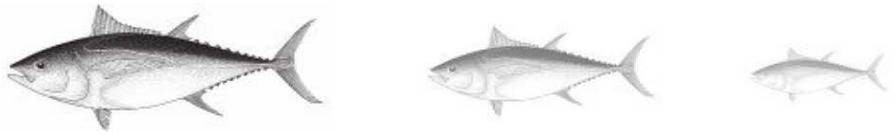


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## Editorial



Welcome to our first issue of the year and we hope you are safe.

Coronavirus or COVID-19 although a global health crisis, has impacted local communities greatly and reshaped society. The resulting lockdowns have affected schools and tertiary institutions with most still closed as countries monitor local cases and determine plans for the future. For us in the region, this pandemic has challenged existing teaching and learning methods and also student access to relevant technology as we switch to remote learning.

In the marine and fisheries industry, the reduced demand by large-scale buyers worldwide has hit the industry severely as restaurants close and exports come to a halt. What started as a health crisis has led to an economic one, with market access reduced or closed and movement restrictions affecting not only commercial fishing fleets and companies but also those who depend largely on the ocean for income and food.

But not all is bad news as the health pandemic could be a temporary relief for our oceans and marine life. A United Nations report released in April, suggested that COVID-19 could help turn the tide on the well-being of oceans in the Asia-Pacific region. This chance to recovery arises from the shutdown of activities and reduced traffic on the seas.

At PIMRIS and as part of the USP Library's overall careful and considered approach to re-opening physical spaces, study and work spaces have been re-arranged to enforce social distancing amongst other measures. The library's online services and e-resources are continuously promoted to support remote teaching and learning during this crisis. For our partners out in the region, our online support is available as always and we hope you can keep us updated when you can.

Stay well, Stay healthy and Stay informed!

Susana Macanawai, *PIMRIS Coordinator*

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USP Coronavirus updates & Semester 2 info. via USP website

---Opinions expressed in articles included in the PIMRIS Newsletter do not necessarily represent those of any participants. --

## Directory

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## New Faces, New Places

### Happy Retirement!

**Viliame Makasiale**, who spent 1 year at PIMRIS (2019) was farewelled in late May by the USP Library (Laucala campus). 'Vili' has been with the library for more than 16 years serving as a Library Attendant. Vinaka and enjoy your retirement Vili!



Vili Makasiale

### Bula & Welcome!



Fulori Tupou

**Fulori**, is the latest addition to PIMRIS (temporary) after the COVID19 Suva lockdown in April. She relocates from the USP main library (Laucala) to maintain a COVID-19 compliant environment at Lower Campus library.

**Tavite** relocated to PIMRIS from the USP main library (Laucala) in February 2020 as its new Library Attendant. Tavite has been with the USP Library for 15 years and this is his first stint at Lower Campus.



Tavite Qionibaravi



Waisale  
Vakaloloma

**Waisale**, joined PIMRIS in February as our new Part-time Junior Library Assistant replacing Jillian Serevi who resigned to take up a full-time role at the iTaukei Lands Trust Board in Suva. Waisale joined USP Library in 2019.

## COVID-19 and its likely impact on the tuna industry in the Pacific Islands

by Transform Aqorau

The importance of tuna in the Western and Central Pacific Ocean (WCPO) cannot be underestimated. Approximately 60 percent of the raw material for the global tuna canning market comes from the WCPO. There are two reasons why COVID-19's impact on the tuna industry should be monitored.



First, shelf-stable foods, such as canned tuna, have taken on a new level of significance for food security.

Tuna purse seine vessels. (Photo: USOG Press)

Second, Pacific island countries are dependent on revenues from the licensing of fishing vessels. The declaration by the World Health Organization (WHO) of COVID-19 as a pandemic prompted Pacific island countries to close their airports and ports. Foreign vessels are now required to spend up to 14 days quarantined at sea before going into port.

