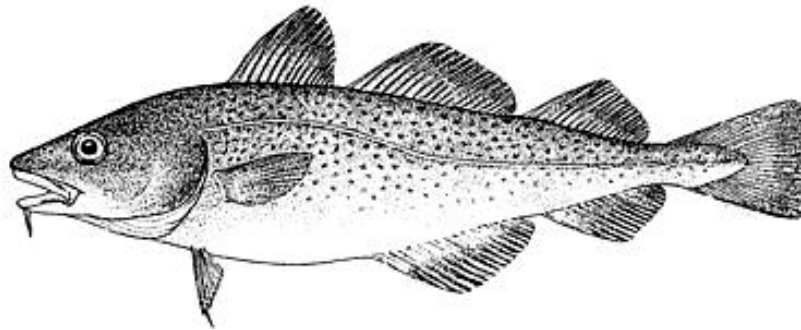


# Gulf of Maine Cod in 514

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Groundfish Plan Development Team Chair  
NEFMC Staff



Groundfish Oversight Committee  
April 4, 2014



# Outline

- Background
- Approach
  - Distribution of GOM cod
  - Trends in cod landings in 514 and adjacent areas
  - Focus on GOM cod catch and effort in 514 by vessel size classes
- Conclusions



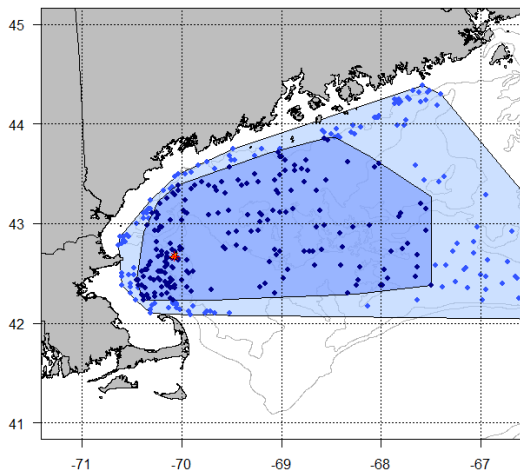
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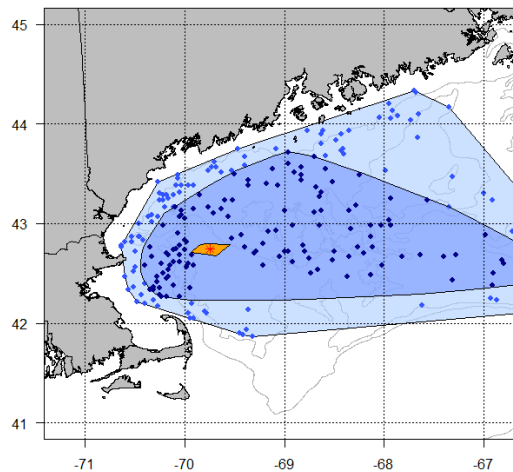


# Concentration of GOM cod distribution into the Western GOM

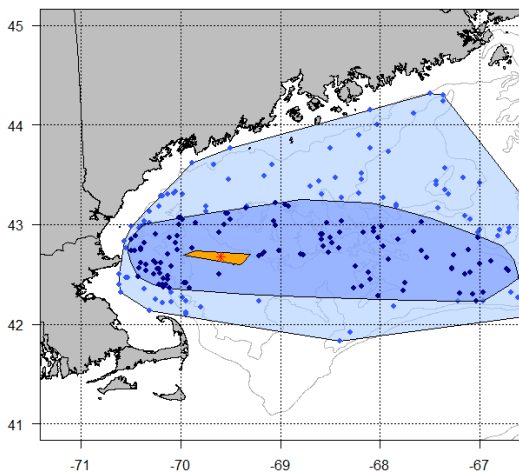
GoM cod NEFSC spring survey (1968-1979)



