

# SSC Report to NEFMC

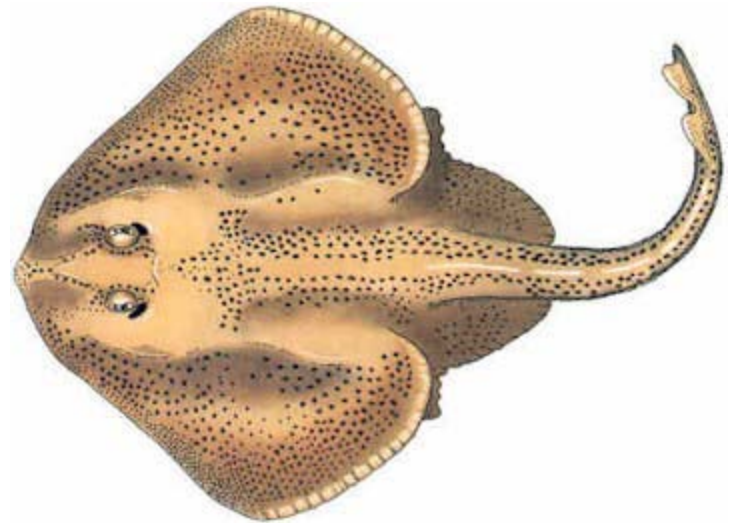
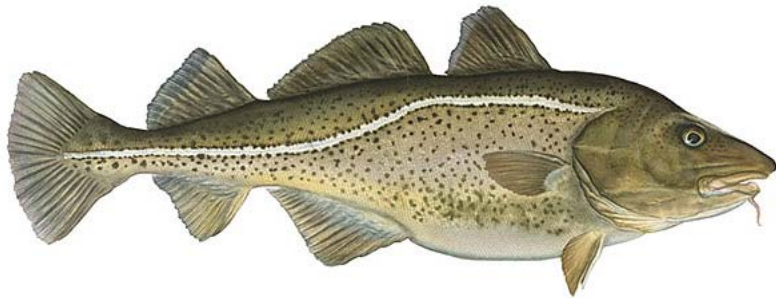
Dr. Jake Kritzer, Vice-Chair

June 23, 2011

Portland, ME

# Agenda for June 14-15 meeting

- Advise Groundfish APDT on projection analyses.
- Set Skate ABC for 2012-2013.
- Other business:
  - Risk policy.
  - SSC communications.

