FEUS-tables

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Create Tables from the Fisheries Economics of the US (FEUS) Report

Purpose: Construct the FEUS Commerical Fisheries state and national tables and output them to csv files

```
PKG <- c(# devtools::install_github("emilymarkowitz-NOAA/FishEconProdOutput", force = TRUE)
         "FishEconProdOutput",

         #Seperating species by taxonomic group
         "taxize",  # install.packages("remotes"); remotes::install_github("ropensci/taxize")

         # Data Managment
         "tidyverse",
         "filesstrings",
         "data.table",
         "plyr",
         "rlist",

         # #RMarkdown
         "rmarkdown",
         "ggpubr",
         "kableExtra",

         #Excel File Management
         "xlsx",
         "readxl"
)

for (p in PKG) {
  if(!require(p,character.only = TRUE)) {
    install.packages(p)
    require(p,character.only = TRUE)}
}
```

1. Set knowns

```
# Define what regions we are interested in
reg_order = c("National", "North Pacific", "Pacific", "Western Pacific (Hawai`i)",
              "New England",
              "Mid-Atlantic", "South Atlantic", "Gulf of Mexico")

reg_order_abbrv = c("US", "NP", "Pac", "WP", "NE", "MA", "SA", "GOM")

# Define Category
category0 = "category"

# Define Years
maxyr<-2018
yr <- minyr <- minyr.data<-as.numeric(paste0(floor((maxyr-24)/10),
                              ifelse(substr(maxyr, start = nchar((maxyr-24)),
                                            stop = nchar((maxyr-24)))>=5, 6, 1))) #of data going into the a
  nalysis
minyr.ProdOut<-maxyr-19 # That will be shown in the analysis
baseyr<-as.numeric(paste0(floor(maxyr/10),
                          ifelse(substr(maxyr, start = nchar(maxyr),
                                        stop = nchar(maxyr))>=5, 5, 0))) #Will change every 5 years, e.g.,
   maxyr 2019 = byr 2015; maxyr 2020 = byr 2020; maxyr 2021 = byr 2020
```

2. Set your Directories where you will save everything

```
dir.in<-getwd()
#Local Directories
dir_outputtables<-paste0(dir.in, "/output/")
dir.create(dir_outputtables)

# Folder name for output
folder<-"T567_ProdOutput"
titleadd = paste0(minyr.ProdOut, "To", maxyr, "_FSFEUS")
counter<-0

# Define Directories
dir_analyses = paste0(dir_outputtables, folder)
dir.create(dir_analyses)
# dir.nore<-paste0(dir.out,"/analyses/",minyr,"To",maxyr0,"_Fisheries_Northeast/")
# create_dir(dir.nore)
```

2. Load example data

```
counter<-0
landings_data<-FishEconProdOutput::land
knitr::kable(head(landings_data), booktabs = T) %>%
  kable_styling(latex_options = "striped")
```

	Year	Pounds	Dollars	category	Tsn	State	Region	abbvreg
5	2001	613	750	Shellfish	83677	Oregon	Pacific	Pac
6	2003	172	119	Shellfish	83677	Oregon	Pacific	Pac

	Year	Pounds	Dollars	category	Tsn	State	Region	abbvreg
7	2006	131	131	Shellfish	83677	North Carolina	South Atlantic	SA
14	2005	15	30	Shellfish	83677	Maryland	Mid-Atlantic	MA
15	2004	3	2	Shellfish	83677	New Jersey	Mid-Atlantic	MA
16	2006	37	28	Shellfish	83677	New Jersey	Mid-Atlantic	MA

4. Run Analysis

```
out <- OutputAnalysis(landings_data = landings_data,
                category0 = category0,
                baseyr = baseyr,
                titleadd = titleadd,
                dir_analyses = dir_analyses,
                skipplots = TRUE,
                reg_order = reg_order,
                reg_order_abbrv = reg_order_abbrv,
                save_outputs_to_file = FALSE)
#> [1] "National"
#> [1] "North Pacific"
#> [1] "Pacific"
#> [1] "Western Pacific (Hawai`i)"
#> [1] "New England"
#> [1] "Mid-Atlantic"
#> [1] "South Atlantic"
#> [1] "Gulf of Mexico"
#> [1] "Create spreadsheets"
#> [1] "Create plots"
names(out)
#> [1] "warnings_list"    "editeddata_list"  "index_list"       "spp_list"
#> [5] "figures_list"     "gridfigures_list"

for (jjj in 1:length(out)) {
  assign(names(out)[jjj], out[[jjj]])
}
```

