Atlantic Bluefish Data Update for 2020

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Commercial bluefish landings in 2019 were 1,381 MT = 3.05 million lbs, an increase of 25% from 2018, and 40% of the 2019 commercial quota (3,497 MT, 7.71 million lbs). Estimated 2019 landings in the recreational fishery were 6,612 MT = 14.58 million lbs, an increase of 16% from 2018, and 125% of the 2019 recreational harvest limit (5,271 MT, 11.62 million lbs). Total recreational discards (assuming 15% mortality, and calculated using NEFSC methodology from SARC60) were 6,992 MT = 15.42 million lbs, an increase of 56% from 2018. Total bluefish catch in 2019 was 14,985 MT = 33.04 million lbs, an increase of 33% from 2018 (Figure 1).

A recreational catch-per-unit-effort index was updated through 2019 from the MRIP intercept data. This index is an important index incorporated into the stock assessment and shows a slight decrease from the 2018 estimate. In addition, the NEFSC Fall bottom trawl survey was updated through 2019, noting that there is no survey value for 2017 due to incomplete sampling (vessel issues). The 2019 NEFSC fall index value of 0.94 is the lowest in the Bigelow time-series, and much lower compared to the 2018 value of 3.31(Figure 2). The NEFSC fall survey length frequency distributions suggest that typical peak of smaller fish centering around 20 cm (historical bi-modal pattern) was not present in 2019 (Figure 3).
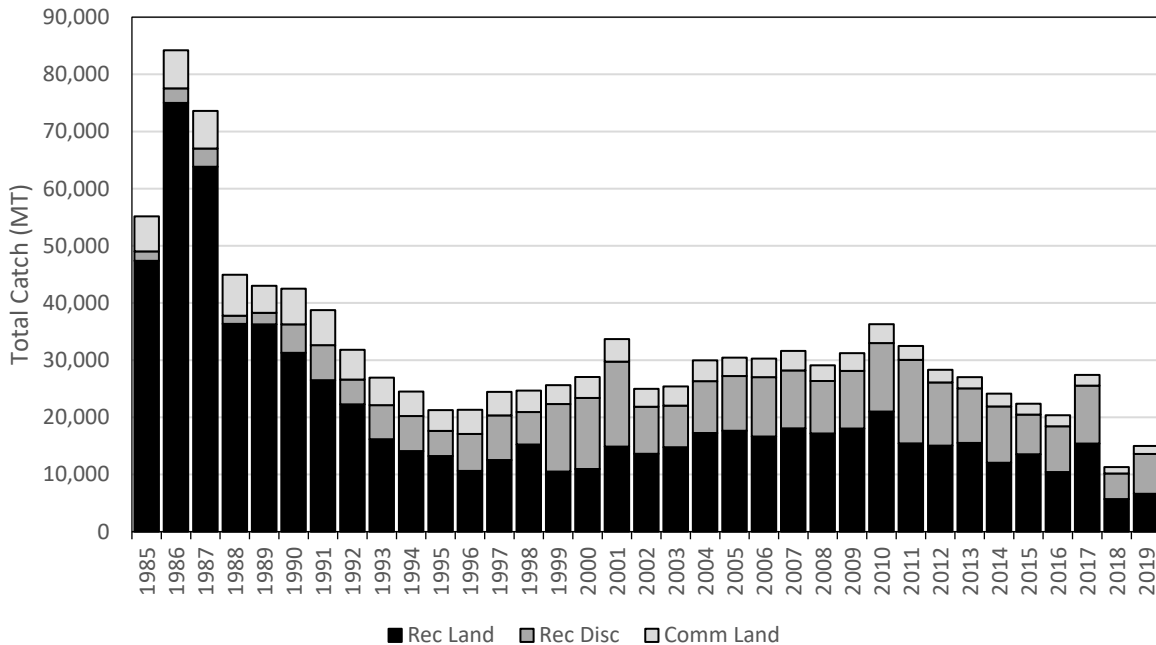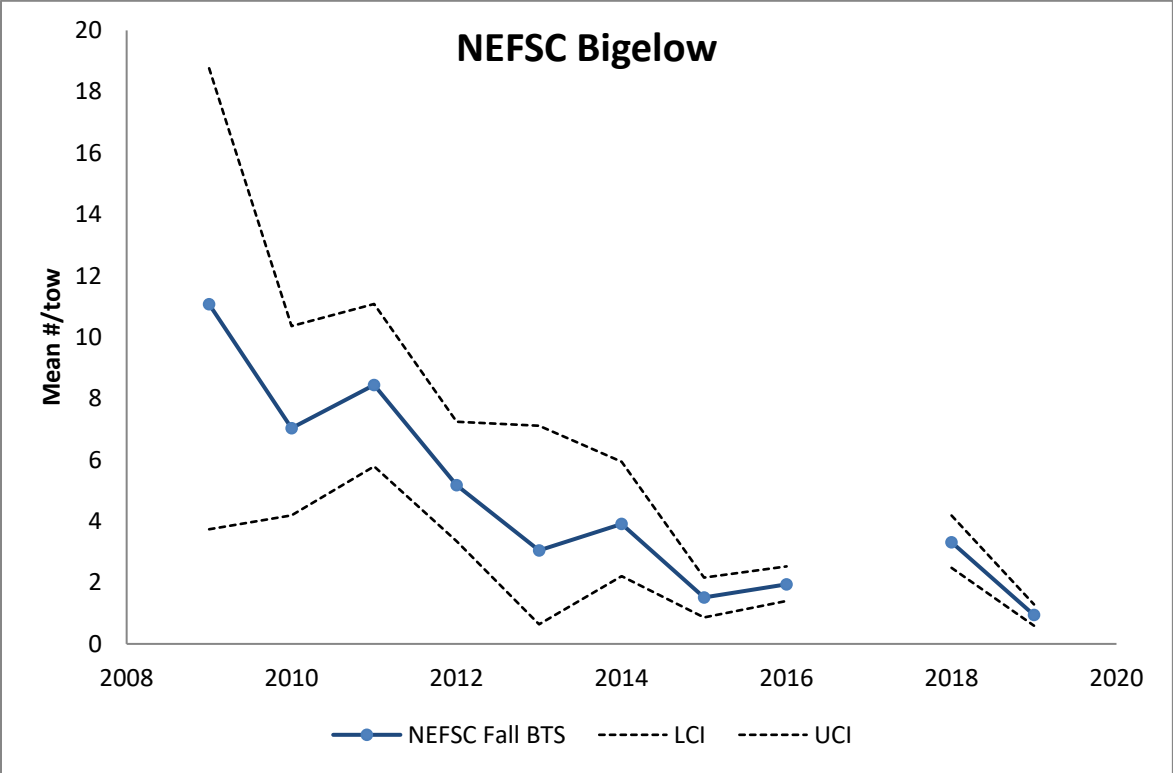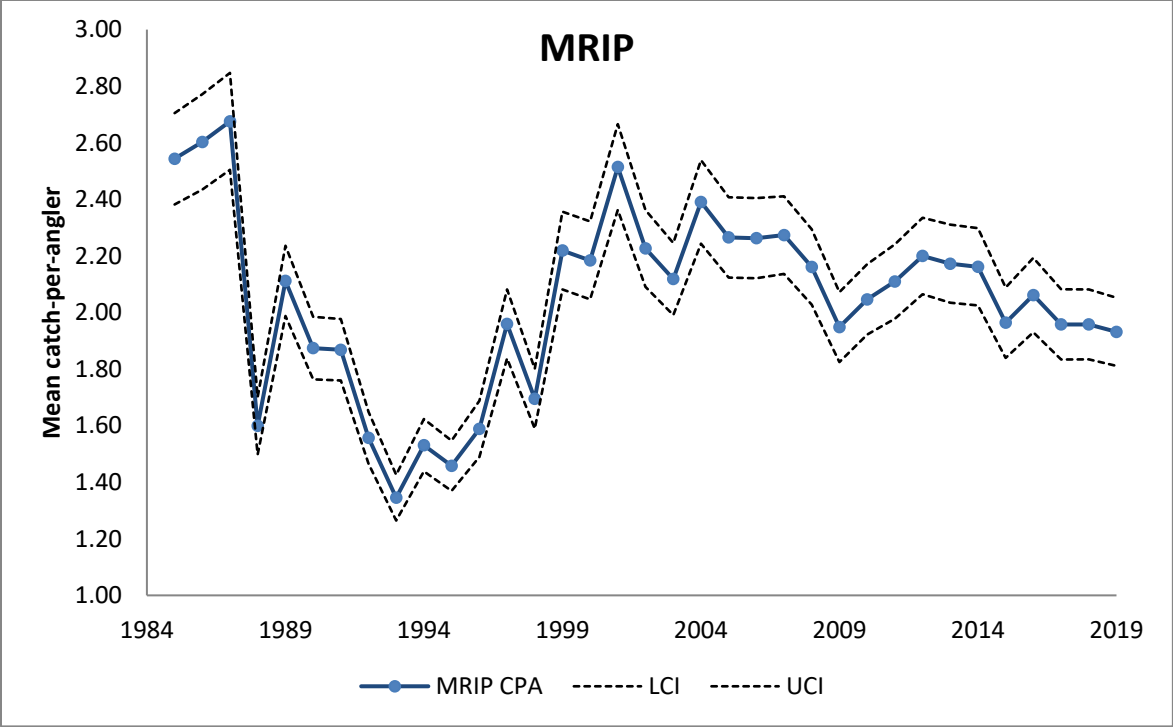

Figure 1. Atlantic bluefish fishery total catch.

