

## Table of Contents

<b>Session 6.</b> Coral conservation in times of change: letting nature pick the winners <b>K.S. Lunz, C. Shea, K.W. Ames, K. Neely, E. Goergen, D. Williams, D.S. Gilliam, A. Whittle</b> <i>Acropora palmata</i> 's last stand in Florida? .....	<b>2</b>
<b>Session 7.</b> Biodiversity, biogeography and evolution of coral reef organisms <b>D. Huang, J.D. Reimer, M. Timmers, P.F. Cowman, J. Hodge</b>  SUMMARY of Session 7: Biodiversity. Biogeography and evolution of coral reef organisms.....	<b>24</b>
<b>Session 8.</b> Incorporating mechanistic processes in spatial decision science: dispersal, movement, functional groups, evolution and range shifts <b>R.T. Etti, T. Schils</b>  Global biogeography of marine algae with applications for coral reef connectivity..	<b>28</b>
<b>Session 11.</b> Animal-algal symbioses: molecular, physiological and genetic interactions, processes and adaptations <b>I.Yuyama, T. Higuchi, T. Mezaki</b>  <i>Symbiodinium kawagutii</i> (clade F) coats the surface of <i>Acropora solitaryensis</i> , resulting in the formation of a sheet-like crust .....	<b>49</b>
<b>Session 12.</b> The coral reef microbiome and microbial interactions and changes <b>G. Banc-Prandi, K. Imhof, E. Hall, K.B. Ritchie</b>  Interspecific coral bacterial competition under ocean acidification scenarios .....	<b>58</b>

**Session 13.** Diseases on the reef: presence, persistence and responses

**L. K. Deignan, J. R. Pawlik**

Demographics of the Caribbean brown tube sponge *Agelas tubulata* on Conch Reef, Florida Keys, and a description of *Agelas* Wasting Syndrome (WS).....72

**K. D. Raj, G S. Aeby, G. Mathews, M. S. Bharath, S. Rajesh, R.L. Laju, A. Arasamuthu, P. D. Kumar, J. K. Patterson Edward**

Patterns in the abundance of fish and snail corallivores associated with an outbreak of acute tissue loss disease on the reefs of Vaan Island in the Gulf of Mannar, India .....85

**Session 15.** Connectivity, recruitment and isolation among coral reef populations

**F. Elmer, J.S. Rogers, R.B. Dunbar, S.G. Monismith, J.J. Bell, P.A. Gardner**

Influence of localised currents, benthic community cover and composition on coral recruitment: integrating field-based observations and physical oceanographic modelling..... 101

**Session 16.** Larval recruitment on coral reefs facing global change

**P. Kegler, H.F. Kegler, A. Kunzmann, A. Gärdes, Y.R. Alfiansah, M. Lukman, C. Hassenrück, S.C.A. Ferse**

Different levels of anthropogenic impact influence coral larvae settlement and bacterial biofilm communities in the Spermonde Archipelago, Indonesia.....145

**Session 20.** Reef fish ecology, conservation, and fisheries: the scientific legacy of Glenn Almany

**M. Hixon, G. Jones, D. Feary**

SUMMARY of Session 20: Reef fish ecology, conservation, and fisheries: the scientific legacy of Glenn Almany ..... 159

**Session 21.** Achieving sustainable coral reef fisheries: policy development, implementation, management and enforcement

**B.L. Kojis, W.J. Tobias**

Survey of boat-based recreational fishers in the US Virgin Islands ..... 170

**Session 25.** Indicator taxa: what can they tell us about the past, present and future for coral reefs?

**W. Eder, J. Hohenegger, A.I. Torres-Silva, Antonino Briguglio**

Morphometry of the larger foraminifer *Heterostegina* explaining environmental dependence, evolution and paleogeographic diversification .....185

**G.R. Narayan, H. Westphal**

Are Zanzibar's reefs undergoing ecological change? Foraminifera bio-indicators for monitoring and assessment of reef ecosystems in the west Indian Ocean.....197

