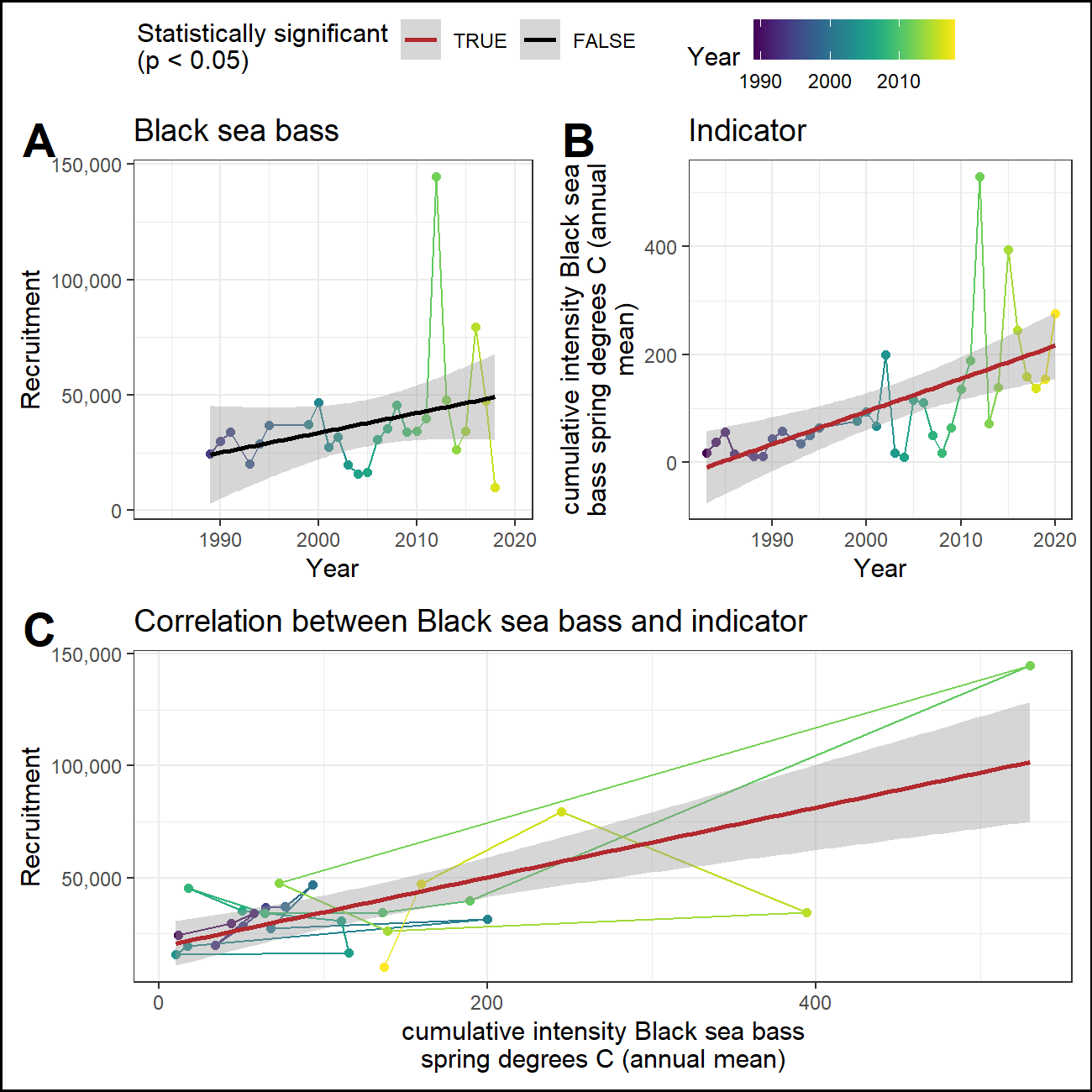
indicator analysis

Abigail Tyrell

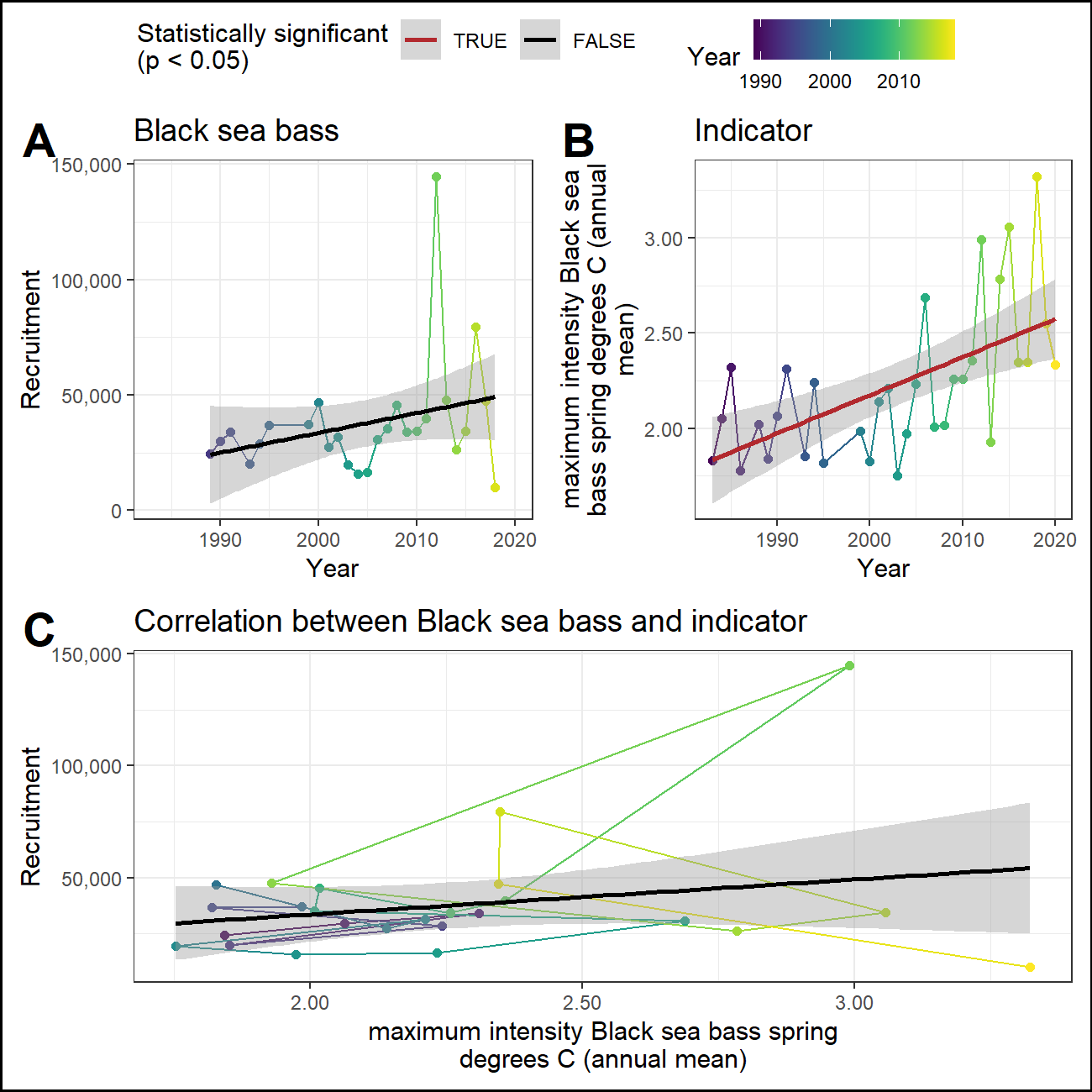
15 Jul 2021

