



Researching the Blues – A Marine Science Youth Scholarship

Final report to Handbury Fellowship
July 2014

PROJECT OUTLINE

During the January 2014 to May 2014 blue whale season, the Blue Whale Study (BWS) offered a scholarship program for four high school students (preferably Yr10/ 11) from the south west region, to be trained and mentored in marine science activities. The four students were selected by Principals and science teachers from three regional government high schools and one non-government school.

The scholarship provided an opportunity for the selected students to be trained in the technical skills of basic seamanship, the marine working environment and scientific research methods including observation, photo-identification (photo-ID) and database management, and in theoretical and practical aspects of the ecology of the *Bonney Upwelling*.

The *Bonney Upwelling* is the epic natural ocean occurrence that powers a seven month (November to May) feeding frenzy of tuna, crayfish, giant crabs, squid, fish, seabirds, seals, krill and blue whales. Supporting an incredibly rich ecological food web, the *Upwelling* is at its greatest off the coast of Portland and is the cornerstone of our lucrative local fishing and tourism industry.

Participants were given the opportunity to take part in four small boat surveys, as a part of our continuing at-sea monitoring and research program, and to develop valuable skills of teamwork, self-reliance, communication and project management.

The intention was to involve participants in an internationally recognised long-term study of blue whales in the *Bonney Upwelling* off Portland, focusing on photo-identification of individual blue whales.

Students and Schools

The four selected students were:

- Madeline Englezos, Year 11, Bayview College, Portland
- Ceejay Gordon, Year 10, Baimbridge College, Hamilton.
- Megan Husband, Year 11, Portland Secondary College
- Sean Van Der Heyden, Year 11, Heywood Secondary College

None of the students had prior experience in scientific field research, and only one had been to sea on a boat before.

Project timeline

The project got off to a slow start because of delays in payment due to issues surrounding the extension project required by Handbury Fellowship. The Induction day was postponed from the planned 17 February to 27 February.

After the first two at sea days were successfully held in March, further delays in the project were incurred by periods of sustained windy weather during April. The two final at sea days were held on 8 May and 21 May.

The photo-ID workshop and debrief day were combined into one and held on 23 June.

DATE	ACTION
November 2013	Selection of students began
14 February 2014	Selection of students complete
27 February 2014	Induction and training day
13 March 2014	At sea day 1
29 March 2014	At sea day 2
4 April	Term 1 ends
22 April	Term 2 begins
08 May 2014	At sea day 3
21 May 2014	At sea day 4
23 June 2014	Photo-ID workshop & debrief day
End June	Project acquitted
July, August, September	Extension Project delivery

INDUCTION DAY:

Induction day introduced the students to the Bonney Upwelling, blue whales and blue whale research, and general principles of marine science, safety at sea, and seamanship, and introduced them to our safety and communications equipment.

Below: On board *Bonney Blue* for the first time, L-R: Ceejay Gordon, Sean van der Heyden, Dr Margie Morrice, Megan Husband, Maddy Englezos, Dr Pete Gill.

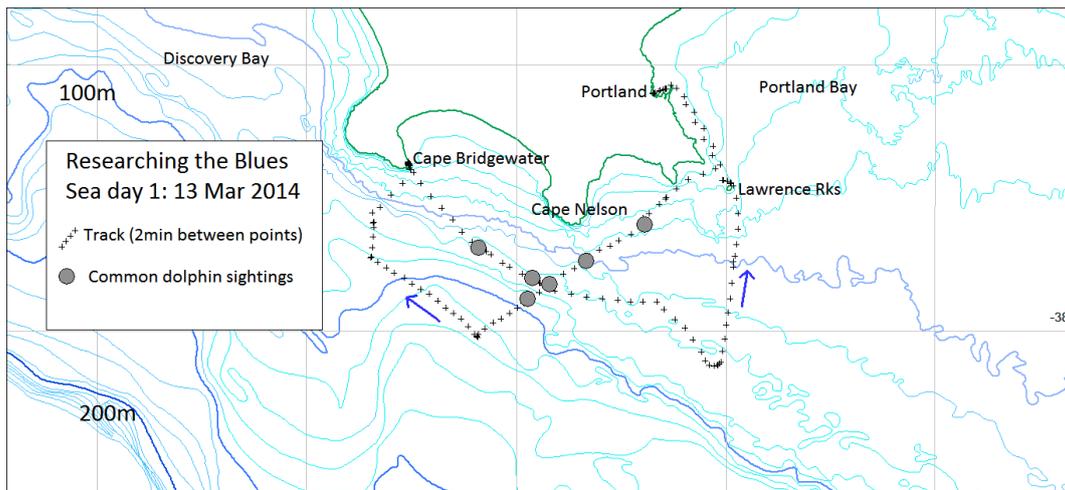


In the afternoon the students were taken aboard our research vessel *Bonney Blue* for a trial run outside the Harbour, and given practical lessons in moving safely around the boat, observation and tying basic knots (below, practising the bowline). From left: Megan, Maddy, Ceejay, Sean.



