Asian School of the Environment

Newsletter

August 2021

Instagram: @ntu_ase Twitter: @ntu_ase, Facebook: @ntuaseofficial

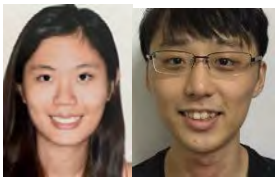
Welcome to a new academic year! Highlights in this month's newsletter include newly graduated PhD students, a conservation award, and an interview with ASE alumni Emelyn Ang.

The ASE web page is our face to the world in these days of social distancing. However, it is still being built up after being transferred to a new platform earlier this year. At this point we ask you to take a look and send your constructive feedback, suggestions and corrections for any part of the ASE web page directly to Anna (alagerstroem@ntu.edu.sg) or Kianhua (kianhua@ntu.edu.sg). Thanks!

Staff turnover

Alison Lau

Adela Annalisa and Michelle Lee Zi Yi



Law Mei Ting and Kenneth Song

Welcome to ASE

Thankfully, we have a new computer support officer in place already (replacing Sueping). Big thanks to those who contributed to making this happen so fast! **Alison Lau** joined ASE on 21 July as assistant Manager, InfoComm Infrastructure. She will be managing user support and computer labs at ASE. Scroll down for an interview with Alison in the MSO section below.

There are three new additions to Federico Lauro's lab: **Nur Hazimah Binte Mohamed Nor** has joined as a Research Fellow, **Adela Annalisa** as Project Officer, and **Michelle Lee Zi Yi** as Research Assistant.

Law Mei Ting joins EOS as Research Assistant in Benjamin Horton's team, and **Kenneth Song** joins as Research Assistant working with Patrick Martin's team.

You may have noticed that **Jacqueline Koh** is currently the interim Secretary to the ASE Chair, and she will remain in this position until 31 December 2021. During this period, she is seated at ASE Chair's office (N2-01C-40). Please approach her for any administrative matters pertaining to ASE Chair's Office. Wong Chun Yu is still around and currently handling ASE Finance and CoS Research Grant Admin portfolio.

Good bye

Our positive and hard working UG academic officer **Janice Tan** is leaving ASE, her last day was 31st July. We send a big warm thanks to Janice for her great commitment and service since she joined ASE in Aug 2016. We wish you all the best in the future as you take up your new position in pharmaceutical research. Take care, stay in touch and come back to see us some time! A search for Janice's replacement is ongoing.

Awards and Recognition

Anushka Rege, PhD student at ASE.

Congratulations to **Anushka Rege**, who is the 2021 recipient of the Navjot Sodhi Conservation Research Award from the Association for Tropical Biology and Conservation (ATBC). The award is presented on an annual basis to a student from a developing country conducting research in tropical conservation biology. It was created in remembrance and recognition of the Navjot Sodhi, a prominent conservation biologist at NUS who inspired many students and colleagues with his passion for research and the conservation of tropical biodiversity. Anushka won with a research project titled "Evaluating the socio-environmental impacts of cashew monoculture expansion in northern Western Ghats, India".

Meetings and workshops

- Resilient and Livable Cities Lab (led by **Perrine Hamel**) has been selected as the Regional Curator (South East Asia) for the upcoming Innovate4Cities Conference 2021. The lab's involvement has been spearheaded by **Devansh Jain**. The conference is a virtual global and regional event that promises to bring together science and innovation, policy and practice united by a common objective: enabling cities to take accelerated and more ambitious climate action. The Call for Submissions are open until 4 Aug 2021.
- **Janice Lee** is organising a **Google Earth Engine workshop** along with others from various universities on 13 Sept 2021. This would be held in Singapore virtually and co-located with the Singapore Land Authority Singapore GeoFest.

