

## **Project Update: March 2019**

I attended the National Scientific Expedition to the Seaflower Biosphere Reserve 2018. However, the national institution in charge of the expedition did a last-minute change and we ended up going to the southern cays of the reserve (Albuquerque Cays) instead of Bajo Nuevo Cays as it was planned from the beginning of 2018 when I send my proposal for your consideration.

This change has caused alteration to the initial structure of the project however I (with the help and support of my tutor) managed to adapt and gathered a very interesting dataset to the new scenery I was confronted with. Albuquerque Cays have better and more reliable fisheries information in which I can rely on to compare the parrotfish community among sites. Because of this change we also decided to sampled the other cays in the southern part of the reserve (Bolivar Cays, which also have better fisheries information) to have a more complete data. To date I have more than 5000 data points for parrotfishes. To get to this point a lot of activities have been achieved:

July 2018: Purchase of Stereo-video equipment and software licenses from SeaGis Company (Australia).

August 21- 31, 2018: Training in the use of Eventmeasure and CAL softwares by SeaGis staff.

September, 2018: Calibration and get used to the used of stereo-video equipment in field.

September 22 to October 2, 2018: Sampling of 16 stations in Albuquerque Cays during the 2018 Seaflower Expedition.

October 5 to 13, 2018: Sampling of 16 stations in Bolívar Cay.

October 13 to 17, 2018: Sampling of eight Stations in San Andrés Island.

November 3 to 16, 2018: Sampling of the remaining eight stations in San Andres and 16 stations in Old Providence Island.

\*The method used during sampling were transects of 50 x 2m and freediving for 20 minutes in each station.

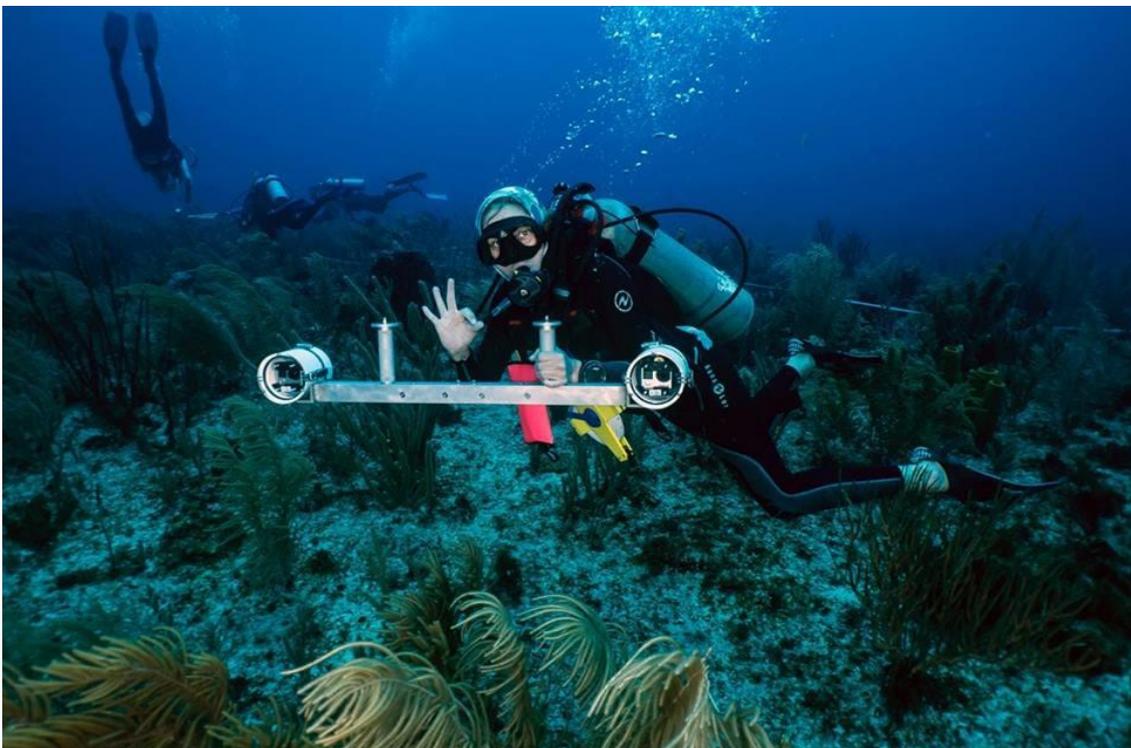
December, 2018- January, 2019: Video processing of the 64 stations sampled in the four localities to get abundance and size data with the Eventmeasure software. Each video of 40 minutes took an average of 3-4 hours to process.

