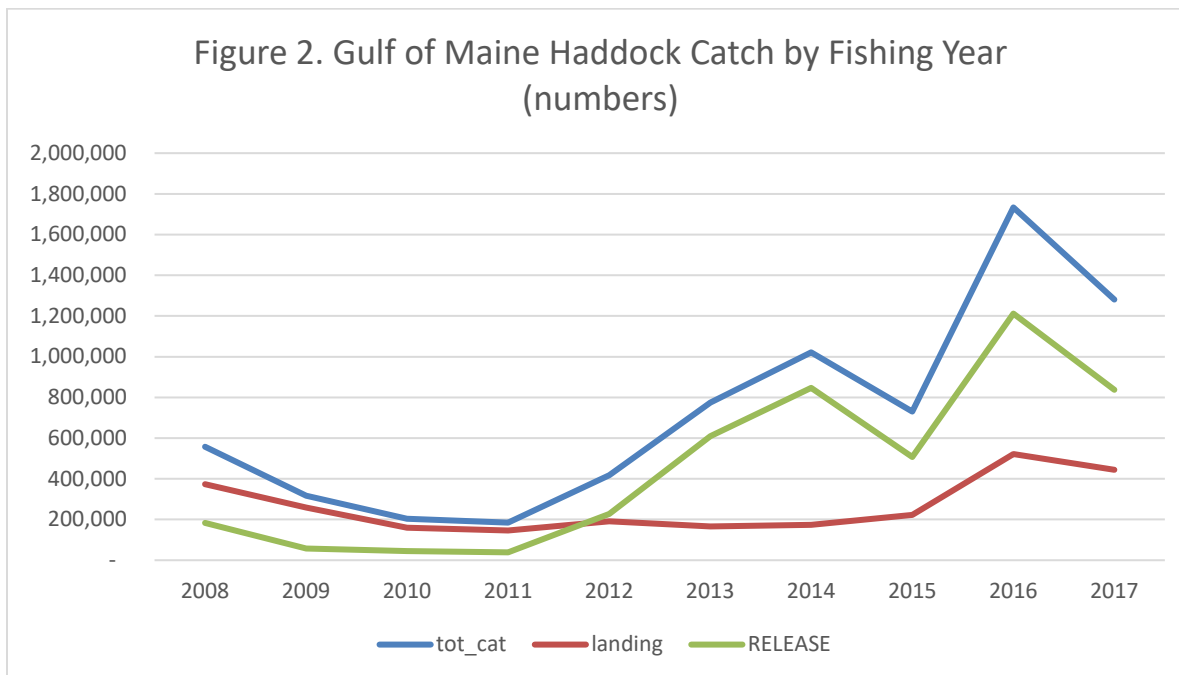
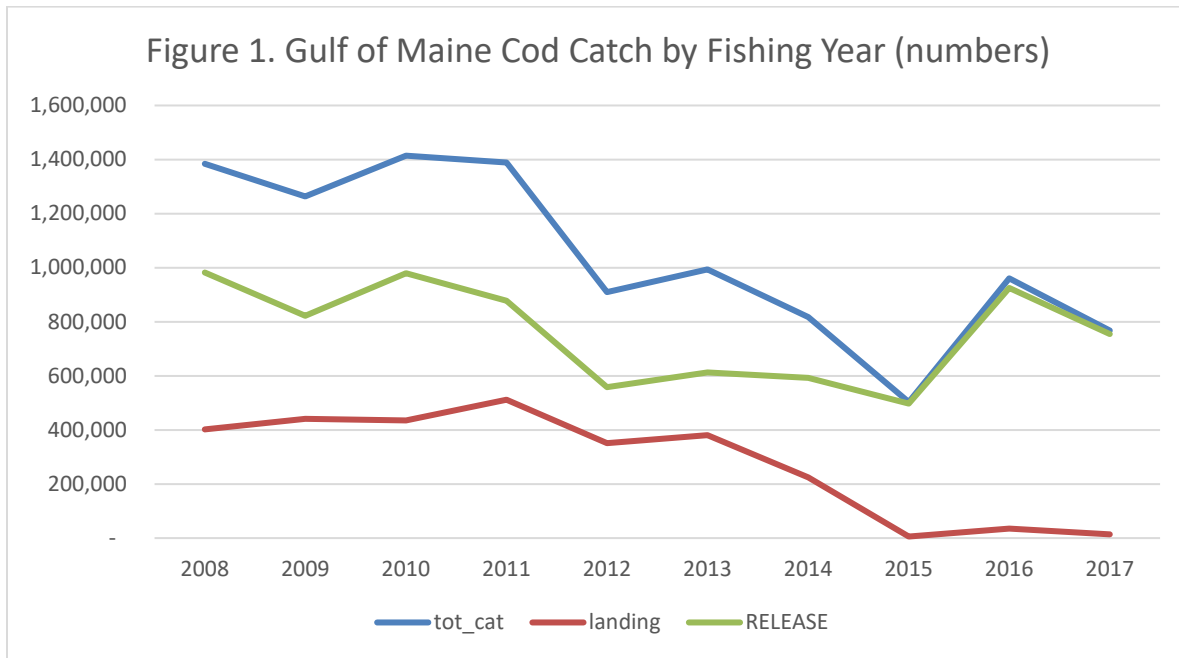
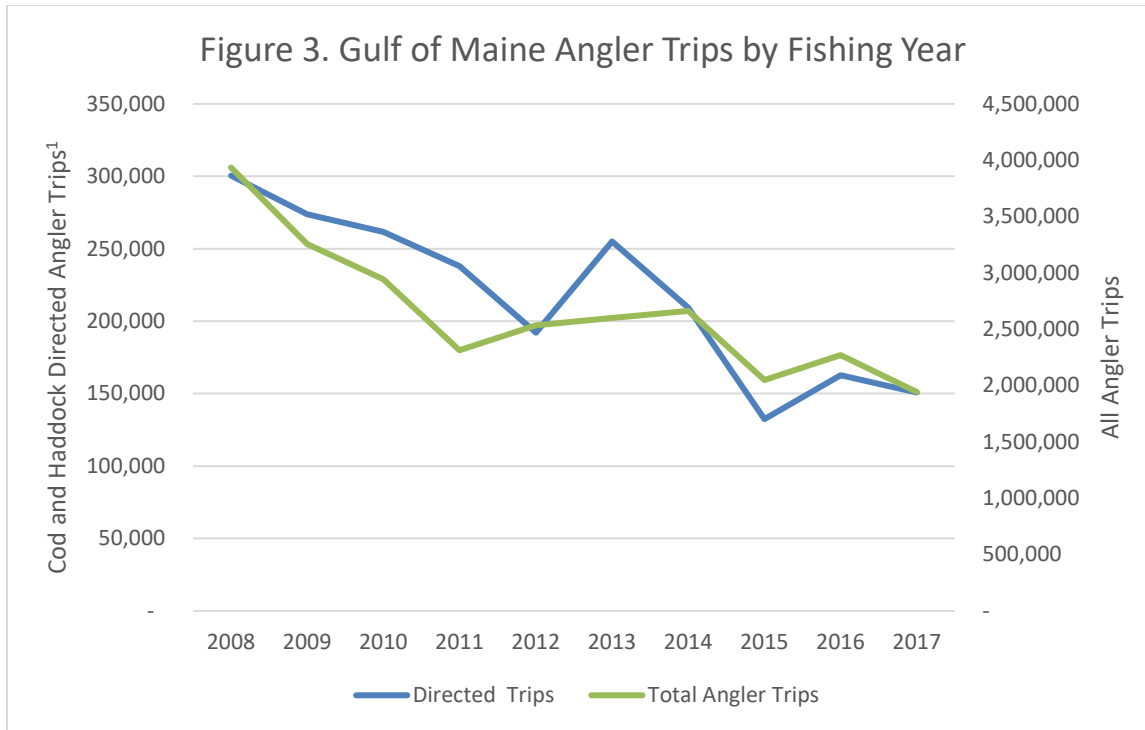


