

Gulf of Mexico Red Snapper 2011 Projection Update

NOAA SEFSC, 2012

SEDAR31-RD03

7 February 2012





Gulf of Mexico Red Snapper 2011 Projection Update

SSC Meeting

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Tampa, FL

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Input Data

- 2009 and 2010 landings were updated
- 2009 and 2010 shrimp effort values were updated
- All other inputs were the same as in the 2009 update assessment



Directed Landings

- Commercial landings from IFQ monitoring system
- Recreational landings from MRFSS, NMFS Headboat, TPWD
- 2010 landings are still preliminary
 - MRFSS wave 6 is not available
 - IFQ numbers may be affected by late reporting



Directed Landings

2011 projection landings (lbs ww)

Year	Commercial	Recreational	Total
2009	2,483,507	4,625,521	7,109,028
2010	3,392,209	2,231,482	5,623,691

2009 update vs. 2011 projection landings (lbs ww)

Year	2009 Update	2011 Projections
2009	6,820,000	7,109,028
2010	NA	5,623,691



Shrimp Effort

- 2009 and 2010 shrimp effort from SEFSC Galveston Laboratory
- 2010 shrimp effort estimates are still preliminary



Shrimp Effort

Effort reported in days fished

Year	2009 Update		2011 Projections	
	East	West	East	West
2009	6,774	21,416	10,304	26,469
2010	6,774	21,416	5,180	27,638

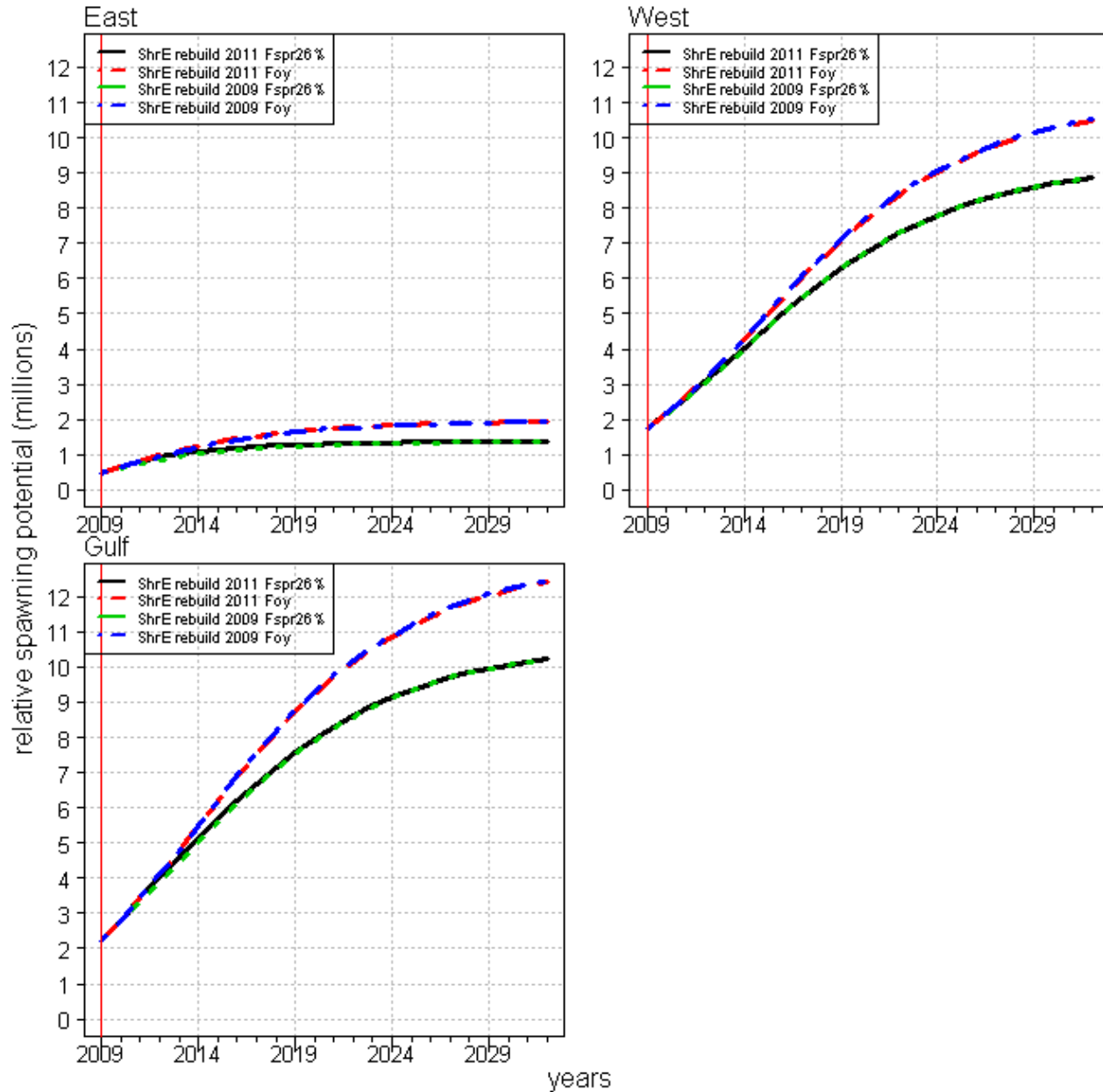
2009 update effort values came from estimated shrimp effort rebuilding schedule



