

19. 8th May 1990: Club member Angus Sullivan submits a 32-page report titled "Should Gordon's Bay be declared an aquatic reserve?" to the NSW Minister for Agriculture & Rural Affairs Ian

Senior Geography Project



Should Gordons Bay be declared
an Aquatic reserve ?

Written by Angus Sullivan.

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1.0 - Introduction

1.1 - Why this topic was chosen ?

The main reason why I choose to do my SGP¹ on this subject is not only because of a interest that I have had in the environment but also it may also be a stepping stone towards Gordon's Bay becoming a Aquatic reserve therefore my SGP may create a real outcome for Sydney.

This project is written is in a report format which I will be sending to the Department of Fisheries and Agriculture, whose responsibility it is to declare Aquatic reserve's. The project has been designed to acheive my ultimate goal; getting Gordon's Bay declared an Aquatic reserve. Map 2.3.1 contains the major features of the Gordon's bay and surrounding area.

N.B. All compass bearings and scales are the same on all maps as in the first unless otherwise specified.

1.2 - Background information on Aquatic reserves

Marine and Estuarine protected area is the general name given to an area that receives protection from activities that are damaging or potentially damaging to the environment. the Australian council of nature conservation ministers or CONCOM has devised a definition of an Aquatic reserve as " Any area of intertidal or subtidal terrain, together with its superjacent waters and associated flora and fauna, which has been reserved by legislation to protect part or all enclosed environment for conservation, scientific, educational or recreational purposes."² Currently there are only seventeen recognized MEPA's in New South Wales. An Aquatic reserve is a sort of MEPA which comes under particular legislation.

The Department of Agriculture and fisheries has recently identified three general zonings for reserve management: sanctuaries, refuges and multiple-use reserves. **Sanctuaries** are areas of such high environmental

¹ SGP - Senior Geography project.

² AGFACTS - Issued from the department of Agriculture & Fisheries, this particular edition was on aquatic reserves. Agfact FO.3.2. Division of Fisheries. See appendix 1 for the actual magazine.

value that no exploitation of any type can be permitted. A **refuge** is the one that Gordon's Bay should come under, it allows some activities which are not too damaging with recreational functions allowed. **Multiple-use reserves** combine two or more of these zones.

To have an area declared as a Aquatic reserve it has to have some specific value to the general public either for conservation, scientific, educational or recreational purposes. The main assets of Gordon's Bay are a wide variety of fish & marine plants and its popularity as an area for novice and experienced SCUBA³ divers.

To have the area declared an Aquatic reserve a great deal of field work will have to be done. Refer to the table of contents for a description of each section of the work.

1.3 - Study Aims.

The main points of this project are listed below:-

- i) Enough information so that the Department of Fisheries and Agriculture can see that Gordon's Bay is special enough to be preserved.
- ii) Show that Gordon's Bay is being environmentally damaged by fishers, spearfishers, diving trail, access track and the Storm water outlet.
- iii) Take a survey and a petition so that the Department of Agriculture and Fisheries can see that there is enough public support to get the area declared a Aquatic reserve.

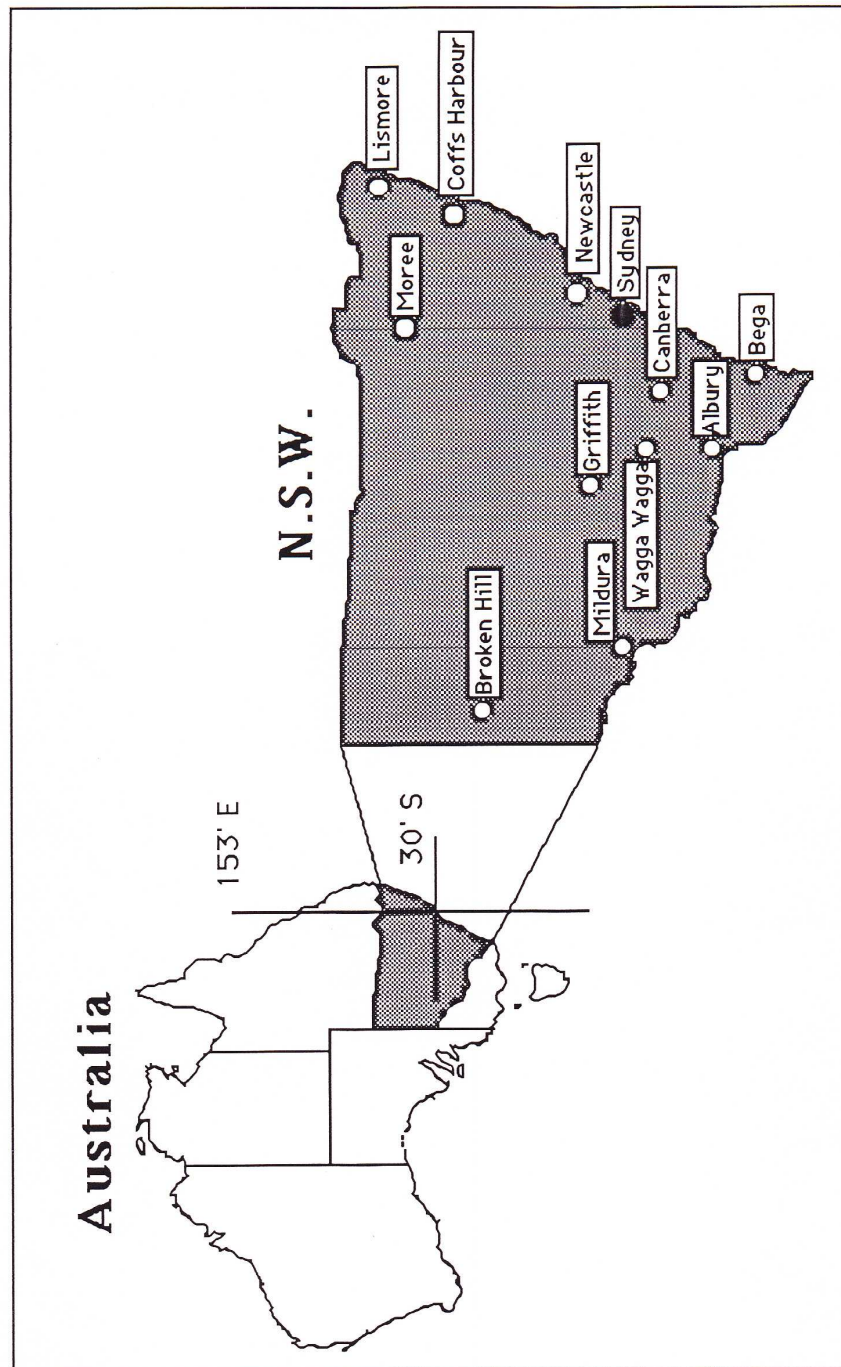
Hopefully if all these things are accomplished then the end result will be the creation of Gordon's Bay as an Aquatic reserve.

