VICTORIAN COASTAL MONITORING PROGRAM NEWSLETTER

October 2020

WELCOME

Hello VCMP Citizen Scientists, and welcome to the third edition of the VCMP newsletter. It has been a challenging six months for the VCMP, but with the easing of COVID-19 restrictions in Victoria, we are excited to announce that we will be restarting our Citizen Science Coastal Monitoring! Our top priority remains the safety and wellbeing of our community members, so resumption in the UAV coastal monitoring is entirely optional, and subject to any changes in the state COVID regulations. I am also aware that some people are based in Melbourne, and may need to wait a little longer before they can operate in a regional location. Please note that volunteering is not a valid reason to leave the 25 km travel restriction in Melbourne.

It has been over 6 months since some groups have conducted mapping, so we will be running refresher training for all groups prior to their resumption and checking/updating all equipment to ensure it is operational. I have included a list of proposed dates for the next mapping runs for each group. I will be in contact with each group individually before this time to find out who would like to restart, and to organize the refresher training. You will also receive an updated Safe Work Methods Statement (digital copy to each person, and I will bring a hard-copy with me for your binders). All training and mapping will adhere to the COVID-safe plans in the SWMS and the government regulations. Training will be outdoors, and we have a limit of 10 people who can attend. We will also be able to train prospective new members for any of our groups, so if you know anyone keen to be involved, please let me know.

There has also been a change to the CASA regulations during our hiatus. Many of you will have received emails regarding the registration of drones, and the requirement of a new “Excluded Operations” accreditation. As I visit each group for refresher training, I will be registering your drone with CASA, so you are not required to do so. You will be required to complete the new “Excluded Operations” accreditation, and I have provided more information on that later in the newsletter.

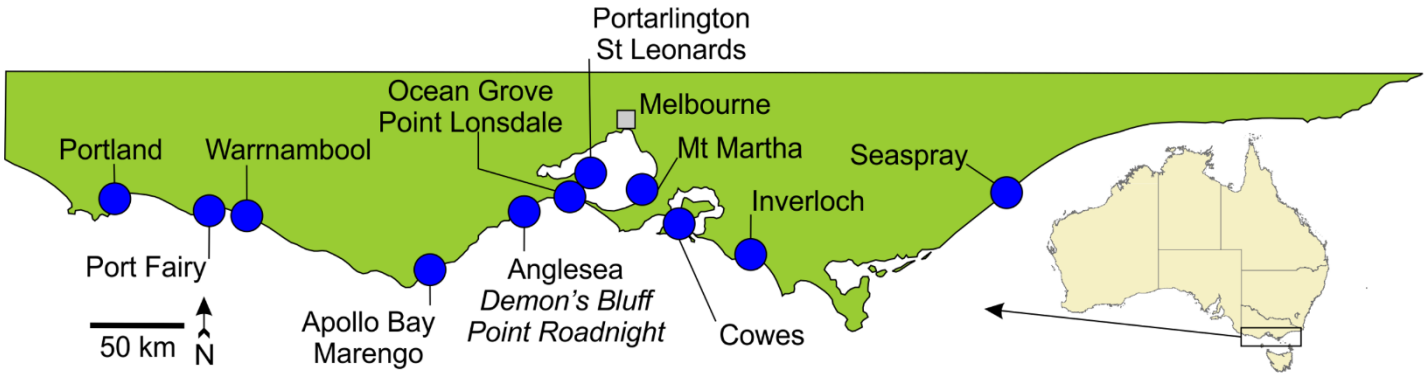
We have also had a slight change to our staff for the last couple of months. Karina has been conducting some bird survey work up in the mallee, so filling in for her has been Benjamin Viola. Ben has been doing a fantastic job processing data and mapping the sites to the east of Melbourne. I’d like to thank Ben for his hard work filling in while Karina has been away. Karina will be back with us near the end of November.

Thank you all for your continued support in the VCMP during some very challenging times. If you have any questions or concerns about resuming mapping, please don’t hesitate to contact me on b.allan@deakin.edu.au

- Dr Blake Allan
  UAV Citizen Science Co-ordinator

PROGRESS

The data collection continues to grow despite all the current challenges! We have hit an amazing milestone of 250 datasets (258 datasets if we include Wild Dog Creek). We are a little behind in data processing at the moment as we've been spending more time in the field to collect, but rest assured that the raw data is being collected, and we intend to catch-up in January. The image below lists the VCMP sites and the number of datasets collected.



