



Atlantic States Marine Fisheries Commission

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MEMORANDUM

TO: American Lobster Management Board
FROM: Jonah Crab Technical Committee
DATE: January 20, 2026
SUBJECT: Jonah Crab Indicator Update Through 2024

Background

The 2023 Jonah Crab Benchmark Stock Assessment determined that the abundance of three of four Jonah crab stocks (Offshore Southern New England or OSNE, Inshore Gulf of Maine or IGOM, and Offshore Gulf of Maine or OGOM) has not been depleted to historical lows observed in the 1980s and 1990s. Data were insufficient to make determinations about abundance for the Inshore Southern New England stock (ISNE) or fishing mortality rates for any of the four stocks. The Peer Review of the assessment noted substantial uncertainty about stock status and expressed concern due to similarities between some trends in data for the US stocks and a Canadian stock assessed in the late 2000s that appeared sensitive to fishing pressure and experienced a rapid decline in abundance.

Following review and acceptance of the assessment in October 2023, the American Lobster Management Board tasked the Jonah Crab Technical Committee (TC) to “recommend possible management measures or other options to correct what appear to be deficiencies in the stock”. A TC recommendation at the 2024 ASMFC Winter Meeting in response to this tasking was to conduct annual updates of indicators selected during the stock assessment for the OSNE stock, the stock supporting the majority of coastwide landings, to identify any concerning trends between assessments. Indicators for the other three stocks should be updated every five years. The TC also recommended monitoring several additional indicators to understand important contextual information from the fishery. The TC did not believe management action was necessary at the time.

This memo provides results of the second annual indicator update. Indicators include the number and proportion of pot/trap trips landing Jonah crab, the number and proportion of lobster/crab permits landing Jonah crab, landings, the number of trips landing Jonah crab in Massachusetts alone, catch per trip (CPUE) in Rhode Island, price per pound of Jonah crab and American lobster, and fishery-independent abundance indicators from the Northeast Fisheries Science Center bottom trawl survey. Fishery-independent abundance indicators include recruit abundance (male crabs 90-119 mm carapace width), exploitable abundance (male crabs 120 mm+ carapace width), and spawning abundance (female crabs 80 mm+ carapace width).

All fishery-dependent indicators have been updated with 2024 data. Fishery-independent indicators are updated every two years due to intermittent processing of these data and this

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update includes the first update of these indicators since the stock assessment, with updated data from 2022-2024. Historical indicator data from this survey have also changed since the stock assessment due to (1) correction of an error leading to some crabs being excluded from the data set during the stock assessment, (2) application of a gap-filling procedure to address strata with missed sampling in a given year (as applied to American lobster in its recent 2025 benchmark stock assessment), and (3) modification of the survey domain to better align Jonah crab stock boundaries with existing survey strata boundaries.

Additionally, fishery-dependent catch rate data from the Commercial Fishery Research Foundation's (CFRF) Research Fleet ventless trap sampling were revisited during this second update. During the first data update, the TC recommended revisiting CFRF data to determine if there is any utility in including these data in indicators, despite their limited utility during the stock assessment. Commission staff and the TC Chair communicated with CFRF Research Fleet leads following the call and were informed of several developments that may improve the data collected. An increased stipend was offered to fleet participants for fishing ventless traps starting in the fall of 2022, increasing sample size, and collection of target species information for the commercial research fleet began in 2021 that could be linked to some ventless traps sampled. These changes could improve recent and future data, but limitations will remain with the historical data. The CPUE of exploitable-sized (121 mm+ carapace width) male crabs from OSNE sampling sessions was updated with the methods used during the stock assessment for consideration during this update.

The annual update does not include a process or decision rules to trigger management action but rather provides the TC an opportunity to review updated indicators and provide recommendations to the Board for action in response to concerning trends. During the first update last year, the TC determined that stock conditions were similar to what they were at the end of the assessment and that data limitations precluded a recommendation for management intervention at the time. For indicators provided during the stock assessment, time series percentiles are used as a qualitative characterization of the indicator status. The indicators are categorized as positive if above their 75th percentile, neutral if between their 75th and 25th percentiles, and negative if below their 25th percentile. Three-year averages of these indicators to smooth out interannual variability are provided from the final three years of the assessment time series (2019-2021; black asterisk) and the updated time series (2022-2024; red asterisks) for comparison. For indicators added since the stock assessment, most of which have short time series, only time series are provided.

