



# **Black Sea Bass Pot Fishery Effort**

An Analysis of Effort Pre- and Post-18A for  
Regulatory Amendment 16



# Outline

1. Overall effort pre- and post-18A
  - All permit holders
  - Endorsement holders only
2. Effort and % landings by statistical area pre- and post-18A
  - For all permit holders and endorsement holders only
3. Effort and % landings by month pre- and post-18A
  - For all permit holders and endorsement holders only
4. Effort and % landings by depth pre- and post-18A
  - For all permit holders and endorsement holders only
5. Maps overlaying BSB pot effort and Right Whale SPUE by season



# Data

- All data from commercial logbooks provided by SERO
- All analyses done by fishing year (June 1 – May 31)
  - However, fishing year will begin on Jan 1 starting in 2015
- Years range from 2000-2001 to 2013-2014 fishing years
  - No actual trip data from 2014
  - 2000-2009 used as Pre-18A, 2012-2014 used as Post-18A
- All trips that reported landings of BSB by trap included
- Depth is in meters
- All depth bins are in 5m increments
  - A depth bin includes the stated depth as the starting depth and goes up until the start of the next bin
  - Ex. Depth Bin 5 goes from 5m to 9.9m



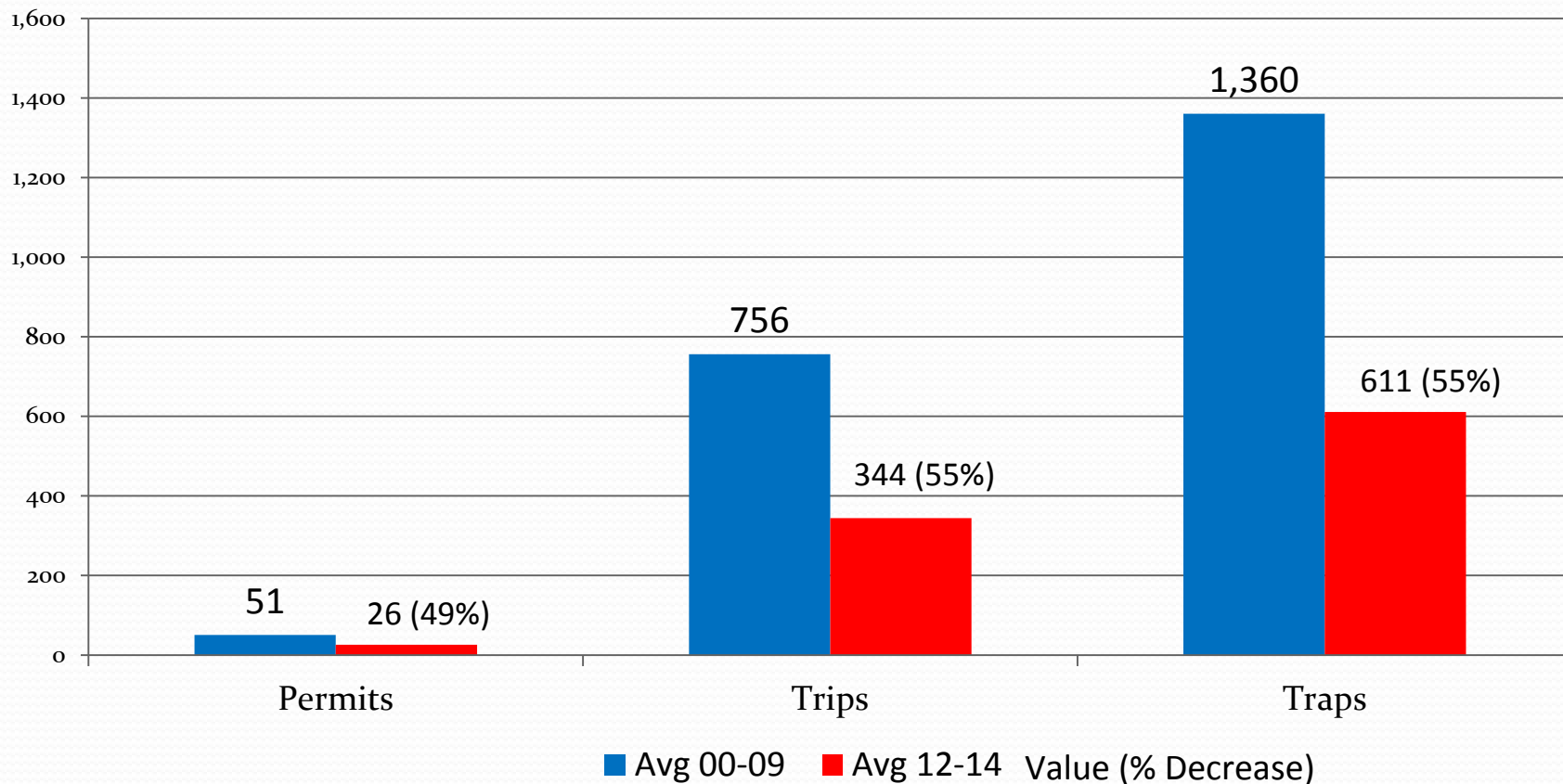
# Data

- All landings data are in pounds gutted weight
- All right whale SPUE data is from the ALWTRP Co-occurrence model
- Maps that use this data simply show the location of the SPUE data and give no indication of magnitude



# All Permit Holders

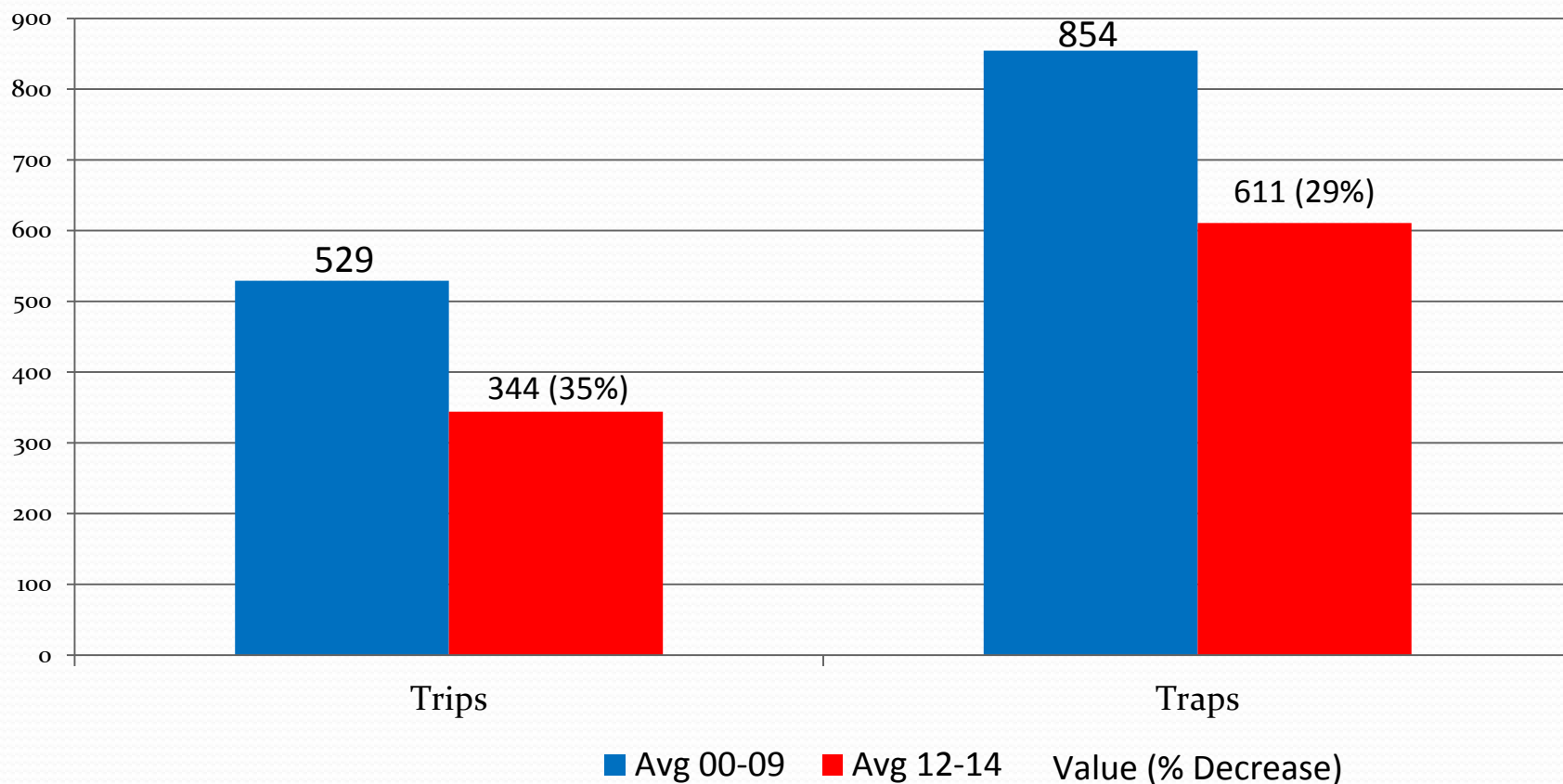
Number of Permits, Avg Number of Trips Taken, and Avg Number of Traps Fished Pre- and Post-18A