³ Self Contained Under Water Breathing Apparatus

2.0 - Study Area

2.1 - Location

Gordons Bay is located in East Sydney, on the Eastern coast of Australia about 12km south of the Sydney Metropolis. It is a small bay between Clovelly and Coogee. A map of the area in which Gordon's Bay is located can be seen in Map 2.3.1 (See table of Contents for page number and a brief description). In rough terms it is located at 33.55S, 151.10E . The map below shows where Sydney is located.



Map 2.1.1- Showing roughly where Sydney is located.

2.2 - Physical characteristics

Gordons Bay has many characteristics. On its north side it has high 20-25m cliffs which taper at either ends to a small white beach and at The South-West end a rather large and unsightly parking lot (shown as a nature

reserve on most maps !!). Towards the northern side the bay continues to eventually become cliffs. At its maximum depth the water is about 17m.

Most of the plant growth occurs on the top of the cliffs. It consists mainly of rich, native, green bushes with an occasional flower. At sea level the bay is crowded by large boulders. The main characteristic about Gordon's

Bay is not its view from the air but its view from underwater. Gordons Bay has long been a place held dearly with all divers from novice to expert. The main reason for its popularity with learners is its tranquility and shallow depth. For the more experienced divers there is the bombora to explore and many varieties of fish and marine plants.



Photo 1.1- Showing the small beach at the western end of Gordon's Bay. It also shows the rich vegetation on the top of the cliffs which is a main feature of Gordon's Bay.

The Department of Environment describes the area as "...an attractive narrow inlet with dramatic sandstone cliffs and steep slopes with a narrow beach...." In an article that the Sydney Morning Herald published⁴ they said that "...Sydney bays offer underwater experiences equal to the great barrier reef and that the common octopus is so friendly he does not like you to leave! These are the wonders you will discover at Gordon's Bay..."⁵ As you can see

⁴ The Sydney Morning Herald, September 22, 1987

from this comparison Gordon's Bay is obviously an area of unequaled beauty in the Sydney metropolitan region.

Gordon's Bay on some days, especially with an easterly breeze, like most Sydney beaches becomes very polluted. With a westerly it is very clean. After rain it is also quite dirty due to the storm water outlet. Chemical analysis of the water pollution can be seen in section 3.3⁶

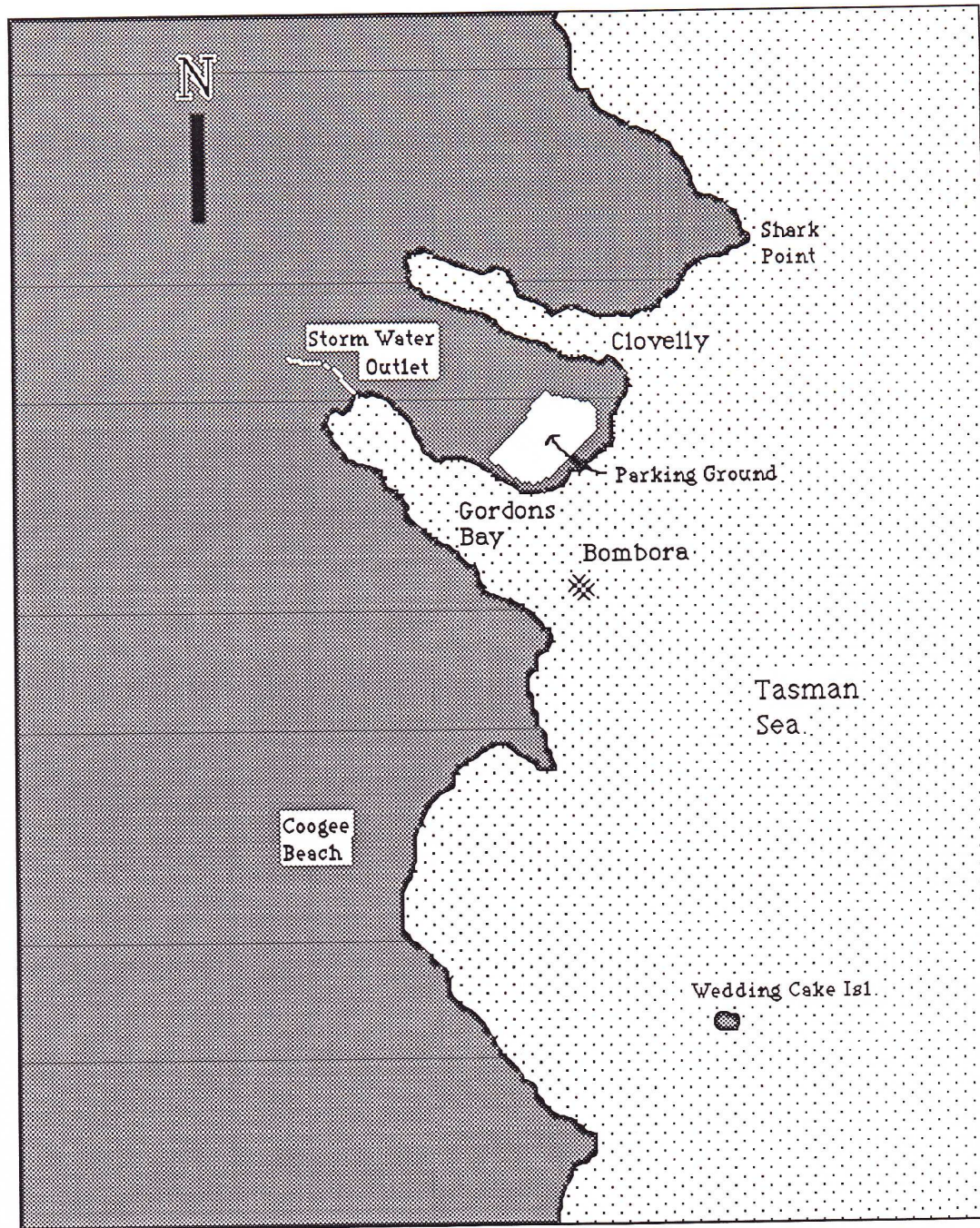
Map 2.3.2 (See table of contents) shows the topographical features of the area. This is perfect for seeing what a tranquil area it is, being protected from most prevailing winds.

