



Blue Crab Fishery Management Plan Amendment 3

Adaptive Management

DEPARTMENT OF ENVIRONMENTAL QUALITY

Marine Fisheries

NC Marine Fisheries Commission | Robert Corbett & McLean Seward | May 24, 2024



Presentation Outline

- **Management History**
 - FMP and Amendment 1
 - Amendment 2
 - Amendment 2 Adaptive Management & Revision
- **Amendment 3**
- **Amendment 3 adaptive management**
- **Timeline**



North Carolina Blue Crab Management History

- **December 1998**
 - Original Blue Crab Fishery Management Plan (FMP) adopted
- **December 2004**
 - Amendment 1 adopted
- **November 2013**
 - Amendment 2 adopted
 - Relied on annual updates to the Traffic Light Assessment (TLA)



Amendment 2

- **May 2016**

- Revision to Amendment 2
- Adaptive management measure began June 2016

- **August 2016**

- MFC voted to begin development of Amendment 3
- Originally scheduled to begin July 2018

- **March 2018**

- Benchmark stock assessment approved for management use
- Time series 1995-2016
- Overfished and overfishing occurring



Amendment 3

F (yr -1)	Catch reduction (%)	Probability of achieving sustainable harvest within 10 years (%)	Comments
1.48	0	31	2016 average F from stock assessment
1.46	0.4	45	Catch reduction to meet F threshold and end overfishing
1.40	1.7	46	Catch reduction to meet spawner abundance threshold and end overfished status
1.38	2.2	50	Catch reduction to meet minimum statutory requirement for achieving sustainable harvest
1.30	3.8	67	
1.22	5.9	90	Catch reduction to meet F target
1.10	9.3	96	
1.00	12.3	100	
0.90	15.7	100	
0.80	19.8	100	Catch reduction to meet spawner abundance target
0.70	24.3	100	



Amendment 3

• **November 2019**

- The MFC voted for preferred management measures projected to result in a 3.7% harvest reduction

• **February 2020**

- MFC changed preferred management measures
 - 5-inch mature female minimum size statewide
 - Lowered projected reduction from 3.7% to 2.4% with a 50% probability of success
 - Removed recommendation to update stock assessment with 2019 data
- Included adaptive management framework



Amendment 3 Adaptive Management Framework

1. Update the stock assessment at least once in between full reviews of the FMP, timing at the discretion of the division
 - a. If the stock is overfished and/or overfishing is occurring or it is not projected to meet the sustainability requirements, then management measures shall be adjusted using the director's proclamation authority
 - b. If the stock is not overfished and overfishing is not occurring, then management measures may be relaxed provided it will not jeopardize the sustainability of the blue crab stock
2. Any quantifiable management measure, including those not explored in this paper, with the ability to achieve sustainable harvest (as defined in the stock assessment), either on its own or in combination, may be considered
3. Use of the director's proclamation authority for adaptive management is contingent on:
 - a. Consultation with the Northern, Southern, and Shellfish/Crustacean advisory committees
 - b. Approval by the Marine Fisheries Commission

Upon evaluation by the division, if a management measure adopted to achieve sustainable harvest (either through Amendment 3 or a subsequent Revision) is not working as intended, then it may be revisited and either: 1) revised or 2) removed and replaced as needed provided it conforms to steps 2 and 3 above.

