Cross test using Operating Model based on Life History

MLZ, Estimate Z from Mean Length

L Kell

02 October, 2018

Brill

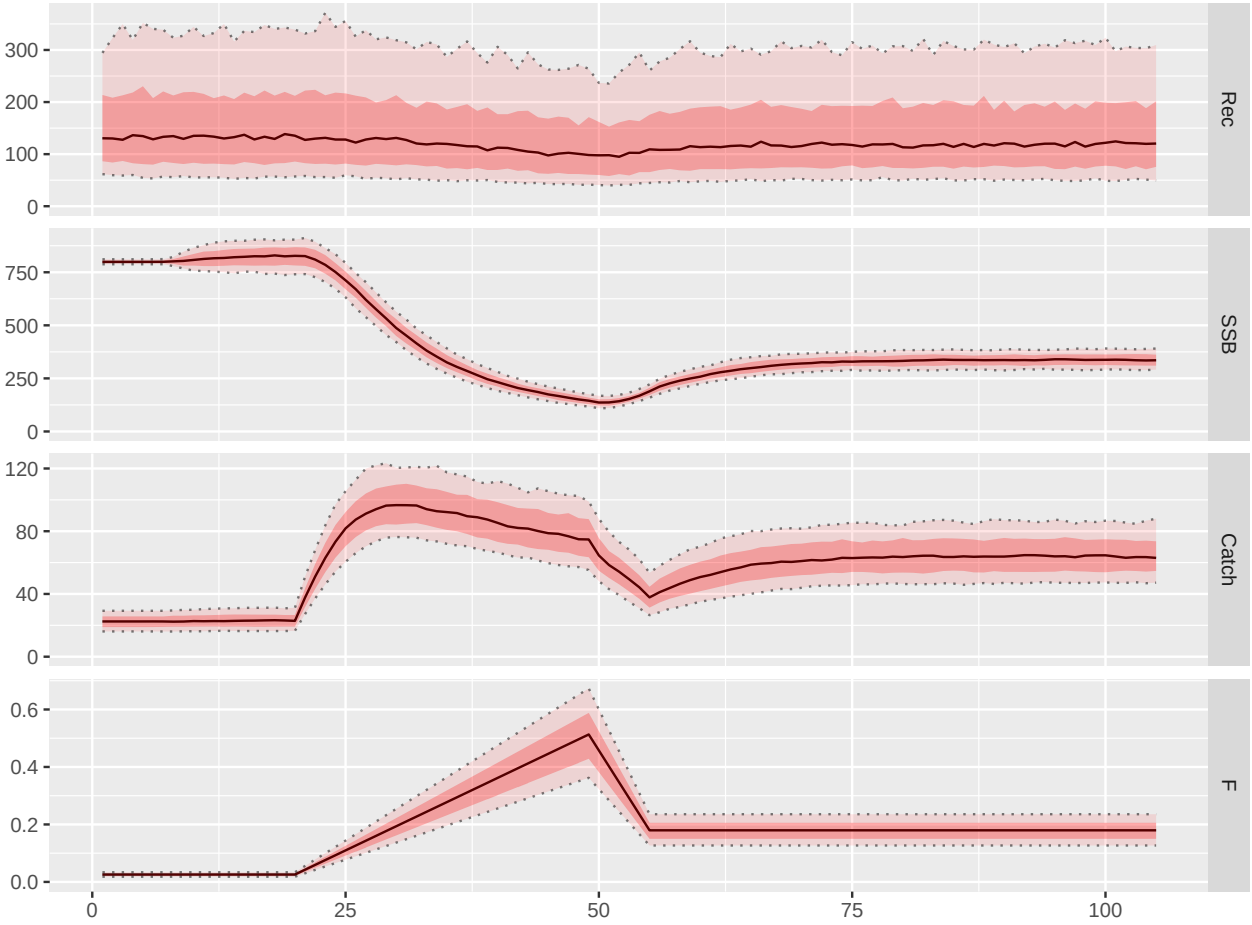

Figure 1 Operating model for brill.

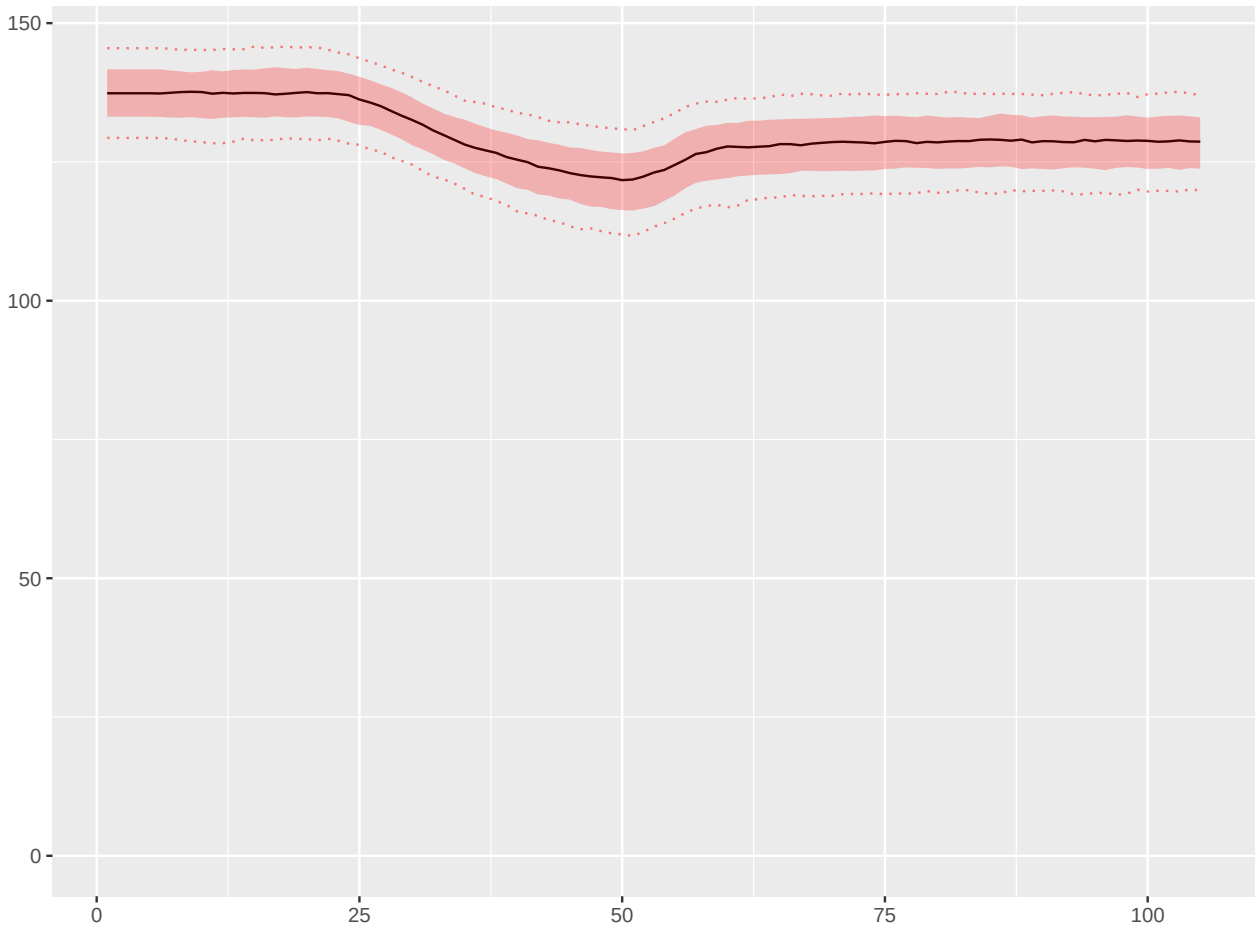

Figure 2 Mean length of catch brill.