## Indicator data

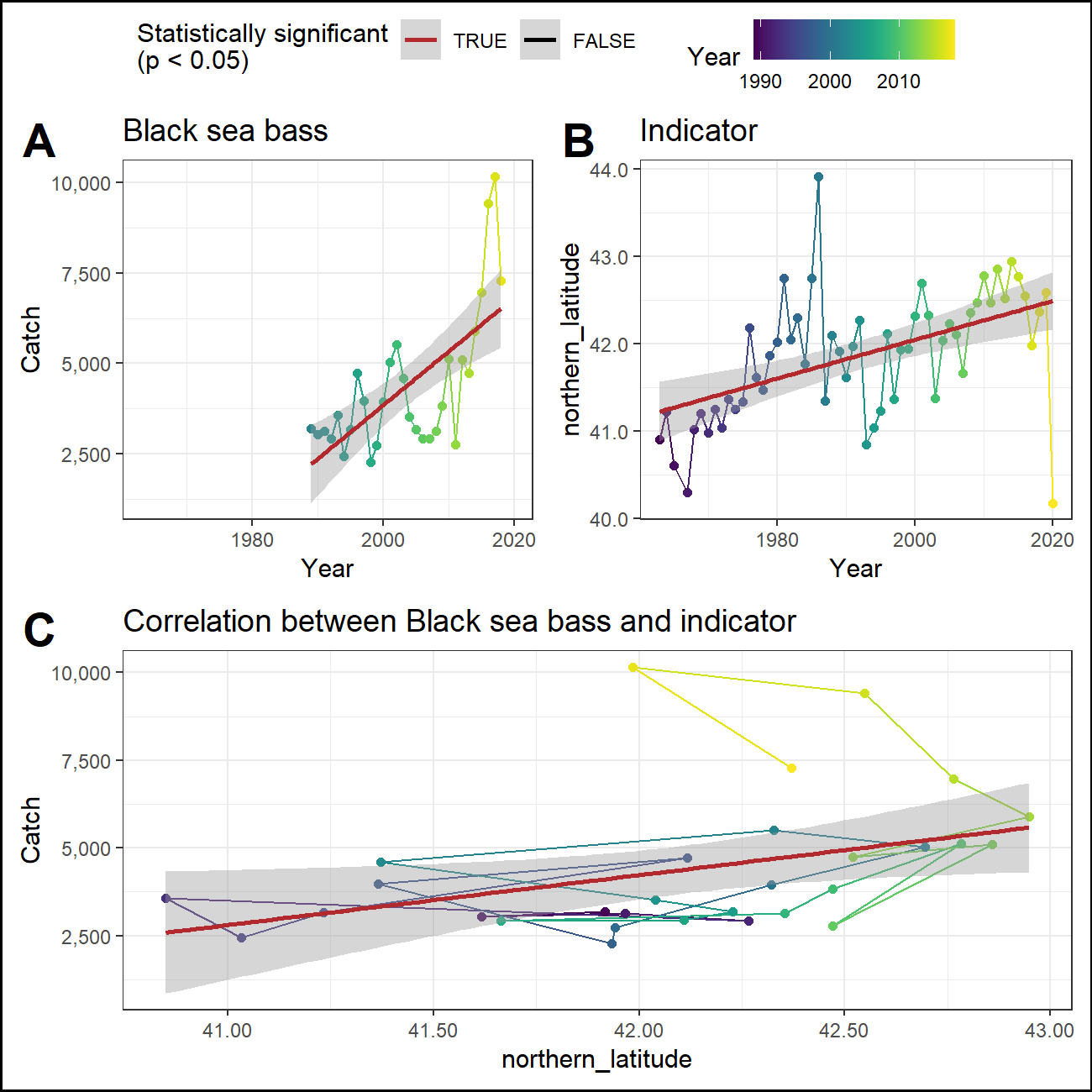
### Black\_sea\_bass\_Mid\_MAB\_0\_lag\_FALSE\_rr\_heatwave-stock.RDS

