# APPENDICES

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**Appendix A** Study sites, site codes, regions and, protection level. Habitat type, S&G: Spur and Grove; Protection level, NTZ: No-take zone, MPA: marine protected area. Date of survey is month and year(s).

code         type         (m)         survey         level         year           Mesoauerican Barrier, Mexico           None            Cancún         GH         S & G         10         Jul 12         21.02544         -86.7713         none           Cozumel North         PB         S & G         15         Jul 12         20.42689         -87.2860         none           Cozumel South         CR         S & G         15         Jul 12         18.44867         -87.3476         MPA         1996           Chinchorro North         BCN         S & G         15         Jul 12         18.57457         -87.3476         MPA         1996           Chinchorro South         BCS         S & G         12         18.16282         -87.82222         NTZ         1996           Bacalar Chico         BC         S & G         12-15         May 10/12         17.91056         -87.95083         none           Tackle Box         TB         S & G         12-15         May 10/12         17.36147         87.9238         NTZ         1987           Gallows         GA         S & G         12-15         May 10/12         17.3656         -87.95083         none	Site name	Site	Habitat	Depth	Date of	Latitude	Longitude	Protection	MR
$ \begin{array}{c c c c c c c c c c c c c c c c c c c $		code	type	( <b>m</b> )	survey		0	level	year
				Mesoame	rican Barrier,	Mexico			
	Cancún	GH	S & G	12	Jul 12	21.02544	-86.7713	none	
Akumal         XA         S & G         15         Jul 12         20.42689         -87.2860         none           Cozumel South         CR         S & G         15         Jul 12         20.31961         -87.0266         NTZ         1996           Chinchorro North         BCC         S & G         15         Jul 12         18.74867         -87.3476         MPA         1996           Chinchorro South         BCC         S & G         15         Jul 12         18.41008         -87.4169         MPA         1996           Chinchorro South         BCS         S & G         12         May 10/12         17.81682         -87.93082         none           Bacalar Chico         BC         S & G         12-15         May 10/12         17.91676         -87.95083         none           Tackle Box         TB         S & G         12-15         May 10/12         17.94952         -88.05115         none           Calabash Caye         CA         S & G         12-15         May 10/12         17.24560         -87.54679         NTZ         1982           Alligator Caye         AL         S & G         12-15         May 10/12         16.9111         -88.04757         none           South	Cozumel North	PB	S & G	10	Jul 12	20.47188	-86.9815	NTZ	1996
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	Akumal	XA	S & G	15	Jul 12	20.42689	-87.2860	none	
$\begin{array}{c c c c c c c c c c c c c c c c c c c $	Cozumel South	CR	S & G	15	Jul 12	20.31961	-87.0266	NTZ	1996
$\begin{array}{c c c c c c c c c c c c c c c c c c c $	Chinchorro North	BCN	S & G	15	Jul 12	18.74867	-87.3476	MPA	1996
Chinchorro South         BCS         S & G         15         Jul 12         18.41008         -87.4169         MPA         1966           Mesoamerican Barrier, Belize           Bacalar Chico         BC         S & G         12-15         May 10/12         17.98782         -87.82222         NTZ         1996           Mexico Rocks         MR         S & G         12-15         May 10/12         17.91056         -87.95083         none           Tackle Box         TB         S & G         12-15         May 10/12         17.49592         -88.04255         none           Calabash Caye         CA         S & G         12-15         May 10/12         17.261047         -87.81970         none           Half Moon Caye         HM         S & G         12-15         May 10/12         17.2147         -87.84679         NTZ         1982           Alligator Caye         AL         S & G         12-15         May 10/12         16.91911         -88.04757         none           South Water Caye         S & G         12-15         May 10/12         16.73703         -87.8679         MPA         1993           South Middle Caye         S & G         12-15         May 10/12         16.73703         -87.867	Chinchorro Central	BCC	S & G	15	Jul 12	18.57457	-87.4198	MPA	1996
$ \begin{array}{c c c c c c c c c c c c c c c c c c c $	Chinchorro South	BCS	S & G	15	Jul 12	18.41008	-87.4169	MPA	1966
Bacalar Chico         BC         S & G         12-15         May 10/12         18.16282         -87.82222         NTZ         1996           Mexico Rocks         MR         S & G         12-15         May 10/12         17.98782         -87.90382         none           Tackle Box         TB         S & G         12-15         May 10/12         17.86343         -87.97238         NTZ         1987           Gallows         GA         S & G         12-15         May 10/12         17.86343         -87.97238         NTZ         1987           Gallows         GA         S & G         12-15         May 10/12         17.26147         -88.04255         none           Calabash Caye         CA         S & G         12-15         May 10/12         17.2060         -87.54679         NTZ         1982           Alligator Caye         AL         S & G         12-15         May 10/12         16.81346         -88.05715         none         500th Mater Caye         NC         S & G         12-15         May 10/12         16.73703         -87.82867         MPA         1993           South Midle Caye         S & G         12-15         May 10/12         16.28501         -88.15031         none           Rangu				Mesoame	erican Barrier,	Belize			
$\begin{array}{c c c c c c c c c c c c c c c c c c c $	Bacalar Chico	BC	S & G	12-15	May 10/12	18.16282	-87.82222	NTZ	1996
$ \begin{array}{c c c c c c c c c c c c c c c c c c c $	Mexico Rocks	MR	S & G	12-15	May 10/12	17.98782	-87.90382	none	
$ \begin{array}{c c c c c c c c c c c c c c c c c c c $	Tackle Box	TB	S & G	12-15	May 10/12	17.91056	-87.95083	none	
Gallows       GA       S & G       12-15       May 10/12       17.49592       -88.04255       none         Calabash Caye       CA       S & G       12-15       May 10/12       17.20560       -87.81970       none         Half Moon Caye       HM       S & G       12-15       May 10/12       17.20560       -87.54679       NTZ       1982         Alligator Caye       AL       S & G       12-15       May 10/12       16.91911       -88.05115       none         Tobacco Caye       TO       S & G       12-15       May 10/12       16.81346       -88.0757       none         South Water Caye       SW       S & G       12-15       May 10/12       16.73703       -87.80536       MPA       1996         South Middle Caye       SW       S & G       12-15       May 10/12       16.37310       -88.08913       none         Ranguana Caye       RA       S & G       12-15       May 10/12       16.1247       -88.15031       none         South West Caye       ST       S & G       12-15       May 10/12       16.11247       -88.25766       MPA       2003         Dry Tortugas, USA       LG       S & G       12       Jun 10/12       22.16627 <t< td=""><td>Hol Chan</td><td>HC</td><td>S &amp; G</td><td>12-15</td><td>May 10/12</td><td>17.86343</td><td>-87.97238</td><td>NTZ</td><td>1987</td></t<>	Hol Chan	HC	S & G	12-15	May 10/12	17.86343	-87.97238	NTZ	1987
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$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	Calabash Caye	CA	S & G	12-15	May 10/12	17.26147	-87.81970	none	
Alligator CayeALS & G12-15May 10/1217.19660-88.05115noneTobacco CayeTOS & G12-15May 10/1216.91911-88.04757noneSouth Water CayeSWS & G12-15May 10/1216.81346-88.07756MPA1996Middle CayeMCS & G12-15May 10/1216.73703-87.80536MPA1993South Middle CayeSMS & G12-15May 10/1216.73703-87.80536MPA1993Pampion CayePOS & G12-15May 10/1216.73710-87.80536MPA1993Pampion CayePOS & G12-15May 10/1216.72875-87.82867MPA1993South Widdle CayeSTS & G12-15May 10/1216.17230-88.08913noneRanguana CayeRAS & G12-15May 10/1216.11247-88.27107noneNicholas CayeNTS & G12-15May 10/1216.11247-88.27107noneNicholas CayeNIS & G12-15May 10/1216.11230-88.25586MPA2003Dry Tortugas, USAL GS & G12Jun 10/1222.16627-81.13827nonePunta PerdizPZSlope10-12Jun 10/1222.07914-81.07599noneBauna SayeCue ASlope10-12Jun 1120.82586-82.91050NTZ1996Bauna SayeSlope10-	Half Moon Cave	HM	S & G	12-15	May 10/12	17.20560	-87.54679	NTZ	1982
$\begin{array}{c c c c c c c c c c c c c c c c c c c $	Alligator Cave	AL	S & G	12-15	May 10/12	17.19660	-88.05115	none	
South Water Caye         SW         S & G         12-15         May 10/12         16.81346         -88.07756         MPA         1996           Middle Caye         MC         S & G         12-15         May 10/12         16.73703         -87.80536         MPA         1993           South Middle Caye         SM         S & G         12-15         May 10/12         16.73703         -87.80536         MPA         1993           Pampion Caye         PO         S & G         12-15         May 10/12         16.73703         -87.82867         MPA         1993           Ranguana Caye         RA         S & G         12-15         May 10/12         16.1247         -88.27107         none           Nicholas Caye         NI         S & G         12-15         May 10/12         16.11230         -88.25586         MPA         2003           Dry Tortugas, USA         LG         S & G         12         Jun 10/12         22.16627         -81.13827         none           Nuth Perdiz         PZ         Slope         10-12         Jun 10/12         22.16627         -81.13827         none           Punta Perdiz         PZ         Slope         10-12         Jun 10         22.07914         -81.05588 <td< td=""><td>Tobacco Cave</td><td>ТО</td><td>S &amp; G</td><td>12-15</td><td>May 10/12</td><td>16.91911</td><td>-88.04757</td><td>none</td><td></td></td<>	Tobacco Cave	ТО	S & G	12-15	May 10/12	16.91911	-88.04757	none	
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South Middle Caye         SM         S & G         12-15         May 10/12         16.72875         -87.82867         MPA         1993           Pampion Caye         PO         S & G         12-15         May 10/12         16.72875         -87.82867         MPA         1993           Ranguana Caye         RA         S & G         12-15         May 10/12         16.37310         -88.08913         none           South West Caye         ST         S & G         12-15         May 10/12         16.11247         -88.27107         none           Nicholas Caye         NI         S & G         12-15         May 10/12         16.11230         -88.2586         MPA         2003           Dry Tortugas, USA         LG         S & G         12         Jun 12         24.68508         -82.91050         NTZ         1992           Bay of Pigs, Cuba           Bay of Pigs, Cuba         -         16.12         Jun 10/12         22.16627         -81.13827         none         -           Cueva Peces         CP         Slope         10-12         Jun 10         22.07914         -81.07599         none           Ebano         EB         Slope         10-12         Jun 11         20.8463	Middle Cave	MC	S & G	12-15	May 10/12	16.73703	-87.80536	MPA	1993
Daminin Caye         PO         S & G         12-15         May 10/12         16.37310         -88.08913         none           Ranguana Caye         RA         S & G         12-15         May 10/12         16.37310         -88.08913         none           Southwest Caye         ST         S & G         12-15         May 10/12         16.17310         -88.08913         none           Nicholas Caye         NI         S & G         12-15         May 10/12         16.11247         -88.25107         none           Nicholas Caye         NI         S & G         12-15         May 10/12         16.11230         -88.25105         MPA         2003           Dry Tortugas, USA         LG         S & G         12         Jun 12         24.68508         -82.91050         NTZ         1992           Bay of Pigs, Cuba           Bay of Pigs, Cuba           10.12         10.12         10.12         0.1010         22.07914         -81.07599         none           Barono         EB         Slope         10-12         Jun 10         22.07914         -81.05588         none           Bacunayagua, Cuba         BC         Slope         10-12         Jun 11         20.82465	South Middle Cave	SM	S & G	12-15	May $10/12$	16.72875	-87.82867	MPA	1993
Ranguana Caye       RA       S & G       12-15       May 10/12       16.28501       -88.15031       none         Southwest Caye       ST       S & G       12-15       May 10/12       16.1247       -88.27107       none         Nicholas Caye       NI       S & G       12-15       May 10/12       16.11247       -88.27107       none         Nicholas Caye       NI       S & G       12       Jun 12       24.68508       -82.91050       NTZ       1992         Dry Tortugas, USA       LG       S & G       12       Jun 10/12       22.16627       -81.13827       none         Punta Perdiz       PZ       Slope       10-12       Jun 10/12       22.11003       -81.11626       none         Ebano       EB       Slope       10-12       Jun 10       22.07914       -81.07599       none         Brinco       BR       Slope       10-12       Jun 12       23.14653       -81.66664       none         Jardines de la Reina, Cuba       Cuba       Jun 11       20.84411       -79.02166       NTZ       1996         Pipin       PP       S & G       12-15       Jun 11       20.82586       -78.98026       NTZ       1996         Anclit	Pampion Cave	PO	S & G	12-15	May 10/12	16.37310	-88.08913	none	
National Construction         National Construction         National Construction         National Construction           Southwest Caye         NI         S & G         12-15         May 10/12         16.11247         -88.27107         none           Nicholas Caye         NI         S & G         12-15         May 10/12         16.11247         -88.27107         none           Dry Tortugas, USA         LG         S & G         12         Jun 12         24.68508         -82.91050         NTZ         1992           Bay of Pigs, Cuba         Bay of Pigs, Cuba         -         -         -         88.27107         none           Punta Perdiz         PZ         Slope         10-12         Jun 10/12         22.16627         -81.13827         none           Batono         EB         Slope         10-12         Jun 10/12         22.11003         -81.11626         none           Batono         EB         Slope         10-12         Jun 12         23.0693         -81.05588         none           Bacunayagua, Cuba         BC         Slope         10-12         Jun 12         23.14653         -81.66664         none           Jardines de la Reina, Cuba         El Peruano         EP         Slope         10-12	Ranguana Cave	RA	5 & G	12-15	May $10/12$	16 28501	-88 15031	none	
Nicholas Caye         NI         S & G         12-15         May 10/12         16.11210         -08.2187         Infle           Nicholas Caye         NI         S & G         12-15         May 10/12         16.11230         -88.25586         MPA         2003           Dry Tortugas, USA         LG         S & G         12         Jun 12         24.68508         -82.91050         NTZ         1992           Bay of Pigs, Cuba           Cueva Peces         CP         Slope         10-12         Jun 10/12         22.16627         -81.13827         none           Punta Perdiz         PZ         Slope         10-12         Jun 10/12         22.11003         -81.11626         none           Baoo         EB         Slope         10-12         Jun 10         22.07914         -81.07599         none           Brinco         BR         Slope         10-12         Jun 12         23.14653         -81.66664         none           Bacunayagua, Cuba         BC         Slope         10-12         Jun 11         20.84411         -79.02166         NTZ         1996           Pipin         PP         S & G         12-15         Jun 11         20.82586         -78.98026         NTZ	Southwest Cave	ST	5 & G	12-15	May $10/12$	16 11247	-88 27107	none	
Initial Start of Price         Initial Start of Price <thinitial of="" price<="" start="" th="">         Initial Start of Price<!--</td--><td>Nicholas Cave</td><td>NI</td><td>5 &amp; G</td><td>12-15</td><td>May <math>10/12</math></td><td>16 11230</td><td>-88 25586</td><td>MPA</td><td>2003</td></thinitial>	Nicholas Cave	NI	5 & G	12-15	May $10/12$	16 11230	-88 25586	MPA	2003
Bay of Pigs, Cuba         Bay of Pigs, Cuba           Bay of Pigs, Cuba	Dry Tortugas USA	LG	<u>S&amp;G</u>	12 13	Iun 12	24 68508	-82 91050	NTZ	1992
Cueva Peces         CP         Slope         10-12         Jun 10/12         22.16627         -81.13827         none           Punta Perdiz         PZ         Slope         10-12         Jun 10/12         22.11003         -81.11626         none           Ebano         EB         Slope         10-12         Jun 10         22.07914         -81.07599         none           Brinco         BR         Slope         10-12         Jun 12         22.06939         -81.05588         none           Bacunayagua, Cuba         BC         Slope         10-12         Jun 12         23.14653         -81.66664         none           Bacunayagua, Cuba         BC         Slope         10-12         Jun 11         20.84411         -79.02166         NTZ         1996           Pipin         PP         S & G         12-15         Jun 11         20.82586         -78.98026         NTZ         1996           Anclita         AN         Slope         10-12         Jun 11         20.75266         -78.83634         NTZ         1996           Cueva Pulpo         CF         Slope         10         Jul 11/12         26.70967         -77.15408         none           Fowls Cay         FC <t< td=""><td>Dig Toltugus, ODIT</td><td>EG</td><td>540</td><td>Ba</td><td>v of Pigs. Cub</td><td>a <u>21.00500</u></td><td>02.91050</td><td>1112</td><td>1772</td></t<>	Dig Toltugus, ODIT	EG	540	Ba	v of Pigs. Cub	a <u>21.00500</u>	02.91050	1112	1772
Punta Perdiz       PZ       Slope       10-12       Jun 10/12       22.1002/       -6311362/       none         Punta Perdiz       PZ       Slope       10-12       Jun 10/12       22.11003       -81.11626       none         Ebano       EB       Slope       10-12       Jun 10       22.07914       -81.07599       none         Brinco       BR       Slope       10-12       Jun 12       22.06939       -81.05588       none         Bacunayagua, Cuba       BC       Slope       10-12       Jun 12       23.14653       -81.66664       none         Bacunayagua, Cuba       BC       Slope       10-12       Jun 11       20.84411       -79.02166       NTZ       1996         Pipin       PP       S & G       12-15       Jun 11       20.82586       -78.98026       NTZ       1996         Anclita       AN       Slope       10-12       Jun 11       20.78697       -78.94317       NTZ       1996         Cueva Pulpo       CF       Slope       10-12       Jun 11       20.75266       -78.83634       NTZ       1996         Guana Cay       GC       S & G       10-12       Jul 11/12       26.63717       -77.03848       NTZ	Cueva Peces	CP	Slone	10-12	$J_{\rm un} 10/12$	22 16627	-81 13827	none	
Fundar Ferdal       FE       Slope       10 12       Jun 10       22.11003       01.11023       none         Ebano       EB       Slope       10-12       Jun 10       22.07914       -81.07599       none         Brinco       BR       Slope       10-12       Jun 12       22.06939       -81.05588       none         Bacunayagua, Cuba       BC       Slope       10-12       Jun 12       23.14653       -81.66664       none         Bacunayagua, Cuba       BC       Slope       10-12       Jun 12       23.14653       -81.66664       none         Bacunayagua, Cuba       BC       Slope       10-12       Jun 11       20.84411       -79.02166       NTZ       1996         Pipin       PP       S & G       12-15       Jun 11       20.82586       -78.98026       NTZ       1996         Anclita       AN       Slope       10-12       Jun 11       20.75266       -78.94317       NTZ       1996         Cueva Pulpo       CF       Slope       10-12       Jul 11/12       26.70967       -77.15408       none         Fowls Cay       FC       Slope       10       Jul 11/12       26.63717       -77.03848       NTZ       2009	Punta Perdiz	P7	Slope	10-12	Jun 10/12	22.10027	-81 11626	none	
Brinco       BR       Slope       10-12       Jun 10       22.07914       -01.07999       none         Brinco       BR       Slope       10-12       Jun 12       22.06939       -81.05588       none         Bacunayagua, Cuba       BC       Slope       10-12       Jun 12       23.14653       -81.06664       none         Jardines de la Reina, Cuba       Image: Cuba       El Peruano       EP       Slope       10-12       Jun 11       20.84411       -79.02166       NTZ       1996         Pipin       PP       S & G       12-15       Jun 11       20.82586       -78.98026       NTZ       1996         Anclita       AN       Slope       10-12       Jun 11       20.78697       -78.94317       NTZ       1996         Cueva Pulpo       CF       Slope       10-12       Jun 11       20.75266       -78.83634       NTZ       1996         Abaco, Bahamas         Guana Cay       GC       S & G       10-12       Jul 11/12       26.63717       -77.15408       none         Fowls Cay       FC       Slope       10       Jul 11/12       26.62122       -77.00550       none         Pelican Cay       PC       Slope </td <td>Fhano</td> <td>FB</td> <td>Slope</td> <td>10-12</td> <td>Jun 10</td> <td>22.11005</td> <td>-81 07599</td> <td>none</td> <td></td>	Fhano	FB	Slope	10-12	Jun 10	22.11005	-81 07599	none	
Briteo         BR         Stope         10-12         Juli 12         22.00737         -631.03388         none           Bacunayagua, Cuba         BC         Slope         10-12         Jun 12         23.14653         -81.66664         none           Jardines de la Reina, Cuba         Jardines de la Reina, Cuba         -79.02166         NTZ         1996           Pipin         PP         S & G         12-15         Jun 11         20.82586         -78.98026         NTZ         1996           Anclita         AN         Slope         10-12         Jun 11         20.78697         -78.94317         NTZ         1996           Cueva Pulpo         CF         Slope         10-12         Jun 11         20.75266         -78.83634         NTZ         1996           Guana Cay         GC         S & G         10-12         Jul 11/12         26.70967         -77.15408         none           Fowls Cay         FC         Slope         10         Jul 11/12         26.63717         -77.03848         NTZ         2009           Man o' War         MW         S & G         10-12         Jul 11/12         26.62122         -77.00550         none           Pelican Cay         PC         Slope	Brinco	BB	Slope	10-12	Jun 12	22.07714	81.05588	none	
Bacunayagua, Cuba         BC         Stope         10-12         Jun 12         25.14053         -81.00004         none           Jardines de la Reina, Cuba           El Peruano         EP         Slope         10-12         Jun 11         20.84411         -79.02166         NTZ         1996           Pipin         PP         S & G         12-15         Jun 11         20.82586         -78.98026         NTZ         1996           Anclita         AN         Slope         10-12         Jun 11         20.78697         -78.94317         NTZ         1996           Cueva Pulpo         CF         Slope         10-12         Jun 11         20.75266         -78.83634         NTZ         1996           Guana Cay         GC         S & G         10-12         Jul 11/12         26.70967         -77.15408         none           Fowls Cay         FC         Slope         10         Jul 11/12         26.63717         -77.03848         NTZ         2009           Man o' War         MW         S & G         10-12         Jul 11/12         26.62122         -77.00550         none           Pelican Cay         PC         Slope         10         Jul 11/12         26.39783 <t< td=""><td>Bacupayagua Cuba</td><td>BC</td><td>Slope</td><td>10.12</td><td>Jun 12</td><td>22.00757</td><td>81 66664</td><td>none</td><td></td></t<>	Bacupayagua Cuba	BC	Slope	10.12	Jun 12	22.00757	81 66664	none	
El Peruano       EP       Slope       10-12       Jun 11       20.84411       -79.02166       NTZ       1996         Pipin       PP       S & G       12-15       Jun 11       20.82586       -78.98026       NTZ       1996         Anclita       AN       Slope       10-12       Jun 11       20.78697       -78.94317       NTZ       1996         Cueva Pulpo       CF       Slope       10-12       Jun 11       20.75266       -78.83634       NTZ       1996         Cueva Pulpo       CF       Slope       10-12       Jun 11       20.75266       -78.83634       NTZ       1996         Abaco, Bahamas         Guana Cay       GC       S & G       10-12       Jul 11/12       26.670967       -77.15408       none         Fowls Cay       FC       Slope       10       Jul 11/12       26.63717       -77.03848       NTZ       2009         Man o' War       MW       S & G       10-12       Jul 11/12       26.62122       -77.00550       none         Pelican Cay       PC       Slope       10       Jul 11/12       26.39783       -76.98850       NTZ       1972	Dacunayagua, Cuba	DC	Slope	Io-12 Iardine	s de la Reina	23.14033 Cuba	-81.00004	none	
Difference       Difference <thdifference< th="">       Difference       Difference<td>El Peruano</td><td>EP</td><td>Slope</td><td>10-12</td><td>Jun 11</td><td>20 84411</td><td>-79 02166</td><td>NTZ</td><td>1996</td></thdifference<>	El Peruano	EP	Slope	10-12	Jun 11	20 84411	-79 02166	NTZ	1996
Anclita       AN       Slope       10-12       Jun 11       20.02500       70.70020       NTZ       1996         Cueva Pulpo       CF       Slope       10-12       Jun 11       20.78697       -78.94317       NTZ       1996         Cueva Pulpo       CF       Slope       10-12       Jun 11       20.75266       -78.83634       NTZ       1996         Abaco, Bahamas         Guana Cay       GC       S & G       10-12       Jul 11/12       26.670967       -77.15408       none         Fowls Cay       FC       Slope       10       Jul 11/12       26.62122       -77.03848       NTZ       2009         Man o' War       MW       S & G       10-12       Jul 11/12       26.62122       -77.00550       none         Pelican Cay       PC       Slope       10       Jul 11/12       26.39783       -76.98850       NTZ       1972	Pinin	PP	S&G	12-15	Jun 11	20.82586	-78 98026	NTZ	1996
Anchia       Art       Stope       10-12       Jun 11       20.76097       -76.94917       RTZ       1996         Cueva Pulpo       CF       Slope       10-12       Jun 11       20.75266       -78.83634       NTZ       1996         Abaco, Bahamas         Guana Cay       GC       S & G       10-12       Jul 11/12       26.70967       -77.15408       none         Fowls Cay       FC       Slope       10       Jul 11/12       26.63717       -77.03848       NTZ       2009         Man o' War       MW       S & G       10-12       Jul 11/12       26.62122       -77.00550       none         Pelican Cay       PC       Slope       10       Jul 11/12       26.39783       -76.98850       NTZ       1972	Anclita	ΔΝ	Slone	10-12	Jun 11	20.02500	-78 9/317	NTZ	1996
Guana Cay         GC         S & G         10-12         Jul 11/12         26.70967         -77.15408         none           Fowls Cay         FC         Slope         10         Jul 11/12         26.63717         -77.03848         NTZ         2009           Man o' War         MW         S & G         10-12         Jul 11/12         26.62122         -77.00550         none           Pelican Cay         PC         Slope         10         Jul 11/12         26.39783         -76.98850         NTZ         1972	Cueva Pulpo	CE	Slope	10-12	Jun 11	20.75266	-78 83634	NTZ	1996
Guana Cay         GC         S & G         10-12         Jul 11/12         26.70967         -77.15408         none           Fowls Cay         FC         Slope         10         Jul 11/12         26.63717         -77.03848         NTZ         2009           Man o' War         MW         S & G         10-12         Jul 11/12         26.62122         -77.00550         none           Pelican Cay         PC         Slope         10         Jul 11/12         26.39783         -76.98850         NTZ         1972	Cueva I uipo	CI	Slope	Δł	aco Bahamas	20.75200	-70.05054	MIZ	1770
Fowls Cay       FC       Slope       10       Jul 11/12       26.63717       -77.03848       NTZ       2009         Man o' War       MW       S & G       10-12       Jul 11/12       26.62122       -77.00550       none         Pelican Cay       PC       Slope       10       Jul 11/12       26.39783       -76.98850       NTZ       1972	Guana Cay	GC	S & G	10-12	Inl 11/12	26 70967	-77 15408	none	
Man o' War         MW         S & G         10-12         Jul 11/12         26.62122         -77.005040         NTZ         2009           Pelican Cay         PC         Slope         10         Jul 11/12         26.62122         -77.00550         none           Pelican Cay         PC         Slope         10         Jul 11/12         26.39783         -76.98850         NTZ         1972	Fowls Cay	FC	Slope	10-12	Jul 11/12	26 63717	-77 038/18	NT7	2009
Pelican Cay         PC         Slope         10         Jul 11/12         26.02122         -77.000500         Hold           10         Jul 11/12         26.39783         -76.98850         NTZ         1972	Man o' War	MW	S & G	10-12	Jul 11/12	26.62122	-77 00550	none	2007
renear cay i C Suppe io Juli1/12 20.37/03 -70.30030 INIZ 17/2	Pelican Cav	PC	Slope	10-12	Jul 11/12	26 30783	-76 98850	NT7	1972
Little Harbor I.H. $S \& G = 10.12$ Jul $11/12 = 26.32300 = 76.00160$ none	I ittle Harbor	те ти	S & C	10 12	$J_{11} = \frac{1}{1} \frac{1}{17}$	26.37703	-76 00160	none	1712
Rocky Point RP Slope 10-12 Jul 11/12 25 99661 -77 40092 Remote	Rocky Point	RP	Slope	10-12	Jul 11/12	25 99661	-77 40092	Remote	

