

Benefits of community action in the environment: A case study of the Seagrass-Watch in Hervey Bay and the Whitsundays

Leigh Bulkeley
School for international Training
C.S.A Byron Bay
December 2000

Advisor: Dr. Stuart Campbell, Department of Primary Industries

Abstract

The purpose of my study was to determine what benefits evolve from a community based and originated program verses a strictly scientific one. I felt the study needed to be conducted due to the importance of public action in environmental projects.

A key aspect to any sustainable development is having the community involved. Australia, with its biodiversity and endangered natural environment seeks to obtain a sustainable environment. Knowing the importance of the social factor in this aspect, I sought out to research how a community can successfully conduct an environmental program and the benefits that result from it.

I learned of the Seagrass-Watch that was taking place in Hervey Bay and Airlie Beach in Queensland. Seagrass is a marine plant that is crucial for the survival of many species including fish, sea turtles and dugongs. This Seagrass Watch (SGW) is a community based program that seeks to monitor the status of the grass within the community.

I went to these two coastal towns to observe the project and interview the community for a month. I found that having local community members at the origin of the program allows for the greatest benefits to occur. From the SGW program, public education and awareness on the subject has escalated along with the long-term benefit of producing members who truly care about their surrounding and will constantly observe and protect it. These benefits are only obtainable from involving the local residents.

Table of Contents

Abstract.....	2
Acknowledgements.....	5
I. Introduction	6
1.1 research question.....	6
1.2 The philosophy behind Seagrass-Watch.....	6
1.3 Previous research	7
1.4 The philosophy behind my research	7
III Methodology.....	8
2.1 My project.....	8
2.2 How I conducted the study	9
2.21 Information to seek from volunteers.....	9
2.22 Desired information from the coordinators.....	10
2.3 How I collected Data	11
2.4 reasons for techniques used	12
2.5 Analyzing the data	13
III. Results.....	13
3.1 The process of seagrass monitoring.....	13
3.2 Why the program originated	14
3.3 How the community organized the Seagrass-Watch	15
3.4 The Path to Seeking Help and Funding for the Project	15
3.5 How the program is based around the community.	17
3.6 How volunteers are recruited	18
3.7. What motivates people to volunteer?.....	19
3.8. How the Program is advertised	20
3.9 projects that have stemmed from the original Seagrass Watch	22
3.10 Response from public and those associated with the SGW program	24
IV Discussion.....	26
4.1 The financial benefits of a community run program	26
4.2 Benefits of familiarity of your surroundings	27
4.23 A continuous project.....	27
4.24 Personal Benefits	28
4.3 The Benefits of Community Members Attracting People	29
4.4 Education and Awareness	31
4.42 Teaching the Young.....	31
V Conclusions.....	32
5.1 Uncontrollable Obstacles in the Program	32
5.2 Ways in which the Program could be improved.....	33
5.2.1 Organization of Volunteer Information	34
5.2.2 Increased attempts to gain volunteers	34
5.2.3 The Power of Personalization	35
5.3 The Future of the Seagrass Watch	36
5.3.1 The everlasting Benefits	36
5.3.2. Where does the future stand for SGW?	37
5.3.3 Efforts to achieve funding.....	37
5.4 Analysis of my data	37
Appendices:.....	38
References.....	39

List of Figures:

Figure 1. Map of Queensland showing location of the two Seagrass-Watch regions I researched.	10
Figure 2. Stuart explaining the monitoring process to volunteers.	14
Figure 3. Article from Hervey Bay Observer stating that SGW's seek for funding....	17
Figure 4. Excerpt from CRC Reef Research Centre Newsletter, Volume 8, No 3-4, September - December 1998. p3.....	21
Figure 5. Mr Comans (2 nd from left) with Seagrass-Watch representatives, receiving environment award from Environment Minister (3 rd from right) and Prime Minister (right).....	25

Abbreviations:

SGW	Seagrass-Watch
DPI	Department of Primary Industries where Stuart Campbell and Len McKenzie work.
HBDSMP	Hervey Bay Dugong and Seagrass Monitoring Program
OUCH	Order of Underwater Coral Heroes

Acknowledgements

I would first off like to thank my academic director, Peter Brennan for suggesting this topic to me. Thank you my project advisor, Dr. Stuart Campbell (Seagrass-Watch Coordinator) from the Department of Primary Industries, for explaining the monitoring process to me, taking me to all the sites, getting me involved in the community, advising my research and making the SGW week an enjoyable one. I would like to thank Len McKenzie (Seagrass-Watch Program Leader), also with the Department of Primary Industries, for his similar efforts in taking me around town and getting me involved in the community, along with helping to direct my study questions. Both of these SGW workers helped me out tremendously and were a pleasure to work with.

I would also like to thank all the SGW volunteers and workers in Hervey Bay, Karen Kirk, Steve Winderlich, Andrew Collins, Mark Darguish, Paul, Mike, Bill, Lynne, Jenn, Kirsten, Hanne, John, Laurie, and anyone else I am forgetting, for allowing me to interview them and harass them with questions. Within this group, I would especially like to thank Jerry Comans, who founded the Hervey Bay Dugong and Seagrass Monitoring Program. He was extremely helpful in providing endless information for me including articles and a paper he had written. He as well devoted much of his time in helping me and showing me certain sites around town Next, I would like to think Wendy Jones, schoolteacher at Yarrillee State School. Thanks to her, I was able to visit the school, watch the students receive their seagrass awards, see them do a re-enactment of their presentation at the "Rivers to Range" show, and play a game of turtle tag. I also thoroughly appreciated her thoughtful and personal interview with me. I really enjoyed talking to her.

In Airlie Beach, I would especially like to thank Margaret Parr for her kindness and "watching after me" for the time I was there. She showed me around town, took me to her site, allowed me to interview her and supplied names and numbers of volunteers I could contact. Having her help and guidance was so comforting and helpful since there was no actual project going on and my advisor was gone.

Also in Airlie Beach I would like to thank Tony Fontes from OUCH, for allowing me to interview him and teaching me about OUCH (and the reef). I would also like to thank Jacquie and Elmer ten Haken, also from OUCH, for visiting me at my hostel and filling me in on important information. Other volunteers that graciously let me call them to interview them that I would like to thank were, Airleen Gleason, Robin Salmon, and Cate Radcliffe (although I never actually go to interview her).

I. Introduction

1.1 research question

What benefits evolve from a community based environmental program and how are they obtained? In order to determine the positive aspects of having a community sponsored environmental project rather than a scientific and government based one, I researched the Seagrass-Watch that occurs three times a year in the towns of Hervey Bay and the Whitsundays in Queensland, Australia. Public participation is key to any ecologically sustainable development. In a country that holds much of the world's threatened habitats and wildlife, it is crucial that we preserve for the future and work towards a sustainable development or the country's treasures will slowly deteriorate. Knowing the importance of public participation, I decided that it should be noticed how community action can lead local programs and what benefits specifically materialize from such involvement.