[1] “Recruitment\_cumulative\_intensity\_Black\_sea\_bass\_spring\_degrees\_C\_(annual\_mean).png” 

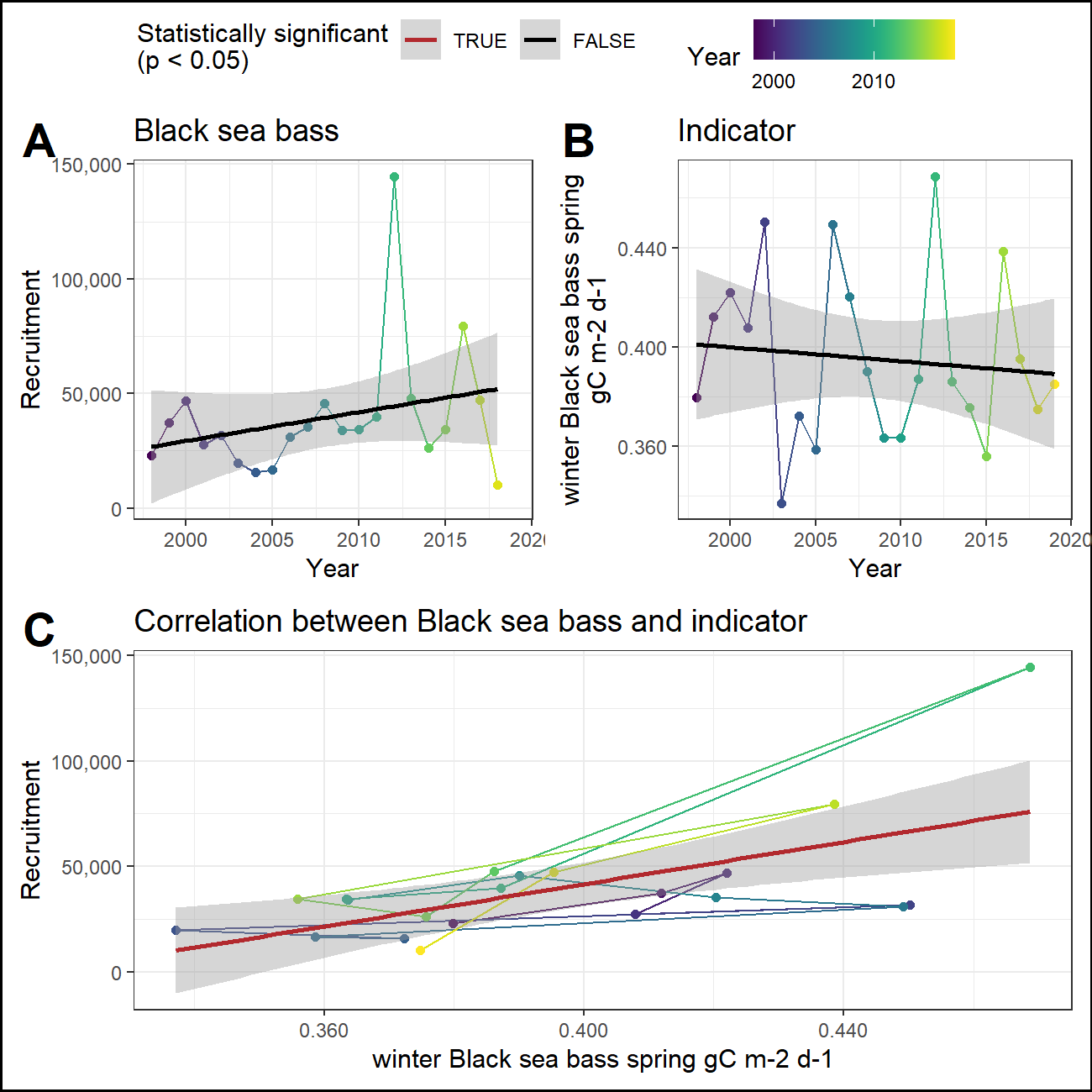
### Black\_sea\_bass\_Mid\_MAB\_0\_lag\_FALSE\_rr\_heatwave-stock.RDS

[1] “Recruitment\_maximum\_intensity\_Black\_sea\_bass\_spring\_degrees\_C\_(annual\_mean).png” 