**Appendix B** Fish trophic guilds, species taxonomic information, and allometric parameters used to calculate biomass.

Apex predatorCarangidaeGreater AmberjackSeriola dumerili0.03252.870Apex predatorCaracharhinaco JackSeriola rivoliana0.0122.957Apex predatorCarcharhinidaeBlackip SharkCarcharhinus faisformis0.01013.060Apex predatorCarcharhinidaeBlackip SharkCarcharhinus inhustus0.00213.010Apex predatorCarcharhinidaeCarcharhinus precis0.02713.000Apex predatorLutjanidaeLumon sharkNegapron brevirostris0.00122.884Apex predatorHuracnidaeGreen MorayGymonthorax fimebris0.00142.856Apex predatorRhincodontidaeNurse SharkGingfymostoma cirratum0.01522.802Apex predatorSerranidaeTige GrouperMycteroperca interstitialis0.00412.856Apex predatorSerranidaeTige GrouperMycteroperca interstitialis0.00422.866Apex predatorSerranidaeTige GrouperMycteroperca interstitialis0.00402.866Piso/InvertivoreBelonidaeGreat BarracudaSplyraena barracuda0.00363.205Apex predatorSplyraenidaeGreat BarracudaSplyraena barracuda0.00402.866Piso/InvertivoreBelonidaeHoumdfishTylosurus crocolitus0.00383.299Piso/InvertivoreGarangidaeBarlackCaranx tinpos0.03292.855Piso/InvertivoreCarangidaeBarlackCaranx tinpos0.0329 <th><b>Trophic Group</b></th> <th>Family</th> <th>Common Name</th> <th>Species Name</th> <th>а</th> <th>b</th>	<b>Trophic Group</b>	Family	Common Name	Species Name	а	b
Apex predatorCarangidaeAlmaco JackSeriola rivoliana0.01222.957Apex predatorCarcharhinidaeBlacktip SharkCarcharhinus finiformis0.01013.060Apex predatorCarcharhinidaeBlacktip SharkCarcharhinus limbatus0.00613.010Apex predatorCarcharhinidaeReef SharkCarcharhinus generei0.00213.080Apex predatorCarcharhinidaeTarponMegalops atlanticus0.01222.984Apex predatorLuiginidaeCubera SnapperLuiginidae2.8923.060Apex predatorRhincodonidaeNuse SharkGingfymosotoma cirratum0.01022.894Apex predatorScombridaeCeroScombronorus regalis0.02022.800Apex predatorScornaidaeYellowmouth GrouperMycteroperca interstitualis0.01412.852Apex predatorSerranidaeYellowrin GrouperMycteroperca interstitualis0.00433.120Apex predatorSerranidaeTigor GrouperMycteroperca interstitualis0.00443.200Apex predatorSerranidaeGreat BarracudaSphyraena barracuda0.00702.972Apex predatorSubitaTagota1.8003.205Pisc/InvertivoreAulostomidaeTrumpefishAulostomus maculatus0.00483.280Pisc/InvertivoreBarlackCaranx hippos0.03182.490Pisc/InvertivoreCarangidaeBlackCaranx crysos0.03182.990Pisc/Inv	Apex predator	Carangidae	Greater Amberjack	Seriola dumerili	0.0325	2.870
Apex predator         Carcharhinidae         Silky Shark         Carcharhinus [abliformis         0.0101         3.060           Apex predator         Carcharhinidae         Reef Shark         Carcharhinus perezi         0.0271         3.000           Apex predator         Carcharhinidae         Lemon shark         Negaprion brevirosiris         0.0051         3.160           Apex predator         Luijanidae         Cubera Snapper         Luiganidae         0.0152         3.960           Apex predator         Muraenidae         Green Moray         Gymothoras [unebris]         0.0101         2.852           Apex predator         Scombridae         Nurse Shark         Ginglymostoma cirratum         0.0105         2.892           Apex predator         Serranidae         Black Grouper         Mycteroperca intersitiatis         0.0042         3.160           Apex predator         Serranidae         Yellowrin Grouper         Mycteroperca intersitiatis         0.0043         3.120           Apex predator         Seranidae         Trager Grouper         Mycteroperca venenosa         0.0012         2.872           Apex predator         Seranidae         Trager Grouper         Mycteroperca venenosa         0.0014         2.856           Pisc/Invertivore         Aulostomidae         Tr	Apex predator	Carangidae	Almaco Jack	Seriola rivoliana	0.0122	2.957
Apex predatorCarcharhinidaeBlacktip SharkCarcharhinus limbatus0.00613.010Apex predatorCarcharhinidaeReef SharkCarcharhinus perezi0.02713.000Apex predatorElopidaeTarponMegaprion brevirostris0.01202.984Apex predatorLutjanidaeCubera SnaperLutjanidae0.010152.892Apex predatorRhincodontidaeNurse SharkGinglymostoma cirratum0.010152.892Apex predatorScombridaeCeroScomberomorus regalis0.02022.800Apex predatorSeranidaeBlack GrouperMycteroperca horaci0.00823.140Apex predatorSeranidaeTiger GrouperMycteroperca iteris0.01213.000Apex predatorSeranidaeTumpetfishAulostomus maculaus0.00412.800Apex predatorSeranidaeGreat BarracudaSphyraena barracuda0.00702.972Pisc/InvertivoreAulostomidaeTumpetfishAulostomus maculaus0.00883.205Pisc/InvertivoreBothidaePeacock FlounderBoths lunatus0.00883.205Pisc/InvertivoreCarangidaeBlac RunerCaranx ripsos0.03122.949Pisc/InvertivoreCarangidaeBlac RunerCaranx ripsos0.03292.945Pisc/InvertivoreCarangidaePalometaTrachinous goodei0.02592.908Pisc/InvertivoreCarangidaePalometaCaranx ripsos0.03182.949Pi	Apex predator	Carcharhinidae	Silky Shark	Carcharhinus falsiformis	0.0101	3.060
Apex predatorCarcharhinidaeReef SharkCarcharhinus perezi0.02713.000Apex predatorCarcharhinidaeLemon sharkNegalops atlanticus0.01202.984Apex predatorLuijanidaeCubera SnapperLutjanus cyanopterus0.011202.984Apex predatorMuraenidaeGreen MorayGymothorax funcheris0.00142.856Apex predatorScombridaeNurse SharkGinglymostoma cirratum0.01052.892Apex predatorSerranidaeBlack GrouperMycteroperca interstitialis0.01413.000Apex predatorSerranidaeYellowrnouth GrouperMycteroperca interstitialis0.01413.000Apex predatorSerranidaeYellowrnouth GrouperMycteroperca interstitialis0.00433.120Apex predatorSerranidaeYellowrinouth GrouperMycteroperca interstitialis0.00443.120Apex predatorSerranidaeYellowrinouth GrouperMycteroperca interstitialis0.00403.860Pisc/InvertivoreAlcostomidaeTumpetfishAulostomus maculants0.00402.866Pisc/InvertivoreAlcostomidaeHumpetfishAulostomus maculants0.00883.189Pisc/InvertivoreCarangidaeBar JackCarangidaes ruber0.01802.949Pisc/InvertivoreCarangidaeBar JackCarangidaes ruber0.01802.949Pisc/InvertivoreCarangidaePale Scanski0.02592.908Pisc/InvertivoreCarangidaePal	Apex predator	Carcharhinidae	Blacktip Shark	Carcharhinus limbatus	0.0061	3.010
Apex predatorCarcharhinidaeLemon sharkNegaprion brevirostris0.00533.160Apex predatorLutjanidaeTarponMegalops atlanticus0.01222.984Apex predatorMuraenidaeCreen MorayGymnothorax funebris0.01522.366Apex predatorRhincodontidaNurse SharkGinglymostoma cirratum0.01052.892Apex predatorScombridaeCeroScomberomorus regalis0.00222.800Apex predatorSerranidaeYellowmouth GrouperMycteroperca bonaci0.00823.140Apex predatorSerranidaeYellowmouth GrouperMycteroperca intersitialis0.01413.000Apex predatorSerranidaeTiger GrouperMycteroperca intersitialis0.00422.800Apex predatorSerranidaeTrumpetfishAulostomis maculatus0.00402.866Pisc/InvertivoreBotnidaeHoundfishTylosurus crocodilus0.00083.205Pisc/InvertivoreCarangidaeBlackCaranx crysos0.03182.949Pisc/InvertivoreCarangidaeBlackCaranx crysos0.03292.855Pisc/InvertivoreCarangidaePalometaTrachinotus goodei0.02592.908Pisc/InvertivoreCarangidaeCorans bonokCernroponus andecimalis0.01642.846Pisc/InvertivoreCarangidaePalometaCaranx crysos0.03182.949Pisc/InvertivoreCarangidaePalometaCaranx crysos0.03292.855 </td <td>Apex predator</td> <td>Carcharhinidae</td> <td>Reef Shark</td> <td>Carcharhinus perezi</td> <td>0.0271</td> <td>3.000</td>	Apex predator	Carcharhinidae	Reef Shark	Carcharhinus perezi	0.0271	3.000
Apex predatorElopidaeTarponMegalops atlanticus0.01202.984Apex predatorLutjanidaeCubera SnapperLutjanus cyanopterus0.01523.060Apex predatorMuraenidaeGreen MorayGymunohorax funebris0.00412.856Apex predatorScombridaeCeroScomberomorus regalis0.02022.800Apex predatorSerranidaeBlack GrouperMycteroperca interstitialis0.01413.000Apex predatorSerranidaeYellowmouth GrouperMycteroperca interstitialis0.01413.000Apex predatorSerranidaeYellowmouth GrouperMycteroperca interstitialis0.00402.860Apex predatorSertanidaeTiger GrouperMycteroperca interstitialis0.00402.866Pisc/InvertivoreBelonidaeHoundfishTylosurus crocollus0.00833.100Pisc/InvertivoreBelonidaeBar JackCarang condes ruber0.013182.949Pisc/InvertivoreCarangidaeBar JackCaranx crysos0.03182.949Pisc/InvertivoreCarangidaeHorse Eye JackCaranx hippos0.02252.908Pisc/InvertivoreCarangidaeHolometaTrachinous goodei0.02433.000Pisc/InvertivoreCarangidaeYellow JackCaranx hippos0.03182.949Pisc/InvertivoreCarangidaeHorse Eye JackCaranx hippos0.02292.908Pisc/InvertivoreCarangidaeYellow JackCaranx hippos0.025	Apex predator	Carcharhinidae	Lemon shark	Negaprion brevirostris	0.0053	3.160
Apex predatorLutjanidaeCubera SnapperLujanis cyanopterus0.01523.060Apex predatorRhincodontidaeGreen MorayGymnothorax funebris0.00412.856Apex predatorScombridaeCeroScomberomorus regalis0.02022.800Apex predatorSerranidaeBlack GrouperMycteroperca interstitialis0.01152.892Apex predatorSerranidaeYellowino di GrouperMycteroperca interstitialis0.01143.000Apex predatorSerranidaeTiger GrouperMycteroperca iteristitialis0.01023.140Apex predatorSerranidaeGreat BarracudaSphyreena barracuda0.00702.972Pisc/InvertivoreBolnidaeTrumpetfishAulostomus maculatus0.00083.205Pisc/InvertivoreBothidaePeacock FlounderBothus lunatus0.00883.205Pisc/InvertivoreCarangidaeBlackCaranx hippos0.03182.949Pisc/InvertivoreCarangidaeCrevalle JackCaranx hippos0.03292.855Pisc/InvertivoreCarangidaePaloretaTrachinotus goodei0.01243.000Pisc/InvertivoreCarangidaeYellow JackCaranx hippos0.03182.949Pisc/InvertivoreCarangidaePalometaTrachinotus goodei0.02043.000Pisc/InvertivoreCarangidaeYellow JackCaranx harma0.0392.850Pisc/InvertivoreCarangidaeSouthern SingrayDasyatia mericana0.0	Apex predator	Elopidae	Tarpon	Megalops atlanticus	0.0120	2.984
Apex predatorMuraenidaeGreen MorayGymothorax funebris0.00112.852Apex predatorRhincodontidaeNurse SharkGinglymostoma cirratum0.01052.892Apex predatorSerranidaeBlack GrouperMycteroperca bonaci0.00823.140Apex predatorSerranidaeYellowront GrouperMycteroperca interstitialis0.01113.000Apex predatorSerranidaeYellowront GrouperMycteroperca interstitialis0.01213.000Apex predatorSerranidaeYellowront GrouperMycteroperca venenosa0.01223.000Apex predatorSerranidaeTrumpetTishAulostomus maculatus0.00003.205Pisc/InvertivoreBelonidaeHoundfishTylosurus crocodilus0.00083.205Pisc/InvertivoreCarangidaeBur RunnerCaranx cryos0.03182.949Pisc/InvertivoreCarangidaeHorse Eye JackCaranx hippos0.03292.855Pisc/InvertivoreCarangidaeHorse Eye JackCaranx hippos0.01382.949Pisc/InvertivoreCarangidaeYellow RackCaranx hippos0.01392.940Pisc/InvertivoreCarangidaeYellow RackCaranx hippos0.01423.000Pisc/InvertivoreCarangidaeYellow RackCaranx hippos0.01392.810Pisc/InvertivoreCarangidaeYellow RackCaranx hippos0.02493.000Pisc/InvertivoreCarangidaeSouthern ShingrayDasyatis americana <td>Apex predator</td> <td>Lutjanidae</td> <td>Cubera Snapper</td> <td>Lutjanus cyanopterus</td> <td>0.0152</td> <td>3.060</td>	Apex predator	Lutjanidae	Cubera Snapper	Lutjanus cyanopterus	0.0152	3.060
Apex predatorRhincodontidaeNurse SharkGinglymostoma cirratum0.01052.892Apex predatorScramidaeCeroScombreomorus regalis0.00222.800Apex predatorSerranidaeYellovmouth GrouperMycteroperca intersitialis0.01413.000Apex predatorSerranidaeYellovfin GrouperMycteroperca intersitialis0.01413.000Apex predatorSerranidaeYellovfin GrouperMycteroperca intersitialis0.01213.120Apex predatorSerranidaeGreat BarracudaSphyraeni barracuda0.00702.972Pisc/InvertivoreBoltostomidaeTrumpetfishAulostomus maculatus0.00083.205Pisc/InvertivoreBothidaePeacock FlounderBothus lunatus0.00983.189Pisc/InvertivoreCarangidaeBlue RunnerCaranax crysos0.03182.949Pisc/InvertivoreCarangidaeBlue RunnerCaranx thippos0.03292.855Pisc/InvertivoreCarangidaePalometaTrachinotus goodei0.02043.000Pisc/InvertivoreCarangidaePalometaTrachinotus goodei0.02192.908Pisc/InvertivoreCarangidaeSouthern StingrayDasyatia americana0.07392.810Pisc/InvertivoreCarangidaeSouthern StingrayDasyatia americana0.01922.903Pisc/InvertivoreHaemulidaeSouthern StingrayDasyatia americana0.01932.810Pisc/InvertivoreHaemulidaeSouthern	Apex predator	Muraenidae	Green Moray	Gymnothorax funebris	0.0041	2.856
Apex predatorScombridaeCeroScomberomorus regalis0.02022.800Apex predatorSerranidaeBlack GrouperMycteroperca bonaci0.00823.140Apex predatorSerranidaeTiger GrouperMycteroperca tigris0.01413.000Apex predatorSerranidaeTiger GrouperMycteroperca tigris0.00943.120Apex predatorSerranidaeTiger GrouperMycteroperca venenosa0.01223.000Apex predatorSerranidaeTrumpetfishAulostomus maculatus0.00402.866Pisc/InvertivoreBelonidaeHoundfishTylosurus crocodilus0.00083.129Pisc/InvertivoreBotnidaeBar JackCaranx crysos0.03182.949Pisc/InvertivoreCarangidaeBlue RunnerCaranx tatus0.01223.000Pisc/InvertivoreCarangidaeHorse Eye JackCaranx tatus0.01862.856Pisc/InvertivoreCarangidaePalometaTrachinotus goodei0.02592.908Pisc/InvertivoreCarangidaeYellow JackCaranx tatus0.0142.910Pisc/InvertivoreCarangidaeSouthern StingrayDasyatis americana0.01992.933Pisc/InvertivoreHaemulidaeSuitors ChoiceHaemulon plamieri0.02593.000Pisc/InvertivoreLutjanidaeWhite GruntHaemulon plamieri0.02593.000Pisc/InvertivoreLutjanidaeSchoolmasterLutjanus griseus0.01442.910	Apex predator	Rhincodontidae	Nurse Shark	Ginglymostoma cirratum	0.0105	2.892
Apex predatorSerranidaeBlack GrouperMycteroperca bonaci0.00823.140Apex predatorSerranidaeYellowmouth GrouperMycteroperca interstituidis0.01413.000Apex predatorSerranidaeYellowmouth GrouperMycteroperca venenosa0.01223.000Apex predatorSerranidaeYellowfin GrouperMycteroperca venenosa0.01223.000Apex predatorSphyraenidadeGreat BarracudaSphyraena barracuda0.00702.972Fisc/InvertivoreBelonidaeHoundfishTylosurus crocodilus0.00083.205Pisc/InvertivoreBothidaePeacock FlounderBothus lunatus0.00883.205Pisc/InvertivoreCarangidaeBlue RunnerCaranx crysos0.03182.949Pisc/InvertivoreCarangidaeHouse Eye JackCaranx lutus0.01862.856Pisc/InvertivoreCarangidaePalometaTrachinotus goodei0.02043.000Pisc/InvertivoreCarangidaePalometaTrachinotus goodei0.02143.000Pisc/InvertivoreCarangidaeSouthern StingrayDasyatia americana0.07392.810Pisc/InvertivoreHaemulidaeSouthern StingrayDasyatia americana0.01392.810Pisc/InvertivoreHaemulidaeSouthern StingrayDasyatia americana0.01392.810Pisc/InvertivoreLutjanidaeWhite GruntHaemulon plumieri0.02593.000Pisc/InvertivoreLutjanidaeSchoolmaster	Apex predator	Scombridae	Cero	Scomberomorus regalis	0.0202	2.800
Apex predatorSerranidaeYellowmouth GrouperMycteroperca interstitialis0.01413.000Apex predatorSerranidaeTiger GrouperMycteroperca igriss0.00943.120Apex predatorSpranidaeGreat BarracudaSphyraena barracuda0.00702.972Pise/InvertivoreAulostomidaeTrumpetfishAulostomus maculatus0.00402.866Pise/InvertivoreBothidaePeacock FlounderBothus lunatus0.00883.205Pise/InvertivoreCarangidaeBar JackCarangidies ruber0.01802.990Pise/InvertivoreCarangidaeCrevalle JackCaranx hippos0.03292.855Pise/InvertivoreCarangidaeHorse Eye JackCaranx hippos0.03292.855Pise/InvertivoreCarangidaeYellow JackCaranx hippos0.01862.856Pise/InvertivoreCarangidaeYellow JackCaranx bartholomaei0.02592.908Pise/InvertivoreDasyatidaeSouthern StingrayDasyati americana0.07392.810Pise/InvertivoreDasyatidaeSouthern StingrayDasyati americana0.07392.810Pise/InvertivoreLutjanidaeSchoolmasterLutjanus apodus0.01463.0300Pise/InvertivoreLutjanidaeSchoolmasterLutjanus apodus0.01463.0300Pise/InvertivoreLutjanidaeSchoolmasterLutjanus apodus0.01462.910Pise/InvertivoreLutjanidaeSchoolmasterLutjanus apodus <td>Apex predator</td> <td>Serranidae</td> <td>Black Grouper</td> <td>Mycteroperca bonaci</td> <td>0.0082</td> <td>3.140</td>	Apex predator	Serranidae	Black Grouper	Mycteroperca bonaci	0.0082	3.140
Apex predatorSerranidaeTiger GrouperMycteroperca venosa0.00943.120Apex predatorSphyraenidadeYellowfin GrouperMycteroperca venosa0.01223.000Apex predatorSphyraenidadeGreat BarracudaSphyraenosa0.00702.972Pisc/InvertivoreBelonidaeHoundfishTylosurus crocodilus0.00083.189Pisc/InvertivoreBelonidaeHoundfishTylosurus crocodilus0.00083.189Pisc/InvertivoreCarangidaeBar JackCarangides ruber0.01802.990Pisc/InvertivoreCarangidaeBlue RunnerCaranx crysos0.03182.949Pisc/InvertivoreCarangidaeHorse Eye JackCaranx hippos0.03292.855Pisc/InvertivoreCarangidaePalometaTrachinotus goodei0.02043.000Pisc/InvertivoreCarangidaePalometaTrachinotus goodei0.02192.908Pisc/InvertivoreCarangidaeSouthern StingrayDasyatis americana0.01922.935Pisc/InvertivoreDasyatidaeSouthern StingrayDasyatis americana0.01922.930Pisc/InvertivoreHaemulidaeWhite GruntHaemulon plumieri0.02593.000Pisc/InvertivoreLutjanidaeSchoolmasterLutjanus griseus0.01463.034Pisc/InvertivoreLutjanidaeGray SnapperLutjanus griseus0.01482.940Pisc/InvertivoreLutjanidaeGray SnapperLutjanus synagris0.0214	Apex predator	Serranidae	Yellowmouth Grouper	Mycteroperca interstitialis	0.0141	3.000
