

User's Guide

CountCOFI 1.0 Data Entry App

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Introduction

CountCOFI is a data entry program designed specifically for CalCOFI's marine mammal survey team. CountCOFI is designed to be an efficient, easily viewed, intuitive, touchscreen button-based way for researchers to log observations while letting the computer take care of associating each entry with many more positional and environmental data. In this way, a large amount of information can be collected with minimal effort and training on the part of the user. The working premise is this: the easier it is to take good data, the more good data will be taken.

CountCOFI automatically records the date, time, GPS, sighting conditions, effort mode and observer positions for every piece of data entered. Sightings can typically be logged within 15 seconds of the sighting report.

CountCOFI outputs these data in a single, stable, cross-platform, standardly-formatted text file that can serve as both a raw record of the day's work and a single source from which to produce various presentations of the data.

CountCOFI was written in Visual Studio 2015 Community (free) Edition, and published as a stand-alone executable file (.exe) for Windows. Data files are stored in C > countCOFI > data. A backup of the raw file is automatically stored in C > countCOFI > backup. For detailed instructions on suggested nightly data management procedures, see the word document "CountCOFI Data Processing".

Tour

Settings File

CountCOFI draws certain cruise details from a settings text file, located at C > countCOFI > settings.txt, so that user's do not have to retype information every time they start the app. These details are:

- Cruise number
- Vessel name
- Initials of observers on the cruise
- Initials of research cameras to be used on the cruise
- GPS serial port to use
- Total number of sightings during the cruise so far

In order to update these details in the app: close the app, open the settings file in a text editor and make the necessary changes, save and close the settings file, then re-open the app.

Note: The GPS serial port can also be changed within the app, but this will not change the port named in the settings file.

Note: The total number of sightings recorded in the settings file is updated by the app every time it is closed. Users should NEVER modify this number within the settings file, unless they have good reason to

and have received permission from the survey leader.

Navigation

When the program starts up, the user is presented with its main screen, which consists of several tabs, one for each major topic of data entry: Effort, Sightings, Weather, Comment, and Settings. Clicking on the tab will allow you to update fields associated with that topic.

At the bottom of the window are several status bars, including time and position, observer positions, ship name and cruise number, the number of sightings so far on the cruise, and the last line of data manually entered (i.e., it will not show the automatic position updates).

Entering Data

Data will not be stored until users press the “Store” button on each tab. Simply navigating to a different tab will not store data. Once the “Store” button is pressed, a different tab will come to the front to confirm that data were stored.

Entering a Sighting

On the sightings tab you will see a list of all the sightings logged during the current CountCOFI session. Click on the “Cetacean”, “Pinniped”, “Turtle”, or “Ship” buttons to log a new sighting. A new window will appear for entering sighting details. On that sightings screen, you can click on buttons to enter primary, secondary, and tertiary behavior. This will open another small window to select from among many behavior options. Once all the data are entered, hit “Store”. You will now see your sighting listed on the Sightings tab screen.

Updating a Sighting

To update information for a sighting, select a sighting from the list on the Sightings tab, and click the “Update” button. The Sightings form will load with all the previously entered data for that sighting already selected (except for behaviors and photographer info – they have been cleared, to allow new data to be reported without replacing the initial behavior entries). Once you hit “Store”, the sighting will be updated on the Sightings Tab’s list.

Closing

Closing the main window will close the app. A message box will appear to verify that you really meant to close the window. When the app closes, the backup data file is saved to C > countCOFI > backup, and the number of survey sightings are updated in the settings file.

Output

CountCOFI saves logged data into a single .txt file. Text files are cross-platform, open-source, and highly stable. The text file output also provides a raw, unfiltered narrative of the day's research effort. The downside is that it is difficult to read for the untrained eye. However, the text file can then be fed to a R script that breaks the single file into highly organized dataframes -- *without* risking the corruption of the original data.

Every line in the output text file corresponds to a certain **event** (e.g. whale sighting, position update, weather update, etc.). In each line, the data are comma-separated into columns.

All lines of data will follow this general format: *Event Code, Date, Time, GPS and Speed, Event Details*

Each line, regardless of event, follows the same format for the first 6 columns. Every entry line will begin the same way. See Table 1 for details on these standard data columns. Following these standard data, the output line then concludes with event-specific details.

The columns for event-specific details (columns 8-28) are formatted uniquely for each event. Some events are more information-rich than others (e.g. whale sightings), while some are straightforward (e.g. comment). See the section below, "Events", for detailed syntax of these event-specific columns.