Gulf of Maine Cod and Haddock





¹Angler trips that targeted and/or caught cod or haddock.

Table 1. Gulf of Maine Recreational Catch Estimates¹

	FY2016 (PSE)	FY2017 ² (PSE)
Cod/Haddock Angler Trips ³	162,596 (12.1)	150,799 (13.1)
Cod Catch (numbers, a+b1+b2)	960,353 (15.7)	768,134 (22.9)
Cod Kept/Released Dead (numbers, a+b1)	34,995 (23.6)	13,513 (29.1)
Cod Released Alive (numbers, b2)	925,357 (15.8)	754,621 (23.2)
Cod Removals (numbers, a+b1+(b2*0.15))	173,799	126,706
Cod Removals (weight ⁴ , mt)	286	244
Cod Avg. Catch Per Trip (numbers)	5.9	5.1
Cod Avg. Weight of Caught Fish (lbs)	3.2	4.1
Haddock Catch (numbers, a+b1+b2)	1,733,327 (20.2)	1,281,109 (19.7)
Haddock Kept/Released Dead (numbers, a+b1)	521,621 (23.6)	443,537 (22.2)
Haddock Released Alive (numbers, b2)	1,211,706 (20.7)	837,572 (20.9)
Haddock Removals (numbers, a+b1+(b2*season/size release mortality))	1,190,253	899,309
Haddock Removals (weight ⁴ , mt)	1,031	740
Haddock Avg. Catch Per Trip (numbers)	10.7	8.5
Haddock Avg. Weight of Caught Fish (lbs)	1.7	1.3

¹Source: Available MRIP data as of Dec. 26, 2017

²Wave 6, 2016 and wave 2, 2017 used as proxies for those waves in FY2017.

³Angler trips = number of trips that targeted and/or caught cod or haddock

⁴All weights are based on round weights calculated from MRIP length frequencies and length to weight equations used in the assessments.