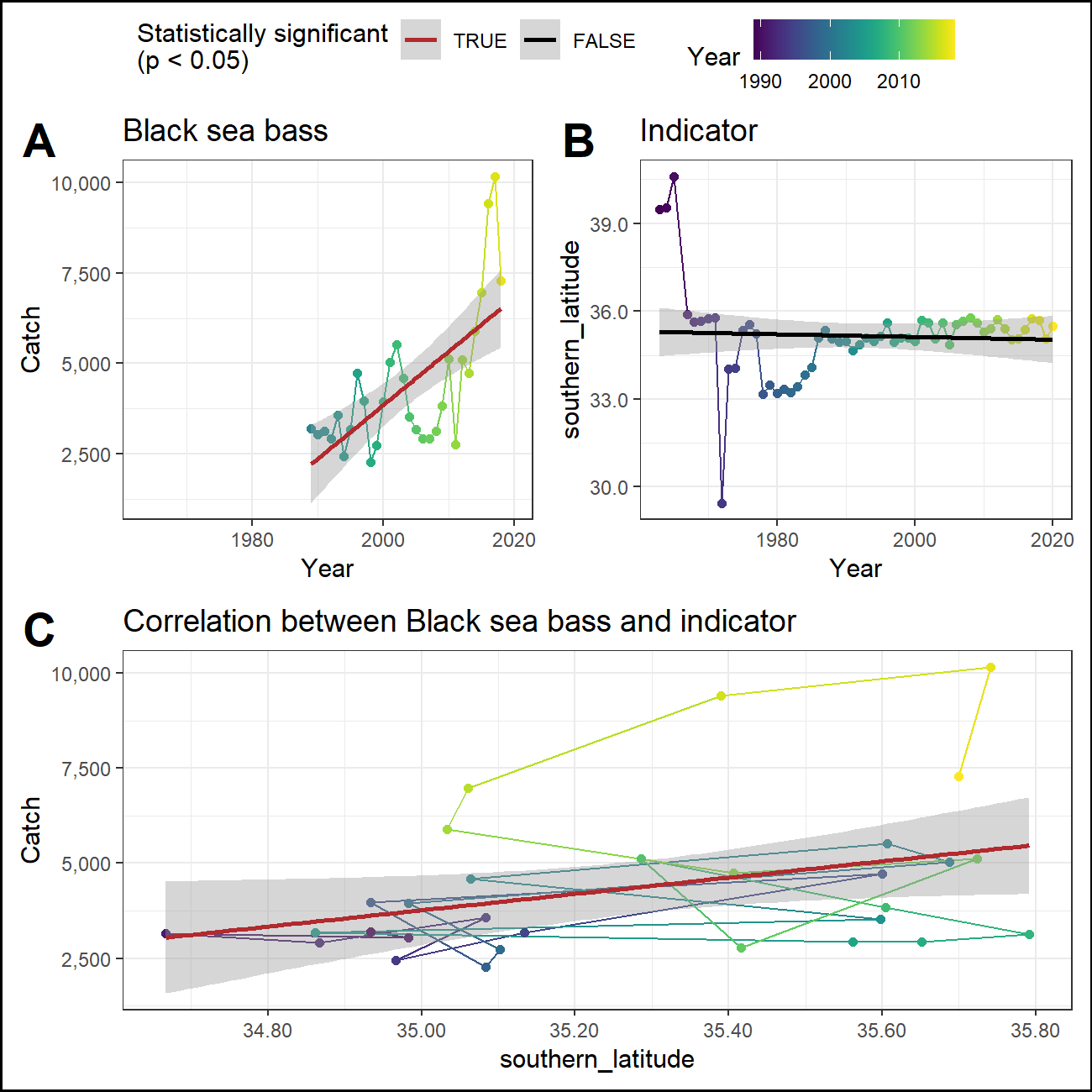
### Black\_sea\_bass\_Mid\_MAB\_0\_lag\_FALSE\_rr\_northern-bound.RDS

[1] “Catch\_northern\_latitude.png” 

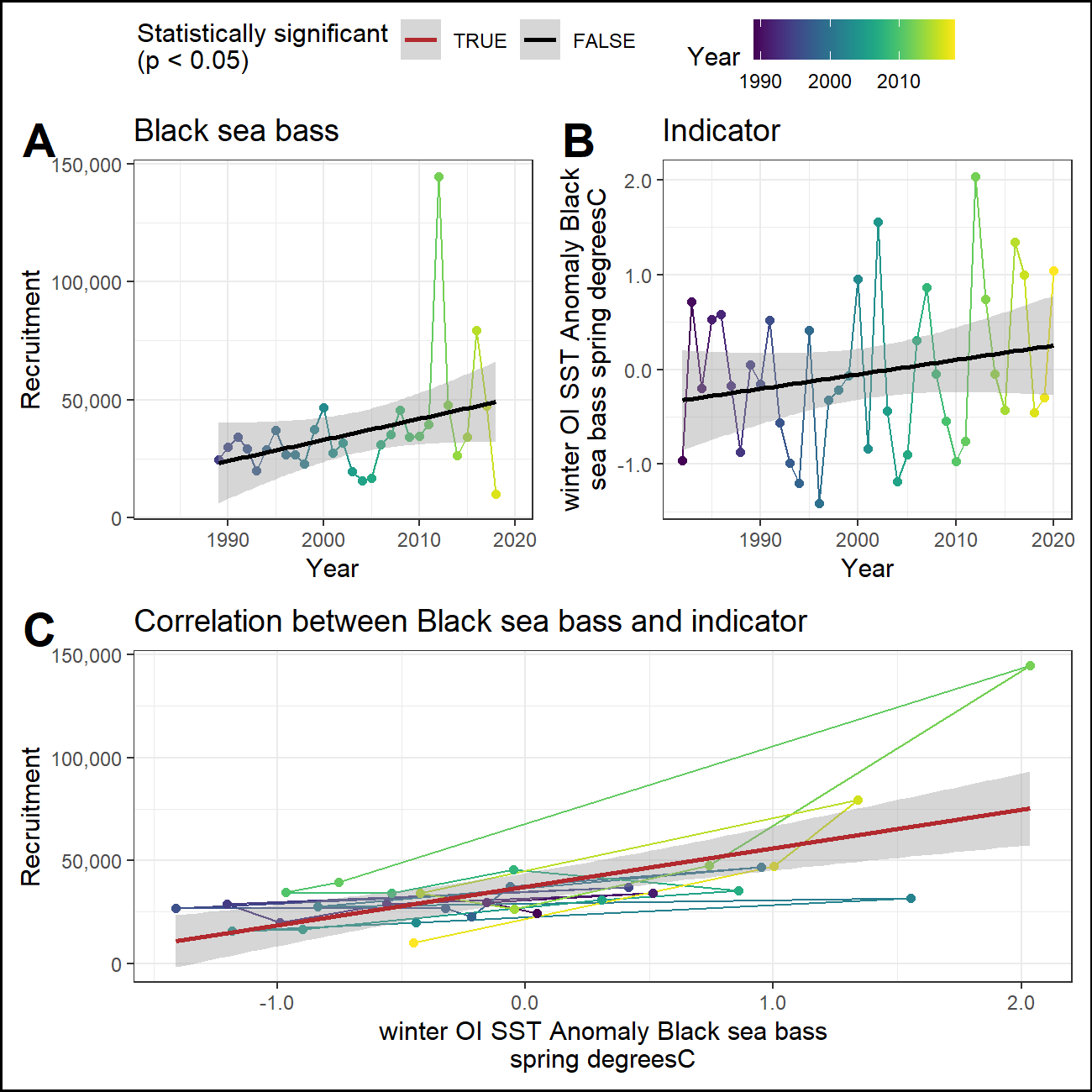
### Black\_sea\_bass\_Mid\_MAB\_0\_lag\_FALSE\_rr\_pp-stock.RDS