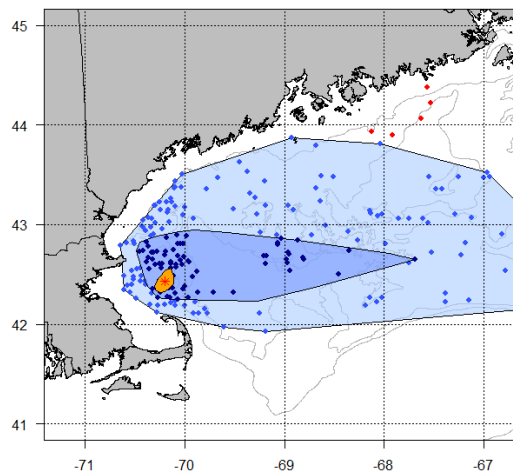
GoM cod NEFSC spring survey (1980-1989)



GoM cod NEFSC spring survey (1990-1999)



GoM cod NEFSC spring survey (2000-2011)

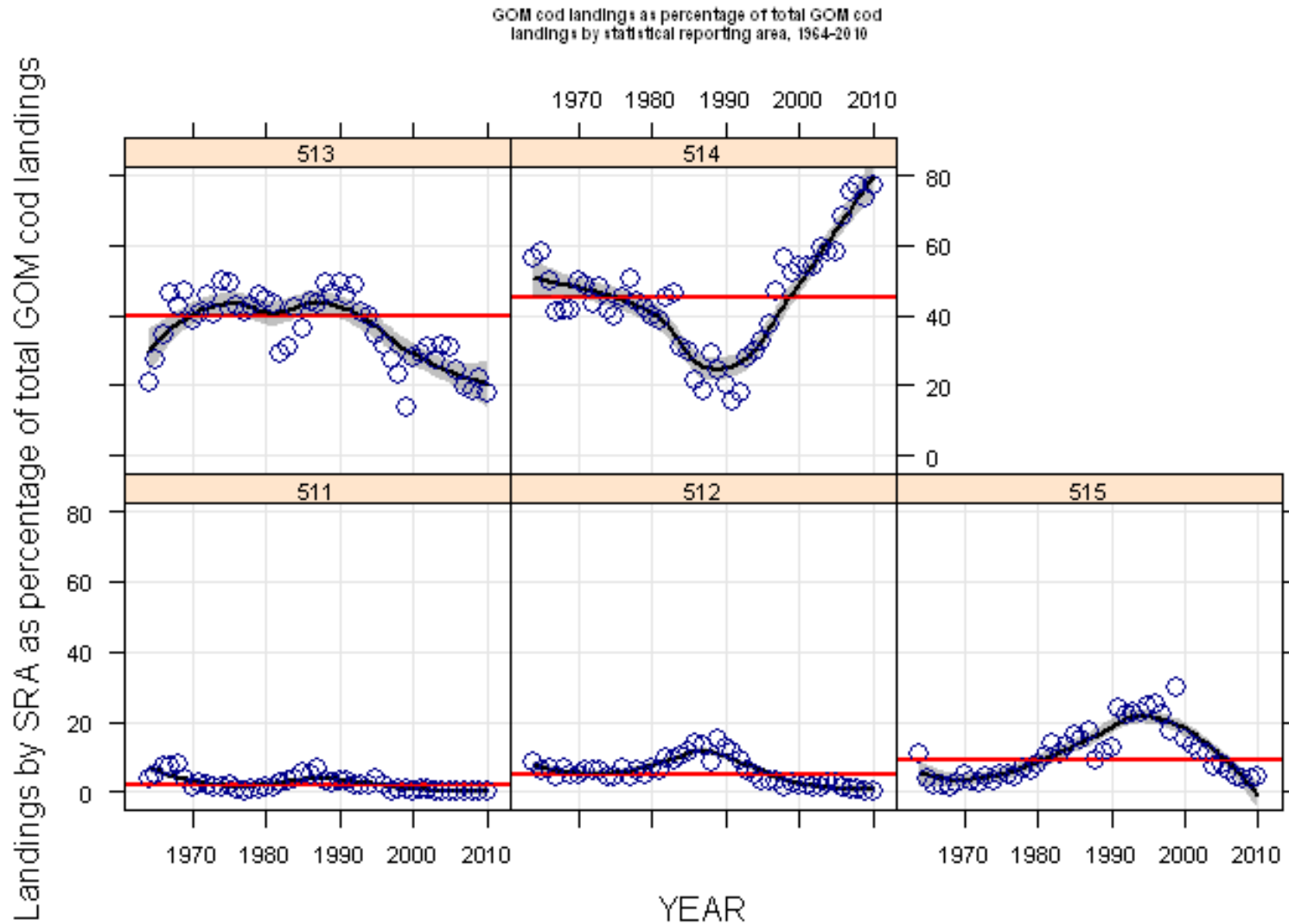