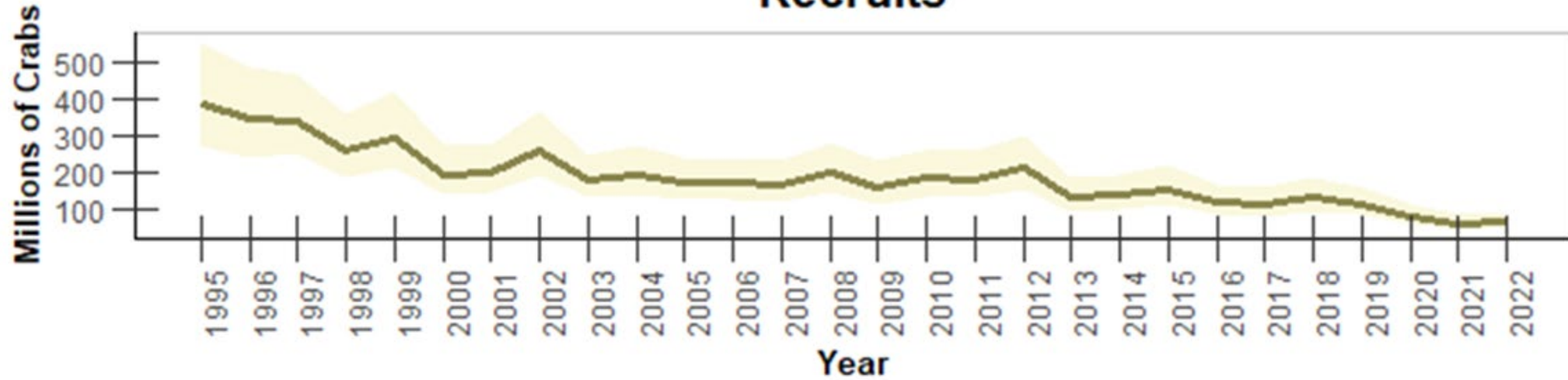
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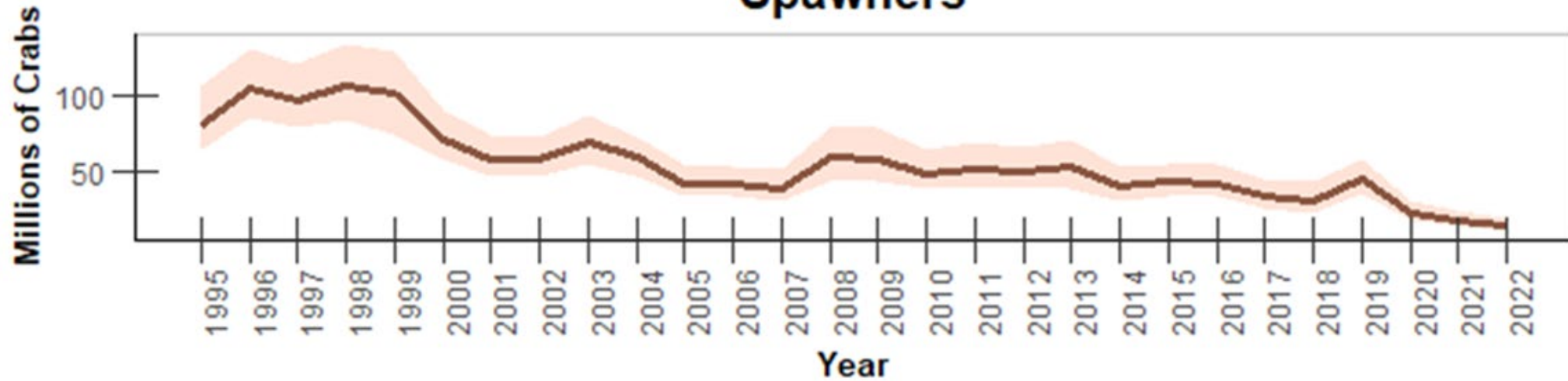
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Stock Assessment Update Trends

