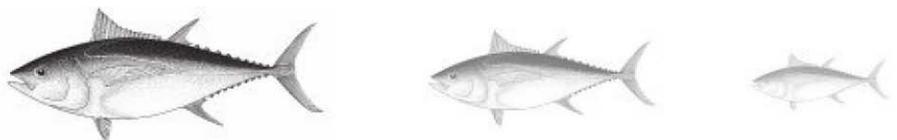


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Editorial



It's the end of another challenging but remarkable year in terms of plans and agreements for a better Pacific Islands region and the world. The historic Paris Agreement reached by 195 nations at the recent 21st Session of the Conference of the Parties to the United Nations Framework Convention on Climate Change, has been described as a 'giant shove in the right direction'(cnn.com), 'the world's greatest diplomatic success' (theguardian.com) and the culmination of many years of work on climate change globally. While this accord may offer hope to most of us in the islands, it all goes down to implementation – will they deliver?

From within our region, the outcome of the 12th Session of the Western and Central Pacific Fisheries Commission (WCPFC) held early December in Bali, was received with mixed reactions. While the commission agreed on a work plan to develop harvest strategies for most of the region's commercially fished tuna stocks and take measures to make data of fish harvests more transparent, it did not take action to end overfishing, reduce catch target of certain tuna species or ban tuna transshipment in the high seas which many interested parties had hoped it would consider. The fight to sustain our fisheries for future generations must continue and we could all contribute with actions within and around our communities.

This year at PIMRIS (Lower Campus Library) has been fruitful. We had many challenges but the support from our partners and colleagues has been great. Fa'afetai tele lava and we look forward to working with you again next year.

Till our next issue in June 2016, have a very merry Christmas and a safe and prosperous 2016!

Susana Macanawai, *PIMRIS Coordinator*

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PIMRIS staff (Amora, Abane & Pushpa – 2nd, 3rd & 5th) will be transferred to USP main library in February 2016. Vinaka ladies and all the best. (Photo: PIMRIS)

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

Directory

PIMRIS is a cooperative network of fisheries and marine resources libraries and information centres in the Pacific. Participants include national ministerial libraries and regional agencies listed below.

For additional information, please contact the PIMRIS coordination unit or the specific agency.

Secretariat of the Pacific Regional Environment Programme (SPREP)

Miraneta Williams-Hazelman
Information Resource Centre Manager

MiranetaW@sprep.org
www.sprep.org

Secretariat of the Pacific Community (SPC) / Secrétariat général de la Communauté du Pacifique

Aymeric Desurmont
Fisheries Information Officer/Charge de l'information halieutique
AymericD@spc.int

Marie-Clare Ame
Librarian / Bibliothécaire
maryca@spc.int

Pacific Islands Forum Fisheries Agency (FFA)

Eddie Marahare
Librarian
eddie.marahare@ffa.int
www.ffa.int

University of the South Pacific (USP) PIMRIS Coordination Unit

Susana Macanawai
PIMRIS Coordinator

Pushpa Prasad (*Library Assistant*)
Abane Makei (*PTJLA*)
Amora Tavisa (*Library Attendant*)

pimris@usp.ac.fj
www.usp.ac.fj/library/pimris.htm

New Faces, New Places

Francis Pituvaka is the new Communications Officer at the Solomon Islands' Ministry of Fisheries (MFMR). He started in March 2015 and showed interest in joining the PIMRIS network. Francis will be assisting Ataban Kapule



Francis Pituvaka

as the back-up PIMRIS contact within the Solomon Islands MFMR. Welcome Francis!

USP Laucala Library farewells staff

The USP Laucala Library in Suva farewelled three of its staff on Friday 4 December 2015 with morning tea. Two of them, have spent more than 20 years with USP library.



Maciu Bulai

Maciu Bulai, retired at the end of this year after 40 years of service as a Library Attendant. Maciu is one of the longest serving members of the Laucala Library and he will be missed. We wish him well in his retirement.

Jainul Ali, Library Assistant (OSIC), retired after 16 years with the library. She was once the LA for PIMRIS from 2009-2011. Vinaka to Jainul for all her contributions and we wish her a happy and enjoyable retirement.



Jainul Nisha Ali



Sharmila Pillay

Sharmila Pillay, Librarian – Reader Services departed in early December. She first joined USP library as a part-time staff in 1999 and made her way up the ranks until now. She rejoined the main library in 2009 as a librarian. All the best Sharmila!

Missed opportunities at Tuna Commission in Bali



Frozen albacore tuna offloaded in Lami, Fiji.
(Photo:RNZ/Philippa Tolley)

There have been mixed results for Pacific Island states from five days of exhaustive talks at the annual meeting for the Western and Central Pacific Fisheries Commission, or Tuna Commission according to Radio New Zealand website.

