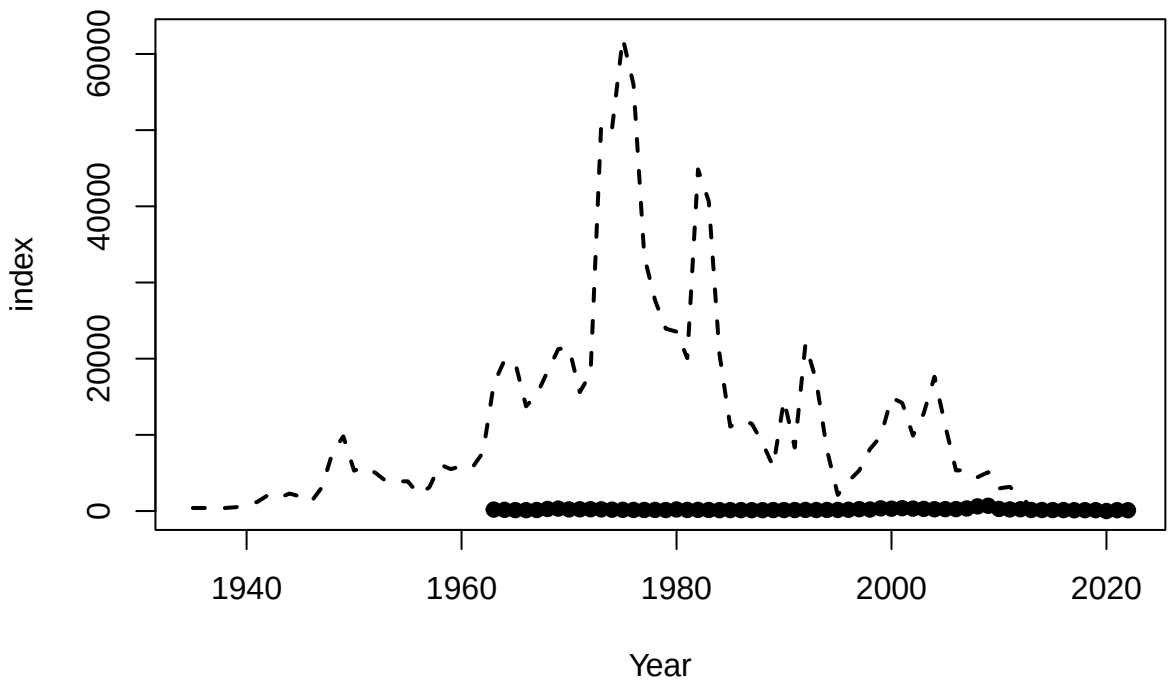
WriteUrOwnWHAM

2025-05-20

Data and Plot

This is an attempt to incorporate YT Georges Bank data into Gavin's Intro to MSE vigs. Who knows lol




```
## integer(0)
```