Table 2. Gulf of Maine Angler Trips by Mode

	FY2016				FY2017			
	Cod & Haddock Angler Trips ¹		All Angler Trips ²		Cod & Haddock Angler Trips ¹		All Angler Trips ²	
		(PSE)		(PSE)		(PSE)		(PSE)
Head	31,356	(17.2)	49,665	(9.5)	27,510	(21.8)	50,583	(14.6)
Charter	12,380	(14.2)	46,395	(10.4)	15,529	(20.8)	78,871	(12.9)
Private	118,631	(15.8)	1,341,314	(8.0)	107,761	(17.3)	1,144,513	(6.9)
Shore	229	(100.0)	832,339	(16.4)	-		669,190	(14.1)
	162,596	(12.1)	2,269,713	(7.7)	150,799	(13.1)	1,943,156	(6.4)

¹Number of angler trips that targeted and/or caught cod or haddock

²All angler trips in the Gulf of Maine

Table 3. Gulf of Maine Cod Recreational Catch Estimates by Mode

	FY2016	(PSE)	FY2017	(PSE)
Head				
Cod Catch (numbers, a+b1+b2)	140,084	(21.8)	44,124	(17.4)
Cod Kept/Released Dead (numbers, a+b1)	4,740	(39.5)	794	(42.7)
Cod Released Alive (numbers, b2)	135,344	(22.2)	43,330	(17.7)
Cod Removals (numbers, a+b1+(b2*0.15))	25,042		7,294	
Cod Avg. Catch Per Angler Trip (numbers) ¹	4.5		1.6	
Charter				
Cod Catch (numbers, a+b1+b2)	134,905	(25.7)	91,950	(31.3)
Cod Kept/Released Dead (numbers, a+b1)	4,783	(17.8)	363	(100.0)
Cod Released Alive (numbers, b2)	130,122	(26.4)	91,587	(31.4)
Cod Removals (numbers, a+b1+(b2*0.15))	24,301		14,101	
Cod Avg. Catch Per Angler Trip (numbers) ¹	10.9		5.9	
Private				
Cod Catch (numbers, a+b1+b2)	685,364	(20.9)	632,061	(27.5)
Cod Kept/Released Dead (numbers, a+b1)	25,473	(31.5)	12,356	(31.6)
Cod Released Alive (numbers, b2)	659,891	(21.0)	619,705	(27.8)
Cod Removals (numbers, a+b1+(b2*0.15))	124,457		105,312	
Cod Avg. Catch Per Angler Trip (numbers) ¹	5.8		5.9	

¹Based on the number of angler trips that targeted and/or caught cod or haddock

Table 4. Gulf of Maine Haddock Recreational Catch Estimates by Mode

	FY2016	(PSE)	FY2017	(PSE)
Head				
Haddock Catch (numbers, a+b1+b2)	231,977	(16.6)	160,403	(25.1)
Haddock Kept/Released Dead (numbers, a+b1)	86,848	(20.8)	50,946	(26.1)
Haddock Released Alive (numbers, b2)	145,128	(17.6)	109,458	(25.0)
Haddock Removals (numbers, a+b1+(b2*season/size release mortality))	166,931		110,508	
Haddock Avg. Catch Per Angler Trip (numbers) ¹	7.4		5.8	
Charter				
Haddock Catch (numbers, a+b1+b2)	183,347	(17.7)	165,826	(27.2)
Haddock Kept/Released Dead (numbers, a+b1)	101,281	(20.8)	70,163	(27.6)
Haddock Released Alive (numbers, b2)	82,067	(20.2)	95,663	(27.8)
Haddock Removals (numbers, a+b1+(b2*season/size release mortality))	146,566		122,219	
Haddock Avg. Catch Per Angler Trip (numbers) ¹	14.8		10.7	
Private				
Haddock Catch (numbers, a+b1+b2)	1,314,879	(26.3)	954,879	(25.7)
Haddock Kept/Released Dead (numbers, a+b1)	333,492	(35.9)	322,429	(29.6)
Haddock Released Alive (numbers, b2)	981,388	(25.4)	632,451	(27.0)
Haddock Removals (numbers, a+b1+(b2*season/size release mortality))	875,032		666,583	
Haddock Avg. Catch Per Angler Trip (numbers) ¹	11.1		8.9	
Shore				
Haddock Catch (numbers, a+b1+b2)	3,124	(100.0)	-	
Haddock Kept/Released Dead (numbers, a+b1)	-		-	
Haddock Released Alive (numbers, b2)	3,124	(100.0)	-	
Haddock Removals (numbers, a+b1+(b2*season/size release mortality))	1,724		-	