Other reports from several interested parties and observers during this meeting including Greenpeace International and the Parties to the Nauru Agreement or the PNA, indicated frustration over no resulting management outcomes to end overfishing and protect the Pacific from overfishing.



A purse-seiner offloads skipjack tuna in Majuro Atoll for transshipment to a cannery.
(Photo: RNZI/G.Johnson)

Radio New Zealand in one of their reports after the meeting stated, 'For the PNA, an issue of contention centred on limiting Fish Aggregating Devices, which are floating platforms used to attract fish near the bottom of the ocean. The devices were banned for up to four months of the year as a measure to preserve stocks of bigeye, skipjack and yellowfin tuna.'

This and a request by Tuvalu for more stringent controls on longline fishing during the aggregation device ban period and to prohibit the transshipment of big-eye tuna were ignored.

The Pew Charitable Trusts and the World Wide Fund for Nature (WWF) also highlighted the week-long management meeting's failure to end bigeye and bluefin overfishing. Even measures to improve shark conservation and further eradicate illegal fishing failed to gain consensus.

"While the Commission made some progress in determining timelines for developing long-term management strategies, it is of great concern that member governments left this meeting with no agreement on how to end the continued overfishing of Pacific bluefin and bigeye tunas," said Amanda Nickson, director of global tuna conservation for The Pew Charitable Trusts.

"There was very encouraging momentum leading up to this meeting thanks to the strong leadership of the WCPFC executive director, Feleti Teo, and chairperson, Rhea Moss-Christian," said Bubba Cook, WWF's Western Central Pacific tuna program manager.

"Regrettably, as the saying goes, 'you can lead a horse to water, but you can't make it drink.'" he added. "Until the member states of the WCPFC can muster the political will to take action for the collective benefit of all parties, I'm afraid the tuna fisheries of this region will be doomed to the same trajectory we have seen so many times before in other fisheries."

Sources: www.radionz.co.nz; www.undercurrentnews.com; <http://www.abc.net.au>

New cosmetic line made from marine phytoplankton

Algoid Technologies, a certified Florida aquaculture company, has launched a new line of organic cosmetics made from marine and freshwater phytoplankton.

The first beauty product in the Alginique range, Morning Rose Facial Elixir, is 100% organic, consisting of all natural products, primarily phytoplankton extracts and carefully selected essential plant oils that repair and rejuvenate damaged skin, giving a youthful, radiant complexion.

Phytoplankton are tiny microalgal cells that are rapidly gaining traction in the beauty industry due to their anti-aging properties. They are rich in oils and minerals which have been shown to have powerful anti-oxidant properties that help combat the effects of aging by fighting free radicals and repairing ultraviolet skin damage.

To ensure the quality of the ingredients is of the highest standard and not compromised in any way, Algoid Technologies grows their own plankton using organic cultivation methods.

For example, only distilled/deionized water and top quality (food grade) fertilizers are used to prevent impurities from being inadvertently added to the culture.

Live cultures are harvested and freeze-dried to ensure the plankton retain all the important properties essential for skin health and that these are not lost during processing.

All other ingredients used in the formulation of Alginique cosmetic products are certified **USDA organic**.

CEO, Ilya Epshteyn is really excited about the launch: "We have been providing microalgae to the beauty industry for some time now, and wanted to formulate our own 100% organic beauty range made from the best selection of natural ingredients."

"Releasing the Alginique brand is a major milestone for the company," said Epshteyn.

Algoid Technologies, a certified State of Florida Aquaculture Facility, is a division of **Faremax, Inc.**, that has been involved in aquaculture as a diverse and up-to-the-minute technology, creating research and development on the use of microalgae across several different commercial uses and industries. Faremax, Inc., supplies the aquaculture, pet, biofuel and beauty industries with top quality microalgae and microalgae products.

More from: <http://fis.com> & Algoid Technologies



Microalgae use has become the "New Green Revolution".
(Photo: Algoid)



Ingredients used in the formulation of Alginique cosmetic products are certified USDA organic.
(Photo: Algoid)



Phytoplankton are the foundation of the oceanic food chain.
(Photo: fis.com)



Morning Rose facial elixir. (Photo: fis.com)

Protecting the marine and coastal environment in the Pacific Islands



Vava'u, Tonga. (Photo: Stuart Chape)

The protection, management and development of the marine and coastal environment for the Pacific islands region, was at the core of discussions in Apia, Samoa, during the opening of the 13th Conference of the Parties to the Noumea Convention on 17 September 2015.

