



BAJA COASTAL INSTITUTE  
INSTITUTO COSTERO DE  
BAJA CALIFORNIA SUR



# Newsletter

Spring-Summer 2019

As the eastern cape of Baja Sur looks longingly to the advent of fall and it's cooler weather, we begin to wrap up the last half year of activities and look towards upcoming projects.

Each of BCI's programs contribute to our top priorities: Research, Education and Communications. In addition to strengthening ourselves as an organization, with new additions to our board of directors and a network of permanent volunteers who have made BCI possible by donating time and resources.

We are pleased to announce that Octavio Aburto, PhD and Hector Reyes Bonilla, PhD joined BCI's board in April. Octavio is a leading researcher on the reefs of Cabo Pulmo and is a highly honored associate professor at Scripps Institute of Oceanography. Hector has written many papers on the corals of the Gulf of California, is a National Researcher of level III of the National System of Researchers and is currently a professor-researcher in the Academic Department of Marine and Coastal Sciences of the UABCS. We are honored to have their commitment and support.





## Research

### Fresh Water Research

Access to fresh water is one of the most critical factors to consider as we look at future development on the eastern cape of Baja California Sur. Residents, businesses and policy makers need scientific information to inform their decisions about future land use in this amazing region. A clear statement of researched facts about the availability of fresh water is critically important and doesn't currently exist.

With our partner, LegacyWorks Group we have contracted two leading experts in fresh water, Fernando Frias Villagón and Dr. Arturo Cruz Falcón, to produce a research paper on the current availability and quality of fresh water on the eastern cape. The report covers the Santiago, Cabo Pulmo, San Bartolo and La Ventana / Los Planes aquifers and will indicate the impact of future development on the availability of potable water.

The final product will be a 30-page report written in everyday language with easy to understand graphics. This report will be based on a longer paper that fully describes the research and methodology used. The paper will be printed with funds from International Community Foundation. It will be distributed through the Education to Action schools, lectures and meetings in regional towns, and private meetings with policy makers. We anticipate a complete first draft by the end of September.

### Radar to prevent illegal fishing

BCI partnered with Pronatura Noroeste to buy and install a radar system to help prevent illegal fishing that endangers the fish population around the Cabo Pulmo reefs. The radar has captured images that enable scientists to identify small and mid-size boats that have a movement pattern that indicates if they are fishing. Pronatura Noroeste is working with the business leaders in Cabo Pulmo to enforce the non-fishing regulations by using pangas with CONANP officials to track boats identified by radar. It has taken several months to fine-tune the algorithm and Pronatura Noroeste is preparing to report on their enforcement efforts.



# Education

## Education to Action

Education to Action brings scientific information about conservation to high school students in the east cape region (from south of La Paz to north of San Jose). Last year eight teachers and principals from Santiago and Los Planes high schools trained at Monterey Bay Aquarium to teach conservation through 'project-based learning'. In the last 6 months we completed the first year of the program. Over 700 students participated in conservation training and brought the message home to friends and family in 27 communities.



## Expeditions with Students

### Water Roads

Spring semester, we had two four-day expeditions hiking the watershed of Cabo Pulmo with a total of 24 students and 3 teachers from 10 different communities throughout the east cape. They visited two of the most pristine and most ecologically important areas of the southern peninsula: the Sierra la Laguna Biosphere Reserve and Cabo Pulmo National Park, both recognized as a World Heritage sites by UNESCO. During the camp, we followed the natural course of water from the mountains to the sea. The students carried out research aimed at recording and understanding the different stages of the water process.



Students had time to connect with nature and to visit traditional ranches where they learned the historical relationship between people and water as it moved from the mountains to the sea. In addition, students participated in research about biodiversity associated with water and learned about the importance of the species that serve as indicators of water quality. For most of them this was the first time to experience being in a kayak, doing snorkel, camping or hiking on the trails around the Sierras.



For the design and preparation of this trip we had the valuable advice and support of Kenton Parker (from the Monterey Bay Aquarium) and Edgardo Cortes of Baja Sierra Adventures. Paulina was trained in an intensive Wilderness First Aid course and we had the participation of two other instructors who have collaborated with Ecology Project International for many years. Upon their return they gave a presentation of their findings and experiences at the Visitors' Center.





