

Table S1. Fish groups used to categorize the carcasses reported to the FWC Fish Kill Hotline, as well as those enumerated during float-by and quadrat surveys.

Fish group	Fish category	Family common	Family scientific	Habitat
Baitfish	Anchovy	Anchovy	Engraulidae	Coastal
Baitfish	Baitfish	Baitfish	Baitfish	Coastal
Baitfish	Ballyhoo	Halfbeak	Hemiramphidae	Coastal
Birds & terrestrial	Bird	Bird	Bird	Bird
Birds & terrestrial	Pelican	Bird	Bird	Bird
Birds & terrestrial	Terrestrial Org	Terrestrial org	Unknown	Terrestrial org
Boxfish	Boxfish	Boxfish	Ostraciidae	Demersal
Burrfish & pufferfish	Burrfish	Porcupinefish	Diodontidae	Demersal
Burrfish & pufferfish	Puffer	Pufferfish	Tetraodontidae	Demersal
Catfish	Catfish	Catfish	Ariidae	Demersal
Coastal fish	Amberjack	Amberjack	Seriola	Coastal
Coastal fish	Atlantic Spadefish	Spadefish	Ephippidae	Coastal
Coastal fish	Barracuda	Barracuda	Sphyraenidae	Coastal
Coastal fish	Blue Runner	Jack	Carangidae	Coastal
Coastal fish	Bluefish	Bluefish	Pomatomidae	Coastal
Coastal fish	Bonefish	Bonefish	Albulidae	Coastal
Coastal fish	Bonitos	Mackerel, Tuna, Bonito	Scombridae	Coastal
Coastal fish	Cobia	Cobia	Rachycentridae	Coastal
Coastal fish	Damselfish	Damselfish Clownfish	Pomacentridae	Coastal
Coastal fish	Filefish	Filefish	Monacanthidae	Coastal
Coastal fish	Flying Fish	Flying fish	Exocoetidae	Coastal
Coastal fish	Greenback Horse Mackerel	Jack	Carangidae	Coastal
Coastal fish	Gulf Kingfish	Mackerel Tuna Bonito	Scombridae	Coastal
Coastal fish	Hogfish	Wrass	Labridae	Coastal
Coastal fish	Irish Pompano	Mojarra	Gerreidae	Coastal
Coastal fish	Jack Crevalle	Jack	Carangidae	Coastal
Coastal fish	Ladyfish	Ladyfish	Elopidae	Coastal
Coastal fish	Lookdown	Jack	Carangidae	Coastal
Coastal fish	Mackerel	Mackerel Tuna Bonito	Scombridae	Coastal
Coastal fish	Mahi Mahi	Dolphinfish	Coryphaenidae	Coastal
Coastal fish	Mojarra	Mojarra	Gerreidae	Coastal
Coastal fish	Needlefish	Needlefish	Belonidae	Coastal
Coastal fish	Parrotfish	Wrass	Labridae	Coastal
Coastal fish	Permit	Jack	Carangidae	Coastal
Coastal fish	Pilotfish	Jack	Carangidae	Coastal
Coastal fish	Pompano	Jack	Carangidae	Coastal
Coastal fish	Remora	Remora	Echeneidae	Coastal

