NOAA FISHERIES
Southeast Regional Office

Season Length Projections:
Gulf Red Snapper

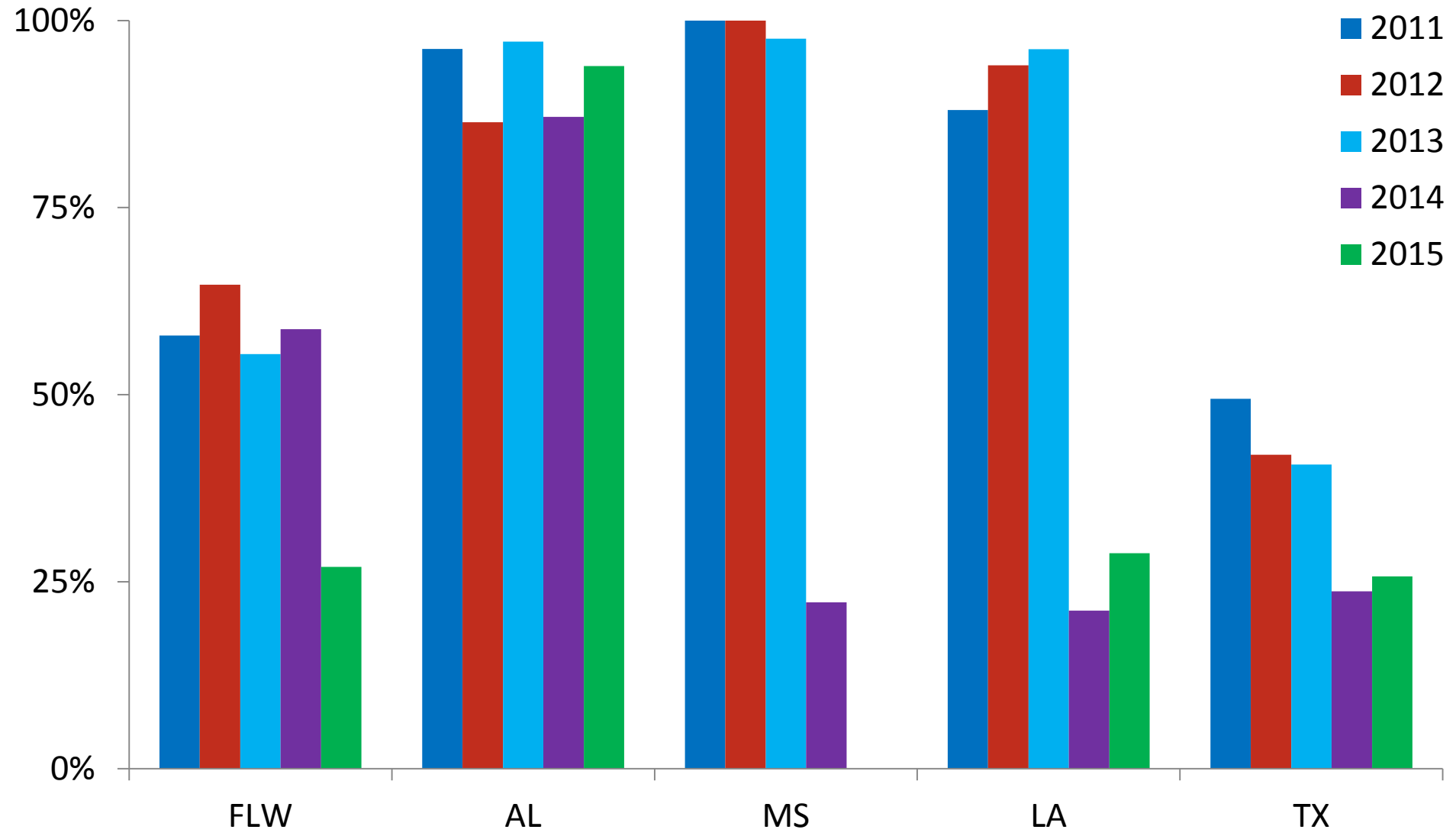
Gulf Council Meeting
April 2016

2015 Preliminary Landings

Mode	Source	FLW	AL	MS	LA	TX	TOTAL	% ACL	% ACT
Private + State Charter	MRIP/ LA Creel/ TPWD	757,748	1,751,666	33,942	1,088,064	219,386	3,850,807	95	119
Federal For-Hire	MRIP/ LA Creel/ TPWD	626,526	664,612	5,955	106,854	21,091	2,005,265	68	85
	SRHS	124,938	95,417	18,267		341,605			

Source: MRIP and Southeast Region Headboat Survey (SRHS) data Waves 1-6 from SEFSC Recreational ACL Database (Mar 2016), LA Charter estimates from LA-DWF Creel Survey, Texas Private and Charter estimates from TPWD Creel Survey.

% Private Landings in Federal Waters



2016 Quotas

Gulf-wide ACL = 7,192,000 pounds whole weight*

Sector	Annual Catch Target
Gulf-wide	5,753,600
Private	3,319,827
For-Hire	2,433,773

** Upon implementation of Reef Fish Amendment 28*

2016 State Seasons (Preliminary)

	Season (days)	Details
FL	78	Open Saturdays and Sundays in May starting May 7. Open continuously May 28 - July 10. Reopen for Fridays, Saturdays and Sundays (and Labor Day) in September and October.
AL	Fed+31	Open federal season, July 1-31
MS	Fed+108	Open federal season, 3-day weekends July, Oct
LA	Up to 358	Opened Jan 8, may close when 'quota' of 763,560 lb ww caught
TX	365	Open year-round, 4-fish bag limit in state waters, 15" min. size limit

Note: Seasons for FL, AL, and MS have not been finalized; AL, MS, and LA state water boundaries recently extended from 3 to 9 nautical miles

Data Inputs

Source	Years	Details
Marine Recreational Information Program (MRIP)	2004-2015	Landings and PSE by wave, 2004-2013 landings recalibrated for APAIS changes from SEDAR-31 Update; 2014-2015 from ACL Database
Texas Parks and Wildlife Department (TPWD)	2004-2015	Landings 2004-2014 by wave from ACL Database; 2015 landings and PSE 2004-2015 from TPWD staff
Louisiana Department of Wildlife and Fisheries (LDWF)	2014-2015	Weekly landings and error estimates from LDWF staff
Southeast Region Headboat Survey (SRHS)	2004-2015	Monthly landings from ACL Database

ACL Database = SEFSC Recreational ACL Database (Mar 2016)

Projection Scenarios

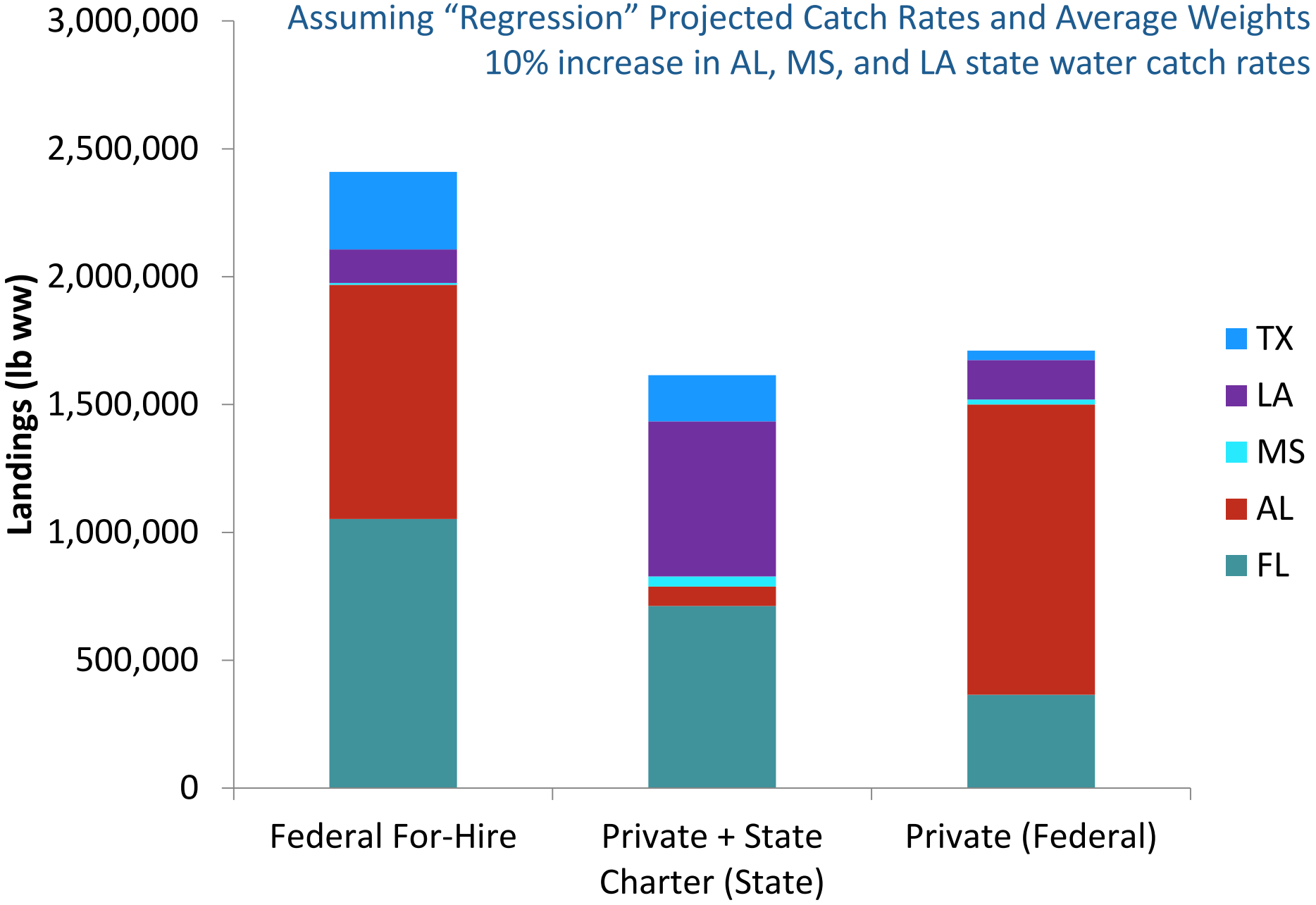
10 Projections for catch rates and mean weights