## Heroes of the sea

BCI supported the participation of 4 students and 1 teacher in a new life-experience: Heroes of the Sea, is a 3-year program that provides children ages 13-17 the chance to work side-by-side with scientists, eco-tourism experts, economists, and environmentalists to learn about science and marine biology, marine sustainability, eco-tourism, and business opportunities. The goal is to empower them with experiences and knowledge so that they can not only appreciate their natural resources but become the true guardians of the ocean and its inhabitants. This first year, 14 young people from remote communities in the Gulf of California were one week on a live-aboard ship. Watch the video: [here!](#)

## Professional Strengthening of Teachers and Students

Continuous training is essential to keeping the program active in the schools for the longterm. In the last 6 months BCI conducted:

- 1 Participatory co-creation workshop: #Desplastificate (Get rid of plastics)
- 1 Participatory workshop about School Gardening
- Continuous follow-up calls with the Monterey Bay Aquarium team with teacher groups
- Mediation tools for life workshop at Santiago high school by [WIF](#) fellows Iván Ormachea and Nuria Gonzalez.
- Forum for exchanging experiences on Project Development, at the ExpoCiencias 2019 organized by BCI and supported by the Secretary of Education (SEP). Biological Research Center (CIB) and Ecology Project International (EPI). The conversation and participation of around 200 people (including teachers and students from our schools of the East Cape) created this innovative event a great success.





## Equipment

Thanks to the donation of members of our community, 12 mobile devices (iPads) were given to the two schools to support our student community for their participation in the Education to Action program.

The delivery was accompanied with 2 workshops for teachers (one in each school) about the use of technological tools and applications in education.



## Student Projects

- In both campus, school gardens were established by teachers and students. They received financial support from a small grant from the Aquarium staff to buy some tools.



*"Even though we are in an agricultural area, many students do not know the importance of pollinators. On the campus there are bees and the students used to be afraid of them. The school garden produces' vegetables and attract pollinators. We learned about the importance of these in food production. We are learning as we go by documenting the biodiversity of our region. This is a good life experience."*

Natalia, Teacher





*"The methodology that is being developed to obtain and process information, opens up a wide range of areas for citizen science projects, involving stakeholders who are affected by various social and environmental problems."*

Carlos Salgado, Teacher

- 42 students developed 17 projects to participate in the Expo-science, a fair in which students from all over the state share their ideas in order to improve their lives and environment. Some won honorable mentions and first places in their categories.
- 17 of this students presented their project in the Sustainable Community festival at La Paz, where they met other students and participated in an Ecology Project International award. BCI supported them with some funds for their food.
- BCI also supported linking students with scientific advisors and in some cases facilitating the registration of the projects.

A team from the Santiago school, led by the teacher Carlos Salgado, was selected to represent Baja California Sur at the National Expo-Science 2019 in Monterey, Nuevo León. Their project is a citizen science study on the quantity and availability of water in Cabo del Este. In this project 300 students georeferenced sites that are sources of water and its infrastructure, the availability of water in their homes and its expenditure. Interviewed their grandparents about the changes of availability and quality. The data was analyzed with the help of different programs and applications. Results have been shared in their schools and soon will be with their communities.

Examples of other student projects presented were:

- rainwater collection system to propose new public policies;
- hydroponic fodder for livestock;
- health products made with native plants;
- aquaculture for native species;
- environmental education

*"So that the proposals do not remain just in idea, I started working in my house and my school. Soon I'll work in my community. Even if it's little by little, I believe, we can all do something."*

Silvana, student.





## Curriculum development

Our teachers struggled during the first few months of last year with bringing what they learned at Monterey Bay Aquarium into the classroom. They requested a curriculum that included lesson plans to help them get started. In addition BCI wanted to prepare a formal curriculum for the Secretary of Education's consideration to broaden the program to other regions. The curriculum is an important part of making the program more independent of nonprofit financing in the future.

