

“Advancing Ocean Knowledge, Fostering Sustainable Development”

10th WESTPAC International Scientific Conference

17-20 April 2017, Qingdao, China



Contents

1	General Descriptions
2	Conference Overview
4	Keynote speeches
6	22 Sessions
7	8 Workshops
8	Outstanding Scientist Award
9	Best Young Scientist Award
10	Voice of WESTPAC Young Scientist
10	Young Scientist Travel Grant
11	Bring Marine Science into School
12	Conference Conclusions

The designations employed and the presentation of the material in this publication do not imply the expression of any opinion whatsoever on the part of WESTPAC concerning the legal status of any country, territory, city or its authorities, or concerning the delimitation of its frontiers or boundaries.

For citation purposes, this brochure may be cited as:

Advancing Ocean Knowledge, Fostering Sustainable Development: 10th WESTPAC International Scientific Conference, Qindao, China, 17-20 April 2017. Bangkok. 2017. 13pp. [English] WESTPAC Brochure 2017-4

© WESTPAC

A PDF version is available online at <http://iocwestpac.org>. This document is produced by the UNESCO/IOC Regional Office for the Western Pacific (WESTPAC Office). Editor-in-Chief: Wenxi Zhu, Design and Layout: Warren Field.

General Descriptions

Science and innovation are among key driving forces for the 2030 Agenda for Sustainable Development that is conducive to the safeguarding of our planet and its finite resources.

The ocean is our planet's life support system and a healthy ocean means a healthy planet. Ocean flows on its rule without any respect to national boundaries. This puts the IOC¹ Sub-Commission for the Western Pacific (WESTPAC) in a pivotal place in promoting cooperation at all levels in order to assist countries in advancing ocean knowledge to address their development challenges in the region.

To cater to the needs of people and countries in the region, WESTPAC has been forging the WESTPAC International Scientific Conference (formerly known as "WESTPAC Scientific Symposium") as a unique platform to advance ocean knowledge and catalyze cross-disciplinary collaborations with a view to addressing the challenges the region is facing.

Upon the kind offer of the State Oceanic Administration (SOA) of China, the 10th International WESTPAC International Scientific Conference, entitled "Advancing Ocean Knowledge, Fostering Sustainable Development: from the Indo-Pacific to the Globe", was organized in Qingdao, China, 17-20 April 2017, in partnership with the First Institute of Oceanography, SOA of China and a number of marine research institutions from the region. The Conference was geared at driving the implementation of the 2030 Agenda for Sustainable Development, particularly the dedicated Goal 14 for the ocean: Conserve and sustainably use the oceans, seas and marine resources for sustainable development.

1 Intergovernmental Oceanographic Commission (IOC) of UNESCO

Conference Overview

The four-day 10th WESTPAC International Scientific Conference attracted immense interest, as demonstrated by a record breaking number of participants and positive feedbacks.

Over 700 scientists, governmental officials and resources managers from 21 countries and many international programmes within and outside the WESTPAC region, took part in this grand event.



The Conference featured 6 keynote speeches, 22 sessions, and 8 workshops, which are structured around four themes: (1) Understanding ocean processes and climate change in the Indo-Pacific;

(2) Ensuring marine biodiversity, food safety and security; (3) Maintenance of ocean health; and (4) Enhanced knowledge for cross-cutting and emerging issues.



Keynote speeches

In view of the current and emerging challenges that the region is facing, six prestigious scientists and notable marine science-policy makers shared their long years of knowledge and provided their valuable perspectives.



