

CHAPTER 3: SOUNDS AND MUSIC

ADDING SOUNDS

Sound markers are generally used to play looping sounds at specific spots.

If you're looking to add ambient background sounds, see the section on [Regions](#) instead.

Sound markers appear as green objects as per the screenshot below:

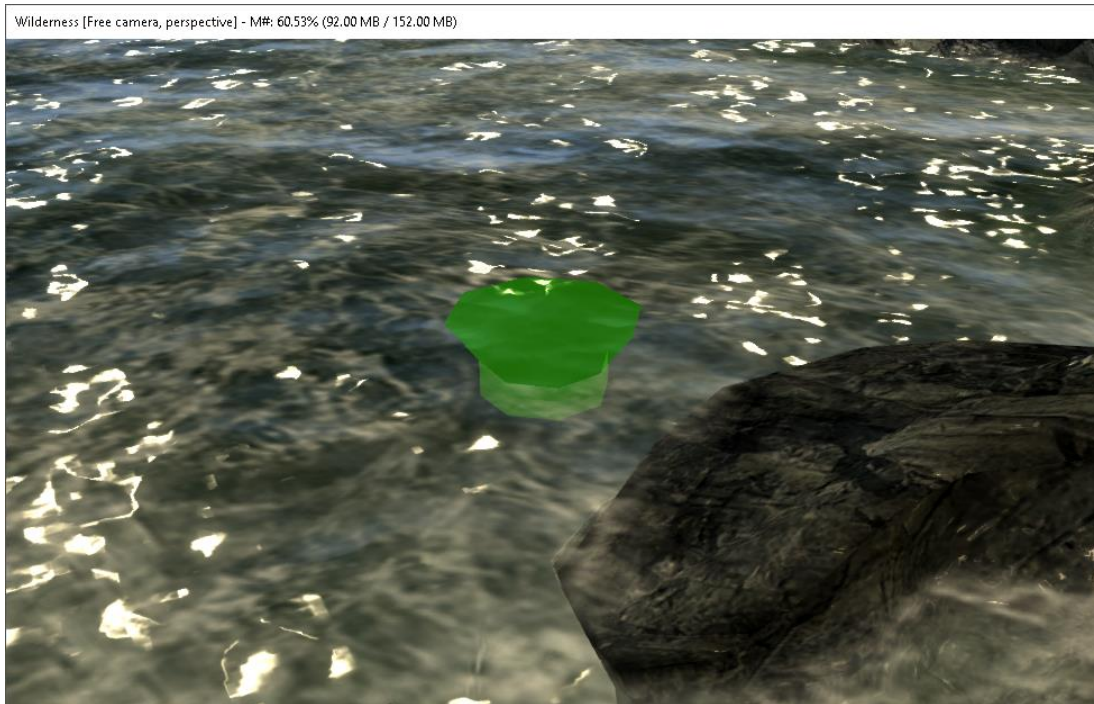


Figure 353 - A sound marker.

To see a list of sounds that you can add to your world space, in the Object Window go to Audio > Sound Marker.

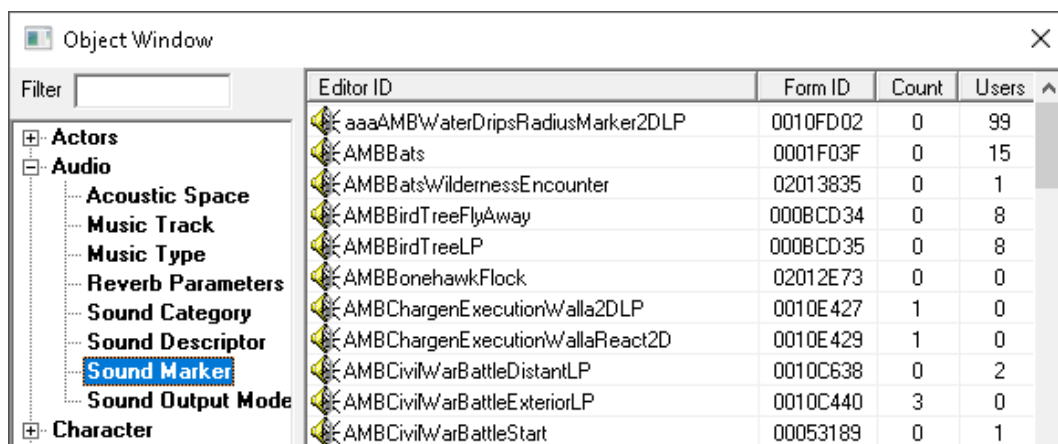


Figure 354 - List of place-able sounds.

To add a sound, drag and drop it from the Object Window into the render window.

For example, in the screenshot below, I added AMBWaterfallRapidsMedium in places where rocks break the surface of the water.

