

FINDING STRENGTH IN THE OUTCAST: CREATING A CORAL RESTORATION NETWORK FOR THE EASTERN TROPICAL PACIFIC (ETP)

Workshop report
Costa Rica, April 23-25th, 2019

Raising Coral Costa Rica (RCCR) and Centro de Investigación en Ciencias del Mar y Limnología (CIMAR), Universidad de Costa Rica, led the first workshop to address coral restoration in the Eastern Tropical Pacific (ETP). The meeting was carried out from April 23-25th, 2019, in the UCR research station in Rincón de Osa (south Pacific coast of Costa Rica). The main goal of the meeting was to create a regional network between Latin American countries conducting or anticipating research on coral restoration in the ETP. The network included participants representing Mexico, El Salvador, Costa Rica, and Colombia.

Participants

1. Carlos Muñoz, Ecomares, Colombia: munozcarlosg@gmail.com
2. María Fernanda Maya, Corales de Paz, Colombia: mfmayaa@gmail.com
3. Irene Salinas, Universidad de Baja California Sur (UBCS), México: ireneasalinas@gmail.com
4. Claudia Rebeca Navarrete, UBCS, México: torices.crn@gmail.com
5. Paulina Martínez, UABS, México: pmartinezsarabia@gmail.com
6. Paola Rodríguez Troncoso, Universidad de Guadalajara, México: pao.rodriguez@gmail.com
7. Mauricio Méndez, Sistema Nacional de Áreas de Conservación (SINAC), Costa Rica: mauricio.mendez@sinac.go.cr
8. Catalina Mora, SINAC, Costa Rica: catalina.mora@sinac.go.cr
9. Mauricio Solano, GIZ-Cooperación Alemana, Costa Rica: mauricio.solano@giz.de
10. Joanie Kleypas, Raising Coral Costa Rica (RCCR): kleypas@ucar.edu
11. Tatiana Villalobos Cubero, RCCR: tatiana14.villalobos@gmail.com
12. Juan José Alvarado Barrientos, Centro de Investigación en Mares y Limnología Centro de Investigación en Ciencias del Mar y Limnología (CIMAR), UCR: juanalva76@yahoo.com
13. Jorge Cortés Núñez, CIMAR, UCR: jorge.cortes@ucr.ac.cr

*Johanna Segovia from El Salvador did not participate in person because of a family emergency, but confirmed her commitment to be part of the ETP network.

Workshop goals

- Exchange of experiences about coral restoration in each country.
- Creating a Coral Restoration Network in the ETP.
- Establishing the main lines of work for the ETP network (and a chronogram).

Agenda



Hour	Tue 23 th 2019	Wed 24 th 2019	Thu 25 th 2019
06:00			Breakfast
07:15		Breakfast	
07:30	CIMAR-UCR		Departure to Playa Blanca
07:45			Boat departure
08:00	Departure to UCR station		
08:15			
08:30			
08:45		Workshop: coral restoration network ETP	
09:00			
09:15			
09:30			RCCR nursery visit
10:00		Break	
10:15			
10:30			
11:00		Workshop: coral restoration network ETP	
11:15			
11:30			Back to Playa Blanca
11:45			
12:00	Lunch		Lunch
13:30		Lunch	
13:45			Departure to San José
14:00			
14:15			
14:30			
14:45			
15:00		Workshop: coral restoration network ETP	
15:15			
15:30			
15:45	Arrival to UCR station		
16:00		Break	
16:15			
16:30	Welcome and introduction (Tatiana Villalobos) Presentations:		
16:45	ETP coral reefs, (Jorge Cortés)		
17:00	UBCS-México (1 person)	Workshop: coral restoration network ETP	
17:15	Universidad de Guadalajara-México (Paola Rodríguez)		
17:30	Ecomares-Colombia (Carlos Muñoz)		
17:45	Corales de Paz-Colombia (María Fernanda Maya)		
18:00	Mauricio Solano-GIZ		
18:15	Questions		
18:30	Dinner	Dinner	
19:30			
19:45	Raising Coral Costa Rica, Tatiana Villalobos (<i>in situ</i>)	Final	
20:00	Raising Coral Costa Rica, Juan José Alvarado (<i>ex situ</i>)		
20:15			
20:30	Final		Arrival to San José (21:00)