Results

Abundance Indicators

When interpreting trawl survey indicators, it is important to consider the magnitudes of the average catch per tow on the figure x-axis. Jonah crab are an infrequently encountered species during this survey, leading to high interannual variation and narrow ranges of negative abundance conditions near zero. Additionally, an important caveat with these data is that vessel calibration factors are unavailable for Jonah crab to adjust catch rates due to vessel and gear changes that occurred in 2009.

Recruit abundance experienced marginal deterioration since the stock assessment. The updated three-year average abundance in spring declined from a positive status to a neutral status, while fall abundance remains positive. Note that the historical data changes since the stock assessment resulted in a change to the 2021 spring status reported in the assessment from neutral to positive.

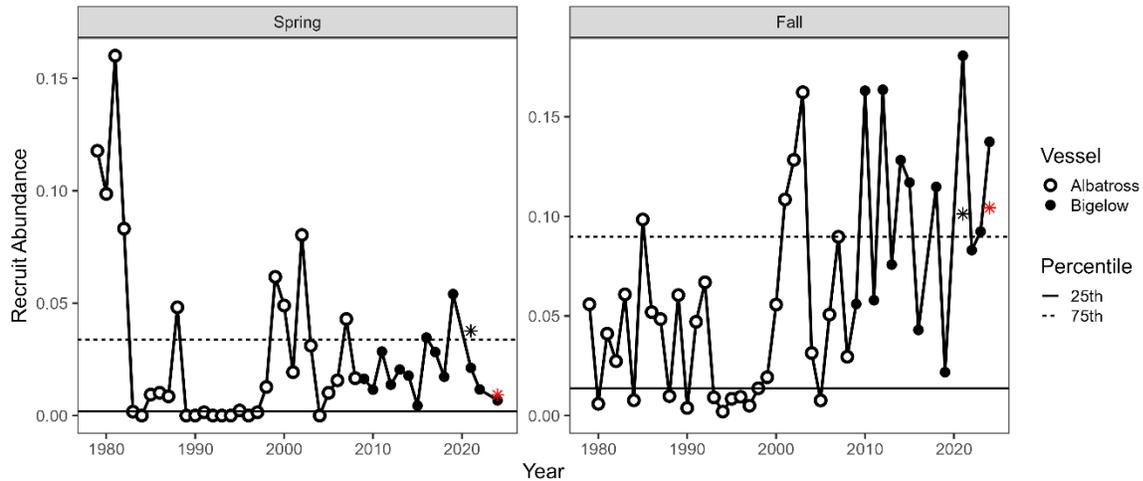


Figure 1. Jonah crab recruit (male crabs 90-119 mm carapace width) abundance as measured by the Northeast Fisheries Science Center Bottom Trawl Survey from the Offshore Southern New England stock.

Exploitable abundance has been stable since the assessment, remaining at a neutral status in spring and positive status in fall. This indicator appears most affected by the vessel and gear changes in 2009, with the current vessel (R/V Bigelow) being more efficient at catching larger, exploitable-sized male crabs. The historical data changes since the stock assessment did not result in any changes to the 2021 statuses reported in the assessment.