1.2 The philosophy behind Seagrass-Watch

From an article about the project I learned that seagrass is a marine plant that is vital for the survival of fish, turtles, dugongs, and other marine life. In 1992 massive floods wiped out almost 1000 square kilometers of the seagrass meadows in the coastal town on Hervey Bay. The project arose from concern over the slow recovery of the marine plant. Community members were especially curious to this lack of re-growth when commercial net catches had dropped 40 percent in the Hervey Bay area and dugong food sources were a great scarce (www.reefrc.org.au/4news/exploring/feat38.html). The organizations that work along side of the community are DPI (the Department of Primary Industries) and QPWS (Queensland Parks and Wildlife Service). Together monitor the status of

seagrass in various sites around the area. This process includes percent coverage of seagrass, type of species, size, type of sand and any other vital information pertaining to the area such as animals living in the area.

1.3 Previous research

As Harding (1998) explains, the public's role in the environment is crucial because they can provide alternate sources of information and expertise and therefore, propose other methods or actions to be taken. Another key aspect Harding points out is that residents are the ones who can identify long-term effects since they are constantly in contact with the area (Harding 1998). Local involvement also allows community members to spread their knowledge and education throughout their environment. This criteria for community involvement pertains specifically to the Seagrass-Watch and the areas in which the program is conducted.

1.4 The philosophy behind my research

From the previous research conducted on the project, I knew that the Seagrass-Watch's aim was to get local members working with scientists to make a difference. Since the towns the projects occur in are fairly small, I thought it seemed like a good place to strive for locals to come together to help the environment. My aim was to get involved with the community during the time of one of their projects and see how they work together to produce action. I wanted to observe their strategies while I worked along side of them and interview them to get an inside view on how a program as such is run and ultimately, how its benefits to the community and the land produced both short and long term results. Originally I was led to believe that the scientists and government organizations organized this study and sought after local community involvement. However, during the course of the research I learned that it

was the community that first approached the government. Due to that factor my goal to find out why the government found it vital to entice local support was irrelevant. During my month long stay in Hervey Bay and Airlie Beach in the Whitsundays, I sought out to determine what the specific, beneficial aspects were of community action in environmental project and how a successful program such as this one is formed.

III Methodology

2.1 My project

From 3 November to 2 December 2000, I traveled to Hervey Bay and Airlie Beach in Queensland, Australia. I first contacted Dr. Stuart Campbell, the scientist involved in the project who had written an article about it in a newsletter. He informed me that during the week of November 8th to the 16th one of the tri-annual Seagrass-Watch projects would be occurring in the town of Hervey Bay on the coast of Queensland. This town is the main gateway to the heavily tourist visited, Fraser Island. It is also is an important habitat area for dugongs alongside of turtles and other such marine life. This town was heavily affected by the 1992 floods so is a key area that needed to be monitored for the status of seagrass. I stayed in a hostel in the centre of town and close to where Stuart and the Seagrass-Watch Program Leader, Len McKenzie, were staying. This way, I was able to get a ride with them to all the seagrass sites and other related events occurring during the week.

The situation in the Whitsundays was similar. It is a small coastal town with an abundance of marine wildlife that depends on seagrass. Airlie Beach, where I stayed, is the central area of the Whitsunday region. This region with the coastal town of Airlie Beach includes many of the Whitsunday Islands that fall on the Great Barrier Reef marine park. The study in this area was formed as a result of the one in Hervey

Bay. Although I was not able to be in the area during the time of an actual project, I met up with and interviewed many of the community members involved.

2.2 How I conducted the study

Upon arrival in Hervey Bay, I spent the first few days preparing how I would obtain data and constructing intensive interview schedules since I planned to interview a number of the volunteers and coordinators. Due to the nature of the project and from discussion with Stuart Campbell, I knew that a majority of my information would have to come from informal conversation with volunteers while working on the sites.

In order to adhere to these conditions, I prepared tactics to obtain the information I was after, I made a list of all the information I was seeking and questions I wanted to have answered. First off, I needed to understand what this project was exactly about. How the monitoring process works and the goals of the program were crucial to understand. This information would easily be achieved by first hand observation and questioning the process.

2.21 Information to seek from volunteers

From my volunteers I looked for the following information: How they heard of the project, why they chose to volunteer, what did they personally get out of it and whether the program met their expectations and fulfilled their reasons for joining. Alongside of these questions, I also wanted to know whether they were satisfied with the program, whether they would do it again, and whether they felt it benefited the community and environment and increased their awareness. I wanted to know what the general community attitude to the environment was, as well as what they perceived was the best strategy to get community members involved. It was important

for my project to find out what the SGW members' thought was beneficial about the program. To obtain a general understanding of who volunteers for these sort of projects, I wanted to find out who these people were, whether they had any environmental background and what factors led to their participation.

