

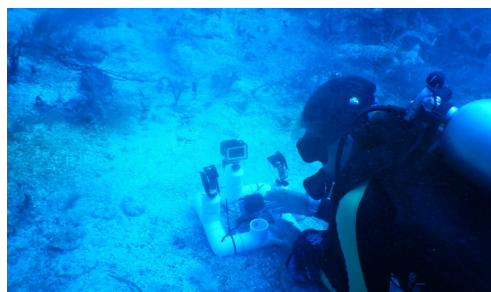
2021
OCTOBER

30
años

BICA MAGAZINE

INSIDE THIS ISSUE

Are the activities that we do on a daily basis to conserve in a participatory, transparent and sustainable way the coastal marine resources and the ecosystem services which they provide for the social and cultural well-being of present and future generations in the Bay Islands.



EDUCATE

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COME VISIT US

Utila Roatan Guanaja
or visit our website at : www.bayislandsconservationassociation.org



¡Bienvenidos!
al Aula Virtual del Programa de
Educación Ambiental
2021



EDUCATION DURING A PANDEMIA

Environmental education during a pandemic has taken a 180 degree turn. We were practically forced to change our way of life; we have had many challenges, schools have been closed for over a year now. As a result of this, we renewed ourselves and implemented techniques to continue bringing knowledge to our communities about our coastal marine resources and raising awareness of their importance to our present and future generations. Schools will continue to be closed in 2021, with a posible hybrid program begining in September. On the island of Utila, we continue with the development of videos with different topics about the environment, these videos are shared with students through our

YouTube channel every week. Currently we have developed 17 topics with 760 students from different public and private schools in Utila. To measure the change of perception in the older students, pre and post surveys are conducted, before and after the young people watch the videos, the children in the primary level elaborate simple and fun activities to reinforce the learning through the videos.

Here is the link to our YouTube channel for the environmental education program on the island of Utila. We work together with Kanahau, Bay Islands Foundation and WSORC, check it out!
<https://www.youtube.com/channel/UCwcehHY1HVspesL3AXPaHLA>

On the island of Roatan, we continued working with senior students from two educational institutions (J.S. Guardiola and ESBIR), public and private, as well as other schools (J.S. Guardiola Anexo Willie Warren, ALFA,



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EDUCATION DURING A PANDEMIA CONT'D

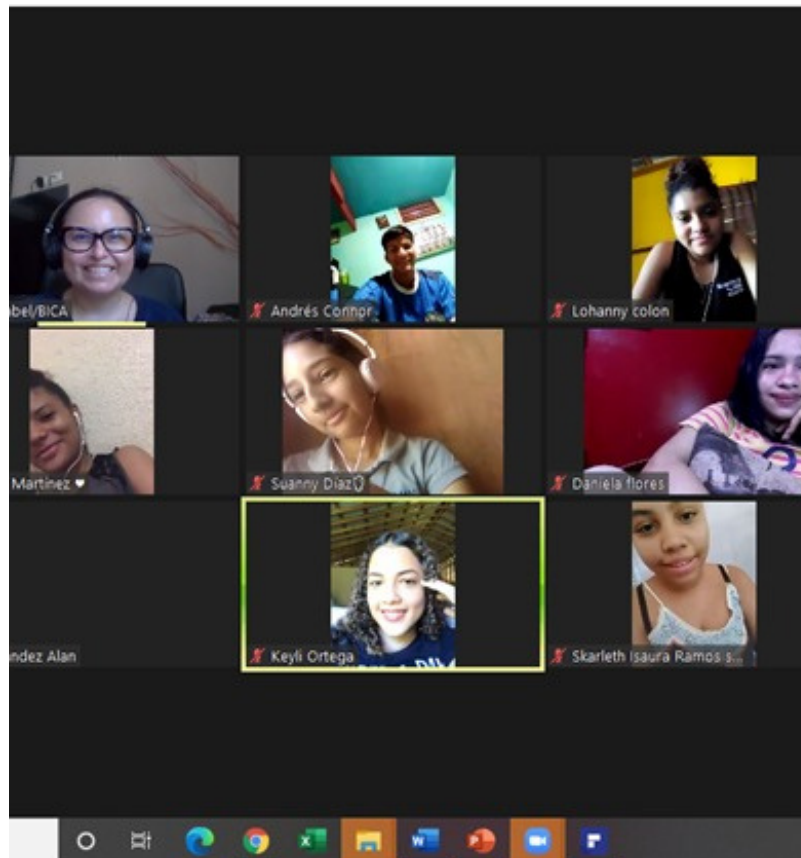
Guaymuras, Centro de Superación para jóvenes y adultos); reaching over 500 students from September 2020 to date via zoom. We have tried to be innovative to engage the students, an example of this was a virtual tour of the Tela Marine Aquarium.

Furthermore, since the beginning of 2021 we have been coordinating environmental education classes with the technical baccalaureate port marine career, managing a group of 36 students, leading virtual classes on important topics such as the protection of our marine and terrestrial ecosystems as well as the health of the reef and the people of the Bay Islands. More recently, we have began our weekly environmental education at the Center for Community Growth in Sandy Bay with

weekly talks and activities such as clean ups, games and citizen science.

On the island of Guanaja, education activities have been drastically reduced, we have tried to start with the virtual system but the schools work only through WhatsApp groups where they assign tasks weekly. Our talks have been limited to target groups such as savings clubs, artisanal fishermen and the Ocean Protectors, on the importance of separation of waste, coral reefs and more. We recently started having a cinema for kids in the community of Armadores, showing movies and documentaries about conservation.

In addition, we have ran a campaign on waste via social media to create awareness of the problem that plastic causes to our environment and our health.



