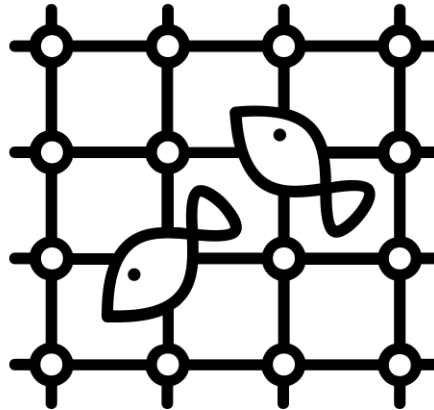


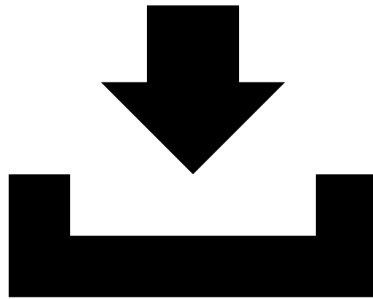
ASSESSING THE STATUS OF THE FISH COMMUNITIES OF THE TORONTO WATERFRONT USING A REPRODUCIBLE APPROACH

MONICA GRANADOS UNIVERSITY OF GUELPH
WCS CANADA

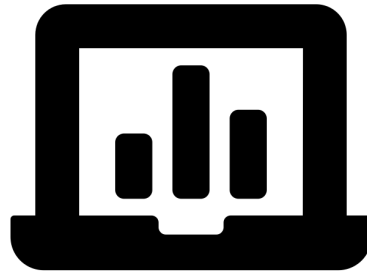
COLLECT



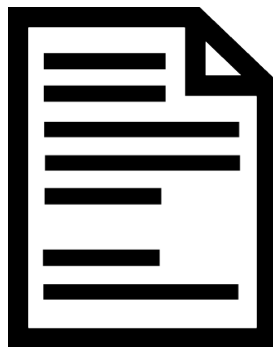
INPUT



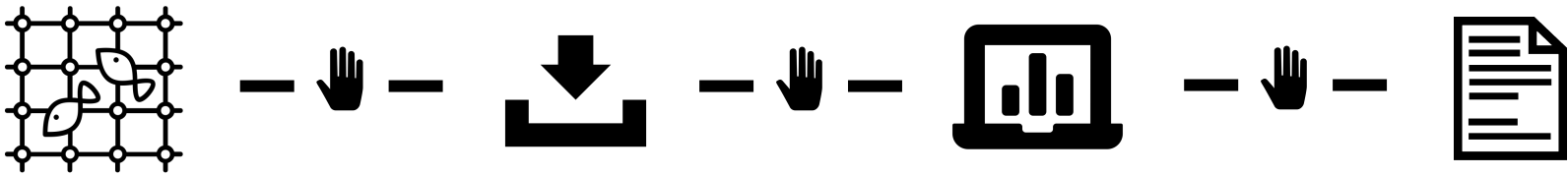
ANALYSIS



REPORT



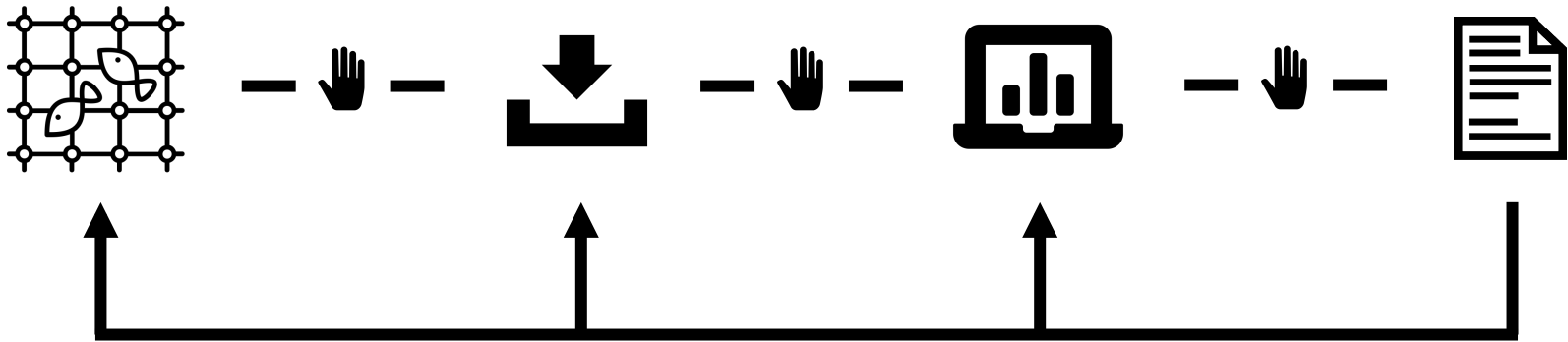
CURRENT WORKFLOW



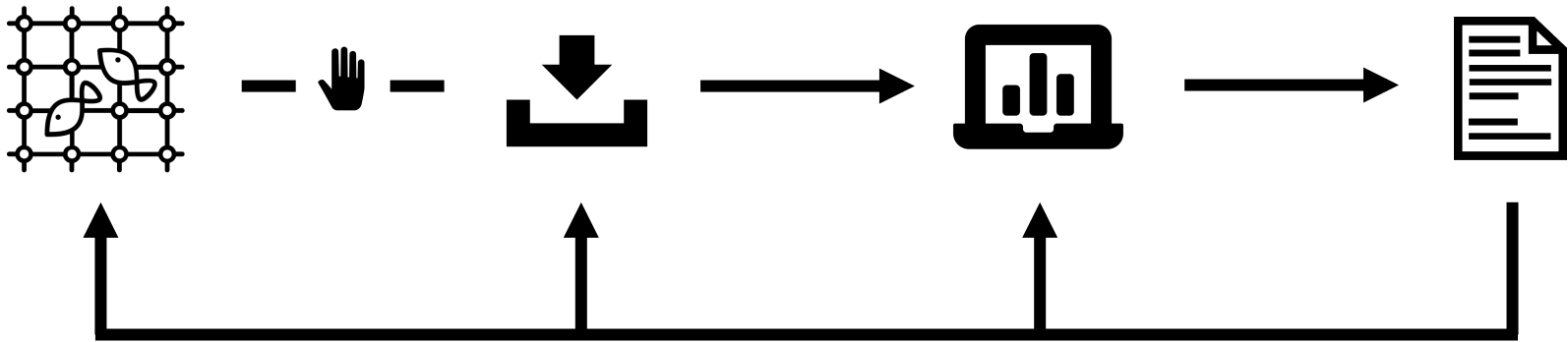
R MARKDOWN

Markdown documents are fully reproducible. Use a productive notebook interface to weave together narrative text and code to produce elegantly formatted output.