“Causes and consequences of the 2015-16 El Niño”

Dr Michael James
McPHADEN (USA)



“Marine plastics and microplastics- threats to marine ecosystem”

Dr Shige TAKADA
(Japan)

WESTPAC
International Scientific Conference
10 April 2017 Qingdao, China

Vertical profiles of
microplastics in sediment
cores from Asian and African



“Dynamics of Western Pacific subtropical high that shapes predictability of summer monsoon and tropical storms”

Professor Bin WANG
(USA)



“Science-policy Nexus in the governance of marine biodiversity”

Professor Zakri
ABDUL HAMID
(Malaysia)



“Scientific advance in ocean observations and modelling techniques”

Professor Fangli QIAO
(China)



“The broad science agenda of IOC and WESTPAC: from a healthy Indo-Pacific Ocean to the global sustainability”

Dr Vladimir RYABININ
(IOC/UNESCO)



WESTPAC
10th International Scientific
17-20 April 2017 Qingda

22 Sessions



Sub-theme A

Understanding Ocean Processes and Climate Change in the Indo-Pacific

A01: Role of the Indo-Pacific Ocean in Regional Climate Change and Variability

A02: Atmospheric Deposition and Biogeochemical Interaction Processes

A03: Risk and Vulnerability Assessment on Coastal Sea-Level related hazards

A04: Western Boundary Current: Dynamics, Variability and their Impacts on Climate and Marine Ecosystems

A05: Sediment Source-to-Sink Process in the Western Pacific

A06: Past Climate Variations over the Asian Continental Margin

A07: Asian Marginal Seas: Physics, Biogeochemistry and Ecosystem



Sub-theme B

Ensuring Marine Biodiversity, Food Safety and Security

B08: Marine Taxonomy and Biogeography

B09: Status, Trends of Marine Biodiversity and Impacts of Climatic and Anthropogenic Stressors

B10: Research and Conservation of Endangered Species

B11: Sustainable Fisheries and Environmentally Friendly Aquaculture

B12: Toxic Marine Organisms and Seafood Safety



Sub-theme C

Maintenance of Ocean Health

C13: Chemical Contaminants and Issues of Emerging Concern

C14: Ocean Acidification and its Impacts on Marine Ecosystems

C15: Harmful Algal Blooms

C16: Remote Sensing in Integrated Coastal and Marine Management

C17: Rehabilitation and Conservation of Marine Ecosystems



Sub-theme D

Enhancing Knowledge of Cross-cutting and Emerging Issues

D18: Ocean Observations, Data and Information Management in the Indo-Pacific: Major Advances and Challenges

D19: Ocean and Climate Model Development & Applications

D20: Blue Economy, Renewable Energy, Science Policy and Governance

D21: Coastal Ecosystem Services and Marine Social-economic Analysis

D22: Marine Scientific Advances and Knowledge Gap in the South China Sea

8 Workshops

WS-1 Monsoon Onset Monitoring and its Social & Ecosystem Impacts

WS-2 Coastal Habitat Mapping

WS-3 Harmful Algal Blooms

WS-4 Indo-Pacific Ocean Environment Variations and Air-sea Interaction

WS-5 Coastal Marine Biodiversity and Conservation

WS-6 DNA Taxonomy for Coral Reef Organisms

WS-7 Deoxygenation in Coastal and Oceanic Waters in the Western Pacific

WS-8 Monitoring the Ecological Impacts of Ocean Acidification on Coral Reef Ecosystems

WESTPAC

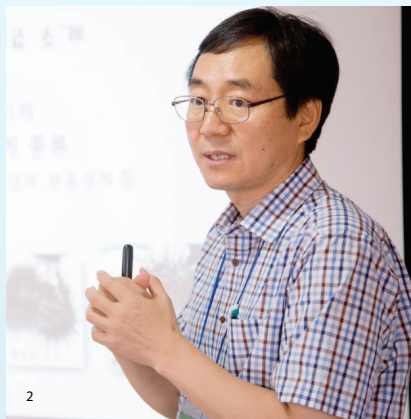
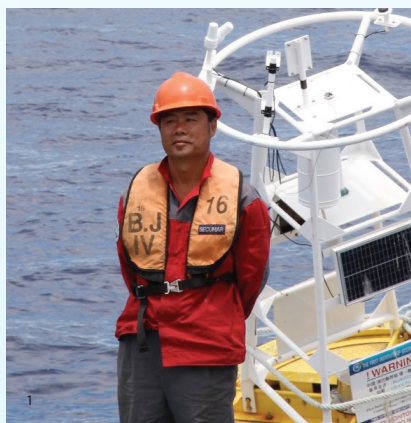
Outstanding Scientist Award

In recognition and appreciation of those marine scientists for their long term dedication to marine science development and cooperation in the region, WESTPAC selected three Outstanding Scientists for the “WESTPAC Outstanding Scientists 2017” in broad consultation with scientific communities in the region.