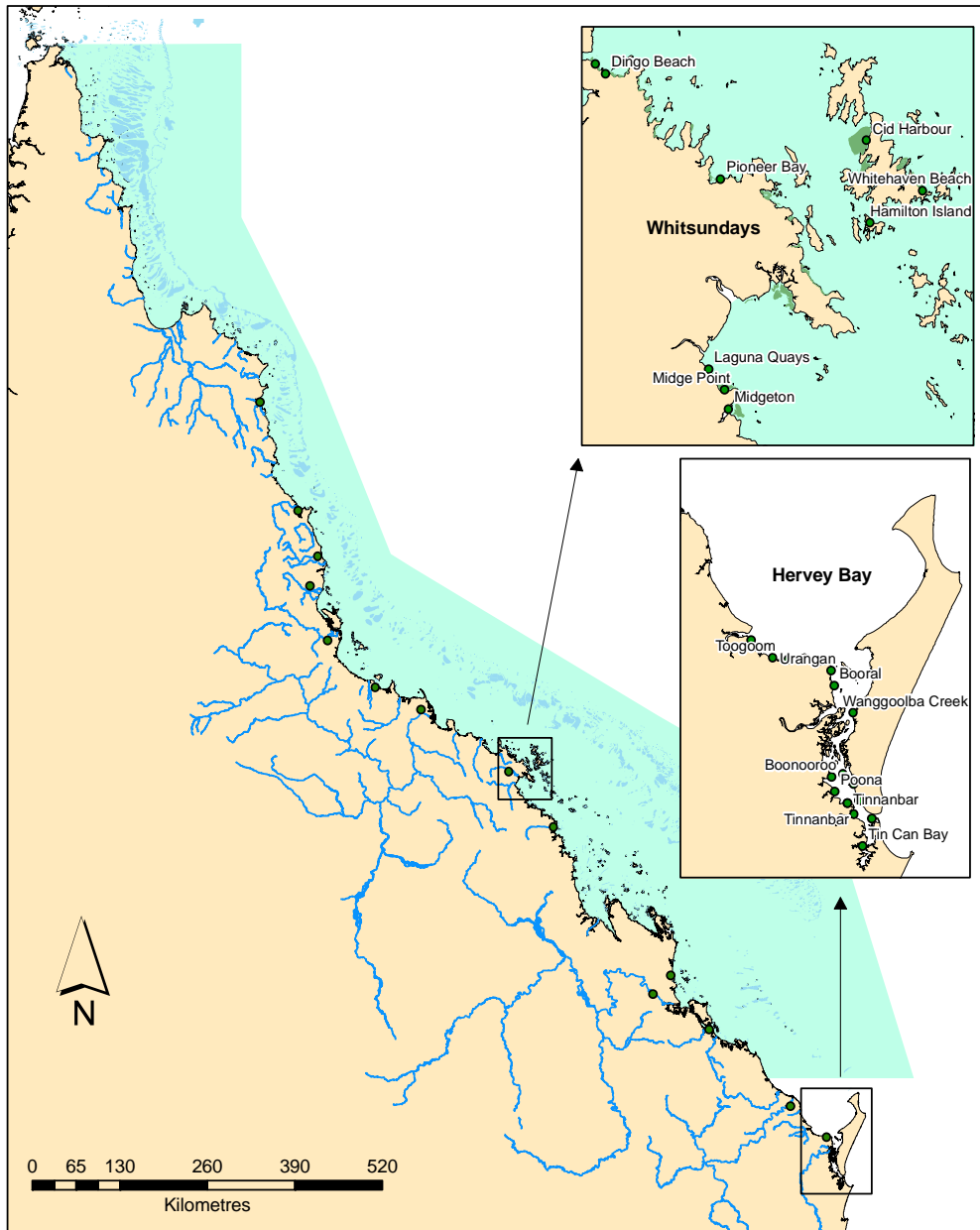


Figure 1. Map of Queensland showing location of the two Seagrass-Watch regions I researched.

2.22 Desired information from the coordinators

From those who coordinated this project, I had a slightly different slant to the questions I sought after. I wanted to know why they chose to incorporate local

volunteers (which I later found out was irrelevant to Hervey Bay). How they announced and advertised their volunteers was also an important factor for me to determine. I needed to know what expectations they had for the volunteers and whether they had met them. I was to find out what benefits local individuals bring to the project and how the coordinators accommodate to their needs to support and encourage involvement. All of these questions I formulated were to help me answer the question of what exactly were the benefits that evolve from a community-based project. In order to obtain this answer, I had to determine how the project is organized and obtain people's feedback and motivation for involvement.

2.3 How I collected Data

With all the questions I prepared, I determined which ones were appropriate to casually find out in the field and which ones needed intensive interviewing. With these topics and questions I had organized in my head and on paper, I was able to obtain my information through observation, casual conversation and intensive interviewing. Often during the day while we were out monitoring seagrass sites, I would not have a journal to record notes in, so I would come into the field with questions in my head and information I wanted to find out and later relay it back on paper. For intensive interviewing and during other events, I was able to record detailed notes.

Out on the field there were always either members of environmental organizations such QPWS, local community members who volunteered or both, which was the case in most days. Here I was able to talk to the different members of the SGW program and answer many of my questions while obtaining contact information from them to pursue further formal information. From being out in the field, I could see the importance of the study and how the community felt about it.

In the Whitsundays, my research techniques were slightly different. Since there was no monitoring currently going on, I could not have first hand observation of the program. I was able to meet with a few of the coordinators and volunteers of the program though. One problem I ran into was that the people involved with SGW in this area lived far apart and I had no transportation to reach many of them. For this reason, I had to conduct phone interviews with some of them.

Other events I attended included a monthly meeting of Hervey Bay Seagrass & Dugong Monitoring Program at the council chambers, and the Yarrillee State School where various seagrass oriented events were occurring. In the Whitsundays, I was able to go to an OUCH (Order of Underwater Coral Heroes) presentation that one of the leaders of the Seagrass-Watch organizes. With such events, I was able to come with a pen and paper and record my observations so they are more accurate.

2.4 reasons for techniques used

I used these methods for collecting data because they were the most direct personal approaches. In order to find out information such as what motivates people to do something and how they feel, you must spend time with people and get to know them. As well as understanding a program, the best way to do it is to participate in the activity. Going to all the sites being monitored and conducting the research that the volunteers and scientists do, allowed me to understand what the philosophy behind the project and the role a community plays in it. This method allowed people to get to know me and determine for myself what I felt were the benefits alongside with what people claimed. This type of project can not be accomplished without meeting and talking with the people involved. I thought about doing a survey of all the people, but I thought personal contact would be more productive.

2.5 Analyzing the data

At the end of each day and after each interview, I would recopy my notes into my work journal and summarize the results. After describing the results, I would interpret the data collected in terms of who the person was and what biases might have occurred. Similarly, with information observed in the field, I took into account the different circumstances of the day, location, general atmosphere and event. I always referred back to my study question and determined how each new piece of information would fit into my results. Evaluating was another important step. I considered how I approached people and whether my methods were on target for what I was after. I recorded how I felt about each day and interview and was in constant check and reflection of the general topic and question I was after.

III. Results

3.1 The process of seagrass monitoring

My first day out in the field monitoring seagrass helped me to comprehend the process and the details surrounding the project. The monitoring must occur during low tide so that the seagrass can be easily measured. Upon arriving at the site, Stuart explains the process (see appendix) to any new volunteers or those who need refreshment.

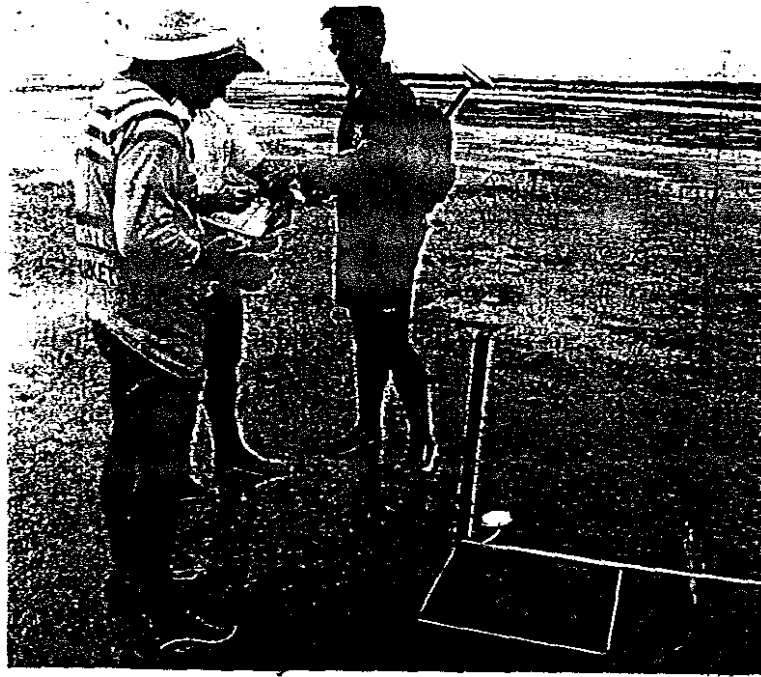


Figure 2. Stuart explaining the monitoring process to volunteers.