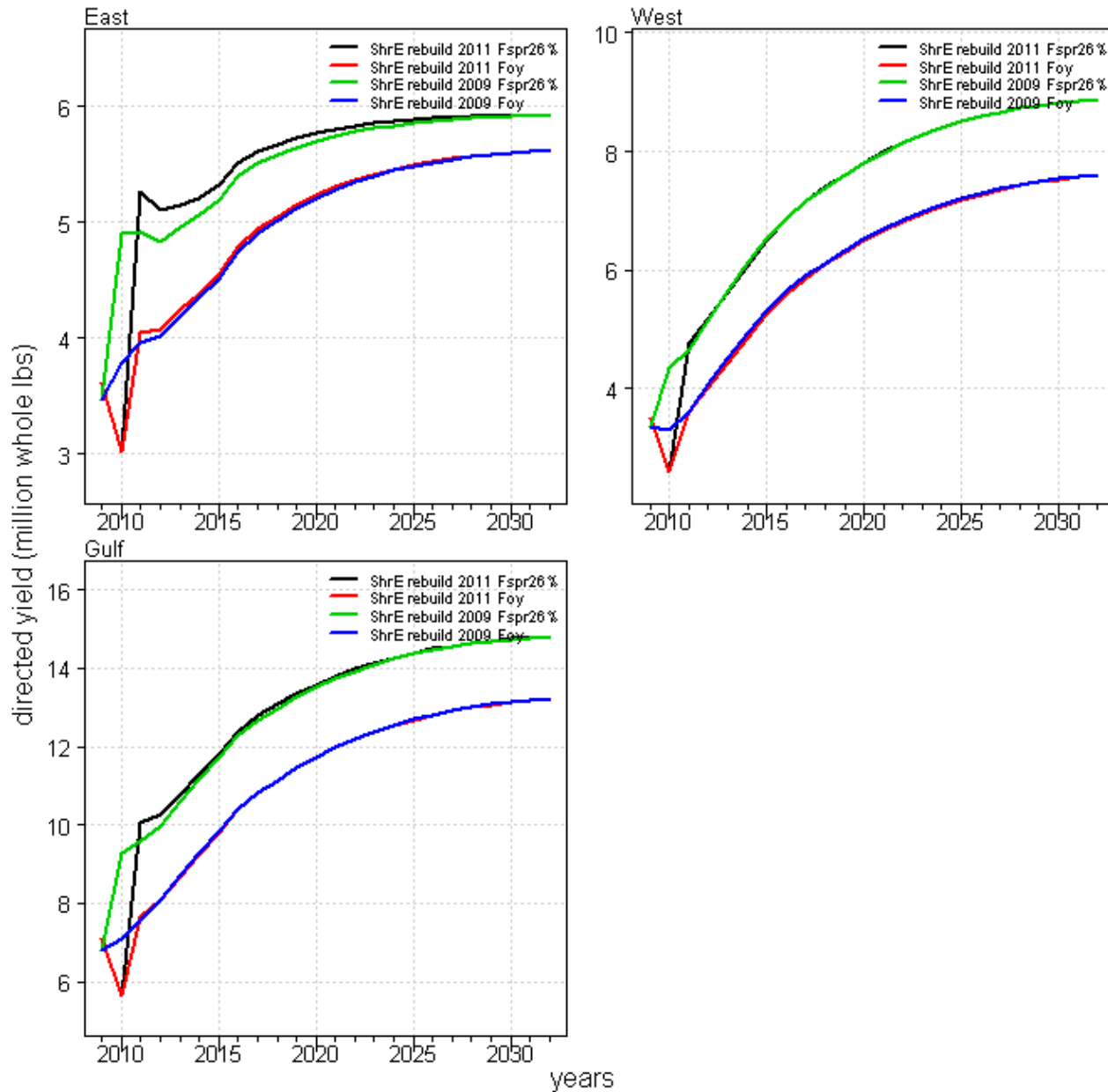
Methods

- Used AS3 model with shrimp effort rebuild schedule (i.e., final model from 2009 update assessment)
- Ran 2 fixed F projection scenarios
 - $F_{spr26\%}$ (F_{msy} proxy)
 - 75% of $F_{spr26\%}$ (F_{oy})

Projected Relative Spawning Potential SEDAR31-RD03



Projected Yield





Projected Yield

Yield reported in million lbs ww

Year	2009 Update		2011 Projections	
	OFL	OY	OFL	OY
2009	6.82	6.82	7.11	7.11
2010	9.26	7.08	5.62	5.62
2011	9.58	7.57	10.04	7.66
2012	9.98	8.07	10.27	8.09
2013	10.62	8.73	10.79	8.70
2014	11.19	9.30	11.29	9.26

High lighted values represent fixed catches



Quantifying Uncertainty

- Calculated probabilities of exceeding OFL from PDFs of projected yields
- Assumed projected yields are $N(\mu, \sigma)$
 - μ = point estimate
 - σ = std dev calculated from the Hessian matrix

Probabilities of Exceeding OFL SEDAR31-RD03

yield	2011	2012	2013	2014
9.50	0.14	0.04	0.00	0.00
9.55	0.16	0.05	0.00	0.00
9.60	0.19	0.07	0.00	0.00
9.65	0.21	0.08	0.00	0.00
9.70	0.25	0.10	0.00	0.00
9.75	0.28	0.12	0.01	0.00
9.80	0.31	0.14	0.01	0.00