- 5 using recent data
  - 2015, 2014, 2013, Mean 2014-2015, Mean 2013-2015
- 5 regression-based
  1. By state and mode
  2. By state and mode, Drop 2014 (short season)
  3. By East/West and mode
  4. By East/West and mode, Drop 2014
  5. By East/West and mode, scale HBC

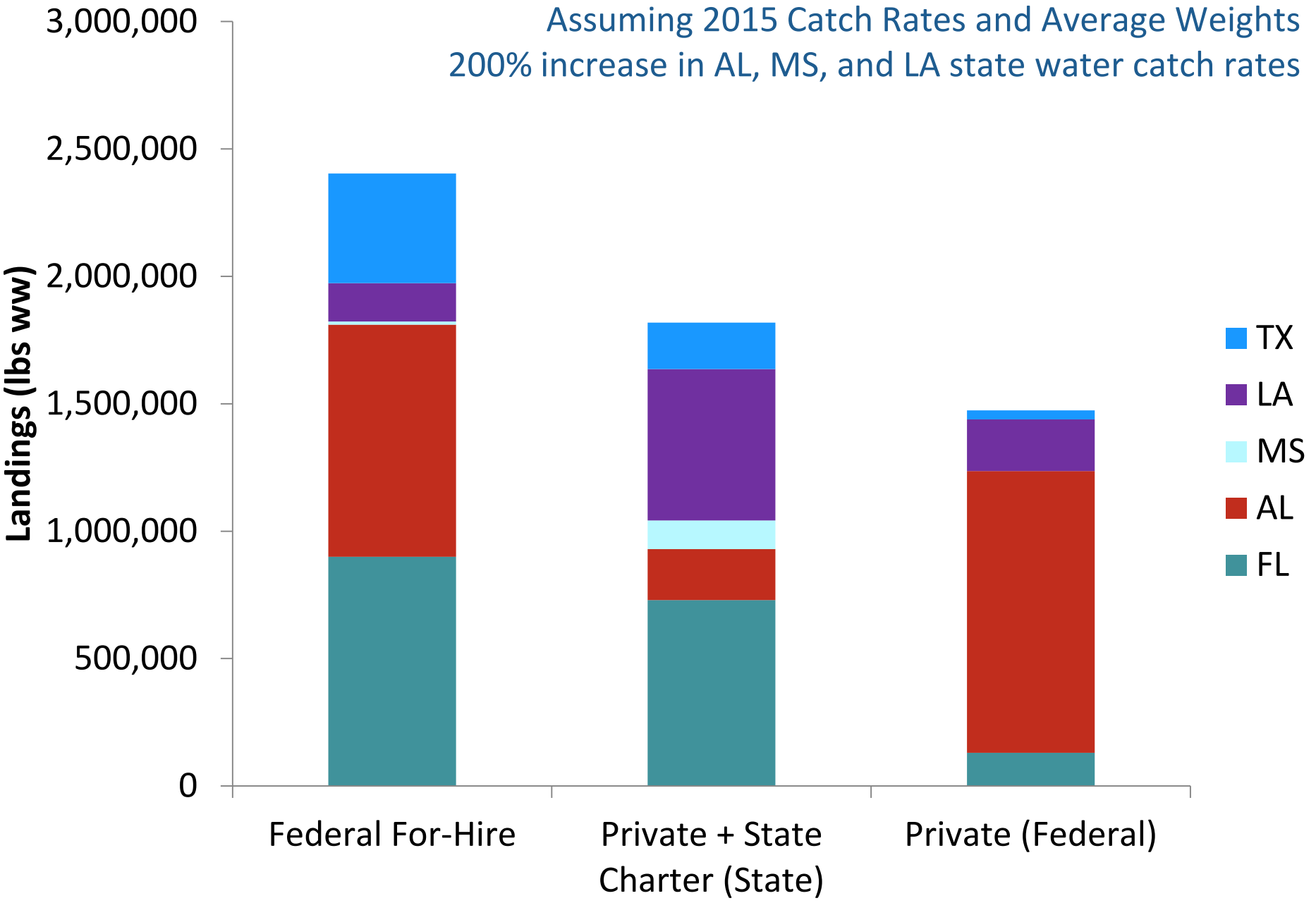
Considered covariates such as SSB, State Seasons, Federal Seasons, Fuel Prices, Google Trends, and per capita GDP

Model
2015
2014
2013
2014-2015
2013-2015
Regression
Regression (drop 2014)
Regression (East West)
Regression (E/W with scaled HBC)
Regression (East West drop 2014)

Assuming “Regression” Projected Catch Rates and Average Weights
10% increase in AL, MS, and LA state water catch rates



Assuming 2015 Catch Rates and Average Weights
200% increase in AL, MS, and LA state water catch rates



Season Length Projections

Model	Season Length (days)	
	Private	For-Hire
2015	8	53
2014	9	38
2013	9	44
2014-2015	8	43
2013-2015	8	44
Regression	6	49
Regression (drop 2014)	8	55
Regression (East West with scaled HBC)	7	46
Regression (East West)	7	49
Regression (East West drop 2014)	8	56
Median	**8**	**48**
Min	**6**	**38**
Max	**9**	**56**

Assumes state water catch rates off AL, MS, and LA increase 10%

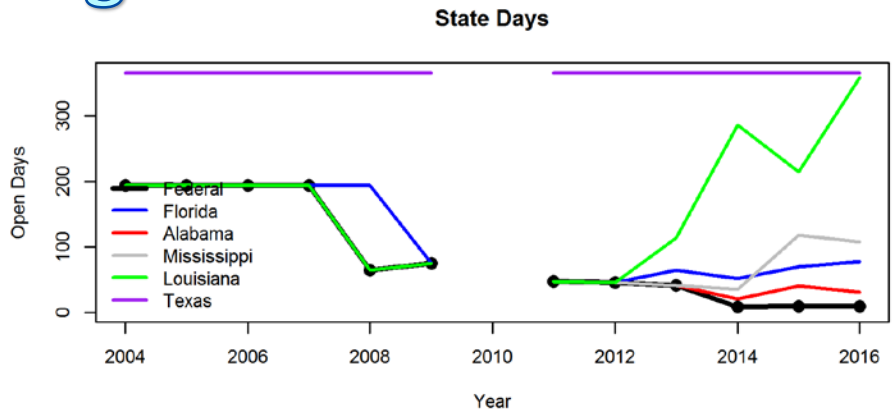
QUESTIONS?

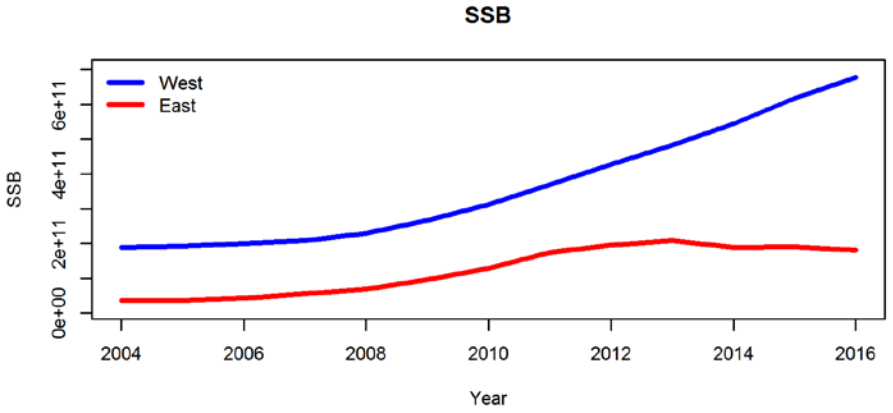
Image © D. Rainer (AL-DNR)

