NRDA Bottom Longline Dataset Documentation

This document is meant to serve as a reference for the file structure of the datasets provided from the NMFS Bottom Longline Survey. Data included is limited to the United States waters of the Gulf of Mexico, collected during the annual bottom longline survey from 1995 - 2013.

Datasets

Six files are provided: STATION, CATCH, ENV, CTD, CTD\_PROC\_CAST and LENGTH. The STATION file contains information on where and when the operations (stations) took place. The CATCH contains information on the total number of species captured at each station. The ENV contains environmental information for each station (from 1995 – 2003), summarized by surface, mid water depth, and bottom measurements. The CTD contains information about where and when the Conductivity, Temperature and Depth (CTD) unit, with added instruments (Fluorometer, Oxygen and Transmissometer) was used to collect environmental measurements (from 2004 – 2013). The CTD\_PROC\_CAST contains the entire CTD cast for a given station. Finally, the LENGTH contains information about individual taxa collected at each station.

Dataset Linkage

All the individual files can be linked by the STATIONKEY variable contained within each dataset.

Notes

In the CATCH dataset there may be more than one instance (row) of a particular taxon at a station. To get the total number of individual, each row for a taxon at a station needs to be summed. This is done in order to get an accurate of the measure of the weights, if a total taxon weight is required.

In the LENGTH dataset, not all taxon at a given station may have a length record (e.g. body damaged due to predation). In addition, not all length measurements (fork, total, etc.) will be present for each taxon (e.g. not all species, such as nurse sharks, have the full suite of characters such as fork length).

The ENV file only contains environmental summary data from 1995 – 2003. From 2004 – 2013, all the environmental measurements can be found in the CTD\_PROC\_CAST file, which provides a more detailed profile of the water column since all measurements are included. In both cases, there may be instances when one or more sensors may not have readings due to breakdowns, malfunctions, or other issues.

STATION Dataset File Structure

Variable – dataset variable name

Type – character (Char) or numeric (Num) variable

Len – variable length

|  | *Variable* | *Type* | *Len* |
| --- | --- | --- | --- |
| *1* | STATIONKEY | Num | 8 |
| *2* | STARTLAT | Num | 8 |
| *3* | STARTLON | Num | 8 |
| *4* | STARTDEPTH | Num | 8 |
| *5* | START\_TIME | Num | 8 |
| *6* | ENDLAT | Num | 8 |
| *7* | ENDLON | Num | 8 |
| *8* | ENDDEPTH | Num | 8 |
| *9* | END\_TIME | Num | 8 |
| *10* | TIME\_ZONE | Num | 8 |
| *11* | EFFORT | Num | 8 |
| *12* | NUMBERHOOKS | Num | 8 |
| *13* | HOOKTYPE | Char | 1 |
| *14* | LLINEGEAR | Char | 2 |
| *15* | LLINEHOOKSIZE | Num | 8 |
| *16* | TEMPAIR | Num | 8 |
| *17* | BAROPRES | Num | 8 |
| *18* | WINDSPD | Num | 8 |
| *19* | WINDDIR | Num | 8 |
| *20* | WATERCOLOR | Char | 1 |
| *21* | FORELULE | Num | 8 |
| *22* | CLOUDCOVER | Char | 3 |
| *23* | PRECIPITATION | Char | 2 |
| *24* | WAVE\_HGHT | Num | 8 |
| *25* | SEA\_COND | Char | 2 |
| *26* | COMMENT | Char | 255 |

Explanation of STATION variables

STATIONKEY

Concatenation of the vessel number, cruise number and Pascagoula station number. Used to link the datasets.

STARTLAT

Decimal degrees of latitude for the position of the first highflyer deployed.

STARTLON

Decimal degrees of longitude for the position of the first highflyer deployed.

START\_TIME

Starting date and time of the soak of the longline.

ENDLAT

Decimal degrees of latitude for the position of the last highflyer retrieved.

ENDLON

Decimal degrees of longitude for the position of the last highflyer retrieved.

END\_TIME

Ending date and time of the soak of the longline.

TIME\_ZONE

Time zone code. Valid values are:

            2 – Eastern Daylight Savings Time             
               4 – Central Daylight Savings Time

         8 – Greenwich Mean Time                       
        

EFFORT

Total soak time of the bottom longline in minutes taken from the deployment of the last highflyer and retrieval of the first highflyer. .

NUMBERHOOKS

Number of hooks set out.

HOOKTYPE

Type of hook used during the set:

J – 3/0 J Hook

C – 15/0 Circle Hook

LLINEGEAR

Type of longline gear used (BL = bottom longline).

LLINEHOOKSIZE

Size of the hook used.

TEMPAIR

Air temperature in degrees Celsius.

BAROPRES

Barometric pressure in millibars.

WINDSPD

Wind speed in knots.

WINDDIR

Wind direction in compass degrees.

WATERCOLOR

Character code describing the general color of the water:

B – Blue / Clear

G – Green

T – Blue Green

Y – Yellow

M – Muddy / Brown

FORELULE

Forel-Ule Water Color Measurements in Arabic numbers.

