

INTERNATIONAL CORAL REEF INITIATIVE (ICRI) 33<sup>rd</sup> General Meeting 5-7 December 2018 – Principality of Monaco

# **ICRI Member's Report**

## The Nature Conservancy

## **Reporting period December 2017 – November 2018**

- **Reporting on the ICRI Plan of Action** <u>2016-2018</u>. Your responses will help inform the Secretariat about members' contributions toward the previous Plan of Action.
  - Please list any relevant examples from your organisation/country of investment/projects to protect and restore the natural infrastructure of reefs and mangroves. (See Goal (1) 2 ICRI Recommendation for supporting investments in the natural infrastructure of reefs and mangroves to increase climate resilience).
    - In Grenada, TNC is working with the Red Cross and local governments and communities to build the resilience of coastal habitats including coral reefs and mangroves to reduce flooding and erosion exacerbated by climate change. We designed and piloted engineered reef structures to reduce wave energy and prevent erosion. TNC trained community coral gardeners (locals from Grenada and Carriacou who were previously unemployed) and handed over the maintenance, monitoring and management of two coral nurseries to them.
    - In Mexico's Yucatan Peninsula, TNC has designed and will test the first-ever insurance mechanism that leverages the protective service of reefs to transfer disaster risk: The Coastal Zone Management Trust (CZMT). In partnership with the State Government of Quintana Roo, academic institutions, tourism industry, and the insurance industry, TNC has laid the groundwork to build a scalable way for vulnerable coastal communities to strengthen physical and financial resilience against climate change. This pilot project will demonstrate how to insure coastal natural ecosystems that support tourism and offer a source of funding for ongoing reef and beach protection and restoration. For more information: <u>https://www.nature.org/en-us/what-we-do/ourinsights/perspectives/insuring-nature-to-ensure-a-resilient-future/</u>
    - In Indonesia, TNC is supporting communities to assess their climate risk and help them identify/adopt nature-based risk-reduction and adaptation strategies that contribute to healthier ecosystems and reduce community vulnerability. We are also working with the Government of Indonesia to improve the governance of fisheries and marine resources and to conserve biological diversity by designing MPA Networks/fisheries management areas. We are also helping the Ministry of Marine Affairs and Fisheries on national guidelines for MPAs/Network development and measurement.

- In October 2015 the Global Disaster Preparedness Center (GDPC) of the American Red Cross started a 5-year project to prototype approaches for coalition-building, addressing increasing risk in a set of coastal cities in Southeast Asia and the Pacific. The goal of the project is to enhance local collaboration and problem solving to support effective climate change adaptation. TNC has joined efforts with GDPC to identify ways that nature can be a part of building social-ecological community resilience before, during, and after natural disasters. The Nature Conservancy produced an online mapping tool, the Resilient Coastal Cities Explorer app demonstrates the critical role mangroves play in reducing social and economic vulnerability to flooding in Semarang, Indonesia. The app helps city planners and disaster managers better understand how nature-based adaptation solutions can reduce the risk of flooding in the city
- a. **Has your organisation/country made any progress in the following areas to target anthropogenic pressures?** Please give detail below. <u>Note: If no change since your last ICRI member report, please write 'no change'.</u>

L Encourage ban of plastic microbeads in cosmetic products. (See Goal (3) 2 & See ICRI Recommendation to reduce plastic microbeads pollution in marine environment):

Improve regulation and enforcement to reduce direct anthropogenic damage due to dredging and physical alteration of reef structures. (See Goal (3) 3 & <u>ICRI Recommendation to reduce damage due to</u> <u>dredging and dumping on coral reefs</u>):

Following unanticipated coral reef damage from turbidity and siltation associated with deepening the north channel into Port Miami, TNC's Florida Chapter is closely tracking and working to influence the Army Corps of Engineers procedures for dredging to reduce ecological impacts in the south channel into Port Miami and the channel into Port Everglades.

