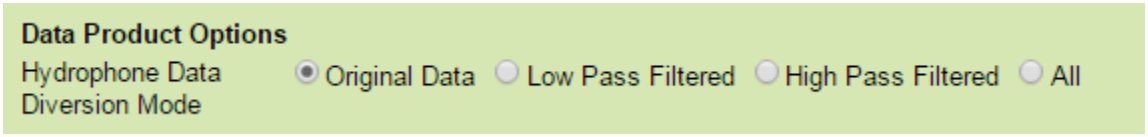
Hydrophone Data Acquisition and Diversion Mode

For hydrophone data products only (audio and spectrogram data):

Diversion Mode



For security reasons, the military occasionally diverts seismic and acoustic data. Over time how this diversion is performed has changed. Currently, when diverted the entire data set is removed. Diverted data is then reviewed by military authorities, if it does not contain sensitive recordings it is returned to the ONC archive.

Standard practice prior to August 2016: instead of diverting the entire data stream, the military diverted only a low frequency band of the data. When this filtering occurred, the remaining data's file-name was appended with 'HPF' for high-pass filtering, while the low-pass data was held for review. Usually that withheld/diverted data was returned, after a delay of 3 days to 2 months; those files are appended with 'LPF' for low-pass filtered. To further confuse matters, sometimes the file-name appending was not complete - half of the data stream was not appended with the LPF or HPF moniker (usually the HPF side), however, our data product software now detects this via time overlaps and handles the other half of the LPF/HPF even if it isn't named so. After 2016, diversions tended to be all or nothing and no low-pass diversion occurred. Recently, the LPF/HPF data splitting has occurred again.

Data diversion is further explained in the data diversion page. Feel free to contact us for support.

Original Data

This option will cause the search to return results for original data only. Files labelled with "-HPF" or "-LPF" are excluded as well as any files that overlap in time with "-HPF" or "-LPF" files. For spectral probability density plots and spectrograms, 'Data Diversion Mode: Original Data' will appear in the plot title.

This is the default option.

Oceans 3.0 API filter: `dpo_hydrophoneDataDiversionMode=OD`

Low Pass Filtered

Applies to pre-August 2016 data (with some exceptions). This option will cause the search to return results for diverted data that has been low pass filtered only (only files with "-LPF" in the their file-names). For spectral probability density plots and spectrograms, 'Data Diversion Mode: Low Pass Filtered' will appear in the plot title.

Oceans 3.0 API filter: `dpo_hydrophoneDataDiversionMode=LPF`

High Pass Filtered

Applies to pre-August 2016 data (with some exceptions). This option will cause the search to return results for diverted data that has been high pass filtered only (only files with "-HPF" in the their file-names). For spectral probability density plots and spectrograms, 'Data Diversion Mode: High Pass Filtered' will appear in the plot title.

Oceans 3.0 API filter: `dpo_hydrophoneDataDiversionMode=HPF`

All

This option will cause the search to return results for all data. For spectral probability density plots and spectrograms, 'Data Diversion Mode: High Pass Filtered' will appear in the plot title. This is only way to see data that overlaps in time with files labelled "-LPF" or "-HPF".

Oceans 3.0 API filter: `dpo_hydrophoneDataDiversionMode=All`

File-name mode field

"-LPF" or "-HPF" is added to the file-name when the quality option is set to high or low pass filtered data, i.e. ICLISTENHF1234_20110101T000000Z-HPF.wav. For spectral probability density data products, 'All' may be added to the file-name, as these plots can join LPF, Original and HPF data together into one plot if the spectral frequency bins are the same (data with different frequency content will make addition plots with labels indicating the frequency range). For brevity, 'Original' does not get added to the file-name.

Acquisition Mode

For hydrophones operating with a duty cycle that includes high and low frequency sample rates (the hydrophones alternate between low and high sample rates periodically, to save battery and memory storage in autonomous deployments). The low sample frequency data will likely have a sample frequency of 16 kHz and the high sample frequency data will likely have a sample frequency greater or equal to then 128 kHz.

Low Sample Frequency

This option will cause the search to return results for the low sample frequency data only (files with "-16KHZ" in their file-names). For spectral probability density plots and spectrograms, "Data Acquisition Mode: Low Frequency" will appear in the plot title.

Oceans 3.0 API filter: `dpo_hydrophoneAcquisitionMode=LF`

High Sample Frequency

This option will cause the search to return results for the high sample frequency data only (files with "-128KHZ" or similar in their file-names). For spectral probability density plots and spectrograms, "Data Acquisition Mode: High Frequency" will appear in the plot title.

Oceans 3.0 API filter: `dpo_hydrophoneAcquisitionMode=HF`

All

This option will cause the search to return results for both the low and high sample frequency data or other mode data. For spectral probability density plots and MAT files, the low and high frequency data will be segregated regardless of option.

Oceans 3.0 API filter: `dpo_hydrophoneAcquisitionMode=All`

File-name mode field

The sample frequency is added to the file-name for each data acquisition mode option, i.e. ICLISTENHF1234_20110101T000000Z-16KHZ.wav. The Spectrogram_ModeDurationDPO device attribute is populated on devices with a duty cycle, it is used to link the low frequency (LF) and high frequency (HF) acquisition modes with the exact file-name mode modifier string - if this link is not correct, the data acquisition mode option will not properly filter the data products.