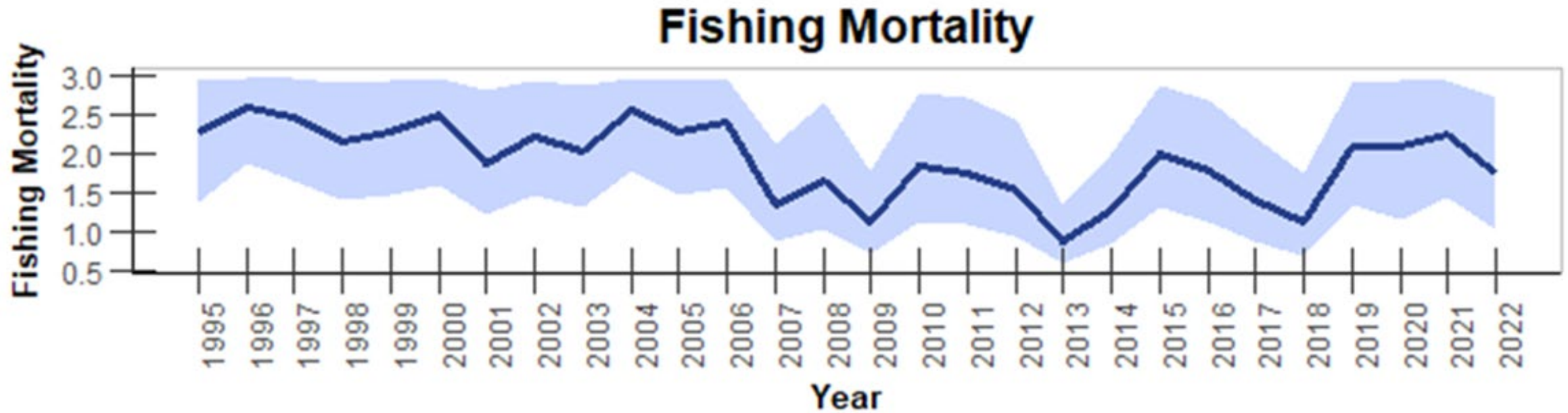
Recruits



Spawners

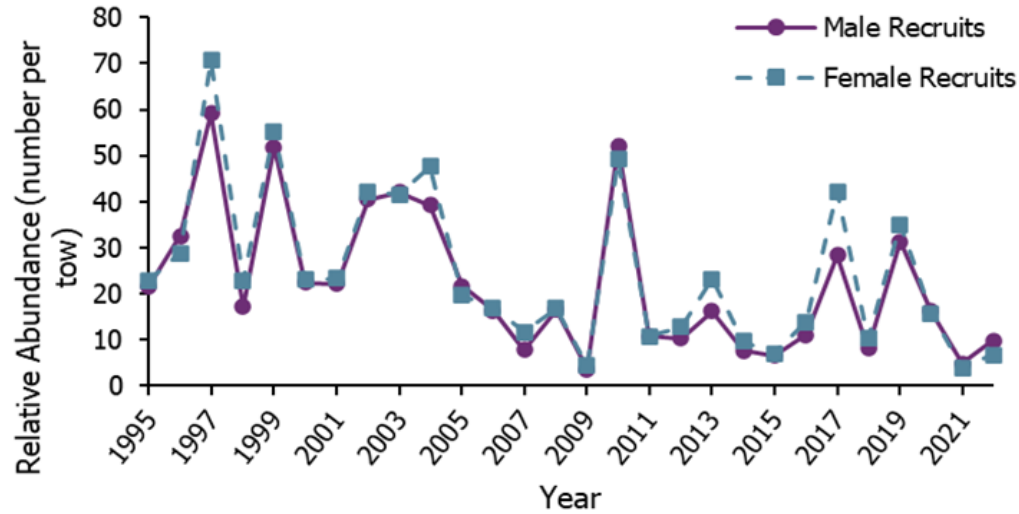


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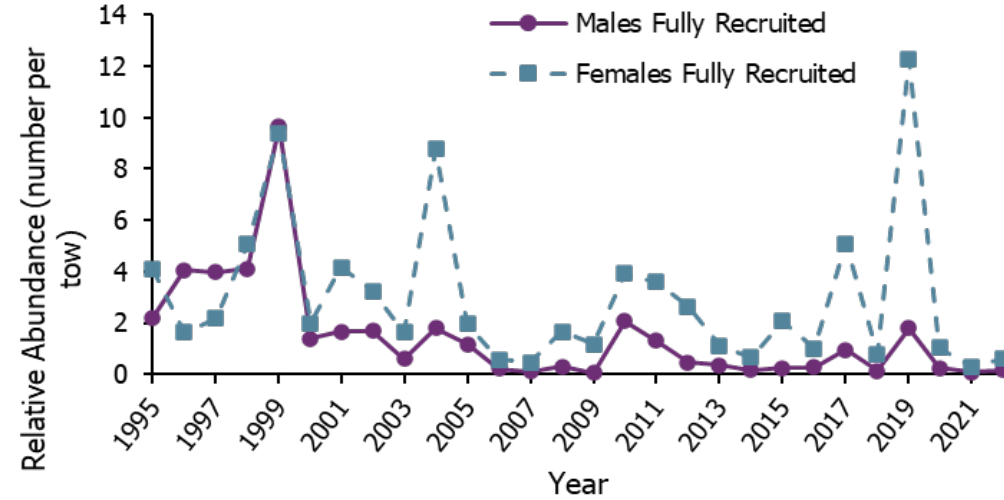


