

2014, 2015 Spiny Dogfish Review



Review

- Existing Mgmt Measures
- Stock Condition
- ABC Update
- Options

Review

- 2014 is Year 2/3
- ACL: 55.277 M lb
- Commercial Quota: 41.784 M lb
- Trip Limit: 4,000 lb

Review

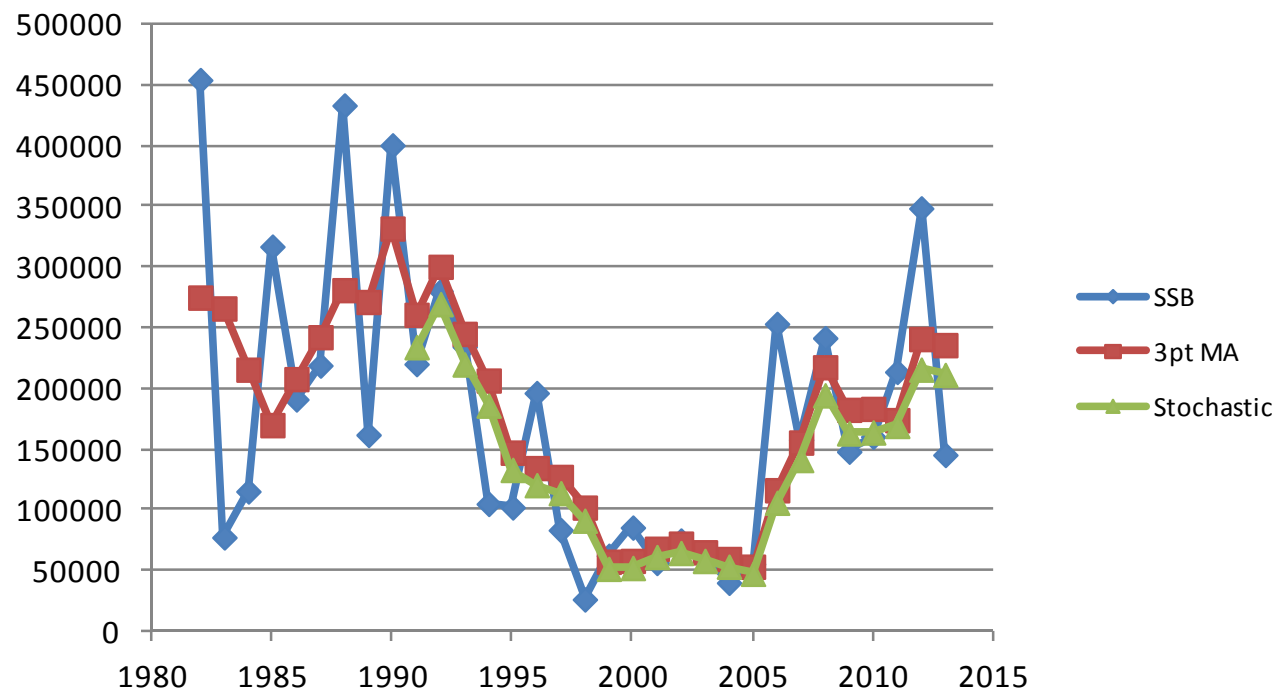
- 2015 is Year 2/3
- ACL: 55.063 M lb
- Commercial Quota: 41.578 M lb
- Trip Limit: 4,000 lb

Stock Status

- Overfishing not occurring, Not overfished
- F_{2012} : 0.149 (F_{MSY} : 0.2439)
- B_{2013} : 211,372 mt (B_{MSY} : 159,288 mt)

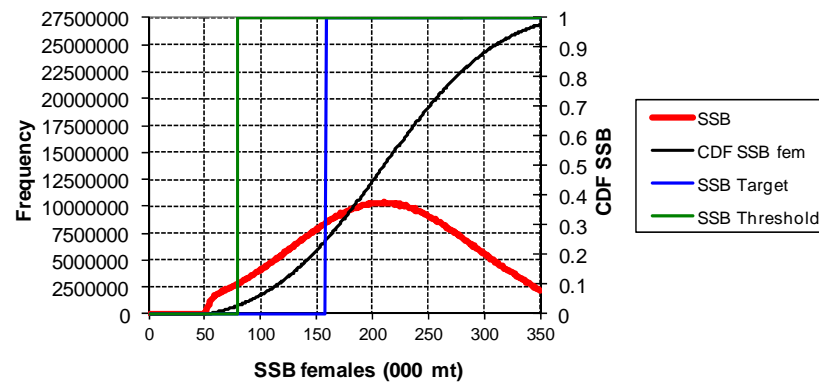
Stock Status

**Female spawning stock biomass
Estimates 1982-2013**



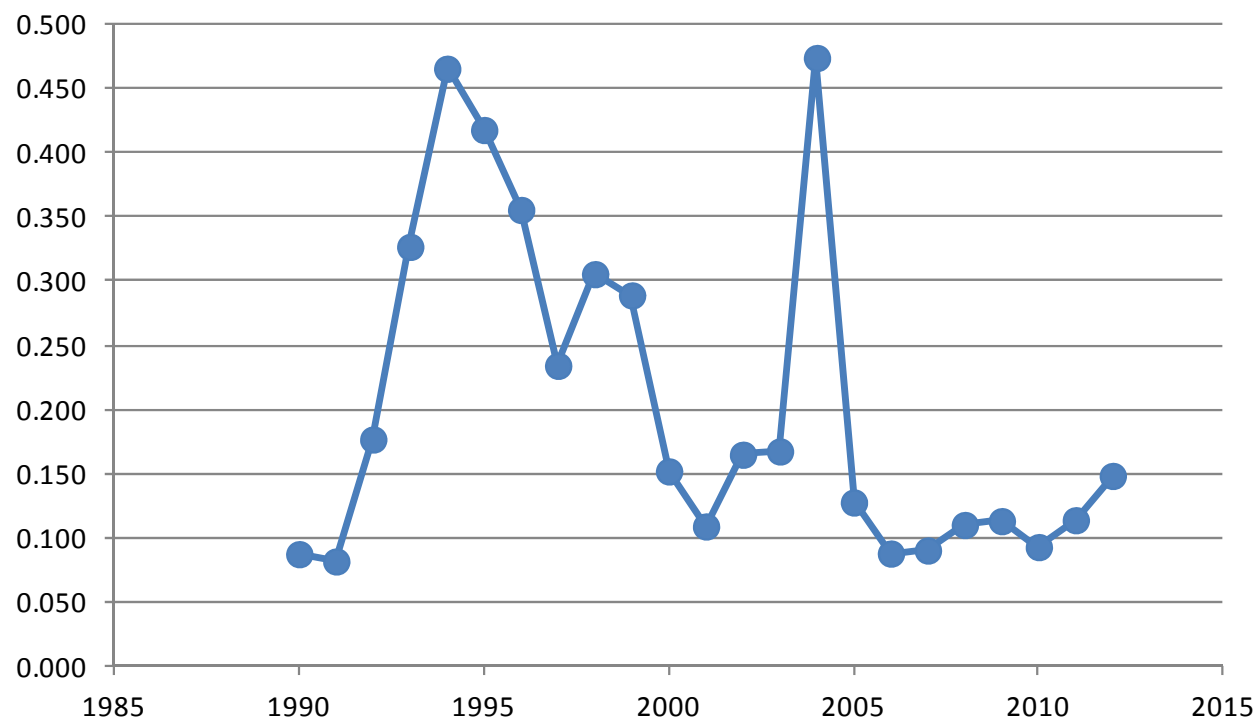
Stock Status

Stochastic Estimate of Spawning Stock Biomass with nominal target and threshold biomasses, 2013