5. Create FEUS Tables

Table 5. Regional Törnqvist Price Index, 1996-2018 (2015 = 1)

```
result <- lapply(index_list, "[", , c("Year", "cat", "PI_CB"))

a<-data.frame(result[1][[1]]$Year,
              result[1][[1]]$cat)
for (i in 1:length(result)) {
  a<-cbind.data.frame(a, result[i][[1]]$PI_CB)
}
names(a)<-c("Year", "cat", names(result))
a <- a[a$Year %in% minyr.ProdOut:maxyr &
         a$cat %in% "Total", ]

a$cat<-NULL

a$Footnotes<-NA
temp_code<-a

a[,reg_order]<-round(x = a[,reg_order], digits = 2)

temp_print <- a

ProdOutputPI_Raw<-temp_code
write_csv(x = ProdOutputPI_Raw, file = paste0(dir_analyses, "/ProdOutputPI_Raw.csv"))

ProdOutputPI_Print<-temp_print
write_csv(x = ProdOutputPI_Print, file = paste0(dir_analyses, "/ProdOutputPI_Print.csv"))

ProdOutputPI_Print$Footnotes<-NULL
knitr::kable(ProdOutputPI_Print, booktabs = T) %>%
  kable_styling(latex_options = "striped")
```

	Year	National	North Pacific	Pacific	Western Pacific (Hawai`i)	New England	Mid-Atlantic	South Atlantic	Gulf of Mexico
50	1999	0.61	0.60	0.47	0.78	0.61	0.52	0.59	0.80
51	2000	0.64	0.64	0.49	0.85	0.61	0.54	0.66	0.93
52	2001	0.59	0.58	0.45	0.84	0.56	0.49	0.64	0.84
53	2002	0.55	0.53	0.43	0.75	0.56	0.50	0.58	0.70
54	2003	0.58	0.59	0.46	0.81	0.59	0.51	0.57	0.65
55	2004	0.63	0.70	0.50	0.82	0.62	0.52	0.59	0.66
56	2005	0.71	0.74	0.53	0.88	0.75	0.67	0.63	0.73
57	2006	0.78	0.83	0.56	0.90	0.92	0.66	0.64	0.65
58	2007	0.80	0.91	0.65	0.89	0.77	0.65	0.73	0.77
59	2008	0.92	1.14	0.72	0.95	0.73	0.69	0.73	0.86
60	2009	0.77	0.89	0.66	0.93	0.65	0.68	0.71	0.68
61	2010	0.91	1.10	0.72	1.01	0.74	0.73	0.74	0.87

	Year	National	North Pacific	Pacific	Western Pacific (Hawai`i)	New England	Mid-Atlantic	South Atlantic	Gulf of Mexico
62	2011	1.04	1.28	0.89	1.08	0.82	0.78	0.79	0.96
63	2012	1.05	1.27	0.93	1.23	0.82	0.83	0.86	0.89
64	2013	1.09	1.25	0.89	1.12	0.87	0.93	0.99	1.17
65	2014	1.07	1.13	0.96	1.02	0.95	0.99	1.02	1.29
66	2015	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
67	2016	1.06	1.11	1.02	1.11	0.99	0.98	0.96	1.07
68	2017	1.03	1.07	1.06	1.05	0.93	0.96	1.02	1.00
69	2018	1.14	1.30	1.05	1.13	0.92	0.95	1.06	1.07