Portland (13)	**Port Fairy (21)**	**Warrnambool (20)**	**Marengo (18)**
Apollo Bay (19)	**Anglesea Demon's Bluff (16)**	**Anglesea Point Roadknight (16)**	**Ocean Grove (13)**
Queenscliffe (13)	**St Leonards (16)**	**Portarlington (17)**	**Mount Martha (11)**
Cowes (16)	**Inverloch (17)**	**Seaspray (16)**	*Wild Dog Creek (8)* *Skenes Creek (4)* *Point Lonsdale (3)*

Map depicting all VCMP Citizen Science sites in Victoria. The table indicates the number of datasets collected. Sites marked with *Sci* are also mapped by the Science Team. Wild Dog Creek and Skenes Creek are collected sporadically. Point Lonsdale is only mapped by the Science Team.

At some of these sites, we have interspersed your Citizen Science collection with Science Team surveys. Science Team surveys often cover a longer distance, or in the case of Point Lonsdale, locations not mapped by Citizen Science Groups. Wild Dog Creek and Skenes Creek are beach renourishment sand sites for Apollo Bay, and are mapped when requested by the Department of Environment, Land, Water and Planning (DELWP).

UPCOMING MAPPING DATES

Below are the upcoming proposed mapping dates for each group. Please note that these are only tentative dates, are subject to changes in the COVID regulations, and that you will need to complete the refresher training before mapping independently.

LOCATION	PROPOSED DATE
Port Fairy	09/11/2020
Anglesea	10/11/2020
Portland	17/11/2020
Ocean Grove	19/11/2020
Apollo Bay	20/11/2020
Cowes	23/11/2020
Inverloch	24/11/2020
Seaspray	28/11/2020
Mount Martha	3/12/2020
St Leonards	7/12/2020
Warrnambool	14/12/2020

MEET A VCMP RESEARCHER

Dr. David Kennedy, *Associate Professor, The University of Melbourne*

David is the co-lead of the VCMP and is a coastal geomorphologist who's interests focus on the evolution of coastal landscapes and how they respond to environmental and climatic change. His journey on the beach started very early having grown up on the beaches of Sydney, before embarking on more formal training at The University of Sydney, followed by a PhD at the University of Wollongong. During his PhD he explored the reef and lagoon systems of Lord Howe Island, the southernmost coral reef in the world. He then spent almost 10 years in New Zealand (Wellington) where he thoroughly explored with wild and beautiful landscapes of the North and South Island before returning back across the Ditch a decade ago to The University of Melbourne.

During his career David has produced over 110 academic papers on topics ranging from reef islands in Fiji, Hurricane impacts in Mexico to the Drowned Apostles in Victoria. Using the latest technology has been a core component of this work from ground penetrating radar to isotopic analysis of microfossils and now extensive use of drones. The rapid advances in technology have really shaped his thinking:

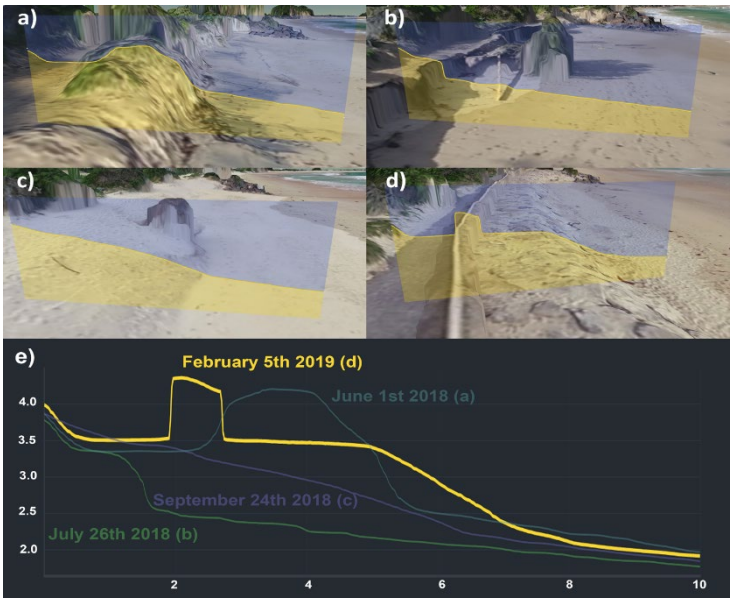
"I remember as a PhD student trying to work out fanciful ways of getting an aerial shot of the reef on Lord Howe. We thought about borrowing a boat and parasailing over the reef with a film camera, but given neither a boat with this capability or a parasail was on the island, we opted for a window seat of the Dash-8 passenger plane that flew us from Sydney. Its just amazing to think how far we have gone in that now we just fly a drone and get a 3D image at cm-scale resolution – I would have killed for that during my PhD – though also may never have left the island to finish the thesis!"