Raw vs Expanded Output

CountCOFI's raw .txt file output is designed to be simple, clear, and easy to edit. For that reason, entries for changes to effort, observers and conditions entries are made as single-line entries – they are not included in entries for other events, such as position updates and whale sightings. This way, if a change to effort was forgotten, during nightly data review you would only have to correct a single "EFF" event rather than an effort column for every line in the text file.

However, in order to make the output useful for data exploration and analysis, the raw data file has to be "expanded" to include effort, survey, condition, and observer information on every single line. This software package includes a R script that performs that expansion (C > countCOFI > R > cc-expand.R). During expansion, all the files from a single day of effort are combined into a single "daily". The expanded data files are stored in C > countCOFI > expanded) in the format "CC-YYYYMMDD.txt".

When the raw data gets expanded, effort and conditions fields (e.g., transect effort, BFT sea state, observer positions, etc.) are simply added to each line of data output, while other fields are interpolated to step steadily between the values that were manually entered (e.g., percent cloud cover and glare bearings).

The raw output is much easier to explore and understand visually than the expanded version, making error correction easier. A final reason for separating the raw data entry from the process of expansion is that, if there is a problem with the expansion algorithms, the original data are not compromised. It is easy to modify the expansion routine in R and re-run it for all the raw files.

The column layout is different for raw and expanded data outputs. The tables in the following sections will have columns that provide column number and heading for the raw file and expanded file separately.

Here is an example of raw data output:

```
ev,date,X,Y,spd,hdg,X1,X2,X3,X4,X5,X6,X7,X8,X9,X10,X11,X12,X13,X14,X15,X16,X17,X18,X19,X20,X21,X22,X23,X24,X25
NEW,2016-08-31 07:24:41,Longitude ,Latitude , SP.D, HDG,
EFF,2016-08-31 07:24:41,Longitude ,Latitude , SP.D, HDG,EF
EFF,2016-08-31 07:24:47,-120.9970000,33.9868333, 09.1, 154,0,0,AAA,BBB,001 ,Melville
POS,2016-08-31 07:24:51,-120.9968333,33.9866666, 09.2, 151,
POS,2016-08-31 07:25:01,-120.9966666,33.9861666, 09.3, 152,
SEA,2016-08-31 07:25:10,-120.9965000,33.9860000, 09.6, 155,G ,012,PC ,056,010,030,SL,WNW,0032,01,010
POS,2016-08-31 07:25:11,-120.9963333,33.9858333, 09.4, 156,
POS,2016-08-31 07:25:21,-120.9961666,33.9855000, 09.4, 155,
POS,2016-08-31 07:25:31,-120.9960000,33.9850000, 09.9, 155,
POS,2016-08-31 07:25:41,-120.9956666,33.9846666, 09.8, 155,
POS,2016-08-31 07:25:51,-120.9955000,33.9843333, 09.4, 153,
POS,2016-08-31 07:26:01,-120.9951666,33.9838333, 09.8, 154,
POS,2016-08-31 07:26:11,-120.9950000,33.9835000, 09.2, 153,
POS,2016-08-31 07:26:21,-120.9948333,33.9831666, 09.6, 151,
POS,2016-08-31 07:26:31,-120.9945000,33.9826666, 09.8, 155,
POS,2016-08-31 07:26:41,-120.9941666,33.9823333, 09.9, 154,
```