ASE/EOS JEDI

*The ASE/EOS JEDI committee has an active Slack group. Please contact any of the JEDI committee members if you want to know more! Check out their chats and material on **Slack** (JEDI@ASE/EOS).*

- The JEDI committee is planning a **town hall for all students, faculty and staff** from ASE/EOS on 11 August (17:30–18:30) — we hope you'll attend. Stay tuned for an e-mail with additional details.
- In August, we will begin holding **weekly coffee breaks** on various JEDI topics, and later in the semester, we're planning a fun, interactive training on issues such as unconscious bias. Again, we'll announce details soon.

The ASE JEDI committee

- The **JEDI seminars** will resume this semester — look out for e-mail announcements from the regular ASE seminar account. If you have ideas for speakers, please contact Gina (GINA0007@e.ntu.edu.sg) and Clarence (SIMW0034@e.ntu.edu.sg).
- We're also working on a **survey to assess the "climate" of JEDI matters** within ASE and EOS. With this survey, we hope to get candid feedback on how our school is doing on JEDI issues, and to give all of you an opportunity to provide anonymous feedback if there are any areas of concern.

Faculty

- First a reminder to all faculty of the recurring **virtual faculty gatherings/coffee breaks** at 1:30pm on Wednesdays. Zoom links are sent out by e-mail. Thanks to Janelle & Perrine for organizing and encouraging social engagement in these times of so much enforced social distancing!
- Assessment at ASE is about to get even better as **Perrine Hamel** embarks on her newly awarded **Edex project**: *Evaluating the effectiveness of authentic assessment for environmental sciences in higher education.* Congratulations to the grant!
- **Shawn Lum** has assisted in the production of an **MOE-H3 Biology Webinar Series**. In a letter of appreciation to ASE, Mdm Yin Lee says that Dr Lum's "sharing and video have contributed to fulfilling and enriching learning experiences for both students and teachers. The SLS lessons that were produced from his sharing and the video are also invaluable resources for students especially in light of the increased emphasis on blended learning." Well done, Dr Lum! 😊

Dr Lum teaching in the field.

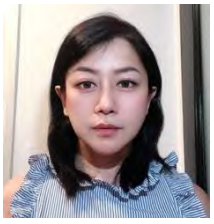
MSO

Elaine Lee will lead the Research Agreements team for CoS.

Congratulatioins to our senior administrator **Elaine Lee** who has been appointed to lead the new **CoS Research Agreements Team**. The Research Agreements team is part of the CoS Research Admin Consolidation exercise, aiming to streamline Research Agreements operations across CoS schools. Thankfully Elaine's new role is concurrent with her current role in ASE.

Monthly MSO mini interview

Over the next few months we will get to know some of the MSOs better through a series of mini interviews. This month we caught up with the new Assistant Manager, InfoComm Infrastructure (replacing Sueping), **Alison Lau.**



Alison Lau is glad to be working with ASE again

Welcome to ASE! Where have you worked before (I heard you are not entirely new to ASE)?

My last 3 workplaces were at Hewlett Packard Enterprise, Bank of Singapore and Tivo Technologies. It was at Tivo where I worked with ASE (known as DES then) on an Apple Time Machine backup project.

and we are glad to have her! 😊

Stay calm, take a deep breath and wait at least three seconds before you do this, says Alison Lau. (shutterstock_565025776)

Alison plays golf 😊

What is your impression of ASE so far?

ASE left a deep impression since the last time I had project work here, and it's all good vibes. Everyone is friendly and caring, and the research work done here exemplifies the love that we have for planet Earth. I'm very happy to be back here in ASE to support the division on IT matters.

You will be managing user computer support and computer labs at ASE. Do you have any tips for us how to avoid computer problems?

Hmm, I do have some tips, for different scenarios, but for starters, try to stay calm and take a deep breath (at least 3 secs) when you encounter an issue. You may ask why 3 seconds? Not too long ago, I have learnt from the storage disk manufacturers that it takes approximately 2.3 secs to read/write data to/from a magnetic disk. This timing is standard, even if you have the fastest CPU instructing the read. So, it may not be a computer problem, it's just "doing its thang", doing its job.. albeit a bit slower as the computer gets older… Fast forward to today, we have very fast hard disks, (they are called flash drives now), but the 3 second rule still helps give a chance to the computer to "do its thang".. Hope this tip is useful 😊

What do you like best about your job?

