



## Member's report on activities related to ICRI

INTERNATIONAL SOCIETY FOR REEF STUDIES

Reporting period November 2016 – November 2017

1. **Contribution to the ICRI Plan of Action 2016-2018.** *Your responses to the following questions will assist the Secretariat in assessing contributions towards the major themes of the current ICRI Plan of Action (<http://www.icriforum.org/icri-secretariat/current>)*

### Theme 1 – “Help raise awareness of how coral reefs and related ecosystems help to fight climate change”

- *Goal 1-1: highlight the contribution of coral reefs, mangroves and seagrasses to mitigate and adapt to climate change and its impacts*

**Question:** Do you have examples of solutions provided by coral reefs and coastal systems to mitigate and adapt to climate change?

A number of articles in the ISRS journal *Coral Reefs* and newsletter *Reef Encounter* cover this issue – see attached for list of publications Nov 2016-Nov 2017. Many individual ISRS members contribute to this theme, particularly those in academic teaching jobs and others working as coral reef practitioners.

**Question:** Are you planning to add in your NDC the importance of coral reefs / mangroves?

This question applies only to individual countries. However, the work of individual ISRS members and the publications and briefings produced might have influenced some countries to do this.

### Theme 3: “Help to reduce human threats to coral reefs and associated mangroves and seagrasses, by making greater use of regulatory tools”

- *Goal 3-1: promote legal frameworks for the protection of coral reefs and associated mangroves and seagrasses, with quantified targets and effective enforcement to protect these ecosystems*

**Question:** What are the legal frameworks for the protection of coral reefs and associated mangroves and seagrasses in place in your countries? If you already replied to the previous request, you don't need reply

**Question:** Did you to set quantified targets to protect their coral reefs, mangroves and seagrasses? And are you able to provide a % of what is currently protected in your country? Please define what you mean by protection?

ISRS contributes to this goal in a general sense by providing scientific evidence that helps to inform countries and other ICRI members to take the necessary action. In particular, in Nov 2016, ISRS published a briefing on the coral reefs of the South China Sea which was distributed widely.

- *Goal 3-2: encourage a ban on plastic microbeads in cosmetic products*

**Question:** How did you implement the recommendation to reduce plastic microbeads pollution in marine environment?

ISRS has not yet participated in this action, but if there is a need for scientific evidence in relation to plastic microbeads and coral reefs, we could consider developing a briefing.

- *Goal 3-3: improve regulation and enforcement to reduce direct anthropogenic damage due to dredging and physical alteration of reef structures*

**Question:** are you working on this topic? If yes, could you please share with us your work. Please note that the information provided will help us to develop a recommendation for the next ICRI General Meeting. Please send us information as soon as possible,

Individual ISRS members work on this, both academically and practically. The forthcoming European Coral Reef Symposium, jointly sponsored by ISRS, includes a session on this topic that might help ICRI members in the future.

- *Goal 3-4: promote the deployment of mooring devices limiting the mechanical destruction of coral reefs and seagrasses*

**Question:** are you working on this topic? If yes, could you please share with us your work. Please note that the information provided will help us to develop a recommendation for the next ICRI General Meeting. Please send us information as soon as possible.

Individual ISRS members may be working on this. ISRS could consider preparing a briefing on the scientific evidence available to inform management decisions about moorings in coral reefs and seagrasses.

- *Goal 3-5: review issues related to the impact of sunscreens and other endocrine disruptors on coral reefs, and encourage the production of sunscreens that are proven not to damage coral reefs*

**Question:** are you working on this topic? If yes, could you please share with us your work. Please note that the information provided will help us to develop a recommendation for the next ICRI General Meeting. Please send us information as soon as possible.

ISRS is preparing a briefing on this topic, the draft of which will be submitted to the 2017 ICRI General Meeting.

#### **Theme 4: “Monitor the state of reefs in order to better manage them”**

- *Goal 4-2: better monitor the phenomena of coral bleaching*

**Question:** How did you implement the recommendation on addressing the decline in coral reef health due to global bleaching events?