REPRODUCIBLE WORKFLOW



REPRODUCIBLE WORKFLOW



RStudio

Go to file/function Addins

Project: (None)

RmdWalkthroughPresentation.Rmd

```
16 ~
17
18 ```{r, echo=FALSE}
19 fish<-read.csv("doubsspe.csv")
20 fish.pa<-decostand(fish[,2:28], method = "pa")
21 fish$richness<-rowSums(fish.pa)
22 fish.richness<-ggplot(fish, aes(x = Site, y = richness))+ geom_bar(stat = "identity", position="dodge")+xlab("Sites")+
23   ylab("Richness")+theme_bw()
24 plot(fish.richness)
25 ~
26
27 We can also embed R code within the document. For example if we wanted to know the average richness across our Doubbs sites.
28 The average fish richness is `r mean(fish$richness)`.
29
30 Another feature is the ability to include tables. For example if we wanted a table with each site and the richness. We can
31 make it in R and then display it.
32
33 ```{r, results='asis', echo=FALSE}
34 table<-data.frame(fish$Site, fish$richness)
35 knitr::kable(table)
36 ~
37
```

35:1 Plots, tables and in-line code R Markdown

Environment History

Global Environment

Environment is empty

Files Plots Packages Help Viewer

Zoom Export

Console R Markdown Markers

.../Pilot/RmdWalkthroughPresentation.Rmd

Secondary code needed to run code

```
/Applications/RStudio.app/Contents/MacOS/pandoc/pandoc +RTS -K512m -RTS RmdWalkthroughPresentation.utf8.md --to latex --from markd
own+autolink_bare_uris+ascii_identifiers+tex_math_single_backslash --output RmdWalkthroughPresentation.pdf --template /Library/Fra
meworks/R.framework/Versions/3.3/Resources/library/rmarkdown/rmd/latex/default-1.15.2.tex --highlight-style tango --latex-engine /
Library/TeX/texbin/pdflatex --variable graphics=yes --variable 'geometry:margin=1in'
output file: RmdWalkthroughPresentation.knit.md
```