¹Based on the number of angler trips that targeted and/or caught cod or haddock

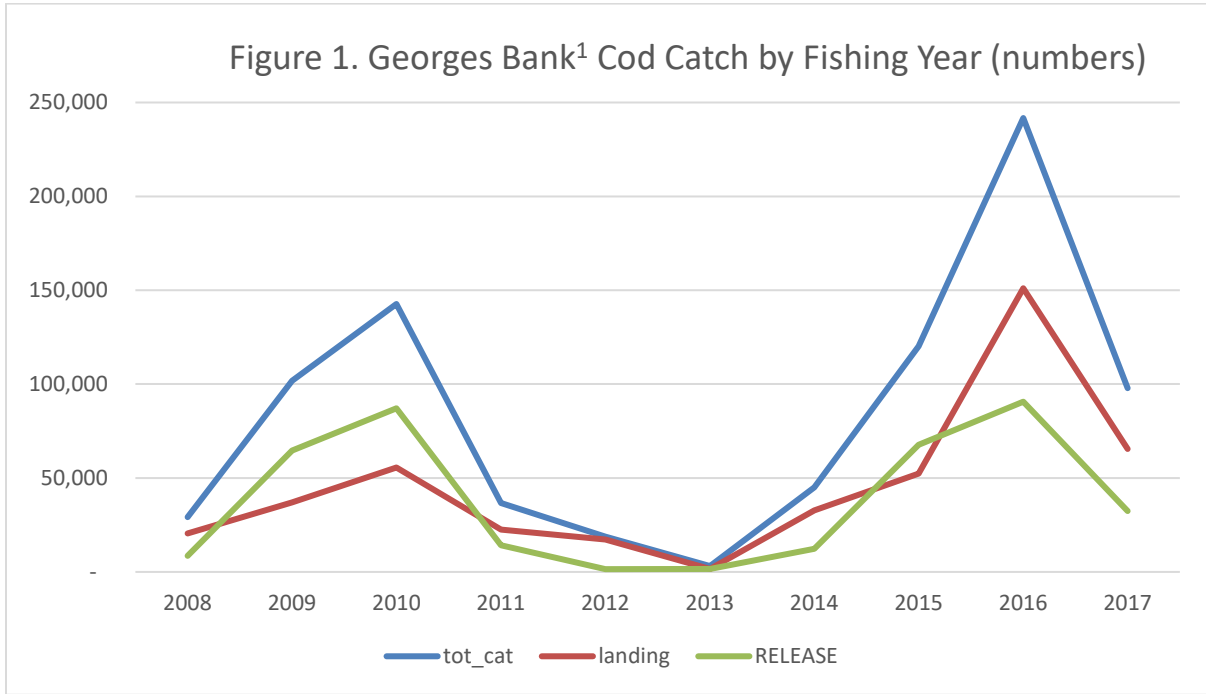
Estimate Status	Year	State	Common Name	Fishing Mode	Observed Harvest (A)	PSE	Reported Harvest (B1)	PSE	Released Alive (B2)	PSE
FINAL	2016	MAINE	ATLANTIC COD	PARTY BOAT	1,236	51.2	569	10.2	22,247	7.7
FINAL	2016	MAINE	ATLANTIC COD	CHARTER BOAT	-	.	-	.	2,645	62.9
FINAL	2016	MAINE	ATLANTIC COD	PRIVATE/RENTAL BOAT	366	95.5	-	.	52,159	56.1
PRELIMINARY	2017	MAINE	ATLANTIC COD	PARTY BOAT	-	.	143	26.5	18,868	2.9
PRELIMINARY	2017	MAINE	ATLANTIC COD	CHARTER BOAT	-	.	-	.	290	32.1
PRELIMINARY	2017	MAINE	ATLANTIC COD	PRIVATE/RENTAL BOAT	-	.	-	.	69,744	53
FINAL	2016	MASSACHUSETTS	ATLANTIC COD	PARTY BOAT	146	50.8	433	56.8	30,778	56.6
FINAL	2016	MASSACHUSETTS	ATLANTIC COD	CHARTER BOAT	-	.	4,563	36.7	106,602	43.6
FINAL	2016	MASSACHUSETTS	ATLANTIC COD	PRIVATE/RENTAL BOAT	6,745	46.2	16,829	39.2	478,830	32.2
PRELIMINARY	2017	MASSACHUSETTS	ATLANTIC COD	PARTY BOAT	108	87.6	449	60.3	10,547	34.3
PRELIMINARY	2017	MASSACHUSETTS	ATLANTIC COD	CHARTER BOAT	-	.	363	104.8	82,151	52.8
PRELIMINARY	2017	MASSACHUSETTS	ATLANTIC COD	PRIVATE/RENTAL BOAT	4,292	48.1	6,885	42	521,043	30.4
FINAL	2016	NEW HAMPSHIRE	ATLANTIC COD	PARTY BOAT	2,154	50.5	186	52.5	80,120	19.7
FINAL	2016	NEW HAMPSHIRE	ATLANTIC COD	CHARTER BOAT	-	.	606	17.6	20,197	24.4
FINAL	2016	NEW HAMPSHIRE	ATLANTIC COD	PRIVATE/RENTAL BOAT	797	73.4	1,430	62.7	128,901	37.2
PRELIMINARY	2017	NEW HAMPSHIRE	ATLANTIC COD	PARTY BOAT	-	.	93	43.5	13,914	27.8
PRELIMINARY	2017	NEW HAMPSHIRE	ATLANTIC COD	CHARTER BOAT	-	.	-	.	9,145	41
PRELIMINARY	2017	NEW HAMPSHIRE	ATLANTIC COD	PRIVATE/RENTAL BOAT	1,117	90.5	61	90	21,673	57.7