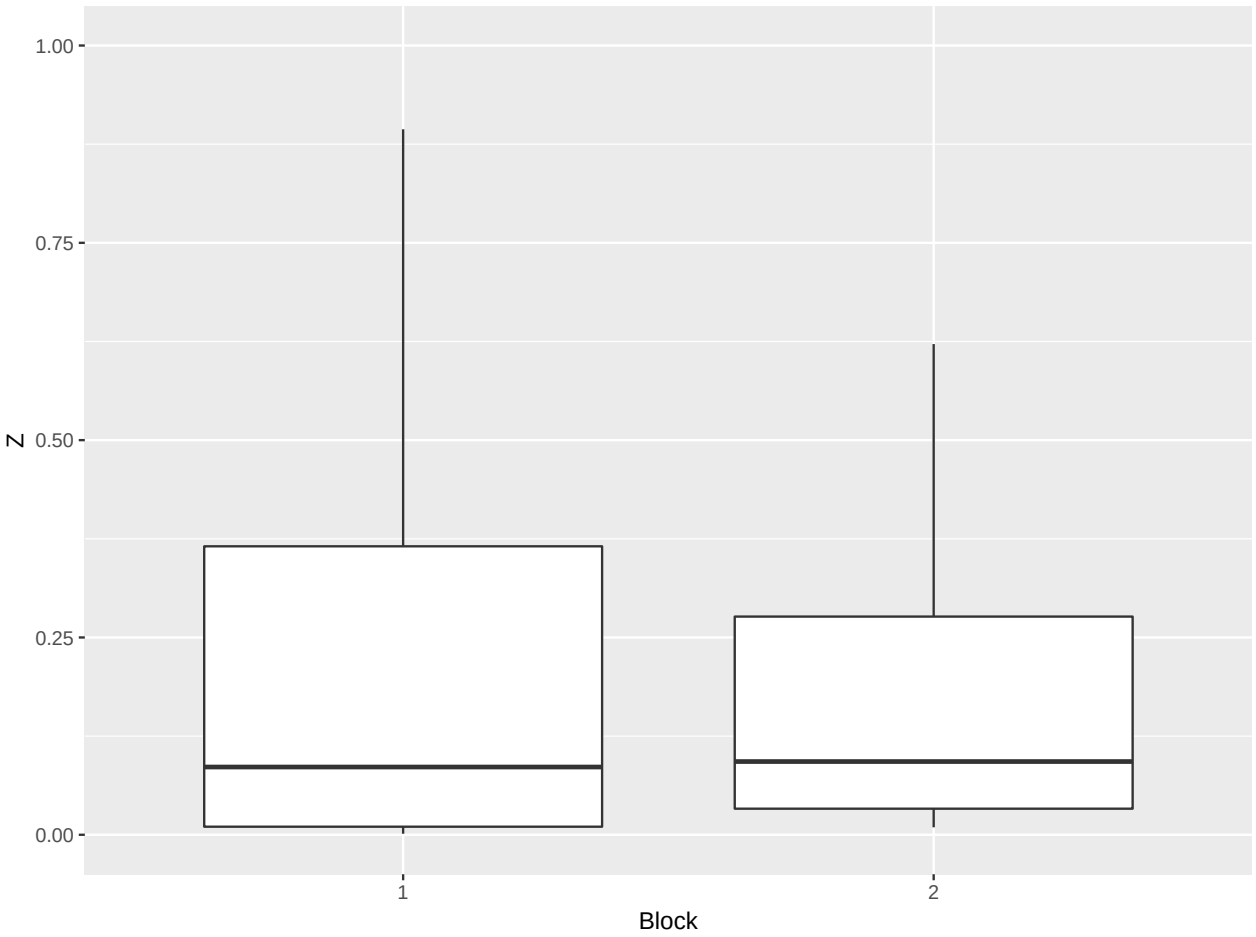

Figure 3 Zs

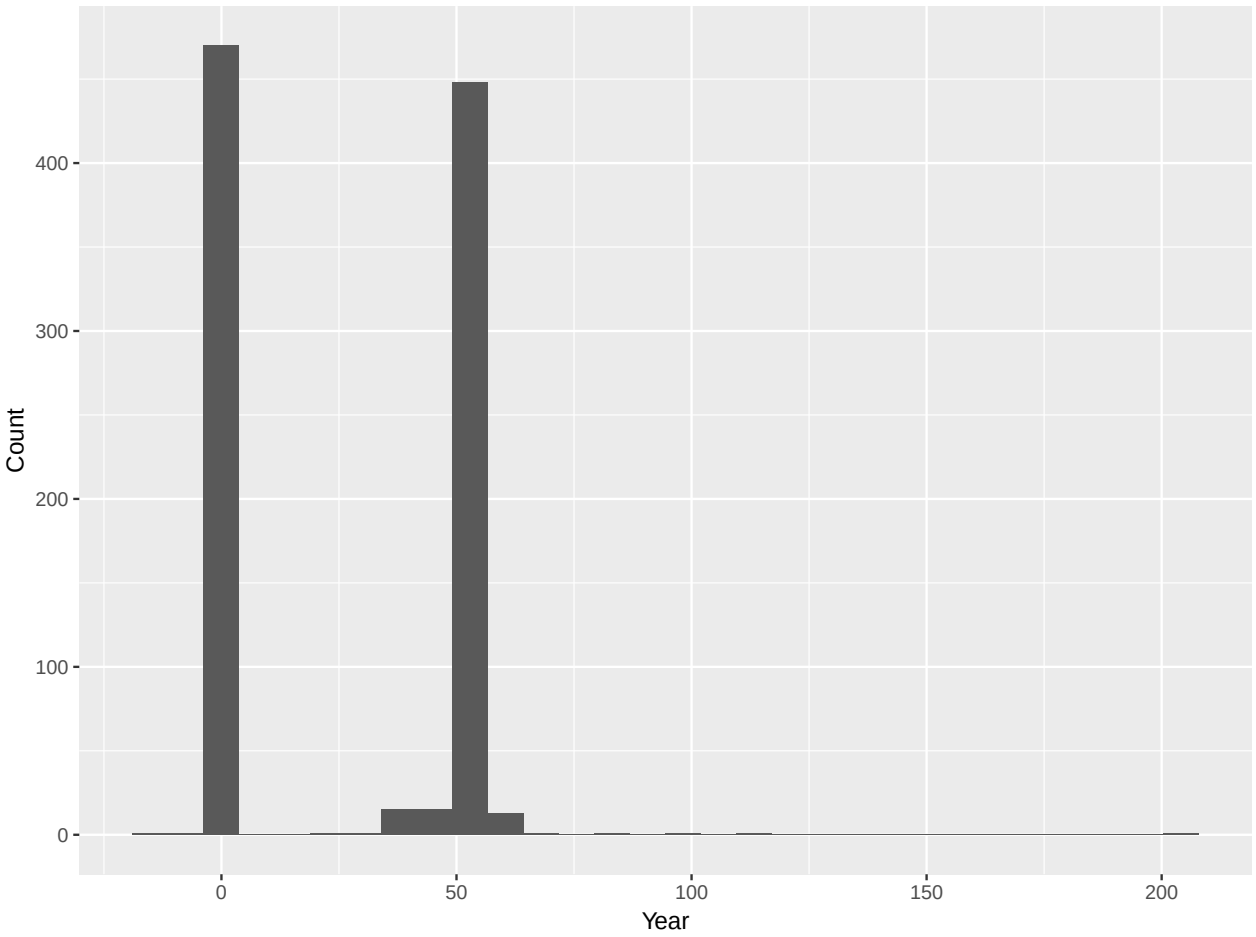

Figure 4 Break

Turbot

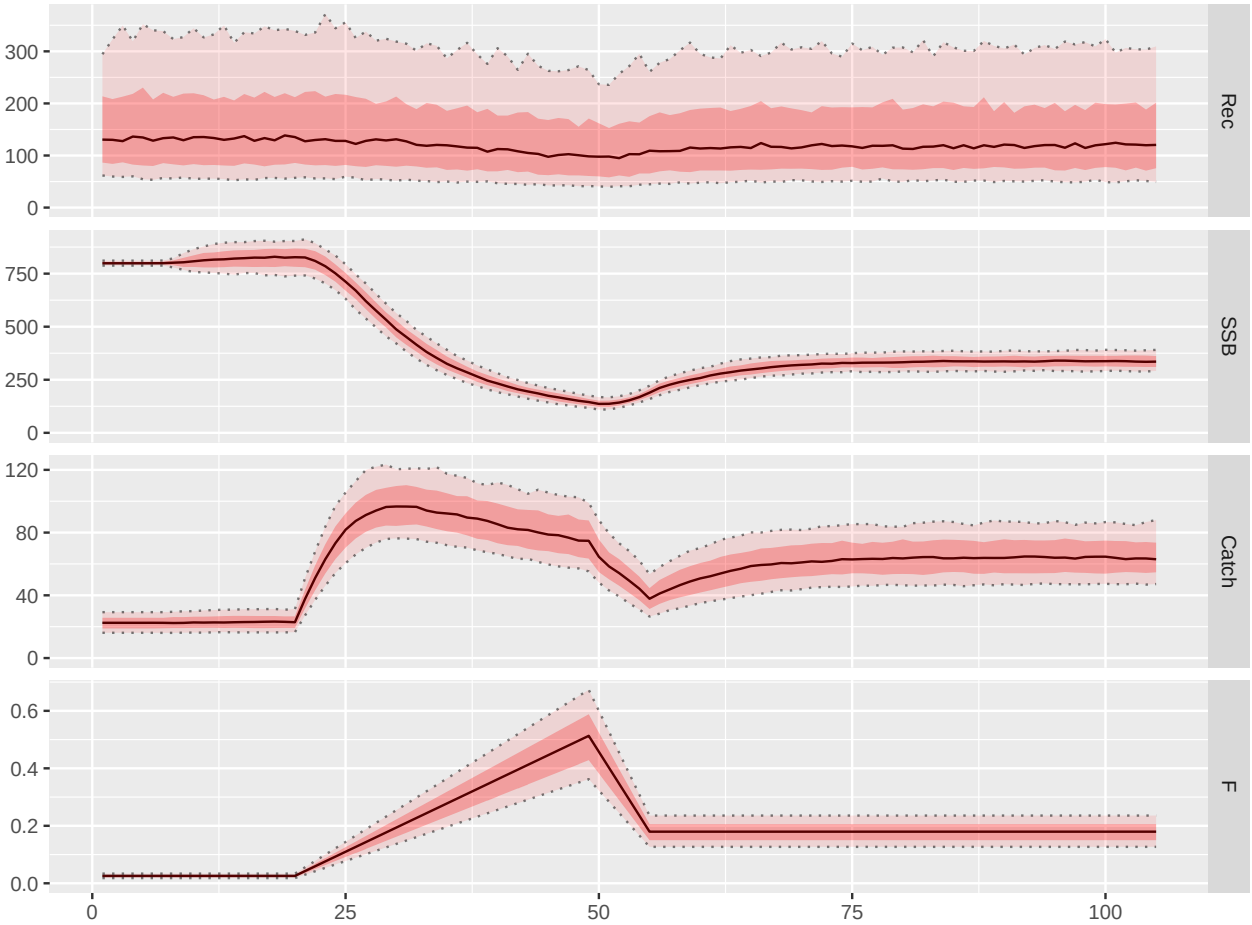

Figure 5 Operating model for turbot.

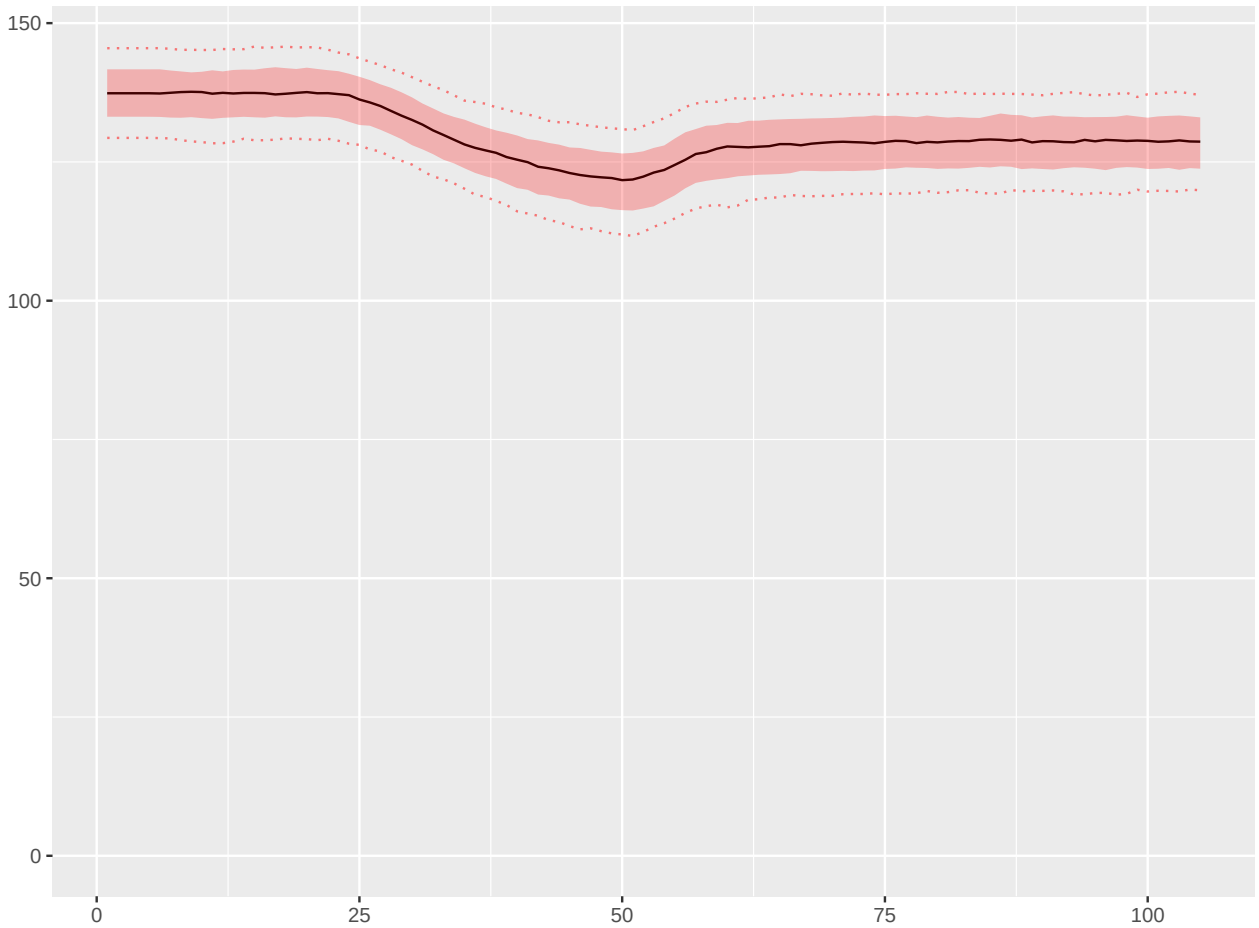

Figure 6 Mean length of catch turbot.

