports were only seen by the River Patrol crews, staff and board members. They were of course available at any time if people requested them. They have now been uploaded to one of our websites for free access to the information. Go to http://www.maroochycatchmentcentre.org.au/catchment/?page_id=40

We did however investigate involving businesses in the water monitoring and River Patrols directly by either sponsorship or corporate volunteering with a view that involvement would lead to understanding and thus lead to changed behaviour. We have however been thwarted with this endeavour as we don't have the marketing skills to drive this program. We continue to look for the right volunteer who can represent the organisation in the corporate world and engage with local businesses.

Word of mouth is one of the most powerful ways of enacting change and generating understanding. We know from our school based education the children talk to the parents about what they have learnt and we have had feedback at times about the family change.

For this program we educated as many people as possible who walked through our office doors with an estimate of up to 5000 people. These consisted of general community members, university and tafe students, our own interns, our own trainees, contractors, church members (our office is behind a church), employment agencies and support agencies and a myriad

of others using our facilities and being guest speakers at various events. Using this approach it is difficult to capture uptake of knowledge and it is not fast acting. We initially proposed to undertake a survey of the community's knowledge about the water mouse and litter, however this item did not get transposed to the contract and we missed undertaking this activity. However, we can give one example of success with a local resident who contacted us about a water mouse sighting after hearing about the program. See below the email thread:

From: Noemi Janovics [REDACTED]

Sent: Tuesday, 1 May 2018 7:44 AM

To: janine@ecollaboration.org.au

Subject: RE: Photos i was talking about on Friday

Hi Janine,

I will look out for droppings and the nest.

Please feel free to use the photos in order to identify them, and sure you can mention my name.

The only times I saw them was at dusk and dawn.

Thanks a lot

Have a nice holiday

Noemi

[Sent from Yahoo7 Mail on Android](#)

On Mon, 30 Apr. 2018 at 18:28, Janine Bedros

[<janine@ecollaboration.org.au>](mailto:janine@ecollaboration.org.au) wrote:

Hi Noemi

Thank you for sharing your photos - they are amazing! I found out from my boss that the best way to identify the water mouse is from their droppings and from their nest. Their droppings are cylindrical with round ends, are often in three pieces connected by hair. They are about 11mm long by 4mm wide. Their mounds are built from dirt and are about 60cm high. Have you seen anything like this?

I have attached a brochure about the water mouse for more information.

From your photos and the location you described to me, she thinks that they are water mouse... the only confusing thing is that water mouse are usually nocturnal! Do you mind if we share your photos on facebook to find out what other people think? Maybe someone can give us a definite identification. Would you like your name mentioned as the photographer?

Janine Bedros BAppSci(Env Sci)(Hons); BBus
Environmental Projects Manager
Environmental Educator
Community Engagement Officer

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janine@ECollaboration.org.au
www.ECollaboration.org.au

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-----Original Message-----

From: Noemi Janovics [mailto:]
Sent: Sunday, 29 April 2018 3:29 PM
To: janine@ecollaboration.org.au
Subject: Photos i was talking about on Friday

oops, didn't check the spelling

--- On Sat, 28/4/18, Noemi Janovics < > wrote:

> From: Noemi Janovics < >
> Subject: Photos i was talking about on Friday
> To: janine@ecollaboration.org.au

- > Received: Saturday, 28 April, 2018, 5:17 PM Hi Janine, I am sending
- > you some of the photos I told you about on Friday. Whatever they are,
- > they are still damn cute.
- > Have a nice holiday
- > See you when you're back
- > Regards
- > Noemi
- >
- > P.S. I have a few more photos if
- > necessary :)



In addition to the direct projects funded through the grant, in 2017 were also successful in obtaining some funding to run 10 ECO Safaris throughout the coast. Through council support we targeted the general community (people not involved in the environment). As part of these events we used the opportunity to educate about the mouse and litter when we reached the estuarine environment.

5.0 Conclusion

The development of the education program has been successful with many schools now rebooking in subsequent years. The student learnings exceed what the teacher can deliver due to experts in the field delivering the excursions in an interactive format. We look forward to delivering the program further into the future.

The general community education program is like many in that it takes time change people's attitudes and knowledge base. In the last year the tide has probably turned in relation to litter with many people making a lot of noise around the issue. This is due to programs like this with little steps at a time causing change.

