

Fish ID Project

- Objective: Is there a noticeable difference in bio-diversity between un-protected vs protected reefs?
(protected: no fishing allowed)
- Hypothesis: Due to the protection from fishing, the protected reefs should have more bio-diversity
- Impact: Determine and track the impact that fishing has on the health of reefs by examining the biodiversity between protected reefs and unprotected reefs

SCUBAnauts Key Largo Dive Trip

June 11-18, 2023



Fish ID Project Team:

Maya Barboza (Science Lead)

Audrey (Dive Lead)

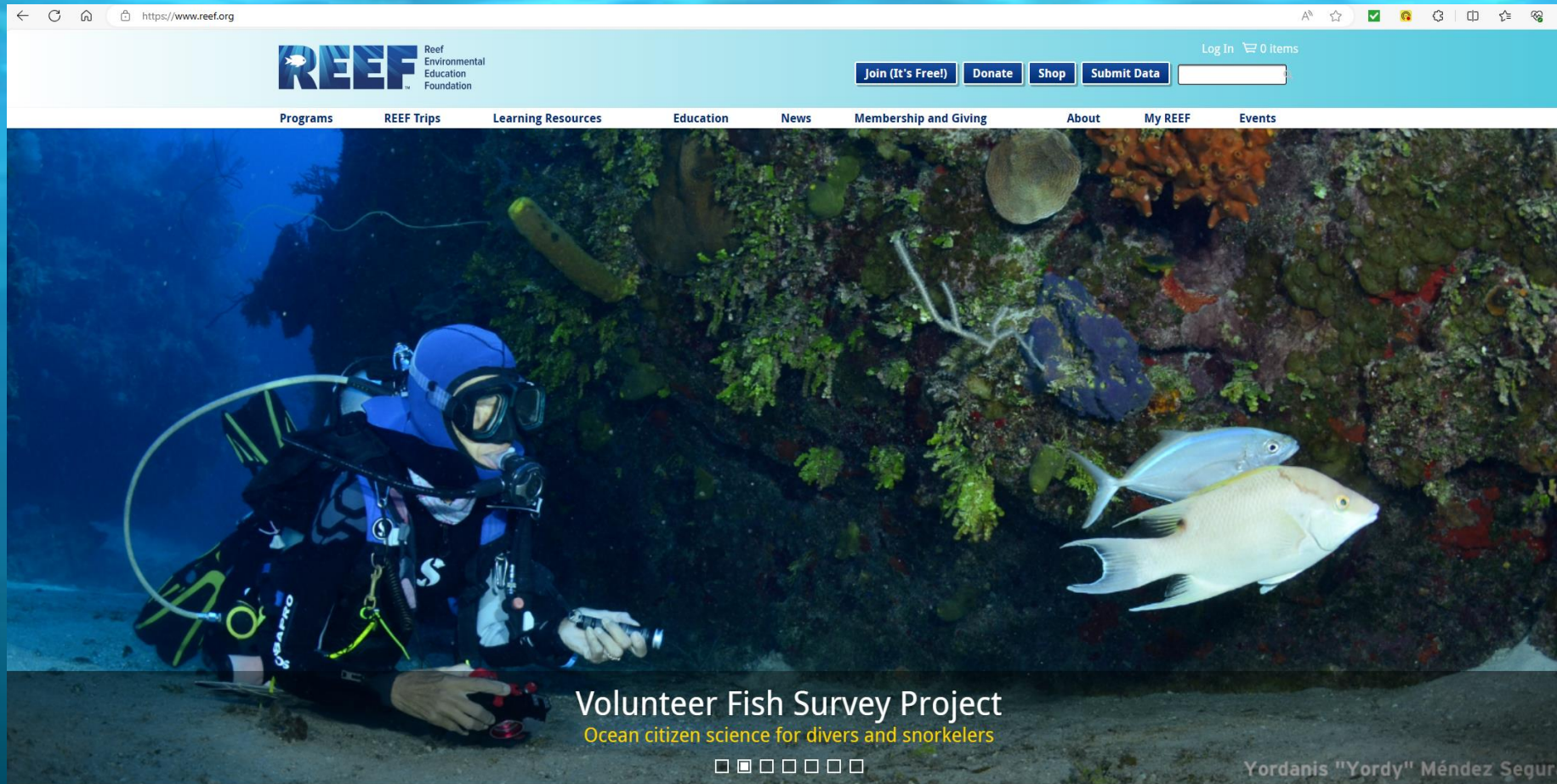
Hannah

Bibiana

Graham

Owen

Fish ID Project



Nauts required to pass a REEF Fish Identification test to participate in dives

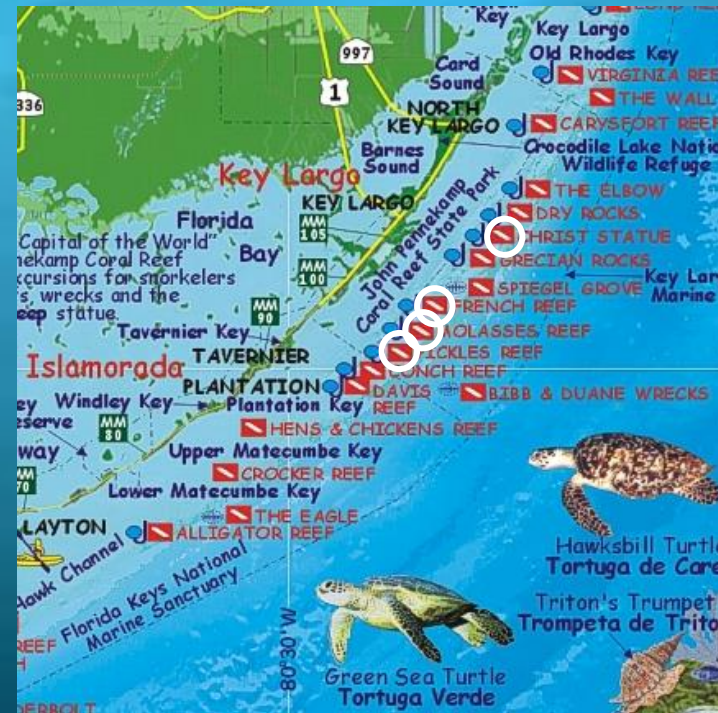
Data entered in REEF database and used by scientific community

Fish ID Project, Key Largo Dive Trip

Dive Location: Key Largo

Area: Tropical Western Atlantic (TWA)

Region 3: Florida (East Coast & Keys)



Dive Sites:

Christ of the Abyss

French Reef

Molasses Reef

Pickles Reef**

Snappers Ledge**

Benwood (wreck)

** un-protected reefs

Fish ID Project, Data Collection



Example Data Sheet

French Angelfish S F
 Gray Angelfish F F
 Queen Angelfish F S S
 Rock Beauty F S
 Bicolor Damselfish F M M M A
 Sergeant Major M F F M
 Threespot Damselfish M S F F
 Yellowtail Damselfish F S F F F
 Bluestriped Grunt F F S
 Barjack F F F M
 Princess Parrotfish M M S F M
 Redband Parrotfish F F S F F
 Redtail Parrotfish F