I like to make the complicated look easy and help others tap on technology to improve our quality of life.

Finally, what do you like to do in your spare time (any hobbies, interests, or interesting facts)?

Wow, I do have a lot of hobbies, but not enough time. My top 3 indulgences now would be cooking, singing and playing golf. And when I get the chance, I would like to ride my motorbike and embark on a road trip visiting Malaysia, Thailand, Cambodia, Vietnam, and blog on the culture and culinary experiences in those countries.

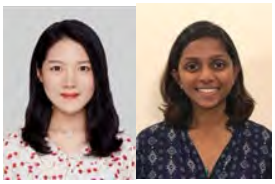
Undergraduate students

Convoncation ceremony for 2020 graduates in March 2021.

Congratulations to all graduating students! The convocation ceremony for ASE will tentatively be held on 24 August at 1pm (fingers crossed it can go ahead as planned).

A warm welcome to all new ASE students! The ASE Freshman Orientation Programme starts this week, and we look forward to a report from it in the next newsletter.

PhD students



Zhang Yilin and Manimaram Sonali are ASE graduates returning to ASE do their PhDs.

Current postgraduate representatives for ASE are Vanesa Burgos Delgado and George Williams.

Dr Constance Chua

Screenshot from Constance Chua's PhD defense.

Welcome new PhD students!

A warm welcome to all the 14 new PhD students enrolled in the August intake! Whether you are an international student or a local, maybe even an ASE graduate, we hope that you will have four enriching years with ASE. See advice for new PhD students in the interview with Constance below 😊

New PhD representative wanted

This month one of the two ASE postgraduate representatives will be stepping down and we will be seeking a new student to fill the role. The primary responsibility of a PG Rep is to communicate important news and issues between ASE faculty and the growing ASE graduate student community. This requires a student who is approachable, open-minded and can confidently voice student opinions. For details on time commitments, specific responsibilities and the potential benefits of this role, there will be a longer message sent out to the community in the coming week.

Congratulations to our two new doctors

Congratulations to **Dr Constance Chua** and **Dr Molly Moynihan** on successfully defending their PhD theses on the 4th and 14th of June respectively! Below we catch up with both of them to find out more about their PhD experience.

Constance Chua did a PhD on coastal hazards focusing on the impact of the 2011 Tsunami in Japan on port infrastructure. This is an extract from an interview with her published in the ASE news blog.

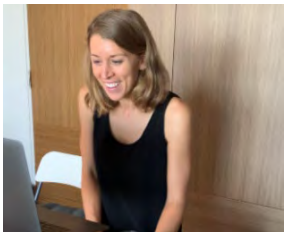
What are the most important things you have learnt from your PhD days?

One of the things I have learnt is that it is most important that you take ownership of your work. You are training to become an independent researcher during your PhD, try to master as much as possible every area of your thesis work. Be active in your learning!

Do you have any advice for prospective or new PhD students?

Well, I have many! I have thought about this a lot while I was writing my thesis in the last year. One advice would be that we can learn by making mistakes. We are not expected to be an expert in our field on the very first day of PhD, so do not feel the need to hide your weaknesses. Definitely have the courage to ask and sometimes, you get a clearer and more straightforward answer than you would trying to find them through literature.

Making friends would also be an added bonus to your PhD life. I have made friends who have been very supportive of my endeavours. Through them, I have also learnt



Molly Moynihan at her PhD defense.

Celebrating Dr Moynihan. (Note that the picture was taken when SMM allowed groups of 5 people).

