

# Current Status and Harvest Trends of Rockfish in the Cook Inlet and North Gulf Coast Waters



## **Mike Booz**

Lower Cook Inlet Area Manager  
Division of Sport Fish  
ADF&G Homer Office

## **Brittany Blain-Roth**

North Gulf Coast Area Manager  
Division of Sport Fish  
ADF&G Anchorage Office

## **Wyatt Rhea-Fournier**

Cook Inlet – Groundfish Research  
Division of Commercial Fisheries  
ADF&G Homer Office

# Rockfish






- Over 40 species

## Assemblages:







- Pelagic (Pelagic Shelf) (black rockfish)
- Nonpelagic (Demersal Shelf/Slope) (yelloweye rockfish)

**Rockfish Identification**  
Common Rockfish Species Found in Alaska

**Pelagic Rockfish:** Six pelagic species of rockfish are often found mid-water in schools, close to rocky structures. These fish are moderately long-lived (most fish are 7-20 years old).

<p><b>Dark Rockfish<sup>††</sup></b></p>  <p>Uniform black to dark brown body with slightly lighter belly, three pores on each side of lower jaw, sides just above anal fin darkly colored. Length to 23 inches.</p>	<p><b>Dusky Rockfish<sup>††</sup></b></p>  <p>Brownish body with lighter belly, tinged with pink or orange, three pores on each side of lower jaw, sides just above anal fin lightly colored, two dark bars on each cheek. Length to 24 inches.</p>
<p><b>Yellowtail Rockfish<sup>†</sup></b></p>  <p>Olive green to greenish brown with lighter under-side; fins distinctly yellowish green. Length to 26 inches.</p>	<p><b>Widow Rockfish<sup>†</sup></b></p>  <p>This is a relatively slim species in various shades of brown or brass that lighten towards the belly. Length to 23 inches.</p>
<p><b>Black Rockfish<sup>†</sup></b></p>  <p>(Black Bass). Dark gray to black with white belly. Usually uniform in color, but may have lighter patches along back. No pores on lower jaw. Length to 25 inches.</p>	

**Nonpelagic Rockfish:** Bottom-dwelling species found on or near the ocean floor, usually in rocky or boulder-stream habitat. Extremely long-lived (most fish are 15-75 years old).

<p><b>Quillback Rockfish<sup>†</sup></b></p>  <p>Brown body mottled with orange and yellow. Long, prominent spines on a high dorsal fin. Length to 24 inches.</p>	<p><b>Copper Rockfish<sup>†</sup></b></p>  <p>Olive brown to copper with pink or yellow blotches, white on sides and belly. Dorsal fins dark copper brown to black with some white. Rear two-thirds of lateral line is light. Length to 22 inches.</p>
<p><b>Silvergray Rockfish<sup>†</sup></b></p>  <p>Greenish to silver-gray body, belly white, tinged with soft orange or pink. Slender body fish with a long lower jaw protruding well beyond upper jaw. Length to 26 inches.</p>	<p><b>Tiger Rockfish<sup>††</sup></b></p>  <p>Light pink with five dark red stripes along the side. Two dark bars extend from each eye. Length to 24 inches.</p>
<p><b>Yelloweye Rockfish<sup>†</sup></b></p>  <p>Orange red and orange yellow, bright golden yellow eye, fins may be black at tips. Juveniles have two light bands along the side, one on the lateral line and a smaller one below the lateral line. Length to 36 inches.</p>	<p><b>China Rockfish<sup>†</sup></b></p>  <p>Mostly black, with bright yellow and white blotches and a yellow stripe along most of the lateral line. Length to 17 inches.</p>

# Rockfish Life History: Challenges to Management

- Long-lived
  - Black rockfish: 20 – 40 years (May differ by sex)
  - Yelloweye rockfish: 60 to over 100 years old
- Slow growing
  - Black rockfish: females grow faster than males
- Late to mature and skip spawn
  - Black rockfish
    - Different maturity timing between sexes has been observed
      - Males mature earlier (5-6 years) than females (10-15 years)
      - Older females missing from the harvest data
  - Yelloweye rockfish
    - 50% mature at 17 years old; nearly all mature around 30 years old
- High fecundity (up to 3 millions eggs)
- Give live birth
  - Most rockfish (including yelloweye) release larvae in the summer
  - Black rockfish release larvae in the winter
- Closed Swimbladder (physoclastic)
  - Issues with resubmerging and discard mortality



Yelloweye rockfish with barotrauma



# ADF&G Statewide Rockfish Initiative (SRI)

## **Purpose:**

- Interdivisional statewide effort to develop short & long-term management & assessment strategies for black and yelloweye rockfish

## **Issue:**

- No overarching management or assessment strategies
- Lack of abundance and harvest rate information
- Vulnerable to overharvest and require long recovery periods
- Growing level of concern – harvest trends, changes in size & age

## **Management Priorities:**

- Manage all fisheries under an appropriate harvest level or harvest rate
- Maintain optimum spawning populations

# Sport Fish Management Areas

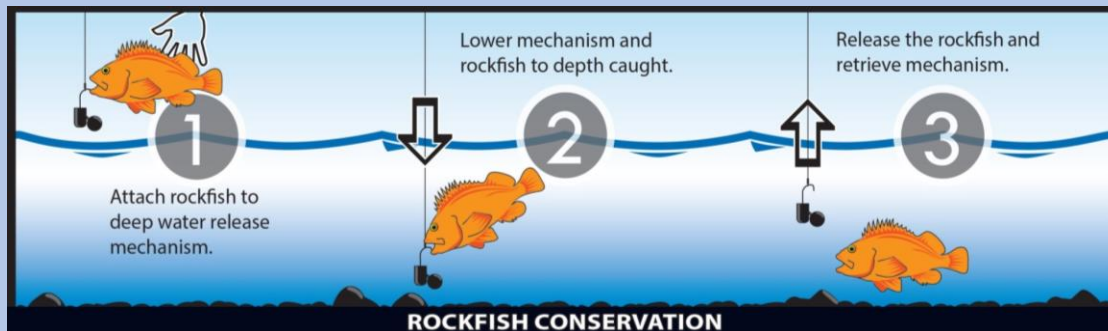


# Commercial Fisheries Management Districts



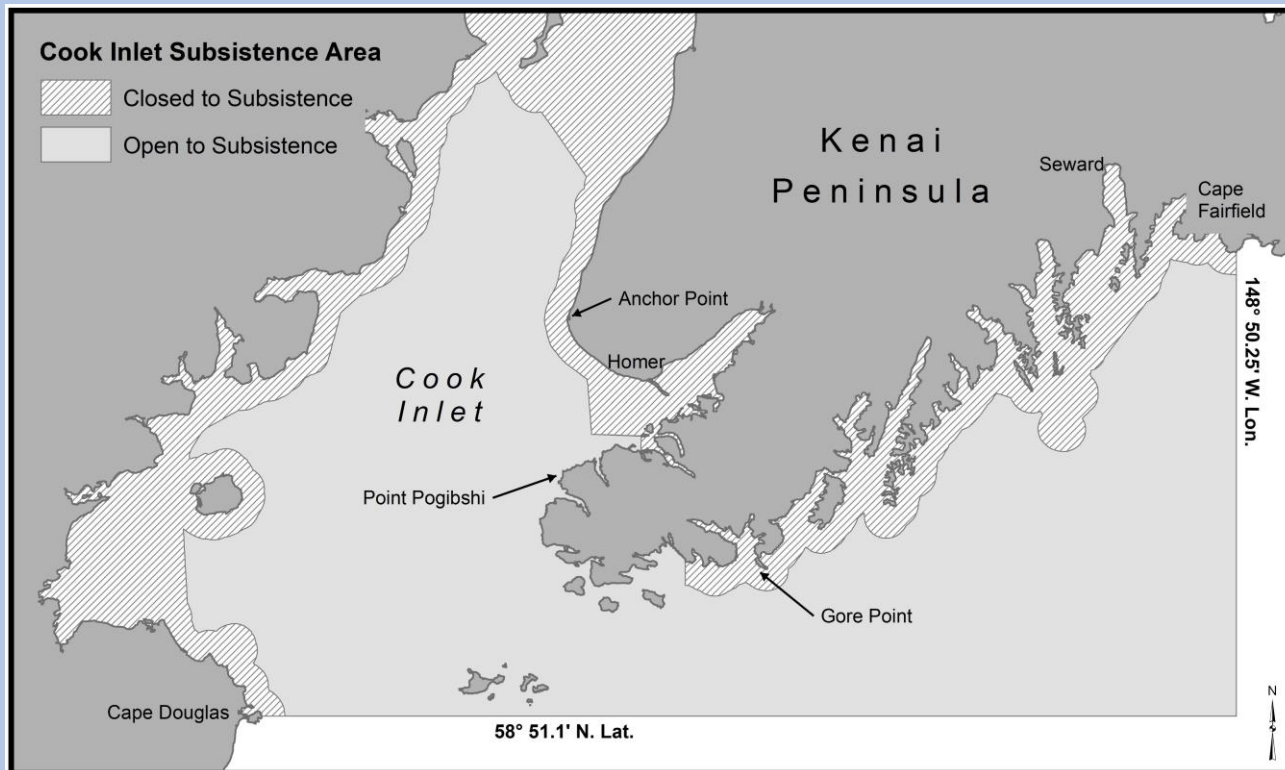
# Sport Fish Regulations

- No management plan or Guideline Harvest Level (GHL)
- Managed by assemblage since 1995 (pelagic and nonpelagic)
- Bag and possession limits:
  - *North Gulf Coast*
    - 4 rockfish per day (bag limit), 8 in possession of which only 1 nonpelagic per day and 2 in possession
    - Put in regulation in 2007
  - *Lower Cook Inlet*
    - 5 rockfish per day (bag limit), 10 in possession of which only 1 nonpelagic per day and 2 in possession
    - Put in regulation in 1989
- Gear: Mandatory use of a Deepwater Release Mechanism (statewide)