Output created: RmdWalkthroughPresentation.pdf

FISHES OF THE TORONTO WATERFRONT 1989–2015

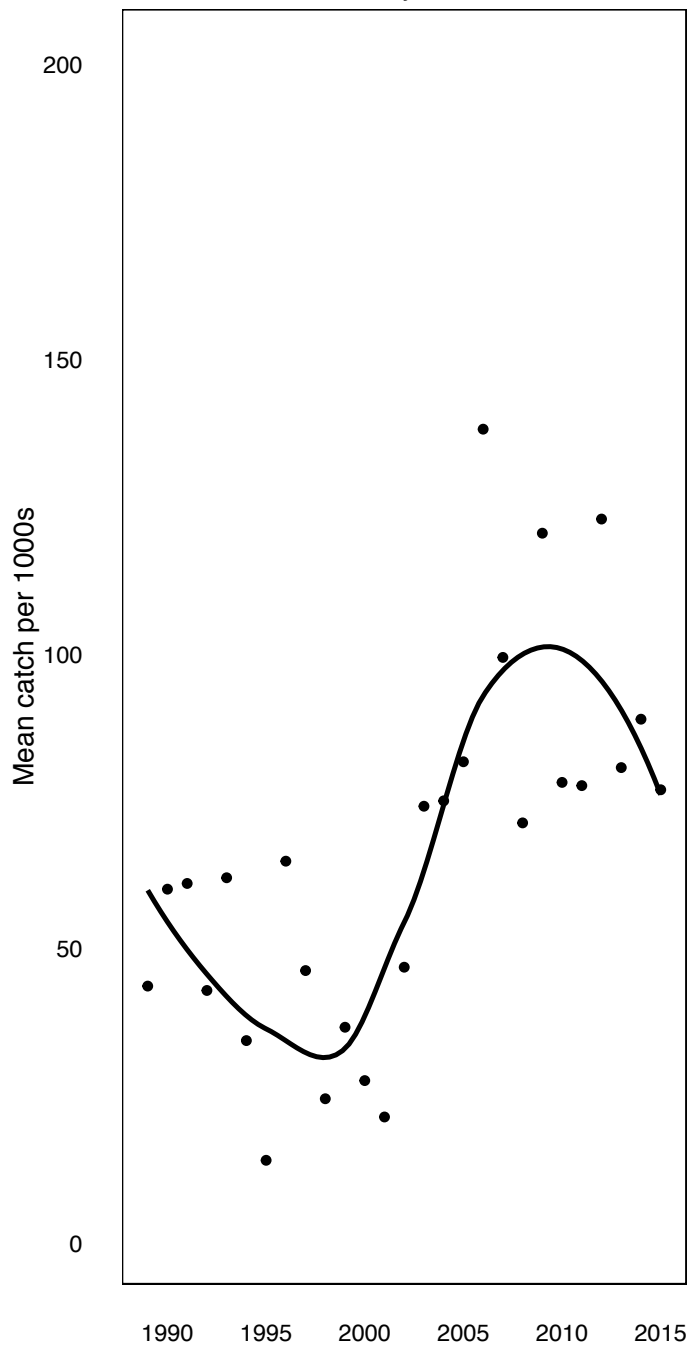
EMBAYMENT 30168

ESTUARY 6565

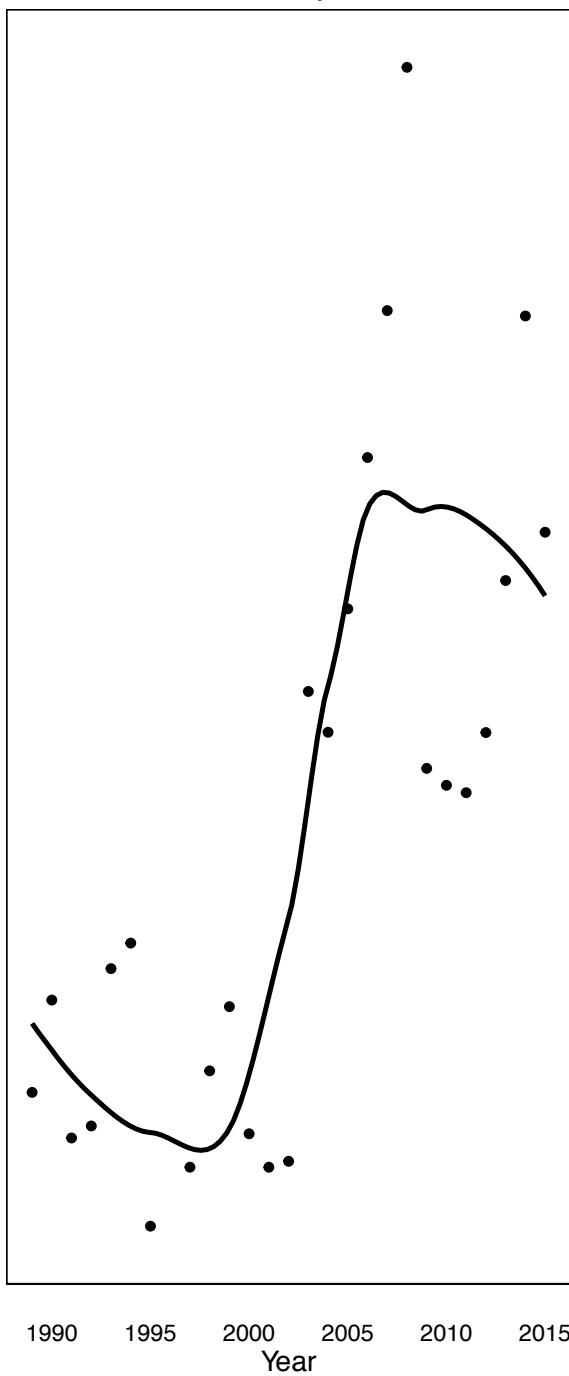