# Endorsement Holders

Avg Number of Trips Taken, and Avg Number of Traps Deployed by Endorsement Holders Pre- and Post-18A



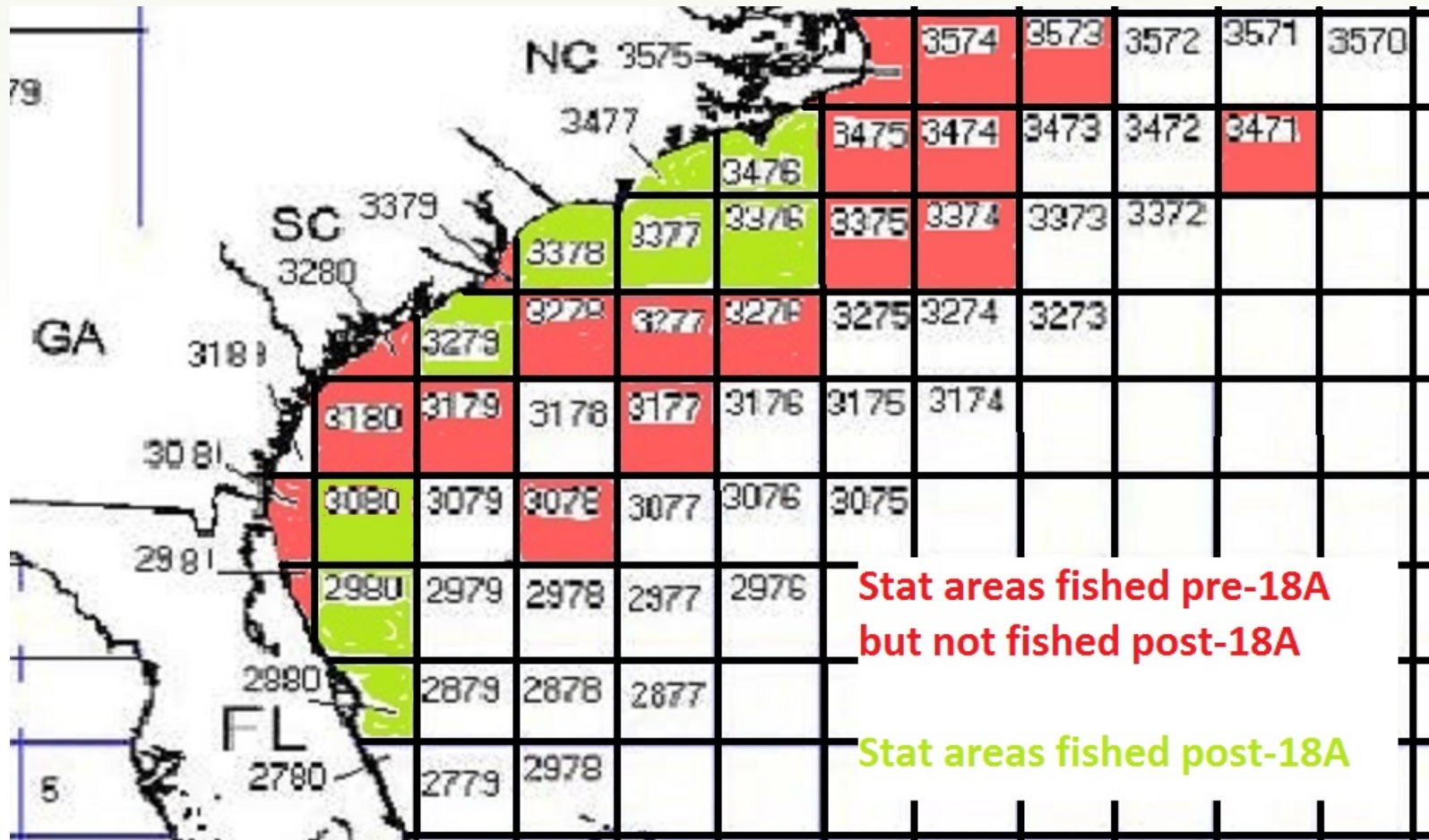


# Overall Effort

- Over 50% decrease in effort, on average
- Decrease in effort for endorsement holders also
- Not only due to ACL decrease
  - Avg landings 00-09: 293,000; Avg landings 12-14: 219,000
- Landings similar, even higher in some years
  - Partly due to catch rates
  - Avg catch/trap increased over 89% (13 lbs/trap -> 24 lbs/trap)
- Don't need as much effort to catch the quota in 2012-2014