# Outline

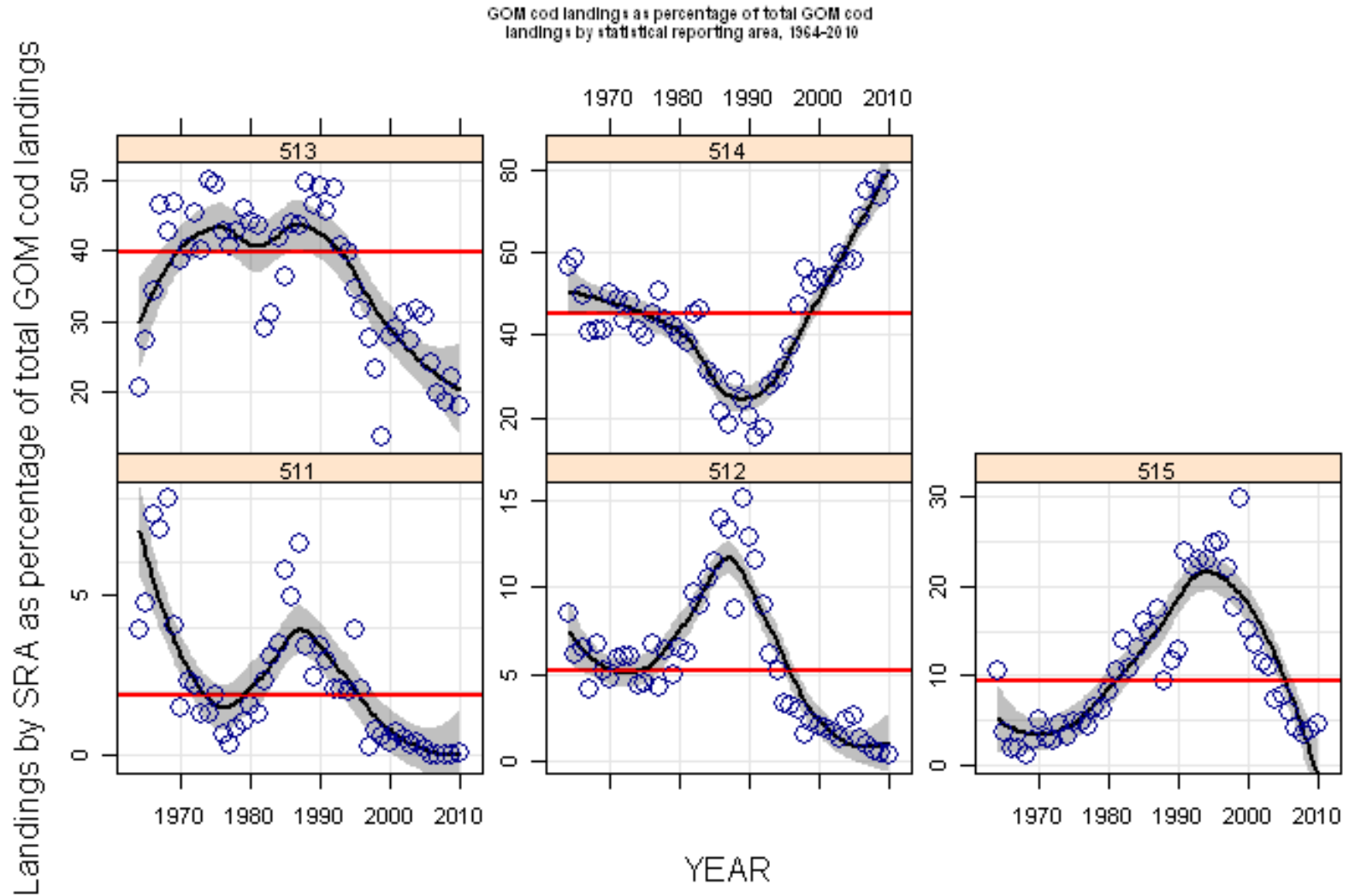
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# Increased landings of cod in 514 relative to other GOM areas