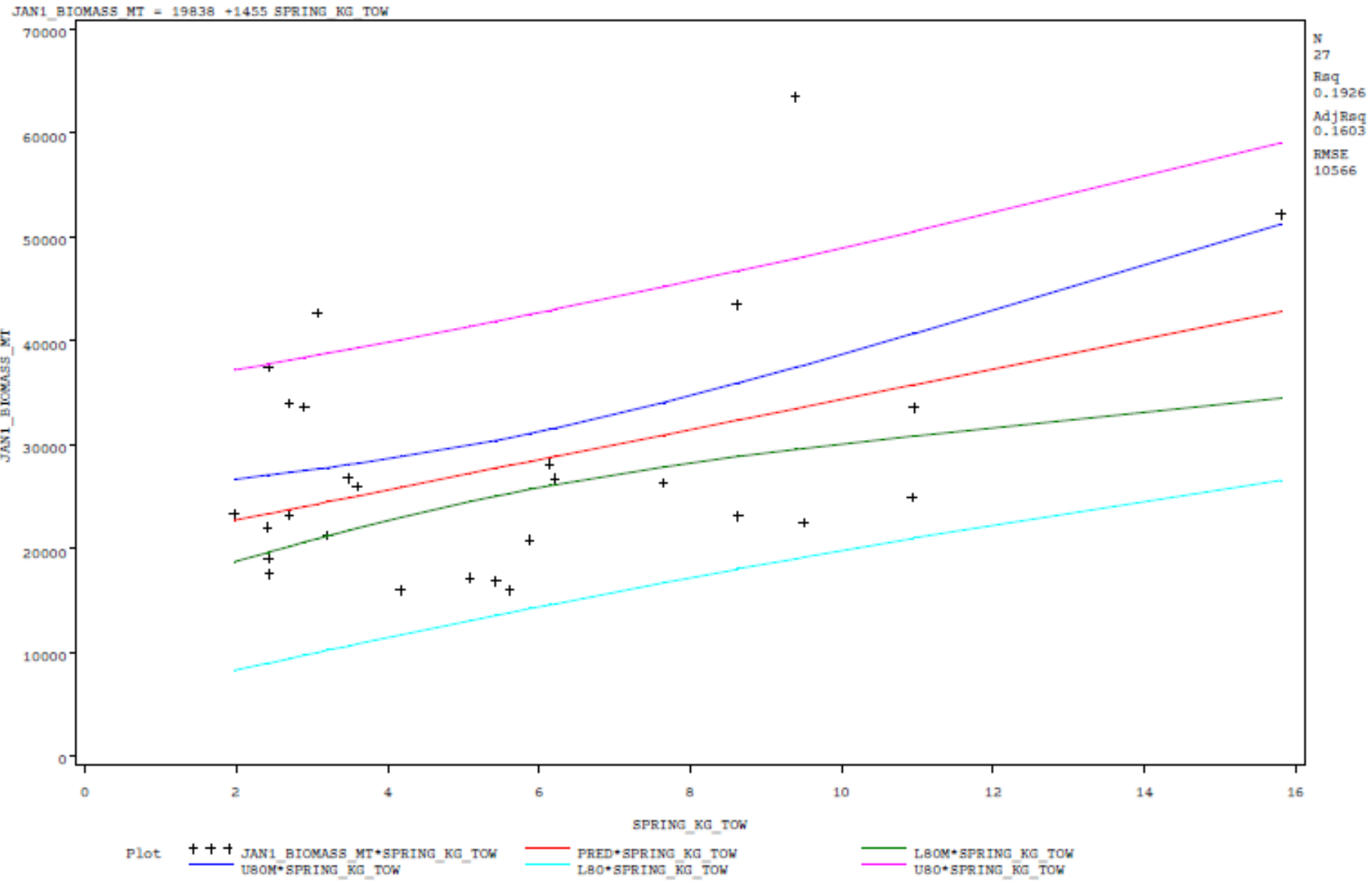


# **GROUND FISH PROJECTIONS**

# Background

- ABCs needed for 19 stocks:
  - Four with new assessments
  - Three index-based stocks
  - Twelve stocks without new assessments
- For 12 stocks, 2012-2014 projections extend 5-7 years beyond GARM III terminal year (2007).
- Two analyses by APDT reported to SSC:
  - Regression of survey index on assessment biomass.
  - Evaluation of projection performance.

Species: cod  
 Stock: gom  
 Dependent variable: jan1\_biomass\_mt  
 Independent variable: spring\_kg\_tow