# Stat Areas

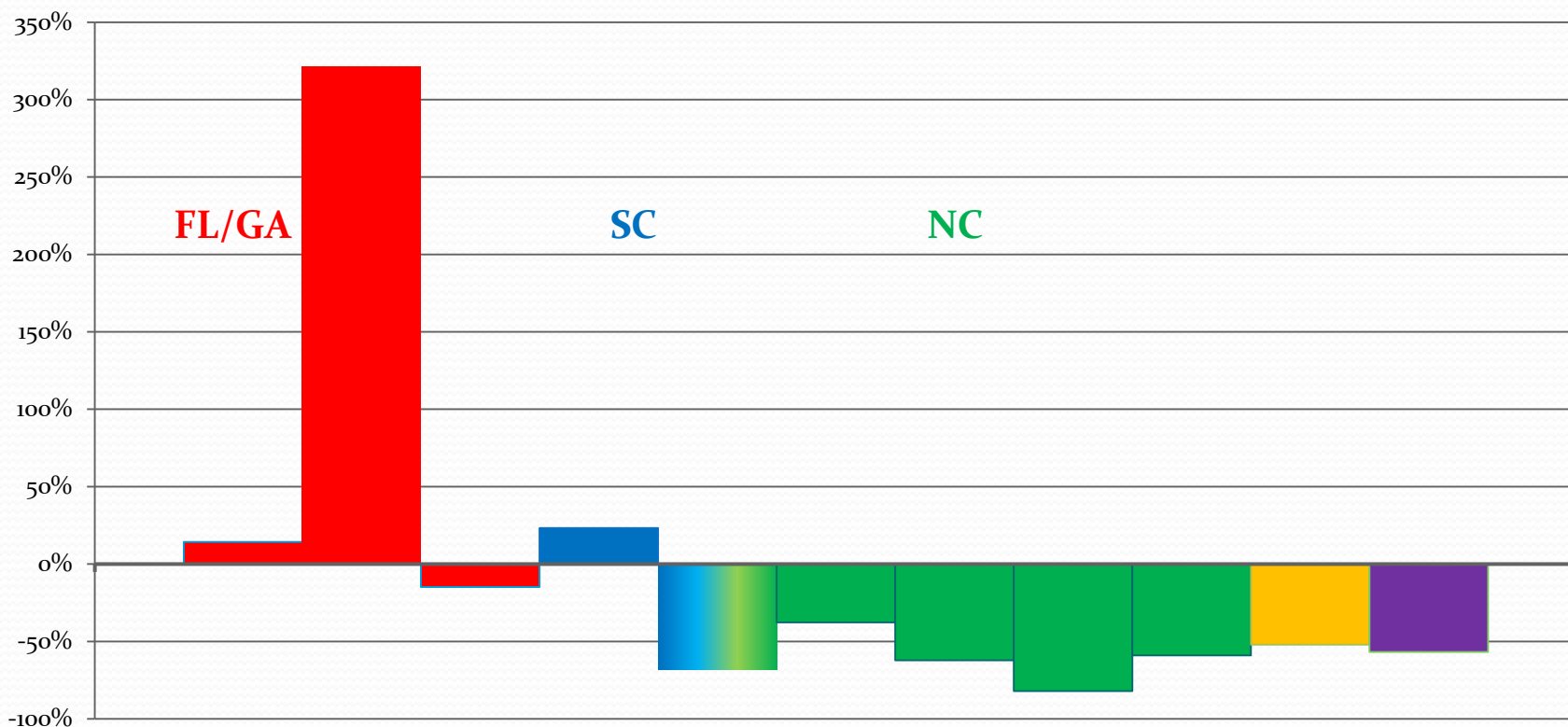






# Stat Areas: All Permits

% Change in Avg Trips/Yr within Stat Areas from Pre-18A to Post 18A

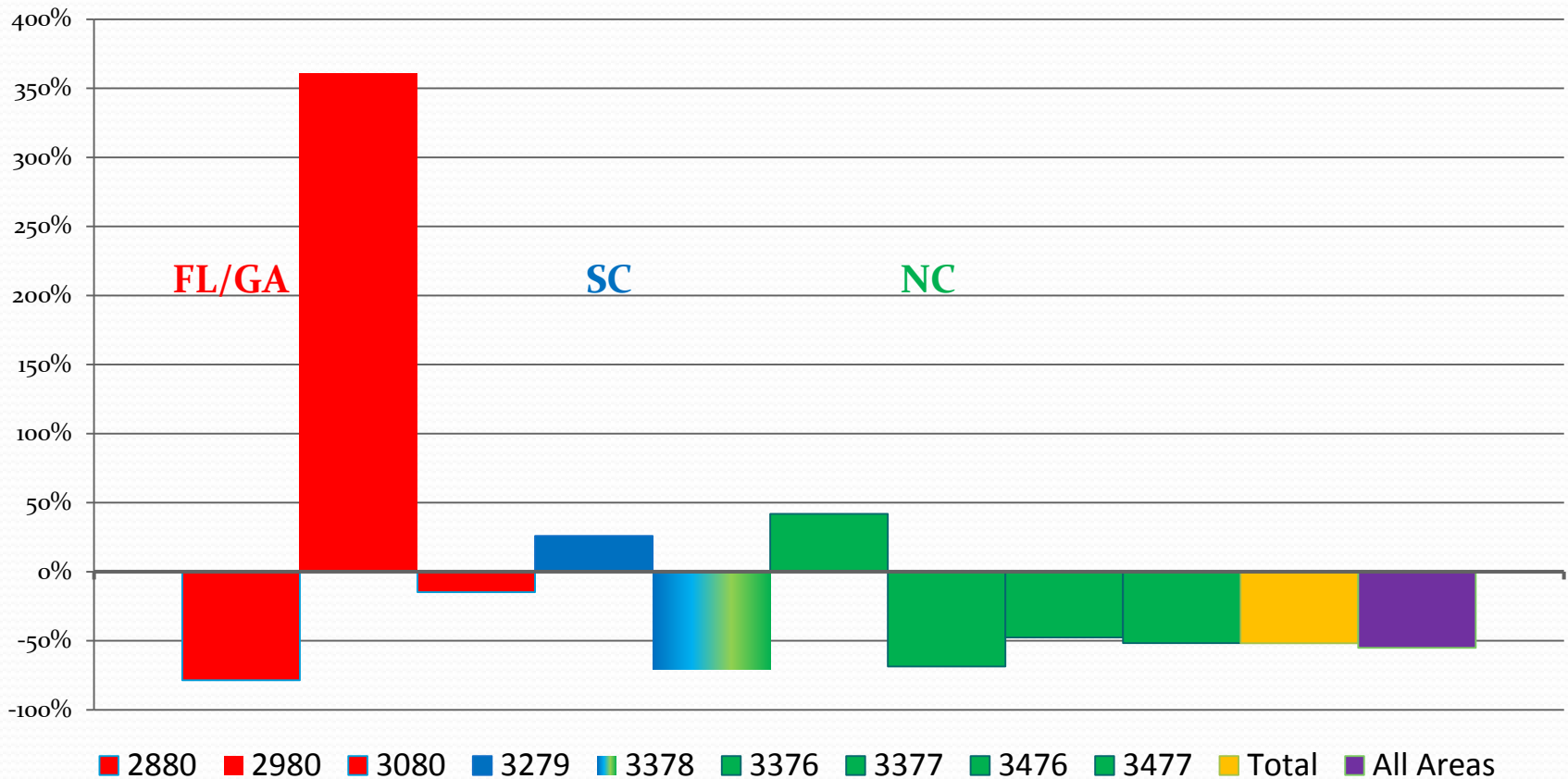


■ 2880 
 ■ 2980 
 ■ 3080 
 ■ 3279 
 ■ 3378 
 ■ 3376 
 ■ 3377 
 ■ 3476 
 ■ 3477 
 ■ Total 
 ■ All Areas