Also known as the SPREP Convention, it entered into force along with its two Protocols on "Dumping" and "Emergencies" in 1990.

In order to protect the Pacific islands environment, it is through the Noumea Convention that parties have agreed to take all

appropriate measures to abide under international law to prevent, reduce and control pollution in the Convention Area from any source. Parties must also ensure sound environmental management and development of natural resources.

"The Pacific Ocean covers an area that is larger than the surface area of the moon. Our region is mostly ocean, comprising 2% land and 98% water. The Pacific Ocean is vast but it is also under threat from challenges such as ocean acidification, marine pollution and overfishing," said Mr. David Sheppard Director-General of the Secretariat of the Pacific Regional Environment Programme (SPREP) during his opening remarks.

Mr Sheppard further stated that the threats to the Pacific Ocean were many and varied and that action was needed, and needed now. He re-affirmed that the secretariat and convention parties have all agreed that mechanisms such as the Pacific Oceanscape Framework are providing critical and effective guidance for the level of integrated actions needed across the region.

Through the Noumea Convention, SPREP has been able to address many of the emerging and challenging issues in the Pacific ocean such as deep seabed minerals exploration and mining; increased fishing pressures on fish stocks and species of iconic and cultural significance; increasing marine pollution including marine debris related to fishing, shipping and land based sources; and ocean acidification and the declines in marine species and survival end ecosystem resilience.

Australia, Cook Islands, Federated States of Micronesia, France, Marshall Islands, Nauru, New Zealand, Samoa, Solomon Islands and the United States were present at the gathering in Apia along with New Caledonia as an observer.

"I look forward to guidance from Parties today to ensure a dynamic and effective Noumea Convention which benefits the environment and people of the Pacific region. The Noumea Convention offers a very important legally binding mechanism for tackling the big issues that our countries face in the Pacific...Let's all work together to ensure that the convention is working as effectively as possible to support the better management and observation of our Pacific Ocean and its resources," said Mr. Sheppard during the opening.

In collaboration with the Secretariat of the Pacific Community and the Forum Fisheries Agency, SPREP proposed to undertake a detailed analysis of the forms completed by observers on fishing vessels who witness interactions with threatened species such as turtles and marine mammals.

This follows on from a recent detailed analysis undertaken by SPREP of observer forms detailing the dumping of marine debris from fishing vessels which revealed a considerable amount of valuable information.

The conference of the parties to the Noumea Convention proposed to strengthen partnerships such as the International Maritime Organization (IMO) in terms encouraging members to ratify the various IMO conventions.

The "Dumping" and "Emergencies" Protocols of the Noumea Convention mirror those of the IMO.

A key funding partner for the Noumea Convention is the government of the United States of America, whose significant financial support for activities under the convention was acknowledged by the Parties today.

There are 12 SPREP members that have ratified the Convention and Protocols, and they are: Australia, Cook Islands Federated States of Micronesia, Fiji, France, Marshall Islands, Nauru, New Zealand, Papua New Guinea, Samoa, Solomon Islands and the United States.

The 13th meeting of the Noumea Convention held at the Tanoa Tusitala in Apia, Samoa was followed by the 8th meeting of the Waigani Convention on 18 September.

The Pacific Environment Forum on Climate Finance was held on 21 September followed by the Twenty-Sixth SPREP Meeting of Officials from 22 – 24 September.



Mr Warwick Harris of Marshall Islands at the meeting.
(Photo: spre.org)

The 13 Parties to the Waigani Convention are Australia, Cook Islands, Federated States of Micronesia, Fiji, Kiribati, New Zealand, Niue, Papua New Guinea, Samoa, Solomon Islands, Tonga, Tuvalu and Vanuatu.

The 21 Pacific island countries and territories that are members of SPREP are: American Samoa, Commonwealth of the Northern Marianas, Cook Islands, Federated States of Micronesia, Fiji, French Polynesia, Guam, Kiribati, Marshall Islands, Nauru, New Caledonia, Niue, Palau, Papua New Guinea, Samoa, Solomon Islands, Tokelau, Tonga, Tuvalu, Vanuatu and Wallis and Futuna.

The 5 Metropolitan members of SPREP are: Australia, France, New Zealand, United Kingdom and the United States of America.

(Source: spre.org)

Special training for Pacific tuna processing sector

A specialized training in thermal processing and regulatory audit for cannery and national fish inspectors from Fiji, Papua New Guinea and Solomon Islands was carried out in Levuka, Ovalau, Fiji from late November 2015.

This training was organized by the Secretariat of the Pacific Community's (SPC) Development of Tuna Fisheries in the Pacific Project (DevFish 2) which is funded by the European Union (EU).