OPEN COAST 12287

72 UNIQUE TAXA

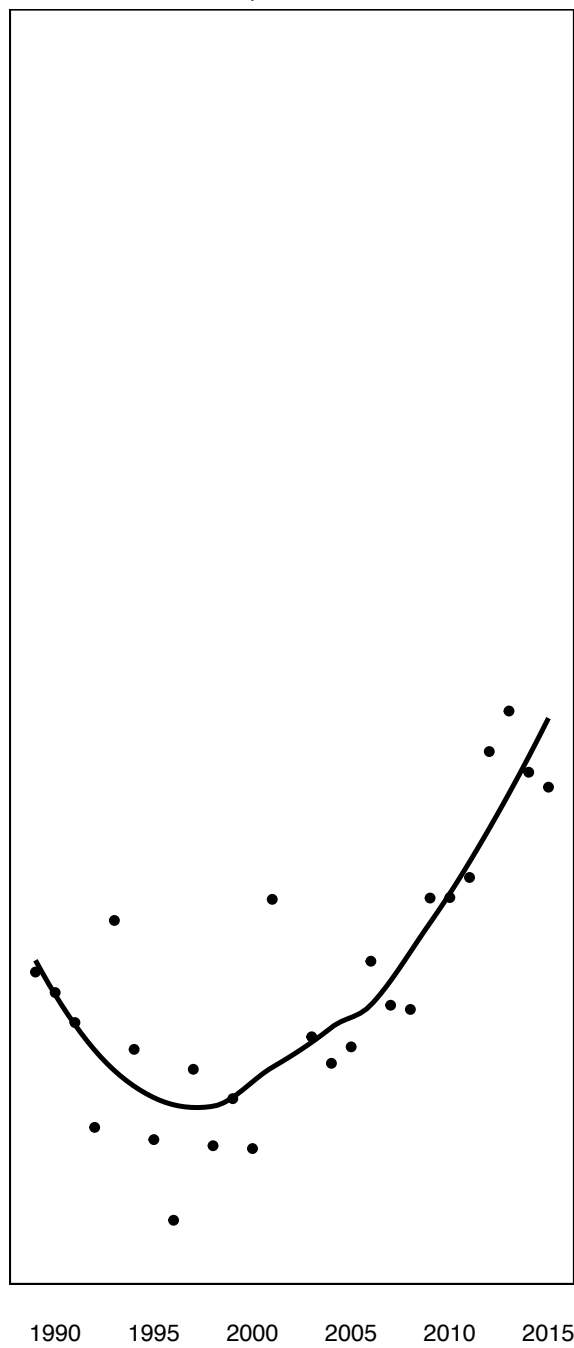
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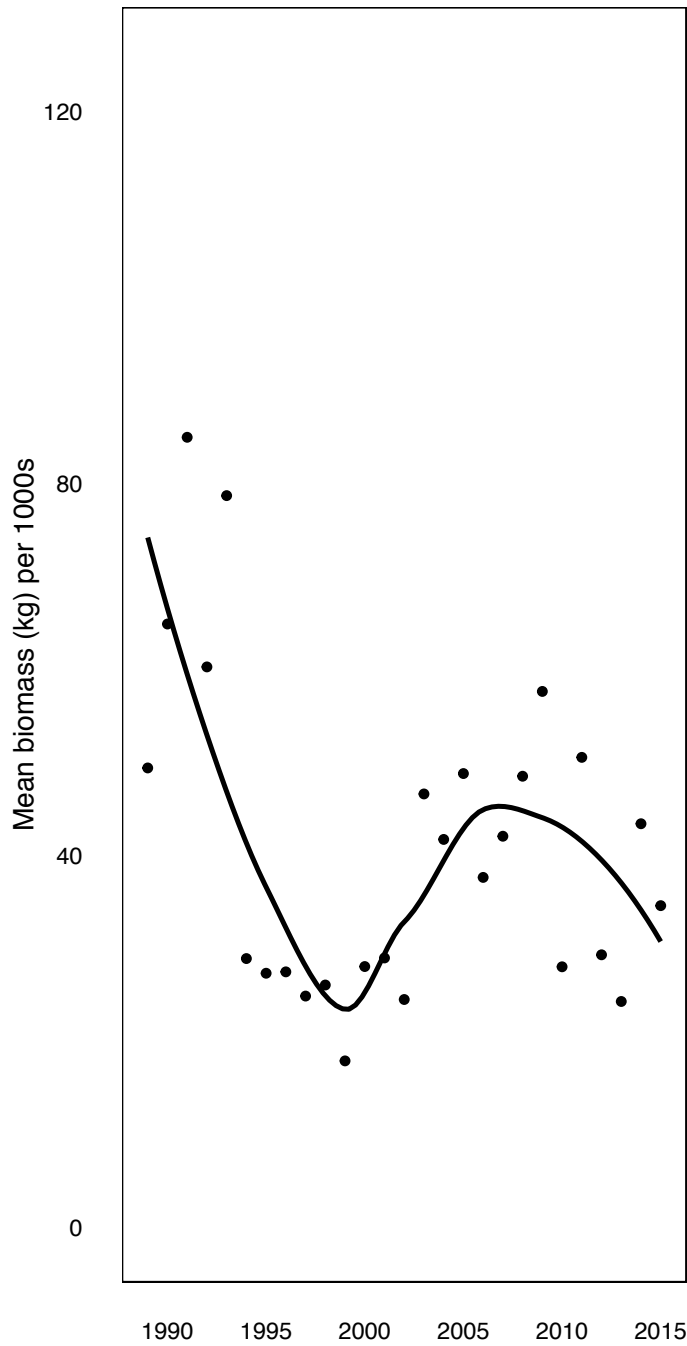
Estuary