Coastal fish	Shark	Shark	Elasmobranchii	Coastal
Coastal fish	Squirrelfish	Squirrelfish	Holocentridae	Coastal
Coastal fish	Tarpon	Tarpon	Megalopidae	Coastal
Coastal fish	Triggerfish	Triggerfish	Balistidae	Coastal
Coastal fish	Tripletail	Tripletail	Lobotidae	Coastal
Coastal fish	Tuna	Mackerel Tuna Bonito	Scombridae	Coastal
Coastal fish	Wahoo	Mackerel Tuna Bonito	Scombridae	Coastal
Demersal fish	Barbfish	Scorpionfish	Scorpaenidae	Demersal
Demersal fish	Batfish	Batfish	Ogcocephalidae	Demersal
Demersal fish	Lionfish	Scorpionfish	Scorpaenidae	Coastal
Demersal fish	Lizardfish	Lizardfish	Synodontidae	Demersal
Demersal fish	Rockfish	Scorpionfish	Scorpaenidae	Demersal
Demersal fish	Scorpionfish	Scorpionfish	Scorpaenidae	Demersal
Demersal fish	Seahorse	Seahorse	Syngnathidae	Demersal
Demersal fish	Searobin	Searobin	Triglidae	Demersal
Drum	Croaker	Drum	Sciaenidae	Coastal
Drum	Drum	Drum	Sciaenidae	Coastal
Drum	Drum Black	Drum	Sciaenidae	Coastal
Drum	Drum Red	Drum	Sciaenidae	Coastal
Drum	Perch	Drum	Sciaenidae	Coastal
Drum	Sand Seatrout	Drum	Sciaenidae	Coastal
Drum	Spot	Drum	Sciaenidae	Coastal
Drum	Spotted Seatrout	Drum	Sciaenidae	Coastal
Drum	Trout	Drum	Sciaenidae	Coastal
Eel	Eel	Eel	Anguillidae	Demersal
Flounder	Flounder	Flounder	Paralichthyidae	Demersal
FW organism	Alligator	Crocodylian	Alligatoridae	Freshwater
FW organism	Bass	Sunfish	Centrarchidae	Freshwater
FW organism	Carp	Unknown	Unknown	Unknown
FW organism	Cichlid	Cichlids	Cichlidae	Freshwater
FW organism	Fw Fish	FW fish	Unknown	Freshwater
FW organism	Gar	Gar	Lepisosteidae	Freshwater
FW organism	Largemouth Bass	Sunfish	Centrarchidae	Freshwater
FW organism	Minnnow	Minnnow	Cyprinidae	Freshwater
FW organism	Snakehead	Snakehead	Channidae	Freshwater
FW organism	Sunfish	Sunfish	Centrarchidae	Freshwater
FW organism	Tilapia	Cichlids	Cichlidae	Brakish
Grouper	Grouper	Sea basses	Serranidae	Coastal
Grouper	Grouper Goliath	Sea basses	Serranidae	Coastal
Grunt	Grunt	Grunt	Haemulidae	Coastal
Invertebrate	Crab	Crustacean	Crustacea	Demersal
Invertebrate	Horseshoe Crab	Crustacean	Crustacea	Demersal
Invertebrate	Invertebrate	Invertebrate	Invertebrate	Demersal
Invertebrate	Jellyfish	Jellyfish	Scyphozoa	Coastal
Invertebrate	Mollusk	Mollusk	Mollusca	Coastal
Invertebrate	Shrimp	Crustacean	Crustacea	Demersal
Marine mammal	Dolphin	Dolphin	Delphinidae	Coastal

Marine mammal	Manatee	Manatee	Trichechidae	Coastal
Mullet	Mullet	Mullet	Mugilidae	Coastal
Porgies	Bream	Porgies	Sparidae	Coastal
Porgies	Pinfish	Porgies	Sparidae	Coastal
Porgies	Porgy	Porgies	Sparidae	Coastal
Porgies	Sheepshead	Porgies	Sparidae	Coastal
Rays	Ray	Stingray	Dasyatidae	Demersal
Sea Turtle	Sea Turtle	Sea Turtle	Cheloniidae	Coastal
Shad & sardines	Herring	Shad Sardines	Clupeidae	Coastal
Shad & sardines	Menhaden	Shad Sardines	Clupeidae	Coastal
Shad & sardines	Shad Sardines	Shad Sardines	Clupeidae	Coastal
Snapper	Snapper	Snapper	Lutjanidae	Coastal
Snook	Snook	Snook	Centropomidae	Coastal
Toadfish	Toadfish	Toadfish	Batrachoididae	Demersal
Unknown	Unknown	Unknown	Unknown	Unknown

Table S2. Description of the 7 quadrat surveys and 25 float-by surveys conducted in Tampa Bay by the authors. Lat: latitude; Long: longitude.