2.3 - Cultural characteristics

Gordon's Bay does not have many cultural characteristics apart from being an exceptional diving spot well within the reach of almost anyone in Sydney. As a result of this popularity there are now about 5 diving shops within 2km of Gordon's Bay.

⁶ The Water samples for these were collected on extreme days and kindly processed at Western Suburbs Hospital. For full details of information gained please see Appendix 2

Map showing the Gordons Bay area



Scale 1cm:10000cm

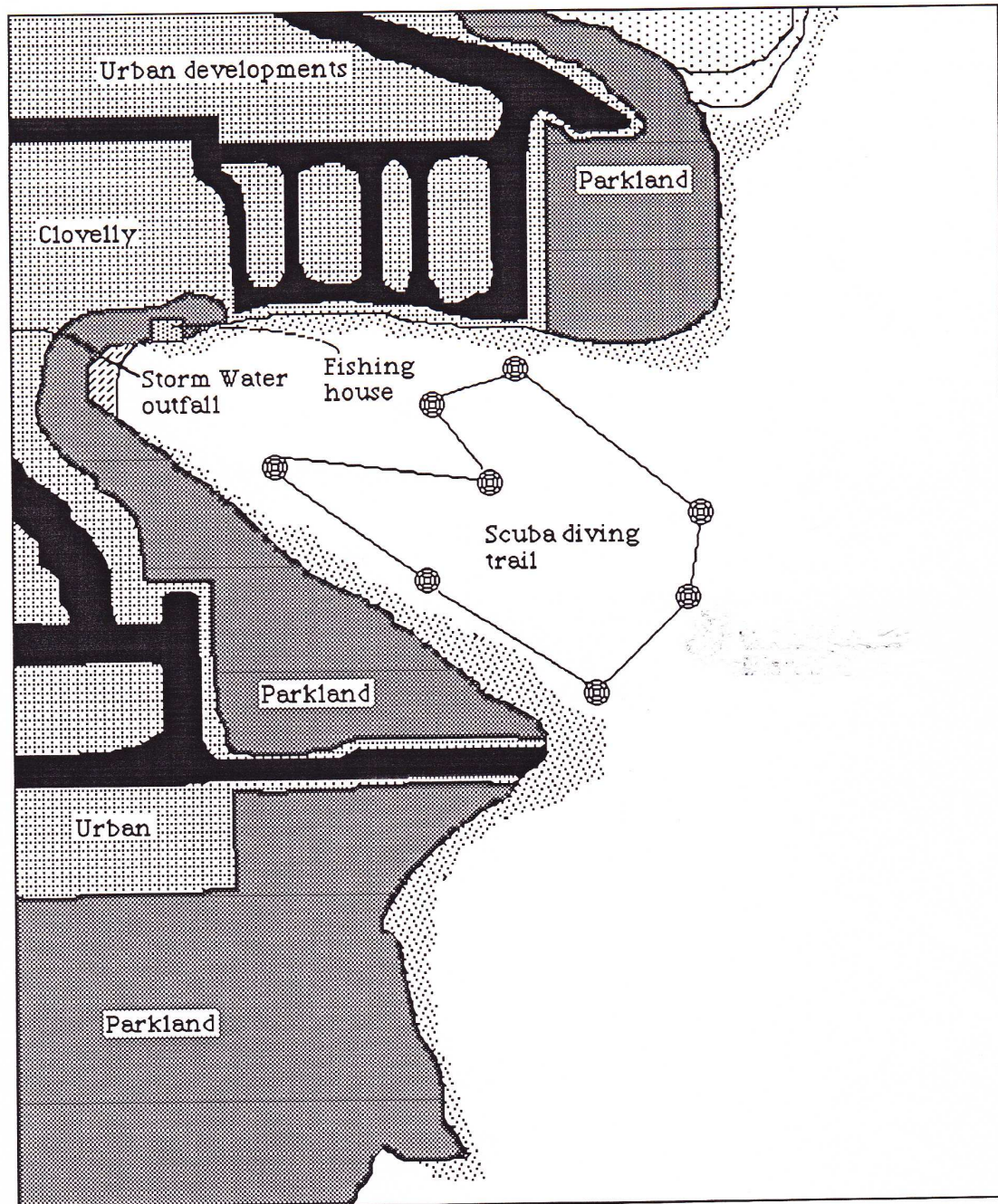
Map 2.3.1- The above map shows the general area of Gordons Bay in relation to other parts of Sydney.

Detailed map of the Gordons Bay Area-Topographical, Interval = 5m



Map 2.3.2 Topographical overview of Gordons Bay; Dark- Land, Light - Sea

Detailed map of the Gordons Bay Area-Urban, man made facilities.



Map 2.3.3 Urban overview of the Gordons Bay area. The main features are the Scuba diving trail and fishing house. Black lines represent roads. Scale is 1cm:5000cm or 1cm=50m

3.0 - Methods.

