



ENHANCE ★ PROTECT ★ CONSERVE

BLUE CRAB

SPRING 2021

BEACON



A NEWSLETTER FROM THE SHRIMP AND CRAB BUREAU OF THE MISSISSIPPI DEPARTMENT OF MARINE RESOURCES

CONSOLIDATION APPROPRIATIONS ACT 2021: ADDITIONAL COVID-19 FISHERIES RELIEF FUNDING COMING SOON

In March of 2021, the Secretary of Commerce announced the allocation of an additional \$255 million in fisheries assistance funding provided by the Consolidation Appropriations Act 2021. This funding will support activities previously authorized under Sec. 12005 of the CARES Act. Nearly \$3 million of these funds has been allocated to the state of Mississippi to assist coastal and marine fishery participants who have been negatively affected by COVID-19 with an economic revenue loss greater than 35% (as required by the National Oceanic and Atmospheric Administration (NOAA)). The MDMR will be opening a second round of applications to distribute these funds to eligible fisheries participants once the spending plan has been approved by NOAA.

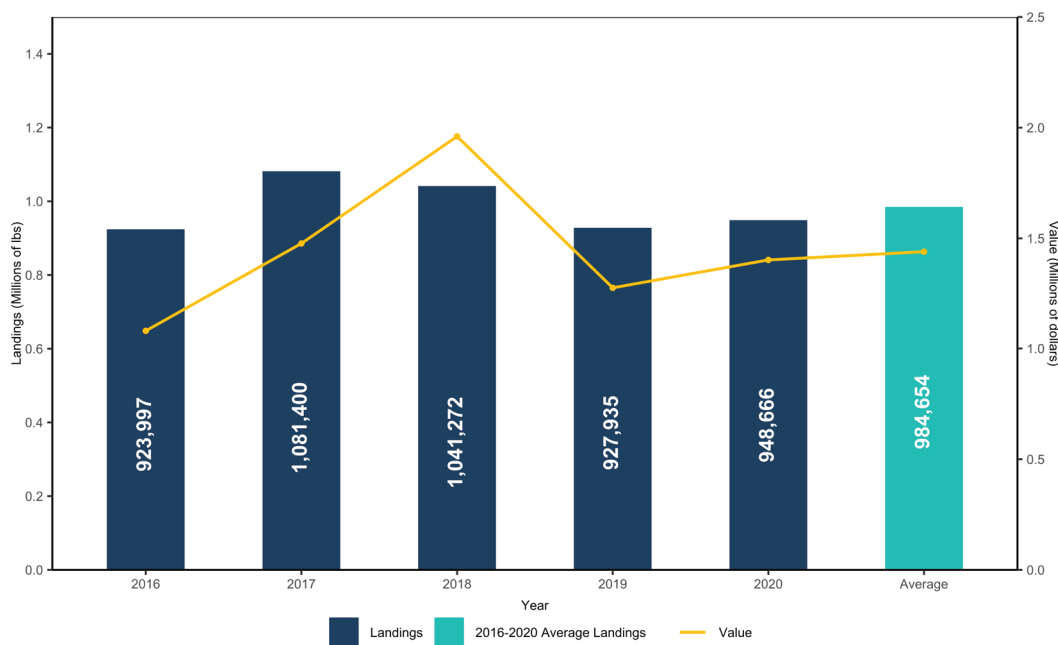
THE DRAFT PLAN IS AVAILABLE AT DMR.MS.GOV/ELEMENTOR-13246/.