Aimed at ensuring the production of canned tuna in the region meets the required standard for safe human consumption, this training brought together 18 participants.



The tuna process line at the Solander (Pacific) Limited factory at Walu Bay, Suva, Fiji. (Photo: WWF South Pacific)

In welcoming the participants, the Lomaiviti Provincial Administrator, Ekimi Rokoduru stressed the importance of this training to Fiji's tuna processing industry and local economy.

"Such SPC regional training adds value to the Pacific Fishing Company Limited's operation in Levuka in terms of supporting the skills of locals employed in the factory," Mr Rokoduru said.

"After initial plans to move sites, we're pleased the tuna factory will remain in Levuka because it is the mainstay of the local economy, being the largest employer on the island," he added.

SPC's DevFish Officer, Jonathan Manieva, said the training was both timely and critical as the tuna processing industry in the Pacific region experiences growth.

According to the Forum Fisheries Agency (FFA) [2015 Economic Indicators Report](#), the estimated tuna processing market share of FFA member countries doubled from 100,000 tonnes prior to 2013 to around 210,000 tonnes in 2014.

"As the industry grows, the need for human resource capacities in key specialized areas of the production line also grows. This technical and specialized training will enhance the skill sets of our nationals so they can fill roles that would otherwise be occupied by specialists from overseas. This is enabling employment of nationals at mid-management levels in the industry," Mr Manieva said.

He further added, "The safe production of canned tuna fish is also a critical component of nutritional contribution of fish to food security for our people. And enhancing employment opportunities of our nationals in the sector contributes to individual and household income.

In collaboration with the Pacific Fishing Company Limited (PAFCO), workshop participants also had the opportunity for practical training sessions at the tuna processing plant's factory floor.

Brett Carter, PAFCO's General Manager stated, "The need for such technical training is critical as the canned products are exported into overseas markets like the EU and US and exports require such technical thermal processing of cans to meet required standards."

The two-week intensive training ended on 3 December 2015.

(Source: www.spc.int)

Pressure mounting to ban fish transshipment throughout Pacific



Transshipment in the Federated States of Micronesia.
(Photo: <http://www.franciscoblaha.info>)

Pressure is mounting to outlaw Pacific region transshipments – a practice linked to overfishing – after Nauru's decision to impose a ban in its waters.

This decision follows Greenpeace's discovery of the Taiwanese longliner *Shuen De Ching No. 888*, which the environmental organisation claims had been fishing without permission near Nauru's waters for two months.

Along with an illegal amount of shark fins,

Greenpeace said the logbook also showed an implausibly low catch of five tonnes, suggesting the vessel had been transferring undocumented fish to another ship.

Greenpeace's *Rainbow Warrior III* has been traveling throughout the Pacific over the past few months, monitoring the tuna industry.

Speaking from the ship before the discovery, senior oceans campaigner Karli Thomas told *Pacific Scoop* that Greenpeace was pushing for a regional ban on transshipments to be on the agenda at the Western Central Pacific Fisheries Commission meeting in December.

"The tuna fisheries in the region are out of control, and particularly the longline sector. [Transshipment] is giving fishing vessels the ability to stay at sea almost indefinitely, and some of these fleets are fishing only on the high seas."

Too many boats

"There are too many boats chasing too few fish," said Bubba Cook, western central Pacific tuna manager for the World Wildlife Fund (WWF).

"Big eye tuna is down to 16 percent of unfished levels, and yellowfin down to 20 percent. Skipjack and albacore stocks are still salvageable but we need to act now," said Cook.

There are currently almost 3500 longliners and 300 purse seiners operating in the WCPFC waters.

Charles Hufflett, chairman of the Nelson-based Solander group, which has had an associate longline fishing company in Fiji since 1981, said while the number of vessels and amount of fish being caught is increasing, the catch per ship is falling. "You've only got to go to Suva harbour and see 130 vessels anchored off there, all quite new. It's just over capacity."

There is currently a ban on transshipments for purse-seiners in the high-seas, in the Western Central Pacific Fisheries Commission (WCPFC) area, but longliners are excluded. Nauru joins the Marshall Islands and Tuvalu, which also have total bans on transshipment in their exclusive economic zones (EEZs).

More on: <http://pidp.eastwestcenter.org/pireport/2015/September/09-28-02.htm>

World Ocean Council and MAERSK Line partner with University of Hawai'i to advance tsunami detection



Maersk Line vessels operating across the North Pacific are hosting instruments that create a network of low-cost tsunami sensors to augment existing detection systems. Maersk's involvement in the project was organized by the World Ocean Council (WOC) "Smart Ocean-Smart Industries" Program, which works as a broker between the science community and the ocean business community in order to advance the use of ocean industry vessels and platforms for data collection.

