



Blue Turtle
Sustainable

33326-C FINAL REPORT 2021/2022

A Blue Economy Approach to Support Community-
based Sea Turtle Conservation

PREPARED FOR:





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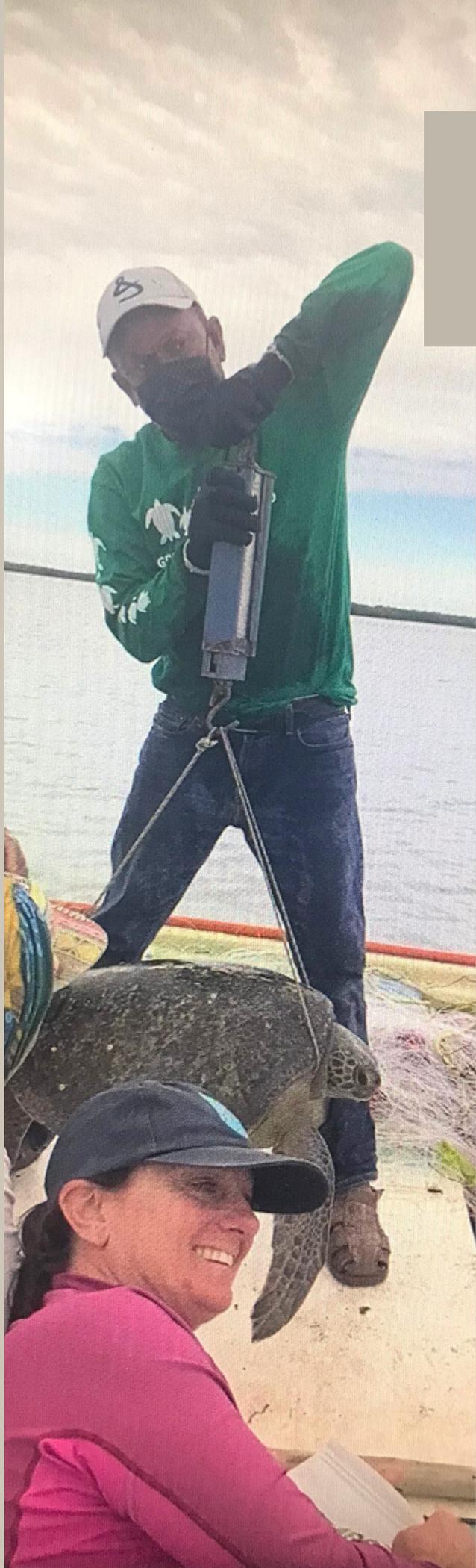
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HIGHLIGHTS

£53,000: 2021 - 2023

5

Presentations
+ Seminars

12

University interns
received

4

Successfully
executed
Sea turtle
mindfulness
expeditions

23 Endangered sea turtles tagged
and released

2

Shellcatch
cameras obtained
to document
bycatch and
fishing activity

68

Sea turtles voluntarily reported by
participating small-scale fishers

14

Small-scale
fishermen
participating

3

Fisherman
training
workshops

Project Summary

The Rufford Foundation continuation grant provided vital start-up funding necessary for Blue Turtle Sustainable to gain traction in the conservation travel and responsible seafood arena. Over these past 18 months, my team was able to run several trials of our sea turtle mindfulness expeditions. We tested the logistics, refined the system of coordinating between ecotourism partners, fishing community and travelers. Funds enabled our team to evaluate the entire supply chain to help cultivate our responsible seafood program. We built an advisory board from list of stakeholders interested and passionate about the work we are creating for small-scale fishing communities.

Our work has taken notice by several organizations and businesses, many of whom are eager to put responsibly-sourced shrimp on their menus and send guests to our boats. We became the first and still only Mexican community-supported fishery registered with Local Catch Network. This milestone was so important, that they changed their mission statement to include Mexico recognizing us for helping them expand their non-profit organization based at the University of Maine, U.S.

This funding served as a start-up investment in our marketing, administration organization, and helped to build trust with funders, supporters, and beneficiaries. It allowed us to cultivate a culture of shared learning among similar organizations.