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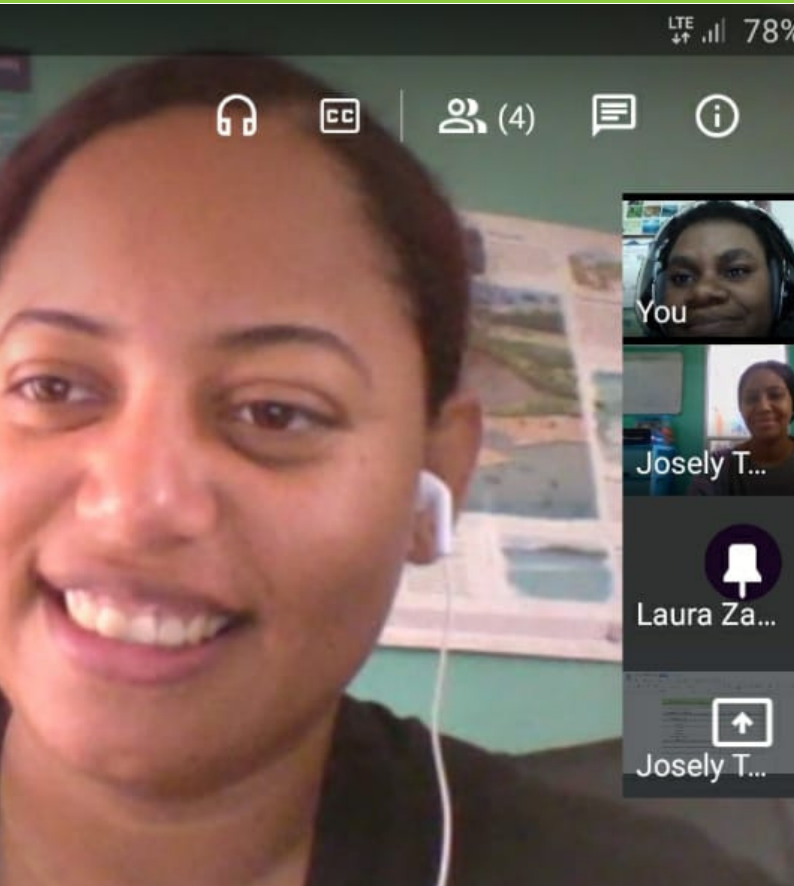


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WILL YOU KEEP FEEDING THE GARBAGE MONSTER

In 2020, the project Waste, People and Reef Health began implementation. The overall objective of this project is to increase investment in sanitation in the Bay Islands because one of the main problems that affect the conservation of marine areas is pollution in its different forms (human and animal waste, trash and industrial waste). This is a result of the lack of basic sanitation infrastructure in coastal communities. The Bay Islands of Honduras is no exception, there is little to no effective infrastructure or state governance in the handling of domestic and industrial waste. As a result of this contamination the coasts of the Bay Islands

has seen a measurable increase in environmental degradation and public health problems. One way to address this problem is to develop and implement environmental campaigns on the effects of waste on coral reefs and human health. The environmental education coordinators of BICAs three chapters (Josely Turcios - Utila, Maria Peralta - Roatan, and Laura Zaldivar - Guanaja) worked together to develop the campaign "Will you keep feeding the garbage monster?" which will be implemented in the Bay Islands and beyond (zoom) in 2021. The campaign consists of a social media campaign on the garbage monster, a cartoon book, videos on where waste goes once you place it in the garbage bin, or in the toilet.



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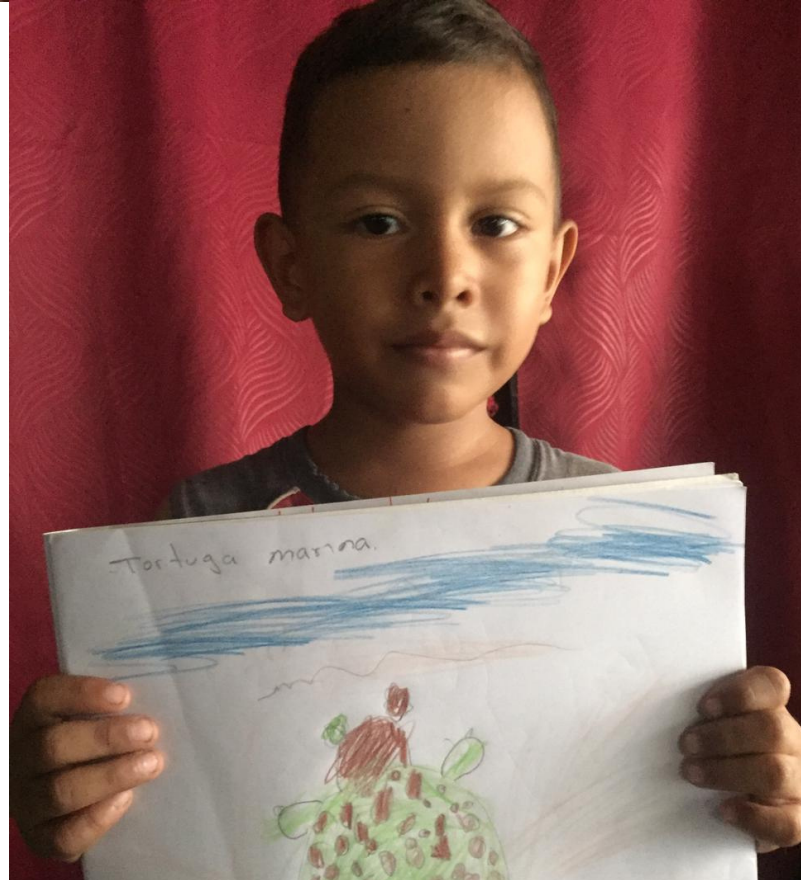
OUR VOICES

Since the mid-1990s, Utila has become a popular dive destination along the Mesoamerican Barrier Reef, but today it has been transformed by the expansion of the tourism sector, climate change and resource misuse. These changes threaten Utila, the Bay Islands archipelago and the entire Mesoamerican Barrier Reef; in the last decade the island has experienced an increase in emigration for economic, social and political reasons. In the midst of interconnected changes, traditional subsistence, ecological and cultural knowledge is being displaced. Our Voices aims to address this trend by leveraging a small environmental education program, through the development of a new curriculum that incorporates local and traditional environmental knowledge.