Diver and giant coral. Photo: EOS/M. Moynihan

ASE PhD student Xu Jiamin representing NTU at the Singapore Athletics All-Comers Meet 3. Photo credit: Ng Kok Leong of SG Running Pictures

a lot about the field and about research in general. My friends have made my PhD life not only bearable but in fact, very enjoyable. These were some of the best years of my life. Ultimately, I would encourage everyone to make the most out of their PhD experience.

What's next for you?

I will be starting my new position as a research fellow with the Earth Observatory of Singapore. I will be part of the SEA2 program which is a big project that EOS has undertaken to improve our understanding of sea level and sea level extremes in South East Asia. I am quite excited to be part of this project, where I can apply some of my findings from my PhD to the South East Asia context.

The title of Constance's thesis is: *Understanding the Response of Coastal Infrastructure to Tsunami Impacts.* You can find out more about her research in the ASE web news: Preventing future tsunami impact on major Asian ports by characterizing the Tohoku port response – new PhD thesis from ASE

Dr Moynihan did a PhD on nutrient cycling in corals. Molly, what were the best and most challenging things about your PhD? And what are your future plans?

The most challenging thing about my thesis was balancing intensive fieldwork and lab work. Fieldwork can be so mentally and physically consuming that it's hard to have the energy and time for lab work! But I would also say this is the most rewarding part of my work because working in the field provided me with important insights into the environment I was studying, which really shaped the decisions I made back in the lab. The last year finishing up was also challenging, especially with all the uncertainty and stress surrounding the pandemic. Now that I've "crossed the finish line", I feel very proud of the work that I've done while a part of EOS/ASE, sad to leave behind so many wonderful colleagues and friends, and excited for my new postdoc position at the Marine Biological Laboratory in Woods Hole (although I'm definitely not looking forward to having winter again)!

The title of Molly's thesis is: *From the microbial to the mechanical: environmental impacts on coral nitrogen cycling, microbial communities, and skeletal properties*. You can find out more about her research on the EOS Blog: How Strong are Singapore's Reefs?

Xu Jiamin – PhD Student athlethe

As a member of the NTU Cross-Country team, ASE PhD student **Xu Jiamin** represented NTU at the Singapore Athletics All-Comers Meet 3 in April, where she finished first in the Women's 5,000m run! (One of the few races that was not cancelled due to the pandemic this year). NTU has many sports teams, both competitive and recreational, that students can join depending on their interest. To the question if she has always enjoyed running Xu Jiamin answers: *"I actually disliked running when I was younger but only picked it up as an adult, and gradually grew to like it! I guess I enjoy it now because I can challenge and set goals for myself, and my daily runs help with both my physical and mental well-being. And it doesn't*

take much to pick up running, just some attire and a good pair of shoes, and you can do it anywhere!"

ASE/EOS Research fellows

No updates from the post docs/research fellows this month, but some of them made it into the publication and outreach section below.

The ASE Alumni Association

ASE alumni Emelyn Ang works as a Geoscientist at ERC Equipoise.

Emelyn was inspired by Prof Judith.

ASE Alumni Association
On LinkedIn
https://www.linkedin.com/in/aseaa/?originalSubdomain=sg
On the NTU website
https://www.ntu.edu.sg/alumni/associations/school/aseaa
On the ASE website
https://www.ntu.edu.sg/ase/alumni
Email
ase_alumni@ntu.edu.sg

Monthly interview with ASE Alumni

This month we catch up with the current treasurer of ASE AA, Emelyn Ang from the Geological/Engineering Consultancy Micro-Network.

Where have you been since your graduation?

After graduation, I continued as a Geoscientist at ERC Equipoise, an energy consultancy which I had previously interned at. My main responsibilities revolve around geological and geophysical data management and analysis. I work with a diverse team of engineers and economists to understand and assess the subsurface and the assets associated with these geological formations. While the consultancy has its roots primarily in the oil and gas industry, we also provide services such as GHG emissions assessments and Carbon Capture and Storage (CCS) advisory.

Who was/were your inspiration in ASE?