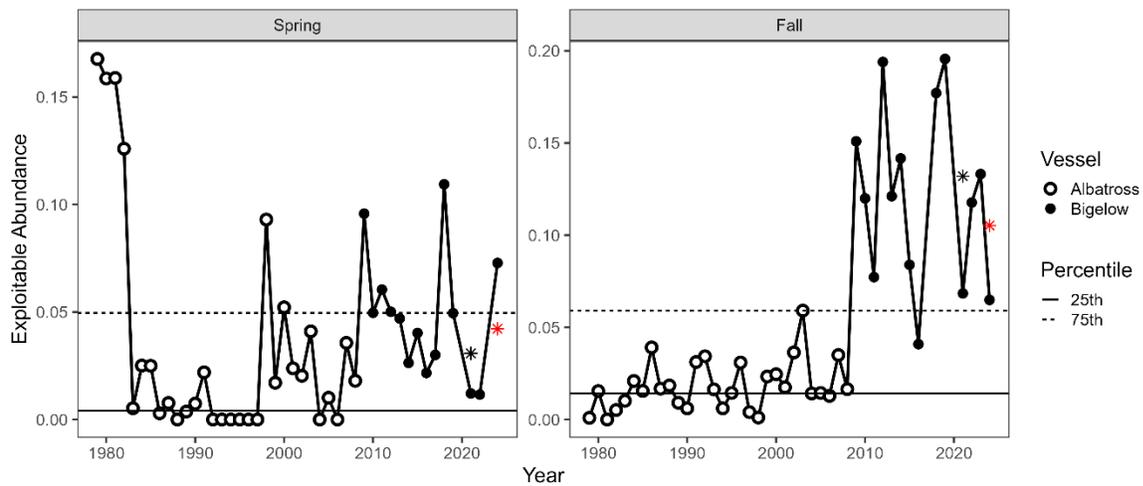


Figure 2. Jonah crab exploitable (male crabs 120 mm+ carapace width) abundance as measured by the Northeast Fisheries Science Center Bottom Trawl Survey from the Offshore Southern New England stock.

Spawning abundance has also been stable since the stock assessment, remaining at neutral statuses in both seasons. The historical data changes since the stock assessment did not result in any changes to the 2021 statuses reported in the assessment.

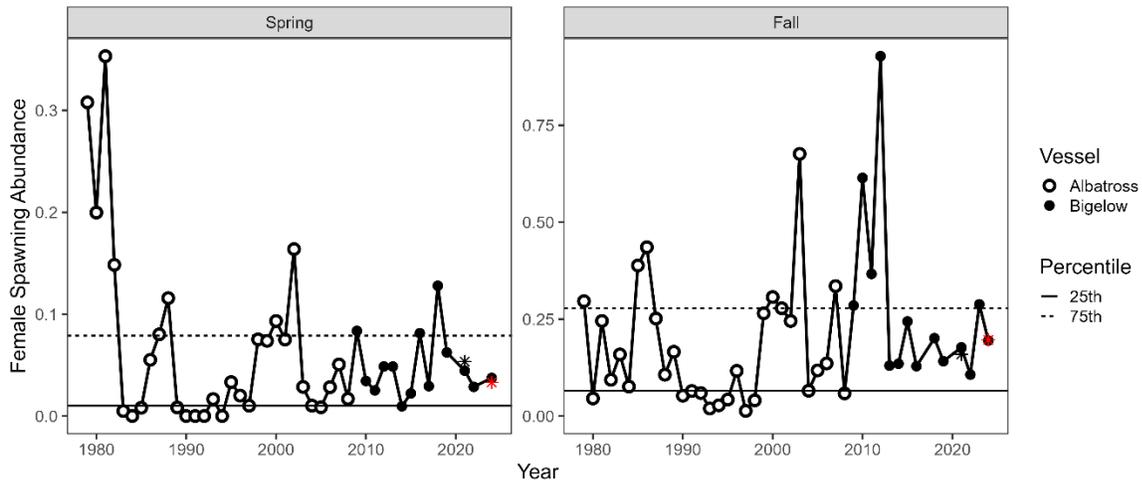


Figure 3. Jonah crab spawning (female crabs 80 mm+ carapace width) abundance as measured by the Northeast Fisheries Science Center Bottom Trawl Survey from the Offshore Southern New England stock.

Trip Indicators

The number of trips landing Jonah crab has declined continuously since 2014 to the lowest point of the time series in 2024. The three-year average remained negative. The proportion of trips in the lobster/Jonah crab fishery landing Jonah crab showed an increasing trend until 2020 but has steadily declined since, moving from positive to neutral conditions since the stock assessment. These indicators show a general reduction in trips by the fishery through time, though it is unclear if this reduction is driven by availability or markets.