Some measures have also prohibited carrier vessels that originate in, or transit in, countries that have COVID-19 cases. These measures have disrupted fishing operations because of the constraints to transshipping.

Pacific island governments have suspended the requirement to have observers on purse seine vessels and will allow vessels to transship at sea. It is normally mandatory for purse seine fishing vessels to have observers on board while in the fishing grounds. However, due to the closure of the airports it was difficult to mobilise the observers, and there were also concerns about their health and safety.

Because of these constraints, the World Tuna Purse Seine Association (WTPO) asked for flexibility from the Pacific Islands governments. This decision to remove the requirement of observers was not taken lightly and has been criticised.

Nineteen environmental non-government organisations wrote a joint protest expressing their concerns about illegal, unreported and unregulated (IUU) fishing. I will return to this later, but let's first look at two examples of how different companies are faring.

Fishery Company Ltd of Taiwan (FCF) is the largest tuna trader in the world, and a vertically integrated fishing company. It has a diverse range of fishing interests around the world including in the WCPO. Their activities focus on catching tuna, processing, and wholesaling, with interests in a processing plant at Wewak, in East Sepik Province of Papua New Guinea.

FCF associated purse seine vessels have had their operations disrupted. They have waited, sometimes for over a week, to get authorisation to operate without an observer which cost them, in lost fishing time, between US\$50,000-60,000 per vessel per day.

The closure of the ports, and the extended quarantine periods, has made it difficult for their boats to use the ports in the region.



Left: Fishing vessels during transshipment in the Solomons Islands capital, Honiara (MFMR, Solomons).  
Right: Tuna catch onboard a fishing vessel (Photo: RNZ International)

Their various processing plants have also been compelled to shut down for varying periods of time. Their processing plant in Papua New Guinea is being affected by labour shortages because of the country's declared 'State of Emergency' reducing productivity.

These supply issues and the need to protect their workers has also affected production in their plants in Thailand, Mauritius and China.

The closure of airports has affected the company's domestic longline fleet in Fiji, Marshall Islands, Federated States of Micronesia, Palau and possibly French Polynesia, and staff have been laid off.

In contrast, those who are not reliant on foreign flagged vessels and crews have had the least disruptions to their operations.

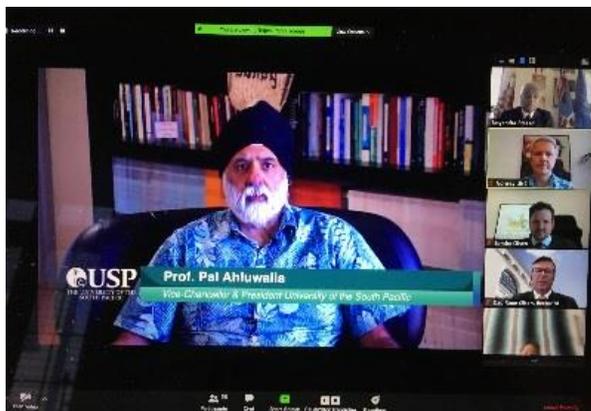
For example, two Solomon Islands-based fishing companies, Soltuna, a fish processing company, and National Fisheries Development (NFD) Ltd, a fish-catching company, who are both vertically integrated with the Bolton brands and have their own Solomon Islands flagged vessels and crews, do not have the challenges experienced by other processing plants that are not vertically integrated and that rely on foreign flag vessels.

They supply both the local and international markets exporting canned tuna to Papua New Guinea, Vanuatu and Fiji, frozen tuna to Japan, and loins to Italy. As the General Manager of NFD Ltd told me: "What this crisis is revealing is that locals can lead and implement most shore and some vessel operations, with guidance from experts offshore."

Ensuring the right balance between maintaining the integrity of the conservation and management measures in the WCPO, while allowing flexibility for fishing vessels to maintain production is not easy. The short-term measures taken by Pacific island governments are understandable, and will contain the damage, though losses to both revenue and employment are inevitable. Nevertheless, the current crisis also suggests some directions for long-term reform.

