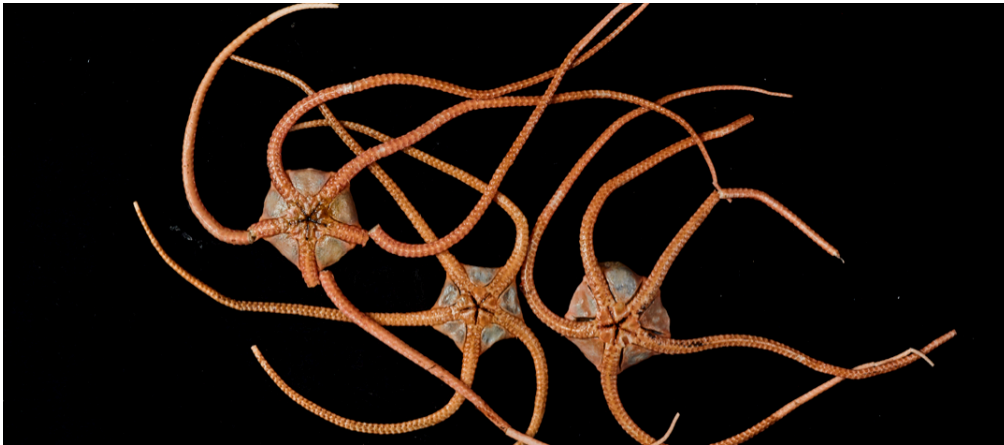


INVESTIGATING THE IOT EDUCATION & OUTREACH

IN2021_V04



Brittle stars photographed on board RV Investigator during the Investigating the IOT voyage in June/July 2021. Photo Credit: Nish Nizar, Museums Victoria.

SHARING SCIENCE THROUGH VIDEO-CHATS AND SOCIAL MEDIA.

BushBlitz joined scientists from across Australia for a scheduled 45-day research voyage to describe the seamounts around Cocos and Christmas Island (Australia's Indian Ocean Territory, IOT) and the inhabitants of these unique ecosystems. Led by Chief Scientist Tim O'Hara from Museums Victoria, RV *Investigator* departed Darwin on 10 July 2021 and was scheduled to finish the trip 10 August 2021 in Fremantle. However, the voyage was shortened as a precautionary measure for the ship's

high-pressure compression equipment to undertake a review, resulting in the ship docking in Hobart on 29 July. The second half of the voyage will be rescheduled as soon as feasible.

A key component of BushBlitz's involvement was education and outreach through live ship-to-shore communications with Australian schools and engaging with the public through social media posts. While the shortened voyage presented challenges to some of the planned outreach activities, over 350 students were still

given the opportunity to talk live with scientists on the ship- and many more have access through the online Adventure Portal, featuring videos made on board RV *Investigator*. The interest in ship-to-shore participation from schools was high, with initial enrollment of over 1000 students before the research program was shortened. This report details the interest in the voyage (original enrolments), completed education programing, and social media highlights.

“This type of interaction can sow the seeds for future careers and exposes many to the operations of science. The interface between scientists and the community is extremely important in the development scientific literacy” –Teacher on ship-to-shore live video session



R. French, Museums Victoria

OTHER VOYAGE OUTPUTS

Maritime Times Article

An article written by A. Abbott featured in the *Maritime Times* of Tasmania June 2021 highlighting the upcoming voyage. Part of a special ‘maritime occupations’ issue, this piece on the Investigating the IOT voyage highlighted oceanography as an occupation. The article highlighted how much of the ocean is yet to be described with a specific focus on seamounts and why they are important to understanding marine biodiversity. There is an open invitation for a follow up piece in the December issue.

Voyage Brief

Join the adventure, from the comfort of your living room! This document, targeted for school kids walks them through what they would be doing if they were joining the ship in Darwin. From the motivation behind the voyage to what to pack, the document also highlights some of the key considerations for life at sea and features some of the state-of-the-art equipment available to scientists on board RV *Investigator*. Find the brief in the Adventure Portal!

Meet the Creatures

This poster features ten of the most popular creatures from our social media campaign on an easy to download single page on the trip’s Adventure Portal. From the bioluminescent parasite the cookie cutter shark to the Disney inspired Dumbo octopus, this document demonstrates a range in biodiversity and highlights one or two cool facts for each species shown.