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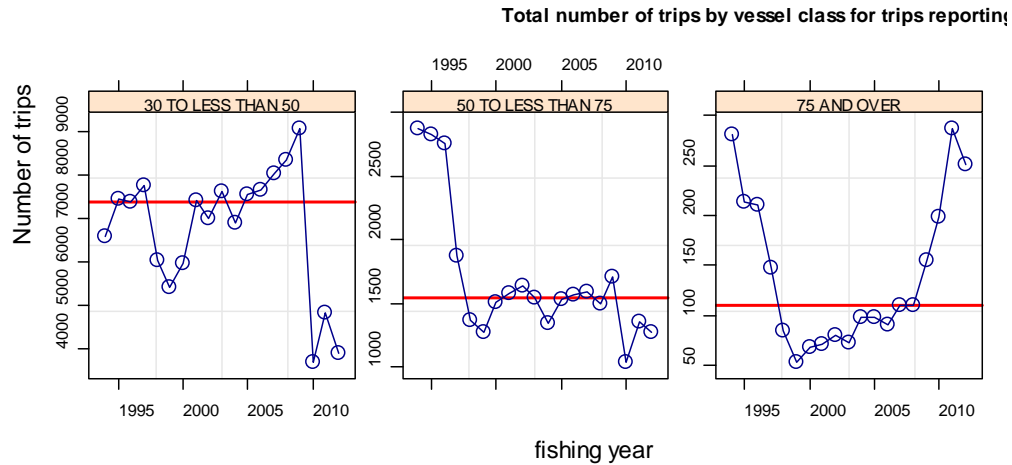
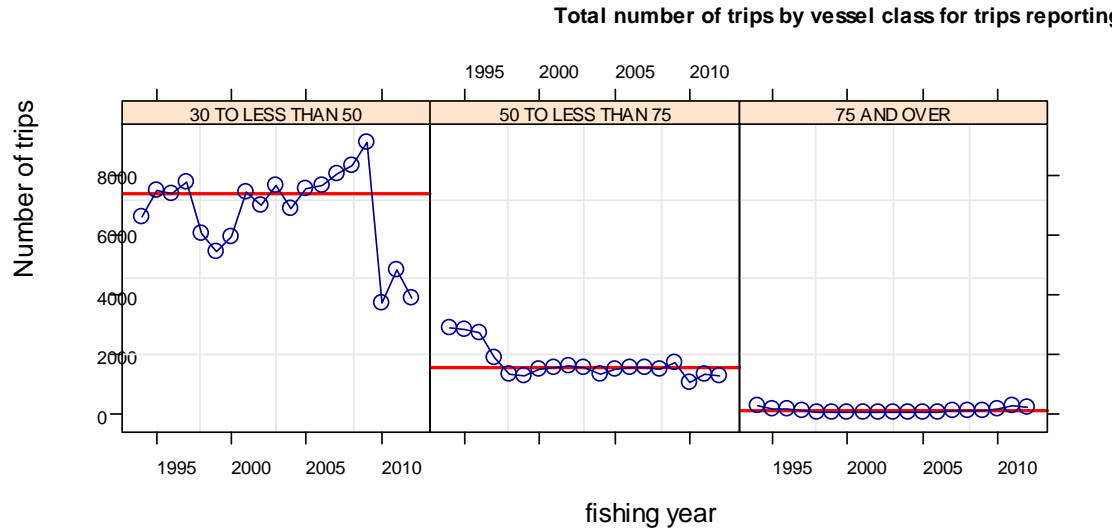
