

Estimation of species misidentification in the commercial landing data of
yellowedge groupers in the Gulf of Mexico from 1984 to 2009

Ching-Ping Chih

March, 2010

Southeast Fisheries Science Center
National Marine Fisheries Service
National Oceanic and Atmospheric Administration
75 Virginia Beach Drive
Miami, FL 33149

Abstract

This report documents the misidentification of yellowedge groupers in landing records from the Gulf of Mexico from 1984 to 2009. The percentage of species misidentification was based on samples obtained from the Trip Interview Program. About 5.03% of yellowedge groupers were misidentified as other species or were placed in the general grouper category in landing records, while about 0.42% of yellowedge groupers landings were actually other species. The net effect of the species misidentification is an approximate 4.61% underestimation of yellowedge grouper landings from 1984 to 2009.

Methods

All data used for this analysis were from the Trip Interview Program (TIP) database. The main assumption of this analysis was that TIP samples represented landings. The percentage of yellowedge groupers misidentified as other species was calculated by dividing the number of yellowedge grouper samples identified in landing records as another species by the total number of yellowedge grouper samples. The percentage of other species misidentified as yellowedge groupers was calculated by dividing the number of other species samples identified as yellowedge groupers in yellowedge grouper landing records by the total number of samples recorded as yellowedge groupers in landing records. Not all samplers recorded a landing species based on the dealer's landing records in the historical TIP database (i.e., sometimes samplers accounted for mistakes in a dealer's landing records or were not able to obtain dealer's landing records). Thus, the percentage of species misidentification in the TIP database is probably underestimated.

Results and discussion

About 5.03% of yellowedge grouper samples were misidentified as other species in landing records (Table 1). Most of this misidentification was due to yellowedge groupers being categorized as general grouper or bony fish landings. Yellowedge groupers were most frequently misidentified as black groupers, speckled hind or yellowfin groupers. The percentage of misidentification varied significantly from year to year (Table 2). Some of the variation was due to small sample sizes. Also, the percentage of

misidentification varied significantly between different counties (Table 3). Since different dealers tended to group landings differently, the variation between different counties was expected. About 0.42% of yellowedge grouper landings were actually other species, particularly snowy groupers or blueline tilefish. The overall effect of species misidentification is a 4.61% underestimation of yellowedge grouper landings from 1984 to 2009.

Table 1. Number and percentage of yellowedge groupers misidentified as other species in the Gulf of Mexico from 1984 to 2009.

Species name	Number of yellowedge samples misidentified as other species	Percentage of misidentified samples
ALMACO JACK	3	0.00%
BLACK GROUPER	594	0.85%
BONY FISHES	787	1.13%
GAG	35	0.05%
GREATER AMBERJACK	2	0.00%
GROUPERS	1402	2.01%
GROUPERS, EPINEPHELUS	38	0.05%
RED GROUPER	61	0.09%
RED SNAPPER	68	0.10%
SCAMP	81	0.12%
SNOWY GROUPER	29	0.04%
SPECKLED HIND	235	0.34%
TILEFISH	32	0.05%
WARSAW GROUPER	2	0.00%
YELLOWFIN GROUPER	138	0.20%
Total	3507	5.03%

Table 2. Number and percentage of yellowedge groupers misidentified as other species in the Gulf of Mexico from 1984 to 2009 listed by year.

YEAR	Number of misidentified samples	Total number of yellowedge samples	Percentage of misidentified samples
1984	197	1638	12.03%
1985	667	3120	21.38%
1986	206	1968	10.47%
1987	64	1171	5.47%
1988	36	417	8.63%
1989	37	335	11.04%
1990	104	1338	7.77%
1991	200	2809	7.12%
1992	66	2849	2.32%
1993	167	1370	12.19%
1994	244	3074	7.94%
1995	176	2675	6.58%
1996	409	1869	21.88%
1997	278	2145	12.96%
1998	108	4459	2.42%
1999	132	5359	2.46%
2000	58	10600	0.55%
2001	16	4304	0.37%
2002	6	2558	0.23%
2003	301	3801	7.92%
2004	1	2720	0.04%
2005		2358	
2006		821	
2007	1	1922	0.05%
2008	32	1637	1.95%
2009	1	2392	0.04%

Table 3. Number and percentage of yellowedge groupers misidentified as other species in the Gulf of Mexico from 1984 to 2009 listed by county.

State	County name	Number of misidentified samples	Total number of yellowedge samples	Percentage of misidentified samples
AL	Baldwin		1272	
AL	Mobile	1	8	12.50%
FL			69	
FL	Bay	310	6250	4.96%
FL	Charlotte		6	
FL	Collier		31	
FL	Escambia	1036	2458	42.15%
FL	Franklin		878	
FL	Gulf		22	
FL	Hillsborough		128	
FL	Lee	2	393	0.51%
FL	Manatee	461	5694	8.10%
FL	Monroe	33	2038	1.62%
FL	Okaloosa	165	1762	9.36%
FL	Pasco		2	
FL	Pinellas	689	35216	1.96%
FL	Santa Rosa	40	789	5.07%
FL	Sarasota	3	1045	0.29%
FL	Wakulla		6	
LA			75	
LA	Cameron		21	
LA	Jefferson	321	4631	6.93%
LA	Lafourche	262	4352	6.02%
LA	Orleans		1	
LA	Plaquemines	37	107	34.58%
LA	Terrebonne		84	
LA	Vermilion		134	
MS	Jackson	79	153	51.63%
TX			78	
TX	Cameron	18	1932	0.93%
TX	Galveston		19	
TX	Nueces	50	50	100.00%
TX	San Patricio		5	

Table 4. Number and percentage of other species samples misidentified as yellowedge groupers in the Gulf of Mexico from 1984 to 2009.

NAME	Number of other species samples misidentified as yellowedge groupers	Percentage of yellowedge grouper landings that were actually other species
ALMACO JACK	1	0.00%
BLACKBELLY ROSEFISH	1	0.00%
BLUELINE TILEFISH	53	0.08%
GAG	28	0.04%
RED GROUPER	4	0.01%
SCAMP	13	0.02%
SNOWY GROUPER	123	0.19%
SPECKLED HIND	26	0.04%
TILEFISH	8	0.01%
YELLOWFIN GROUPER	21	0.03%
YELLOWMOUTH GROUPER	1	0.00%
Total	279	0.42%

Table 5. Number and percentage of other species samples misidentified as yellowedge groupers in the Gulf of Mexico from 1984 to 2009 listed by year.

Year	Number of other species samples misidentified as yellowedge groupers	Total number of samples with landing recorded as yellowedge groupers	Percentage of yellowedge grouper landings that were actually other species
1984	9	1441	0.62%
1985		2453	
1986	18	1762	1.02%
1987	16	1107	1.45%
1988		381	
1989		298	
1990	8	1234	0.65%
1991	9	2609	0.34%
1992		2783	
1993	2	1203	0.17%
1994	16	2830	0.57%
1995	42	2499	1.68%
1996	20	1460	1.37%
1997	32	1867	1.71%
1998	1	4351	0.02%
1999	14	5227	0.27%
2000	2	10542	0.02%
2001	46	4288	1.07%
2002	1	2552	0.04%
2003	24	3500	0.69%
2004	5	2719	0.18%
2005		2358	
2006		821	
2007	13	1921	0.68%
2008	1	1605	0.06%
2009		2391	