[1] “Recruitment\_winter\_Black\_sea\_bass\_spring\_gC\_m-2\_d-1.png” 

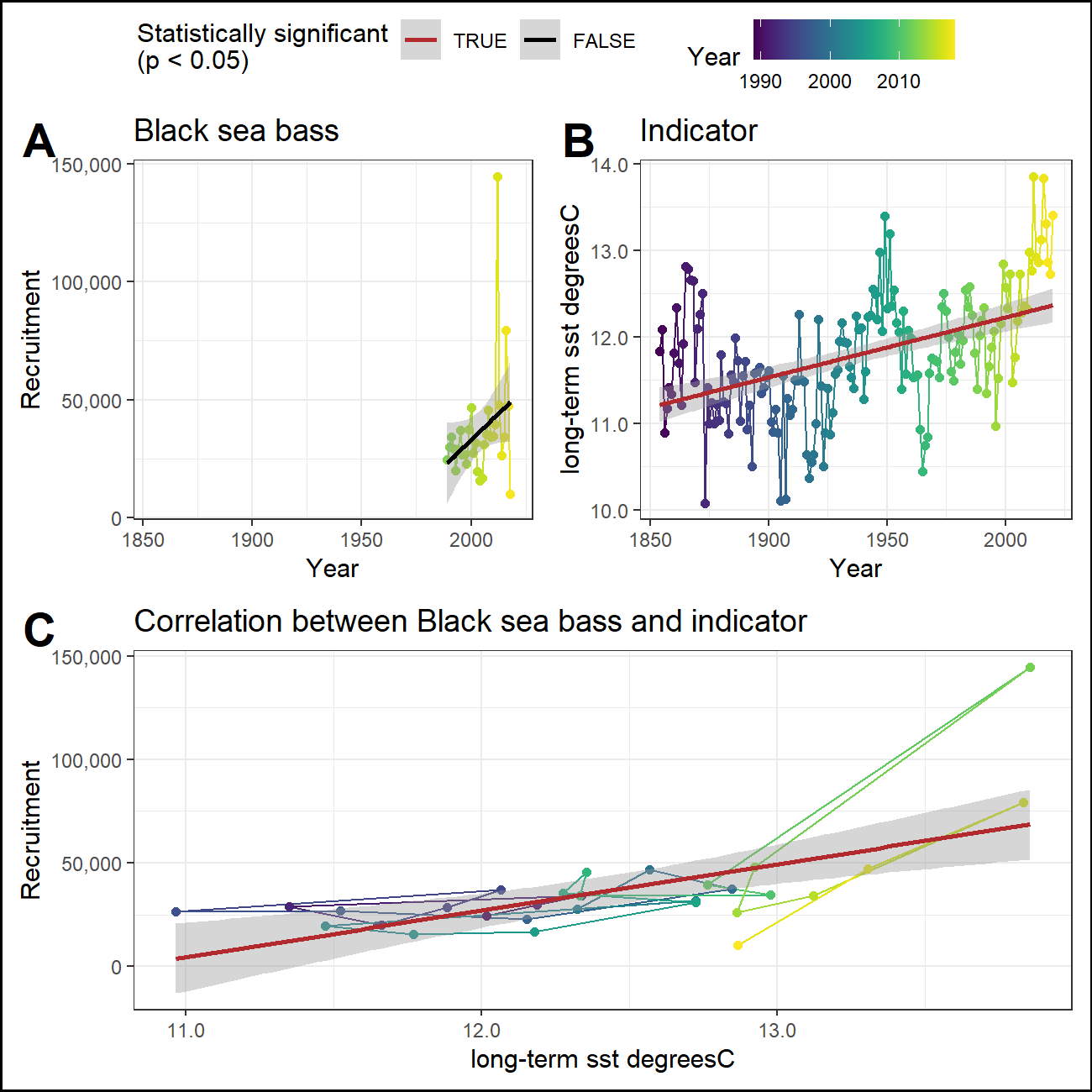
### Black\_sea\_bass\_Mid\_MAB\_0\_lag\_FALSE\_rr\_southern-bound.RDS

[1] “Catch\_southern\_latitude.png” 