# Stat Areas: All Permits

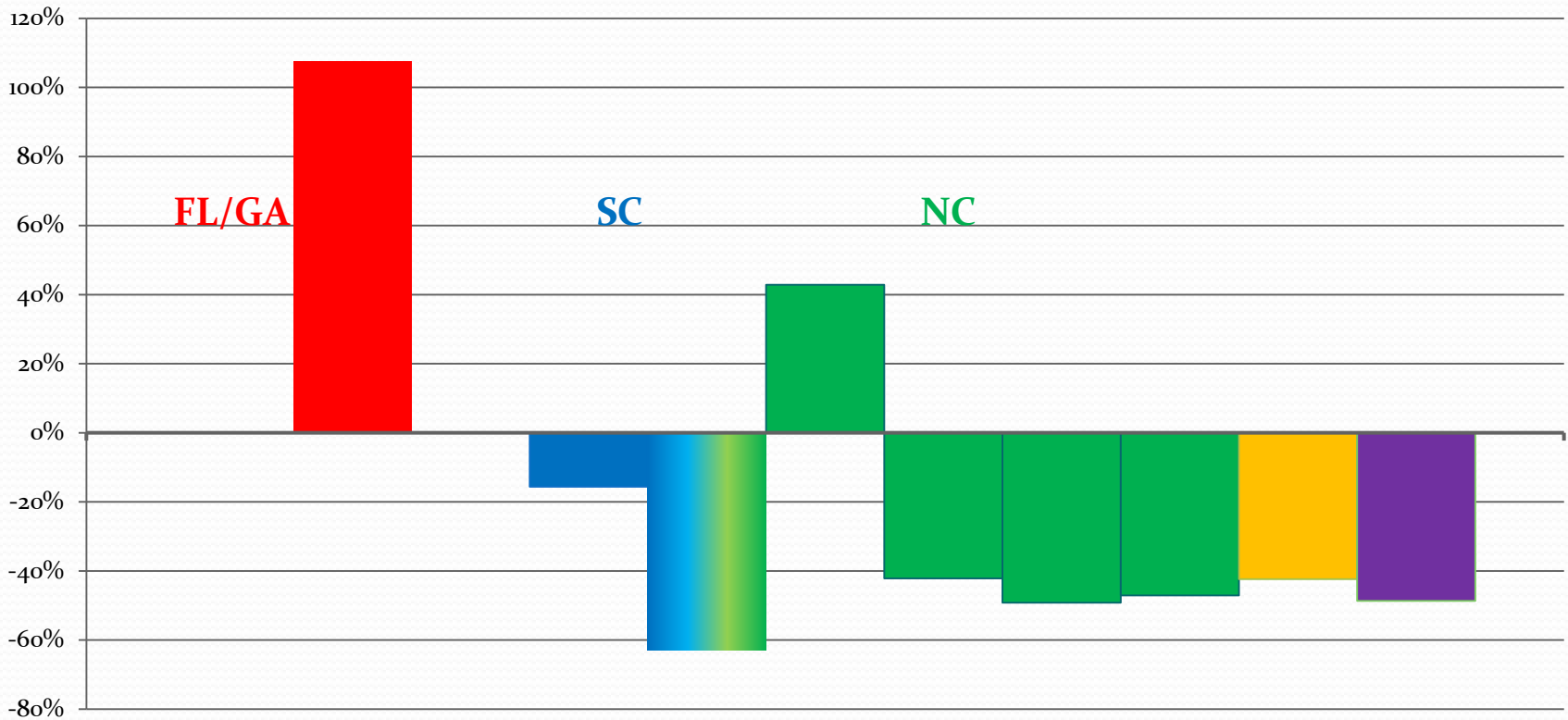
% Change in Avg Traps/Yr within Stat Areas from Pre-18A to Post 18A





# Stat Areas: All Permits

% Change in Num Permits/Yr within Stat Areas from Pre-18A to Post 18A



■ 2880 
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 ■ Total 
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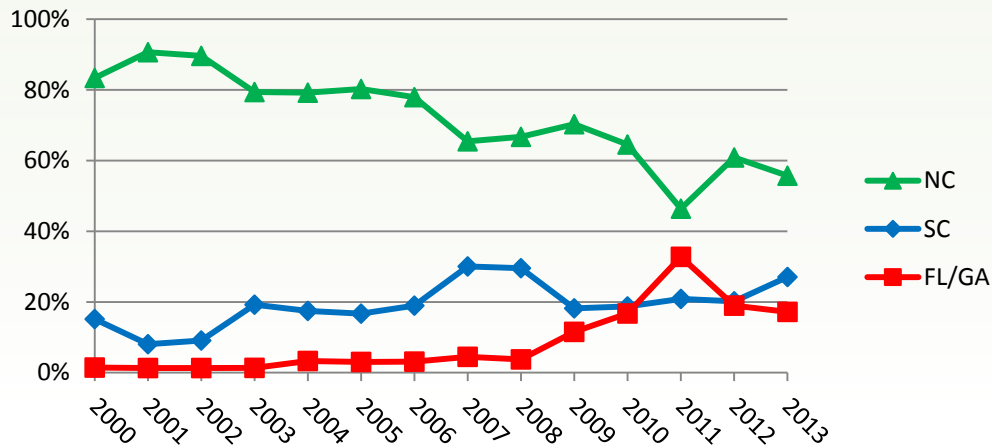
# What is Importance of Areas?

<b>% of Effort and Landings for most important Stat Areas on Avg for 2012-2014</b>				
<b>Area</b>	<b>% Trips</b>	<b>% Traps</b>	<b>% Permits</b>	<b>% Landings</b>
3477	40%	43%	31%	40%
3279	14%	13%	23%	17%
2980	17%	10%	12%	14%
3378	10%	12%	15%	12%
3377	10%	21%	17%	9%
Other Areas	10%	25%	25%	7.5%
Pre-18A Areas	10%	2.7%	23%	8%