Appendix 1

| School | Year Level | Subject | Student # | Date of engagement | Comments |
|-------------------------------------|-----------------|------------|-----------|--------------------|---|
| Meridan State School | Year 7 | | 150 | 04-02-16 | 2 mornings for 150 students |
| Meridan State School | Year 7 | | 150 | 05-02-16 | |
| Chancellor Park Geography Excursion | Year 11 | | 20 | 16-02-16 | Catchment Crawl |
| Pacific Lutheran | Year 11 | | 30 | 16-02-16 | Mangrove and Veg Assessment @ Bli Bli Wetlands |
| Pacific Lutheran | Year 11 | | 30 | 17-02-16 | Catchment Crawl |
| Matthew Flinders | Year 4 | | 30 | 18-02-16 | Half day mangrove excursion @ Bli Bli Wetlands |
| Narangba Valley SHS | Year 12 | Geo | 25 | 24-02-16 | Catchment Crawl |
| St Johns College | Year 10 | Humanities | 50 | 10-03-16 | Mary Caincross and Baroon Pocket Dam |
| Sunshine Coast Council | Various | | 30 | 31-03-16 | Waterbug activities @ Maroochy Bushland Reserve |
| Matthew Flinders Year 11s | Year 11 | Geo | 15 | 26-04-16 | Catchment Crawl |
| Unity College | Year 11 | | 35 | 28-04-16 | Water Chemistry |
| Nambour Christian College | Year 11? 12? | Geo | 15 | 29-04-16 | Catchment Crawl |
| Good Shepherd | Year | Geo | 25 | 03-05-16 | Noosa Catchment Crawl |

| | | | | | |
|---|------------------|-----------|-----|----------|---|
| Lutheran College | 11 &12 | | | | |
| Narangba Valley SHS | Year 11 | Geo | 40 | 06-05-16 | Catchment Crawl Pine Rivers |
| Burnside High School | Year 11 | Marine Sc | 30 | 17-05-16 | Mangrove talk to class |
| Bella Grace Early Learning Centre Buderim | 5yo | | 40 | 24-05-16 | Environmental Treasure Hunt - 3 groups at 30 minutes each |
| Kuluin School OSHC | OSHC | | 100 | 30-06-16 | Outside School Hours Care session for 60-100 children - about 3 hours |
| Immanuel Luthern Excursion | Year 11 | | 15 | 01-08-16 | Biology / Catchment Crawl |
| Pacific Lutheran College | Year 7 | | 23 | 03-08-16 | Catchment Crawl |
| Paradise Kids Club | OSHC | | 60 | 27-09-16 | Outside School Hours Care session for ... children - about 2 hours |
| Live It Tours | | Noosa NP | 45 | 22-10-16 | |
| Maroochydore High School | Year 11 | | 15 | 28-10-16 | Biology field trip |
| Maryborough Gifted Students Program | Year 6 & 7 | | 20 | 10-11-16 | Snorkel Safari |
| Gympie Central State School | | | 30 | 30-11-16 | Snorkel Safari + Mangrove Walk |
| Narangba Valley | 12 | Geo | 35 | 10-02-17 | Sunshine Coast |
| Pacific Lutheran College | 11 (36 students) | Biology | 30 | 13-02-17 | Janine: Lots of hands on and valuable data! - Catchment Crawl w/ WQ + macro + veg +soil + abiotic at Curruthers Rd, Quota Pk, Parklakes II, & Fishermans Rd |

| | | | | | |
|-------------------------------------|------------------|-----------------|----|----------|--|
| Pacific Lutheran College | 11 (36 students) | Biology | 30 | 15-02-17 | Janine: Lots of hands on and valuable data! Veg Assessment + Soil at Golden Beach Mangroves, Kathleen McArthur Wallum & Dunes; WQ at Ewen Maddock |
| Montessori | Year 7-9 | Land Management | 15 | 21-02-17 | Janine Eudlo Creek - its catchment area, why it floods, why water moves slowly, how it relates to the school, why we test for water quality, etc. |
| St Teresa's Catholic College | 11 | Marine Science | 15 | 22-02-17 | Cerran - WQ lecture and workshop |
| Matthew Flinders | Year 4 | | 78 | 02-03-17 | Janine - 10.30 am 78 students Half day mangrove excursion @ Bli Bli Wetlands |
| St Johns College | Year 10 | Geo | 35 | 07-03-17 | Cerran - Environmental change investigation at Maleny, WQ and bugs |
| St Teresa's Catholic College | 11 | Marine Science | 15 | 26-04-17 | Cerran - Noosa Catchment Crawl |
| Matthew Flinders | 11 | Geo | 18 | 27-04-17 | Janine - Catchment tour (dulong, woombye, wappa, quota, fishermans + stormwater treatment eg. Chancellor Lakes, Parklakes 2 - water + macroinvertebrate data collection); 18 students + 2 teachers |
| Nambour Christian College - Primary | 2 | Science | 60 | 02-05-17 | Janine - water testing + macro at creek and dam. 3x25 students x 1hr each 8.45-9.45, 9.45-10.45 + 11.30-12.30 |
| Glennie School TBC | 11 | Ecol | 15 | 03-05-17 | Cerran - Catchment Crawl, Reveg, STP, Wappa, Macros, WQ, old Bridge, Canoeing |
| Glennie School TBC | 11 | Ecol | 15 | 04-05-17 | Cerran - Catchment Crawl, Reveg, STP, Wappa, Macros, WQ, old Bridge, Canoeing |