CLOUDCOVER

Percent cloud cover during daylight hours only. Cloud cover is determined for the entire sky, not just that portion overhead.

PRECIPITATION

1 character code code designating the relative amount of precipitation. Valid values are:

0 – Not recorded

1 – Light Rain

2 – Moderate Rain

5 – Sleet

WAVE\_HGHT

Wave height in meters.

SEA\_COND

Sea surface condition according to Beaufort Scale.

COMMENT

Short comment regarding an issues or observations occurring during the sampling at the station.

CATCH Dataset File Structure

Variable – dataset variable name

Type – character (Char) or numeric (Num) variable

Len – variable length

|  | *Variable* | *Type* | *Len* |
| --- | --- | --- | --- |
| *1* | STATIONKEY | Num | 8 |
| *2* | TAXON | Char | 50 |
| *3* | NUMBER | Num | 8 |
| *4* | WEIGHT | Num | 8 |
| *5* | WTCODE | Char | 1 |

Explanation of CATCH variables

STATIONKEY

Concatenation of the vessel number, cruise number and Pascagoula station number. Used

to link the datasets.

TAXON

50-character field containing the full taxonomic name.

NUMBER

Number of individuals caught at a station.

WEIGHT

Total weight of taxon caught at a station.

WTCODE

Code describing the condition of the taxon when it was weighted:

E – Estimated Weights  
C – Counts without weights  
D – Damaged

ENV Dataset File Structure

Variable – dataset variable name

Type – character (Char) or numeric (Num) variable

Len – variable length

|  | *Variable* | *Type* | *Len* |
| --- | --- | --- | --- |
| *1* | STATIONKEY | Num | 8 |
| *2* | DEPTH\_ESRF | Num | 8 |
| *3* | DEPTH\_EMID | Num | 8 |
| *4* | DEPTH\_EMAX | Num | 8 |
| *5* | DEPTH\_EWTR | Num | 8 |
| *6* | TEMPSURF | Num | 8 |
| *7* | TEMPMID | Num | 8 |
| *8* | TEMPMAX | Num | 8 |
| *9* | SALSURF | Num | 8 |
| *10* | SALMID | Num | 8 |
| *11* | SALMAX | Num | 8 |
| *12* | CHLORSURF | Num | 8 |
| *13* | CHLORMID | Num | 8 |
| *14* | CHLORMAX | Num | 8 |
| *15* | OXYSURF | Num | 8 |
| *16* | OXYMID | Num | 8 |
| *17* | OXYMAX | Num | 8 |
| *18* | TURBSURF | Num | 8 |
| *19* | TURBMID | Num | 8 |
| *20* | TURBMAX | Num | 8 |

Explanation of ENV variables

STATIONKEY

Concatenation of the vessel number, cruise number and Pascagoula station number. Used to link the datasets.

DEPTH\_ESRF

Depth in meters at which surface environmental measurements were taken.

DEPTH\_EMID

Depth in meters at which mid-water or mid-point environmental measurements were taken.

DEPTH\_EMAX

Depth in meters at bottom or maximum depth of environmental measurements were taken.

DEPTH\_EWTR

Depth in meters of the station.

TEMPSURF, TEMPMID AND TEMPMAX

Water temperature in degrees Celsius for DEPTH\_ESRF, DEPTH\_EMID and DEPTH\_EMAX.

SALSURF, SALMID AND SALMAX

Salinity in ppt or PSU for DEPTH\_ESRF, DEPTH\_EMID and DEPTH\_EMAX.

CHLORSURF, CHLORMID AND CHLORMAX

Chlorophyll a in in milligrams per cubic meter for DEPTH\_ESRF,

DEPTH\_EMID and DEPTH\_EMAX.

OXYSURF, OXYMID AND OXYMAX

Dissolved oxygen mg/L for DEPTH\_ESRF, DEPTH\_EMID and DEPTH\_EMAX.

TURBSURF, TURBMID AND TURBMAX

Percent transmissivity for DEPTH\_ESRF, DEPTH\_EMID and DEPTH\_EMAX.

CTD Dataset File Structure

Variable – dataset variable name

Type – character (Char) or numeric (Num) variable

Len – variable length

|  | *Variable* | *Type* | *Len* |
| --- | --- | --- | --- |
| *1* | STATIONKEY | Num | 8 |
| *2* | CAST\_NUM | Num | 8 |
| *3* | STA\_TIME | Num | 8 |
| *4* | END\_TIME | Num | 8 |
| *5* | TIMEZONE | Char | 3 |
| *6* | STA\_LAT | Char | 8 |
| *7* | STA\_LON | Char | 8 |
| *8* | END\_LAT | Char | 8 |
| *9* | END\_LON | Char | 8 |
| *10* | STA\_DPTH | Num | 8 |
| *11* | END\_DPTH | Num | 8 |
| *12* | COMMENTS | Char | 255 |

Explanation of CTD variables

STATIONKEY

Concatenation of the vessel id, cruise number and Pascagoula station number. Used to

link the datasets.

CAST\_NUM

Cast number for the CTD

STA\_TIME

Date and time at the start of the CTD cast.