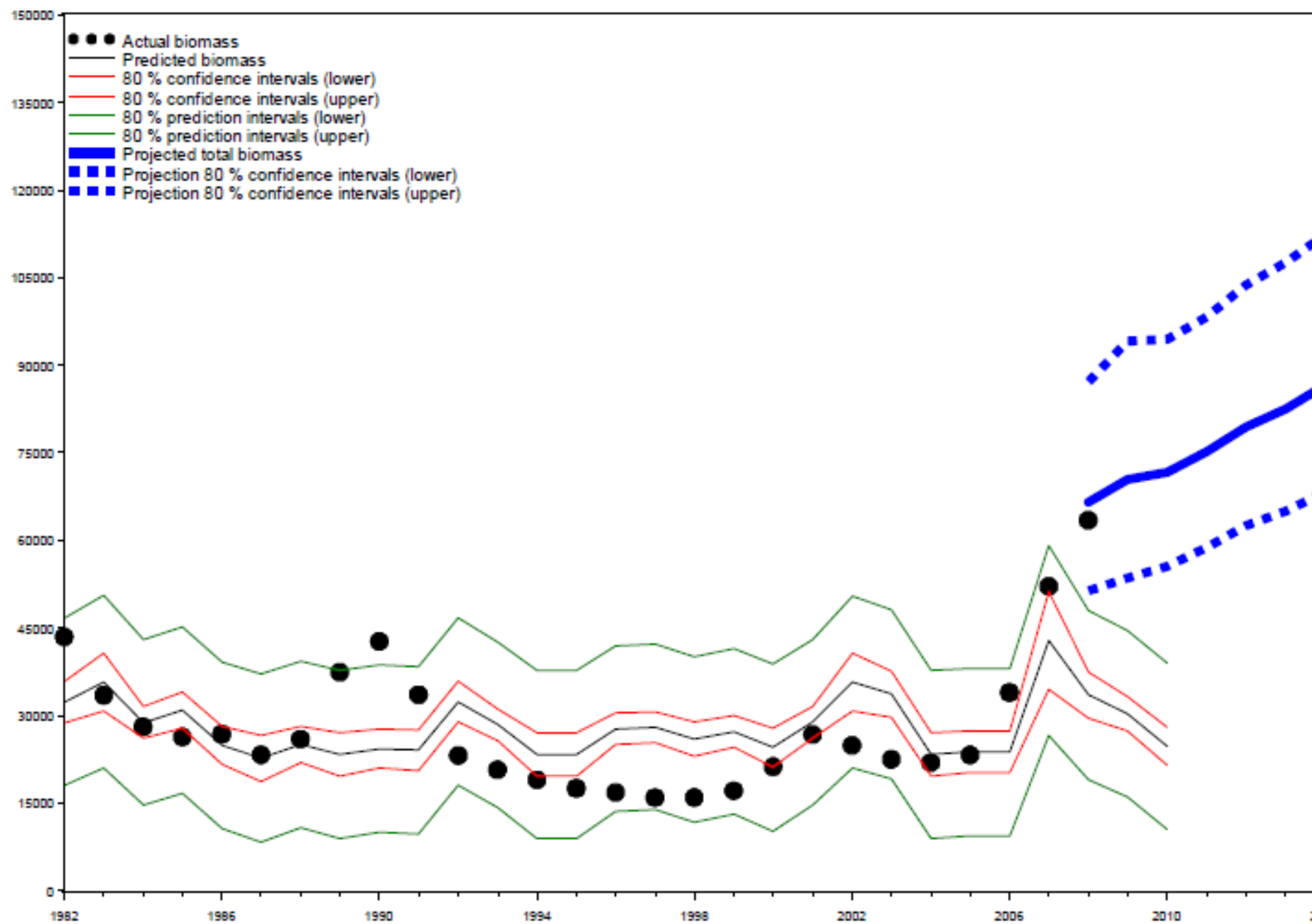
Stock	Biomass	Spring	Spring Ln	Autumn	Autumn Ln	§
GB Cod	Jan 1	-0.04	-0.07	-0.08	-0.07	
GB Cod	Mean	-0.09	-0.09	0.01	0	
GB Haddock	Jan 1	0.24	0.44	<b>0.81</b>	<b>0.77</b>	
GB Haddock	Mean	0.19	0.4	<b>0.81</b>	<b>0.77</b>	
GOM Cod	Jan 1	0.16	0.06	0.02	0.14	
GOM Cod	Mean	0.11	-0.02	-0.04	0.06	
GOM Haddock	Jan 1	0.61	0.72	0.58	0.75	
GOM Haddock	Mean	0.57	0.66	0.67	0.72	
SNMEA Yellowtail	Jan 1	0.64	0.61	0.6	0.59	
SNMEA Yellowtail	Mean	0.53	0.58	0.59	0.62	
CCGOM Yellowtail	Jan 1	0.13	0.17	0.03	0.15	
CCGOM Yellowtail	Mean	0.09	0.13	0.11	0.18	
American Plaice	Jan 1	0.75	0.62	0.45	0.18	
American Plaice	Mean	0.74	0.57	0.55	0.35	
Witch	Jan 1	0.24	0.23	0.33	0.29	
Witch	Mean	0.08	0.05	0.34	0.35	
White Hake	Jan 1	0.34	0.34	0.34	0.32	
White Hake (2)	Jan 1	0.35	0.36	0.36	0.34	