3.1 - Surveys

For a copy of the actual survey see Appendix 4.
The survey asked nine basic questions:-

- i) Age of the recipient
- ii) Are you a Scuba diver ?
- iii) Have you ever dived at Gordons Bay ?
- iv) If you are a scuba diver do you also fish or spearfish ?
- v) If you are not a scuba diver do you fish or spearfish ?
- vi) Would you support the declaration of Gordon's Bay as a Aquatic reserve ? If not why ?
- vii) Are you concerned about the threat of pollution from the storm water drains?
- viii) Are you concerned about the threat fishing poses on Gordon's Bay?
- ix) Are you currently a member of an environmentally conscious organisation?

A total of 23 people were surveyed ranging in age from 15 through to 57 years. (cf. Appendix 4). Not all of the information was used in the actual project so for further results of the survey see section 4.1.

3.2 - Interviews

These particular interviews were done by letter. There are three letters of considerable importance that I wrote, these are:-

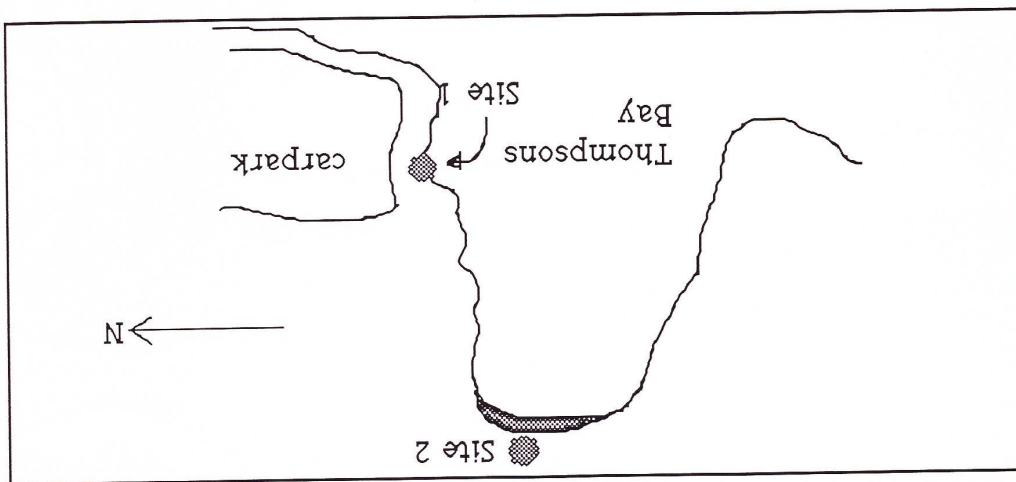
- i) Minister of Agriculture and Fisheries - discussing how could Gordon's Bay be declared an Aquatic reserve
- ii) Greenpeace - To ask them what could be done to save the area and to contrast the views of an environmental movement to an "environmentally friendly" government.
- iii) Randwick Municipal Council - asking whether or not Pro-dive had permission for construction of the underwater nature trail. I also enquired about the diver access trail and how Gordon's Bay could be declared an Aquatic reserve.

3.3 - Chemical Analysis

The four samples that were taken were taken on two separate days:-

- i) good weather - 11th June 1990
- ii) Bad weather - 24th May 1990

Site two is located next to the storm water outlet, whilst site one is located on a headland in the bay.



Map 3.3.1 This map shows the location of the water sample sites, scale is 1:5000 or 1cm:50m.

On each day two 100ml samples of seawater were taken at the above sites to show the effect of the storm water drain. The water was collected in sterile plastic bags, so as not to contaminate the specimens. The specimens were kept in a refrigerator and then transported to the microbiology department at Western Suburbs Hospital⁷ the following morning.

⁷ Western Suburbs Hospital from now on will be known as "WSH"

As you can see from the photos overleaf the local government (i.e. the Randwick Municipal Council) has constructed a diving access trail for disabled and able divers. This access trail has wrecked the ascetics of the area in a number of ways:-

- i) The construction of the trail five metres into the water from the high tide level.
- ii) the movement of a large number of the rocks creating ecological instability, and the creation of unnatural walls of rock up to two metres high.
- iii) the construction of a trail one metre wide, in concrete, without concern for how it will effect the surrounding biophysical environment.



Photo 1.2- shows an overview of the path leading down to the water on the northern side of Gordon's Bay.



Photo 1.3 shows the path leading down to the water on the northern side of Gordon's Bay.



Photo 1.4 shows the path going through a slab of rock. This had to be blasted and the retainer on the side of the wall to holds up the hill. This is on the northern side of Gordon's Bay.

3.5 - Construction of "Pro-Dive" Nature trail

The construction of the Pro-Dive nature trail in Gordon's Bay will do enormous ecological damage to the underwater ecosystem. There will be an increased number of Scuba Divers travelling on the same path destroying all natural wildlife on the trail. Not only will the divers destroy a great deal of wildlife on the trail they may threaten the existence of many of the species of animals there. As the Scuba divers tame the fish it will become easier for spearfishers to follow the trail and find tamed and awaiting fish. These fish, possibly protected under legislation, would be needlessly killed.

Also I am not sure whether or not permission was gained from the Randwick Municipal Council for the construction of this trail and whether the government set down any guide-lines for the construction of it. Refer the following letter:-

Angus Sullivan
359 Clovelly Rd,
Clovelly,
N.S.W., 2031.

Randwick municipal council.

Dear Sir/Madam,

Currently I am preparing a report on the question "Should Gordon's Bay be declared an Aquatic Reserve ?". I would like to know two things. Firstly did Pro-Dive receive permission to construct their "Nature trail" and if so where there any restrictions placed on the construction of the trail.

Secondly could you please tell me if there was an environmental impact study done before the construction of the Gordons Bay access trail for able and disabled divers ? Thirdly If Gordons Bay were to be declared a Aquatic reserve what would have to be done by the council. Your thoughts on any of these issues would be most appreciated.