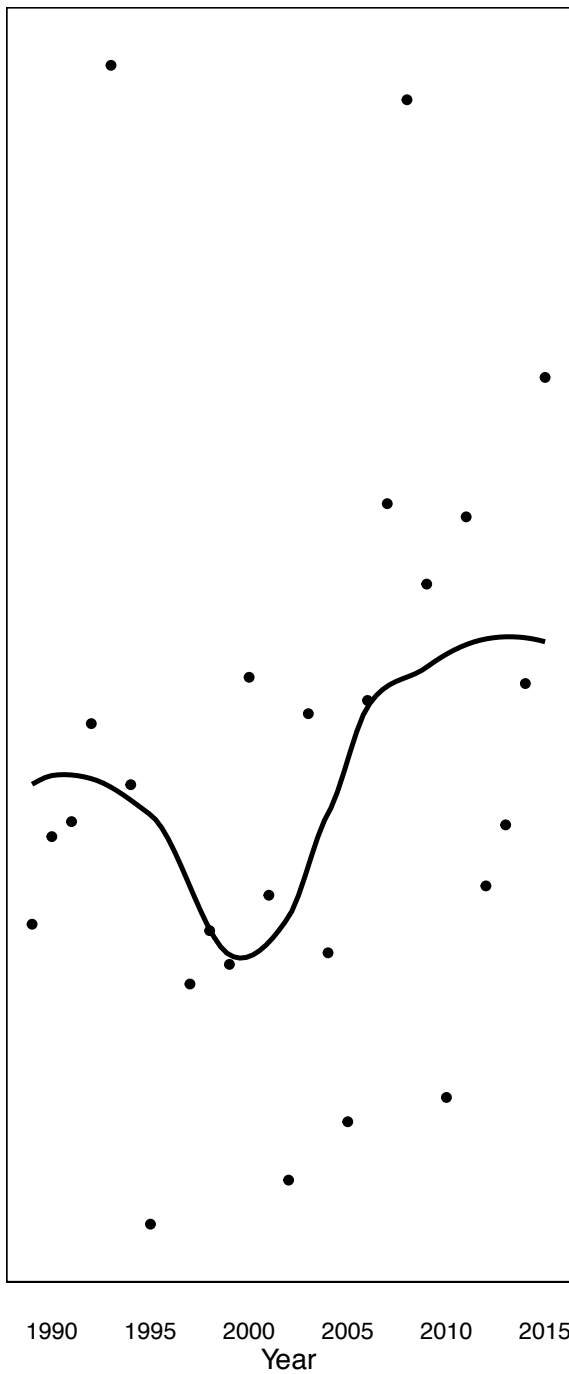
Open coast



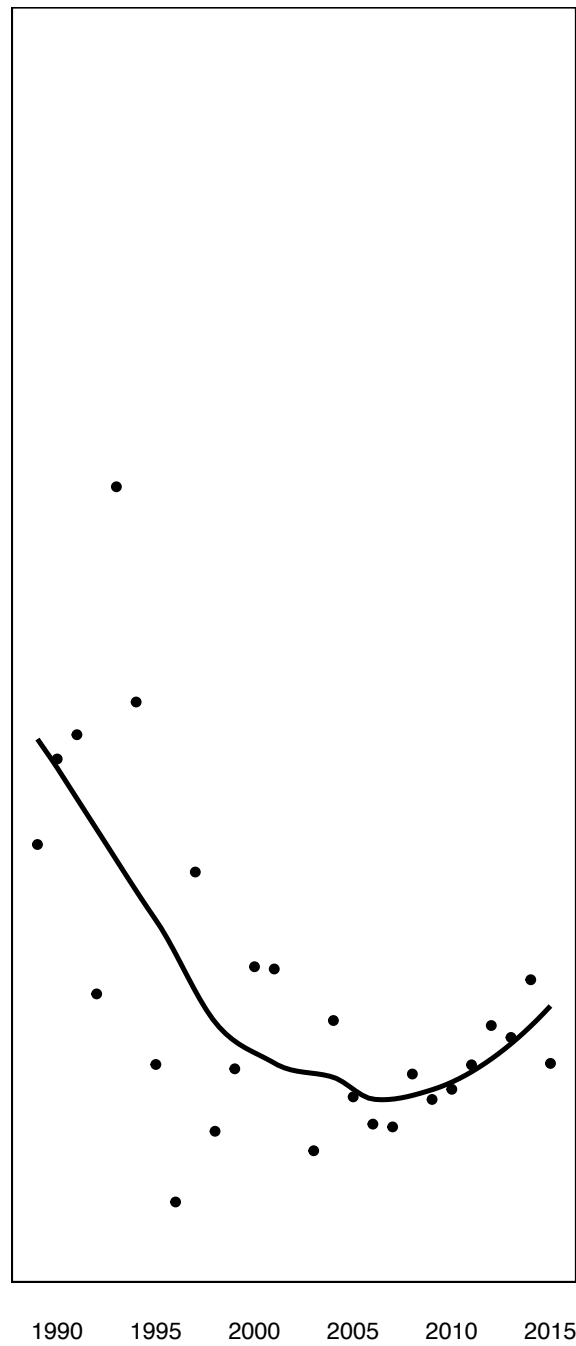
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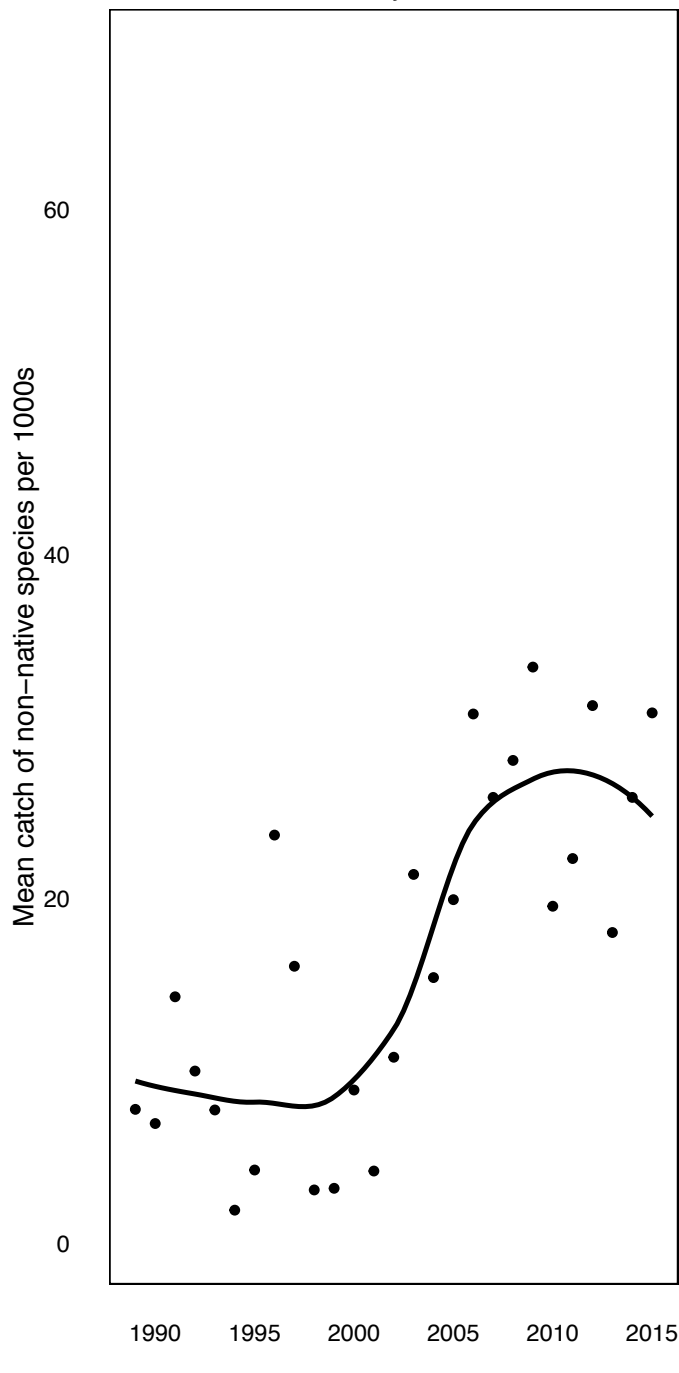
Estuary