Program 195 Trends

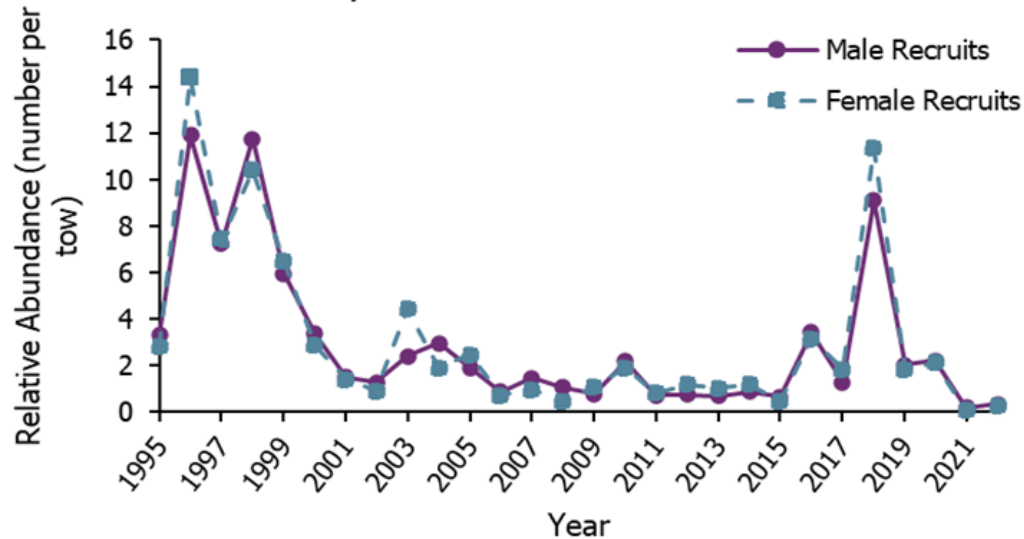
P195 June Nominal Recruit Index



