

## GSMFC Texas Report October 2022—Blue Crab Subcommittee Abandoned Crab Trap Program

The Texas Parks and Wildlife Department (TPWD) closed state waters to crabbing (with crab traps) from February 18 – February 27, 2022. During this time, crab traps encountered are classified as “abandoned” and may be removed by Law Enforcement personnel, Department staff, and any member of the general public. A grand total of 1,258 traps were removed. We documented 250 volunteers participating onboard 79 boats during the annual closure. Table 1 gives this data broken down by major bay in Texas.

**Table 1.** 2022 Abandoned Crab Trap Removal Program Summary

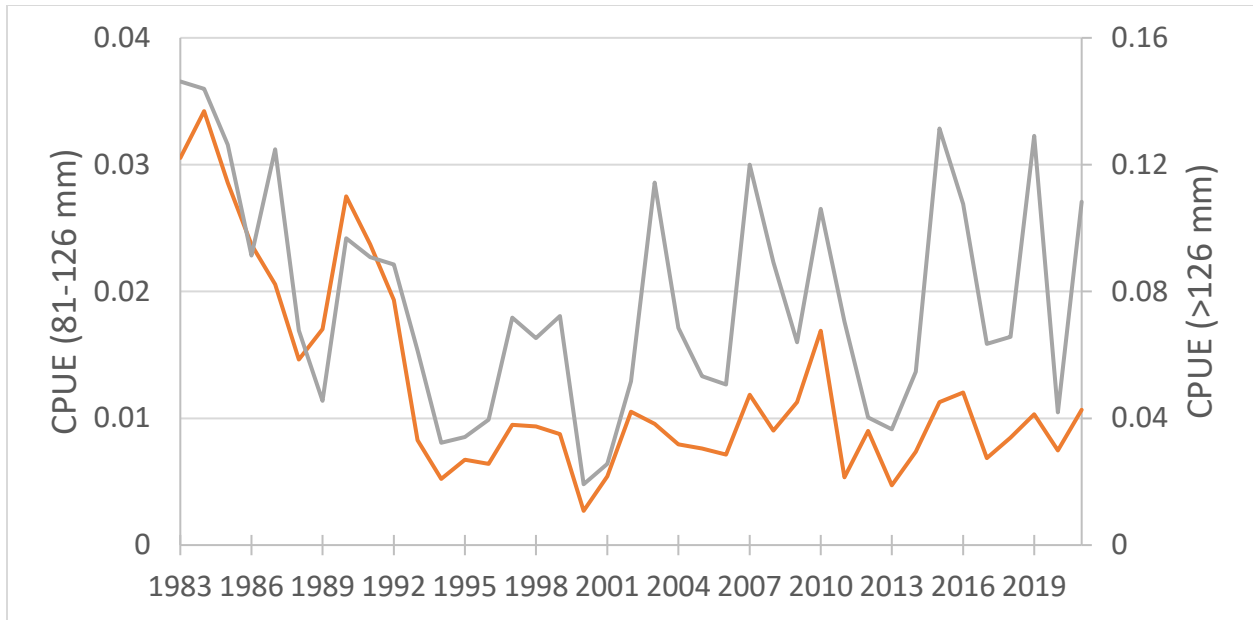
<b>ACTRP 2022 Results</b>	<b>Traps</b>	<b>Volunteers</b>	<b>Boats*</b>
Sabine Lake	1	2	2
Galveston Bay	110	63	12
Matagorda Bay	298	14	8
San Antonio Bay	608	109	30
Aransas Bay	198	61	24
Corpus Christi Bay	43	1	1
Upper Laguna Madre	0	0	0
Lower Laguna Madre	7	0	2
<b>Totals</b>	<b>1258</b>	<b>250</b>	<b>79</b>

\*Note, vessels with no volunteers indicates TPWD staff members operating vessels and collecting traps with no volunteers on board.