COMMERCIAL LANDINGS

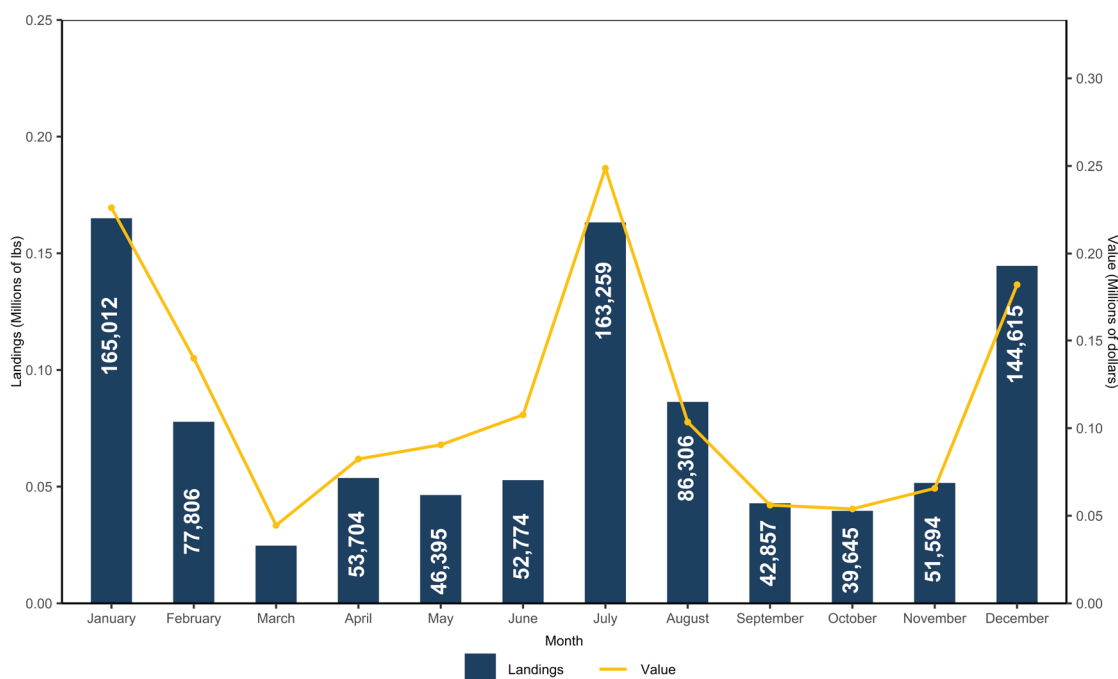
MISSISSIPPI LANDINGS 2016-2020 - BLUE CRABS (*Callinectes sapidus*)

The blue bars represent the total number of pounds of crab landed for the given year while the blue-green bar represents the average crab landings over the 5-year period. The yellow line represents the total value in dollars of crab landed for the given years and the 5-year average. 2017 landings were the highest for the most recent 5-year period at 1,081,400 pounds and resulted in the second highest value for the period at \$1,476,053.13.



2020 MISSISSIPPI LANDINGS BY MONTH - BLUE CRABS (*Callinectes sapidus*)

The blue bars represent the total pounds of crab landed each month in 2020 and the yellow line represents the total monthly value in dollars of those 2020 landings. The highest landings of blue crab in 2020 occurred in January at 165,012 pounds and the highest monthly value occurred in July at \$248,559.90.



COMMERCIAL TRIP TICKET

COMING SOON. VESL: NEW WEB-BASED COMMERCIAL TRIP TICKET SYSTEM

The MDMR has been working to develop a new fisherman-friendly web-based trip ticket forum. This new system will provide an easy and convenient, online submission process while helping to improve accuracy of reported landings. Below you will find a sample trip ticket submission showing what the new system will include.

New Ticket

Trip Details

Start Date * 05/01/21 Transaction Date * 05/02/21 Dealer * MISSISSIPPI TEST DEALER County Landed * JACKSON

Fisherman * JOE CRABBER 9999997 Gear Used * CRAB TRAP / POT Gear Qty * 269 Hours Fished * 72 HOURS

Area Fished * MS WATERS SOUTH OF ...

12.422
LA WATERS - LAKE BORGNE, MARSH 12.420
MS STATE WATERS SOUTH OF BARRIER ISLANDS 11.4
MS WATERS SOUTH OF HANCOCK COUNTY 45
MS WATERS SOUTH OF HARRISON COUNTY 47
MS WATERS SOUTH OF JACKSON COUNTY 48

MARKET / COUNT	QUANTITY	PRICE PER UNIT	TOTAL
Please click the "Add Species" button below to add details			
TOTAL:			

ADD SPECIES

SUBMIT

STEP 1: The first section of the trip ticket is for all trip details. This includes the dealer's name, fisherman's name (and license number), county where the catch was landed, area where the catch was caught, type and quantity of gear used, etc. All active commercial fishing licenses are uploaded and stored in this online forum. Once the fisherman and license number are selected, the system will limit the options available to select for gear type based on gear permissible under the selected license. Once the section has been filled out, you will need to click the "Add Species" button in order to add information about the catch.

