



**NOAA  
FISHERIES**

# Potential implications of reduction in mortality based on use of descender devices in red snapper recreational fisheries



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# Outline

- Descender devices may reduce release mortality
- red snapper PR/HB/CH release mortality is 11.8%- based on Campbell et al (2014) metaanalysis at 25 m fishing depth
- No clear numbers exist for what % reduction in discard M might occur in the Gulf
- SEFSC considered 6% and 0% for PR/HB/CH to reduction in numbers of dead fish and sensitivity of overfishing limit.



<http://flseagrant.ifas.ufl.edu/newsletter/2012/07/what-are-fish-descending-devices-2/>

# Methods

- Used Catch-shares funded decision support tool (Vaughan et al, *in prep*)

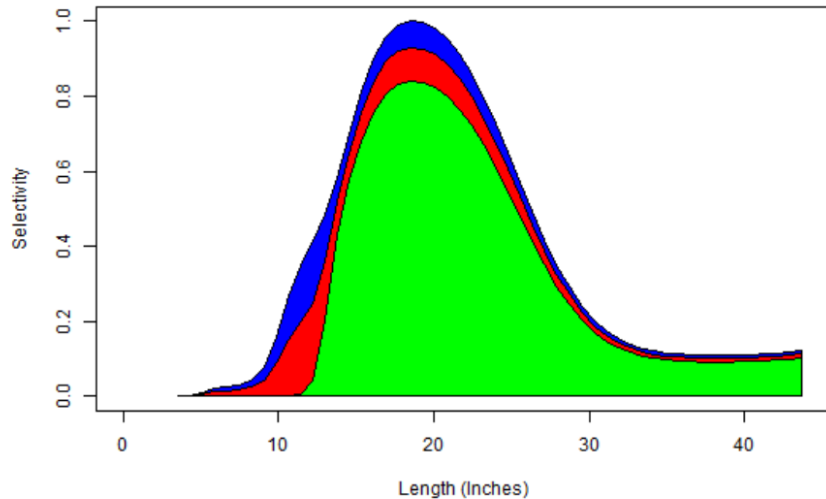