Prof Judith, with her great love and enthusiasm for the processes of the earth beneath us! I had the opportunity to take her Structural Geology module and thoroughly enjoyed learning about the subsurface. Little did I know, the little lab exercise we did on examining seismic data and proposing where we might drill a well to test for oil would be so relevant to my job later. At that point in time, it was just so fun to play earth detective in her engaging lab work, it made me more interested in pursuing a career that would allow me to continue doing so.

What do you miss about ASE, if at all?

I miss being with my fellow ASE schoolmates! While I did have fun observing, sketching outcrops and frantically writing notes as the profs lectured during our many fieldtrips, the thing I miss the most after graduating is the company. We are still in contact, but we are each on different paths of life now. It is difficult to meet up in between work and many other commitments in life. During our fieldtrips, I got to experience communal living with them: something I might never get to experience again. Everyone was doing their part to help the group, as we were all stuck in the same place together and working towards the common goals of learning and handing in the work whilst enjoying as much as we could.

Tell us some lifestyle changes you have experienced since graduating and starting work!

Micro-networks in AA
Environment & Environmental Consulting
Academic Research & Education
Geoscience Consultancy
Corporate Sustainability & Governance
Business, Entrepreneurship & Technology
Public & Civil Service

As I started working full-time around when Covid hit us, a lot of the lifestyle changes stem from the covid restrictions rather than work itself. That said, I get to work from home and can be close to my parents and nephew throughout the day, which has been a huge plus.

One major change directly from starting work is the lack of time to do things now. We had more free time as students to waste away, but every hour and weekend is now so much more precious. My messy sleep schedule has also had to change: gone are the times I can sustainably rush on a project for several nights and days on end. It is no longer merely a 3-hour lecture I have to power through after an all-nighter, but a full 9 hours that should be spent being productive and not dead.

Famous last words for this interview?

Cherish and make full use of what time we have now and it will leave less to be desired in the future.

Some recent outreach and publications from ASE

ASE/EOS authors are in bold. The list is not in alphabetical order and does not aim to include all published papers from ASE/EOS, but to give a taste of the incredible diversity of topics we publish on with some recent examples. Have a recent publication or outreach we could include? Please let Anna know: alagerstroem@ntu.edu.sg

Zhou Yongli *published on the fate of carbon from tropical peatlands.*

George Williams *published on water absorbtion of volcanic ash deposits. He explains the study in this Twitter thread.*

Dr Dhruba Samantha *published an article addressing systematic biases in climate models*

Zhou, Y., Evans, C. D., **Chen, Y.**, **Chang, K. Y. W.**, & **Martin, P.** (2021). Extensive remineralization of peatland-derived dissolved organic carbon and ocean acidification in the Sunda Shelf Sea, Southeast Asia. *Journal of Geophysical Research: Oceans*.

Patrick Martin, Nivedita Sanwlani, Tiffany Wan Qi Lee, Joel Meng Cheng Wong, **Kristy Chang**, Elizabeth Wing-See Wong, Soo Chin Liew. (2021) Dissolved organic matter from tropical peatlands impacts shelf sea light availability on coral reefs in the Singapore Strait, Southeast Asia. *bioRxiv.*

Farsang, S., Louvel, M., Zhao, C… **Simon A.T.Redfern** (2021). Deep carbon cycle constrained by carbonate solubility. *Nature Communications.*

Stephen Chua, **Adam D Switzer**, **Tanghua Li**, **Huixian Chen**, Margaret Christie, **Timothy A Shaw**, Nicole S Khan, Michael I Bird, **Benjamin P Horton**. (2021) A new Holocene sea-level record for Singapore. *Holocene*.

Williams, G.T., Jenkins, S.F., Lee, D.W.J. *et al.* How rainfall influences tephra fall loading — an experimental approach. *Bull Volcanol.*

Sarah E. Parker, Sandy P. Harrison, Laia Comas-Bru, **Nikita Kaushal**, Allegra N. LeGrande, Martin Werner (2021) A data–model approach to interpreting speleothem oxygen isotope records from monsoon regions. Climate of the Past.