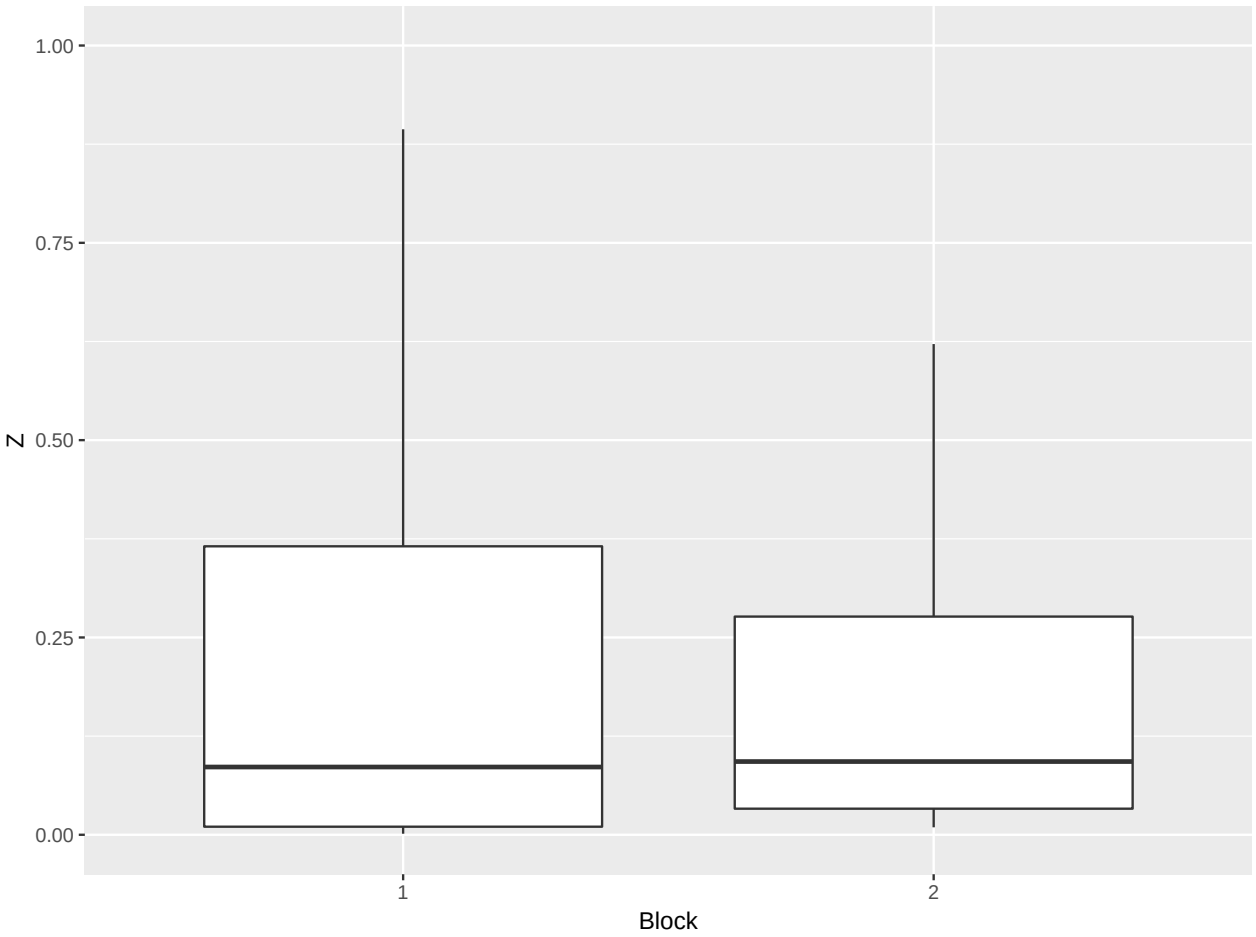

Figure 7 Zs

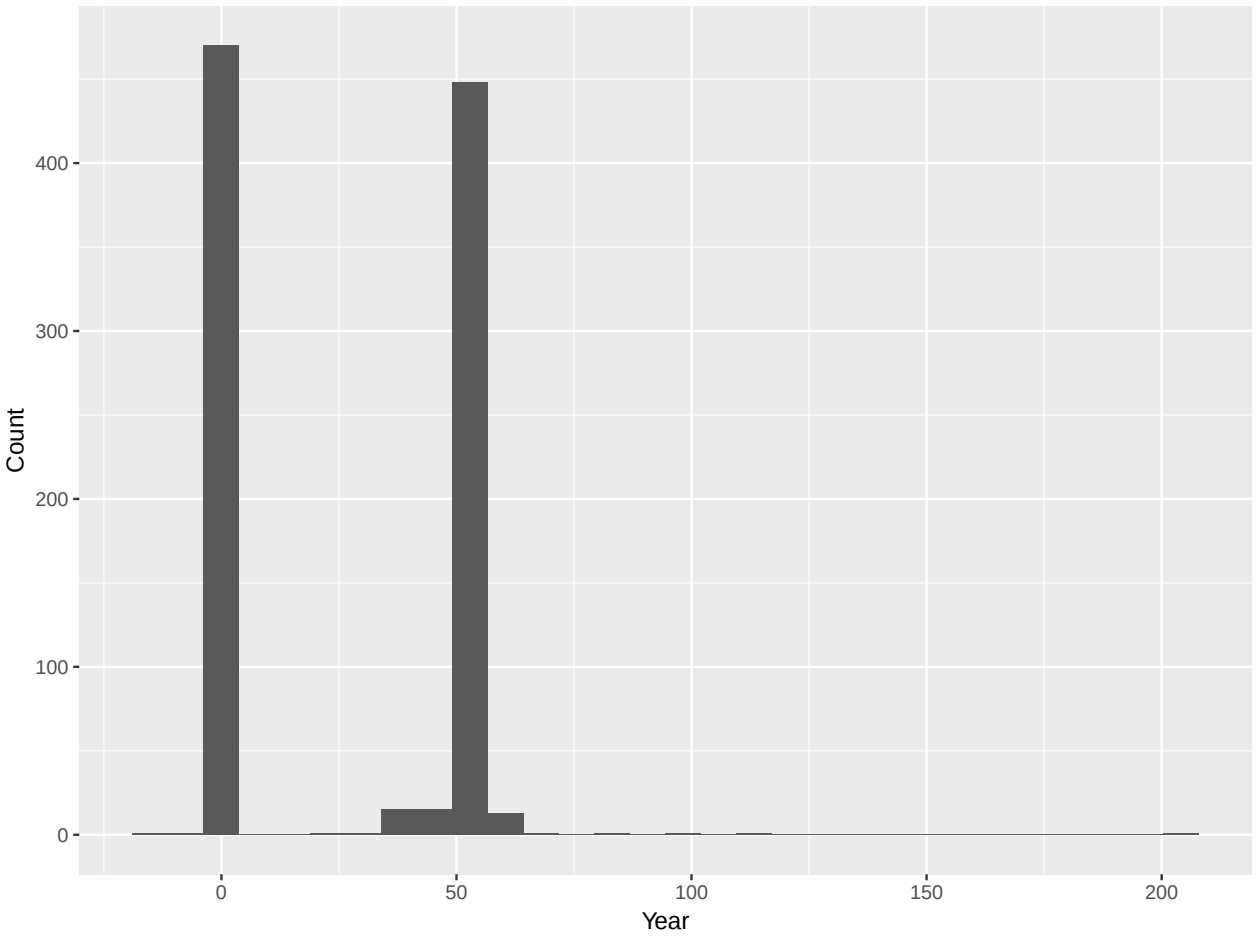

Figure 8 Break

Ray

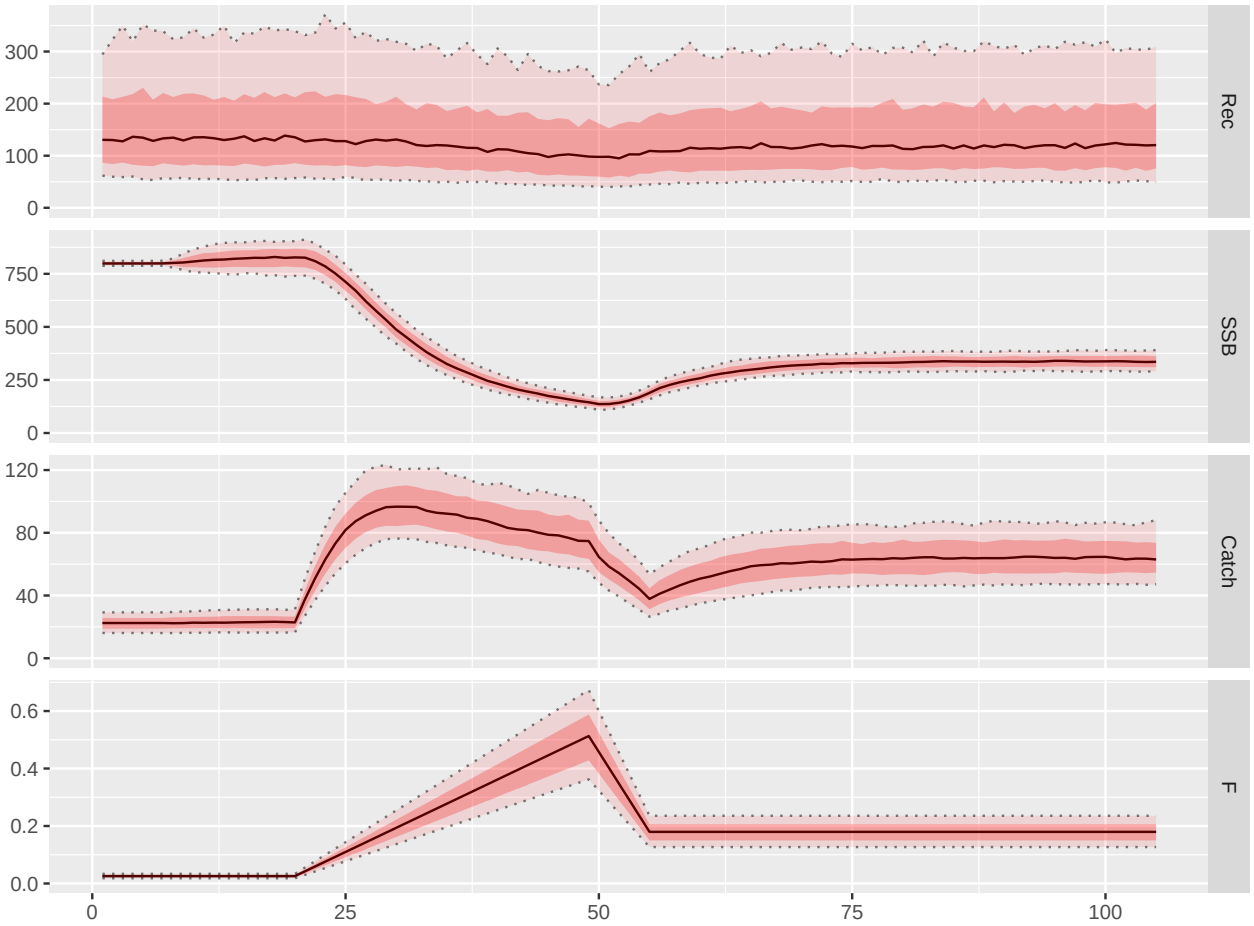

Figure 9 Operating model for ray.

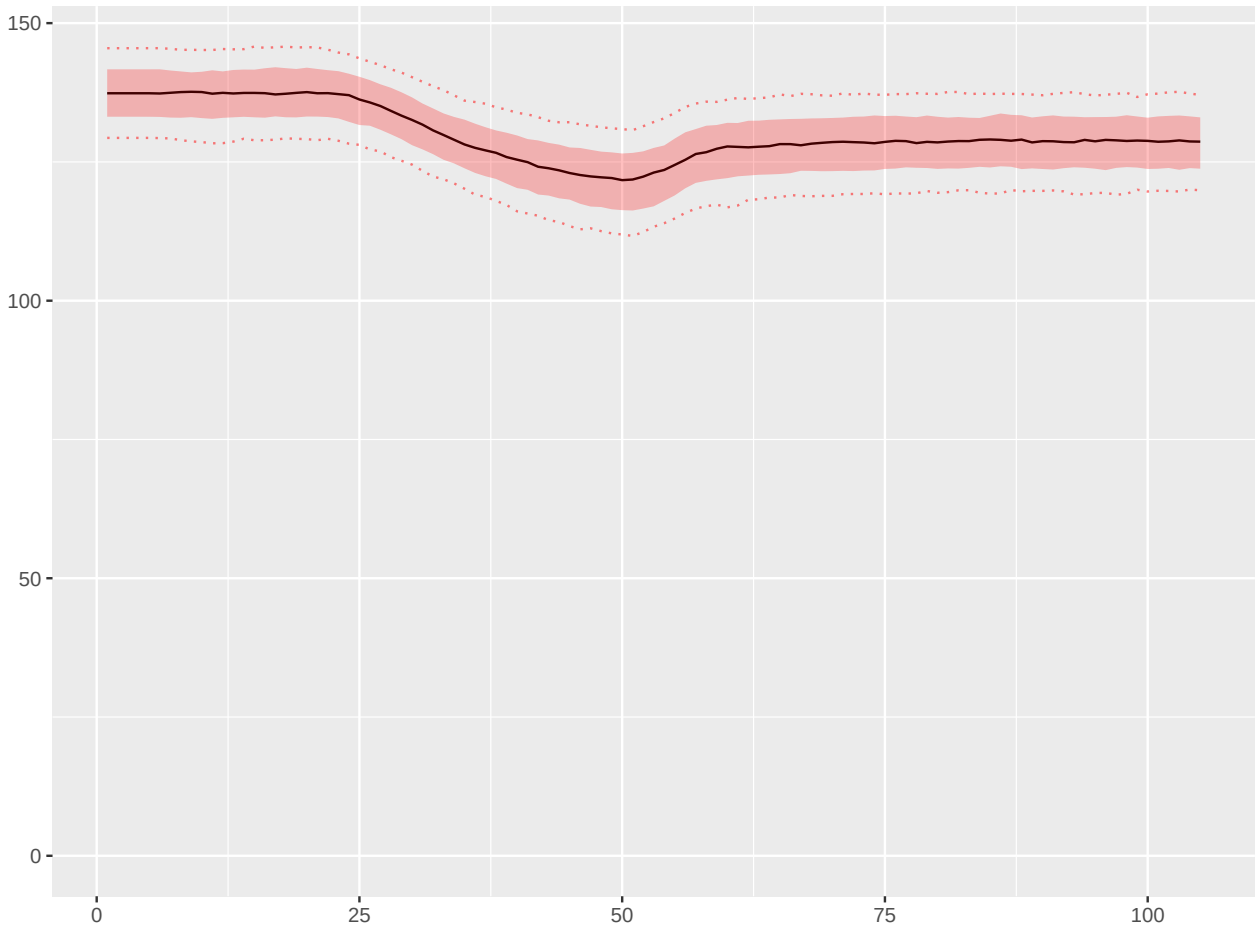

Figure 10 Mean length of catch ray.