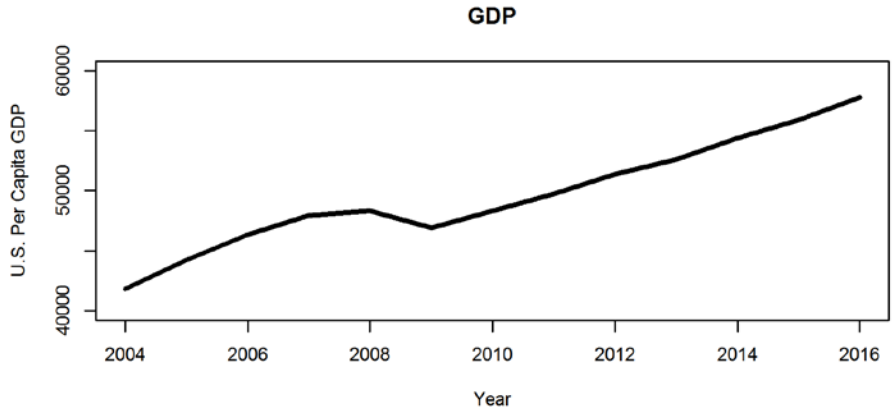
Projection Scenarios

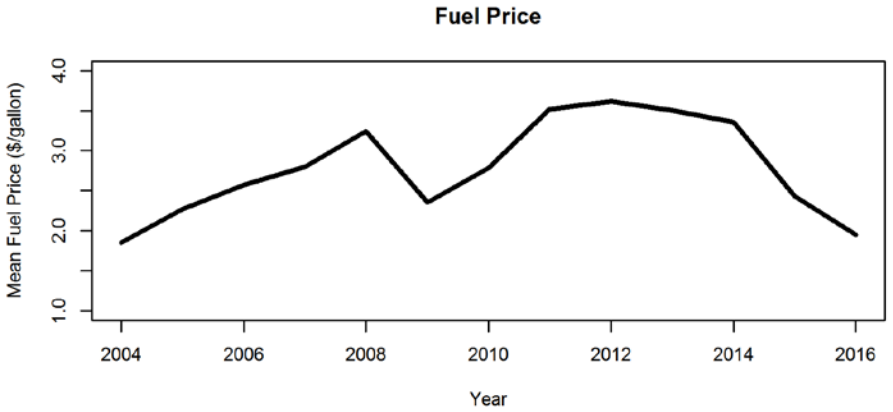
Model	Description
2015	Uses 2015 catch rates and average weights as proxy
2014	Uses 2014 catch rates and average weights as proxy
2013	Uses 2013 catch rates and average weights as proxy
2014-2015	Uses mean 2014-2015 catch rates and average weights as proxy
2013-2015	Uses mean 2013-2015 catch rates and average weights as proxy
Regression	Regression fits with AIC-selected covariates for average weights (from 2004-2015 inputs, excluding 2010) and catch rates (from 2007-2015 inputs, excluding 2010)
Regression (drop 2014)	Regression fits with AIC-selected covariates for average weights (from 2004-2015 inputs, excluding 2010 and 2014) and catch rates (from 2007-2015 inputs, excluding 2010 and 2014)
Regression (East West)	Regression fits with AIC-selected covariates for average weights (from 2004-2015 inputs, excluding 2010) and catch rates (from 2007-2015 inputs, excluding 2010), with catch rates allocated to Eastern (FL, AL, MS) and Western (LA, TX) states based on 2015 ratios.
Regression (E/W with scaled HBC)	Regression fits with AIC-selected covariates for average weights (from 2004-2015 inputs, excluding 2010) and catch rates (from 2007-2015 inputs, excluding 2010), with total headboat federal season catch rate for 2014 scaled from non-headboat collaborative (HBC) vessels based on the observed ratio from 2013 between HBC and non-HBC vessels.
Regression (East West drop 2014)	Regression fits with AIC-selected covariates for average weights (from 2004-2015 inputs, excluding 2010 and 2014) and catch rates (from 2007-2015 inputs, excluding 2010 and 2014), with catch rates allocated to Eastern (FL, AL, MS) and Western (LA, TX) states based on 2015 ratios.

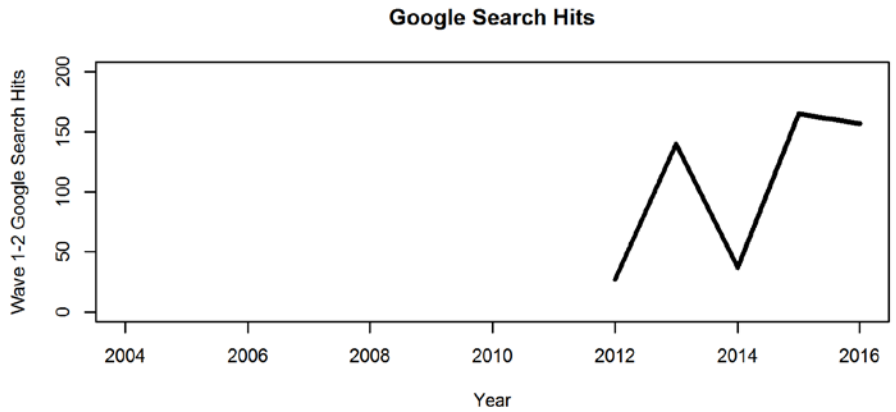
Regression Covariates

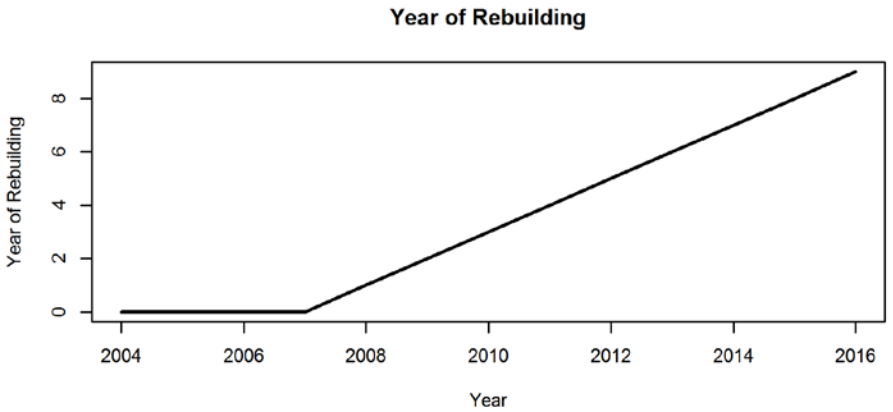






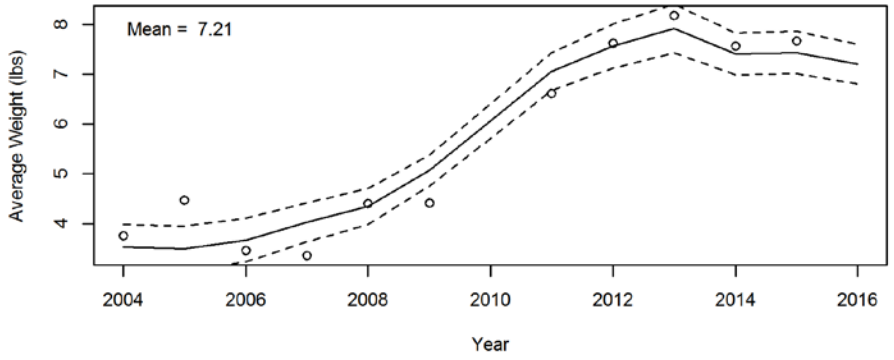




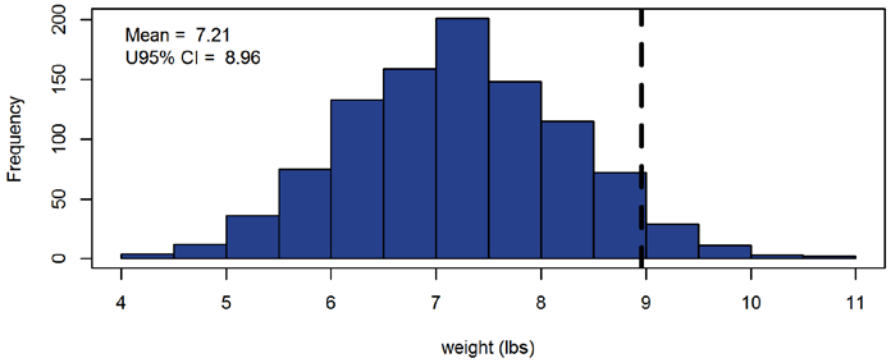


EAST PRIVATE

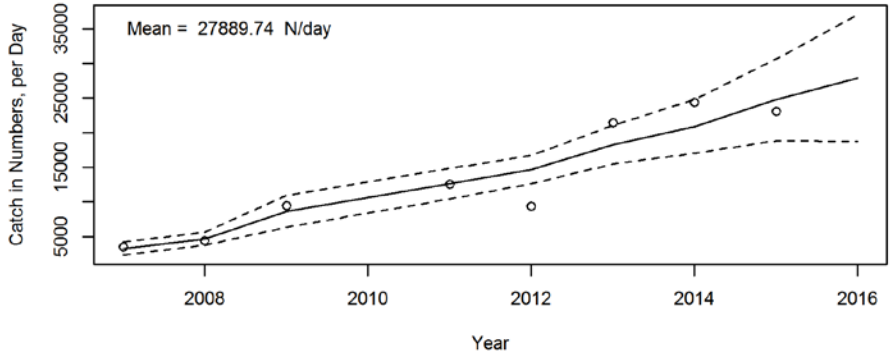
Average Weight



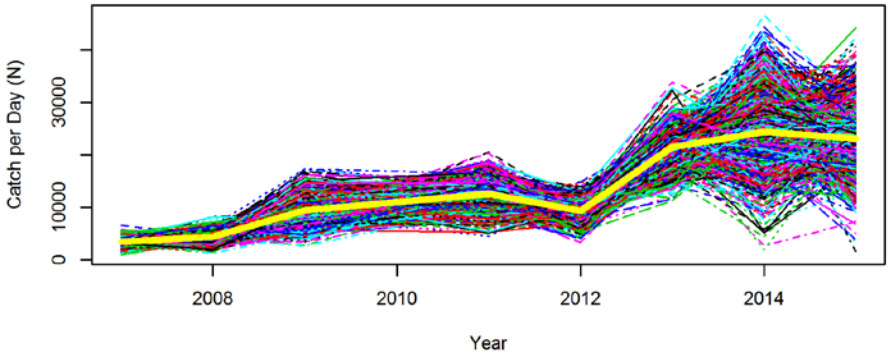
Predicted Average Weight 2016



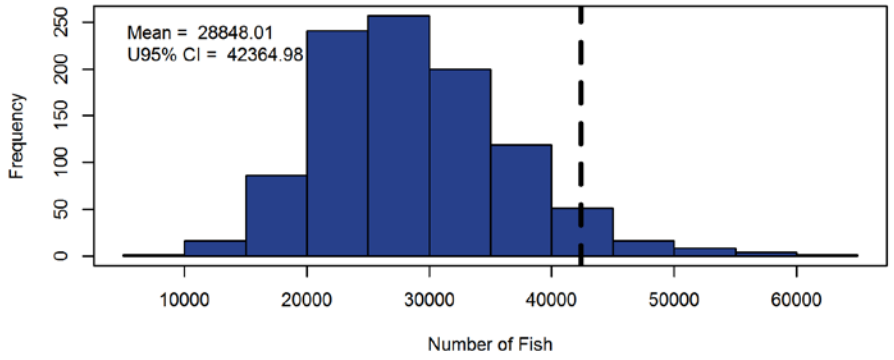
Catch per Day in Numbers



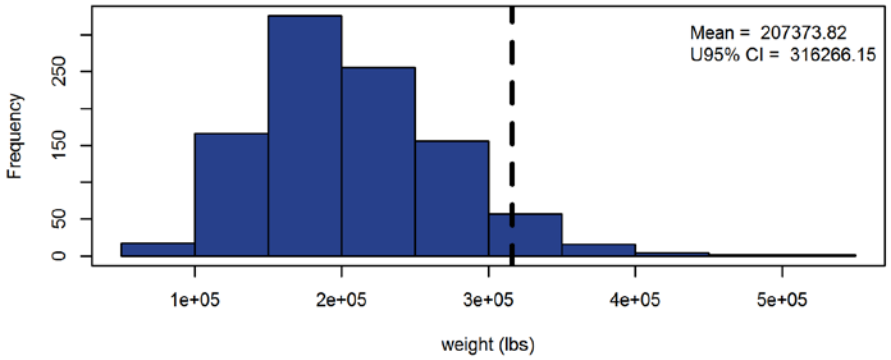
Uncertainty in Catches



Predicted Daily Catch 2016 (N/day)