During 2021, Our Voices has been dedicated to educate through virtual platforms approximately 760 students, from the different institutes and schools that Utila has. Different educational videos have been made on seven of the topics Our Voices focuses on: Invasive species, endemic species, vegetation cover, fish, environmental pollution, corals and turtles. Through surveys, Our Voices is evaluating the change in students' perception before and after watching the videos, in order to better adapt to the new environmental education strategies and the so-called new normal.

In addition, we have been working on a proposal to expand the Our Voices project to Roatan and Guanaja. In an effort to document our culture throughout the Bay Islands.



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ART WITH A CAUSE

In 2021, in an effort to shed light on the waste problem through different mediums, BICA partnered with Honduran artist Evelyn Hernandez from San Pedro Sula; who had lived on the island of Utila for a few years before moving to Guatemala. Evelyn uses micro & macro plastics found on beaches to create artwork envious of any art found in galleries around the world; at the same time contributing to the protection of our fauna by removing these harmful materials off our beaches. She conducted workshops on the three islands in May of this year in partnership with BICA, Municipality of Roatan, Municipality of Guanaja and the Bay Islands Heritage Foundation which benefited 35 locals and foreigners (29 females, 6 males). We work closely with women, in an effort to provide economic alternatives while empowering them

at the same time. During each workshop, a beach clean up was done on beaches in the Bay Islands (Pumpkin Hill, Flowers Bay and East End) and micro & macro plastics were collected which were then used to create the art work. At the end of the workshop the art was displayed on beaches or hotels to the community in general; many of the pieces were sold at these events. We will continue with these workshops in 2021, they were a hit and the groups that participated have expressed their interest to continue.

Furthermore, the group on the island of Roatan, have continued meeting monthly doing clean ups to collect more material and creating art as an alternative livelihood.

Plastics are plaguing our beaches and affecting our environment and ourselves in ways unforeseen. **Remember to try to use less single use plastic in your life, it will make a difference.**





MY COMMUNITY: MY RESPONSIBILITY

The community development program in the Roatan chapter, coordinated by Nikita Johnson, a local islander; is currently implementing the project My Community : My Responsibility, Pensacola. The objective is to improve the management of potable water and basic sanitation in the community of Pensacola on the island of Roatan through the strengthening of the water and community boards. To date, infrastructure improvement plans have been developed, a new potable water system has been designed, an analysis of a tariff is underway, strengthening through trainings (legal & institutional frameworks, requirements & procedures for legal entity) have been completed, socioeconomic surveys were applied to **837** homes, **32** septic tanks were cleaned-removing **140,400** gallons of raw

sewage from reaching the marine ecosystem without being treated. Through the project **380** biosafety kits (masks, gel and gloves) were provided to homes visited and a water catchment system was built at the Lunsford Johnson school. Furthermore, there is an education component of the project that consist of raising awareness of the importance of water. This was down through individual interviews with over **567** community members and **58** kids through zoom sessions. Furthermore, in this community we are conducting the separation pilot project with **17** homes, to date (March-June 2021) we have collected **148** lbs of recyclable materials. We will expand this project to different communities on the island of Roatan. To date, we have collected baseline data for over **110** homes in Coxen Hole and **670** homes in Sandy Bay.



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OCEAN PROTECTORS : GUANAJA

Through this program we aim to provide young adults opportunities to prepare professionally as PADI Divemasters. In 2021, it was possible to certify a group of 9 young islanders (3 females, 6 males) from the different fishing communities of the island of Guanaja. To date, each participant has a total of 6 certifications (Open Water, Advanced, First And Secondary Response, Rescue, Divemaster and Lion Fish Hunting).

In addition, each participant have been trained in conservation and monitoring activities; as young environmentalists who support and participate in the different activities carried out by BICA on the island of Guanaja. They are currently supporting BICA in the monitoring

and research program through the intervention and monitoring of SCTLD disease, micro plastics surveys, brand audits (specialized clean ups), ECOME, verification of spawning sites and more. They have also been active in the community development program through the implementation of the separation pilot project in the community of East End.

"This opportunity provided by BICA Guanaja chapter, has helped us to interact more with our marine ecosystem and know some ways to conserve and preserve it for future generations! Developing our environmental work and educating the population, we must be an example for other people to integrate and thus take care of the variety of habitats that we have on the island!" Marcos Lopez

If you are interested in supporting this project please contact us at info.guanaja@bicainc.org





FISHING LIVELIHOODS & LIONFISH MARKETS

The Utila Cays are a small fishing community located on the west side of the island of Utila, the men work in fishing, using the techniques their parents and grandparents taught them. With hardy hands they fish with hand lines and small reels. As a tourist, you can visit the fish factory and see the men come in with the catch of the day or sit in a restaurant and have the best fish burger you'll ever taste. But in this community, what role do the women play? They tend to work in food service or become housewives. To bolster community capacity building, we have partnered with NatGeo Explorer Keri Brondo, to offer a program for women in fishing communities.

Since 2010, legal extraction of lionfish has been conducted in the marine protected area because of its potential to further reduce the population abundance of native reef fish species.

A small group of women (4) from the Utila cays are in the pilot program for "Fishing livelihoods and lionfish markets in Utila Cays". The goal is to create an artisan network to sell the jewelry as an alternate revenue stream while contributing to the extraction of this invasive species. In this program they are learning how to safely go scuba diving, hunt for lionfish and to create jewelry from the lionfish that they get. They will have the option to hunt for fish themselves or use the scraps that would get tossed by other fishermen and convert them into beautiful souvenirs. Be on the lookout for the newest sustainable fashion trend and support local artisans when in the Bay Islands!



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SAVING CLUBS

In 2020, despite the complicated situation that occurred do to Covid-19; two savings club were formed by community members in the communities of Armadores, Vista Hermosa and Pelican Reef on the island of Guanaja as part of the Rare Fish Forever program implemented by BICA and CEM. Through these clubs, the goal is to train locals on how to save, to become entrepreneurs to generate other income and reduce pressure on the coastal marine resources in the Bay Islands.

