Skate Methods and Results

August 13, 2024

Ratio of catch:index

$$ Catch \Big/ Index_y = \frac{\dfrac{\sum_{y-a}^{y} Catch}{a+1}}{\dfrac{\sum_{y-a}^{y} Index}{a+1}} $$

y=year

a= span of moving average

Relative *F* & Annual Catch

1) $\text{Relative } F = \text{median}\left(\frac{Catch}{Index} \right)$

2) $C_{rec,y} = \frac{Catch}{Index_y} * \text{Relative } F$

3) $Catch\,\Delta = \dfrac{C_{rec,y} - \dfrac{\sum_{y-a-1}^{y-1} Catch}{a+1}}{\dfrac{\sum_{y-a-1}^{y-1} Catch}{a+1}}$

Normalized Catch:Index Ratio

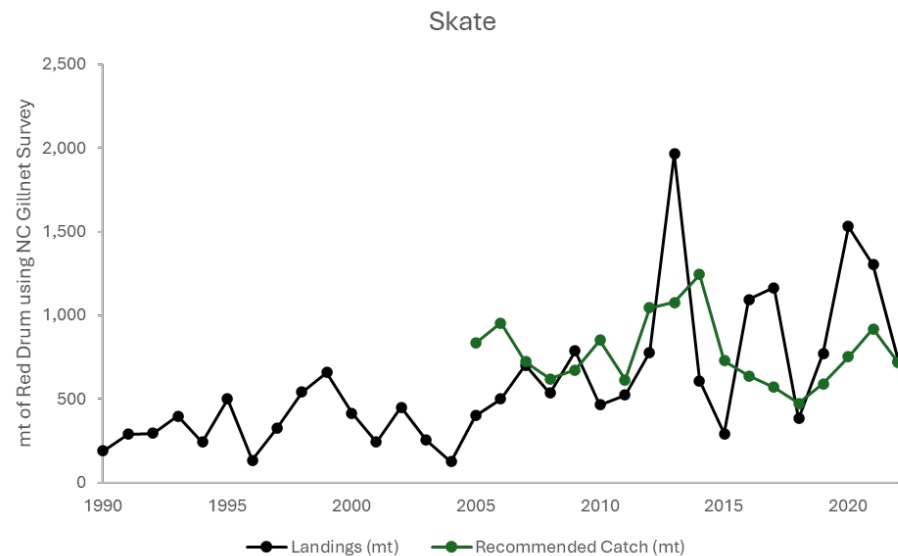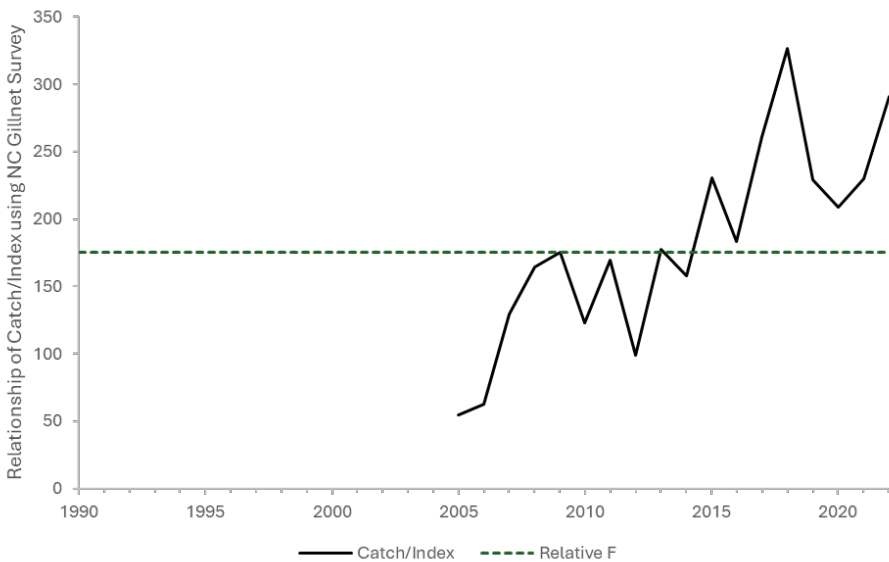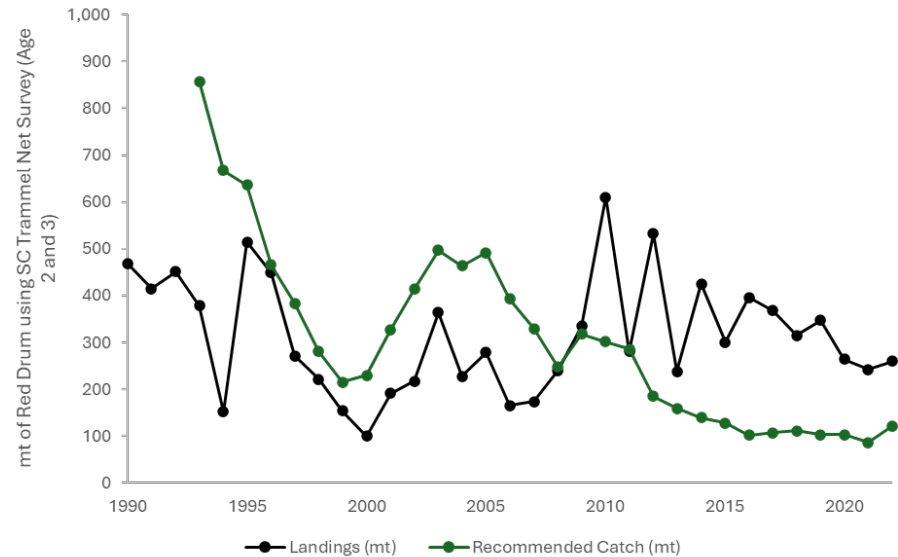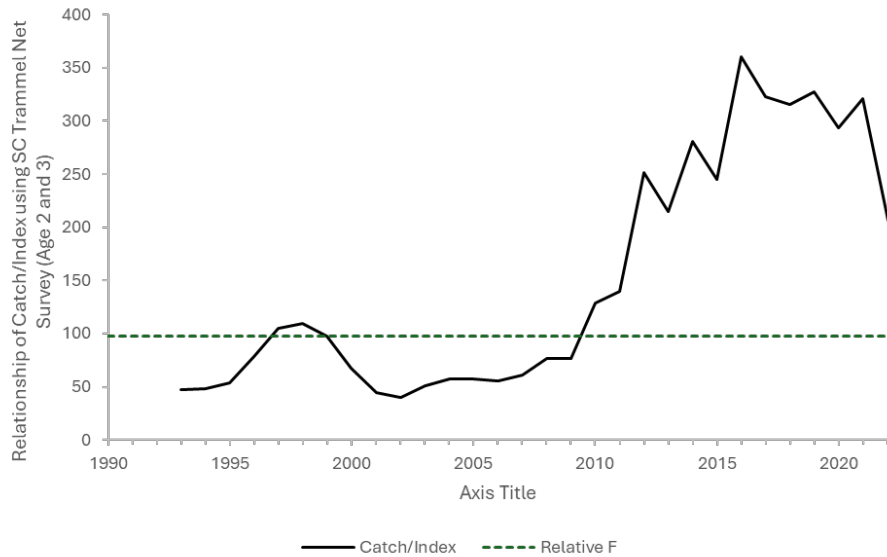$$Catch/Index_{norm,y} = \frac{Catch/Index_y}{\text{Relative } F}$$