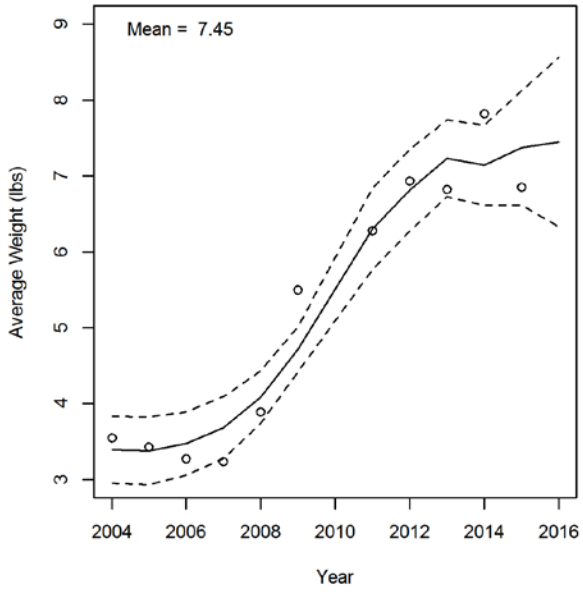


Predicted Daily Catch 2016 (LB/day)

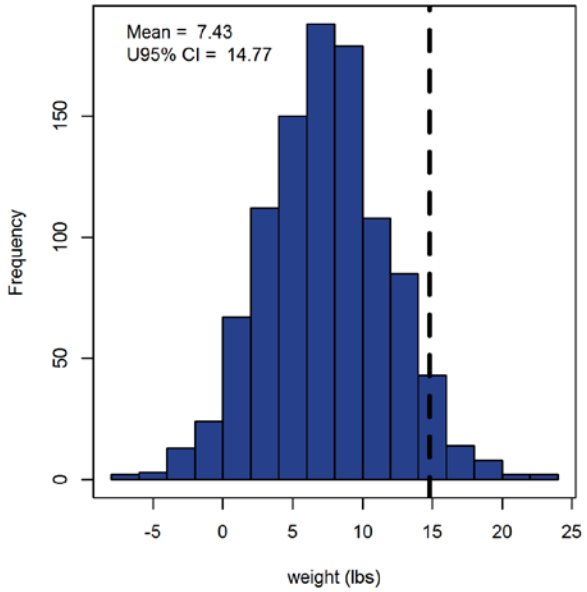


EAST CHARTER

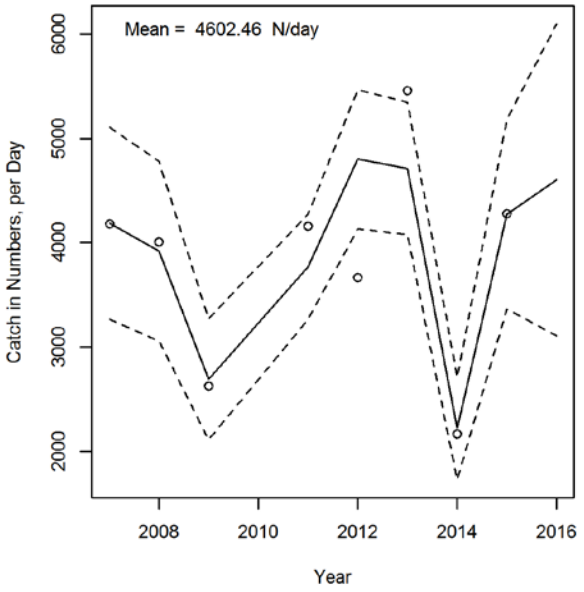
Average Weight



Predicted Average Weight 2016



Catch per Day in Numbers



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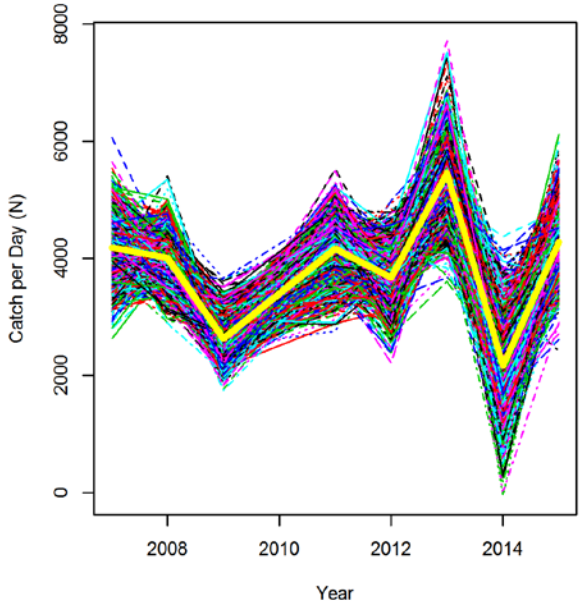

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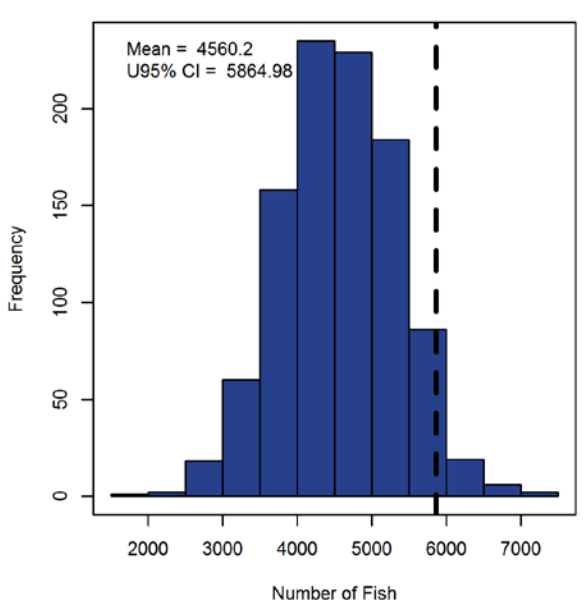

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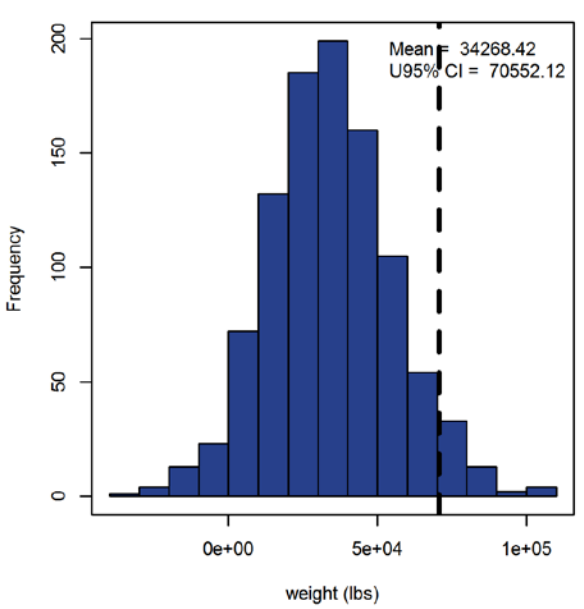
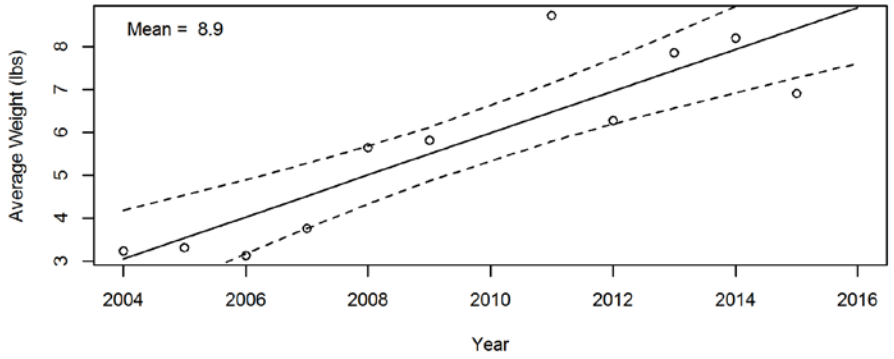
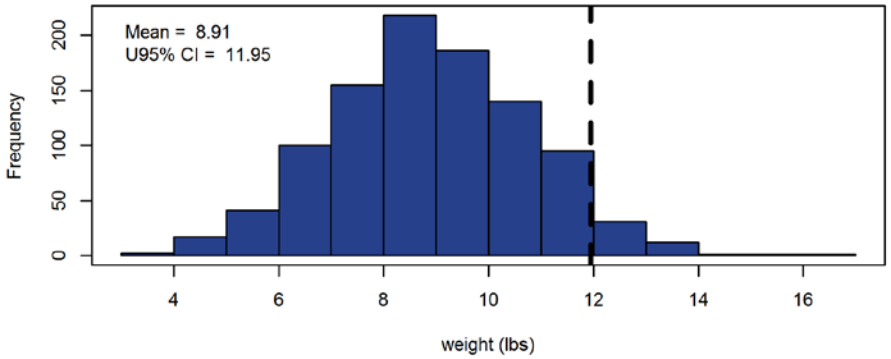