Kotze, D. J., Ghosh, S., Hui, N., Jumpponen, A., Lee, B.P.Y-H., Lu, C., **Lum, S.**, Pouyat, R., Szlavecz, K., **Wardle, D. A.**, Yesilonis, I., Zheng, B. and Setälä, H. (2021) Urbanisation minimises the effects of plant traits on soil provisioned ecosystem services across climatic regions. *Global Change Biology*.

Xiaolei Feng, Zvi Steiner, **Simon A.T.Redfern**. (2021) Fluorine incorporation into calcite, aragonite and vaterite CaCO3: Computational chemistry insights and geochemistry implications. *Geochimica et Cosmochimica Acta.*

Zweifler A, O'Leary M, **Morgan K**, Browne NK. (2021) Turbid Coral Reefs: Past, Present and Future—A Review. *Diversity*.

Stefan Farsang, Marion Louvel, Angelika D.Rosa, Monica Amboage, Simone Anzellini, Remo N.Widmere, **Simon A.T.Redfern**. (2021) Effect of salinity, pressure and

over the Indian Region. Seasonal rainfall forecast over the Indian subcontinent is crucial for the agriculture and livelihood over the region, however, remains challenging due to regional rainfall biases in the climate model, he explains. The present study demonstrates possible ways to reduce such biases and simulate rain events of various intensities in a better way.

Photo: Shutterstock734060971

temperature on the solubility of smithsonite (ZnCO3) and Zn complexation in crustal and upper mantle hydrothermal fluids. *Chemical Geology.*

Vaulot, D., Mahé, F., Bass, D., & Geisen, S. (2021). pr2-primer : An 18S rRNA primer database for protists. Molecular Ecology Resources. See also Twitter

Stefan Farsang, Ian A. Franchi, Xuchao Zhao, Timothy D. Raub, **Simon A.T. Redfern**, Monica M. Grady. (2021). Carbonate assemblages in Cold Bokkeveld CM chondrite reveal complex parent body evolution. *Meteoritics & Planetary Science.*

Hari Prasad, K. B. R. R., Ramu, D. A., Rao, S. A., Hameed, S. N., **Samanta, D.**, & Srivastava, A. Reducing Systematic Biases over the Indian Region in CFS V2 by Dynamical Downscaling. *Earth and Space Science*.

Sheinna May D. Claro, Noelynna T. Ramosa, Allan Gil S.Fernandoa, Daisuke Ishimura, **Adam D. Switzer**. (2021) Sedimentological evidence of washover deposits from extreme wave events in Zamboanga del Sur, Mindanao, southern Philippines. Marine Geology.

Phillips, H. R. P., Bach, E. M., Bartz, M. L. C., ……**Wardle, D. A**……., (2021) Global data on earthworm abundance, biomass, diversity and corresponding environmental properties. *Scientific Data*.

Fanin, N., Lin, D., Freschet, G., Keiser, A., Augusto, L., **Wardle, D. A.**, Veen, G. F. (2021) Home field advantage from the phyllosphere to the soil. *New Phytologist*.

Media Outreach

Mt Pinatubo eruption in 1991. Source: https://pubs.usgs.gov/fs/1997/fs113-97/

The Straits Times did an interview with the EOS Volcano Group: 30 years after Mount Pinatubo eruption, scientists look at how S'pore can be better prepared