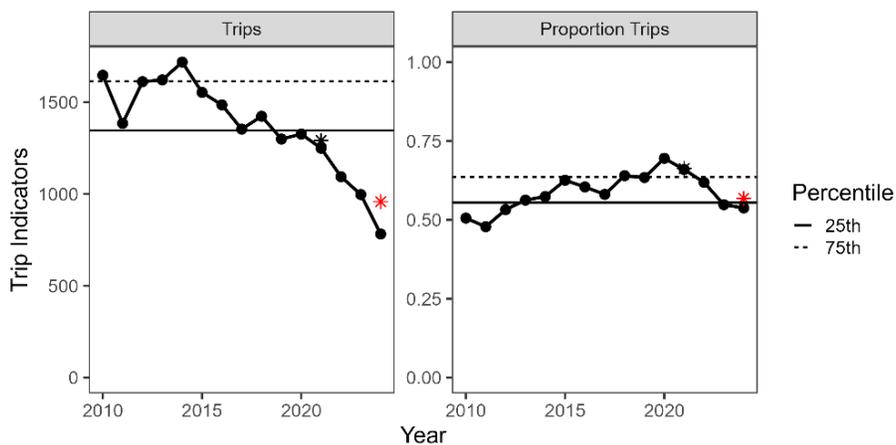


Figure 4. Number (left) and proportion (right) of lobster/crab pot/trap trips landing Jonah crab from the Offshore Southern New England stock.

An additional trip indicator recommended by the TC following the stock assessment, trips landing Jonah crab from Massachusetts alone, shows declines to the lowest levels in 2024. This value is just slightly below the 2023 value which represented a relatively large decrease from previous years. CPUE data from Massachusetts similar to the Rhode Island time series was not recommended because vessel participation in the fishery has been more inconsistent, complicating selection of a “high liner” fleet.

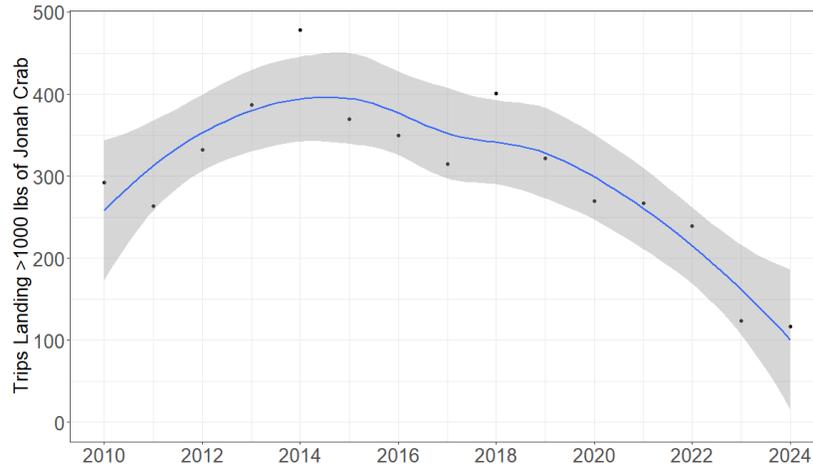


Figure 5. Number of trips landing Jonah crab from the Offshore Southern New England stock in Massachusetts. The blue line and shaded area represent a LOESS smoother and confidence intervals fitted to the data.

Permit Indicators

Permit indicators show similar trends to the trip indicators. The number of permits reporting Jonah crab landings, based on harvester logbook data, declined to its lowest level in 2024, with the status moving from neutral to negative since the stock assessment. The proportion of permits landing Jonah crabs also dropped to a new time series low in 2024 with the status changing from positive to negative since the stock assessment.

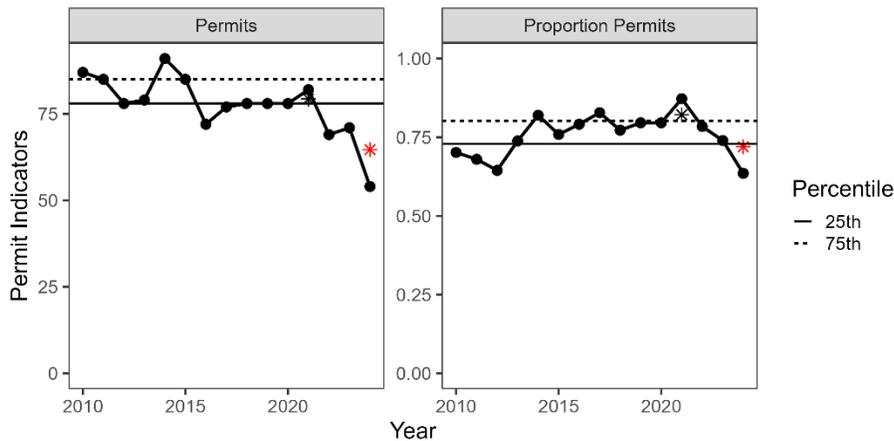


Figure 6. Number (left) and proportion (right) of lobster/crab permits contributing to Jonah crab landings from the Offshore Southern New England stock.