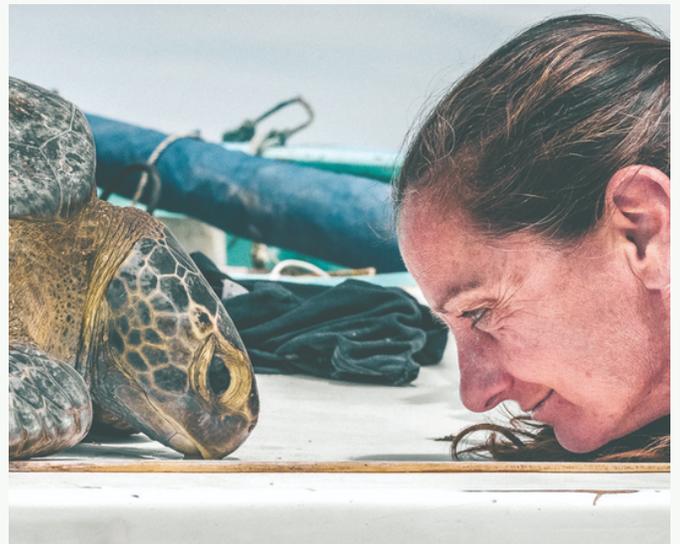
While we didn't reach all the objectives in our initial plan, it is important to note that along the way, new opportunities were presented beyond our expectations. Overall, we accomplished our goal, which was to create a long-term, sustainable financial strategy to continue our research. Our innovating approach to conservation travel helps us move beyond the dependency of grant funding into a mission-driven business model that will allow our team to expand and build a financial security for sea turtle conservation. Even though Blue Turtle is currently at a start-up phase, we are contributing to the blue economy, which defined by the WEF is the "sustainable use of ocean resources for economic growth, improved livelihoods, and jobs while preserving the health of ocean ecosystem."

Reflection

This is my authentic, sincere and honest reflection on how this project is going. It is not complete, and that was the point. This was an investment in my idea and I feel so much gratitude for the Rufford Foundation. The trust and patience that RSG provides to early career biologists is inspiring and generous.

Overall, this is hard. I spent a lot of time in bed, frozen with overwhelm, my skin has manifested a rash for the past year from stress. The stress I self-created, working on a PhD while simultaneously starting a business from scratch that will sustainably generate funding for my research. Traveling back and forth and visiting small-scale fishing communities, then the daunting work of articulating to seafood consumers how local is not always sustainable has felt heavy. Yet, I feel energized when I am planning our next travel conservation trip, when someone asks me for responsible -caught shrimp, and when a fishermen calls to chat about family, not work. These small unique moments make the stress dissolve.

Over these past two years, I decided to deepen my mindfulness practice. Listening to a sea turtle breathe while measuring her carapace, I found myself pausing and breathing with her. It made me realize that all the work, the reports, the logistics, the business administration, meetings, conferences, and exams do not mean anything if I cannot pause, enjoy, and reflect on the path that I have created and that Rufford has provided. Even though my five funding cycles are complete with RSG, the opportunity to build a mission-driven business provides me, my team, and the fishermen whom I feel inspired and encouraged a means to sustain our research and our lives. We still have a lot to do, I often feel "behind" or slow yet I know that it is about the small accomplishments, each sea turtle we tag and release, and each person who learns little more about sea turtles and what they can do in their own lives choosing boat to fork responsibly caught seafood and participating in conservation through their travels.



Listening to a sea turtle breathe while measuring her carapace, I found myself pausing and breathing with her.

Priority SDGs



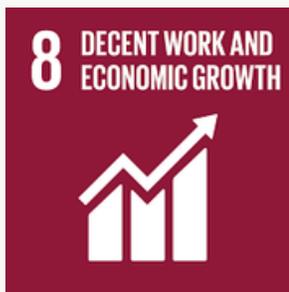
There are 17 SDGs and 169 targets in total. While they are all important and interrelated, we identify the three most relevant goals we addressed during our RSG continuation grant, and continue to address these through our mission-driven business to promote sea turtle conservation through our blue mindfulness expeditions and responsibly-caught wild seafood community supported fishery.