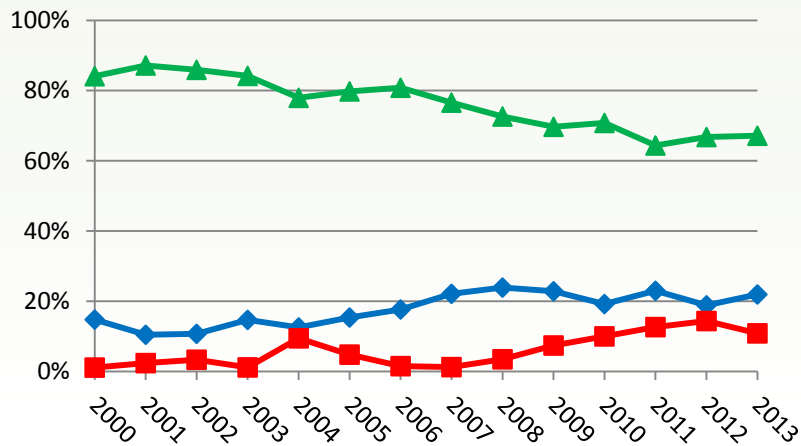


# How much has the fishery shifted?

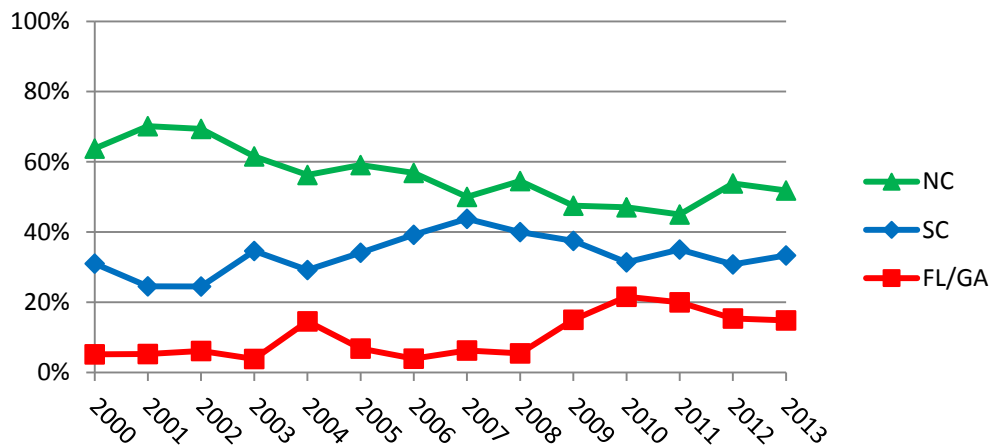
## % Trips



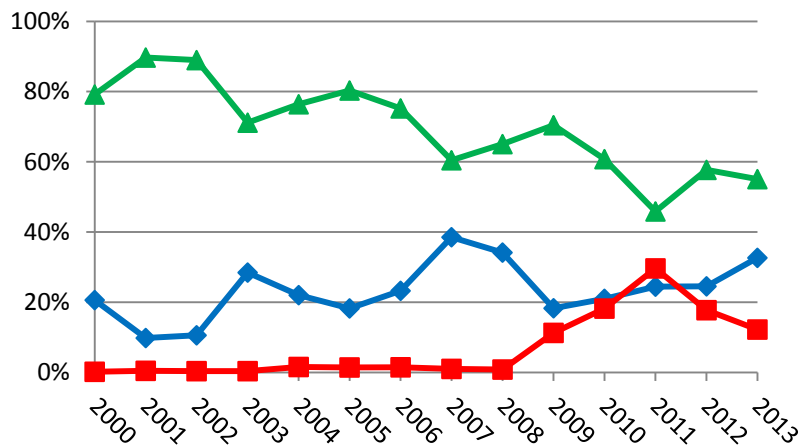
## % Traps



## % Permits



## % Landings





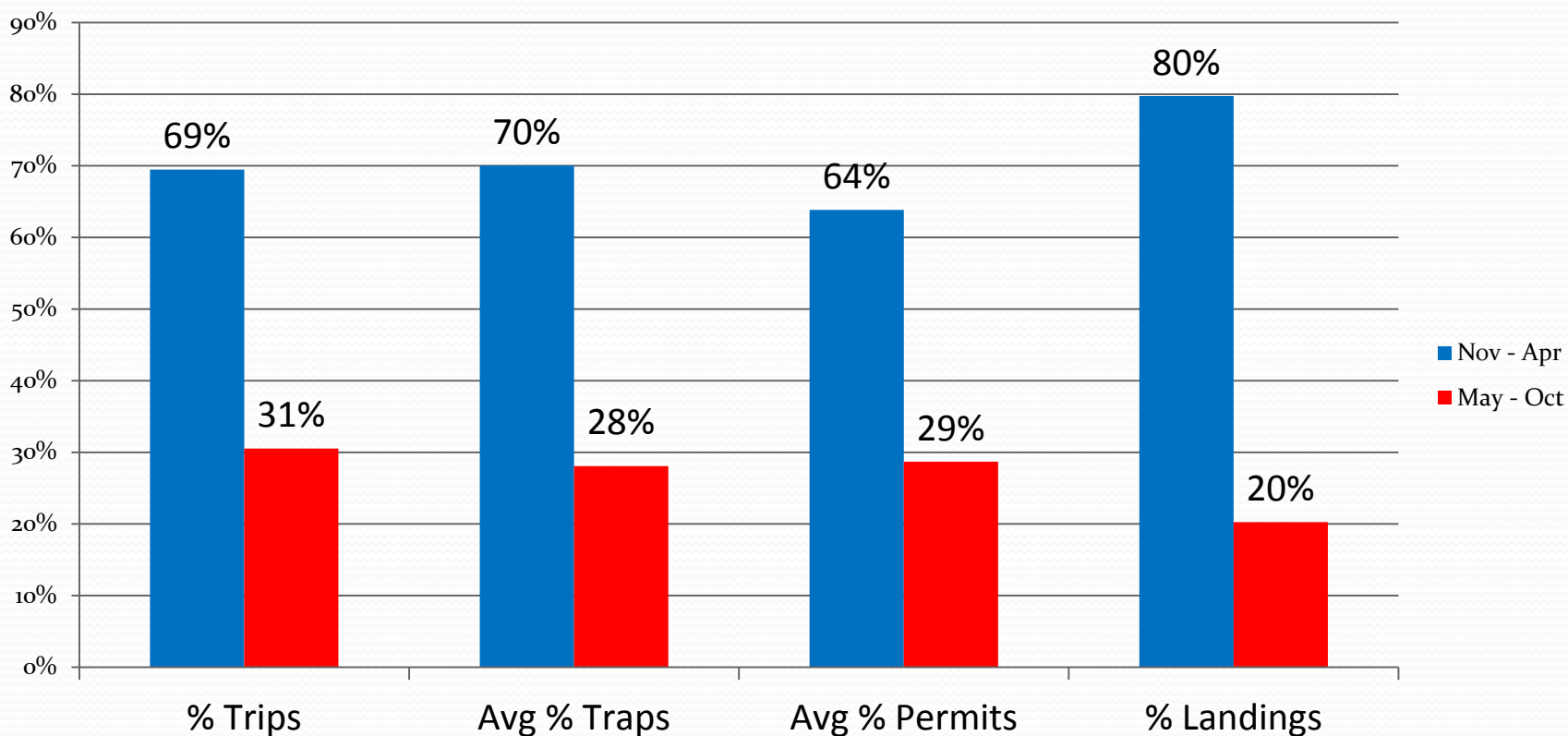
# Stat Areas

- These graphs show that there has been development of a section of the pot fishery off FL
  - However, not relative to other areas
  - Accounts for only 17% of trips and 14% of landings
- Overall, however, effort has decreased in almost all stat areas
- 4 of the top 5 areas had decreases in effort
  - 2980 is exception, developing fishery off FL
- Top 5 areas account for 90% of trips and 92% of landings



# Effort by Season

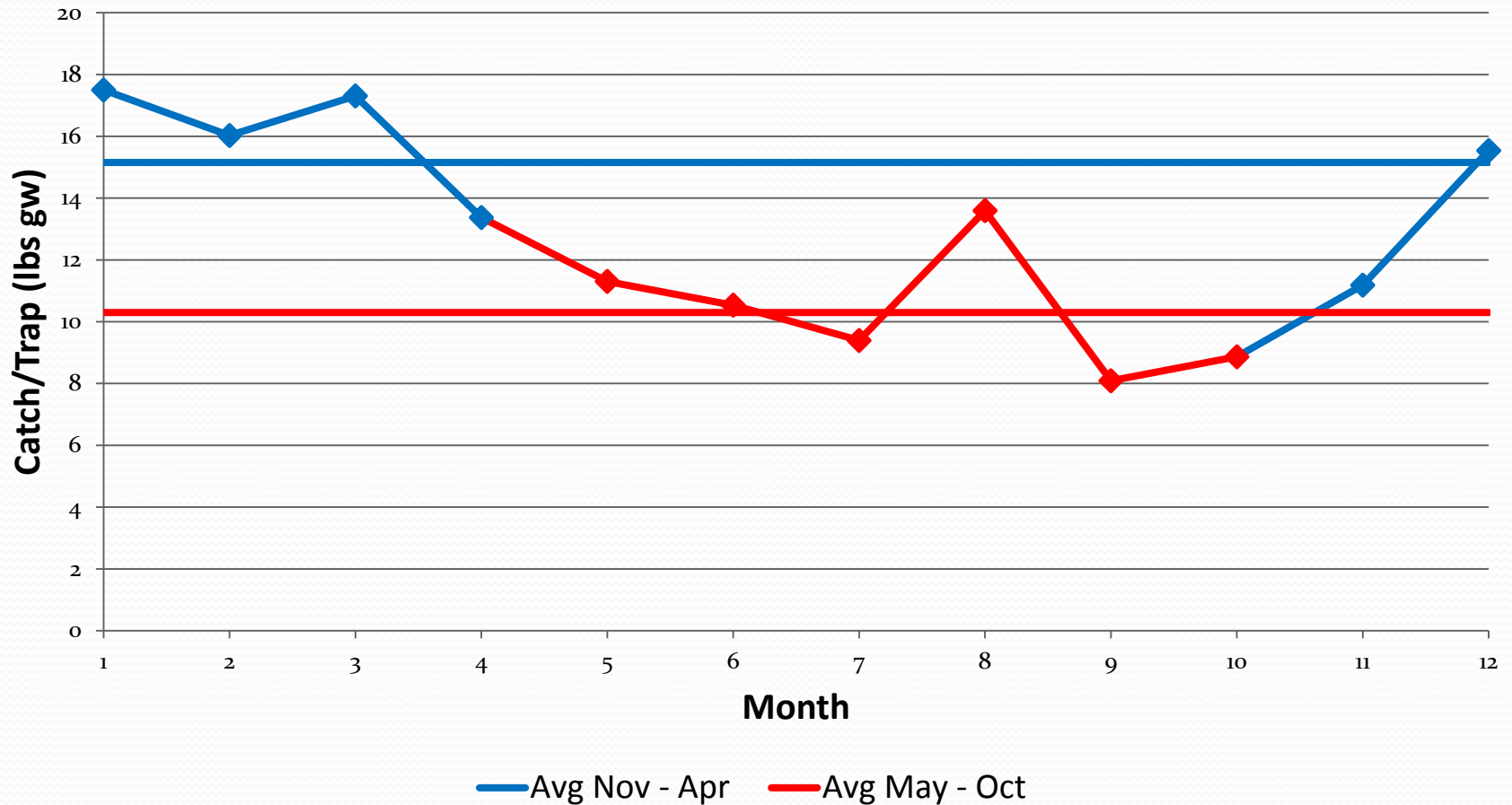
Historical Differences in Effort and Landings between Closed (Nov-Apr) and Fishing (Jun-Oct, May) Seasons for Endorsement Holders (2000-2009)





