



# *Blue Crab Fishery Management Plan Amendment 2 Traffic Light Update*



*DEPARTMENT OF ENVIRONMENTAL QUALITY*

Marine Fisheries

N.C. Marine Fisheries Commission | Jason Rock | Aug. 16, 2018



# Traffic Light Overview

- Initially developed to reduce reliance on data-intensive stock assessment models
- More timely fisheries management decisions
- Fewer assumptions than traditional stock assessment models
- Easy to understand visual representation of data
- Not unique to North Carolina blue crab management
- Uses:
  - Invertebrate species (e.g., Northern shrimp, broadtail shortfin squid, snow crab)
  - Management trigger (e.g., Atlantic croaker, spot)



## *Blue Crab Traffic Light Overview*

- Implemented in Amendment 2 (November 2013) and will remain in place until Amendment 3 is adopted
- The Traffic Light evaluates qualitative and quantitative indicators of the stock
- Indicators are evaluated using a set of base years
- Indicator values are assigned a green, yellow, or red “signal”



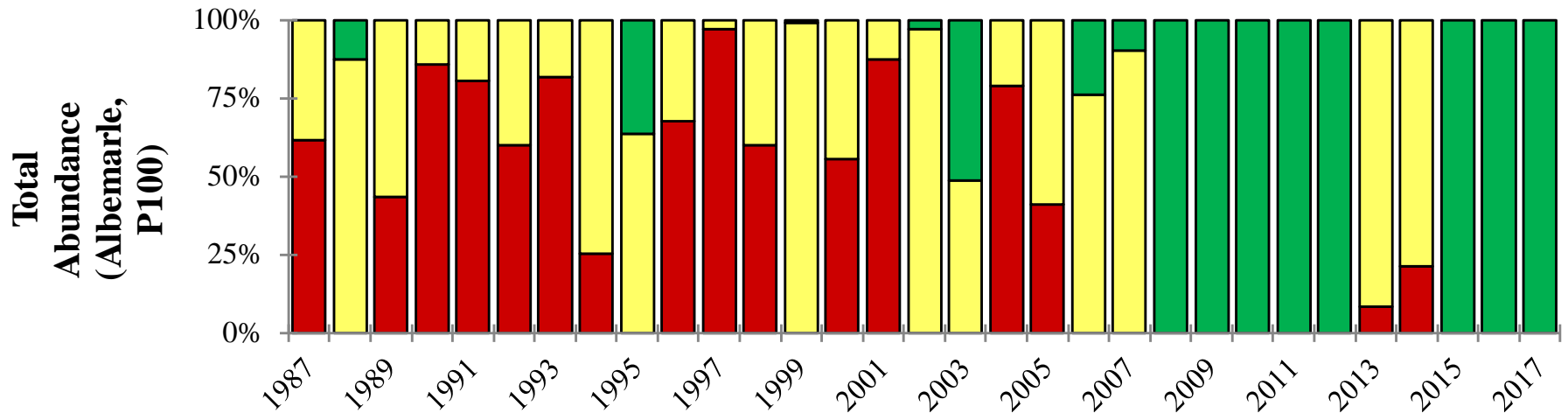
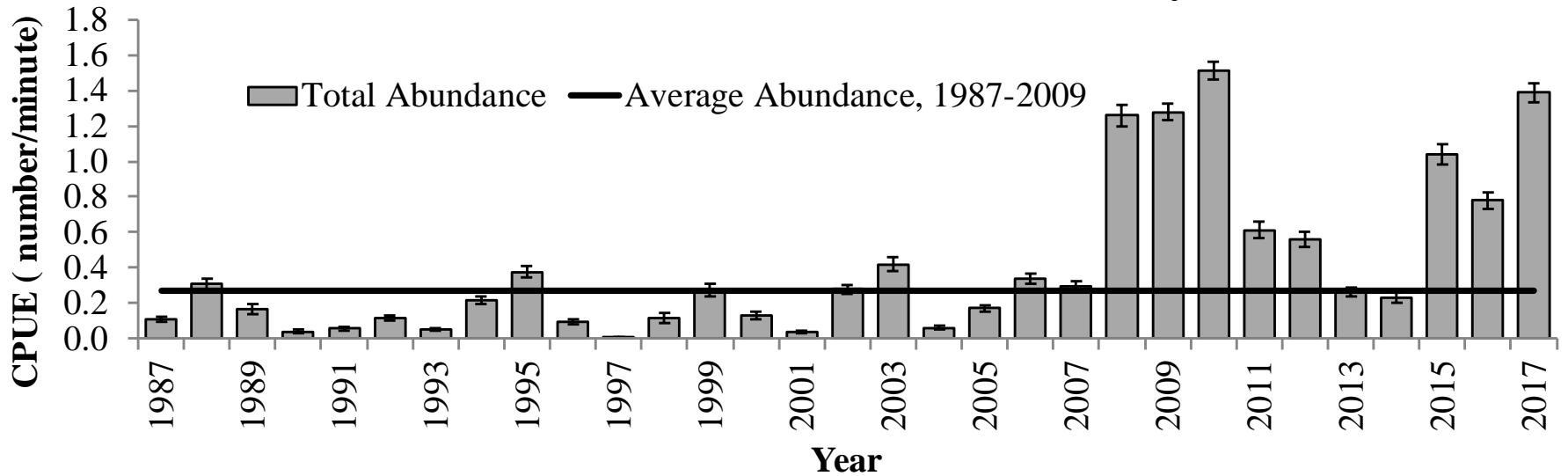
# *Blue Crab Traffic Light Overview*