1. **Dr Weidong Yu (China)**

2. **Dr Youn-Ho Lee (Republic of Korea)**

3. **Dr Teruhisa Komatsu (Japan)**



WESTPAC Best Young Scientist Award

In order to encourage young marine scientists to devote themselves to marine science, WESTPAC established "WESTPAC Best Young Scientist Award" since 2011. At the 10th WESTPAC International Scientific Conference, five young scientists were awarded the "WESTPAC Best Young Scientists 2017" in view of their outstanding scientific research and presentations at the Conference.

Best Young Scientist Oral Presentation Award 2017

"The origin of the suspended particulate matter in the seagrass meadow, an evidence of the stable isotope signatures"

Mr A'an Johan Wahyudi (Indonesia)

"A basin scale nutrient load model for Manila bay: identifying sources, load resection scenarios, and options"

Ms Lara Patricia Sotto (Philippines)

"Characterization of a new species of *Chattonella* that caused massive wild fish kill event at the northeast coast of Peninsular Malaysia"

Ms Winnie Lik Sing Lau (Malaysia)

Best Young Scientist Poster Presentation Award 2017

"Microplastics in sediments of the Changjiang Estuary, China"

Ms Guyu Peng (China)

"Monitoring of a paralytic shellfish toxic-producer *Alexandrium*"

Ms Guat Ru Liow (Malaysia).



Voice of **WESTPAC** Young Scientist

WESTPAC organized, for the first time, a Young Scientist Forum in order to help the young generation of marine scientists to network and exchange their perspectives on marine science development and collaboration.

WESTPAC Young Scientist Travel Grant

WESTPAC Young Scientist Travel Grant was established to nurture young science leaders and facilitate international exposures of young scientists. With financial support of the Government of China, almost forty young scientists were provided with financial support to facilitate their participation into the 10th WESTPAC International Scientific Conference, 17-20 April 2017, Qingdao, China.



WESTPAC Bring Marine Science into School

An outreach activity of "Bring Marine Science into Schools" was organized at the 10th International Scientific Conference to inspire the enthusiasm and motivation of students at elementary and high school for ocean and marine science. Six selected WESTPAC scientists brought to the school students their first-hand experiences of marine research and ocean explorations. Over 1200 students (9-16 years old) from the Experimental Primary School of Shinan District and Qingdao Experimental High School participated in this activity.

"Beyond their beauty: coral reefs as a history book of our changing oceans"

Dr Intan Suci Nurhati (Indonesia)

"Sea turtles in trouble"

Dr Juanita Joseph (Malaysia)

"Kingdoms of life in the sea"

Dr Hongjun Song (China)

"Antarctica: secrets of the Southern Continent"

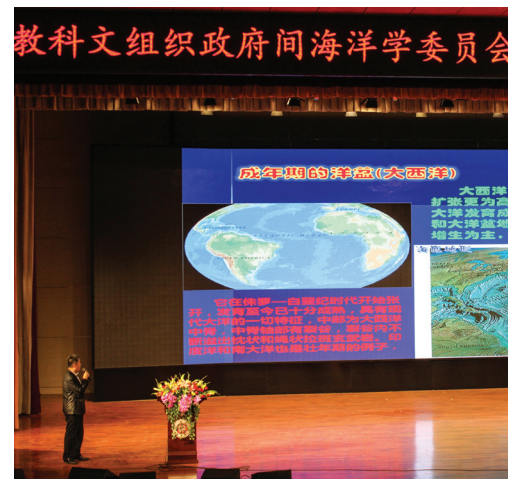
Dr Suchana Chavanich (Thailand)

"DNA, plankton and the sea"

Dr Yunyun Zhuang (China)

"The ocean: from birth to extinction"

Dr Chuanshun Li (China)



Conference Conclusions

The 10th WESTPAC International Scientific Conference sets a new record again in its history in terms of the number of participants, and the number of sessions and workshops, all statistics demonstrated the ever-increasing interests, scientific capacities of scientists and countries, and the leadership of WESTPAC in promoting marine science development and cooperation in the region.