Estimate Status	Year	State	Common Name	Fishing Mode	Observed Harvest (A)	PSE	Reported Harvest (B1)	PSE	Released Alive (B2)	PSE
FINAL	2016	MAINE	HADDOCK	PARTY BOAT	12,468	3.2	444	2.1	25,067	14
FINAL	2016	MAINE	HADDOCK	CHARTER BOAT	-	.	1,984	62.9	4,081	40.2
FINAL	2016	MAINE	HADDOCK	PRIVATE/RENTAL BOAT	2,569	100	9,725	71.2	70,969	52.1
PRELIMINARY	2017	MAINE	HADDOCK	PARTY BOAT	17,353	2.1	1,245	7.2	40,762	4
PRELIMINARY	2017	MAINE	HADDOCK	CHARTER BOAT	-	.	937	32.6	635	32.8
PRELIMINARY	2017	MAINE	HADDOCK	PRIVATE/RENTAL BOAT	6,631	75.5	21,931	60.6	96,969	48.4
FINAL	2016	MASSACHUSETTS	HADDOCK	SHORE	-	.	-	.	3,124	105
FINAL	2016	MASSACHUSETTS	HADDOCK	PARTY BOAT	15,854	52.5	16,020	60.2	19,256	55.8
FINAL	2016	MASSACHUSETTS	HADDOCK	CHARTER BOAT	8,740	111	72,323	42.1	54,754	38.2
FINAL	2016	MASSACHUSETTS	HADDOCK	PRIVATE/RENTAL BOAT	118,766	66.8	139,295	40	770,956	29
PRELIMINARY	2017	MASSACHUSETTS	HADDOCK	PARTY BOAT	7,556	40.2	3,044	39	14,489	33.1
PRELIMINARY	2017	MASSACHUSETTS	HADDOCK	CHARTER BOAT	2,232	28.5	56,912	49.7	77,216	48.2
PRELIMINARY	2017	MASSACHUSETTS	HADDOCK	PRIVATE/RENTAL BOAT	47,100	41.1	247,077	29.7	433,250	29.7
FINAL	2016	NEW HAMPSHIRE	HADDOCK	PARTY BOAT	36,920	8.8	1,406	29	96,431	9.3
FINAL	2016	NEW HAMPSHIRE	HADDOCK	CHARTER BOAT	398	74.9	16,658	13.5	22,472	15.2
FINAL	2016	NEW HAMPSHIRE	HADDOCK	PRIVATE/RENTAL BOAT	17,412	51.7	45,724	40.5	151,714	40.6
PRELIMINARY	2017	NEW HAMPSHIRE	HADDOCK	PARTY BOAT	20,547	20.9	1,201	70.1	54,207	18.1
PRELIMINARY	2017	NEW HAMPSHIRE	HADDOCK	CHARTER BOAT	269	80.1	9,814	45.3	17,813	56.3
PRELIMINARY	2017	NEW HAMPSHIRE	HADDOCK	PRIVATE/RENTAL BOAT	3,207	69.3	2,584	65.5	25,719	61.6