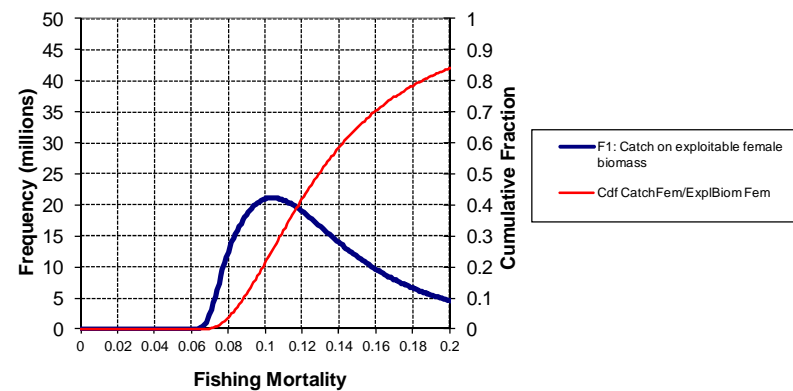
Stock Status

**Fishing Mortality Rate based Female Catch
on Exploitable Female Biomass**

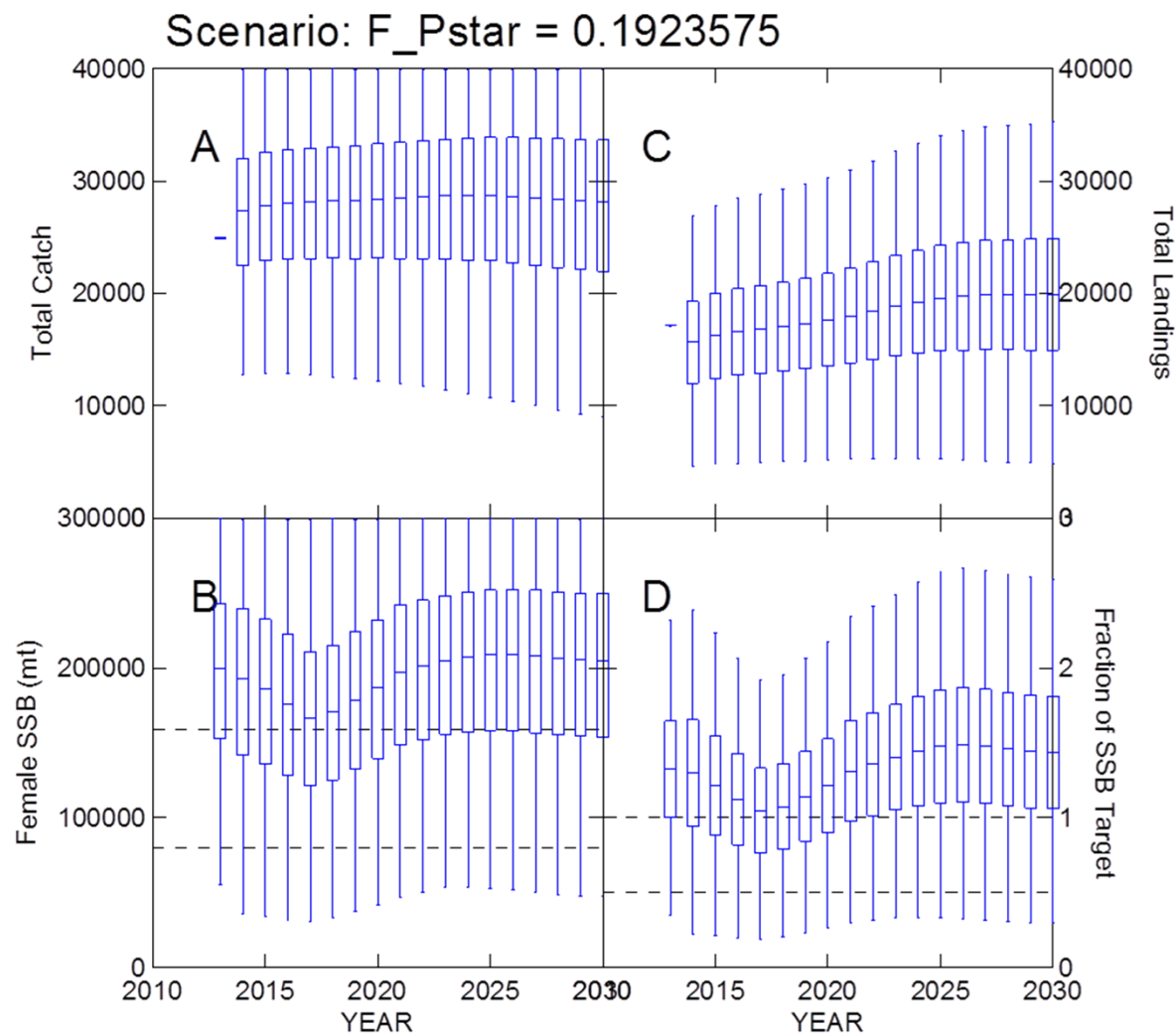


Stock Status

F1: Female Catch vs exploitable biomass: 2012

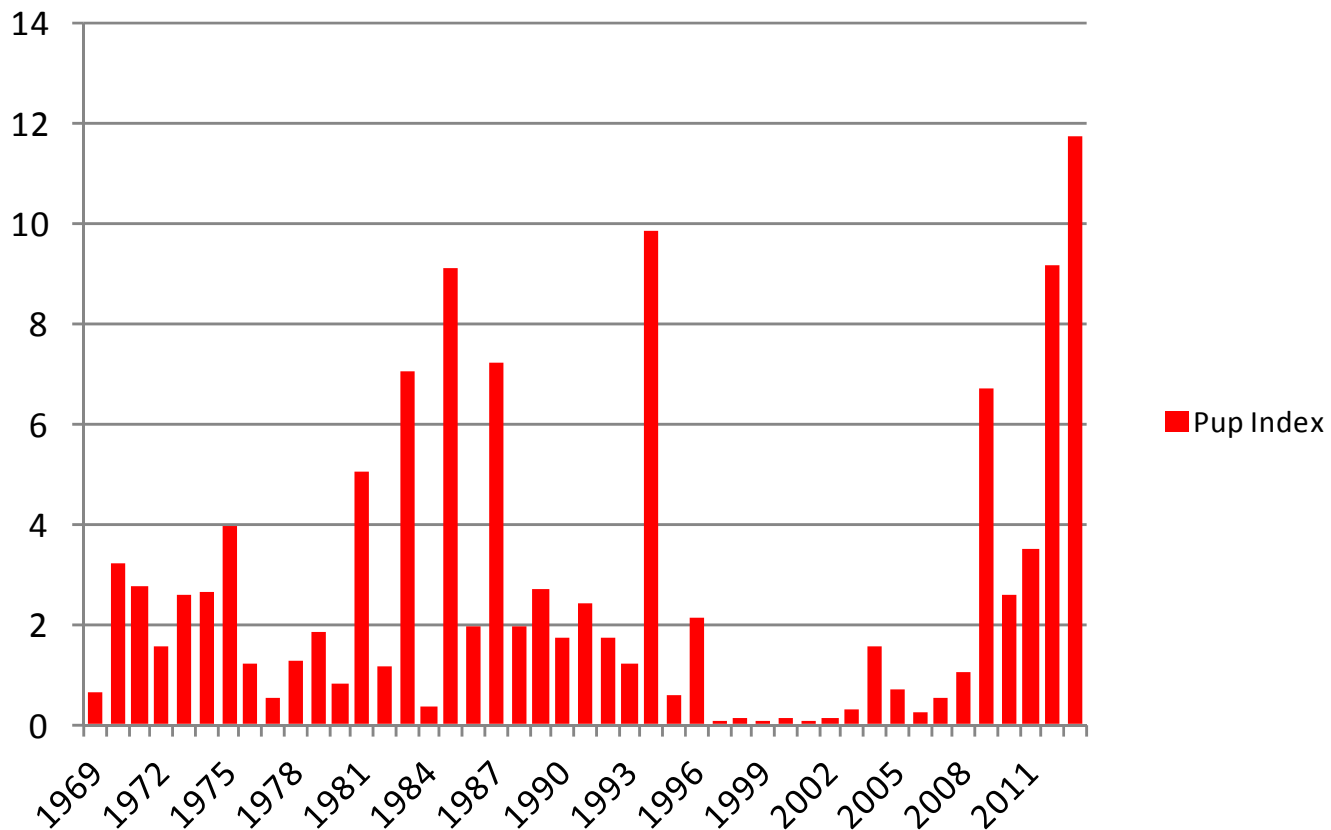


Projections



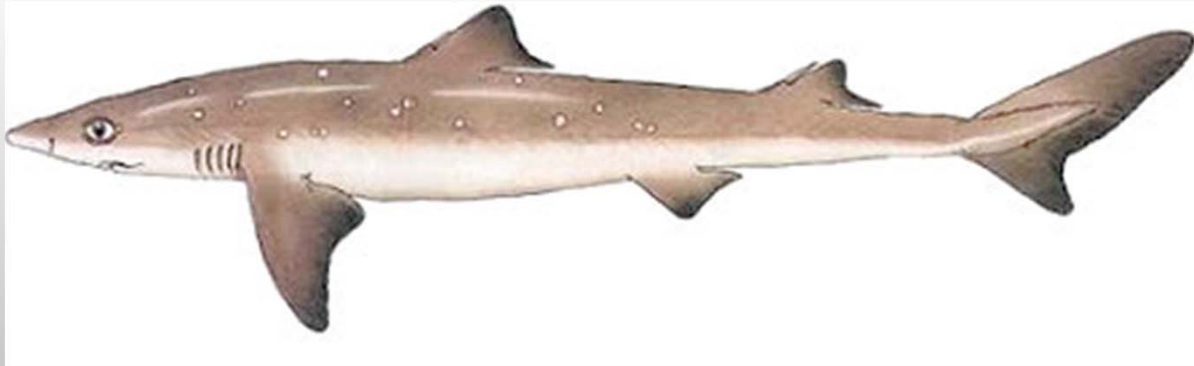
Pups

Pup Index, 1968-2013



Projections

	2014					2015					2016			
Percentile	<i>Catch</i>	<i>Landings</i>	<i>Discards</i>	<i>Female SSB</i>		<i>Catch</i>	<i>Landings</i>	<i>Discards</i>	<i>Female SSB</i>		<i>Catch</i>	<i>Landings</i>	<i>Discards</i>	<i>Female SSB</i>
1	13,578	5,288	8,290	45,766		13,733	5,448	8,285	43,089		13,759	5,555	8,204	40,419
2	14,436	5,922	8,514	55,631		14,626	6,108	8,518	52,297		14,673	6,230	8,443	48,943
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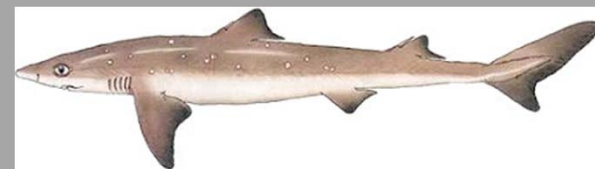


