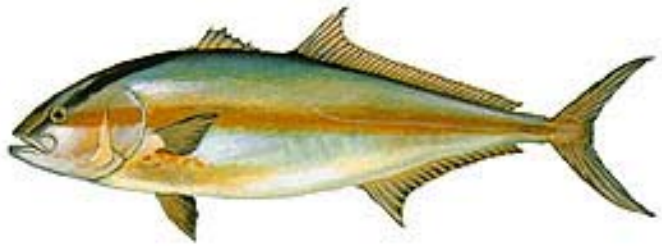
Greater amberjack, *Seriola dumerili*



Greater amberjack is a reef-associated species with circumglobal distribution in warm-temperate waters. In the western Atlantic, it ranges from Nova Scotia to Brazil, including Bermuda, the Gulf of Mexico, and the Caribbean (Manooch 1984). Analysis of nearly 35 years of tag-recapture data showed that some greater amberjack are resident along Florida's gulf or Atlantic coasts (Cummings and McClellan 1996). In winter, others move into Florida's Atlantic waters from the South Atlantic Bight, possibly in preparation for spring spawning (McClellan and Cummings 1997). Based on *mt*DNA haplotype frequency data, two subpopulations of greater amberjack were hypothesized: one in the northern Gulf of Mexico and another along southwest Florida and the U.S. South Atlantic region (Gold and Richardson 1998a). In these groups, spawning occurs from March through July. Females first mature to spawn at ages 2 or 3 when about 34" total length (Manooch 1984). Burch (1979) found that females grow more rapidly and to a larger size and can reach an older age than males. However, Burch's size-at-age data were based on scale readings; the readings implied sizes at age that were much larger than the sizes-at-age reported for fish aged using otoliths. Thompson *et al.* (1999) found that all amberjack older than age 9 were females, but growth did not differ between sexes. Greater amberjack grow quickly (Table 1): fish of undetermined sex grew from 13.2" fork length (FL) at age 1 to over 43.1" by age 10 in the U.S. South Atlantic (Table 1; Manooch and Potts 1997a). In the Gulf of Mexico, sizes varied from 14.6" to 19.7" FL at age 1, and fish grew as large as 39.9"–62.4" FL by age 10 (Manooch and Potts 1997b; Schirripa and Burns 1997; Thompson *et al.* 1999). Maximum life span is at least 17 years (Manooch and Potts 1997a).

Table 1. Von Bertalanffy growth parameters and length-weight relations for greater amberjack.

Inches FL = $L_\infty (1-e^{-K(age-t_0)})$	K	L_∞ (inches FL)	t_0 (years)	Source
Combined sexes; Southeastern US	0.115	59.6	-1.178	Manooch and Potts (1997a)
Combined sexes; Gulf of Mexico	0.227	43.7	-0.7198	Manooch and Potts (1997b)
Combined sexes; Gulf of Mexico	0.259	67.4	-0.042	Schirripa and Burns (1997)
Combined sexes; Gulf of Mexico	0.25	54.7	-0.79	Thompson *et al*. (1999)

Weight in lbs = a (inches FL)^b	a	b	Source
Combined sexes; Gulf of Mexico	0.0010356	2.81	Manooch and Potts (1997b)
Combined sexes; Southeastern US	0.0014764	2.677	Manooch and Potts (1997a)
Males; northern Gulf of Mexico	0.00061	2.96	Thompson *et al.* (1999)
Females; northern Gulf of Mexico	0.00104	2.87	Thompson *et al.* (1999)

Stomach content analysis of 308 adult amberjack in the central Mediterranean Sea (Andovora and Pipitone 1997) found *Loligo* spp., *Sardinella aurita*, and *Sardinella pilchardus* to be the most common prey items.

In 2005, total statewide landings of amberjack were 2,658,845 pounds, of which both recreational and commercial fisheries contributed equally. Approximately 75% of the statewide landings were from the gulf coast of Florida in 2005. Commercial landings on the Atlantic coast in 2005 were highest in Duval, St. Johns, Volusia, Palm Beach and Dade Counties. On the gulf coast in 2005, commercial landings of greater than 10,000 pounds were reported in Monroe, Pinellas and Bay Counties, but high landings were also recorded in Manatee, Pasco, Franklin, Okaloosa and Escambia Counties (Fig. 1). Recreational landings were evenly distributed along the Atlantic and gulf coasts of peninsular Florida (Fig. 2). In Florida, total annual landings of amberjack declined sharply between the early 1990s and late 1990s before rebounding somewhat during the early 2000s (Fig. 3). The 2005 total landings were 14% lower than the average annual landings in the previous five years (2000–2004) and 38% lower than the historical average landings (1982–2005). Much of the decline during the early 1990s may be attributed to size or bag limits and seasonal closures implemented then.