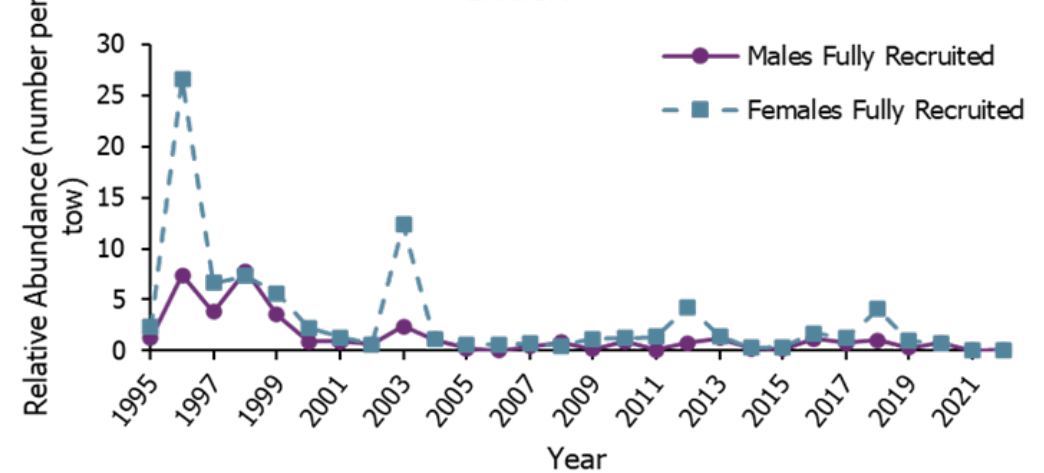
P195 June Nominal Fully Recruited Index



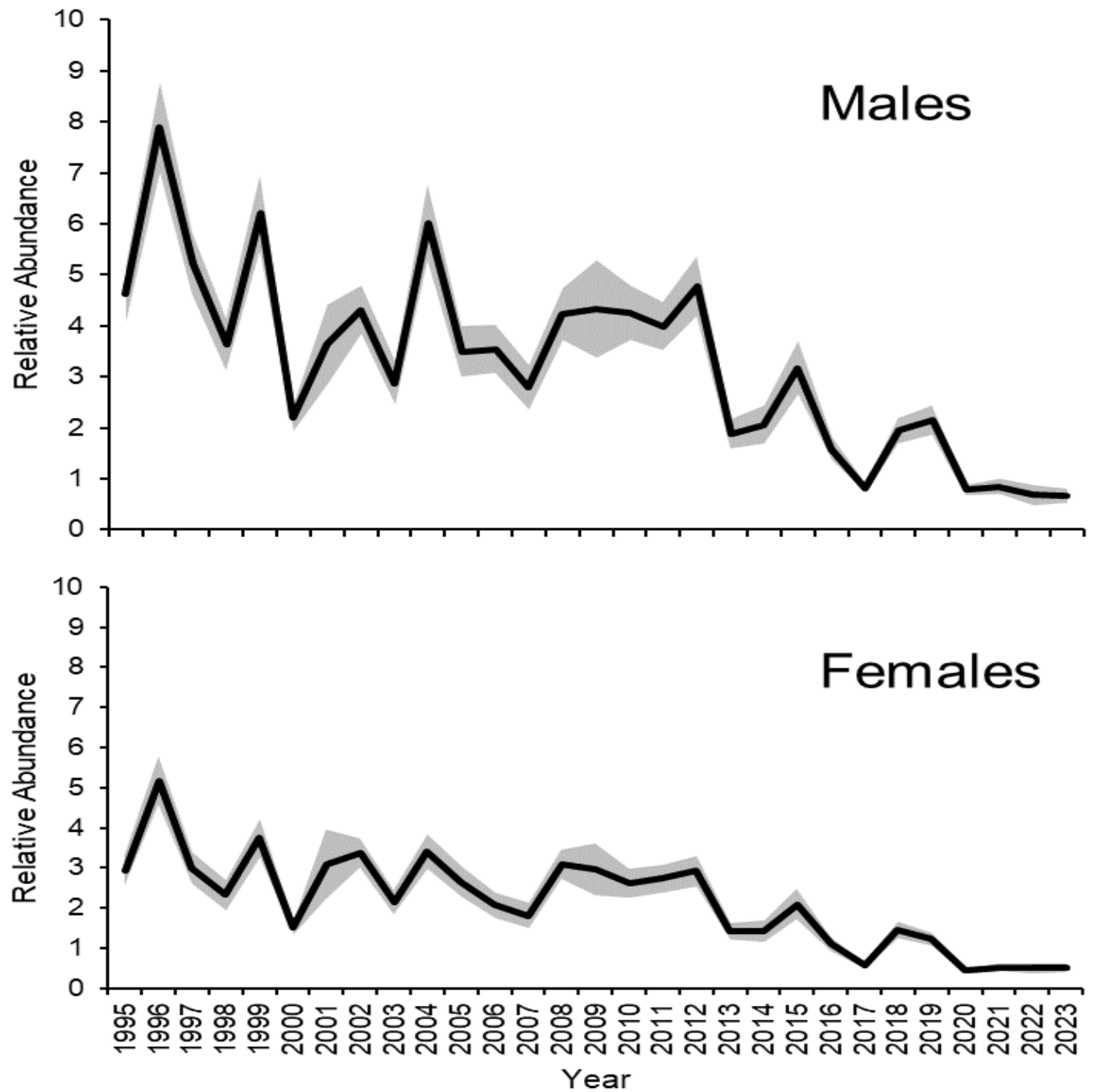