*Regards,
Yours Sincerely,*

.....
Angus Sullivan.

No reply was ever received from this letter, but further investigation revealed permissive occupancy of the land. I was able to find out that the

occupancy offer had been broken. As said in the Permissive occupancy offer, the area which was set aside for the construction was pronounced an "Area: 250sq. metres"⁸. This is later discussed in Section 5.

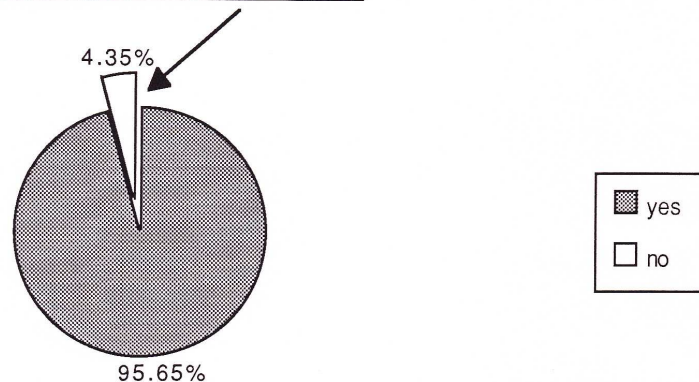
Apart from this, in the booklet published by Pro-Dive of Coogee, it was stated (in their environmental impact study) that they would inflict no ecological impact on Gordons Bay⁹. This is obviously untrue as the increase in the number of divers in one particular place will have adverse effects on the whole ecology surrounding the path. The divers would wear down the plant life and if the fish on the path are tamed by divers feeding them they will become easy prey for spearfishers.

4.0 - Results

4.1 - Results of Survey

The results of the survey are shown below in graphical form and a conclusion is drawn about each one of them.

Are you concerned about the threat of pollution from the storm water drain?



Graph 4.1.1 As you can see from the above graph there was only one person in the whole survey who was not concerned by the threat that storm water drains posed to peoples health. The graph shows that people are aware of the threats that storm water drains pose which is good, and shows that they are concerned.

⁸ The full permissive occupancy offer and other details can be viewed in appendix 6, the File reference number is HO85H1427JC:FH

⁹ For full description see "Proposal for an underwater nature trail in Gordon's Bay" on page number 4

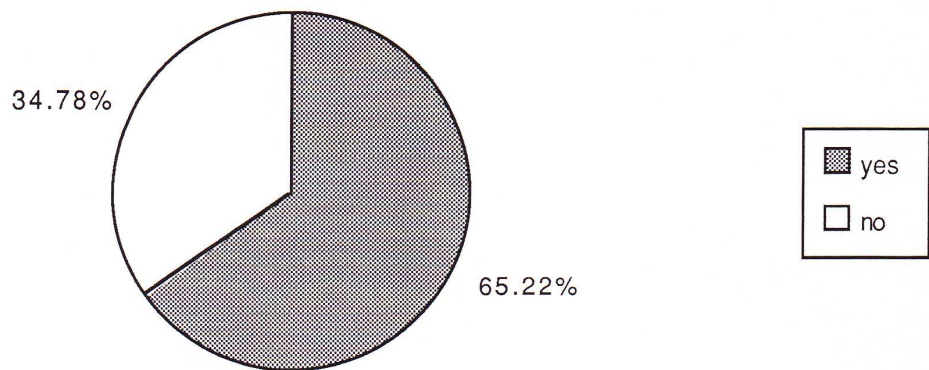


Photo 1.5- Storm water pollution which occurs at the western end of Gordon's Bay.



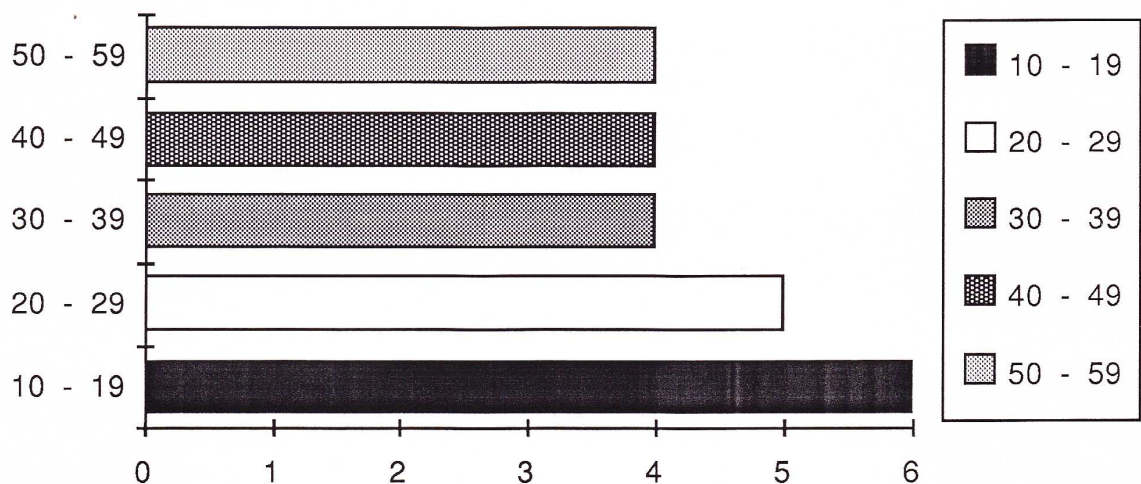
Photo 1.6- Storm water pollution which occurs at the northern side of Gordon's Bay.

Are you concerned about the threat fishing poses on
the bay?