Standardized commercial catch rates on the Atlantic coast have peaked at about 57 pounds per trip in 1994 but have averaged only about 41 pounds per trip during 2001-2005 (Fig. 4). Commercial catch rates on the gulf coast have held steady at about 45 pounds per trip between 2000 and 2003, but increased a bit since 2004 (Fig. 5). Total catch rates for recreational anglers have fluctuated without any apparent long-term trend on either coast (Figs. 6, 7).

The status of the greater amberjack in the Northwest Atlantic is determined separately for the stock off the Southeast U.S. Atlantic coast and for the U.S. Gulf of Mexico. During the 1998-1999 fishing year, the stock off the Atlantic coast was classified as most likely not overfished (Legault and Turner 1999). A tuned VPA (ADAPT) model generated SPR values in the range of 0.3 to 0.8 for 1998–1999 depending on the natural mortality rate and the maturity schedule selected. The Gulf of Mexico stock of greater amberjack was not overfished in 1993–1994, but it was probably overfished during 1998 (Cummings and McClellan 1998; Turner *et al*. 2000). Strict regulations were applied to the Gulf of Mexico fishery beginning in 1998; recreational fishing restrictions consist of a 1-fish bag limit and a 28” minimum size, while commercial fishing restrictions include a minimum size limit of 36” and a closed season between March and May. On the Atlantic coast of Florida, regulations are similar to the gulf, except for a closed season in April and a commercial quota limit in federal waters. Commercial permits are required to harvest greater amberjack in federal waters, and a restricted species endorsement is required to commercially harvest greater amberjack in Florida State waters. Despite these restrictions, the SEDAR 09 findings for the gulf greater amberjack stock were that overfishing had continued and that the stock was overfished in 2005 (SEDAR 09 Assessment Panel 2006; Haddon 2006). These findings were based on a simple surplus production model (ASPIC).

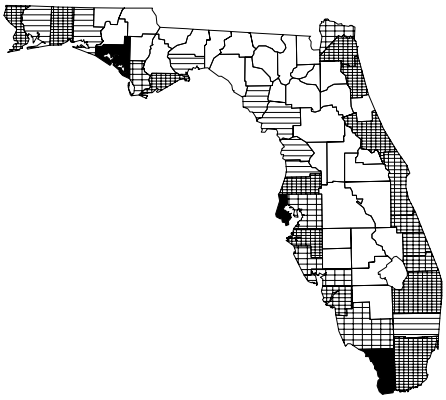


Figure 1. Geographic distribution of commercial landings of amberjack during 2005

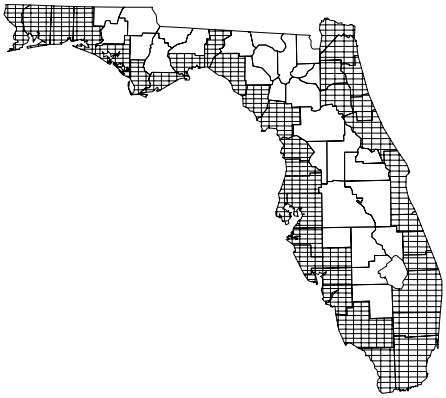


Figure 2. Geographic distribution of recreational landings of greater amberjack during 2005

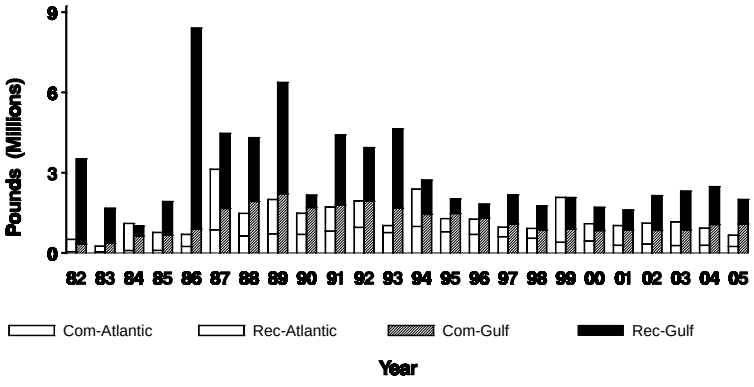


Figure 3. Total annual landings of amberjack on the Atlantic and gulf coasts, 1982–2005

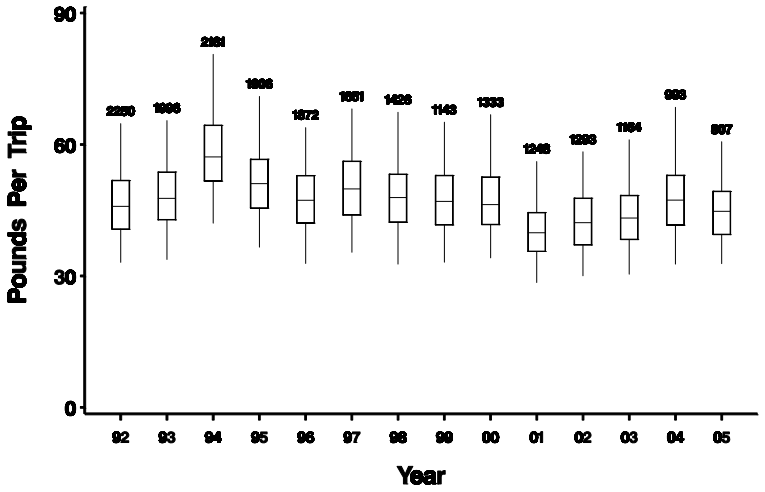


Figure 4. Annual standardized commercial catch rates (pounds) for greater amberjack on the Atlantic coast of Florida, 1992–2005