P195 September Nominal Recruit Index



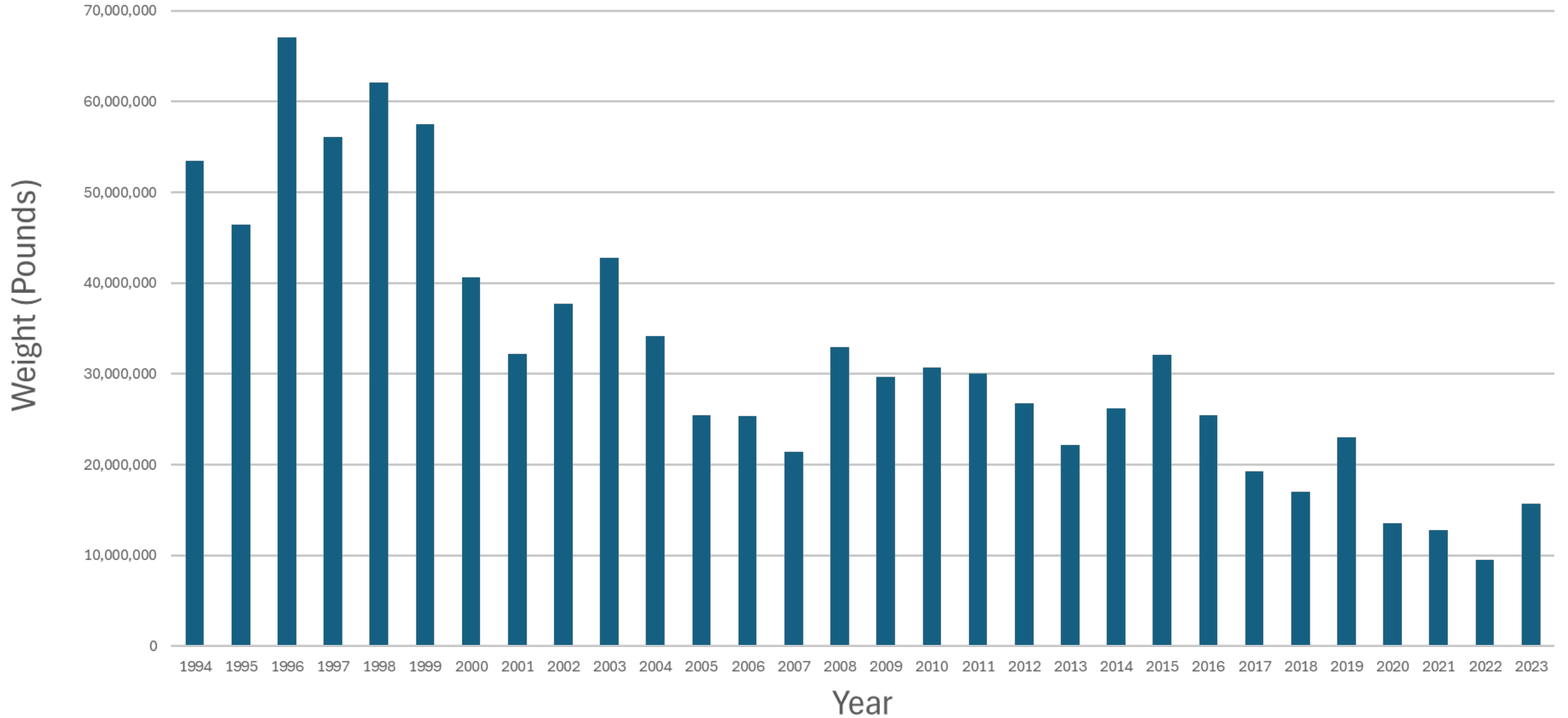
