Economic Impacts of the North Carolina Southern Flounder Fishery from 2011-2014

Commercial Fishing Sector Economic Impacts

Average annual landings, effort, and estimated economic activity associated with commercial landings of southern flounder in North Carolina by gear from 2011-2014 is provided in Table 1. Sales impacts represent estimated total sales in the state economy of North Carolina generated by the commercial seafood industry, while income impacts represent estimated wages, salaries, and self-employment income. Sales and income impacts should not be added, as this would result in double counting of economic impacts. All monetary figures presented in Table 1 are adjusted for inflation and are in 2014 dollars. Annual figures for each year in the time series (2011-2014) can be found in Appendix 1. Please note that income and sales impacts are displayed in thousands of dollars.

Table 1. Average annual participation, trips, harvest, ex-vessel value, and economic impacts associated with North Carolina commercial southern flounder landings from 2011-2014. (2014 dollars)

Gear	Participants[1]	Trips[1]	Pounds Harvested[1]	Ex-Vessel Value[1]	Jobs[2,3]	Income Impacts (thousands of dollars)[3]	Sales Impacts (thousands of dollars)[3]
Gill Net	842	13,943	872,514	$2,272,806	190	$3,615.4	$8,797.8
Pound Net	78	1,666	668,461	$1,851,119	154	$2,930.1	$7,166.4
Gig	273	2,544	129,433	$353,369	29	$559.8	$1,368.5
Other	302	1,425	15,142	$38,627	3	$61.2	$149.5
Total	1,186	19,578	1,685,549	$4,515,921	376	$7,166.5	$17,482.1

[1]As reported by the North Carolina Division of Marine Fisheries (NCDMF) Trip Ticket Program.
[2]Represents both full-time and part-time jobs.
[3]Economic impacts calculated using the NCDMF economic impact model for coastal commercial fishing and IMPLAN economic impact modeling software.

Recreational Fishing Sector Economic Impacts

Average estimated annual harvest, effort, and economic activity associated with recreational fishing for southern flounder in North Carolina by gear from 2011-2014 is provided in Table 2. Sales impacts represent estimated total sales in the state economy of North Carolina generated from recreational fishing trips, while income impacts represent estimated wages, salaries, and self-employment income. As previously stated, sales and income impacts should not be added, as this would result in double counting of economic impacts. All monetary figures presented in Table 2 are adjusted for inflation and are in 2014 dollars. Annual figures for each year in the time series (2011-2014) can be found in Appendix 2. Please note that expenditures, income impacts, and sales impacts are displayed in thousands of dollars.

Compiled by John Hadley, NC Division of Marine Fisheries, on May 19, 2015 in response to a data request from the NC Marine Fisheries Commission.

Table 2. Average annual harvest, effort, expenditures, and economic impacts associated with North Carolina recreational fishing for southern flounder from 2011-2014.[1] (2014 dollars)

Gear	Pounds Harvested[2]	Trips[2]	Expenditures (thousands of dollars)[3]	Jobs[4,5]	Income Impacts (thousands of dollars)[5]	Sales Impacts (thousands of dollars)[5]
Hook and Line	309,132	479,861	$29,823.5	462	$17,382.4	$40,043.9
Gig	96,748	24,477	$1,502.5	22	$771.8	$1,965.2
Total	405,881	504,337	$31,326.0	484	$18,154.1	$42,009.1

[1]Data were not available at the time of this analysis for 2014 gigging trips, therefore calculated averages do not include 2014 information for gig or total effort for southern flounder.
[2]Harvest and trip estimates as reported by the National Marine Fisheries Service Marine Recreational Information Program (MRIP) for hook and line gear and NCDMF Recreational Statistics Program for gigging gear.
[3]Expenditures estimated using the NCDMF economic impact model for coastal recreational fishing.
[4]Represents both full-time and part-time jobs.
[5]Economic impacts calculated using the NCDMF economic impact model for coastal recreational fishing and IMPLAN economic impact modeling software.

Statement on Economic Impact Estimates

Commercial Fishing Economic Impacts

Economic impact estimates for commercial fishing represent those of commercial seafood harvesters, dealers, wholesalers, and retailers. These estimates are a product of IMPLAN economic impact modeling software customized with data from the North Carolina Division of Marine Fisheries (NCDMF) as well as economic multipliers originating from the National Marine Fisheries Service (NMFS) Commercial Fishing and Seafood Industry Input/Output Model (NOAA 2011). Commercial landings data from the NCDMF Trip Ticket Program are used as the primary input as well as data from North Carolina commercial fishermen and seafood dealers collected during surveys that have been carried out by the NCDMF Fisheries Economics Program examining fishing business expenditures (Crosson 2007, 2009, 2010a; Hadley and Crosson 2010; Hadley and Wiegand 2014). Economic impact estimates for the commercial harvesting and seafood dealer sectors are derived from NCDMF data while estimates for seafood wholesalers and retailers originate from the NMFS model.