END\_TIME

Date and time at the end of the CTD cast.

TIMEZONE

Time zone that the STA\_TIME and END\_TIME are recorded in:

CDT – Central Daylight Savings Time

GMT – Greenwich Mean Time

STA\_LAT

Latitude at the start of the CTD cast in DDMM.DM

DD – Degrees

MM – Minutes

DM – Decimal Minutes

STA\_LON

Longitude at the start of the CTD cast in DDDMM.DM

DDD – Degrees

MM – Minutes

DM – Decimal Minutes

END\_LAT

Latitude at the start of the CTD cast in DDMM.DM

DD – Degrees

MM – Minutes

DM – Decimal Minutes

END\_LON

Longitude at the end of the CTD cast in DDDMM.DM

DDD – Degrees

MM – Minutes

DM – Decimal Minutes

STA\_DPTH

Depth in meters at the start of the CTD cast.

END\_DPTH

Depth in meters at the end of the CTD cast.

COMMENTS

Short comment regarding an issues or observations occurring during the CTD cast.

CTD\_PROC\_CAST Dataset File Structure

Variable – dataset variable name

Type – character (Char) or numeric (Num) variable

Len – variable length

|  | *Variable* | *Type* | *Len* |
| --- | --- | --- | --- |
| *1* | STATIONKEY | Num | 8 |
| *2* | DEPTH | Num | 8 |
| *3* | TEMP | Num | 8 |
| *4* | FLUORO | Num | 8 |
| *5* | XMISS | Num | 8 |
| *6* | OXY\_MG | Num | 8 |
| *7* | OXSAT | Num | 8 |
| *8* | DENSITY | Num | 8 |
| *9* | SALINITY | Num | 8 |
| *10* | NBIN | Num | 8 |

Explanation of CTD\_PROC\_CAST variables

STATIONKEY

Concatenation of the vessel number, cruise number and Pascagoula station number. Used to link the datasets.

DEPTH

Depth in meters where the measurements were taken.

TEMP

Water temperature in degrees Celsius

FLUORO

Fluorescence measured in mg/m3.

XMISS

Beam Transmission measured in %.

OXY\_MG

Dissolved oxygen concentration measured in mg/l.

OXSAT

Dissolved oxygen saturation measured in %.

DENSITY

Water density measured in kg/m3.

SALINITY

Salinity measured in practical salinity units (PSU).

NBIN

Number of scans per bin.

LENGTH Dataset File Structure

Variable – dataset variable name

Type – character (Char) or numeric (Num) variable

Len – variable length

|  | *Variable* | *Type* | *Len* |
| --- | --- | --- | --- |
| *1* | STATIONKEY | Num | 8 |
| *2* | TAXON | Char | 50 |
| *3* | DAMAGED | Num | 8 |
| *4* | INDVL\_WEIGHT | Num | 8 |
| *5* | INDVL\_W\_ESTIMATED | Num | 8 |
| *6* | SEX | Char | 1 |
| *7* | MATURITY | Char | 1 |
| *8* | LENGTHESTIMATED | Num | 8 |
| *9* | PRECAUDAL | Num | 8 |
| *10* | STANDARD | Num | 8 |
| *11* | FORK | Num | 8 |
| *12* | NAT\_TOTAL | Num | 8 |
| *13* | TOTAL | Num | 8 |
| *14* | DISK\_WIDTH | Num | 8 |
| *15* | SNOUT\_ANAL | Num | 8 |
| *16* | TURTLE\_MLCTL | Num | 8 |
| *17* | TURTLE\_MLCW | Num | 8 |

Explanation of LENGTH variables

STATIONKEY

Concatenation of the vessel number, cruise number and Pascagoula station number. Used to link the datasets.

TAXON

50-character field containing the full taxonomic name.

DAMAGED

Field indicating whether an individual was damaged in some way:

0 – No

1 – Yes

INDVL\_WEIGHT

Weight of the individual, measured in kilograms.

INDVL\_W\_ESTIMATED

Field indicating whether an individual weight was estimated:

0 – No

1 – Yes

SEX

Sex of the animal.

M – Male

F – Female

U – Unknown

MATURITY

Stage of maturity of the animal:

1 – Undetermined

2 – Resting

3 – Enlarging / Developing

4 – Running Ripe

5 – Spent

6 – Elasmobranch Mature

7 – Elasmobranch Immature

LENGTHESTIMATED

Field indicating whether an individual’s length was estimated:

0 – No

1 – Yes

PRECAUDAL

Precaudal length of the animal.

STANDARD

Standard length of the animal.

FORK

Fork length of the animal.

NAT\_TOTAL

Natural total length of the animal.

TOTAL

Stretched total length of the animal.

DISK\_WIDTH

Measurement of the maximum disk width of the animal (typically skates and rays).

SNOUT\_ANAL

Measurement from the snout to anus of the animal.

TURTLE\_MLCTL

Measurement of the maximum total length of a turtle’s carapace.

TURTLE-MLCW

Measurement of the maximum total width of a turtle’s carapace.