February and March, 2019: Database management and fisheries information gathering.

In October 2018 the project got awarded for a grant from a national institution, nonetheless, for internal process I haven't received the money yet but I expect to get it in the next 2 months. This has slowed things up a little bit but thanks to your grant and personal savings I have managed to get the project on track and

expect to do statistical analysis next month to have results and comply with the report and goals with which I committed to you.

Here are some photos (By Santiago Estrada) during sampling and screen shots of the work done with the software to calculate size data of fishes:



EventMeasure : L:\16\ALB002.MP4 : R:\16\ALB002.MP4  
 Program Picture Measurement Stereo About

Zoom 6 1 Frames Toggle view Period: ErDivOpALB16 ( 18.0108 mins)

Play movie Lock Frame 22311 ( 30.1251 mins) Play movie Frame 21075

Data

Data view 3D Measurements

Family	Genus	Species	Number	Activity	C...	Filename	Frame	Time (mins)	Period	Period time (mins)	Length (mm)	X (mm)	Y (mm)	Z (mm)	Range (mm)	RMS (mm)	Precision (mm)
Labridae	Scarus	taeniopterus	1	Passing	IP	L:\16\ALB0...	22311	30.1251	ErDivOpALB16	18.0108	150.908	-245.280	-130....	-1744.471	1766.478	1.612	2.605
Labridae	Scarus	taeniopterus	1	Passing	IP	L:\16\ALB0...	22311	30.1251	ErDivOpALB16	18.0108	164.146	-336.473	3.806	-1372.279	1412.932	0.151	2.840
Labridae	Scarus	taeniopterus	1	Passing	IP	L:\16\ALB0...	22311	30.1251	ErDivOpALB16	18.0108	128.597	-354.882	-159....	-1046.552	1116.604	1.013	1.421
Labridae	Scarus	taeniopterus	1	Passing	IP	L:\16\ALB0...	22311	30.1251	ErDivOpALB16	18.0108	109.621	-257.853	-191....	-1449.638	1484.732	0.441	2.869
Labridae	Scarus	taeniopterus	1	Passing	IP	L:\16\ALB0...	22311	30.1251	ErDivOpALB16	18.0108	117.541	-422.748	-115....	-1196.094	1273.863	2.226	2.211
Labridae	Scarus	taeniopterus	1	Passing	IP	L:\16\ALB0...	22311	30.1251	ErDivOpALB16	18.0108	159.506	-150.356	-122....	-979.413	998.469	0.425	1.085
Labridae	Scarus	taeniopterus	1	Passing	IP	L:\16\ALB0...	22311	30.1251	ErDivOpALB16	18.0108	102.687	-197.107	-270....	-995.168	1049.994	0.680	1.639

EventMeasure : L:\10\BOL001.MP4 : R:\10\BOL001.MP4  
 Program Picture Measurement Stereo About

Zoom 6 1 Frames Toggle view

Play movie Lock Frame 8690 ( 4.8326 mins) Play movie Frame 9255

Data

Data view 3D Measurements

Family	Genus	Species	Number	Activity	C...	Filename	Frame	Time (mins)	Period	Period time (mins)	Length (mm)	X (mm)	Y (mm)	Z (mm)	Range (mm)	RMS (mm)	Precision (mm)
Labridae	Sparisoma	rubripinne	1	Passing	IP	L:\10\BOL0...	8690	4.8326			236.390	260.272	-440....	-1715.457	1790.170	1.657	1.669

EventMeasure: L:\3\SAI001.MP4: R:\3\SAI001.MP4  
 Program Picture Measurement Stereo About

Zoom 4 1 Frames Toggle view Period: TransectOpSA11 ( 1.7540 mins)