Recreational Fishing Economic Impacts

Estimates of the economic impacts stemming from recreational fishing trips for southern flounder are conducted using the NCDMF economic impact model for coastal recreational fishing and IMPLAN software. The NCDMF economic impact model combines effort data by mode (charter boat, private/rental boat, beach/bank, and man-made structures) with inflation adjusted angler expenditures per trip by expenditure category. These expenditures are derived from information collected from recreational anglers in North Carolina during surveys that have been carried out by the NCDMF Fisheries Economics Program and for North Carolina Sea Grant to provide estimated total coastal recreational fishing trip expenditures (Dumas et al. 2009; Crosson 2010; Hadley 2012). For this analysis, recreational trips harvesting or catching southern flounder, as examined in the 2015 Southern Flounder Supplement, were utilized in estimating total trip expenditures.

Compiled by John Hadley, NC Division of Marine Fisheries, on May 19, 2015 in response to a data request from the NC Marine Fisheries Commission.

Appendix 1: Annual information on the North Carolina commercial fishery for southern flounder 2011-2014.

Table 3. Harvest, ex-vessel value, participation, effort, and economic impacts associated with North Carolina commercial southern flounder landings in 2011.

Gear	Participants[1]	Trips[1]	Pounds Harvested[1]	Ex-Vessel Value[1]	Jobs[2,3]	Income Impacts (thousands of dollars)[3]	Sales Impacts (thousands of dollars)[3]
Gill Net	764	11,511	658,087	$1,408,692	126	$2,260.3	$5,459.2
Pound Net	61	1,349	463,542	$1,062,334	95	$1,704.5	$4,117.0
Gig	212	2,083	113,845	$257,776	23	$413.6	$999.0
Other	238	869	11,976	$24,326	2	$39.0	$94.3
Total	1,039	15,810	1,247,450	$2,753,128	246	$4,417.5	$10,669.5

[1]As reported by the NCDMF Trip Ticket Program.
[2]Represents both full-time and part-time jobs.
[3]Economic impacts calculated using the NCDMF economic impact model for coastal commercial fishing and IMPLAN economic impact modeling software.

Table 4. Harvest, ex-vessel value, participation, effort, and economic impacts associated with North Carolina commercial southern flounder landings in 2012.

Gear	Participants[1]	Trips[1]	Pounds Harvested[1]	Ex-Vessel Value[1]	Jobs[2,3]	Income Impacts (thousands of dollars)[3]	Sales Impacts (thousands of dollars)[3]
Gill Net	860	15,042	937,040	$2,498,761	221	$3,999.4	$9,688.1
Pound Net	82	1,715	548,883	$1,536,735	136	$2,459.6	$5,958.2
Gig	289	3,005	149,441	$388,452	34	$621.7	$1,506.1
Other	277	1,162	10,604	$27,094	2	$43.4	$105.1
Total	1,200	20,921	1,645,968	$4,451,042	393	$7,124.1	$17,257.3

[1]As reported by the NCDMF Trip Ticket Program.
[2]Represents both full-time and part-time jobs.
[3]Economic impacts calculated using the NCDMF economic impact model for coastal commercial fishing and IMPLAN economic impact modeling software.

Compiled by John Hadley, NC Division of Marine Fisheries, on May 19, 2015 in response to a data request from the NC Marine Fisheries Commission.

Table 5. Harvest, ex-vessel value, participation, effort, and economic impacts associated with North Carolina commercial southern flounder landings in 2013.

Gear	Participants[1]	Trips[1]	Pounds Harvested[1]	Ex-Vessel Value[1]	Jobs[2,3]	Income Impacts (thousands of dollars)[3]	Sales Impacts (thousands of dollars)[3]
Gill Net	939	17,362	1,203,250	$3,007,711	256	$4,855.8	$11,607.8
Pound Net	81	1,882	832,273	$2,265,177	193	$3,657.0	$8,742.1
Gig	272	2,420	118,953	$321,586	27	$519.2	$1,241.1
Other	330	1,814	21,042	$51,712	4	$83.5	$199.6
Total	1,287	23,477	2,175,518	$5,646,185	480	$9,115.4	$21,790.7

[1]As reported by the NCDMF Trip Ticket Program.
[2]Represents both full-time and part-time jobs.
[3]Economic impacts calculated using the NCDMF economic impact model for coastal commercial fishing and IMPLAN economic impact modeling software.

Table 6. Harvest, ex-vessel value, participation, effort, and economic impacts associated with North Carolina commercial southern flounder landings in 2014.