(More info.: [devpolicy.org](http://devpolicy.org))

## Norway-Pacific Ocean- Climate Scholarship Programme launched



USP Vice-Chancellor and President, Professor Pal Ahluwalia speaking at the launch of Norway-Pacific Ocean-Climate Scholarship Programme (N-POC), a virtual event hosted by Norway's Ministry of Foreign Affairs. (Image: USP News)

The University of Bergen (UiB) in Norway, and the University of the South Pacific (USP) have raised their long-term collaboration to a new level with the launching of the Norway-Pacific Ocean Climate Scholarship Programme (N-POC) on 28 April 2020.

The Scholarship Programme or N-POC has been described as an ambitious and interdisciplinary partnership in research and PhD training between the two universities.

Norway's Minister for International Development, Hon. Dag-Inge Ulstein who launched the new PhD programme said,

"Today we are launching a substantial package to reinforce the partnership on science and education. About 24 students and researchers at doctoral level get funding to dig deep into the science, and provide us with data and research we need for sound policymaking".

"We are climate focused ocean states, with a common understanding of the importance of the ocean-climate nexus. To save our ocean, we need to base policy on the best available science. Someone must develop this science. That is a job for our excellent universities, in the Pacific and in Norway,"

"Addressing climate change and ensuring sustainable use of the ocean still remain a priority for Norway. In fact, the current pandemic, and recent cyclones underline the need for genuine and long-term partnerships."

"I am delighted that the cooperation over decades between the University of the South Pacific and the University of Bergen is now taken to a whole new level," the Norwegian government minister said.

Hon. Ulstein in his address stressed that together the partnership will produce tomorrow's scientific leaders within climate and ocean – and that is going beyond words and promises to partnership in action.

The Prime Minister of Fiji, Hon. Josaia Voreqe Bainimarama who was also a virtual guest spoke that the new partnership, from the halls of USP and UiB, will cultivate the next generation of Pacific Island oceans leaders, bringing together the experiences of our people with world-leading oceans and climate expertise.

"We need ideas, borne in Pacific minds and backed by science that can transform humanity's relationship with the ocean and marine life. Thanks to the commitment of Norway, Fiji and our fellow Pacific Island Countries — more young people across the Pacific can contribute to the cutting-edge science behind the oceans-climate nexus", said Hon Bainimarama.

*(con't next page)*

UiB's Rector, Dag Rune Olsen mentioned that 'the two universities share the conviction that the ocean is central to understanding the urgent challenges posed by climate change.

"Our two universities have developed a fine history of collaboration in both ocean and climate research and education across a number of disciplines", said Mr. Olsen. "In the complex fields of research like sustainable development, climate change and ocean research, both our universities see the importance of interdisciplinary approaches."



A coastal community in Pentecost, Vanuatu was flattened by TC Harold in April 2020. (Image: Daily Post, Vanuatu)

"I am proud and glad for our equal, long-standing partnership with the USP, which today enters a new dimension," said Olsen about the close partnership between the two universities, "our universities share the conviction that the ocean is central to understanding the urgent challenges posed by climate change."

The USP's Vice Chancellor and President, Professor Pal Ahluwalia expressed thanks to the Norwegian Government, the Norwegian Ministry of Foreign Affairs and the Norwegian people for funding this science initiative on the ocean climate-nexus.

Professor Ahluwalia added, "I am very proud that we stand together in this partnership in a field of research where we both have so much to offer and so much at stake in terms of the impacts of climate change on our countries and the changes that are taking place to the ocean environment in the different oceanic regions in which we live".

"The University of Bergen has for many years been our academic partner in this broader people to people partnership between nations. In recent times, we took that partnership to a new level with our new Agreement to create a jointly funded professorial position in 'Oceans and Climate Change," said Ahluwalia. "Not content with that exciting outcome of our partnership, we continued to work together to develop this new scheme for postgraduate study in the same field."