**J. Wöger, A. Briguglio, W. Eder, S. Kinoshita, J. Hohenegger**

First results of a long-term cultivation experiment of different species of Nummulitidae (Foraminifera) from the island of Sesoko (Okinawa, Japan).....206

**Session 30.** Coral bleaching: monitoring, management responses and resilience

**K. L Kramer, S. P. Cotton, M. R. Lamson, W. J. Walsh**

Bleaching and catastrophic mortality of reef-building corals along west Hawai'i island: findings and future directions .....219

**Session 34.** Coral reef records of sea level, climatic and environmental changes: a tribute to Lucien Montaggioni

**G. Bufarale, M. O'Leary, L.B. Collins, A. Stevens, M. Kordi, T. Solihuddin**

Geomorphology and Holocene Evolution of Kimberley Coral Reefs.....233

**Session 36.** Biodiversity, biogeography and evolution of coral reef organisms

**L.M. Oliver, D.L. Santavy, P. Bradley**

Developing a multi-stressor gradient model for coral reefs of Puerto Rico,,.....,245

**Y.D. Louis, S.D. Dyllal, R. Bhagooli**

Coast-reef scale physiological responses of <i>Acropora muricata</i> harboring <i>Symbiodinium</i> clade A .....	258
<b>D. Kaullysing, A. Gopeechund, S. Mattan-Moorgawa, N. Taleb-Hossenkhan, B. Kulkarni, R. Bhagooli</b>	
Increased density of the corallivore <i>Drupella cornus</i> on <i>Acropora muricata</i> colonies overgrown by <i>Padina boryana</i> .....	278
<b>Session 42A.</b> Propagation and active reef restoration-techniques and considerations for the production of coral propagules and transplantation on to degraded reefs	
<b>Andrew M. Ross</b>	
The efficacy of nursery head-starting in the culture and restoration of <i>Acropora cervicornis</i> .....	296
<b>S. Griffin, T. Moore, M. Nemeth, A.C.R. Gleason, B. Gintert</b>	
Using photomosaics to monitor <i>Acropora cervicornis</i> thickets created by outplanting nursery-grown corals .....	315
<b>Session 42B.</b> Propagation and active reef restoration – distribution, transplantation, monitoring and evaluation of restoration activities	
<b>R. ter Hofstede, C. Finney, A. Miller, M. van Koningsveld, T. Smolders</b>	
Monitoring and evaluation of coral transplantation to mitigate the impact of dredging works .....	330
<b>Lisa Carne, Les Kaufman, Karina Scavo</b>	
Measuring success for Caribbean acroporid restoration: key results from ten years of work in southern Belize .....	342
<b>M. Omori, Y. Higa, C. Shinzato, Y. Zayasu, T. Nagata, R. Nakamura, A. Yokokura, S. Janadou</b>	
Development of active restoration methodologies for coral reefs using asexual reproduction in Okinawa, Japan.....	359

**Session 50.** Modeling and computation tools for coral reef management and conservation

**Christine Lai, Claus Pedersen**

Agent based modelling as a tool to manage dredging impact on coral spawning .....380

**M. Jenne, M.M. Dalkilic, C. C. Johnson**

Employing software engineering principles to enhance analysis of coral reef databases.....394

**Session 51.** Remote sensing of coral reefs: transitioning from developmental to operational

**A. Collin, J. Laporte, B. Koetz, F.-R. Martin-Lauzer, Y.-L. Desnos**

Mapping bathymetry, habitat, and potential bleaching of coral reefs using Sentinel-2 .....406

**Session 66.** Human-natural coupled reef systems: integrating indigenous and western sciences for sustainable management solutions

**H. Nawata**

Indigenous beliefs and divine conceptions of Red Sea black coral: a case study of the traditional fishery, Sinai Peninsula, Egypt .....422

**Session 72.** Marine resource sustainability, conservation and management in the Coral Triangle and southeast Asia

**T. Yeemin, W. Suebpala, M. Sutthacheep**

Efforts of small-scale fishers in coral reef conservation: Thailand case illustrations.....441