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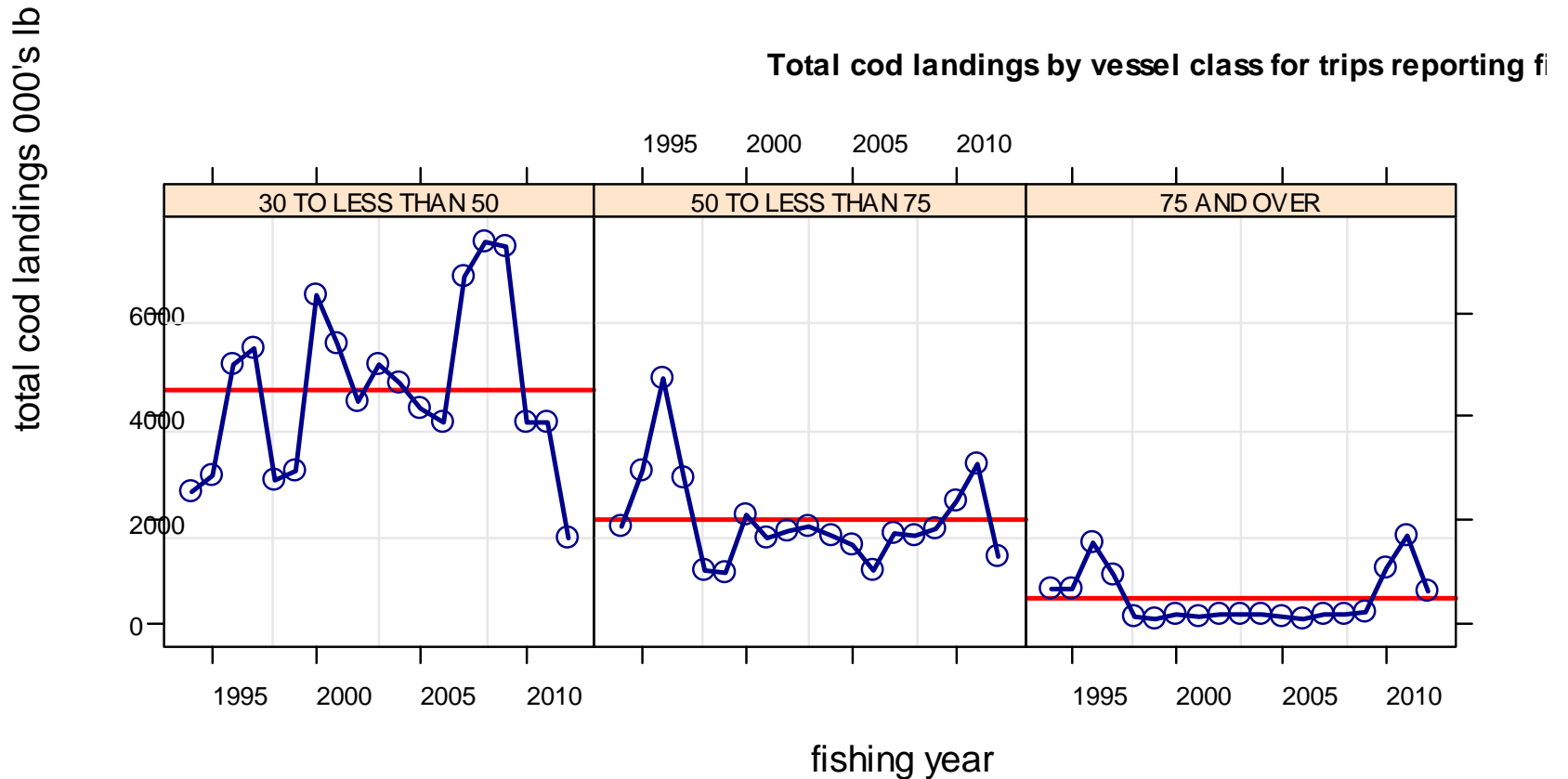