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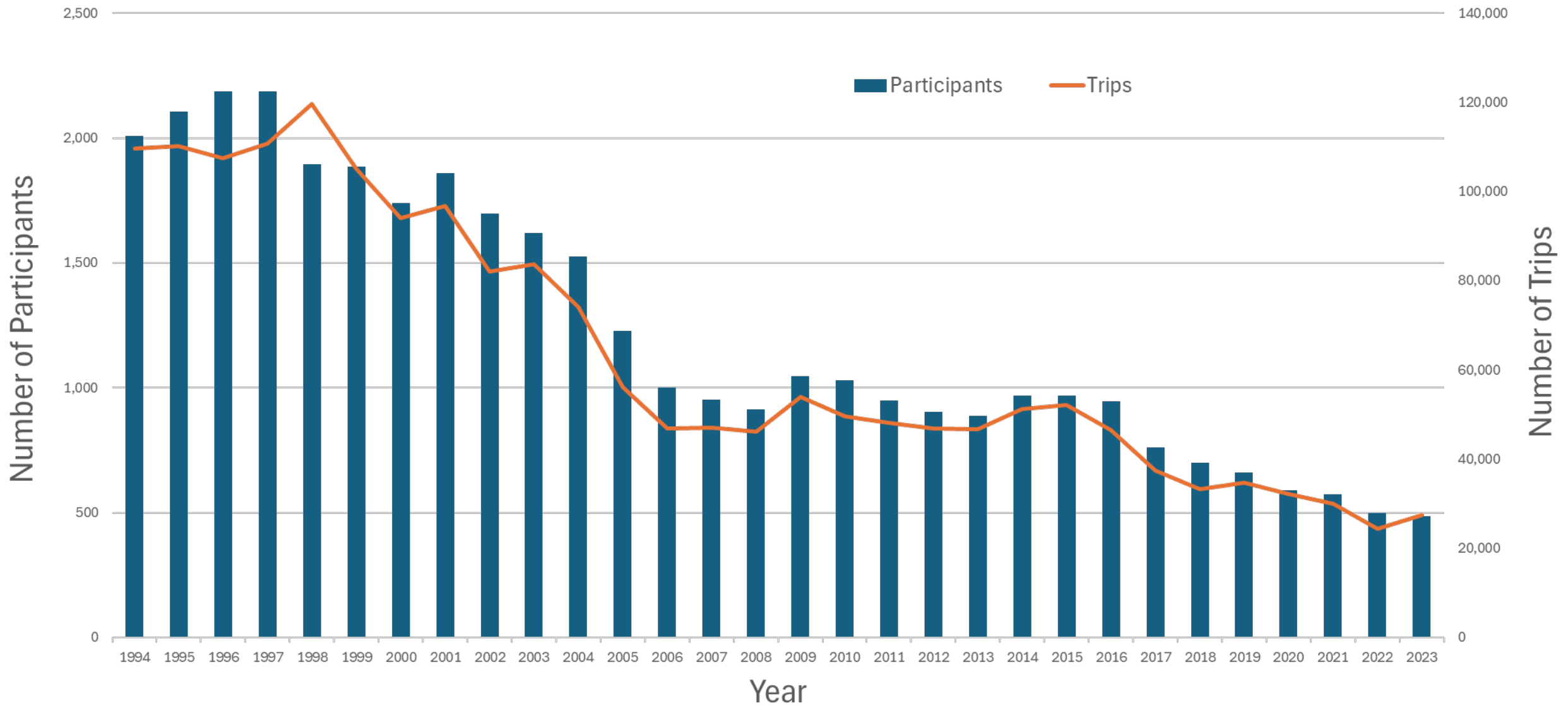
Program 120 Trends