MAFMC SSC ABC Recommendations

Spiny Dogfish
2014 - 2015 Fishing Years

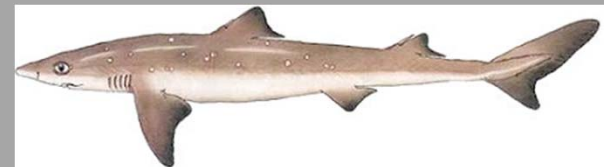
Level 3

- The assessment provides plausible estimates of the absolute levels of biomass and abundances, and the assessment also provides a plausible set of reference points that together represent the best available science.
- The biological reference points were calculated outside of the assessment model.
- Important sources of uncertainty were not incorporated into estimates for the biological reference points.



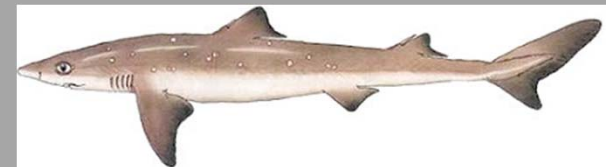
OFL

- The F_{msy} proxy is calculated from a projection model for which the finite rate of population increase = 1.0.
- For Spiny Dogfish, the F_{msy} proxy = 0.2439.
- This is equivalent to a catch of **OFL = 32,166 mt**, based on the projected biomass in 2014 and the assumption that the catch in 2013 will be equal to 24,709 mt (the ABC = ACL from last year).



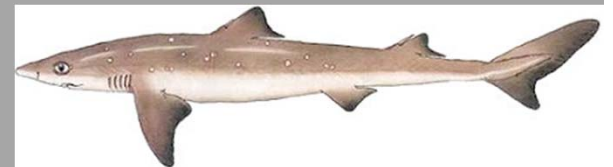
ABC

- The SSC applied the Council's risk policy for a typical life history, an estimated B_{2014}/B_{msy} ratio > 1 , and a CV of the OFL distribution of 100% assuming a lognormal distribution. Using these parameters, the Council's risk policy implies a $P^* = 0.40$.
- Applying this P^* to the OFL produces an **ABC = 27,596 mt.**



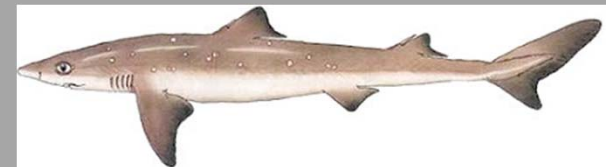
ABC (cont'd)

- The SSC notes that the stock biomass is projected to decline in the future because of poor recruitment in earlier years, before recovering again.
- Current projections suggest that the ratio of (median B_{current})/ B_{msy} may be <1 for 2018-2023. As a result, the P^* value developed by the Council's risk policy will be lower, thereby leading to a reduced ABC for these years.



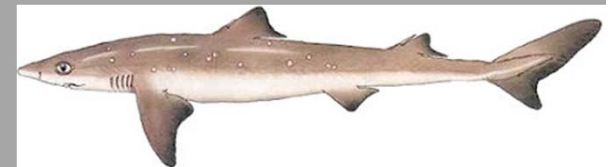
Number of Fishing Years for ABC

- The SSC recommends a 2-year ABC specification.
- The SSC recommends that ABC be calculated based on a constant F policy, which translates to an ABC in the subsequent year 2015 of **28,310 mt.**



Number of Fishing Years for ABC (cont'd)

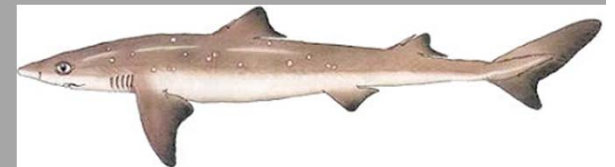
- Next year, the SSC will examine:
 - discard rates,
 - survey abundance trends (size composition, sex ratio and pup size),
 - average size and sex in commercial landings, agreement between observed and predicted catch and survey forecasts,
 - changes in Canadian landings, and the spatial distributions of catch and survey abundances.



Most Significant Sources of Scientific Uncertainty

The assessment relies heavily on an assumed efficiency of the survey gear in developing minimal swept area estimates of biomass. Inter-annual differences in availability of the stock to the survey gear.

F_{msy} proxy is based on a projection model that relies on a time-invariant selectivity estimated from data up to 2008. The assessment assumes selectivity has not changed subsequently, but may be variable.

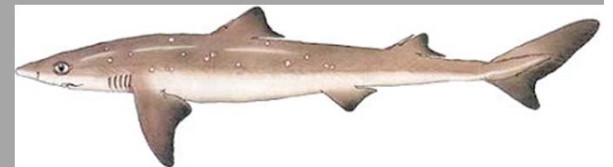


Most Significant Sources of Scientific Uncertainty (cont'd)

Both the F_{msy} proxy and the projections rely on a model that assumes constant pup survival and pup production rates. Empirical evidence suggests pup survival correlates positively with maternal size.

Inconsistencies exist between the estimation model and the projection model.

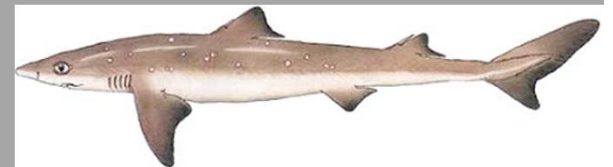
Potential changes in fishery selectivity could occur. Large increases in catches could induce changes in the overall selectivity pattern in the fishery.



Most Significant Sources of Scientific Uncertainty (cont'd)

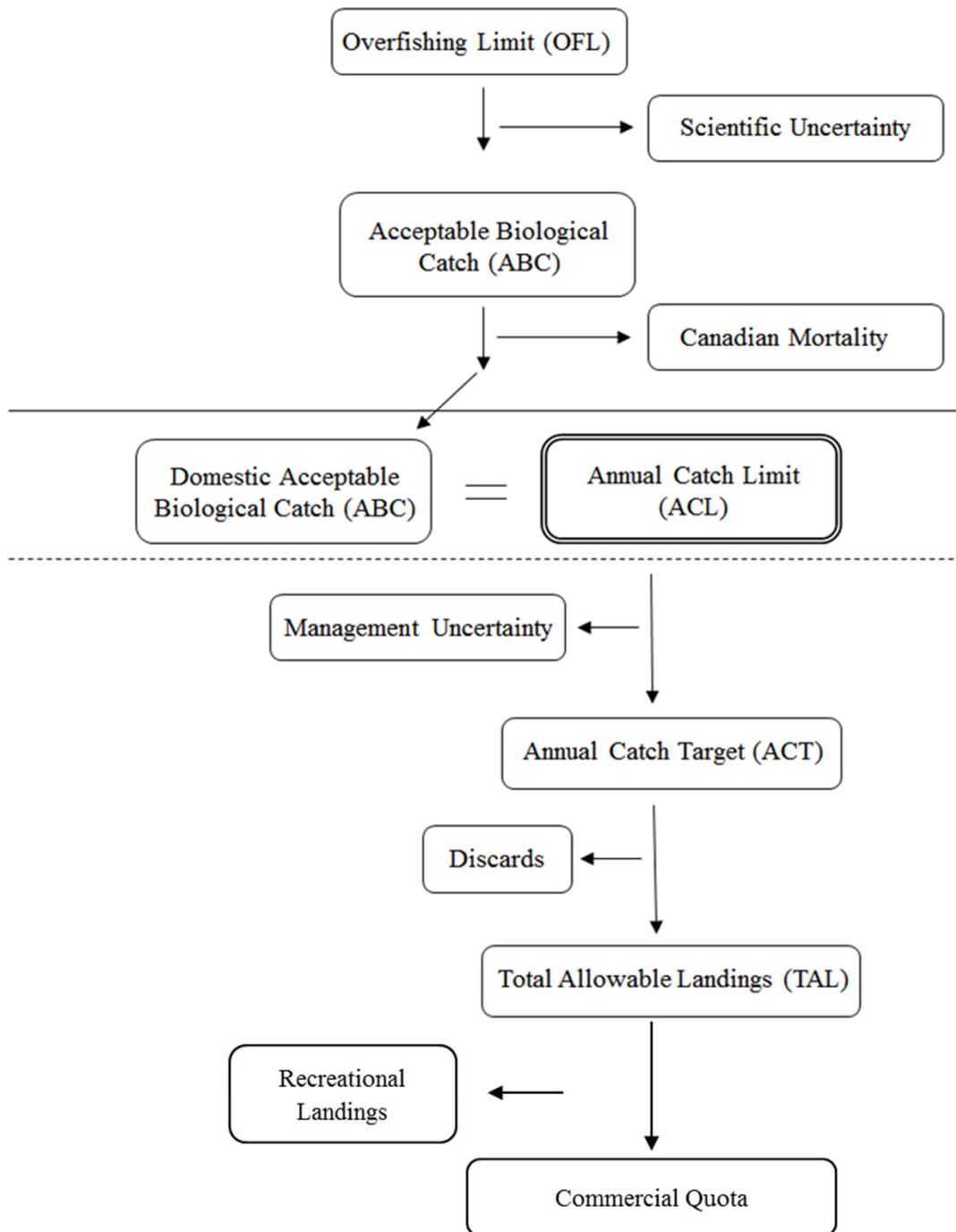
Potential inconsistency between the life history-based estimates of fishing mortality rates and the biomass reference points derived from the Ricker stock recruitment curve.