Green boldfaced font means  $r^2 \geq 0.5$

Yellow highlight means regression significant ( $p \leq 0.05$ )

Note: Acadian redfish will be analyzed in a subsequent report

dependent variable: jan1\_biomass\_mt  
independent variable: spring\_kg\_tow  
predicted variable: total



# Evaluation of projections

- Use 2010 GB YTF assessment as “truth” to compare with projections from 2001.
- Three approaches trialed:
  - Simple projection from 2001 assessment
  - Adjust 2001 NAA to account for retrospective
  - Fix NAA in 2001 at values from 2010 assessment
- Preliminary lessons learned:
  - Starting conditions matter.
  - Recruitment disparities are large.
  - Potential for reasonable performance to 5 years, but >5 is less likely.

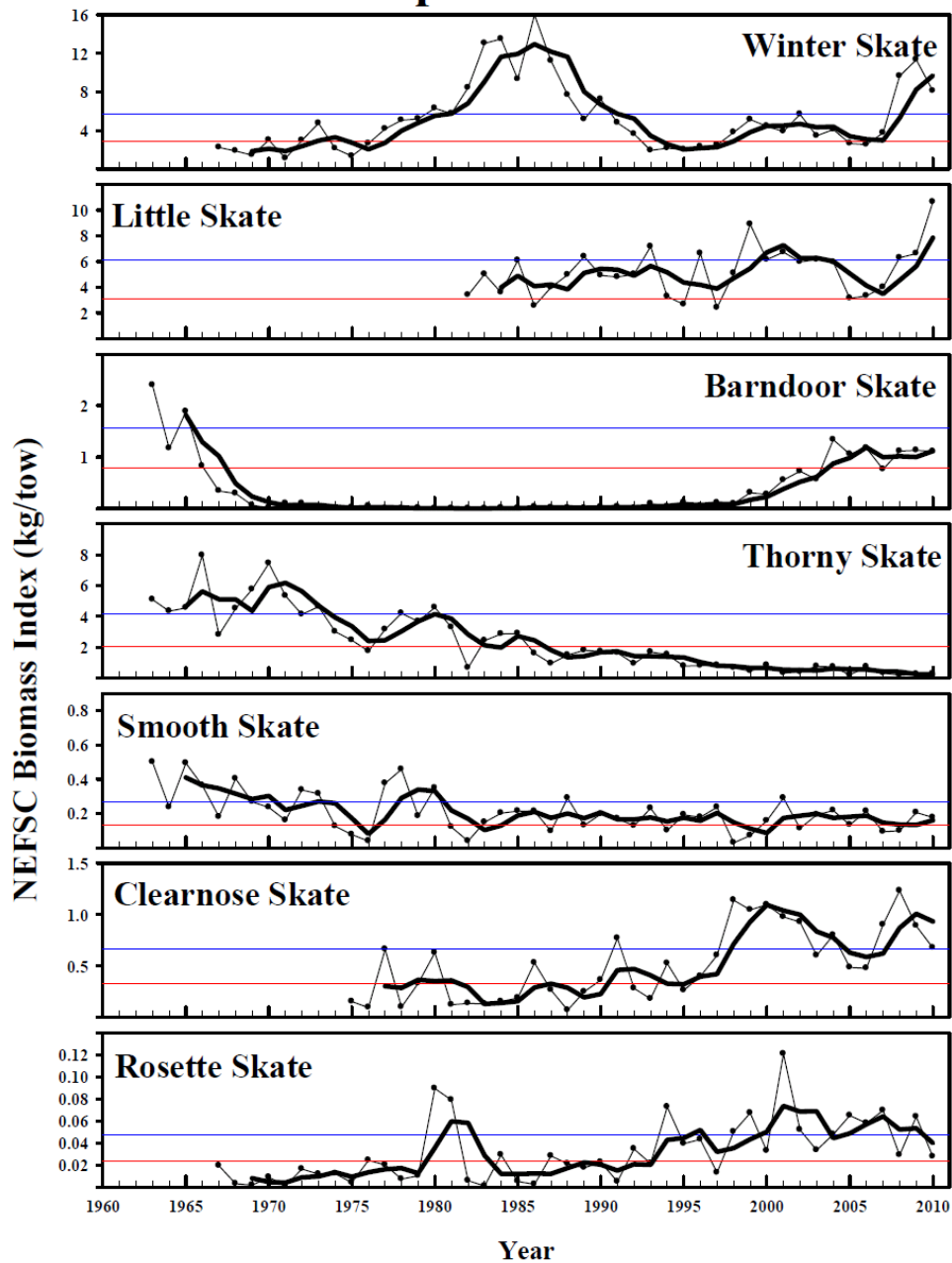


# SSC Advice

- Regression results suggest approaches other than survey biomass needed to evaluate projections.
- Continue and expand evaluation of projections, and seek causes of deviations.
- Adjustments could be made upwards or downwards in principle, but details of analysis will dictate final determination.
- At what point does work done to improve projections equal or exceed that needed for new assessments?
- Develop non-projection-based approaches as alternatives.

