



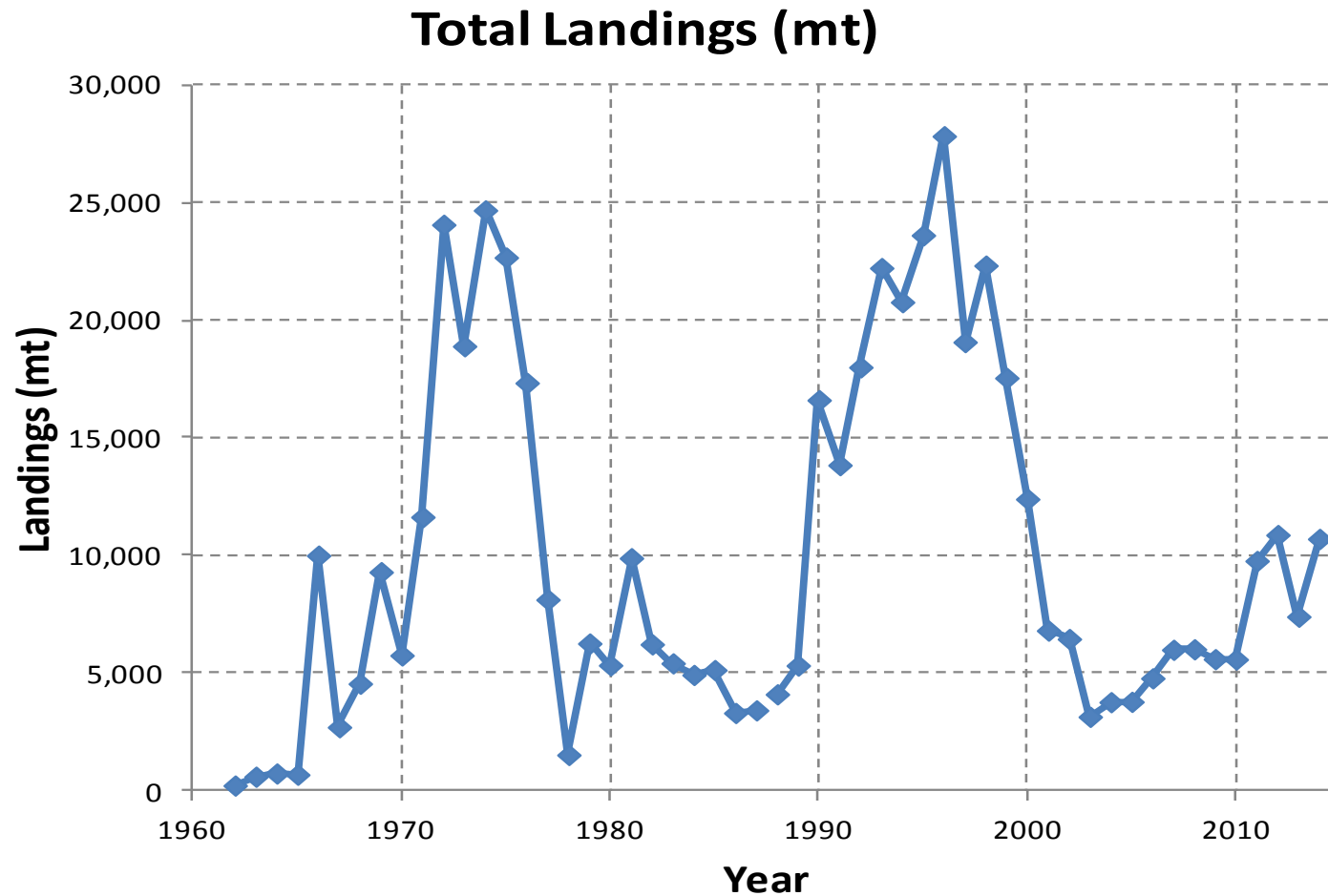
Dec 2015: Dogfish Specs

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Overview

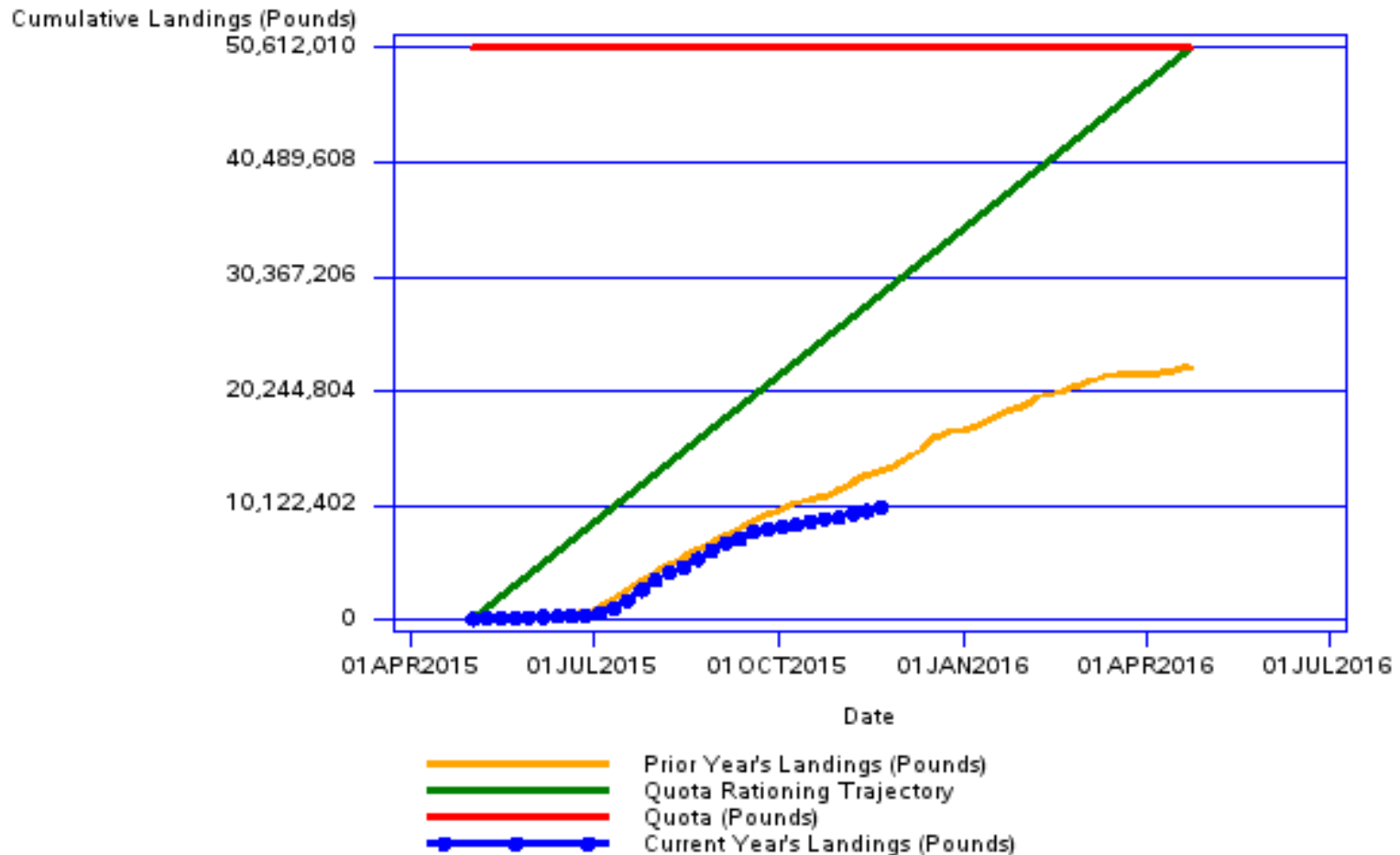
- Recent Catches
- Fishery Performance Reports
- Assessment Update Part 1
- ABC Part 1
- Assessment Update Part 2
- ABC Part 2
- Monitoring Committee Findings
- Motions

Dogfish Landings



Recent Landings – Nov 21

Spiny Dogfish Quota Monitoring Report



Recent Catches

			Landings
As of	11/21/2015	2016	Trending Below 2015
As of	Late April	2015	22,315,621
As of	Late April	2014	16,099,726
As of	Late April	2013	<u>27,979,613</u>
As of	Late April	2012	Quota Only 20,000,000, caught quota

Fishery Performance Report

- Markets, Markets, Markets
 - Price
- Boats have no problem catching trip limit
- Some processor restrictions (days)
- Male/Female Issues
 - Off shelf biomass