Apex predatorSerranidaeYellowfin GrouperMycteroperca venenosa0.01223.000Apex predatorSphyraenidadeGreat BarracudaSphyraenida barracuda0.00702.972Pisc/InvertivoreAlostomidaeTrumpetfishAulostomis maculatus0.00083.205Pisc/InvertivoreBelonidaeHoundfishTylosurus crocodilus0.00083.205Pisc/InvertivoreCarangidaeBar JackCarangidae stuber0.01802.990Pisc/InvertivoreCarangidaeBlue RunnerCaranx crysos0.03182.949Pisc/InvertivoreCarangidaeCrevalle JackCaranx hippos0.03292.855Pisc/InvertivoreCarangidaePalometaTrachinotus goodei0.02043.000Pisc/InvertivoreCarangidaeYellow JackCaranx bartholomaei0.02592.908Pisc/InvertivoreDasyatidaeSouthern StingrayDasyatis americana0.07392.810Pisc/InvertivoreHaemulidaeSailors ChoiceHaemulon plumieri0.02593.000Pisc/InvertivoreHaemulidaeMutton SnapperLutjanus analis0.01463.040Pisc/InvertivoreLutjanidaeSchoolmasterLutjanus analis0.01463.040Pisc/InvertivoreLutjanidaeSchoolmasterLutjanus analis0.01463.040Pisc/InvertivoreLutjanidaeSchoolmasterLutjanus analis0.01463.040Pisc/InvertivoreLutjanidaeSchoolmasterLutjanus analis0.0	Apex predator	Serranidae	Tiger Grouper	Mycteroperca tigris	0.0094	3.120
Apex predatorSphyraenidadeGreat BarracudaSphyraena barracuda0.00702.972Pisc/InvertivoreAulostomidaeTrumpetfishAulostomus maculatus0.00402.866Pisc/InvertivoreBothidaeHoundfishTylosturus crocodilus0.00083.189Pisc/InvertivoreCarangidaeBar JackCarangidae ruber0.01802.990Pisc/InvertivoreCarangidaeBlue RunnerCaranx hippos0.03182.949Pisc/InvertivoreCarangidaeHorse Eye JackCaranx hippos0.0243.000Pisc/InvertivoreCarangidaePalometaTrachinotus goodei0.02443.000Pisc/InvertivoreCarangidaeYellow JackCaranx bartholomaei0.02592.908Pisc/InvertivoreCarangidaeSouthern StingrayDasyatis americana0.07392.810Pisc/InvertivoreHaemulidaeSailors ChoiceHaemulon parra0.01992.993Pisc/InvertivoreHaemulidaeWhite GruntHaemulon plumieri0.02593.000Pisc/InvertivoreLutjanidaeSchoolmasterLutjanus apodus0.01883.002Pisc/InvertivoreLutjanidaeGray SnapperLutjanus griseus0.02162.917Pisc/InvertivoreLutjanidaeGray SnapperLutjanus mahogoni0.04282.719Pisc/InvertivoreLutjanidaeGray SnapperLutjanus synagris0.02162.917Pisc/InvertivoreScombridaeKing MackerelScomberomorus caballa0.009	Apex predator	Serranidae	Yellowfin Grouper	Mycteroperca venenosa	0.0122	3.000
Pisc/InvertivoreAulostomidaeTrumpetfishAulostomus maculatus0.00402.866Pisc/InvertivoreBelonidaeHoundfishTylosurus crocodius0.00083.129Pisc/InvertivoreCarangidaeBar JackCaranx thus0.001802.990Pisc/InvertivoreCarangidaeBur RunnerCaranx trysos0.03182.949Pisc/InvertivoreCarangidaeCrevalle JackCaranx thippos0.03292.855Pisc/InvertivoreCarangidaePalometaTrachinotus goodei0.02043.000Pisc/InvertivoreCarangidaeYellow JackCaranx tatus0.01042.910Pisc/InvertivoreCarangidaeYellow JackCaranx bartholomaei0.02592.908Pisc/InvertivoreDasyatidaeSouthern StingrayDasyatis americana0.01942.910Pisc/InvertivoreHaemulidaeSailors ChoiceHaemulon para0.01992.993Pisc/InvertivoreLutjanidaeMutto SnapperLutjanus analis0.01463.034Pisc/InvertivoreLutjanidaeSchoolmasterLutjanus apodus0.01893.000Pisc/InvertivoreLutjanidaeGara SnapperLutjanus griseus0.02402.910Pisc/InvertivoreLutjanidaeGara SnapperLutjanus griseus0.02142.910Pisc/InvertivoreLutjanidaeMahogany SnapperLutjanus synagris0.02162.917Pisc/InvertivoreLutjanidaeLane SnapperLutjanus synagris0.02162.917 <td>Apex predator</td> <td>Sphyraenidade</td> <td>Great Barracuda</td> <td>Sphyraena barracuda</td> <td>0.0070</td> <td>2.972</td>	Apex predator	Sphyraenidade	Great Barracuda	Sphyraena barracuda	0.0070	2.972
Pisc/Invertivore Pisc/InvertivoreBelonidae BothidaeHoundfish Peacock Flounder Bothus lunatus0.0008 Bothus lunatus3.205Pisc/Invertivore Pisc/InvertivoreCarangidae CarangidaeBar Jack BulkCaranx crysos0.0180 2.990Pisc/Invertivore Pisc/InvertivoreCarangidaeCrevalle Jack Caranx crysos0.0329 2.855Pisc/Invertivore Pisc/InvertivoreCarangidaeCrevalle Jack Caranx tatus0.0186 0.0224Pisc/Invertivore Pisc/InvertivoreCarangidaePalometa PalometaTrachinotus goodei0.0204 0.0204Pisc/Invertivore Pisc/InvertivoreCarangidaeYellow Jack Caranx bartholomaei0.0259 0.2908Pisc/Invertivore Pisc/InvertivoreCarangidaeSouthern Stingray Dasyatia americana0.0199 0.01992.9903Pisc/Invertivore Pisc/InvertivoreHaemulidaeSailors Choice White Grunt HaemulidaeMutton Snapper Lutjanus analis0.0146 0.01483.030Pisc/Invertivore LutjanidaeCaray Snapper Lutjanus griseus0.0198 0.02402.910Pisc/Invertivore LutjanidaeDog Snapper Vanpper Lutjanus griseus0.0148 0.02402.910Pisc/Invertivore LutjanidaeDog Snapper Vanpper Lutjanus griseus0.0240 0.02162.910Pisc/Invertivore LutjanidaeLutans Snapper Vanpper Lutjanus griseus0.0216 0.02162.917Pisc/Invertivore LutjanidaeYellowail Snapper Vanpper Lutjanus griseus0.0216 0.02162.917Pisc/Invertiv	Pisc/Invertivore	Aulostomidae	Trumpetfish	Aulostomus maculatus	0.0040	2.866
Pisc/Invertivore Pisc/InvertivoreBothidae CarangidaePeacock Flounder Bothus lunatusDouble Outsource CarangidaePeacock Flounder Bothus lunatusDouble Outsource Outsource CarangidaePeacock Flounder Bule RunnerDouble CarangidaeOutsource CarangidaeOutsource CarangidaeOutsource CarangidaeOutsource CarangidaeOutsource CarangidaeOutsource CarangidaeOutsource CarangidaeOutsource PeacockOutsource CarangidaeOutsource PeacockOutsource CarangidaeOutsource PeacockOutsource CarangidaeOutsource PeacockOutsource CarangidaeOutsource PeacockOutsource CarangidaeOutsource PeacockOutso	Pisc/Invertivore	Belonidae	Houndfish	Tylosurus crocodilus	0.0008	3.205
Pisc/InvertivoreCarangidaeBar JackCarangides ruber0.01802.990Pisc/InvertivoreCarangidaeBlue RunnerCaranx crysos0.03182.949Pisc/InvertivoreCarangidaeCrevalle JackCaranx hippos0.03292.855Pisc/InvertivoreCarangidaeHorse Eye JackCaranx latus0.01862.990Pisc/InvertivoreCarangidaePalometaTrachinotus goodei0.02043.000Pisc/InvertivoreCarangidaeYellow JackCaranx bartholomaei0.02592.908Pisc/InvertivoreCentropomidaeSouthern StingrayDasyatis americana0.01792.910Pisc/InvertivoreHaemulidaeSailors ChoiceHaemulon parra0.01992.993Pisc/InvertivoreHaemulidaeWhite GruntHaemulon parra0.01863.000Pisc/InvertivoreLutjanidaeMutton SnapperLutjanus analis0.01463.034Pisc/InvertivoreLutjanidaeGray SnapperLutjanus griseus0.02402.910Pisc/InvertivoreLutjanidaeGray SnapperLutjanus goodi0.04282.719Pisc/InvertivoreLutjanidaeMahogany SnapperLutjanus synagris0.02142.910Pisc/InvertivoreLutjanidaeYellowtail SnapperLutjanus synagris0.02142.910Pisc/InvertivoreLutjanidaeYellowtail SnapperLutjanus synagris0.02142.910Pisc/InvertivoreLutjanidaeYellowtail SnapperLutjanus synagris	Pisc/Invertivore	Bothidae	Peacock Flounder	Bothus lunatus	0.0098	3.189
Pisc/Invertivore Pisc/InvertivoreCarangidae CarangidaeBlue Runner Caranx crysos0.03182.949Pisc/Invertivore Pisc/InvertivoreCarangidaeCrevalle Jack Caranx taus0.01862.855Pisc/Invertivore Pisc/InvertivoreCarangidaePalometa PalometaTrachinotus goodei0.02592.908Pisc/Invertivore Pisc/InvertivoreCarangidaeYellow Jack Caranx bartholomaei0.02592.908Pisc/Invertivore Pisc/InvertivoreCentropomidaeCommon Snook Centropomus undecimalis0.01042.910Pisc/Invertivore Pisc/InvertivoreDasyatidaeSouthern Stingray Dasyatia americana0.07392.810Pisc/Invertivore Pisc/InvertivoreHaemulidaeSailors Choice Haemulon planieri0.01992.993Pisc/Invertivore Pisc/InvertivoreLutjanidaeMutton Snapper Lutjanus griseus0.01893.000Pisc/Invertivore LutjanidaeGray Snapper Lutjanus griseus0.01892.910Pisc/InvertivoreLutjanidaeDog Snapper Lutjanus griseus0.01892.960Pisc/InvertivoreLutjanidaeLutjanus SnapperLutjanus griseus0.02142.910Pisc/InvertivoreLutjanidaeYellowtail SnapperLutjanus synagris0.02142.910Pisc/InvertivoreLutjanidaeYellowtail SnapperLutjanus synagris0.02142.910Pisc/InvertivoreScorpinadaeLionfishPterois volitans0.00142.917Pisc/InvertivoreSerranidaeGraysby <td>Pisc/Invertivore</td> <td>Carangidae</td> <td>Bar Jack</td> <td>Carangoides ruber</td> <td>0.0180</td> <td>2.990</td>	Pisc/Invertivore	Carangidae	Bar Jack	Carangoides ruber	0.0180	2.990
Pisc/Invertivore Pisc/InvertivoreCarangidae CarangidaeCrevalle Jack Caranx hippos0.0329 0.03292.855Pisc/Invertivore Pisc/InvertivoreCarangidae CarangidaeHorse Eye Jack PalometaCaranx latus0.0186 0.02042.856Pisc/Invertivore Pisc/InvertivoreCarangidae CarangidaeYellow Jack Caranx bartholomaei0.0259 0.02592.908Pisc/Invertivore Pisc/InvertivoreDasyatidae Common Snook CentropomidaeCommon Snook Centropomus undecimalis0.0104 0.01042.910Pisc/Invertivore Pisc/InvertivoreDasyatidae HaemulidaeSouthern Stingray Salors Choice Haemulon plarra0.0199 0.02592.993Pisc/Invertivore HaemulidaeWhite Grunt Haemulon plarra0.0146 0.02593.000Pisc/Invertivore HutjanidaeLutjanidae Gray Snapper Lutjanus apodus0.0148 0.01483.040Pisc/Invertivore LutjanidaeLutjanidae Gray Snapper Lutjanus spiceu0.0148 0.02162.910Pisc/Invertivore LutjanidaeLutae SnapperLutjanus spiseus Lutjanus spiceu0.0216 0.02142.917Pisc/Invertivore LutjanidaeLutae SnapperLutjanus synagris Soudola0.0314 0.02162.793Pisc/Invertivore ScombridaeKing Mackerel King MackerelScomberomorus caballa 0.002160.002162.917Pisc/Invertivore SerranidaeGraysby Gephalopholis cruentata Disc/Invertivore0.0121 3.0823.082 3.02163.291Pisc/Invertivore Serranidae	Pisc/Invertivore	Carangidae	Blue Runner	Caranx crysos	0.0318	2.949
Pisc/Invertivore Pisc/InvertivoreCarangidae CarangidaeHorse Eye Jack PalometaCaranx Iatus0.01862.856Pisc/Invertivore Pisc/InvertivoreCarangidaePalometaTrachinotus goodei0.02043.000Pisc/Invertivore Pisc/InvertivoreCarangidaeYellow JackCaranx bartholomaei0.02592.908Pisc/Invertivore Pisc/InvertivoreDasyatidaeSouthern Stingray Southern StingrayDasyati americana0.07392.810Pisc/Invertivore Pisc/InvertivoreHaemulidaeSailors ChoiceHaemulon parra0.01992.993Pisc/Invertivore Pisc/InvertivoreLutjanidaeMutton SnapperLutjanus analis0.01463.034Pisc/Invertivore LutjanidaeCray SnapperLutjanus apodus0.01983.000Pisc/InvertivoreLutjanidaeGray SnapperLutjanus griseus0.02402.910Pisc/InvertivoreLutjanidaeMahogany SnapperLutjanus mahogoni0.04282.719Pisc/InvertivoreLutjanidaeKing MackerelScomberomorus caballa0.00912.960Pisc/InvertivoreLutjanidaeKing MackerelScomberomorus caballa0.00142.793Pisc/InvertivoreLutjanidaeKing MackerelScomberomorus caballa0.00142.910Pisc/InvertivoreScranidaeKing MackerelScomberomorus caballa0.00122.960Pisc/InvertivoreSerranidaeConeyCephalopholis fulva0.01123.224Pisc/InvertivoreSerranidae <td>Pisc/Invertivore</td> <td>Carangidae</td> <td>Crevalle Jack</td> <td>Caranx hippos</td> <td>0.0329</td> <td>2.855</td>	Pisc/Invertivore	Carangidae	Crevalle Jack	Caranx hippos	0.0329	2.855
Pisc/Invertivore Pisc/InvertivoreCarangidae CarangidaePalometa PalometaTrachinotus goodei0.02043.000Pisc/Invertivore Pisc/InvertivoreCarangidaeYellow Jack Common SnookCentropomus undecimalis0.01042.910Pisc/Invertivore Pisc/InvertivoreDasyatidaeSouthern Stingray Salos ChoiceDasyatis americana0.07392.810Pisc/Invertivore Pisc/InvertivoreHaemulidaeSailors Choice MaemulidaeMatton SnapperLutjanus analis0.01463.034Pisc/Invertivore Pisc/InvertivoreLutjanidaeMutton SnapperLutjanus analis0.01463.034Pisc/Invertivore Pisc/InvertivoreLutjanidaeGray SnapperLutjanus analis0.01483.034Pisc/Invertivore Pisc/InvertivoreLutjanidaeGray SnapperLutjanus anodus0.01982.960Pisc/InvertivoreLutjanidaeMahogany SnapperLutjanus synagris0.02162.917Pisc/InvertivoreLutjanidaeLane SnapperLutjanus synagris0.02162.917Pisc/InvertivoreLutjanidaeKing MackerelScomberomorus caballa0.00912.960Pisc/InvertivoreScorpinadaeLionfishPterois volitans0.01213.082Pisc/InvertivoreSerranidaeGraysbyCephalopholis cruentata0.01213.082Pisc/InvertivoreSerranidaeGraysbyCephalopholis fulva0.01823.224Pisc/InvertivoreSerranidaeRed GrouperEpinephelus adscensionis0.	Pisc/Invertivore	Carangidae	Horse Eve Jack	Caranx latus	0.0186	2.856
Pisc/Invertivore Pisc/InvertivoreCarangidae CarangidaeYellow Jack Yellow JackCaranx bartholomaei Caranx bartholomaei0.0259 0.02592.908Pisc/Invertivore Pisc/InvertivoreDasyatidaeSouthern Stingray SaldaeDasyatis americana0.07392.810Pisc/Invertivore Pisc/InvertivoreHaemulidaeSailors Choice Haemulon parra0.01992.993Pisc/Invertivore Pisc/InvertivoreHaemulidaeWhite Grunt HaemulidaeHaemulon plumieri Mutton Snapper Lutjanus analis0.01463.034Pisc/Invertivore Pisc/InvertivoreLutjanidaeGray Snapper Lutjanus griseus0.01893.000Pisc/Invertivore Pisc/InvertivoreLutjanidaeDog Snapper Lutjanus griseus0.01422.910Pisc/Invertivore Pisc/InvertivoreLutjanidaeDog Snapper Lutjanus griseus0.02402.910Pisc/Invertivore Pisc/InvertivoreLutjanidaeMahogany Snapper Lutjanus mahogoni0.04282.719Pisc/Invertivore Pisc/InvertivoreLutjanidaeYellowtail Snapper Vellowtail SnapperLutjanus mahogoni Ocyurus chrysurus0.03142.793Pisc/Invertivore Pisc/InvertivoreScombridaeKing MackerelScomberomorus caballa0.00912.960Pisc/Invertivore SerranidaeGraysbyCephalopholis cruentata0.01253.224Pisc/Invertivore SerranidaeSerranidaeRock HindEpinephelus adscensionis0.01253.224Pisc/Invertivore SerranidaeSerranidaeRed GrouperEpinep	Pisc/Invertivore	Carangidae	Palometa	Trachinotus goodei	0.0204	3.000
Thise IntervitiveCentropomidaeCommon SnookCentropomus undecimalis0.01042.910Pisc/InvertivoreDasyatidaeSouthern StingrayDasyatis americana0.07392.810Pisc/InvertivoreHaemulidaeSailors ChoiceHaemulon parra0.01992.993Pisc/InvertivoreHaemulidaeWhite GruntHaemulon plumieri0.02593.000Pisc/InvertivoreLutjanidaeMutton SnapperLutjanus analis0.01463.034Pisc/InvertivoreLutjanidaeGray SnapperLutjanus griseus0.02402.910Pisc/InvertivoreLutjanidaeGray SnapperLutjanus griseus0.02162.910Pisc/InvertivoreLutjanidaeMahogany SnapperLutjanus griseus0.02162.917Pisc/InvertivoreLutjanidaeYellowtail SnapperLutjanus synagris0.02162.917Pisc/InvertivoreLutjanidaeYellowtail SnapperCutjanus synagris0.02162.917Pisc/InvertivoreScombridaeKing MackerelScomberomorus caballa0.00912.960Pisc/InvertivoreScorpinadaeLionfishPterois volitans0.00503.291Pisc/InvertivoreSerranidaeGraysbyCephalopholis cruentata0.01213.082Pisc/InvertivoreSerranidaeRock HindEpinephelus adscensionis0.01253.224Pisc/InvertivoreSerranidaeRed GrouperEpinephelus tajara0.01313.056Pisc/InvertivoreSerranidaeRed Grouper <t< td=""><td>Pisc/Invertivore</td><td>Carangidae</td><td>Yellow Jack</td><td>Caranx bartholomaei</td><td>0.0259</td><td>2,908</td></t<>	Pisc/Invertivore	Carangidae	Yellow Jack	Caranx bartholomaei	0.0259	2,908
Pisc/InvertivoreDasyatiaSouthern StingrayDasyatia americana0.07392.810Pisc/InvertivoreHaemulidaeSailors ChoiceHaemulon parra0.01992.993Pisc/InvertivoreHaemulidaeWhite GruntHaemulon plumieri0.02593.000Pisc/InvertivoreLutjanidaeMutton SnapperLutjanus analis0.01463.034Pisc/InvertivoreLutjanidaeGray SnapperLutjanus griseus0.02402.910Pisc/InvertivoreLutjanidaeGray SnapperLutjanus griseus0.02162.910Pisc/InvertivoreLutjanidaeMahogany SnapperLutjanus mahogoni0.04282.719Pisc/InvertivoreLutjanidaeYellowtail SnapperLutjanus synagris0.02162.917Pisc/InvertivoreLutjanidaeYellowtail SnapperCyurus chrysurus0.03142.793Pisc/InvertivoreScombridaeKing MackerelScomberomorus caballa0.00912.960Pisc/InvertivoreScorpinadaeLionfishPterois volitans0.00503.291Pisc/InvertivoreScranidaeGraysbyCephalopholis cruentata0.01213.082Pisc/InvertivoreSerranidaeRock HindEpinephelus adscensionis0.01253.224Pisc/InvertivoreSerranidaeRed GrouperEpinephelus guttatus0.00843.100Pisc/InvertivoreSerranidaeRed GrouperEpinephelus striatus0.00133.221Pisc/InvertivoreSerranidaeRed GrouperEpineph	Pisc/Invertivore	Centropomidae	Common Snook	Centropomus undecimalis	0.0104	2.910
NicolinetitionData baseData baseData baseData basePisc/InvertivoreHaemulidaeSailors ChoiceHaemulon parra0.01992.993Pisc/InvertivoreLutjanidaeMutton SnapperLutjanus analis0.01463.034Pisc/InvertivoreLutjanidaeSchoolmasterLutjanus apodus0.01893.000Pisc/InvertivoreLutjanidaeGray SnapperLutjanus griseus0.02402.910Pisc/InvertivoreLutjanidaeDog SnapperLutjanus griseus0.02162.917Pisc/InvertivoreLutjanidaeLane SnapperLutjanus synagris0.02162.917Pisc/InvertivoreLutjanidaeLane SnapperLutjanus synagris0.02162.917Pisc/InvertivoreLutjanidaeYellowtail SnapperOcyurus chrysurus0.03142.793Pisc/InvertivoreScombridaeKing MackerelScomberomorus caballa0.00912.960Pisc/InvertivoreScorpinadaeLionfishPterois volitans0.01213.082Pisc/InvertivoreSerranidaeGraysbyCephalopholis cruentata0.01213.024Pisc/InvertivoreSerranidaeRock HindEpinephelus adscensionis0.01253.224Pisc/InvertivoreSerranidaeRed HindEpinephelus guttatus0.00843.100Pisc/InvertivoreSerranidaeRed GrouperEpinephelus guttatus0.00843.100Pisc/InvertivoreSerranidaeRed GrouperEpinephelus striatus0.00653.229	Pisc/Invertivore	Dasvatidae	Southern Stingray	Dasvatis americana	0.0739	2.810