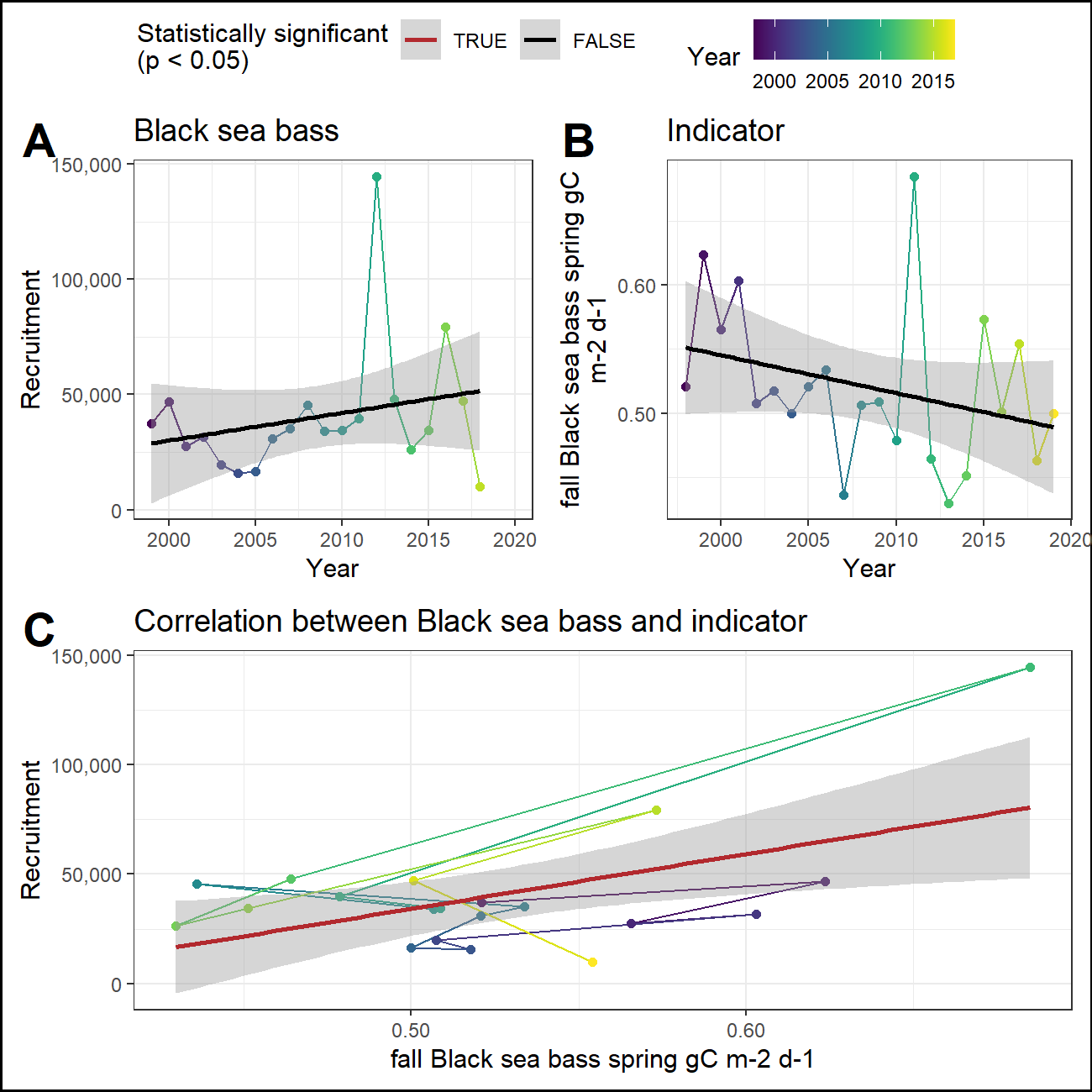
### Black\_sea\_bass\_Mid\_MAB\_0\_lag\_FALSE\_rr\_sst-anom-stock.RDS

[1] “Recruitment\_winter\_OI\_SST\_Anomaly\_Black\_sea\_bass\_spring\_degreesC.png” 

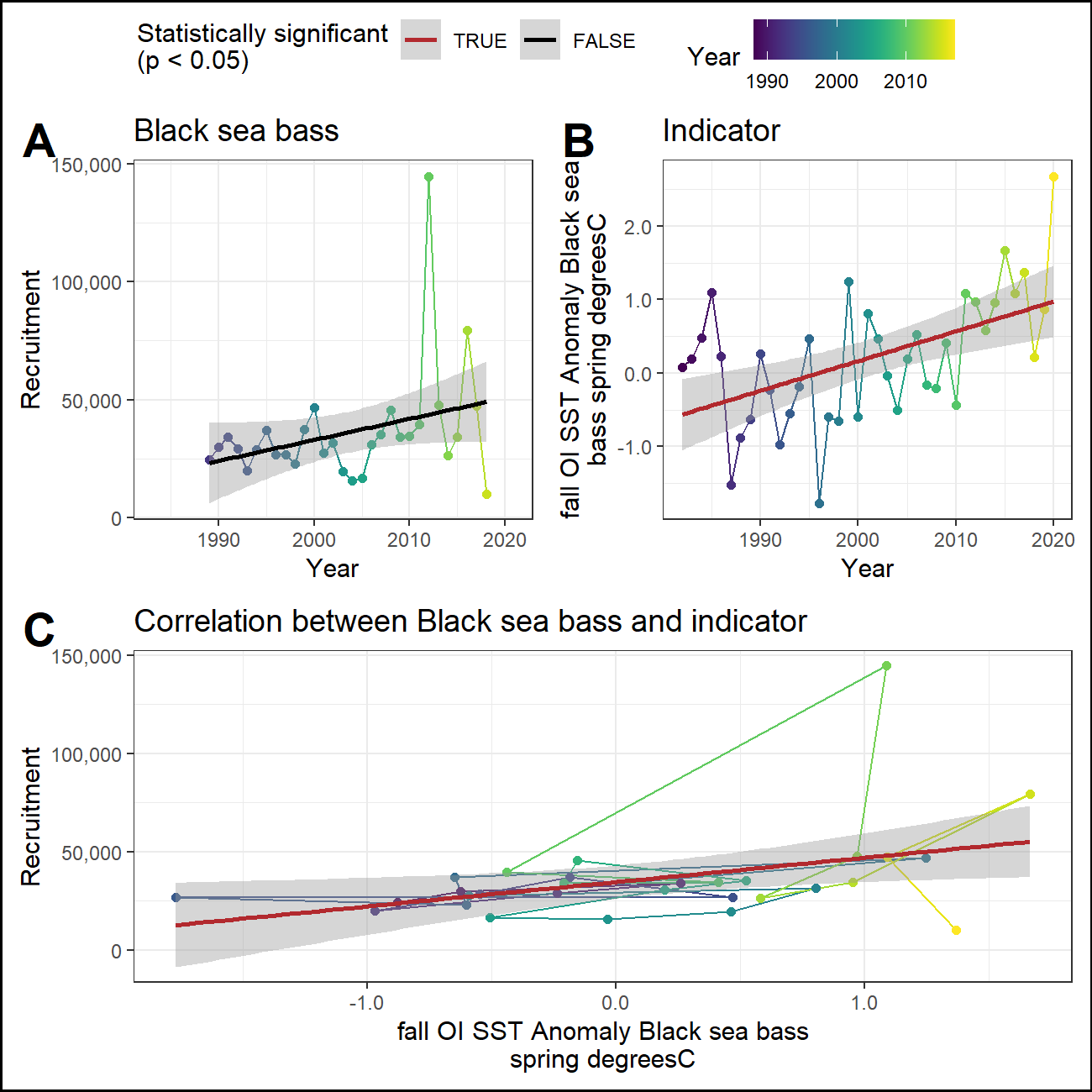
### Black\_sea\_bass\_Mid\_MAB\_0\_lag\_FALSE\_rr\_sst.RDS