Table 6. Regional Real Landing Törnqvist Values, 1996-2018 (2015 $ Million)

```
result <- lapply(index_list, "[", , c("Year", "cat", "Q_CB"))

a<-data.frame(result[1][[1]]$Year,
              result[1][[1]]$cat)
for (i in 1:length(result)) {
  a<-cbind.data.frame(a, result[i][[1]]$Q_CB)
}
names(a)<-c("Year", "cat", names(result))
a <- a[a$Year %in% minyr.ProdOut:maxyr &
         a$cat %in% "Total", ]

a$cat<-NULL

a$Footnotes<-NA
temp_code<-a

a[,reg_order]<-round(x = a[,reg_order]/1e6, digits = 2)
for (i in 2:length(reg_order)){
  a[,i]<-prettyNum(x = a[,i], big.mark = ",")
}
temp_print <- a

ProdOutputQ_Raw<-temp_code
write_csv(x = ProdOutputQ_Raw, file = paste0(dir_analyses, "/ProdOutputQ_Raw.csv"))

ProdOutputQ_Print<-temp_print
write_csv(x = ProdOutputQ_Print, file = paste0(dir_analyses, "/ProdOutputQ_Print.csv"))

ProdOutputQ_Print$Footnotes<-NULL
knitr::kable(ProdOutputQ_Print, booktabs = T) %>%
  kable_styling(latex_options = "striped")
```

	Year	National	North Pacific	Pacific	Western Pacific (Hawai`i)	New England	Mid-Atlantic	South Atlantic	Gulf of Mexico
50	1999	7,925.76	3,237.45	995.01	163.73	1,372.7	874.29	330.26	975.53
51	2000	7,652.09	2,782.8	1,031.59	160.49	1,451.42	823.74	311.89	1042.56
52	2001	7,436.78	2,773.35	1,000.3	128.59	1,494.97	894.42	266.45	916.56
53	2002	7,582.75	2,803.48	1,022.21	138.47	1,576.58	846.15	296.7	900.79
54	2003	7,860.5	3,037.26	1,157.31	128.95	1,489.53	867.18	273.39	943.28
55	2004	8,008.36	3,211.12	963.51	140.02	1,631.46	952.32	275.55	851.74
56	2005	7,609.02	3,247.18	854.37	160.41	1,548.18	832.37	217.24	730.11
57	2006	7,539.53	3,098.07	888.89	147.48	1,581.67	722.94	221.57	907.76
58	2007	7,173.29	3,095.49	757.34	170.47	1,377.65	765.25	209.9	800.26
59	2008	6,712.85	2,849.74	698.05	177.98	1,334.42	741.02	215.43	700.56
60	2009	6,885.84	2,702.71	821.72	152.68	1,437.56	771.17	207.59	859.91
61	2010	6,879.21	2,771.42	863.92	166.43	1,515.16	825.15	209.8	616.16
62	2011	7,310.12	2,912.82	899.47	168.79	1,569.24	855.61	192.34	781.50
63	2012	7,153.09	2,831.29	829.95	182.03	1,718.81	765.22	178.49	801.28
64	2013	7,067.73	2,998.89	1,013.3	192.13	1,523.36	586.21	155.58	728.14
65	2014	6,930.19	2,944.72	872.83	198.09	1,446.35	583.52	175.17	737.21
66	2015	6,968.71	3,206.74	629.88	206.74	1,400.7	597.16	189.02	738.47
67	2016	6,935.66	2,898.55	741.12	211.8	1,483.34	646.39	187.4	837.22
68	2017	7,188.51	3,146.48	743.87	221.27	1,533.05	613.03	180.98	808.79
69	2018	6,667.61	2,686.15	722.23	210.33	1,631.74	588.01	146.43	805.92

