

Project Update: June 2016

The fifth field season of our project took place from April to May 2016 at Isla Holbox where we have continued our interviews with fishers at the Island.

Fishers' surveys and interviews

We have collected 72 field surveys and 13 open interviews at Holbox Island with information of traditional fishers' knowledge related to historical and current small fisheries, species caught, changes in fishing technology, and fishers' perception of the future of fisheries. For fishers' interviews at the port of Chiquila we have established collaboration with *Biologist Francisca Antele, "Francis"*.

Francis is a native from Chiquila; she has previously worked with the fishers' community there and she is also active in conservation matters at the island. Some of her results related to small-scale fisheries at Chiquila will be integrated to our research. For our future field seasons we will continue collecting information from the younger population of fishers at Holbox Island. Young fishers are hard to approach since most of the time they are not interested in giving us an interview nor talking with us about their perception of coastal exploitation at the island. Many young fishers do not fish full time; and work on tourism or have small businesses.

The information obtained from the fishers' surveys is being complemented with 33 literature sources related to coastal exploitation in the region (Table 1). Grey literature sources were obtained at Holbox and at the municipal library of Kantunilkin town. Interdisciplinary literature sources are being collected online from Web of Science and at the libraries of The Universidad Autonoma de Yucatan, Centro de Investigación y de Estudios Avanzados, Unidad Mérida, and at Instituto Nacional de Antropología e Historia, Merida. During the month of July we will be visiting historical archives at Cancun city to obtain more historical information.

Documentation of species fished at Holbox and Chiquila

We have collected the common Spanish names of over 80 highly fished resources over the past 40 years from the fishers' surveys and interviews. Species names, generic and family identifications are being resolved to the extent possible based on published taxonomies (Table 2).

Scientific Outreach

We were invited by the online magazine Agua y Ambiente to collaborate with a popular science paper related to our research at Holbox Island <https://aguayambiente.com/2016/05/11/holboxmay2016/>. We attach a PDF version of the paper.

We are also invited to participate in a coming event at Casa de la Cultura de Isla Holbox on

July 8th 2016. Here we will continue to disseminate our results by showing pictures and giving a talk to the community.

Upcoming conferences

Our work at Holbox Island has been accepted as a talk for two international marine conservation conferences (below). However my assistance depends on the approval of external travel funds I am applying for:

- The 4th International Marine Conservation Congress, *Making Marine Science Matter*, will be held from 30 July-3 August 2016 in St. John's, Newfoundland and Labrador, Canada (YYT).
- ECSA 56 Coastal systems in transition from a 'natural' to an anthropogenic ally modified' state, 4-7 September 2016 in Bremen, Germany.

Table 1 Preliminary data on coastal exploitation for each time period.

Time Period	Year	Major characteristics for each time period (preliminary results)
Pre-Columbian	Post-Classic 1100-1521	Exploitation of abundant bony fish, sea turtles and sharks in coasts and estuaries. Strong hurricanes and pestilence before the conquest period. Spanish conquest brought depopulation of natives and land abandonment for almost 3 centuries.
Spanish Occupation	1546-1821	The Island and its surrounding became an important site for European pirates and trafficking of arms and other goods existed. Coastal exploitation was not a main activity in the region. 1839 Settlements of mestizo hunters for exploitation of sea turtles and Sponges. Commercialization of dried fish. 1850 Exploitation of sea turtles, manatees, Caribbean monk seals, dolphins and sharks.
Mexico's Independent Period	1820-1910	1900s The sea turtle fishery was a major commercial activity. There was an important sea turtle export market to Belize. 1920 Decline of the sea turtle fishery, fisheries are open-access 1930 Proliferation of ranches that exploited coconut trees. Decline in the sea turtle and sea sponges fisheries. Shark fishing begins to flourish. 1940s Shark fishery blooms. 1964 Fishing cooperatives initiate at the Island. 1960s to 1970s The lobster fishery becomes an important export item. Fishing technologies begin to diversify, with the Introduction of outboard motors and nets to fish near shore and in estuaries.
Contemporary Mexico	1910-Present	1980s National migration of people from the agricultural fields to the coast promoted by Government policies. Late 1980s, diversification of fisheries towards diverse finfish families. Lobster catches begin to decrease. 1990s The fishers' population largely increased. There are overcapacity issues at fishing cooperatives which have incremented overfishing and the use of unsustainable fishing practices. The area becomes a Natural protected area, however no management plan exists.

Table 2. Common Names of fishery resources collected from the fishers' surveys.

