

SEDAR 2 Southeast Black Sea Bass and Vermillion Snapper
Data Workshop
Life History Workgroup

Mortality

Black Sea Bass Mortality Estimates

Natural Mortality – Black sea bass live for a maximum of 10 years. The group suggested using a M of 0.3. This value was also used by Low (1981) and Vaughan et al. (1995) and is in accord with a maximum age of 10. The group agreed with the range of M = 0.2 and 0.4 that was used by Vaughan et al (1995).

Release Survival – Release survival for black sea bass is estimated to be 85% at 20-23 m; 88% at 29-35 m; and 61 % at 43-55 m for fish that have not had the air released from the swimbladders. The group recommended using a release mortality of 15% with a range of 10-20 %.

Citation

Collins, M.R. J.C. McGovern, G.R. Sedberry, H.S. Meister, and R. Pardieck. 1999. Swim bladder deflation in black sea bass and vermilion snapper: potential for increasing postrelease survival. N. Am. J. Fish. Manage. 19:828-832.
 Low, R.A., Jr. 1981. Mortality rates and management strategies for black sea bass off the southeast coast of the United States. N. Am. J. Fish. Manage. 1:93-103.
 Vaughan, D.S., M.R. Collins, and D.J. Schmidt. 1995. Population characteristics of the black sea bass *Centropristis striata* from the southeastern U.S. Bull. Mar. Sci. 56:250-267.

Black Sea Bass Tagging Information

Total tagged and recaptured during 1993-2001. Includes fish recaptured by MARMAP.

No. Tagged	No. Recap
12,519	926

Data for black sea bass tagged at Gray's Reef during October 1993, 1994, 1995, 1999, 2000, 2001. Recreational recapture data include # recaptured during the first 6 months after tagging (October-April) and the second six months after tagging May-October.

Year	# Tagged	Recreational Recaptures		
		# recap by MARMAP	# rec Oct-Apr	# rec May-Oct
1993	786	55	27	6
1994	1677	73	22	4
1995	1971	115	16	2
1999	2131	192	48	17
2000	1224	147	49	11
2001	1704	83	21	6

Total mortality (Z) from tag recaptures reported by recreational fishermen can be estimated by the equation: $Z_i = -(\log_e R_2 - \log_e R_1)$ where R_1 = the number of fish that were recaptured six months (through April) following a tagging event in October of year i and R_2 = the number of fish that were recaptured after April following October tagging in year i .

Growth rate was determined by (recapture TL = Tagged TL)/ # days at large. Growth from tag recaptures = 0.21 mm/d.

VERMILLION SNAPPER

Natural Mortality – Vermilion snapper live for a maximum of 14 years and aged to 21 in the Gulf of Mexico. The group suggested using a M of 0.25 with a range of 0.2 and 0.3. This value was also used in vermilion snapper assessments conducted by Manooch et al. 1998 and Porch and Cass-Calay 2001.

Release Survival – Release survival for vermilion snapper is estimated to be 83% at 43-55 m by Collins et al. 1999 and 73% for headboat catches by Dixon and Huntsman. The group recommended using a release mortality of 15% with a range of 10-20 %.

Citation

- Collins, M.R. J.C. McGovern, G.R. Sedberry, H.S. Meister, and R. Pardieck. 1999. Swim bladder deflation in black sea bass and vermilion snapper: potential for increasing postrelease survival. *N. Am. J. Fish. Manage.* 19:828-832.
- Dixon, R. L. and G.R. Huntsman. Unpublished. Survival rates of released undersized fishes. NMFS Beaufort.
- Manooch, C.S., III., J.C. Potts, M.L. Burton, D.S. Vaughan. 1998. Population assessment of the vermilion snapper, *Rhomboplites aurorubens*, from the southeastern United States. NOAA Tech. Mem. NMFS-SEFSC-411.
- Porch, C.E. and S.L. Cass-Clay. 2001. Status of the vermilion snapper fishery in the Gulf of Mexico: Assessment 5.0. Southeast Fisheries Division Contribution No. SFD-01/01-129.

Vermilion Snapper Tagging Data

4,076 fish tagged by MARMAP
63 fish recaptured

19 fish recaptured by MARMAP
44 fish recaptured by fishermen