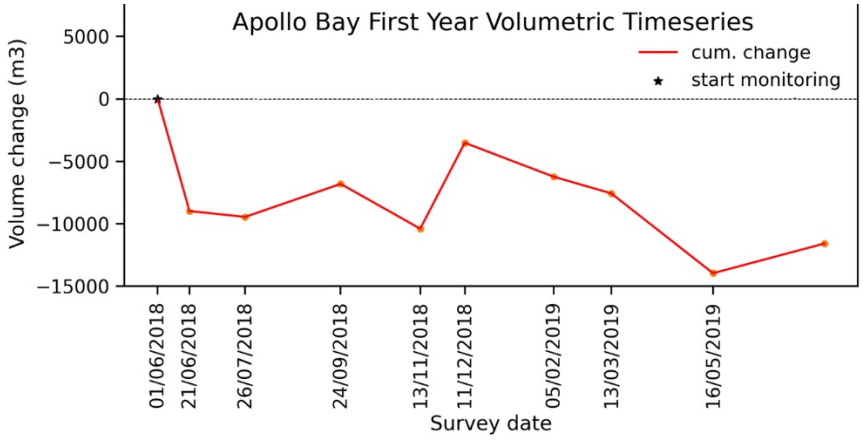
David is also passionate about educating the next generation of environmentalists in the fundamentals of sustainability. In this capacity he is Director of the University of Melbourne's Office for Environmental Programs. It's a cross disciplinary unit founded in 1999 crossing nine faculties. The program is one of the largest graduate coursework degrees in the Science Faculty with over 400 students.

Managing the coast for future generations through grounded and accurate field data has been a driving philosophy of his career.

SITE SNAPSHOT - APOLLO BAY

This issue's Site Snapshot is Apollo Bay. Apollo Bay is a well-known tourist stop on the Great Ocean Road, and picturesque harbour town. It is also one of our most dynamic sites, and one of the most managed in terms of sand renourishment. We first mapped Apollo Bay on June 1st 2018, shortly before a major storm event hit on June 17th-18th. We re-visited the site on June 21st, mapped again, and used the data to both inform management of the storm damage, and demonstrate the volumetric analyses possible with UAV data in PropellerAero. Since then, we've had fantastic engagement from the community, and have established an extremely enthusiastic and dedicated Citizen Science team. I have put together a comparison of 4 time series cross-sections from PropellerAero on the right.





PhD candidate Nicolas Pucino (featured in the first edition of the VCMP Newsletter) has been conducting research using the Citizen Science data to explore the patterns of sand movement at Apollo Bay. The graph on the left displays how the volume of sand has changed on the beach in the first year of monitoring. This graph shows a loss of approximately 9,000 m^3 of sand in the major storm event which happened on June 17th-18th. Over summer renourishment works and natural cycles have seen some increases in the sand budget on the beach, but major storms at the start of May 2019 caused further losses. Nick is continuing this analysis up to the present, building in the volumetrics for renourishment works.

Since the mapping began, there has been extensive works on the Apollo Bay foreshore. Much of the renourishment work focuses on maintaining the beach, and protecting the walking path, trees, carparks, and road which runs close to the beach itself. Sections of the footpath have been rebuilt, a rock wall was constructed along approximately 170 m of the foreshore, and there have been several renourishment events. The renourishment works have been proposed to take sand from the beach at Wild Dog Creek (less than 1 km north-west of where the mapping ends) where it is accumulating, and from an accumulation point directly next to the harbour wall, as shown in the image (left).

EUREKA AWARDS

We are honoured that the VCMP has been announced as a finalist in the 2020 Australian Museum Eureka Awards in the category of "Innovation in Citizen Science". The Eureka prizes are Australia's most comprehensive awards for science crossing all branches and activities from primary schools to individual scholars and of course Citizen Science. 2020 marks 30 years since the awards were established.

Our nomination to the finals is a great testament, and entirely due, to the wonderful dedication of all our volunteers. Without your commitment to flying the coast there would not be a program and the government and public would still be in the dark on what is happening on our beaches. The program is truly a world first!