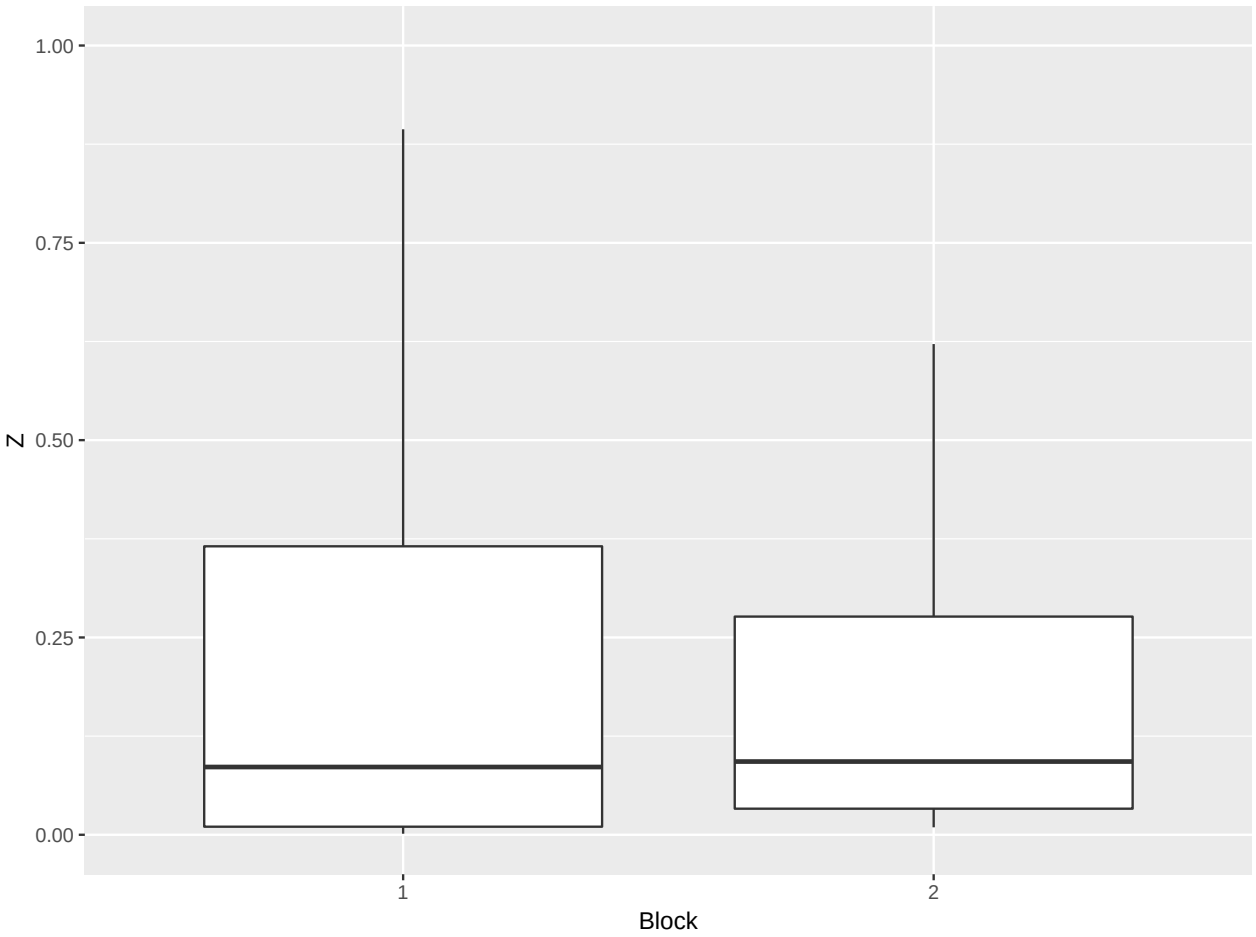

Figure 11 Zs

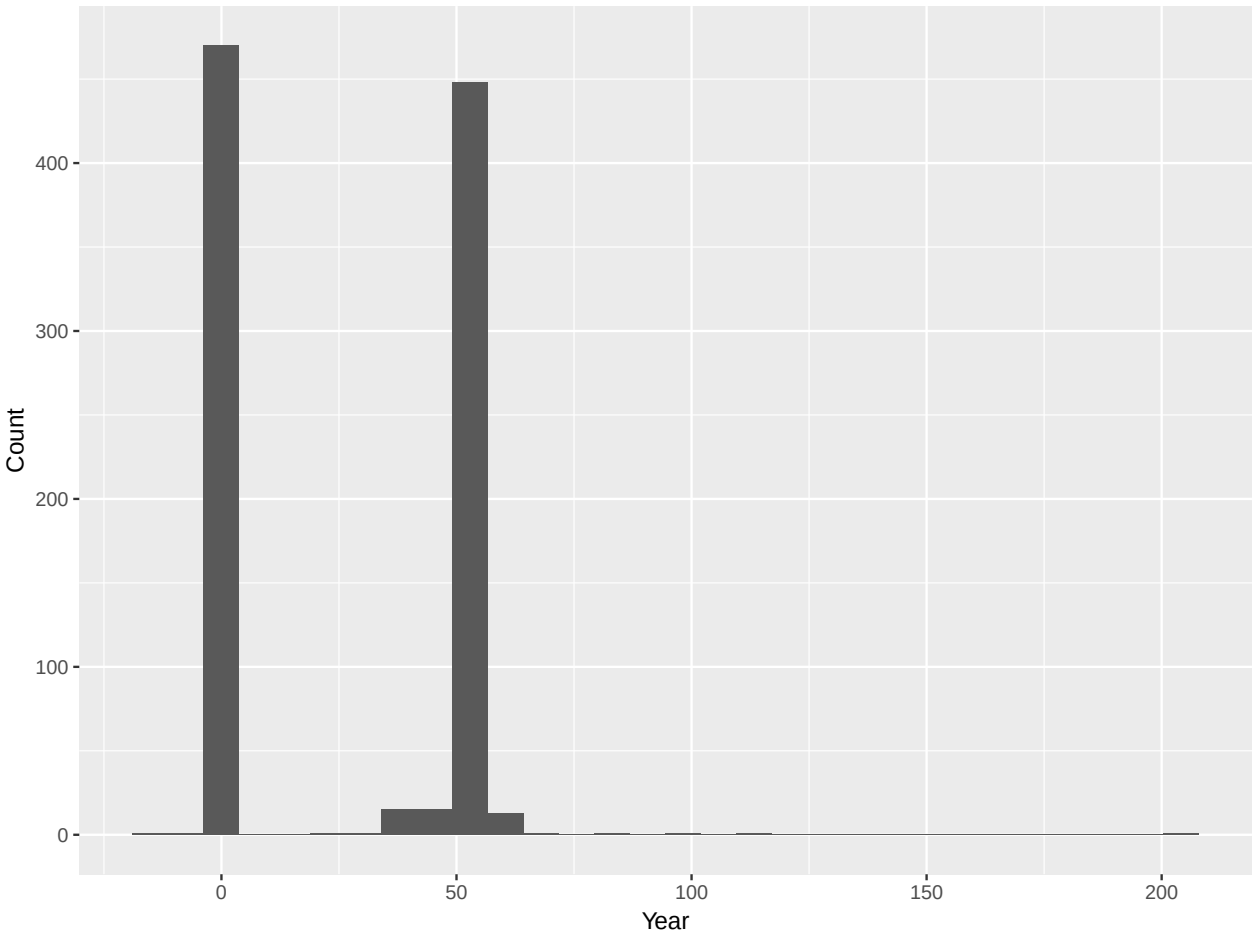

Figure 12 Break

Pollack

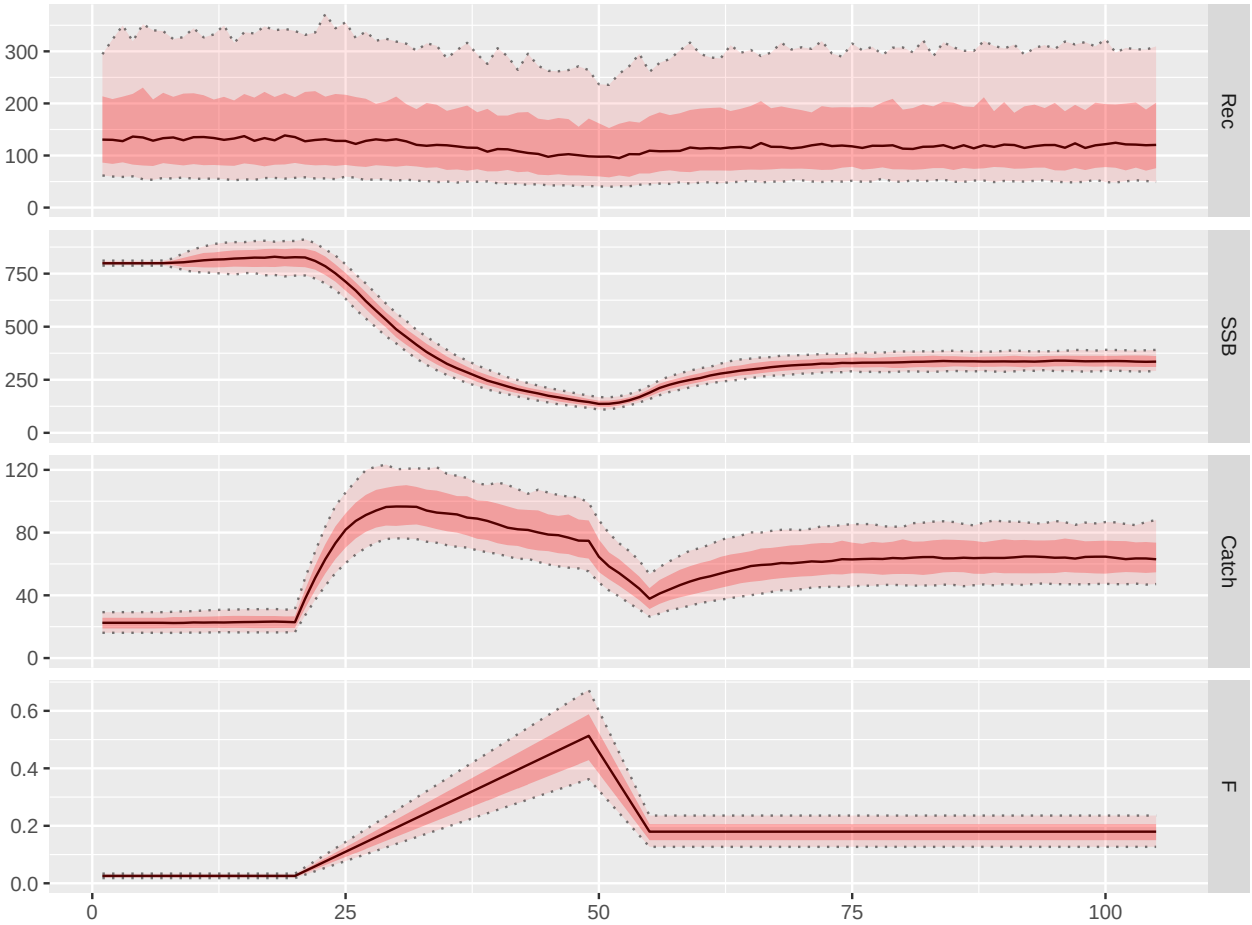

Figure 13 Operating model for pollack.

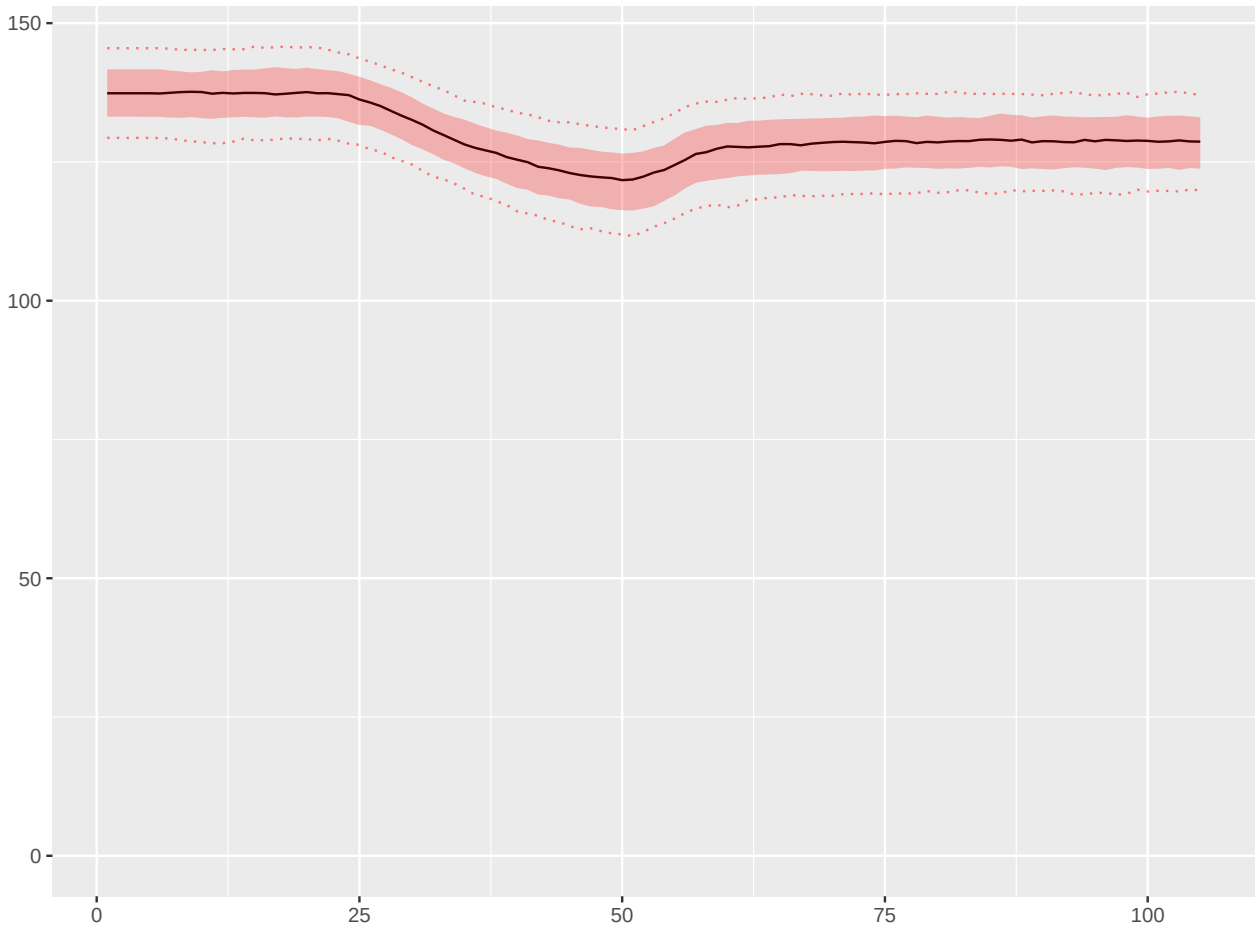

Figure 14 Mean length of catch pollack.