# Catch/Trap by Month

Avg Catch/Trap of Endorsement Holders by Month 00-09







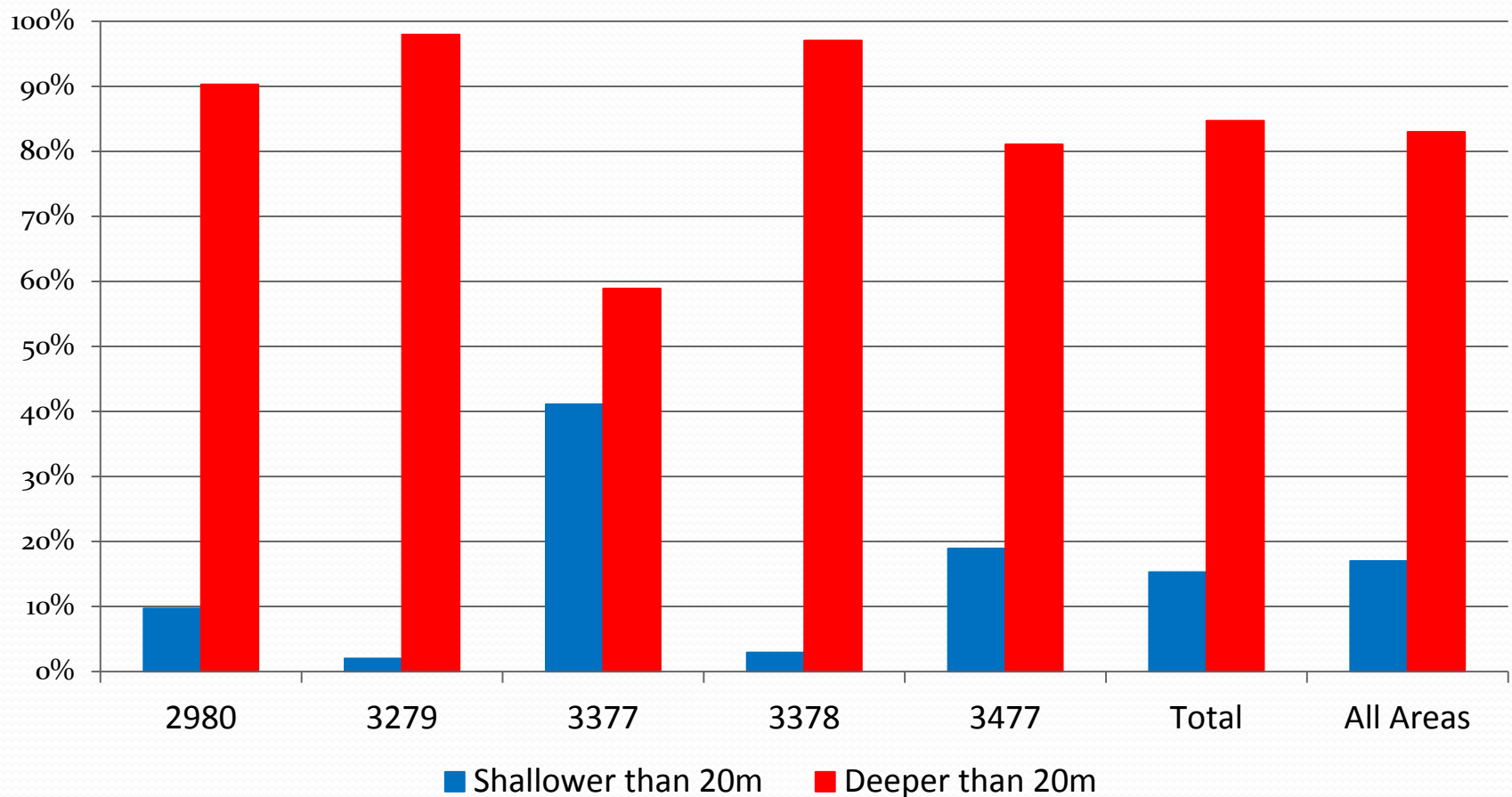
# Monthly/Seasonal Effort

- Historically, effort was 30%-40% higher from Nov-Apr
- 80% of landings historically came in Nov-Apr
  - Potentially economically important for participants
- Catch rates also 32% higher during Nov-Apr
  - More efficient to fish at this time (more economically viable, catch trip limit in less time)
  - May catch ACL quicker fishing during Nov-Apr, especially since current catch rates are 89% higher than they were from 2000-2009 on avg