Fishery Performance Report

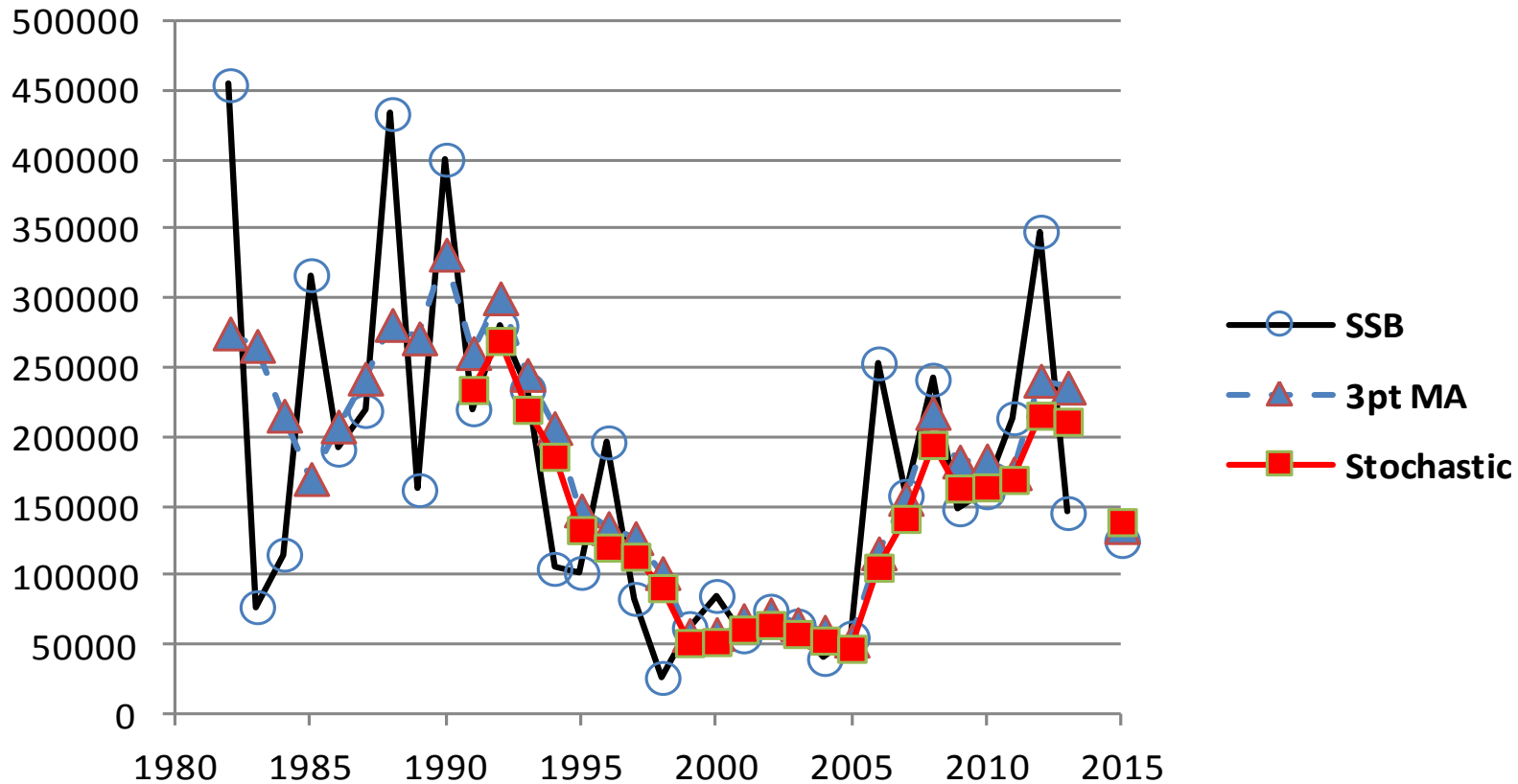
- Slow and steady approach
- Some interest in trip-limit changes
 - Some opposition
 - Regional impacts
- Export information
- Name change

Assessment Update Part 1

- Update:
 - Overfishing not occurring
 - F_{2014} : 0.214 (F_{MSY} : 0.2439)
 - Not overfished
 - B_{2015} : 138,997 mt (B_{MSY} : 159,288 mt)
 - 87% of target

SSB

Female spawning stock biomass Estimates 1982-2015



Why the Drop?