ISRS members play in major role globally in the monitoring of coral reefs, and in particular bleaching. Both the journal and newsletter carry publications relating to this topic. A Special Issue of Coral Reefs on the Third Global Bleaching Event is in preparation.

#### **Theme 5: “Progress via education”**

- *Goal 5-1: prepare for the 2018 International Year of the Reef (IYOR)*

**Question:** How did you implement the Recommendation designating 2018 as the third International Year of the Reef? Please let us also know what are you planning to celebrate IYOR2018.

- An article promoting IYOR was published in Reef Encounter, and IYOR will continue to be promoted in the newsletter in 2018;
- e-mail discussions have been held about key IYOR messages with ISRS members;
- ECRS, which is sponsored by ISRS, will be holding an event to launch IYOR in Europe
- ISRS Conservation, Education and Student Committees are considering ways in which ISRS members can contribute further. The Education Committee, through its members have a variety of activities planned.

**Please also list the educational material that you’ve developed in the past, so we can share it on the IYOR website.**

The ISRS Education Committee is compiling information on educational materials and could provide this to ICRI members; a process for this could be developed.

**Question:** Would you like to report on one of your activities during the ICRI GM meeting?

We hope to have someone reporting briefly on progress with the sunscreen briefing

**2. Publications.** Please list relevant publications/reports (related to the ICRI plan of action) you have released during this reporting period.

See Annex for list of contents of the two issues of the newsletter Reef Encounter, and the 4 issues of the journal, Coral Reefs, that have been produced in this reporting period.

**3. General Information.** (Note that this information will be posted on the ICRI website on your member page: <http://www.icriforum.org/about-icri/members-networks>.)

Member type (Country / Organization):	
<b>Focal Point 1:</b>	
<i>Name:</i> Sue Wells	
<i>Title/Organization:</i>	
<i>Email:</i> suewells1212@gmail.com	
<b>Focal Point 2:</b>	
<i>Name:</i> Rupert Ormond	
<i>Title/Organization:</i>	
<i>Email:</i>	

**Annex. ISRS Publications Nov 2016–Nov 2017** - Selection of articles that contribute to the ICRI Action Plan

**Coral Reefs: Dec 2016, Vol 35 (4)**

The potential of azooxanthellate poriferan hosts to assess the fundamental and realized *Symbiodinium* niche: evaluating a novel method to initiate *Symbiodinium* associations. Brian Strehlow, Sarah Friday, Mark McCauley, Malcolm Hill. pp 1201-1212

Population distribution, host-switching, and chemical sensing in the symbiotic shrimp *Lyssmata pedersenii*: implications for its mating system in a changing reef seascape J. Antonio Baeza, Rodrigo Guéron, Lunden Simpson, Louis J. Ambrosio. pp 1213-1224

Near-future ocean acidification enhances the feeding rate and development of the herbivorous juveniles of the crown-of-thorns starfish, *Acanthaster planci*. Pamela Z. Kamyra, Maria Byrne, Alexia Graba-Landry, Symon A. Dworjanyn. pp 1241-1251

Chemically cued suppression of coral reef resilience: Where is the tipping point? Rohan M. Brooker, Mark E. Hay, Danielle L. Dixson. pp 1263-1270

Ecological limitations to the resilience of coral reefs. Camilo Mora, Nicholas A. J. Graham, Magnus Nyström pp 1271-1280

Interactive effects of three pervasive marine stressors in a post-disturbance coral reef. Michael A. Gil, Silvan U. Goldenberg, Anne Ly Thai Bach, Suzanne C. Mills pp 1281-1293

Hope for coral reef rehabilitation: massive synchronous spawning by outplanted corals in Okinawa, Japan. Yuna Zayasu, Chuya ShinzatoPage 1295

Sediments influence accumulation of two macroalgal species through novel but differing interactions with nutrients and herbivory. Rachel J. Clausing, Sarah Joy Bittick, Caitlin R. Fong, Peggy Fong. pp 1297-1309