# Subsistence Fishery 5 AAC 01.566

- 750 – 1,350 rockfish Amount Necessary for Subsistence (ANS)
- Single hand troll, single hand-held line, or single longline, none of which may have more than 5 hooks
- 5 fish bag limit, 10 fish in possession. 1 nonpelagic rockfish per day and 2 in possession





# Commercial Fisheries Regulations

## Cook Inlet Rockfish Management Plan 5AAC 28.365

- 1993-** Directed rockfish fishery established with 150,000 lb Guideline Harvest Level (GHL)
  - Considered harvest in North Gulf Coast District
- 1997-** GHL applied to all rockfish harvest (directed and bycatch)
- 1998-** State of Alaska assumes management of Black rockfish in federal waters (5 AAC 28.010)
- 2005-** Mandatory retention of all rockfish caught in state managed fisheries & directed Pelagic Shelf Rockfish fishery established to limit yelloweye harvest

# Commercial Fisheries

5-day Rockfish harvest trip limit (all fisheries):

- 1,000 lb in Cook Inlet District
- 4,000 lb in North Gulf Coast District

## Directed Pelagic Shelf Rockfish Fishery

- Limited to 150 hooks per jig machine
  - No limit on number of machines per vessel
- Bycatch allowance:
- 20% for nonPelagic rockfish

## Bycatch in other directed fisheries

### Halibut

- Longline
- Jig
- Hand troll

### Sablefish

- Longline

### Pacific cod

- Longline
- Jig
- Pot

### Lingcod

- Jig
- Hand troll

Bycatch allowance:

- 10% all rockfish species

**Proceeds from rockfish overages are surrendered to the State of Alaska**

# How do we get our harvest data?

## Commercial Fisheries

- Fish Ticket harvest information
- Port sampling
- Logbooks and call-in



## Subsistence

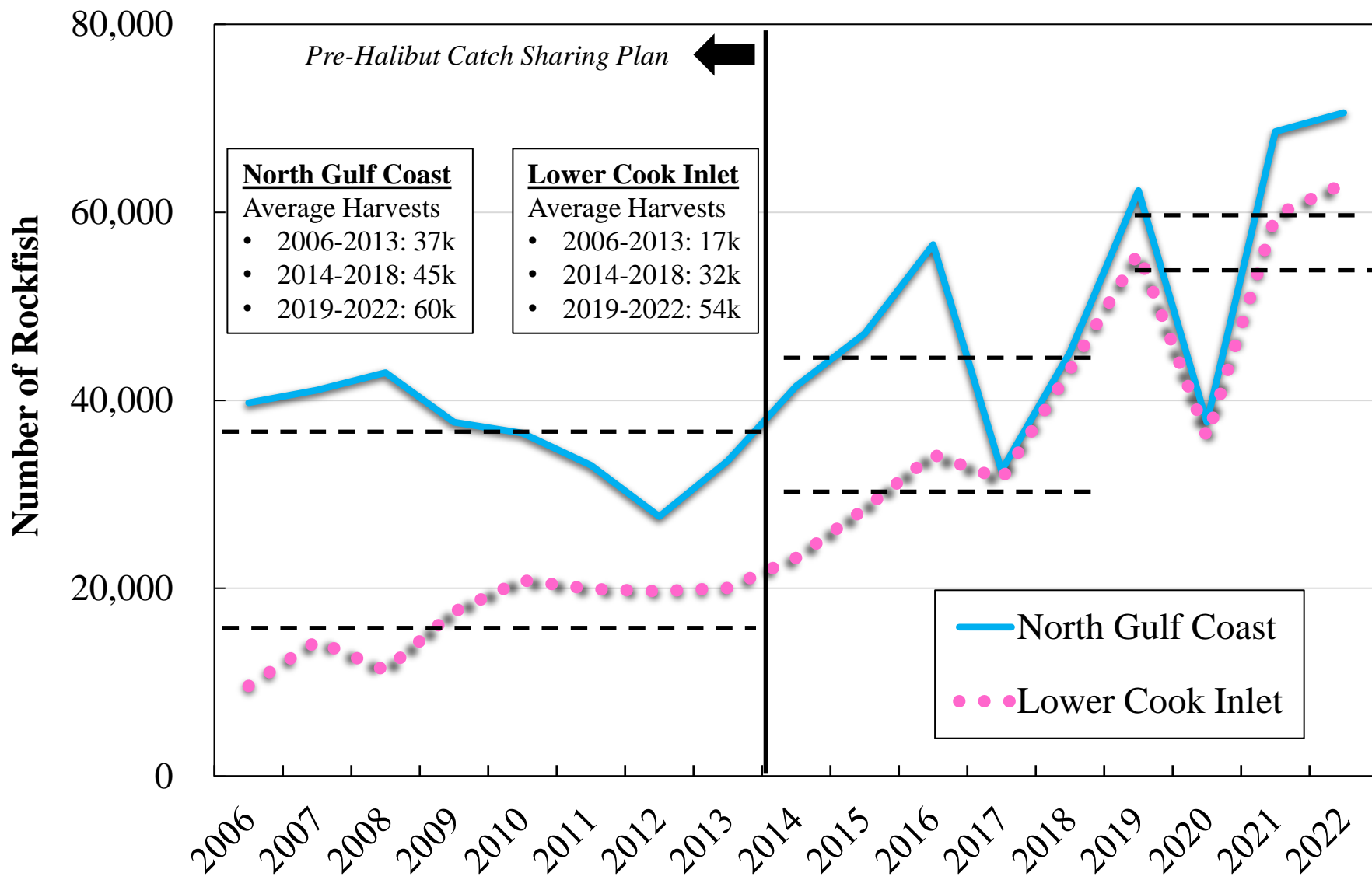
- Household Surveys

## Sport Fisheries

- Charter Logbook
- Statewide Harvest Survey
- Port sampling

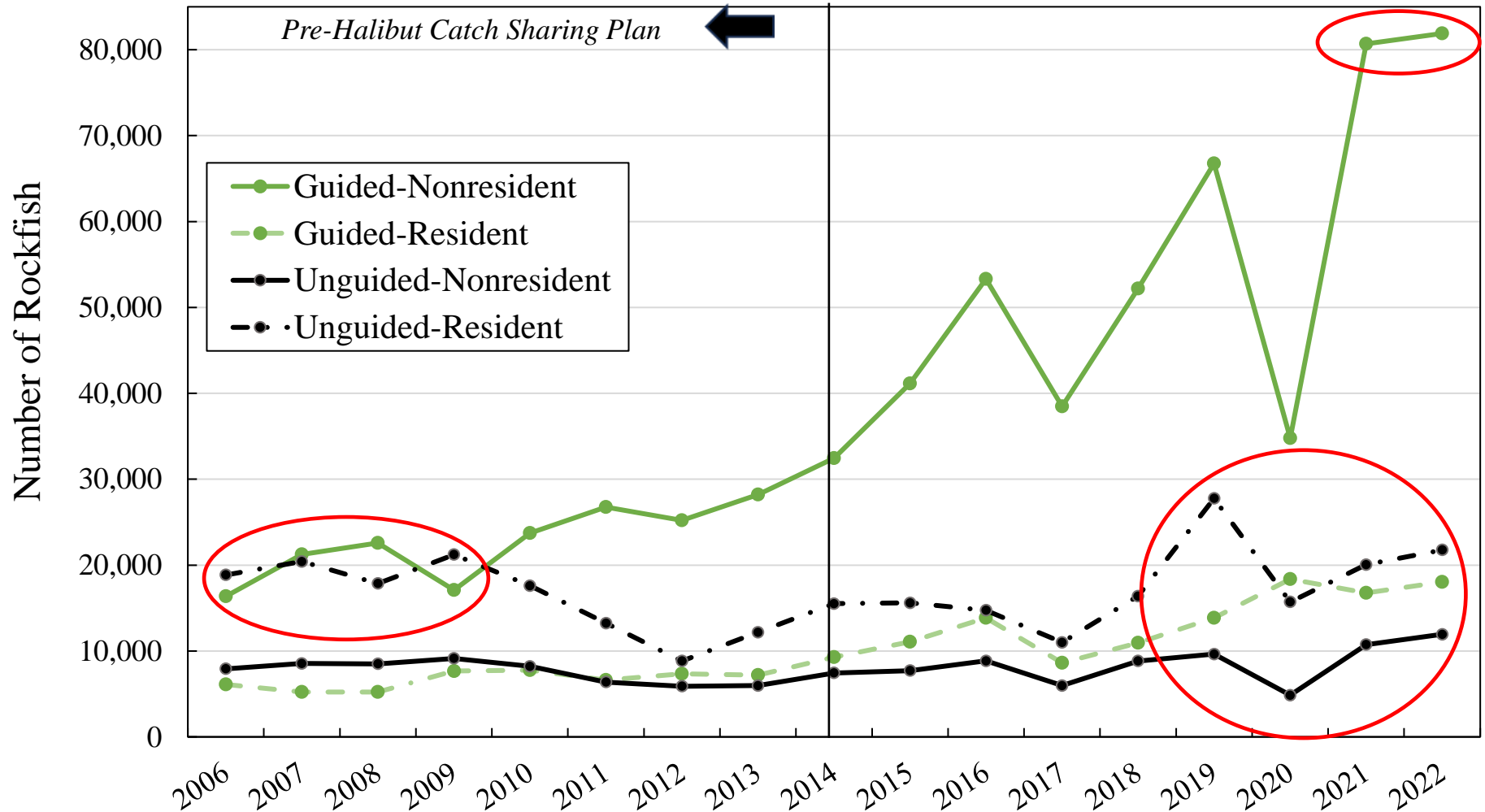


# Sport Fish Harvest—Total Rockfish



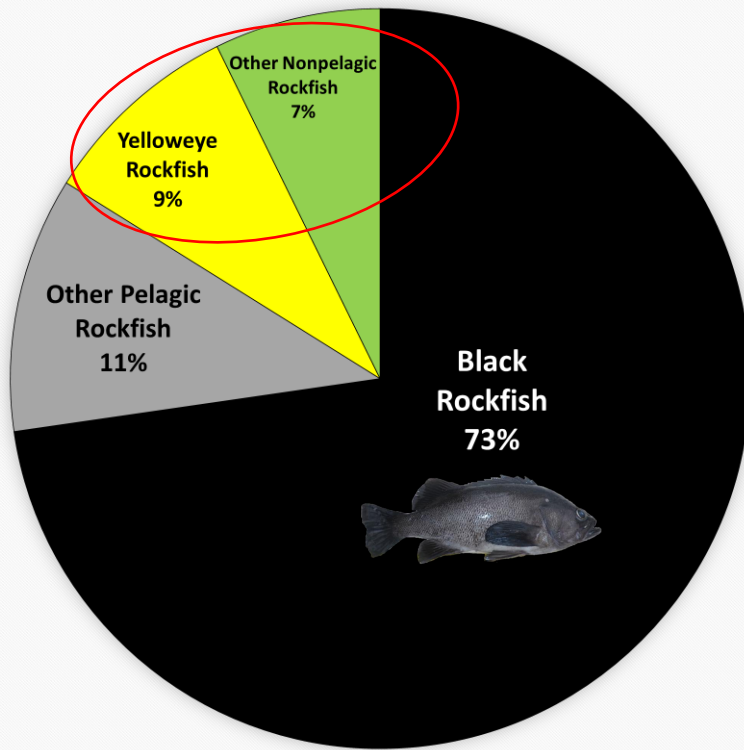
# Sport Rockfish Harvest by User & Residency

## North Gulf Coast & Lower Cook Inlet (combined)



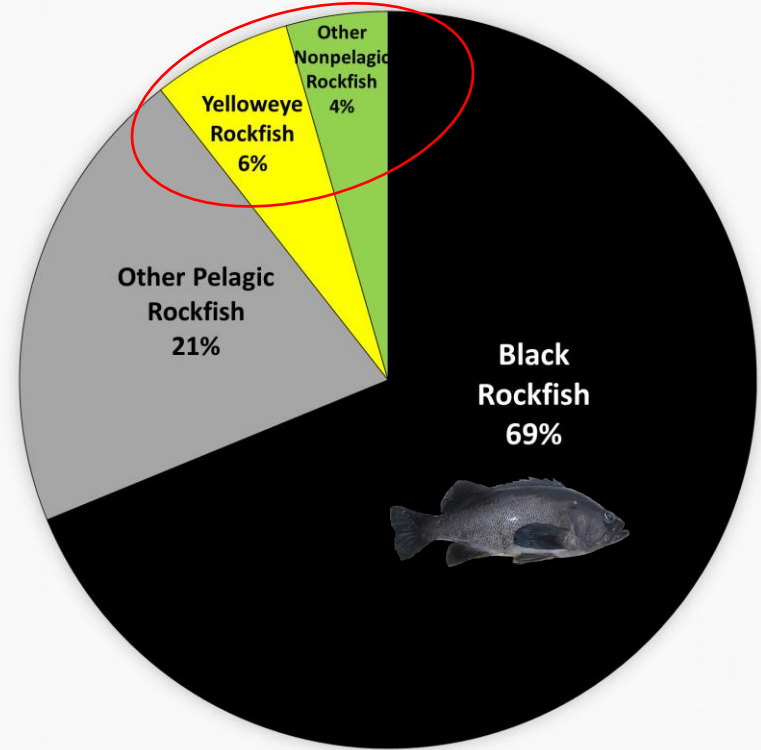
# Sport Fish Rockfish Harvest— Recent Species Composition

North Gulf Coast



- 84% Pelagic/16% Nonpelagic
- Mostly Black Rockfish
- Similar portions Yelloweye/Other Nonpelagic

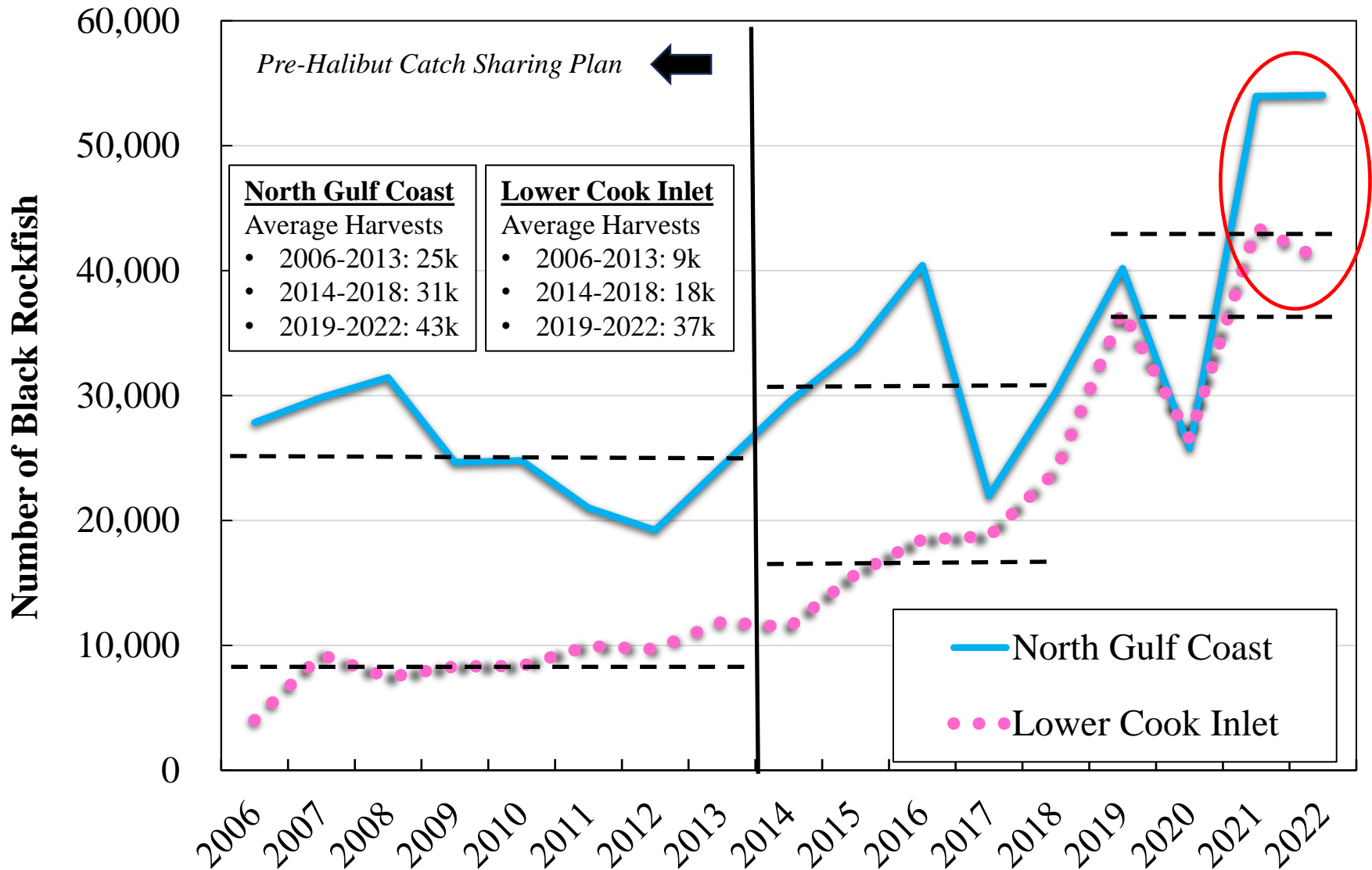
Lower Cook Inlet



- 90% Pelagic/10% Nonpelagic
- Mostly Black Rockfish
- Similar portions Yelloweye/Other Nonpelagic