AnominorInternationData StateInternationInternationInternationPisc/InvertivoreHaemulidaeWhite GruntHaemulon plumieri0.02593.000Pisc/InvertivoreLutjanidaeMutton SnapperLutjanus analis0.01463.034Pisc/InvertivoreLutjanidaeGray SnapperLutjanus griseus0.02402.910Pisc/InvertivoreLutjanidaeDog SnapperLutjanus griseus0.02402.910Pisc/InvertivoreLutjanidaeMahogany SnapperLutjanus griseus0.02402.910Pisc/InvertivoreLutjanidaeMahogany SnapperLutjanus griseus0.02402.917Pisc/InvertivoreLutjanidaeYellowtail SnapperLutjanus synagris0.02162.917Pisc/InvertivoreScombridaeKing MackerelScomberomorus caballa0.00912.960Pisc/InvertivoreScorpinadaeLionfishPterois volitans0.00503.291Pisc/InvertivoreSerranidaeGraysbyCephalopholis cruentata0.01213.082Pisc/InvertivoreSerranidaeRock HindEpinephelus adscensionis0.01253.224Pisc/InvertivoreSerranidaeRed HindEpinephelus striatus0.00843.100Pisc/InvertivoreSerranidaeRed GrouperEpinephelus striatus0.00843.100Pisc/InvertivoreSerranidaeRed GrouperEpinephelus striatus0.00653.229Pisc/InvertivoreSerranidaeRed GrouperEpinephelus striat	Pisc/Invertivore	Haemulidae	Sailors Choice	Haemulon parra	0.0199	2.993
Pisc/InvertivoreLutjanidaeMutto SnapperLutjanus analis0.01463.034Pisc/InvertivoreLutjanidaeSchoolmasterLutjanus analis0.01893.000Pisc/InvertivoreLutjanidaeGray SnapperLutjanus griseus0.02402.910Pisc/InvertivoreLutjanidaeDog SnapperLutjanus griseus0.02402.910Pisc/InvertivoreLutjanidaeMahogany SnapperLutjanus griseus0.02162.917Pisc/InvertivoreLutjanidaeYellowtail SnapperLutjanus synagris0.02162.917Pisc/InvertivoreLutjanidaeYellowtail SnapperOcyurus chrysurus0.03142.793Pisc/InvertivoreScombridaeKing MackerelScomberomorus caballa0.00912.960Pisc/InvertivoreScorpinadaeLionfishPterois volitans0.001013.082Pisc/InvertivoreSerranidaeGraysbyCephalopholis cruentata0.01213.082Pisc/InvertivoreSerranidaeRock HindEpinephelus adscensionis0.01253.224Pisc/InvertivoreSerranidaeRed HindEpinephelus gutatus0.00843.100Pisc/InvertivoreSerranidaeRed GrouperEpinephelus striatus0.00653.229Pisc/InvertivoreSerranidaeRed GrouperEpinephelus striatus0.001622.990Pisc/InvertivoreSerranidaeRed GrouperEpinephelus striatus0.00653.229Pisc/InvertivoreSerranidaeGreater SoapfishRypti	Pisc/Invertivore	Haemulidae	White Grunt	Haemulon plumieri	0.0259	3.000
Pisc/InvertivoreLutjanidaeSchoolmasterLutjanus apodus0.01893.000Pisc/InvertivoreLutjanidaeGray SnapperLutjanus griseus0.02402.910Pisc/InvertivoreLutjanidaeDog SnapperLutjanus griseus0.01893.000Pisc/InvertivoreLutjanidaeDog SnapperLutjanus griseus0.02402.910Pisc/InvertivoreLutjanidaeMahogany SnapperLutjanus mahogoni0.04282.719Pisc/InvertivoreLutjanidaeYellowtail SnapperLutjanus synagris0.02162.917Pisc/InvertivoreScombridaeKing MackerelScomberomorus caballa0.00912.960Pisc/InvertivoreScorpinadaeLionfishPterois volitans0.00503.291Pisc/InvertivoreSerranidaeGraysbyCephalopholis cruentata0.01213.082Pisc/InvertivoreSerranidaeRock HindEpinephelus adscensionis0.01253.224Pisc/InvertivoreSerranidaeRed HindEpinephelus gutatus0.00843.100Pisc/InvertivoreSerranidaeRed GrouperEpinephelus striatus0.00653.229Pisc/InvertivoreSerranidaeRed GrouperEpinephelus striatus0.001622.990Pisc/InvertivoreSerranidaeRed GrouperEpinephelus striatus0.00053.229Pisc/InvertivoreSerranidaeGreater SoapfishRypticus saponaceus0.00101.000Pisc/InvertivoreSerranidaeGreater SoapfishRyptic	Pisc/Invertivore	Lutianidae	Mutton Snapper	Lutianus analis	0.0146	3.034
Pisc/InvertivoreLutjanidaGray SnapperLutjanidaGray SnapperPisc/InvertivoreLutjanidaeDog SnapperLutjanus jocu0.02402.910Pisc/InvertivoreLutjanidaeDog SnapperLutjanus jocu0.01982.960Pisc/InvertivoreLutjanidaeLane SnapperLutjanus mahogoni0.04282.719Pisc/InvertivoreLutjanidaeLane SnapperLutjanus synagris0.02162.917Pisc/InvertivoreScombridaeKing MackerelScomberomorus caballa0.00912.960Pisc/InvertivoreScorpinadaeLionfishPterois volitans0.00503.291Pisc/InvertivoreSerranidaeGraysbyCephalopholis cruentata0.01213.082Pisc/InvertivoreSerranidaeConeyCephalopholis fulva0.01882.973Pisc/InvertivoreSerranidaeRed HindEpinephelus adscensionis0.01253.224Pisc/InvertivoreSerranidaeRed HindEpinephelus itajara0.01313.056Pisc/InvertivoreSerranidaeRed GrouperEpinephelus morio0.01622.990Pisc/InvertivoreSerranidaeRed GrouperEpinephelus striatus0.00063.229Pisc/InvertivoreSerranidaeGrays Red GrouperEpinephelus striatus0.00653.229Pisc/InvertivoreSerranidaeRed GrouperEpinephelus striatus0.00163.040Pisc/InvertivoreSerranidaeShy HamletHypoplectrus gutavarius0.00103.0	Pisc/Invertivore	Lutianidae	Schoolmaster	Lutianus apodus	0.0189	3.000
Pisc/InvertivoreLutjanidaeDog SnapperLutjanida jocu0.01082.960Pisc/InvertivoreLutjanidaeMahogany SnapperLutjanus mahogoni0.04282.719Pisc/InvertivoreLutjanidaeLane SnapperLutjanus synagris0.02162.917Pisc/InvertivoreLutjanidaeYellowtail SnapperOcyurus chrysurus0.03142.793Pisc/InvertivoreScombridaeKing MackerelScomberomorus caballa0.00912.960Pisc/InvertivoreScorpinadaeLionfishPterois volitans0.00503.291Pisc/InvertivoreScorpinadaeGraysbyCephalopholis cruentata0.01213.082Pisc/InvertivoreSerranidaeGoneyCephalopholis cruentata0.01253.224Pisc/InvertivoreSerranidaeRock HindEpinephelus adscensionis0.01313.056Pisc/InvertivoreSerranidaeRed GrouperEpinephelus striatus0.00653.229Pisc/InvertivoreSerranidaeRed GrouperEpinephelus striatus0.00653.229Pisc/InvertivoreSerranidaeRed GrouperEpinephelus striatus0.00653.229Pisc/InvertivoreSerranidaeGreater SoapfishRypticus saponaceus0.00101.000Pisc/InvertivoreSerranidaeGreater SoapfishRypticus saponaceus0.00101.000Pisc/InvertivoreSerranidaeShy HamletHypoplectrus indigo0.01103.182Pisc/InvertivoreSerranidaeBlack Hamlet	Pisc/Invertivore	Lutianidae	Grav Snapper	Lutianus griseus	0.0240	2.910
Pisc/InvertivoreLutjanidaeMahogany SnapperLutjanus mahogoni0.04282.719Pisc/InvertivoreLutjanidaeLane SnapperLutjanus synagris0.02162.917Pisc/InvertivoreLutjanidaeYellowtail SnapperOcyurus chrysurus0.03142.793Pisc/InvertivoreScombridaeKing MackerelScomberomorus caballa0.00912.960Pisc/InvertivoreScorpinadaeLionfishPterois volitans0.00503.291Pisc/InvertivoreSerranidaeGraysbyCephalopholis cruentata0.01213.082Pisc/InvertivoreSerranidaeRock HindEpinephelus adscensionis0.01253.224Pisc/InvertivoreSerranidaeRock HindEpinephelus guttatus0.00843.100Pisc/InvertivoreSerranidaeRed HindEpinephelus itajara0.01313.056Pisc/InvertivoreSerranidaeRed GrouperEpinephelus striatus0.00653.229Pisc/InvertivoreSerranidaeRed GrouperEpinephelus striatus0.00653.229Pisc/InvertivoreSerranidaeRed GrouperEpinephelus striatus0.00101.000Pisc/InvertivoreSerranidaeShy HamletHypoplectrus guttavarius0.00903.040Pisc/InvertivoreSerranidaeShy HamletHypoplectrus nigricans0.01103.182Pisc/InvertivoreSerranidaeBlack HamletHypoplectrus nigricans0.01103.182Pisc/InvertivoreSerranidaeBlack Hamlet<	Pisc/Invertivore	Lutianidae	Dog Snapper	Lutianus jocu	0.0198	2.960
Pisc/InvertivoreLutganidaeHanogany BrapperLutganias ynagris0.012162.917Pisc/InvertivoreLutjanidaeLane SnapperLutjanus synagris0.02162.917Pisc/InvertivoreScombridaeKing MackerelScomberomorus caballa0.00912.960Pisc/InvertivoreScorpinadaeLionfishPterois volitans0.00503.291Pisc/InvertivoreSerranidaeGraysbyCephalopholis cruentata0.01213.082Pisc/InvertivoreSerranidaeConeyCephalopholis fulva0.01253.224Pisc/InvertivoreSerranidaeRock HindEpinephelus adscensionis0.01253.224Pisc/InvertivoreSerranidaeRed HindEpinephelus guttatus0.00843.100Pisc/InvertivoreSerranidaeRed GrouperEpinephelus morio0.01622.990Pisc/InvertivoreSerranidaeRed GrouperEpinephelus morio0.01622.990Pisc/InvertivoreSerranidaeGreater SoapfishRypticus saponaceus0.00101.000Pisc/InvertivoreSerranidaeShy HamletHypoplectrus guttavarius0.00903.040Pisc/InvertivoreSerranidaeShy HamletHypoplectrus indigo0.01103.182Pisc/InvertivoreSerranidaeBlack HamletHypoplectrus nigricans0.01103.182Pisc/InvertivoreSerranidaeBlack HamletHypoplectrus puella0.00903.040	Pisc/Invertivore	Lutianidae	Mahogany Snapper	Lutianus mahogoni	0.0428	2.719
Pisc/InvertivoreLutjanidaeYellowtail SnapperOcyurus chrysurus0.03142.793Pisc/InvertivoreScombridaeKing MackerelScomberomorus caballa0.00912.960Pisc/InvertivoreScorpinadaeLionfishPterois volitans0.00503.291Pisc/InvertivoreSerranidaeGraysbyCephalopholis cruentata0.01213.082Pisc/InvertivoreSerranidaeConeyCephalopholis fulva0.01882.973Pisc/InvertivoreSerranidaeRock HindEpinephelus adscensionis0.01253.224Pisc/InvertivoreSerranidaeRed HindEpinephelus guttatus0.00843.100Pisc/InvertivoreSerranidaeRed GrouperEpinephelus itajara0.01622.990Pisc/InvertivoreSerranidaeRed GrouperEpinephelus striatus0.00653.229Pisc/InvertivoreSerranidaeGreater SoapfishRypticus saponaceus0.00101.000Pisc/InvertivoreSerranidaeShy HamletHypoplectrus guttavarius0.00903.040Pisc/InvertivoreSerranidaeShy HamletHypoplectrus nigricans0.01103.182Pisc/InvertivoreSerranidaeBlack HamletHypoplectrus nigricans0.01103.182Pisc/InvertivoreSerranidaeBlack HamletHypoplectrus nigricans0.01103.182	Pisc/Invertivore	Lutianidae	Lane Snapper	Lutianus synagris	0.0216	2.917
Pisc/InvertivoreScombridaeKing MackerelScomberomorus caballa0.00912.960Pisc/InvertivoreScorpinadaeLionfishPterois volitans0.00503.291Pisc/InvertivoreSerranidaeGraysbyCephalopholis cruentata0.01213.082Pisc/InvertivoreSerranidaeConeyCephalopholis fulva0.01882.973Pisc/InvertivoreSerranidaeRock HindEpinephelus adscensionis0.01253.224Pisc/InvertivoreSerranidaeRed HindEpinephelus guttatus0.00843.100Pisc/InvertivoreSerranidaeRed GrouperEpinephelus itajara0.01622.990Pisc/InvertivoreSerranidaeRed GrouperEpinephelus striatus0.00653.229Pisc/InvertivoreSerranidaeGreater SoapfishRypticus saponaceus0.00101.000Pisc/InvertivoreSerranidaeShy HamletHypoplectrus guttavarius0.00903.040Pisc/InvertivoreSerranidaeBlack HamletHypoplectrus nigricans0.01103.182Pisc/InvertivoreSerranidaeBarred HamletHypoplectrus puella0.00903.040	Pisc/Invertivore	Lutianidae	Yellowtail Snapper	Ocvurus chrysurus	0.0314	2,793
Pisc/InvertivoreScorpinadaeLionfishPterois volitans0.00503.291Pisc/InvertivoreSerranidaeGraysbyCephalopholis cruentata0.01213.082Pisc/InvertivoreSerranidaeConeyCephalopholis fulva0.01882.973Pisc/InvertivoreSerranidaeRock HindEpinephelus adscensionis0.01253.224Pisc/InvertivoreSerranidaeRed HindEpinephelus guttatus0.00843.100Pisc/InvertivoreSerranidaeRed GrouperEpinephelus itajara0.01622.990Pisc/InvertivoreSerranidaeRed GrouperEpinephelus striatus0.00653.229Pisc/InvertivoreSerranidaeGreater SoapfishRypticus saponaceus0.00101.000Pisc/InvertivoreSerranidaeShy HamletHypoplectrus guttavarius0.00903.040Pisc/InvertivoreSerranidaeIndigo HamletHypoplectrus nigricans0.01103.182Pisc/InvertivoreSerranidaeBlack HamletHypoplectrus nigricans0.01103.182Pisc/InvertivoreSerranidaeBlack HamletHypoplectrus nigricans0.01103.182	Pisc/Invertivore	Scombridae	King Mackerel	Scomberomorus caballa	0.0091	2.960
Pisc/InvertivoreSerranidaeGraysbyCephalopholis cruentata0.01213.082Pisc/InvertivoreSerranidaeConeyCephalopholis fulva0.01882.973Pisc/InvertivoreSerranidaeRock HindEpinephelus adscensionis0.01253.224Pisc/InvertivoreSerranidaeRed HindEpinephelus guttatus0.00843.100Pisc/InvertivoreSerranidaeJewfishEpinephelus itajara0.01313.056Pisc/InvertivoreSerranidaeRed GrouperEpinephelus morio0.01622.990Pisc/InvertivoreSerranidaeRed GrouperEpinephelus striatus0.00653.229Pisc/InvertivoreSerranidaeGreater SoapfishRypticus saponaceus0.00101.000Pisc/InvertivoreSerranidaeShy HamletHypoplectrus guttavarius0.00903.040Pisc/InvertivoreSerranidaeIndigo HamletHypoplectrus nigricans0.01103.182Pisc/InvertivoreSerranidaeBlack HamletHypoplectrus nigricans0.01103.182Pisc/InvertivoreSerranidaeBlack HamletHypoplectrus puella0.00903.040	Pisc/Invertivore	Scorpinadae	Lionfish	Pterois volitans	0.0050	3 291
Pisc/InvertivoreSerranidaeConeyCephalopholis Guiva0.01215.002Pisc/InvertivoreSerranidaeConeyCephalopholis Guiva0.01882.973Pisc/InvertivoreSerranidaeRock HindEpinephelus adscensionis0.01253.224Pisc/InvertivoreSerranidaeRed HindEpinephelus guttatus0.00843.100Pisc/InvertivoreSerranidaeJewfishEpinephelus itajara0.01313.056Pisc/InvertivoreSerranidaeRed GrouperEpinephelus morio0.01622.990Pisc/InvertivoreSerranidaeRed GrouperEpinephelus striatus0.00653.229Pisc/InvertivoreSerranidaeGreater SoapfishRypticus saponaceus0.00101.000Pisc/InvertivoreSerranidaeShy HamletHypoplectrus guttavarius0.00903.040Pisc/InvertivoreSerranidaeIndigo HamletHypoplectrus nigricans0.01103.182Pisc/InvertivoreSerranidaeBlack HamletHypoplectrus nigricans0.01103.182Pisc/InvertivoreSerranidaeBlack HamletHypoplectrus puella0.00903.040	Pisc/Invertivore	Serranidae	Gravsby	Cephalopholis cruentata	0.0020	3.082
Pisc/InvertivoreSerranidaeRock HindEpinephelus adscensionis0.01253.224Pisc/InvertivoreSerranidaeRed HindEpinephelus adscensionis0.01253.224Pisc/InvertivoreSerranidaeRed HindEpinephelus guttatus0.00843.100Pisc/InvertivoreSerranidaeJewfishEpinephelus itajara0.01313.056Pisc/InvertivoreSerranidaeRed GrouperEpinephelus morio0.01622.990Pisc/InvertivoreSerranidaeRed GrouperEpinephelus striatus0.00653.229Pisc/InvertivoreSerranidaeGreater SoapfishRypticus saponaceus0.00101.000Pisc/InvertivoreSerranidaeShy HamletHypoplectrus guttavarius0.00903.040Pisc/InvertivoreSerranidaeIndigo HamletHypoplectrus indigo0.01103.182Pisc/InvertivoreSerranidaeBlack HamletHypoplectrus nigricans0.01103.182Pisc/InvertivoreSerranidaeBlack HamletHypoplectrus nigricans0.01103.182	Pisc/Invertivore	Serranidae	Coney	Cephalopholis fulva	0.0121	2 973
Pisc/InvertivoreSerranidaeRed HindEpinephetus dateenstonis0.01209.121Pisc/InvertivoreSerranidaeRed HindEpinephelus guttatus0.00843.100Pisc/InvertivoreSerranidaeJewfishEpinephelus itajara0.01313.056Pisc/InvertivoreSerranidaeRed GrouperEpinephelus morio0.01622.990Pisc/InvertivoreSerranidaeNassau GrouperEpinephelus striatus0.00653.229Pisc/InvertivoreSerranidaeGreater SoapfishRypticus saponaceus0.00101.000Pisc/InvertivoreSerranidaeShy HamletHypoplectrus guttavarius0.00903.040Pisc/InvertivoreSerranidaeIndigo HamletHypoplectrus indigo0.01103.182Pisc/InvertivoreSerranidaeBlack HamletHypoplectrus nigricans0.01103.182Pisc/InvertivoreSerranidaeBarred HamletHypoplectrus puella0.00903.040	Pisc/Invertivore	Serranidae	Rock Hind	Epinephelus adscensionis	0.0100	3 224
Pisc/InvertivoreSerranidaeJewfishEpinephetus guitaus0.00015.100Pisc/InvertivoreSerranidaeJewfishEpinephelus itajara0.01313.056Pisc/InvertivoreSerranidaeRed GrouperEpinephelus morio0.01622.990Pisc/InvertivoreSerranidaeNassau GrouperEpinephelus striatus0.00653.229Pisc/InvertivoreSerranidaeGreater SoapfishRypticus saponaceus0.00101.000Pisc/InvertivoreSerranidaeShy HamletHypoplectrus guttavarius0.00903.040Pisc/InvertivoreSerranidaeIndigo HamletHypoplectrus indigo0.01103.182Pisc/InvertivoreSerranidaeBlack HamletHypoplectrus nigricans0.01103.182Pisc/InvertivoreSerranidaeBarred HamletHypoplectrus puella0.00903.040	Pisc/Invertivore	Serranidae	Red Hind	Epinephetus auseensionis Eninenhelus guttatus	0.0125	3 100
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Pisc/InvertivoreSerranidaeNassau GrouperEpinephelus striatus0.00653.229Pisc/InvertivoreSerranidaeGreater SoapfishRypticus saponaceus0.00101.000Pisc/InvertivoreSerranidaeShy HamletHypoplectrus guttavarius0.00903.040Pisc/InvertivoreSerranidaeIndigo HamletHypoplectrus indigo0.01103.182Pisc/InvertivoreSerranidaeBlack HamletHypoplectrus nigricans0.01103.182Pisc/InvertivoreSerranidaeBarred HamletHypoplectrus puella0.00903.040	Pisc/Invertivore	Serranidae	Red Grouper	Epinephetus najara Epinephelus morio	0.0151	2,990
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Pisc/Invertivore Serranidae Barred Hamlet Hypoplectrus mgrietans 0.0010 3.102 Pisc/Invertivore Serranidae Barred Hamlet Hypoplectrus puella 0.0090 3.040	Pisc/Invertivore	Serranidae	Black Hamlet	Hypoplectrus nioricans	0.0110	3 182
	Pisc/Invertivore	Serranidae	Barred Hamlet	Hypoplectrus puella	0.0090	3.040