Notwithstanding a further analysis, the following were put forward from the Conference that WESTPAC intensifies its efforts over the next intersessional period.

WESTPAC embraces the new development of various international frameworks with a bearing on ocean, including the 2030 Agenda

for Sustainable Development, in order to ensure regional needs and knowledge are integrated/ considered into the global development agenda, and global goals are adapted to regional and national ones to meet the region's unique socio-economic and environmental challenges.

Participants called for a commitment that WESTPAC could make to assisting Member States in the implementation of SDG 14, which will be fulfilled through: (i) strengthening regional collaborative research, especially on marine pollution, ocean acidification and marine biodiversity; (ii) disseminating scientific knowledge and strengthening information sharing and science-policy interface; (iii) transfer of marine technology and capacity development; (iv) provision of technical assistance to address specific needs of its Member States; and (v) forging, if necessary, a regional platform for countries to share their progresses, lessons learned, technology innovation and best practices in SDG 14 implementation.

While reaffirming the essential importance of research capacity and transfer of marine technology for sustainable development, participants suggested that WESTPAC continuously accord priority to capacity development, and further employ inclusive, adaptive and self-driven approaches with focus on user needs at the regional and national level, North-South and South-South collaboration, and linking trainings to the attainment of research goals.

Noting the great positive impacts generated from the two Regional Training and Research Centers (RTRCs), respectively on Ocean Dynamics and Climate (China) and Marine Biodiversity and Ecosystem Health (Indonesia), participants expressed their supports to the WESTPAC Initiative of "IOC Regional Network of Training and Research Centers on Marine Science", and strongly recommended the competent governments, research institutes and universities join the initiative by hosting RTRCs based on their specialization areas.

Meanwhile, participants suggested, but not limited to, the following subjects for enhanced efforts in the Western Pacific and its adjacent regions:

Sustained ocean observations and information services;

Ocean forecasting systems, particularly for NEAR-GOOS and SEA-GOOS;

Marine pollutions, especially microplastic and eutrophication;

Ocean acidification and its impact on marine ecosystems;

Atmosphere and ocean circulation, and air-sea interaction;

Ecosystem restoration techniques/methods;

Vulnerability assessment methodology and tools.

This Conference demonstrated the strategic role of WESTPAC between global objectives and national actions, by continuously engaging world's leading scientists/research institutes working on global hotspot issues into the regional context, with a view to providing a clearer global picture, and enabling scientists in the region to better tune up their research in the global context.

Participants recognized that the "WESTPAC Outstanding Scientist Award" generates positive impacts in recognition and appreciation of those marine scientists for their long-term dedication to marine science development and cooperation in the region.

Participants stressed the importance of the outreach activity of "Bringing marine science into schools", and a series of initiatives aiming to nurture young scientists in the region, including the "WESTPAC Young Scientific Travel Grant" and "WESTPAC Best Young Scientist Award".



青岛

IOC Sub-Commission for the Western Pacific (WESTPAC)

Intergovernmental Oceanographic Commission of UNESCO
c/o the Department of Marine and Coastal Resources
9th Floor, the Government Complex Building B
120 Chaengwattana Road, Lak Si, Bangkok 10210, Thailand
Tel: +66 (0) 2 141 1287-89
Fax: +66 (0) 2 143 9245
E-mail: w.zhu@unesco.org
Website: <http://iocwestpac.org>; <http://ioc.unesco.org>