Accurate and rapid detection and assessment of tsunamis in the open ocean is critical for predicting how they will impact distant coastlines, enabling appropriate mitigation efforts. Scientists from the University of Hawai'i – Mānoa (UHM) School of Ocean and Earth Science and Technology (SOEST), with funding from US NOAA, are partnering with Maersk Line and Matson Navigation to equip 10 ships with real-time geodetic GPS systems and satellite communications. The pilot network of GPS-equipped ships enables each vessel to act as an open-ocean tide gauge. Data from these new tsunami sensors are streamed, via satellite, to a land-based data center where they are processed and analyzed for tsunami signals.

"The 2011 Japan earthquake highlighted weaknesses in our understanding of earthquake and tsunami hazards, and emphasized the need for more densely-spaced observing capabilities," said James Foster, SOEST associate researcher and lead investigator for the project. "Commercial vessels are the only realistic option for providing observation platforms at the scale necessary. The WOC Smart Ocean-Smart Industries program was exactly the mechanism we needed to identify and engage a shipping company that might respond to our needs for instrument hosting and ocean data collection," he added.

During the Illapel tsunami in 2015, several of the pilot project ships were in open ocean, enabling actual testing of the sensors. First results were positive, confirming predicted performance of the sensors. With the network installed, the scientists are at the beginning of further testing system performance and refining methods for filtering time series to improve resolution of tsunami events.

Signe Bruun Jensen, Head of Sustainability at Maersk Line, highlighted that "The Smart Ocean-Smart Industries program was one of the main reasons we joined the World Ocean Council. The WOC enables new models for cooperation between the scientific/ocean observing community and ocean industries to address our shared challenges. The tsunami detection project is a perfect example of the potential of these collaborations. Through our fleet of more than 600 vessels, deeper knowledge of the oceans can be gained, resulting ultimately in higher safety of exposed coastal areas."

Paul Holthus, WOC's CEO, added, "The WOC Smart Ocean-Smart Industries program is expanding the use of commercial vessels and platforms for data collection by fostering and coordinating interaction between ocean industries and the science and technology communities. We are working to increase ocean information through pilot efforts that would address: Priority data needs, such as ocean acidification, bathymetry; Data deficient areas, such as the Arctic, waters around Africa, the Southern Ocean; and Partnering with existing programs and technology, such as the Global Drifter Program and the General Bathymetric Chart of the Oceans (GEBCO)."

Source: World Ocean Council – News Release (Web: www.oceancouncil.org)

News from around the Region

Observer training programme for Solomon Islands fisheries staff completed



Some of the trainees who attended the training in September 2015. (Photo: MFMR-Solomon Islands)

In September 2015, more than thirty trainee observers were taken through an intensive programme in ten weeks.

The Ministry of Fisheries and Marine Resources observer training is similar to all standard programmes carried out across the Pacific.

During this training, fisheries observers were taught many relevant skills and knowledge related to their 'fisheries observer' role.

These included personal safety at sea, how to identify workplace hazards, administration of

first aid procedures, emergency procedures and processes onboard a vessel, record keeping and usage of navigation equipment, how to identify different fish and marine species and carry out biological catch sampling.

The large group was divided into two smaller groups, with one doing the Pacific Islands Regional Fisheries Observer syllabus first while the other, learning basic sea safety at the Solomon Islands National University's School of Technology & Maritime Studies.

All trainees completed both sessions successfully in ten weeks and a small graduation ceremony was held at Jina's Restaurant for them and to officially close the programme.

This new batch of trained fisheries observers will boost the Ministry of Fisheries and Marine Resources' (MFMR) capacity to implement 100% coverage of purse seine and 5% minimum coverage of longline and pole and line fishing in the region, as required by the Western and Central Pacific Fisheries Commission.

This group of observers has increased the number of fisheries observers in Solomon Islands to more than ninety.

Congratulations to all who graduated and the Ministry of Fisheries and Marine Resources officials for the successful coordination of the programme.

Meanwhile, the MFMR's weekly radio awareness programme has also resumed in September. This program is aimed at informing fishermen and women, and basically anyone who has interest in the industry, the laws and regulations that governs it and also the activities that MFMR engages in.

The radio program will run initially for a year and may be extended after the current contract ends next year.

Source: Ministry of Fisheries & Marine Resources (MFMR), Solomon Islands 'Tuna Nius' #2.