Table 7. National Nominal Landing Values ($ Million), Törnqvist Price Index, (2015 = 1), and Real Landing Törnqvist Values (2015 $ Million), 1996-2018

```
result <- lapply(index_list, "[", , c("Year", "cat", "PI_CB", "Q_CB", "v"))
a<-result$National
a<-a[a$Year %in% minyr.ProdOut:maxyr, ]

a<-dplyr::rename(a,
                 PI = PI_CB,
                 Q = Q_CB,
                 V = v)

# temp_code
a.pi<-spread(a[!(names(a) %in% c("V", "Q"))], cat, PI)
names(a.pi)[-1]<-paste0(names(a.pi)[-1], "_PI")
a.q<-spread(a[!(names(a) %in% c("PI", "V"))], cat, Q)
names(a.q)[-1]<-paste0(names(a.q)[-1], "_Q")
a.v<-spread(a[!(names(a) %in% c("PI", "Q"))], cat, V)
names(a.v)[-1]<-paste0(names(a.v)[-1], "_V")

b<-left_join(a.pi, a.q, by = c("Year"))
b<-left_join(b, a.v, by = c("Year"))



b<-b[,match(x = c("Year",
                  names(b)[grep(pattern = "_V", x = names(b), ignore.case = T)],
                  names(b)[grep(pattern = "_PI", x = names(b), ignore.case = T)],
                  names(b)[grep(pattern = "_Q", x = names(b), ignore.case = T)]),
            names(b))]

b<-b[,match(x = c("Year",
                  names(b)[grep(pattern = "fin", x = names(b), ignore.case = T)],
                  names(b)[grep(pattern = "Shell", x = names(b), ignore.case = T)],
                  names(b)[grep(pattern = "Total", x = names(b))]),
            names(b))]

b<-b[b$Year %in% minyr:maxyr, ]
temp_code<-b
temp_code$Footnotes<-NA

# temp_print
b<-a
b$PI<-round(x = b$PI, digits = 2)
b$Q<-prettyNum(x = round(x = b$Q/1e6), digits = 2, big.mark = ",")
b$V<-prettyNum(x = round(x = b$V/1e6), digits = 2, big.mark = ",")



b.pi<-spread(b[!(names(b) %in% c("V", "Q"))], cat, PI)
names(b.pi)[-1]<-paste0(names(b.pi)[-1], "_PI")
b.q<-spread(b[!(names(b) %in% c("PI", "V"))], cat, Q)
names(b.q)[-1]<-paste0(names(b.q)[-1], "_Q")
b.v<-spread(b[!(names(b) %in% c("PI", "Q"))], cat, V)
names(b.v)[-1]<-paste0(names(b.v)[-1], "_V")

b<-left_join(b.pi, b.q, by = c("Year"))
b<-left_join(b, b.v, by = c("Year"))

b<-b[,match(x = c("Year",
                  names(b)[grep(pattern = "_V", x = names(b), ignore.case = T)],
```

```
                  names(b)[grep(pattern = "_PI", x = names(b), ignore.case = T)],
                  names(b)[grep(pattern = "_Q", x = names(b), ignore.case = T)]),
            names(b))]

b<-b[,match(x = c("Year",
                  names(b)[grep(pattern = "fin", x = names(b), ignore.case = T)],
                  names(b)[grep(pattern = "Shell", x = names(b), ignore.case = T)],
                  names(b)[grep(pattern = "Total", x = names(b))]),
            names(b))]

b<-b[b$Year %in% minyr:maxyr, ]
temp_print<-b
temp_print$Footnotes<-NA

ProdOutputUS_Raw<-temp_code
write_csv(x = ProdOutputUS_Raw, file = paste0(dir_analyses, "/ProdOutputUS_Raw.csv"))

ProdOutputUS_Print<-temp_print
write_csv(x = ProdOutputUS_Print, file = paste0(dir_analyses, "/ProdOutputUS_Print.csv"))

ProdOutputUS_Print$Footnotes<-NULL
knitr::kable(ProdOutputUS_Print, booktabs = T) %>%
  kable_styling(latex_options = "striped")
```

Year	Finfish_V	Finfish_PI	Finfish_Q	Shellfish_V	Shellfish_PI	Shellfish_Q	Total_V	Total_PI	Total_Q
1999	1,478	0.61	2,429	3,334	0.61	5,486	4,812	0.61	7,926
2000	1,502	0.64	2,349	3,420	0.65	5,293	4,922	0.64	7,652
2001	1,378	0.59	2,346	3,020	0.59	5,081	4,398	0.59	7,437
2002	1,247	0.54	2,324	2,894	0.55	5,247	4,141	0.55	7,583
2003	1,399	0.58	2,421	3,128	0.58	5,427	4,527	0.58	7,861
2004	1,631	0.66	2,466	3,436	0.62	5,531	5,067	0.63	8,008
2005	1,739	0.73	2,381	3,675	0.70	5,214	5,414	0.71	7,609
2006	1,958	0.89	2,209	3,898	0.73	5,336	5,855	0.78	7,540
2007	1,917	0.87	2,194	3,854	0.78	4,969	5,771	0.80	7,173
2008	2,109	1.05	2,013	4,063	0.87	4,696	6,172	0.92	6,713
2009	1,699	0.86	1,982	3,574	0.73	4,917	5,273	0.77	6,886
2010	2,058	1.03	2,007	4,199	0.86	4,880	6,257	0.91	6,879
2011	2,497	1.17	2,135	5,079	0.98	5,183	7,576	1.04	7,310
2012	2,456	1.20	2,040	5,052	0.98	5,131	7,508	1.05	7,153
2013	2,524	1.21	2,078	5,212	1.04	4,995	7,735	1.09	7,068
2014	2,283	1.10	2,080	5,153	1.06	4,852	7,436	1.07	6,930