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Pisc/Invertivore	Serranidae	Butter Hamlet	Hypoplectrus unicolor	0.0090	3 0/0
Pisc/Invertivore	Sphyraenidade	Southern Sennet	Sphyraena picudilla	0.0050	2 9/2
Macroinvertivore	Balistadae	Oueen Triggerfish	Balistas vatula	0.0007	2.942
Macroinvertivore	Balistadae	Queen Triggerfish	Canthidarmis sufflamen	0.0334	2.900
Macroinvertivore	Carangidae	Decali Higgeriisii Dermit	Trachinotus falcatus	0.0217	2 958
Macroinvertivore	Echanaidaa	Sharksucker	Fehanais naueratas	0.0010	2.200
Macroinvertivore	Enhippidae	Atlantic Spadefish	Chaetodipterus faber	0.0010	2 952
Macroinvertivore	Gerreidae	Vellowfin Mojarra	Corres cinerous	0.0550	2.952
Macroinvertivore	Haemulidae	Rlack Margate	Anisotromus surinamonsis	0.0134	3.004
Macroinvertivore	Haemulidae	Diack Margaic	Anisotremus virginicus	0.0233	3 167
Macroinvertivore	Haemulidae	White Margate	Haemulon album	0.0148	3.107
Macroinvertivore	Haemulidae	Tomtata	Haemulon aurolineatum	0.0144	3.070
Macroinvertivore	Haemulidae	Caesar Grunt	Haemulon carbonarium	0.0120	3.100
Macroinvertivore	Haemulidae	Smallmouth Grunt	Haemulon chrysaroproum	0.0147	3.030
Macroinvertivore	Haemulidae	French Grunt	Haemulon flavolineatum	0.0100	3.047
Macroinvertivore	Haemulidae	Spanish Grunt	Haemulon jiavoiineaium	0.0232	2.060
Macroinvertivore	Haemulidae	Spanish Orunt	Haemulon macrosiomum	0.0170	2.000
Macroinvertivore	Haemulidae	Plugstringd Crunt	Haemulon melanurum	0.0220	2.933
Macroinvertivore	Haemulidae	Striped Grunt	Haemulon striatum	0.0194	2.777
Macroinvertivore	Halocontridaa	Surped Orunt	Halemation structum Holocontrus adscensionis	0.0175	3.099
Macroinvertivore	Holocentridae	Longenine Squirrelfich	Holocentrus auscensionis	0.0210	2,000
Macroinvertivore	Holocentridae	Dingspille Squillenish	Munipristis is solves	0.0170	3.000
Macroinvertivore	Holocentridae	Longious Squirrolfish	Mynprisits Jacobus	0.1110	2.720
Macroinvertivore	Labridaa	Spanish Hogfish	Reoniphon marianus	0.0213	2.052
Macroinvertivore	Labridae	Spanish Hoghsh	Haliahaanaa hiyittatua	0.0145	2.002
Macroinvertivore	Labridae	Vallowbaad Wraasa	Halichoeres diviliaius	0.0105	2 275
Macroinvertivore	Labridae	Clown Wrasse	Halichoeres garnoli Halichoeres maculining	0.0032	2.573
Macroinvertivore	Labridae	Ciowii własse Doinhow Wrosso	Halichoeres maculpinna	0.0028	5.095 2.275
Macroinvertivore	Labridae	Railloow wrasse	Halichoeres pictus	0.0032	2.029
Macroinvertivore	Labridae	Puddingwife	Hallehoeres radialus	0.0151	2.050
Macroinvertivore	Labridae	Pluchead	Thalassoma bifassiatum	0.0237	2.930
Macroinvertivore	Malaganthidag	Sand Tilefich	Malaganthus plumiori	0.0101	2.690
Macroinvertivore	Mulichatidae	Salid Thensh Spotted Eagle Day	Malacaninus plumieri	0.0001	2.000
Macroinvertivore	Ostrasidas	Spotted Eagle Ray	Aelobalus harinari	0.0039	2.092
Macroinvertivore	Domoconthidoo	Dive A posifich	Acaninosiración polygonius	0.0178	2.002
Macroinvertivore	Pomacanthidae	Blue Angellish	Holacanthus bermuaensis	0.0319	2.899
Macroinvertivore	Pomacantinidae	Queen Angemisn	Holacantnus ciliaris	0.0337	2.900
Macroinvertivore	Samanidae	Glasseye Snapper	Secondaria di anima cruentatus	0.0188	3.000
Macroinvertivore	Serranidae	Harlequin Bass	Serranus tigrinus	0.0145	5.048 2.190
Macroinvertivore	Sparidae	Saucereye Porgy	Calamus calamus	0.0125	3.180
Macroinvertivore	Sparidae	Sneepsnead Porgy	Calamus penna Sebaanai dag geografiani	0.0764	2.000
Macroinvertivore	Tetraodontidae	Bandtall Puller	Sphoerolaes spengleri	0.0235	3.050
Microinvertivore	Chaetodontidae	Foureye Butterflyfish	Chaetodon capistratus	0.0220	3.190
Microinvertivore	Chaetodontidae	Spottin Butterflyfish	Chaetodon oceilatus	0.0318	2.984
Microinvertivore	Chaetodontidae	Banded Butterflyfish	Chaetodon striatus	0.0220	3.140
Microinvertivore	Gobiidae	Neon Goby	Elacatinus oceanops	0.0080	3.13/
Microinvertivore	Grammatidae	Fairy Basslet	Gramma loreto	0.0001	1.111
Microinvertivore	Grammatidae	Blackcap Basslet	Gramma melacara	0.0001	1.111
Microinvertivore	Monacantnidae	whitespotted Filefish	Canthernines macrocerus	0.0561	2.653
Microinvertivore	Mullidae	Yellow Goatfish	Mulloidichthys martinicus	0.0110	3.092
Microinvertivore	Mullidae	Spotted Goatfish	Pseudupeneus maculatus	0.0150	3.157
Microinvertivore	Sciaenidae	Jackknife Fish	Equetus lanceolatus	0.0011	3.844
Microinvertivore	Sciaenidae	Spotted Drum	Equetus punctatus	0.0153	3.062
Planktivore	Labridae	Creole Wrasse	Clepticus parrae	0.0145	3.053
Planktivore	Pomacentridae	Blue Chromis	Chromis cyanea	0.0188	3.000
Planktivore	Pomacentridae	Brown Chromis	Chromis multilineata	0.0262	2.753
Large Omnivore	Balistadae	Black Durgon	Melichthys niger	0.0217	3.000

