

**NOAA
FISHERIES**

Gulf of Maine Cod and Haddock: Review of the Recreational Bioeconomic Model and Potential AMs for FY2015

Scott Steinback and Min-Yang Lee

¹NOAA Fisheries, Northeast Fisheries Science Center, Woods Hole, MA

Groundfish RAP Meeting, January 22, 2015

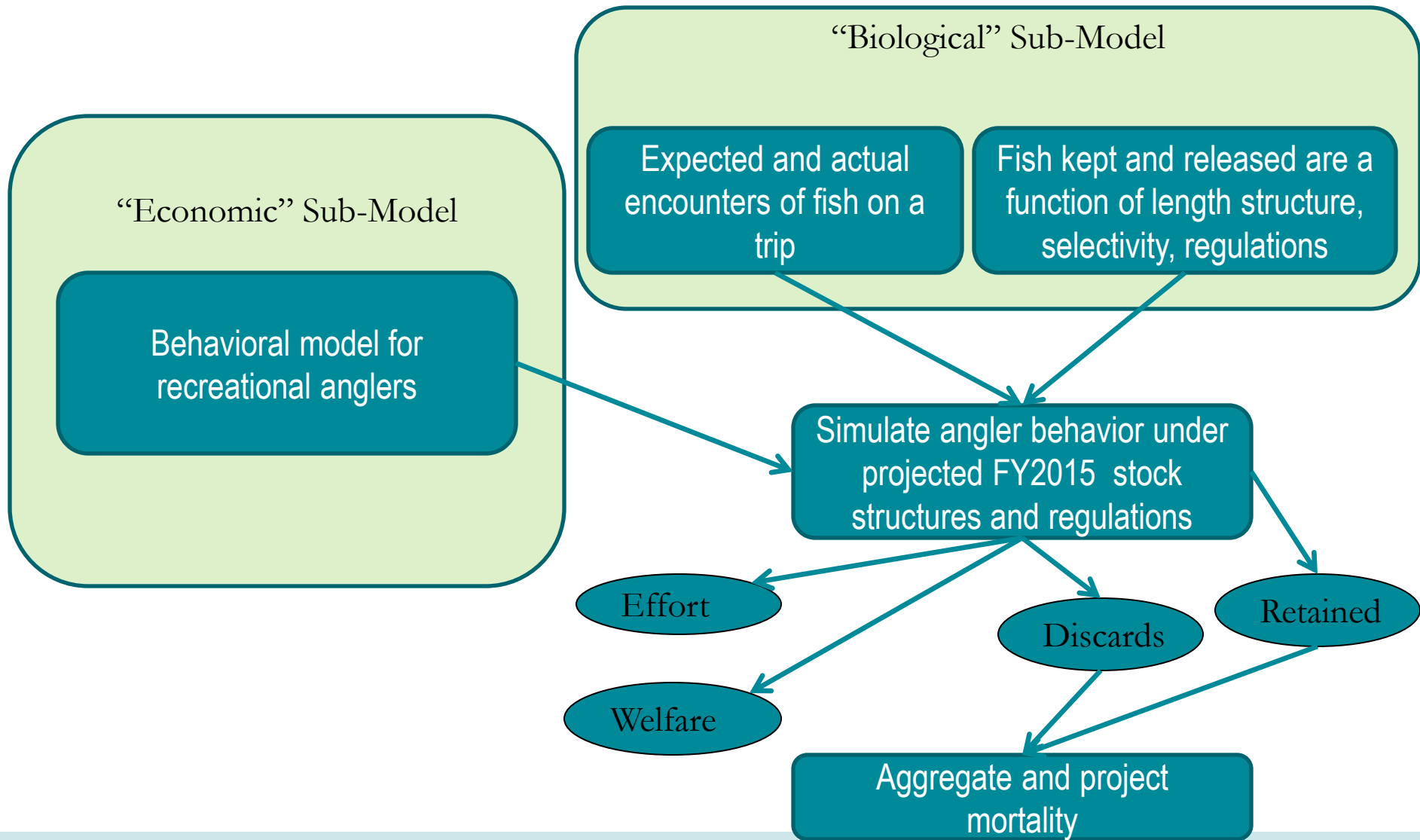
Bioeconomic Model

- Joint Mid-Atlantic and New England Council SSC review conducted in 2012.
- Used to set recreational AMs for GOM cod and haddock in FY2013 and FY2014

Bioeconomic Model

- Predicts how changes in management measures for GOM cod and haddock alter angler fishing effort and recreational fishing mortality in the Gulf of Maine

Model Overview



Evaluation of Mortality Predictions

GOM Cod	Actual (mt)	Model (mt)
FY2013	610	409 (33% lower)
FY2014*	561	422 (25% lower)