Specifics for Red Drum

- 3-year average used (a=2)
- Terminal year = 2021 fishing year
  - No different in sensitivity analysis with 2022 fishing year
- Sub-adult population only
  - NC: Gill Net Survey
  - SC: Trammel Net Survey
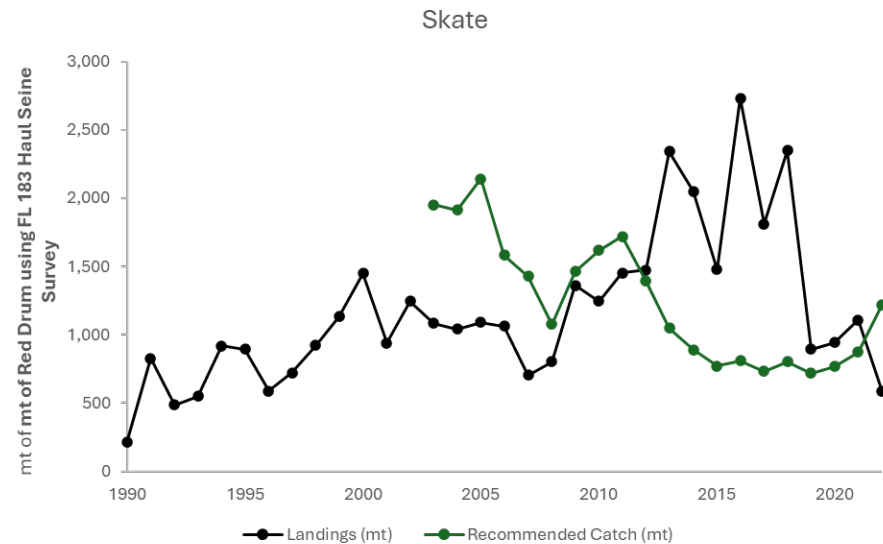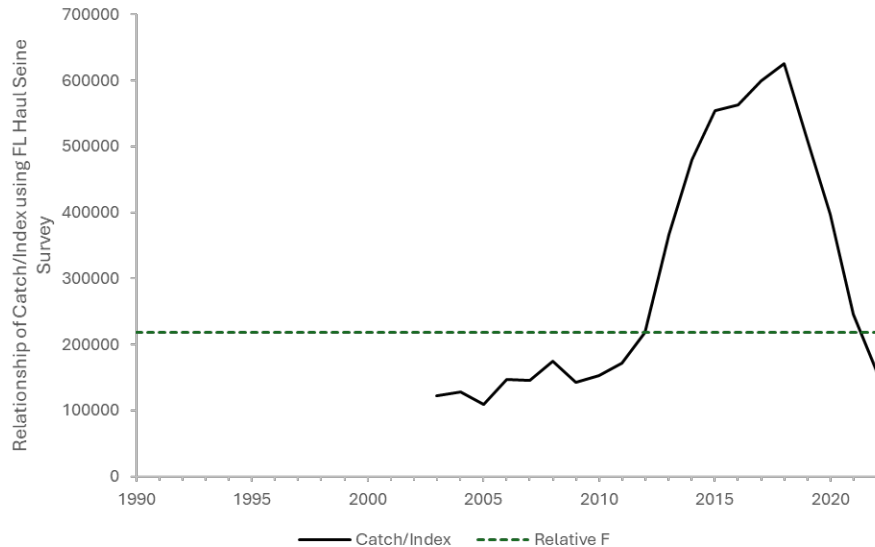 - FL: 183 Haul Seine Survey

Northern: Sub-adult
(NC Gillnet)

Southern: Sub-Adult
(SC Trammel-Age 2 and 3)

Southern: Sub-adult
(FL 183 Haul Seine)

Conclusions

- Relative *F* was exceeded in each analysis during the last several years, including the terminal year
  - NC: 2015-2021
  - SC: 2012-2021
  - FL: 2012-2021
- Recommended catch based on analysis should be reduced by:
  - NC: average reduction 0.228
  - SC: average reduction 0.669
  - FL: average reduction 0.476

Questions?