Extract to create cSV used to feed FGP/OGSL/ETC

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This document is the narrative of how an Excel file called "sGSL-Northumberland-Survey-FGP.csv" was generated.

The DFO Gulf Region Northumberland survey follows a stratified random sampling design and covers Division 4T of the Northwest Atlantic Fisheries Organisation (NAFO).

```
`%nin%` = Negate(`%in%`) ## a useful operator
suppressPackageStartupMessages(library(gulf))
survey ="ns"
```

SETS

Using the function "read.card" from the DFO Gulf Region's R package "gulf", read in the set cards and exclude hydrographic stations and null sets, so as to keep only representative tows in strata 401 to 439.

```
yrs <- 1999:2021 #
x <- read.card(card.type="set", year=yrs, survey =survey)
index <- x$experiment == 1
x <- x[which(index),]

valid.cruise<-c('0901','0024','0139','0241','0341','0434','0536','0637','0030','0022','0029','0103','01


index  <- paste0(x$vessel.code,  x$cruise.number) %in% valid.cruise
x = x[which(index),]
```

Add a few useful columns to the data frame containing the set card information (including depth and swept area as requested).

```
## add useful columns
x$unique.id <- paste(x$year, x$cruise.number, x$vessel.code, x$set.number, sep="-")
x$experiment.str <- experiment.str(x$experiment)
x$gear.str <- gear.str(x$gear)
x$longitude <- longitude(x)
x$latitude <- latitude(x)

ox <- order(x$year, x$month, x$day, x$start.hour)
x <- x[ox,] # reorder chronologically
```

Catch cards contain the total catch information for the species of interest. Here they are adjusted for distance towed, estimated diurnal effects and estimated vessel-gear effects.

```
### Catch card for all years requesteed (1971 - 2018)
y <- read.card(card.type="catch", year = yrs, survey = survey)
index <- y$experiment == 1
y <- y[which(index),]
index  <- paste0(y$vessel.code,  y$cruise.number) %in% valid.cruise
y = y[which(index),]
```

CATCH

```
y <- adjust(y, x)
```

```
## Tow catches for nephrops trawl adjusted to a standard tow distance of 0.125 nautical miles.
```

```
y$unique.id <- paste(y$year, y$cruise.number, y$vessel.code, y$set.number, sep="-")
y$english.name <- species.str(y$species, "english")
y$latin.name <- species.str(y$species, "latin")
y$french.name <- species.str(y$species, "french")

z <- merge(y,x, all.x = TRUE, by = "unique.id", names = c("longitude","latitude", "gear.str"))

##  CSV
## write catch cards to file
fn2 <- "sGSL-Northumberland-Survey-FGP.csv"
fp  <- "D:/SourceControl/Git Hub/fgp-datasets/6d61f7b4 (ns_survey)/"
csv.fn2 <- file.path(fp,fn2)

ooz <- order(z$year, z$month, z$day, z$start.hour, z$start.minute, z$species)

#columns to keep
fvars2 <- c("cruise.number","year","month","day","start.hour","start.minute","latitude","longitude","gea

zz=  z[ooz,fvars2]

#proper headers for FGP
names(zz) =  c("cruise_number__numero_de_criosiere","year__annee","month__mois","day_jour","start_hour_
write.csv(zz, file=csv.fn2, row.names=FALSE)
```