Landings Indicator

Landings are presented at the state and coastwide level because stock-specific landings are only available during the stock assessment cycle. However, the majority of landings from the two largest contributing states, MA and RI, are from the OSNE stock. Landings had declined at the end of the assessment in 2021 to the lowest values since the early 2010s. Landings have stabilized around these low levels since the assessment. Of note is a continued increasing trend in ME landings since the assessment which are primarily from the Inshore Gulf of Maine stock. Average annual ME landings since the assessment (2022-2024) have more than doubled from the previous three-year average at the end of the assessment (2019-2021). In Maine, due to continued issues in identification between Jonah crab and Atlantic rock crab, the Jonah crab landings include both Jonah and rock crab landings because the landings staff believe most of the landings entered as rock crab are actually Jonah crab landings.

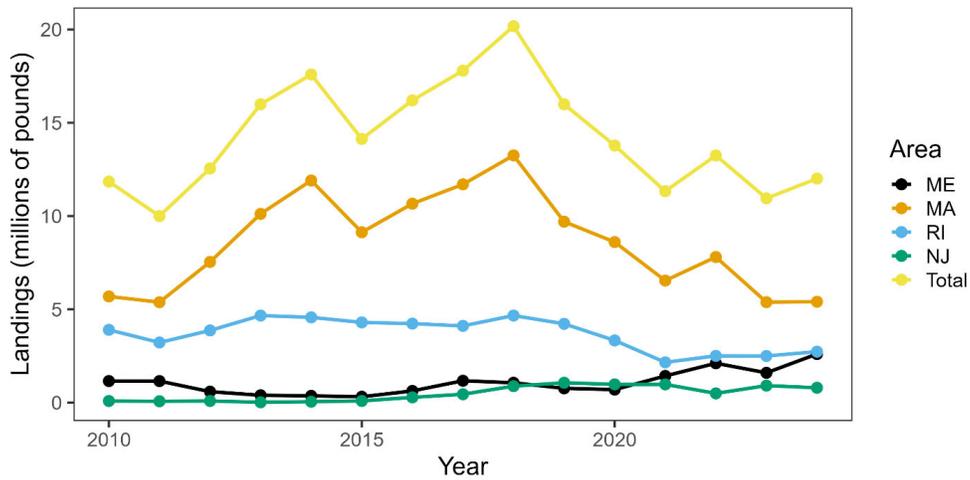


Figure 7. Landings of Jonah crab. Total landings include all Atlantic coast states with non-confidential annual values.

CPUE Indicators

Trip-level CPUE from RI had been declining since the mid-2010s to the lowest point of the time series at the end of the stock assessment in 2021. Low CPUE continued in 2022 but then increased significantly in 2023 and again in 2024 to the highest value of the time series. It is important to note that selection of “high liner” vessels changed since the stock assessment due to some vessels exiting the Jonah crab fishery. Supplementary data also indicates catch per day has declined while vessels have been conducting fewer, longer trips so CPUE data may be confounded by other drivers like market conditions and harvester behavior.

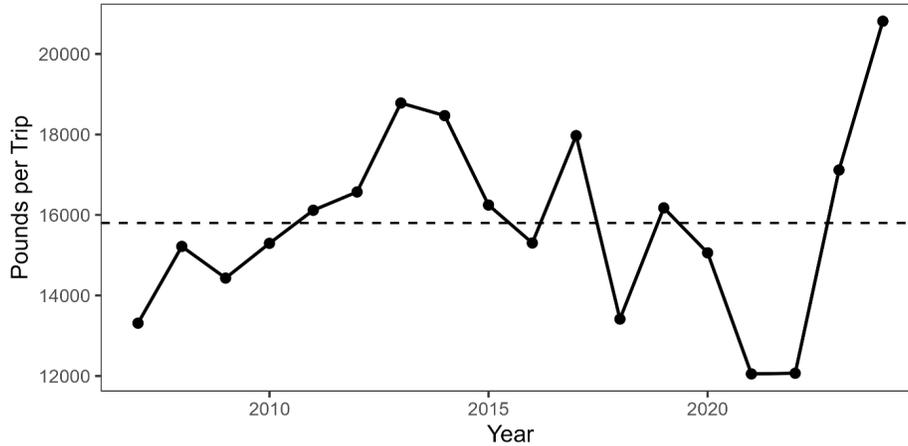


Figure 8. Pounds of Jonah crab landed per trip by the Rhode Island highliner fleet (n vessels=4) in the Offshore Southern New England stock. The dashed line is the time series mean.

