# Minke Detector Processing and Analysis - Quick Guide

09/25/2023

1. **Create configuration files on Stellwagen server**
    - Z:\DETECTORS\MinkePulseTrains_Ketos\v0.2\processing_queue
    - Copy a configuration file from the “processed” or “to_do” folders and paste it the “processing_queue” folder
    - Rename it with the deployment title
        i. Example: NEFSC_MA-RI_202001_NS01
    - Open this file in Notepad so that you can edit it
        i. This is a shell file - right click -> open with -> Notepad
    - Scroll down to the “# Input arguments” at the bottom of the file
        i. Edit the **AUDIO_DIR=** Put in the path for your audio files
            - Make sure to use /mnt/ at the start
            - /mnt/stellwagen_new/ will access the petabyte
            - Use forward slashes
        ii. Make sure **FILES_EXT=.wav**
        iii. **CHANNEL=1** for current single channel data
        iv. **RECORDING_ID=** email Murali and Kate Choate to get these from Makara
        v. The output directory will create a folder for each deployment processed. Input the deployment name for the new folder:
            - **OUTPUT_DIR=**/mnt/stellwagen/DATA_ANALYSIS/BALEEN_WHALES/MINKE_ATLANTIC_ALL/DETECTOR_ANALYSIS/KETOS_v0.2/NEFSC_MA-RI_202001_NS01
        vi. **CREATE_DAILY_SUMMARY=true**
        vii. The time offset will adjust for time zones. For most current data this will be UTC-5: **SUMMARY_TIME_OFFSET=-5**

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# ######################################################################

set -a

# Input arguments
AUDIO_DIR=/mnt/stellwagen/ACOUSTIC_DATA/BOTTOM_MOUNTED/NEFSC_MA-RI/NEFSC_MA-RI_202001_NS01/5419_48kHz_UTC
FILES_EXT=.wav
CHANNEL=1
RECORDING_ID=901370
OUTPUT_DIR=/mnt/stellwagen/DATA_ANALYSIS/BALEEN_WHALES/MINKE_ATLANTIC_ALL/DETECTOR_ANALYSIS/KETOS_v0.2/NEFSC_MA-RI_202001_NS01
CREATE_DAILY_SUMMARY=true # true or false
SUMMARY_TIME_OFFSET=-5 # in hours (can be positive of negative)

# Starts detector
/mnt/stellwagen/DETECTORS/MinkePulseTrains_Ketos/v0.2/scripts/run_ketos_detector.sh
```

2. **Start processing**
    - Go to the container URL**:** https://155.206.139.102:31236/
        i. This page will say your connection is not private. Click advanced -> proceed
        ii. username: nefsc
        i. password: f8tmEEvgjdfkGdTA6Vpe
    - Go to Stellwagen\DETECTORS\MinkePulseTrains_Ketos\v0.2
        i. right click process_queue.sq
        ii. Select “Open with Terminal Emulator”
        iii. This will open a terminal window and start processing
    - It will take about 3 days to run a deployment so you can log into the container to make sure the terminal screen is still running. You can also check the processing_queue on Stellwagen to see what is in the queue, what is processed, and what errors occurred.
        i. It will skip deployments that have errors in the config files and put them in the “errors” folder
3. **Analysis**
    1. Z:\DATA_ANALYSIS\BALEEN_WHALES\MINKE_ATLANTIC_ALL\DETECTOR_ANALYSIS\KETOS_v0.2
    2. Look for the deployment you need to analyze and open that folder→ open “extracted detections” folder → open “daily_counts” spreadsheet and “MW” folder
    3. Setup the excel sheet
        a. Add 3 columns:
            i. Manual_Review
            ii. Detection_file_name
            iii. Notes
    4. Analysis
        a. In the “MW” folder open the first day folder
        b. Sort the names by highest confidence (i.e. 0.99 or 1.00 would be on top so you have a better chance of identifying a minke sooner for that day)
            i. Open the PNG file to see what the soundscape looks like
            ii. Open the associated WAV file to listen to it
            iii. If that file is not a minke, move onto the next one (you can sift through the PNG’s quickly by hitting the right arrow button on the keyboard rather than manually opening them each time, but the WAV file you will need to manually click on)

c. If you spot a minke whale that day, you can mark it as done on the spreadsheet and move onto the next day
    i. For a definite minke whale, add to the spreadsheet as such:
        1. Manual review:
            a. “0” if no minkes
            b. “1” if definite minke
            c. “2” if possible minke
        2. Detection_file_name:
            a. Copy and paste directly from the file name everything from the “T” to past the decimal point. Example: the full file name is “0.77_20201108T164549.620000+0000” so you copy and paste “T164549.62” into that column on the spreadsheet.
        3. Notes:
            a. Make note of anything you feel necessary, i.e. if it’s a really good pulse train, other animals present, or unusual noise
d. Save the spreadsheet
    i. Save as in this location on the stellwagen server: Z:\DATA_ANALYSIS\BALEEN_WHALES\DAILY_PRESENCE\MINKE
    ii. Name the file as the deployment_minke_UTC-5_(your initials). Example: NEFSC_MA-RI_202011_NS02_minke_UTC-5_TA
e. Mark as done on the Monday board
    i. Click the arrow on the left side of that deployment to open the subitems, then mark the minke status as “done”.