And here is an example of that raw data expanded. Only 10 lines of data are provided; each line of entry wraps onto 2-3 lines in this document, making it look much less organized than it actually is. I have added a space between each line to aid visualization, but the real expanded output has no blank lines between data.

```
EID,X,Y,ev,when,spd,hdg,cruise,vessel,eff,trn,port,star,qual,vis,precip,cloud,glareL,glareR,glareS,wind.dir,wind.spd,bft,swell,X1
,X2,X3,X4,X5,X6,X7,X8,X9,X10,X11,X12,X13,X14,X15,X16,X17,X18,X19,X20,X21,X22,X23,X24,X25
3,-120.997,33.9868333,EFF,2016-08-31 07:24:47, 09.1, 154,1,Melville ,0,0,AAA,BBB,NA,NA,NA, NA, NA,
NA,NA,NA,NA,NA,NA,0,0,AAA,BBB,1,Melville ,,,NA,NA,NA,NA,NA,NA,NA,NA,NA,NA,NA,NA,NA,NA,NA
4,-120.9968333,33.9866666,POS,2016-08-31 07:24:51, 09.2, 151,1,Melville ,0,0,AAA,BBB,NA,NA,NA, NA, NA,
NA,NA,NA,NA,NA,NA,,NA,,NA,,NA,NA,NA,NA,NA,NA,NA,NA,NA,NA,NA,NA,NA,NA,NA,NA,NA,NA,NA,NA,NA,NA
5,-120.9966666,33.9861666,POS,2016-08-31 07:25:01, 09.3, 152,1,Melville ,0,0,AAA,BBB,NA,NA,NA, NA, NA,
NA,NA,NA,NA,NA,NA,,NA,,NA,,NA,NA,NA,NA,NA,NA,NA,NA,NA,NA,NA,NA,NA,NA,NA,NA,NA,NA,NA,NA,NA,NA
6,-120.9965,33.986,SEA,2016-08-31 07:25:10, 09.6, 155,1,Melville ,0,0,AAA,BBB,G ,12 ,PC , 56, 10, 30,SL,WNW,32 ,1,10
,G ,12,PC ,056,10,030,SL,WNW,32,1,10,NA,NA,NA,NA,NA,NA,,NA,NA,NA,NA,NA,NA,NA,NA,NA,NA,NA,NA,NA,NA,NA
7,-120.9963333,33.9858333,POS,2016-08-31 07:25:11, 09.4, 156,1,Melville ,0,0,AAA,BBB,G ,12 ,PC , 56, 10, 30,SL,WNW,32
,1,10 ,,NA,,NA,,NA,,NA,NA,NA,NA,NA,NA,NA,NA,NA,NA,NA,NA,NA,NA,NA,NA,NA,NA,NA,NA,NA,NA,NA,NA,NA,NA,NA,NA
8,-120.9961666,33.9855,POS,2016-08-31 07:25:21, 09.4, 155,1,Melville ,0,0,AAA,BBB,G ,12 ,PC , 56, 10, 30,SL,WNW,32
,1,10 ,,NA,,NA,,NA,,NA,NA,NA,NA,NA,NA,NA,NA,NA,NA,NA,NA,NA,NA,NA,NA,NA,NA,NA,NA,NA,NA,NA,NA,NA,NA,NA,NA
9,-120.996,33.985,POS,2016-08-31 07:25:31, 09.9, 155,1,Melville ,0,0,AAA,BBB,G ,12 ,PC , 56, 10, 30,SL,WNW,32 ,1,10
,,NA,,NA,,NA,,NA,NA,NA,NA,NA,NA,NA,NA,NA,NA,NA,NA,NA,NA,NA,NA,NA,NA,NA,NA,NA,NA,NA,NA,NA,NA,NA,NA
10,-120.9956666,33.9846666,POS,2016-08-31 07:25:41, 09.8, 155,1,Melville ,0,0,AAA,BBB,G ,12 ,PC , 56, 10,
30,SL,WNW,32 ,1,10 ,,NA,,NA,,NA,,NA,NA,NA,NA,NA,NA,NA,NA,NA,NA,NA,NA,NA,NA,NA,NA,NA,NA,NA,NA,NA,NA,NA,NA,NA,NA,NA,NA
11,-120.9955,33.9843333,POS,2016-08-31 07:25:51, 09.4, 153,1,Melville ,0,0,AAA,BBB,G ,12 ,PC , 56, 10, 30,SL,WNW,32
,1,10 ,,NA,,NA,,NA,,NA,NA,NA,NA,NA,NA,NA,NA,NA,NA,NA,NA,NA,NA,NA,NA,NA,NA,NA,NA,NA,NA,NA,NA,NA,NA,NA,NA
12,-120.9951666,33.9838333,POS,2016-08-31 07:26:01, 09.8, 154,1,Melville ,0,0,AAA,BBB,G ,12 ,PC , 56, 10,
30,SL,WNW,32 ,1,10 ,,NA,,NA,,NA,,NA,NA,NA,NA,NA,NA,NA,NA,NA,NA,NA,NA,NA,NA,NA,NA,NA,NA,NA,NA,NA,NA,NA,NA,NA,NA,NA,NA
13,-120.995,33.9835,POS,2016-08-31 07:26:11, 09.2, 153,1,Melville ,0,0,AAA,BBB,G ,12 ,PC , 56, 10, 30,SL,WNW,32
,1,10 ,,NA,,NA,,NA,,NA,NA,NA,NA,NA,NA,NA,NA,NA,NA,NA,NA,NA,NA,NA,NA,NA,NA,NA,NA,NA,NA,NA,NA,NA,NA,NA,NA
```

Standardized Columns for All Events

Every line of data entered begins with the same 7 columns of position data.