Play movie Lock Frame 15096 ( 8.3951 mins) Play movie Frame 15887

Data

Data view 3D Measurements

Family	Genus	Species	Number	Activity	C...	Filename	Frame	Time (mins)	Period	Period time (mins)	Length (mm)	X (mm)	Y (mm)	Z (mm)	Range (mm)	RMS (mm)	Precision (mm)
Labridae	Scarus	iseri	1	Passing	IP	L:\3\SAI001...	13383	7.4424	TransectOpSA11	0.8014	171.297	-1439.449	-646....	-3201.748	3569.503	1.493	8.455
Labridae	Sparisoma	aurofrenatum	1	Passing	IP	L:\3\SAI001...	13383	7.4424	TransectOpSA11	0.8014	130.688	-521.562	-591....	-3104.964	3203.467	2.603	5.818
Labridae	Scarus	taeniopterus	1	Passing	IP	L:\3\SAI001...	13505	7.5103	TransectOpSA11	0.8692	66.769	530.266	-369....	-1722.314	1839.604	1.117	2.847
Labridae	Scarus	iseri	1	Passing	IP	L:\3\SAI001...	13965	7.7651	TransectOpSA11	1.1250	133.188	-386.475	-166....	-1783.978	1999.072	5.215	5.070
Labridae	Sparisoma	aurofrenatum	1	Passing	IP	L:\3\SAI001...	14175	7.8829	TransectOpSA11	1.2418	157.359	-1113.680	-923....	-3898.893	4158.687	3.393	8.735
Labridae	Sparisoma	aurofrenatum	1	Passing	IP	L:\3\SAI001...	14876	8.2727	TransectOpSA11	1.6316	173.885	-236.527	-203....	-1182.618	1223.048	5.661	1.052
Labridae	Sparisoma	aurofrenatum	1	Passing	TP	L:\3\SAI001...	15096	8.3951	TransectOpSA11	1.7540	219.245	59.125	-253....	-937.902	973.261	1.713	0.717

EventMeasure: L:\3\SAI001.MP4: R:\3\SAI001.MP4  
 Program Picture Measurement Stereo About

Zoom 2 1 Frames Toggle view Period: ErDivOpSA13 ( 3.0898 mins)

Play movie Lock Frame 27811 ( 15.4660 mins) Play movie Frame 28142

Data

Data view 3D Measurements

Family	Genus	Species	Number	Activity	C...	Filename	Frame	Time (mins)	Period	Period time (mins)	Length (mm)	X (mm)	Y (mm)	Z (mm)	Range (mm)	RMS (mm)	Precision (mm)
Labridae	Scarus	taeniopterus	1	Passing	IP	L:\3\SAI001...	25431	14.1425	ErDivOpSA13	1.7662	80.616	-145.201	-149....	-1342.370	1338.488	1.623	2.506
Labridae	Scarus	taeniopterus	1	Passing	IP	L:\3\SAI001...	25431	14.1425	ErDivOpSA13	1.7662	88.871	-108.635	-146....	-1335.771	1348.158	0.164	2.380
Labridae	Scarus	taeniopterus	1	Passing	IP	L:\3\SAI001...	25431	14.1425	ErDivOpSA13	1.7662	96.848	-70.112	-171....	-1905.467	1914.437	1.794	3.988
Labridae	Scarus	taeniopterus	1	Passing	IP	L:\3\SAI001...	25431	14.1425	ErDivOpSA13	1.7662	105.569	-475.837	-260....	-1493.597	1589.077	0.459	2.818
Labridae	Scarus	taeniopterus	1	Passing	IP	L:\3\SAI001...	25431	14.1425	ErDivOpSA13	1.7662	92.227	-352.427	-319....	-1283.319	1368.577	1.736	1.948
Labridae	Sparisoma	aurofrenatum	1	Passing	IP	L:\3\SAI001...	27589	15.3425	ErDivOpSA13	2.9663	150.950	793.772	-366....	-2644.899	2785.600	0.290	8.030
Labridae	Scarus	vetula	1	Feeding	TP	L:\3\SAI001...	27811	15.4660	ErDivOpSA13	3.0898	276.031	110.898	-69.854	-1081.309	1089.223	0.172	0.804

EventMeasure: L:16)SAI001.MP4 : R:16)SAI001.MP4  
 Program Picture Measurement Stereo About

Zoom 4 Frames Toggle view Period: ErDivOpSAI16 ( 5.1663 mins)