CFRF ventless trap CPUE has been at lower levels since the end of the stock assessment, similar to levels at the beginning of the time series in the mid-2010s. Only three sessions were conducted in the terminal year of the assessment (2021), so an index value was not calculated for that year. A few caveats are important to keep in mind for this data set. This sampling program is intended to provide information on presence of sublegal lobsters and crabs and some temperature information and was not designed to measure abundance. Research Fleet participants decide when to record a sampling session and can decide not to record a session after hauling the traps (e.g., when inundated with crabs). Target species at the time/location of sampling sessions is not currently identified, which can impact catch rates. These data fields are anticipated moving forward and can be used to account for these impacts when calculating future CPUE.

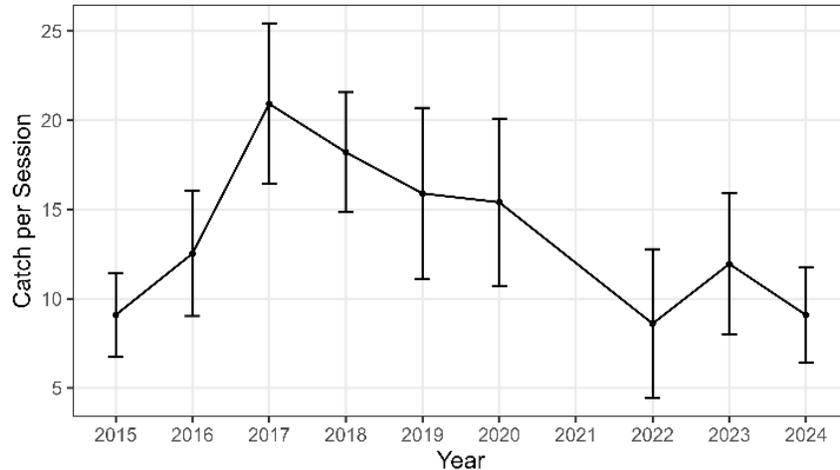


Figure 9. CFRF VTS CPUE of exploitable-sized (121 mm+ carapace width) male crabs in the Offshore Southern New England stock.

Price per Pound Indicators

In the indicator update last year, only nominal price data were presented. During this update, the TC recommended adding price data adjusted for inflation. These data were adjusted based on the unprocessed and prepared seafood producer price index (PPI) with 2024 as the base year (<https://fred.stlouisfed.org/series/WPU0223>), consistent with the methodology applied in the recent American lobster stock assessment. Nominal price per pound of both American lobster and Jonah crab has increased throughout most of the time series. Price per pound adjusted for inflation has been more stable through time. Notably, lobster prices increased sharply in 2021, the year of the lowest RI Jonah crab landings and second lowest MA Jonah crab landings since 2011. Jonah crab prices then increased sharply in 2022 when landings in RI and MA increased, albeit to levels lower than in the 2010s, while lobster prices returned to trending levels (nominal) or decreased (adjusted) relative to those observed before 2022. Jonah crab prices decreased in 2023 but remained high relative to years when landings were highest and in line with the underlying increasing or stable trends observed previously, depending on price type (nominal or adjusted). Prices reversed trend in all areas reported in 2024, decreasing to the lowest levels since 2020 while lobster prices did not decrease. There was some discussion of increased Jonah crab price per pound in preliminary 2025 data from some areas (MA), though data were not yet available for all areas. These data will be reviewed at the next indicator update in October.

