Project data handling – POD data

The scheme below aims to avoid problems, errors, and data losses that have occurred in real projects.

File naming.

Names should have the largest location identifier first, then successively smaller identifiers, e.g.

'*U KinburnA 2020 09 12 FPOD_6278 series1 file0*.FP1'

U = Ukraine

Kinburn = the main location

A designates one of potentially several sites at Kinburn. If a site is moved, within the named location, by more than 200m it should be given a new letter.

The rest of the name is given by the FPOD app and should not be modified.

With these names a file list can be sorted alphabetically and will appear sorted by location and then by date.

File cropping.

Files will often have data at each end that is not useful data – the POD may have been out of the water or the noise of the vessel that serviced it may be present in the record. So files should be cropped to just the 'good' data.

The can be done in the FPOD app and the file name will then be:

'*U KinburnA 2020 09 12 FPOD_6278 series1 file0 PART 70d 22h 16m.FP1*'

This file is the source of all data that will be used in subsequent analysis. However, picking the cropping point is somewhat subjective so this should only be done once and the file produced will then be the definitive data file.

File Archiving

The original FP1 file should be stored in a folder called '**Archive orig FP1**'. FP1 files with no good data should also be placed here for reference.

The cropped FP1 file should be stored in a single folder called '**Valid cropped**'

Keeping all the files in a single folder has *serious advantages* in large projects.

Definitive list of files.

One of those advantage is this:

 'List file times etc' on the Filters + files page, and filtering by 'FP1' files an up to date definitive list can be obtained in seconds at any time and pasted into a spreadsheet.

File storage.

The 'Valid cropped' folder should be accessible to all stakeholders so that analyses do not acquire minor discrepancies from use of different cropping times or processing settings.

It should be on a storage system with drive failure protection such a RAID.

Here all the relevant files should be stored in a directory that has the project name.

e.g:

BlackCeTrends

    -Archive

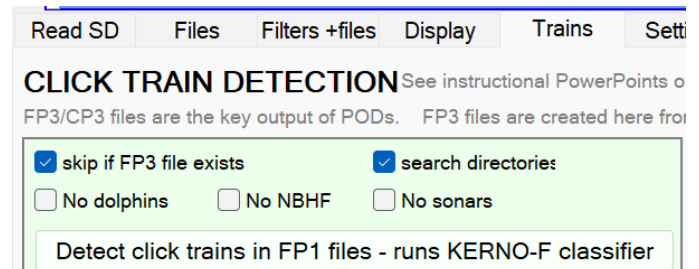   --Archive orig FP1

    -Active

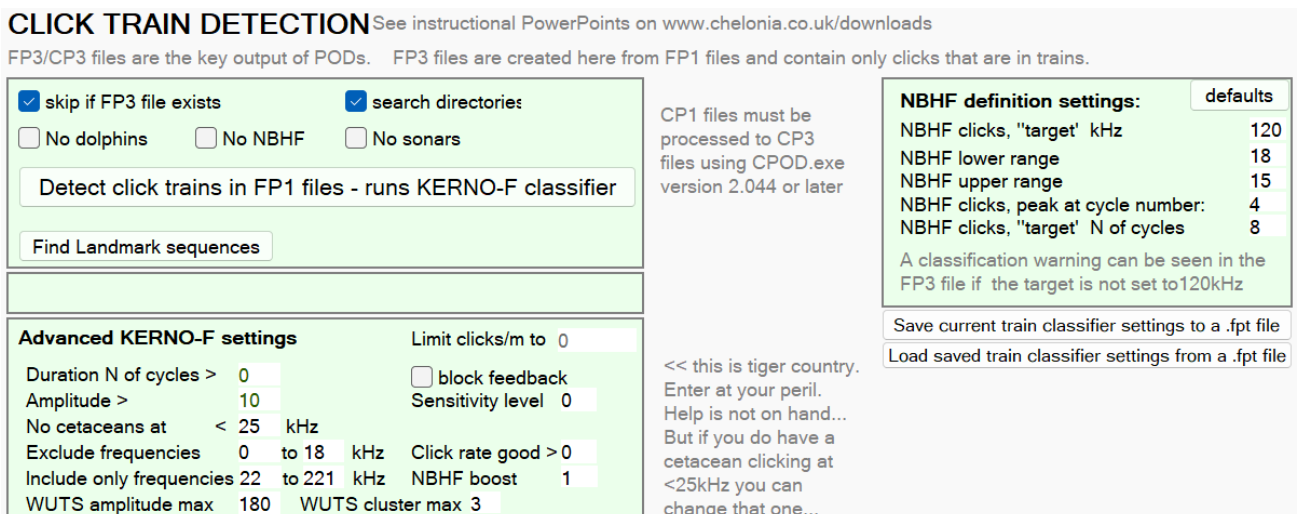   --Valid cropped

        --Docs

        --Temporary

The reason for the Archive / Active split is that cropped FP1 files can be added directly to the 'Valid cropped' folder and then, by picking the options shown, the folder can be selected and the train detection will be automatically carried out only on those newer files that do not have an FP3 file yet.

Read SD	Files	Filters +files	Display	Trains	Setti

CLICK TRAIN DETECTION See instructional PowerPoints o

FP3/CP3 files are the key output of PODs. FP3 files are created here fror

☑ skip if FP3 file exists   ☑ search directories

☐ No dolphins   ☐ No NBHF   ☐ No sonars

Detect click trains in FP1 files - runs KERNO-F classifier

File processing.

Mostly this will use the standard settings but it is a good idea to have, in the Docs folder, a 'File processing.docx' file with a screengrab of the settings area of the Trains page, and also a corresponding .fpt file.

CLICK TRAIN DETECTION See instructional PowerPoints on www.chelonia.co.uk/downloads

FP3/CP3 files are the key output of PODs. FP3 files are created here from FP1 files and contain only clicks that are in trains.

☑ skip if FP3 file exists   ☑ search directories

☐ No dolphins   ☐ No NBHF   ☐ No sonars

CP1 files must be processed to CP3 files using CPOD.exe version 2.044 or later

Detect click trains in FP1 files - runs KERNO-F classifier

Find Landmark sequences

NBHF definition settings: defaults

NBHF clicks, "target' kHz	120
NBHF lower range	18
NBHF upper range	15
NBHF clicks, peak at cycle number:	4
NBHF clicks, "target' N of cycles	8

A classification warning can be seen in the FP3 file if the target is not set to120kHz

Advanced KERNO-F settings   Limit clicks/m to   0

Duration N of cycles >	0	☐ block feedback	
Amplitude >	10	Sensitivity level	0
No cetaceans at	< 25 kHz		
Exclude frequencies	0 to 18 kHz	Click rate good >	0
Include only frequencies	22 to 221 kHz	NBHF boost	1
WUTS amplitude max	180 WUTS cluster max	3	

Save current train classifier settings to a .fpt file

Load saved train classifier settings from a .fpt file

<< this is tiger country.
Enter at your peril.
Help is not on hand...
But if you do have a
cetacean clicking at
<25kHz you can
change that one...

Data analysis.

There are many filters that can be applied to the data in the FP3 files, so this requires similar documentation in a 'Data analysis settings' document. Here's the relevant screengrab:

Also an '.fpf' file that lists the settings should be saved.

The data could be used to determine trends in population, seasonal and diel patterns of habitat use and more detailed studies of behaviour, social communication etc.

Validation Record

When a file is visually validated the result should be stored in the spreadsheet with the definitive list of files. Validation results will depend on the species filters in use so separate validations for 'other cet and 'NBHF' are needed.

Errors

In large projects errors can arise from:

Inconsistent site naming. …. this can later produce :

Renaming of files resulting in duplication. For original FP1 files sorting these by size and looking for files with the same size is very useful (and easy if they are in one folder).

File time errors - if some instrument clocks are on UTC (the default) and some have been set to local time. Local time, ideally without summertime adjustment, is what is needed in analysing data.

No designated definitive data set …. so resolving discrepancies can become a circular process!

Differing classifier settings or versions. The classifier warnings list for each file includes the classifier settings and can be exported from the whole definitive list (if in one folder). The filter settings when results are exported are not stored within the file.

Feedback

Please send comments, questions, advice, requests etc to nick.tregenza@chelonia.co.uk