STEP 2: Just as with the gear selection, the options for species selection will be limited to those species allowed to harvest under the selected license number. This section will include whether the catch is being sold as food or bait and the condition of the catch when sold. Once these selections are made, the drop-down menu for market/count size will show the different options utilized for the species selected (this field will automatically fill if only one market/count size is permissible). If more than one market/count was sold under this trip ticket, click the button indicated by the red arrow shown to select the Expanded Multi-Entry to input data for all market/count sizes at once.

Species Details

Species * BLUE CRAB Disposition * FOOD Condition * LIVE

Market / Count * SMALL #3

Quantity * Price per Unit * DOLLARS

ADD ADD & NEW

SPECIES	CONDITION	MARKET / COUNT	QUANTITY	PRICE PER UNIT	TOTAL
Please click the "Add Species" button below to add details					
TOTAL:					

SAVE SUBMIT

COMMERCIAL TRIP TICKET

STEP 3: Once the Expanded-Multi-Entry mode has been opened, a quantity in pounds and price per pound can be entered for each market/count size (leave the entry blank if no catch was landed in a particular size). Once all data has been entered, you will need to click the “Add” button to add the entered species details to your trip ticket. If you are utilizing a license that allows more than one species to be harvested, you may click “Add & New” to add data on the next species landed from the trip.

Species Details

Species * Disposition * Condition *

Market / Count	Quantity	Price per Unit
<input type="button" value="X"/> SMALL #3	<input type="text" value="3.7"/> POUNDS	<input type="text" value="1.5"/> DOLLARS
<input type="button" value="X"/> MEDIUM #2	<input type="text" value="15.2"/> POUNDS	<input type="text" value="2.5"/> DOLLARS
<input type="button" value="X"/> LARGE #1	<input type="text" value="7.6"/> POUNDS	<input type="text" value="3.5"/> DOLLARS
<input type="button" value="X"/> UNCLASSIFIED (MIXED)	<input type="text" value="10.9"/> POUNDS	<input type="text" value="2"/> DOLLARS

New Trip Ticket

Trip Details

Start Date * Transaction Date * Dealer * County Landed *

Fisherman * Gear Used * Gear Qty * Hours Fished *

Area Fished *

SPECIES	CONDITION	MARKET / COUNT	QUANTITY	PRICE PER UNIT	TOTAL
BLUE CRAB	LIVE	SMALL #3	3.700 lbs	\$1.50	5.55
BLUE CRAB	LIVE	MEDIUM #2	15.200 lbs	\$2.50	38.00
BLUE CRAB	LIVE	LARGE #1	7.600 lbs	\$3.50	26.60
BLUE CRAB	LIVE	UNCLASSIFIED (MIXED)	10.900 lbs	\$2.00	21.80
TOTAL:					\$91.95

STEP 4: Once the species has been added to the trip ticket, the system will convert the entered quantity and price per unit into a total value of catch landed. Once all species landed have all been added, the ticket is ready for submission.

MISSISSIPPI COMMERCIAL BLUE CRAB FISHERY OBSERVER PROGRAM

The Gulf Coast Research Laboratory (GCRL) created a program to monitor the crab fishery in 2007. In the program, biologists accompanied blue crab fishermen as they ran their traps and recorded information on the size and sex of the crabs captured, the number of egg crabs that occurred in the catch and overall trap bycatch. Information generated by this program helps resource managers monitor the fishery. For example, the information collected on bycatch shows that unintended harvest of recreational and commercial fish species was low and comprised less than 1% of the catch. This information was based on over 72,000 trap pulls in which the bycatch was recorded.

Recently acquired Gulf of Mexico Energy Security Act (GOMESA) funding allows for expansion of the project and a cooperative program between GCRL and the Mississippi Department of Marine Resources to begin in July 2021. A minimum of nine resident commercial fishermen will be needed for this program, and GCRL staff are currently seeking commercial crab fishermen who are interested in helping with this project. To qualify for consideration, fishermen must currently be active in the Mississippi blue crab fishery, must fish year-round using a 20ft or larger boat and have a record of landings (trip tickets) in the blue crab fishery in Mississippi for the past two years. Each fisherman will be contracted for up to 16 trips over the duration of the project and will be compensated for each trip made with scientists aboard.

Two scientists will accompany the fishermen on selected trips and will cull the crabs and collect detailed biological information on the crabs in every other trap. Number of crabs per trap, sex/maturity composition of the catch and bycatch will be recorded from every trap. Twenty legal-sized crabs will be returned to GCRL for further examination.