This goal aims to conserve and sustainably use the oceans, sea, and marine resources for sustainable development. Target 14.b aims to provide access for small-scale artisanal fishers to marine resources and markets and improve access to the blue economy. We are doing that on a small, regional scale through developing a market for residents and tourists to have an option for responsibly-caught seafood that mitigates sea turtle bycatch and gives fishers a premium price for their collaboration.



Goal n.12 of the 2030 Agenda for Sustainable Development aims to ensure sustainable consumption and production patterns. Our "Pescador Responsable" Certification and associated seafood eco-label aims to create a responsible seafood supply chain starting by recognizing small-scale fisherman for their voluntary responsible fishing practices to minimize bycatch and offering gratitude for the mindful consumer who chooses responsibly-caught, traceable, and fairly-traded wild seafood.



In the 2030 Agenda for Sustainable Development SDG target 8.9, aims to “by 2030, devise and implement policies to promote sustainable tourism that creates jobs and promotes local culture and products”. Our Blue Mindfulness Expeditions promotes the honorable conservation efforts of small-scale fishing communities by bringing tourists into their culture in an authentic way. We are promoting a blue economy that provides long term funding for research and recognizes efforts to grow sustainably.

Next Steps

The Rufford Foundation has provided me with a generous and ambitious road ahead. This continuation grant is aptly termed, because I feel that I am continuing to grow, expand, and make a larger impact than I could in just my dreams. You have allowed me to realize my dreams of becoming an expert in sea turtle conservation using a citizen science approach. Thought this, I have found my niche as a fisheries bycatch expert assimilating a multitude of citizen science data and applying it into community-based conservation. These next steps would not be possible without the support you have provided.

1 PhD Fisheries Scientist

I recently finished my PhD pre-doctoral exam, which was approved. Now I am officially a PhD candidate and will be analyzing several years of data and assimilating it into my dissertation. I will finish by December 2024 or January 2025 and Rufford logo will continue to be displayed on my oral presentations and acknowledgements in published scientific papers and magazine articles. By the time I graduate, I also may be a Mexican national and plan to apply for a Whitney Grant to build our responsible fisherman certification and seafood Eco-label.

2 Integrating Mindfulness into Marine Science

Along this journey, I experienced burnout, almost to the point of suicide. It was a scary road, yet I feel grateful for the experience. I found mindfulness as my healing modality and took a neuroscience-based meditation course, now I am a teacher. I aim to bring mindfulness and slow travel into our sea turtle expeditions, offering meditations with a sea turtle, at the tidal line of each fishing community we collaborate, intentional breathwork sitting surrounding by nourishing seaweeds, and into our consumption of responsibly-caught seafood. I am currently offering free weekly meditations in a garden and encouraging my peers in marine science, and conservation work to join me as our passions can be beautiful and also stressful as we continue to witness dead sea turtles, poaching, illegal fishing, etc.

3 Sustainable, Long-term funding

I am to grow my business as a means to sustainably fund our research and outreach efforts through travel and seafood and eventually opening up educational scholarships to the next generation of fishing community members to study sustainable fishing, sea turtle conservation, and responsible business. I have drafted my pitch deck and still, forever working on a video representation of our mission that will ideally attract investors and donors. We aim to offer workshops to fishing communities to start their own mission-driven seafood business and conservation tourism, focused on reducing shark and ray fishing as well as mitigating sea turtle bycatch.