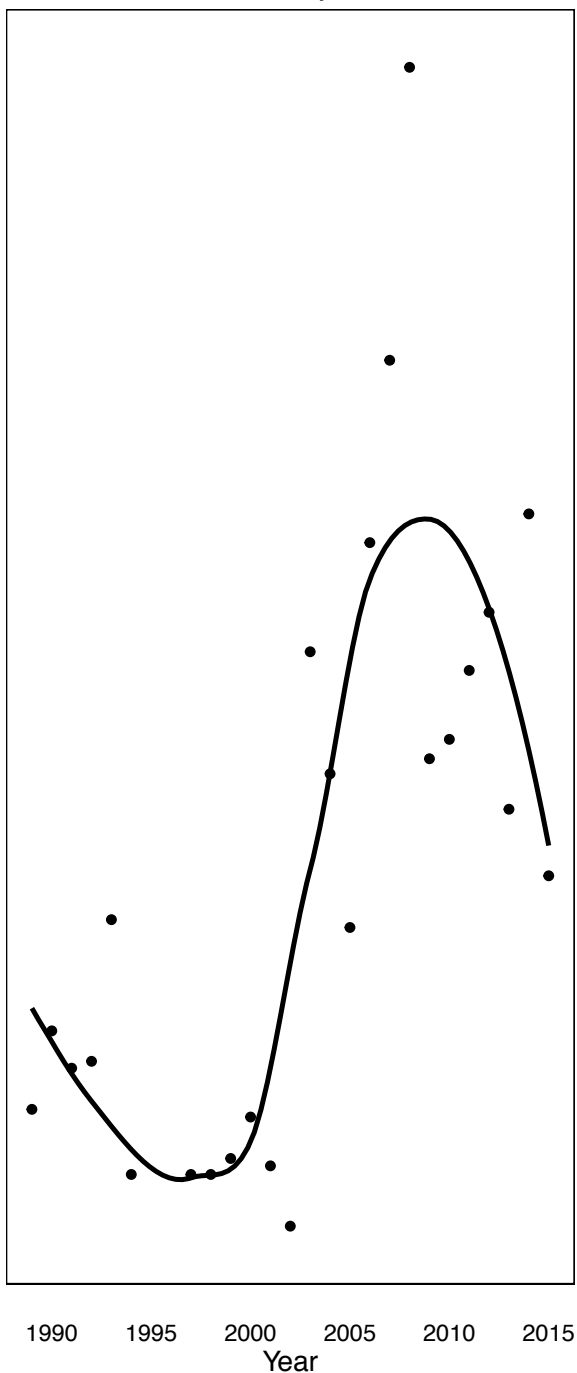
Open coast



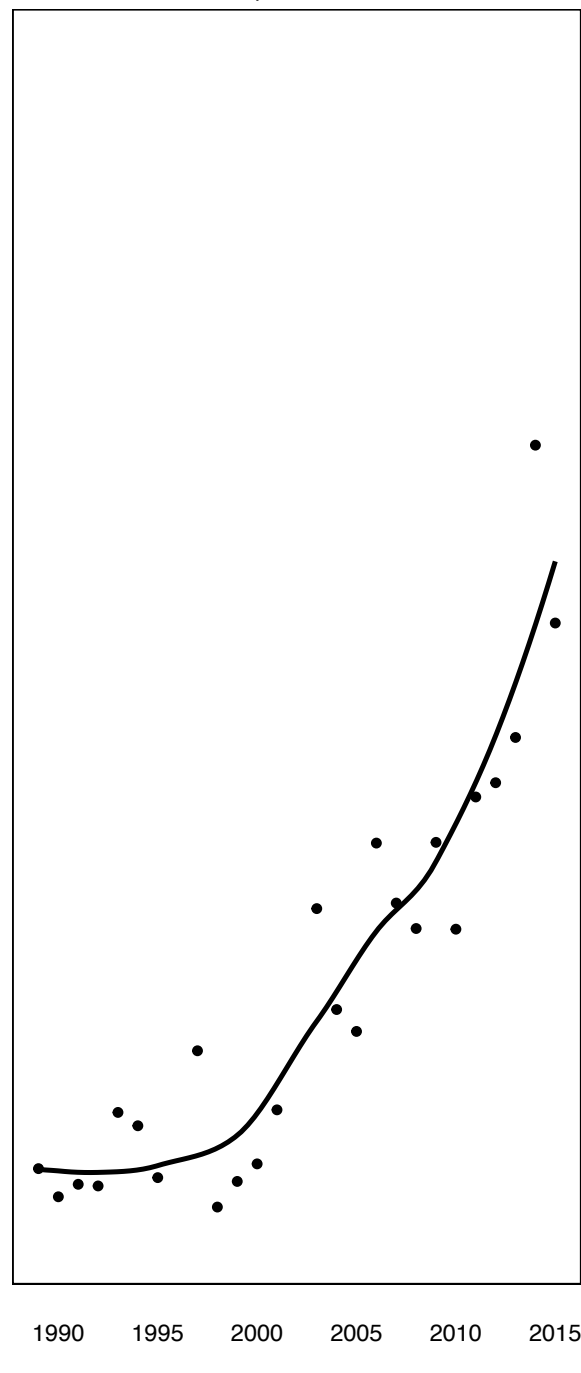
Embayment



Estuary



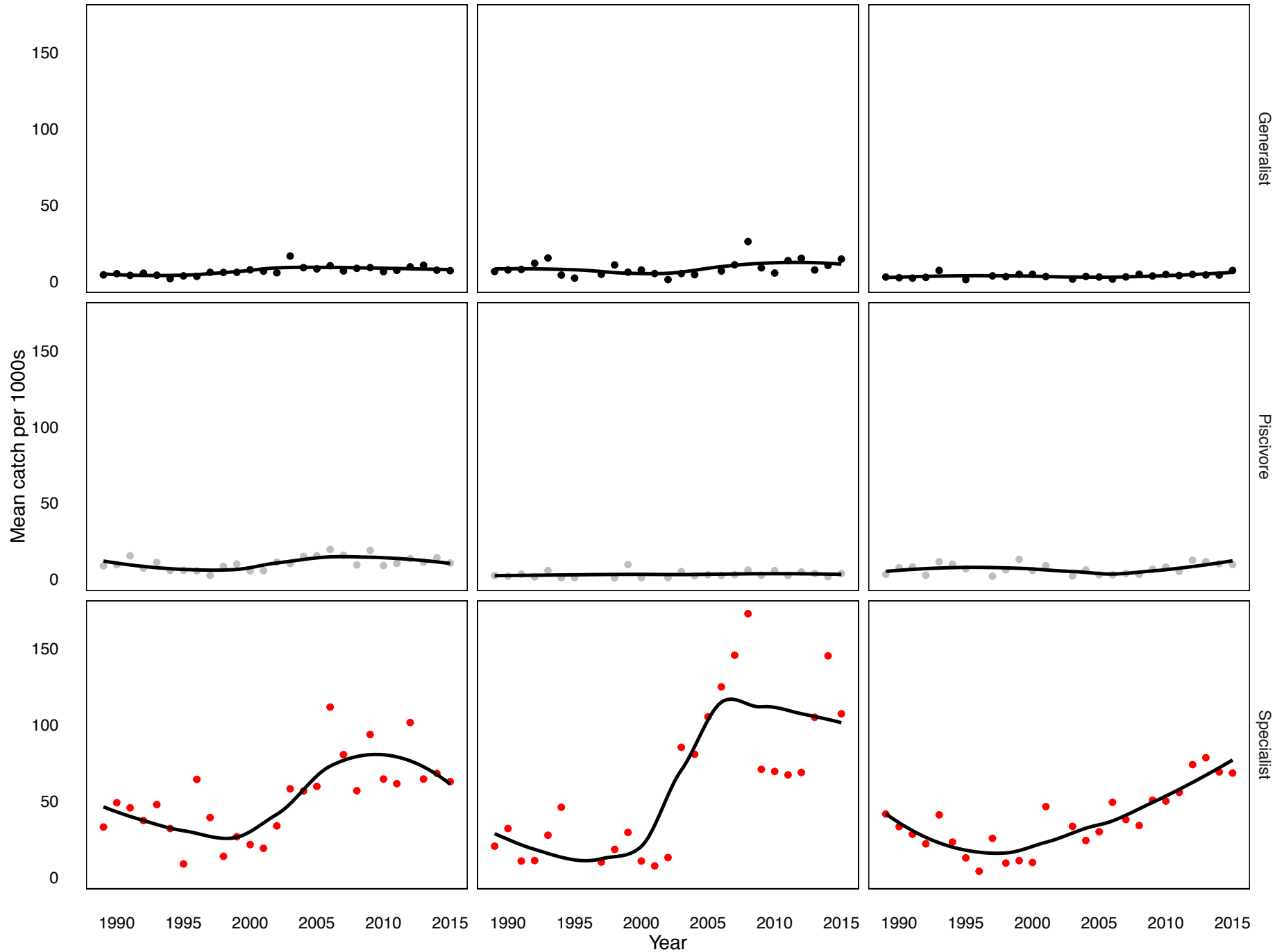
Open coast



Embayment

Estuary

Open coast



1980's

1990's

2000's

2010's

Embayment

Estuary

Open coast

Decade

● 1980's