The first savings cycle of the Ara Macao and the Dreamers savings clubs was successfully closed with a total of 30 people and a generation of L173,250.00 and L13,840 to the social commitment of the clubs. Yearly, the clubs project in the communities by donating food baskets, cash donations for medical emergencies to families of scarce resources and

other activities that benefit their community. After these results, the clubs decided to continue with a second round and invited new members of the community to participate. In 2021, the Ara Macao and the Dreamers savings club continue with the second savings cycle with a total of 70 people. Additionally, because of the success of the first two clubs, they drew plenty attention on the island of Guanaja; two new clubs were formed, Island Dream and Los Almendros in the communities of El Cayo, Pelican Reef, Vista Hermosa and Armadores. These clubs began their first cycle with 60 people. Totaling four clubs in Guanaja and 130 people (84 females, 46 males) participating. We hope in the near future to expand this project to other fishing communities in the Bay Islands. 2020 thought us all that it is important to have savings, we can not risk living day to day, but for this we must create a savings culture.



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WILD & FREE : BIRDS

BICA is a member of the Honduran Association of Ornithology (ASHO); created the 17th of July, 2010 as an initiative of biologists, bird watchers, photographers and conservationists, in order to promote scientific research and conservation of the birds of Honduras. It also seeks to encourage bird watching tourism and promote environmental education among Honduras, ASHO is also made up by different birding clubs throughout the country. We are a part of Club Auropalliata, which is located in the Bay Islands; and created in 2020 by locals to promote bird conservation and tourism in the Bay Islands. We have been supporting and participating in different bird monitoring activities on the island of Roatan with the Club Auropalliata, Roatan Wildlife and Green Island

Challenge. Among them is a Yellow Nape parrot population monitoring, through sightings and placing nests in the Port Royal Terrestrial Park in Santos Guardiola. A total of 14 nests were placed in strategic areas in the protected area. To date, no parrots have laid in the nests, however there have been many sightings near the nests, indicating that the population is using that area. End of 2021, we plan on selecting new areas to place nests, as well as continue promoting the conservation of these important species.

More recently, we began monitoring nesting sights for seabirds around the island of Roatan. To date, we have been able to find one active site of Least Tern nesting, seven inactive sites with two sites with the presence of Least Tern, Royal Tern, Bridled Tern, Roseate Tern and Sandwich Tern.



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WILD & FREE : IGUANAS

The black iguana (*Ctenosaura oedirhina*) is an endemic species to the island of Roatán, Barbareta and other surrounding keys; this means that they are typical of these islands and that their populations cannot be found naturally anywhere else in the world. Currently, according to the International Union for Conservation of Nature (IUCN), the populations of the black iguana are in danger of extinction due to the loss and fragmentation of their habitat, illegal hunting for human consumption, predation by domestic animals, among others.

In 2019, the Roatan Iguana Conservation Action Plan was produced by The IUCN Iguana Specialist Group and approved in 2020. This document presents a comprehensive five-year

plan for the conservation and management actions considered essential to ensuring the long-term survival of *Ctenosaura oedirhina* in the wild. One of the goals in the plan is to monitor long-term fluctuation in population dynamics and implement conservation action as needed. BICA is contributing to this goal by searching for new populations across Roatan and monitoring low density areas across Roatan and satellite cays.

We do this while conducting our monthly monitoring across the island of Roatan. We keep a data base of the observations of black iguanas on the island. A photo is taken of the iguanas sighted, the sex is identified and the coordinates of the place where they were observed are taken. These results are later shared with the specialist to learn more about the state of their populations.



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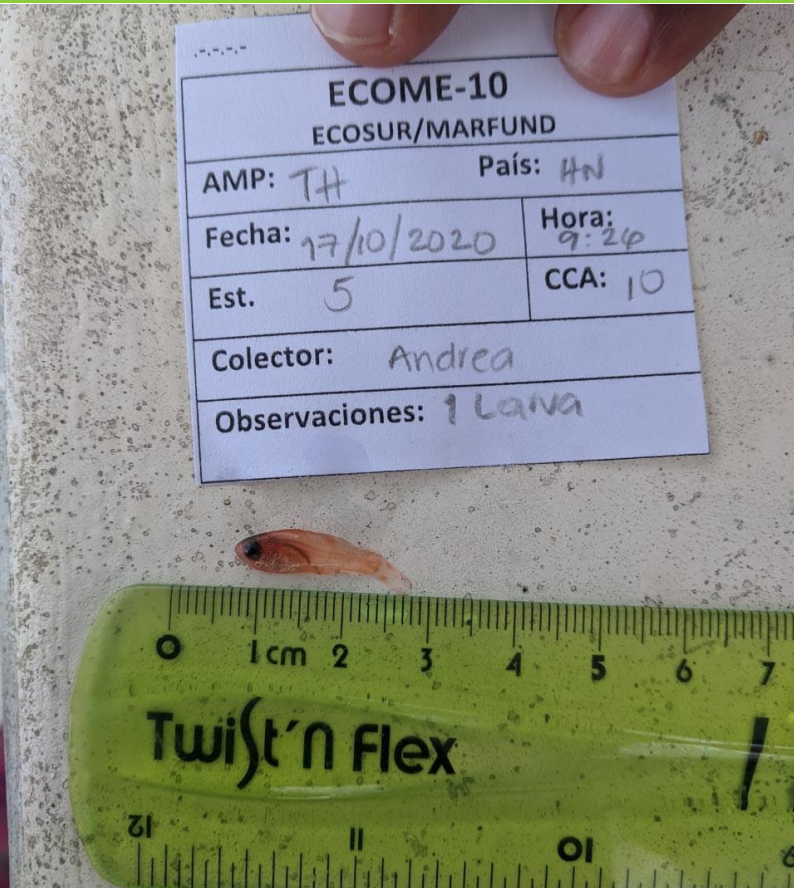


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ECOME : CONNECTIVITY NETWORK

In 2012, BICA joined the Connectivity Network in the Mesoamerican Reef (MAR), to have a more interdisciplinary approach to reef fish biodiversity. The network conducts a yearly standardized monitoring of reef fish post larvae recruits know as Connectivity Exercise in the Mesoamerican Reef (ECOME).