Raw Output

Table 1. Details on the comma-separated data that are included and standardized at the beginning of every single line of code in GU output.

Category	Raw Col.	Raw Header	Min. String width	Example	Setting mode	Description
Event	1	ev	3	POS	Auto	Code corresponding to the data event being entered. See "Event-Specific Formats" for possible event codes.
Position	2	date	19	2014-09-20 11:21:15	Auto	Date and time (PST), formatted to comply the strftime() function in R. Format= "%Y-%m-%d %H:%M:%S"
	3	X	12	-129.2373366	Auto	Longitude, formatted in decimal degrees for use in R.
	4	Y	10	53.0293116	Auto	Latitude, formatted in decimal degrees for use in R.
	5	spd	5	003.3	Auto	Vessel speed over ground, calculated by GPS feed.
	6	hdg	5	231.1	Auto	Vessel GPS heading, calculated by GPS feed.

Expanded Output

Table 2. Details on the comma-separated data that are included and standardized at the beginning of every single line of code in expanded GU output.

Xpand Col	Xpand Header	Min. String width	Example	Setting mode	Description
1	EID	5	1	Auto	Row index that is added to the expanded output. This column does not exist in the raw output. The EID,X,Y column format makes mapping very easy in the R package PBSmapping
2	X	12	-129.2373366	Auto	Longitude, formatted for use in PBSMapping package in R.
3	Y	10	53.0293116	Auto	Latitude, formatted for use in PBSMapping package in R.
4	ev	3	POS	Auto	Code corresponding to the data event being entered. See "Event-Specific Formats" for possible event codes.
5	when	19	2014-09-20 11:21:15	Auto	Date and time (PST), formatted to comply the strftime() function in R. Format= "%Y-%m-%d %H:%M:%S"
6	spd	5	003.3	Auto	Vessel speed over ground, calculated by GPS feed.
7	hdg	5	231.1	Auto	Vessel GPS heading, calculated by GPS feed.
8	cruise	8	1232	Auto	Cruise number. This was drawn automatically by the app from the settings file.
9	vessel	20	Melville	Auto	Vessel name.
10	eff	1	2	Manual	Observation effort. See Effort event code below for details.
11	trn	1	1	Manual	Transect effort. See Effort event code below for details.
12	port	3	CRP	Manual	Observer initials at Port position.
13	star	3	DON	Manual	Observer initials at Starboard position.
14	qual	2	UX	Manual	Sighting conditions quality. See SEA Conditions event code details below.

15	vis	3	9	Manual	Visibility (nmi).
16	precip	3	CLR	Manual	Precipitation state. See SEA Conditions event code details below.
17	cloud	3	60	Manual	Percent cloud cover
18	glareL	3	95	Manual	Compass bearing to the left border of glare on the sea surface, if any.
19	glareR	3	234	Manual	Compass bearing to the right border of glare.
20	glareS	2	SL	Manual	Glare severity. See SEA Conditions event code details below.
21	wind.dir	3	120	Manual	Wind direction
22	wind.spd	4	18.1	Manual	Wind speed
23	bft	1	6	Manual	BFT Sea State.
24	swell	3	12	Manual	Swell height (ft)

Events: Code Index

Each line's first column, the "ev" or Event column, determines how columns 7-25 in that line will be interpreted. Below is the list of different Event codes. A couple event codes also have different subevent options.

Event	Sub-Event	Description
NEW		Beginning of data file.
END		End of data file.
POS		Position update.
EFF		Effort update
SEA		Sighting / sea conditions
COM		Comment
SIT	CETA	Cetacean sighting
	PINN	Pinniped sighting
	SHIP	Vessel sighting
	TURT	Turtle sighting
UPD	Same as SIT	Sighting update

Event Code: NEW

Description: Announces the beginning of the CountCOFI data entry session.

Example output: NEW,2016-08-31 07:24:41,Longitude ,Latitude , SP.D, HDG,

Event Code: END

Description: Announces the end of this CountCOFI data entry session and the closing of the output file.

Example output: END,2016-09-04 04:18:17,-120.8538333,33.9533333, 01.3, 303,

Event Code: POS

Description: An automatic position update, logged every 10 seconds. No event-specific data are added.