Acknowledgements

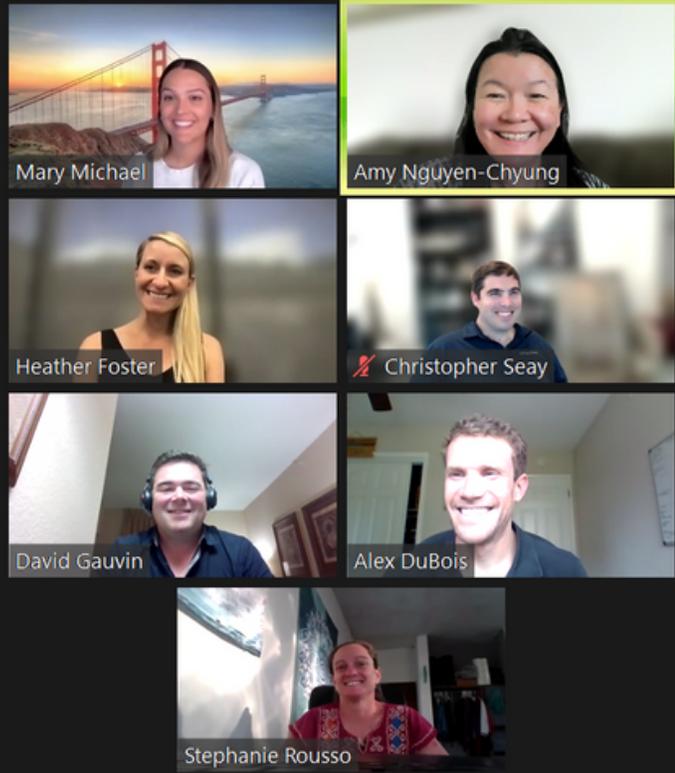


UPWELL

MARES *COMUNIDAD*



THANK YOU!



University of California at San Diego Masters Students conducted a business viability study for their Lab to Market semester program. The prepared a business assessment, reviewed my draft pitch deck and identified investor options.





Blue Turtle Sustainable



SURIPERA SHRIMP
"RESPONSIBLE SEAFOOD"



✓ Wild-caught
✓ Responsible
✓ Traceable

✗ Farm-raised
✗ Chemicals
✗ Antibiotics

Thank you for purchasing wild-caught *Suripera* Shrimp. *Suripera* is a fishing practice using small mesh bags that are only set for 2 hours compared to commercial shrimp boats which use a giant bottom trawl net and set for 12-24 hours causing a high incidence of mortality of non-target species, termed "bycatch". *Suripera* shrimpers significantly reduce bycatch and allows any sea turtles who are accidentally captured to be released alive, unharmed and safely back into their feeding habitat. Your purchase contributes to the research, conservation, and education to improve fishing practices that protect sea turtles.

Nutrition Facts
Serving size: 6 shrimp (170g)

Amount per serving	Calories from Fat 10
	Daily Values %*
Calories 137	
Total Fat 0.1g	0%
Cholesterol 1.4g	3%
Sodium 4.5 mg	1%
Protein 2.6g	5%
Calcium 400mg	8%
Iron 1mg	2%
Potassium 14.5mg	0%

*PER 6 SHRIMP (170g) SERVING. PER 100g SERVING. PER 100g SERVING. PER 100g SERVING. PER 100g SERVING.



In collaboration with:











*PER 6 SHRIMP (170g) SERVING. PER 100g SERVING. PER 100g SERVING. PER 100g SERVING. PER 100g SERVING.



Nómada

FRESH & ORGANICS



We conducted a trial at Nómada Restaurant with our shrimp to have consumer response. The survey is ongoing and will be integrated as data set in my PhD dissertation.





Small-scale fishermen from Sinaloa reported, assessed and liberated several sea turtles. They were even interviewed by the local newspapers and brought their grandchildren and friends to the releases