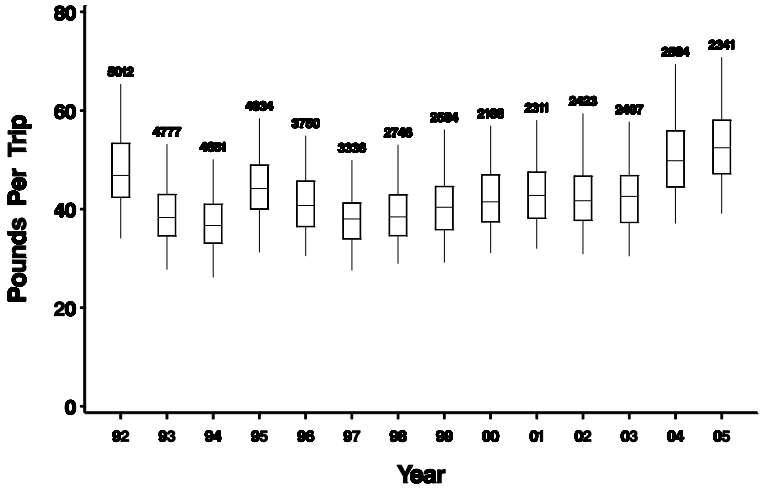


Figure 5. Annual standardized commercial catch rates (pounds) for greater amberjack on the gulf coast of Florida, 1992–2005

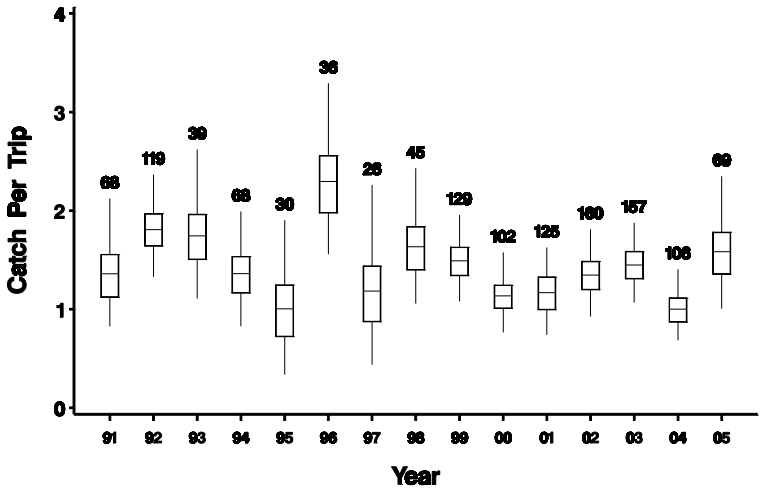


Figure 6. Annual standardized recreational total-catch rates (numbers) for greater amberjack on the Atlantic coast of Florida, 1991 –2005

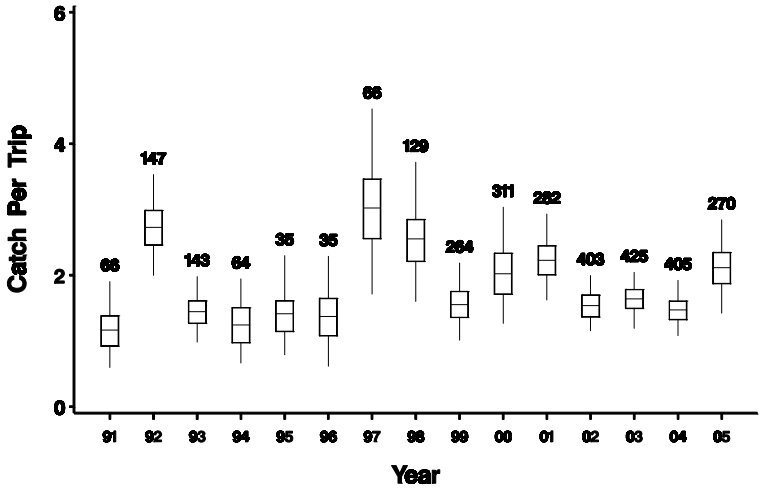


Figure 7. Annual standardized recreational total-catch rates (numbers) for greater amberjack on the gulf coast of Florida, 1991–2005