This study consists of monitoring the recruitment of early stages of reef fish, including fish of commercial and ecological importance such as snappers, groupers and parrotfishes. BICA has participated in these connectivity exercises since 2013. From 2013 to 2020, 10 ECOMES were carried out. where fish larvae and postlarvae were registered with a total of 1,184 individuals;

The family of pufferfishes (Tetraodontidae) were the most abundant, among other families that were identified are Angel fishes (Pomacanthidae), Cardinal fishes (Apogonidae), Parrotfishes (Scaridae), and Wrasses (Labridae). November 2020, marked the first time BICA conducted ECOME on all three islands, to expand our understanding of larvae recruitment in our reefs.

In Utila, we had a total of 22 fish post larvae collected during the 10 day collection period, including a new species in the catalogue which was a 4cm long four eyed butterfly fish (Chaetodon capistratus). In Guanaja a total of 10 fish post larvae were collected.

This data is important because it sheds light on connectivity in the MAR region and it provides key locations for recruitment in the marine protected area.



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FISH SPAWNING AGGREGATIONS (FSA)

Imagine, you plunge below the surface of the water, and you are greeted with fish as far as the eye can see. During reproductive months for groupers and snappers, they will swim hundreds of kilometers to spawn at a specific spot. These are called Fish Spawning Aggregations (FSAs) and are spots of a rich biodiversity, attracting not just the species that spawns but also larger apex predators and planktonic feeders.

Unfortunately, most of the FSAs are in big decline worldwide due to pressures on commercial fish stocks, to protect them first we need to know where they are.

In 2020, BICA started a project to monitor FSAs throughout the Bay Islands. First, to map out the FSAs we interviewed local fishermen, who helped with their expertise in the area to pinpoint places where the potential spawning activity occurred; which we verified during the spawning season on the three islands.

We monitored fish landings, by hiring people from inside the fishing communities, we hope to create alternative income source for community members. To date our community scientists, have conducted over **150** landings with fishermen from **7** communities in the Bay Islands.

Finally, we increased awareness of FSAs through zoom talks with students in both private and public schools; as well as through visits with fishermen in the communities.



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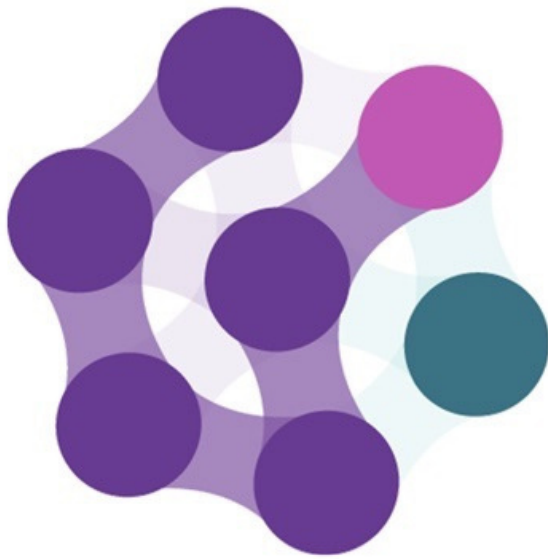


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epicollect5

observations, but can also be used for off-site, previous observation submissions. The app interface follows a “survey” model that asks for questions to be filled out and photos to be uploaded. If you want to learn more about the project visit this website link <https://five.epicollect.net/project/ez-sargassum/data>

BICA has been reporting arrivals of sargassum since 2020, to Paola Diaz, Honduran student at the University of Costa Rica. Although, we have data since 2015 on the arrivals of sargassum in the Bay Islands. Over the years, the private sector and local municipalities have invested in the clean up of sargassum along the beaches. Through this network we have met with specialist in the field to continue to document the arrivals, conduct genetic analysis on the sargassum, as well as heavy metals. Furthermore, we hope to develop alternative livelihoods were possible.

CITIZEN SCIENCE : EZ SARGASSUM PROJECT

The Marine Macroalgae Research Lab at Florida International University (MMRL-FIU) is part of a network in the Caribbean Region dedicated to monitoring the invasions of pelagic Sargassum on Caribbean beaches. While satellite imagery can estimate the abundance of Sargassum influx in the region, local observations are just as valuable in refining the actual scope of the Sargassum landing on Caribbean coasts. The app needed for the EZ Sargassum is Epicollect5. Epicollect5 is a free, open-source citizen science app that is both compatible with Android and IOS. This app was originally developed in Imperial College, London and has since been used on a variety of citizen science projects. The app is used for on-site



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CITIZEN SCIENCE : #HONDRIFT

Currently, we are using driftcards to find a trend towards where marine debris could pass under different environmental conditions in the Gulf of Honduras. Since 2018, we began these studies on the island of Roatan. In March 2021, we expanded the project to include the Utila, Guanaja and the northcoast of Honduras (the main rivers of the Motagua, Chamelecon and Ulua). The methodology consists of launching three driftcards every 300 meters and taking the geographical coordinates of each trio at the time of release. **768** driftcards were launched along 77 kilometers on the north coast of Honduras and two kilometers upstream at the mouth of the rivers. Currently **7.4%** have already been reported and most of the reports come from the beaches off the north coast of

Honduras. **487** driftcards have been launched in and out of the reefs of Guanaja, as a result we have received reports from Belize, Roatán and from communities around the island of Guanaja. **387** driftcards have been launched in and out of the reefs of Utila. Currently **4.5%** have been reported. Most were reported in Belize and around Utila Island. These cards contain data such as phone number, email, social networks and a unique code written on them that help us identify the distance traveled from the launch point to the meeting point.

If you see these cards washed up on beaches, please report them to one of the following emails:

- info.utila@bicainc.org
- info.roatan@bicainc.org
- info.guanaja@bicainc.org





CITIZEN SCIENCE : BRAND AUDITS

Brand Audits are specialized cleanups, which means that the garbage is classified according to the type of material and product, if it is recyclable or non-recyclable. This initiative belongs to "Break free from plastic", this is a global movement that envisions a future free of plastic pollution. Through these cleanups data is collected in order to identify the companies responsible for the plastic contamination. Since 2018, we have been conducting brand audits on the island of Roatan. They have proven to be very important and necessary to collect data and present to the competent authorities to establish better waste management strategies in the municipalities. Specifically, on the island of Roatan, the data highlighted that plastic bottles are one of the

main waste found on the beaches and creeks. In 2019, a ban on single use plastics was approved based on the recommendations made from data collected in these clean ups.