Photo: Nish Nizar, Museums Victoria

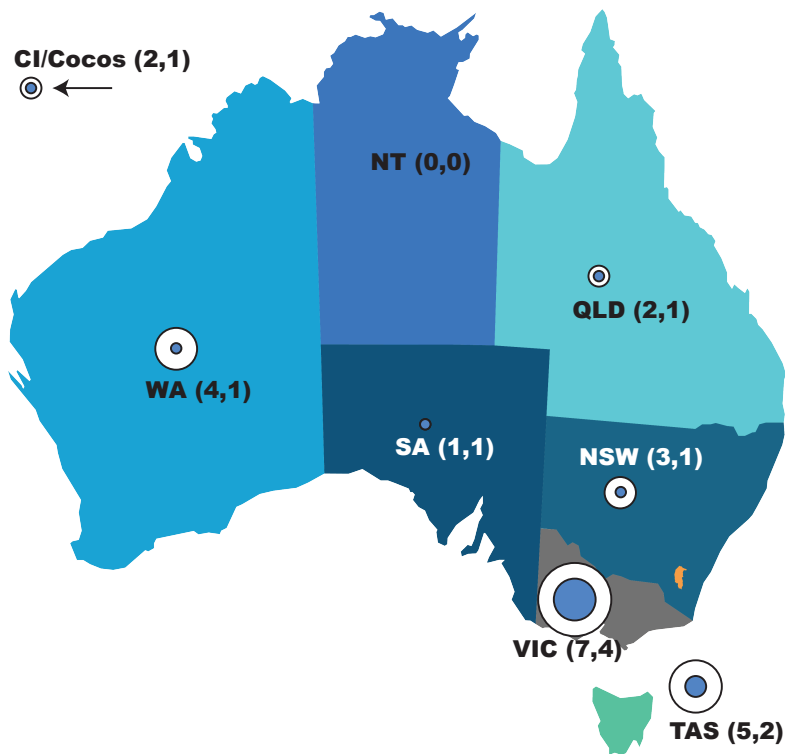
6 STATES/TERRITORIES, 10 SCHOOLS, OVER 350 STUDENTS

During the shortened research program, BushBlitz successfully ran ship-to-shore live video chats with 10 schools, several of these schools including multiple classrooms in the opportunity. These schools (listed below) represent New South Wales, Queensland, Victoria, Tasmania, and Western Australia as well as Christmas Island.

- Broome Senior High
- Mirboo North Secondary
- Warrandyte Primary
- Lyndale Greens Primary
- Hunter School of Performing Arts
- Bialik College
- Kingston High
- Caboolture East State
- Launceston Christian
- Christmas Island District

The teachers highlighted the opportunity’s alignment with classroom curriculum in topics such as biodiversity and the classification of life. Others used the live cross to build student interest and talk about scientific research and how discoveries are used to inform personal and community decisions. Students ranged from year 2 to year 12 with classes across subjects, including environmental science, biology, and marine science as well as all around primary school classrooms. The majority of classes participating were in years 5-6 (4 classes) and years 7-9 (7 classes). The student numbers do not include the two Christmas Island classrooms.

Continued page 4



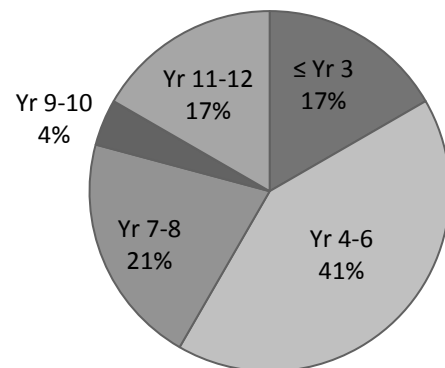
Classroom Reach

This map shows the number of schools by region for the live ship-to-shore classroom video chats. Due to several last minute changes including ship itinerary shifts and rolling state lockdowns, in most cases the number of schools that were actually able to complete their scheduled session is lower than the number that signed up. This metric is presented by school instead of by classroom because in many instances a single teacher signed up for multiple classrooms to join in (e.g. 1 teacher signed up all 6 of the school's year 6 classes). Numbers are indicated by circle size (signed up in white and completed in blue) and in text (scheduled, completed).

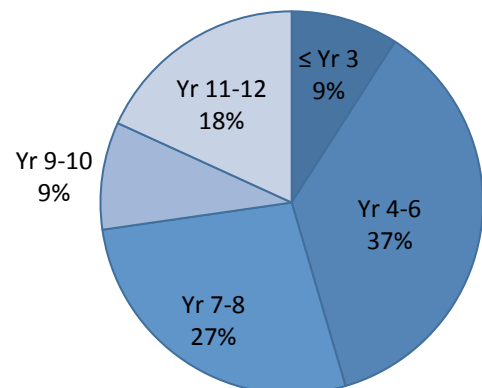
TEACHER LINKS TO CURRICULUM:

- Scientific understanding, discoveries, and inventions are used to inform personal and community decisions
- Diversity of life and classification
- Biodiversity- using seamounts as a case study
- Science is a human endeavour
- Man's impact on the environment- climate change implications on the ocean and its inhabitants
- What does a scientist do day to day? And how do they use technology?
- Scientific careers and education pathways

Scheduled (by age*)



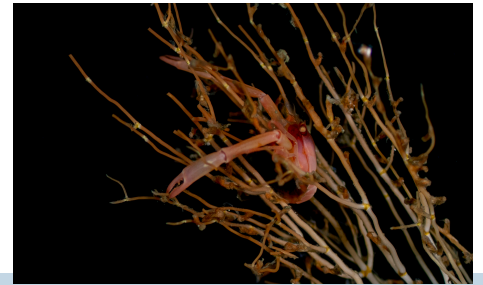
Completed (by age*)



*Not normalised by class size

Initially, we had 23 schools committed to participating in the program. This cap was set due to logistical constraints (timing, science party availability) and reached within 72 hours of the sign-up link going live on the Earthwatch Australia website. These additional classrooms included representation from South Australia and would have brought the total student count to over 1000. Of the classes, about a third of the interest came from biology, a third from environmental science, and a third from general

education. Geography classes were only a minor component. The highest interest was in years 4-6 (10 sign ups), followed by years 7-8 (5 sign ups). Both year 3 and under as well as year 11-12 had 4 sign ups and year 9-10 only had one school registration. Class sizes ranged from 12 to 250 pupils. This range reduced to between 12 and 80 pupils in the classrooms that ultimately participated. The shortened voyage duration combined with rolling lockdowns in several states caused the reduced session availability.



CREATURE FEATURE!

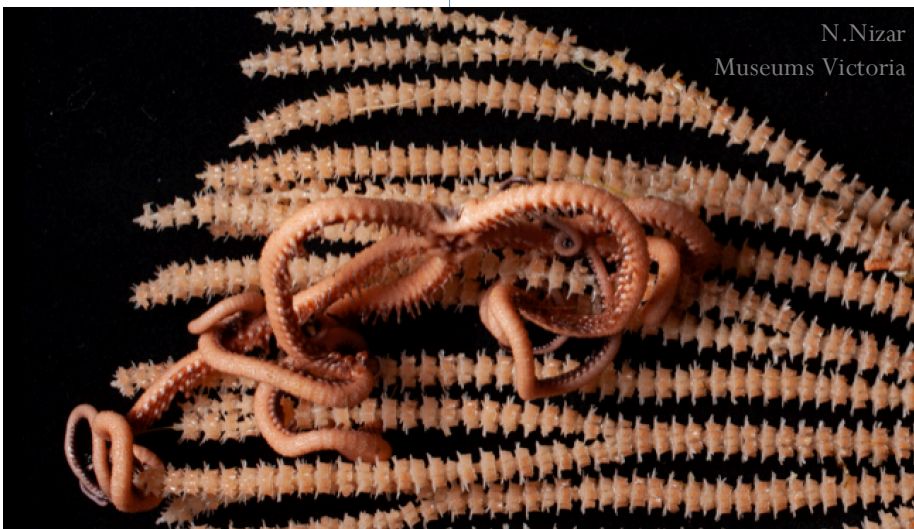
Top Performer: The Squat Lobster (photo R French, Museums Victoria)

A recurring highlight on social media for the voyage was our Creature Feature, spotlighting some of the incredible deep-sea life encountered by the science party during the voyage. With over 3,300 Twitter impressions, the Squat Lobster was our most popular creature highlight. Most creature features received about 2,000 impressions. The Cookie Cutter Shark ousted the Squat Lobster for Facebook popularity with almost 500 post impressions.

MEET THE SCIENTIST

Another recurring social media highlight, the static posts were popular (typically between 800 and 4,000 twitter impressions) but the short video clips brought in the biggest audience. The clip on Environmental DNA with Dr. Katrina West brought in nearly 13,500 impressions on Twitter! On Facebook, most #InvestigatingTheIOT posts got between 200-400 views, but our Meet the Scientist post with Andrew Hosie of the Western Australia Museum was the most popular of the series with nearly 1000 impressions.