Modifications

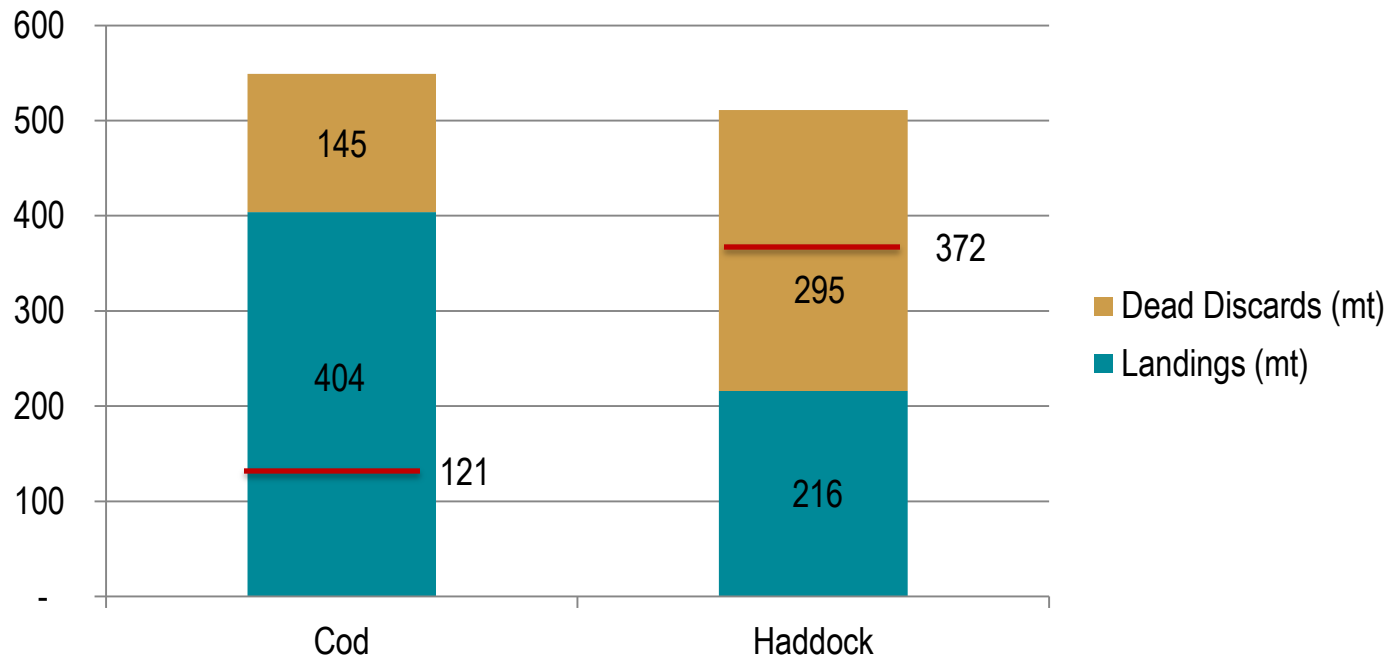
- FY2014 projections incorporated size limit noncompliance
- FY2015 projections incorporate bag limit noncompliance and the algorithm for how trips are retained in the simulation was changed

FY2015 Projection Uncertainty

- No consideration of potential avoidance behavior
 - If anglers are able to avoid cod, discard mortality will be lower than projected
- FY2015 mortality projections derived from incomplete, preliminary FY2014 data
- Noncompliance?
- Model Uncertainty: economic model, biological projections

FY2015 Status Quo Mortality Projections

Species	Possession Limit	Minimum Size Limit	Season (Open)
GOM Cod	9	21"	April 16 – Aug 31
GOM Haddock	3	21"	May 1 – Aug 31, Dec 1 – Feb 28



Medians of 100 model runs

195,295 angler trips

FY2015 Simulation Projections

Cod discard mortality rate = 0.30

Haddock discard mortality rate = 0.50

Option	Cod Bag	Had Bag	Had Size	Had Open Season	Cod Kept mt (Median)	Cod Release Mortality mt (Median)	Had Kept mt (Median)	Had Release Mortality mt (Median)	% Under	% Under	Trips (Median)
									Cod ACL (out of 100 trials)	Had ACL (out of 100 trials)	
1	0	3	21"	May – Aug	52	197	183	247	0	0	169,898
2	0	2	21"	May – Aug	52	195	151	216	0	93	168,320
3	0	3	19"	May – Aug	52	196	275	117	0	0	173,358
4	0	3	17"	May – Aug	54	204	300	41	0	100	173,534

GOM cod FY2015 Rec sub-ACL = 121mt

GOM haddock FY 2015 Rec sub-ACL = 372mt

FY2015 Simulation Projections

Let's Assume.....

Cod discard mortality rate = 0.10

Haddock discard mortality rate = 0.25

Option	Cod Bag	Had Bag	Had Size	Had Open Season	Cod Kept mt (Median)	Cod Release Mortality mt (Median)	Had Kept mt (Median)	Had Release Mortality mt (Median)	% Under Cod ACL (out of 100 trials)	% Under Had ACL (out of 100 trials)	Trips (Median)
1	0	3	17"	May – Aug	53	66	292	13	53	100	172,526
2	0	4	17"	May – Aug	54	68	363	13	47	32	174,838

GOM cod FY2015 Rec sub-ACL = 121mt

GOM haddock FY 2015 Rec sub-ACL = 372mt

FY2015 Simulation Projections

Let's Assume.....

Cod discard mortality rate = 0.10

Haddock discard mortality rate = 0.25

Noncompliance reduced by 50%

Option	Cod Bag	Had Bag	Had Size	Had Open Season	Cod Kept mt (Median)	Cod Release Mortality mt (Median)	Had Kept mt (Median)	Had Release Mortality mt (Median)	% Under	% Under	Trips (Median)
									Cod ACL (out of 100 trials)	Had ACL (out of 100 trials)	
1	0	3	17"	May – Aug	27	69	256	22			
2	0	4	17"	May – Aug	27	71	318	24			

GOM cod FY2015 Rec sub-ACL = 121mt

GOM haddock FY 2015 Rec sub-ACL = 372mt