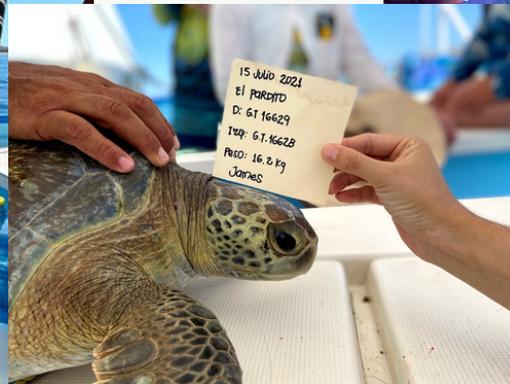


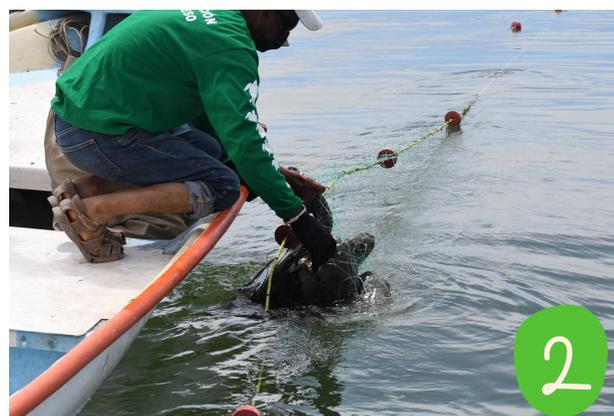
Women fishermen are also participating actively and have recruited over 50 other women fishermen to participate in reporting bycatch in their indigenous communities.



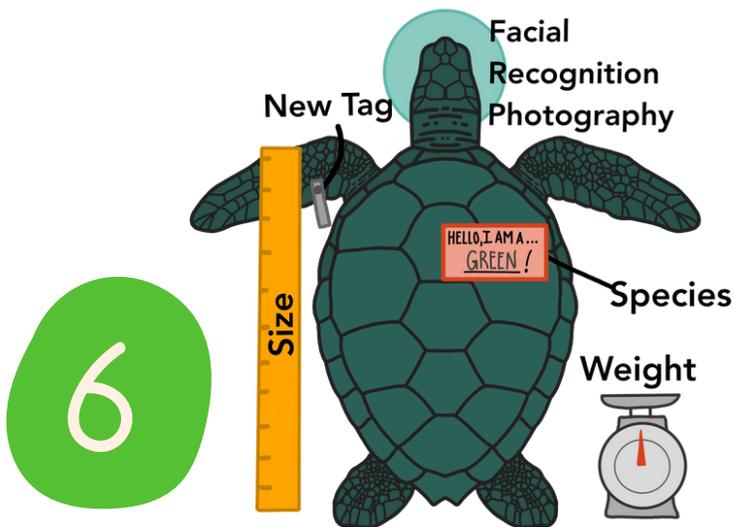


Successful sea turtle mindfulness expeditions





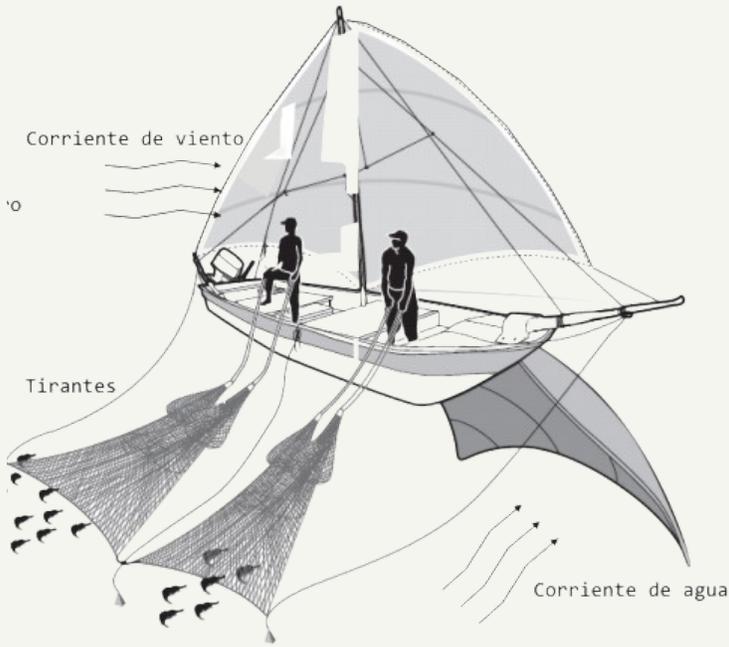
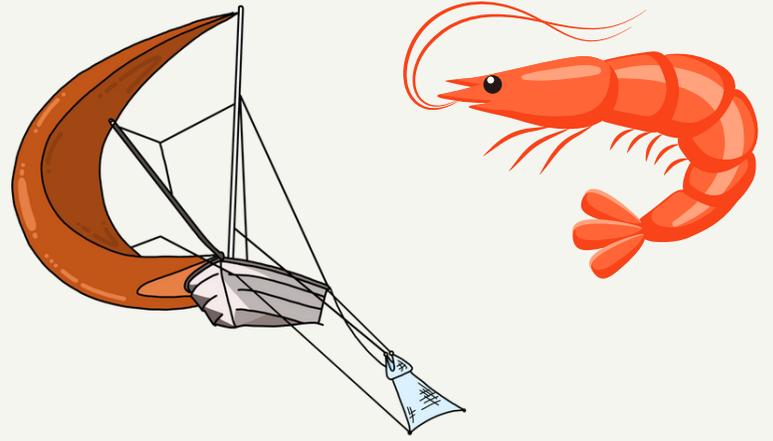
Our bycatch protocol is a working document as we continue to learn more of the distinctions in fishing practices and gear and seasons from each fishing community. We learned that some fishermen are illiterate, so allowing various forms of written and verbal reporting of bycatch is the key to success as is mindful listening to the fishermen.