Run Assessment

```
## $pars
## [1] 13.644382 -3.800507  1.852079
##
## $biomass
##  [1] 842713.53646 842313.53646 841922.47599 841540.14706 841166.34685
##  [6] 840700.87763 839945.77208 838807.45449 836794.38747 835225.80672
## [11] 833091.74058 831404.42218 830453.89422 827624.02512 820255.37683
## [16] 810944.14645 806327.71295 801306.15224 797186.50600 794249.47036
## [21] 791370.78071 788548.83377 787482.08424 785536.09032 780627.80379
## [26] 776413.73216 771879.52995 767630.21214 761459.45515 746411.07623
## [31] 728504.27698 711263.84641 700003.52930 687347.07691 671859.51880
## [36] 653634.20125 635503.33995 623387.23545 608975.92046 561762.59606
## [41] 515756.18708 458153.39850 406847.12415 378114.18891 355082.22560
## [46] 335734.33643 316711.47078 301066.57179 260546.30186 223908.81754
## [51] 207020.07369 199426.80772 190942.64727 182775.66081 177045.04686
## [56] 174335.00978 162852.64360 157460.26501 138354.14437 123865.78065
## [61] 118208.26651 118362.59099 116720.39742 113637.72829 107692.97374
## [66] 100001.20834  87093.84625  74637.95660  66265.01066  54817.15286
## [71]  38335.10515  27925.26474  23198.96730  18336.40354  14299.47435
## [76]   9509.77732   6748.01111   3719.68467   1887.48763   1389.59627
## [81]    995.61563    713.85074    624.79852    379.75831    281.24567
## [86]    241.53206    