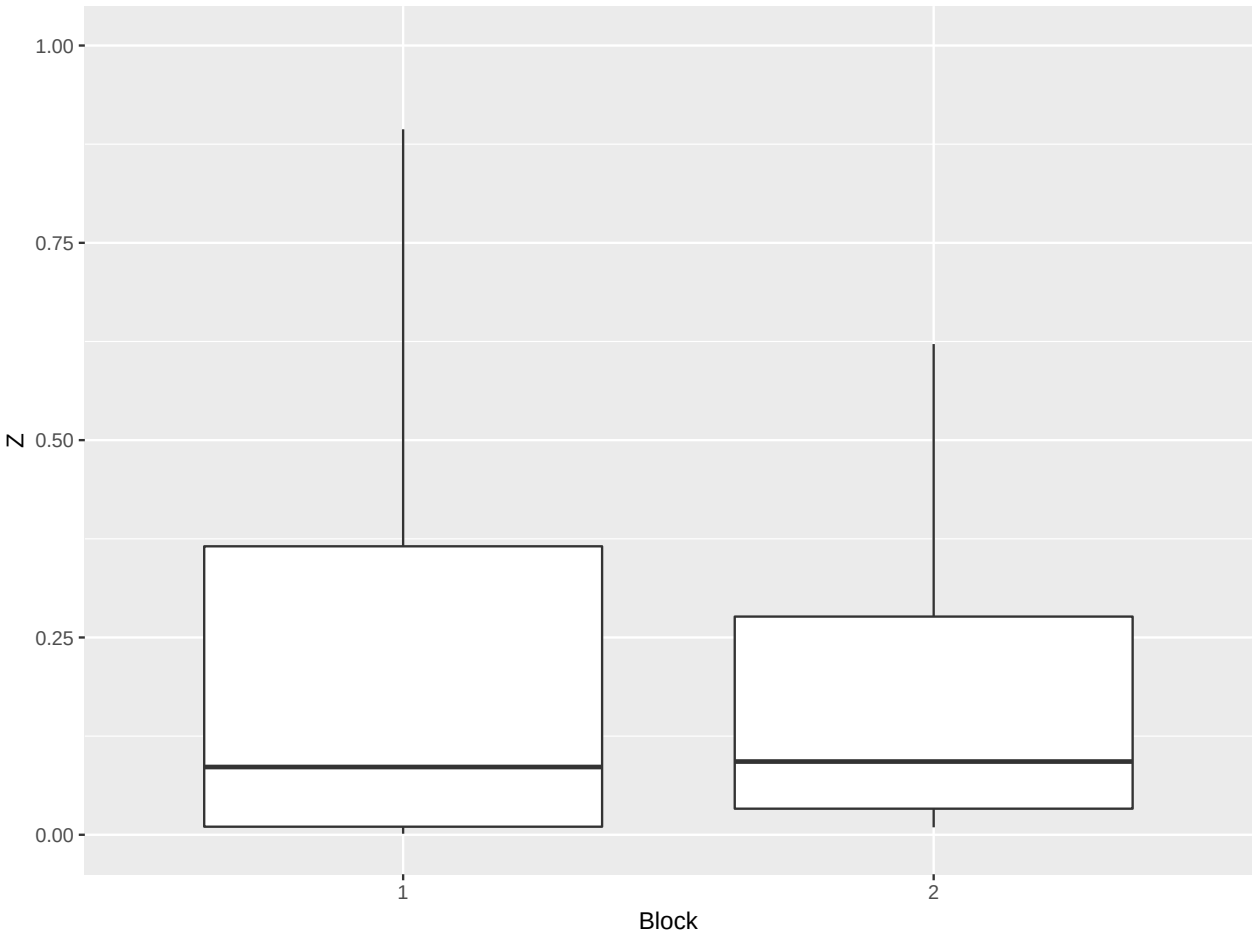

Figure 15 Zs

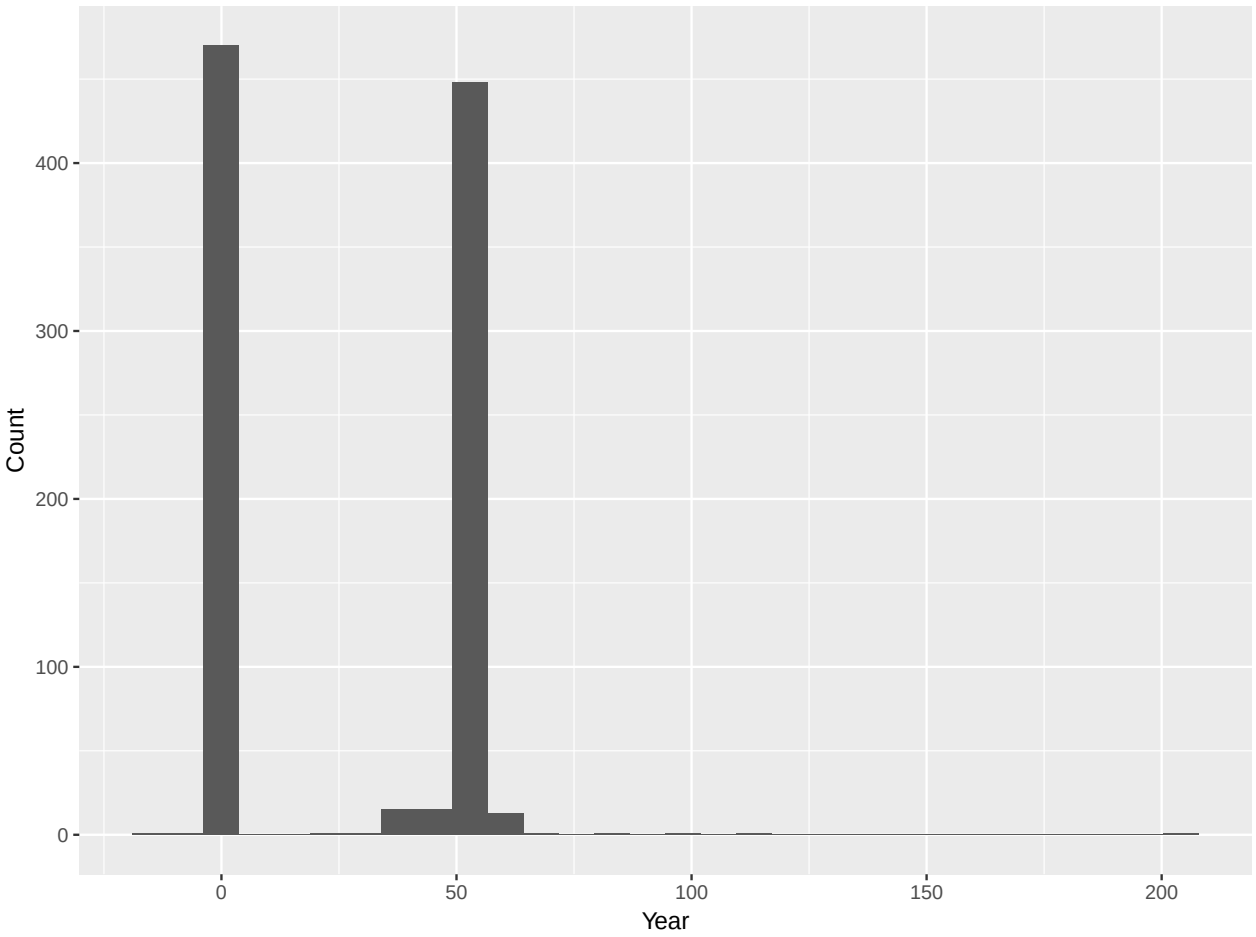

Figure 16 Break

Sprat

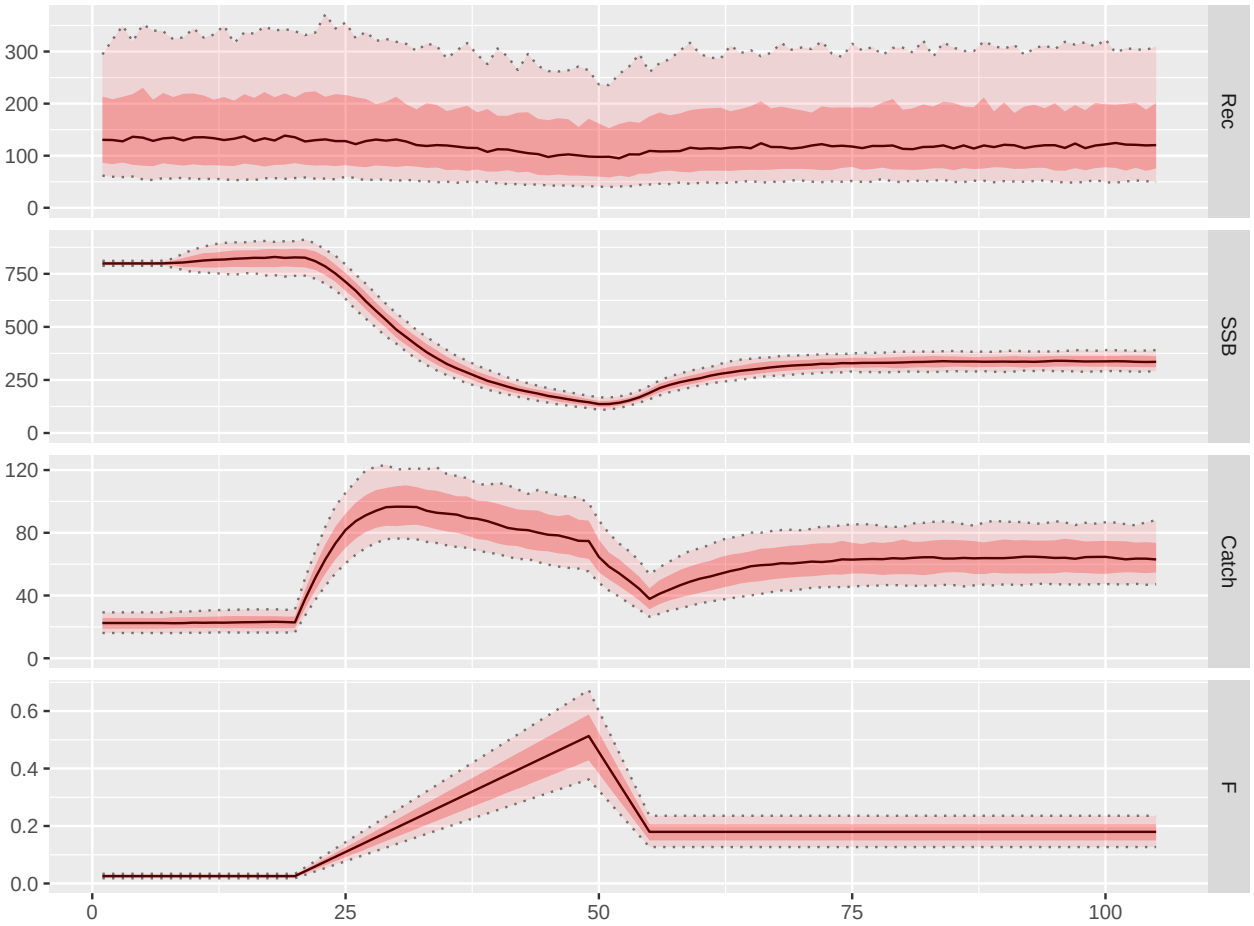

Figure 17 Operating model for sprat.

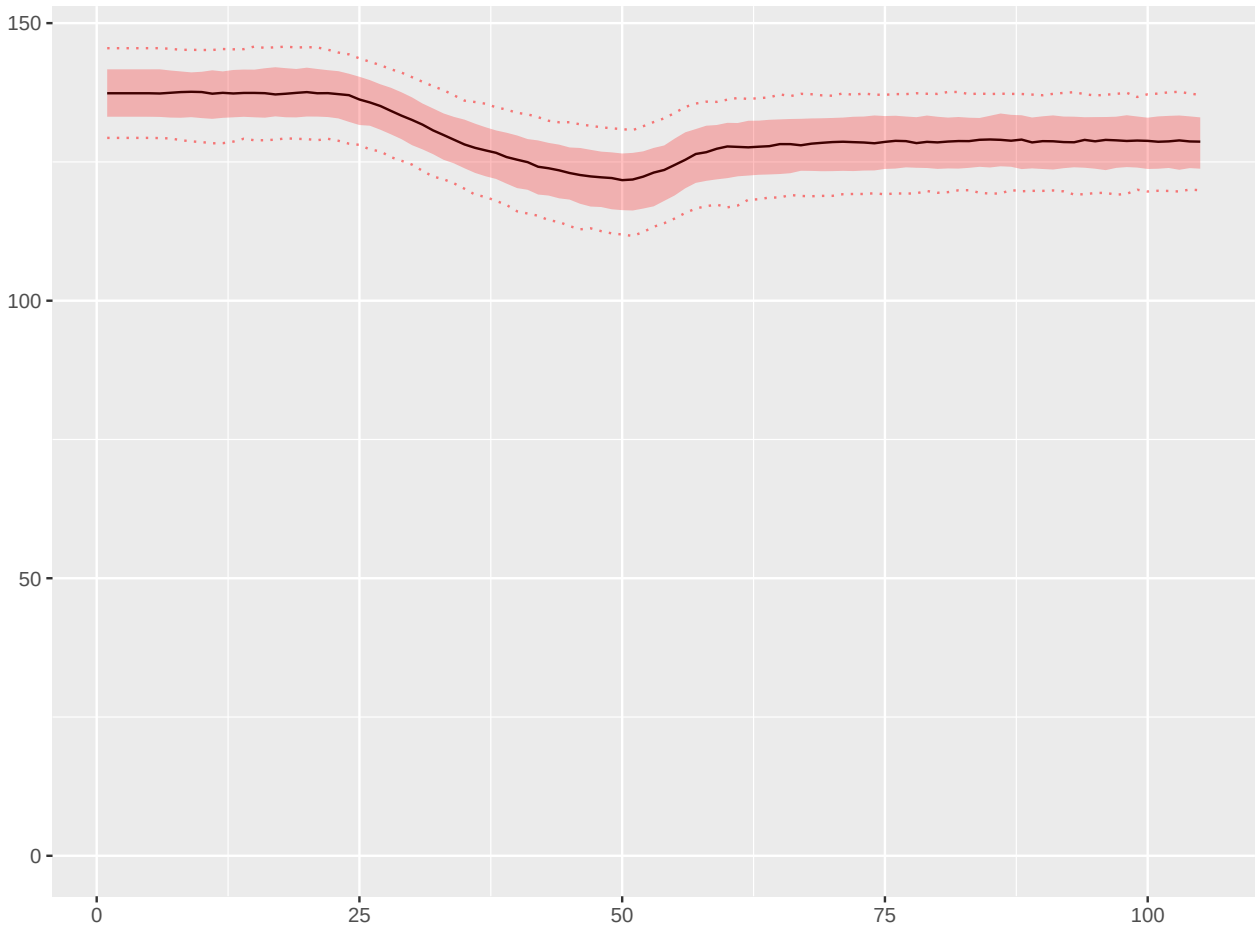

Figure 18 Mean length of catch sprat.