WEST PRIVATE

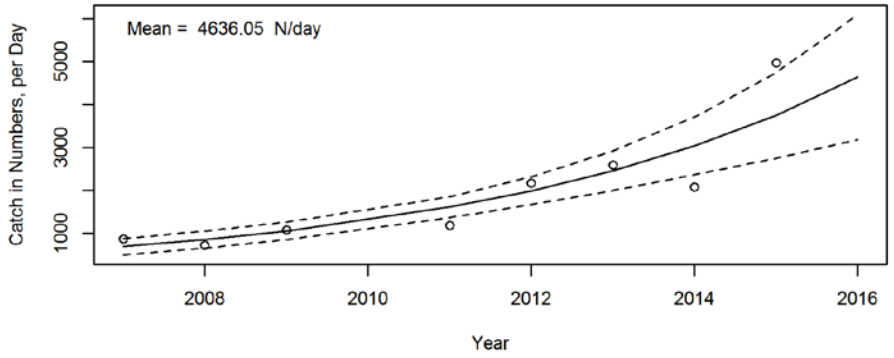
Average Weight



Predicted Average Weight 2016



Catch per Day in Numbers



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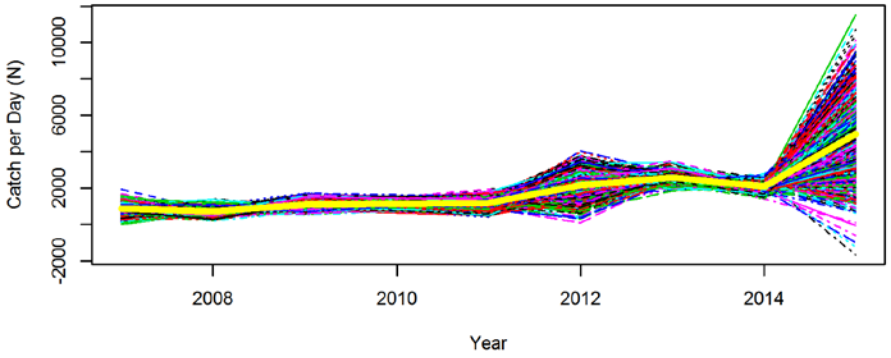

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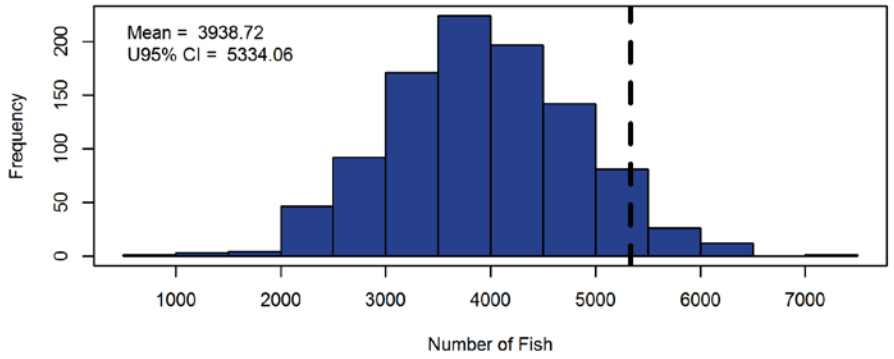

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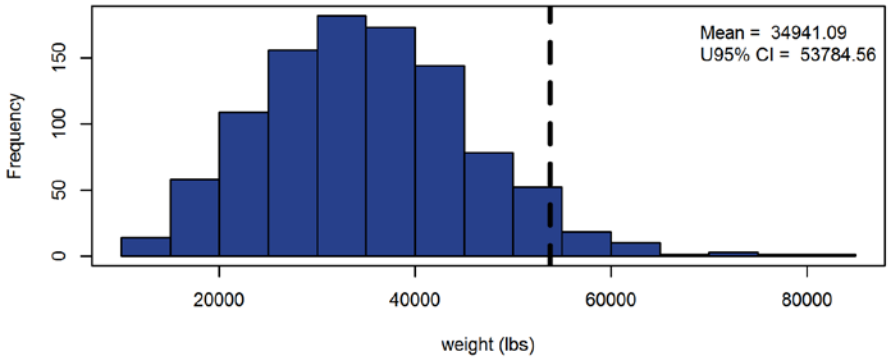
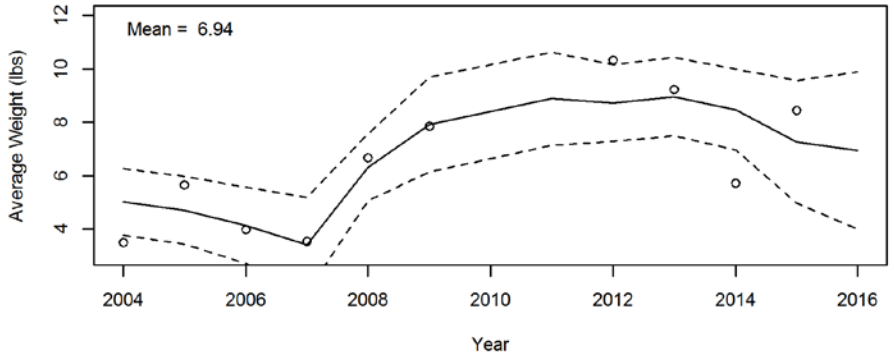
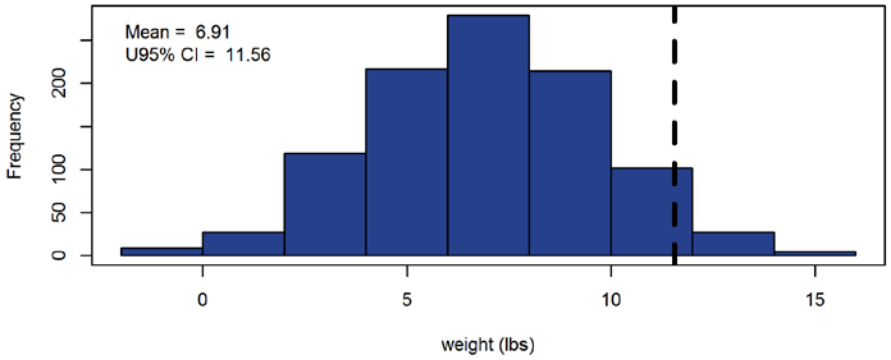


WEST CHARTER

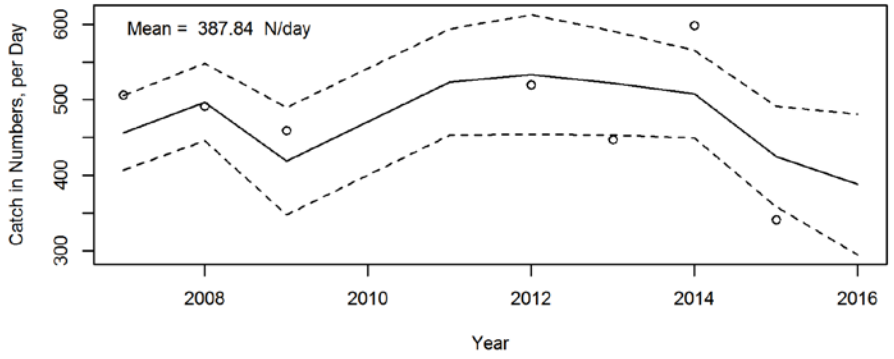
Average Weight



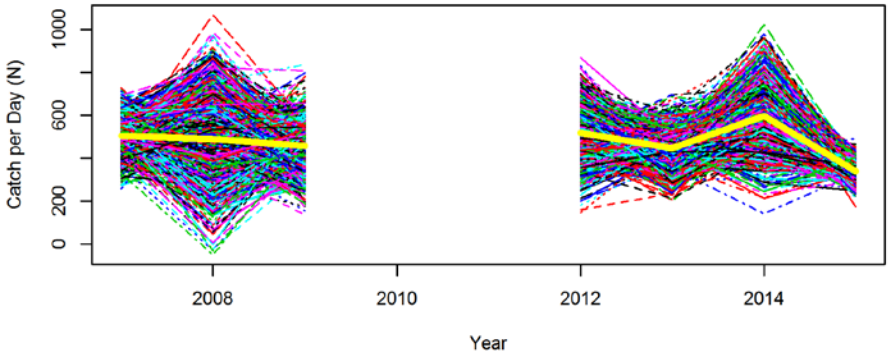
Predicted Average Weight 2016



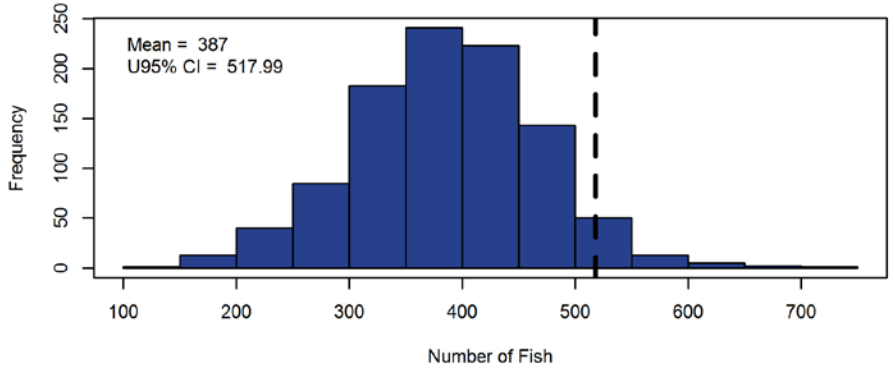
Catch per Day in Numbers



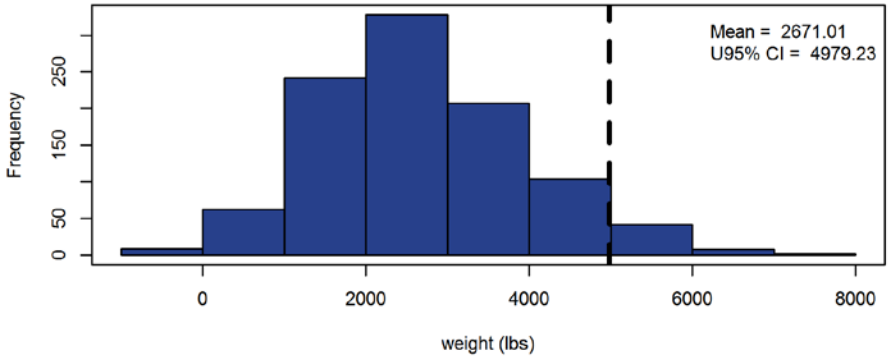
Uncertainty in Catches



Predicted Daily Catch 2016 (N/day)