Figure 2. A. MRIP CPUE index and B. NEFSC trawl survey index for bluefish. The Bigelow did not sample southern strata in 2017 so no index value for that year.
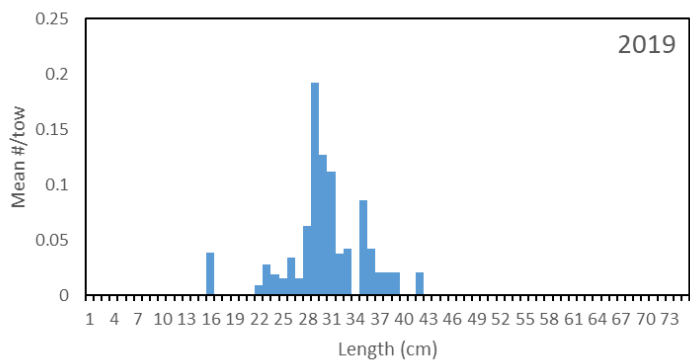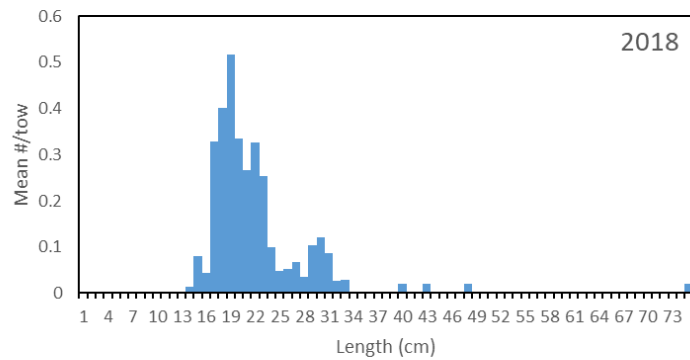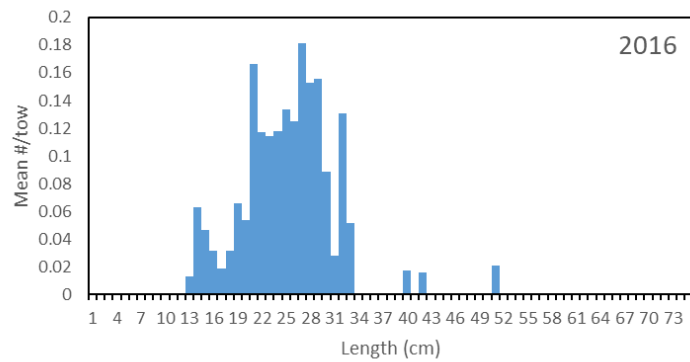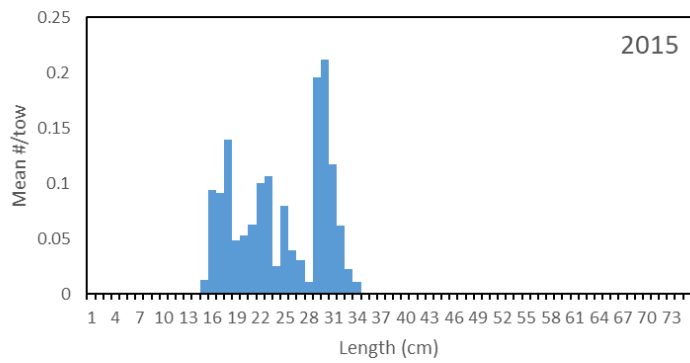
Figure 3. Northeast Fisheries Science Center (NEFSC) fall trawl survey indices at length. There is no valid fall 2017 index for bluefish.

<u>Appendix</u>

This appendix will describe how the science center calculates both recreational landings and discard weights, and why these values are different from using solely MRIP information.

      <u>Recreational Landings weight:</u>

Landings weight for the assessment is calculated bi-annually using seasonal length-weight parameters from the NEFSC bottom trawl survey. Landed numbers of fish-at-length are converted to weight using these length-weight equations and summed across lengths and time period to derive total landed weight. In most years, the total MRIP landed weight and the landed weight using science center methodology are not significantly different.

In 2019 there is a noticeable difference in landed weight when comparing the two methodologies.