Professor Ahluwalia made explicit reference to UiB Professor Edvard Hviding, who has been a driving force in the Norway-Pacific collaboration. First, doing his anthropological field work in the Pacific, then leading the EU supported ECOPAS project and currently the scientific director for both SDG Bergen Science Advice and the Mare Nullius project, supported by the Research Council of Norway and like N-POC an interdisciplinary collaboration between UiB and USP.

The three main objectives of the N-POC programme are:

1. To build a strong interdisciplinary Pacific cohort of PhD researchers to address urgent challenges for ocean and climate;
2. To build new multidisciplinary Pacific research on the ocean-climate nexus for regional and global policy impact;
3. To build enduring partnerships between researchers and universities in Norway and the Pacific Islands

More details:

<https://www.uib.no/en/sdgbergen/135464/new-pacific-phd-programme-launched>;  
[USP News](#)

## First batch of PEUMP funded scholarship recipients graduate

The first group of the University of the South Pacific (USP) and the Pacific European Union Marine Partnership Programme (PEUMP) scholarship recipients have completed their programme.

A total of fifty-three (53) marine and fisheries officials from government, non-government organisations and communities were from around fifteen (15) African, Caribbean and Pacific (ACP) countries and over half were women.



Twenty-seven (27) of the graduates had completed the

Some of the first batch of the PEUMP funded scholarships that graduated recently at USP. *(Image: USP News).*

Certificate IV in Coastal Fisheries and Aquaculture Compliance course that was held from April to November last year.

Another twenty-six (26) completed Certificate IV in Training and Assessment held between October and December last year as well.

Although the March 2020 Laucala graduation ceremony was cancelled due to the COVID-19 pandemic, arrangements were made to have certificates collected or mailed via post.

A scholarship recipient from Fiji and also a fisheries officer, Jacqueline Nalomaca shared that “it is not easy as a female fisheries officer to enforce rules and regulations when dealing with fishermen. The fact that the Certificate IV in Coastal Fisheries and Aquaculture Compliance course ensured gender balance, was a great achievement given the dominance of male fisheries officers.”

Ms Nalomaca also said that apart from gaining an additional certificate from the USP, the training has been crucial in developing her skills in the area of monitoring, control and surveillance and on compliance mechanisms.

A participant from Samoa acknowledged the relevancy of the Certificate IV in Coastal Fisheries and Aquaculture Compliance course to his work and role. He stated that apart from learning new knowledge and skills he has also formed new perspectives relating to his role as a Pacific Ocean custodian and as a Senior Fisheries Officer in Samoa.

The USP is one of four key implementing partners of the PEUMP Programme funded by the European Union and the Government of Sweden.

The EURO 35 million project focusses on building the capacity of Pacific Islanders through fisheries and marine resource management training, education, research and development.

*(Adapted from: USP News)*

## In times of uncertainty, the deep sea provides potential solutions



Deep-sea hydrothermal vents harbor diverse microbes whose enzymes can be used in diagnostic tests, like the ones to detect the novel coronavirus and other pandemics like AIDS and SARS. (*Image captured from actual video on website – video acquired from the submersible Alvin at the East Pacific Rise near 9° 50'N at 2510 meters depth. © WHOI-NDSF, Alvin Group, National Science Foundation*).

The test being used to diagnose the novel coronavirus – and other pandemics like AIDS and SARS ---was developed with the help of an enzyme isolated from a microbe found in marine hydrothermal vents as well as freshwater hot springs.

Biomedical breakthroughs sometimes happen in the most unlikely places. Take the deep ocean, for example, where mineral-laden fluid superheated by magma gushes from hydrothermal vents. Under extreme pressure and acidity, at times with no oxygen to speak of, microbes not only survive there, they thrive. This incredible adaptation offers insight into how life evolved billions of years ago – and how modern humans may be able to fight infections and disease.