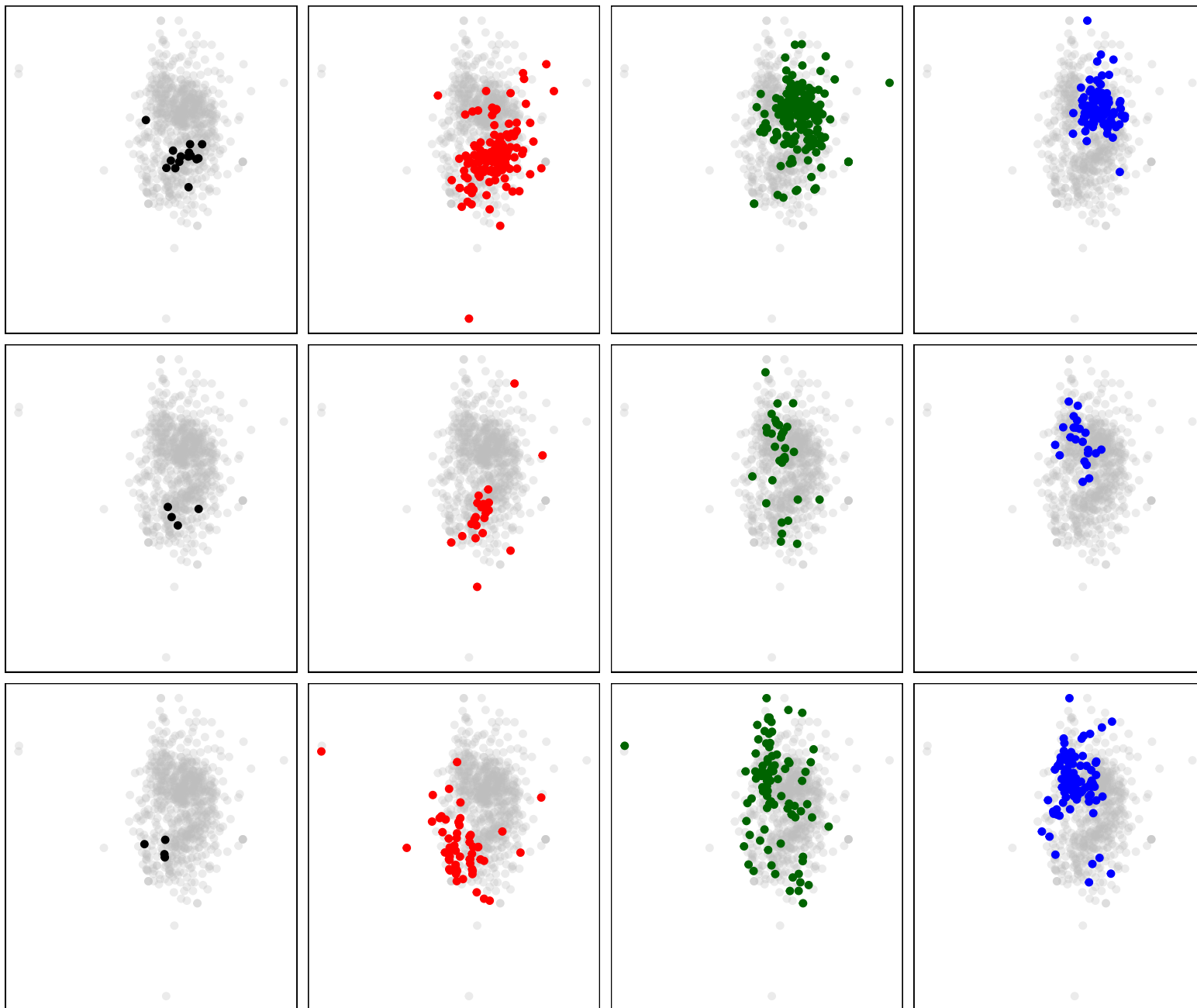
● 1990's

● 2000's

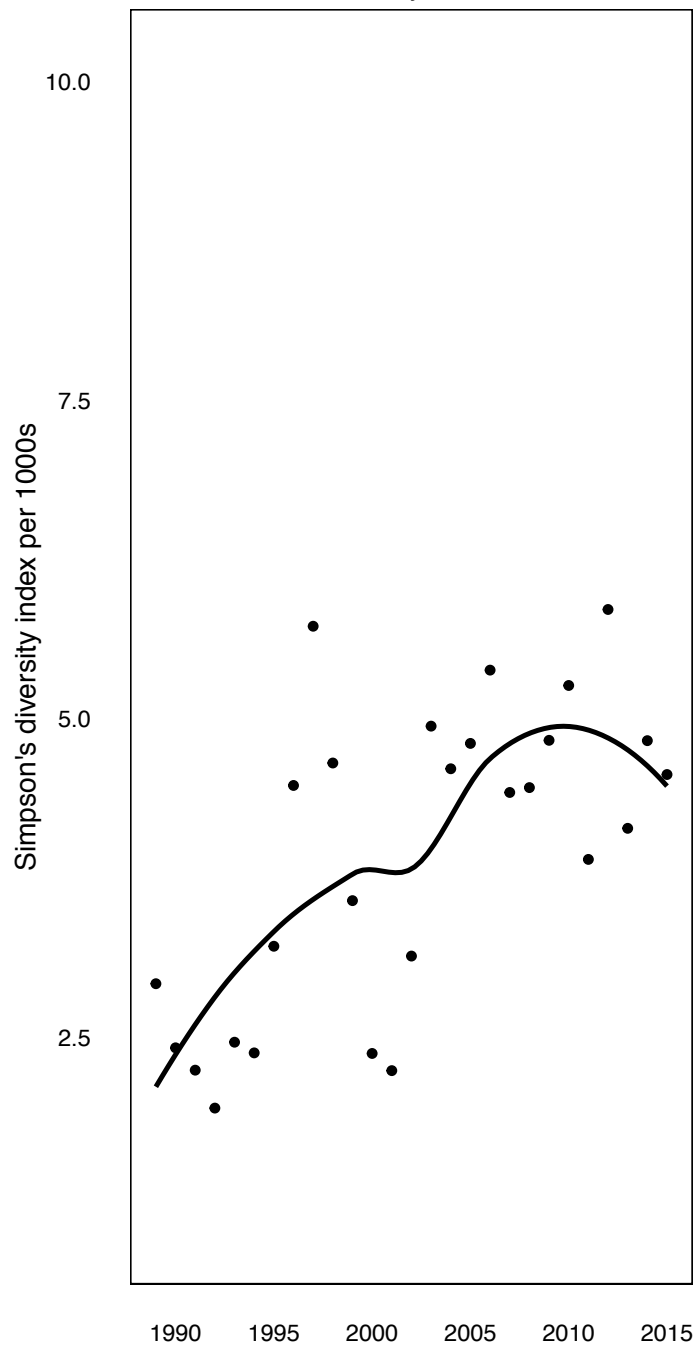
● 2010's

NMDS2

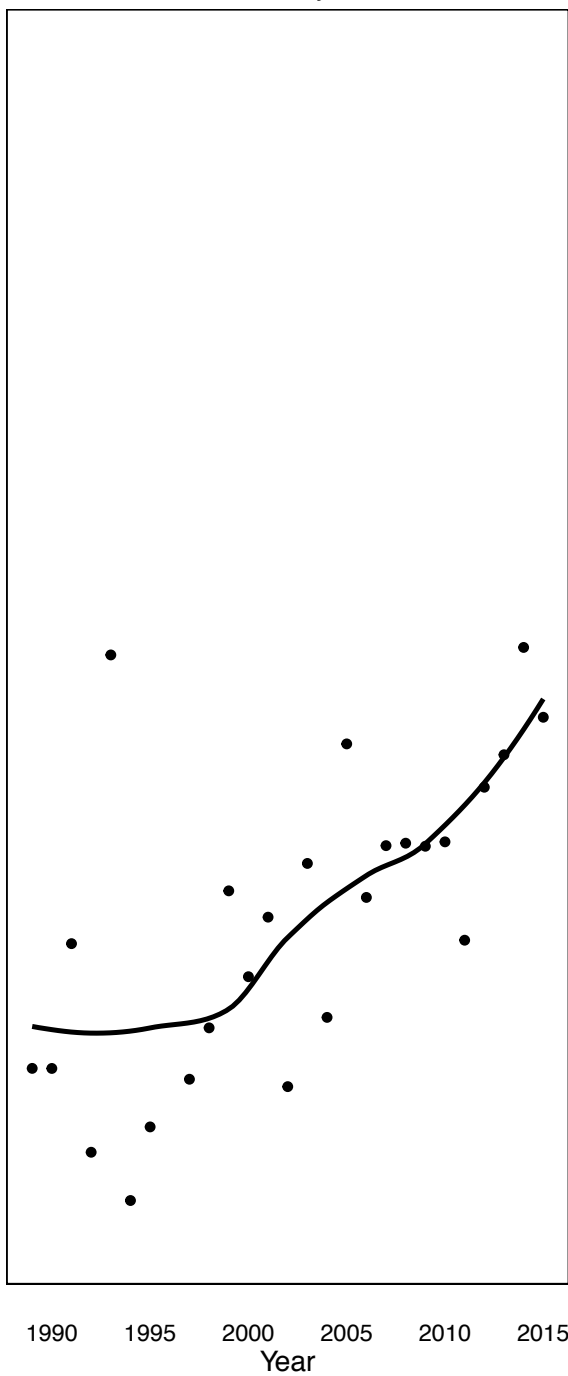
NMDS1



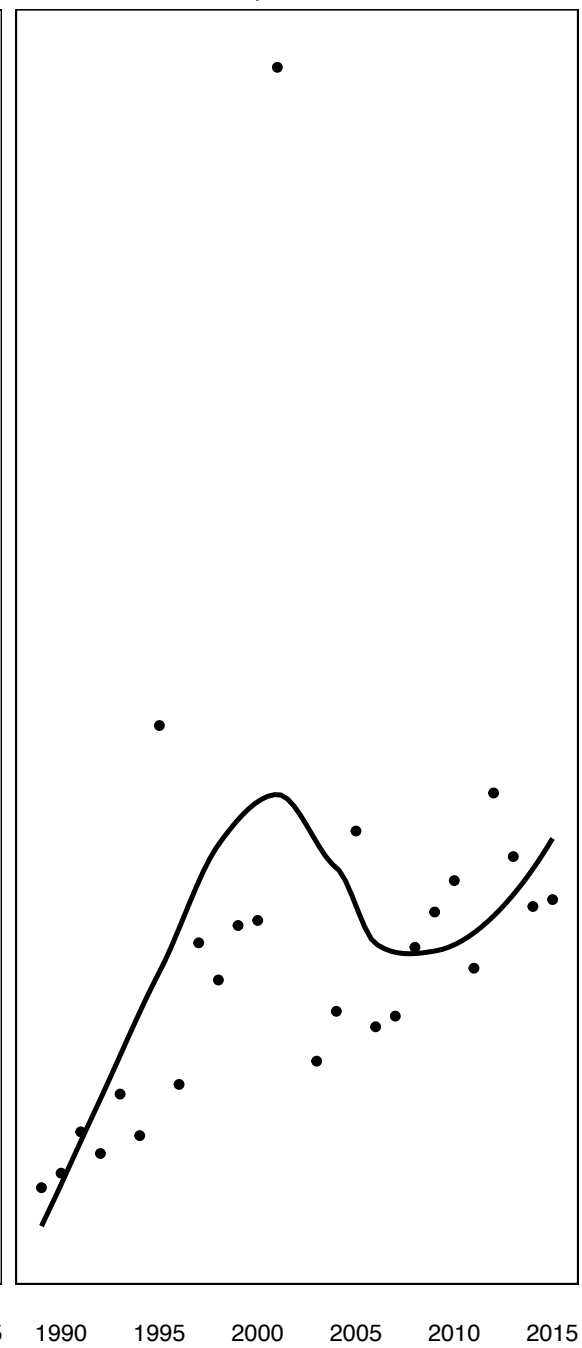
Embayment



Estuary



Open coast



SHINY APP

ACKNOWLEDGEMENTS

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JO JO BRADIE

KRISTINA ENCISO

ICONS at Noun Project:

INPUT — C. HOWLETT

COLLECT — MADE SOMEWHERE

ANALYSIS — G. CRESNAR

MANUAL — P. ROZENBERG

QUESTIONS?

GITHUB.COM/MONSAUCE

 **MONSAUCE**

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