After setting up the site and going through an example, the monitoring process begins. This process in total usually takes about two hours.

3.2 Why the program originated

The following paragraph is information obtained from Jerry Comans. From residing in Hervey Bay and operating commercial and recreational fishing boats, Jerry Comans, who is a member of Hervey Bay - Bundaberg Zonal Advisory Committee to the Queensland Fish Management Authority, slowly noticed a lack of marine creatures in the waters. Oyster beds were dying and everything from black swans to shells on the beach was slowly disappearing. When he discovered that 100 square kilometers of seagrass had disappeared, he realized the two losses must be connected and should be researched (Comans, Pers. Comm. 2000).

3.3 How the community organized the Seagrass-Watch

In my interview with Jerry Comans, he explained the process of events described in the following paragraph. Having discovered the loss of seagrass and subsequently, marine life, Comans called a public meeting in February 1997. From the meeting, 100 people attended and signed volunteer forms. Alongside of Karen Kirk, a dive instructor with similar concerns who helped him organize the project, Comans chose about 10 people to form the first committee of the Hervey Bay Seagrass & Dugong Monitoring Program (HBDSMP). These people were chosen, aside from their interest, for the resources they could provide, such as a boat to take out to sites. From this process, the first committee meeting took place. Establishing that there was a definite interest to monitor the seagrass, the committee needed to know where they should obtain data. They knew that they needed further help to obtain progress, so they made efforts to utilize publicity to get government and other officials involved. This resulted in them helping to map inter-tidal seagrass in the region, with Comans and Kirk walking 30 kilometres from Burrum Heads to the other area of Hervey Bay doing random checks of the status of seagrass (Comans, Pers. Comm. 2000).

3.4 The Path to Seeking Help and Funding for the Project

From the initial public meeting, many local organizations showed their support. These members who spoke at the meeting included: John Thorogood, Marine consultant on seagrass studies in the Great Sandy Strait and Kai Yeung, a senior coastal manager of the Department of Environment, Maryborough. The meeting itself was chaired by the then Mayor Fred Kleinschmidt (Comans, 2000). According to

Comans, this initial local support is crucial to obtain any further assistance from the government or a higher organization.

Although the community was actively interested, a project of this dynamic needed further assistance. The process of further progress explained below is from Comans (2000). To obtain publicity, the HBDSMP committee did an aerial survey of a dugong count. George Bezant from Hervey World Travel donated a plane for the study. This project raised awareness from the radios, newspapers and televisions stations that came to report on the survey. Having the community's support behind them and involving the public was the key means to obtaining any recognition and or interest from the government.

From this step, Comans contacted Dr Bill Dennison for directional help for the project. Dennison is in charge of marine botany at the University of Queensland and had done work with seagrass in the Chesapeake Bay in the United States. He organized a workshop for the members of the committee to attend. With this knowledge, the committee still needed a uniform way to monitor the seagrass. They contacted the Department of Primary Industries in Cairns who constructed a program that the community could get involved with and that program is the one currently being used today (Campbell, McKenzie and Comans, Pers. Comm. 2000).

Funding seemed to be an even more difficult task. In his history of the program, Comans described the process to funding. The committee contacted everyone that had any connections with the marine environment for support, which totaled around 30 different organizations. With their letters of support attached, they applied for funding to any government agency they could think of. They initially received \$1000 from CoastCare. That money enabled them to pursue further studies to entice the government for funding. With the Department of Primary Industries in Cairns, the

committee gathered all their supporting organizations and applied to the Natural Heritage Trust Foundation for funding. After many struggles, funding finally came through and is currently being used until it runs out in November 2001 (Comans, 2000; Comans, Pers. Comm. 2000).

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Seagrass beds study hopes rise

Hervey Bay's seagrass beds could be the focus of a major research study early next year.

Representatives from about 15 organisations gathered recently to show their support for a seagrass study funding application in the Bay and Great Sandy Straits.

The National Heritage Trust application is seeking funding for a project that will determine the present status of seagrass beds in the area, as well as identify continuing trends.

Hervey Bay Dugong and Seagrass Monitoring Program co-ordinator Jerry Comans said the importance of seagrass beds to dugong and sea turtles was widely recognised, as was the influence such beds had on commercial and recreational fishers.

"It was an exercise to get together and show support for the project, and reinforce community concern," Mr Comans said.



From left to right: Mary Jenlle (Wildlife Preservation Society); Phil Smith (Marine Studies Teacher); Fiona Foley (Wondunna Aboriginal Corporation); Mike Finlay (Environmental Officer, QCFO Urangan Branch); Rachael Thorgar (Student, Hervey Bay High); Kathy Fielden (Junior Theatre Director, Consultant for Jerreboen); Dr. Vernon Harris (Retired University Lecturer - Marine Zoology); Des Finlay (President, QCFO Urangan Branch); Ben Jasch (Marine Studies Student, Hervey Bay High); Jerry Comans (Member of the QFMA Zonal Advisory Committee); Susan Channels (Senior College, Arts Dept - Logo Design); Alan Simpson (Hervey Bay Dive Club); Robert Ziglerman (Mary River Catchment Co-ordinating Committee); Randal McLellen (Fraser Coast SUNFISH); Shine Schifke (Hervey Bay Dive Club); Derek Butler (Hervey Bay Chamber of Commerce and Tourism); Bill Bresnan (Mayor, Hervey Bay City Council); Janet Wolff (Nepunes Reefworld); Anne Wyborn (Chamber of Commerce and Tourism); Kai Yeung (Dept. of Environment); Maree Matzer (Senior College, Multi Media Dept -Web Site Design); Joanne Rogers (Tourism, Hervey Bay).

Charity auction

Figure 3. Article from Hervey Bay Observer stating that SGW's seek for funding.

3.5 How the program is based around the community.

Unlike I originally thought, it was the community that contacted the government and organizations. Since it is their project, the design of the monitoring was to fit their needs. The detailed process to the monitoring task that I explained previously is due to the community's desire for a consistent, organized method. As Dr. Stuart Campbell (Seagrass-Watch Coordinator) explained, scientists would most likely just drop quadrants in random places, but since the Seagrass-Watch is a community based project, we use their desired methods of monitoring and obtaining data (Campbell,

2000). They are the ones that live there and the scientists and government workers who help out are just in town to help.