“We’ve found marine microorganisms that produce antimicrobials – basically chemical weapons that help them fight off other organisms, and molecular mechanisms that help them resist viruses,” says Virginia (Grinny) Edgcomb, a WHOI microbiologist who investigates fungi and bacteria living in the deep sea and deep subsurface biosphere. These microbes feed on tough compounds like hydrocarbons and produce antimicrobial compounds. “Almost every antibiotic we have was produced by microorganisms. Who knows---maybe we’ll find new antimicrobials when we start to look in deep ocean habitats.”

The deep ocean has already given us compounds to treat cancer, inflammation, and nerve damage. But breakthroughs have also come from the ocean depths in the form of diagnostic tools. Case in point: the best being used to diagnose the novel coronavirus –and other pandemics like AIDS and SARS – was developed with the help of an enzyme isolated from a microbe found in marine hydrothermal vents as well as freshwater hot springs.

(More info. [Woods Hole Oceanographic Institution website](https://www.whoi.edu/page.do?pid=3573&tid=550&cid=24222))

## News from around the region

### Tuvalu Fisheries Department releases report on second Inshore Fisheries creel survey



Tuvalu Fisheries staff carrying out assessment of catches. (Image: Tuvalu Fisheries Department).

The Tuvalu Fisheries Department has made available online a report on its second creel survey of inshore fisheries which ran from 2015 to 2017.

The creel surveys are part of the department's plans and management efforts to improve livelihoods and food security in the islands.

According to the report, this creel survey was to: (i) identify the contribution of each type of coastal fishery, (ii) profile the methods, grounds and landings being used and the needs of fishers, (iii) measure the catches including numbers,

sizes and weights, (iv) assess the health of the resources in terms of numbers, weights and sizes being caught in relation to size at maturity and catch per unit of effort, and (v) identify stressed resources in need of management.

Data and information were collected by a team located on 8 islands of Tuvalu (Niulakita excluded) as fishers return from their fishing trips. Data on vessels, methods and gear used, catch details, location of area fished, and perceptions on fishing efforts and catch compared to the past were recorded.

An analysis of the data revealed that of the total 1,491 landings (several repeats) by around 835 fishers from 8 islands, the majority of these (503) were recorded in Funafuti, 192 in Nanumea, 190 in Nanumaga, 188 in Kukufetau and the rest from other islands.

As reported, 22 different types of fishing methods were used including trolling for tuna (most common) which accounted for 47% of all landings followed by handline fishing at 30%. Some fishers confirmed using Fish Aggregating Devices (FADs) and the majority were fishers from the islands of Nanumaga and Niutao.

The survey also noted that 56% of total catches recorded, were for commercial purposes and 44% for household consumption. The fishers also reported when questioned about their fishing experiences now compared to 5 years ago, that the size of fish caught this time around are smaller and numbers are declining. They suspected climate change as a contributing factor and also the presence of purse seiners within the 12 nm zone.

Overall findings from this survey, revealed signs of overfishing and significant pressure on coastal fishery resources in Tuvalu. This has prompted the Tuvalu Fisheries Department to implement several recommendations for the management and improvement of the fishery, as well as some improvements on future resource surveys. The report also highlighted the significant role of the 'Funafuti Reef Fisheries Stewardship Plan (implemented in 2018) in the recovery and management efforts amongst many other local initiatives.

(Adapted from: [Tuvalu Fisheries Creel Survey Report](#))

## Tonga Fisheries organises stock assessment and harvest strategy workshop

A three-day workshop on 'Stock assessment and harvest strategy' organized by the Science Division of the Tonga Ministry of Fisheries in collaboration with the Pacific Community (SPC), was held from 3 – 5 March 2020 at the Ministry of Fisheries office in Soutu.

The aim of this training was to train and inform fisheries staff on some of the basic harvest strategies and concepts relating to Tonga's level of fish stock in their Exclusive Economic Zone (EEZ), how to interpret stock assessment results and activities relating to



Participants and trainer at the workshop hosted by Tonga Fisheries. *(Image: Tonga Fisheries)*

the management of the region's fisheries. The training was conducted by the SPC Fisheries Scientists, Sam McKechnie and Finlay Scott and included interactive discussions and activities, practical exercises using a software and other tools for analysing data and results from harvests.