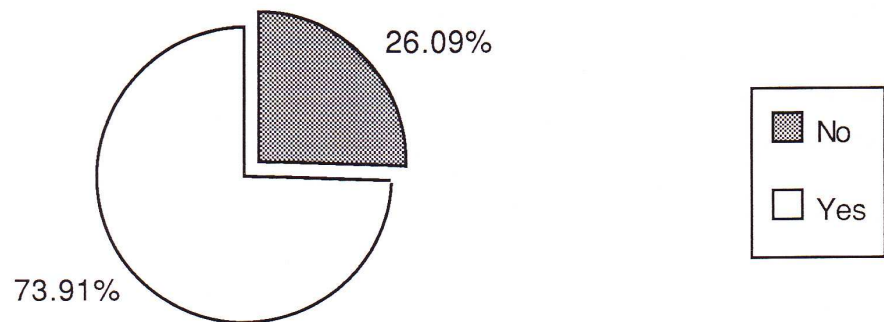
Graph 4.1.2 This graphs shows that people were aware of the threat that overfishing posed on any ecological situation. Although it is not an overwhelming percentage in favour it still shows that people are concerned about the bay and what effects there are on the bay.

Age Pyramid for the people surveyed at Gordons Bay



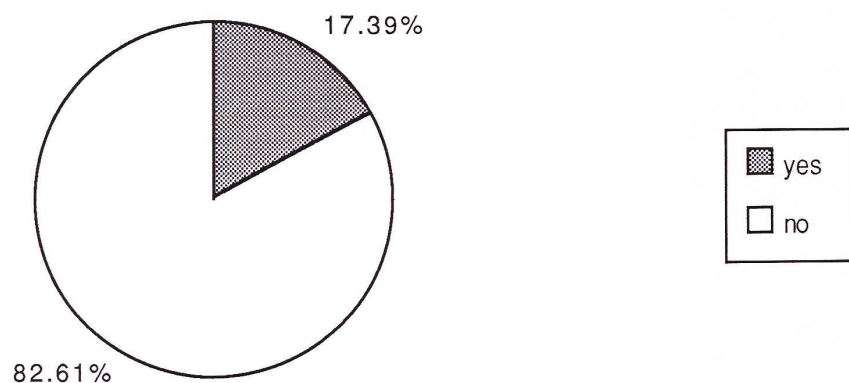
Graph 4.1.3 the above graph is a basic population structure for those people who were interviewed around Gordons bay. As you can see from the graph, distinct from the normal "pyramid" shape the middle to elderly age bracket remained constant showing that there are a large number of people who are over 30 in the area, relative to the normal numbers.

Would people like Gordons Bay declared an Aquatic reserve



Graph 4.1.4 A large number of people thought that it would be good to have Gordons bay declared an Aquatic reserve, close to 74%. This shows that people are aware and willing to participate to save areas which have some environmental values. This is probably the most important graph of all 5 because it voices support for the basic reason for this project and what it is trying to achieve.

Are you currently a member of an environmentally conscious organisation?



Graph4.1.5- As can be seen from this graph although there was not a particularly high rate of membership to environmentally aware organisations there was still a large amount of concern for the welfare of the area.

Below is the raw data for the Survey:-

Data from Survey

No.	Age	Diver?	If "y" do you fish	If "n" do you fish?	Dived Gordons	Gordons Bay a MEPA?
1	23	Y	N	-	N	Y
2	21	N	-	N	-	Y
3	57	N	-	Y	-	N
4	45	Y	Y	-	Y	Y
5	15	Y	Y	-	N	Y
6	17	N	-	Y	-	N
7	16	N	-	N	-	Y
8	34	Y	N	-	Y	Y
9	41	Y	N	-	Y	Y
10	34	N	-	Y	-	N
11	51	N	-	N	-	N
12	17	Y	N	-	Y	Y
13	39	Y	N	-	Y	Y
14	15	Y	N	-	N	Y
15	56	Y	N	-	Y	Y
16	27	Y	Y	-	Y	N
17	22	N	-	Y	-	Y
18	43	N	-	Y	-	Y
19	47	Y	N	-	Y	Y
20	31	Y	N	-	Y	Y
21	52	Y	N	-	Y	N
22	18	N	-	Y	-	Y
23	25	N	-	N	-	Y

Table 4.1.6 This table shows the raw data collected from the survey for a look at the actual work that was done see appendix 4.

The results of all this survey work are plainly obvious. Out of all the divers that were surveyed 77% of the people had dived at Gordon's Bay and out of these thirteen divers, eleven of them supported the declaration of Gordon's Bay as a Aquatic reserve (84.61%). Out of the general community, 78.26% wanted Gordon's Bay declared an Aquatic reserve. So in the diving community and the general public most people would like the area declared an Aquatic reserve. This is not the main problem, which is convincing the fishermen that this is a good idea. As you can see on Map 2.3.3 a fishing house is located next to the beach. This fishing house has many boats there and the area is quite a popular area for all fisherman.

As an example in recent years the number of Eastern blue groper wrasse has decreased rapidly and although they are common. The small school located in Gordon's Bay has continually been depleted, especially due to spearfishers. These wrasse are very friendly and often eat out of divers'

A reply from this letter was received on the 2/7/90¹⁰. In brief the letter said that Mr Armstrong was involved with a number of declarations already under way; namely the Solitary islands and an area near Coffs Harbour. Therefore Gordon's Bay cannot be considered at this time but he will be letting his staff "investigate" the area.¹¹

The second letter was to the environmental movement, "Greenpeace". The letter was of the same nature but was also aimed at distinguishing between the views of a government, that wanted to seem "environmentally friendly", and an organization dedicated to environmental protection. The letter is as follows:-

Angus Sullivan,
359 Clovelly Rd,
Clovelly,
N.S.W., 2031,
11th June 1990.

Greenpeace

Dear Sir/Madam,

I am writing this letter to you so that I can find out what has to be done to get a certain area, namely Gordons Bay declared an aquatic reserve. At the moment I am preparing a report about Gordons Bay which when it is finished I was going to send a copy of to the minister of fisheries to see what he can do and what I have to do to get the area declared.

At the moment Gordons Bay is being abused by spearfishers, wreckless developers and fisherman and the area, which is a haven for all divers is losing its appeal there are many other problems which are detailed in the report. This is of great concern to myself and many others.

Any suggestions that you have to make would be most helpful, the list of areas waiting to be declared is quite large and so for the area to be declared it has to be of great significance. I believe that Gordons bay has such qualities and should be preserved

Yours Sincerely,

.....
Angus Sullivan.