**Deployment of mooring devices limiting the mechanical destruction of coral reefs and seagrasses.** (See Goal (3) 4).

This often occurs within MPAs and LMMAs globally (e.g., in Kenya, Tanzania, Indonesia, etc.). In the Seychelles, TNC is in discussions with local partners to improve the maintenance of permanent mooring buoys and management plans for four marine protection areas include permanent mooring buoys.

b. **Did your organisation/country celebrate International Year of the Reef?** Please give details below. (See Goal (5) 1 & <u>ICRI Recommendation designating 2018 as the third International Year of the Reef</u>):

TNC held a coral campaign, under the "coral on" hashtag, with regular features and updates throughout the year, including:

- Why we must keep calm and carry on: <u>https://www.nature.org/en-us/what-we-do/our-insights/perspectives/why-we-must-keep-calm-and-coral-on/</u>
- Revolutionary aerial mapping technology brings a new resolution to coral solutions: <u>https://www.nature.org/en-us/what-we-do/ourinsights/perspectives/from-constellation-to-coral-reefs/</u>
- Insuring Reefs:
  - https://www.nature.org/en-us/what-we-do/ourinsights/perspectives/reefs-for-resilience-insuring-our-shared-naturalcapital/
  - <u>https://www.nature.org/en-us/what-we-do/our-insights/perspectives/insuring-nature-to-ensure-a-resilient-future/</u>
- Coral reef Flood Protection: <u>https://www.nature.com/articles/s41467-018-04568-z</u>
- Collaborations with business to invest in protecting and restoring coral reefs:
  - https://www.nature.org/en-us/about-us/who-we-are/how-wework/working-with-companies/cause-marketing/minecraft/
  - https://www.nature.org/en-us/about-us/who-we-are/how-wework/working-with-companies/cause-marketing/bonefish-grill/
- Contribution to the ICRI Plan of Action 2018-2020 and upcoming ICRI general meetings. Your responses to the following questions will assist the Secretariat in assessing contributions towards the major themes of the draft ICRI Plan of Action 2018-2020.

# <u>Theme 1 – Promote effective and adaptable solutions to improve the protection of coral reefs</u>

- a. Which of the below topics do you consider to be the <u>three top</u> challenges that your organisation faces in managing coral reefs? Please select from the options below:
  - Climate change impacts
  - Inadequate planning, zoning and management
  - Unsustainable resource extraction
  - Tourism and recreation
  - □ Shipping
  - Coastal development
  - Dredging
  - □ Illegal and destructive fishing
  - □ Fish and coral trade
  - Marine debris
  - Other. Please specify:

- b. Please list any examples of innovative management practices that your organisation/country is involved in, such as use of VMS, drones & ecological mooring devices. Include their limits, conditions of implementation, financing and an assessment of their results and links for more information if possible.
  - TNC is deploying habitat mapping at multiple scales to identify coral and other habitats to allow identification of coral colonies that may be more resilient (e.g., more tolerance to heat stress, candidates for selective breeding in coral restoration).
  - Partnering with the Carnegie Airborne Observatory, we are mapping millions of coral colonies across the Caribbean and using drones to map habitat types (e.g., in Grenville Bay, Grenada). Using data from a constellation of 125 Planet.com satellites and newly developed image processing techniques, we are also working to provide detailed information on changes in Caribbean's shallow coral reefs
  - In the Seychelles the marine spatial plan is developing management considerations that will lead to regulations for sustainable fisheries in a "medium biodiversity & sustainable uses" category of marine protection. The criteria for sustainable uses is being discussed and includes electronic monitoring and vessel monitoring systems. Drones are being explored but there are issues re: feasibility and restrictions for operation in a small island state. A pilot is starting with E-monitoring so it is too soon to discuss results.
  - In Hawaii, TNC is partnering with the State Division of Aquatic Resources (DAR) to engage the public and local stakeholders in the design and implementation of a network of marine managed areas based on reef resilience principles using Marxan and Seasketch.
- c. **Please list any examples of innovative funding for management that your organisation/country is involved in.** Include their limits, conditions of implementation, financing and an assessment of their results and links for more information if possible.
  - In Micronesia, we are developing a sustainable financing plan and are identifying income-generating mechanisms (e.g. "Green Fees" in Palau generate ~\$1.5M annually; payment for ecosystem services, exploring tuna licensing fees, etc).
  - In Mexico and Hawaii, we are assessing the applicability of Reef Insurance for increased management and restoration to protect/restore reefs from natural disasters. If viable, this innovative new funding mechanism could provide millions of dollars for reef restoration.
  - In Florida, TNC advocated for using Monroe County (Florida Keys) Tourism Development Council funding for coral reef restoration, a departure from its historic standard of utilizing funds only for land-side tourist attractions. Search "reef" in this doc to see allocations; http://www.monroecountyfl.gov/DocumentCenter/View/11282/Annual-Financial-Report-FY16?bidId=
  - In Kenya, TNC is working with local partners to set up a Kenya Conservation Trust Fund to support both terrestrial and marine conservation.
  - Seychelles TNC and partners coordinated a debt swap that is resulting in a marine spatial plan that will expand marine protection of coral reef and reef systems. See <u>www.seymsp.com</u> for more information.

- d. **Please list any examples of leading practices, techniques and strategies for building reef resilience that your organisation/country is involved in.** Include their limits, conditions of implementation, financing and an assessment of their results and links for more information if possible.
  - In the Seychelles, TNC is working on a marine spatial plan using a zoning framework to propose new areas for marine protection. Ecological criteria for the marine protection across the 1.35 million square kilometres include replication, redundancy, spacing and size (among others) and this includes for the coral reef or shallow habitats that are part of the final milestone of the MSP (2019-2020).
  - In Indonesia, TNC in collaboration with national, provincial and district governments, local communities, NGOs and universities helped to identify sites for a resilient network of MPAs in the Lesser Sunda Ecoregion based on climate and resilience modelling. TNC continues to work with government agencies at multiple levels on the establishment, zoning and management of the 3.35 million hectare Savu Sea Marine National Park.
  - In Hawaii, TNC is working with Scripps Institution of Oceanography to pilot the first biological surveys of mesophotic reefs to evaluate the extent to which deeper reefs provide refugia to shallow water species and contribute to coral reef resilience. TNC is also leading a multi-partner team to conduct the State's only nearshore reef resilience surveys to identify the most important stressors to address to conserve the reefs most resilient to the effects of climate change. The results of our surveys are informing marine managed area network design and management
  - In Hawaii, we are partnering with the State Division of Aquatic Resources to design and implement a statewide network of marine managed areas based on resilience principles. 2) We have also conducted reef resilience assessments of the west coast of Hawai'i Island and the leeward coast of Maui. The results of these resilience assessments will be used to refine the outputs of the statewide planning effort at the island-scale. 3) We have partnered with Scripps to assess mesophotic reef habitats as refuges for shallow water coral and reef fish species.
    We have assessed the role of herbivores in reef resilience and recovery in response to Hawai'i's first statewide mass bleaching event.
  - In Florida, data gathered by the TNC-led Florida Reef Resilience Program are being used in the rezoning process for the Florida Keys National Marine Sanctuary. Reef areas with a track record of resistance to mass coral bleaching and coral disease are one factor in zoning proposals.
  - In Kenya and Tanzania, TNC is helping to improve governance and management capacity for community-based fisheries in the northern coast Kenya (Pate Island and Kiunga in Kenya). Through partnerships, we have helped design and enforce science-based management and monitoring plans (reef monitoring <u>video</u> & <u>guidebook</u>, fisheries <u>co-management plans</u> and helped implement fisheries zonation plan, <u>fishers exchanges</u>, helped establish baselines for fish stocks and habitats (coral reef, mangrove), working with government and partners to develop adaptive plans that ensures <u>fisheries objectives</u> are achieved (<u>gearbased management plans</u>, <u>reef fisheries</u>, <u>locally managed marine areas</u>).
  - TNC is working with partners to support fishing communities in Kenya's Pate Island and Zanzibar's Pemba Island to restore, within locally managed marine areas (LMMAs), one ha of degraded reefs through community-based restoration projects, and also build local practitioners' capacity to apply coral reef resilience tools and approaches through trainings provided by the Conservancy's Reef Resilience Network. We are working with partners to support fishing communities on Kenya's North coast (Lamu) to demarcate and implement LMMAs to protect 1,000 hectares of coral reef area to fulfil gear restrictions in