During the workshop, fisheries staff also learned about the Western and Central Pacific Fisheries Commission's (WCPFC) work, their harvest strategy and approach, stock assessment process using the WCPFC's 2017 albacore assessment as an example, harvest strategy objectives, monitoring strategies and performance indicators.

This workshop was the last reported from Tonga before Coronavirus spread worldwide and restrictions to flights and movements were introduced.

A state of emergency was declared in Tonga from 20 March as a result of the COVID-19 pandemic. The Nukualofa Times reported that the public health emergency and closure of its borders, has put pressure on Tonga's health systems and the broader economy.

In mid-April, the Asian Development Bank (ADB) announced the release of US \$6 million grant from its Pacific Disaster Resilience Programme (Phase 2) to help finance the Government of Tonga's response to the pandemic.

Tonga's US \$6 million grant complements the ADB \$20 billion package announced a week earlier (13 April) to support member economies as they cope with the COVID-19 pandemic.

The Asian Development Bank Outlook 2020 Report forecasted that the pandemic will severely hit tourism sectors, especially those in the South Pacific including Tonga.

The Kingdom of Tonga is facing huge difficulties as a result of COVID-19 restrictions and job losses since March then Tropical Cyclone Harold in early April which left many homeless and crops and infrastructures severely damaged.

(Adapted from: Tonga fisheries news & The Nukualofa Times online)

## Coronavirus lockdown – PIMRIS staff experience

My name is Carol and I would like to share my COVID -19 lockdown experience with you. I am a free-spirited person and I love my freedom but the announcement of the Suva lockdown in March was a big disappointment. Nevertheless, after seeing the effect this pandemic had and continues to have on other countries, slowly I began to understand.

I told myself, a few weeks in lockdown will pass in a blink, but I was wrong. I was home on annual leave when the Prime Minister announced that Suva will be on lockdown for 14 days from 03 April.

Fortunately, my supervisor and I were prepared as we learned from the Lautoka lockdown on possible scenarios two weeks earlier.

Adjusting to working from home was not difficult, but a bit unusual. I had to organise a schedule of my tasks and discussed with my family so that I am not disturbed. The first few days were comfortable as I was working at my pace and there was no deadline. I communicated with my supervisor via email and updated her regularly.

However, after the first week I started to feel bored, as it seemed I was repeating myself day in and day out. For me, time stood still and the day seemed never-ending. I wanted to call my friends for a chat but opted out. I needed to come up with something better to get rid of the boredom but I was not sure of what to do. Luckily, on the same day I had to drive to town to buy groceries and it was a good chance to get out of the house.

While at the market I was surprised to see the increase in prices of vegetables. I went home and thought that I should start gardening, as this will bring a change to my routine and can save a few dollars from shopping. I discussed my plans with my husband and started working on a few vegetable plots. My daily schedule changed between office work, house chores and gardening. Our new 'Project Green' has added fun to our lockdown daily schedule.

Soon the Suva lockdown was lifted and we were called to report to work. Looking back at the 4 weeks (including my leave) at home was not bad at all. I managed to complete my office tasks and started a worthwhile project. Now I look forward to tending to my garden daily after work and it is pleasing to see 'Project Green' thriving.



During the lockdown, I missed my colleagues, friends and my freedom but it was all for our safety.

At times we may feel lonely and trapped, but we can come up with something creative and simple to occupy ourselves with.

I wish we all pass through this pandemic and get back to normal. The Suva lockdown has taught me that through constructive thinking and productive actions we can overcome any adversity and turn it into a blessing.

Left: Caroline's long bean plot at home in Navua.  
(Photo: Caroline Nand).