Likewise, the scientists that are hired to assist the community must understand that everyone has different ways in which they contribute to the project. As Len McKenzie (Seagrass-Watch Program Leader) explained to me, when they first began working with the Seagrass-Watch, they assumed everyone would want to work out in the field to experience the monitoring process first hand. They soon realized that people have different agendas. Jerry Comans, for example, who is extremely dedicated and focused on the project, almost never obtains data from the field. However, he is the one who is constantly contacting volunteers, publicity agents, government workers for funding; he is constantly working hard for the program although he might not be actually on the site. Similarly, many people prefer projects such as designing logos and calendars for the organization (McKenzie, Pers. Comm. 2000) Nevertheless, whether or not out on the field, the different peoples contributions greatly benefit the program.

3.6 How volunteers are recruited

In the beginning, Jerry simply called people on the volunteer list obtained from the initial meeting. Over time, word among friends has spread and the media has played a role in helping to gather volunteers. However, this tactic differs slightly from site to site. For the Poona site, Steve Winderlich from QPWS is in charge of organizing the volunteers. He keeps a list of people involved and interested members whom he contacts when there is a monitoring occurring. In other areas there are sites where people who live near-by "adopt" the site and are in charge of looking after it. This tactic was the original long-term plan of the organization to train people so

eventually they will be able to watch the site for themselves (Comans, Pers. Comm. 2000).

In Airlie Beach, the situation differs slightly. Some sites work similarly to Hervey Bay in that residents have "*adopted*" the area. While in other locations, such as Pioneer Bay and Pigeon Island, Margaret Parr is the one in charge of arranging volunteers. The main difference in the Whitsundays is that the Seagrass-Watch program has stemmed from organizations rather than community members. The two main organizations that control the Seagrass-Watch are the Whitsunday volunteers and OUCH (Order of Underwater Coral Heroes). Both of these organizations are volunteer environmental groups. So, the volunteers are already members of the organizations and are interested in helping the environment.

With the Whitsunday volunteers, the Seagrass-Watch is simply one of their projects they offer to their members. With OUCH, Tony is in charge of gathering the volunteers. The site he is in charge of requires observing the plant under water by diving. Since this area is trickier to monitor, the volunteers are usually people involved in his dive projects or local dive instructors around the area; they cannot recruit random locals interested in the environment unlike the other sites. Likewise, they need to be efficient with this process, so only about six or seven people do the monitoring. Occasionally one of the articles Tony writes in the paper attracts volunteers, but usually it is the members of these groups that participate in these projects.

3.7. What motivates people to volunteer?

Although many different reasons exist, the main people who were involved in the projects either had an interest in the environment and/or were long-time residents who obviously cared about the condition of the area around them. As Jerry explained,

Hervey Bay is a town that is dependent on marine life for survival. Fishermen rely on a healthy habitat for the survival of fish. Due to the location of these two towns, finding volunteers has not seemed to be a problem due to the inherent concern for the environment.

Among the people I interviewed, a majority of them stated as a reason for volunteering that the project made them feel worthwhile and they could make a difference. Many of the volunteers in Hervey Bay had been persuaded by co-workers from organizations such as QPWS to help and so they decided to come out and see what the project was all about. People's motivation for joining was mostly out of curiosity and genuine care for the environment.

Some groups had specific reasons for donating their time. In the Whitsundays, OUCH joined because they saw 30-40 boats being anchored in a small area daily near Whitehaven Beach that was undoubtedly damaging the seagrass.

3.8. How the Program is advertised

I sought out to discover how the volunteers had heard of the Seagrass-Watch. As mentioned above, initially people were informed of the starting of this organization by the public meeting Comans set up. From this original list of volunteers Jerry contacts for help, many of them tell their friends who also become involved. Nowadays, the process has become a little more detailed. Although the previous method still abides, coordinators such as Steve have letter drops that go out to the community members informing them of an upcoming event. Numerous times during the week long monitoring events, there will be reports (in the local paper describing the event and contact information for those who want to help out. The following is an excerpt from a newsletter

The success of the monitoring program depends on considerable input and feedback from community volunteers. *Seagrass-Watch* aims to be user-friendly with simple field sampling methods, uncomplicated data recording and handling, and prompt follow-up from the coordinator to ensure information is fully used in coastal zone management for continuous good health of fisheries and dugong populations. For further information on seagrass monitoring and management, or how to become involved in Seagrass-Watch, contact Warren Lee Long, Len McKenzie or Chantal Roder at the Department of Primary Industries Northern Fisheries Centre, Cairns on +617 4035 0100.

Figure 4. Excerpt from CRC Reef Research Centre Newsletter, Volume 8, No 3-4, September - December 1998. p3.

Likewise, Stuart Campbell writes articles in the *Waves* magazine, a quarterly newsletter, which is sent to various environmental groups around the area. Stuart has received many inquires about the articles he writes and many volunteers have been a result of that publication.

Alongside of phone calls and public advertisements, the Seagrass-Watch group has worked hard to utilize other methods to publicize their organization and philosophy. The following information was received from the monthly HBDSMP meeting. One event they participate is in the Hervey Bay seafood festival. Alongside with the community council, SGW has a booth that promotes and explains their program. This event attracts people through such devices as a fish tank with seagrass and paper mache dugongs.

Similarly in the Whitsundays, the SGW workers from the Whitsunday volunteers have fairs and markets to promote and explain the organization. They as well provide aesthetic devices such as wooden dugongs, posters and t-shirts that they sell (Parr, Pers. Comm. 2000).

Wendy Jones, a school teacher at Yarrillee State School in Hervey Bay, has been an advocate for explaining the importance of seagrass to her students and getting them involved and interest in the program. She incorporates seagrass into her teaching

methods so that the kids become educated and aware of this vital marine plant while improving on other necessary skills.

Her sixth and seventh graders put on a presentation and drama skit to explain the importance of seagrass in the "River to Ranges" competition in a near-by town with several other schools. Their presentation won them an award presented by the Prime Minister and Mayor (Jones, Pers. Comm. 2000). This tactic was a good publicity stunt as well as an educational event to inform the public including important groups that are capable of assisting the organization financially and in other ways.

Another way in which the Seagrass-Watch strives to gain recognition is through the two videos that have been produced concerning the program. In discussion with Campbell, he explained the following description of the videos to me. The Department of Primary Industries in Cairns made a documentary explaining the philosophy behind the Seagrass-Watch program. This video is sent out to various community groups all over the area of Hervey Bay and neighboring towns. The local community (HBDSMP) produced a video as well. This video consisted of the technical information about how to set up a seagrass site (Campbell, Pers. Comm. 2000).

A calendar is the making as another device to help promote their cause. This calendar that is being created by the members involved in SGW will as well be sent to all community groups and organizations in near-by areas (Campbell, Pers. Comm. 2000).