China and Samoa celebrate 40 years with the opening of the \$33m Maritime Research Campus

by Lagi Keresoma
Apia, Samoa: 9 Nov 2015

Forty years to the 6 of November 2015, the People's Republic of China and the Samoan Government opened a \$33 million School of Maritime Training & Marine Research Campus at Mulinu'u as the latest landmark in the celebration of 40 years of the diplomatic relationship between the two countries.

China's Ambassador to Samoa His Excellency Wang Xefeng said China has committed to assist and support Samoa and will continue to strengthen not only their diplomatic ties, but to support Samoa's development programmes.

The Ocean Campus of the National University of Samoa will focus on Marine and Maritime Training of Samoa's future seamen and will also be used as a centre for scientific research.

"This unique building will be used for conducting search on ocean study and has a better access not only to teaching facilities but for training which will be in line with international standards of maritime," said Ambassador Wang.

Prime Minister Tuilaepa Lufesolai Sailele Malielegaoi acknowledged the support and assistance from China and he hopes that the campus will produce more future sailors.

"I hope this new campus will nurture more high quality service in maritime operation, and create shipping line services between China and Samoa.

The \$33 million campus is a significant milestone achieved by NUS in the past 31 years and this is an accomplishment for the Government in recognition of the value of such project," said Tuilaepa.

More details: <http://www.talamua.com/china-samoa-celebrate-40-years-with-the-opening-of-the-33m-maritime-research-campus/>



Ambassador Wong and Samoan Prime Minister in front of the friendship plaque. (Photo: Talamua)



The new maritime research campus in Mulinu'u, Apia. (Photo: Talamua)



Flag raising ceremony to open the new campus. (Photo: Talamua)

Fiji Fisheries Department aims to increase production of dry seaweed



Seaweed being dried in the Yasawas, Fiji.
(Photo:news.algaeworld.org)

One of the Fiji Fisheries Department's aim for 2015 is to increase the production of dry seaweed by end of the year to 100 million tonnes.

According to a report via fijivillage.com in September, the Director for Fiji Fisheries Department stated that the current production of dry seaweed was around 42 million tonnes.

The harvested seaweed was mostly from Vuaki and Yaqeta farms in Yasawa.

Earlier this year, the department had assisted potential farmers from the province of Macuata find suitable areas for seaweed farming.

Fisheries staff in the north are continuing to provide assistance and working with seaweed farmers from the villages of Lakeba, Kavewa, Nabukadogo and Nakalou to boost production.

Dried seaweed from these areas are sold to Wee Kong Marine Products and Exports Co. Ltd for \$1 per kilogram or \$1000 per tonne.

In June this year, fourteen families and two youths of Vuaki and Yaqeta villages in Yasawa, will be able to increase their seaweed production following the handing over of two boats, life jackets and relevant equipment through a partnership between the Ministry of Finance and Ministry of Fisheries and Forests.

Through this partnership the Ministry of Fisheries will provide technical expertise to support the identification of sites, farm development, quality control, monitoring and basic training for communities.



Permanent Secretary for the Ministry of Finance (in suit) and his counterpart from the Ministry of Fisheries during handing over of equipment. (Photo:www.fiji.gov.fj)

The equipment complements a funding of \$200,000 provided to the fisheries ministry to assist with the implementation of its Seaweed Development Programme this year.

Sources: www.fiji.gov.fj; <http://news.algaeworld.org>; <http://fijivillage.com>

Mariculture technology training for Samoans in China

The first bilateral training for officials from the Samoa Fisheries Division and community representatives who are actively involved in aquaculture activities in Samoa (ie. Tilapia, mudcrab, seagrapes, and giant clam farming) was held at the Fujian Institute of Oceanography in Xiamen, China from 18 June to 8 July 2015.

This three weeks training, is the first of its kind between the Samoa Fisheries Division and the Fujian Institute of Oceanography to be held in China.

Its purpose was to enhance and improve the touring team's knowledge and understanding of the development of mariculture technology in China and learn from the experience to develop aquaculture in Samoa.

The programme for the touring group also included sessions on Chinese language and culture, site visits and field trips to hatcheries and processing plants for aquatic products.

The group also visited scenic spots around the area, including Gulang Island, Quanzhou (the most famous historical and cultural cities and an important seaport), museums, commercial streets etc.

The group has learnt a lot especially on mariculture technology and its development in China.

It is hoped that members of the touring team will utilize experiences and lessons learnt to develop aquaculture in Samoa.

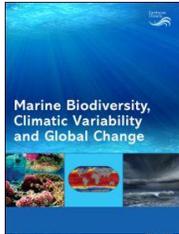
The assistance and support (financial, administrative etc.) of the Ministry of Commerce of the People's Republic of China, the Fujian Institute of Oceanography, the Economic and Commercial Counselor's office (EECO) of the Chinese Embassy in Samoa and the Government of Samoa towards making this training and tour possible, is acknowledged.