# Trends in Effort (# of trips) by Vessel Size Class

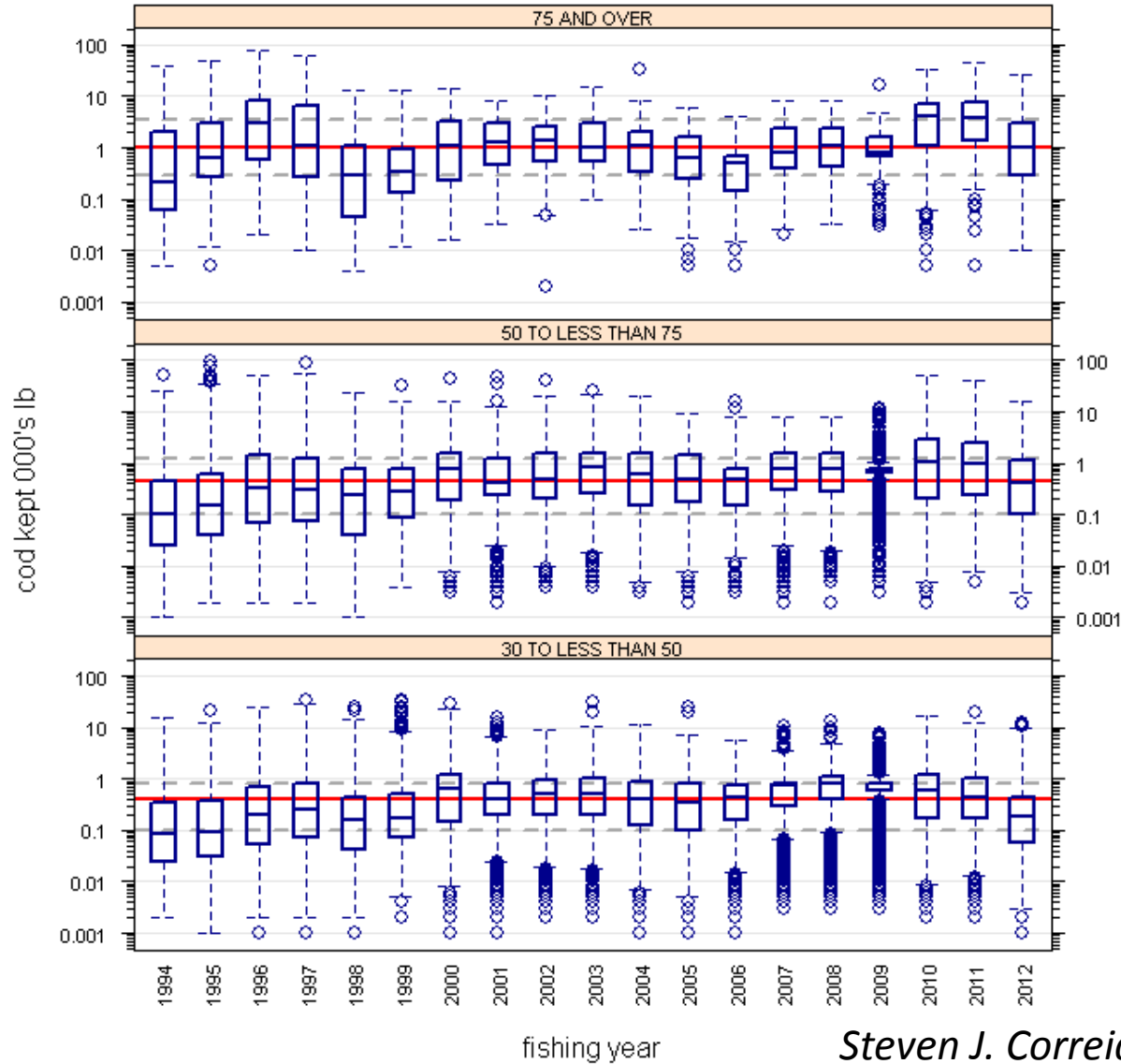


# Trends in Total Cod Landings