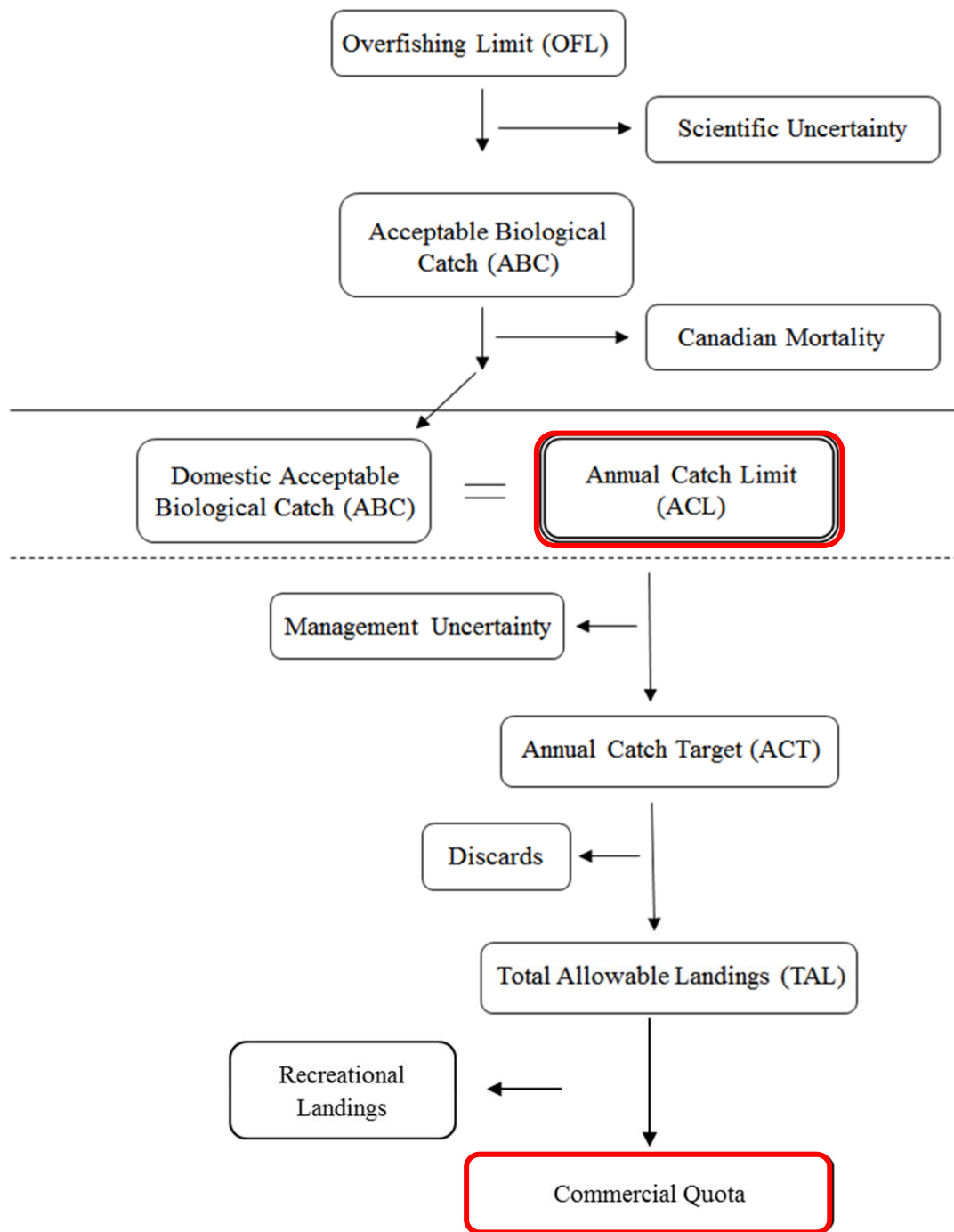
Total discard estimates and estimated mortality of discarded dogfish are uncertain.



Options

- Updated ABC effect on specified ACL
- Updated ABC < specified ABC
 - ACL is automatically affected
- Updated ABC > specified ABC
 - ACL not automatically affected





Trip Limit

Management Measures

(Existing)

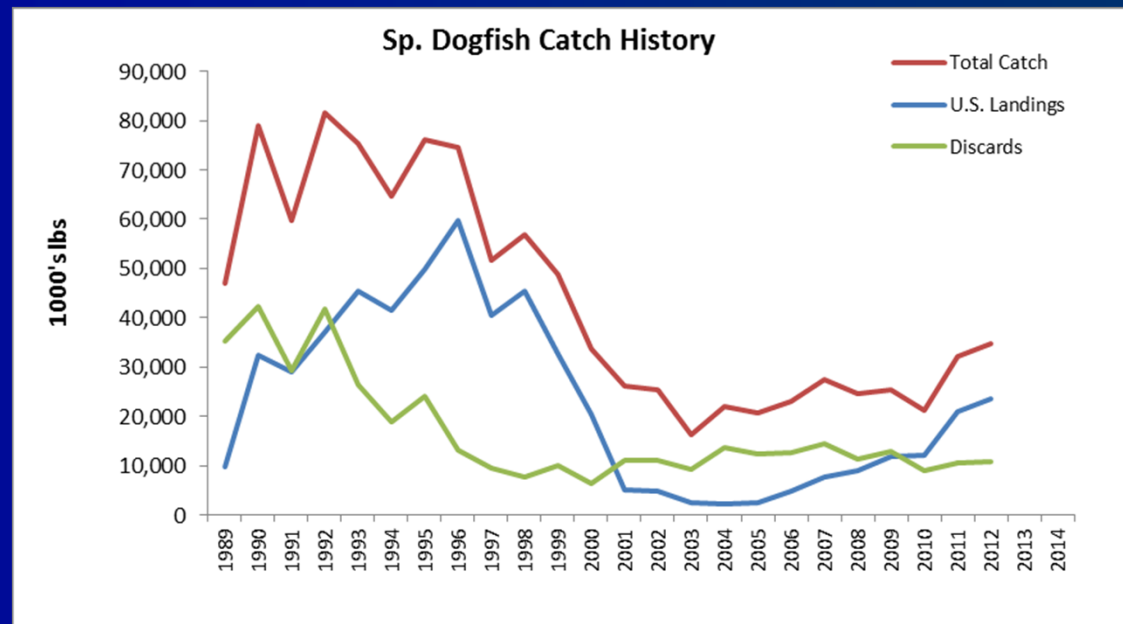
2014 Measures	Basis	M lb	mt	ABC Update (Mlb)	No ABC Update (Mlb)
OFL	<i>Projected Catch at Fmsy</i>			71.011	
ABC	<i>Constant F</i>	55.455	25,154	60.839	55.455
Canadian Landings	<i>= ave since 2009</i>	0.179	81	0.143	0.143
Domestic ABC	<i>= ABC – Canadian Landings</i>	55.277	25,073	60.695	55.312
ACL	<i>= Domestic ABC</i>	55.277	25,073	60.695	55.312
Mgmt Uncert. Buffer	<i>Ave pct quota overage since 2010</i>	1.737	788	0.000	0.000
ACT	<i>= Domestic ACL - mgmt uncertainty</i>	53.540	24,285	60.695	55.312
U.S. Discards	<i>= ave since 2002</i>	11.698	5,306	11.605	11.605
TAL	<i>ACT – Discards</i>	41.842	18,979	49.090	43.707
U.S. Rec Landings	<i>= ave since 2010</i>	0.058	26.5	0.053	0.053
Comm Quota	<i>TAL – Rec Landings</i>	41.783807	18,953	49.037	43.654