- Similar indicators combine to form characteristics
- Characteristics combine to form the Traffic Light
- Divided into three characteristics:
  - Adult Abundance
  - Recruit Abundance
  - Production



# Blue Crab Traffic Light Overview

## Albemarle P100 (Anadromous Trawl Survey)



# Blue Crab Traffic Light Overview



# *Blue Crab Traffic Light Overview*

## Adaptive Management Framework

- Adult Abundance and Production characteristics trigger management action
- Management Thresholds
  - 50 percent red or higher (moderate management) for three consecutive years
  - 75 percent red or higher (elevated management) for two of three consecutive years
- Recruit Abundance characteristic used to inform management if another characteristic triggers management action





# *Blue Crab Traffic Light Overview*

## Adaptive Management Plan

- When triggered, management action must be taken
- Specifies suite of management options for each characteristic at each management threshold
- Management measures must remain in place for a minimum of three years





# *Blue Crab Traffic Light Overview*

## Adaptive Management Plan

Why was the three year time frame chosen?

Marine Fisheries Commission selected three years to:

- Prevent action due to annual variability
- Prevent delaying needed action
- Take action based on short but continued negative trend



# *Blue Crab Traffic Light Overview*

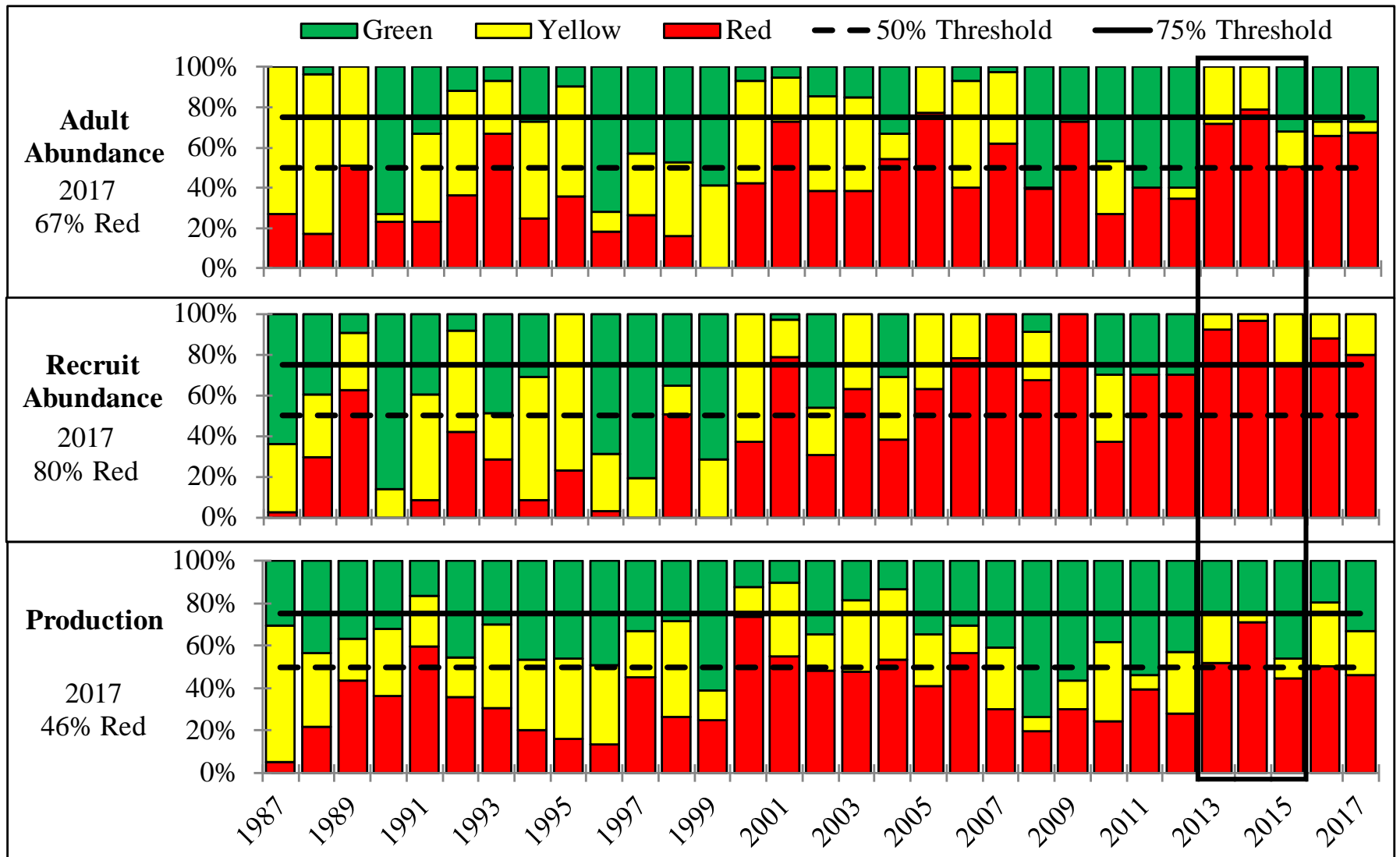
## Adaptive Management Plan

Moderate management measures in place for three years:

- If characteristic falls below management trigger then measures may be relaxed
- If characteristic unchanged or above elevated trigger then elevated measures will be enacted for three years
- After second three year period if characteristic has not improved then supplement process begins



# Blue Crab Traffic Light Results



## *Blue Crab Traffic Light Results*

- Adult abundance exceeded the moderate management threshold in 2017
- Per the adaptive management plan in Amendment 2, management measures enacted in 2016 should continue



## *Blue Crab Traffic Light Results*

<b>Traffic Light Characteristic</b>	<b>Management Level</b>	<b>Management Action</b>	<b>Effective Date</b>
<b>Adult Abundance</b>	Moderate	Add one cull ring to crab pots; must be within one mesh of corner of pot and one mesh of bottom of divider in the upper chamber of the pot	Jan. 15, 2017
<b>Adult Abundance</b>	Moderate	Eliminate harvest of v-apron immature female hard crabs (excluding peeler crabs) and include in cull tolerance	June 6, 2016
<b>Adult Abundance</b>	Moderate	Lower cull tolerance to 5 percent for all crabs, except mature females	June 6, 2016
<b>Adult and Recruit Abundance</b>	Elevated	Prohibit crab harvest with dredges except incidental to lawful oyster dredging	June 6, 2016
<b>Recruit Abundance</b>	Moderate	Prohibit harvest of dark sponge crabs (brown and black) during April; add dark sponge crabs to cull tolerance	June 6, 2016

*Questions?*



*Department of Environmental Quality*