Caroline Nand (PIMRIS Library Assistant)

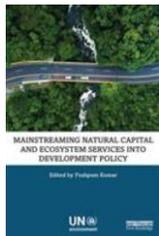
## New Additions to PIMRIS (Lower Campus) Library



**Confronting global climate change: experiments and applications in the tropics** / Harris, M. Boca Raton: CRC Press, ©2019. ISBN: 9780367203115.

This book offers a solutions-based approach to climate change problems which potentially impinge on human beings within the tropics. It largely comprises research articles with supplementary applications and illustrations.

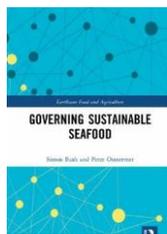
<https://www.routledge.com/Confronting-Global-Climate-Change-Experiments--Applications-in-the-Tropics/Harris/p/book/9780367203115>



**Mainstreaming natural capital and ecosystem services into development policy** / edited by P. Kumar. New York: Routledge, ©2019. ISBN: 9781386931111.

This book highlights the latest advances in the science and practice of using ecosystem services to inform decisions for economic development in the context of the developing countries.

[https://www.routledge.com/Mainstreaming-Natural-Capital-and-Ecosystem-Services-into-Development-Policy/Kumar/p/book/9781386931111?utm\\_source=crcpress.com&utm\\_medium=referral](https://www.routledge.com/Mainstreaming-Natural-Capital-and-Ecosystem-Services-into-Development-Policy/Kumar/p/book/9781386931111?utm_source=crcpress.com&utm_medium=referral)



**Governing sustainable seafood** / Bush, SR., & Oosterveer, P. New York.: Routledge © 2019. ISBN: 9781138017542.

Taking a social science approach, this book explores the governance of sustainable seafood, which is fundamental to food and nutrition security as well as being an important source of income and employment in many regions.

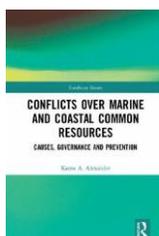
<https://www.routledge.com/Governing-Sustainable-Seafood-1st-Edition/Bush-Oosterveer/p/book/9781138017542>



**Microplastics in fisheries and aquaculture: status of knowledge on their occurrence and implications for aquatic organisms and food safety** / Lusher, A. et. al., Rome: Food and Agriculture Organisation, ©2017. ISBN: 9789251098820

This technical paper aims to contribute to the stock taking of scientific knowledge available on microplastics in fisheries and aquaculture. It provides information on the most likely pathways in terms of sources,

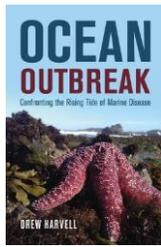
<http://www.fao.org/in-action/globefish/fishery-information/resource-detail/en/c/1043135/>



**Conflicts over marine and coastal common resources: causes, governance and prevention** / Alexander, K. A. New York: Routledge, c2019. ISBN: 9781138635258.

This book explores the types of conflicts that occur over marine and coastal resources, the underlying causes, and attempts to prevent them. Drawing on case studies from both the northern and southern hemispheres, the book takes a broad view of how we interact with our environment, ...

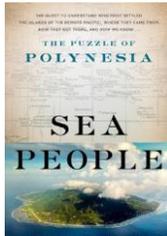
<https://www.routledge.com/Conflicts-over-Marine-and-Coastal-Common-Resources-Causes-Governance-and/Alexander/p/book/9781138635258>



**Ocean outbreak: confronting the rising tide of marine disease** / Harvell, D. 1<sup>st</sup> ed. Oakland, California: University of California Press, c2019. ISBN: 9780520296978.

There is a growing crisis in our oceans as rates of infectious disease outbreaks are on the rise. Marine epidemics have the potential to cause a mass die-off of wildlife from the bottom to the top of the food chain, impacting the health of ocean ecosystems as well as lives on land.