      -The average weight of a landed fish from MRIP for 2019 is 0.6 kg, this is a rounded up value and using the actual numbers and weight values from the MRIP data, the average weight of a landed fish is 7,056,105 kg / 12,137,290 = 0.581 kg per fish. The average weight of a landed fish using science center methodology is 0.545 kg per fish. The difference between these values (0.036 kg) summed across 12,137,290 fish amounts to a 436,942 kg (963,292 lbs) difference in landings weight.

      <u>Recreational Discard weight:</u> GARFO and the MAFMC use the MRIP rounded average weight of a landed fish in pounds to calculate total discard weight. For 2019 the MRIP average rounded weight for a landed fish was 1.3 lbs, and the number of dead discards assuming a 15% mortality was 3,974,197. These values result in a discard weight of 1.3 lbs*3,974,197 = 5,166,456 lbs.

The assessment calculates discards weight using methodology that was peer reviewed at SARC60. Annual release length data from the American Littoral Society, the MRIP intercept survey, and volunteer angler surveys from RI, CT, and NJ are compiled and provide a release length distribution that is converted to weight using seasonal length-weight parameters from the NEFSC bottom trawl survey. In 2019 the average weight of a discarded bluefish using science center methodology was 1.759 kg, or ~3 times that of an MRIP landed fish. The total discard weight assuming 15% mortality is 1.759 kg*3,974,197 = 6,992,447 kg (15,415,689 lbs).

The assessment does not use the average weight of a landed fish because there is evidence that the length distribution of discarded fish is larger than those that are landed (SARC60). The length distributions of landed fish vs discarded fish in 2019 support this statement (Fig A1). The science center methodology aims to incorporate the best scientific information available in order to calculate discard weights.
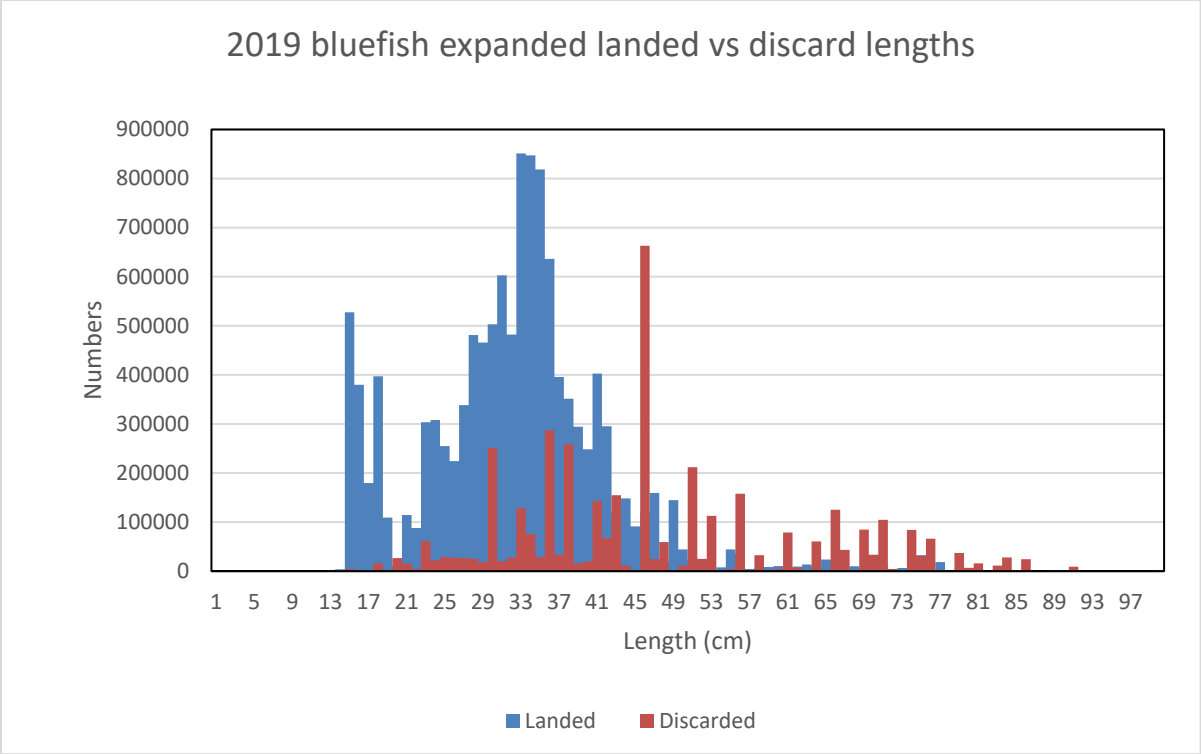
Figure A1. Landed lengths versus discarded lengths for bluefish in 2019.