| | | | | | |
|--|---------|----------------|----|----------|--|
| St Laurence's College | 11 | Geo | 60 | 09-05-17 | Cerran - Pine Rivers |
| Unity College | Year 11 | Chemistry | 30 | 10-05-17 | Janine - Water testing + Theory |
| Nambour Christian College | Year 11 | Geo | 14 | 10-05-17 | Cerran - Catchment Crawl Petrie Ck 3 sites, Curruthers Rd, Florabunda and Quota Park (14 students, water testing and macroinvertebrates) |
| St Patrick's College | Year 11 | Geo | 40 | 11-05-17 | Janine - Maroochy Catchment Tour |
| Narangba Valley | 11 | Geo | 20 | 12-05-17 | Cerran - Pine Rivers |
| Chancellor State College | Year 11 | Geo | 12 | 16-05-17 | Cerran - Maroochy Catchment Tour |
| Nambour High School | Year 11 | Marine Studies | 40 | 25-05-17 | Janine - 2x1 hour presentations on our water testing program, water chemistry, affect on reef, etc. May include trip to creek. |
| Glasshouse Christian College | Year 7 | Biology | 90 | 31-05-17 | Cerran - Coochin Ck, env factors affecting biology etc |
| Nambour State College | Year 2 | Science | 30 | 15-06-17 | Janine- Water conservation and looking after Petrie Creek workshop. From 11:10 to 12:55, about 45 minutes with each group. |
| Maroochy Botanic Gardens - SCC Holiday program | | | 25 | 29-06-17 | Janine - A Catchment Story featuring Water Bugs 10am to 12 noon - Maroochy Botanic Gardens |
| Mooloolaba OSHC | 5-12yo | OSHC | 50 | 07-07-17 | Janine - 2 hours OSHC workshops on sustainability, nature, plants; 40-50 kids |
| Genesis Christian College | Year 9 | Geo | 15 | 24-07-17 | Janine - Food Security; McMartin's, Melsted Park, and Moving Feast USC |

| | | | | | |
|------------------------------|---------|----------------|----|----------|---|
| Immanuel Luthern Excursion | Year 11 | Biology | 32 | 03-08-17 | Janine - 32 students - Biology / Catchment Crawl + 2 vollies + 2-3 teachers |
| St John College | Yr 10 | Geo | 35 | 18-08-17 | Janine - WQ at Maleny for an hour or so 9:30am onwards; +2 teachers |
| Burnside High School | 11 | Marine Science | 21 | 06-09-17 | Janine - 21 international students - 10 at a time, mangroves on foot or kyaks (casual learning, no curriculum or assessments), at Fishermans Rd; 8am-4pm +1 teacher |
| St Teresa's Catholic College | Year 11 | Marine Science | 20 | 11-10-17 | Cerran - to answer student question about Citizen Science |
| Agnew School | 11&12 | Science21 | 17 | 12-10-17 | Janine - 3 sites along Petrie (Carruthers, PCYC, Quota) Horiba + Macro - 17 students, 10am-1pm; +5-6 adults (teachers & parents) |
| Maroochydore High School | Year 11 | Biology | 60 | 20-10-17 | Janine - Biology field trip; 3 volunteers + 3 teachers |
| Caloundra Christian College | 7 | | 45 | 09-11-17 | Janine - 45 students (35 on the day) + 3 teachers, 9-11:30am, STP/WTP Tour + water test + waterbugs |
| Burnside State School | 6 | | 30 | 16-11-17 | Contact via volunteer Helen Jones - 30-45min visit about water testing and litter |
| Pacific Lutheran College | 11 | Biology | 35 | 13-02-18 | Janine: Lots of hands on and valuable data! - Catchment Crawl West Woombye, Florabunda Pocket, Parklakes II, Fishermans Rd Mangroves |
| Matthew Flinders | Year 4 | | 78 | 14-02-18 | Janine - 10.30am-12:30pm. 78 students Mangrove excursion @ Bli Bli Wetlands requires 3 instructors. |

| | | | | | |
|-----------------------------------|-------|------------|----|-------------------------|---|
| St Theresa's | Snr | Biology | 18 | 15/02/2018 & 28/2/18 | Janine - 2 classes of 18 students: Day 1 Maroochy Botanic Garden, Day 2 Kathleen McArthur Park. local (SC) data collection. |
| Narangba Valley State High School | Yr 12 | Geography | 20 | 23-02-18 | Cerran: Coastal Catchments SC |
| Nambour State College | Yr 10 | Geography? | 25 | 19-03-18 | Cerran - Petrie Creek field trip |

Appendix 2