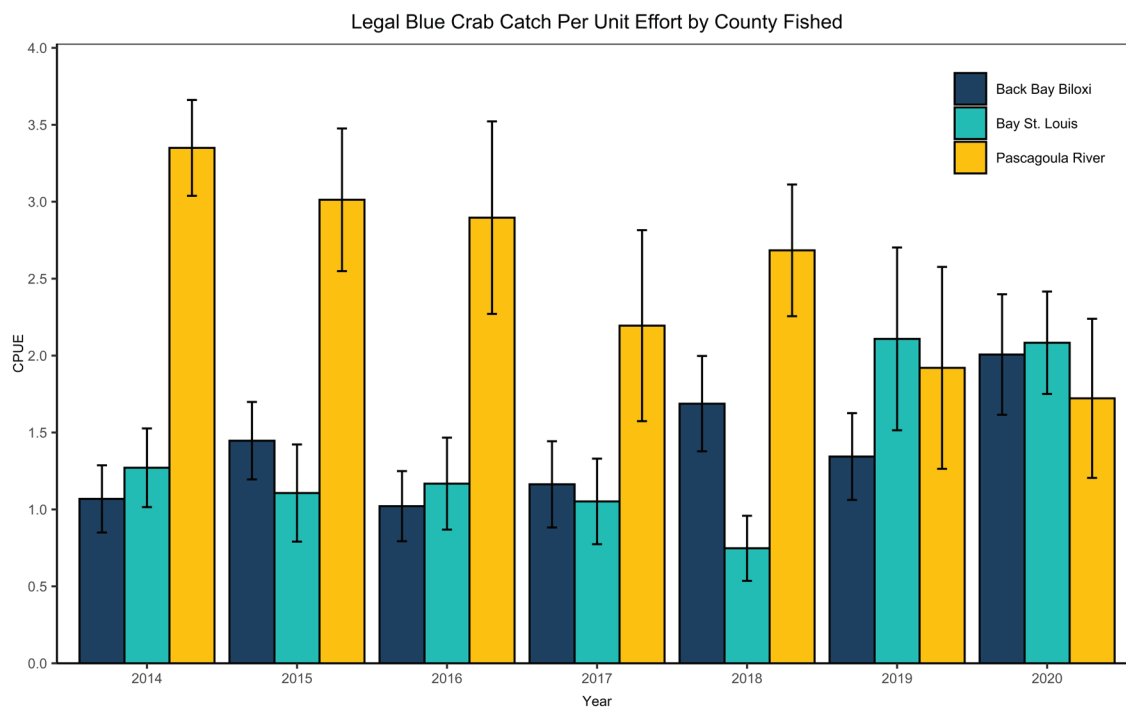
IF YOU ARE INTERESTED IN WORKING WITH GCRL PERSONNEL ON THIS PROJECT,
CONTACT LILLIAN.COLLINS@USM.EDU.

TO VIEW GOMESA INFORMATION, VISIT DMR.MS.GOV/GOMESA.