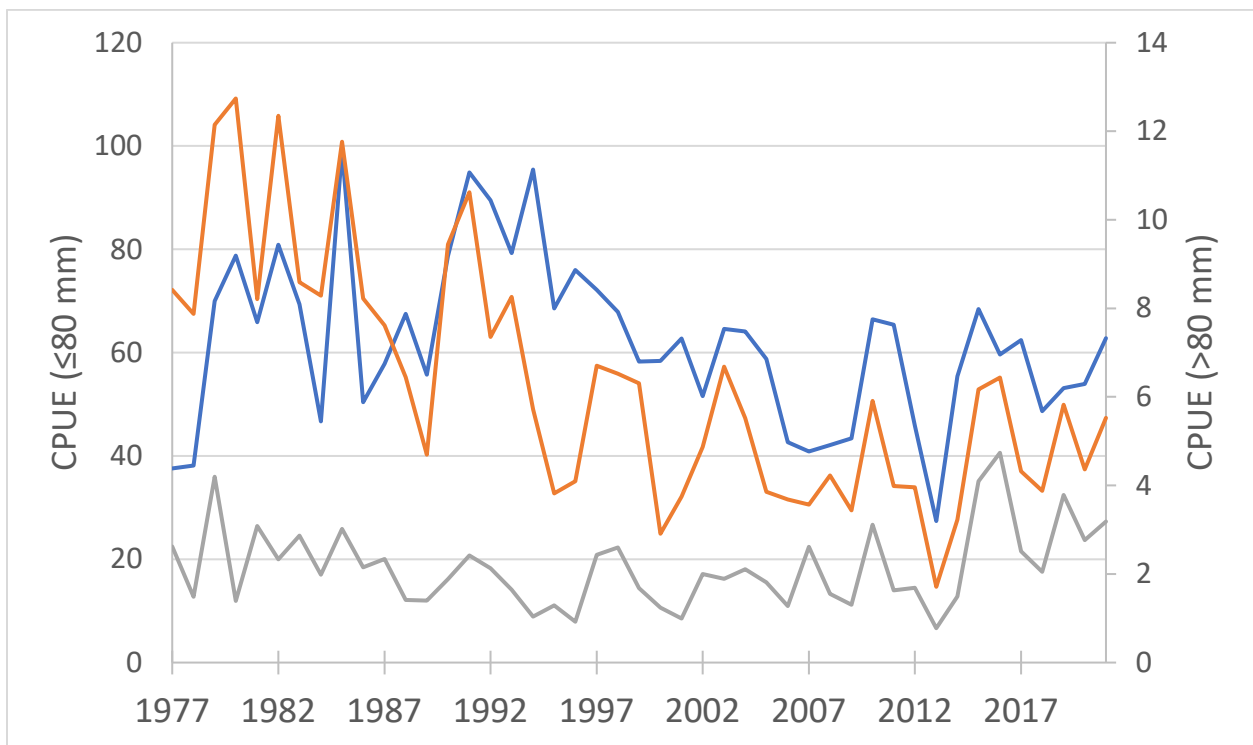
### Fishery Independent Monitoring

Blue crab trends in Texas remain relatively unchanged from last year’s report. Based on TPWD fishery independent catch rates, coastwide relative abundance of blue crabs has shown coastwide significant declines since the 1980’s, however, there is some variation in these trends by bay system. While these coastwide trends have largely stabilized since the early 2010’s, and gill net and bag seine surveys suggest increased catch rates of adult blue crabs in recent years (Fig. 1, and 2), bag seine and bay trawl catch-rates (Fig 2. and 3, respectively) suggest that juvenile abundance continues to remain low. Variation in trends among sampling gears may be due to habitat difference among these sampling gears (i.e., seine and gill net surveys are shore based while trawl surveys typically occur in mid-bay areas). Preliminary data from 2022 (not shown) suggests that these trends continue to remain largely unchanged.

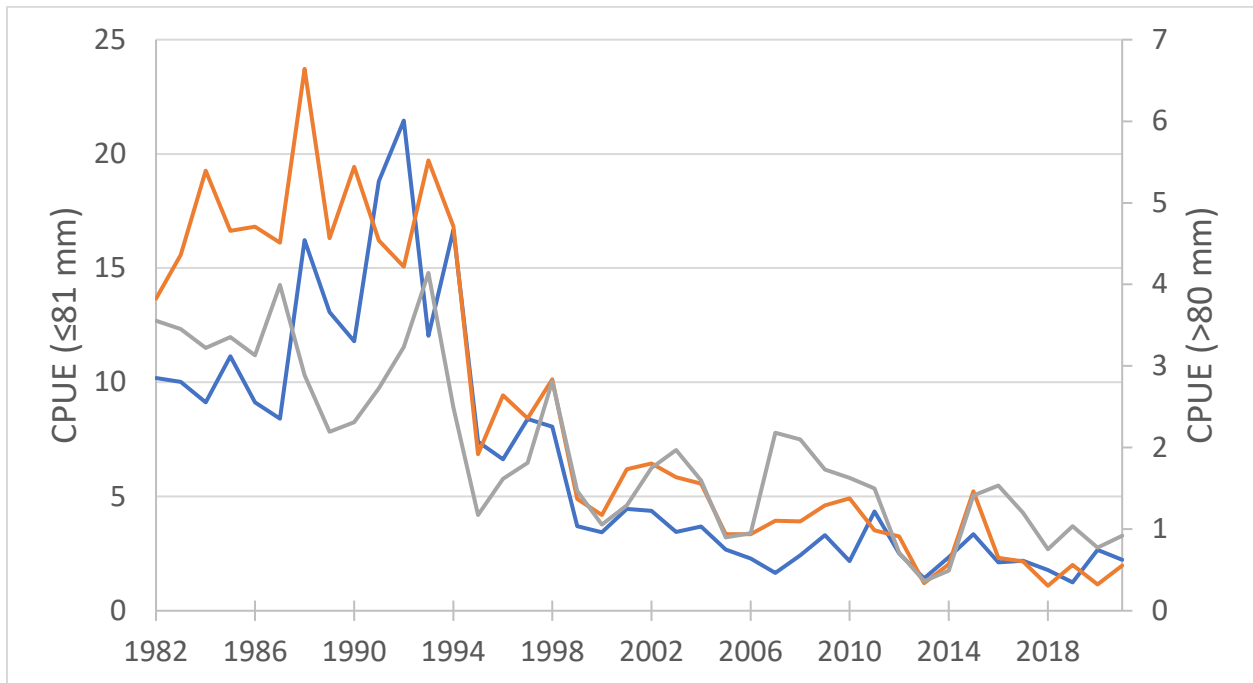
Sex ratio (here reported as proportion female and separately for crabs  $\geq 127$  mm and  $< 127$  mm; Figs. 4-9) does not seem to show any trends across the timeseries that this data has been collected in TPWD fishery independent monitoring (i.e., 1984-1987; 2006-present). Patterns among gear and size class are likely due to habitat and size selectivity differences among sampling gears. Understanding any potential trends in blue crab sex ratio is important considering variation in fishery selectivity among sexes and sex specific regulation common in many Gulf states.