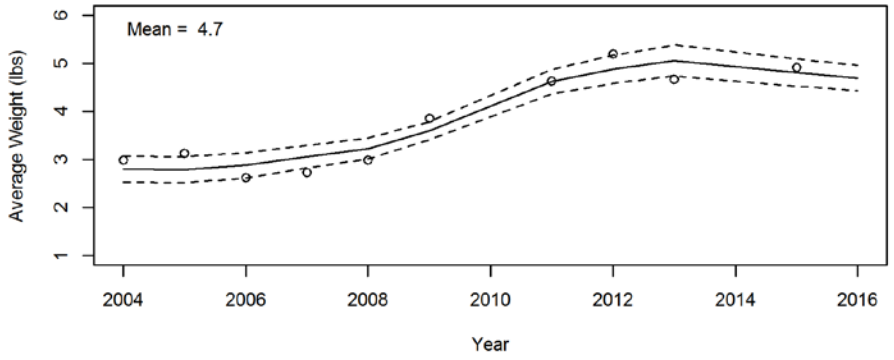


Predicted Daily Catch 2016 (LB/day)

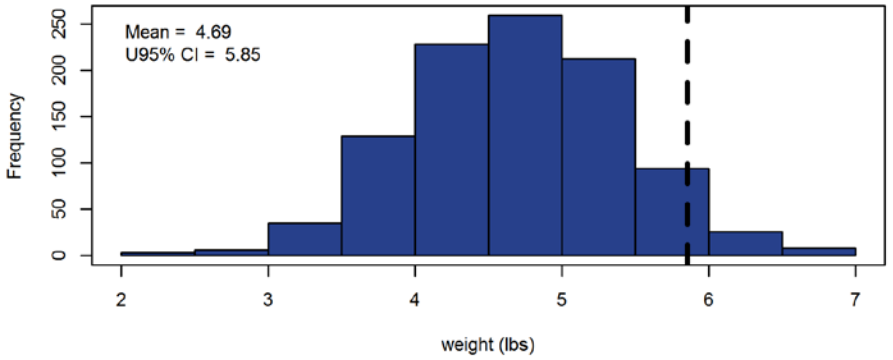


HEADBOAT EAST (Drop 2014)

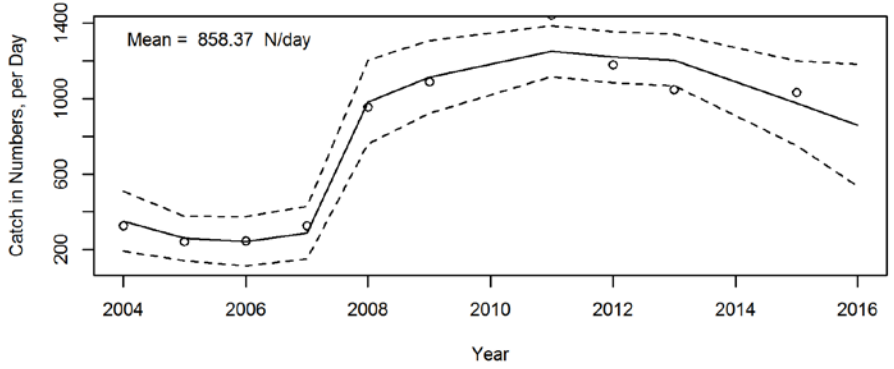
Average Weight



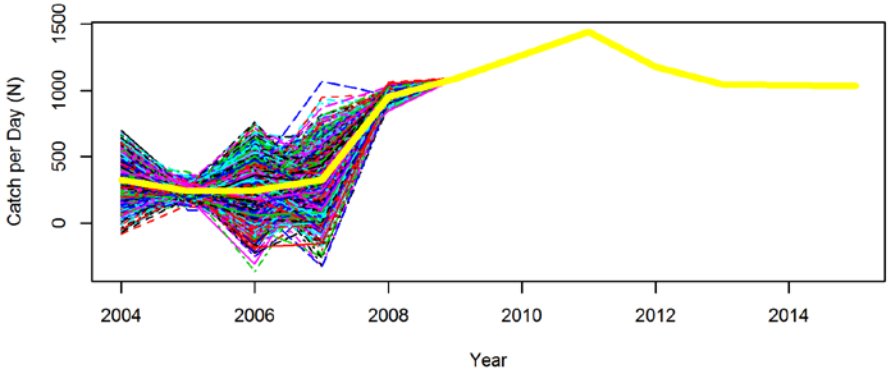
Predicted Average Weight 2016



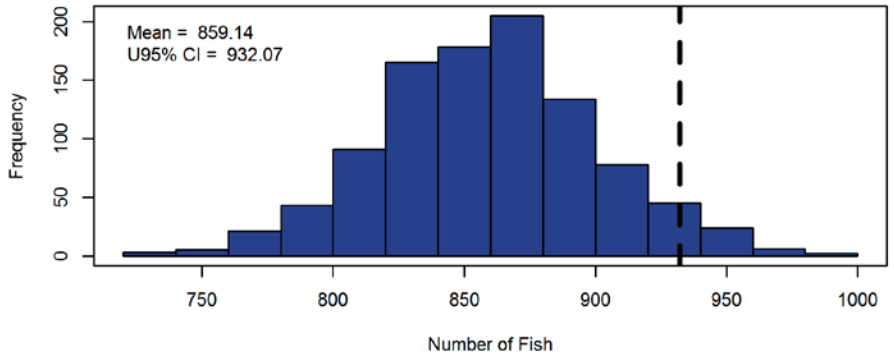
Catch per Day in Numbers



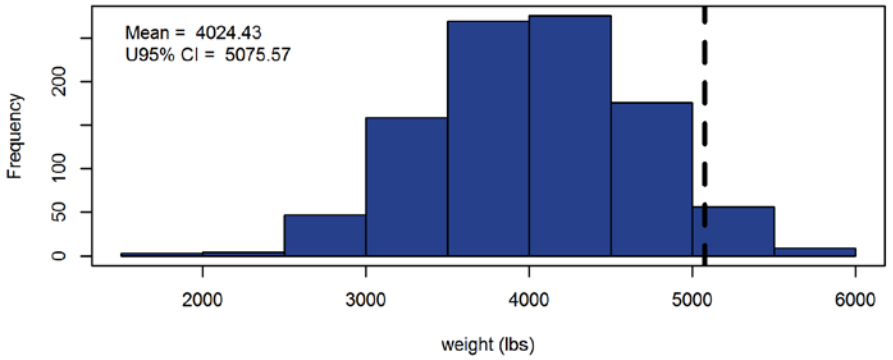
Uncertainty in Catches



Predicted Daily Catch 2016 (N/day)

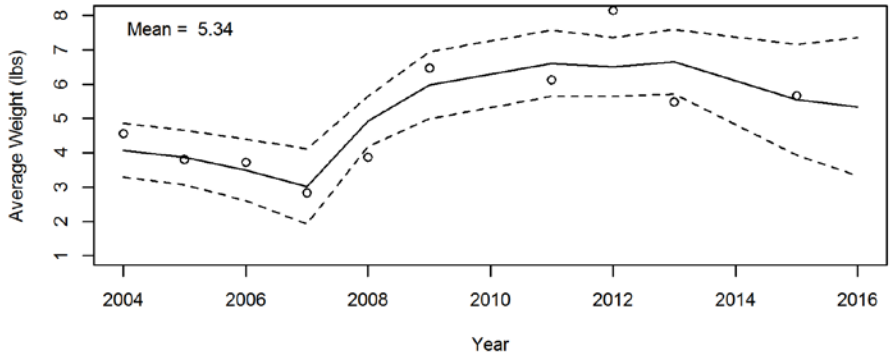


Predicted Daily Catch 2016 (LB/day)

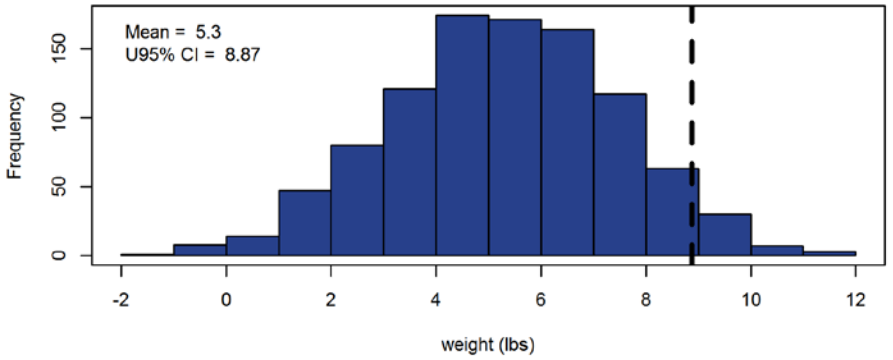


HEADBOAT WEST (Drop 2014)