# Effort by Depth

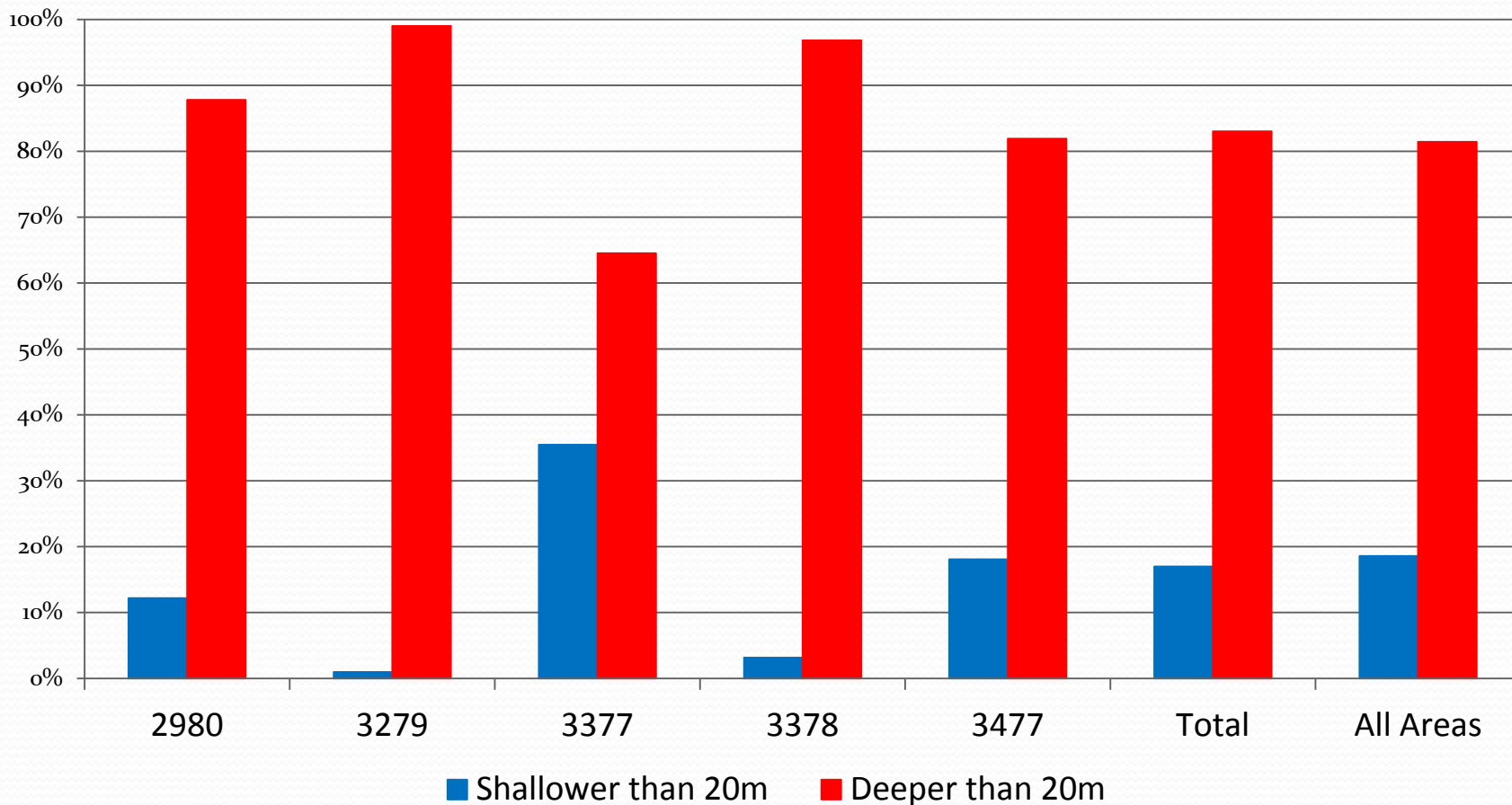
## % Trips within Areas by Depth





# Effort by Depth

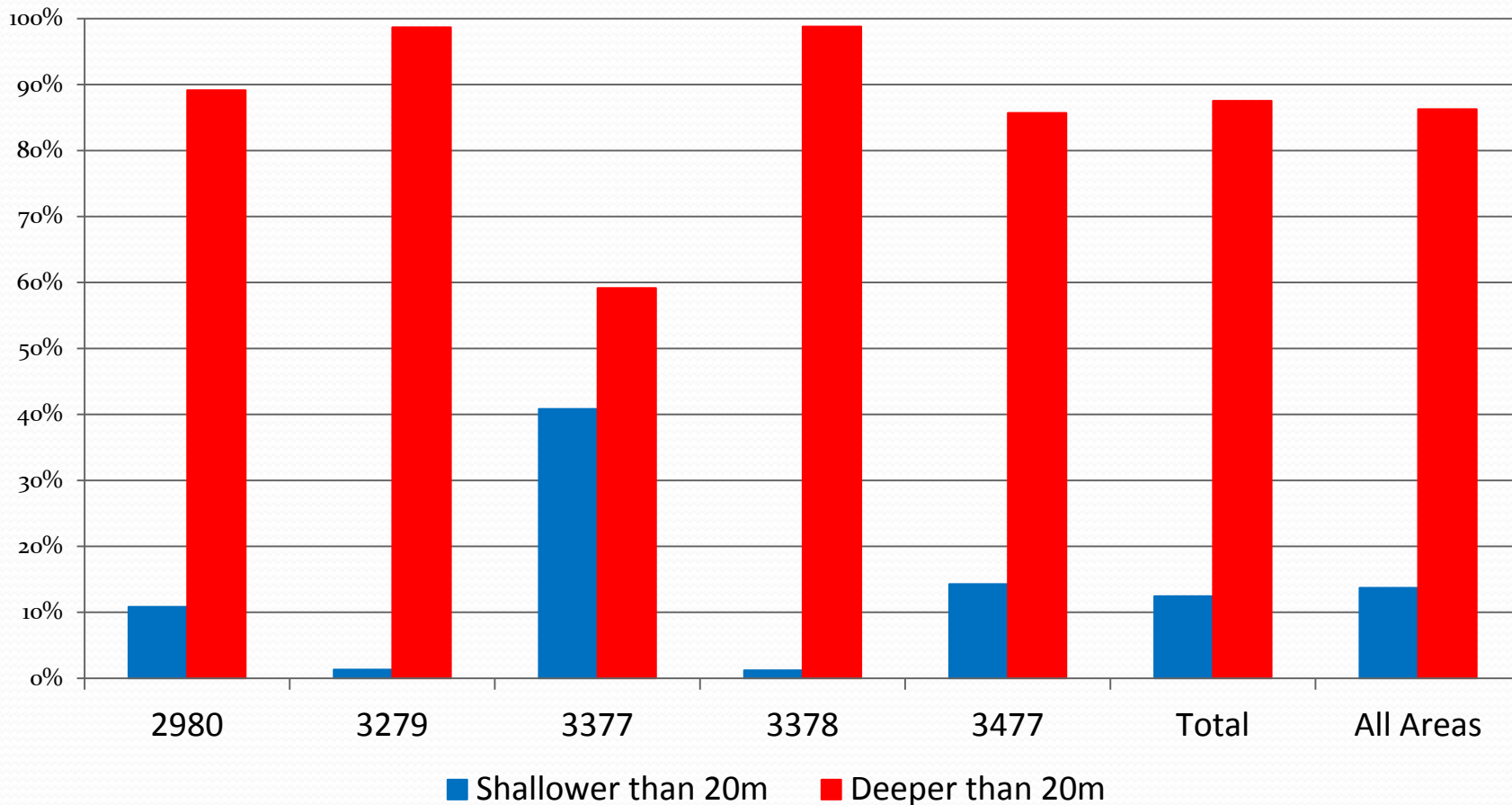
## % Trap Deployments within Areas by Depth





# Effort by Depth

## % Landings within Areas by Depth



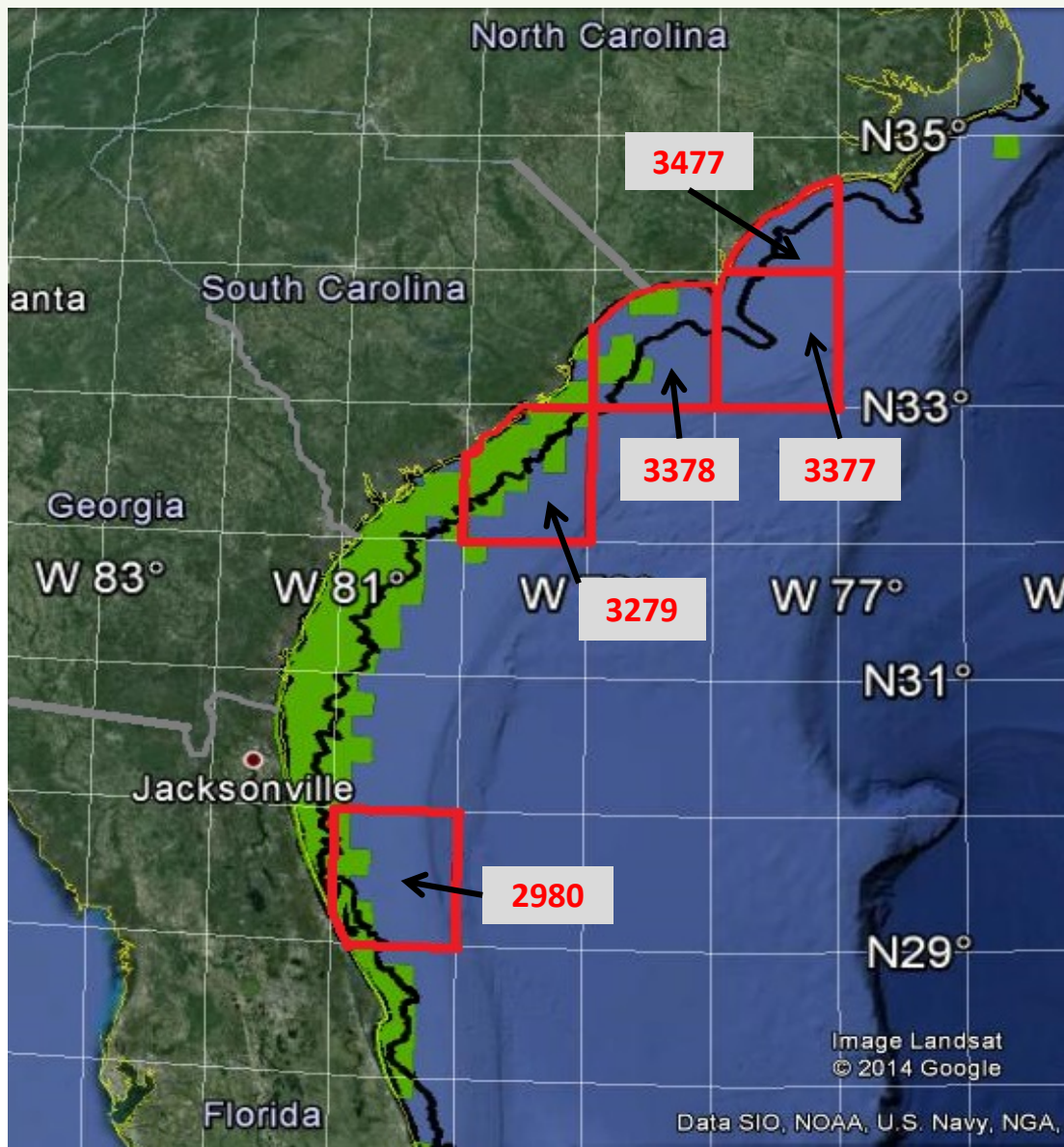
# Winter BSB Pot Effort and Right Whale SPUE