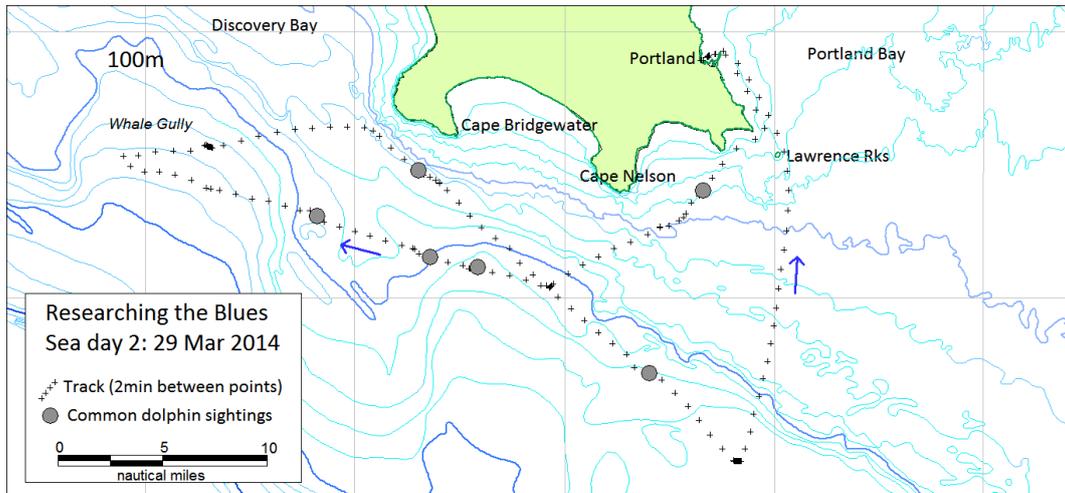
AT SEA DAYS – SUMMARY:

Day 1, 13 March 2014: After boarding at 09:00 we left Portland Harbour at 09:30 and headed for the Pass between Lawrence Rocks and Point Danger. We then searched an extensive area (see track map below) using a figure-of-eight track for blue whales and returned to Portland Harbour by 15:30. For a respite from the heavy SW swell we had lunch and watched seals in the shelter of Cape Bridgewater. There were numerous sightings of common dolphin schools in the central area of the survey. On the way home we passed by Lawrence Rocks to observe gannets and seals. This was not an easy first day at sea due to rough conditions at times and heavy swell throughout the day.



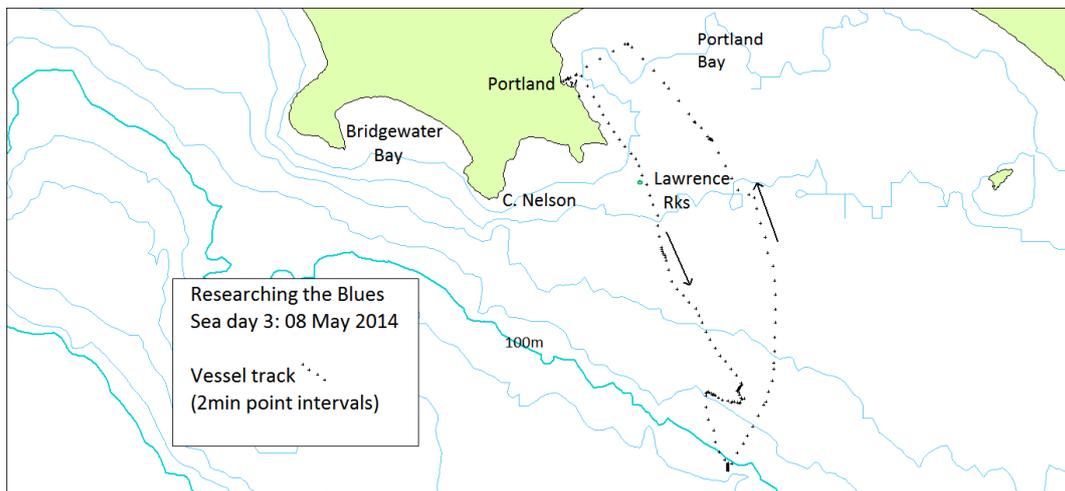
Day 2, 29 March 2014: After leaving Portland Harbour at 09:15 we rounded Point Danger and headed through the Pass to the south-west of Cape Nelson. As it was calm we decided to head west to Whale Gully, a broad 'valley' on the seafloor to the west of Cape Bridgewater, where we have sighted many blue whales in the past. As we approached the western side of Whale Gully we ran into thick fog, so rather than risk collision with another vessel we headed east again to get out of the

