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# Can Unharvested Gulf of Mexico Red Snapper Quota be Carried Over to Future Fishing Seasons?

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# Council Request to SEFSC

Provide recommendations on the **percentage of unharvested quota that can be carried over** without negatively impacting the red snapper rebuilding plan.

- **Goal:** Demonstrate that 100% of unharvested quota can be carried over without negative consequences to the current 2032 rebuilding plan
- **Assume:** Hypothetical maximum 20% underage across all directed fleets

# Methods

- Used base projection model (SS3) from 2014 update to SEDAR 31 with a terminal data year of 2014
  - Maintained all projection assumptions with no update to input data (i.e., 2015 landings)
    - Utilized 48.5 : 51.5 commercial : recreational allocation
    - Bycatch rates fixed at values from 2015 projections
- Conducted two projection scenarios:
  - Base:** Landings fixed at levels that achieve 26% SPR by 2032
  - Underage:** Same as base model (i.e., fixed landings that achieve 26% SPR by 2032) except:
    - a) 2015 landings were decreased by 20% for all directed fleets
    - b) 2017 landings were increased by fleet-specific 2015 underage

# Assumed Landings

Commercial (million lbs)					
	Hypothetical 2015 Landings			Hypothetical 2017 Landings	
	Landings	With 20% Reduction	Underage	Landings	Plus 2015 Underage
<b>HL_E</b>	2.32	1.85	0.46	1.91	2.38
<b>HL_W</b>	4.67	3.74	0.93	4.78	5.72
<b>LL_E</b>	0.09	0.07	0.02	0.07	0.09
<b>LL_W</b>	0.06	0.05	0.01	0.06	0.08
<b>Total</b>	7.14	5.71	1.43	6.83	8.26

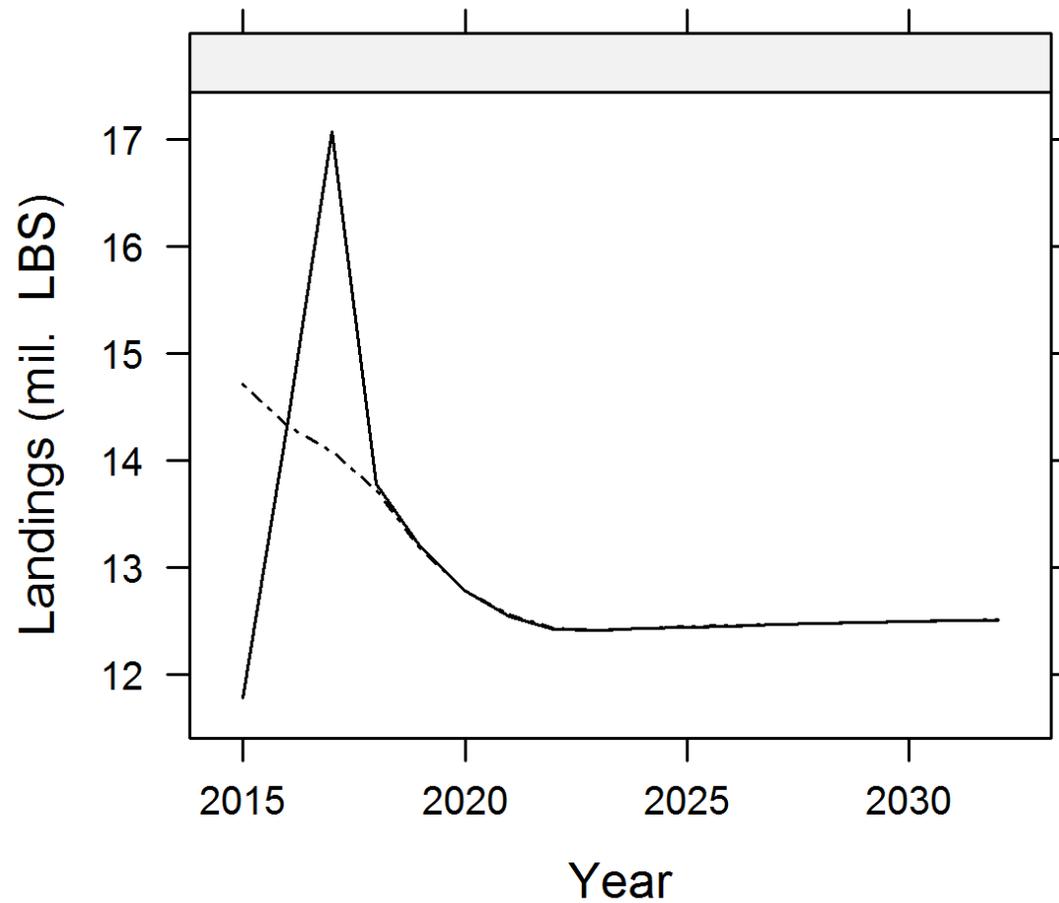
Recreational (1000s of Fish)					
	Hypothetical 2015 Landings			Hypothetical 2017 Landings	
	Landings	With 20% Reduction	Underage	Landings	Plus 2015 Underage
<b>MRIP_E</b>	813.92	651.14	162.78	750.88	913.66
<b>MRIP_W</b>	263.99	211.19	52.80	303.76	356.56
<b>HBT_E</b>	61.36	49.09	12.27	57.19	69.46
<b>HBT_W</b>	82.83	66.26	16.57	98.24	114.81
<b>Total</b>	1222.09	977.67	244.42	1210.08	1454.49

- Assumed carry-over in 2017 to emulate 1 year lag in tabulating catch
- 20% underage across commercial and recreational directed fleets represented theoretical maximum
  - Situations with lower carryover percentages and/or fewer fleets with carryover are expected to demonstrate similar (or better) rebuilding properties