Survey ID	Site ID	Site description	Lat	Long	Date	Time	Quadrat count	Total carcass count
Quadrat surveys								
1	a	Boat dock with rock seawall	27.69577	-82.7323	7/13/2021	5:30 PM	4	32
2	a	Boat dock with rock seawall	27.69577	-82.7323	7/14/2021	8:00 AM	4	28
3	c	Intertidal sand beach	27.68377	-82.7361	7/14/2021	9:00 AM	4	150
4	c	Intertidal sand beach	27.68377	-82.7361	7/16/2021	8:00 AM	4	68
5	b	Sand beach	27.65324	-82.6758	7/13/2021	4:04 PM	3	147
6	b	Sand beach	27.65324	-82.6758	7/14/2021	11:00 AM	4	16
7	b	Sand beach	27.65324	-82.6758	7/15/2021	4:30 PM	4	12
Float-by surveys								
1	a	Boat dock with rock seawall	27.69577	-82.7323	7/14/2021	7:30 AM	na	10
2	a	Boat dock with rock seawall	27.69577	-82.7323	7/14/2021	8:40 AM	na	100
3	a	Boat dock with rock seawall	27.69577	-82.7323	7/14/2021	7:05 PM	na	100
4	a	Boat dock with rock seawall	27.69577	-82.7323	7/15/2021	6:52 AM	na	100
5	a	Boat dock with rock seawall	27.69577	-82.7323	7/15/2021	7:07 PM	na	100
6	a	Boat dock with rock seawall	27.69577	-82.7323	7/15/2021	10:36 PM	na	71
7	a	Boat dock with rock seawall	27.69577	-82.7323	7/16/2021	6:50 AM	na	100
8	a	Boat dock with rock seawall	27.69577	-82.7323	7/16/2021	7:06 PM	na	3
9	a	Boat dock with rock seawall	27.69577	-82.7323	7/17/2021	6:57 AM	na	56
10	a	Boat dock with rock seawall	27.69577	-82.7323	7/17/2021	7:33 AM	na	100
11	a	Boat dock with rock seawall	27.69577	-82.7323	7/17/2021	7:24 PM	na	4
18	a	Boat dock with rock seawall	27.69577	-82.7323	7/18/2021	6:57 AM	na	56
12	c	Intertidal sand beach	27.68377	-82.7361	7/16/2021	8:06 AM	na	99
13	c	Intertidal sand beach	27.68377	-82.7361	7/17/2021	9:06 AM	na	22
14	d	Boat marina	27.69692	-82.7353	7/15/2021	7:34 PM	na	64
15	d	Boat marina	27.69692	-82.7353	7/16/2021	7:29 AM	na	100
16	d	Boat marina	27.69692	-82.7353	7/16/2021	8:22 PM	na	12
17	d	Boat marina	27.69692	-82.7353	7/17/2021	8:39 AM	na	63
19	a	Boat dock with rock seawall	27.69577	-82.7323	7/29/2021	7:38 AM	na	100
20	a	Boat dock with rock seawall	27.69577	-82.7323	7/24/2021	6:10 PM	na	100

21	a	Boat dock with rock seawall	27.69577	-82.7323	7/25/2021	7:53 PM	na	9
22	a	Boat dock with rock seawall	27.69577	-82.7323	7/25/2021	8:41 AM	na	100
23	a	Boat dock with rock seawall	27.69577	-82.7323	7/26/2021	6:30 PM	na	2
24	a	Boat dock with rock seawall	27.69577	-82.7323	7/27/2021	7:23 PM	na	0
25	a	Boat dock with rock seawall	27.69577	-82.7323	7/27/2021	8:00 AM	na	98

Table S3. Total Fish Kill Hotline reports from 2010-2022, grouped by waterbody group and fish group, habitat, and bloom season. Total report values represent presence/absence values, not count data. Red tide-related manatee mortalities are grouped by waterbody group and cause of mortality.

	Waterbody group					Overall	
	Charlotte Harbor	Everglades W Coast	Sarasota Bay	Springs Coast	Tampa Bay		
Report count (n)	929	265	1360	1534	1002	5090	
Season (month)							
Spring (03-05)	54	58	172	147	68	499	9.8%
Summer (06-08)	307	52	548	716	672	2295	45.1%
Fall (09-11)	324	57	361	501	127	1370	26.9%
Winter (12-02)	244	98	279	170	135	926	18.2%
Fish categories reported (n)	1655	455	2277	2556	1879	8832	
Fish Group							
Baitfish	57	5	38	52	37	189	2.1%
Boxfish	3	0	3	11	1	18	0.2%
Burrfish & pufferfish	44	14	47	47	16	168	1.9%
Catfish	104	47	142	127	169	589	6.7%
Coastal fish (<10)	120	43	167	274	153	757	8.6%
Demersal fish (<10)	6	2	8	6	3	25	0.3%
Drum	115	37	104	125	180	561	6.4%
Eel	38	4	61	59	32	194	2.2%
Flounder	13	0	13	9	16	51	0.6%
FW organism	23	5	53	40	29	150	1.7%
Grouper	65	21	52	68	44	250	2.8%
Grunt	28	7	43	111	40	229	2.6%
Invertebrate	76	18	68	78	72	312	3.5%
Marine mammal	26	7	15	11	18	77	0.9%
Mullet	156	49	240	164	157	766	8.7%
Other	14	3	16	16	19	68	0.8%
Porgies	95	13	114	152	132	506	5.7%
Rays	13	8	21	92	59	193	2.2%
Sea Turtle	17	2	9	8	7	43	0.5%
Shad & sardines	11	1	14	10	10	46	0.5%
Snapper	29	11	30	27	25	122	1.4%
Snook	81	15	105	93	110	404	4.6%
Toadfish	3	0	2	3	2	10	0.1%
Unknown	528	143	912	973	548	3104	35.1%