3.9 projects that have stemmed from the original Seagrass Watch

One of the main benefits of the original formation of the SGW program is the other similar events and organizations that have sprung from it. I have mentioned the

SGW that takes place in the Whitsundays, but that project has only been occurring for about a year. After the program in Hervey Bay was up and running with funding, there was interest to conduct a study in the Whitsunday region as well.

As Margaret Parr explained the following paragraph to me, the SGW in the Whitsundays originated when Warren Lee Long, another scientist who works with the Whitsunday SGW projects, came to Airlie Beach to promote the program and gather interest to start one up in the area. A public meeting was held that was advertised in the paper to gather volunteers and people interested in helping out. Unfortunately only three environmental organizations came; there were no solo community members, which is one of the reasons that the program in the Whitsundays has not produced the same extent of benefits that the one in Hervey Bay has. The groups that were represented at the meeting were the Wildlife Preservation Society, OUCH and the Whitsunday volunteers. Since these were the only interested members, the SGW in the Whitsundays has been based around these environmental groups instead of the community members. None-the-less, they still produce beneficial data and assistance to the environment.

Smaller groups with similar interests and goals have also formed as a consequence of the original organization in Hervey Bay. Greg Lynch, a marine studies teacher at the Fraser Coast College, has adopted a site in the area with his marine studies students that they have monitored every three months for the last year or so (Comans, Pers. Comm. 2000).

Similarly Comans (2000) informed me that in May of 1997 marine students from the Hervey Bay High School offered to monitor selected sites around the area. In order to accomplish this goal, they applied for a \$1000 grant from the BPAust for their project (Comans, 2000).

Although currently the SGW program exists in only the Hervey Bay and Whitsunday regions, interest to spread the project to other areas has formed. Townsville, Queensland, has expressed interest in conducting a monitoring project in their area, and they are trying to get funding to make this project possible (Campbell, Pers. Comm. 2000). Scientists in the DPI in Cairns who are involved in the SGW have traveled overseas to areas such as Thailand to discuss the possibilities of organizing a monitoring program over there (Campbell, Pers. Comm. 2000). Jerry Comans informed me that there would be an international conference on how communities can work with scientists, and the methods used in the Chesapeake Bay area will be used.

3.10 Response from public and those associated with the SGW program

Every person I talked who was affiliated with the Seagrass-Watch was satisfied with the way it is run and was very complimentary of its philosophy and accomplishments. The program has been recognized at many official levels. As mentioned previously, the students at Yarrillee State School received a prize for their presentation. As shown in the picture below, the Australian Prime Minister awarded the SGW program for their efforts and accomplishments.



Figure 5. Mr Comans (2nd from left) with Seagrass-Watch representatives, receiving environment award from Environment Minister (3rd from right) and Prime Minister (right).

These recognitions not only increase public awareness, but gain respect from the government and public officials. This respect is crucial for any hopes of financial support that is necessary for the continuation of the program.

IV Discussion

4.1 The financial benefits of a community run program

As mentioned before, in order for a project such as this one to occur, funding from the government or a financially sufficient organization must exist. The SGW has managed to obtain this support through many hard efforts. The question remains why is it beneficial to have the community receiving help from the government instead of simply having scientists or government workers handle the monitoring situation?

The first reason for the positive aspects of having the community lead the program is that the government is more interested in the social aspects. As Comans and Campbell described, having the program community based is crucial because the government is interested in seeing people get involved and if there is enough pressure from people and different organization that support the cause, the government will be more willing to contribute money to the cause.

Volunteers from the community conducting the project offer something that the government cannot; they do the study for free. If it were not for these local community members such projects would not be able to occur. Although money is still needed for utilities such as boats for transport and scientists to guide the project, the government cannot afford to hire workers to come and monitor the site. So, in that area the community's support and involvement is vital.

Upon asking the volunteers which aspect of the program they felt produced the greatest benefits, many stated the financial reason stated above. In the sites in the Whitsundays where SCUBA diving is required, this aspect of volunteering is essential. For the government to hire people to SCUBA dive would be too expensive. The monitoring would not occur if the OUCH members and diver volunteers did not devote their time to the project (ten Haken, Pers. Comm. 2000).

4.2 Benefits of familiarity of your surroundings

One of the benefits found is that the locals know the land. This knowledge means that the project can successfully make a difference. There is no one that understands and knows the land and waters better than those who permanently reside there. Picking out sample sites to monitor is a prime example of how it benefits the program to have the community members in charge. When Warren set up the program in the Whitsundays, he informed the community that this program was theirs and they were the ones to determine where they would monitor the seagrass (Fontes, Pers. Comm. 2000). This method allowed the best strategy for monitoring to occur. As Tony Fontes informed me, as a community they decided where the best sites would be on the Islands. Since there are everywhere between 30 and 40 boats moored on Whitehaven beach at one time, they thought that would be a crucial place to determine damage. In stark contrast, as a control group, they designated their next area to be Cid Harbor. This harbor remains pristine and natural so it is a good site to compare to others (Fontes, Pers. Comm. 2000). This sort of useful information that shapes a project can only be obtained from people who live on and know the area. Having an environmental program that is controlled by the community aides to the success and positive results of such projects.

4.23 A continuous project

The same knowledge holds true for the long-term benefits of monitoring. The local members of Hervey Bay are the ones that grew up in the area and noticed the gradual, yet dynamic change of the seagrass beds turn from bright green and plentiful to almost non-existent. If outside professionals simply come and monitor the areas for seagrass a few times a year, they will not know the previous conditions and the status

in between the monitoring projects. Karen Kirk, for example, I already mentioned was one of the original participants of the program who noticed the drastic change in the seagrass beds. Since she resides in the area and from her job as a dive instructor, she is constantly in tact with the area and observing its status during her spare time as well (Kirk, Pers. Comm. 2000). This devotion of hers is limited to those who live in the area and holds true for many of the avid volunteers I interviewed. Most of them had commented on how the status of the seagrass had changed from just last week when they went out on their own to check its status.

Margaret Parr in Airlie Beach demonstrates the same "ownership qualities" as those in Hervey Bay. She is in charge of gathering volunteers for Pigeon Island and Pioneer Bay. She took me out to the seagrass monitoring site while I was in town and told me that she likes to get out to the site every week or so to just walk around the area and observe its status (Parr, Pers. Comm. 2000). This devotion that exists in the members of the SGW allows quarterly monitoring to be under constant scrutiny and care.

4.24 Personal Benefits

While interviewing members of the SGW organization, I found that the many of the benefits of having communities involved were also the same reasons they joined and valued the experience. A sense of ownership was one of the rewards the project brought to them. By taking care of the land around them, they began to feel protective of the area as demonstrated by their continuous supervision. Not only does this "adoptive" behavior benefit the environment, it grants its members with a sense of worthiness and value. With a solely professional program, not only would you lose these advantages, but also you would be neglecting the pride that the local community members are given from such projects.