¹⁰ This letter can be fully viewed in appendix 5

¹¹ By the way Mr John Rowe who also wrote concerning the same issue was sent the same letter word for word his is also included with mine.

In brief the reply to the letter¹² said that "(Greenpeace) devotes most of it's time to national and international issues." They, therefore, suggested that I direct my fears, for the future of this area, to:-

The Total Environment Centre
18 Argyle St.
Sydney 2000

I shall be carrying on the fight to save Gordon's Bay with the help of The Total Environment Centre and aim to get Gordon's Bay declared an Aquatic reserve.

4.3 - Results of Chemical Analysis

The results of the chemical analysis were as follows (the bacteria that was isolated included):-

- i) Salmonella Spp (11 different types)
- ii) Clostridium Perfringers
- iii) Aeromonas Hydrophilia
- iv) Faecal coliforms
- v) Faecal streptococci

The table below shows the amount of bacteria found in certain weather conditions and the types of bacteria.

Site	Conditions	Faecal coliforms	faecal streptococci	Cl. Perfringers
1	Sunny	<10	<10	<10
2	Sunny	10^2-10^4	10^2-10^4	10^2-10^4
1	Rainy	10^2-10^4	10^2-10^4	10^2-10^4
2	Rainy	10^4-10^7	10^4-10^7	10^4-10^7

Table 4.3.1 Table showing detection of bacteria in the Sea Water (each is in cfu/100ml).

As can be seen from the above table, there were more faecal coliforms, faecal streptococci & Cl. Perfringers ($10^4 - 10^7$ cfu/100ml) during rainy, stormy weather than during calm seas ($10^2 - 10^4$ cfu/100ml). Therefore,

¹² The full version of the letter can be viewed in Appendix 5

obviously the source of the water pollution in Gordon's Bay was the storm water outlet. If Gordon's Bay was to be declared an Aquatic reserve, the storm water outlet would have to be blocked up or moved to another location. Quoting from¹³ "Stormwater is an important form of pollution."

Salmonella was detected in 3/4 samples (i.e. at Site 2-Sunny, Site 1-rainy, Site 2-rainy). The types of salmonella detected at site 2 on the rainy day were different from the type detected at site 2 on the sunny day, which indicates that stormwater was causing the pollution on rainy days.

No ecology can survive whilst it is being polluted to such a degree, and not only is this effecting the environmental side of the bay, it is making such a beautiful area unattractive for people to come and take part in water activities. With a fall in the number of people using the bay, there will be less public involvement, and the government will get a free hand in doing whatever they want to Gordon's Bay.

4.4 - "Design and management Guide for the Eastern Beaches" written by Dept. of Environment and Planning.

As this report was written for all Eastern Beaches, there is a section in here for Gordon's Bay. In the points that they had for Gordon's Bay they recommended "encouraging the continuation of snorkelling and scuba diving activities designating an area as an underwater park"¹⁴. Obviously they think that Gordon's Bay is special enough to preserve and should therefore be done but unfortunately they have made very little effort to get the area declared a Aquatic reserve.

¹³ Australian medical journal

¹⁴ The full brochure can be viewed in Appendix 8



Photo 1.7- Adjacent signs placed at the north-east end of the bay these detail the construction of the walking path to the water.

4.5 - Sewage pollution from the Septic tanks.

There is a septic storage tank located at the Northern side of Gordon's Bay. If there is an overflow of the sewage then it flows from the storage tanks straight down a pipe into Gordon's Bay. This sewage is totally raw and untreated. As you can see from the two photos below the pipe goes straight into the water.



Photo 1.8 Shows the septic storage area which is very close to the walkway.



Photo 1.9 The line which is concreted over is the path which the pipe follows as you can see it leads directly into the ocean.

5.0 - Discussion

Firstly I shall sum up all the results that I have gained information on. They are listed below:-

i) Using a survey and interviewing people at random around the Gordon's Bay area I have proved that there is enough support to warrant the area being declared an Aquatic Reserve. The people of the Gordon's Bay are concerned about the welfare of the area.

ii) By interviewing:-

a) Greenpeace.

b) Minister for Agriculture and Rural Affairs.

I have found out where additional support for getting Gordon's Bay declared an Aquatic reserve can be obtained and also that one would not be able to rely solely on the government to get Gordon's Bay declared an Aquatic reserve.

iii) Using chemical analysis to prove beyond a doubt that the area is being polluted by the storm water that is pumping raw sewage into Gordon's Bay.

iv) Mismanagement by the government has led to the construction of a hideous walkway to help disabled divers enter the water.

v) The government has let the construction of the underwater nature trail go ahead. This will cause damage to the whole ecosystem surrounding the nature trail.

Obviously you can see from all this abuse and mismanagement Gordon's Bay has suffered ecologically and that is what I plan to stop. The declaration of Gordon's Bay as an Aquatic reserve will allow the area to restore itself to its original pride and glory, where people, who do not intend to damage the bay, can use it in harmony.

If Gordon's Bay was not declared an Aquatic reserve then the government would be allowed a free hand in distributing the bay to profit based organizations such as Pro-Dive, who stand to make a great deal of money out of the underwater nature trail. They plan to Charge \$5 for the use of the trail. If five people use the trail on average per day it adds up to \$9,125 a year. The bay will be overfished and one of the last untouched areas in the Sydney metropolitan area will be lost forever. It would end up as a pollution dump for the Gordon's Bay/ Clovelly area.