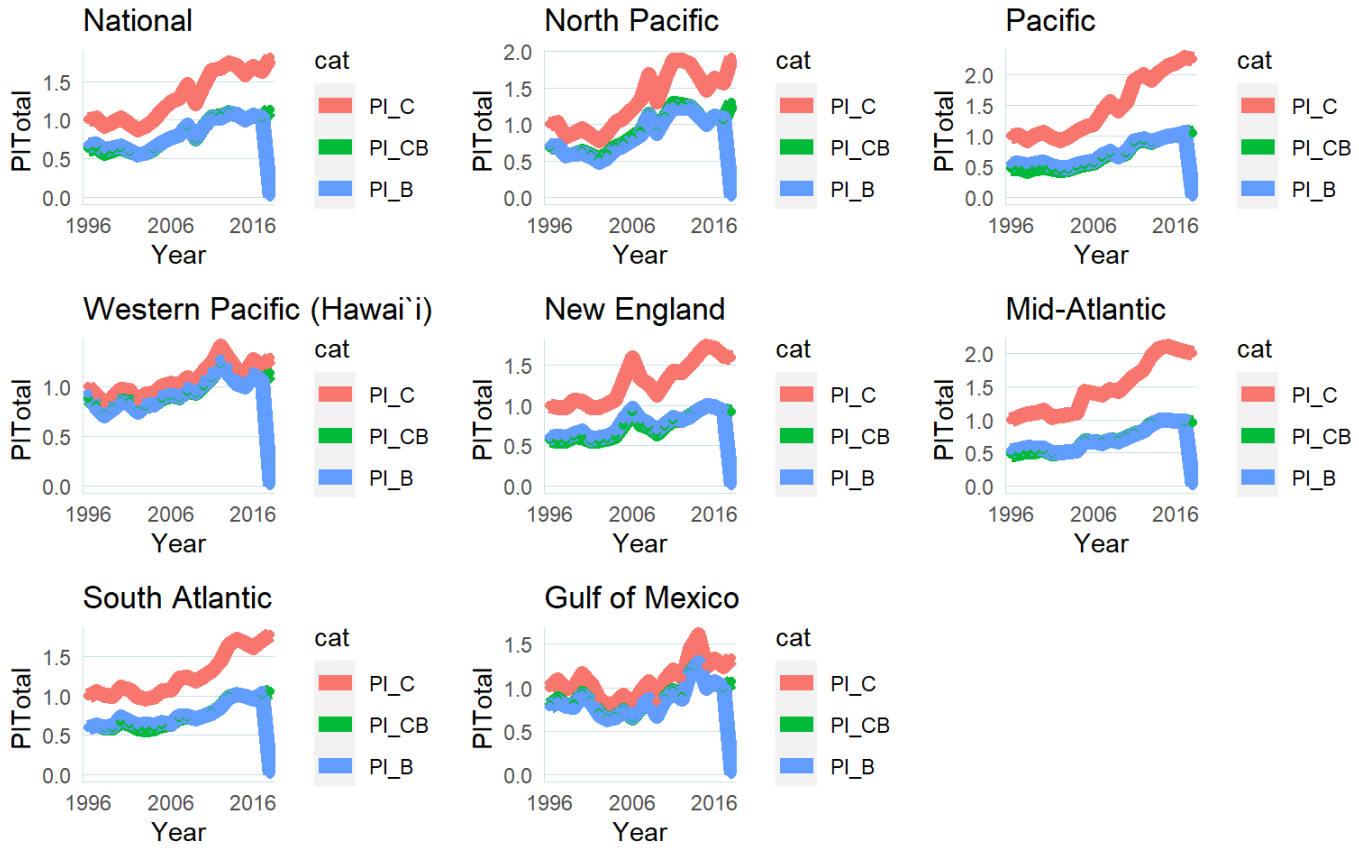
Year	Finfish_V	Finfish_PI	Finfish_Q	Shellfish_V	Shellfish_PI	Shellfish_Q	Total_V	Total_PI	Total_Q
2015	2,177	1.00	2,177	4,792	1.00	4,792	6,969	1.00	6,969
2016	2,262	1.10	2,062	5,119	1.05	4,876	7,382	1.06	6,936
2017	2,334	1.05	2,220	5,047	1.02	4,968	7,381	1.03	7,189
2018	2,390	1.23	1,944	5,181	1.09	4,732	7,570	1.14	6,668