Habitat							
Bird	11	1	15	15	17	59	0.7%
Brackish	6	0	13	14	15	48	0.5%
Coastal	806	214	947	1115	916	3998	45.3%
Demersal	294	90	349	412	367	1512	17.1%
Freshwater	17	5	35	24	14	95	1.1%
Terrestrial org	3	2	1	1	2	9	0.1%
Unknown	528	143	917	975	548	3111	35.2%
Red tide-related manatee mortalities	Charlotte Harbor	Everglades W Coast	Sarasota Bay	Springs Coast	Tampa Bay	Overall	
Cause							
Bloom present	98	40	22	0	0	160	22.1%
Red tide positive	227	92	87	32	13	451	62.4%
Red tide suspected	45	25	23	6	13	112	15.5%
Total count	370	157	132	38	26	723	

Table S4. Total dead fish enumerated through 25 float-by and 7 quadrat surveys (27 quadrats total) conducted during a coastal fish kill event in Tampa Bay, FL in July 2021 compared to dead fish categories mentioned in reports (presence/absence data) to the Fish Kill Hotline in Tampa Bay in July 2021.

	Float-by surveys		Quadrat surveys		Fish Kill Hotline reports Tampa Bay July 2021	
	Count	%	Count	%	Reports	%
Fish group						
Boxfish	11	0.7%	5	1.1%	0	0.0%
Toadfish	77	4.9%	12	2.6%	0	0.0%
Demersal fish	0	0.0%	4	0.9%	1	0.2%
Sea Turtle	0	0.0%	0	0.0%	2	0.3%
Flounder	9	0.6%	0	0.0%	3	0.5%
Shad & sardines	8	0.5%	2	0.4%	3	0.5%
Birds & terrestrial	0	0.0%	0	0.0%	5	0.8%
FW organism	0	0.0%	0	0.0%	6	0.9%
Marine mammal	0	0.0%	0	0.0%	6	0.9%
Snapper	28	1.8%	0	0.0%	6	0.9%
Burrfish & pufferfish	22	1.4%	10	2.2%	9	1.4%
Baitfish	0	0.0%	0	0.0%	12	1.8%
Grunt	0	0.0%	1	0.2%	15	2.3%
Invertebrate	8	0.5%	0	0.0%	15	2.3%
Eel	121	7.7%	34	7.5%	19	2.9%
Grouper	1	0.1%	1	0.2%	20	3.1%
Rays	0	0.0%	0	0.0%	27	4.1%
Snook	0	0.0%	0	0.0%	38	5.8%
Coastal fish	8	0.5%	1	0.2%	39	6.0%
Porgies	1205	76.8%	370	81.7%	44	6.7%
Mullet	13	0.8%	6	1.3%	47	7.2%
Drum	15	1.0%	1	0.2%	56	8.5%
Catfish	33	2.1%	0	0.0%	64	9.8%
Unknown	10	0.6%	6	1.3%	218	33.3%
Habitat						
Bird	0	0.0%	0	0.0%	3	0.5%
Brackish	0	0.0%	0	0.0%	2	0.3%
Coastal	1278	81.5%	382	84.3%	289	44.1%
Demersal	281	17.9%	65	14.3%	137	20.9%
Freshwater	0	0.0%	0	0.0%	4	0.6%
Terrestrial	0	0.0%	0	0.0%	2	0.3%
Unknown	10	0.6%	6	1.3%	218	33.3%
Total count	1569		453		655	