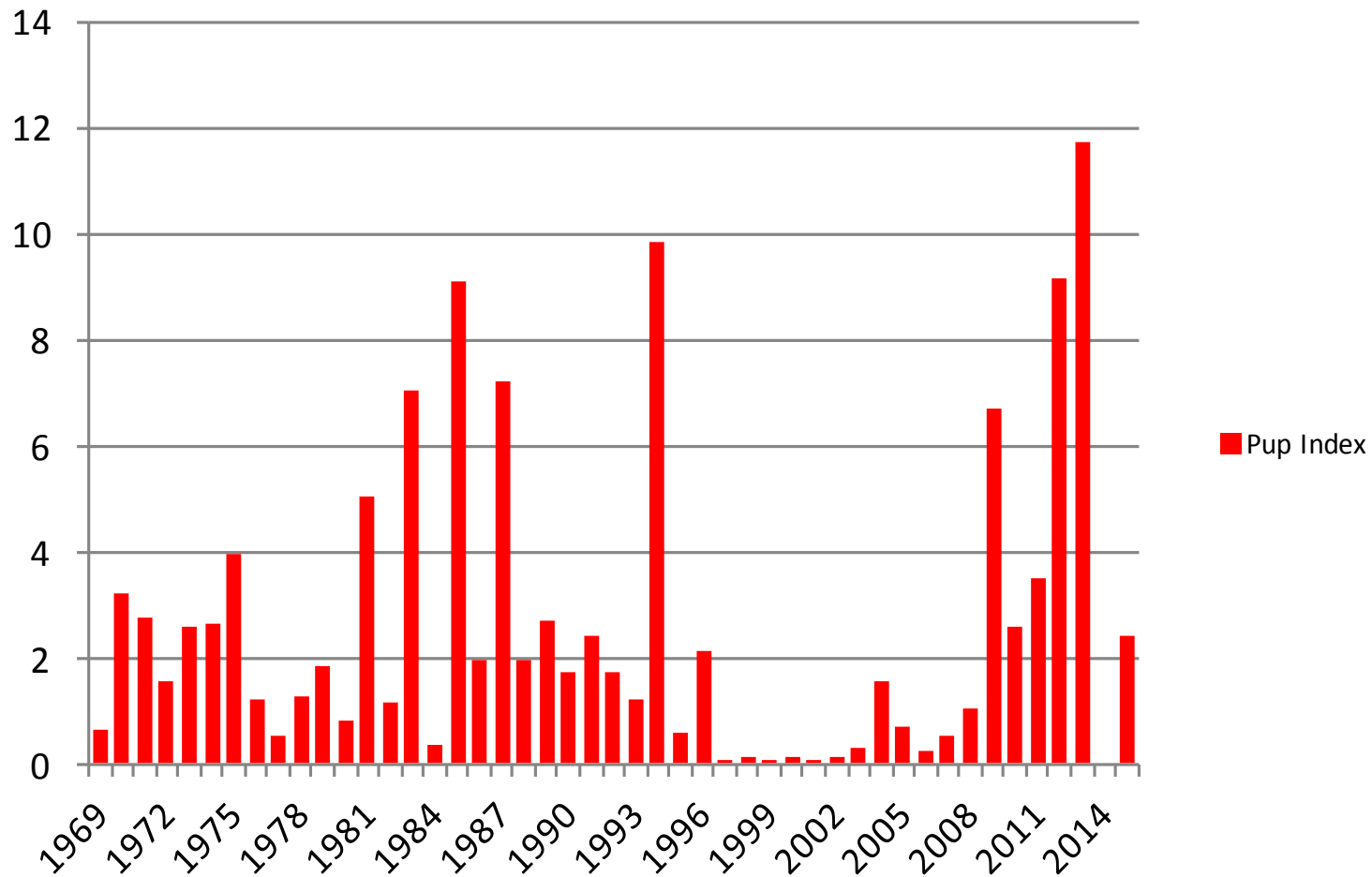
- 2 Parts
 - Pup Production Gap
 - Survey Variability

Why the Drop?

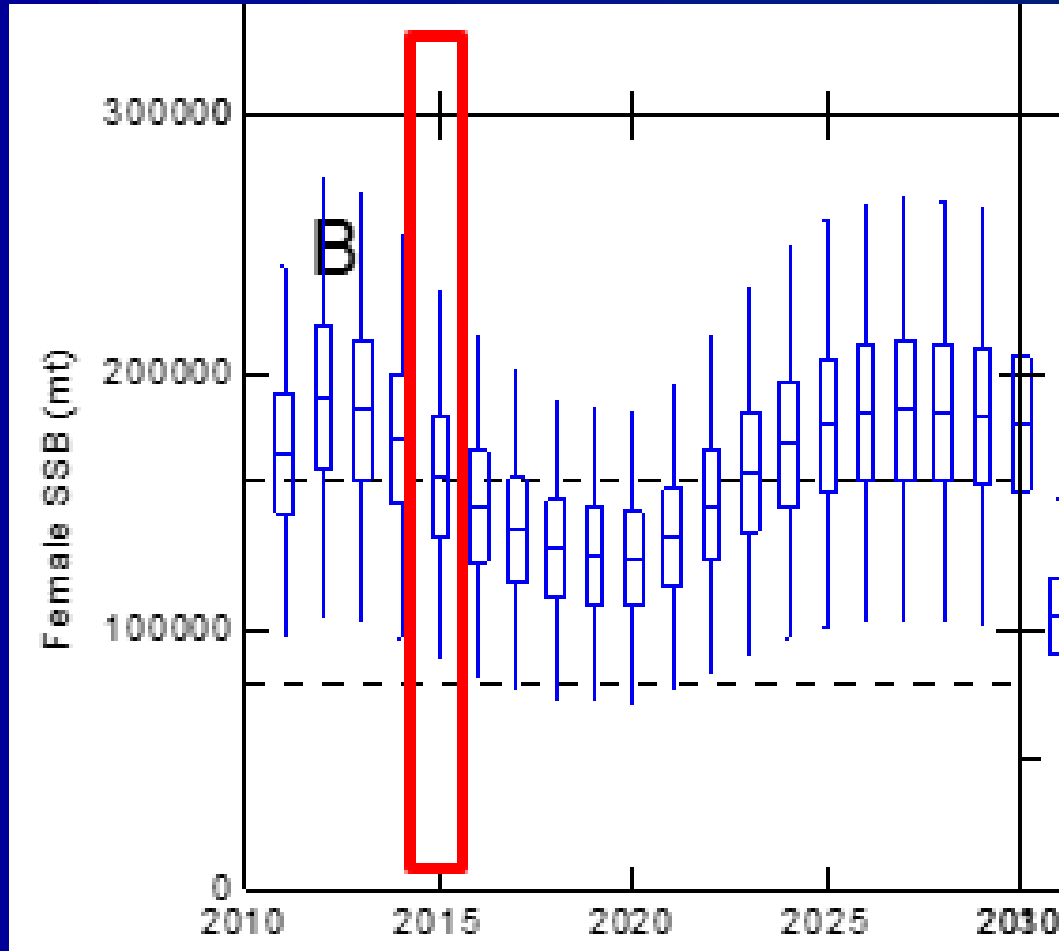
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Pup Production