 Stoplight Parrotfish M F F F M
 Schoolmaster F F
 Yellowtail Snapper M M M F M
 Bluehead Wrasse F F S S M

0	None
S	Single: 1
F	Few: 2-10
M	Many: 11-100
A	Abundant: >100

Fish ID Project, Data Evaluation

Once collected the variety of fish species identified and their abundance recorded, used Fish ID groupings to place into the 12 groups:

Group 1: Disks & Ovals, colorful (examples: angelfish, butterfly fish, surgeonfish/tangs)



Group 2: Silvery (Ex. jacks, barracuda, look-downs)



Group 3: Sloping head, tapered body (Ex. grunts, snappers)



Group 4: Small ovals (Ex. damsels, hamlets, sergeant majors)



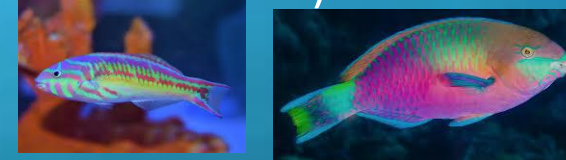
Fish ID Project, Data Evaluation

Once collected the variety of fish species identified and their abundance recorded, used Fish ID groupings to place into the 12 groups:

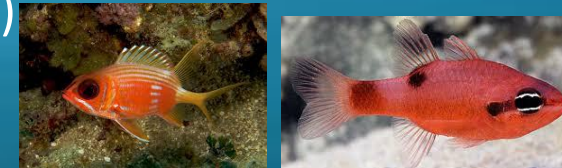
Group 5: Heavy bodies, large lips (Ex. groupers, basslets)



Group 6: Swim with pectoral fins, have obvious scales (Ex. wrasse, parrotfish)



Group 7: Reddish and large eyes (Ex. squirrelfish, cardinalfish)



Group 8: Small, elongated bottom-dwellers (Ex. goby, blenny, jawfish)



Fish ID Project, Data Evaluation

Once collected the variety of fish species identified and their abundance recorded, used Fish ID groupings to place into the 12 groups:

Group 9: Odd-shaped bottom-dwellers (Ex. flounder, scorpionfish)



Group 10: Odd-shaped swimmers (Ex. triggers, boxfish, goatfish, trumpetfish, puffers)