protected zones and promote sustainable harvests. We are also supporting, local partners in Zanzibar, a LMMA to protect 500 hectares of coral reef area, share lessons on expanding community-based marine managed areas with our partners in the WIO region, and scope potential additional LMMA sites in the region. With local partners, we train fishers to apply the latest scientific guidelines to improve the design of their marine managed areas, including LMMAs, to maximize benefits for fisheries management, biodiversity conservation and climate change adaptation.

- In Papua New Guinea, we are supporting communities to lead their own Ridges to Reefs planning processes along with strengthening tribal networks (e.g., Manus E Ndras Asi Resource Development Network, M Ndras) and supporting the development of networks of locally managed marine areas. We are also supporting tribal governance structures and CBOs to monitor and manage coral reef ecosystems to enhance food security and sustainability, supporting resilient LMMA design and implementation, and measuring effectiveness
- In Palau and Federated States of Micronesia, we are supporting the implementation of protected areas network focused on improving management capacity at the site level, supporting the implementation of the resilient network design, and supporting the creation of enabling framework to support management at the network level, i.e., strengthening PAN Office and processes that support monitoring of PAN implementation.
- e. **Please list any examples of leading practice reef restoration mechanisms that your organisation/country is involved in.** Include their limits, conditions of implementation, financing and an assessment of their results and links for more information if possible.
  - New <u>coral reef restoration</u> content has been added to the Reef Resilience Toolkit, which describes the steps involved with restoring coral populations through <u>larval propagation</u> methods utilizing the sexual reproduction process. In addition, we completed a new <u>Blue Carbon</u> module that compiles the latest scientific guidance and tools to help managers, researchers, practitioners, and governments understand how blue carbon can be measured and utilized to promote conservation and restoration of coastal ecosystems.
  - Three webinars were held- one of these webinars, Restoration in the Age of Disease, was hosted as part of the collaboration with the <u>Coral Restoration</u> <u>Consortium</u>, a community of practice that comprises scientists, managers, coral restoration practitioners, and educators dedicated to enabling coral reef ecosystems to adapt and survive the 21st century and beyond. *Learning from Reef Restoration Experiences Around the World* was broadcast live from the Great Barrier Reef Restoration Symposium in Cairns, Australia, an international symposium of restoration practitioners, scientists, engineers, environmental managers, NGOs and industry partners sharing experiences, insights and ideas about what works, what doesn't, what may work and what more we need to know to help the Great Barrier Reef.
  - The TNC Reef Resilience Program is partnering with the NOAA Coral Reef Conservation Program, the EPA, the US All Coral Reef Islands Committee, and Tetra Tech to creating and piloting new guidance and tools to help coral reef managers design coral reef restoration projects, including strategic planning of objectives, site selection, and the incorporate of climate-smart design.
  - $\circ$   $\;$  TNC is currently creating and gathering new content for the Reef

Resilience Toolkit on new restoration best practices in partnership with TNC Mexico and Australia's Reef Restoration and Adaptation Program on emergency and rapid response restoration after hurricanes, ship groundings, and disease epidemics.