122.93104     31.67931      0.00100
##
## $convergence
## [1] 0
##
## $nll
## [1] 196.3652
##
## $vcov
##               [,1]          [,2]          [,3]
## [1,]  3.457440e-07 -2.700938e-08 -3.432411e-05
## [2,] -2.700938e-08  5.883610e-07 -1.340703e-05
## [3,] -3.432411e-05 -1.340703e-05  1.215358e-02

##  [1] 842713.53646 842313.53646 841922.47599 841540.14706 841166.34685
##  [6] 840700.87763 839945.77208 838807.45449 836794.38747 835225.80672
## [11] 833091.74058 831404.42218 830453.89422 827624.02512 820255.37683
## [16] 810944.14645 806327.71295 801306.15224 797186.50600 794249.47036
## [21] 791370.78071 788548.83377 787482.08424 785536.09032 780627.80379
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## [31] 728504.27698 711263.84641 700003.52930 687347.07691 671859.51880
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## [71]  38335.10515  27925.26474  23198.96730  18336.40354  14299.47435
## [76]   9509.77732   6748.01111   3719.68467   1887.48763   1389.59627
## [81]    995.61563    713.85074    624.79852    379.75831    281.24567
```
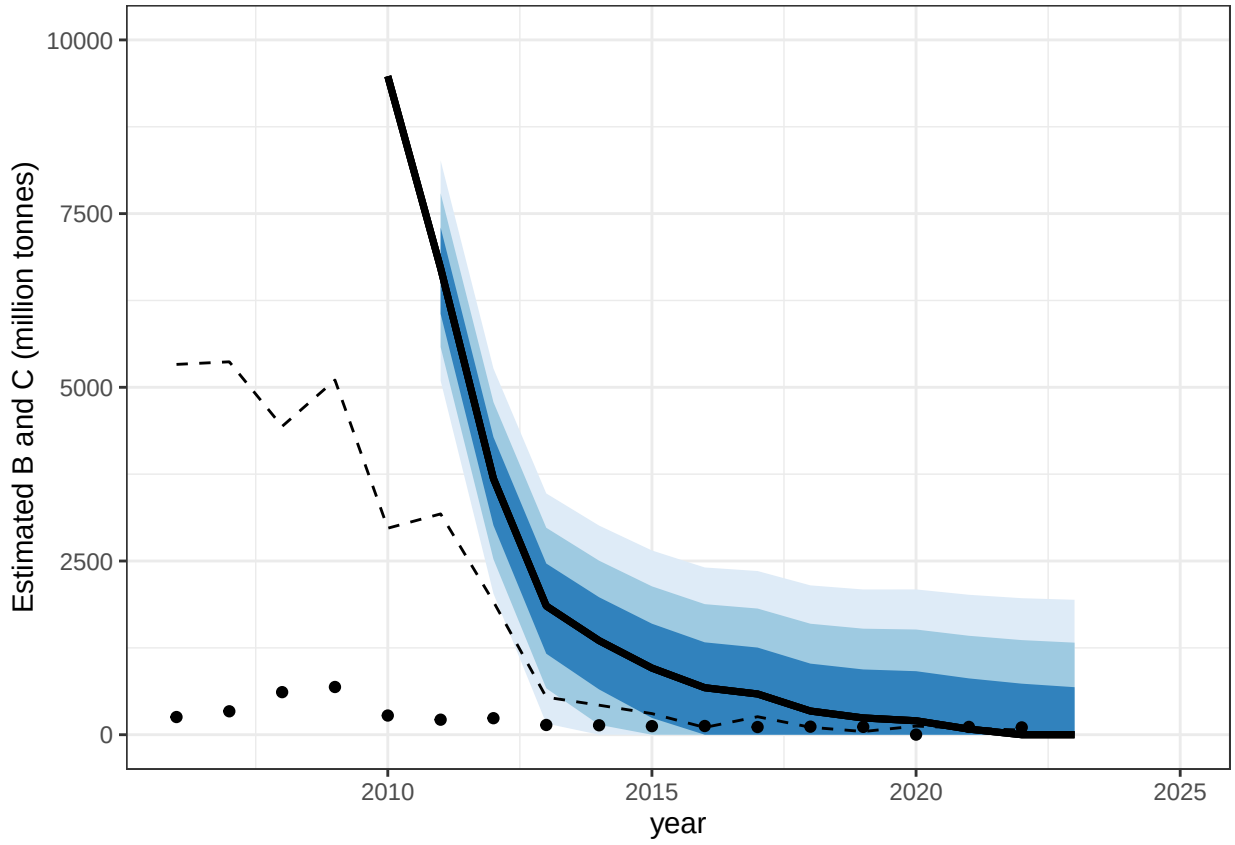

```
## [86]    241.53206    122.93104     31.67931      0.00100
```

```
## [1] 8.427135e+05 2.235944e-02 6.373057e+00
```

```
## Warning: Removed 71 rows containing missing values or values outside the scale range
## (`geom_line()`).
```