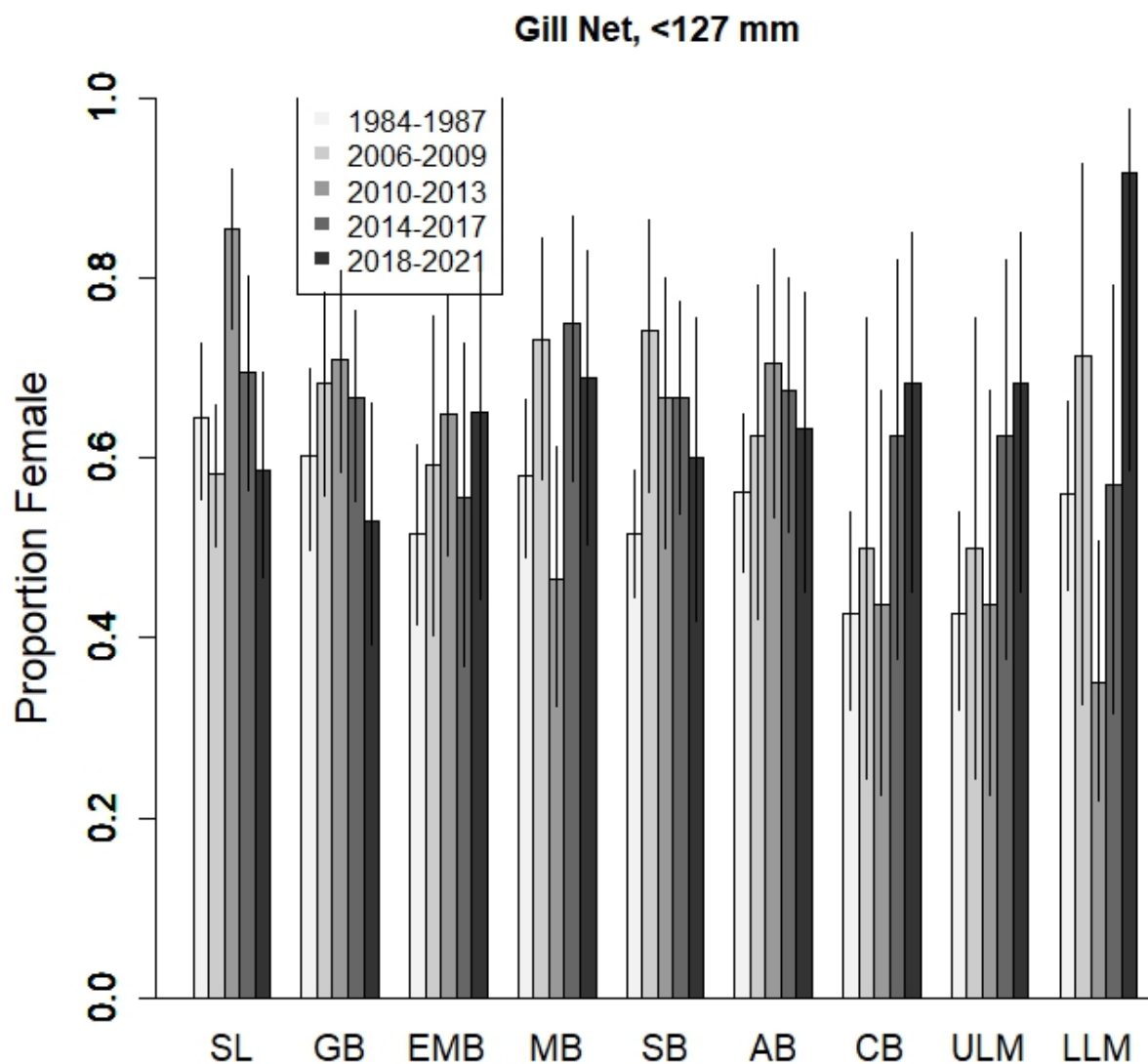
**Fig. 1.** Blue crab catch-per-unit-effort (CPUE; catch/hour) in fishery independent gill net surveys conducted in Texas bays from 1983-2021. The orange line represents blue crabs 81-126 mm, and the gray line represents crabs  $\geq 127$  mm. Note, gill net samples were not collected during the spring of 2020 due to the COVID-19 pandemic (i.e., 2020 consists of only fall gill net samples).