Play movie Lock: Frame 24350 ( 13.5413 mins) Play movie Frame 24714

Data

Data view 3D Measurements

Family	Genus	Species	Number	Activity	C...	Filename	Frame	Time (mins)	Period	Period time (...)	Length (mm)	X (mm)	Y (mm)	Z (mm)	Range (mm)	RMS (mm)	Precision (mm)
Labridae	Scarus	iseri	1	Passing	IP	L:16)SAI00...	22199	12.3451	ErDivOpSAI16	3.9701	99.868	99.184	-201.0...	-1012.431	1037.01		
Labridae	Scarus	iseri	1	Passing	IP	L:16)SAI00...	22199	12.3451	ErDivOpSAI16	3.9701	170.770	130.278	-119.0...	-1278.191	1290.31		
Labridae	Scarus	iseri	1	Passing	IP	L:16)SAI00...	22199	12.3451	ErDivOpSAI16	3.9701	87.150	82.689	-189.0...	-1198.959	1216.51		
Labridae	Scarus	iseri	1	Passing	IP	L:16)SAI00...	22199	12.3451	ErDivOpSAI16	3.9701	77.081	-1811	-202.0...	-1326.257	1341.61		
Labridae	Sparisoma	viride	1	Passing	IP	L:16)SAI00...	22347	12.4274	ErDivOpSAI16	4.0524	178.952	74.048	251.822	-1074.677	1106.21		
Labridae	Sparisoma	atomarium	1	Passing	IP	L:16)SAI00...	22347	12.4274	ErDivOpSAI16	4.0524	103.799	-195.449	189.692	-1088.843	1122.31		
Labridae	Sparisoma	viride	1	Passing	TP	L:16)SAI00...	24350	13.5413	ErDivOpSAI16	5.1663	287.821	32.863	-159.0...	-1074.855	1087.093	1.873	0.955

Brightness and contrast  
 Brightness -42  
 Contrast 54

ESP 10:47 p. m.  
 LAA 20/01/2019

EventMeasure: L:2)PRO002.MP4 : R:2)PRO002.MP4  
 Program Picture Measurement Stereo About

Zoom 6 Frames Toggle view Period: ErDivOpPRO2 ( 7.9424 mins)

Play movie Lock: Frame 2166 ( 18.9222 mins) Play movie Frame 2472

Data

Data view 3D Measurements

Family	Genus	Species	Number	Activity	C...	Filename	Frame	Time (mins)	Period	Period time (...)	Length (mm)	X (mm)	Y (mm)	Z (mm)	Range (mm)	RMS (mm)	Precision (mm)
Labridae	Sparisoma	aurofenatum	1	Passing	IP	L:2)PRO00...	1215	18.3954	ErDivOpPRO2	7.4135	176.425	-1294.352	-390.0...	-2545.490	2882.236	0.988	7.422
Labridae	Sparisoma	aurofenatum	1	Passing	IP	L:2)PRO00...	1350	18.4685	ErDivOpPRO2	7.4886	149.820	-188.083	-591.0...	-1774.772	1876.784	0.897	1.960
Labridae	Sparisoma	aurofenatum	1	Passing	IP	L:2)PRO00...	1350	18.4685	ErDivOpPRO2	7.4886	169.399	-421.723	-501.0...	-1412.858	1557.548	2.021	2.498
Labridae	Sparisoma	chrysoternum	1	Passing	IP	L:2)PRO00...	1350	18.4685	ErDivOpPRO2	7.4886	341.591	-380.938	-272.0...	-3954.892	3982.501	1.978	4.209
Labridae	Sparisoma	chrysoternum	1	Passing	TP	L:2)PRO00...	1350	18.4685	ErDivOpPRO2	7.4886	333.951	-528.179	-267.0...	-5542.806	5574.329	5.387	6.346
Labridae	Scarus	vetula	1	Passing	TP	L:2)PRO00...	1481	18.5413	ErDivOpPRO2	7.5614	346.501	-83.584	-47.681	-1528.500	1531.526	1.187	1.480
Labridae	Scarus	coelestinus	1	Passing	IP	L:2)PRO00...	2166	18.9222	ErDivOpPRO2	7.9424	409.283	165.886	-172.0...	-2091.494	2105.127	1.877	2.174

ESP 3:00 p. m.  
 LAA 21/01/2019

EventMeasure : L\12\PRO002.MP4 - R\12\PRO002.MP4  
 Program Picture Measurement Stereo About

