Summary Table of Stone Crab, (Menippe mercenaria) life history for the Gulf of Mexico. Associations and interactions with environmental and habitat variables are listed with citations.

							Trophic relationships		Habitat Associations and Interactions			
Life Stage	Season	Location	Temp(°C)	Salinity(ppt)	Oxygen	Depth(m)	Food	Predators	Habitat Selection	Growth	Mortality	Production
Eggs	Spring - fall; ovigerous females year-round in south Florida, but frequency is low in winter months and spawning females are smaller	Eggs brooded externally beneath female abdomen (160,000-1,000,000 per egg mass) ovigerous females subtidal to shallow shelf across distributional range	Lower limit for spawning: 20-22°C; optimum ovarian develop: 28°C; ovigerous females collected in wild between 19°-33°C	Ovigerous females found in wild from 28-36 ppt.; ovigerous females used in larval development studies held at salinities from 30-32 ppt		Subtidal to shallow shelf				Embryogenesis variable, 9-14 days		
Citation	2,3,13	4,5,6,9,27	2,30,14	7,8,14,31		4,27				9,10		
Larvae (5 zoeal stages)	Spring-fall; year-round in south Florida; based on seasonal abundance of ovigerous females expected frequency low in winter months	Nearshore marine environments	Highest survival in lab studies from 28 to 30°C	Highest survival in lab studies in salinities at or above 30ppt.		Planktonic	Smaller zooplankton; lab reared specimens thrive on *Artemia*	Primary plankton-feeding carnivores including adult filter-feeding fish, larval fish, other zooplankton		Growth through 5 zoeal stages from 14-27 days in lab; duration of zoeal stages strongly dependent on temperature	Presumed to be high in the wild; high in first and fifth zoeal stages in lab reared larvae	
Citation	2,3,31	7	7,8,31	7,8,31		5,12	7,8,10,11,12,31	5,11,12		7,8,10,31	3,7	

Summary Table of Stone Crab, (Menippe mercenaria) cont.

							Trophic relationships		Habitat Associations and Interactions			
Life Stage	Season	Location	Temp(°C)	Salinity(ppt)	Oxygen	Depth(m)	Food	Predators	Habitat Selection	Growth	Mortality	Production
Post Larvae (1) megalopal stage	Spring-fall; year-round in south Florida; based on seasonal abundance of ovigerous females expected frequency low in winter months		Highest survival in lab studies from 28 to 30°C	Highest survival in lab studies in salinities at or above 30ppt			Lab reared specimens fed *Artemia* and minced conch			Duration of megalopal stage 1-2 weeks	Presumed to be high in the wild; high in laboratory reared larvae	
Citation	2,3,13		7,8,31	7,8,31			7,8,10,31			7,8	3,7	
Postsettlement Juveniles (under 10 mm CW)	Year-round, peak settlement in fall	Nearshore shallow waters over range of adult occurrence in Gulf of Mexico; nearshore marine waters off the Ten Thousand Islands and Cedar Key are high frequency settlement areas	Broad temperature tolerance, 8-38°C in wild; in laboratory studies lower-limit threshold for survival between 5 and 10°C	Broad salinity tolerance, 5-40ppt. In laboratory studies lower-limit threshold for survival between 10 and 15ppt.		Nearshore marine waters	Opportunistic carnivore, some herbivory noted	Other xanthids; grouper, black sea bass and other large fish	Seagrass beds, emergent live rock, sponges, gorgonians, deep channels; areas with high densities of postsettlement juveniles (recruitment areas) include Cedar Key and nearshore marine waters off the Ten Thousand Islands	In lab studies mean growth per molt of 18%, molt increment and intermolt period increasing with size, developmental time from first crab to 10 mm CW about 12 months; in field studies estimates of time from first crab to 10 mm CW from 6-12 months	Natural mortality thought to be high due to predation	
Citation	13,18	13	7,15,16	7,13,17		13	3,5,18	*1,3,12,19	13,20	21,22	3	

*Study conducted in zone of hybridization between Menippe adina and M. mercenaria.

Summary Table of Stone Crab, (Menippe mercenaria) cont.

							Trophic relationships		Habitat Associations and Interactions			
Life Stage	Season	Location	Temp(°C)	Salinity(ppt)	Oxygen	Depth(m)	Food	Predators	Habitat Selection	Growth	Mortality	Production
Late Juveniles	Year-round	Nearshore shallow waters over range of adult occurrence in Gulf of Mexico; marine waters off Everglades Bay and Cedar Key are high frequency settlement areas	Broad temperature tolerance, 8 to 38°C in wild; in laboratory studies lowest survival at temperature extremes (5 and 35°C) in low salinity (5ppt). Optimum survival at 25°C over range of salinity from 5 to 35%	Broad salinity tolerance, 5 to 40ppt in wild; in lab studies lowest survival at 5ppt at extremes of temperature (5 and 35°C), optimum survival at and above 15ppt at temperatures from 15 to 35°C		Nearshore marine waters	Opportunistic carnivore, some herbivory noted	Other xanthids; grouper, black sea bass and other large fish	Seagrass beds, emergent live rock, sponges, gorgonians, deep channels; areas with high densities of postsettlement juveniles (recruitment areas) include Cedar Key and marine waters off EvergladesCity	Intermolt period approximately 40 days but increases with size; in lab studies growth per molt under 15ppt in juveniles above 10 mm CW; size at age one approximately 30-40 mm; transition from juvenile to adult form occurs at 35 mm CW	Natural mortality thought to be high due to predation	
Citations	13,18	13	15,16,32	13,17,32		1,3	3,5,18	1,3,12,19	13,20	13,18,23	3	
Adults	Year-round	Greatest abundance in Gulf of Mexico on continental shelf from Naples to Key West, FL; northward range in Gulf to Homosassa, FL	Eurythermal, from 8-32°C; in laboratory studies lowest survival at 5°C, highest survival from 15 to 35°C	Euryhaline, most abundant in salinities approaching full seawater; in laboratory studies no survival at 5 and 15ppt at low temperature (5°C), highest survival at and above 15ppt from 15 to 35°C	Tolerant of reduced dissolved oxygen; can remain alive from 17-21 hours in hypoxic conditions; oxygen consumption averages 0.51 cm^3 0_2/g/hr.	Subtidal to shallow shelf, occasionally intertidal	Opportunistic carnivore	Octopus, horse conchs, sea turtle, cobia, grouper	Inhabit burrows in *Thalassia* flats, rocky or shell bottom, sand, mud, artificial reef rubble	Growth in males is greater and more variable than in females; males develop legal claws and enter fishery at smaller CW than do females; growth influenced by temperature and by ovarian development/embryogenesis in females; males live to about 6 years old and females to about 7 years old	Instantaneous fishing and natural mortality rates are thought to be high; estimated total mortality rates (Z) of 1.47 yr^{-1} for males greater than 118 mm CW and 0.70 yr^{-1} for females above 104 mm CW	Highest fishery production from the Everglades-Florida Bay region; fishery in the Big Bend region prosecuted in zone of hybridization. Production dependent on maintenance of coastal nursery grounds, seagrass beds, and mangrove forests
Citation	3,5,13,18	3,9,20	*1,32	12,32	24,25	3,26,27	*1,3	3,5	3	13,28,29,30	13,33	3,13

*Study conducted in zone of hybridization between Menippe adina and M. mercenaria.

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