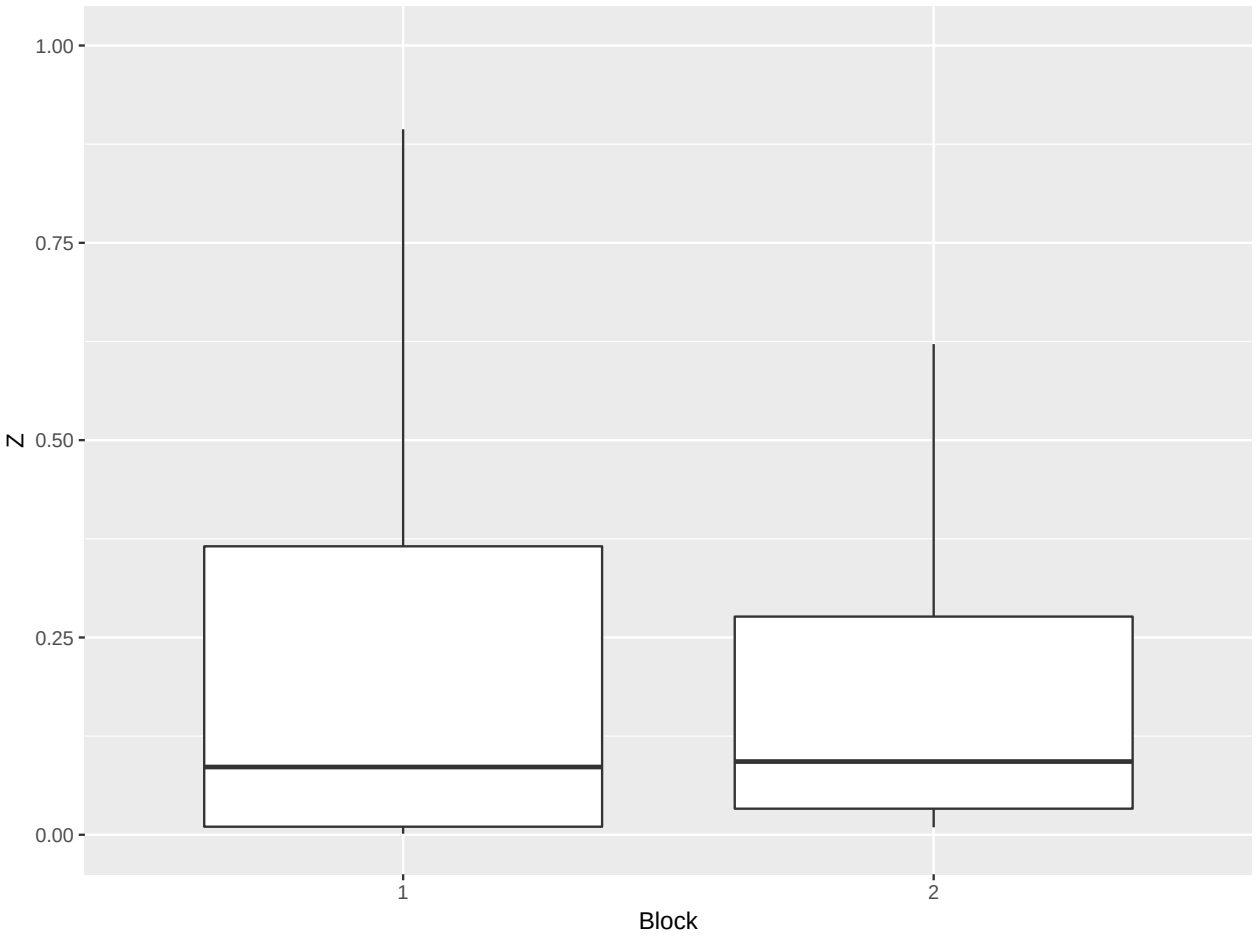

Figure 19 Zs

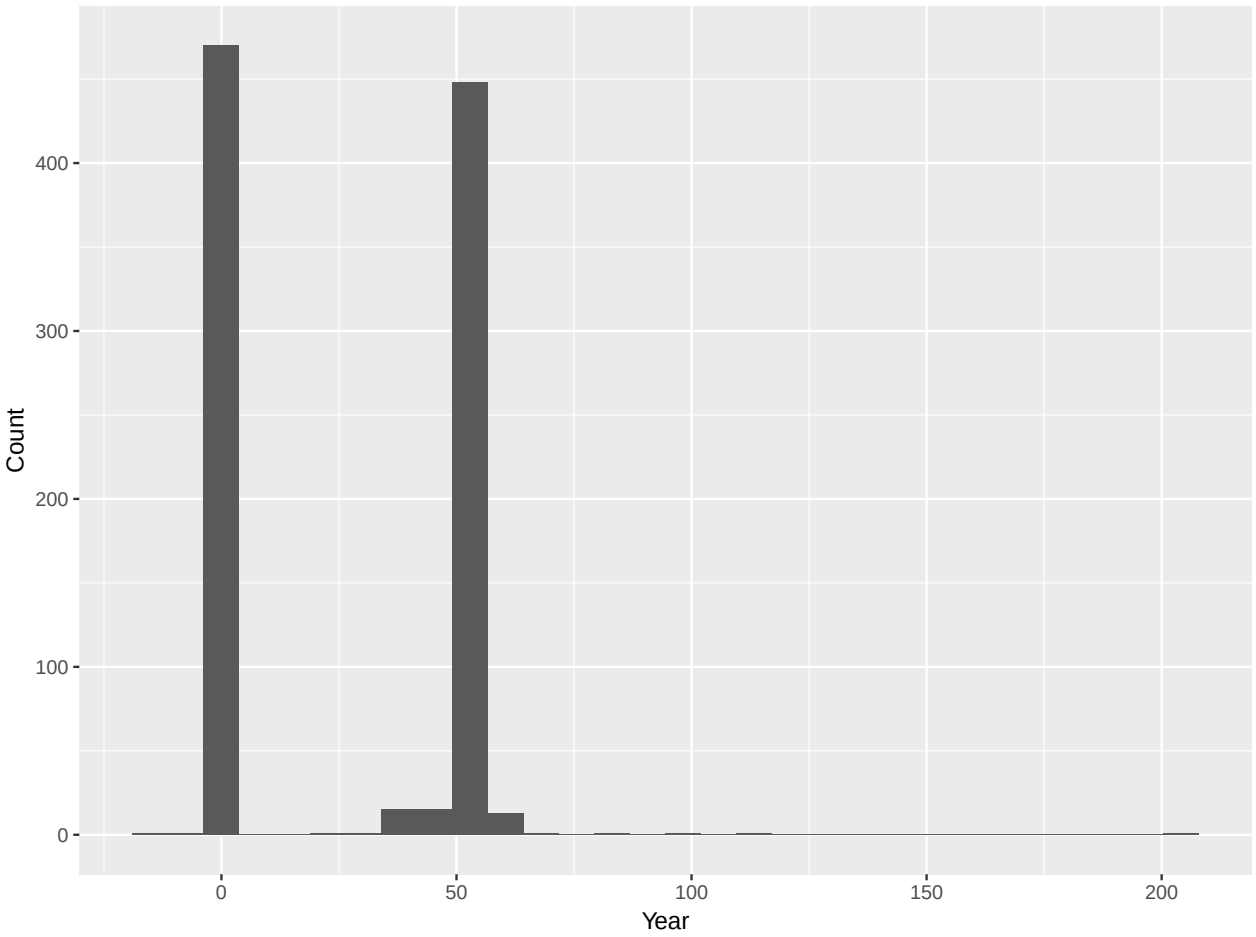

Figure 20 Break

Razors

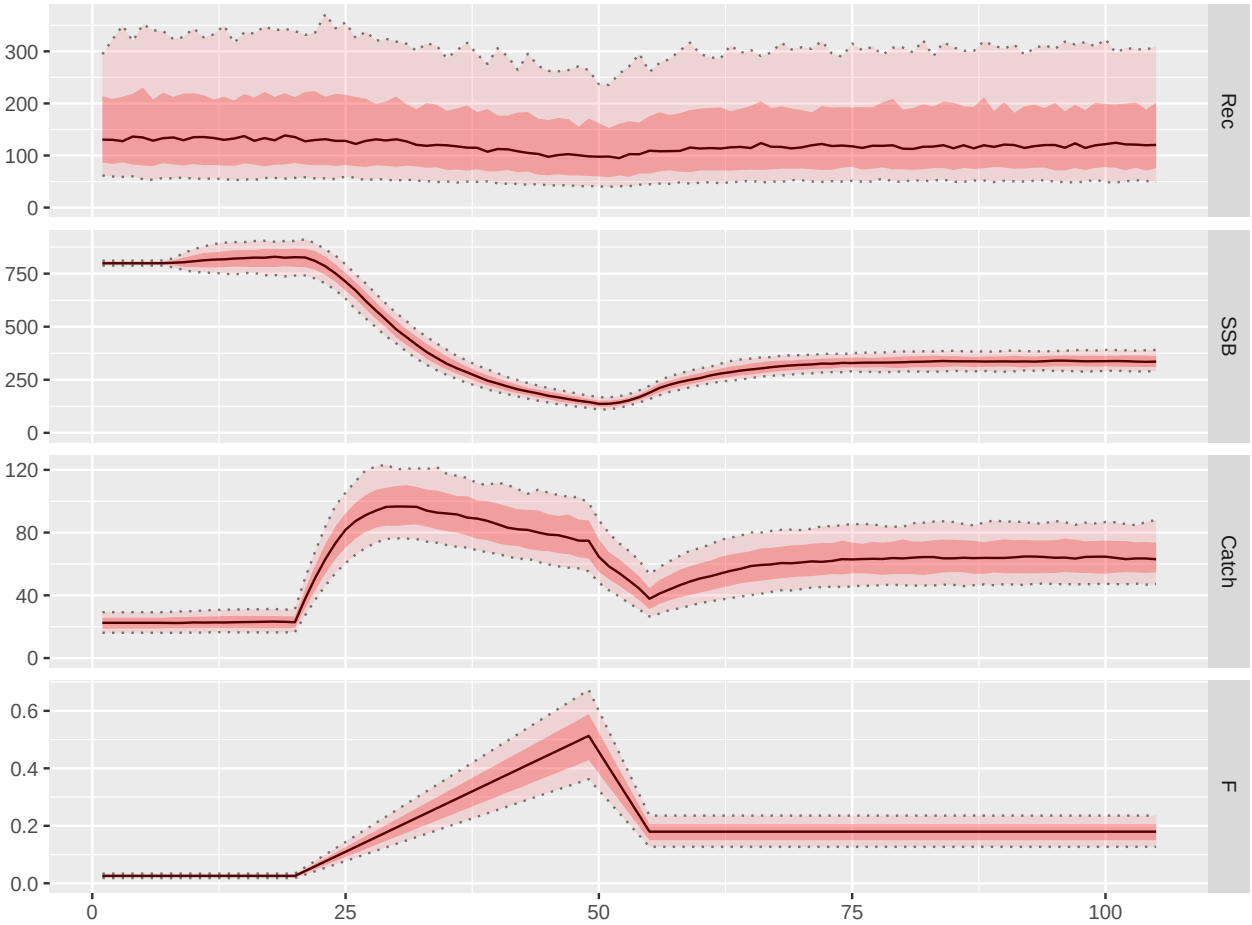

Figure 21 Operating model for razor.

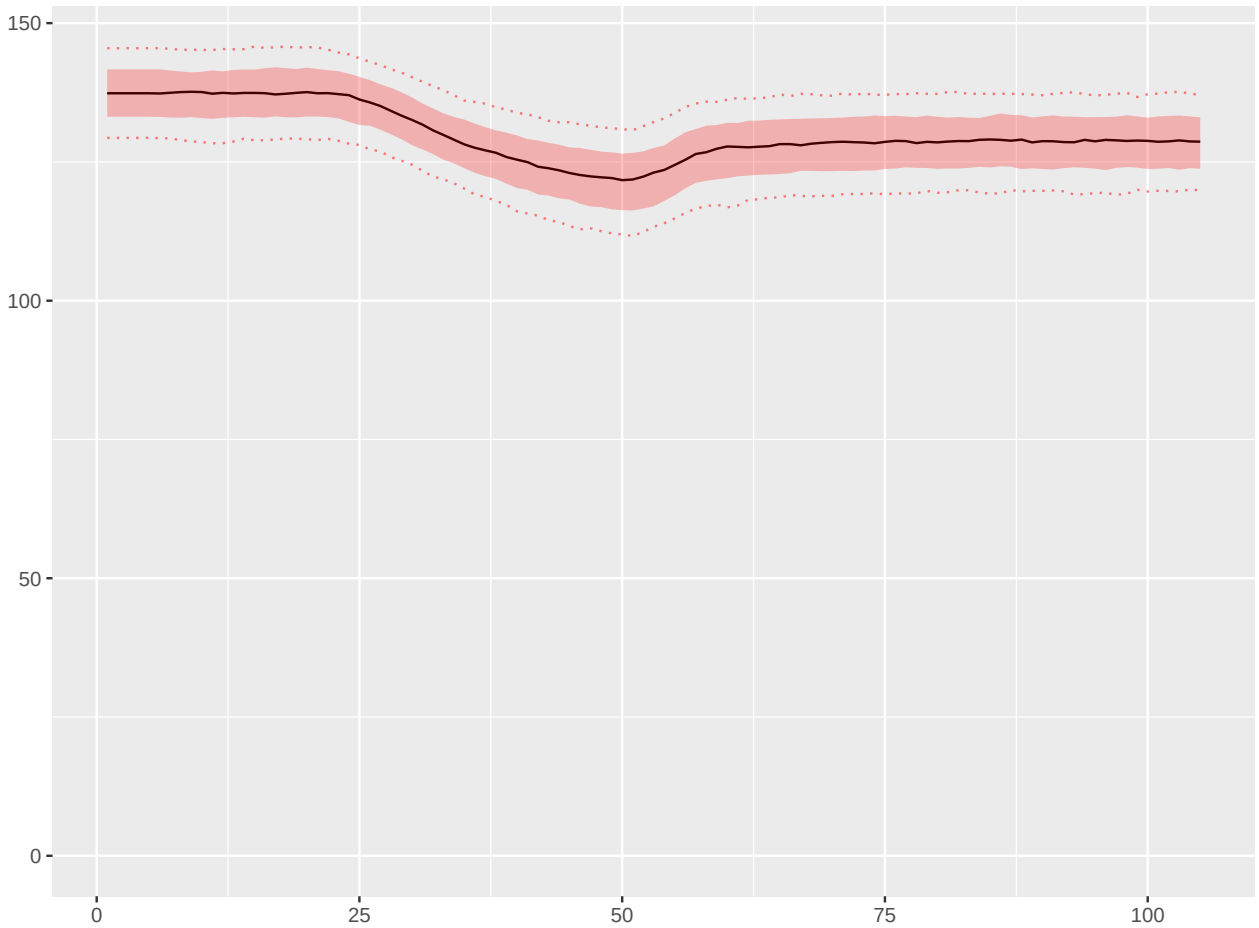

Figure 22 Mean length of catch razor.