More social media statistics on page 4-5; Report prepared by A. Abbott



LOGISTICAL CHALLENGES:

- *Scheduling:* Classrooms generally had limited availability (1-2 time slots during the 45 day period); Often first or second class session after students returned from school holidays preventing any pre-video chat preparations
- *Software:* Some schools had more restricted options on approved video-conferencing software; Zoom seemed to be more reliable connection; Best if avoided overlap with media and other high ship broadband demand periods so video conference could have priority I-pad
- *Approvals:* All photos/social media from the ship and related to the voyage had to go through a series of approvals prior to release

TWITTER STATISTICS:



Twitter analytics provides monthly numerical summaries which include total tweets, impressions, profile visits, mentions, and new followers. They also identify the top tweet and top media tweet (must include photo or video) based on the number of impressions each post that month received. Additionally, the top mention is provided based on the number of engagements. Data is provided for the last year (October 2020 to September 2021). The first voyage related tweet went out in May 2021. Each time a voyage related tweet was ranked top overall 'tweet,' top 'mention,' or top media 'tweet' for the month is marked with an 'X.'

Month	Tweets	Impressions	Profile visits	Mentions	New Followers
September	9	12600	506	17	7
August	37	46000	1989	39	19
July	55	115000	2130	54	35
June	64	66900	2555	14	40
May	12	7570	488	16	12
April	3	7700	635	20	13
March	63	38400	1861	42	16
February	23	20900	369	16	15
January	17	9368	351	22	4
December	8	11000	297	21	4
November	22	18600	496	21	14
October	19	14800	45	11	6

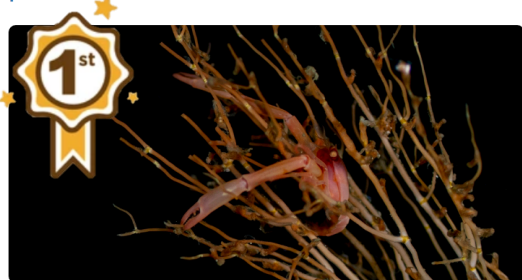
V04 Topping the Charts

Month	Tweet	Mention	Media
September		X	
August		X	X
July	X	X	X
June	X		
May	X	X	X

Top media Tweet

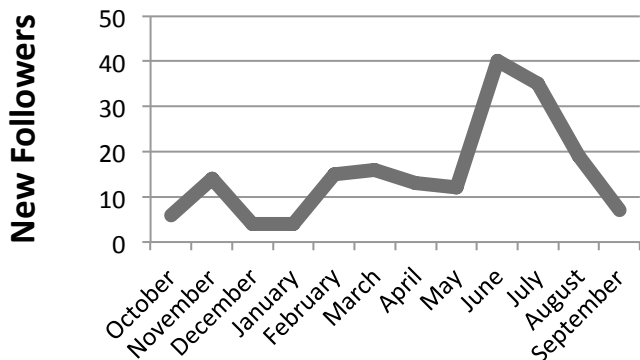
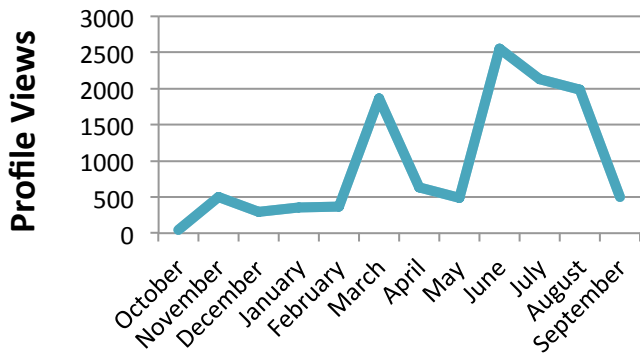
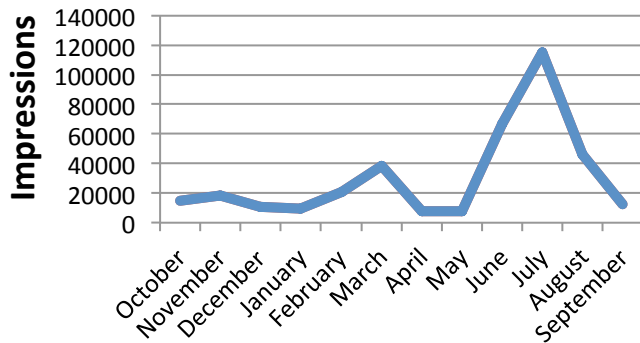
earned 3,361 impressions
Time for another [#CreatureFeature!](#) DYK Squat Lobsters are more closely related to hermit crabs & mole crabs than lobsters. The claws can be 2x the length of their body, making them look like Edward Scissorhands! /2