- In the Caribbean, we are partnering with CORAL to identify the best 'portfolio' of coral reef sites for protection using models. These models identify key nodes for active restoration that promote genetic diversity to increase naturally occurring climate adaptation in corals. This combined portfolio management approach to protection with targeted restoration nodes is using an adaptation framework to support the sustainability of coral reefs.
- TNC was an early adopter and promotor of in-water coral propagation nurseries and associated restoration efforts on coral reefs in the Keys and off the coast of Southeast Florida's mainland. <u>http://frrp.org/coralrestoration/</u> TNC continues to produce coral colonies from nurseries and are actively outplanting colonies (e.g., in Florida, the Bahamas, the US Virgin Islands, etc.).
- TNC is a partner in the NESP 'Best practice coral restoration for the Great Barrier Reef' project. The active restoration component of the Australian Reef Restoration and Adaptation Program. This project has been working with the Great Barrier Reef regulatory authorities to develop permits and early intervention plans for immediate restoration actions on a regional scale following cyclone damage.
- In Hawaii, we are working with partners to develop innovative projects for removing invasive algae from reefs in Hawai'i, providing space for corals and other native reef organisms to recover and grow in areas that were previously dominated by invasive macroalgal species. We are also assessing nutrient impacts on reefs in west Hawai'i and on Maui (through the island's first citizen-science water quality monitoring program), and jointly developing management actions with local government agencies, and coastal and upland land managers, including resorts.
- In Kenya, TNC is working with local communities to support the Wasini coral restoration project which will rehabilitate 3 ha of sea area by planting corals and establish a marine eco-facility. A healthy coral population supports over 400 fishers within the Wasini Island who dependent entirely on fishing and marine tourism for their livelihoods. The fisherfolk lost their livelihoods following fishery resource depletion and subsequent loss of tourists attracted by the diversity of fishery and marine resources within the island.
- TNC is partnering with SECORE and MOTE in the Caribbean to develop and disseminate innovative, scalable technologies for coral restoration that maximize genetic diversity, including propagation of corals from assisted collection and fertilization of coral gametes (e.g., sexual propagation) and coral microfragmentation methods.

#### Theme 3 - Support communities reliant on coral reefs

- **f.** Is sustainable tourism development a significant challenge for your organisation? If so please include detail below of the kinds of challenges faced and your strategies to deal with them.
  - Unsustainable tourism without engagement with local communities may result in the marginalization of local communities. Result include low paying wages for resort staff, increased waste and damage to the coastal environment, and degradation of cultural values. Further, best practices for sustainable marine tourism either do not exist in many places or are not disseminated among relevant stakeholders (e.g., tour/dive operators). TNC is supporting capacity development for communities in Indonesia so they can take part in tourism development through the SIGAP approach (Communities Inspiring Action for Change -https://www.nature.or.id/en/blog/sigap-lets-build-extraordinaryvillages.xml).
  - TNC conducted global study of the value of coral reefs to tourism (https://thought-leadership-

production.s3.amazonaws.com/2017/05/18/19/52/44/c655fbee-b0a5-4e48a34f-2806ff724061/paper\_coralreeftourism\_spalding\_2017.pdf.)The study found that reef represent \$36 billion annually in economic value around the world. The resulting map is influencing government and planning decisions globally. The global maps are being updated and improved in collaboration with Microsoft and will incorporate live-harvest data from social media, likely including latest tools in image and wavelength recognition and machinelearning.