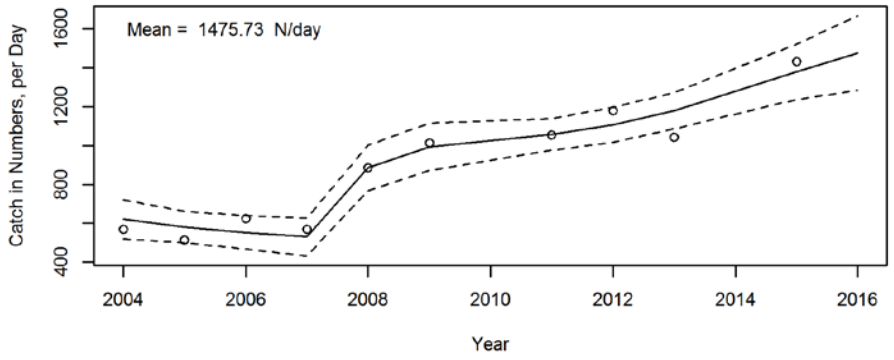
Average Weight



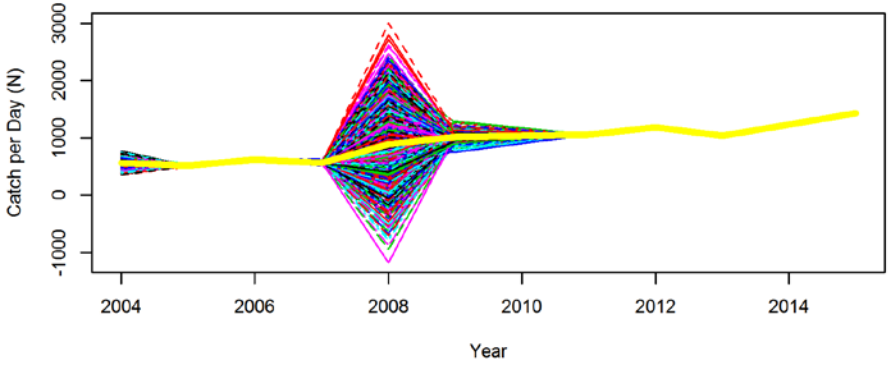
Predicted Average Weight 2016



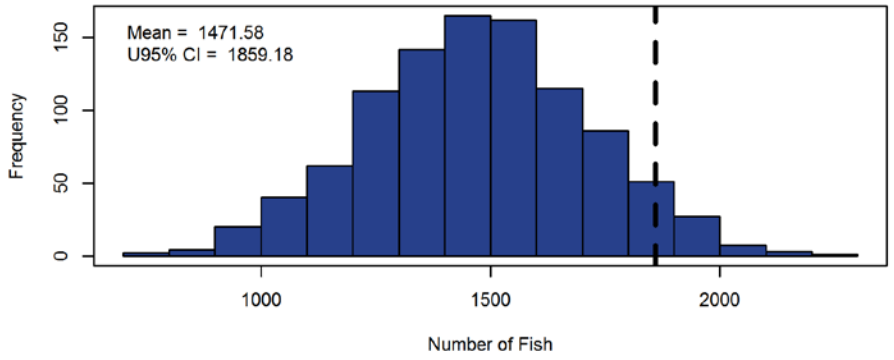
Catch per Day in Numbers



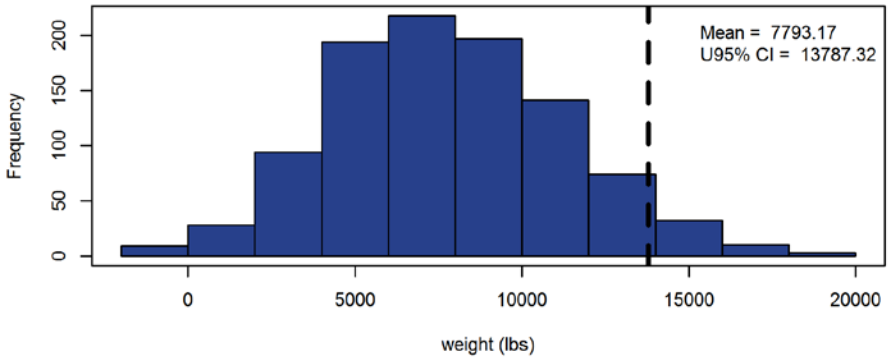
Uncertainty in Catches



Predicted Daily Catch 2016 (N/day)



Predicted Daily Catch 2016 (LB/day)

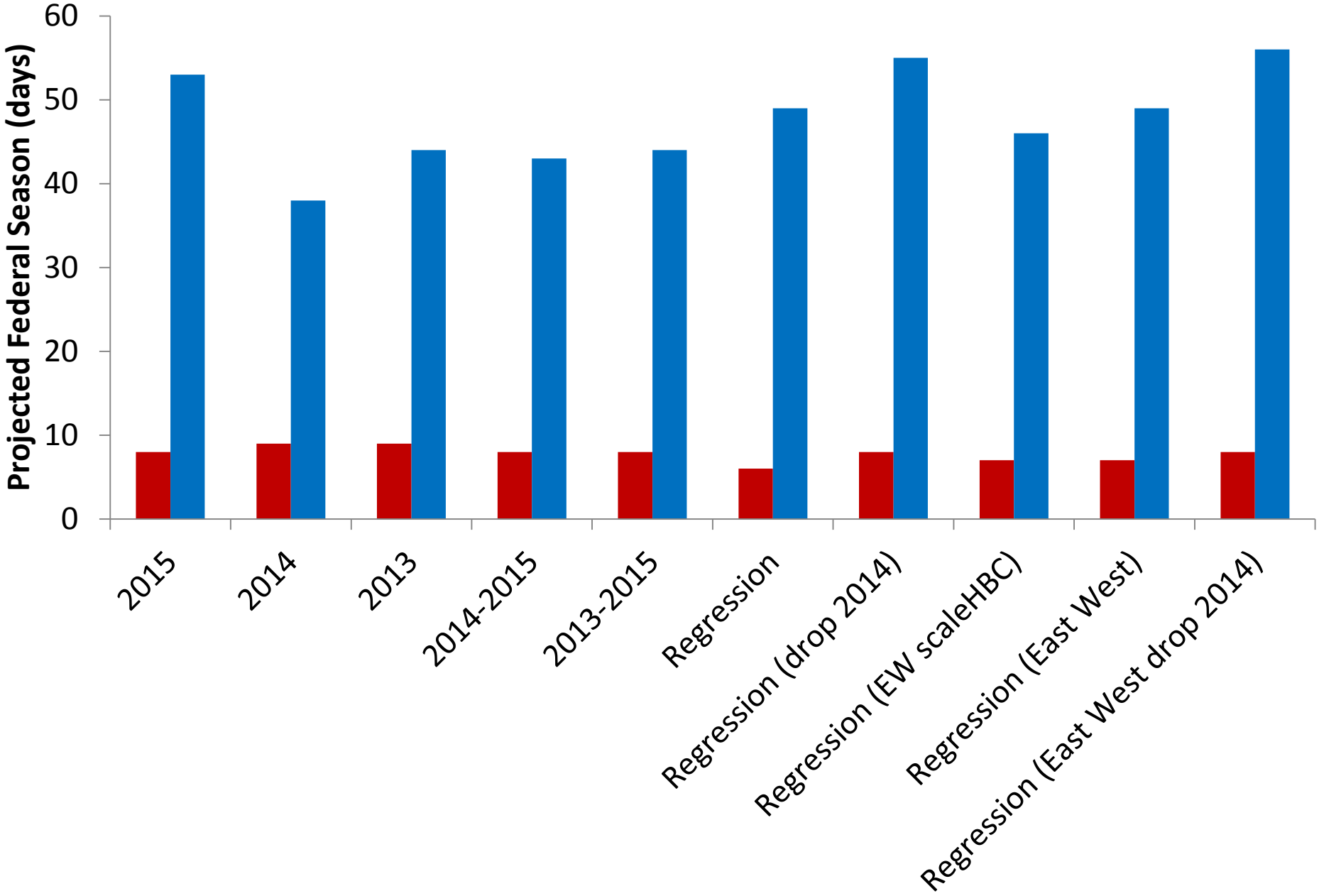


Impact of 3 → 9 nautical mile

Assumed increase in state waters catch rate	Median Season Length (days) Private	For-Hire
10%	8	48
25%	8	48
50%	8	48
100%	8	48
200%	7	48
300%	6	48

Why is the impact relatively low?

- AL open July 1-31 but relatively low catch Wave 4 2015
- MS relatively low catch rates
- LA managing towards 'quota' (catch same amount, faster)

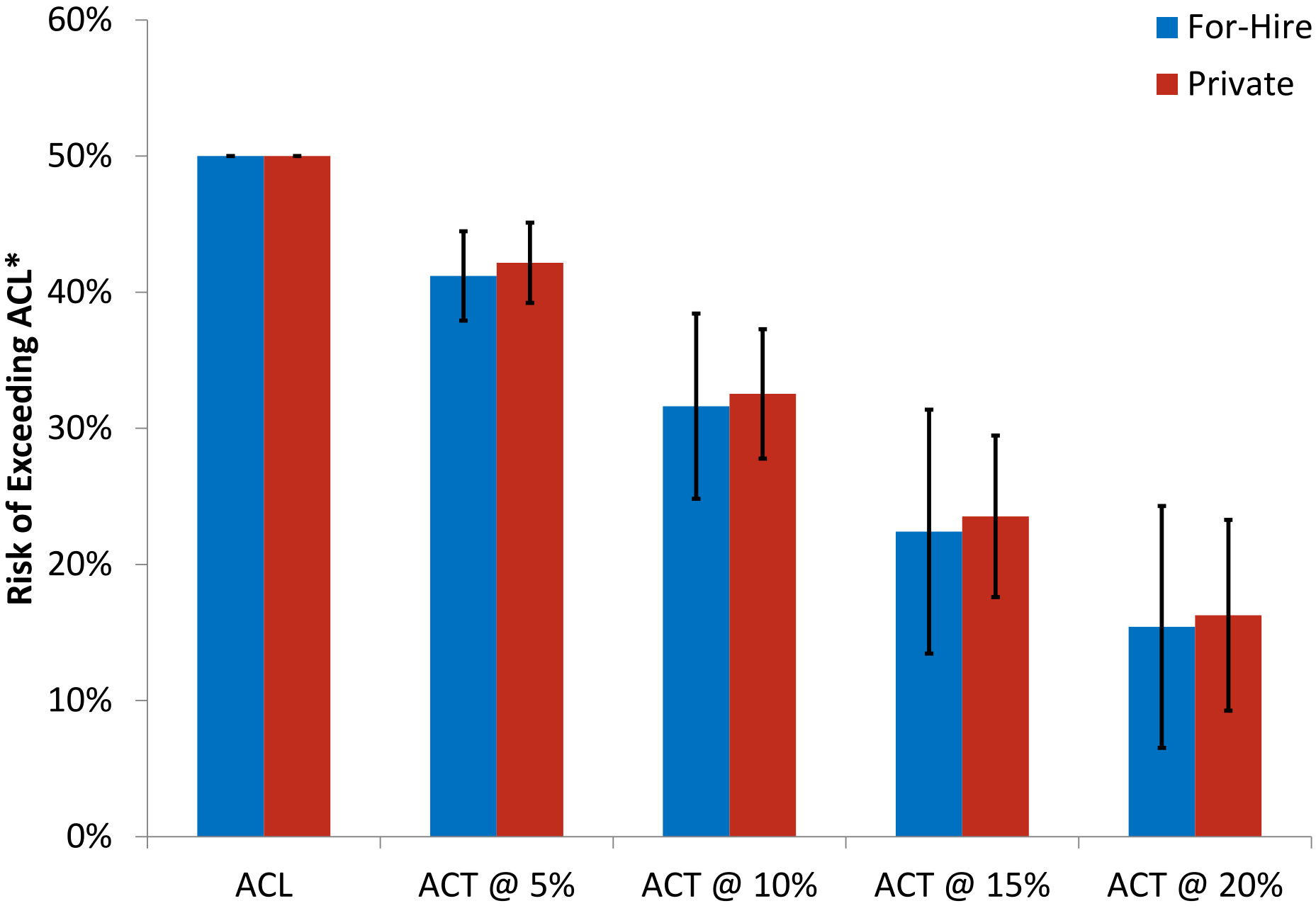

Projected Federal Season (days)
60
50
40
30
20
10
0
2015
2014
2013
2014-2015
2013-2015
Regression
Regression (drop 2014)
Regression (EW scaleHBC)
Regression (East West)
Regression (East West drop 2014)