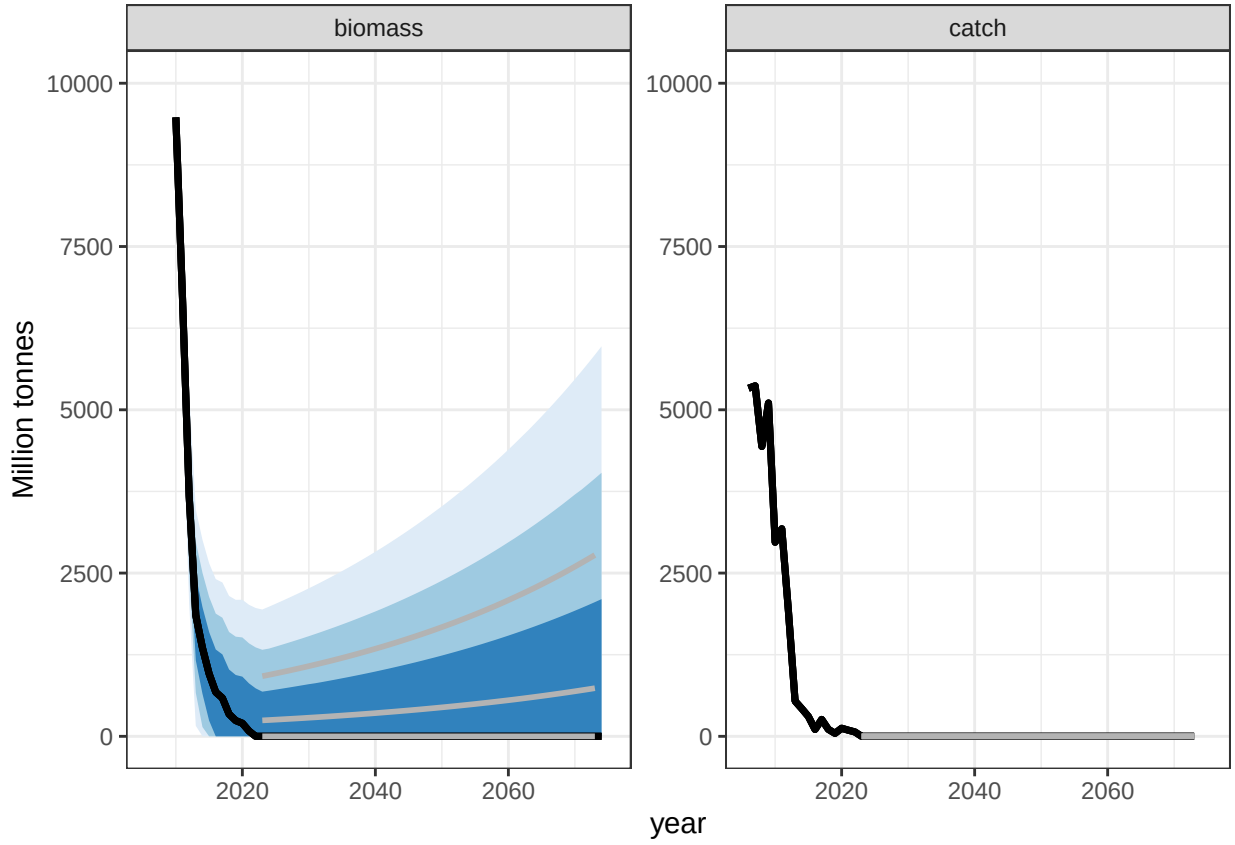
```
## Warning: Removed 71 rows containing missing values or values outside the scale range
## (`geom_point()`).
```