Strategies of dissolved inorganic carbon use in macroalgae across a gradient of terrestrial influence: implications for the Great Barrier Reef in the context of ocean acidification. Guillermo Diaz-Pulido, Christopher Cornwall, Patrick Gartrell, Catriona Hurd...pp 1327-1341

New constraints on the spatial distribution and morphology of the *Halimeda* bioherms of the Great Barrier Reef, Australia. Mardi A. McNeil, Jody M. Webster, Robin J. Beaman, Trevor L. GrahamPages 1343-1355

Recruitment, mortality, and resilience potential of scleractinian corals at Eilat, Red Sea. Tom Shlesinger, Yossi Loya. pp 1357-1368

Variation in calcification rate of *Acropora downingi* relative to seasonal changes in environmental conditions in the northeastern Persian Gulf. Jahangir Vajed Samiei, Abolfazl Saleh, Arash Shirvani, Neda Sheijooni Fumani...pp. 1371-1382

The true identity of *Siderastrea glynni* Budd & Guzmán, 1994, a highly endangered eastern Pacific scleractinian coral. Peter W. Glynn, Benjamin Grassian, Karl H. Kleemann, Juan L. Maté. pp 1399-1404

Skeletal records of community-level bleaching in *Porites* corals from Palau. Hannah C. Barkley, Anne L. Cohen. pp 1407-1417

Environmental factors limiting fertilisation and larval success in corals Rachael M. Woods, Andrew H. Baird, Toni L. Mizerek, Joshua S. Madin. pp 1433-1440

**Coral Reefs Mar 2017, Vol 36 (1)**

Working with, not against, coral-reef fisheries Charles Birkeland. pp 1-11

Coral calcification under environmental change: a direct comparison of the alkalinity anomaly and buoyant weight techniques. Verena Schoepf, Xinping Hu, Michael Holcomb, Wei-Jun Cai, Qian Li...Pp 13-25

Low sediment loads affect survival of coral recruits: the first weeks are crucial. Mareen Moeller, Samuel Nietzer, Tom Schils, Peter J. Schupp pp 39-49

Spatial refugia mediate juvenile coral survival during coral–predator interactions. Clare Gallagher, Christopher Doropoulos. pp 51-61

Validation of degree heating weeks as a coral bleaching index in the northwestern Pacific. Hajime Kayanne pp 63-70

Uncoupling temperature-dependent mortality from lipid depletion for scleractinian coral larvae  
E. M. Graham, A. H. Baird, S. R. Connolly, M. A. Sewell, B. L. Willis. pp 97-104

Metabolite profiling of symbiont and host during thermal stress and bleaching in the coral *Acropora aspera*.  
Katie E. Hillyer, Daniel A. Dias, Adrian Lutz, Shaun P. Wilkinson...pp 105-118

Thermosensitive period of sex determination in the coral-reef damselfish *Acanthochromis olyacanthus* and the implications of projected ocean warming. G. G. Rodgers, J. M. Donelson, P. L. Munday pp 131-138

Extreme white colouration of frogfish *Antennarius maculatus* due to coral bleaching event  
Gabriel Grimsditch, Ahmed Basheer, D. E. P. Bryant p 167

Forecasting lionfish sources and sinks in the Atlantic: are Gulf of Mexico reef fisheries at risk?  
Matthew W. Johnston, Andrea M. Bernard, Mahmood S. Shivji. pp 169-181

Making evolutionary history count: biodiversity planning for coral reef fishes and the conservation of evolutionary processes. Sophie von der Heyden pp 183-194

Seaweed allelopathy to corals: are active compounds on, or in, seaweeds?. G. O. Longo, M. E. Hay. pp 247-253

Mapping coral reefs using consumer-grade drones and structure from motion photogrammetry techniques.  
Elisa Casella, Antoine Collin, Daniel Harris, Sebastian Ferse...pp 269-275

Shifts in species abundance of large benthic foraminifera *Amphistegina*: the possible effects of Tropical Cyclone Ita. Martina Prazeres, T. Edward Roberts, John M. PandolfiPages 305-309