Photo (above): The Samoan delegation with their hosts. Right: A group item during the tour.
(Photos: Samoa Fisheries Division)

Source: Samoa Fisheries Division Newsletter, Vol. 9, Issue 4, 2015.

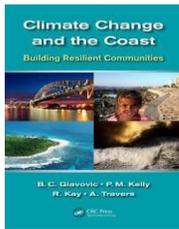
New additions to PIMRIS Library



Marine biodiversity, climatic variability and global change / Beaugrand, G. New York: Taylor & Francis, c2015. ISBN: 9781844076789.

This publication book reviews parameters and processes that control marine biodiversity in time and space and at all organizational levels. Theories and hypotheses proposed to explain the arrangement of biodiversity in time and space are reviewed in depth.

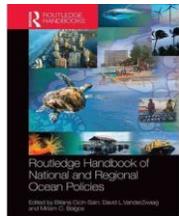
http://www.taylorandfrancis.com/sustainability/articles/marine_biodiversity_climatic_variability_and_global_change/



Climate change and the coast: building resilient communities / edited by B. Glavovic, et al. Boca Raton: CRC Press, c2015. ISBN: 9780415464871.

Climate change and the coast draws on current theory and first-hand experience to show how to reduce vulnerability to climate change impacts and build adaptive capacity and resilience

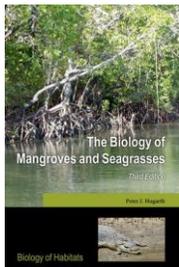
<https://www.crcpress.com/Climate-Change-and-the-Coast-Building-Resilient-Communities/Glavovic-Kelly-Kay-Travers/9780415464871>



Routledge handbook of national and regional ocean policies / edited by B. Cicin-Sain, et al. Oxon, UK: Routledge, c2015. ISBN: 9781138788299.

The comprehensive handbook presents in-depth analyses of the experiences of fifteen developed and developing nations and four key regions of the world that have taken concrete steps toward cross-cutting and integrated national and regional ocean policy.

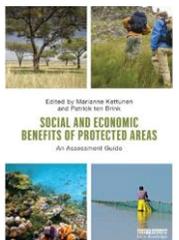
<https://www.routledge.com/products/9781138788299>



The biology of mangroves and seagrasses / Hogarth, P. J. 3rd ed. Oxford, UK: Oxford University Press, c2015. ISBN: 9780198716549.

The edition of biology of mangroves and seagrasses describes the unique adaptations of these plants to their exacting environments; the rich and diverse communities of organisms that depend on mangrove forests and seagrass meadows (including tree-climbing shrimps, synchronously flashing fireflies, and 'gardening' seacows); etc.

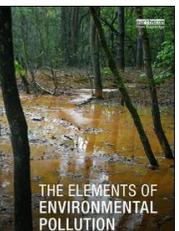
<https://global.oup.com/academic/product/the-biology-of-mangroves-and-seagrasses-9780198716549?cc=fj&lang=en&#>



Social and economic benefits of protected areas: an assessment guide / edited by M. Kettunen & P. ten Brink. New York, N.Y.: Routledge, c2013. ISBN: 9780415632836.

This book provides step-by-step practical guidance on identifying, assessing and valuing the various ecosystem services and related benefits provided by PAs. It also aims to improve the communication of PA benefits to different stakeholders and the general public.

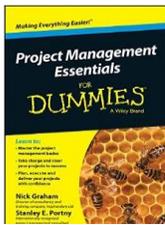
<https://www.routledge.com/products/9780415632843>



The elements of environmental pollution / by Rieuwerts, J. New York: Routledge, c2015. ISBN: 9780415859196.

This book explains the key principles of pollution science, assesses human disturbances of natural element cycles and describes local and global pollution impacts, from smoggy cities, polluted lakes and toxic soils to climate change, ocean acidification and marine dead zones.

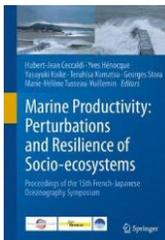
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Project management essentials for dummies / Graham, N. & Portny, S. Milton, Qld: John Wiley & Sons, c2015. ISBN: 9780730319542.

This comprehensive resource will help you unlock the keys to project management success, gain the know-how to assess your strengths and weaknesses to maximise your project management potential, find proven ways to motivate your project team, and so much more.