Example output: POS,2016-09-04 04:14:18,-120.8525000,33.9550000, 03.0, 165,

Event Code: COM

Description: A comment string. On the Comment tab you can either select a commonly used comment (e.g., "REV! Revise that last entry!" or "Course change") or enter a custom comment of your own. When the comment is stored, any commas and carriage-returns that occur in the comment are automatically removed to prevent corruption of the comma-separated file structure.

Example output:

COM,2016-09-03 15:15:25,-120.9360000,33.1020000, 02.9, 117,Course change.

Table 3. Event-specific columns for event code "COM".

Raw Col.	Raw Header	Xpand Col	Xpand Header	Min. String width	Example	Description
7	X1	25	X1	No limit.	"Anne stole my chocolate." Or "REV: Change spp to Bp"	Comment. Wherever a comment field is available in GU, there is also an option to "Flag the code for revision." This will add the character string "REV" to the comment (which you can add manually as well for the same result), which can be searched for in the text file to address any mistakes in the data entry.

Event Code: EFF

Description: An update of visual and acoustic effort, as well as survey status (plan and area). Logged manually.

Example output:

EFF,2016-09-04 04:18:16,-120.8538333,33.9533333, 02.4, 255,0,1,AAA,BBB,001 ,Melville

Table 4. Event-specific columns for event code "EFF".

Raw Col.	Raw Header	Xpand Col	Xpand Header	Min. String width	Example	Description
7	X1	10	eff	1	5	Observation effort ON = 0 OFF – Station = 1 OFF - BFT > 5 = 2A OFF – Vis <0.5 = 2B OFF – Heavy Rain = 2C OFF – Ordered = 3 OFF – Spd < 5 kn = 5 OFF – 1 Obs = 6 OFF – other = 7
8	X2	11	trn	1	0	Transect effort ON = 0 OFF – coastal TRN = 1 OFF – offshore TRN = 2 OFF – SCCOOS TRN = 3 OFF – transit = 4 OFF – weather = 5 OFF – naval = 6 OFF – comments = 7
9	X3	12	port	3	EMK	Port observer initials Initials available in the app are drawn from the settings file.
10	X4	13	star	3	AES	Starboard observer initials
11	X5	8	cruise	8	1604	Cruise number This is drawn automatically by the app from the settings file.
12	X6	9	vessel	20	Melville	Vessel name This is drawn automatically by the app from the settings file.

Event Code: SEA

Description: Sighting / sea conditions.

Example output:

SEA,2016-09-01 09:58:30,-121.5356666,34.9090000, 11.2, 174,G ,012,PC ,100,100,300,SL,WNW,0032,01,010

Table 5. Event-specific columns for event code "SEA".

Raw Col.	Raw Header	Xpand Col	Xpand Header	Min. String width	Example	Description
7	X1	14	qual	2	F	Quality Excellent = E Good = G Fair = F Poor = P Unacceptable = UX
8	X2	15	vis	3	9	Visibility (nmi)
9	X3	16	precip	3	CL	Precipitation Clear (0-25%) = CL Partly Cloudy (26 – 75%) = PC Overcast (75%+) = OV Hazy = H Mist = MI Light Rain/Fog = LRF Heavy Rain / Fog = HRF
10	X4	17	cloud	3	75	Percent cloud cover (%)
11	X5	18	glareL	3	125	Glare – Left bearing
12	X6	19	glareR	3	324	Glare – Right bearing
13	X7	20	glareS	2	M	Glare severity Slight = SL Moderate = M Severe = SE
14	X8	21	wind.dir	3	WNW	Wind direction
15	X9	22	wind.spd	4	18.1	Wind speed
16	X10	23	bft	1	6	Beaufort sea state (0 – 7)
17	X11	24	swell	3	12	Swell height in feet

Event Code: SIT or UPD

Description: Sighting and Sighting update. The original sighting and update forms are exactly the same, the difference being that the update form is opened with the previous selections already highlighted.

Example output (Wrapped onto two lines):

```
SIT,2016-08-31 09:59:48,-121.1386666,34.2335000, 09.4,
325,PINN,0001,BBB,3,330,000,0000,0000,0000,0000,000,000,0000,0000,000,000,Pv ,04,0 ,0 , ,000000,000000,
```

Table 6. Event-specific columns for event code “SIW” or “SIU”.