Paternal identity influences response of *Acanthaster planci* embryos to ocean acidification and warming. Kate M. Sparks, Shawna A. Foo, Sven Uthicke, Maria Byrne, Miles Lamare. pp 325-338

## **Coral Reefs Jun 2017, Vol 36 (2)**

40 Years of benthic community change on the Caribbean reefs of Curaçao and Bonaire: the rise of slimy cyanobacterial mats. Didier M. de Bakker, Fleur C. van Duyl, Rolf P. M. Bak, Maggy M. Nugues...pp 355-367

Bleaching response of coral species in the context of assemblage response. Timothy D. Swain, Emily DuBois, Scott J. Goldberg, Vadim Backman...pp 395-400

Effect of short-term subaerial exposure on the cauliflower coral, *Pocillopora damicornis*, during a simulated extreme low-tide event. Ana Lucia Castrillón-Cifuentes, Diego F. Lozano-Cortés, Fernando A. Zapata pp 401-414

Temporal dynamics of black band disease affecting pillar coral (*Dendrogyra cylindrus*) following two consecutive hyperthermal events on the Florida Reef Tract. Cynthia L. Lewis, Karen L. Neely, Laurie L. Richardson...pp 427-431

Are mesophotic coral ecosystems distinct communities and can they serve as refugia for shallow reefs? Robert F. Semmler, Whitney C. Hoot, Marjorie L. Reaka. pp 433-444

Combined effects of sea water acidification and copper exposure on the symbiont-bearing foraminifer *Amphistegina gibbosa*. Joseane Aparecida Marques, Laura Fernandes de Barros Marangoni...Pp 489-501

Hydroacoustics for the discovery and quantification of Nassau grouper (*Epinephelus striatus*) spawning aggregations. J. P. Egerton, A. F. Johnson, L. Le Vay, C. M. McCoy, B. X. Semmens...Pp 589-600

Limited capacity for developmental thermal acclimation in three tropical wrasses. K. Motson, J. M. Donelson...Pages 609-621

Temperate macroalgae impacts tropical fish recruitment at forefronts of range expansion. H. J. Beck, D. A. Feary, Y. Nakamura, D. J. Booth. pp 639-651

Interspecific variation in potential importance of planktivorous damselfishes as predators of *Acanthaster* sp. eggs. Zara-Louise Cowan, Scott D. Ling, Symon A. Dworjanyn, Ciemon F. Caballes...Pp 653-661

### **Coral Reefs Sept 2017, Vol 36 (3)**

Plasticity in skeletal characteristics of nursery-raised staghorn coral, *Acropora cervicornis* Ilsa B. Kuffner, Erich Bartels, Anastasios Stathakopoulos, Ian C. Enochs...pp 679-684

Palaeoecological records of coral community development on a turbid, nearshore reef complex: baselines for assessing ecological change. J. A. Johnson, C. T. Perry, S. G. Smithers, K. M. Morgan, N. Santodomingo...pp 685-700

Contrasting patterns of connectivity among endemic and widespread fire coral species (*Millepora* spp.) in the tropical Southwestern Atlantic. Júlia N. de Souza, Flávia L. D. Nunes, Carla Zilberberg, Juan A. Sanchez...Pp 701-716

Submerged oceanic shoals of north Western Australia are a major reservoir of marine biodiversity. Cordelia Moore, Mike Cappo, Ben Radford, Andrew Heyward. pp 719-734

Connecting Palau's marine protected areas: a population genetic approach to conservation. Annick Cros, Robert J. Toonen, Megan J. Donahue, Stephen A. Karl. pp 735-748

Dissepiments, density bands and signatures of thermal stress in *Porites* skeletons. Thomas M. DeCarlo, Anne L. Cohen pp 749-761

Calcification responses to diurnal variation in seawater carbonate chemistry by the coral *Acropora formosa*. W. Y. Chan, S. M. Eggins. pp 763-772

Reef-fish larval dispersal patterns validate no-take marine reserve network connectivity that links human communities. Rene A. Abesamis, Pablo Saenz-Agudelo, Michael L. Berumen, Michael Bode...Pp 791-801