4.3 The Benefits of Community Members Attracting People

As seen in the difference between the Hervey Bay and Whitsundays programs, people are more inclined to get involved when the project is ran by the community rather than a professional organization. I noticed while I was in Hervey Bay that there were constantly articles in the local newspaper recording the project. Television stations also frequently appear on the sites when Jerry calls them to inform them of an upcoming project (Campbell, Pers. Comm. 2000). This media aspect, that is not as predominant in Airlie Beach, seems to be one of the factors that contribute to the heightened awareness in the area.

Since the local community members, not organizations, run the monitoring events, there seems to be more of a central community group in Hervey Bay. In the Whitsunday region, the program seems to stop at the monitoring process, while in Hervey Bay, Seagrass-Watch extends into the community. Possibly one of the contributing factors to the success of the volunteers is the various ways in which SGW has extended into the community. It seemed to be more common for volunteers to bring friends along and random people than in the Whitsundays. In the Whitsunday region, the volunteers are either strictly the divers qualified to obtain the data or members of the environmental volunteer groups that signed up to help in monitoring. There was not mention of outside interest.

In Hervey Bay, however, it seemed to be a common process to bring a friend along. Three instances in particular stick out in my mind. During one of the initial sites monitored, one of the volunteers, Jenn brought her friend from out of town who was interested in and studies the environment. Likewise, an older, frequent volunteer, Hanne, brought along her granddaughter who had been wanting to come out and monitor a seagrass site for awhile. One of the more extraordinary examples was when

Wendy Jones, the teacher mentioned previously from Yarrillee State School, brought six of her students to come volunteer on a Sunday afternoon. These 12 and 13 year olds were enthusiastic about coming to monitor and eager to help. In my opinion, these situation and the popularity of the program springs from the community organizing and devoting themselves to the program. As Comans said in my interview with him in response to being asked his opinion of the best way to get people involved. *"It's got to be community driven, not government. People hate that. You need to get the community together first, then the scientists. That's where they run foul in the Whitsundays. It's not direct from the public"* (Comans, Pers. Comm. 2000). The success of Hervey Bay's program explains why it is important for a successful community based project to come from the community first. In the Whitsundays, although it was nobody's fault, it was the scientists that approached the community for assistance.

Parr in the Whitsundays, however, attempts to implement that crucial social aspect to the program for the volunteers. One of their monitoring sites occurs very early in the morning. So, she organizes a breakfast afterwards for the volunteers to try to make it a social event as well (Parr, Pers. Comm. 2000).

One of the strong aspects that seems to attract people is the sense of dedication and commitment that come with a community gathering together to help the environment. Jones exclaimed during an interview with her that the dedication and devotion of the members motivated her to join and stick with the program. This program allowed her to get involved and passionate about something that other people also care about without thinking she's crazy, unlike a previous organization she had belonged to (Jones, Pers. Comm. 2000). I think this dedication is a result of the pride that comes from the community members working hard to create their program.

4.4 Education and Awareness

Perhaps the greatest benefit I noticed was the knowledge and awareness that comes from a community based environmental program such as the Seagrass-Watch. Both the members of the Whitsunday and Hervey Bay SGW programs reported that increased awareness has been one of the strongest rewards of the program. This increased education among a community means that perhaps people will start to become conscious of their actions. Understanding is crucial for caring and wanting to protect an area. People seem to only love what they know and understand. Increased education about the importance of seagrass will lead to respect for the marine plant and concern over its well being.

Tony Fontes gave a wonderful example of the power of increased awareness and education within the community. A local boater informed OUCH that he had seen a boat launch on the beach during low tide and stir up the sand and seagrass in the area. From this information, OUCH contacted the boat operator and prevented future incidents from occurring (Fontes, Pers. Comm. 2000). An increased public awareness around the area was helping to look after the environment.

4.42 Teaching the Young

Wendy Jones has organized her curriculum around using seagrass as a method to educate her students. Not only are her students educated on the importance of the marine plant, but their education on seagrass has contributed to their exceptional writing and public speaking skills.

I got to witness the success of her project first hand when I visited the Yarrillee State School. The first impressive project they participated in that both helped the SGW program and produced educational values was the competition of creating a

Seagrass Watch logo, which was the reason Stuart, Len and I were brought to the school. Jones encouraged her students submit entries in a competition to create a logo for the SGW that incorporated the three key aspects of the program: seagrass, water and a human element. I was brought to the school to witness Campbell and McKenzie presenting the award to the two girls that achieved the prize. With this contest, the students had to be educated about seagrass, along with learning the process of creating a logo and making public speeches that described their processes.

Another impressive accomplishment was the presentation the class made in the Rivers to Range competition mentioned earlier in the paper. I was able to witness a remake of the presentation when I visited the school. Each member of the class had written an excerpt explaining the importance of seagrass and the need to preserve it. Jones described to me how her teaching skills has improved their communication skills. *"I teach them to be objective. I won't let them say anything unless they can back it up"* (Jones, Pers. Comm. 2000).

These examples of the SGW members utilizing the community and their lives to promote their cause and educate others seems to be a direct correspondence to the pride they feel towards the program they have helped organize and run. Having the SGW be a community originated and based program is crucial for such benefits to occur.

V Conclusions

5.1 Uncontrollable Obstacles in the Program

As hard as a community can work on their program, there will always be obstacles that they cannot control. Although the program in the Whitsundays did not originate from the people, the town has still worked hard to help monitor the area with some uncontrollable obstacles. The transient culture that resides in the area poses

many problems with maintaining constant volunteers. As Jacque and Elmer ten Haken described to me, Airlie Beach, aside from certain retired members, has an ever-changing population. It is often a holiday spot for people or a seasonal home. This problem has seen true with the diving spots they monitor. They explained to me that they will often have a wonderful diver come and monitor a site with them and then they will never see them again because they were only in Airlie Beach temporarily.

The sites they fight to maintain, as well, have some inherit problems.

Monitoring the seagrass on the bottom of the ocean off some of the reef islands means limited access and ability to observe the plant. As mentioned above, scuba divers are needed for this site, so they have to limit the number of volunteers they work with and cannot freely recruit any interested members.

The same limitation occurs for all of the seagrass sites in that they can only be monitored during low tide. This small window of time allowed for the study often limits who can come and assist and the amount of time they have to explain the process to new volunteers. So, as hard as a community can work to produce benefits to help the environment and promote awareness, there will always be obstacles that they cannot control.

5.2 Ways in which the Program could be improved

Having researched how a successful program is run and the benefits it produces, I formulated ways in which a similar program could be improved upon from my own personal observations and suggestions from those involved. Since most of the benefits mentioned come from the community's involvement it seems to be crucial that there is a heavy focus on gaining and maintaining volunteers.

