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Introduction

How does the freshwater runoff affect the salinity of coastal waters and estuaries around Dunedin?

Hypothesis

We think that the water will have a lower salinity level around the inner and outer harbour and a higher salinity level as we go further out.

Method

We went on a boat called Polaris II (Fig 7.), sampling at different sites (Fig. 1) through the harbour and coastal waters. We used the CTD (Fig. 2) and hobo data logger

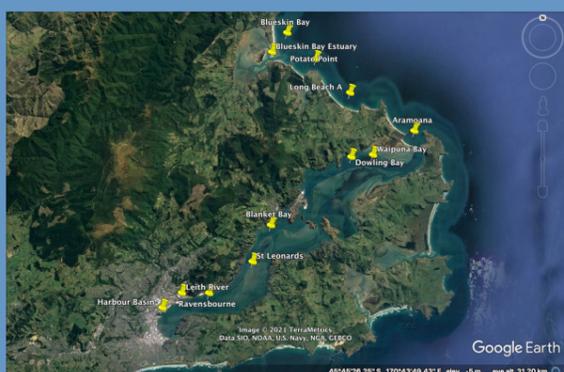


Fig. 2



Results

Fig. 3

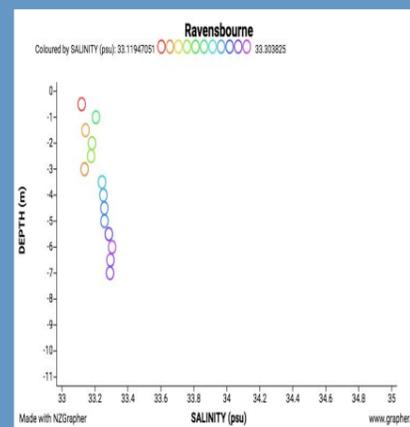
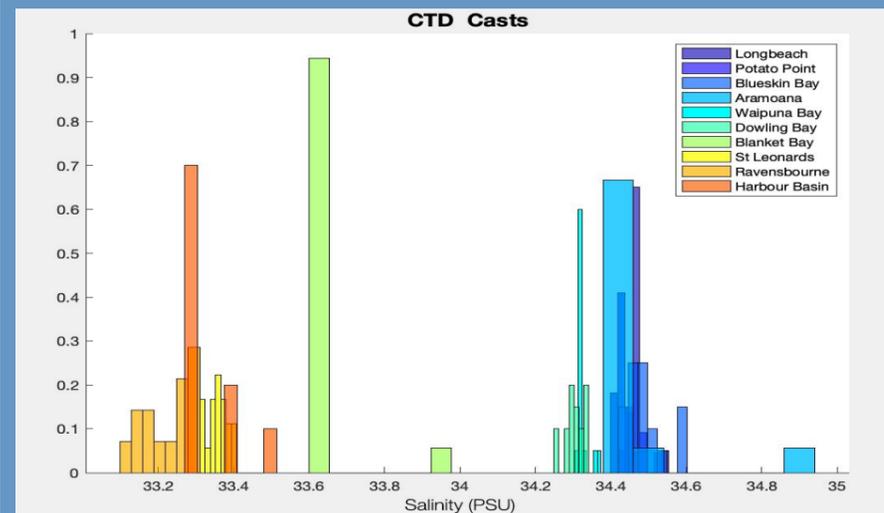


Fig. 4

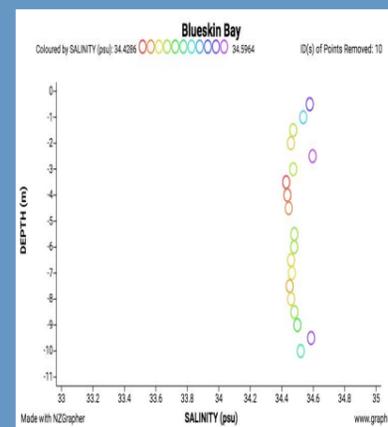


Fig. 5

Fig 3 - Fig 5 show how much salinity is in the water at the inner and outer harbour, coastal waters and in the estuary. We can see that there is lower salinity closer to the city because there is more freshwater runoff. The further out you go the more salinity because less of a human impact

Conclusion

The salinity level in the water was more diluted the closer to Dunedin City and more concentrated the further out we went. This is due mostly to rainwater coming down and flowing into rivers that lead into the harbour or just directly into the harbour. With all water comes lots of waste from farms and the cities. We can see that this affects the waters around Dunedin quite a lot because of the distance between.

If we were to do this experiment again we would look at pH as well as salinity to get a better idea of how freshwater runoff is affecting waters around Dunedin and we would sample more areas.



Acknowledgements

Erik (mentor), Bill (the skipper), Mark and John (the Crew on the Polaris II), Hanna (Program manager), Marine Science Otago, Staff at Quarantine Island, Otakou Marae, Marine Studies Centre, Zaine, Katie, Rob, Uru-Manuka.