Localised hydrodynamics influence vulnerability of coral communities to environmental disturbances George Shedrawi, James L. Falter, Kim J. Friedman, Ryan J. Lowe...Pp 861-872

Severe consequences for anemonefishes and their host sea anemones during the 2016 bleaching event at Lizard Island, Great Barrier Reef. A. Scott, A. S. Hoey. p 873

Could the invasive scleractinians *Tubastraea coccinea* and *T. tagusensis* replace the dominant zoantharian *Palythoa caribaeorum* in the Brazilian subtidal? B. L. P. Luz, M. V. Kitahara. p 875

Modeled differences of coral life-history traits influence the refugium potential of a remote Caribbean reef. Sarah W. Davies, Marie E. Strader, Johnathan T. Kool, Carly D. Kenkel...pp 913-925

Expansion of corals on temperate reefs: direct and indirect effects of marine heatwaves. C. A. Tuckett, T. de Bettignies, J. Fromont, T. Wernberg pp. 947-956

Evidence for coral range expansion accompanied by reduced diversity of *Symbiodinium* genotypes  
Carsten G. B. Grupstra, Rafel Coma, Marta Ribes, Karine Posbic Leydet...pp 981-985

Pre-exposure to simultaneous, but not individual, climate change stressors limits acclimation capacity of Irukandji jellyfish polyps to predicted climate scenarios. Shannon G. Klein, Kylie A. Pitt, Anthony R. Carroll. pp 987-1000

Embracing a world of subtlety and nuance on coral reefs. Peter J. Mumby. pp 1003-1011

## Reef Encounter

### No. 44 (Vol 31(2)), Dec 2016

- Coral Reefs of the South China Sea
- Post-Truth in Reef Conservation: Austin Yeung
- @www.coralsoftheworld.org: JEN Veron, MG Stafford-Smith, LM DeVantier, E Turak
- Listening to Coral Reefs to Monitor their Condition: C Berthe, D Lecchini, E Parmentier, F Bertucci
- Spawning of three species of nursery-grown, out-planted *Acropora*: L Carne, I Baums
- A novel settlement tile design for coral recruits: J Hart, M Schleyer
- Coral Bleaching at Secas Islands, Pacific Coast, Panama: B McGraw
- A novel approach to the restoration of *Diadema antillarum*: S Williams
- Tautology in Simulation Models: J Ware
- Impressions of ICRS13
- Japanese Coral Reef Society: supporting attendance by young researchers
- SF US Coral Bleaching Workshop
- Marine Biodiversity Observation Network (MBON) in the Florida Keys

### No 45 (Vol 32 (1)), Aug 2017

- International Year of the Reef
- Effects of Climate Change on Fish: G Rogers
- Hong Kong Ecosystem Function & Species Richness: A Anand
- Reef Currents – Third Global Coral Bleaching Event
  - Ding Dong The Witch is Dead: M Eakin et al.
  - Coral reef Watch Heat Stress Monitor V3 & 4-Month Outlook V4: G Liu et al
  - *Chasing Coral* – Filmmaking and Coral Bleaching Image Technology: B Graziano
  - *Chasing Coral* – Wonderfully Told Opportunity for Conservation Outreach: Mark Eakin & Ove Hoegh-Guldberg
  - Sponges and Environment: A George
- The Wheels are Falling Off, Chagos, Indian Ocean: C Sheppard
- Gran Banco de Buena Esperanza, a Unique System: V Zlatarski & S González Ferrer
- The Fish of Obispos Reef, Mexico: E Nuñez-Lara, C Gonzalez-Salas & H Pérez-España
- Severe Coral Bleaching, Gulf of Mannar, India: E Patterson
- *Peysonnelia* Crust Outcompeting Corals, US Virgin Islands: L Bramanti, H Lasker & PJ Edmunds
- Review of book: Coral Reefs at the Crossroads: Hubbard DK, Rogers CS & Lipps JH: John Ogden