Management Measures

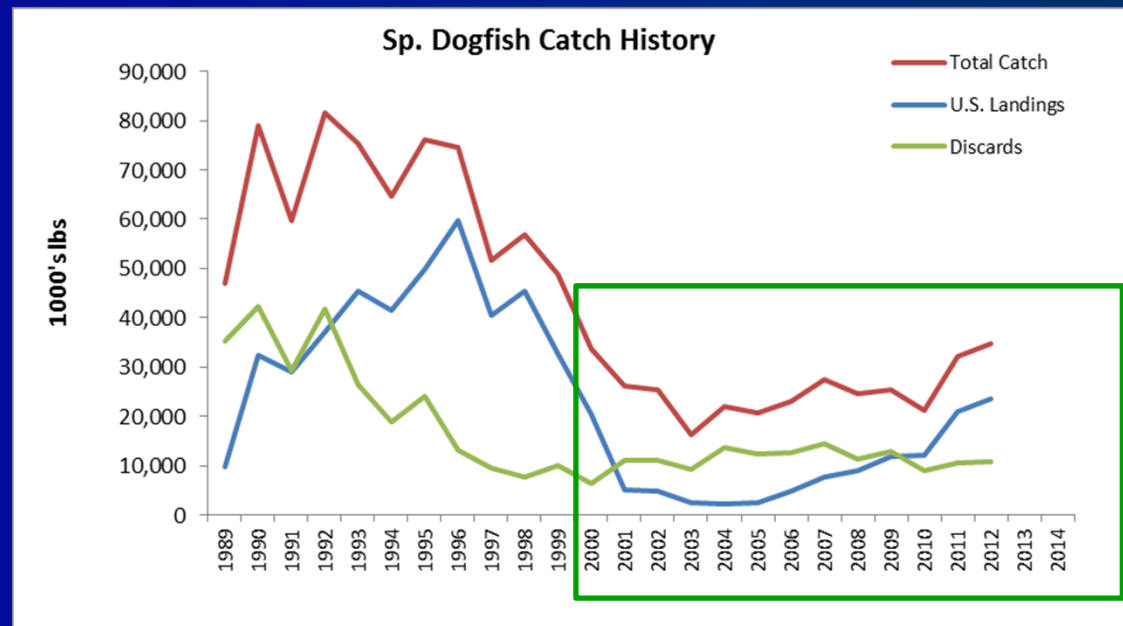
(Existing)

2015 Measures	Basis	M lb	mt	ABC Update (Mlb)	No ABC Update (Mlb)
OFL	<i>Projected Catch at Fmsy</i>				
ABC	<i>Constant F</i>	55.241	25,057	62.413	55.241
Canadian Landings	<i>= ave since 2009</i>	0.179	81	0.143	0.143
Domestic ABC	<i>= ABC – Canadian Landings</i>	55.063	24,976	62.270	55.098
ACL	<i>= Domestic ABC</i>	55.063	24,976	62.270	55.098
Mgmt Uncert. Buffer	<i>Ave pct quota overage since 2010</i>	1.728	784	0.000	0.000
ACT	<i>= Domestic ACL - mgmt uncertainty</i>	53.335	24,192	62.270	55.098
U.S. Discards	<i>= ave since 2002</i>	11.698	5,306	11.605	11.605
TAL	<i>ACT – Discards</i>	41.637	18,886	50.664	43.493
U.S. Rec Landings	<i>= ave since 2010</i>	0.058	26.5	0.053	0.053
Comm Quota	<i>TAL – Rec Landings</i>	41.578491	18,860	50.612	43.440