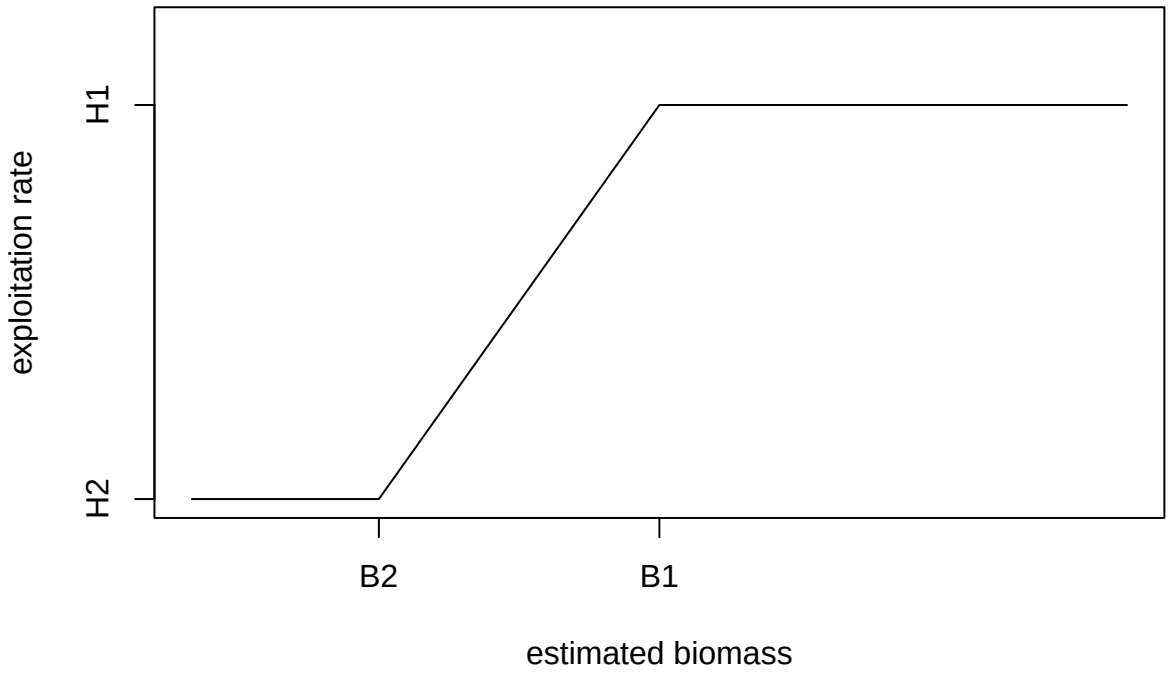
Apply MSE

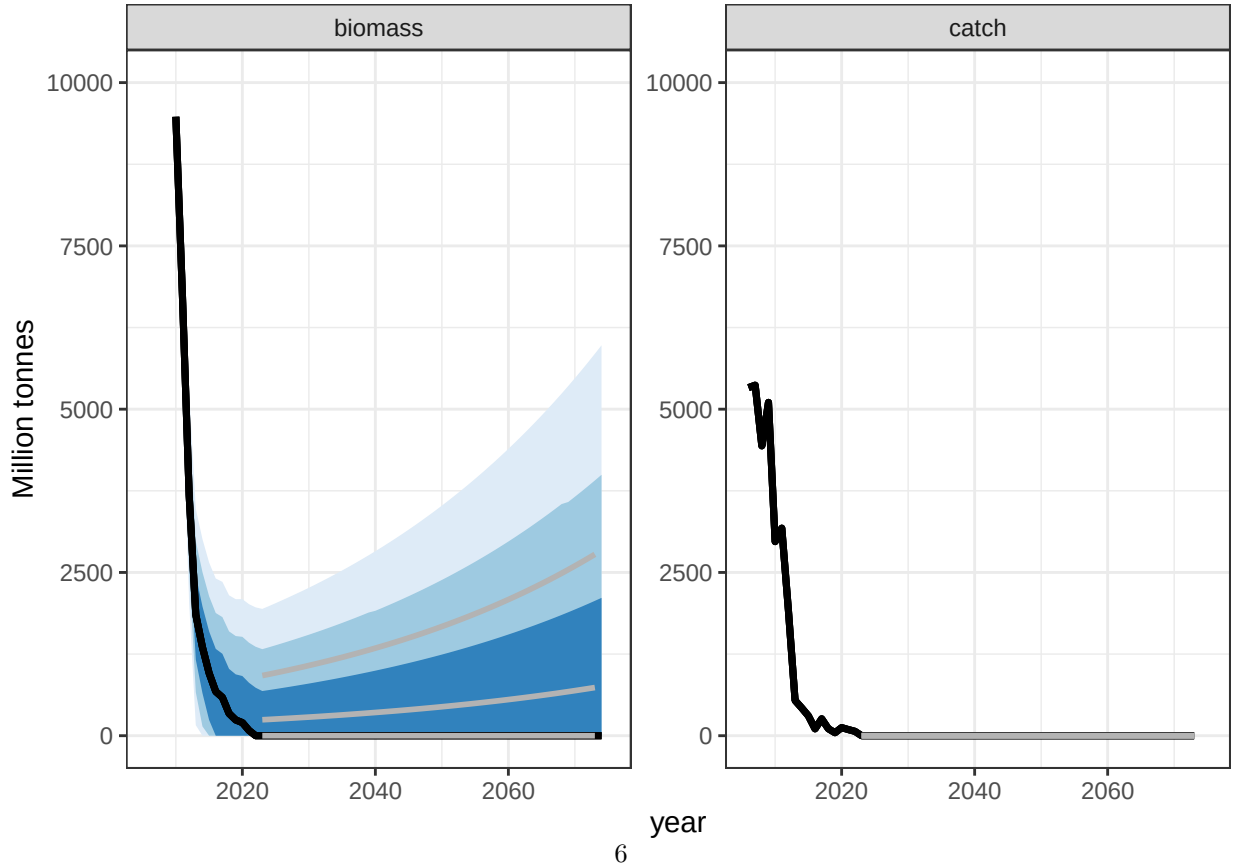
Project with fixed 10% exploitation rate of estimated biomass for all iterations & 50 yrs

```
##       year       value    type iter
## 83595 2069 0.002763531 biomass  200
## 83596 2070 0.002825280 biomass  200
## 83597 2071 0.002888409 biomass  200
## 83598 2072 0.002952948 biomass  200
## 83599 2073 0.003018929 biomass  200
## 83600 2074 0.003086385 biomass  200
```