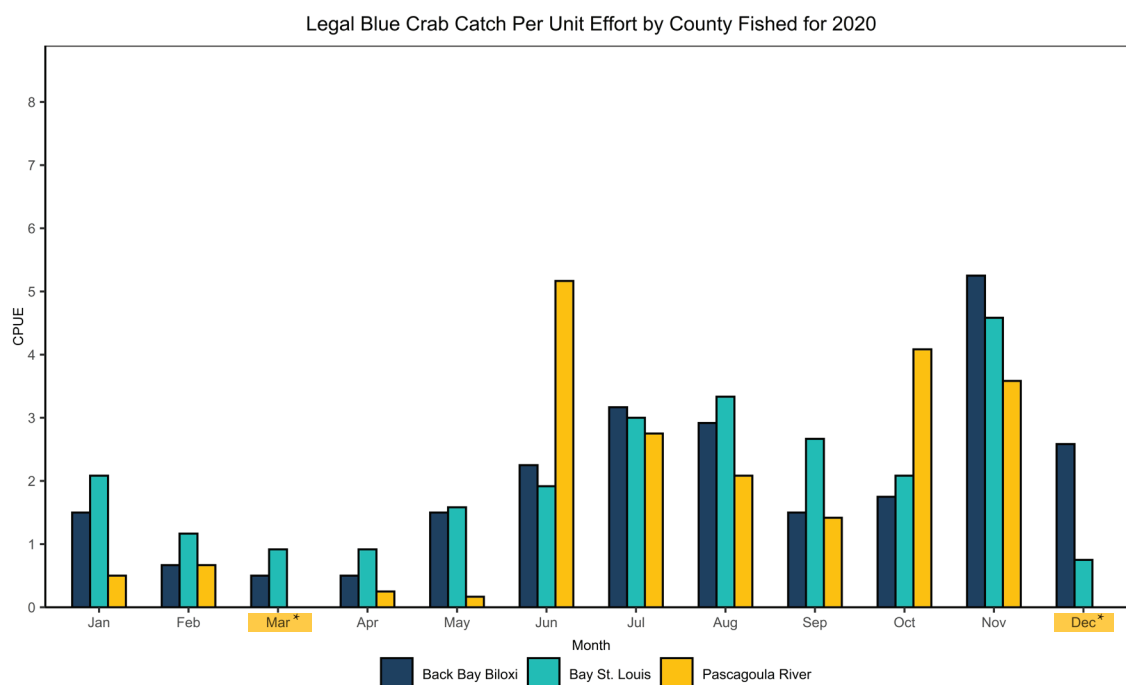


CATCH PER UNIT EFFORT STUDY IN MISSISSIPPI'S RECREATIONAL CRABBING WATERS

In September of 2014, the MDMR began a project directed at measuring the abundance of blue crabs in three major Mississippi estuaries. This program consists of monthly sampling in the St. Louis Bay, Back Bay of the Biloxi and the lower Pascagoula River delta utilizing standard crab traps. Data collected during this project includes number, weight, length, sex, maturity and molt stage of blue crabs and any bycatch is also documented. Graph 1 shows the legal blue crab catch per unit effort (CPUE) per estuary per year since 2014. Graph 2 shows the legal blue crab CPUE per estuary per month for the 2020 calendar year.



▲ Graph 1



▲ Graph 2

*No catch in Pascagoula River attributed to extremely low salinity at the time of sampling.

DERELICT CRAB TRAP REMOVAL PROGRAM

The Mississippi Derelict Crab Trap Removal program began in 1999 and has been an effective measure of removing lost crab traps. In January 2021, the MDMR held a public cleanup which resulted in the removal of 310 derelict traps from the environment. To date, 22,250 traps have been removed and recycled from Mississippi state waters.

Commercial fishermen continue to be vital to the success of this program through their cooperation with closures, movement of their gear and assistance with the removal of derelict crab traps. We would like to thank the fishermen and the volunteers who donate their time to help make this program a success.

We would also like to recognize Owens Scrap Metal, MSU Extension staff, GCRL Center for Fisheries Research and Development staff for their assistance with this year's cleanup.



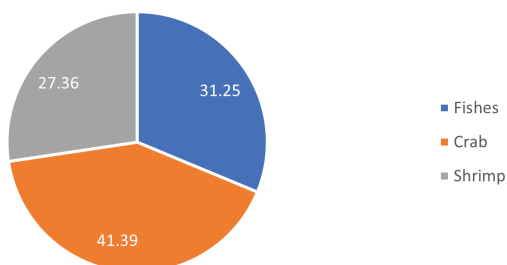
PREDATION ON JUVENILE BLUE CRABS BY RED DRUM: 2011 BONNET CARRÉ FISHERIES DISASTER RELIEF FUNDS

Decapod crustaceans, such as blue crab, are well documented as a primary food source for fish from the drum family, Sciaenadae, including familiar species such as Red Drum (*Sciaenops ocellatus*), Black Drum (*Pogonias cromis*) and Spotted Seatrout (*Cynoscion nebulosus*). With a goal of providing data on the current foraging habits of Red Drum, specifically relating to blue crabs, MDMR staff collected and analyzed the stomach contents of Red Drum collected in Mississippi waters from 2015-2018. Stomach content analyses were performed on 483 Red Drum ranging in size from 7.83 to 44.33 inches in total length. Of the stomachs examined, 372 contained prey items that were identifiable to species, primarily consisting of fish and decapod crustaceans regardless of the length of the Red Drum sampled.