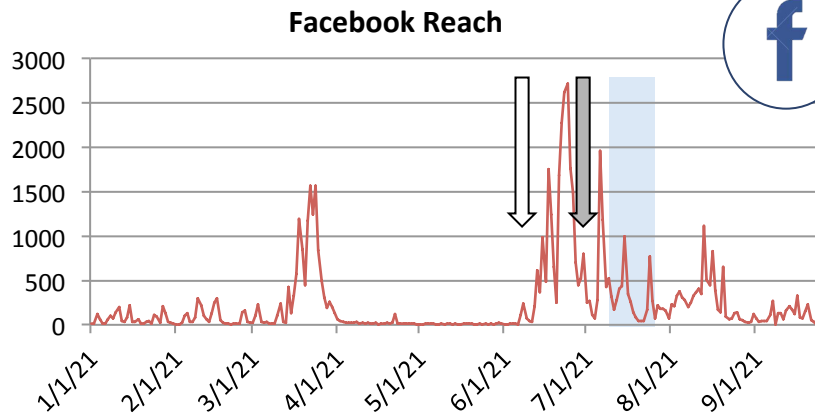
R French [@museumsvictoria](#)
[#InvestigatingTheIoT](#) [#RVInvestigator](#)
pic.twitter.com/hKZFJsENHE



← 1 ↻ 3 ❤ 7

(August 2021)





Facebook Reach

This estimated metric reflects the number of people who saw any content from the Bush Blitz page or 'about your page.' This includes posts, stories, advertisements, and more. Reach is different from impressions because impressions would count multiple views of one or most posts by the same person.

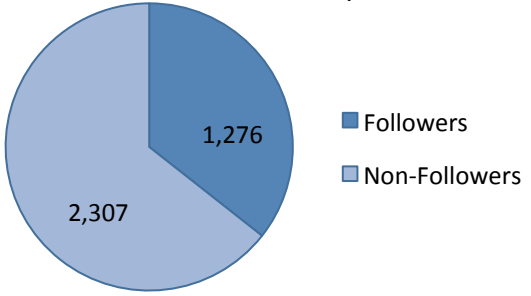
Reach (number of different people) of Bush Blitz Facebook posts from January to September 2021. The first voyage related post was on World Oceans Day (8 June, white arrow) and the 'Welcome Aboard' post was on 30 June (grey arrow). The time RV Investigator was at sea is highlighted in Blue. The lead up to the voyage overlaps with Bush Blitz field work in Groote Eylandt.

Instagram Reach

Similar to Facebook, Instagram Reach is a metric to understand the number of people viewing content. However, Instagram lacks the flexibility in reporting available through Facebook therefore all numbers presented are 25 June through 22 September 2021 as it compares to 27 March through 24 June 2021.

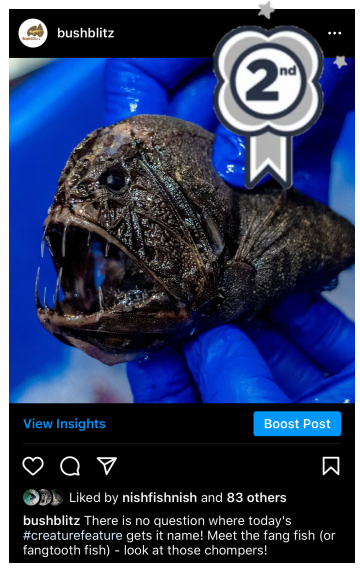
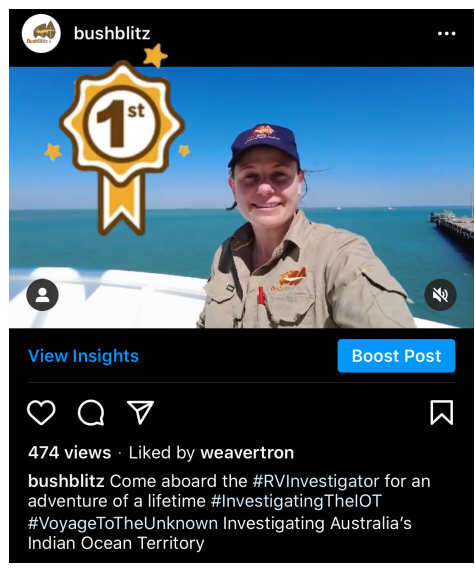


Instagram Reach



Bush Blitz Instagram had a **79% increase** in accounts during June-September compared to the 3 months prior. It reached **181% MORE** accounts that were not followers.

- 6 of the top 9 posts were related to the voyage
- BushBlitz had 26,382 impressions, a 92% increase from the 3 months prior
- Profile visits were up by more than 40% and website taps increased by 229%
- Top post viewed by >1000 different accounts



The top two highest-reach Instagram posts were voyage related:

-In first, with a reach of 1,014 Dr Kate's welcome aboard video!

-In second, the #CreatureFeature of the Fangtooth Fish with a reach of 896.