Pup Index, 1968-2015



Pup Production



Predictions from 2011 status report. This assumes $F=0.1829$ which is about the average on exploitable female biomass since 2012

Why the Drop?

- 2 Parts
 - Pup Production Gap
 - Survey Variability

2012 Survey Very High

- Highest value, highest variance
- Once 2012 worked out of the 3-year average, biomass was almost certain to go down.
- 2013 and 2015 below average, missing 2014

Risk Policy

- When biomass is less than target, risk policy states need lower chance of overfishing
- To get a lower chance of overfishing, increase buffer = lower catch



September 2015 SSC Meeting

ABC Recommendations for
Spiny Dogfish

ABC

The SSC recommends a three-year specification of ABC.

Year	P*	ABC (mt)
2016	0.326	16,765
2017	0.297	16,526
2018	0.282	16,636

Stock biomass is projected to continue to decline from 2016 to 2019 because of poor recruitment in earlier years, before recovering again.



Management Measures

- Except for ex-officio industry representative, Monitoring Committee endorsed these findings as consistent with available data.

Table 2. Proposed spiny dogfish management measures for 2016-2018 fishing years.

Specifications	Basis	2016 (pounds)	2016 (mt)	2017 (pounds)	2017 (mt)	2018 (pounds)	2018 (mt)
OFL	Projected Catch at Fmsy	53,455,485	24,247	55,313,982	25,090	56,824,148	25,775
ABC	Council Risk Policy	36,960,498	16,765	36,433,593	16,526	36,676,102	16,636
Canadian Landings	= avg last 3 years (10,11,12)	143,300	65	143,300	65	143,300	65
Domestic ABC	= ABC – Canadian Landings	36,817,198	16,700	36,290,293	16,461	36,532,801	16,571
ACL	= Domestic ABC	36,817,198	16,700	36,290,293	16,461	36,532,801	16,571
Mgmt Uncert. Buffer	Ave pct overage since 2011	0	0	0	0	0	0
ACT	= ACL - mgmt uncertainty	36,817,198	16,700	36,290,293	16,461	36,532,801	16,571
U.S. Discards	=3 year average 12-13-14	11,494,167	5,214	11,494,167	5,214	11,494,167	5,214
TAL	ACT – Discards	25,323,030	11,486	24,796,126	11,247	25,038,634	11,357
U.S. Rec Landings	= 2014 estimate	68,343	31	68,343	31	68,343	31
Comm Quota	TAL – Rec Landings	25,254,687	11,455	24,727,782	11,216	24,970,291	11,326

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Assessment Update Part 2

- Is additional consideration of missing 2014 data warranted?
- Yes – Pierce Motion (15 13 12/11)
- SSC recommended using Kalman Filter

Assessment Update Part 2

- ...best available approach to overcome the data gap
- ...the Kalman filter provided an objective foundation for analyzing time series data, did not demonstrate a substantial retrospective pattern, and provided more stable estimates of survey abundance and hence catch advice