6. Figures

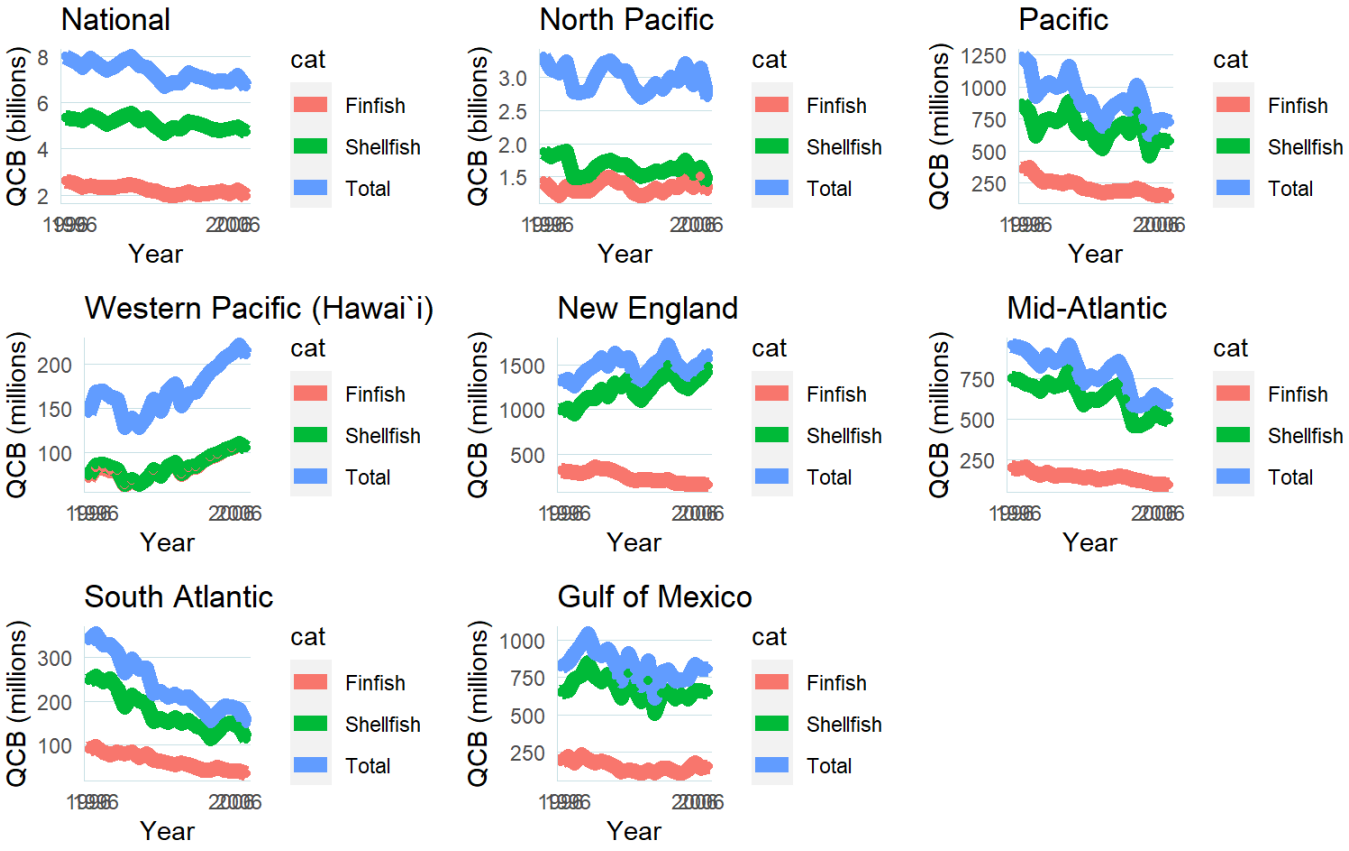
Here are a few figures that come out of this analysis!