# Black Rockfish–Sport Harvest

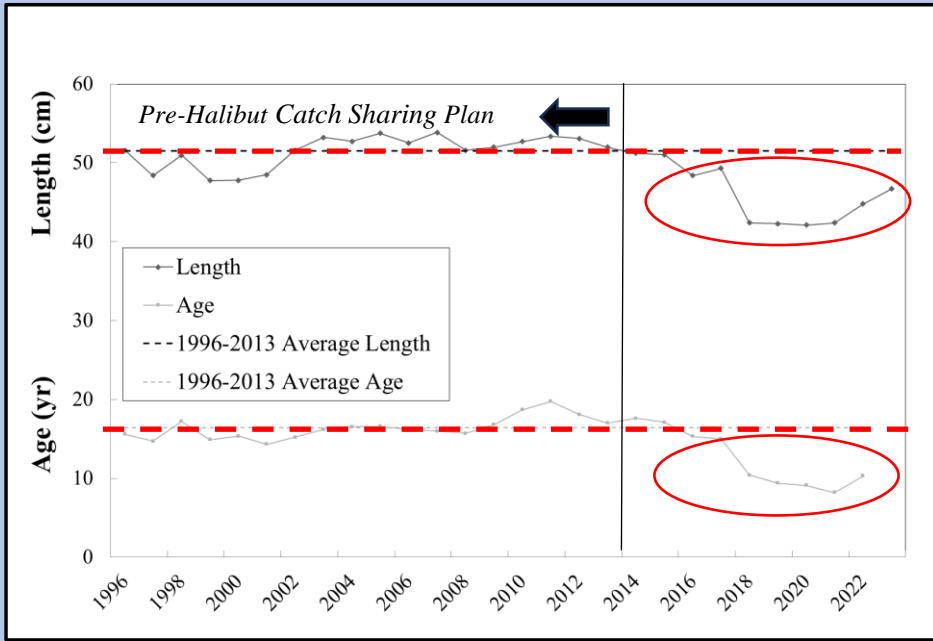
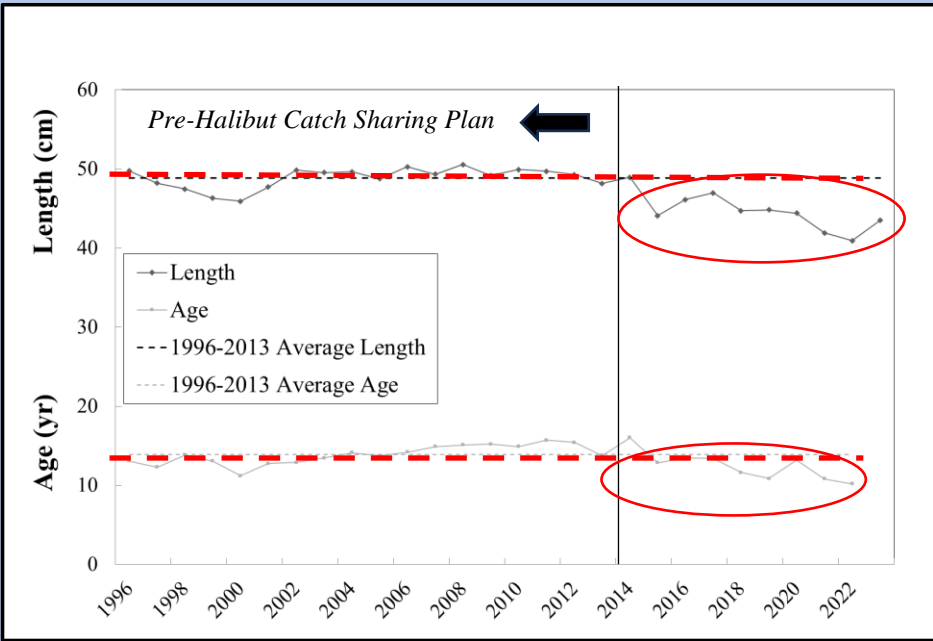