fog. Off Cape Bridgewater we approached the sailing catamaran *Kia Orana* to ask if they had seen blue whales further west, but they hadn't.



We then took a long track to the south-east, to investigate the area well to the south of Lawrence Rocks. Despite excellent spotting conditions along the way, no whales were sighted. At our southernmost point it was time to head back to Portland so we had a fast run in with no whales sighted.

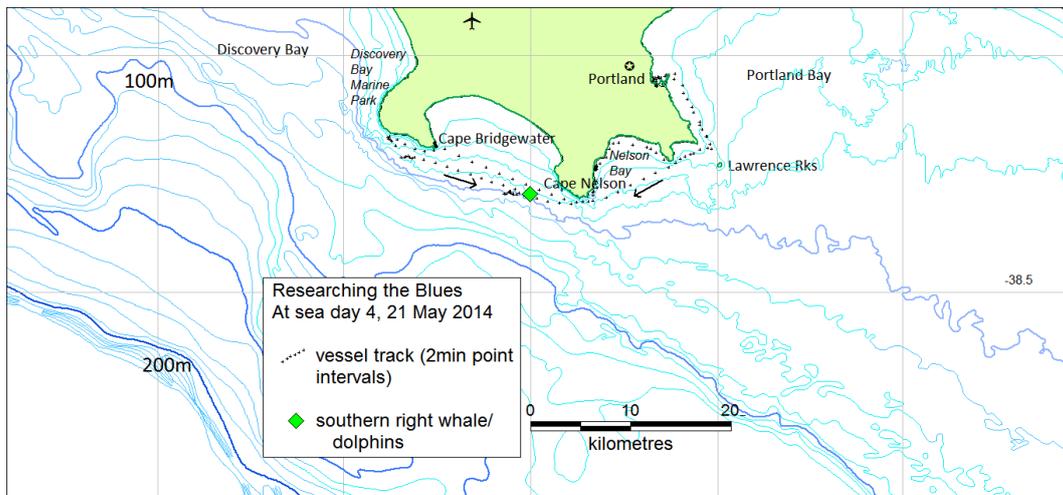
Day 3, 08 May 2014: After leaving Portland Harbour at 09:30 we headed past the east side of Lawrence Rocks before continuing to the SSE. This part of the survey was uncomfortable and slow with a short choppy sea from the easterly wind that was blowing. Due to the easterly wind we decided to go no further west in case we had to beat back into the wind and sea. We searched for whales and stopped to discuss seabird sightings on the way south.



We continued out to a depth of 125m, where we stopped for lunch. During lunch the breeze moderated so that we had a fast smooth run north back into Portland Bay. All four students had a turn at driving the boat, initially toward the southern end of the survey when conditions were still choppy, then during smooth conditions approaching Portland when they were able to drive fast!

Day 4, 21 May 2014: After leaving Portland we headed south around Point Danger and went through The Pass inside Lawrence Rocks, heading west. There was a forecast for freshening north-west winds

so we decided to stay close inshore but to go as far west as we could, aiming for Discovery Bay Marine Park at the eastern end of Discovery Bay.



After rounding Cape Nelson and crossing Bridgewater Bay, we visited the seal colony at Cape Bridgewater. There were very few seals present this time, compared to our first visit in March. We then rounded Cape Bridgewater and continued west along the rugged cliffs, staying clear of the many craypots set along there.

As we approached The Blowholes, the sea got rougher and more confused and the north-westerly headwind freshened, so we decided to turn back to the east. As we headed east conditions improved, and we found a large adult southern right whale, heading steadily west with common dolphins accompanying it (below). This individual was identified by its white callosity patches seen in this photograph which was passed to southern right whale researchers in Warrnambool.



After rounding Cape Nelson we decided to investigate Nelson Bay, which has many unusual features including sea caves, a freshwater upwelling (that we couldn't find), interesting volcanic geology and a blowhole that looks like a blue whale blow (that we did find). Victor also had some interesting stories from his abalone diving days around Cape Nelson. We then returned through the Pass with all hands taking a turn at the wheel, back to Portland Harbour where Victor was kind enough to show us over the Coast Guard vessel *Helen Handbury*.