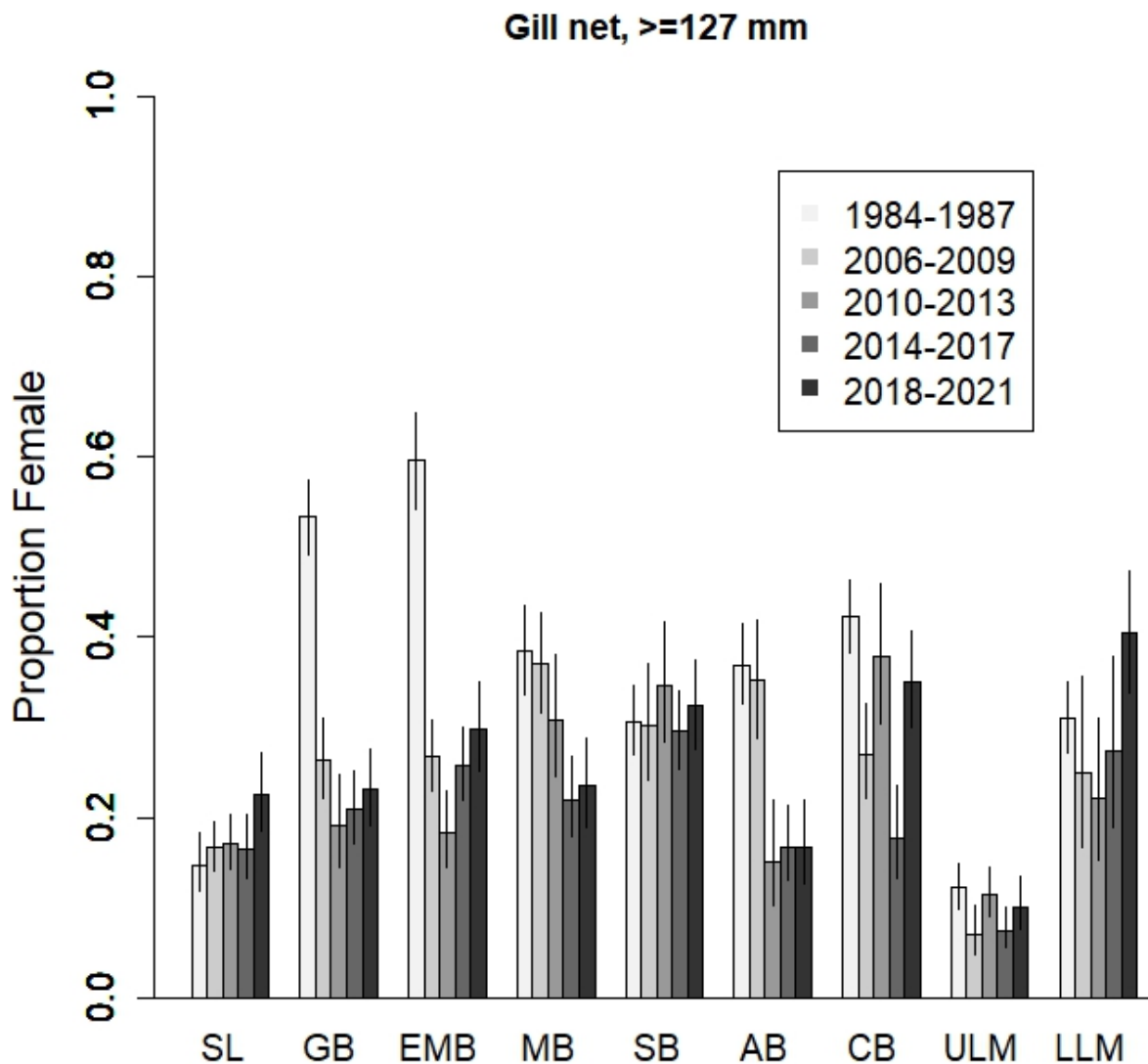
**Fig. 2.** Blue crab catch-per-unit-effort (CPUE; catch/hectare) in fisheries independent bag seine surveys conducted in Texas bays from 1977-2021. The blue line represents blue crabs  $\leq 80$  mm, the orange line represents blue crabs 81-126 mm, and the gray line represents crabs  $\geq 127$  mm.



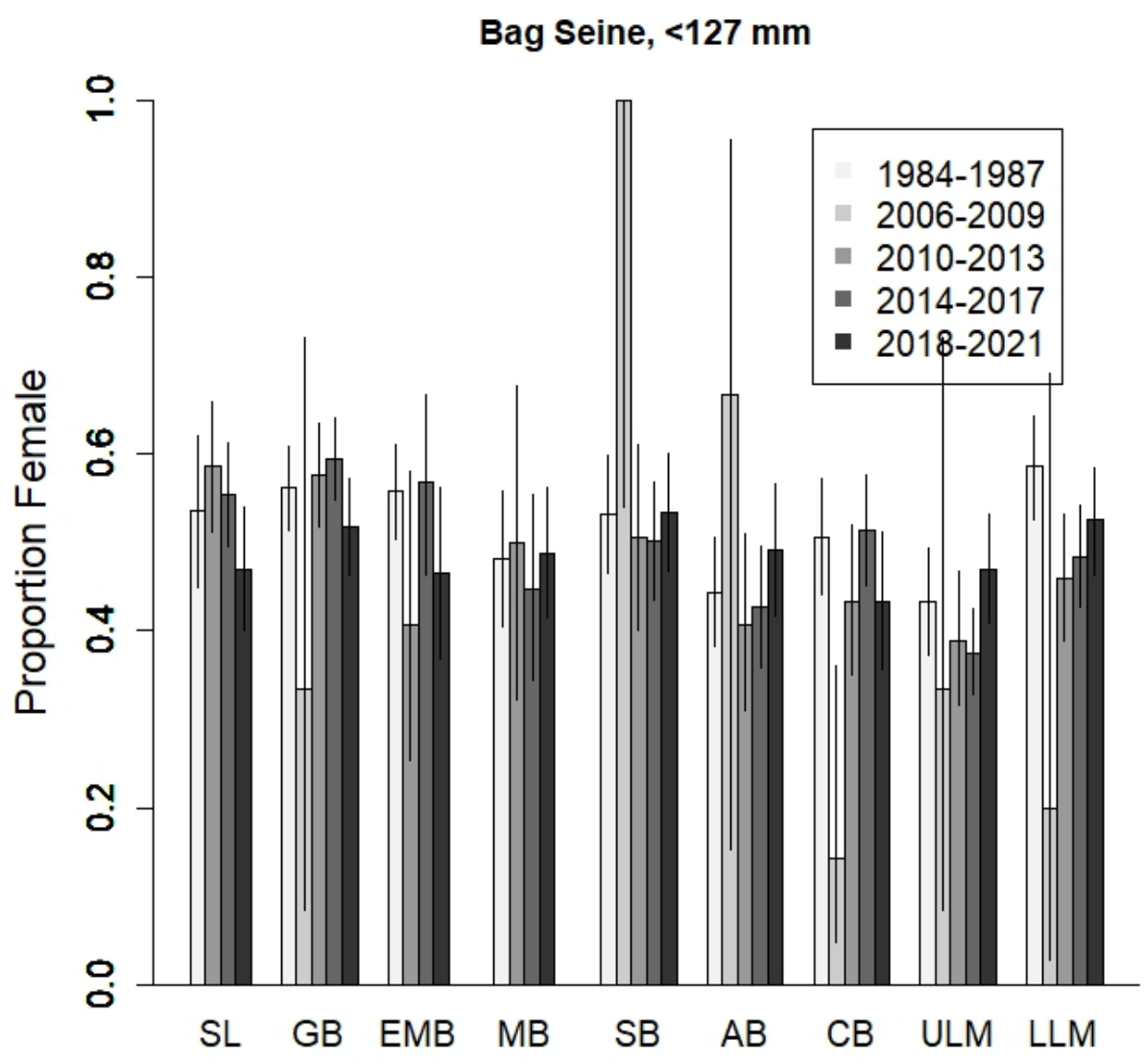
**Fig. 3.** Blue crab catch-per-unit-effort (CPUE) in fisheries independent bay trawl surveys (i.e., trawls conducted in Texas estuaries) conducted in Texas bays from 1982-2021. The blue line represents blue crabs  $\leq 80$  mm, the orange line represents blue crabs 81-126 mm, and the gray line represents crabs  $\geq 127$  mm.