# Black Rockfish—Sport Harvest Length & Age Compositions

## North Gulf Coast

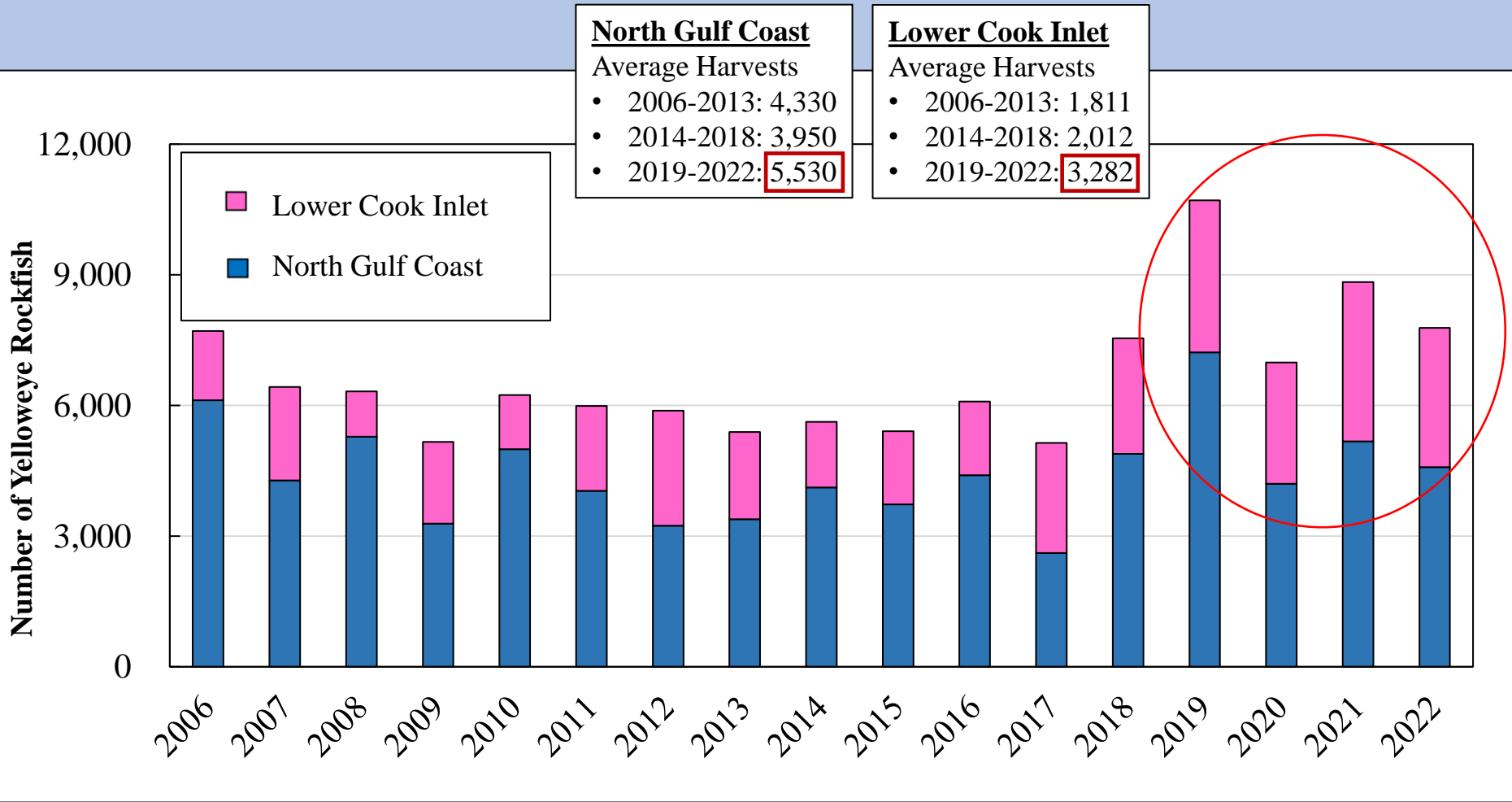
## Lower Cook Inlet





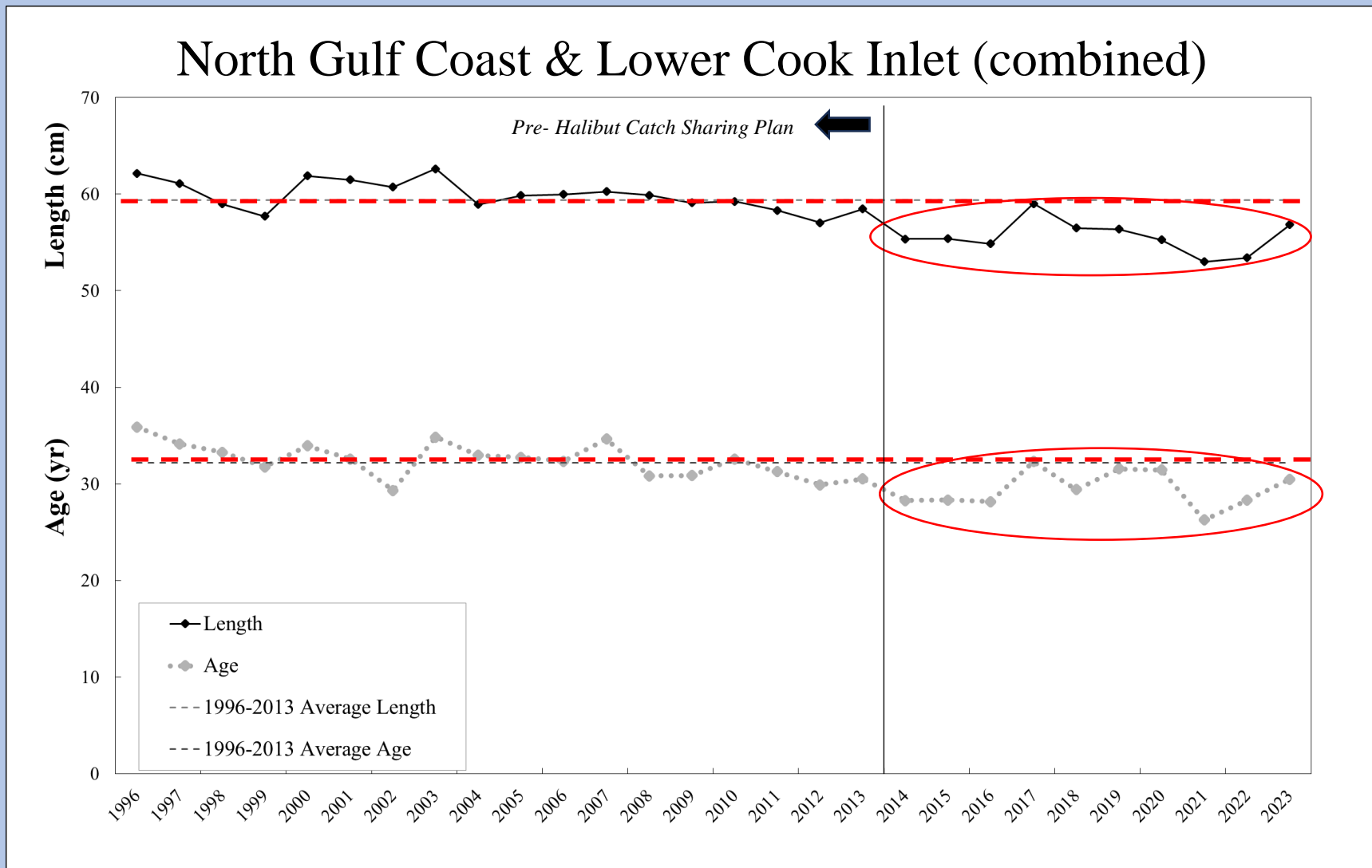


# Yelloweye Rockfish—Sport Harvest

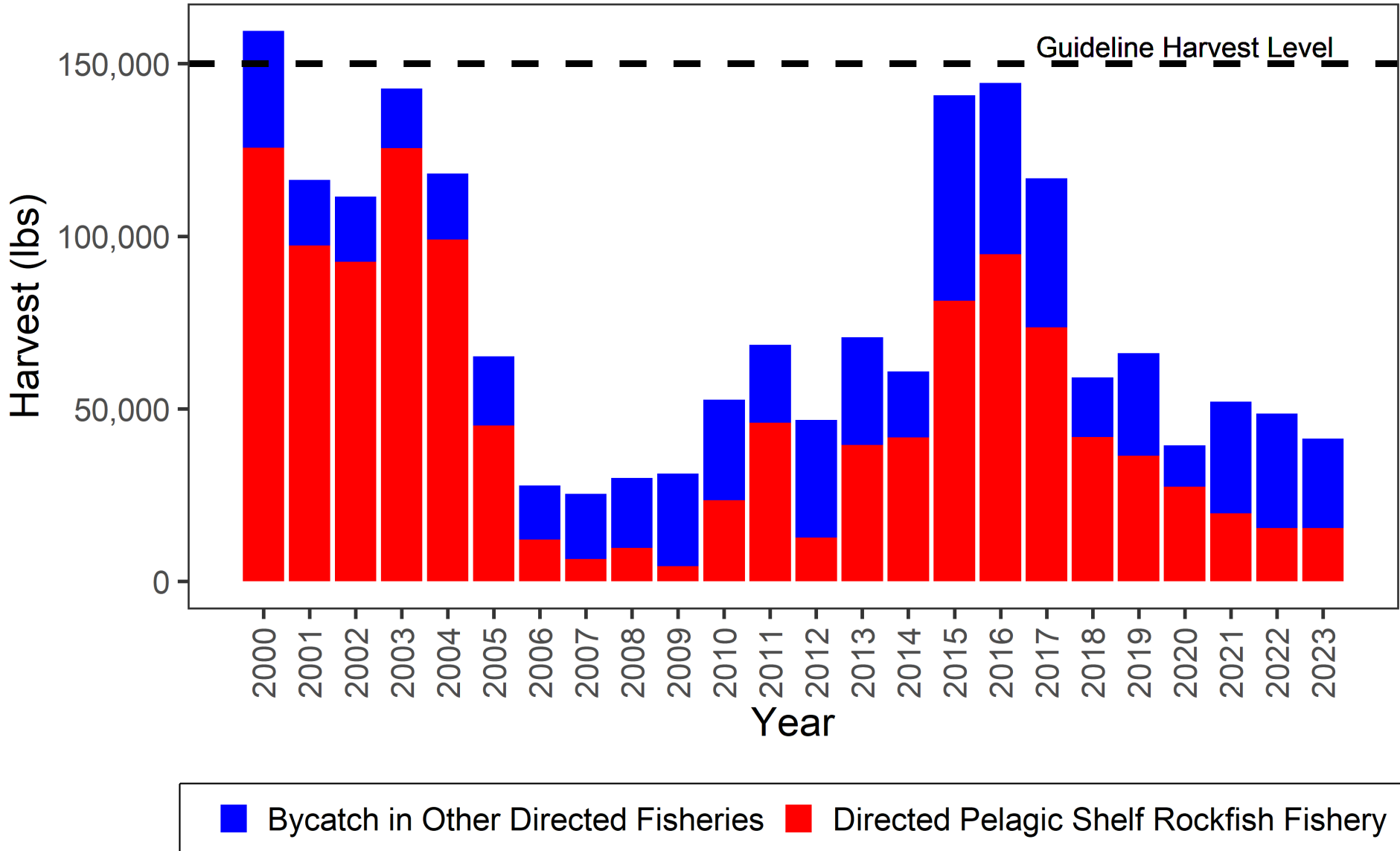




# Yelloweye Rockfish—Sport Harvest Length & Age Compositions

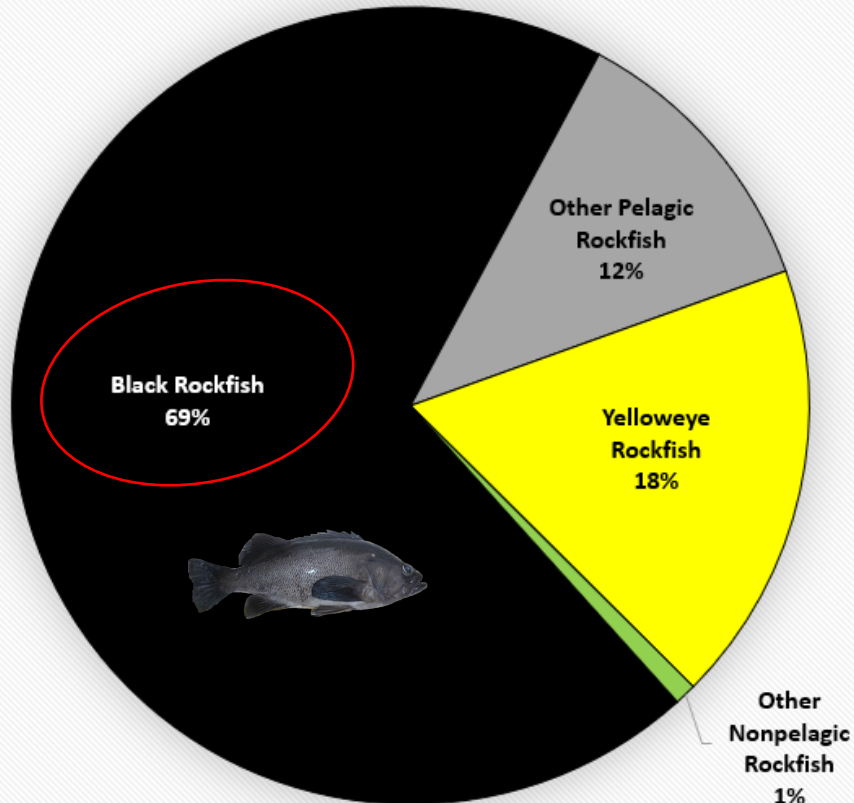