FY 2018 Gulf of Maine Cod and Haddock Bioeconomic Model Simulation Projections

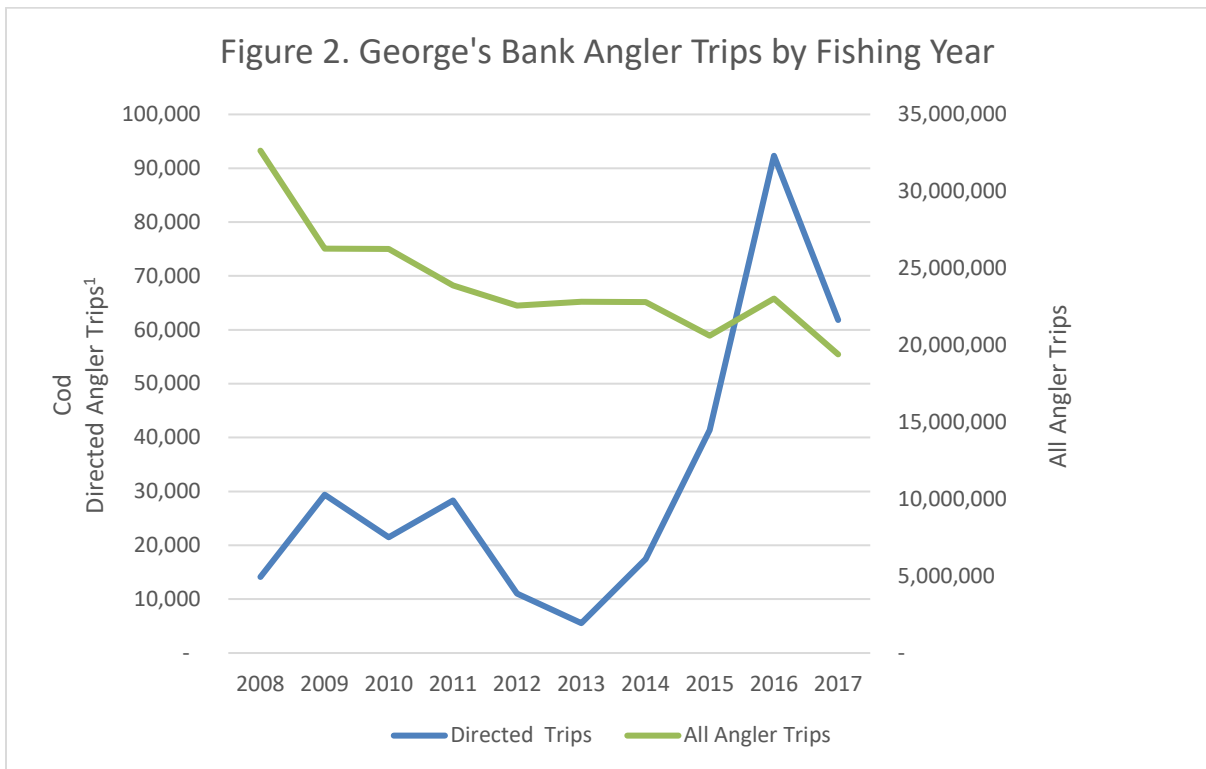
Option	Haddock				Cod				Angler Trips (Median)	% Under Had ACL (out of 100 Simulations)	% Under Cod ACL (out of 100 Simulations)
	Had Limit	Had Size	Had Closed Season	Had Total Mortality (Median)	Cod Limit	Cod Size	Cod Closed Season	Cod Total Mortality (Median)			
OA (Status Quo MA No Possession)	12	17"	Mar-Apr 14	917	0		May-Apr	203	155,298	100	63
OB (Status Quo)	12	17"	Mar-Apr 14	920	0		May-Apr	226	155,733	100	45

FY 2018 rec sub-ACLs: haddock = 3,358 mt, cod = 220 mt

George's Bank Cod



¹Includes catch from Massachusetts anglers (south of Cape Cod) through North Carolina



¹Angler trips that targeted and/or caught cod.

Table 1. George's Bank Cod Recreational Catch Estimates¹

	FY2016	(PSE)	FY2017 ²	(PSE)
Cod Angler Trips ³	92,319	(21.4)	61,841	(25.7)
Cod Catch (numbers, a+b1+b2)	241,720	(23.9)	97,871	(31.4)
Cod Kept/Released Dead (numbers, a+b1)	151,067	(25.1)	65,407	(32.1)
Cod Released Alive (numbers, b2)	90,653	(26.7)	32,464	(36.4)
Cod Removals (numbers, a+b1+(b2*0.30))	178,263		75,146	
Cod Removals (weight ⁴ , mt)	451		198	
Cod Avg. Catch Per Trip (numbers)	2.6		1.6	
Cod Avg. Weight of Caught Fish (lbs)	4.9		5.2	

¹Source: Available MRIP data as of Dec. 22, 2017

²Wave 6, 2016 and wave 2, 2017 used as proxies for those waves in FY2017.

³Angler trips = number of trips that targeted and/or caught cod

⁴All weights are based on round weights calculated from MRIP length frequencies and length to weight equations used in the assessments.

Table 2. George's Bank Angler Trips by Mode

	FY2016				FY2017			
	Cod Angler Trips ¹ (PSE)		All Angler Trips ² (PSE)		Cod Angler Trips ¹ (PSE)		All Angler Trips ² (PSE)	
Head	6,294	(23.1)	352,547	(6.71)	9,127	(30.1)	395,081	(9.72)
Charter	7,677	(22.8)	540,904	(4.48)	2,200	(51.5)	498,333	(4.69)
Private	64,833	(24.0)	11,052,262	(3.09)	50,513	(30.9)	9,827,539	(3.01)
Shore	13,516	(87.9)	11,077,838	(5.42)	-	-	8,685,645	(7.78)
	92,320	(21.4)	23,023,551	(2.65)	61,840	(25.7)	19,406,598	(2.56)