Select Assessment

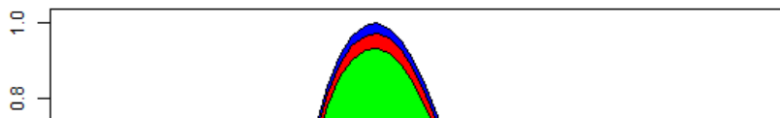
Management Action

Update Allocation

HL\_E selectivity



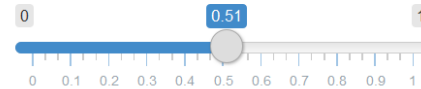
HL\_W selectivity



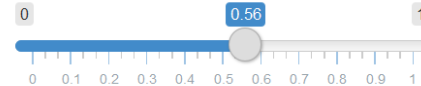
Implement Minimum Size Limit

☒ No ☐ Yes

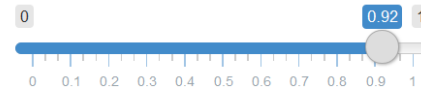
Allocation



Discard Mortality



Max Retention



Management Starting Year

2017

Recent Catch in Pounds

Implement Minimum Size Limit

☒ No ☐ Yes

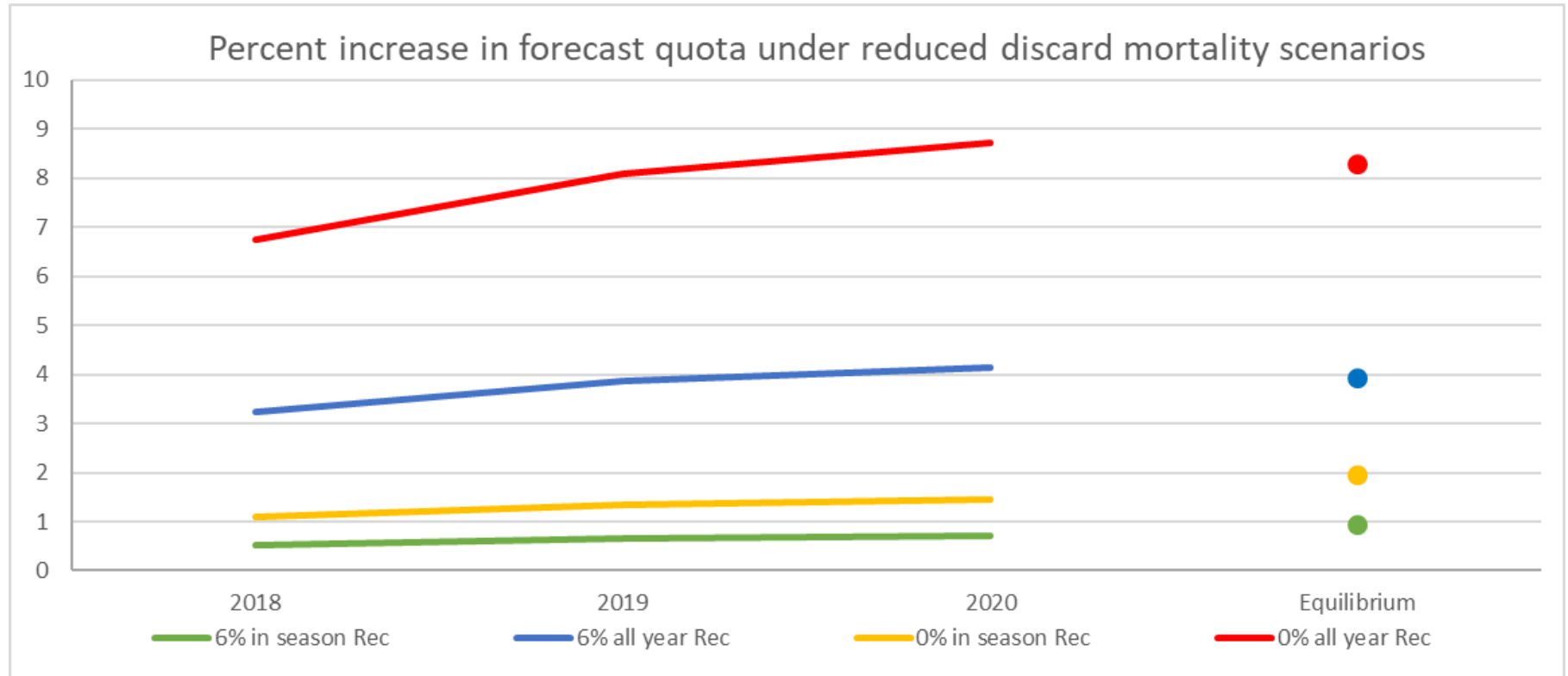
Discard Mortality



Recent Catch in Pounds

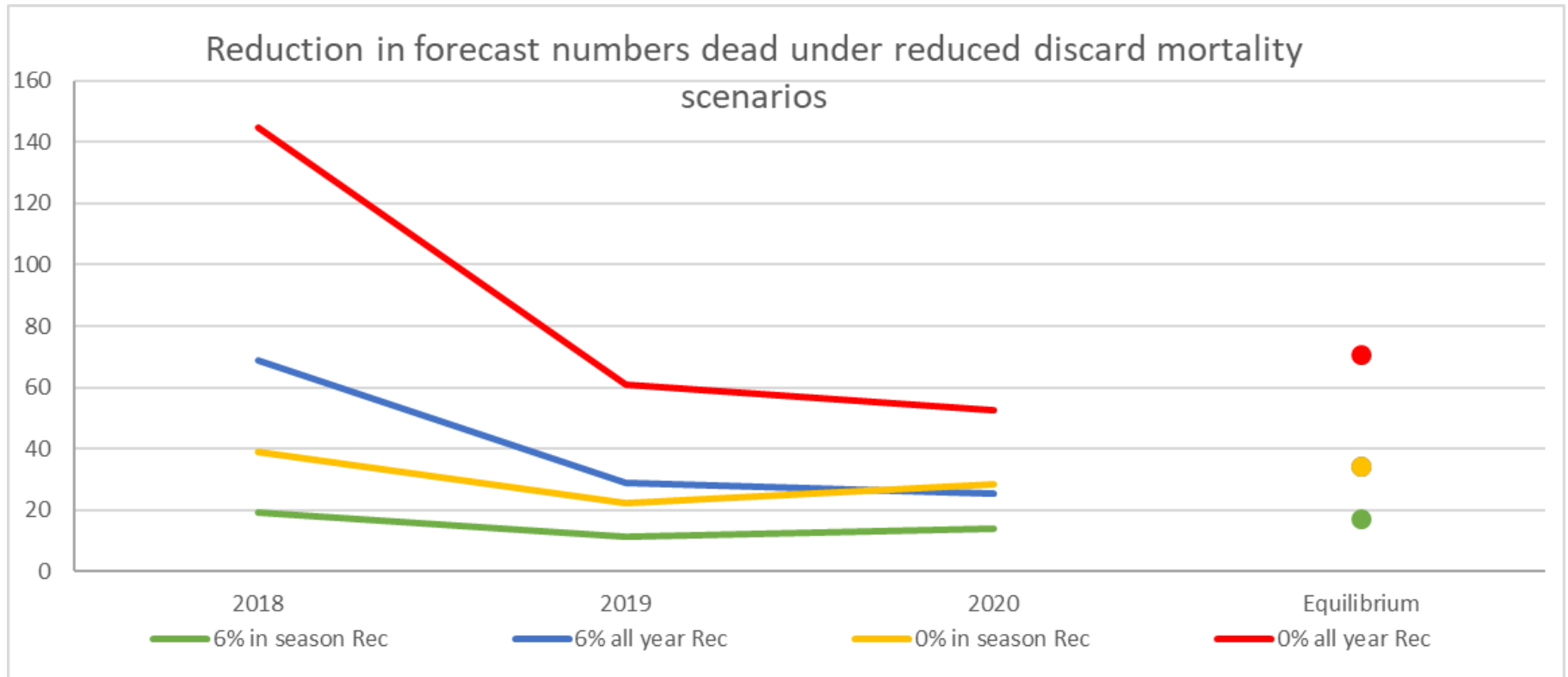
# Results

- Potential exists for a moderate increase in yields



# Results

- Reduction in numbers dead also possible



# Release mortality rates by species and sector\*

	Comm_HL	Comm_LL	Charter/Private	Headboat
gag	25%	25%	12%	12%
gray trigger	5%		5%	5%
amberjack	20%	20%	20%	20%
king mackerel	25%		20%	22%
red grouper	19%	42%	12%	12%
spanish mackerel	10%		20%	20%
cobia	5%		5%	5%
gray snapper	14%		7%	7%
red snapper pre2008	75% E/ 78% W(open) 74% E/ 87% W (close)	81% E/91% (open) 74% E/ 87% W (close)	21% E / 21% W	21% E / 21% W
red snapper post2008	56 % E/ 60% W 55 % E/ 74% W (close)	64% E / 81% W (open) 55% E / 74% W (close)	11.8% E / 11.8% W	11.8% E / 11.8% W

\* values used in most recent stock assessments

# Conclusions

- The absolute % reduction in discard M from using descender devices still unknown for many Gulf species
- Implementation and compliance unknown
- Magnitude of benefits in yield and to population depends on:
  - potential improvement in discard survival rate.
  - magnitude of discards