**M. Sutthacheep, C. Ruangthong, T. Yeemin, W. Samsuvan, S. Pengsakun,  
C. Chamchoy**

Coral reef conservation and management in a Ramsar site in the  
Gulf of Thailand.....454

**S. Pengsakun, T. Yeemin, W. Klinthong, K. Sangmanee, M. Sutthacheep,  
S. Hamanee, B. Lawang**

Managing recreational diving in temporary closures following the 2010  
coral bleaching event in the Andaman Sea .....464

**J. Putthayakool, P. Plangngan, T. Yeemin, W. Klinthong, M. Sutthacheep**

Long-term changes and restoration measures of soft corals  
(*Dendronephthya* spp.) at Mu Ko Similan National Park, the Andaman Sea.....495

**M. Thummasan, T. Yeemin, W. Samsuvan, K. Sangmanee, J. Putthayakool,  
M. Sutthacheep, P. Yeemin**

Population density of crown of thorns starfish in dive sites of Thailand .....483

**C. Chamchoy, T. Yeemin, M. Sutthacheep, W. Klinthong, R. Niamsiri**

Contrasting abundance of juvenile corals at two national parks in the  
Andaman Sea .....494

**V.S. Tuan, N.V. Long**

Comparative study on coral reef related fishery resources at the areas of Vietnam  
representative for the western South China Sea and eastern Gulf of Thailand.....506

**Session 73A.** Co-management: partnerships for achieving effective resource  
outcomes on coral reefs – partnerships across agencies and organizations

**J.C. Hendee, J. Halas, P.J. Fletcher, M. Jankulak, L.J. Gramer**

Expansion of the Coral Reef Early Warning System (CREWS) network  
throughout the Caribbean.....517

**R.E. Schroeder, V.A. Brown, G.W. Davis, M.J. Lameier, S.C. McKagan,  
F. Sauafea-Leau**

A decade of successful partnerships through NOAA's Coral Reef  
Conservation Program Fishery Liaisons in the US Pacific Islands Region.....**523**

**Session 73B.** Co-management: partnerships for achieving effective resource outcomes  
on coral reefs – partnerships with and among communities and stakeholders

**Jamila Patterson, Dan Wilhelmsson, J.K. Patterson Edward**

Co-management to address livelihood linked threats to coral reefs -  
case study from Gulf of Mannar, southeastern India.....**538**

**Session 75.** Prevention, assessment, and mitigation of coral reef impacts resulting  
from planned and unplanned human activities

**D.L. Santavy, P. Bradley, J. Gerritsen, L. Oliver**

The biological condition gradient, a tool used for describing the condition  
of US coral reef ecosystems .....**548**

**Session 80.** Offshore coral reefs in the South China Sea: science, problems, and solutions

**A.H. Yeung, D.M. Baker**

A turnaround at Sanya National Coral Reef Nature Reserve?.....**561**

**Session 82.** Rediscovering crustose coralline algae

**J.C. Sícoli Seoane, J.C. Araújo, B.S. Britto Pereira, F.C. Duarte,  
I.F. Caçonia Fortes**

Santa Cruz Cabrália reefs, Bahia Brazil: using digital tools and printed  
media to raise conservation awareness in K-12 education .....**582**

**Session 88.** Citizen science in support of coral reef protection and sustainability

**Karsten Shein, Jennifer Loder, David G. Bourne, Nohora Galvis**

SUMMARY of Session 88: Citizen science: the next big leap,  
ICRS Town Hall Meeting.....**591**

**Miranda Camp, Karsten Shein , J. Anthony Abbott, Kristi Foster**

Can anyone be a scientist? Exploring the role of citizen science in  
coral reef research.....**599**

**Nohora H. Galvis and Rosa H. Galvis**

Colombian Citizen Science to Improve Coral Reef Conservation.....**606**

**Workshop session**

**Dana Okano, Rob Ferguson, Lisa Vandiver, Adrienne Lorezel**

SUMMARY of the workshop on the science and management of  
water quality on coral reefs.....**620**