Fotos: Aldalberto Garcia y Keegan Sentner

Sustainable Option: Suripera Shrimp

Fair-trade, Wild, & Responsible



FAO 2022

We documented the distinct fishing practices and gear used in certain communities that are not well documented. We are evaluating the difference in bycatch susceptibility to determine levels of sustainability for the eco-label.



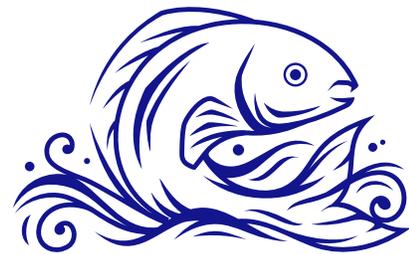


We had a lot of fun in our food photo shoot for marketing. The most delicious photo shoot and the easiest models to work with! The marketing is and will continue to be ongoing as we learn more. We did learn that marketing for our mission-driven business is special and not any marketing company gets what we are doing, so we are learning to do it in-house and word of mouth so far has been the catalyst for success.



Responsible Fisherman Certification Eligibility Criteria

1. Member of GTC or other NGO
2. Participate in scientific research
3. Report sea turtle++ bycatch (live/dead)
4. Report daily fishing activity
5. Co-design and apply gear modifications
6. Recruit other community fishers
7. Clean-ups and next gen outreach