# Cook Inlet Management Area Commercial Harvest



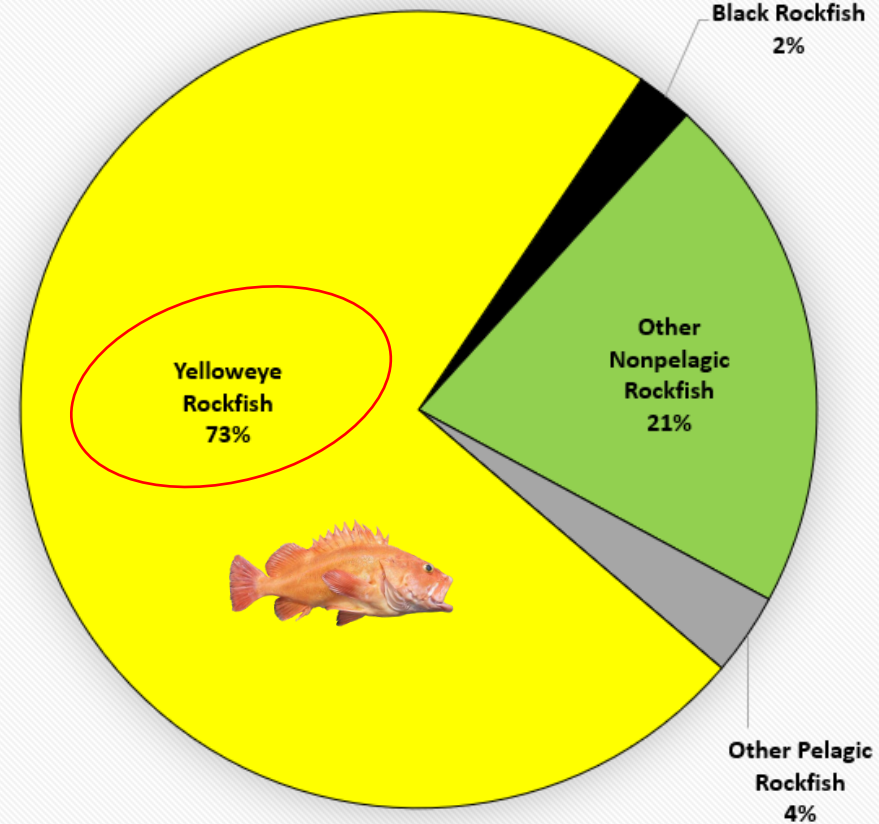
# Commercial Fish Rockfish Harvest— Recent Species Composition

Cook Inlet Area Pelagic Shelf Rockfish Fishery



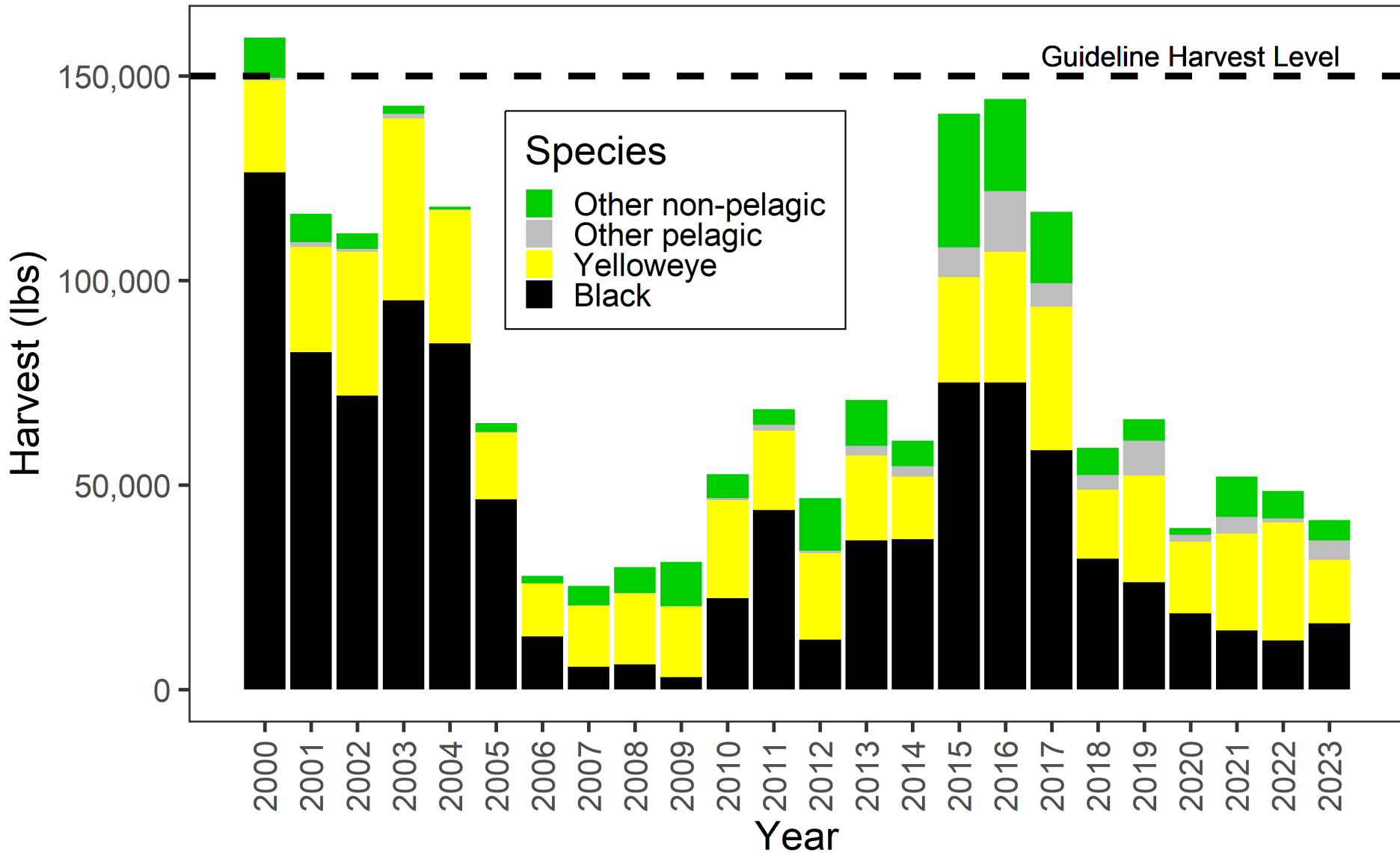
- 82% Pelagic/ 18% Nonpelagic
- Mostly Black Rockfish