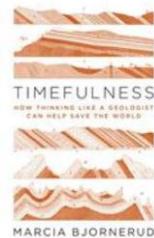
<https://www.ucpress.edu/book/9780520296978/ocean-outbreak>



**Sea people: the puzzle of Polynesia** / Thompson, C. New York: Harper, c2018. ISBN: 9780062060877.

A masterful mix of history, geography, anthropology, and the science of navigation, Sea People combines the thrill of exploration with the drama of discovery in a vivid tour of one of the most captivating regions in the world.

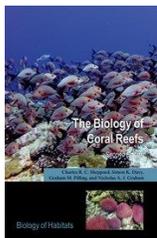
<https://www.amazon.com/Sea-People-Polynesia-Christina-Thompson/dp/0062060872>



**Tunefulness: how thinking like a geologist can help save the world** / Björnerud, M. Princeton: Princeton University Press, c2018. ISBN 9780691181202.

This compelling book presents a new way of thinking about our place in time, enabling us to make decisions on multigenerational timescales. The lifespan of Earth may seem unfathomable compared to the brevity of human existence but this view of time denies our deep roots in Earth's history—and the magnitude of our effects on the planet.

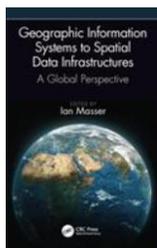
<https://press.princeton.edu/books/hardcover/9780691181202/timefulness>



**The biology of coral reefs** / Sheppard, C., et al. 2<sup>nd</sup> ed., Oxford, UK: Oxford University Press, c2018. ISBN: 9780198787341.

This book provides an integrated overview of the design, physiology, ecology, and behavior of coral reef organisms. It places particular emphasis on conservation and management due to the habitat's increasingly endangered status and contains updates on the magnitude of environmental issues affecting coral reefs...

<https://global.oup.com/academic/product/the-biology-of-coral-reefs-9780198787358?cc=fj&lang=en&>



**Geographic information systems to spatial data infrastructures: a global perspective** / edited by I. Masser. Boca Raton: CRC Press, ©2019. ISBN: 9781138584624.

This book provides a clear overview of the development of the SDI concept and SDI worldwide implementation and brings a logical chronological approach to the linkage of GIS technology with SDI enabling data.

<https://www.routledge.com/Geographic-Information-Systems-to-Spatial-Data-Infrastructures-A-Global/Masser/p/book/9781138584624>

## Conferences, Workshops & Events Jun – Dec 2020

- 21 – 22 Sept.      **ICFOMS 2020: International Conference on Fisheries Oceanography and Marine Science** Toronto, Canada.  
Web: <https://waset.org/fisheries-oceanography-and-marine-science-conference-in-september-2020-in-toronto>
- 17 – 18 Nov.      **ICAFM 2020: International Conference on Aquaculture and Fisheries Management, Tokyo, Japan.** Web: <https://waset.org/aquaculture-and-fisheries-management-conference-in-november-2020-in-tokyo>
- 17 – 18 Nov.      **ICAFT 2020: International Conference on Aquaculture and Fisheries Technology, Tokyo, Japan.**  
Web: <https://waset.org/aquaculture-and-fisheries-technology-conference-in-november-2020-in-tokyo>
- 10 – 11 Dec.      **ICFOE 2020: International Conference on Fisheries Oceanography and Ecology, Rome, Italy.** Web: <https://waset.org/fisheries-oceanography-and-ecology-conference-in-december-2020-in-rome>

### Everyday habits that can help prevent the spread of several respiratory viruses

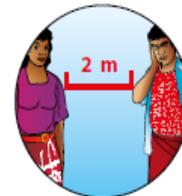
common cold    influenza    novel coronavirus



Wash your hands often with soap and water or with an alcohol-based hand sanitizer.



Avoid touching your eyes, nose, and mouth with unwashed hands.



Avoid close contact with people who are sick with flu-like symptoms (fever, cough).



Stay home when you are sick.



Cover your cough or sneeze.



Clean and disinfect frequently touched objects and surfaces.