- In the Seychelles TNC and partners are working to develop a new brand label called the Seychelles Sustainable Tourism Label.
- **g.** Is your organisation involved in activities to raise awareness and encourage action to support communities reliant on coral reefs? Please include details below.
  - Two Strategic Communication Mentored Courses were held for coral reef managers in the US jurisdictions and globally. Participants learned key components of strategic communication and applied these concepts to develop communication plans for a project specific to their work.
  - Resilient Islands, a new project launching through the Conservancy and partners, focuses on ecosystem adaptation, including adaptive coral conservation, to build climate resilience in the Caribbean. The goal is to enable Governments and communities in the Dominican Republic, Jamaica, and Grenada integrate community- and ecosystem-based adaptation in their local, national and regional decisions in order to reduce community vulnerability and boost adaptive capacity. <u>https://www.nature.org/en-us/about-us/where-wework/caribbean/stories-in-caribbean/caribbean-resilient-islands-program/</u>
  - In the Seychelles, active communications have been developed by a number of NGOs regarding the importance of coral reefs including Nature Seychelles, Marine Conservation Society Seychelles, Seychelles Island Foundation, Island Conservation Seychelles
  - In Hawaii, TNC is partnering with the State Division of Aquatic Resources (DAR) to engage the public and local stakeholders in the design and implementation of a network of marine managed areas using Marxan and Seasketch to identify locally important cultural, biological, social and/or economic areas and resources.

 In the Solomon Islands, we are working with local communities, the Isabel Council of Chiefs, Isabel government, local women groups (Mothers Union and KAWAKI), and Solomon Islands Ministries of Fisheries and Environment to raise awareness of the impacts of poor land-use practices on coral reefs and associated fisheries

### <u>Theme 4 – Help to reduce anthropogenic threats to coral reefs, particularly those that</u> <u>occur at a global or regional scale</u>

- h. What activities is your organisation involved in to elevate awareness of the global nature of the threat of climate change to coral reefs? Please include details below
  - TNC coordinated a number of activities at the UNFCCC Ocean Day; TNC was a colead of SDG 14's fourth Community of Ocean Action: Marine and coastal ecosystems management, corals are within our portfolio. We are using this platform to elevate the importance of address climate impacts on reef systems.
- i. Has your organisation made any progress in dealing with destructive fishing and trade? Please include details below.
  - In the Seychelles, IUU fishing is a component of the marine spatial plan including enhanced monitoring, surveillance and enforcement. Spear fishing is illegal in Seychelles as is demersal or bottom trawling. Seychelles has signed the Port States Measures Agreement (PSMA) to prevent the sale and trade of IUU caught fish. TNC supported the adoption and implementation of the Port State Measures Agreement (PSMA)
  - In Hawaii, we are piloting the first FishPath planning process in the US to engage fishers, local stakeholders, and fishery managers in the development of sustainable fishery management plan for reef fish in Ka'ūpūlehu Hawai'i where the community established a no-take area in 2016.
  - In Papua New Guinea, we are working with national fisheries agency and communities to deploy shallow water inshore fish aggregation device (IFAD) to attract coastal tuna, and quantify the social and ecological impacts of IFAD fishing. Shifting fishing pressure to nearshore pelagic species (e.g., tuna) represents a key way to address future food security and support income in the Pacific, while simultaneously reducing fishing pressure of over exploited reef resources, thus maintaining valuable herbivores that support reef recovery following bleaching events.
- j. **Has your organisation made any progress in dealing with marine debris?** Please include details below.
  - TNC supported Kenya's banning of plastic bags and the Seychelles' banning of plastic bags and plastic straws and supported beach clean ups with local citizens.
  - In Wakatobi, TNC is leading awareness raising for elementary school's students to understand the 3Rs and reduce single use plastics. We are also working on a waste characterization study to build scientific data in Wakatobi to address marine debris.
- Would you like to report on your activities during the ICRI GM? Please give details below.

YES

• **International events.** Please list any upcoming international events relevant to ICRI which someone from your organisation plans to attend in 2018-2019.

ICRI GM, Monaco, 5-7 Dec 2018

Conference of the Parties to the United Nations Framework Convention on Climate Change, 3-14 Dec 2018

Reef Futures 2018: A Coral Restoration and Intervention-Science Symposium, Florida, 10-14 Dec 2018

Global World Heritage Marine Managers meeting, Alaska, US, 26-31 May 2019

Other:

• **Publications.** Please list relevant publications and reports you have released during this reporting period.