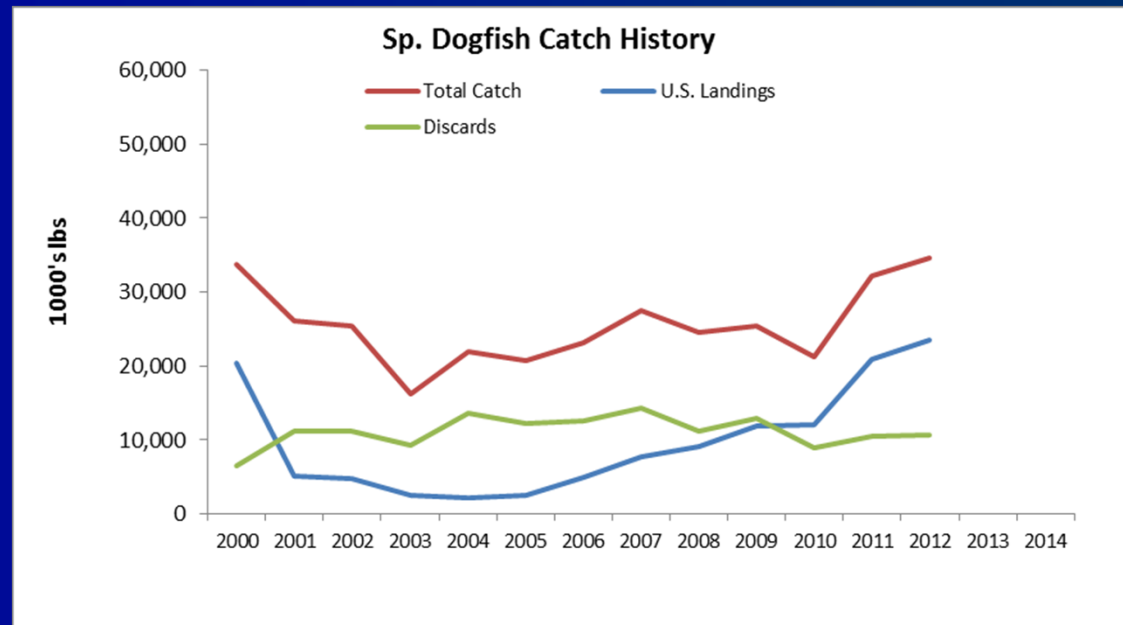
Review



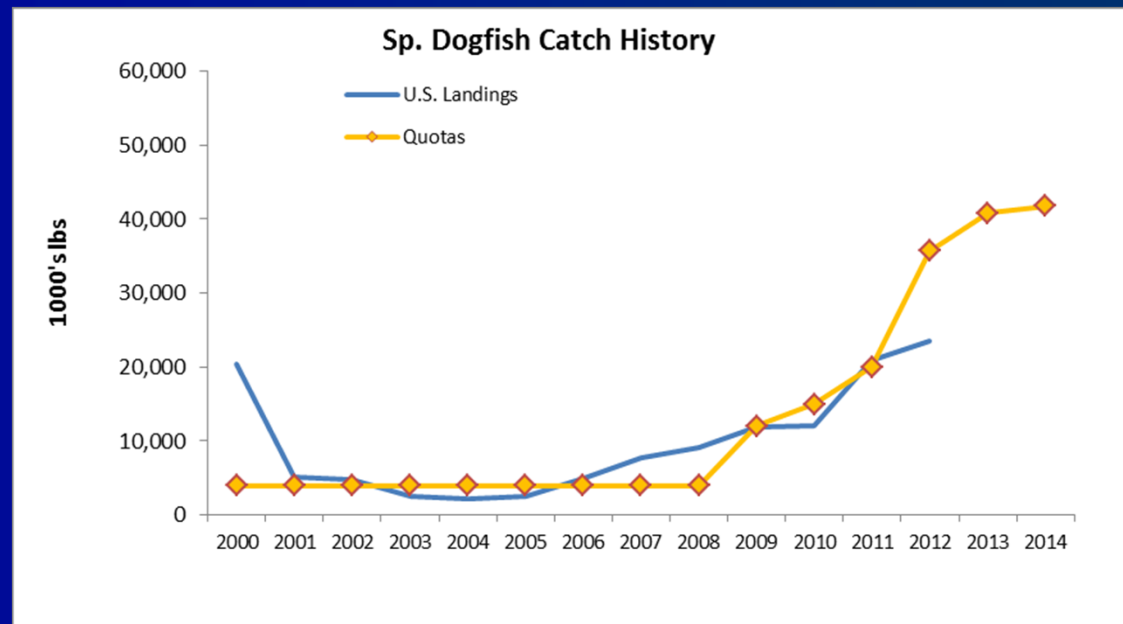
Review



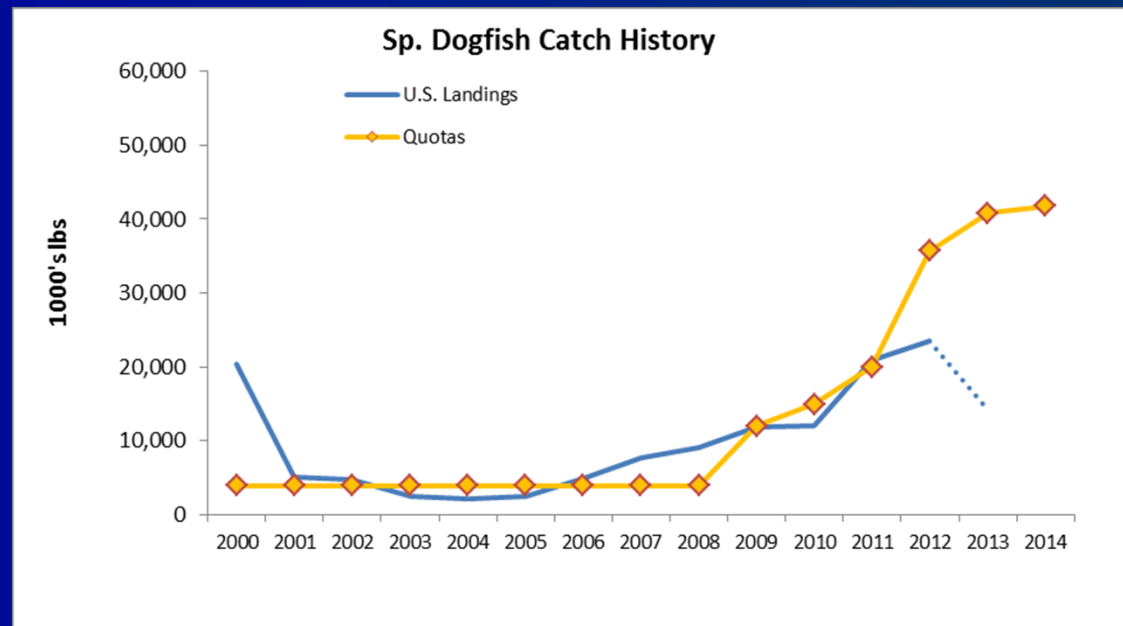
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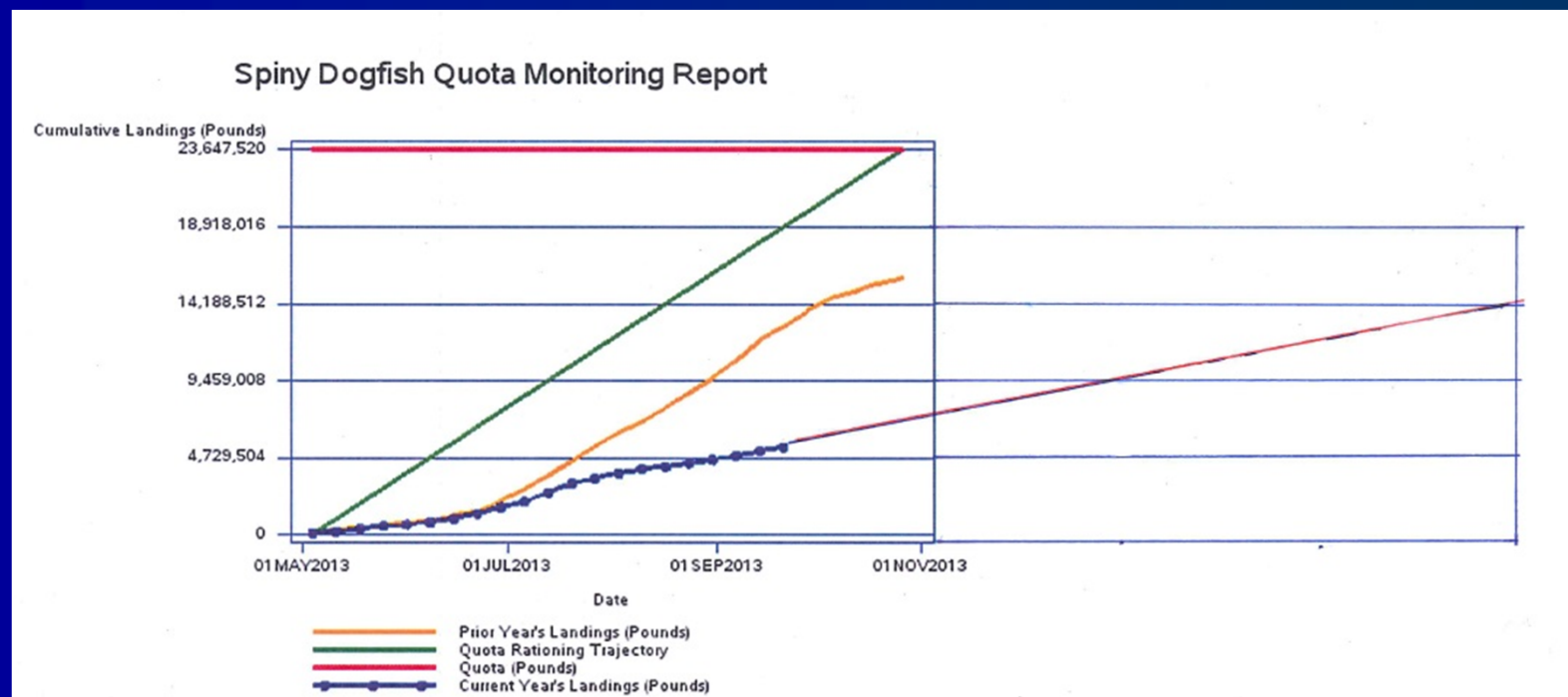
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Review

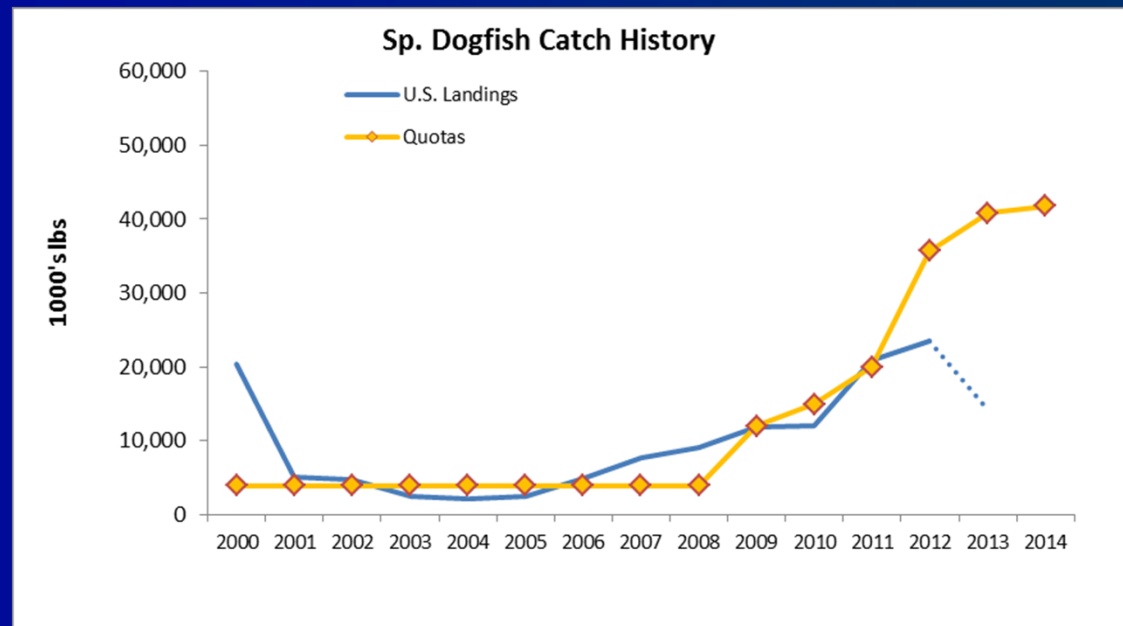


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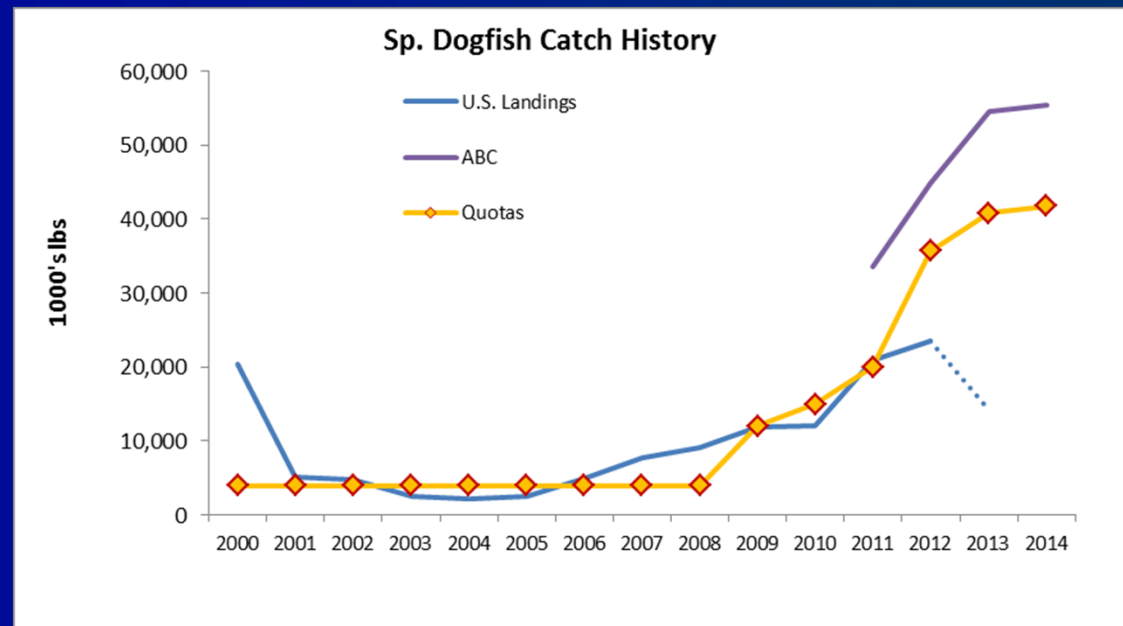


At current rate (273klb/wk), 34% of 2013 quota will be landed
 At last year's max rate (~800klb/wk), 62% of 2013 quota will be landed
 At ~800klb/wk, 99% of 2014 Quota will be landed.