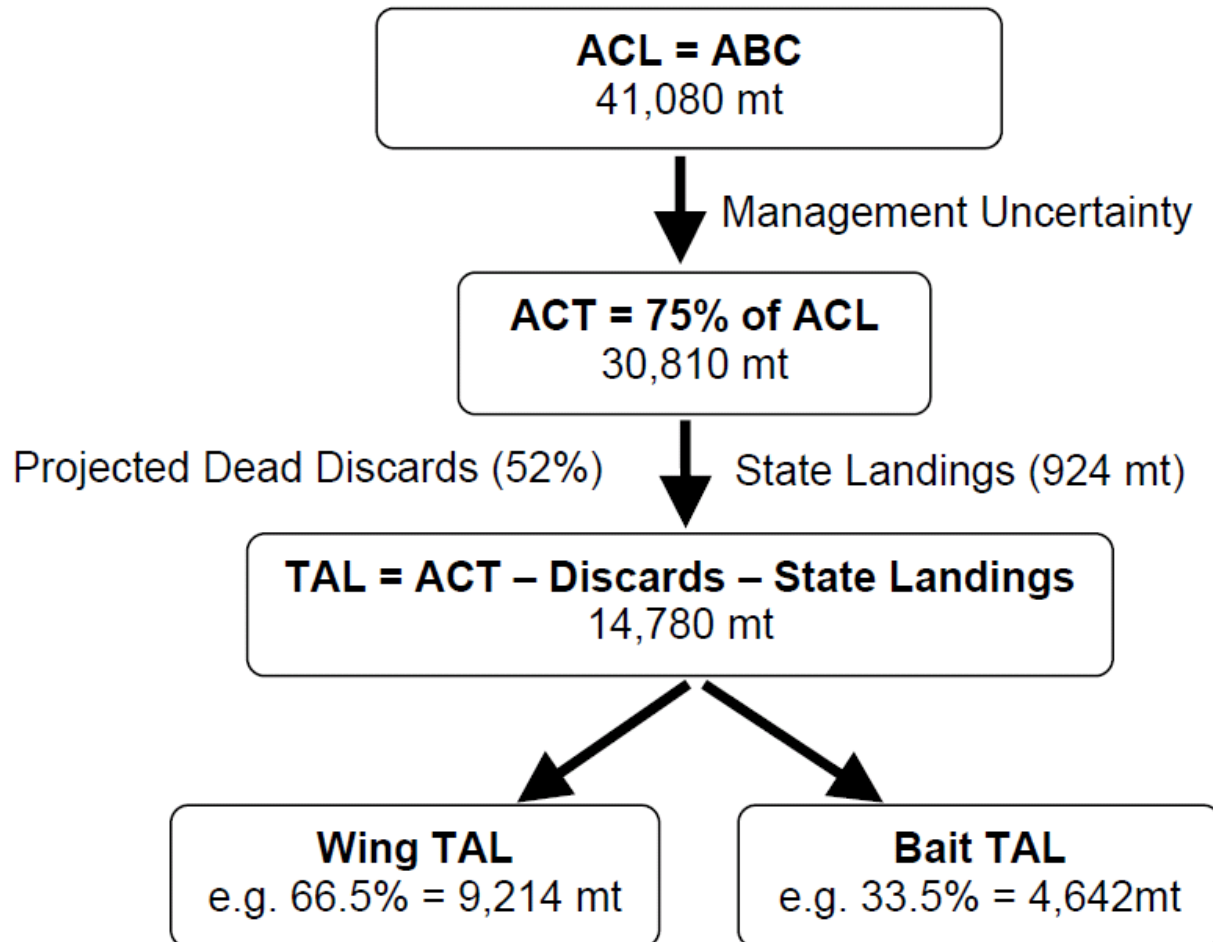
**SKATE ABC**

# Skate Complex Biomass Indices



# Specification process & current values.

Figure 1. Diagram of skate ACL specifications.



# Discard mortality estimates.

Source	Location	Gear Type	Skate/Ray Species	Discard Mortality Rate (%Dead)
Stobutzki et al. (2002)	N. Australia	Prawn Trawl	56 elasmobranch species	<b>56% (range = 10-82%)</b>
			All rays	<b>61%</b>
			Dasyatidae	<b>59%</b>
			Gymnuridae	<b>41%</b>
			Rhynchobatidae	<b>10%</b>
Laptikhovskiy (2004)	Falkland Islands	Squid Trawl	<i>Bathyraja albomaculata</i>	<b>28.6%</b>
			<i>B. brachiurops</i>	<b>45.4%</b>
			<i>B. griseocauda</i>	<b>100%</b>
			<i>B. macloviana</i>	<b>100%</b>
			<i>B. magellanica</i>	<b>40%</b>
			<i>Bathyraja sp.</i>	<b>25%</b>
			<i>Psammobatis sp.</i>	<b>40%</b>
Benoit (2006)	Gulf of St. Lawrence	Bottom Trawl	<i>Leucoraja ocellata</i>	<b>50%</b>
Enever et al. (2009)	Bristol Channel, UK	Bottom Trawl	4 skate species	<b>mean = 45%</b>
			<i>Leucoraja naevus</i>	<b>67%</b>
			<i>Raja microocellata</i>	<b>49%</b>
			<i>Raja brachyura</i>	<b>45%</b>
			<i>Raja clavata</i>	<b>41%</b>
Benoit (2010)	Gulf of St. Lawrence	Scallop Dredge	<i>Leucoraja ocellata</i>	<b>10%</b>
			<b>MEAN TRAWL</b>	<b>50%</b>

Tow Duration	2h			3-4 hr			Total		Pooled
	N tows	Dead	Alive	N tows	Dead	Alive	Dead	Alive	%Mortality
Little	6	18	61	4	17	79	35	140	20%
Winter	11	3	47	11	21	124	24	171	12%

# SSC Advice

- Set ABC/ACL using current control rule and new discard mortality estimate for little skate and winter skate to value of **50,435 mt.**
- Reconsider strategy for managing skates, including but not limited to:
  - Development of control rule tied to biomass/stock status.
  - Development of ABCs for individual species and/or area-based stock units.
  - Development of MSY reference points or proxies.

**OTHER BUSINESS**

## Risk policy:

- Discussed and supported a process for developing a “risk policy” for setting ABC suggested by the Council staff. The staff will communicate its recommendation to the Executive Committee (information item C.1)

## Communications (w/ Council + stakeholders):

- Hold joint meeting(s) with Council.
- Work with Council members and staff in addressing recommendations in regional audit (e.g., participate in listening sessions?).
- Field visits to meet with industry and other stakeholders (formal or informal).
- Receive reports from APs on broader trends in fishery (e.g., market dynamics), akin to MAFMC.