by Vessel Size Class



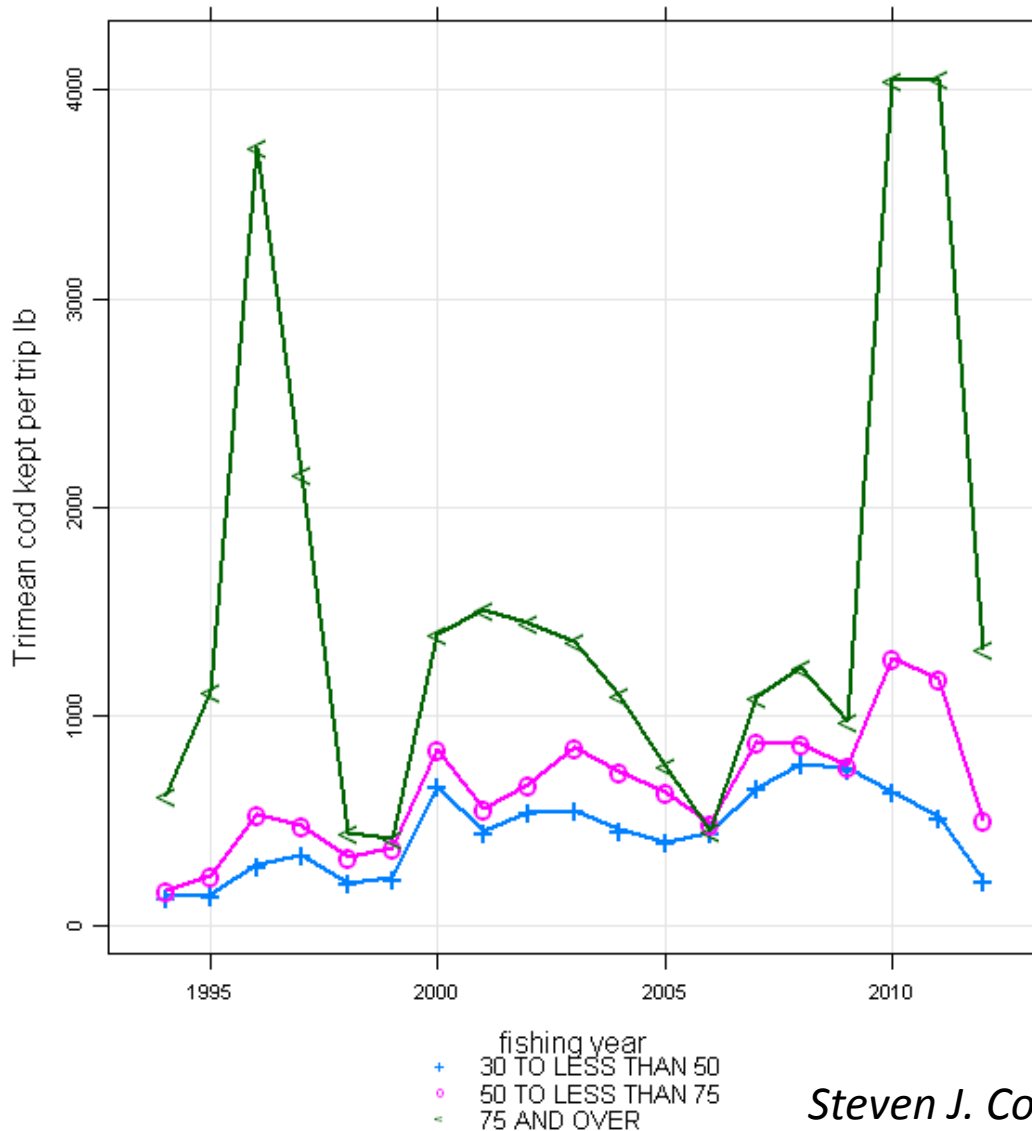
# Trends in CPUE (Kept Cod per Trip) by Vessel Size Class