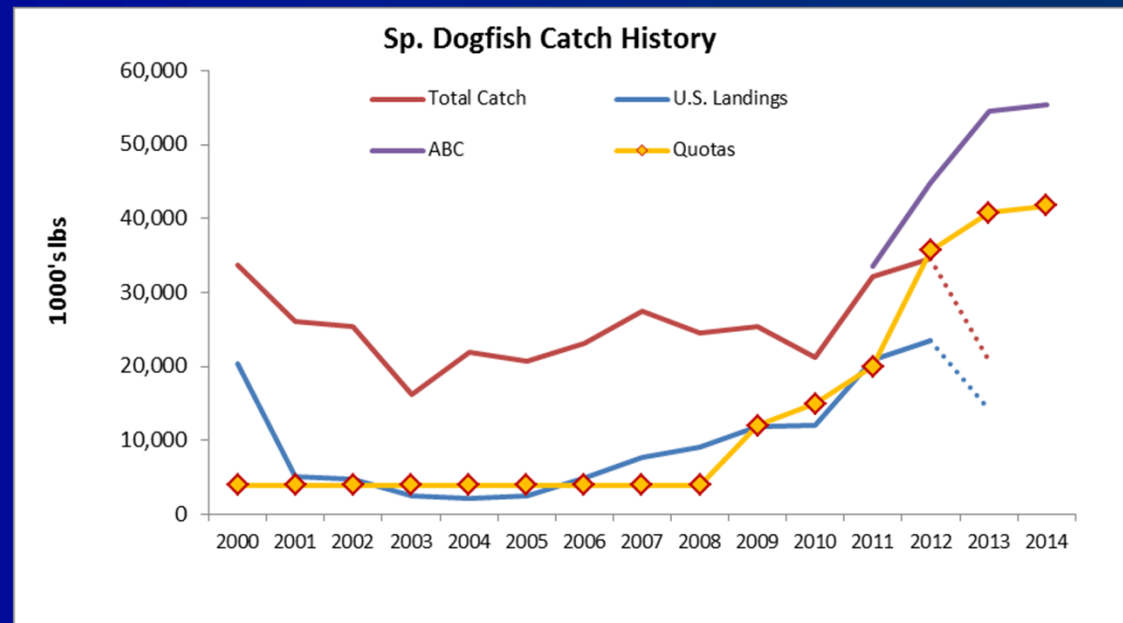
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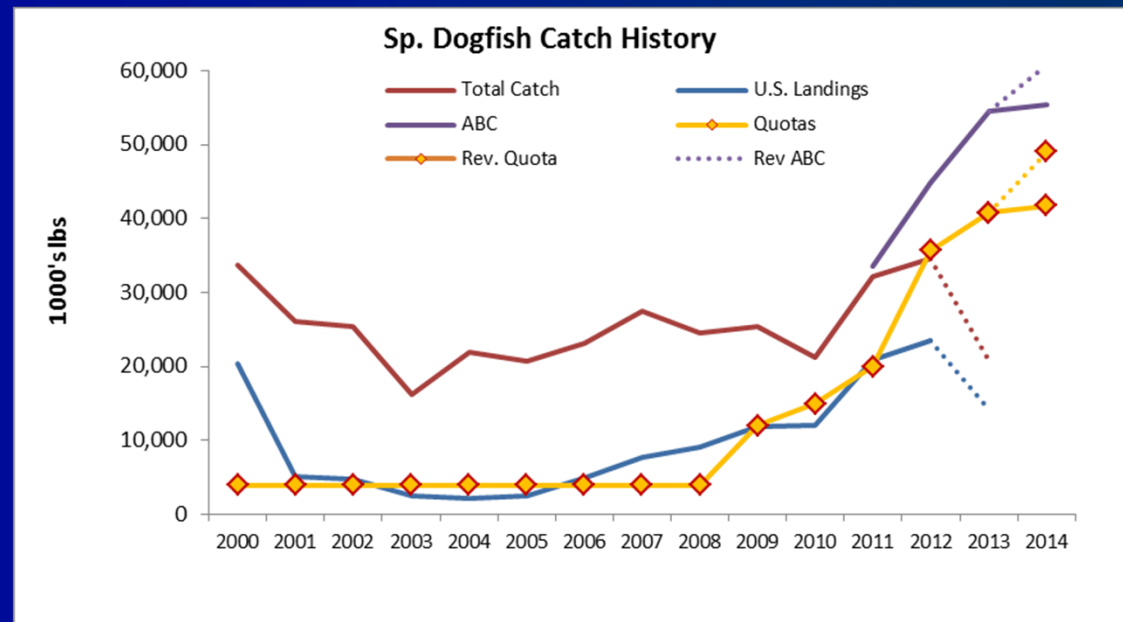
Review



Review



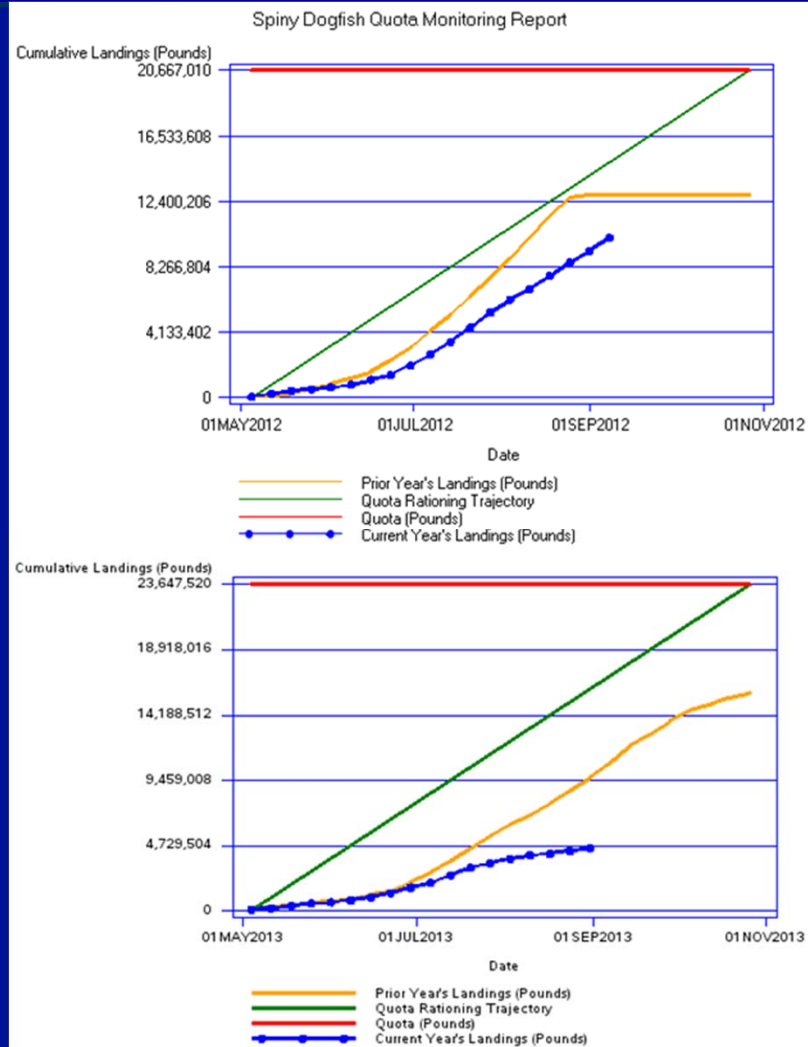
Review



Fishery Performance Report

- Price very low \$0.12/lb compared to \$0.22/lb
- Global market issues*
- A fish by any other name...
- Cod – dog competition
- Trip limit
- Limited Access
- Male dogfishery
- Stock Definition

Fishery Performance



Fishery Performance Report

- Price very low \$0.12/lb compared to \$0.22/lb
- Global market issues
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Summary

- No overfishing / Not overfished
- $ABC_{2014} = 25,154$ mt, $ABC_{2015} = 25,057$ mt
- $ABC_{2014*} = 27,596$ mt, $ABC_{2015*} = 28,310$ mt
- $ACL_{2014} = 25,073$ mt, $ACL_{2015} = 24,976$ mt
- Fishery underperforming (78% CQ_{2012} , 35% CQ_{2013})
- Will revisit again in 2014
- Recommend Status Quo ABC

Motions

- None needed if status quo
- Move to adopt for spiny dogfish in 2014 an ACL/ACT of 60.695 M lb resulting in a commercial quota of 49.037 M lb.
- Move to adopt for spiny dogfish in 2015 an ACL/ACT of 62.270 M lb resulting in a commercial quota of 50.612 M lb.
- Move to maintain 4,000 lb trip limits in 2014 and 2015.
- Move to allow up to 3% RSA in 2014 and 2015.