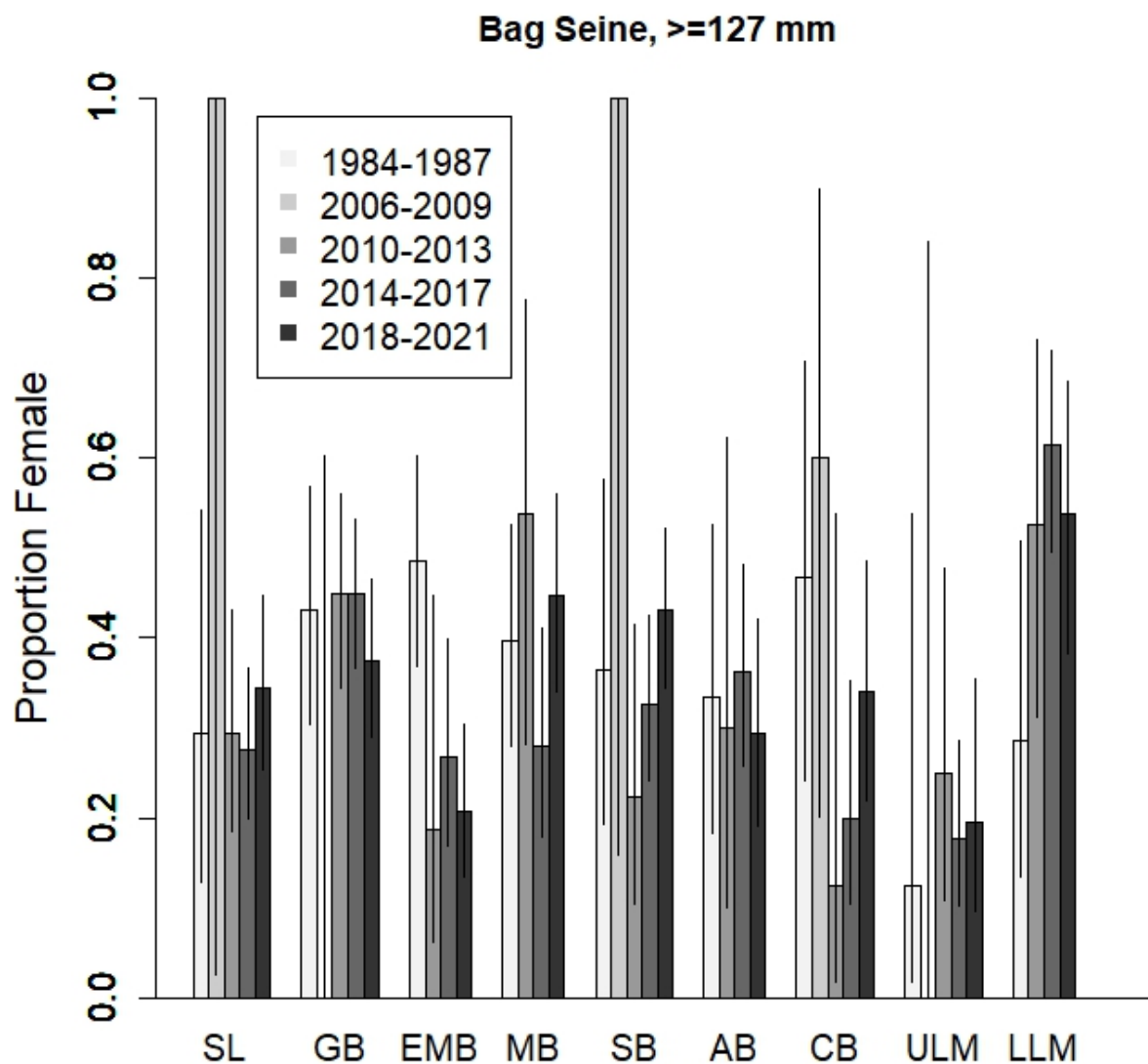
**Fig 4.** Proportion of female blue crabs < 127 mm (i.e., sub-legal size for harvest) in fisheries independent gill net surveys conducted in Texas bays (Sabine Lake (SL), Galveston Bay (GB), East Matagorda Bay (EMB) Matagorda Bay (MB), San Antonio Bay (SB), Aransas Bay (AB), Corpus Christi Bay (CB), Upper Laguna Madre (ULM), and Lower Laguna Madre (LLM)). Error bars represent 95% confidence intervals. Note, sex data was only collected from 1984-1987 and again from 2006-2021.