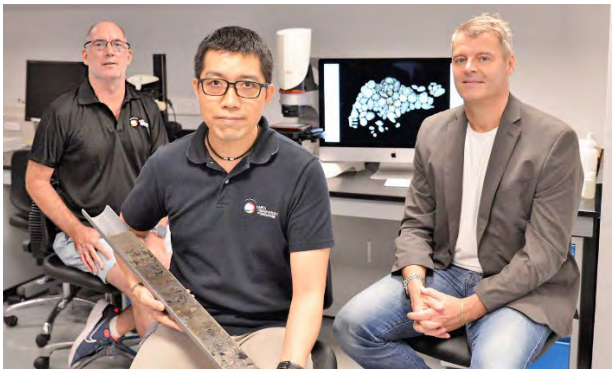
"*We cannot stop the eruptions, but we can prepare for them by using a wide range of monitoring tools, experiments and data from fieldwork*" **Fidel Costa** in ST

"*So if it is an explosive eruption in Sumatra, for example, we would try to figure out when and how the ash would reach Singapore, and the effects on our airspace and supply routes*" **Susanna Jenkins** in ST

Fidel Costa was also interviewed on **CNA Radio** on the same topic.

Stephen Chua's research on past sea level rise in Singapore was featured in **The Straits Times**: NTU study on rising sea levels in S'pore is valuable record, offers strategic insight: Researchers

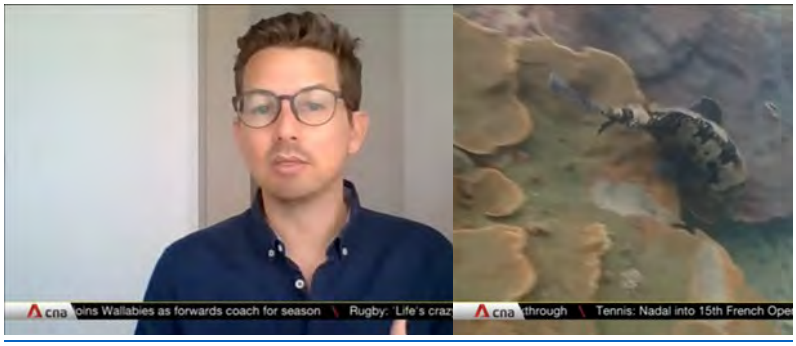
"*The study offers a strategic insight for Singapore as it moves to adapt to climate change.*" Says Stephen Chua to the ST



ASE PhD student **Christaline George** (working in Federico Lauro's lab) was interviewed in the Straits Times about a method for identifying microalgae that she is developing, that could help prevent algal blooms: [Microalgae 'detective' developing faster way to identify species that cause harmful algal blooms]

"*We can't prevent or always accurately predict occurrences of harmful algal blooms. The only way forward could be to regularly monitor for the microalgal species in the waters and manage the problem before it strikes*" said Ms George to The Straits Times.

For World Ocean Day, CNA interviewed **Kyle Morgan** about the health of Singapore's muddy coral reefs, as sediment deposits are increasing. Watch the clip: [Research shows 30% increase in sediment at reef sites in Singapore, threatening coral survival]



Janelle Thompson was interviewed on CNA about waste water monitoring of Covid-19. Watch the clip: [COVID-19: Assoc Prof Janelle Thompson and Dr Leong Hoe Nam on Hougang cluster, wastewater monitoring]

Simon Redfern's discovery of how the Earth's interior swallows up carbon got quite a lot of media attention, see here: [https://www.nature.com/articles/s41467-021-24533-7/metrics]

And also on the ASE news blog: [Tectonic plate subduction is a carbon sink]

Purple water in Sentosa Cove in Jan 2021.
Photo credit: THE HERON OF THE GREEN BARRELS

Federico Lauro was interviewed in **The Straits Times** on harmful alagl blooms: [More harmful algal blooms expected from intense aquaculture and human activities: UN report]. He said: "*Climate change, anthropogenic impacts and environmental impacts are contributing worldwide to this phenomenon, and there's no way you are going to have fewer algal blooms, unless you stop dumping nutrients into the water. And I don't see that happening right away*."

Happy National Day on the 9th!

This newsletter was put together by Anna Lagerstroem. Thanks to everyone who contributed! Have some news to share for the next newsletter? Please let me know at alagerstroem@ntu.edu.sg

Previous newsletters can be found here