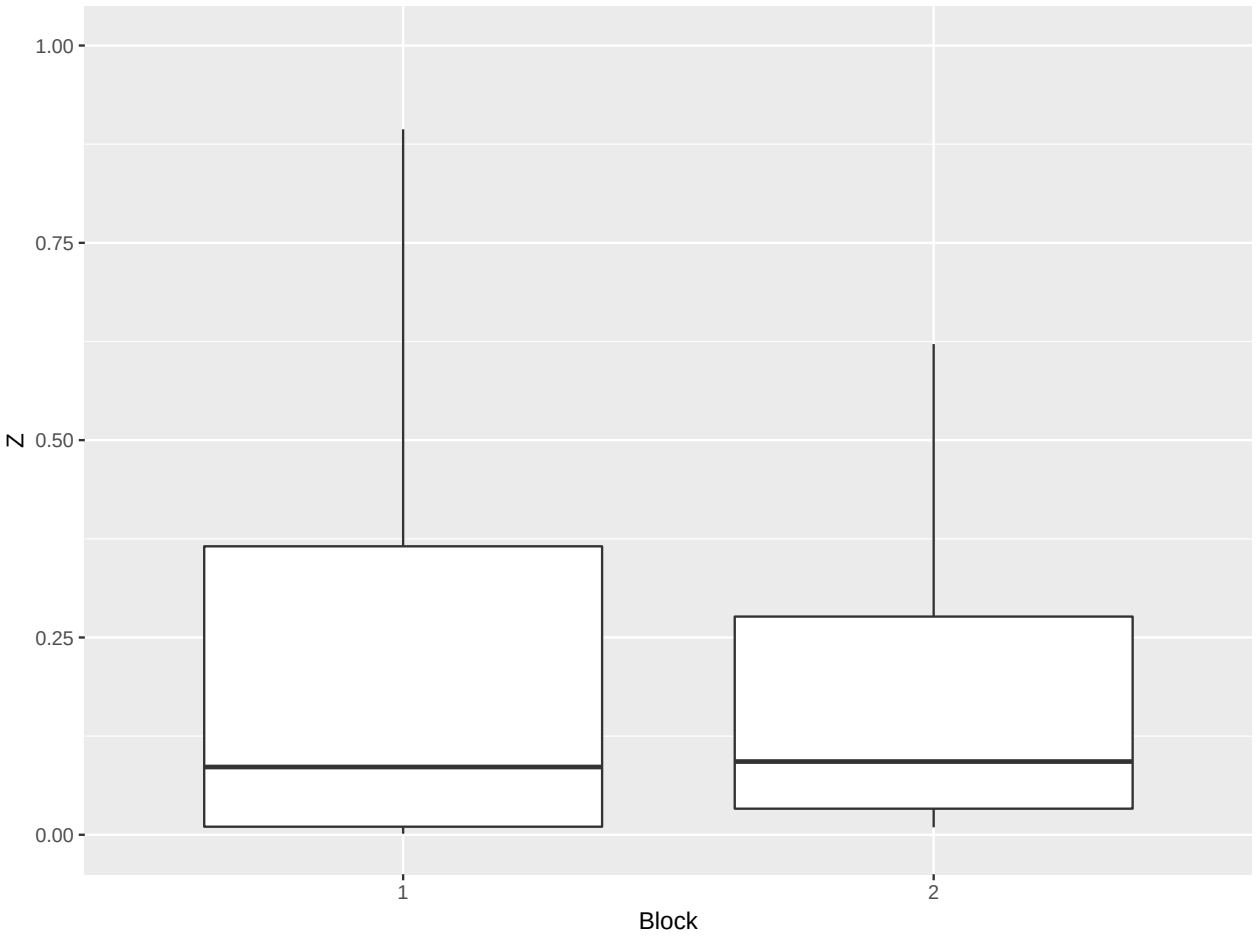

Figure 23 Zs

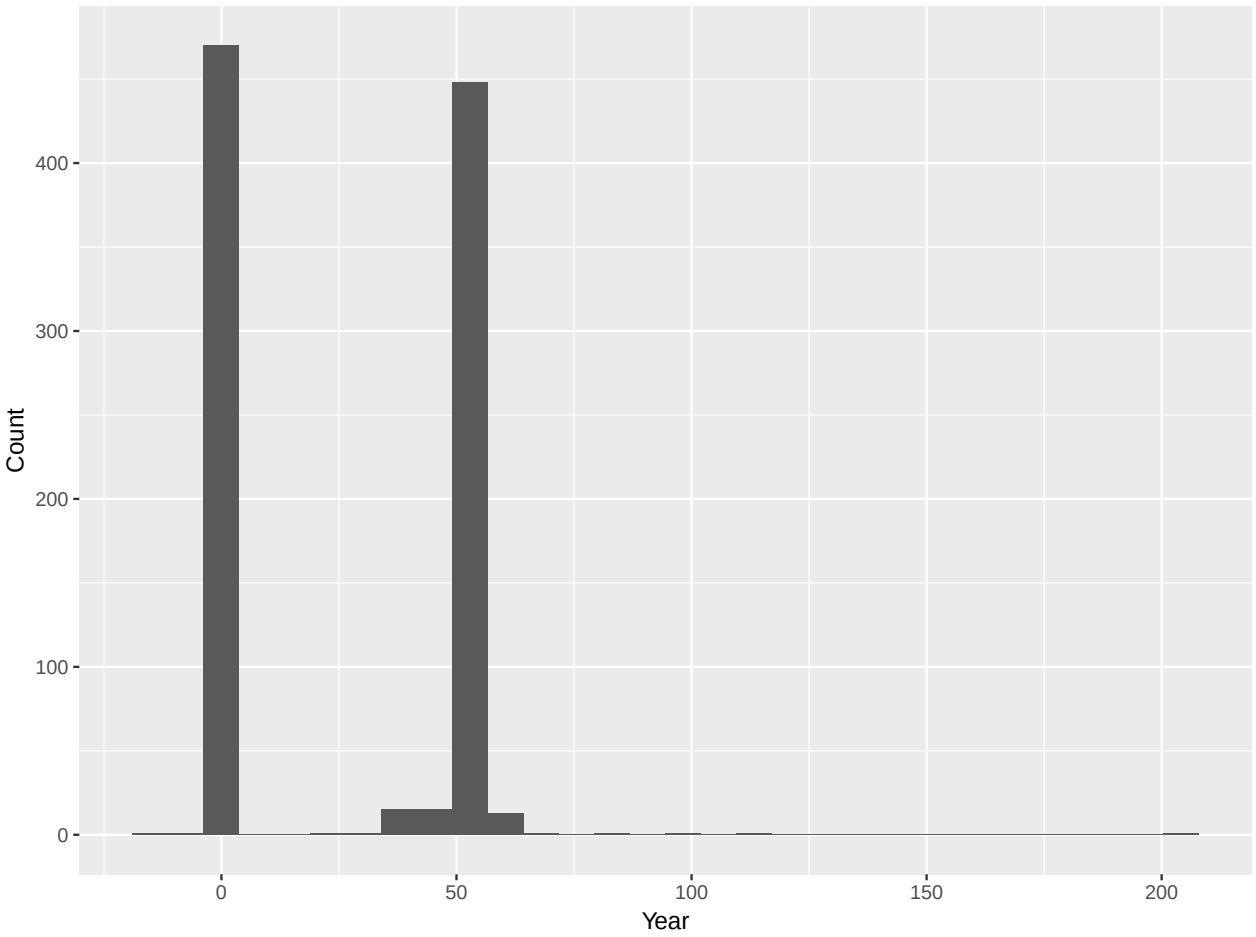

Figure 24 Break

Lobster

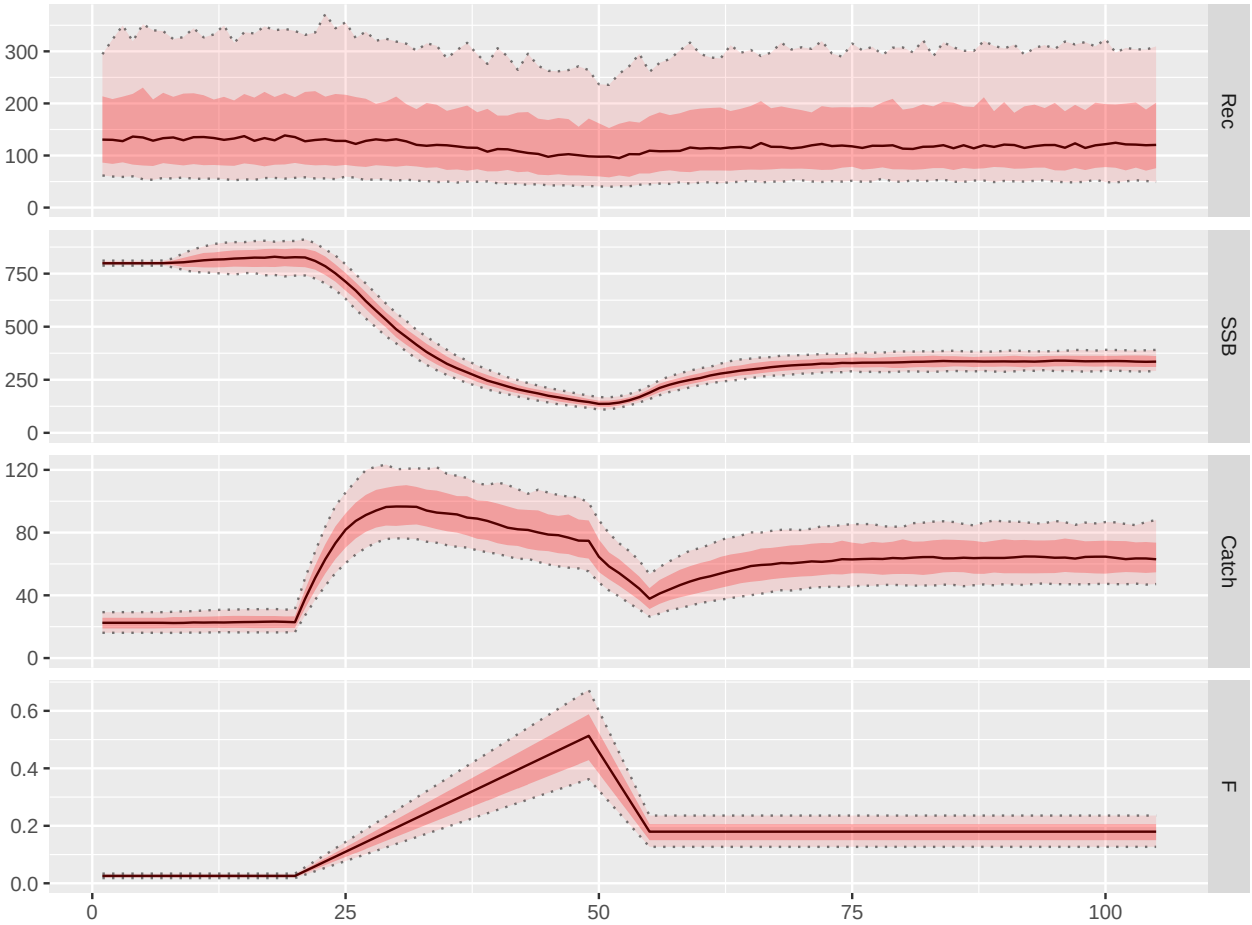

Figure 25 Operating model for lobster.