Month	Samples per Month	Season	Samples per Season
January	33	Winter	110
February	27		
March	50		
April	27	Spring	103
May	46		
June	30		
July	77	Summer	171
August	54		
September	40		
October	24	Fall	99
November	44		
December	31		

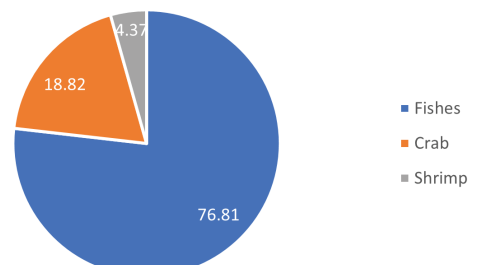
▲ Number of analyzed Red Drum stomachs per month and season

Percent Composition by Number
of Prey Items



▲ Looking at the quantity of prey items in all Red Drum sampled, the MDMR found the stomach contents consisted primarily of crabs (41.39%) followed by fish (31.25%) and shrimp (27.36%).

Percent Composition by Weight
of Prey Items



▲ When separating the stomach contents using the percent composition by weight for each species identified, the MDMR found the stomach contents consisted primarily of fish (76.81%) followed by crab (18.82%) and shrimp (4.37%).

BYCATCH REDUCTION DEVICES

2011 BONNET CARRÉ FISHERIES DISASTER RELIEF FUNDS ALLOWED THE MDMR TO CONTINUE THE DISTRIBUTION OF TERRAPIN EXCLUDER DEVICES AND ESCAPE RINGS TO LOCAL RECREATIONAL AND COMMERCIAL CRAB FISHERMEN UNDER THE FOLLOWING PROGRAMS

TERRAPIN EXCLUDER DEVICES

Terrapin excluder devices (TEDs) are rectangular devices that attach to the funnels of crab traps that prevent the entry of diamondback terrapins while still allowing blue crabs to enter. TEDs are made of plastic or metal and are attached to the funnels using hog rings, wires or zip ties. The use of TEDs is encouraged to help reduce the incidental catch of diamondback terrapins, which is a species of concern.

Under this funding, the Mississippi Crab Trap Bycatch Reduction Device (BRD)/TED Program began in October 2015 and has allowed for the distribution of an additional 7,264 TEDs and counting. To date, over 303 fishermen have received TEDs through this program. If you are a recreational or commercial crab fisherman in the state of Mississippi and would like to obtain TEDs for your crab traps at no cost, please stop by the MDMR office and ask about this program at the licensing desk. MDMR has given out a total of 20,897 terrapin excluder devices since 2008. This program will continue to be offered while supplies last.

CRAB TRAP ESCAPE RINGS

Escape rings are devices that help reduce the catch of sublegal crabs (smaller than 5") and other small bycatch species by incorporating a reinforced circular opening into each trap chamber that allows these smaller organisms to move out of the traps freely. The use of escape rings has a positive impact on the Mississippi blue crab fishery because it not only reduces the time it takes to cull your catch and decreases the amount of non-targeted bycatch, but it also decreases mortality of sublegal crabs, allowing for growth of the population.

Since the funding of the Blue Crab Recovery Program in 2015, the MDMR has successfully distributed an additional 76,380 escape rings and counting to over 743 commercial and recreational crab fishermen. If you are a recreational or commercial crab fisherman in the state of Mississippi and would like to obtain escape rings for your crab traps at no cost, please stop by the MDMR and ask about this program at the licensing desk. Due to limited supply, issuance of escape rings will be limited to 500 per license holder (enough for 250 traps) while supplies last.

Escape Ring Regulations: All crab traps placed in the marine waters of the state of Mississippi shall be equipped with no less than two (2) escape rings positioned on the vertical outside walls of the trap, with at least one (1) ring located in each chamber. Escape rings must have a minimum of 2 and 3/8 inches inside diameter. From April 1 to June 30 and from September 1 to October 31, escape rings may be obstructed for the purposes of retaining peeler or buster crabs. (Title 22 Part 4).

Crab trap TEDs and escape rings are still available free of charge to Mississippi fishermen while supplies last.



▲ Example of a TED



▲ Crab Trap with an installed BRD and TED



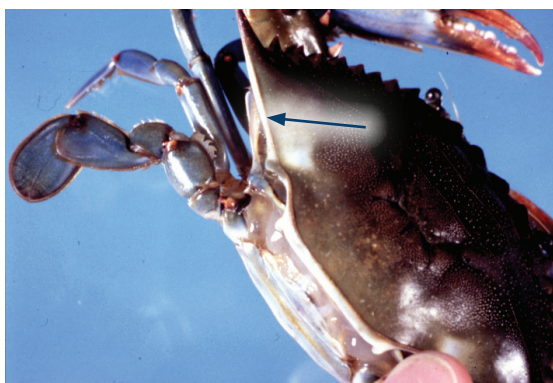
▲ Crab trap with an installed escape ring

BLUE CRAB MOLTING

As with other crustaceans, the blue crab must molt or shed its hard, outer shell (exoskeleton) in order to increase in size. When the body grows too large for the old exoskeleton, a new soft one forms beneath it. A crab preparing to molt is called a "peeler" or a pre-molt crab.