BLUE TURTLE
SEAFOOD
WILD & RESPONSABLE

Seafood Eco-label: \$\$\$

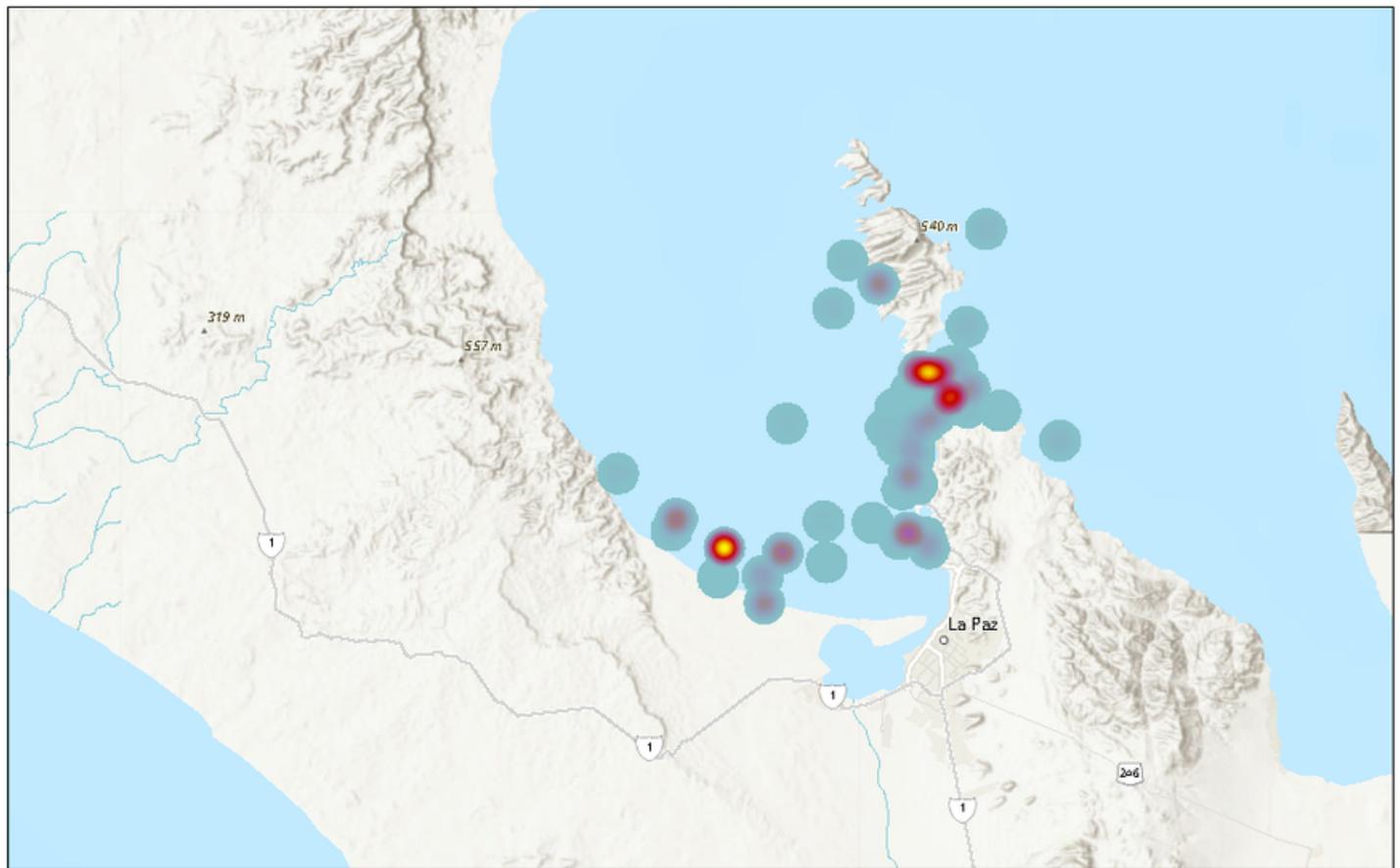
1. Suripera or chango shrimp
2. Blue trap traps or gillnet
3. Line-caught*, longline, and trapped fish
4. Hand harvested scallops, oysters, & clams

Preliminary Results:

Sea turtle distribution in La Paz Bay

Citizen science methodology

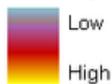
Seaplane Oceanlife Flights



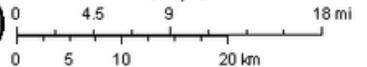
10/26/2022

STS Seaplane (SHAPEFILE) - STS Seaplane (SHAPEFILE)

World Hillshade



1:577,791



Esri, CGIAR, USGS, CONANP, Esri, HERE, Garmin, Puarqure, FAO, METINASA, USGS, EPA

Preliminary Results: Sea Turtle Spotter Citizen Science reports via iNaturalist

iNat citizen science sea turtle spotter



10/26/2022

STS iNat - STS iNat

- Chelonia mydas
- Lepidochelys olivacea

- Eretmochelys imbricata
- Dermochelys coriacea
- Caretta caretta
- World_Ocean_Base

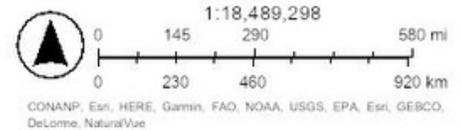


Foto: Petra Oberucova



Foto: Daniel Velazquez



Foto: Mary Sim

Preliminary Results: Sea Turtle Spotter Citizen Science reports via sailboats



SEA TURTLES of the EASTERN PACIFIC

Green (*Chelonia mydas*)
 Habitat: Mostly Coastal
 Diet: Seagrass, mangroves, jellyfish, seaweed (macro algae)
 ID: Rounded head, green-black color
 Smooth, tear-drop shaped shell
 Adult Size: Up to 80cm in length