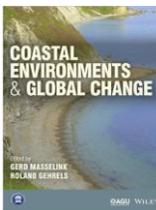
<http://au.wiley.com/WileyCDA/WileyTitle/productCd-0730319547.html>



Marine productivity: perturbations and resilience of socio-ecosystems: proceedings of the 15th French-Japanese Oceanography Symposium / edited by H. Ceccaldi, etc. al. Cham, Switzerland: Springer, c2015. ISBN: 9783319138770.

This conference proceeding reviews the impacts of natural (storms, typhoons, earthquakes, tsunamis, etc.) and man-made (pollution, buildings in coastal areas, aquaculture, tourism, sports, diving, etc.) perturbations inflicted on coastal and marine environments.

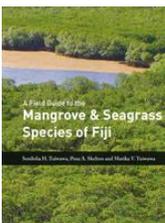
<http://www.springer.com/us/book/9783319138770>



Coastal environments and global change / edited by G. Masselink & R. Gehrels. Hoboken, NJ: Wiley, c2014. ISBN: 9780470656600.

This book draws on the expertise of 21 leading international coastal scientists, represents an up-to-date account of coastal environments and past, present and future impacts to global change.

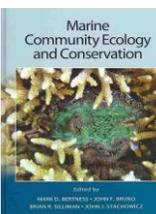
<http://au.wiley.com/WileyCDA/WileyTitle/productCd-0470656603.html>



A field guide to the mangrove & seagrass species of Fiji / Tuiwawa, S., Skelton, P. & Tuiwawa, M. Suva, Fiji: University of the South Pacific Press, c2014. ISBN: 9789820109179.

The 75 page field guide provides photographs and information such as local names, uses, and distribution, of the twelve mangrove and six seagrass species.

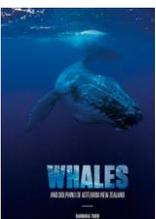
http://uspbookcentre.com/store/merchant.mv?Screen=PROD&Store_Code=UBC&Product_Code=9789820109179



Marine community ecology and conservation / edited by Bertness, M. D., et al. Sunderland, MA: Sinauer Assoc., c2014. ISBN: 9781605352282.

This book provides a current overview of what is known about the structure, organization, and conservation of organism assemblages that live in the ocean. It is extensively referenced and includes a bibliography of over 5,000 citations.

<http://www.sinauer.com/marine-community-ecology-and-conservation-652.html>



Whales and dolphins of Aotearoa New Zealand / Todd, B. Wellington, NZ: Te Papa Press, c2014. ISBN: 9781877385711.

This resource brings these majestic marine mammals and their underwater world to life, with a special focus on the whales and dolphins of the South Pacific. It contains hundreds of breathtaking photographs, historical images, astonishing facts and figures, and informative illustrations and diagrams bring the whale world to life.

<http://www.amazon.com/Whales-Dolphins-Aotearoa-New-Zealand/dp/1877385719>

Conferences, Workshops & Events

- 20-22 Jan 2016 **Smart Shrimp Aquaculture Workshop for the Asia-Pacific region**, Asia Institute of Technology (AIT), Pathumthani, Thailand.
<http://www.pdf.investintech.com/preview/ba280822-8e73-11e5-9555-002590d31986/index.html>
- 8-12 Feb **Regional Observer Coordinators Workshop**, Pacific Islands Forum Fisheries Agency, FFA Headquarters, Honiara, Solomon Islands.
- 15-19 Feb **Observer Front Line Management Training**, Pacific Islands Forum Fisheries Agency, FFA Headquarters, Honiara, Solomon Islands.
- 22-26 Feb **Aquaculture 2016**, World Aquaculture Society, Las Vegas, Nevada,
<https://www.was.org/meetings/default.aspx?code=AQ2016>
- 25-26 Feb **CROP Heads Meeting**, FFA Headquarters, Honiara, Solomon Islands.
- 3-4 Mar **WWF Facilitated: Emerging Technologies Workshop**, Auckland, New Zealand.
- 7-11 Mar **International MCS Network/NZ MPI Facilitated: 5th Global Fisheries Enforcement Training Workshop (GFEW)**, Auckland, New Zealand.
- 26-29 Apr **Asia Pacific Aquaculture 2016**, SECOND MAJOR INTERNATIONAL AQUACULTURE CONFERENCE IN INDONESIA, Grand City, Surabaya, Indonesia. <https://www.was.org/meetings/default.aspx?code=APA2016>
- 9-13 May **Annual 98th Forum Fisheries Committee Meeting (FFC98)**, Port Vila, Vanuatu.
- 30 May – 3 June **MSEAS 2016**, Understanding marine socio-ecological systems: including the human dimension in Integrated Ecosystem Assessments, Brest, France.
<http://www.ices.dk/news-and-events/symposia/MSEAS/Pages/MSEAS.aspx>