All States Compliant

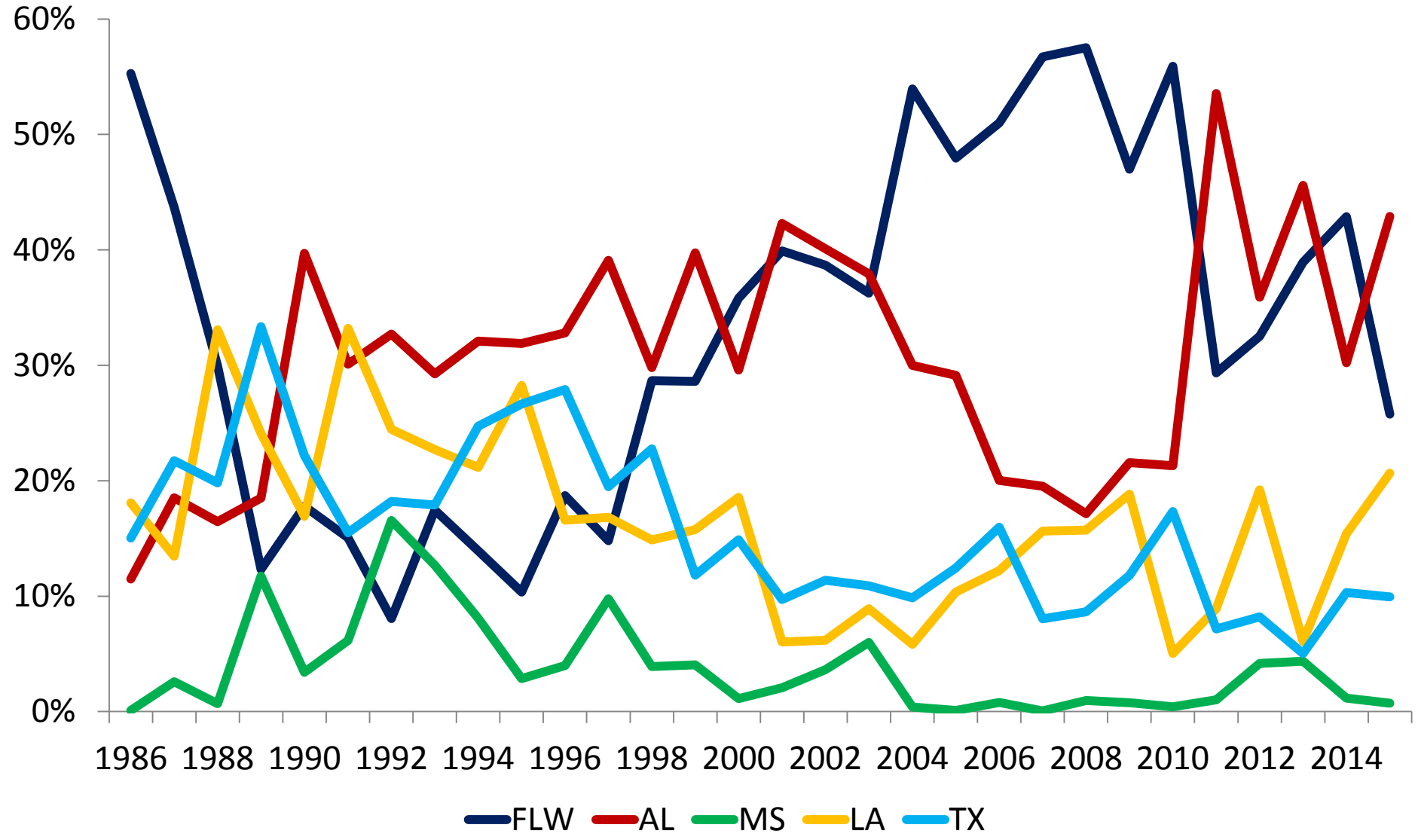
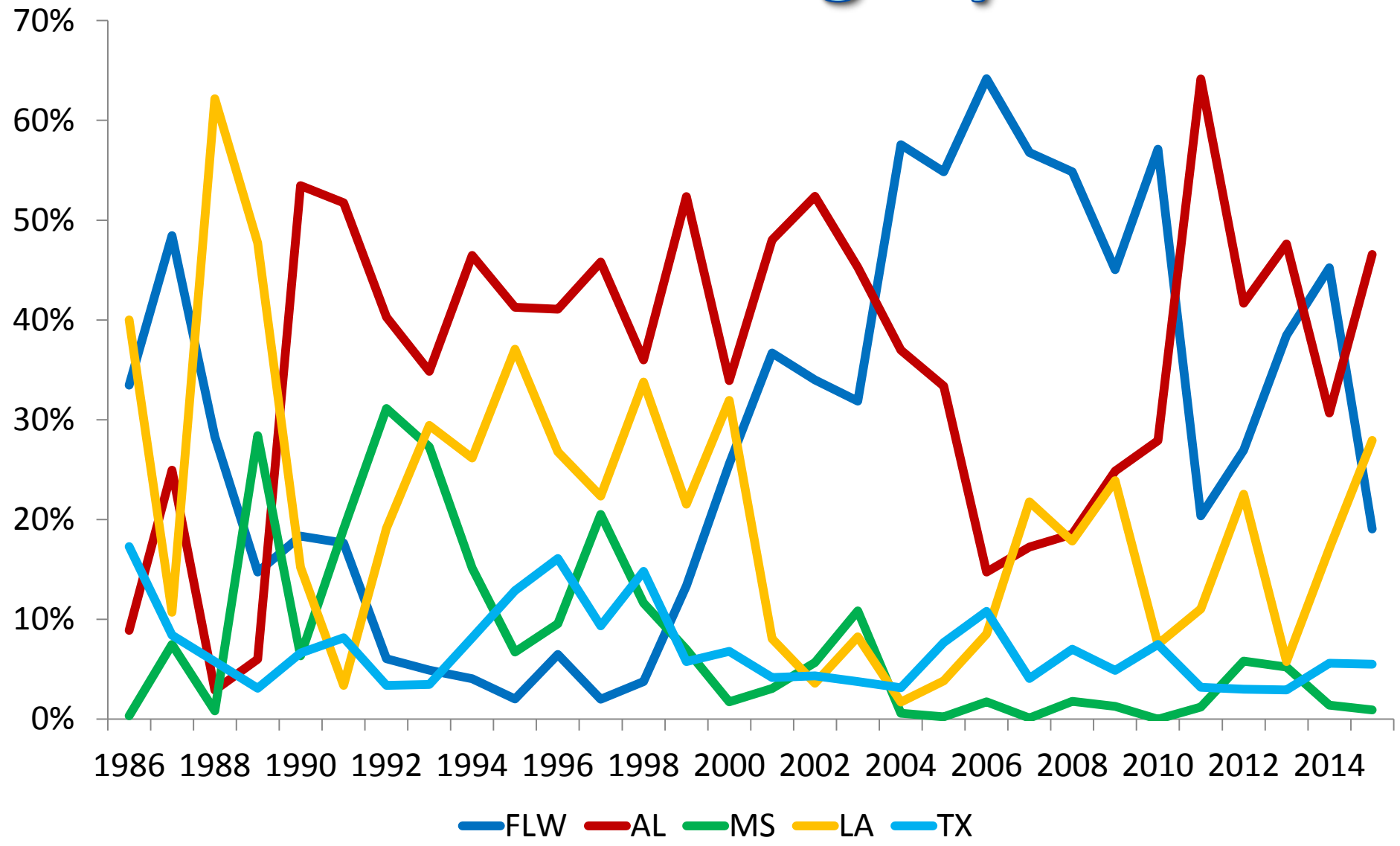
Model	Season Length (days)	
	Private	For-Hire
2015	15	53
2014	16	38
2013	17	46
2014-2015	16	44
2013-2015	16	44
Regression	11	49
Regression (drop 2014)	15	55
Regression (East West with scaled HBC)	13	46
Regression (East West)	13	50
Regression (East West drop 2014)	14	56
Median	**15**	**48**
Min	**11**	**38**
Max	**17**	**56**

No Sector Separation

Model	Season Length (days)
2015	16
2014	16
2013	17
2014-2015	16
2013-2015	16
Regression	12
Regression (drop 2014)	16
Regression (East West with scaled HBC)	14
Regression (East West)	14
Regression (East West drop 2014)	15
Median	**16**
Min	**12**
Max	**17**


60%
50%
40%
30%
20%
10%
0%
Risk of Exceeding ACL*
For-Hire
Private
ACL
ACT @ 5%
ACT @ 10%
ACT @ 15%
ACT @ 20%

% Total Landings by State



% Private Landings by State