5.2.1 Organization of Volunteer Information

In Hervey Bay, spreading knowledge and information does not seem to be a problem; it is the organization of the volunteers' role that could be strengthened. Although there is never a problem with obtaining volunteers from calling people up, it was suggested from current members of the committee that there should be a contact list of all those interested in the project. With this list, perhaps there should be a welcome letter sent out by the workers in Cairns that come down for the project (Jones, Pers. Comm. 2000). This welcome letter could not only inform them of the specific dates, and explain the process of the monitoring, but it will add to the personal aspect of the organization that seems to tie the program together so strongly.

Len McKenzie and Chantal Roder, another scientist from the DPI in Cairns, occasionally organize training sessions for interested volunteers in Hervey Bay. This training session shows how the monitoring process is conducted along with informing them of the scientific aspects of the marine plant (Jones, Pers. Comm. 2000) Many volunteers I worked with praised this type of informative session and requested more of them. Not only would frequent sessions as such increase volunteers' interest and connection to the program, but also it was be a powerful tactic to educate the public which is one of the greatest benefits a program can offer.

5.2.2 Increased attempts to gain volunteers

In the Whitsundays, as I mentioned previously, they have many methods to raise awareness of their causes. However, these tactics serve more to raise awareness rather than recruit volunteers. Obtaining volunteers is crucial because the program can not flourish with it, and it is these volunteers who begin to feel passionately about the project that can spread their knowledge and help care for the land and educate others. One of the ways the volunteers in the Whitsundays felt the program could improve

upon is to gain more people and increase publicity (Salmon, Pers. Comm. 2000). As I mentioned before, one of the benefits of having community members at the heart of a project is that it gets the government more interested which is crucial for financial support at the least. The more a program such as Seagrass-Watch can get the locals involved and promote their project and cause, the more successful they will be and longer it will flourish.

5.2.3 The Power of Personalization

While out in town with Margaret Parr, a Whitsunday volunteer, I reaffirmed the power of personal contact in promoting and strengthening such a program. Parked outside of Pioneer Bay, I pulled out and was reading the poster that the DPI group in Cairns had created. This informative poster stated the importance of seagrass along with the philosophy behind Seagrass Watch. While examining the poster, an Airlie beach resident in his twenties, Greg stopped to look at the poster. I asked him what he knew about seagrass. He informed me that he knew it was an important marine plant but did not know the specifics of it, but had always been interested. This young resident had been looking for more volunteer opportunities helping the environment. He was very interested in seagrass and was glad that he had stopped to observe the poster I was looking at. By the end of our conversation, he had given his number to Parr who coordinates the volunteers for this site and Greg was very enthusiastic and grateful to be able to help out at the next project.

Many of the volunteers stated that the main steady population of volunteers was the older community and they were lacking young members (ten Haken, Pers. Comm. 2000). Although the problem with the transient population they stated is true, I feel that another reason for this occurrence is that the program does not read out to the younger community because the program is ran through primarily two environmental

organizations instead of straight from the community. Although they may be harder to come by, it seemed to me that there were many younger residents around the area who would love to help out with the project which shows, in my opinion, the need for increase publication and active attempts to gather more volunteers.

5.3 The Future of the Seagrass Watch

What do these benefits mean for the future of the SGW and where does the program stand in years to come? In terms of the benefits, scientifically, it is too soon to see results. They are in the process of monitoring so that the data will be accessible for when it is needed, but the process of monitoring seagrass is a continuing one that may never have an end. As Comans said, "*Do you ever find answers? How long do we need to do this to find answers? There are always more things to research....*"

(Comans, Pers. Comm. 2000).

5.3.1 The everlasting Benefits

So the current benefits reside in the progress made with the people in the town. From the last few years that the SGW has been occurring, increased awareness throughout the area and the country has triumphed. From dedicated teachers, school children are learning of its importance. Random fisherman, as well, are becoming protective and environmentally conscious of their surroundings. As Fontes said, "*Even if we never produce scientific results, the education and awareness factor has made it worthwhile*" (Fontes, Pers. Comm. 2000). These results and benefits mentioned can come only with a community program. It is these local members who have reached out to their community to promote their cause, educate other and consequentially helped their environment.

5.3.2. Where does the future stand for SGW?

Every volunteer I conversed with stated that they saw this project as a continuous, long-term effort for him or her. Many of them stated that they would continue with the program for as long as it is offered. Unfortunately this sort of dedication cannot withstand the program alone. In order for SGW to continue it needs government funding. The current funding supplied by National Heritage Trust Foundation expires in November 2001. When asked about the future of the program, Comans stated, "*Hard to say. Without funding, it will collapse. Not from volunteers, it's up to the administration. There are too many applications; it's a hard, long process. You need commitment by local, state or federal government to fund over a given period of time*" (Comans, Pers. Comm. 2000).

5.3.3 Efforts to achieve funding

Nevertheless, members are still fighting to sustain the program. OUCH has set up a reef discovery program to fund their volunteer programs. Fontes explained to me in conversation, that he has set up a program explaining the Great Barrier Reef to tourists and interested members who are going to out to reef. With the money raised from the program, they hope to continue their projects such as SGW when the funding retires. This sort of commitment shows the impact community members can make when they get involved in and care about an environmental project such as this one.

5.4 Analysis of my data

Part of my research and results are dependent on my data collecting techniques and biases that may have occurred. Since I could not attend the monitoring project in the Whitsundays, I had to rely strictly on conversation with people about the program and my own personal interpretation of their opinions and observations made around

the town. I would recommend to those who want to conduct a similar study to ensure that they take part in the actual community monitoring project; it is the best way to get a sense of the benefits of the program and get in touch with the people and their community.

One problem I ran across in my data collection is an occasional inconsistency between interviews with different people. Within the Hervey Bay community, there seems to be some tension between the long-term members of the SGW committee and I received different angles of the program and the group dynamics within it. This realization does not affect the benefits that still occur from it. However, it made me question my sources I was interviewing and whether there were more problems that I was unaware of.

Nonetheless, my study of the Seagrass-Watch showed me the benefits that the community brings to an environmental project. These benefits are ever lasting and are only possible when local members gather together to make a difference. The results supported the notion that a similar project conducted and organized from a governmental organization will not have the same beneficial responses and results as one led by local residents in the town that is to be monitored.

Appendices:

Within each of the 30 sites monitored around the regions, quadrats are strategically sampled throughout a 50 by 50-metre site. Within each quadrat, which is placed along three transect lines every five metres, there are certain criteria the community must record. These features include: the type of sand, percent coverage of seagrass in the type of species, species breakdown (i.e. percent of each type of species), percent of epiphyte and algae, height of canopy of grass, and any other important observations such as presence of critters, dugong feeding trails and ripples in the sand.

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