<b>Reconstructing baselines for Caribbean predatory reef fishes</b> Valdivia <i>et al.</i>											
Large Omnivore	Pomacanthidae	Rock Beauty	Holacanthus tricolor	0.0203	3.126						
Large Omnivore	Pomacanthidae	Gray Angelfish	Pomacanthus arcuatus	0.0203	3.126						
Large Omnivore	Pomacanthidae	French Angelfish	Pomacanthus paru	0.0203	3.126						
Small Omnivore	Monacanthidae	Scrawled Filefish	Aluterus scriptus	0.0022	3.000						
Small Omnivore	Monacanthidae	Orangespotted Filefish	Cantherhines pullus	0.0684	2.563						
Small Omnivore	Pomacentridae	Sergeant Major	Abudefduf saxatilis	0.0227	3.142						
Small Omnivore	Pomacentridae	Dusky Damselfish	Stegastes adustus	0.0384	3.010						
Small Omnivore	Pomacentridae	Beaugregory	Stegastes leucostictus	0.0303	2.887						
Small Omnivore	Pomacentridae	Threespot Damselfish	Stegastes planifrons	0.0379	2.857						
Small Omnivore	Pomacentridae	Cocoa Damselfish	Stegastes variabilis	0.0324	2.836						
Small Omnivore	Tetraodontidae	Sharpnose Puffer	Canthigaster rostrata	0.0323	2.953						
Herbivore	Acanthuridae	Ocean Surgeonfish	Acanthurus bahianus	0.0236	2.975						
Herbivore	Acanthuridae	Doctorfish	Acanthurus chirurgus	0.0225	3.000						
Herbivore	Acanthuridae	Blue Tang	Acanthurus coeruleus	0.0305	3.000						
Herbivore	Blennidae	Redlip Blenny	Ophioblennius atlanticus	0.0324	2.379						
Herbivore	Kyphosidae	Bermuda Chub	Kyphosus saltatrix	0.0174	3.080						
Herbivore	Pomacentridae	Yellowtail Damselfish	Microspathodon chrysurus	0.0239	3.082						
Herbivore	Pomacentridae	Longfin Damselfish	Stegastes diencaeus	0.0353	2.896						
Herbivore	Pomacentridae	Bicolor Damselfish	Stegastes partitus	0.0182	3.152						
Herbivore	Scaridae	Midnight Parrotfish	Scarus coelestinus	0.0153	3.062						
Herbivore	Scaridae	Blue Parrotfish	Scarus coeruleus	0.0124	3.111						
Herbivore	Scaridae	Rainbow Parrotfish	Scarus guacamaia	0.0155	3.063						
Herbivore	Scaridae	Striped Parrotfish	Scarus iserti	0.0158	3.052						
Herbivore	Scaridae	Princess Parrotfish	Scarus taeniopterus	0.0177	3.000						
Herbivore	Scaridae	Queen parrotfish	Scarus vetula	0.0158	3.052						
Herbivore	Scaridae	Greenblotch Parrotfish	Sparisoma atomarium	0.0122	3.028						
Herbivore	Scaridae	Redband Parrotfish	Sparisoma aurofrenatum	0.0129	3.110						
Herbivore	Scaridae	Redtail Parrotfish	Sparisoma chrysopterum	0.0135	3.100						
Herbivore	Scaridae	Bucktooth Parrotfish	Sparisoma radians	0.0179	3.035						
Herbivore	Scaridae	Redfin Parrotfish	Sparisoma rubripinne	0.0194	3.000						
Herbivore	Scaridae	Stoplight Parrotfish	Sparisoma viride	0.0250	2.921						

**Appendix C** Summary of preliminary, anthropogenic, physical, biotic, and management-related predictors used in the analysis. For a detailed description of each variable see Appendix D.

Variable name	Range	Units	Source
Anthropogenic			
Coastal Development in 50km	0-26470	light pixels	Suomi NPP satellite <sup>a</sup>
Humans within 50 km	54-67140	#	World Gridded Population <sup>b</sup>
Humans of closest town	0-628300	#	Country census
Distance to population centers	1.6-115.8	km	Calculated in ArcGIS 10
Cultivated land within 50 km	0-3917	km <sup>2</sup>	Global Land Cover 2000 <sup>c</sup>
Physical			
Net primary productivity	203-1610	mg C m <sup>-2</sup> day <sup>-1</sup>	Aqua MODIS
Sea surface temperature (SST)	26.0-29.3	°C	AHVRR Pathfinder v5.2
Minimum SST	20.8-26.5	°C	AHVRR Pathfinder v5.2
Wave exposure (log)	3.9-7.9	$J m^{-3}$	(Chollett et al. 2012)
Depth	10-16	meters	In situ measurements
Reef structural complexity	1.5-5	#	In situ estimations
Distance to deep water	0.03-32.9	km	NOAA bathymetry charts
Distance to tide channels	0.4-6.0	km	Calculated in ArcGIS 10
Distance to mangrove	0.34-31.9	km	Calculated in ArcGIS 10
Reef area within 5 km	0.1-25.9	km <sup>2</sup>	Global Coral Reef 2010 <sup>d</sup>
Reef area within 10 km	0.4-43.1	km <sup>2</sup>	Global Coral Reef 2010
Biotic			
Mangrove perimeter in 5 km	0-175.6	km	Global Mangrove 2011 <sup>e</sup>
Mangrove perimeter in 10 km	0-406.10	km	Global Mangrove 2011
Live coral cover	1.5-31.6	%	In situ measurements/video
Macroalgae cover	6.2-71.2	%	In situ measurements/video
Gorgonian cover	0-17.2	%	In situ measurements/video
Fish biomass (lower trophic)	3.5-441.0	g m <sup>-2</sup>	In situ measurements
Management regime			
Protection level None,	MPA, NTZ	categorical	Reef Base
Reserve size	7.8-2170	km <sup>2</sup>	Reef Base
Reserve age	3-40	years	Reef Base
Poaching level	low, high	categorical	Reef Base, Interviews

a Suomi NPP satellite global at 750 m resolution available at NASA Earth Observatory (Black Marble)

b Gridded Population of the World V.3 at 0.25 degree resolution estimated for 2010

c Global Land Cover 2000 database

d Global Distribution of Coral Reef 2010 database from Ocean Data Viewer UNEP-WCMC

e Global Distribution of Mangroves USGS 2011 database from the Ocean Data Viewer UNEP-WCMC

## Appendix D Detailed description of covariates

#### Human population density

We considered three measures of human effects based on population size: 1) humans within 50 km (maximum number of people that occurred within 50-km radius of each site); 2) number of humans in the nearest population center (indicator of spatially immediate human pressure); and 3) distance to nearest population centers (indicator of long-distance effects, calculated from each site to the center of nearest population settlements). We chose 50 km as radius for the first measured variable because it is a reasonable range of anthropogenic influence on Caribbean reefs (Mora, 2008). Projection estimates of human population counts for the year 2010 were obtained from the Gridded Population of the World V.3 at 0.25 degree resolution (SEDAC, 2010) and calculated in ArcGIS v10.0.

#### Coastal Development

This variable quantified the use of electrical power measured as the intensity of the Earth's city lights at night within 50 km radius of each site. Power infrastructure can be used as a proxy of coastal development which is a good surrogate for fishing pressure (Sanderson et al. 2002). Light intensity was calculated as the sum of pixel values that corresponded to city and town lights within the interest area. We used the high resolution (750 m) composite map of the world assembled from data acquired by the Suomi NPP satellite global available at NASA Earth Observatory (<u>http://earthobservatory.nasa.gov/Features/NightLights/page3.php</u>). All calculations were performed in ArcGIS v10.0.

#### Cultivated land

We quantified the area of cultivated land that occurred within a 50 km radius of each reef site. The raster data for this variable was obtained from the Global Land Cover 2000 database (GLC 2003). Specifically, we used the regional dataset (North and Central America) that depicts the spatial distribution of 29 different land attributes for the year 2000 as calculated from satellite images at 1 km resolution. Cultivated land could be a surrogate of terrestrial run-offs with potential effects on macroalgae cover when herbivory is reduced (McCook 1999). Additionally sediment derived from agriculture may alter predator-prey interactions in coral reef fish and compromise planktivores feeding efficiency (Wenger et al. 2013). Spatial analyses were performed in ArcGIS v10.

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## Marine Reserve size, age, and poaching level

In this study we only considered marine reserves where fishing was not allowed, at least in theory (i.e. no-take areas). We assessed three variables that together describe some degree of protection effectiveness for reef sites inside marine reserves (Mora et al. 2006). These variables were reserve size, years since the establishment (reserve age) and poaching level. Reserve size and age can positively influence fish communities, as in general, older and larger reserves tend to accumulate relative more fish biomass than younger and smaller reserves (Côté et al. 2001, Halpern 2003, Claudet et al. 2008, Babcock et al. 2010). In contrast, poaching can directly affect fish abundance and undermine the protection efforts particularly when reserves are small (Kritzer 2004). Poaching levels inside the reserve was classified as "low" or "high" based on interviews with park managers and regular users such as dive shops (method modified from Mora et al. 2006). We assumed that poaching inevitable exist in each reserve, thus a range of low to high was established based on a 5 point scale for which 1-2 was low while 3-5 was high.

## Reef Area

Reef areas within 5 km and 10 km radius of each site was calculated from the Global Distribution of Coral Reefs (2010) database as available at the Ocean Data Viewer United Nations Environment Program's World Conservation Monitoring Centre (UNEP-WCMC) (<u>http://data.unep-wcmc.org/datasets/13</u>). This database represents the global distribution of warm water coral reefs compiled mostly from the Millennium Coral Reef Mapping Project validated and un-validated maps as well as other sources acquired by UNEP-WCMC. Reef areas within the interest region were calculated in ArcGIS v10.0.

#### Reef structural complexity

For each transect set we visually estimated structural reef complexity on a scale of 0-5, where 0 was given to reefs with no vertical relief; 1, low and sparse relief; 2, low but widespread relief; 3, moderately complex relief; 4, very complex relief with numerous caves and fissures; and 5, reefs with exceptionally complex habitats, with numerous caves and overhangs (Polunin and Roberts 1993). This topographic measure provided an assessment of reef complexity at the seascape level which is relevant to large and medium-sized fish (Polunin and Roberts 1993, Wilson et al. 2007). To minimize estimation subjectivity among observers, at least two divers estimated reef structural complexity for each transect set and the average was calculated to be used in the

models. We evaluated the accuracy of the estimations among observers by comparing the standard deviations (SD) among transects per site and found that SDs were 0-0.7 in all cases, meaning that average estimation differences were never over 1 unit.

## Mangrove Perimeter

Mangrove abundance was quantified as the perimeter covered by mangrove within 5 km and 10 km radius of each site. Estimates of Caribbean mangrove distribution were obtained from the Global Distribution of Mangroves USGS (2011) database as available at the Ocean Data Viewer UNEP-WCMC (<u>http://data.unep-wcmc.org/datasets/21</u>). This database depicts the distributions of global mangroves based on Global Land Survey data and Landsat images. Landsat images (30 m resolution) were interpreted using unsupervised and supervised digital image classification techniques. Each image was atmospherically corrected, ground truth and validated with existing maps and databases.

## Net primary productivity

We calculated mean oceanic net primary productivity (mg C m<sup>-2</sup> day<sup>-1</sup>) for each site between 2002 and 2012 using remote-sensing. This was obtained from Aqua MODIS satellite monthly data combined in the vertical generalized production model (Behrenfeld and Falkowski 1997) at a spatial resolution of 0.0833° (Oregon State University 2013). We used the mean of the last ten years period because primary productivity is inherently variable in time and established predatory communities may respond better to long term trends in primary productivity than to survey year or monthly mean values. Calculations were performed in ArcGIS 10.0.

## Sea surface temperature

We used AHVRR Pathfinder Version 5.2 (PFV5.2) satellite data obtained from the US National Oceanographic Data Center and GHRSST (NOAA 2013). The PFV5.2 data are an updated version of the Pathfinder Version 5.0 and 5.1 collections described in Casey et al. (2010). We calculated average monthly sea surface temperature (SST, 2002-2011) for each source 4 km<sup>2</sup> grid cell that corresponded to each reef site. We also calculated mean minimum monthly SST by selecting the lowest monthly average temperature per year to compute an average across years. Mean minimum monthly SST could be a better predictor of physiological constrains of some fish predator species (Jennings et al. 2008, Nadon et al. 2012). We used mean temperature of nine

years because it may represent better the temperature regimen these top consumers experience overtime. All calculations were performed in ArcGIS 10.0.