We have expanded these specialized clean ups through the project Waste, People and Reef Health to all Bay Islands. In 2021, 4 brand audits have been carried out in different beaches of the island of Utila, around 800 bottles of soft drinks of different brands, 600 straws approximately, 400 toothbrushes and more.

On the island of Roatan in 2020, 4 brand audits were conducted with a total of 4,866 pieces of waste audited from four communities, Sandy Bay - 797 pieces, Gravel Bay - 1,019, Pensacola - 2,378 and Punta Gorda - 672). In 2021, 11 brand audits with a total of 6,338 pieces audited in communities and four diving; Sandy Bay - 1,801 pieces, West Bay - 676, Pensacola - 2,419 and Diving - 1,442). In Guanaja, brand audits have been carried out on Dina Beach.



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CITIZEN SCIENCE : MICROPLASTICS SURVEYS

Through microplastic studies we obtain a baseline of the level of contamination by these plastic waste on our beaches, bodies of water and marine organisms. Currently the “microplastic survey” activity is being carried out on the beaches of Utila, Roatan and Guanaja; as part of the Big Microplastic Survey initiative.

In Roatan we are working with approximately 10 children from the community of Sandy Bay conducting microplastic surveys. In Guanaja, we began the first monitoring of microplastics on the beach of the East End community in front of the Guanaja hotel, with the ocean protectors group.

This study is very important since it will measure the level of plastic pollution on the beaches of the communities. This year we will also conduct microplastic surveys in Utila. This will give us an understanding of the plastic problem in the Bay Islands as a whole.

In addition, we collect samples of organisms three hammerhead sharks, a beaked whale, a hawksbill turtle, a red-footed booby, and a green moray; from communities around the Bay Islands National Marine Park and Tela. To analyze stomachs and verify if these species have been consuming plastic.

Please remember to report any beached animals, we will collect them and analyze them for microplastic as well as other cause of death.



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PLASTICOSFERA

In May 2021, the “Plasticosphere” expedition was carried out, which aimed to document the solid waste problem, especially microplastics in the Gulf of Honduras. The expedition lasted eight days leaving from Río Dulce (Guatemala), passing through Punta de Manabique, the mouth of the Motagua river, until entering Honduras along the coasts of Omoa, Puerto Cortés, Utila and Roatán. Throughout the tour, a trawl device was launched at 6 sites to search for microplastics on the surface of the water, the results were shocking since macro and microplastics were found in each sampling. The sampled sites were: Punta de Manabique Wildlife Refuge (RVS), Motagua Mouth, Omoa, Utila, Amatique Bay and Río Dulce NP. The site with the highest contamination by microplastics was Punta de Manabique

(Guatemala) with a quantity of microplastic > 340,428 particles / km². Furthermore, 20 yellow tail fish was collected to analyze their stomach for microplastics, 2 reef brand audits were conducted and 2 microplastic surveys on beaches.

The results of this expedition are being disseminated through Diario La Prensa in Honduras, Prensa Libre in Guatemala, an educational documentary on the plastic problem that is in process and a report on the expedition will appear in the National Geographic magazine in November. As well, on social media (Instagram and Facebook) @Rescuetheplanet @Plasticosfera.

ACCIONES. ANALIZAN EL MAR CARIBE ENTRE GUATEMALA Y HONDURAS

Expedición Plasticósfera mide impacto al ecosistema marino

► Organizaciones de Guatemala y Honduras trabajan para frenar la contaminación de los océanos ► Se recorrieron costas del mar Caribe atestadas de macro y microplásticos

CRISIS AMBIENTAL

Ana Reyes
ana.mendoza@laprensa.hn

GUATEMALA. Para analizar de forma científica el daño que causa el plástico en los océanos, un grupo de expertos realiza en América la primera Expedición Plasticósfera, donde constataron que los microplásticos son consumidos por animales marinos y también por humanos. Fueron organizaciones binacionales de Guatemala y Honduras que dirigieron la cruzada, en donde científicos, biólogos y medios de comunicación como LA PRENSA de Honduras, National Geographic y Prensa Libre de Guatemala recorrieron el mar Caribe desde río Dulce en Izabal, Guatemala, culminando en islas de la Bahía, en Honduras. La expedición, que duró nueve días, fue vía marítima en la embarcación The Host, procedente de Puerto Barrios, haciendo escalas en la desembocadura del río Motagua y playas de Guatemala, al igual que en costas de Honduras, como ser Omoa, Puerto Cortés, Utila y Roatán. Sergio Izquierdo, director de Plasticósfera de la asociación

tos y miles de microplásticos en el mar”. El ambientalista de nacionalidad guatemalteca explicó que con la expedición buscan que los Gobiernos de Guatemala y Honduras se den cuenta de que el daño no solo es en las playas con la basura que sale del mar, sino los restos de plástico que quedan en el agua, los que afectan gravemente la vida acuática. Las organizaciones no gubernamentales de ambos países coinciden en que de no tomar acciones inmediatas en pocos años habrá más plástico que peces en los océanos. En la expedición, además de los muestreos en la superficie del mar de ambos países, también hicieron buceo, encontrando en los arrecifes de Roatán y Utila grandes cantidades de plásticos que están matando esas bellezas naturales de Honduras. “Una gran solución es reducir el uso de plástico de un solo uso, el reciclaje no es la mejor opción, ya que la mayoría del plástico nunca se recicla y es el que más llega al océano, y del que se alimenta a los peces y a los animales



9
DÍAS
duró la expedición científica en las costas del mar Caribe.



IMÁGENES EL MAR CARIBE ESTÁ LLENO DE PLÁSTICO
La expedición salió de Guatemala y llegó a Honduras. Playas de ambos países están llenas de basura. Se sacaron cientos de muestras de microplásticos en el mar Caribe.