Alt HCRs

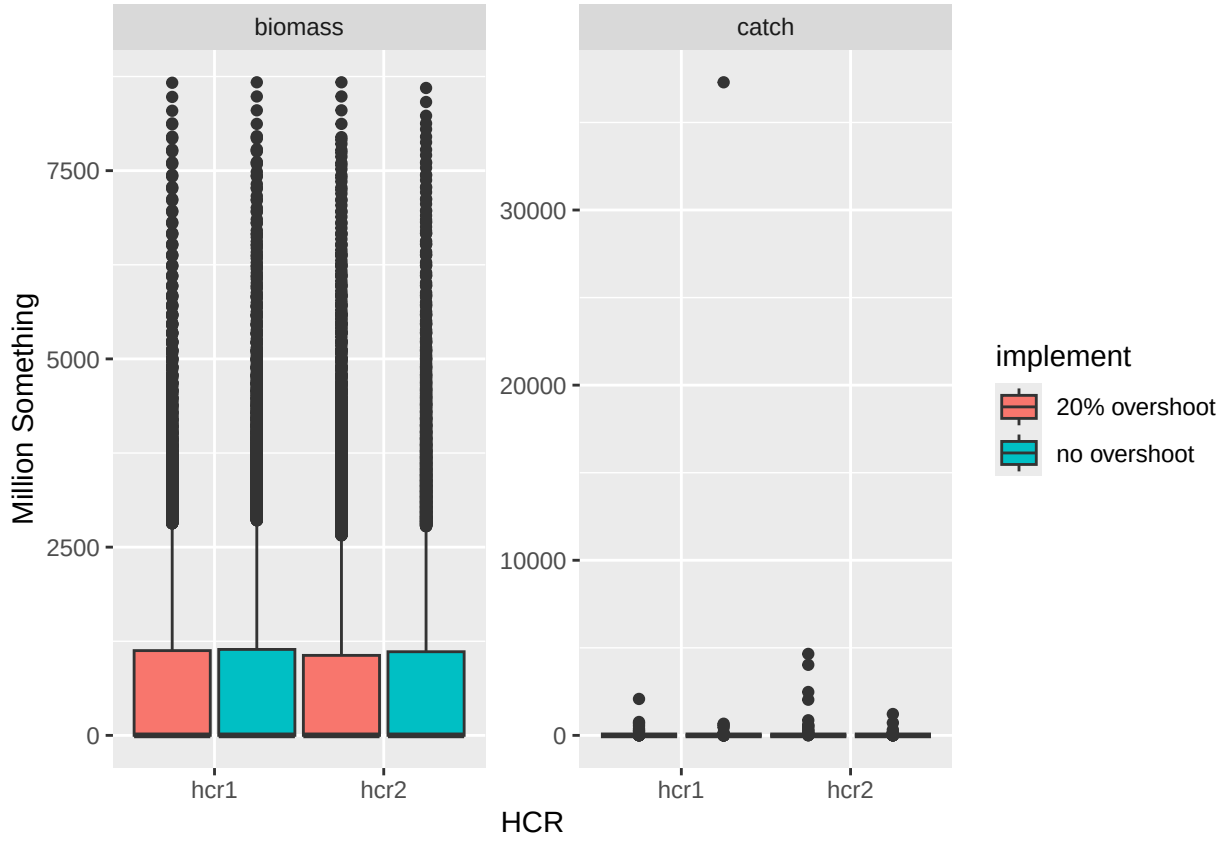

H1
H2
exploitation rate
B2
B1
estimated biomass

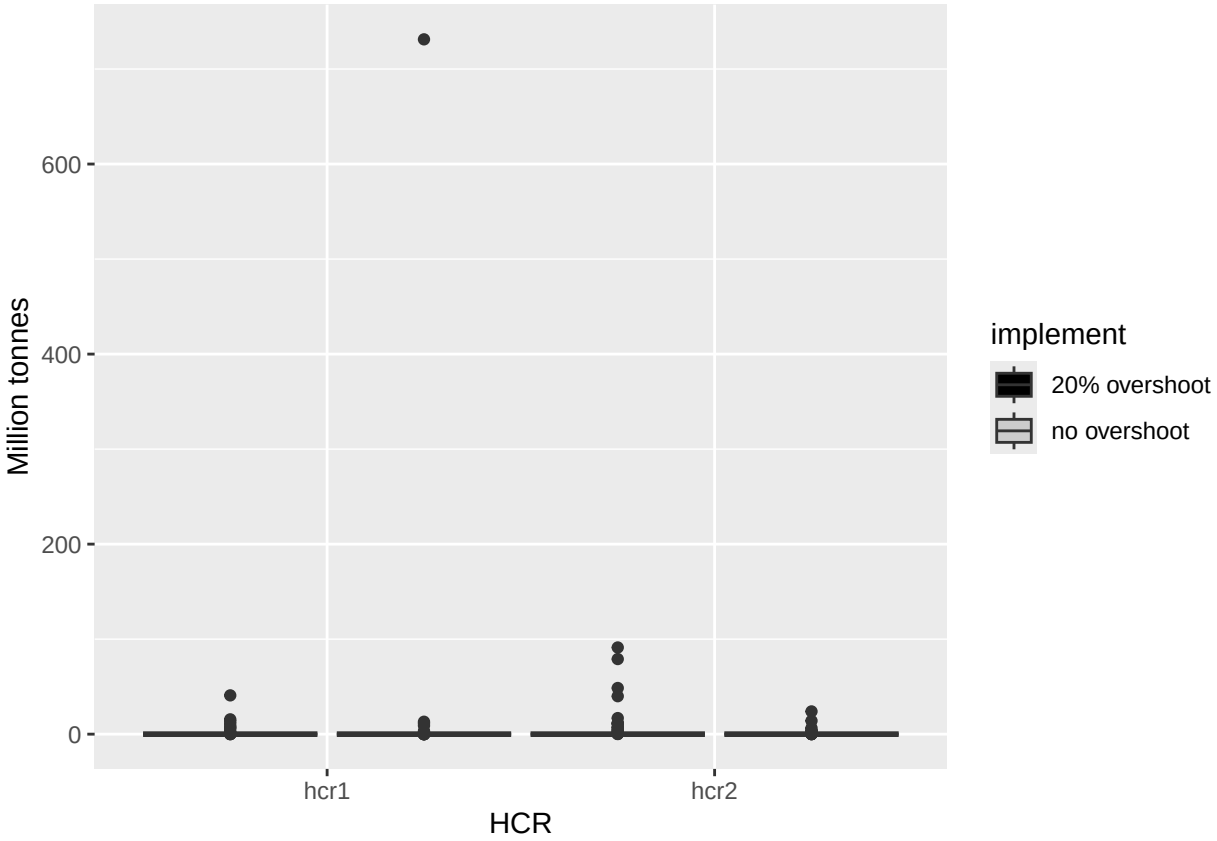

biomass
catch
10000
7500
5000
2500
0
Million tonnes
2020
2040
2060
year

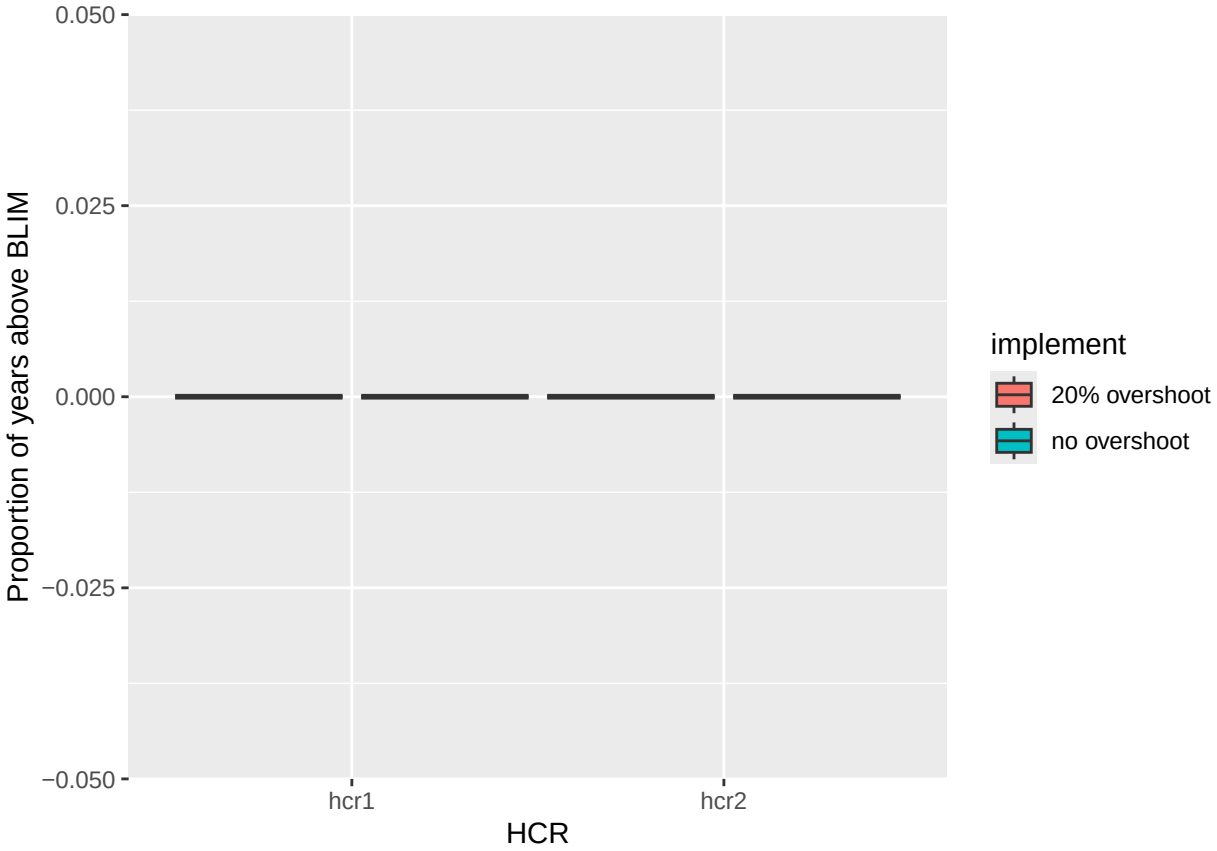
Compare HCRs

Diagnostics

```
##   year value  type iter  HCR    implement
## 1 1935    NA index    1 hcr1 no overshoot
## 2 1936    NA index    1 hcr1 no overshoot
## 3 1937    NA index    1 hcr1 no overshoot
## 4 1938    NA index    1 hcr1 no overshoot
## 5 1939    NA index    1 hcr1 no overshoot
## 6 1940    NA index    1 hcr1 no overshoot
```




600
400
200
0
Million tonnes
hcr1
hcr2
HCR
implement
20% overshoot
no overshoot


0.050
0.025
0.000
−0.025
−0.050
Proportion of years above BLIM
hcr1
hcr2
HCR
implement
20% overshoot
no overshoot