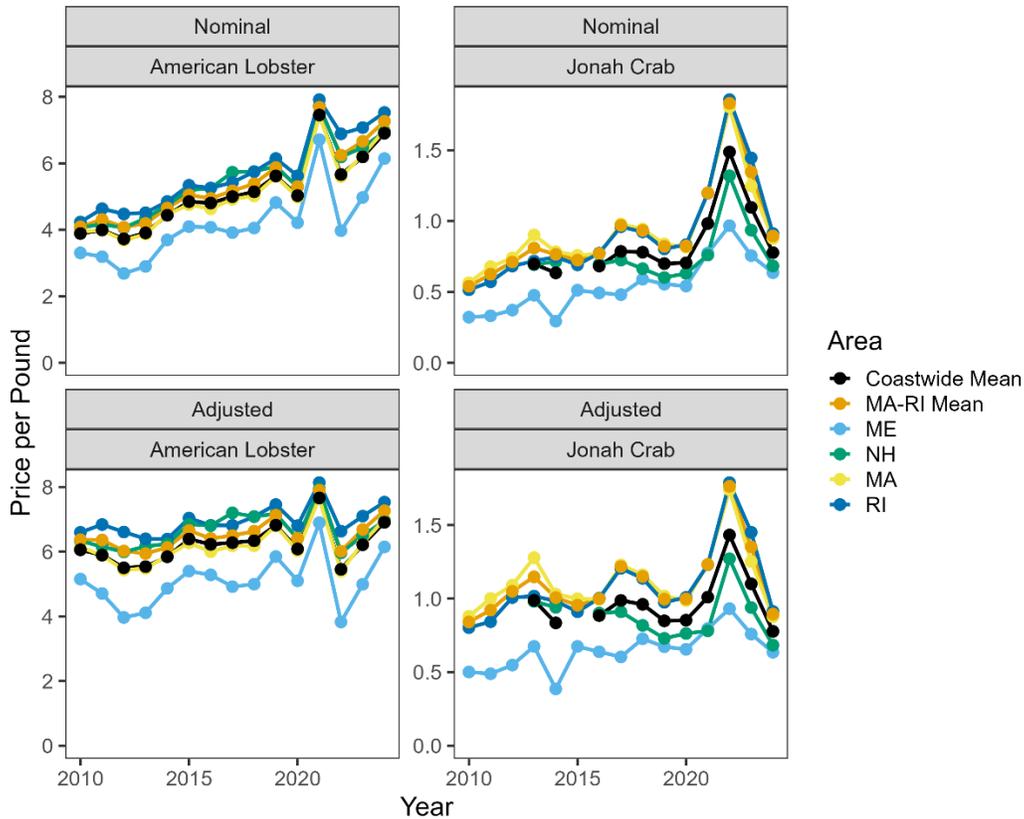


Figure 10. Price per pound (nominal and adjusted for inflation) of American lobster and Jonah crab.

Conclusions and Recommendations

The TC consensus is consistent with conclusions from the first indicator update. Stock conditions appear similar to what they were at the end of the assessment and data limitations preclude a recommendation for management intervention at this time. There remain indications that market factors, as indicated by poor fishery performance indicators, continue to be dominant factors influencing effort to target and land Jonah crabs. The additional fishery-independent abundance indicators available during this update do not support consistent changes in abundance since the stock assessment that would confirm abundance (i.e., availability) as a driver in these short-term fishery changes. Though these are the best available abundance data, there remains uncertainty in their ability to detect short-term changes in abundance and stock status.

Following the recommendation during the first indicator update to reconsider CFRF ventless trap CPUE data as an indicator, the TC recommends including the time series in the indicator update process. However, the TC cautions the market factors discussed above continue to impede interpretation of this and other available fishery-dependent indicators for inference on Jonah crab availability and abundance. The RI CPUE and MA effort indicators were affected by changes in the fleet. Some vessels considered “high liners” in the Jonah crab fishery have changed their trap configurations and shifted their effort to target lobsters or exited the fishery

altogether. There are also continued anecdotal reports of dealers imposing trip limits, causing artifacts in effort and price per pound data. While it does not affect the OSNE stock indicators, the TC also notes ME harvesters have reported relatively high catches of Jonah crabs recently that are primarily being discarded due to unfavorable market conditions.

As a next step in aiding interpretation of existing indicators, the TC recommends (1) comparing offshore wind farm survey data (e.g., Revolution Wind Farm and South Fork Wind Farm Surveys) to available indicators and (2) identifying a process to track dealer/processor-imposed trip limits, such as state-conducted dealer interviews that might provide context for changes in Jonah crab fishing effort or landings. Wind farm data streams are temporally and spatially limited, but additional years of data since the stock assessment have yet to be revisited. As a long-term recommendation, the TC reiterates its recommendation from the assessment to develop a camera-based survey for measuring Jonah crab abundance.