¹Number of angler trips that targeted and/or caught cod

²All angler trips in George's Bank

Table 3. George's Bank Cod Recreational Catch Estimates by Mode

	FY2016	(PSE)	FY2017	(PSE)
Head				
Cod Catch (numbers, a+b1+b2)	13,011	(11.4)	14,178	(21.7)
Cod Kept/Released Dead (numbers, a+b1)	9,941	(12.0)	11,325	(27.1)
Cod Released Alive (numbers, b2)	3,070	(14.6)	2,854	(11.2)
Cod Removals (numbers, a+b1+(b2*0.30))	10,862		12,181	
Cod Avg. Catch Per Angler Trip (numbers) ¹	2.1		1.6	
Charter				
Cod Catch (numbers, a+b1+b2)	13,659	(14.5)	2,608	(42.9)
Cod Kept/Released Dead (numbers, a+b1)	9,659	(13.9)	1,652	(57.8)
Cod Released Alive (numbers, b2)	3,999	(33.6)	956	(40.2)
Cod Removals (numbers, a+b1+(b2*0.30))	10,859		1,939	
Cod Avg. Catch Per Angler Trip (numbers) ¹	1.8		1.2	
Private				
Cod Catch (numbers, a+b1+b2)	201,534	(27.9)	81,085	(37.7)
Cod Kept/Released Dead (numbers, a+b1)	131,466	(28.8)	52,430	(39.6)
Cod Released Alive (numbers, b2)	70,068	(30.1)	28,654	(41.2)
Cod Removals (numbers, a+b1+(b2*0.30))	152,486		61,026	
Cod Avg. Catch Per Angler Trip (numbers) ¹	3.1		1.6	
Shore				
Cod Catch (numbers, a+b1+b2)	13,516	(87.9)	-	
Cod Kept/Released Dead (numbers, a+b1)	-		-	
Cod Released Alive (numbers, b2)	13,516	(87.9)	-	
Cod Removals (numbers, a+b1+(b2*0.30))	4,055		-	
Cod Avg. Catch Per Angler Trip (numbers) ¹	1		-	

¹Based on the number of angler trips that targeted and/or caught cod

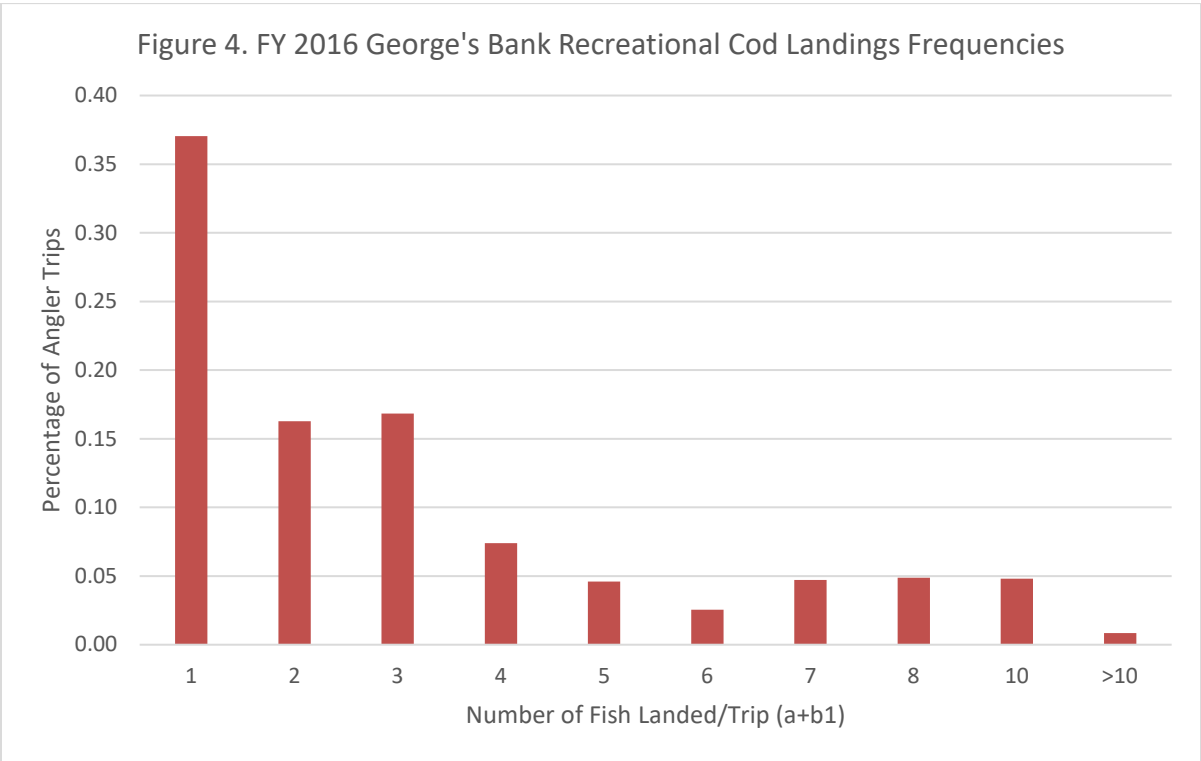
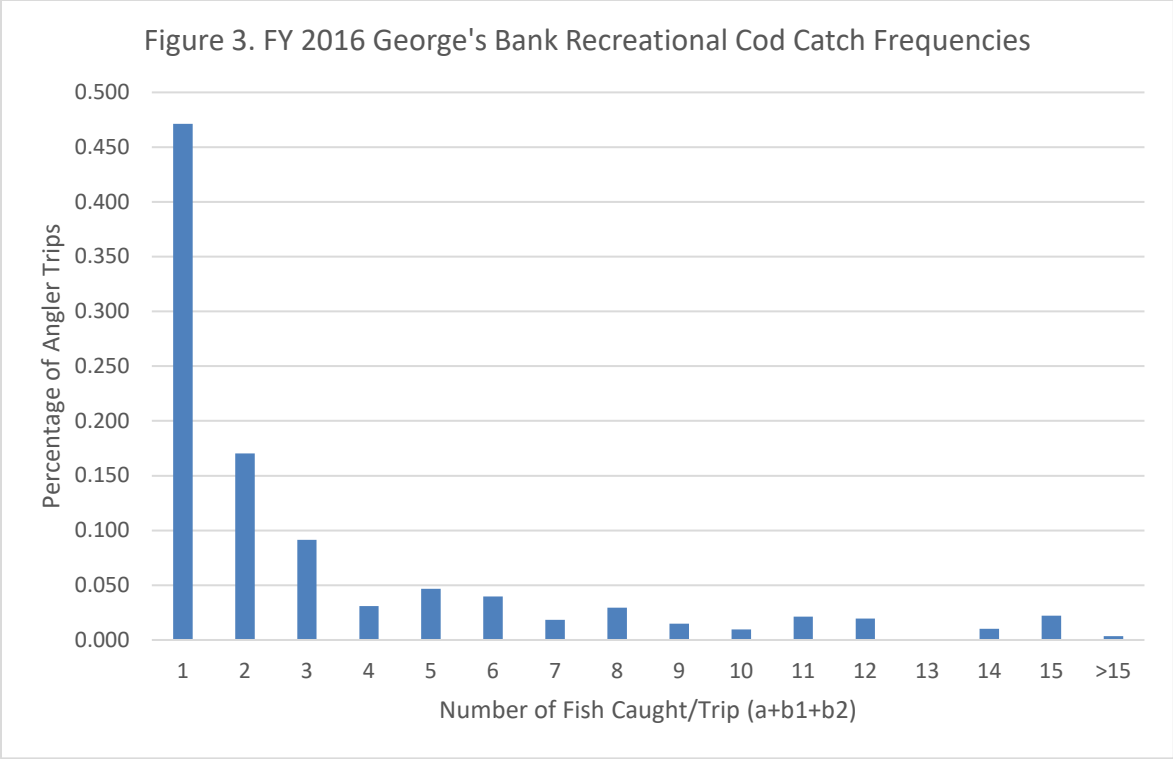