Assessment Update Part 2

Approach	2015 Female Stock Biomass Estimate (mt)		
	Median	10 %ile	90 %ile
Current method (3-yr moving average)	138,903	76,580	201,227
Council proposed method (5-yr average using 4 yrs of data)	189,705	92,430	286,980
Kalman filter	167,983	100,682	235,283

- Kalman has lowest overall catches
- Will be slow to respond to upticks in dogfish data; slow up, medium down

Assessment Update 2

Specifications	2016 (pounds)	2016 (mt)	2017 (pounds)	2017 (mt)	2018 (pounds)	2018 (mt)
OFL	64,414,664	29.218	na	na	na	na
New ABCs	52,066,572	23,617	50,805,528	23,045	49,901,633	22,635
Canadian Landings	143,300	65	143,300	65	143,300	65
Domestic ABC	51,923,272	23,552	50,662,228	22,980	49,758,333	22,570
ACL	51,923,272	23,552	50,662,228	22,980	49,758,333	22,570
Mgmt Uncert. Buffer	0	0	0	0	0	0
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U.S. Discards	11,494,167	5,214	11,494,167	5,214	11,494,167	5,214
TAL	40,429,105	18,338	39,168,060	17,766	38,264,165	17,356
U.S. Rec Landings	68,343	31	68,343	31	68,343	31
Comm Quota	40,360,761	18,307	39,099,717	17,735	38,195,822	17,325

Management Measures

- Monitoring Committee
- Trip Limit
 - Not a biological issue
 - Variety of perspectives in industry & across sectors
 - Consider region-specific impacts