[1] “Recruitment\_long-term\_sst\_degreesC.png” 

### Black\_sea\_bass\_Mid\_MAB\_1\_lag\_FALSE\_rr\_pp-stock.RDS

[1] “Recruitment\_fall\_Black\_sea\_bass\_spring\_gC\_m-2\_d-1.png” 

### Black\_sea\_bass\_Mid\_MAB\_1\_lag\_FALSE\_rr\_sst-anom-stock.RDS

[1] “Recruitment\_fall\_OI\_SST\_Anomaly\_Black\_sea\_bass\_spring\_degreesC.png” 

## Report cards

### Indicator report card

| Indicator | Trend with time | Trend with recruitment | Trend with catch |
| --- | --- | --- | --- |
| cumulative intensity Black sea bass spring degrees C (annual mean) | Yes, positive | Yes, positive | Not tested |
| maximum intensity Black sea bass spring degrees C (annual mean) | Yes, positive | No | Not tested |
| northern\_latitude | Yes, positive | Not tested | Yes, positive |
| winter Black sea bass spring gC m-2 d-1 | No | Yes, positive | Not tested |
| southern\_latitude | No | Not tested | Yes, positive |
| winter OI SST Anomaly Black sea bass spring degreesC | No | Yes, positive | Not tested |
| long-term sst degreesC | Yes, positive | Yes, positive | Not tested |
| fall Black sea bass spring gC m-2 d-1 | No | Yes, positive | Not tested |
| fall OI SST Anomaly Black sea bass spring degreesC | Yes, positive | Yes, positive | Not tested |

### Time series report card

| Time | cumulative intensity Black sea bass spring degrees C (annual mean) | northern latitude | winter Black sea bass spring gC m-2 d-1 | southern latitude | winter OI SST Anomaly Black sea bass spring degreesC | long-term sst degreesC | fall Black sea bass spring gC m-2 d-1 | fall OI SST Anomaly Black sea bass spring degreesC |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 2016 | 244.81 | 42.55 | 0.44 | 35.39 | 1.34 | 13.83 | 0.5 | 1.09 |
| 2017 | 159.65 | 41.99 | 0.4 | 35.74 | 1 | 13.31 | 0.55 | 1.37 |
| 2018 | 136.83 | 42.37 | 0.37 | 35.7 | -0.45 | 12.87 | 0.46 | 0.21 |
| 2019 | 154.56 | 42.59 | 0.39 | 35.05 | -0.3 | 12.73 | 0.5 | 0.87 |
| 2020 | 276.19 | 40.18 |  | 35.5 | 1.04 | 13.41 |  | 2.68 |
| recent mean | 194.41 ± 61.93 | 41.93 ± 1.01 | 0.4 ± 0.03 | 35.48 ± 0.28 | 0.53 ± 0.83 | 13.23 ± 0.44 | 0.5 ± 0.04 | 1.24 ± 0.91 |
| long-term mean | 110.85 ± 115.21 | 41.87 ± 0.73 | 0.4 ± 0.03 | 35.16 ± 1.53 | -0.04 ± 0.83 | 11.79 ± 0.72 | 0.52 ± 0.06 | 0.21 ± 0.89 |
|  |  |  |  |  |  |  |  |  |