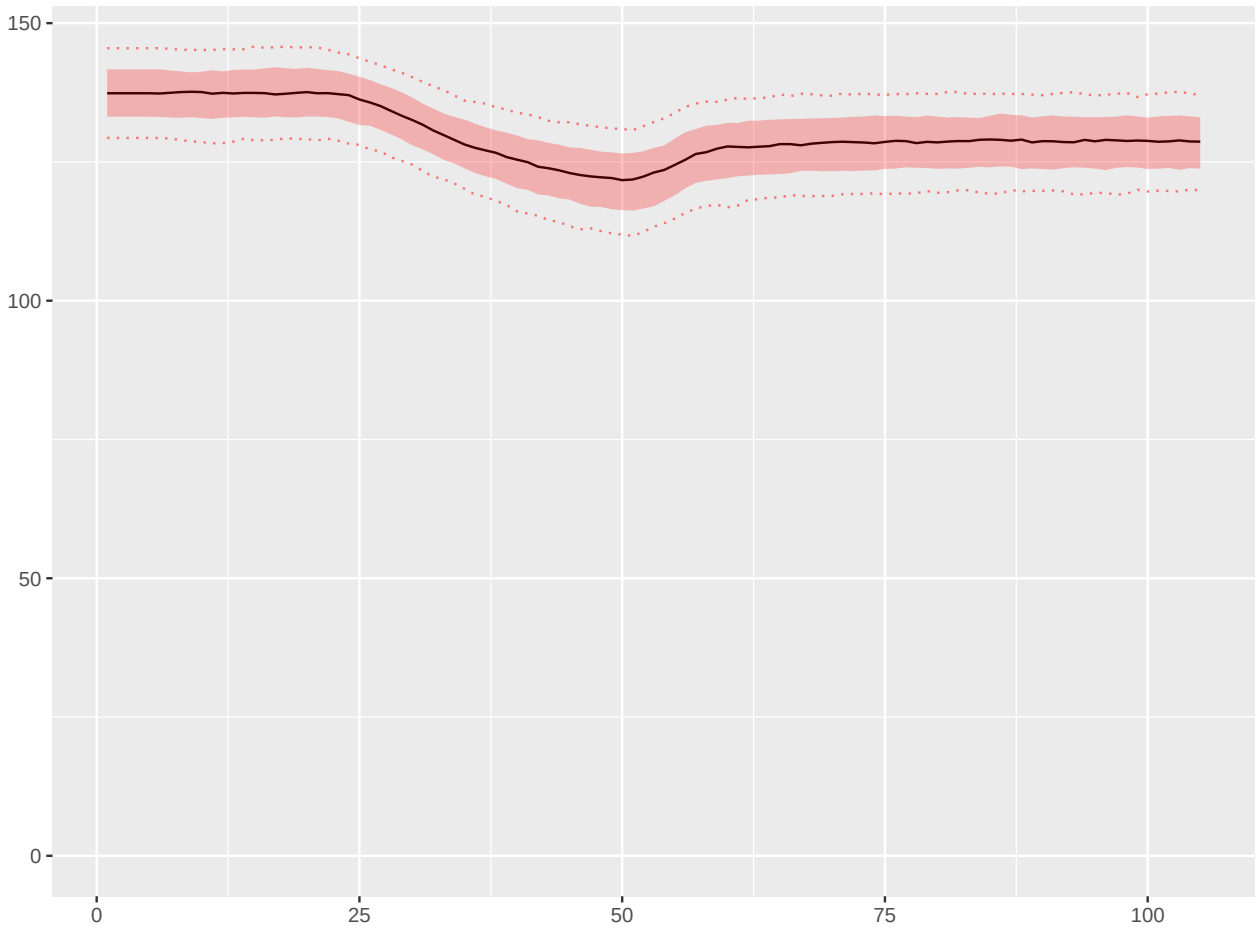

Figure 26 Mean length of catch lobster.

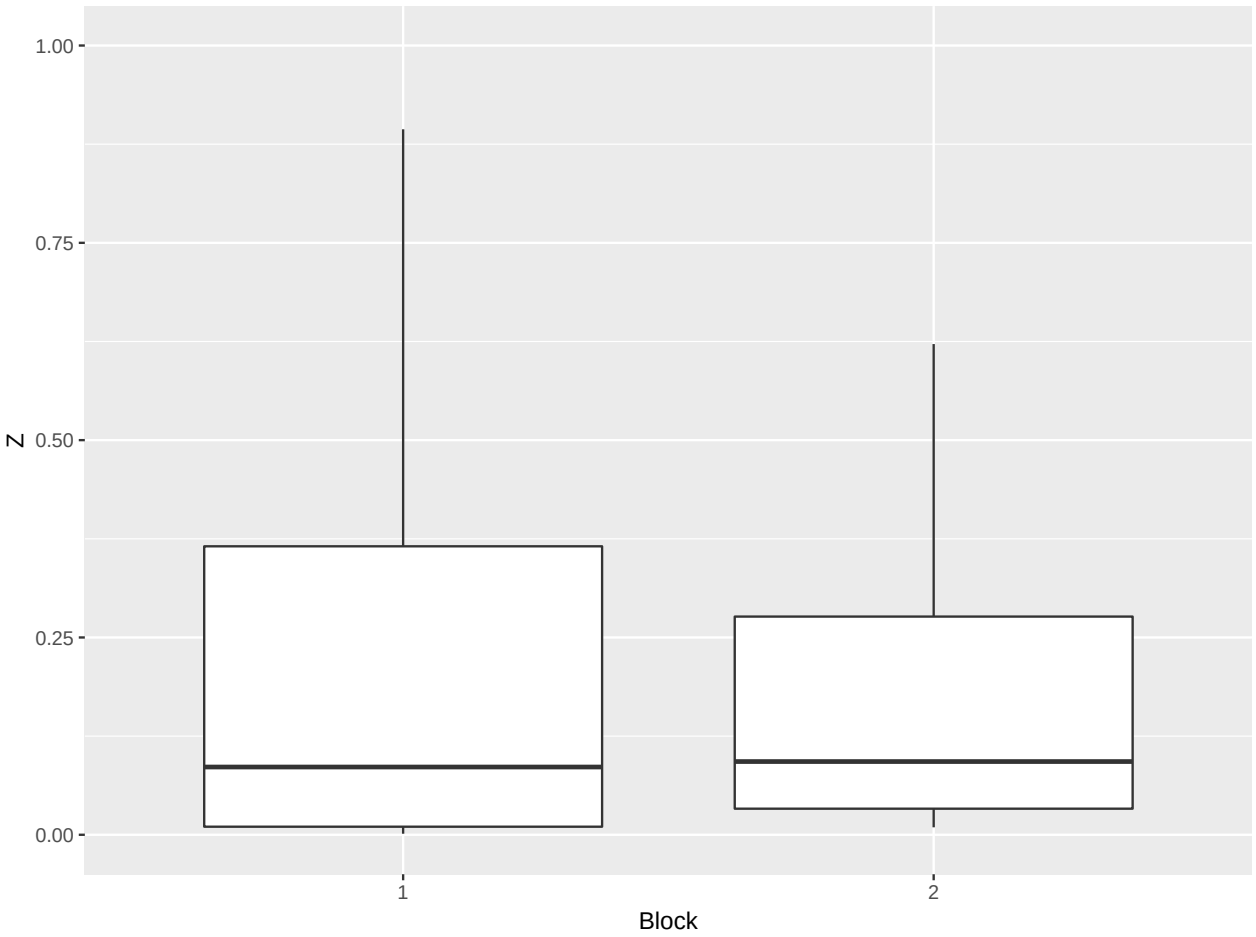

Figure 27 Zs

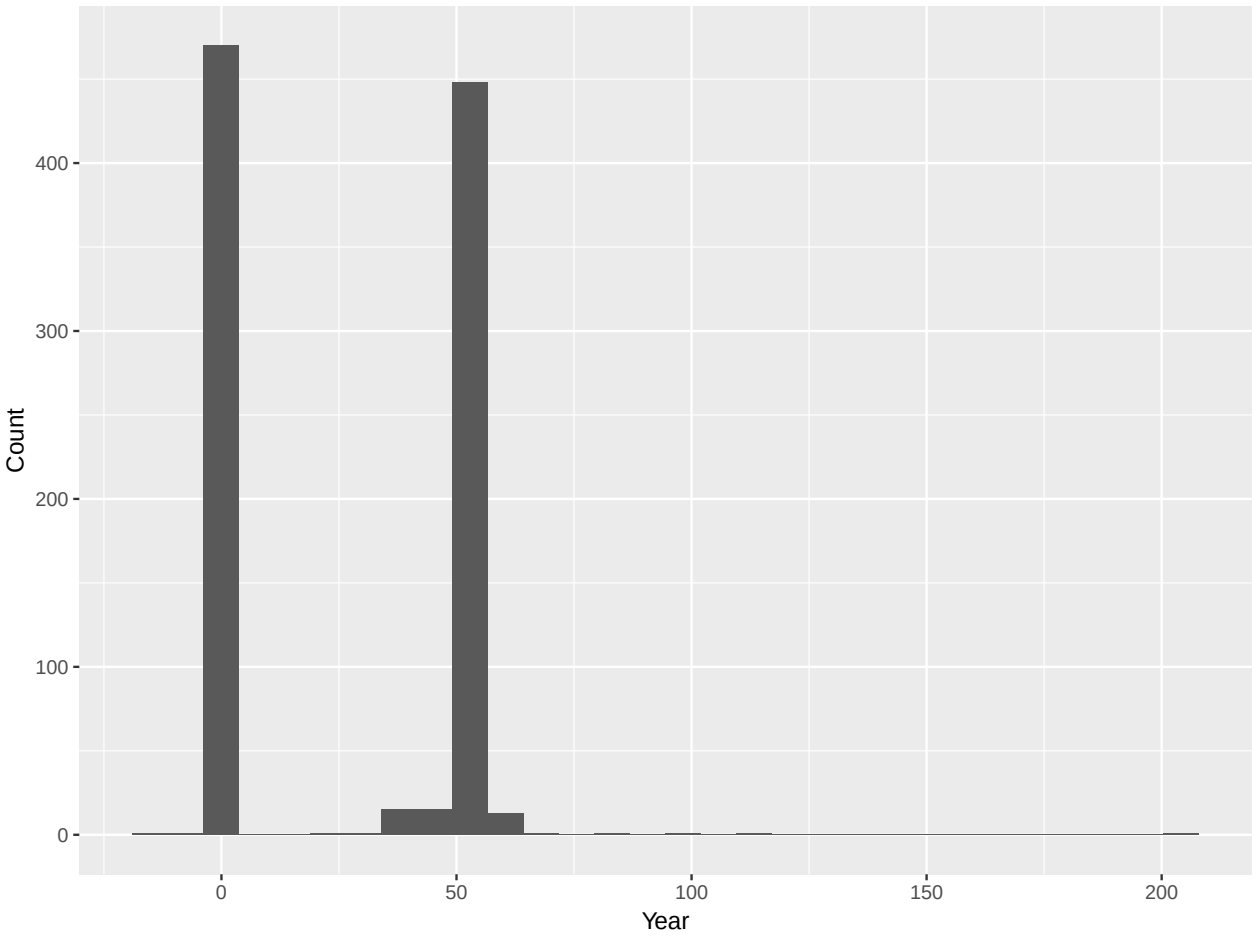

Figure 28 Break

Session Info

```
R version 3.4.1 (2017-06-30)
Platform: x86_64-pc-linux-gnu (64-bit)
Running under: Ubuntu 16.04.2 LTS

Matrix products: default
BLAS: /usr/lib/libblas/libblas.so.3.6.0
LAPACK: /usr/lib/lapack/liblapack.so.3.6.0

locale:
 [1] LC_CTYPE=en_US.UTF-8       LC_NUMERIC=C
 [3] LC_TIME=en_GB.UTF-8        LC_COLLATE=en_US.UTF-8
 [5] LC_MONETARY=en_GB.UTF-8    LC_MESSAGES=en_US.UTF-8
 [7] LC_PAPER=en_GB.UTF-8       LC_NAME=C
 [9] LC_ADDRESS=C               LC_TELEPHONE=C
[11] LC_MEASUREMENT=en_GB.UTF-8 LC_IDENTIFICATION=C

attached base packages:
[1] stats     graphics  grDevices utils     datasets  methods   base

other attached packages:
 [1] MLZ_0.1.1           mydas_0.0.0.9000    FLife_3.2.1.9001
 [4] FLBRP_2.5.3         ggplotFL_2.6.4.9002 FLCore_2.6.9
 [7] lattice_0.20-35     dplyr_0.7.6         ggplot2_3.0.0
[10] reshape_0.8.7       plyr_1.8.4          knitr_1.20

loaded via a namespace (and not attached):
 [1] Rcpp_0.12.18       TMB_1.7.14         pillar_1.1.0
 [4] compiler_3.4.1     bindr_0.1.1        bitops_1.0-6
 [7] tools_3.4.1        digest_0.6.15      evaluate_0.10.1
[10] tibble_1.4.2       gtable_0.2.0       pkgconfig_2.0.1
[13] rlang_0.2.2        Matrix_1.2-10      parallel_3.4.1
[16] yaml_2.1.18        bindrcpp_0.2.2     gridExtra_2.3
[19] withr_2.1.2        stringr_1.3.1      caTools_1.17.1
[22] gtools_3.8.1       stats4_3.4.1       rprojroot_1.3-2
[25] grid_3.4.1         tidyselect_0.2.4   glue_1.2.0
[28] R6_2.2.2           rmarkdown_1.9      gdata_2.18.0
[31] reshape2_1.4.3     purrr_0.2.5        magrittr_1.5
[34] codetools_0.2-15   gplots_3.0.1       backports_1.1.2
[37] scales_1.0.0       htmltools_0.3.6    MASS_7.3-47
[40] assertthat_0.2.0   colorspace_1.3-2   labeling_0.3
[43] KernSmooth_2.23-15 stringi_1.2.3      lazyeval_0.2.1
[46] munsell_0.5.0
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Software Versions

- R version 3.4.1 (2017-06-30)
- FLCore: 2.6.9
- FLife: 3.2.1.9001
- FLBRP: 2.5.3
- **Compiled**: Tue Oct 2 08:25:22 2018

Author information

Laurence Kell. laurie@seaplusplus.es

Acknowledgements

This vignette and many of the methods documented in it were developed under the MyDas project funded by the Irish exchequer and EMFF 2014-2020. The overall aim of MyDas is to develop and test a range of assessment models and methods to establish Maximum Sustainable Yield (MSY) reference points (or proxy MSY reference points) across the spectrum of data-limited stocks.

References