#### Wave exposure

The log of wind driven wave exposure (J m<sup>-3</sup>) was extracted in ArchGIS 10.0 from the wave stress map for the Caribbean basin built by Chollett *et al.* (2012) and available at (http://www.marinespatialecologylab.org/wp-content/uploads/2010/11/PECS1.png). This index does not include the influence of tides or swells, which are not generated by local wind, and it is an approximation of wave patterns in shallow areas (Chollett et al. 2012). Wave exposure has been a good predictor of spatial variation in reef building corals such as *Orbicella* sp. (former *Montastrea* sp.) (Chollett and Mumby 2012) and can partially explain beta diversity patterns of benthic communities (Harborne et al. 2011). Wave exposure may also directly affect the biomass and diversity of tropical reef fish (Friedlander et al. 2003) and the distribution and abundance of temperate reef fish by compromising swimming abilities (Fulton and Bellwood 2004). Alternatively, by modifying the distribution of foundation species like corals, wave exposure could affect fish species that depend on them. The detailed description of the wave exposure calculations and assumptions can be found in Chollett & Mumby (2012).

#### **Benthic cover**

Percent cover data of benthic communities by categories (i.e. coral by species, algae by genus or functional groups, gorgonians, sponges, and other) were measured at each site using point intercepts in 6-8 transect lines (10 m long) (Lang et al. 2010) and/or in 6-8 video transects (50 m long) (Carleton and Done 1995). Point intercept transects (PITs) were used at the Belize sites, while both PITs and video transects were used at the rest of the sites. Both methods provided similar accuracy and results in estimating benthic cover categories in our study. Each benthic transect corresponded to a fish transect set. To estimate percent cover, 100 points per transect was used in PITs (Lang et al. 2010), while ~600 points were extracted from each video transect (Carleton and Done 1995). As model predictors we only used live coral, fleshy algae, and gorgonian cover as they provide physical structure that may affect small and medium size fish predators (Alvarez-Filip et al. 2011).

## References

See references in Appendix K

**Appendix E: Table E1** Spearman's rank ( $r_s$ ) order correlation matrix for response and explanatory variables. Bold values are correlations  $r_s > 0.50$ . Upper matrix panel are correlations within marine reserves. Lower matrix corresponds to values for all sites. Number codes are: apex predator (1), piscivore-invertivore (2), herbivore (3), omnivore (4), invertivore (5), planktivore (6), mangrove within 5 km (7), mangrove within 10 km (8), coral cover (9), algae cover (10), gorgonian cover (11), net primary productivity (12), sea surface temperature (13), minimum sea surface temperature (14), wave exposure (15), depth (16), reef structural complexity (17), distance to deep water (18), distance to channels (19), distance to mangrove (20), reef area within 5 km (21), reef area within 10 km (22), coastal development within 50 km (23), number of humans within 50 km (24), number of humans in the closest town (25), minimum distance to closest town (26), area of cultivate land within 50 km (27), reserve age (28), reserve size (29). Note that reserve age and size are only applicable to sites within reserves.

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# Appendix E: Table E1

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29
1		0.38	0.02	0.10	0.10	0.05	0.29	0.25	0.07	0.12	0.16	0.29	0.11	-0.12	-0.16	-0.04	0.26	-0.08	0.12	-0.33	-0.04	0.03	-0.40	-0.39	-0.36	0.39	-0.49	0.08	0.32
2	0.35		0.26	0.31	0.42	0.18	0.03	-0.03	-0.02	-0.06	0.07	0.10	-0.04	-0.06	-0.35	0.08	0.21	-0.27	0.28	-0.12	0.10	0.14	-0.24	-0.30	-0.28	0.32	-0.19	0.16	0.46
3	0.16	0.36		0.02	0.22	0.08	-0.16	-0.20	0.00	-0.46	0.07	-0.19	-0.50	-0.36	-0.09	-0.39	0.31	0.15	0.28	0.05	-0.40	-0.24	-0.06	-0.25	0.04	-0.12	-0.15	0.20	-0.23
4	0.07	0.24	0.18		0.29	0.33	0.06	0.00	0.06	-0.14	-0.17	-0.18	0.14	0.34	-0.41	0.35	-0.01	-0.54	0.29	-0.14	0.00	-0.10	0.22	0.17	0.11	-0.03	0.15	0.07	0.34
5	0.18	0.37	0.35	0.25		0.31	-0.16	-0.21	0.03	-0.24	0.04	-0.15	-0.14	0.18	-0.37	0.10	0.07	-0.30	0.33	0.00	0.14	0.12	-0.02	-0.08	-0.19	0.14	-0.03	-0.08	0.26
6	0.06	0.25	0.16	0.28	0.22		-0.01	-0.03	0.24	-0.07	-0.05	-0.21	0.07	0.23	-0.13	0.19	0.21	-0.30	0.15	-0.10	-0.04	-0.05	0.10	0.11	0.02	-0.08	0.11	0.01	-0.03
7	0.21	0.05	-0.03	-0.02	-0.05	-0.11		0.97	0.52	0.38	0.14	0.46	0.61	-0.27	-0.21	0.04	0.02	0.08	-0.30	-0.89	-0.32	-0.38	-0.44	-0.30	0.00	0.24	-0.32	-0.04	0.28
8	0.15	0.04	-0.01	-0.05	-0.10	-0.08	0.93		0.53	0.43	0.13	0.47	0.67	-0.28	-0.14	-0.01	-0.07	0.19	-0.47	-0.79	-0.35	-0.39	-0.42	-0.27	0.01	0.15	-0.27	-0.13	0.19
9	-0.09	-0.07	-0.15	0.03	-0.04	0.05	0.21	0.26		-0.02	-0.08	0.00	0.38	0.04	-0.24	0.06	0.28	-0.07	-0.25	-0.58	-0.18	-0.21	-0.31	-0.01	-0.12	0.08	-0.22	-0.30	-0.01
10	-0.13	-0.20	-0.29	-0.03	-0.16	-0.19	0.19	0.06	-0.10		-0.06	0.50	0.59	0.12	0.21	0.22	-0.12	0.03	-0.50	-0.27	0.16	0.17	-0.17	-0.10	-0.09	0.16	0.05	0.07	0.17
11	0.14	0.05	0.07	-0.02	0.08	0.04	0.08	0.00	-0.20	0.02		0.48	-0.17	-0.44	0.00	-0.22	-0.26	0.38	0.18	-0.04	0.05	0.17	-0.53	-0.67	-0.40	0.47	-0.43	0.05	0.29
12	0.04	-0.04	-0.22	0.05	-0.02	-0.07	0.04	-0.02	0.17	0.31	0.14		0.43	-0.25	0.27	0.06	-0.25	0.24	-0.17	-0.28	0.24	0.41	-0.64	-0.71	-0.46	0.66	-0.38	0.42	0.55
13	-0.26	-0.32	-0.37	0.04	-0.23	-0.08	-0.10	0.00	0.31	0.17	-0.23	0.29		0.38	0.06	0.44	-0.17	-0.30	-0.45	-0.47	0.17	0.08	-0.13	0.10	-0.08	0.17	0.05	-0.02	0.38
14	-0.28	-0.27	-0.35	0.11	-0.10	0.00	-0.17	-0.13	0.27	0.14	-0.26	0.18	<b>0.61</b>		-0.01	0.71	0.08	-0.79	0.08	0.07	0.50	0.36	0.39	0.59	-0.07	-0.03	0.30	-0.08	0.20
15	0.00	-0.10	0.01	-0.20	-0.10	-0.23	0.00	-0.15	-0.29	0.24	0.25	-0.17	-0.28	-0.26		-0.20	-0.26	0.36	-0.13	0.40	0.08	0.21	0.03	0.08	0.00	-0.05	0.00	0.22	-0.38
16	-0.12	-0.17	-0.35	0.15	-0.05	0.04	0.00	-0.15	0.10	0.27	-0.06	0.14	0.32	0.48	0.00		0.05	-0.65	-0.03	-0.11	0.52	0.39	0.21	0.28	-0.02	0.15	0.38	0.11	0.45
17	0.28	0.37	0.25	-0.02	0.11	0.29	0.13	0.15	0.22	-0.33	0.00	-0.19	-0.21	-0.27	-0.20	-0.15		-0.34	0.12	-0.34	-0.05	0.03	-0.22	-0.05	-0.25	0.15	-0.31	0.09	-0.10
18	0.11	-0.02	0.14	-0.18	-0.08	-0.28	0.28	0.21	-0.10	0.15	0.27	-0.02	-0.33	-0.50	0.49	-0.18	-0.07		-0.41	0.19	-0.38	-0.25	-0.22	-0.35	0.13	-0.18	-0.10	-0.16	-0.48
19	0.06	0.06	0.14	0.00	0.04	-0.17	0.07	0.04	-0.18	-0.02	0.16	-0.29	0.03	0.06	0.14	-0.20	-0.11	0.14		0.12	0.07	0.08	0.06	-0.14	-0.14	0.26	-0.27	0.37	0.29
20	-0.08	0.12	0.06	-0.04	0.01	0.18	-0.41	-0.35	-0.17	-0.17	-0.06	-0.28	-0.26	-0.17	0.07	-0.08	0.10	-0.28	-0.10		0.22	0.29	0.48	0.25	0.16	-0.33	0.41	0.07	-0.33
21	-0.14	-0.22	-0.37	0.00	-0.01	-0.08	-0.09	-0.26	0.08	0.33	0.10	0.42	0.28	0.48	0.05	0.56	-0.19	-0.14	-0.04	-0.20		0.91	-0.14	0.03	-0.52	0.57	0.06	0.01	0.46
22	-0.08	-0.09	-0.23	-0.06	0.01	-0.03	-0.11	-0.24	0.09	0.23	0.12	0.26	0.05	0.31	0.13	0.32	0.00	-0.12	0.15	-0.04	0.83		-0.33	-0.23	-0.68	0.66	-0.08	0.18	0.45
23	-0.23	-0.16	0.10	0.08	-0.01	0.08	-0.29	-0.20	-0.21	-0.10	-0.14	-0.24	-0.04	-0.07	-0.09	0.13	-0.18	0.06	-0.15	0.05	-0.11	-0.25		0.79	0.81	-0.81	0.76	0.04	-0.42
24	-0.23	-0.17	-0.09	0.07	0.00	0.08	-0.30	-0.17	0.07	-0.11	-0.39	-0.10	0.26	0.19	-0.24	0.01	-0.06	-0.41	-0.46	0.11	-0.13	-0.27	0.47		0.57	-0.65	0.61	-0.32	-0.42
25	-0.28	-0.25	-0.01	-0.01	-0.15	0.01	-0.04	0.09	-0.01	-0.05	-0.27	-0.17	0.16	-0.06	-0.13	0.02	-0.14	-0.02	-0.37	-0.09	-0.24	-0.41	0.76	0.72		-0.86	0.70	0.10	-0.49
26	0.05	-0.05	-0.20	0.08	0.03	0.01	-0.08	-0.18	0.13	0.08	0.28	0.45	0.43	0.39	-0.15	0.33	-0.01	-0.17	0.21	-0.40	0.68	0.51	-0.28	-0.28	-0.39		-0.65	0.17	0.72
27	-0.34	-0.13	-0.06	0.05	-0.01	0.11	-0.30	-0.11	0.07	-0.05	-0.36	-0.01	0.16	0.19	-0.35	0.08	-0.16	-0.35	-0.50	0.22	-0.19	-0.29	0.52	0.62	0.63	-0.43		0.05	-0.24
28																													0.29

**Appendix E: Table E2** Covariate selection procedure for closely related variables for each predator group based on AIC<sub>c</sub> (AIC corrected for small samples). wAIC<sub>c</sub>, AIC<sub>c</sub> weigths; Pr(>|z|) significance level from the generalized linear models; CoastDev50km, coastal development within 50 km; PopDen50km, number of humans within 50 km; PopDenclstowns, number of humans in the closest population center; CultLand50km, area of cultivated land within 50 km; DistPop, minimum distance to nearest population center; SSTmin, average monthly minimum sea surface temperature; SST, average sea surface temperature; ReefArea5km(10km), reef area within 5 and 10 km; MangrvPer5km(10km), mangrove perimeter within 5 and 10 km.

All Sites		Predators		A	pex preda	itors	Pisc-Invertivores			
Covariate	AICc	wAICc	Pr(> z )	AIC <sub>c</sub>	wAIC <sub>c</sub>	Pr(> z )	AIC <sub>c</sub>	wAIC <sub>c</sub>	Pr(> z )	
CoastDev50km	670.4	1	***	767.6	1	***	634.5	0.97	***	
PopDen50km	684.3	0	***	791.1	0	***	641.4	0.03	***	
PopDenclstowns	710.7	0	***	819.5	0	***	661.8	0	**	
CulLand50km	711.1	0	***	798.9	0	***	666.0	0	*	
DistPop	725.2	0	ns	842.1	0	ns	669.3	0	ns	
SSTmin	686.8	0.96	***	812.2	0.93	***	641.0	0.68	***	
SST	693.4	0.04	***	817.4	0.07	***	642.0	0.38	***	
ReefArea5km	713.7	0.96	***	835.8	0.62	*	658.9	0.98	***	
ReefArea10km	720.3	0.04	*	836.7	0.38	*	666.2	0.02		
MangrvPer5km	719.6	0.79	*	817.3	1	***	668.4	0.60	ns	
MangrvPer10km	722.3	0.21	•	829.1	0	***	669.3	0.40	ns	
	Predators									
Reserves (NTZ)		Predators		Ap	ex predat	ors	Pise	c-Invertive	ores	
<b>Reserves (NTZ)</b> Covariate	AICc	Predators wAICc	Pr(> z )	Ap AIC <sub>c</sub>	ex predate wAIC <sub>c</sub>	ors Pr(> z )	Pise AIC <sub>c</sub>	c-Invertive wAIC <sub>c</sub>	ores Pr(> z )	
Reserves (NTZ) Covariate CoastDev50km	AICc 218.7	Predators wAICc 0.22	Pr(> z ) ***	Ap AIC <sub>c</sub> 276.6	ex predate wAIC <sub>c</sub> <b>0.26</b>	ors Pr(> z ) ***	Pise AIC <sub>c</sub> 206.3	c-Invertive wAIC <sub>c</sub> 0.16	ores Pr(> z ) ***	
Reserves (NTZ) Covariate CoastDev50km PopDen50km	AICc 218.7 216.2	Predators wAICc 0.22 0.75	Pr(> z ) *** ***	Ap AIC <sub>c</sub> 276.6 280.3	ex predate wAIC <sub>c</sub> <b>0.26</b> 0.04	ors Pr(> z ) *** ***	Pise AIC <sub>c</sub> 206.3 203.2	c-Invertive wAIC <sub>c</sub> 0.16 <b>0.74</b>	ores Pr(> z ) *** ***	
Reserves (NTZ)CovariateCoastDev50kmPopDen50kmCulLand50km	AICc 218.7 216.2 223.4	Predators wAICc <b>0.22</b> <b>0.75</b> 0.02	Pr(> z ) *** *** ***	Ap AIC <sub>c</sub> 276.6 280.3 274.6	ex predate wAIC <sub>c</sub> 0.26 0.04 0.69	ors Pr(> z ) *** *** ***	Pise AIC <sub>c</sub> 206.3 203.2 212.0	c-Invertive wAIC <sub>c</sub> 0.16 <b>0.74</b> 0.01	ores Pr(> z ) *** *** ***	
Reserves (NTZ) Covariate CoastDev50km PopDen50km CulLand50km DistPop	AICc 218.7 216.2 223.4 225.2	Predators wAICc <b>0.22</b> <b>0.75</b> 0.02 0.01	Pr(> z ) *** *** *** ***	Ap AIC <sub>c</sub> 276.6 280.3 274.6 291.1	ex predate wAIC <sub>c</sub> 0.26 0.04 0.69 0	ors Pr(> z ) *** *** *** ***	Pise AIC <sub>c</sub> 206.3 203.2 212.0 207.5	c-Invertive wAIC <sub>c</sub> 0.16 <b>0.74</b> 0.01 0.09	ores Pr(> z ) *** *** *** *	
Reserves (NTZ)CovariateCoastDev50kmPopDen50kmCulLand50kmDistPopPopDenclstowns	AICc 218.7 216.2 223.4 225.2 230.3	Predators wAICc <b>0.22</b> <b>0.75</b> 0.02 0.01 0	Pr(> z ) *** *** *** *** *** ***	Ap AIC <sub>c</sub> 276.6 280.3 274.6 291.1 294.7	ex predate wAIC <sub>c</sub> 0.26 0.04 0.69 0 0	ors Pr(> z ) *** *** *** *** ***	Pise AIC <sub>c</sub> 206.3 203.2 212.0 207.5 212.5	c-Invertive wAIC <sub>c</sub> 0.16 0.74 0.01 0.09 0.01	ores Pr(> z ) *** *** *** * *	
Reserves (NTZ)CovariateCoastDev50kmPopDen50kmCulLand50kmDistPopPopDenclstownsSSTmin	AICc 218.7 216.2 223.4 225.2 230.3 239.7	Predators wAICc <b>0.22</b> <b>0.75</b> 0.02 0.01 0 0 0.51	Pr(> z ) *** *** *** ** ** ** NS	Ap AIC <sub>c</sub> 276.6 280.3 274.6 291.1 294.7 306.4	ex predate wAIC <sub>c</sub> 0.26 0.04 0.69 0 0 0	ors Pr(> z ) *** *** *** *** *** *** ns	Pise AIC <sub>c</sub> 206.3 203.2 212.0 207.5 212.5 218.1	c-Invertive wAIC <sub>c</sub> 0.16 <b>0.74</b> 0.01 0.09 0.01 0.53	ores Pr(> z ) *** *** * * * * * *	
Reserves (NTZ) Covariate CoastDev50km PopDen50km CulLand50km DistPop PopDenclstowns SSTmin SST	AICc 218.7 216.2 223.4 225.2 230.3 239.7 239.8	Predators wAICc <b>0.22</b> <b>0.75</b> 0.02 0.01 0 0 0.51 0.49	Pr(> z ) *** *** *** ** ns ns	Ap AIC <sub>c</sub> 276.6 280.3 274.6 291.1 294.7 306.4 303.6	ex predate wAIC <sub>c</sub> 0.26 0.04 0.69 0 0 0 0.20 0.80	ors Pr(> z ) *** *** *** *** ns	Pise AIC <sub>c</sub> 206.3 203.2 212.0 207.5 212.5 218.1 218.3	c-Invertive wAIC <sub>c</sub> 0.16 0.74 0.01 0.09 0.01 0.53 0.38	ores Pr(> z ) *** *** *** * * * * * * * *	
Reserves (NTZ)CovariateCoastDev50kmPopDen50kmCulLand50kmDistPopPopDenclstownsSSTminSSTReefArea5km	AICc 218.7 216.2 223.4 225.2 230.3 239.7 239.8 239.2	Predators wAICc <b>0.22</b> <b>0.75</b> 0.02 0.01 0 0.51 0.49 0.39	Pr(> z ) *** *** *** *** *** ns ns ns ns ns	Ap AIC <sub>c</sub> 276.6 280.3 274.6 291.1 294.7 306.4 303.6 306.4	ex predate wAIC <sub>c</sub> 0.26 0.04 0.69 0 0 0 0 0 0.20 0.80 0.49	ors Pr(> z ) *** *** *** *** ns ns	Pise AIC <sub>c</sub> 206.3 203.2 212.0 207.5 212.5 218.1 218.3 218.0	c-Invertive wAIC <sub>c</sub> 0.16 0.74 0.01 0.09 0.01 0.53 0.38 0.30	ores Pr(> z ) *** *** * * * * ns ns ns	
Reserves (NTZ)CovariateCoastDev50kmPopDen50kmCulLand50kmDistPopPopDenclstownsSSTReefArea5kmReefArea10km	AICc 218.7 216.2 223.4 225.2 230.3 239.7 239.8 239.2 240.1	Predators wAICc <b>0.22</b> <b>0.75</b> 0.02 0.01 0 0.51 0.49 0.39 0.61	Pr(> z ) *** *** *** *** ** ns ns ns ns ns ns	Ap AIC <sub>c</sub> 276.6 280.3 274.6 291.1 294.7 306.4 303.6 306.4 306.3	ex predate wAIC <sub>c</sub> 0.26 0.04 0.69 0 0 0 0 0.20 0.80 0.49 0.51	ors Pr(> z ) *** *** *** *** ns ns ns ns	Pise AIC <sub>c</sub> 206.3 203.2 212.0 207.5 212.5 218.1 218.3 218.0 216.3	c-Invertive wAIC <sub>c</sub> 0.16 0.74 0.01 0.09 0.01 0.53 0.38 0.30 0.70	ores Pr(> z ) *** *** * * * ns ns ns ns ns	
Reserves (NTZ)CovariateCoastDev50kmPopDen50kmCulLand50kmDistPopPopDenclstownsSSTReefArea5kmReefArea10kmMangrvPer5km	AICc 218.7 216.2 223.4 225.2 230.3 239.7 239.8 239.2 240.1 239.5	Predators wAICc <b>0.22</b> <b>0.75</b> 0.02 0.01 0 0.51 0.49 0.39 0.61 0.60	Pr(> z ) *** *** *** *** ns ns ns ns ns ns ns	Ap AICc 276.6 280.3 274.6 291.1 294.7 306.4 303.6 306.4 306.3 297.5	ex predate wAIC <sub>c</sub> 0.26 0.04 0.69 0 0 0 0.20 0.80 0.49 0.51 0.77	ors Pr(> z ) *** *** *** *** ns ns **	Pise AIC <sub>c</sub> 206.3 203.2 212.0 207.5 212.5 218.1 218.3 218.0 216.3 218.5	c-Invertive wAIC <sub>c</sub> 0.16 0.74 0.01 0.09 0.01 0.53 0.38 0.30 0.70 0.34	Dres Pr(> z ) *** *** * * * ns ns ns ns ns ns ns	