Annual Blue Crab Commercial Landings



Annual Hard Blue Crab Participants & Trips



Coastwide Commercial Landings Trends

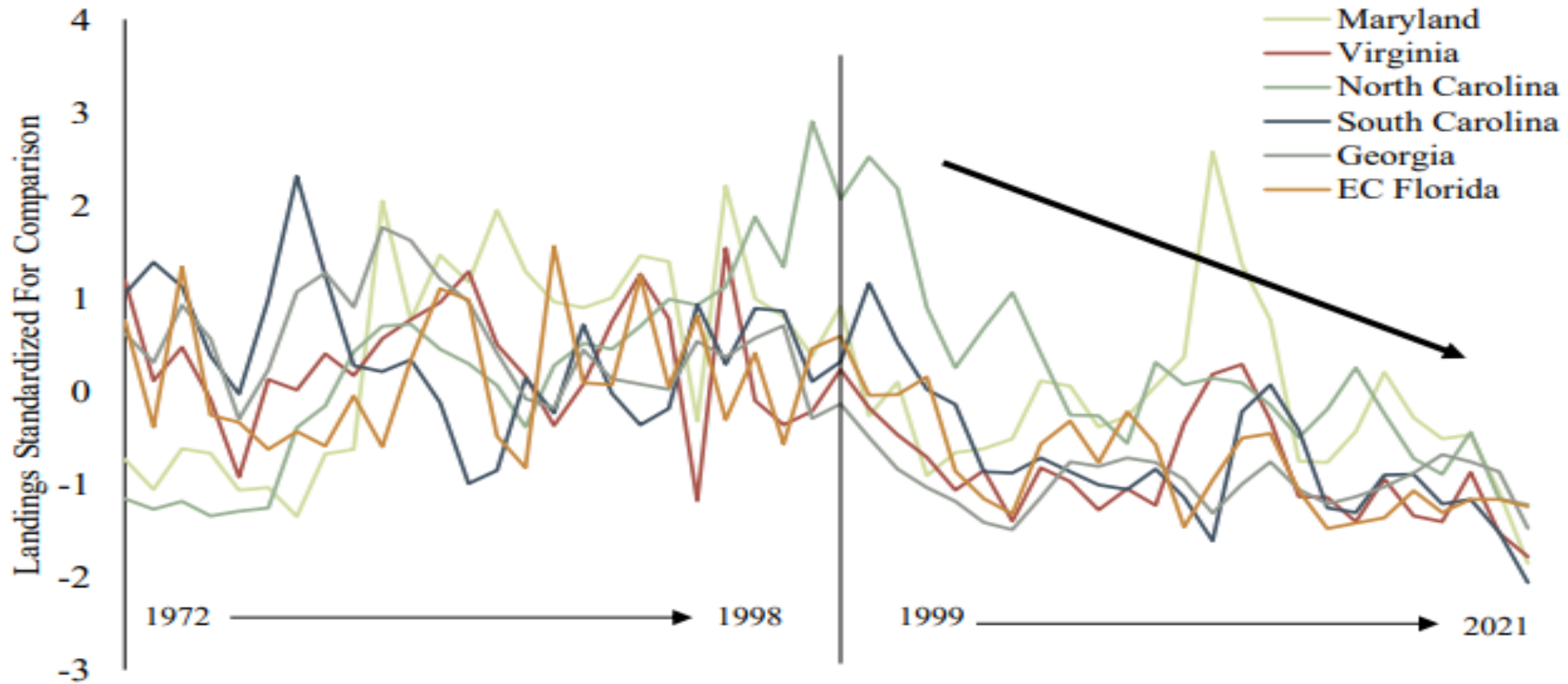


Figure 2-2. Annual commercial landings (standardized units for comparison) for blue crab by state (EC Florida = East Coast Florida).

Amendment 3 Adaptive Management Framework

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Amendment 3 Adaptive Management Timeline

May 2024	Division presents results of stock assessment update and adaptive management plan to MFC
May 2024 – August 2024	Division drafts management options
August 2024	Division updates the MFC on progress
September – October 2024	Division consults with Northern, Southern, and Shellfish/Crustacean advisory committees
November 2024	Division provides MFC with management recommendations and MFC votes on final approval
January 2025	New blue crab management measures implemented via proclamation



Questions?

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