Some come already in convient grids…

```
gridfigures_list$`000_All_byr2015_categoryPI_Total`
```

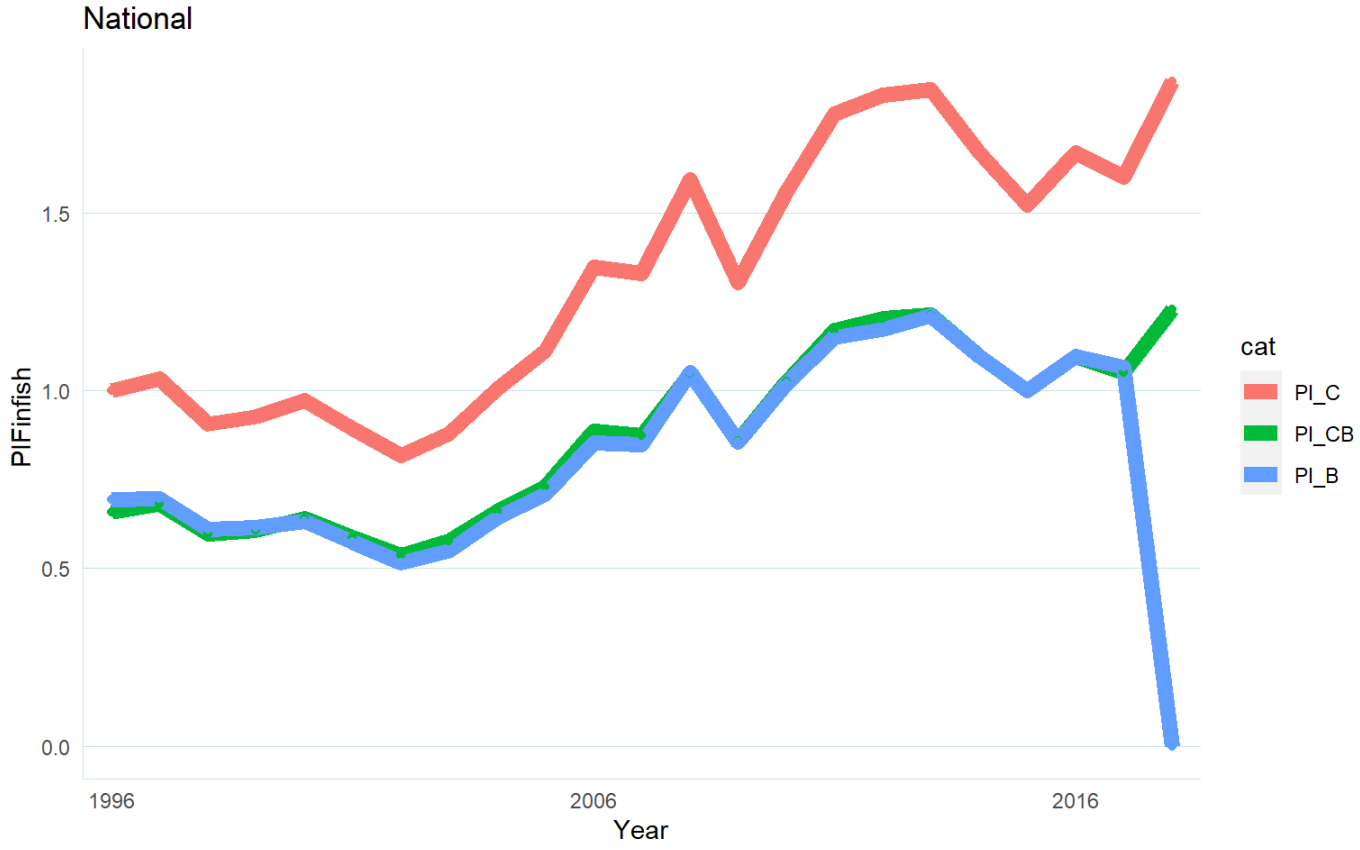



```
gridfigures_list$`000_All_byr2015_categoryQ_CB_Q`
```



And in single plots!

```
figures_list$National__PI_Finfish
```



```
figures_list$National__Q_CB_CatTot_QCatTot
```