Significance codes: 0 '\*\*\*', 0.001 '\*\*', 0.01 '\*', 0.05 '.', non-significant 'ns'

**Appendix F** Analysis and R code to predict total predator biomass in the absence of humans considering all sites as no fishing areas based on the best explanatory model from Table 1. Note that all numerical predictors were standardized and centered before model run. Some predictors were log transformed to improve model fit.

# Top model for total predatory fish biomass

```
modelPR.final <- glmer(log(Predators+1) ~ log(CoastDev50km) + I(SSTmin^2) +
                   Rugosity + Coral + Gorgonian + log(Invertivore) + log(Omnivore) +
                   log(Planktivore) + log(Herbivore) + Protection.level +
                   (1|Year/Region/Site.Code), na.action=na.omit,
                   Data = fishcoral, family= Gaussian ("log"), nAGO=1L)
summary (modelPR.final)
Generalized linear mixed model fit by maximum likelihood (Laplace Approximati
on) [glmerMod]
Family: gaussian (log)
Formula: Predators.log \sim log(CoastDev50km) + I(SSTmin.s^2) + Rugosity.s +
    Coral.s + Gorgonian.s + scale(Invert.log) + scale(Herbivore.log) +
    scale(Omniv.log) + scale(Planktivore.log) + (1 | Year/Region/Site.Code) +
    Protection.Level
    Data: fishcoral
                     logLik deviance df.resid
     AIC
               BIC
   462.3
            525.1
                     -215.2
                                430.3
                                            358
Scaled residuals:
Min 10 Median
-2.7773 -0.5935 -0.0186
                          3Q
0.5598
                                      Мах
                                   4.0192
Random effects:
 Groups
                          Name
                                       Variance
                                                  Std.Dev.
 Site.Code:(Region:Year) (Intercept) 4.769e-03 0.0690604
                           (Intercept) 8.772e-07 0.0009366
 Region:Year
                           (Intercept) 7.373e-04 0.0271531
 Year
                                       1.757e-01 0.4191577
 Residual
Number of obs: 374, groups: Site.Code:(Region:Year), 62; Region:Year, 14; Yea
r. 3
Fixed effects:
                         Estimate Std. Error t value Pr(>|z|)
                                                                 ***
                         0.847396
-0.073770
(Intercept)
                                     0.040077
                                                21.144
                                                        < 2e-16
CoastDev50km.s
                                                                 ***
                                     0.019775
                                                -3.730 0.000191
                                                 1.589 0.112022
                         0.019078
                                     0.012005
I(SSTmin.s^2)
                         0.047850
                                                 2.925 0.003448
                                                                 **
Rugosity.s
                                     0.016361
Coral.s
                        -0.026879
                                     0.012604
                                                -2.133 0.032963
                                                                 *
                        -0.024912
Gorgonian.s
                                     0.012930
                                                -1.927 0.054013
                                                                 ***
scale(Invert.log)
                         0.039759
                                     0.010812
                                                 3.677 0.000236
                         0.021963
scale(Herbivore.log)
                                     0.011721
                                                 1.874 0.060962
                                                                 **
                         0.033216
                                     0.010522
                                                 3.157 0.001595
scale(Omniv.log)
scale(Planktivore.log)
                         0.011406
                                     0.011098
                                                 1.028 0.304087
                                                -3.052 0.002275
                                                                 **
Protection.LevelMPA
                         -0.163262
                                     0.053497
                         0.004572
                                     0.042879
                                                 0.107 0.915090
Protection.LevelNTZ
Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

#Calculate prediction when coastal development is zero and all sites are NTZ

prediction <- predict(modelPR.final, newdata = data.frame( LightInt50km.s = 0\*fishcoral\$LightInt50km.s, SSTmin.s= fishcoral\$SSTmin.s, Rugosity.s = fishcoral\$Rugosity.s, Coral.s= fishcoral\$Coral.s, Gorgonian.s= fishcoral\$Gorgonian.s, Invert.log = fishcoral\$Gorgonian.s, Invert.log = fishcoral\$Invert.log, Herbivore.log = fishcoral\$Herbivore.log, Omniv.log= fishcoral\$Planktivore.log, Planktivore.log = fishcoral\$Planktivore.log, Protection.Level = recode(fishcoral\$Protection.Level,"'none'='NTZ';'MPA'='NTZ'''), Site.Code = fishcoral\$Site.Code, Region= fishcoral\$Region, Year = fishcoral\$Pear), type ="response", se.fit=TRUE, na.action = na.omit)

#Convert predicted values to biomass values since predator biomass was log10(x+1) transformed

fishcoral\$Predicted.predators=(10^(prediction)-1)

**Appendix G Figure G1** Plots of residuals vs. fitted values (left panels) and normal scores of standardized residual deviance (right panels) for the final models (Set A and B) of total predator biomass. The plots for apex predators and piscivore-invertivores are not shown because the patterns are similar to total predators. See Table 1 for model details.



**Appendix G Figure G2** Plots of the spline correlogram function against distance. The spline correlogram is based on the residuals of the final models for total predators in all sites (a) and for two selected models within marine reserves (b and c). See Table 1 for models. The plots for apex predators and piscivore-invertivores show similar patterns and are not shown. A 95% pointwise confidence envelope is superimposed.



**Appendix H: Figure H1** Boxplot of total fish (a) and predator biomass (b) by country and protection level. White boxes are non-reserve whereas grey boxes are reserves. Black points represent the pooled means by site and year of survey for each country. Dry Tortugas is excluded because does not have a non-reserve site.



**Appendix H: Figure H2** Scatterplots of the mean proportion of trophic guilds per site and survey year. Red line is the best fit from a linear model. Note that higher total fish biomass is driven by higher proportion of apex predators and piscivore-invertivores, while lower total fish biomass is comprise mostly (> 0.55) of herbivores.



**Appendix H: Figure H3** Scatterplots of the mean biomass of predators (apex predator + piscivores-invertivore) and lower trophic guilds across sites. The Spearman's rank correlation coefficient (rho) and the significance probability (p) are shown. Red lines are loess smoothing curve with a span width of 3 in each panel to aid visual interpretation. Axes are in log scale.



## Appendix I Detailed description of reef fish biomass variability

The combined average of total fish biomass in the marine reserves of Abaco, Cuba and Mexico  $(337 \pm 25 \text{ g m}^{-2})$  was 1.6 times higher than in the unprotected reefs of these sub-regions  $(215 \pm 20 \text{ g m}^{-2}, p<0.001)$ . Similarly, the combined predator biomass in reserves of Abaco, Cuba and Mexico  $(154 \pm 22 \text{ g m}^{-2})$  was 2.4 times greater than the combined value of their unprotected sites  $(65 \pm 10 \text{ g m}^{-2}, p<0.001)$ . We found no significant difference in the combined total fish or predator biomass inside and outside marine reserves of Abaco (p = 0.44, p = 0.68, respectively), or in Belize (p = 0.78, p = 0.94, respectively). However, reef sites inside the marine reserves of Hol Chan (HC) and Half Moon Caye (HM) had the highest fish and predator biomass within Belize (Fig. 2). Yet the highest total fish biomass found in Belize at HM ( $212 \pm 14 \text{ g m}^{-2}$ ) was comparable with the combined total fish biomass for Belize ( $118 \pm 8 \text{ g m}^{-2}$ ) was 1.8 times lower than in the unprotected sites of Abaco, Cuba and Mexico (p<0.01, Fig. 2, Fig. H1). Finally, most sites in the marine reserves of Abaco, Cuba and Mexico had average total fish biomass >100 g m^{-2} (Fig. 2, Fig. H2).

The proportion trend of trophic groups within the fish assemblages varied across reef sites (Fig. 2, Fig. H2). The proportion of apex predators and piscivore-invertivores increased with increased total fish biomass from 0% to ~22% ( $r_s = 0.67$ , p < 0.001) and from ~15% to ~35% ( $r_s = 0.58$ , p < 0.001), respectively (Fig. H2). In combination, the proportion of predators increased from ~13% to ~55% ( $r_s = 0.76$ , p < 0.001) with increased total fish biomass. Invertivores, planktivores and omnivores did not follow a clear pattern with increased total fish biomass, the proportional trend of herbivores decreased from ~55% to ~20% ( $r_s = -0.58$ , p < 0.001) with increased total fish biomass (Fig. H2).

The biomass of invertivores, omnivores, planktivores, and herbivores were slightly but significantly and positively correlated with total predator biomass (Fig. H3). This relationship was relatively stronger and less variable for invertivores and herbivores ( $r_s = 0.35$ , p = 0.000), but weaker and more variable for planktivores and herbivores ( $r_s = 0.20$ -0.23, p~0.000) (Fig. H3).

**Appendix J** Relationship between reef structural complexity and fish trophic guilds. Red lines are loess smoothing curve with a span width of 3 in each panel to aid visual interpretation. Y axis is in log scale. Reef complexity is described in Appendix D.



**Appendix K** Detailed discussion of the relationships between predatory fish biomass and cofactors and their potential underlying mechanisms

Ocean productivity had a small positive effect on apex predator biomass. Large predators have been related with quantity and quality of primary production in terrestrial ecosystems (e.g., Serengeti in Africa, Hopcraft et al. 2010). In marine ecosystems, the positive indirect effect of ocean productivity on teleost biomass has been tested theoretically (Jennings et al. 2008) and empirically (Chassot et al. 2010) at global scales, and is probably driven by bottom-up increases of prey populations (Frank et al. 2007). The observed weak connection of apex predators with ocean productivity may not be through increasing reef fish prey, as they did not respond to primary productivity (Fig. 3). Instead, mobile apex predators, such as reef sharks and jacks, may also be feeding upon prey directly linked with ocean productivity via plankton in adjacent oceanic waters (McCauley et al. 2012).

Reef complexity was one of the most important predictors of fish predator biomass. This variable has a strong positive influence on the relative abundance, species richness, and local distribution of small and medium-sized fishes (e.g., 10-30 cm TL) (Wilson et al. 2007, Graham and Nash 2013). As reef complexity increases, refuges become more available to avoid predation and competition (Hixon and Beets 1993). In contrast, less clear is the relationship between landscape reef complexity and the density of large-bodied reef fish (Richards et al. 2012) or reef sharks (Nadon et al. 2012). Large transient predators that actively chase their prey may avoid highly complex environments that reduce hunting efficiency (Hixon and Beets 1993). Conversely, sites with higher structural complexity may attract relative large resident and transient predators that take advantage of greater prey availability (McCauley et al. 2012). Reef tridimensional structure complexity is nonetheless crucial to enhance predatory fish biomass and may be further compromised by the Caribbean-wide reduction of architectural complexity (Alvarez-Filip et al. 2009).

Several physical and biotic cofactors, such as "ocean temperature", "coral cover", "gorgonian abundance", and herbivore and planktivore biomass did not have a significant effect on predator biomass; however, they improved model fit and may be important to support predator biomass within regions. Ocean temperature, for example, showed a weak "unimodal" response on the biomass of piscivore-invertivores. Non-linear relationship between the diversity

of pelagic fish predators and temperature has been observed at a global scale (Worm et al. 2005). However, a clear response to temperature by an entire trophic level may be difficult to detect as the response to temperature gradients is species-specific through physiological constraints that affect individual biomass (Jennings et al. 2008, Munday et al. 2008).

Mangrove was a predictor of apex predator biomass, but unexpectedly not of piscivoreinvertivores. Reefs associated with mangrove habitats have been reported to support more species, and higher density and biomass of reef fishes, including greater prey biomass for piscivore predators (Nagelkerken et al. 2002, Mumby et al. 2004). Mangroves also provide protection and high-quality nursery grounds for juveniles of top predator teleosts (e.g., *Sphyraena barracuda*, Nagelkerken et al. 2002) and sharks (e.g., *Negaprion brevirostris*, Chapman et al. 2009) that later may migrate as adults to adjacent reef habitats (Mumby et al. 2004). Piscivore-invertivores in our study included several species with strong mangrove association (e.g., most *Lutjanus* spp., see Mumby *et al.* 2004), but other species with a weak connection with mangroves (e.g., *Lutjanus mahogoni*, see Nagelkerken *et al.* 2002) may dilute the average response of the trophic guild. Further research will be needed to identify those species with tight connections with mangrove across our sites, but such endeavor was not objective in this paper.

Lower trophic levels were good predictors of total predator biomass, especially for piscivore-invertivores (Table 1, Fig. 3). We found no evidence of top-down regulation at a regional scale. In fact, the higher the biomass of lower trophic levels, the greater the biomass of predators tended to be. Predator dependence on prey, for example, is common within large reserves of terrestrial savannas and woodland ecosystems (Jhala et al. 2008, Sinclair et al. 2010). Positive associations among reef fish trophic guilds also increase as fishing pressure decreases with protection (Newman et al. 2006, Babcock et al. 2010). Since reef predators are often generalists with opportunistic feeding habits, preying upon several trophic levels including their own, predation pressure may be distributed across levels (Russ and Alcala 2003). Alternatively, subsistence fishing in the Caribbean has simultaneously targeted and depleted all trophic levels potentially overriding predator-prey interactions at regional scale (Hawkins and Roberts 2004, Paddack et al. 2009).

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**Appendix L** Estimates of current and potential average biomass (± standard error, se) of predatory reef fishes in the absence of humans (i.e. coastal development) while categorizing every site as a no-take zone (i.e. no fishing). The potential percent lost is shown. Sites with exceptionally high predicted predator biomass are highlighted. Site order follows Fig. 5. For site codes refer to Appendix A.

	Protection	Current	biomass	Predicted	biomass	
Sites	level	mean	se	mean	se	% lost
EB	None	3.5	1.3	81.8	8.7	95.8
NI	MPA	9.5	3.0	205.2	26.8	95.4
XA	None	9.1	4.7	147.0	16.4	93.8
SM	MPA	23.2	16.0	185.7	21.6	87.5
SW	MPA	8.5	2.0	194.0	14.1	95.6
CA	None	16.4	7.9	145.0	20.0	88.7
MR	None	10.7	4.1	119.7	10.1	91.1
BC	NTZ	10.1	3.0	124.7	5.7	91.9
MC	MPA	15.0	5.2	177.3	17.4	91.5
GH	None	14.4	2.9	229.2	33.3	93.7
RA	None	27.8	8.1	196.9	22.9	85.9
AL	None	15.9	2.9	199.1	21.8	92.0
ST	None	16.6	2.8	201.1	17.9	91.7
GA	None	32.8	11.4	287.7	37.1	88.6
HC	NTZ	85.4	67.7	222.5	53.8	61.6
PC	NTZ	88.2	38.4	502.0	76.9	82.4
TO	None	19.8	3.6	199.6	20.8	90.1
CP	None	28.3	7.3	214.9	20.9	86.8
PO	None	41.9	12.7	238.0	30.3	82.4
BCS	MPA	50.9	28.4	299.2	25.0	83.0
ΡZ	None	35.3	10.8	290.9	41.0	87.9
TB	None	71.9	39.5	295.1	86.6	75.6
MW	None	34.2	8.7	310.3	28.2	89.0
FC	NTZ	125.9	57.2	736.0	182.3	82.9
HM	NTZ	89.7	41.8	408.2	63.0	78.0
PB	NTZ	59.2	18.3	667.3	131.8	91.1
BR	None	67.2	28.4	480.4	38.1	86.0
LH	None	63.2	10.5	520.8	51.2	87.9
GC	None	47.7	7.7	471.3	58.9	89.9
CR	NTZ	83.0	35.8	<b>890.9</b>	116.8	<b>90.7</b>
BA	None	72.3	21.7	826.7	150.1	91.3
LG	NTZ	129.0	52.2	273.6	35.3	52.8
AN	NTZ	90.8	16.2	273.1	49.6	66.7
BCN	MPA	109.3	16.3	1067.4	169.3	<b>89.8</b>
RP	None	268.6	73.4	1157.8	200.8	<b>76.8</b>
EP	NTZ	263.6	77.5	505.8	103.2	47.9
BCC	MPA	174.1	35.4	1562.0	308.5	<b>88.9</b>
PP	NTZ	244.5	58.3	402.2	60.7	39.2
CF	NTZ	441.0	139.4	474.3	92.1	7.0