Hawksbill (*Eretmochelys imbricata*)
 Habitat: Reefs, coastal bays
 Diet: Sponges, reef invertebrates
 Macro algae, nautilus
 ID: hawk-like mouth, pointed head,
 Sunset color with sunburst pattern
 Adult Size: Up to 90cm in length

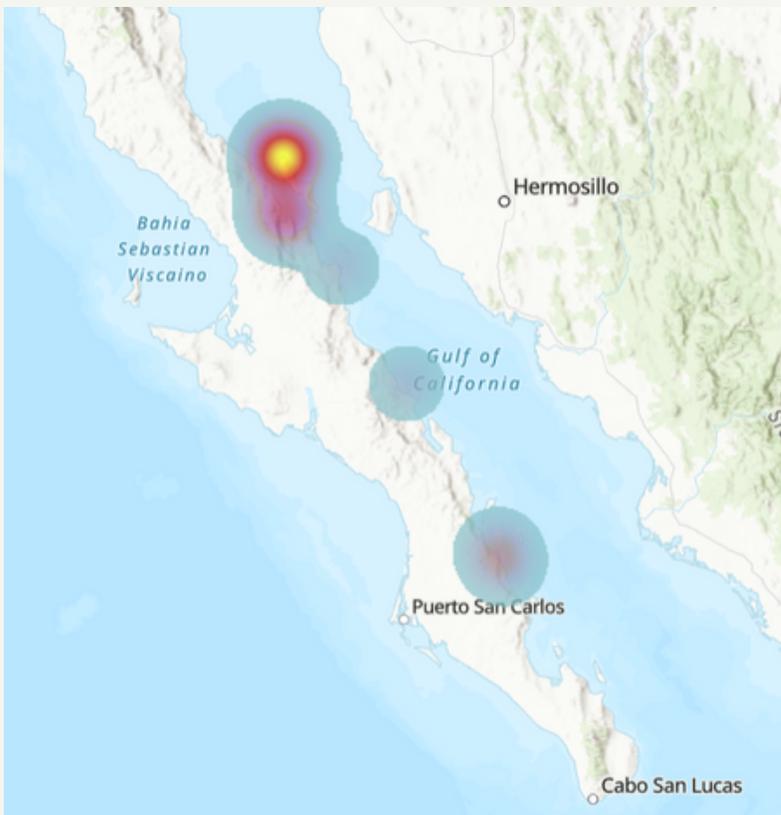
Leatherback (*Dermochelys coriacea*)
 Habitat: pelagic or oceanic
 Diet: jellyfish
 ID: Blunt head, dark gray and white
 with pink spots, soft body with 7 lines
 Adult Size: Up to 155cm in length

Loggerhead (*Caretta caretta*)
 Habitat: Coastal and Oceanic
 Diet: Hard invertebrates and fish
 ID: Large, thick, wide head,
 Yellow color, heart-shaped shell
 Adult Size: Up to 90 cm in length

Ridley (*Lepidochelys olivacea*)
 Habitat: Pelagic or Oceanic
 Diet: variable, fish & invertebrates
 ID: Large, round head, olive gray
 color, Round to oval shell
 Adult Size: Up to 70cm in length

Upwell's mission is to protect endangered sea turtles by reducing threats at sea.
 All five species of sea turtles found in the Eastern Pacific (including the Gulf of California) are protected by national and international laws.

UPWELL



Turtle
(Required)

Date (Day/Mo/Yr)

Time (24hr; Military)

Latitude (decimal degrees)

Longitude

(Additional information)

Species
 green/black hawksbill olive ridley
 loggerhead leatherback

Behavior
 swimming feeding mating resting
 stranded live/dead floating live/dead

Habitat
 coral reef seagrass offshore/pelagic
 mangroves seaweed beds rocky shore
 seamount