Cook Inlet Area Other Fisheries



- 6% Pelagic/ 84% Nonpelagic
- Mostly Yelloweye Rockfish

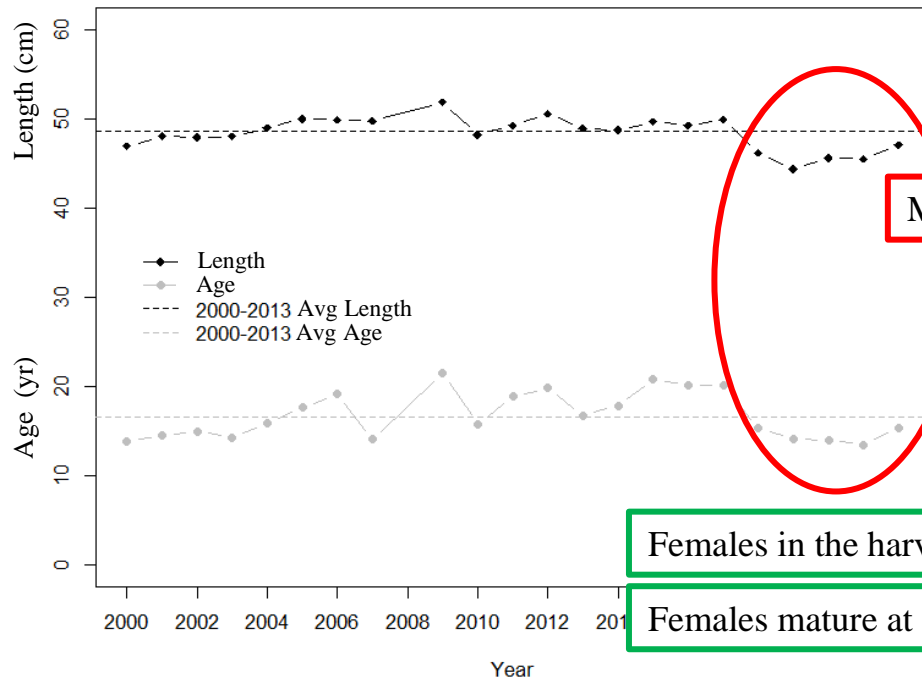
# Cook Inlet Management Area Commercial Harvest



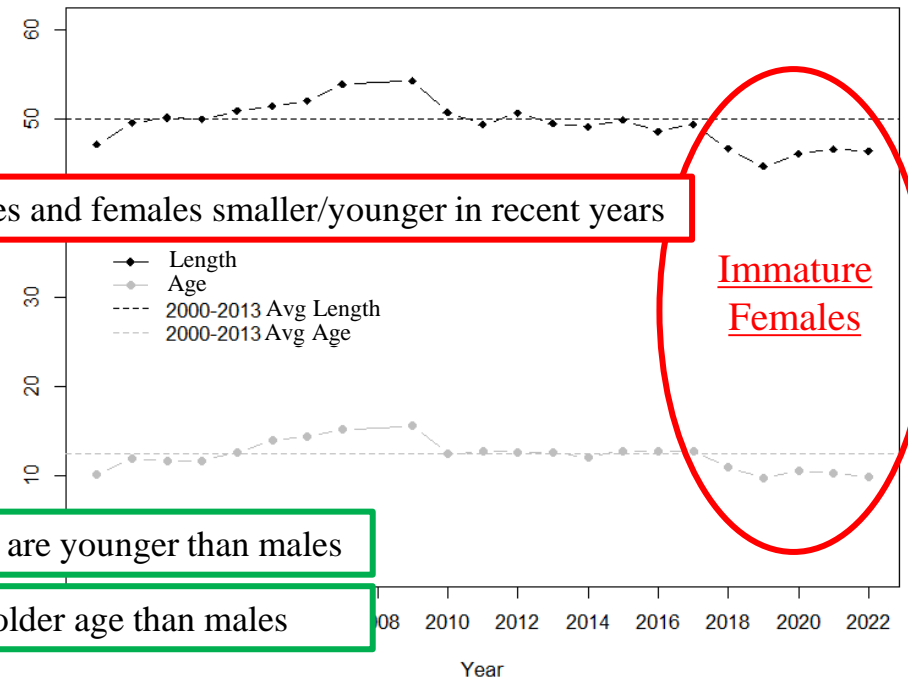


# Black Rockfish—Commercial Harvest Length and Age Compositions

## Male Black Rockfish



## Female Black Rockfish



Males and females smaller/younger in recent years

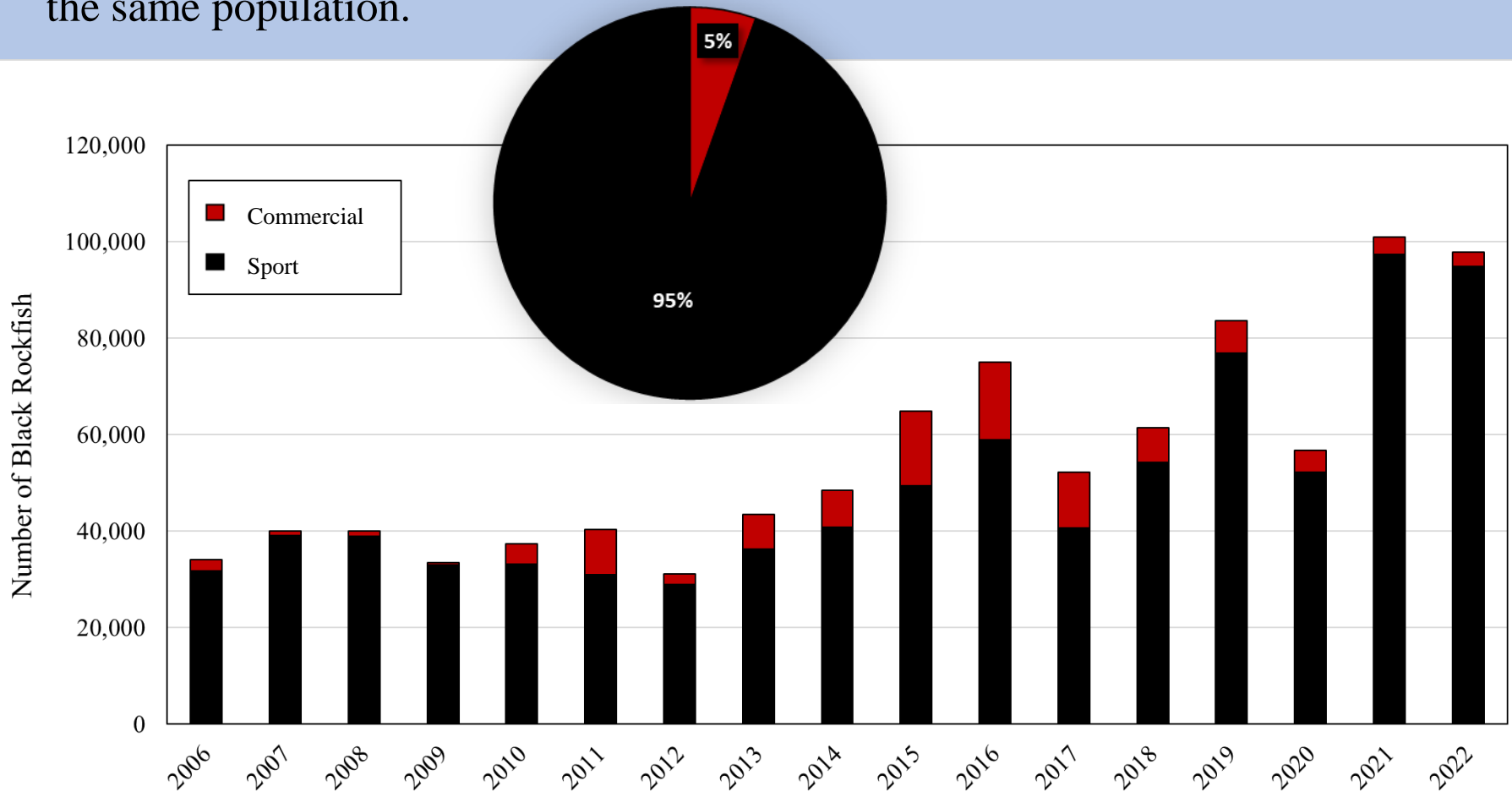
Females in the harvest are younger than males