Stat areas of highest % effort and landings on avg

Right Whale SPUE in Winter (Nov-Feb)

All SPUE data from ALWTRP Co-occurrence model.

— 10 fathom contour



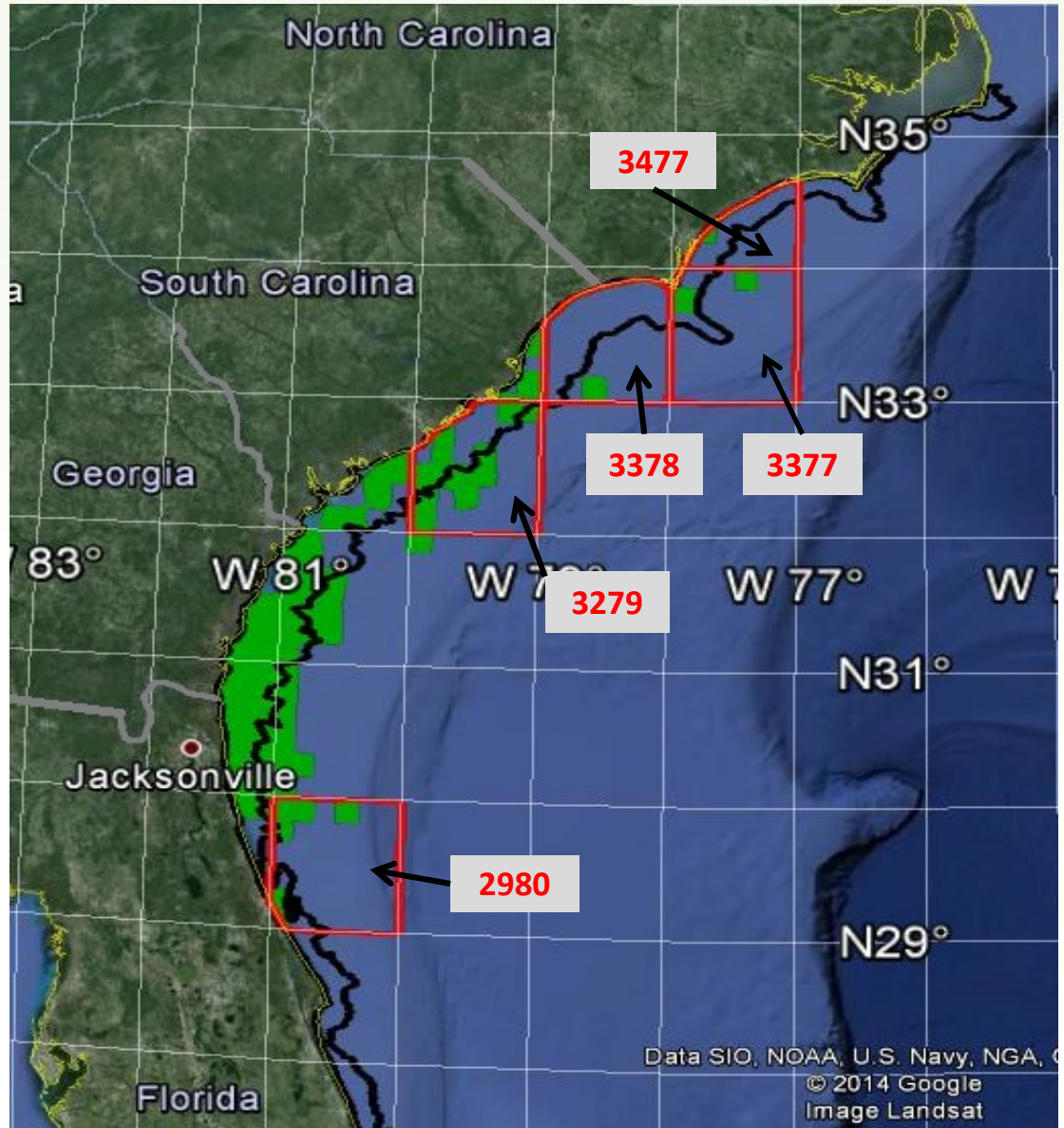
# Spring BSB Pot Effort and Right Whale SPUE

Stat areas of highest % effort and landings on avg

Right Whale SPUE in Spring (Mar-Apr)

All SPUE data from ALWTRP Co-occurrence model.

— 10 fathom contour





# Spatial Overlap

- Little to no overlap from Nov-Feb
  - Whales closer to shore than the bulk of BSB pot effort
  - This is the time historically when most of the effort occurred and the landings came in
- Possibility of overlap from Mar-Apr
  - Sightings of whales in deeper water
  - However unlikely since the avg maximum traps fished/day by all endorsement holders combined during the Spring (Mar-Apr) is 240 from 2000-2009
  - The avg traps fished/day by all endorsement holders combined is 75



# Conclusions

- Effort has been significantly reduced in the BSB pot fishery since implementation of 18A
  - Fishery as a whole
  - Just endorsement holders
- Development of BSB pot fishing off FL
  - Still a significant decrease in effort overall
- Winter is an important season for BSB pot fishery historically
  - Most landings and effort concentrated in winter
  - Highest catch rates in winter (which may explain the increased effort and landings)





# Conclusions

- Vast majority of BSB pots fished deeper than 20m
- Most right whale SPUE data occurs within the 20 m depth contour most of the time they are in the South Atlantic
- Also, fishermen tend not to use all available traps on any given day
  - Max number of total traps fished/day in SA during winter is 501 on average during Winter, 240 during Spring
  - Average is 119 during Winter, 75 during Spring
  - Total traps fished in SA is 1,360 during 2000-2009 and 611 during 2012-2014
  - These estimates were from 2000-2009, when the endorsement holders fished more traps on avg (29% less traps post-18A)
  - Numbers may be lower now



# Questions?