STAGE 1: PRE-MOLT/PEELER

During this stage, blue crabs can be separated from inter-molt or hard crab through the presence of shedding along the merus and long lateral spines of the carapace. Many fishermen check these areas first to see if the suture lines are present and soft. Prior to molting, blue crabs absorb the calcium from suture lines in the exoskeleton. These suture lines split open to help the crab back out of the shell.



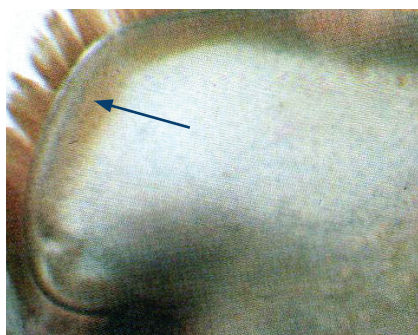
▲ Suture lines on the long lateral spines of the carapace



▲ Suture lines in the merus, a segment of the claw

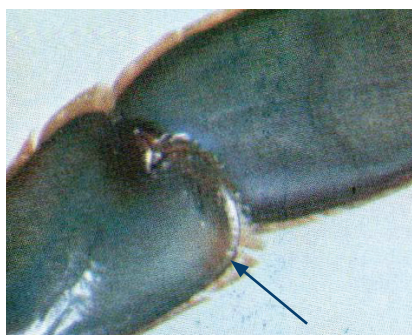
STAGE 2: CHANGES IN COLORATION

Other molting signs involve changes in coloration. Check the last two segments of the swimming leg or paddle where the newly formed shell is most easily visible to determine the crab's molt stage. Crabs are classified as either green or ripe/rank based on their coloration stage. Some areas refer to a green crab as those that don't show any sign of molting. When holding crabs, it's important to separate white lines from pink and red line crabs as white line crabs are still capable of cannibalism.



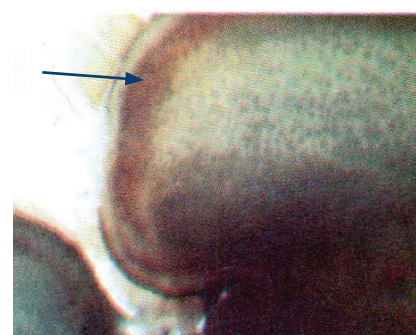
▲ WHITE LINE (GREEN)

- Sheds within 7-14 days
- Grade every 2-3 days for signs of advancing to the pink line



▲ PINK LINE (RIPE/RANK)

- Sheds within 3-6 days



▲ RED LINE (RIPE/RANK)

- Sheds within 1-3 days

Figures were taken from the following publication: Perry, Harriet M. and Ronald F. Malone. 1989. Blue crabs: soft-shell production. In: Cake, E. W., L. F. Whicker, and C. M. Ladner (editors), Mississippi Aquatic Ventures Center: Aquaculture Profiles and Opportunities in Mississippi. Mississippi Department of Wildlife, Fisheries & Parks, Bureau of Marine Resources.

STAGE 3: BUSTING

The “buster” or “soft-shell” stage begins when the hard shell splits across the back and the crab starts to pull out of the old shell. To expand its soft and wrinkled body, the crab takes in large amounts of water to stretch the new shell and allow for future growth. After molting the soft shell hardens and are referred to “paper-shell” or “leather” crabs. Paper-shell/leather are marketable, but soft crabs bring top prices.