Results

- The main advancements and lessons learned from coral restoration activities (techniques, species, strategies) within each country were identified.
- An ETP coral restoration network was established between Costa Rica, México, Colombia and El Salvador.
- A representative person from each country was selected for facilitating and coordinating the work:
 - Costa Rica: Tatiana Villalobos, Raising Coral Costa Rica
 - México: Paola Rodríguez, Universidad de Guadalajara
 - Colombia: Carlos Muñoz, ECOMARES
 - El Salvador: Johanna Segovia
- The network objectives and tasks were divided in four main categories: organization, research, communication, and financial, as listed below:

Working categories	Working team	Short term (0-2 years)	Midterm (2-5 years)	Long term (5-12 years)
Organization	Tatiana Villalobos, Rebecca Navarrete, Paulina Martínez, M. Fernanda Maya	1. Establish chronogram of activities. 2. Hold virtual meeting for the network 3. Identify alliances 4. Report progress to the network		
Research	Paola Rodríguez, Jorge Cortés, Joanie Kleypas, Carlos Muñoz	1. Standardize scientific methodologies 2. Create an ETP coral restoration guide 3. Conduct regional genetic assessments 4. Identify research needs to improve knowledge of sexual reproduction 5. Create summary of coral reef ecological services specific to ETP	1. Ecological succession 2. Regional genetics on the symbiont	1. Long-term monitoring of restoration sites 2. Coral Immune system study
Communication	Juan José Alvarado, Irene Salinas, Catalina Mora	1. Create ETP network identity and logo 2. Official presentation of network 3. Provide scientific reviews 4. Provide regional restoration manual	1. Social media 2. Communication campaign 3. Strategic alliances	
Financial	Mauricio Méndez, Mauricio Solano, Álvaro Terán	1. Identify financial network needs 2. Identify possible sponsors 3. Identify funding for long-term maintenance of website	1. Regional exchange workshops	

- **The Main products** that will be derived from the network are:



1. A regional website to maintain: a library of relevant publications, photos, researchers, description of restoration efforts by country, methodologies and updates.
2. A review of coral restoration in the ETP to be published in an international peer review journal.
3. A manual in coral restoration practices in the ETP.
4. A future coral restoration workshop in Costa Rica focused on coral restoration techniques.

Expenses and sponsors

	UCR	CIMAR	GIZ	CRC
Room	\$ 400,0			
Dive gear		\$ 540,0		
Dive tanks		\$ 228,0		
Transportation	\$ 2000,0	\$ 300,0		
Fuel	\$ 200	\$ 80,0		
Boat 1			\$ 200,0	
Boat 2				\$ 233,3
Airline tickets (award)				\$ 2 204,3
Food RCCR		\$ 100,0		
Snacks		\$ 50,0		
Materials (library)				\$ 28,7
Total	\$ 2 600,0	\$ 1 298,0	\$ 200,0	\$ 2 466,3

*UCR: Universidad de Costa Rica

*CIMAR: Centro de Investigación en Ciencias del Mar y Limnología

*GIZ: Cooperación alemana

*CRC: Coral Restoration Consortium

Next activities chronogram

Date	Subject	Responsible
May 20 th 2019	Website quotations	Tatiana Villalobos
May 25 th 2019	Information provided by each country representative for the website	Irene Salinas
Jun 30 th 2019	Abstract outlining content/structure of the review	Paola Rodríguez
Ago 13 th 2019	Advance report-Webinar	Tatiana Villalobos
Ago 20 th 2019	Abstract for the review for Bremen 2020	Paola Rodríguez & Joanie Kleypas
Dec 5 th 2019	ETP Coral restoration workshop, Costa Rica	Tatiana Villalobos & Juan José Alvarado



Acknowledgments

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People in the photo (left to the right)

Standing up: Mauricio Solano, Joanie Kleypas, Juan José Alvarado, Carlos Muñoz, Rebecca Navarrete, Catalina Mora, Jorge Cortés and Mauricio Méndez. Sitting down: Irene Salinas, Paulina Martínez, Tatiana Villalobos, Paola Rodríguez and María Fernanda Maya.

Report by Tatiana Villalobos
Raising Coral Costa Rica

PURA VIDA