# Results

## Projected Landings

With Underage ———  
Without Underage - - - - -



# Results

Landings (Millions of Pounds) and SPR Comparison						
YEAR	Projected Landings			Projected SPR		
	Landings	With Underage	Difference	SPR	With Underage	Difference
2015	14.72	11.77	-2.95	0.164	0.164	0.000
2016	14.32	14.37	0.05	0.175	0.179	0.004
2017	14.09	17.07	2.98	0.186	0.191	0.005
2018	13.73	13.78	0.05	0.196	0.197	0.002
2019	13.17	13.19	0.02	0.204	0.205	0.001
2020	12.78	12.78	0.00	0.212	0.213	0.001
2021	12.55	12.54	-0.01	0.219	0.219	0.001
2022	12.43	12.42	-0.01	0.225	0.225	0.000
2023	12.41	12.41	0.00	0.230	0.230	0.000
2024	12.43	12.43	0.00	0.235	0.235	0.000
2025	12.45	12.44	-0.01	0.239	0.239	0.000
2026	12.46	12.45	-0.01	0.243	0.243	0.000
2027	12.47	12.46	-0.01	0.247	0.246	0.000
2028	12.48	12.47	-0.01	0.250	0.249	0.000
2029	12.49	12.48	-0.01	0.253	0.252	0.000
2030	12.50	12.49	-0.01	0.255	0.255	0.000
2031	12.50	12.50	0.00	0.258	0.257	0.000
2032	12.51	12.51	0.00	0.260	0.260	0.000

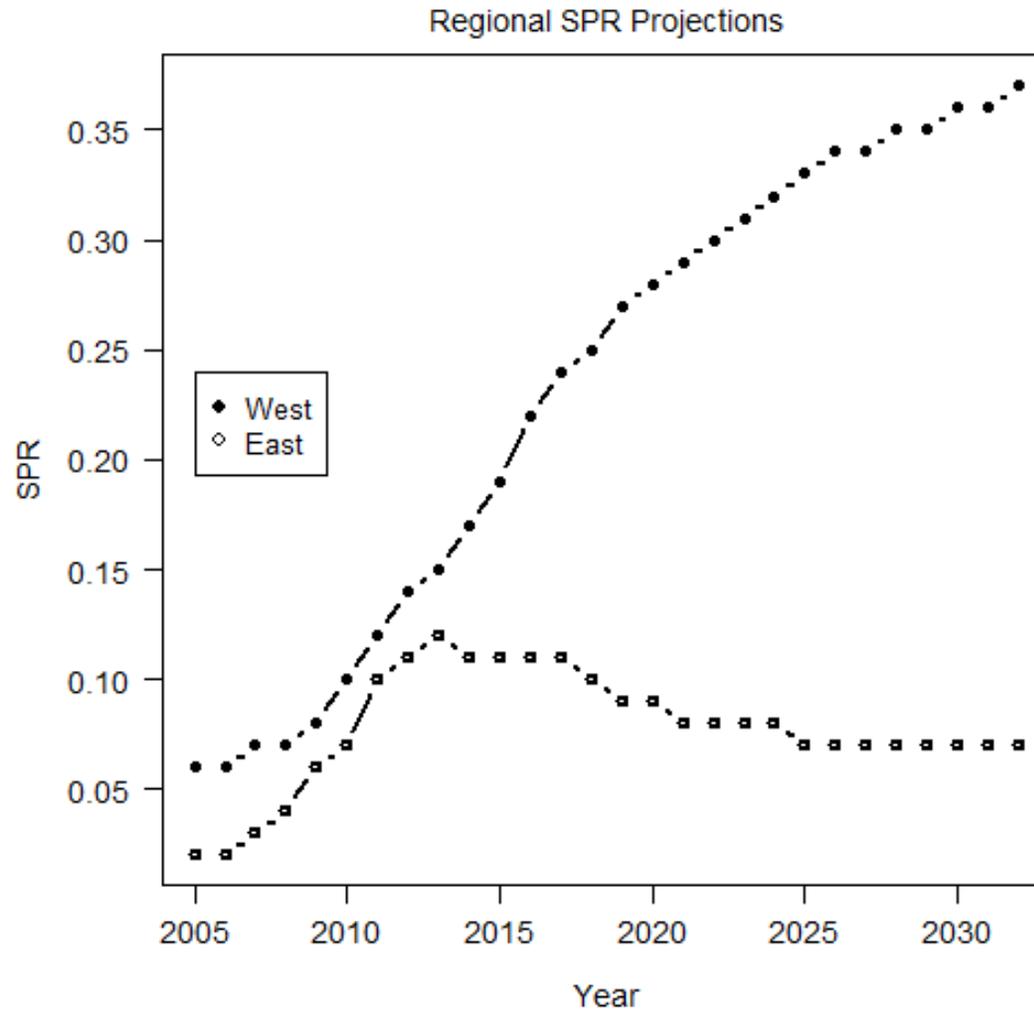
- Slight differences in landings are due to recreational catch being in numbers and subsequent growth (improved age structure) in underage scenario

# Important Assumptions/Caveats

- Results are hypothetical and are **not meant as the basis for management advice**
- Results are expected to hold for underages <20% and/or fewer fleets with underages (still < 20%), but extreme underages (>20%) and their resulting carryover may demonstrate different dynamics
- Results only hold if carryover is applied to the fleet for which the underage occurred
  - Differing selectivities by fleet imply that **carryovers are non-transferable across fleets**
- The same approach is **not** expected to hold for an overage and subsequent underage



# Regional SPR



# Model Inputs