Zoom 4 Frames Toggle view Period: ErDivOpPRO12 ( 12.5347 mins)

Play movie Lock Frame 11164 ( 23.9261 mins) Play movie Frame 11530

Data

Data view 3D Measurements

Family	Genus	Species	Number	Activity	C...	Filename	Frame	Time (mins)	Period	Period time (...)	Length (mm)	X (mm)	Y (mm)	Z (mm)	Range (mm)	RMS (mm)	Precision (mm)
Labridae	Scarus	iseri	1	Passing	IP	L\12\PRO00...	10752	23.6970	ErDivOpPRO12	12.3056	66.448	-63.432	-162....	-1265.132	1277.081	0.846	1.217
Labridae	Scarus	taeniopterus	1	Passing	IP	L\12\PRO00...	10752	23.6970	ErDivOpPRO12	12.3056	105.873	-111.761	-215....	-1257.928	1281.180	0.532	1.178
Labridae	Scarus	iseri	1	Passing	IP	L\12\PRO00...	10752	23.6970	ErDivOpPRO12	12.3056	52.159	-105.003	-179....	-1295.893	1312.529	0.294	1.559
Labridae	Sparisoma	chrysopterus	1	Passing	IP	L\12\PRO00...	11002	23.8360	ErDivOpPRO12	12.4447	274.270	949.260	-755....	-3227.886	3333.556	4.135	6.010
Labridae	Sparisoma	chrysopterus	1	Passing	IP	L\12\PRO00...	11096	23.8827	ErDivOpPRO12	12.4914	320.090	131.896	-508....	-4692.386	4721.738	9.510	20.938
Labridae	Sparisoma	viride	1	Passing	TP	L\12\PRO00...	11067	23.8722	ErDivOpPRO12	12.4808	354.537	1182.550	-465....	-5083.778	5240.194	5.623	19.017
Labridae	Sparisoma	chrysopterus	1	Passing	IP	L\12\PRO00...	11258	23.9784	ErDivOpPRO12	12.5870	323.434	-1158.922	-652....	-2256.157	2619.078	0.788	4.696

EventMeasure : L\14\PRO002.MP4 - R\14\PRO002.MP4  
 Program Picture Measurement Stereo About

Zoom 4 Frames Toggle view Period: ErDivOpPRO14 ( 9.4806 mins)

Play movie Lock Frame 13027 ( 24.9622 mins) Play movie Frame 13308

Data

Data view 3D Measurements

Family	Genus	Species	Number	Activity	C...	Filename	Frame	Time (mins)	Period	Period time (...)	Length (mm)	X (mm)	Y (mm)	Z (mm)	Range (mm)	RMS (mm)	Precision (mm)
Labridae	Scarus	taeniopterus	1	Passing	TP	L\14\PRO00...	10872	23.7637	ErDivOpPRO14	8.2822	251.928	595.125	144.613	-2780.908	28		
Labridae	Scarus	taeniopterus	1	Passing	IP	L\14\PRO00...	10902	23.7804	ErDivOpPRO14	8.2988	117.427	577.332	-391....	-2116.025	22		
Labridae	Scarus	iseri	1	Passing	IP	L\14\PRO00...	11114	23.8983	ErDivOpPRO14	8.4167	108.723	501.295	-208....	-1307.298	14		
Labridae	Scarus	vetula	1	Passing	IP	L\14\PRO00...	11469	24.0957	ErDivOpPRO14	8.6142	208.443	247.897	-652....	-4708.770	4760.205	6.137	18.884
Labridae	Scarus	vetula	1	Passing	TP	L\14\PRO00...	12231	24.5195	ErDivOpPRO14	9.0379	350.273	2119.635	-30.519	-5912.500	6281.038	1.391	52.319
Labridae	Scarus	coeruleus	1	Passing	IP	L\14\PRO00...	12711	24.7864	ErDivOpPRO14	9.3049	561.479	-165.536	-697....	-4202.323	4263.043	4.118	5.197
Labridae	Scarus	coeruleus	1	Passing	TP	L\14\PRO00...	13027	24.9622	ErDivOpPRO14	9.4806	582.534	599.830	-200....	-2321.484	2406.097	1.590	3.795

Brightness and contrast  
 Brightness 8  
 Contrast 100