## Appendix

### R session information

## R version 4.0.3 (2020-10-10)  
## Platform: x86\_64-w64-mingw32/x64 (64-bit)  
## Running under: Windows 10 x64 (build 19042)  
##   
## Matrix products: default  
##   
## locale:  
## [1] LC\_COLLATE=English\_United States.1252 LC\_CTYPE=English\_United States.1252 LC\_MONETARY=English\_United States.1252 LC\_NUMERIC=C   
## [5] LC\_TIME=English\_United States.1252   
##   
## attached base packages:  
## [1] stats graphics grDevices utils datasets methods base   
##   
## other attached packages:  
## [1] NEespShiny\_0.1.1 shiny\_1.6.0   
##   
## loaded via a namespace (and not attached):  
## [1] ggnewscale\_0.4.5 colorspace\_2.0-0 ggsignif\_0.6.1 ellipsis\_0.3.1 rio\_0.5.26 rprojroot\_2.0.2 flextable\_0.6.4 base64enc\_0.1-3 fs\_1.5.0   
## [10] rstudioapi\_0.13 ggpubr\_0.4.0 farver\_2.1.0 remotes\_2.2.0 DT\_0.17 fansi\_0.4.1 xml2\_1.3.2 splines\_4.0.3 cachem\_1.0.4   
## [19] knitr\_1.31.6 pkgload\_1.2.0 jsonlite\_1.7.2 broom\_0.7.5 compiler\_4.0.3 backports\_1.2.1 assertthat\_0.2.1 Matrix\_1.2-18 fastmap\_1.1.0   
## [28] cli\_2.3.1 later\_1.1.0.1 htmltools\_0.5.1.1 prettyunits\_1.1.1 tools\_4.0.3 gtable\_0.3.0 glue\_1.4.2 dplyr\_1.0.5 Rcpp\_1.0.6   
## [37] carData\_3.0-4 cellranger\_1.1.0 jquerylib\_0.1.3 vctrs\_0.3.6 nlme\_3.1-149 crosstalk\_1.1.1 xfun\_0.19 stringr\_1.4.0 ps\_1.5.0   
## [46] openxlsx\_4.2.3 testthat\_3.0.2 NEesp\_0.1.1 mime\_0.10 lifecycle\_1.0.0 devtools\_2.3.2 rstatix\_0.7.0 scales\_1.1.1 hms\_1.0.0   
## [55] promises\_1.2.0.1 yaml\_2.2.1 curl\_4.3 memoise\_2.0.0 gridExtra\_2.3 ggplot2\_3.3.3 gdtools\_0.2.3 sass\_0.3.1 stringi\_1.5.3   
## [64] highr\_0.8 desc\_1.3.0 pkgbuild\_1.2.0 zip\_2.1.1 systemfonts\_1.0.1 rlang\_0.4.10 pkgconfig\_2.0.3 evaluate\_0.14 lattice\_0.20-41   
## [73] purrr\_0.3.4 htmlwidgets\_1.5.3 labeling\_0.4.2 cowplot\_1.1.1 processx\_3.4.5 tidyselect\_1.1.0 magrittr\_2.0.1 R6\_2.5.0 generics\_0.1.0   
## [82] DBI\_1.1.1 pillar\_1.5.1 haven\_2.3.1 foreign\_0.8-80 withr\_2.4.1 mgcv\_1.8-33 abind\_1.4-5 tibble\_3.0.4 crayon\_1.4.1   
## [91] car\_3.0-10 uuid\_0.1-4 utf8\_1.1.4 officer\_0.3.17 rmarkdown\_2.7 viridis\_0.5.1 usethis\_2.0.1 grid\_4.0.3 readxl\_1.3.1   
## [100] data.table\_1.14.0 callr\_3.5.1 forcats\_0.5.1 digest\_0.6.27 xtable\_1.8-4 tidyr\_1.1.3 httpuv\_1.5.5 munsell\_0.5.0 viridisLite\_0.3.0  
## [109] bslib\_0.2.4 sessioninfo\_1.1.1

### NEesp information

## Package: NEesp  
## Title: Generate Preliminary ESP Reports for the Northeast  
## Version: 0.1.1  
## Description: Generates preliminary Ecosystem and Socioeconomic Profiles for Northeast and Mid-Atlantic USA fishery stocks.  
## License: file LICENSE  
## Authors@R: c(person("Abigail", "Tyrell", email = "abigail.tyrell@noaa.gov", role = c("aut", "cre"), comment = c(ORCID = "0000-0002-6656-8470")),  
## person("Ricky", "Tabandera", email = "ricky.tabandera@noaa.gov", role = "aut"))  
## Maintainer: Abigail Tyrell <abigail.tyrell@noaa.gov>  
## URL: https://noaa-edab.github.io/NEesp/  
## BugReports: https://github.com/NOAA-EDAB/NEesp/issues  
## Imports: assessmentdata, bookdown, DT, ecodata, FSA, ggpubr, ggrepel, ggridges, ggthemes, here, nmfspalette, papeR, priceR, rgeos, rnaturalearth,  
## rnaturalearthhires, tidyquant, viridis  
## Remotes: ropensci/rnaturalearthhires, nmfs-general-modeling-tools/nmfspalette, NOAA-EDAB/ecodata, NOAA-EDAB/assessmentdata  
## Encoding: UTF-8  
## LazyData: true  
## Roxygen: list(markdown = TRUE)  
## RoxygenNote: 7.1.1  
## Depends: R (>= 3.5.0)  
## Suggests: testthat (>= 3.0.0)  
## Config/testthat/edition: 3  
## RemoteType: github  
## RemoteHost: api.github.com  
## RemoteRepo: NEesp  
## RemoteUsername: NOAA-EDAB  
## RemoteRef: dev  
## RemoteSha: 998e0ef5df14bb9a870c579e74ca7cd9742e313c  
## GithubRepo: NEesp  
## GithubUsername: NOAA-EDAB  
## GithubRef: dev  
## GithubSHA1: 998e0ef5df14bb9a870c579e74ca7cd9742e313c  
## NeedsCompilation: no  
## Packaged: 2021-07-15 20:41:25 UTC; abigail.tyrell  
## Author: Abigail Tyrell [aut, cre] (<https://orcid.org/0000-0002-6656-8470>), Ricky Tabandera [aut]  
## Built: R 4.0.3; ; 2021-07-15 20:41:32 UTC; windows  
##   
## -- File: C:/Users/abigail.tyrell/Documents/R/win-library/4.0/NEesp/Meta/package.rds

### NEespShiny information

## Package: NEespShiny  
## Title: Shiny App to Generate Preliminary ESP Reports for the Northeast  
## Version: 0.1.1  
## Description: Generates preliminary Ecosystem and Socioeconomic Profiles for Northeast and Mid-Atlantic USA fishery stocks in a Shiny app.  
## License: file LICENSE  
## Authors@R: person("Abigail", "Tyrell", email = "abigail.tyrell@noaa.gov", role = c("aut", "cre"), comment = c(ORCID = "0000-0002-6656-8470"))  
## Depends: shiny  
## Imports: NEesp  
## Remotes: NOAA-EDAB/NEesp  
## Encoding: UTF-8  
## LazyData: false  
## Roxygen: list(markdown = TRUE)  
## RoxygenNote: 7.1.1  
## Suggests: rmarkdown, knitr  
## VignetteBuilder: knitr  
##   
## -- File: C:/Users/abigail.tyrell/Documents/NEespShiny/DESCRIPTION