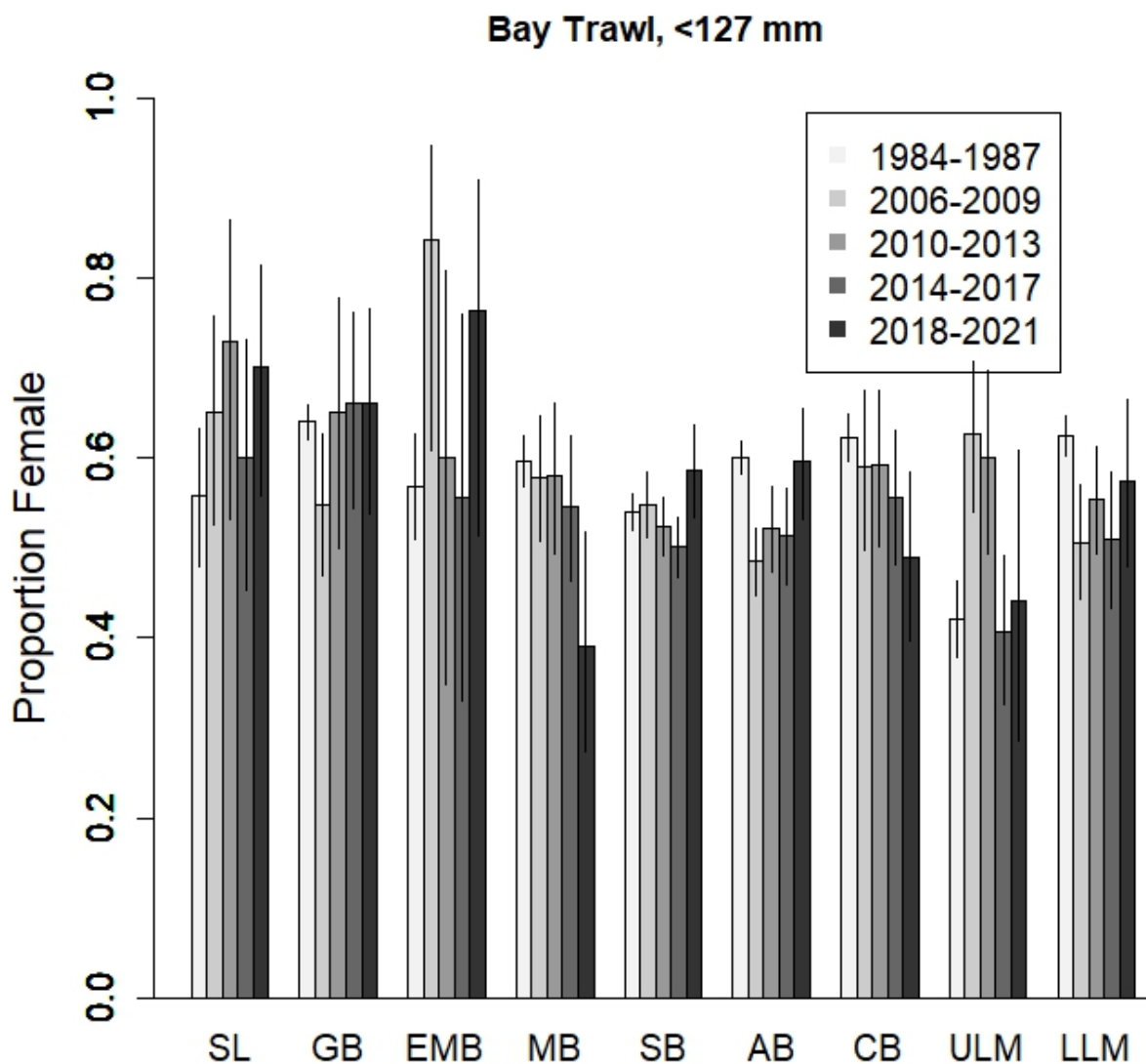
**Fig 5.** Proportion of female blue crabs  $\geq 127$  mm (i.e., legal size for harvest) in fisheries independent gill net surveys conducted in Texas bays (Sabine Lake (SL), Galveston Bay (GB), East Matagorda Bay (EMB) Matagorda Bay (MB), San Antonio Bay (SB), Aransas Bay (AB), Corpus Christi Bay (CB), Upper Laguna Madre (ULM), and Lower Laguna Madre (LLM)). Error bars represent 95% confidence intervals. Note, sex data was only collected from 1984-1987 and again from 2006-2021.



**Fig 6.** Proportion of female blue crabs < 127 mm (i.e., sub-legal size for harvest) in fisheries independent bag seine surveys conducted in Texas bays (Sabine Lake (SL), Galveston Bay (GB), East Matagorda Bay (EMB) Matagorda Bay (MB), San Antonio Bay (SB), Aransas Bay (AB), Corpus Christi Bay (CB), Upper Laguna Madre (ULM), and Lower Laguna Madre (LLM)). Error bars represent 95% confidence intervals. Note, sex data was only collected from 1984-1987 and again from 2006-2021.