Raw Col.	Raw Header	Xpand Col	Xpand Header	Min. string width	E.G.	Description
7	X1	25	X1	4	CETA	Taxon CETA = Cetacean PINN = Pinniped TURT = Turtle SHIP = Ship
8	X2	26	X2	4	0545	Sighting number For cetaceans, this number is cumulative for the entire cruise. For other taxa, this number restarts every time CountCOFI is closed.
9	X3	27	X3	3	AES, OTH	Observed by (lists initials of all observers)
10	X4	28	X4	1	1	Cue Blow = 1 Splashes = 2 Body = 3 Dorsal = 4 Breach = 5 Other = 6 Acoustic = 7
11	X5	29	X5	3	325	Ship heading
12	X6	30	X7	3	87	Bearing to sighting
13	X7	31	X8	4	1.2	Reticle
14	X8	32	X9	4	76	Estimated distance (meters)
15	X9	33	X10	4	.2	Group envelope: Far reticle
16	X10	34	X11	4	2.1	Group envelope: Close reticle
17	X11	35	X12	3	154	Group envelope: Left bearing
18	X12	36	X13	3	214	Group envelope: Right bearing
19	X13	37	X14	4	800	Group size: best estimate
20	X14	38	X15	4	600	Group size: minimum estimate.
21	X15	39	X16	4	1200	Group size: maximum estimate.
22	X16	40	X17	3	3	Number of calves.
23	X17	41	X18	4	Bp	Species 1 (see next page for species codes)
24	X18	42	X19	3	100	Percent group composition for species 1 (default 100)
25	X19	43	X20	4	Ba	Species 2
26	X20	44	X21	3	0	Percent group composition for specie 2 (default 0)
27	X21	45	X22	2	0	Primary behavior (see next page for behavior codes)
28	X22	46	X23	2	2	Secondary behavior
29	X23	47	X24	2	1	Tertiary behavior
30	X24	48	X25	3	AES	Photographer 1 (lists initials of all observers)
31	X25	49	X26	5	40D-1	Camera 1 (lists initials of all cameras)
32	X26	50	X27	6	DC1343	Start frame for camera 1
33	X27	51	X28	6	DC1666	End frame for camera 2
34	X28	52	X29	3	EMK	Photographer 2 (lists initials of all observers)
35	X29	53	X30	5	7D-1	Camera 2 (lists initials of all cameras)
36	X30	54	X31	6	CD211	Start frame for camera 2
37	X31	55	X32	6	CD233	End frame for camera 2
38	X32	56	X33	6	161113	End time of sighting (can only be added if the sighting is closed then updated). Given in the format HHmmss.
39	X33	57	X34	12	-129.6734532	Longitude of end of sighting
40	X34	58	X35	10	53.4284920	Latitude of end of sighting
41	X35	59	X36	1	This is awesome!	Comment

Species Codes

Cetaceans

Blue =	BM
Fin =	BP
Minke =	BA
Bryde's =	BE's
Sei =	BB
Gray =	ER
Humpback =	MN
Cuvier's =	ZICA
UNID dolphin =	UD
UNID Delphinus =	DSP
LB Common =	DC
SB Common =	DD
Pac white-sided =	LO
Risso's =	GG
Bottlenose =	TT
Dall's =	PD
Harbor p =	Pp

Pinniped

California =	Zac
Harbor s =	Pv
Elephant =	Ma
Northern fur =	Cu
Stellar's =	Ej
Guadalupe =	At

Turtle

Green =	Cm
Logger =	Cc
Leather =	Dc
Hawks =	Ei
Kemp-Rid =	Lk

Ship

Cargo/Tanker =	CT
Tug =	TG
Cruise =	CZ
Commercial Fishing =	FV
Whale Watch =	WW
Pleasure Power =	PP
Pleasure Sailing =	PS
Other =	OTH

Behavior Codes

Unknown =	0
Slow travel =	1
Fast travel =	2
Stationary =	3
Feeding =	4
Bowriding =	5
Breaching =	8
Milling =	9
Fluke swish =	10
Hauled out =	11
Lunge feeding =	12
Bubbles =	13
Flick feeding =	14
Spy hop =	15
Pec slap =	16
Group affiliation =	17
Group disaffiliation =	18
Mud plume =	19
Circles boat >2x =	20
Close approach =	21
Spy hop near boat =	22
Contact with boat =	22
Avoidance of boat =	31
Alteration of normal behavior =	32
Quick dive =	33
Fluke up dive =	34
Fluke down dive =	35