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 <- 1999:2025
projectBase = here::here()

x <- read.card(card.type="set", year=yrs, survey =survey)
```

```
## Data channel is being created for the PTRAN database
```

```
index <- x$experiment == 1
x <- x[which(index),]

# New cruise numbers must be added with every new year being added
valid.cruise<-c('0901','0024','0139','0241','0341','0434','0536','0637','0030','0022','0029',
                '0103','0129','0026','P126','P021','P521','P018','P024','P041', 'P140',
                'P150', 'P151', 'P152', 'P303','P402', 'P502')###only cruise numbers from July/August


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)
```

```
## Data channel is being created for the PTRAN database
```

```
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 requested (1999 - 2024)
y <- read.card(card.type="catch", year = yrs, survey = survey)
```

```
## Data channel is being created for the PTRAN database
```

```
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)
```

```
## Data channel is being created for the PTRAN database

## 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")
```

```
## Data channel is being created for the PTRAN database
```

```
y$latin.name <- species.str(y$species, "latin")
```

```
## Data channel is being created for the PTRAN database
```

```
y$french.name <- species.str(y$species, "french")
```

```
## Data channel is being created for the PTRAN database
```

```
# as per request by Natalie
index = y$number.caught == 0
if(length(which(index)) > 0)
y[index,]$number.caught = NA
```

```r
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  <-paste0(projectBase,"/stock_assessment_surveys/6d61f7b4 (ns_survey)/data resources/")

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", "gear.str","species","french.name","english.name",
            "latin.name","weight.caught","number.caught")

#remove any NA's in "weight.caught","number.caught"  as per CADI request :)
index = is.na(z$weight.caught)
if(length(which(index)) > 0){
  z[index,]$weight.caught = ""
}
index = is.na(z$number.caught)
if(length(which(index)) > 0){
  z[index,]$number.caught = ""
}
zz=  z[ooz,fvars2]

#proper headers for FGP

names(zz) =  c("cruise_number__numéro_de_criosière","year__année","month__mois","day__jour","start_hour
               "start_minute__minute_de_départ","latitude","longitude","gear__équipement","species__esp
               "french_name__nom_français","english_name__nom_anglais","latin_name__nom_latin",
               "weight_caught__poids_pris","number_caught__quantité__attrapé")

con<-file(csv.fn2,encoding="ISO-8859-1")
write.csv(zz, file=con, row.names=FALSE)
```