Figure 5. FY 2016 GB Recreational Cod Landings Size Frequencies

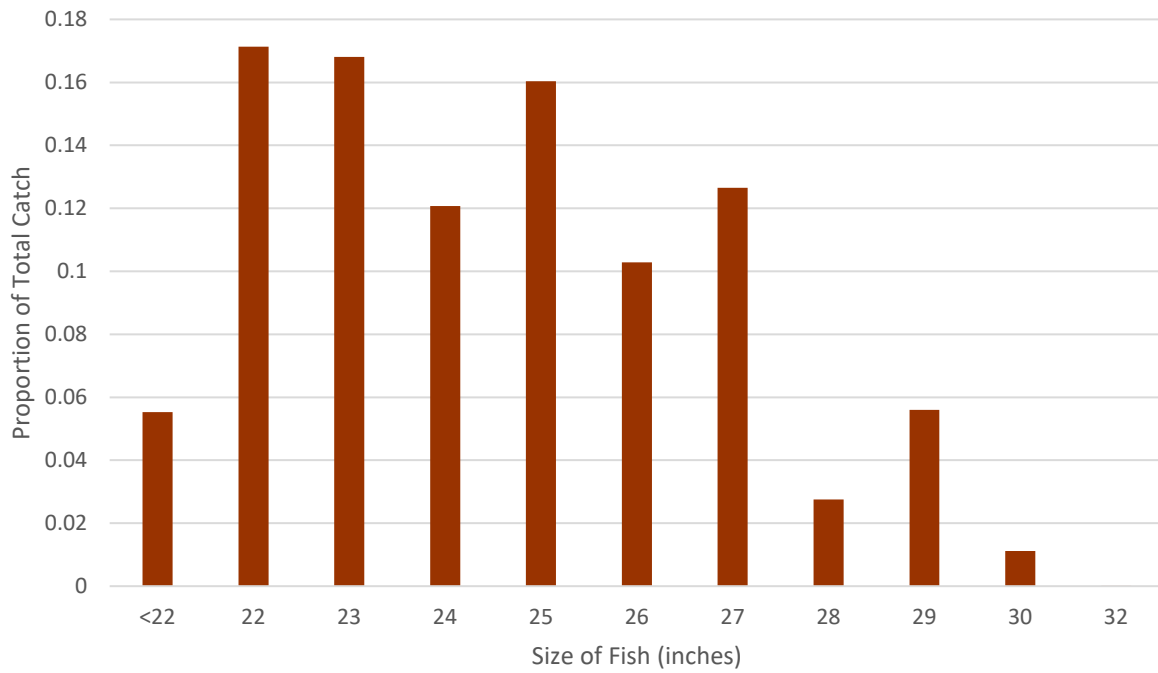


Figure 6. MRIP George's Bank Cod Intercept Data