REPORT ENVIRONMENTAL VIOLATIONS

Report environmental illegalities included non-compliance of environmental law, contamination, degradation and depredation to the following contact information:

Utila

Phone: (504)2425-3260

Email: info.utila@bicainc.org

Roatan

Cel: (504)9796-9956

Email: info.roatan@bicainc.org

Guanaja

Cel: (504)9824-3430

Email: info.utila@bicainc.org

DENUNCIA LAS INFRACCIONES AMBIENTALES

Denuncie ilegalidades ambientales incluyendo incumplimiento de la normativa legal, contaminación degradación de los habitats y depredación a los siguientes contactos:

Utila

Phone: (504)2425-3260

Email: info.utila@bicainc.org

Roatan

Cel: (504)9796-9956

Email: info.roatan@bicainc.org

Guanaja

Cel: (504)9824-3430

Email: info.utila@bicainc.org





STONY CORAL TISSUE LOSS DISEASE (SCTLD)

Just like we are battling a pandemic, our coral reefs are having their own fight against a devastating disease, it affects reef building corals and it is called Stony Coral Tissue Loss Disease (SCTLD). It first appeared off the coast of Florida in 2014 and has now been confirmed in over 18 countries and territories.

SCTLD is a disease that affects hard corals, which are the building blocks of our reefs. Our reefs are of great cultural and economy importance, they are the basis for our fisheries and our tourism. They also protect our coastlines and communities against natural and climate change damage, like storm damage, erosion, and flooding. Currently, we still do not know what causes this disease, but it is

believed to be bacterial, and transmitted by currents and contact.

The best way we have to treat this disease is by applying an antibiotic paste directly on the lesions of the infected corals, this is a mixture of amoxicillin with a highly specialized marine epoxy called Base2B.

Since 2019 we have been monitoring for the presence of SCTLD; unfortunately in 2020 it was first detected in Roatan and little less than a year later it was detected on Guanaja and Utila. Intervention with the treatment has begun on the three islands. Next steps must include ex situ initiatives such as genetic labs to store coral species to minimize the loss of our biodiversity.

If you would like to contribute to protecting the reefs in the Bay Islands, please contact us to learn more about how you can help.



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REEF GARDEN

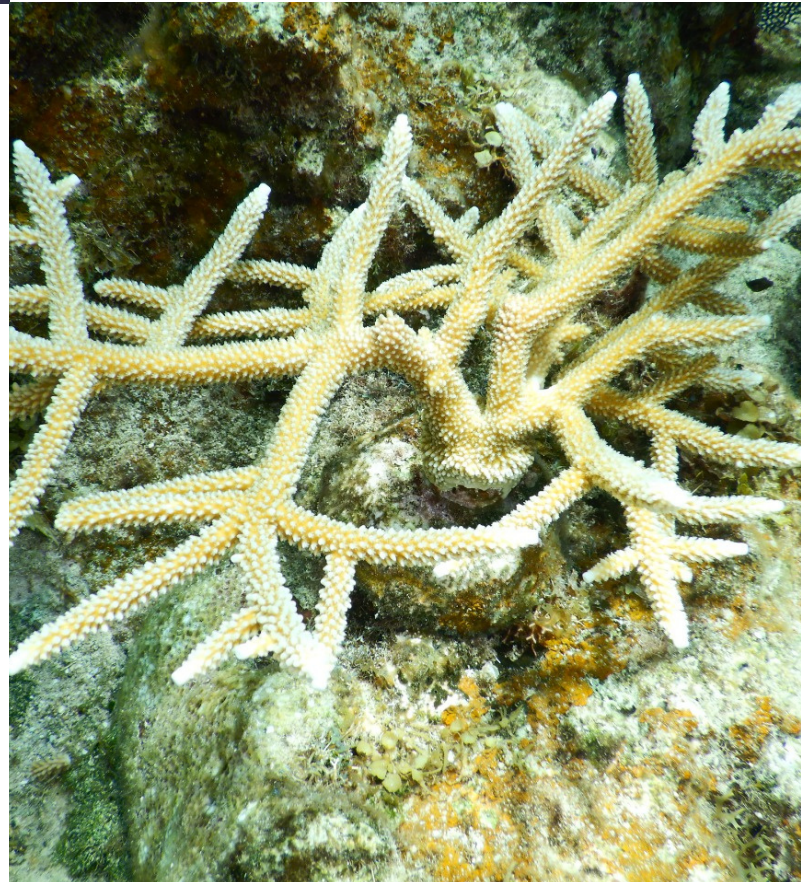
Coral reefs are one of the most important and most productive ecosystems on our planet. These are a resource of incalculable scientific, tourist and educational value thanks to the great biodiversity of fauna and flora that they harbor. The Bay Islands National Marine Park is part of the Mesoamerican reef, second largest barrier reef in the world. The biodiversity around the Bay Islands is extensive and its greatest wealth is found in the reef ecosystem. Around the world, coral reefs are under attack from coastal and near-shore development, overfishing and climate change. Since the 1970s, we have seen a decline in *Acropora* spp corals (*A. palmata* and *A. cervicornis*) due to Banda Blanca disease. Which affected the coverage and structure of reefs throughout the Caribbean, including the MAR.

The project "Reef Garden" which consist of using coral nurseries to accelerate the reef recovery processes on degraded reef in the Bay Islands National Marine Park (BINMP), is being implemented on Roatan and Guanaja. We use three types of nurseries; trees, grills and discs. The species used are elkhorn coral (*Acropora palmata*) and staghorn coral (*Acropora cervicornis*) due to their rapid growth.

In 2020, we added 3 new trees on Roatan, and will add 6 more in 2021.

In the nurseries on Roatan, the average growth of the staghorn coral fragments in the tree nursery ($n = 72$) was 0.91 Inches (2.31 cm) per month.

In 2021, we will build the nurseries on Guanaja, Laura Zaldivar, our program coordinator won a scholarship from Women's Diver Hall of Fame to establish this project on Guanaja.