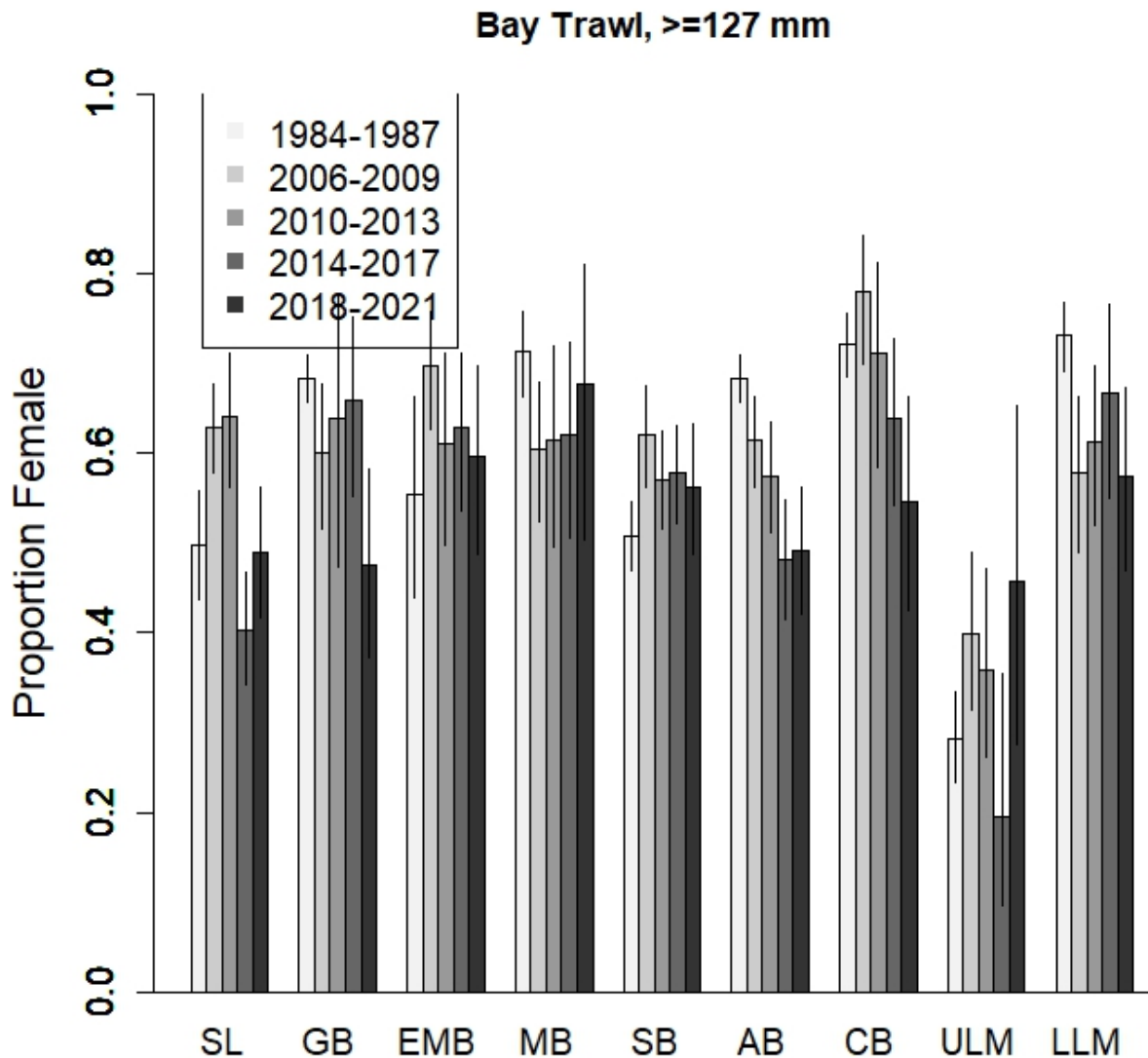


**Fig 7.** Proportion of female blue crabs  $\geq 127$  mm (i.e., legal size for harvest) in fisheries independent bag seine surveys conducted in Texas bays (Sabine Lake (SL), Galveston Bay (GB), East Matagorda Bay (EMB) Matagorda Bay (MB), San Antonio Bay (SB), Aransas Bay (AB), Corpus Christi Bay (CB), Upper Laguna Madre (ULM), and Lower Laguna Madre (LLM)). Error bars represent 95% confidence intervals. Note, sex data was only collected from 1984-1987 and again from 2006-2021.



**Fig 8.** Proportion of female blue crabs < 127 mm (i.e., sub-legal size for harvest) in fisheries independent bay trawl surveys conducted in Texas bays (Sabine Lake (SL), Galveston Bay (GB), East Matagorda Bay (EMB) Matagorda Bay (MB), San Antonio Bay (SB), Aransas Bay (AB), Corpus Christi Bay (CB), Upper Laguna Madre (ULM), and Lower Laguna Madre (LLM)). Error bars represent 95% confidence intervals. Note, sex data was only collected from 1984-1987 and again from 2006-2021.