Group	Common Name Spanish	Common Name English
Sharks	Tiburón	Sharks
	Tiburón Blanco	Great White Shark
	Tiburón Tusun	Mako
	Tiburón Curro, Toro	Bull Shark
	Tiburón Tintorera, Tigre	Tiger Shark
	Tiburón Amarillo Limón	Lemon Shark
	Tiburón Jaquetón	Silky Shark
	Tiburón Gata	Nurse Shark
	Tiburón Cornuda, Martillo	Hammerhead Shark
	Tiburón Chata Adulto	Bonnethead Shark
	Tiburón Espada, Peje Espada, Tiburón Sierra	Sawfish
	Tiburón Espada, Peje Espada, Tiburón Sierra blanco	Sawfish White
	Tiburón Espada, Peje Espada, Tiburón Sierra café	Sawfish Brown
	Immature Sharks	Cazon Tusun
Cazon		Atlantic Sharpnose Shark
Cazon Aleta Negra		Could be black tip shark or silky shark
Cazon Jaquetón		Silky Shark
Cazon Amarillo, Canchock Y Limón		Reef Shark
Cazon chata		Bonnethead Shark
Cazon Cornuda Martillo		Hammerhead Shark
Cazon Rojo Chapat		<i>Not Identified</i>
Cazon Canguay		<i>Not Identified</i>
Sea Turtles		Tortuga Caguama
	Tortuga Blanca, Tortuga Verde	Green Sea Turtle
	Tortuga Carey	Hawksbill Sea Turtle
	Tortuga Lora, Cotorra	Kempis Turtle
	Tortuga Laud, Chalupa	Leatherback Sea Turtle
Rays	Raya Pinta	Spotted Eagle Ray
	Raya Balá	Southern Stingray
Manta	Manta	Manta
Snook	Robalo	Common Snook
Groupers	Cherna	Atlantic Goliath Grouper
	Mero	Es Por Lo General El Mero Rojo
	Mero Rojo	Red Grouper
	Mero Negrillo	Black Grouper
	Mero Criollo	Nassau Grouper

	Abadejo	Gag
	Cabrilla	Grouper
Snappers	Pargo Lunar	Mutton Snapper
	Pargo Perro	Dog Snapper
	Cubera	Cubera Snapper
	Pargo Mulato	Grey Snapper, Mangrove Snapper
	Pargo Biajaiba	Lane Snapper
	Pargo Canane	Yellow Tail Snapper
	Huachinango, pargo rojo, pargo colorado	Northern Red Snapper
	Pargo	Snappers
Corvinas	Corvina	Corvina
	Corvina Blanca	Sand Weakfish
	Corvina Pinta	Spotted Weakfish
Grunt	Ronco	Southern King Croake
Mulletts	Lisa	Mulletts
	Lisa Blanca	White Mullet
	Lisa Yuluma, Lisa Grande	Mullet
	Liseta Rayada	Striped Mullet
	Pampano	Florida Pampano
	Jurel	Crevalle Jack
	Coronado	Greater Amberjack
	Palometa	Permit
	Boquinete	Hogfish
	Picuda	Great Barracuda
	Sierra	Atlantic Soanish Mackerel
Mojarras	Carito, Peto	King Mackerel
	Mojarra	Mojarras
	Mojarra Blanca?	Yellowfin Mojarra
	Mojarra Mopich	Mojarra
	Mojarra Burra	Mojarra
Small Fish	Iguano De Mar	Small Fish Used As Bait Almost Depleted
	Vulcai	Small fish used as bait for octopus
	Macabi	Bonefish
	Sargo Chopá	Tripletail
	Sardina	Herring
	Esmedregal	Cobia
	Sabalo	Tarpon
Octopuss	Pulpo	Octopus
	Pulpo Maya	Octopus Maya
	Pulpo Paton?	Common Octopus
Invertebrate	Pepino De Mar	Sea Cucumber
Snails	Caracol Rosado	Queen Conch

	Caracol Blanco	Milk Conch
	Caracol Chakpel O Rojo	Florida Horse Conch
	Caracol Trompillo	Large Edible Sea Snails
	Caracol Chivita	Sea Snails
	Caracol Chivita Negra	Sea Snails
	Caracol Campechana	True Tulip
	Caracol	Diverse edible sea snails
	Caracol Tomburro	
	Caracol Sacabocado	
	Caracol Negro	
	Caracol Jotuto Parecido Al Caracol Blanco	
Bivalves	Mejillones	Mussel
Crustaceans	Cangrejo Cacerola	Horseshoe Crab
	Cangrejo Moro	Florida Stone Crab
	Jaiba	Crabfish
	Langosta	Lobster
	Camarón	Shrimp
Sponges	Esponja Para Comercializar, Esponja Del Caribe	Sponge, bath sponge
	Esponja Grande Mucaro Donde Vive La Langosta	Large sponges where lobsters live
Marine Mammals	Manati	Manati
	Delfin	Dolphin
Reptile	Cocodrilo	Crocodile
Coral	Coral Mata De Coco Se Le Conoce	Soft Coral