Below: Victor O'Brien (R) shows the students over the Portland Coast Guard vessel *Helen Handbury*.



Below: Common dolphins bowriding with *Bonney Blue*.



Below: happy campers near Cape Bridgewater seal caves.



DEBRIEF DAY

The debrief day was held on 23 June 2014. Due to our lack of blue whale encounters it could not double as a photo-ID matching workshop, but as an exercise we looked through photo-ID images from past years, explaining how the method works and doing some trial matches. We also discussed what we had seen and experienced during the four days at sea, in the context of the weather, the sea, the Bonney Upwelling, the diverse marine fauna we did encounter, and the practical skills that were learnt.

EXTENSION PROJECT

As part of the Handbury Fellowship funding support, an Extension Project was stipulated, in which each student would be funded \$500 to pursue a project to describe or illustrate their experiences for a broader audience of their peers at school, using media of their choice. The extra funding required for the Extension Project was provided by the Handbury Fellowship, but this new arrangement required that the originally proposed five days at sea should be cut back to four days. The schools invoiced BWS for the funds which were then paid directly to the schools.

BWS at that stage was not sure what our involvement should be, so we calculated the cost of managing such a program, which came to approximately \$20,000, on top of the original budget. Apart from the cost, we are not specialist teachers and in November 2013 we suggested that this task should be managed by the schools. This was agreed by the Handbury Fellowship. BWS then facilitated contact between the schools and Dr Yaso Nasarajah in May 2014. Dr Nasarajah indicated that she would be happy to take on the oversight of the Extension Projects, to be managed by the schools. At this point BWS was no longer required to have any further involvement in the Extension Project.

BWS has not heard how the individual Extension Projects developed. We invited the students to speak at the Marine Environment Forum of the Portland Upwelling Festival in late October 2014, to present their Projects to a broad community audience. They declined – possibly the thought of a room full of a hundred or more adults may have been too much. When we last saw some of these students at the Upwelling Festival and asked them about their projects, they could not give us a clear idea of their progress. Hopefully the Handbury Fellowship has been satisfied with the results.

CONCLUSIONS

This project faced many difficulties, including delays in starting, bad weather during April, a shortage of really calm operating days, and most seriously, an absence of blue whales during the four days at sea. Despite this, our four students approached the project enthusiastically and expressed satisfaction at having taken part. None of them volunteered how keen they were, but talking to parents and teachers it became clear that they were excited by their opportunity. All of them were curious about the marine environment and appreciative of the diversity of marine wildlife that was encountered. All of them enjoyed being at sea – at least partly because they were out of school!

None were overtly disappointed that no blue whales were sighted, though it must have been a disappointment for them, as it was for us. The absence of whales could not be insured against: it was a sign of the natural variability that is such a strong characteristic of the Bonney Upwelling. In some years there is abundant krill and plenty of blue whales; in others the action is happening somewhere

else. Unfortunately this was a quiet year for blue whales, which in itself was a valuable scientific lesson.

Four community representatives – the selected students – were given a unique opportunity to participate in a globally recognised whale research program, and were introduced to the exciting and diverse marine environment and fauna of the Bonney Upwelling. We believe this broadened their outlook considerably, something of great value for rural youth in south-western Victoria, which has a very low rate of students continuing into tertiary education. At least three of our students have expressed an interest in studying science after school, including environmental science and marine biology, and have told us that their participation in our program has given them the confidence and clarity to want to pursue such careers. Two have also offered to volunteer for BWS in future.

The schools involved have been enthusiastic supporters of the project, which complements and extends what they are able to offer their students. The broader community including school peers, friends and family, has benefited through these young individuals broadening their skills base and life experience and increasing their confidence and self-belief. The community has also benefited from media stories reminding them of the unique marine environment at our back door, and by also being reminded that there are possibilities for local youth to be involved in exciting local projects.

We at the Blue Whale Study learnt a lot about running a youth mentoring program, and thus gained valuable insights into our community educational role. We built positive relationships with the four students involved, some of whom have expressed a desire to remain involved in our research program. We built valuable relationships with local high schools, which have expressed a willingness to participate in future seasons of this mentoring project. We received positive media exposure which inevitably improved our standing within the local community, and is likely to stimulate increased interest in our activities and our research focus, blue whales in the Bonney Upwelling.

Sincere thanks to the Handbury Fellowship for your support of this valuable project.

Dr Peter Gill

14 July 2014.