9.85	0.35	0.17	0.01	0.00
9.90	0.39	0.20	0.01	0.00
9.95	0.43	0.23	0.02	0.00
10.00	0.47	0.27	0.03	0.00
10.05	0.51	0.31	0.03	0.00
10.10	0.55	0.35	0.04	0.00
10.15	0.59	0.39	0.06	0.00
10.20	0.63	0.44	0.07	0.00
10.25	0.67	0.48	0.09	0.00
10.30	0.71	0.52	0.11	0.01
10.35	0.74	0.57	0.14	0.01
10.40	0.77	0.61	0.17	0.01
10.45	0.80	0.65	0.20	0.02
10.50	0.83	0.70	0.24	0.02
10.55	0.85	0.73	0.27	0.03
10.60	0.88	0.77	0.32	0.04
10.65	0.90	0.80	0.36	0.05

yield	2011	2012	2013	2014
10.70	0.91	0.83	0.41	0.06
10.75	0.93	0.86	0.46	0.08
10.80	0.94	0.88	0.51	0.10
10.85	0.95	0.90	0.55	0.13
10.90	0.96	0.92	0.60	0.16
10.95	0.97	0.94	0.65	0.19
11.00	0.98	0.95	0.69	0.23
11.05	0.98	0.96	0.73	0.27
11.10	0.99	0.97	0.77	0.31
11.15	0.99	0.98	0.81	0.36
11.20	0.99	0.98	0.84	0.41
11.25	0.99	0.99	0.87	0.46
11.30	1.00	0.99	0.89	0.51
11.35	1.00	0.99	0.91	0.56
11.40	1.00	0.99	0.93	0.61
11.45	1.00	1.00	0.95	0.66
11.50	1.00	1.00	0.96	0.70
11.55	1.00	1.00	0.97	0.74
11.60	1.00	1.00	0.98	0.78
11.65	1.00	1.00	0.98	0.82
11.70	1.00	1.00	0.99	0.85
11.75	1.00	1.00	0.99	0.88
11.80	1.00	1.00	0.99	0.90

Yields reported in million lbs ww