

Kaleidoscope Pro Database Support

Welcome to Kaleidoscope Pro from Wildlife Acoustics.

In this video we'll examine the new database functions in Kaleidoscope Pro version 5

A fundamental challenge when working with recordings of wildlife or soundscapes is how to manage and search specific data. How do you work through a mountain of information to find just the data you need?

If you want to create your own PostgreSQL database, Kaleidoscope Pro supports that option. A far easier method is to create or join a Wildlife Acoustics Managed Cloud Account. There's no need for the user to have to create a functional database from scratch. With a Managed Cloud Account, the work has been done for you. Let's take a look.

Kaleidoscope Pro 5 features a built-in search engine, and a Wildlife Acoustics Managed Cloud Account provides a platform for storing the searchable metadata. When Kaleidoscope Pro is used for a batch process the metadata from the original files, plus data created from the batch process, and also from manually added notes can be uploaded to the database. There are two ways to add information to the database.

A Wildlife Acoustics Managed Cloud Account provides the option to use Cloud-Based Computing. If the batch process is run using Cloud-Based Computing, the results of the batch process are automatically added to the database. If a batch process is run on a local computer, a file is created that can then be uploaded to the database. For example, I have a set of bat recordings on my laptop. I'll run a batch process to Auto-ID the bats. The results of the batch process include .csv data files that contain the information created by the batch process, as well as metadata from the original files. Besides the .csv files, a separate file called .db-batch is also created. This file contains the same information as the .csv file and has been specially formatted to upload to the database.

The files I've just analyzed are not stored in a Cloud account. That's not a problem. Database information refers to files but those files can be anywhere. They can be in a Cloud account, on my laptop hard drive, or stored on a USB thumb drive that's in my desk drawer. I'll log on to my Wildlife Acoustics Managed Cloud Account and upload the .db-batch file to the account. Now all the data from the auto-ID batch process has been added to the database.

Now let's do a search.

I have a choice of what type of queries I can run. I can search for Batch Processes. I can search for information regarding basic Recordings, Auto-ID scans, or Cluster Analysis scans. Also, when I run a database Query there's another file that has been created called a .json file. This file doesn't contain

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any actual data, but it does contain all the search parameters. So if I've done previous searches I can load a .json file and that will recall all the search parameters I've previously used. For this example, I'll choose to search bat Auto-ID results.

Once I've selected the type of query I want to run I see further options. The search will provide results in the form of a .csv file. I can choose where that query.csv file will be created.

Next, I'll select where I want to search. I'm logged in to my Wildlife Acoustics Managed Cloud Account. Multiple users can upload information to the database in this account. I have the choice to search only the records I've uploaded. Depending on file locations and folder permissions I can search the records uploaded by specific users, and I can search all the public records in the Cloud. For this example, I'll keep it simple and just search within my own directory within the Wildlife Acoustics Account.

I can choose to search only the most recent results or all available results in the selected Table Data Source. I'll choose to search all records I've uploaded.

Now we get to the details of the search. I have the choice to search specific database fields. The available database fields are based on the MetaForm that is currently selected in Kaleidoscope Pro. Kaleidoscope Pro 5 has a default MetaForm that defines specific database fields. If I use an alternate MetaForm, the searchable database fields will be based on that alternate MetaForm. Let me show you. Right now Kaleidoscope Pro is set to use the default MetaForm and Project Form. You can create and customize MetaForms to define which data fields will be available. For example, Wildlife Acoustics supports the North American Bat Monitoring Program and supports the data fields defined by that effort.

If I check the searchable database fields I don't see any fields that would be specific to NABat. One of the NABat standard fields is called "Grid Cell". I don't see any option to search grid cells because that's not a field defined by the default MetaForm. I'll go to the batch tab and select the NABat Project Form. Now when I look in the searchable database fields I see the NABat defined data fields. Now I do see the option to search grid cells. This is a very important part of Kaleidoscope Pro. The selected MetaForm not only provides search fields but it also defines those fields in the database. This makes the database totally customizable to define which specific data fields that you want to create, populate, and search.

I haven't created any grid cell data but there are some data fields that are common to both the default MetaForm and the customized NABat MetaForm. I'm looking for Auto-ID results so that's the data field I'll select initially. Now I have additional filters I can apply. I want to know how many silver haired bat identifications are in my database. I'll set the filter to look specifically for LASNOC Auto-IDs. I'll create an additional filter to also search for big brown bats. I've specified that I want the search to include both LASNOC and EPTFUS species. I'll further refine the search to provide only results that have at least 6 or more pulses in each recording. And lastly, I'll set the sort order so the results are sorted first by species ID, and then the number of pulses in descending order. You can see that there are many conditions and filters that can be created to refine the search.

I'll press the Run Query button and Kaleidoscope Pro searches the specified database with the parameters I've created. A results window opens to show what the query has found. The results

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window represents an underlying query.csv file. I now see the EPTFUS and LASNOC Auto-ID results listed in alphabetical order and with descending numbers of pulses per recording.

Obviously, my quick search is just scratching the surface of the database functions that can be used. If you need to find specific information from within a mountain of data, the Kaleidoscope Pro database can do the job.

Thank you for watching.