Females mature at an older age than males



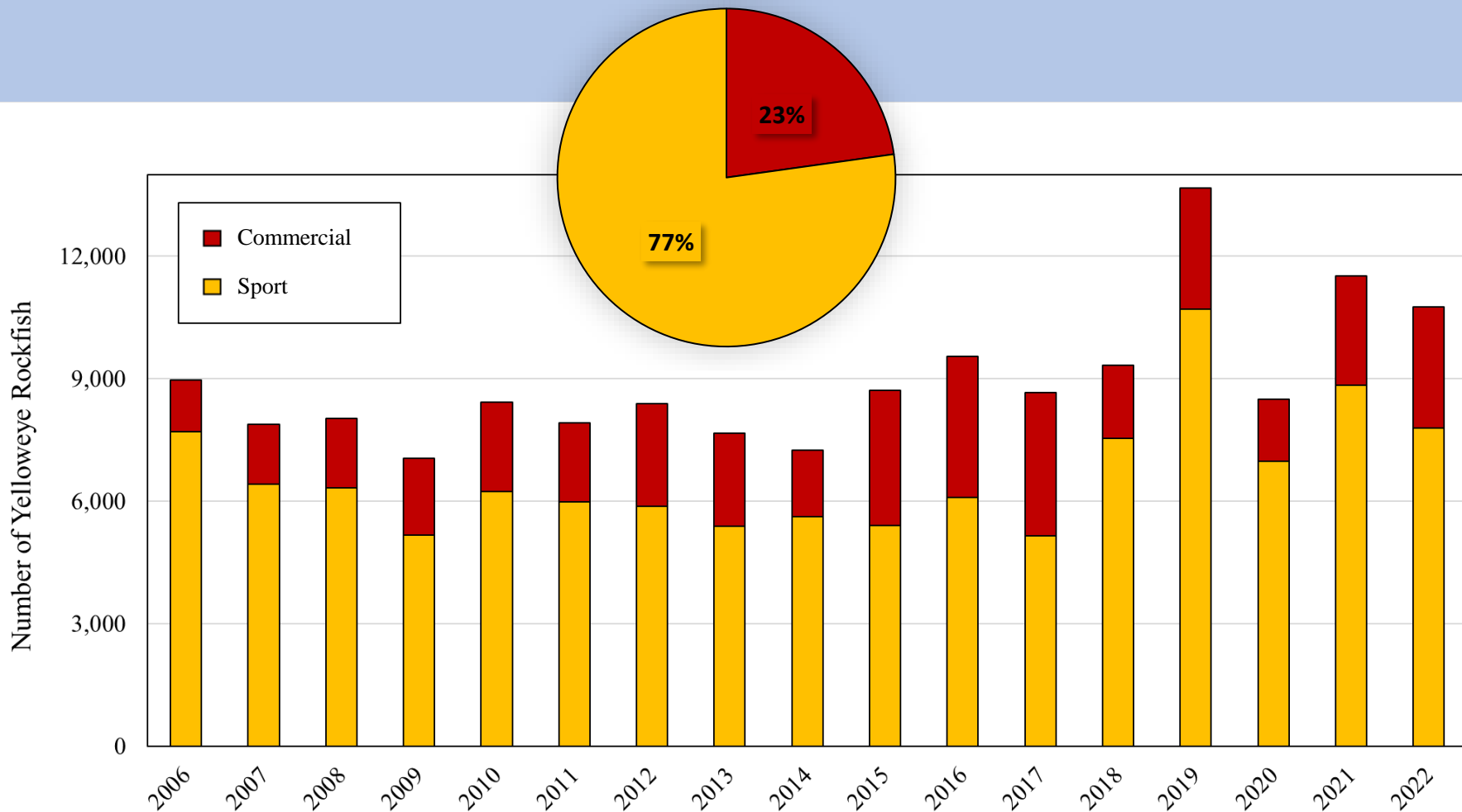
# Total Black Rockfish Harvest: Sport & Commercial Fisheries

- Sport and Commercial fisheries are assumed to be harvesting from the same population.





# Total Yelloweye Rockfish Harvest: Sport & Commercial Fisheries







# Current Status



## Commercial Fishery

- Annual harvests have been well below the 150,000 lb GHL since 2017.
- Black rockfish size and age decreasing in harvest.
- Current participation and harvest in directed Pelagic Shelf Rockfish fishery declining.

-The most recent 10-year (2014-2023) average annual commercial rockfish harvest:  
76,800 lbs (51% of GHL)

-The most recent 5-year (2019-2023) average annual commercial rockfish harvest:  
49,300 lbs (33% of GHL)



# Current Status



## Commercial Fishery

No Management Actions taken in 2023.

Proposal 25: Reduce Cook Inlet commercial and sport rockfish harvest limits.

- The department is NEUTRAL on the allocative aspects of this proposal.
- The department has growing concerns about the status of Central Gulf of Alaska rockfish stocks and recent increasing harvest trends similar to what was experienced in Southeast Alaska.
- The department supports restrictive management measures to conserve Central Gulf of Alaska rockfish stocks (stabilize harvest).

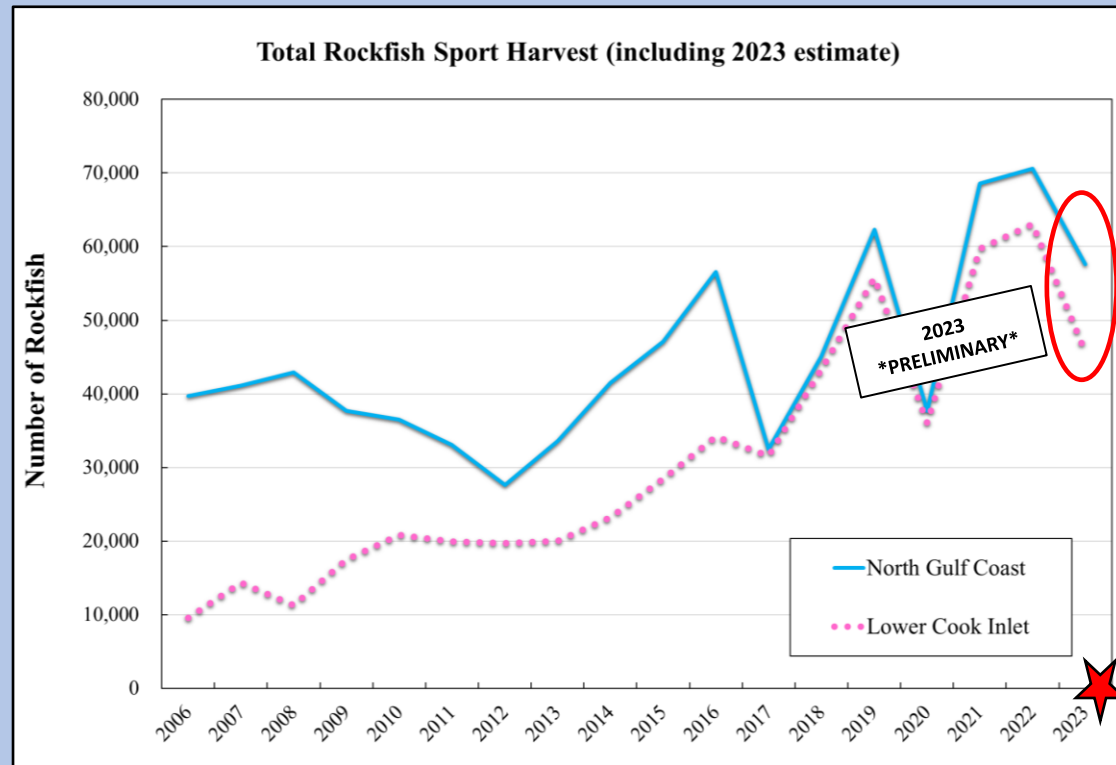


# Current Status



## Sport Fishery

- Annual rockfish harvest is still well above historical harvest level
- Effort towards rockfish by guided anglers is increasing
- Length and ages are below average
- 2023 Management Actions
  - Reduced the bag and possession limits
  - Preliminary harvest for 2023
    - Estimated harvest reduction:
      - Lower CI: 27.6%
      - North Gulf: 18.4%





# Proposals 18-22 & 25



## Sport Fishery

<b>Estimates of Expected Savings by Regulatory Option</b>				
<b>REGULATION</b>		<b>LCI</b>	<b>NGC</b>	
<b>5 Rockfish</b>	5 rockfish per day, of which only 1 may be a nonpelagic	0%	N/A	Current LCI regulations
	4 pelagics 1 nonpelagic	9%	N/A	
<b>4 Rockfish</b>	4 rockfish per day, of which only 1 may be a nonpelagic	16%	0%	Current NGC regulations; Proposal 20&21 for LCI
	3 pelagics 1 nonpelagic	27%	12%	ADF&G submitted Proposal 18
<b>3 Rockfish</b>	3 rockfish per day, of which only 1 may be a nonpelagic	33%	19%	2023 EO for LCI & NGC; Proposal 19
	2 pelagics 1 nonpelagic	44%	34%	



# Future Work



- Finalizing a black rockfish stock assessment model to identify sustainable harvest levels.
- Develop comprehensive inter-divisional management strategy by next Lower Cook Inlet BOF meeting.
- Continue/expand port sampling observations of sport and commercial harvest.
- Continue fishery independent surveys (if funding available).

# Questions?



## Additional information available:

- Statewide Rockfish Initiative: [www.adfg.alaska.gov/rockfish](http://www.adfg.alaska.gov/rockfish)
- Sport Fisheries in the Lower Cook Inlet Management Area, 2022 to Inform the Alaska Board of Fisheries in 2023
- Sport Fisheries in the North Gulf Coast Management Area, 2022 to Inform the Alaska Board of Fisheries in 2023
- Commercial Fisheries Cook Inlet Area Groundfish Management Report, 2016–2018
  - <http://www.adfg.alaska.gov/FedAidPDFs/FMR19-24.pdf>
- Commercial Fisheries Cook Inlet Area Groundfish Management Report, 2019–2022
  - Available at November Alaska Board of Fisheries, 2023