Beck, M. W., I. Losada, P. Menendez, Reguero, B.G., P. Diaz Simal, F. Fernandez. 2018. The global flood protection savings provided by coral reefs. *Nature Communications* 9:2186.

Beyer, H.L., Kennedy, E.V., Beger, M., Chen, C.A., Cinner, J.E., Darling, E.S., Eakin, C.M., Gates, R.D., Heron, S.F., Knowlton, N. and Obura, D.O., 2018. Risk-sensitive planning for conserving coral reefs under rapid climate change. *Conservation Letters*, p.e12587.

Gattuso, J.P., Magnan, A.K., Bopp, L., Cheung, W.W., Duarte, C.M., Hinkel, J., Mcleod, E., Micheli, F., Oschlies, A., Williamson, P. and Billé, R., 2018. Ocean solutions to address climate change and its effects on marine ecosystems. *Frontiers in Marine Science*, *5*, p.337.

Hoegh-Guldberg, O., Kennedy, E.V., Beyer, H.L., McClennen, C. and Possingham, H.P., 2018. Securing a Long-term Future for Coral Reefs. *Trends in Ecology & Evolution* 

Howard, J., E. Mcleod, S. Thomas, E. Eastwood, M. Fox, L. Wenzel, and E. Pidgeon. 2017. The potential to integrate blue carbon into MPA design and management. Aquatic Conservation 27(S1): 100-115.

Howard J., A. Sutton-Grier, D. Herr, J. Kleypas, E. Landis, E. Mcleod, E. Pidgeon, and S. Simpson. 2017. Clarifying the role of coastal and marine systems in climate mitigation. Frontiers in Ecology and the Environment. 10.1002/fee.1451.

Mcleod, E., K. Anthony, J. Maynard, P.J. Mumby, R. Beeden, N.A.J. Graham, S.F. Heron, O. Hoegh-Guldberg, S. Jupiter, P. MacGowan, S. Mangubhai, N. Marshall, P. Marshall, T.R. McClanahan, K. Mcleod, M. Nyström, D. Obura, B. Parker, H.P. Possingham, R.V. Salm, and J. Tamelander. Resilience-based management in coral reef ecosystems: Reviewing the evidence to support its application. Journal of Environmental Management. In Press.

Narayan, S., M.W. Beck, P. Wilson, C. Thomas, A. Guerrero, C. Shepard, B. G. Reguero, G. Franco, C. J. Ingram, D. Trespalacios. 2017. The Value of Coastal Wetlands for Flood Damage Reduction in the Northeastern USA. Scientific Reports 7:9463.

Reguero, B.G., Beck, M.W., Agostini, V.N., Kramer, P. and Hancock, B., 2018. Coral reefs for coastal protection: A new methodological approach and engineering case study in Grenada. Journal of environmental management 210: 146-161.

Reguero, B.G., M.W. Beck, D. Bresch, J. Calil, I. Meliane. 2018. Comparing the cost effectiveness of Nature-based and artificial Coastal Adaptation: A case study from the Gulf Coast of the United States. PLoS ONE 13(4): e0192132.

Spalding, M., Burke, L., Wood, S.A., Ashpole, J., Hutchison, J. and zu Ermgassen, P., 2017. Mapping the global value and distribution of coral reef tourism. *Marine Policy*, *82*, pp.104-113.

- **ICRI Member Feedback.** What do you find most valuable about the ICRI member reports? If you have any ideas for improvement please list below:
- **General Information.** (Note that this information will be posted on the ICRI website on your member page: <u>http://www.icriforum.org/about-icri/members-networks.</u>)

Member type (Country / Organisation):	
Focal Point 1: Dr. Elizabeth Mcleod	
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Thank you very much for sharing your valuable experiences and information with ICRI.