Group 11: Eels



Group 12: Sharks and rays



Fish ID Project, Data Evaluation

Fish	Group	Unprotected		Protected			
		Snappers Ledge	Picketts Reef	Christ of the Abyss	Benwood	French Reef	Molasses
Rock Beauty	1	F	F	F	0	S	0
Bicolor Damselfish	1	M	M	M	A	M	F
Yellowtail Damselfish	1	F	F	F	F	M	F
Threespot Damselfish	1	F	F	M	F	M	0
Cocoa Damselfish	1	S	0	0	0	0	0
Blue Tang	1	M	M	F	F	F	M
Ocean Surgeonfish	1	M	M	F	F	F	F
Foureyed Butterflyfish	1	F	F	S	M	F	S
Reef Butterflyfish	1	S	0	S	0	0	0
Branded Butterflyfish	1	F	F	0	0	0	S
Spotfin Butterflyfish	1	0	F	S	S	F	F
French Angelfish	1	0	S	F	0	0	S
Blue Angelfish	1	0	0	S	0	0	0
Gray Angelfish	1	0	0	F	0	F	F
Queen Angelfish	1	0	0	F	0	F	S
Beaugregory (damselfish)	1	S	0	0	0	0	0
Doctorfish	1	F	M	0	S	F	S
High Hat	1	S	0	0	0	0	0
Baracuda	2	S	S	F	0	0	S
Bar Jack	2	M	F	M	M	M	S
Grey Chub	2	M	F	M	F	M	F
Black Runner (Jack)	2	0	0	0	0	M	0
Yellowhead Jackfish	2	0	0	0	0	0	0
Blue Striped Grunt	3	A	M	F	M	0	M
French Grunt	3	A	M	F	M	0	M
White Grunt	3	M	M	F	M	F	M
Smallmouth Grunt	3	F	M	F	0	0	0
Schoolmaster	3	M	M	F	M	F	F
Yellowtail Snapper	3	A	M	M	A	F	M
Gray Snapper	3	F	0	S	0	0	S
Mohagany Snapper	3	M	0	F	M	0	S
Glassseyed Snapper	3	0	F	0	0	0	0
Parkfish	3	F	M	F	F	F	0
Blue Chromis	4	M	F	S	A	M	M
Brown Chromis	4	0	M	0	0	M	M
Sergeant Major	4	A	M	M	A	A	M
Harlequin Bass	5	F	F	0	0	F	0
Fairy Basslet	5	F	0	0	0	0	0
Goliath Grouper	5	F	0	0	0	0	0
Rind Hind Grouper	5	S	0	0	0	0	0
Crayfish	5	F	S	0	S	F	0
Blue Parrotfish	6	M	M	0	F	F	S
Princess Parrotfish	6	S	F	M	M	M	F
Queen Parrotfish	6	S	M	S	F	F	0
Midnight Parrotfish	6	M	S	S	S	S	F
Rainbow Parrotfish	6	F	S	0	S	0	0
Redband Parrotfish	6	F	F	F	S	F	F
Red Tail Parrotfish	6	S	F	F	0	0	M
Stuplight Parrotfish	6	M	F	M	F	F	F
Striped Parrotfish	6	S	F	S	F	0	0
Yellowtail Parrotfish	6	M	F	F	F	F	M
Bluehead Wrasse	6	F	F	M	F	F	S
Yellowhead Wrasse	6	F	F	S	S	F	F
Hogfish	6	S	F	F	F	F	S
Spanish Hogfish	6	F	0	S	S	F	0
Clown Wrasse	6	M	F	0	0	0	0
Rainbow Wrasse	6	S	0	S	0	0	0
Slippery Dick (wrasse)	6	0	F	M	0	0	S
Black Bar Soldier	7	S	0	0	0	0	0
Squirrelfish	7	F	F	0	S	S	S
Longspine Squirrelfish	7	F	M	0	S	0	S
Barred Cardinalfish	7	0	0	0	0	0	M
Bridled Goby	8	F	0	0	0	F	0
Neon Goby	8	0	M	0	M	M	0
Glass Goby	8	0	0	0	M	0	0
Colon Goby	8	0	0	0	0	0	0
Sand Diver	8	0	0	0	M	0	0
Scrawled Cowfish	10	F	0	0	S	0	0
Honeycomb Cowfish	10	0	S	0	S	0	0
Balloon fish	10	F	0	0	0	0	0
Sharpnose Puffer	10	M	M	F	F	F	F
Spotted Trunkfish	10	S	F	0	0	0	S
Smooth Trunkfish	10	0	0	0	S	S	0
Spotted Goatfish	10	F	0	0	0	S	0
Yellow Goatfish	10	S	0	0	A	F	S
Trumpet Fish	10	S	F	0	0	F	F
Porcupinefish	10	F	0	0	0	F	0
Ocean Triggerfish	10	0	S	F	0	0	S
Green Moray Eel	11	0	S	0	0	0	0
Nurse Shark	12	F	S	0	0	0	0

0	None
S	Single: 1
F	Few: 2-10
M	Many: 11-100
A	Abundant: >100

Observations:

The unprotected reef, particularly Snapper's Ledge, had more diversity in number of species and in groups of fish observed.

Questions:

- Could it be because the protected reefs are suffering and need the protection to build them back up?
- What factors could contribute to the data?
 - Time of day? Weather differences? Diver knowledge? Diver fatigue (first dive enthusiasm vs last dive)?

Conclusion:

It's always good to collect more data!



Thank you!