In February of this year, BCI recruited 4 educators who are now developing two curricular programs aligned to the school objectives of Mexico: Conservation of Biodiversity and Reduction of plastic pollution. These programs will be applied in our two schools to pilot during this next semester Aug-Dec 2019. After the necessary adjustments, these plans will be presented to the Secretary of Public Education of Baja California Sur for publication on its portal.

Paulina attended the international Project Base Learning 2019 conference in Napa Valley. She learned more about the learning model and resources were obtained that are being very helpful, in addition to entering a network of educators who are working under the same scheme. Last week we presented our curricular proposal remotely to a group of teachers from the Dominican Republic to receive feedback.

## Scholarships

Through the kindness of Mona Strelaëff and her husband, a scholarship has been set up at Santiago and Los Planes high schools. Their donation will enable 4 girls to attend high school who would not have been able to otherwise. The scholarship will be named for their deceased daughter, Tanya Diane Pattullo. She was the dean for Niagara College in Saudi Arabia where she taught Saudi women business. Tanya's passion was teaching and there s no better way for us to honour her than give a child a chance at higher education.

We are grateful for the opportunity to arrange this scholarship.





# Communication

## Visitor Center of Cabo Pulmo

A series of Winter and spring lectures and events for the residents and visitors were organized at the Centers:

- Damiana, the afroditte plant of Baja by Jose Francisco Piña
- Exhibition about Sea Species of our region by the Sudcalifornian Community of Science Disseminators by the Esteban Fernando Félix Pico, Biol. Cruz del Carmen Juárez y Jose Francisco Piña. Jose Luis Ortiz Galindo.
- Sea Turtles presentation by Debra Valov
- Native plants – lecture and walk by Debra Valov
- A Reef Reborn movie presentation
- Presentation of Water Roads expedition by participating students

We are working with Pronatura Noroeste and ACCP to develop a calendar of events for the fall. We will provide the calendars to rental operators to post in their rental rooms as a way to reach more visitors.

## Learning Center

The Learning Center serves as a community center for a wide variety of meetings and presentations. Pilu Herмосilla books the room for regional groups and residents.

We are actively seeking a bilingual teacher to provide lessons in Spanish and English at the Learning Center for the fall.

The store and the sale of souvenirs has been a success. All proceeds from sales are used to support the Visitors' Center.

## Community Bonding

One of BCI's on-going goals is to build awareness and trust of our organization in the community. We have made a consistent effort to participate in local projects:

Los Barriles:

- Collaboration with East Cape Recycling: A Reef Reborn and Education to Action presentation
- Los Barriles Summer Courses: 100 children learning to love birds.

Santiago:

- Participation in the XXV Anniversary Festivities of the Sierra de La Laguna Biosphere Reserve. 4 students from our







school in Santiago with the support of Edgardo (Baja Sierra Adventures) shared adobe with the kids and presented their experiences of the Water Roads expedition in a stand.

#### Cabo Pulmo:

- Presentation and participation in the exchange of experiences between Cabo Pulmo and leaders of the Mesoamerican reef communities
- Attending ACCP invitation, we participate in the Celebration of the XXIV Anniversary of Cabo Pulmo National Park. We hosted 4 students and 1 teacher from our school in Los Planes. They conducted a rally and presented their experiences of the Water Roads expedition in a stand.
- BCI and ACCP collaborated in one-night Summer Camp organized by Judith Castro and in which 9 children participated. We had games, learn about plants and birds and stargazed.

### Aliances and coalitions

#### Cabo Pulmo Vivo

- Participation in meetings, monitoring agreements
- Workshop for communicators
- Management of social networks

#### Our sustainable community

- Participation in meetings to organize the Sustainable Festival
- Management of social networks

#### Desplastificate

- Participation in meetings, follow-up on the Education Committee
- August 16, 2019 launches the application of the BCS Law free of single-use plastics (bags, straws and styrofoam)

We are currently developing a Collaboration agreement with the Raiz de Fondo A.C. and with Ponguinguola, organization in charge of coordinating the # Desplastificate (Get rid of plastic) campaign.

BCI has a full plate for this fall. None of this work would be possible without your support. We deeply appreciate your commitment to BCI and our east cape community.