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SAVE THE TURTLES

With the aim of promoting the conservation of sea turtle species; we conduct monitoring of nesting beaches since 1992 on Utila. Thanks to the efforts of Shelby McNab co-founder of the BICA Utila chapter and Glen Pedersen, the technician with experience in the management of marine fauna. During the first years, the usual number of reported nests ranged from 10 to 15 nests per season. Until 2010, annual diurnal and nocturnal monitoring were formally executed. After training workshops to establish protocols and designated patrollers for monitoring were assigned, as well as the support of the naval force and volunteers. The patrols consists of monitoring the coastline of different beaches, in case of observing a turtle, the eggs are counted, the turtle is measured and tagged (if it has no tag). If found in an unsafe area, they are relocated where greater

protection and surveillance can be provided. 48 hours after the hatching process is over, the exhumation stage begins. The turtles that remain in the nest are assisted to leave. We are proud that since the beginning of the monitoring season to the current date, the number of nests has risen to a maximum of 50 nests per season and approximately 30,000 juvenile hawksbill turtles (*Eretmochelys imbricata*) and loggerhead turtles (*Caretta caretta*) have been counted that successfully reached the sea.

Today, you can **Adopt a nest**, and help us protect these endangered turtles for our future generations. Check out our website, social media or contact us at utila.info@bicainc.org to learn more about this program and the impact you can make.



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ONE TREE AT A TIME

Since the 90s degradation has been observed due to increase in population and a poor zoning plan in the Bay Islands; causing a complete loss of green areas. We have emphasized the continuous need to reforest degraded areas to maintain the ecosystem services that they provide. Since then, every year we have worked with different communities and also with private projects that wish to apply their compensatory measures by restoring these ecosystems. As everything in 2020, this too came to a stop, but in July 2020, applying biosafety measures, we have continued our efforts. **4,107** red mangroves were planted on the island of Roatan and **2,500** in Guanaja. To date in 2021, **2,383** red mangroves have been planted on Roatan and **150** on Guanaja.



Recently, our survival rates are up to **60%**; since we have involved the communities in the reforestation activities. We currently have four nurseries, trees are free to anyone who wants to reforest; we have a variety of fruit trees, hardwoods and mangroves.

We always need volunteers in this program, to conduct the different activities, as nursery maintenance, seed collection and reforstations. Contact us for trees or to volunteer at egla.vidotto@bicainc.org in Roatan and cristina.caceres@bicainc.org in Guanaja.

You will contribute to the Bay Islands Tree Planting project **goal of planting 50,000 trees in the Bay Islands for 2021**, while contributing to mitigating climate change. Learn about this initiative at bayislandstreeplanting.com



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IN LOVING MEMORY OF SHELBY MCNAB

The story of BICA on Utila begins when Shelby McNab with a handful of forward thinking, nature loving people got together and formed the Utila chapter. There were 6 original members and Shelby was elected the first president. In collaboration with the local authorities the Turtle Harbor Marine Reserve & Wildlife Refuge was declared as a protected area. In 1992, he continued working, projects included the first management plan for Turtle Harbor, sustainable coral reef tourism via installation of the dive site mooring buoy system, solid waste collection, environmental education, & sea turtle conservation with the help of a volunteer assigned by the the US Peace Corps. Shelby worked between Utila and Florida for many years, renovating homes and managing businesses. He eventually returned

home, Utila, and built an empire of businesses and passion ventures; among them Gables gym on main street; Utila's first ornamental plant nursery, encouraging Islanders to keep Utila known as "The Flower of Honduras"; a farm named "Quebra Piedra" with medicinal plants, fruits, countless species of flowers and trees; realestate venture and he was Utila's nightly news reporter bringing the island's goings on into everyone's home via the local tv channel, HQTv. Over the years he donated land, for needed infrastructure (BICA's office/Visitor Center included), scenic views, parks and trails, leaving special places for people to enjoy nature and the island's beauty. In every aspect of his personal and business endeavors, Shelby always put Utila first. its people, its nature, and especially its future. An icon in the community, he stands as a shining light and positive example for future generations to roll up their sleeves, volunteer, give something back, and protect the island for next generations to come.



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UTILA

ROATAN

GUANAJA



MAKE A DIFFERENCE

There are many ways you can make a difference:

- **Small changes make big waves;** avoid single use plastics, consume sustainable seafood, and use water efficiently are some small steps you can take.
- **Volunteer;** for a week, a month, six months. To the left in photo is our volunteer Aly who spent 4 months with us said "Volunteering with BICA was an incredible experience - I was given exposure to a wide range of experiences in the field and the office including scuba diving regularly with the BICA team to apply coral treatments and building databases from scratch to track treatment effectiveness. Their dedication to Roatan's marine and terrestrial ecosystems is inspiring and their support in helping me

take on new roles made sure I was always engaged and learning new skills. I would do it again in a heartbeat! Thanks for everything team BICA "

3. Support while you shop:

- On **Amazon.smile** choose **Bay Islands Conservation Association** and Amazon will donate 0.5% of your eligible purchases to BICA.
- Search our **wishlists** on **Amazon.smile** and purchase much needed equipment for our programs
- On **Amavara.com** use BICA code **BICA15** when purchasing reef safe products, you will receive a 15% discount and Amavara will give BICA \$1.25.

4. **Make a monthly donation to one of our programs** <https://bicainc.org/bica-inc-donate/>

5. **Become a Corporate Donor**

6. **Follow our social media** @bica.hon on Facebook and @bica.hn on Instagram



WE NEED YOUR HELP!

BICA Guanaja is in need of a 115BETX YAMAHA BOAT MOTOR and its accessories to restore our boat.



GOAL:

L314,926.00

\$13,182.00

YOUR DONATION WILL BE GREATLY APPRECIATED.

Banco Atlántida Lempiras 030420064898
Banco Atlántida Dollars 030411000067

Asociación para la Conservación Ecológica de las Islas de la Bahía (BICA)



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OUR PARTNERS

We work closely with partners to meet our objectives for conservation in the Bay Islands, they are made up by central & local government, local & international NGOs, universities and local, national and international networks.



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OUR CORPORATE DONORS

These are companies which have chosen to give of their success and help us build a better tomorrow for the Bay Islands.



Become a corporate donor, check out our website for more details on how you can contribute to the work we do and what benefits you will receive.

<https://bicainc.org/bica-inc-donate/>



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