Cod kept in vessels fishing in GOM stock area for fishing years 1994-2012



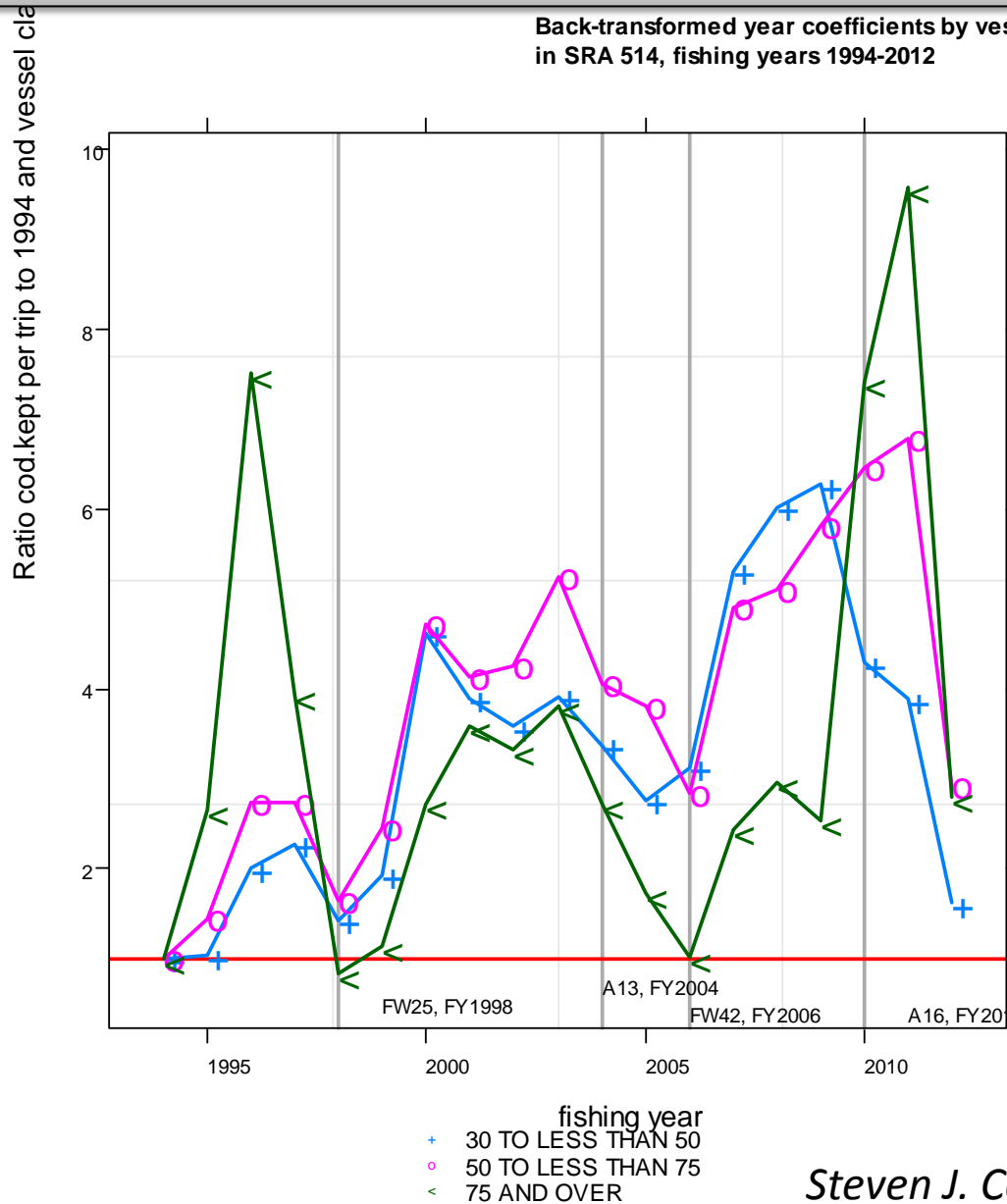
# Trends in CPUE (Cod Kept per Trip) by Vessel Size Class using a trimean approach

Trimean of cod.kept by vessel class for trips reporting fished in 514, 1994-2012



# Trends in CPUE (Cod Kept per Trip )Standardization Model with Management Actions Identified

Back-transformed year coefficients by vessel class in SRA 514, fishing years 1994-2012



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# Conclusions

- The cod distribution in the GOM has contracted to the western GOM (likely multi-factorial such as stock size, ocean temperatures, etc. which were not examined).
- The vessel classes have different fishing power.
- Management regulations had different effects on vessel classes.
- Trip limits appeared to have constrained the two larger vessel classes compared with the smaller class ( $30 \leq 50$ ft).
- The decline in the proportion of landings in the  $30 \leq 50$ ft class was caused by a decline in the total number of trips into 514 as well as decline in catch per trip.
- The number of trips by larger vessels increased slightly, but smaller vessel class dominate the number of trips.



# Conclusions

- Fishing patterns appear to have changed in response to management measures.
- Larger vessels have higher catch rates of cod compared with smaller vessels.
- Vessels targeting cod will fish where the cod are.
- Vessels trying to optimize revenues will fish where the cod are available to optimize revenues.