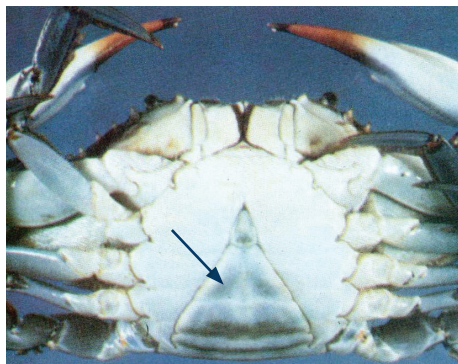


▲ Crab pulling out of old shell



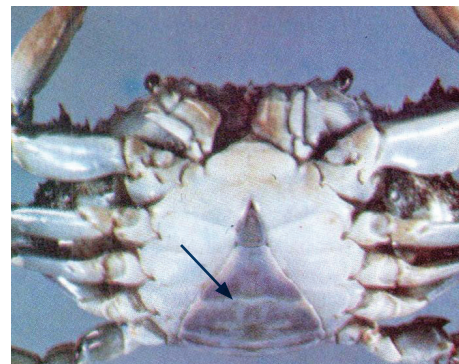
▲ Paper-shell or leather crab

OTHER SIGNS OF SHEDDING

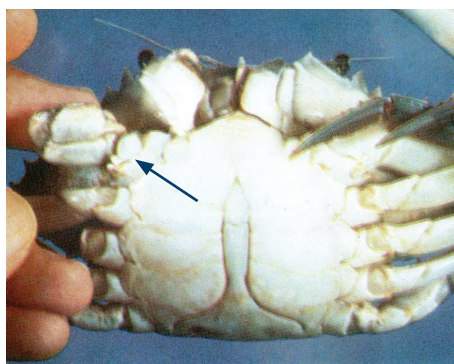


▲ Immature female crab

The abdomen or apron in immature female crabs changes from creamy white to reddish-purple.



▲ Ripe female crab



▲ Male possesses well-developed limb buds.



STATE OF MISSISSIPPI
Tate Reeves
Governor

MISSISSIPPI DEPARTMENT OF MARINE RESOURCES
Joe Spraggins, Executive Director

RESOLUTION NO. 12152020-01

WHEREAS, the Mississippi Department of Marine Resources is a duly constituted governmental entity, created to serve the Great State of Mississippi; and

WHEREAS, said service includes the conservation and wise management of the marine resources of Mississippi; and

WHEREAS, the Mississippi Department of Marine Resources acknowledges contributions to the betterment of the fisheries of the Gulf of Mexico through significant biological, industrial, legislative, enforcement or administrative activities; and

WHEREAS, William "Billy" Albert Thiroux was a member of one of the oldest and foremost commercial fishing families on the Mississippi Gulf Coast and was a commercial fisherman for over 70 years; and

WHEREAS, Mr. Billy served his country in the U.S. Navy working on the aircraft carrier *California*; and

WHEREAS, Mr. Billy served as a founding member of the Mississippi Crab Task Force from 1998 to 2018; and

WHEREAS, Mr. Billy was often sought out for his knowledge, guidance, and council; and

WHEREAS, Mr. William "Billy" Albert Thiroux passed away on February 9, 2020; and

NOW THEREFORE, BE IT RESOLVED, that the Mississippi Department of Marine Resources recognizes and appreciates the long valuable career and service of Mr. William "Billy" Albert Thiroux to the enhancement of fisheries management for State of Mississippi.

DONE AND RESOLVED, on this the 15th of December 2020.

MISSISSIPPI DEPARTMENT OF MARINE RESOURCES


Joe Spraggins, Executive Director

1141 Bayview Avenue • Biloxi, MS 39530-1613 • Tel: (228) 374-5000 • dmr.ms.gov

MR. WILLIAM "BILLY" THIROUX PASSED AWAY ON FEBRUARY 9, 2020. MDMR RECOGNIZES HIS 20 YEARS OF SERVICE ON THE MISSISSIPPI CRAB TASK FORCE AND OVER 70 YEARS OF SERVICE TO THE MISSISSIPPI BLUE CRAB FISHERY.





ENHANCE PROTECT CONSERVE

SHRIMP AND CRAB BUREAU

1141 Bayview Avenue
Biloxi, Mississippi 39530

STATE OF MISSISSIPPI

The Honorable Tate Reeves, Governor

MISSISSIPPI DEPARTMENT OF MARINE RESOURCES

Joe Spraggins, Executive Director

MISSISSIPPI COMMISSION ON MARINE RESOURCES

Ronnie Daniels, Chairman
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Nonprofit Environmental
Organizations

Cammack (Cam) A. Roberds
Recreational Sports Fishermen

Vacant
Commercial Fishermen

Vacant
Commercial Seafood Processors

COMMENTS OR SUGGESTIONS?

Mississippi Department of Marine Resources
Shrimp and Crab Bureau
228.374.5000

WWW.DMR.MS.GOV



Top photo courtesy of the Biloxi Local History and Genealogy Department / Image Collection.