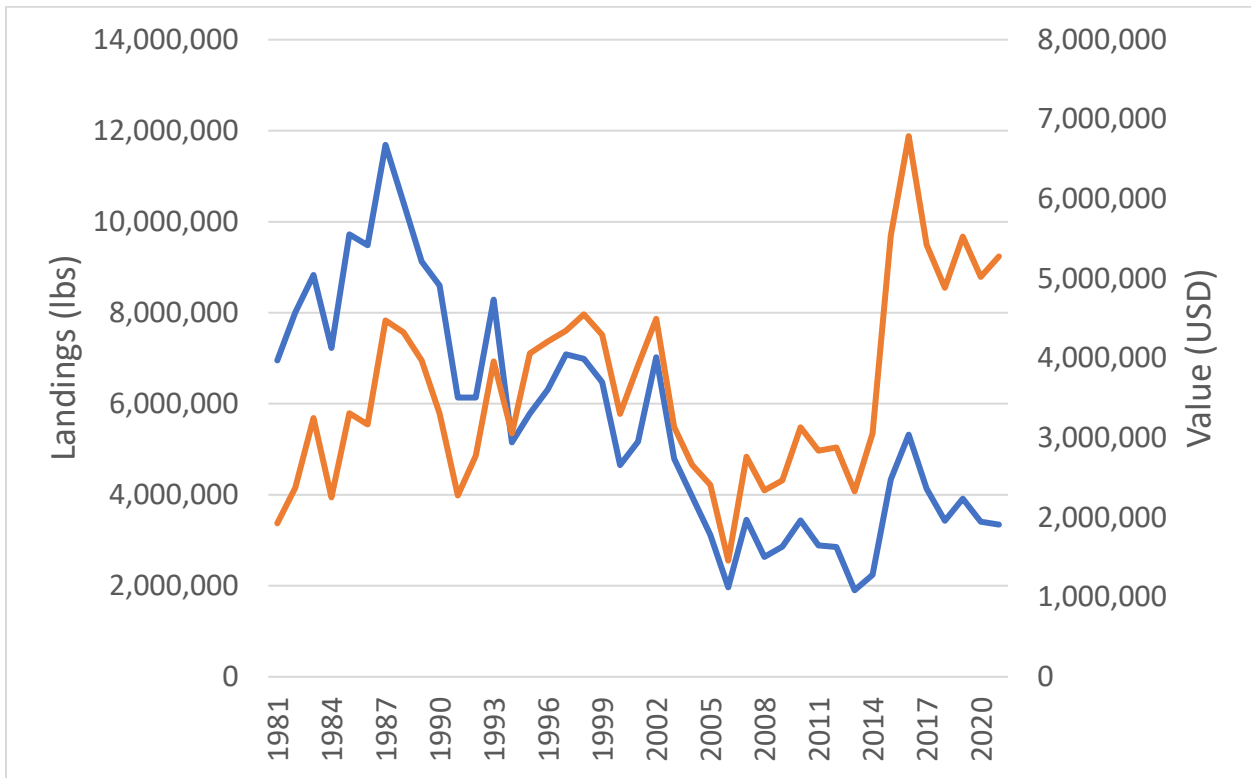




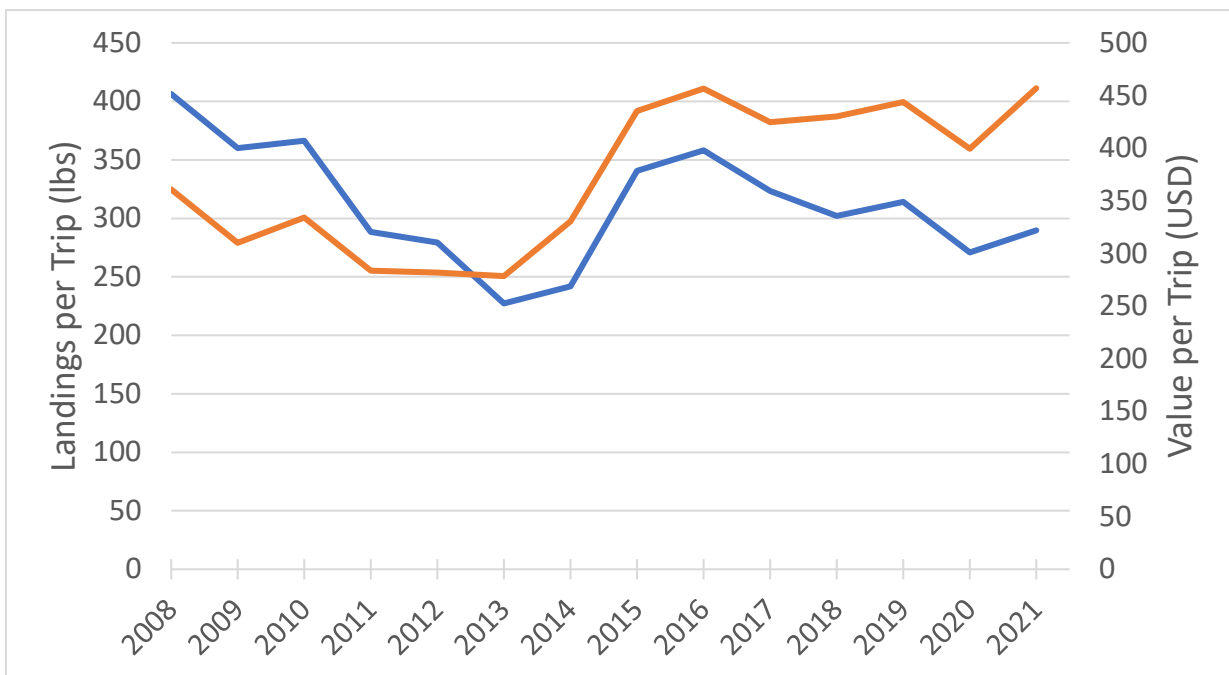
**Fig 9.** Proportion of female blue crabs  $\geq 127$  mm (i.e., legal size for harvest) in fisheries independent bay trawl surveys conducted in Texas bays (Sabine Lake (SL), Galveston Bay (GB), East Matagorda Bay (EMB), Matagorda Bay (MB), San Antonio Bay (SB), Aransas Bay (AB), Corpus Christi Bay (CB), Upper Laguna Madre (ULM), and Lower Laguna Madre (LLM)). Error bars represent 95% confidence intervals. Note, sex data was only collected from 1984-1987 and again from 2006-2021.

### Commercial Landings

Since the late 1980's, blue crab landings have declined in Texas (Fig. 10). Recent years have shown some increases in value with minor increases in landings (e.g., since 2015). When adjusted for effort, trends in recent years have been fairly stable (Fig. 11). Commercial blue crab landings in 2021 were 3,344,771 lbs and worth 5,277,117 US dollars.



**Fig. 10.** Total annual landings (lbs) and value (US Dollars; USD) in Texas. The blue line represents landings, and the orange line represents value.



**Fig 11.** Mean blue crab landings per trip (lbs) and value per trip (US Dollars; USD) per trip. The blue line represents mean landings per trip and the orange line represents mean value per trip.

**Blue Crab License and License Buyback**

As of license year (LY) 2021, there were 127 blue crab license holders holding a total of 172 license (a person may not hold or control more than three license). There have been no buyback applications for blue crab licenses since LY 2017.