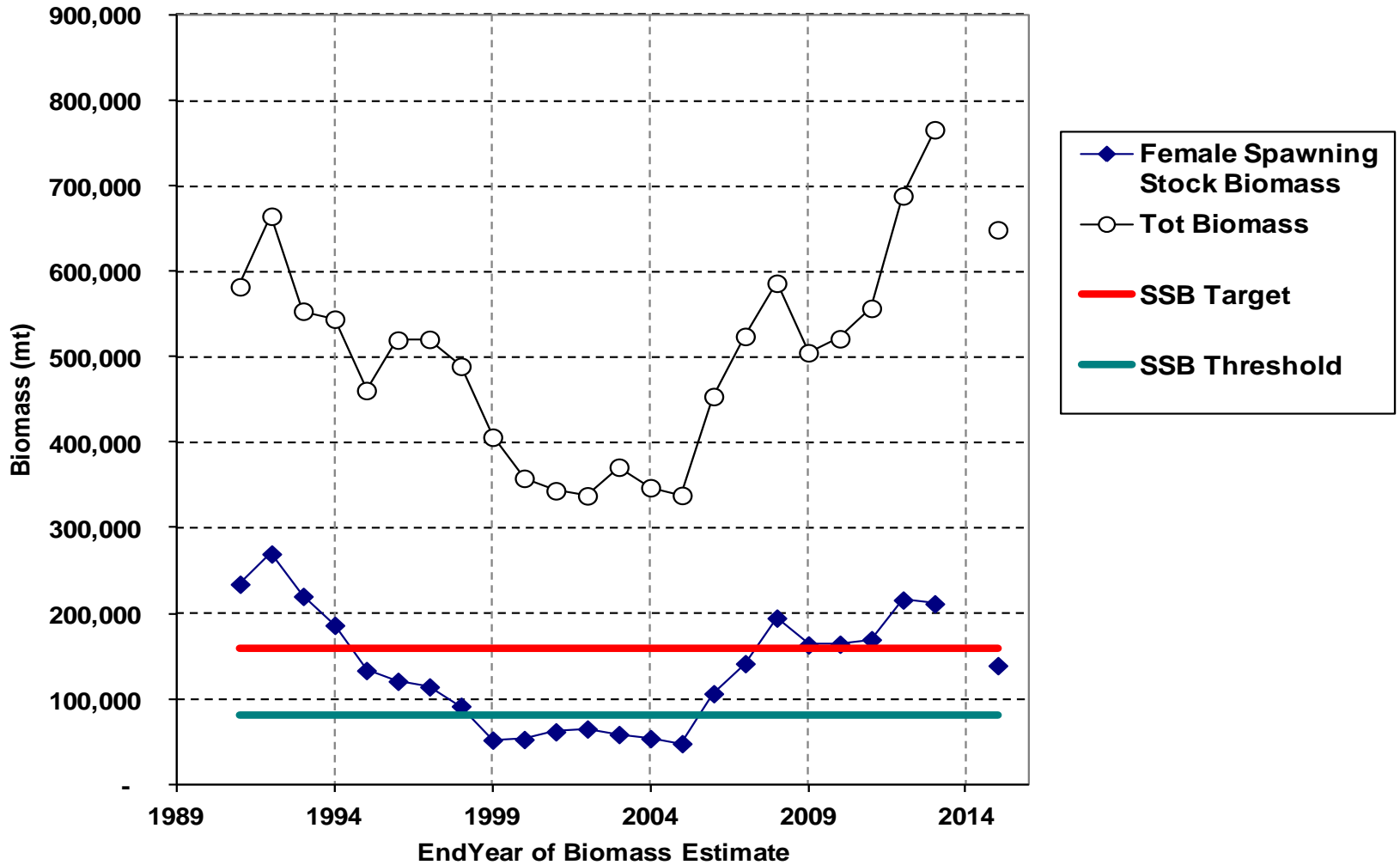
Management Priorities

- Brought up by GARFO
- Not noticed as topic for Monitoring Committee meeting

Discussion/Motions

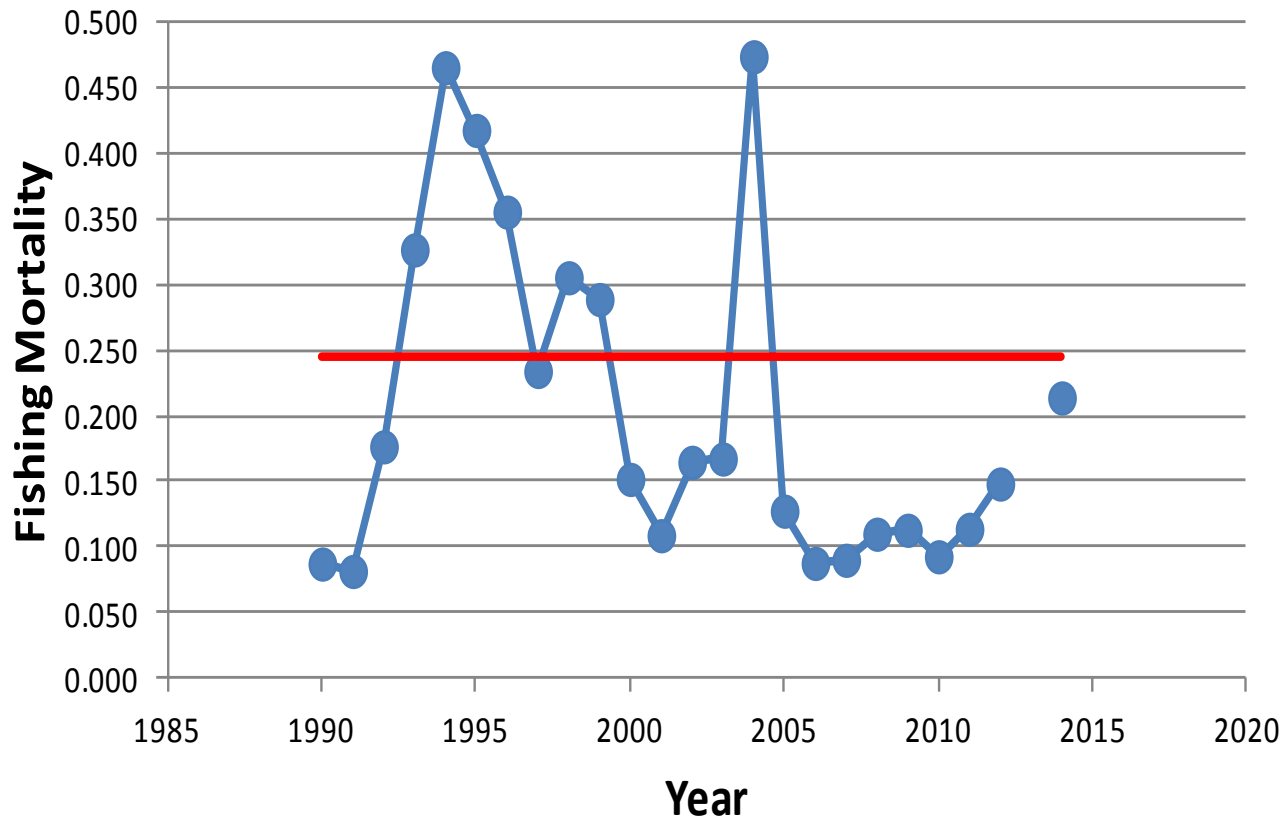
SSB

Stochastic Stock Biomass Estimates, 1990-2015

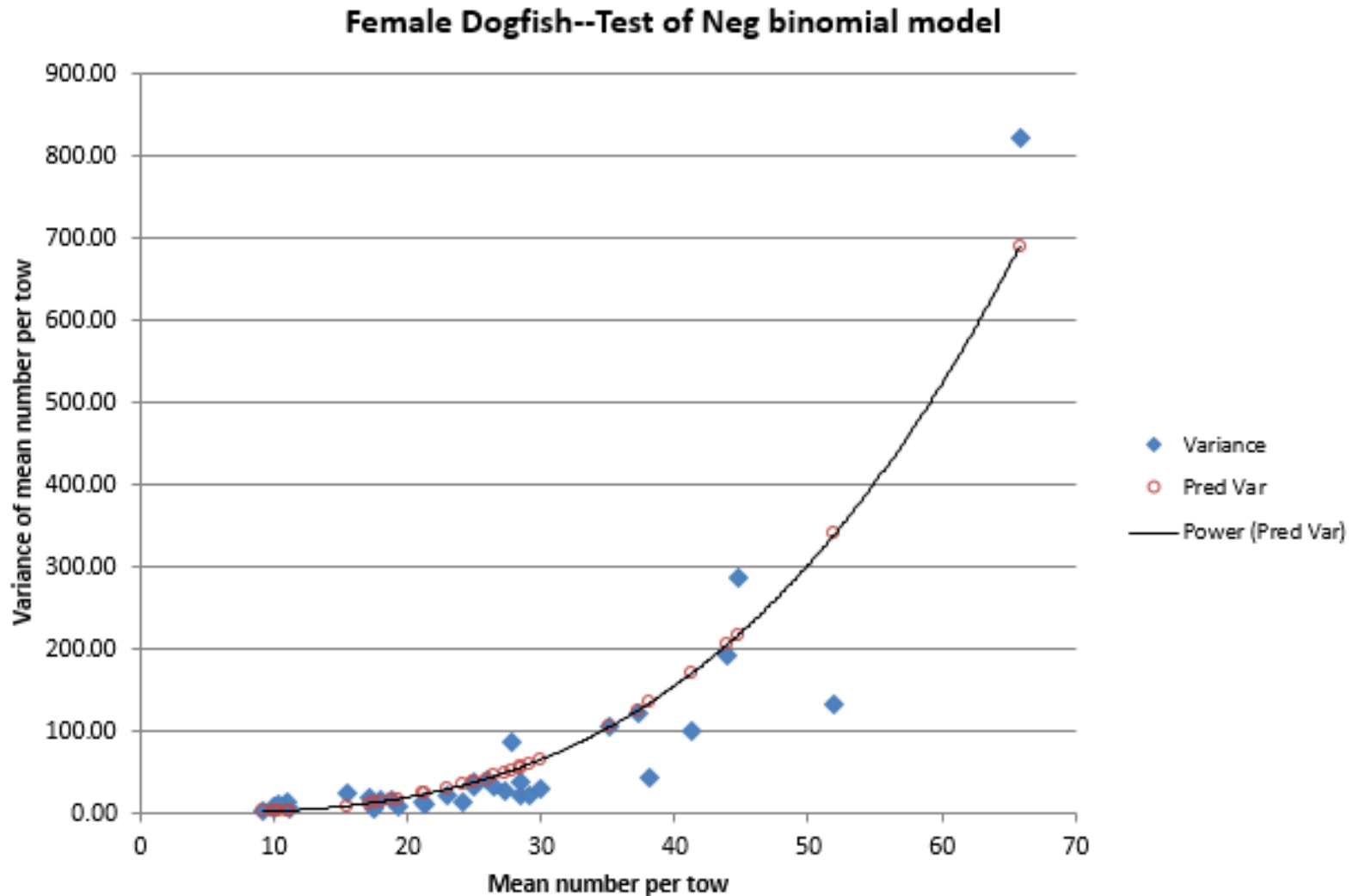


Fishing Mortality

Fishing Mortality Rate based Female Catch
on Exploitable Female Biomass



2012 Survey Very High



Most Significant Sources of Scientific Uncertainty

- The incomplete 2014 NEFSC bottom trawl survey.
- 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.
- Projection model assumption of time-invariant selectivity estimated from data up to 2008.
- Assumption of constant pup survival and pup production rates.
- Total discard estimates and estimated mortality of discarded dogfish.



Next Year the SSC would like to look at:

- 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
- Spatial distributions of catch and survey abundances.



SSC-derived CV for OFL

- F_{msy} proxy = 0.2439.
- **OFL = 24,247 mt**, based on the projected biomass in 2016.
- Assumes OFL is lognormally distributed with a mean as specified and a coefficient of variation of 100%.



Risk Policy Impact - 2016

- Risk Policy for lower biomass (87%)
 - 32.6% chance of overfishing =
16,765 mt
- 40% Chance of overfishing
 - 19,660 mt (2,895 mt higher)
(6.4 million pounds)