6.0 - Conclusion

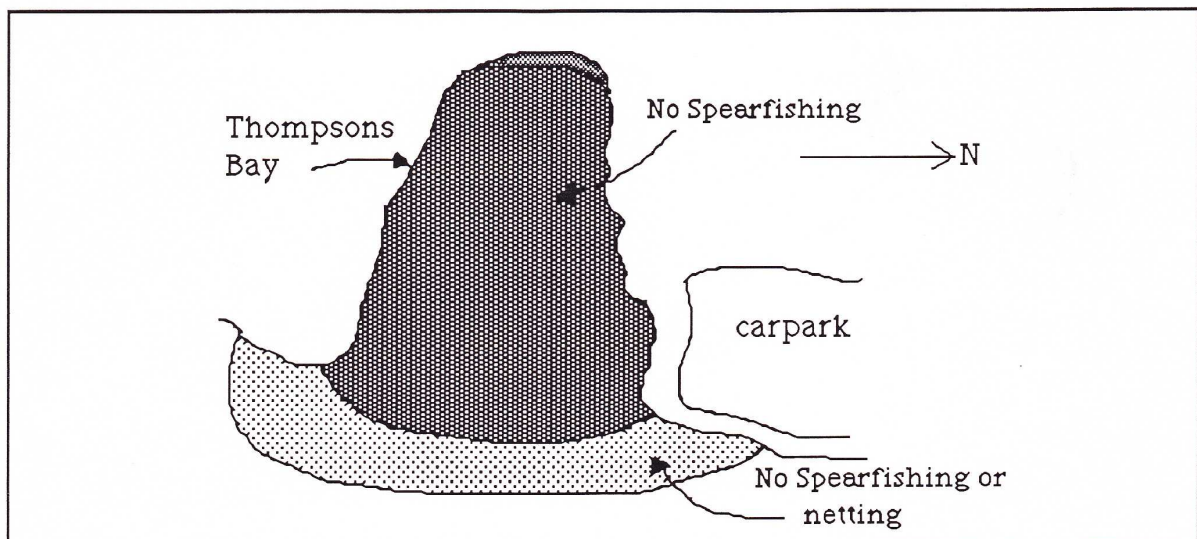
Now that all the data has been drawn together and some results have been tabulated we have to draw this information into an outline of what should be done. We have found out that there are four major areas where Gordon's Bay is being damaged:-

- i) Stormwater outlet and associated pollution.
- ii) Overfishing and killing of protected fish.
- iii) Mismanagement by government bodies.
- iv) Construction of the Pro-Dive nature trail.

Therefore, if Gordon's Bay was to be declared an Aquatic reserve, it would have to have some if not all of the below restrictions on it:-

i) The storm water pipe would have to be blocked. If this could not be done it would have to be redirected to a suitable position; subtly but not practically pumped 100km offshore.

ii) All spearfishing would have to be prohibited in the dark shaded area and all net fishing prohibited in the light shaded area (refer to diagram below).



Map 6.0-1 Showing areas of restricted netting and spearfishing

iii) Stopping the mismanagement of government bodies is a thing that many people have been trying to do for centuries. The government must provide an efficient service to evaluate whether or not certain constructions

will be damaging. Also, the government should recognise whether they are doing what the majority of the community wants them to do or if they are just pleasing a small percentage of the community.

iv) The construction of the Pro-Dive nature trail is something which has been going to happen for a long time. (I am not sure whether government approval has been given for this). The reply to the letter which I wrote to the Randwick Municipal Council indicated that approval had been given.¹⁵

7.0 - Problems encountered with the study

The main problems are listed below:-

- i) Finding original material.
- ii) Getting information out of government bodies and when writing a letter which may contain some unsavoury points, getting a reply.
- iii) Choosing a subject in which how successfully I completed the project would be gauged by whether or not Gordon's Bay was declared an Aquatic reserve.
- iv) It is hard to assess environmental damage of an area when I have no real specialised training to pick up those points which are not plainly obvious.
- v) When assessing the cause of environmental damage it is hard to pin point one certain area that has caused the damage because as you well know ecological problems do not come from one but many sources.

8.0 - Future avenues for the study in regard to more Aquatic reserve's and the declaration of Gordons Bay as an Aquatic reserve

There are still a great number of possibilities left not only for Gordon's Bay but for any other areas that should be declared reserves or sanctuaries of any type and condition. Although my project has not yet lead to the declaration of Gordon's Bay as an Aquatic Reserve it may help others who are trying to get this area declared.

¹⁵ The permissive occupancy can be viewed ion appendix 6

Already there are 7 Aquatic reserves in N.S.W. and all seven of them have been declared in the last ten years. This obviously shows a growing concern for the environment, not only within the community itself but with politicians and the world. After this assignment has been marked I intend to send a copy of it to the Minister for fisheries and Agriculture to see if this will have any impact on getting Gordon's Bay declared an Aquatic reserve.

There are many other areas which need the protection given by reserves and sanctuaries and only now have places such as Lord Howe island been given protection under this legislation. Even after this assignment is over I will continue to fight to get Gordon's Bay declared an Aquatic reserve.

9.0 - Appendices

9.1 - Appendix 1 - The AGFACTs brochure which gives details about Aquatic reserve's and the authorities of the Department of fisheries and agriculture.

9.2 - Appendix 2 - The raw information from the detailed chemical analysis of water samples taken at Gordon's Bay from WSH.

9.3 - Appendix 3 - The brochure "Design and management of Eastern beaches" which has information on Gordon's Bay.

9.4 - Appendix 4 - Survey that was taken on Saturday the 5th May 1990. For the results of the survey see section 4.3

9.5 - Appendix 5 - Letters from the Minister of Fisheries and Agriculture and from Greenpeace in reply to my letters.

9.6 - Appendix 6 - Permissive occupancy document plus a map of the trail and other information regarding the renting of the land from the government.

9.7 - Appendix 7 - Newspaper article on the construction of the underwater dive trail in Gordon's Bay.

9.8 - Appendix 8 - The brochure named "Proposal for an underwater nature trail in Gordon's Bay"

* For all Appendices see the Black folder.

10.0 - Bibliography

Book No.	Author	Date	Title	Publisher
1	Gary Hammer	1989	AGFACTS	NSW Agricult. &Dept. Fisheries.
2	-	1986	Design and Management of Eastern Beaches	Dept. of Environment and Planning
3	Hunt & Pool	1986	Proposal for an underwater nature trail in Thompsons Bay	Pro-Dive