Gear	Participants[1]	Trips[1]	Pounds Harvested[1]	Ex-Vessel Value[1]	Jobs[2,3]	Income Impacts (thousands of dollars)[3]	Sales Impacts (thousands of dollars)[3]
Gill Net	804	11,857	691,678	$1,975,660	157	$3,024.6	$7,660.0
Pound Net	87	1,719	829,146	$2,399,967	191	$3,674.2	$9,305.1
Gig	317	2,666	135,493	$414,844	33	$635.1	$1,608.4
Other	363	1,855	16,944	$48,420	4	$74.1	$187.7
Total	1,219	18,103	1,673,261	$4,838,892	385	$7,408.0	$18,761.2

[1]As reported by the NCDMF Trip Ticket Program.
[2]Represents both full-time and part-time jobs.
[3]Economic impacts calculated using the NCDMF economic impact model for coastal commercial fishing and IMPLAN economic impact modeling software.

Compiled by John Hadley, NC Division of Marine Fisheries, on May 19, 2015 in response to a data request from the NC Marine Fisheries Commission.

Appendix 2: Annual information on the North Carolina recreational fishery for southern flounder 2011-2014.

Table 7. Harvest, effort, expenditures, and economic impacts associated with North Carolina recreational fishing for southern flounder in 2011.

Gear	Pounds Harvested[1]	Trips[1]	Expenditures (thousands of dollars)[2]	Jobs[3,4]	Income Impacts (thousands of dollars)[4]	Sales Impacts (thousands of dollars)[4]
Hook and Line	380,158	383,077	$22,963.0	374	$19,339.5	$30,875.9
Gig	98,810	25,666	$1,500.2	23	$771.4	$1,961.4
Total	478,968	408,743	$24,463.2	397	$20,110.9	$32,837.3

[1]Harvest and trip estimates as reported by MRIP for hook and line gear and NCDMF Recreational Statistics Program for gigging gear.
[2]Expenditures estimated using the NCDMF economic impact model for coastal recreational fishing.
[3]Represents both full-time and part-time jobs.
[4]Economic impacts calculated using the NCDMF economic impact model for coastal recreational fishing and IMPLAN economic impact modeling software.

Table 8. Harvest, effort, expenditures, and economic impacts associated with North Carolina recreational fishing for southern flounder in 2012.

Gear	Pounds Harvested[1]	Trips[1]	Expenditures (thousands of dollars)[2]	Jobs[3,4]	Income Impacts (thousands of dollars)[4]	Sales Impacts (thousands of dollars)[4]
Hook and Line	298,043	472,696	$28,870.7	461	$15,052.0	$38,846.6
Gig	88,128	21,946	$1,306.5	20	$670.3	$1,708.8
Total	386,171	494,642	$30,177.1	481	$15,722.3	$40,555.3

[1]Harvest and trip estimates as reported by MRIP for hook and line gear and NCDMF Recreational Statistics Program for gigging gear.
[2]Expenditures estimated using the NCDMF economic impact model for coastal recreational fishing.
[3]Represents both full-time and part-time jobs.
[4]Economic impacts calculated using the NCDMF economic impact model for coastal recreational fishing and IMPLAN economic impact modeling software.

Compiled by John Hadley, NC Division of Marine Fisheries, on May 19, 2015 in response to a data request from the NC Marine Fisheries Commission.

Table 9. Harvest, effort, expenditures, and economic impacts associated with North Carolina recreational fishing for southern flounder in 2013.

Gear	Pounds Harvested[1]	Trips[1]	Expenditures (thousands of dollars)[2]	Jobs[3,4]	Income Impacts (thousands of dollars)[4]	Sales Impacts (thousands of dollars)[4]
Hook and Line	409,086	557,851	$34,097.2	536	$17,646.1	$45,729.7
Gig	103,307	25,818	$1,556.4	23	$799.4	$2,036.5
Total	512,393	583,669	$35,653.6	559	$18,445.5	$47,766.2

[1]Harvest and trip estimates as reported by MRIP for hook and line gear and NCDMF Recreational Statistics Program for gigging gear.
[2]Expenditures estimated using the NCDMF economic impact model for coastal recreational fishing.
[3]Represents both full-time and part-time jobs.
[4]Economic impacts calculated using the NCDMF economic impact model for coastal recreational fishing and IMPLAN economic impact modeling software.

Table 10. Harvest, effort, expenditures, and economic impacts associated with North Carolina recreational fishing for southern flounder in 2014.

Gear	Pounds Harvested[1]	Trips[1]	Expenditures (thousands of dollars)[2]	Jobs[3,4]	Income Impacts (thousands of dollars)[4]	Sales Impacts (thousands of dollars)[4]
Hook and Line	149,242	505,819	$30,707.6	477	$15,723.1	$41,153.9
Gig	-	-	-	-	-	-
Total	-	-	-	-	-	-

[1]Harvest and trip estimates as reported MRIP for hook and line gear and NCDMF Recreational Statistics Program for gigging gear.
[2]Expenditures estimated using the NCDMF economic impact model for coastal recreational fishing.
[3]Represents both full-time and part-time jobs.
[4]Economic impacts calculated using the NCDMF economic impact model for coastal recreational fishing and IMPLAN economic impact modeling software.

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