Motions

- Move to adopt for spiny dogfish in 2014 an ACL/ACT of 60.695 M lb resulting in a commercial quota of 49.037 M lb, and to adopt for spiny dogfish in 2015 an ACL/ACT of 62.270 M lb resulting in a commercial quota of 50.612 M lb.
 - Himchak/Deem
 - 19/0/0

Motions

- Move to adopt for spiny dogfish in 2015 an ACL/ACT of 62.270 M lb resulting in a commercial quota of 50.612 M lb.

Motions

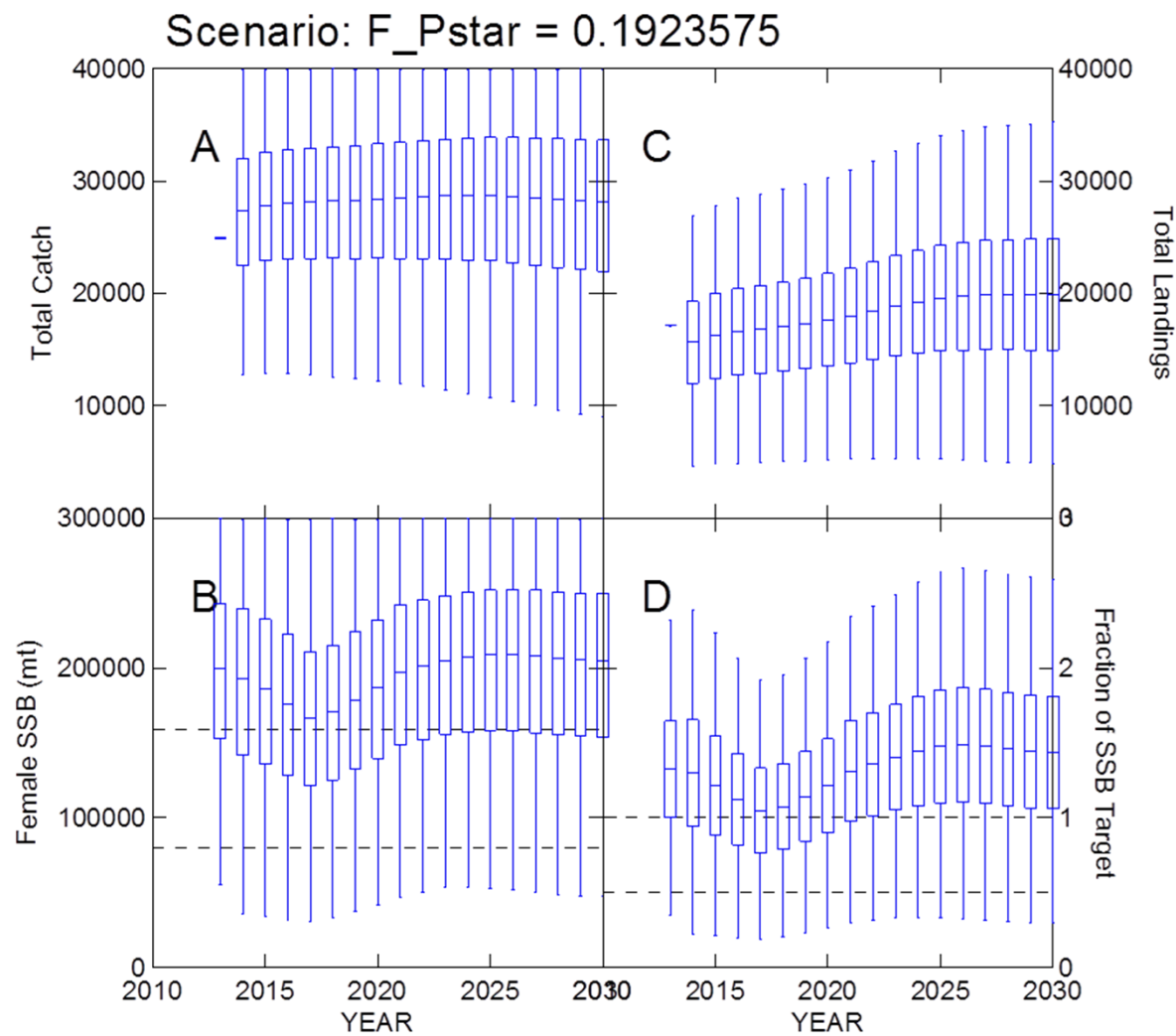
- Move to direct the AP and staff to explore the development of cumulative trip limits, or the elimination of trip limits.
 - Nolan/Kaelin
 - Approved by consent

- Move to allow up to 3% RSA in 2014 and 2015.
 - O'Reilly/Linhard
 - Approved by consent

Projections

	2014					2015					2016			
Percentile	<i>Catch</i>	<i>Landings</i>	<i>Discards</i>	<i>Female SSB</i>		<i>Catch</i>	<i>Landings</i>	<i>Discards</i>	<i>Female SSB</i>		<i>Catch</i>	<i>Landings</i>	<i>Discards</i>	<i>Female SSB</i>
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Projections



ABC

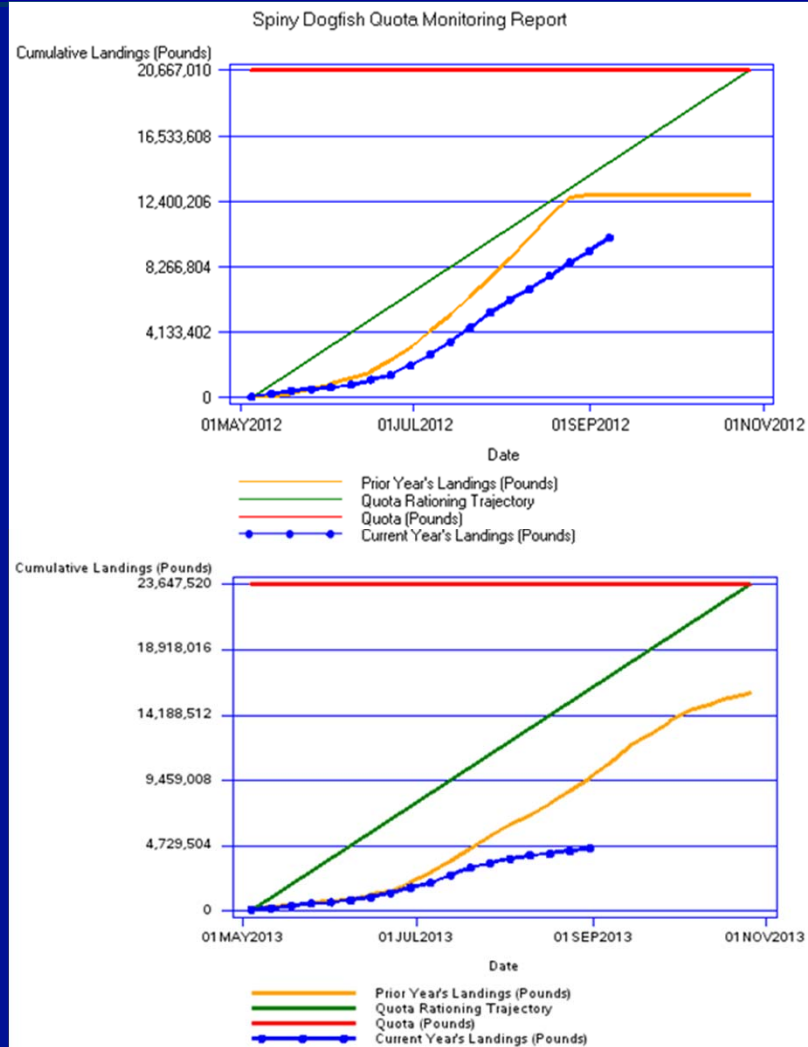
ABC

Typical		
OFL	32210	
B/Bmsy	1	
CV	100%	
sigma	0.832555	
p*	0.4	
ABC	26085	
ABC/OFL	0.809835	

Fishery Performance

Fishing year (May 1 - Apr 30)	Quota (M lb)		Landings (M lb)
	Federal	States'	
2000	4.0	n/a	8.2
2001	4.0	n/a	5.1
2002	4.0	n/a	4.8
2003	4.0	8.8	3.2
2004	4.0	4.0	1.5
2005	4.0	4.0	2.6
2006	4.0	6.0	6.6
2007	4.0	6.0	6.5
2008	4.0	8.0	9.0
2009	12.0	12.0	11.8
2010	15.0	14.4	14.5
2011	20.0	19.5	22.5
2012	35.7	35.7	28.0*

Fishery Performance



Summary

- No overfishing / Not overfished
- $B_{2012}/B_{MSY} > 1$
- $B_{2013}/B_{MSY} > 1$
- Target $F = 0.19258$, $ABC_{2014} = 25,154$ mt
- Catch at $F_{ABC-2014} = 27,631$, $P^* ABC_{2014} = 26,085$ mt
- Median c
- Fishery underperforming (78% $CommQuota_{2012}$)
- **Recommend Status Quo ABC**