The winner is announced at the awards ceremony on Tuesday 24th November in Sydney. This year the event is entirely virtual due to the pandemic. This means anyone can attend! You can register at https://australian.museum/get-involved/eureka-prizes/2020-award-ceremony-registration/

We also congratulate the other finalists in the "Department of Industry, Science, Energy and Resources Eureka Prize for Innovation in Citizen Science" The AstroQuest Team and Team Brush-turkey.

Further details on the Eureka Awards and all the amazing science being conducted in Australia can be found at https://australian.museum/get-involved/eureka-prizes/ .

VCMP Award Entry Summary

Citizen-Science drones empowers local communities to actively monitor coastal response to storms and sea level rise through surveying using lightweight unmanned aerial vehicles. In this global first initiative, citizen scientists produce centimetre resolution 3D models showing the resilience of beaches to waves and the effectiveness of management actions.

30-sec overview: https://www.youtube.com/watch?v=l2ujeK3YWg8&feature=youtu.be

RPA OPERATOR ACCREDITATION

CASA have introduced a new < 2 kg accreditation called the "RPA Operator Accreditation". The accreditation is an online test of 18 multiple-choice questions regarding the rules and regulations surrounding the < 2 kg Excluded Category. You must get 16/18 correct to pass (85%). If you fail, you can re-sit the test. The time limit for the test is unlimited, but 30 minutes is recommended. CASA have developed both a video and a pdf document which cover the regulations. I will also cover this information in the refresher training. We recommend using a computer to do the test if possible (not a phone or tablet/iPad). Further information about the accreditation can be found here: https://www.casa.gov.au/drones/accreditation

This new accreditation is live now, and must be obtained by all Citizen Scientists who wish to fly the UAVs by ***January 28th 2021***. You are not required to complete the RPA Operator Accreditation if you have an RePL drone license. Once you complete the accreditation, you must carry a copy of your certificate (or RePL) on you while flying. Please also submit a copy of your accreditation/RePL certificate to Blake and Kimberley (b.allan@deakin.edu.au kimberley.macdonald@delwp.vic.gov.au) for our records.

ASK A RESEARCHER

In future editions of the VCMP Newsletter, we would like to provide an opportunity for you to engage with our research team and ask any questions you may have. If you have a question, please email it to vcmp@deakin.edu.au with the subject line "Ask a Researcher" and we'll do our best to answer them and include them in the next issue. Please indicate in the email if you would like to remain anonymous.

SHARE YOUR STORY

If you, or your Citizen Science group would like to share your story or an article or photos about your group, we would love to include them in our next edition. Send your ideas and photos to vcmp@deakin.edu.au with the subject line "Content for VCMP newsletter" and we'll be in touch to include your content in the next newsletter.

OTHER MARINE AND COASTAL NEWS

Interested in hearing more about the work being undertaken in marine and coastal management in Victoria? The quarterly 'DELWP marine and coasts newsletter' shares news about DELWP's work across the marine and coastal space, from policy and strategy to coastal protection projects. The newsletter also includes Coastcare Victoria's 'Coastline' publication.

For the latest issue and to subscribe visit marineandcoasts.vic.gov.au/newsletter.

CHALLENGES AND UPDATES

There is not much to report on challenges and updates at this stage, but in light of the reactivation of our community groups, I encourage all groups to check and charge their equipment, and please sit the AeroPoints outside for 2-3 sunny days (minimum 4 hours each day) to check they are still working. Below is a reiteration of useful information:

AeroPoints not turning on – The AeroPoints are a great piece of new technology, but their very pioneering aspect means they have a couple of issues. If your AeroPoint won't turn on, please sit it outside in the sun for 2-3 days. If it still won't turn on after this time, please let us know via email (vcmp@deakin.edu.au).

Lastly, we have some suggestions to help with longevity of the equipment:

1) Please wipe down the UAV, iPad, controller, and batteries with a dry cloth to remove sand and salt
2) Please clean the solar panel on the AeroPoints with a damp cloth
3) Please switch your charger to "Storage" and place all the batteries into a storage charge
4) Please charge the controller and iPad to full, then switch off the iPad
5) Please sit the AeroPoints out in the sun for a day (turned off) every 3 weeks or so.

If you have experienced any other difficulties or challenges you would like to share, please contact us at vcmp@deakin.edu.au.

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