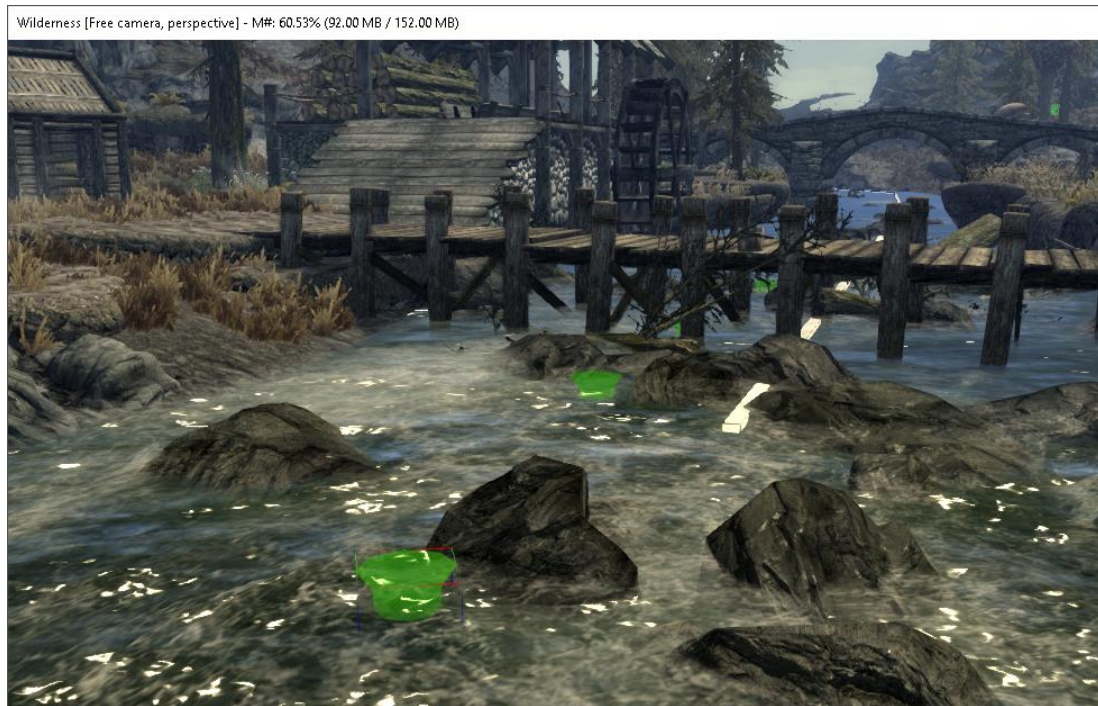
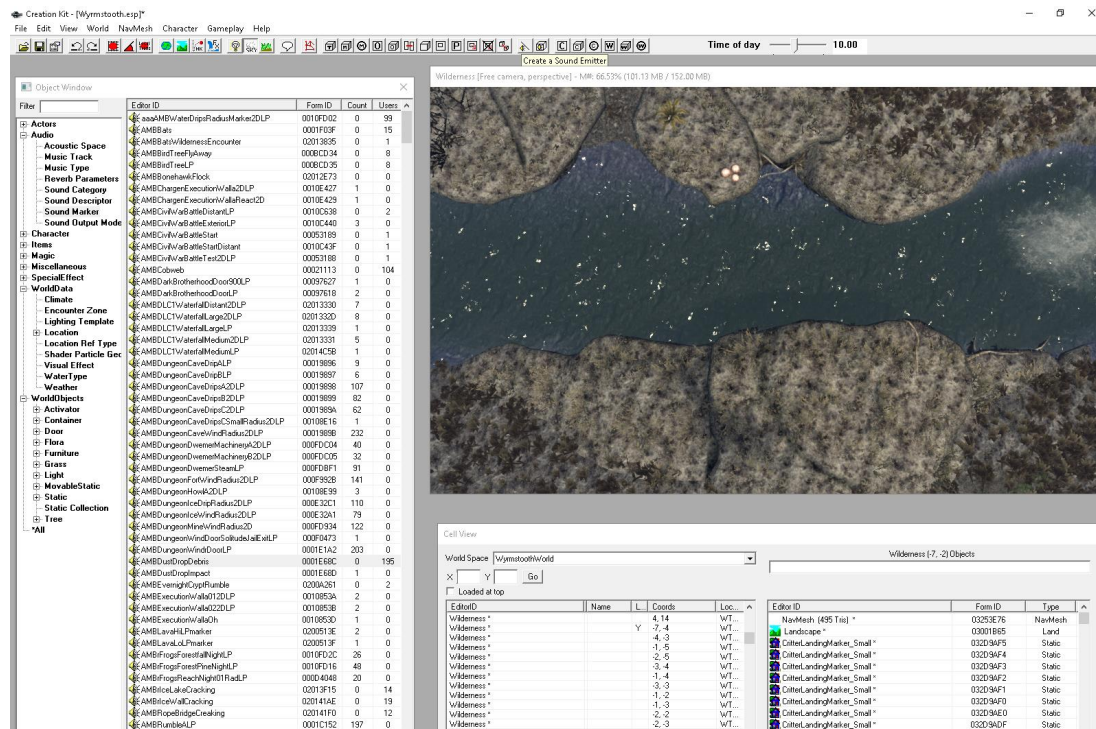


Figure 355 - Sound markers placed along a river.

But what if we wanted to add the sound of running water along a river? Or the sound of crashing waves along a beach. A better option for those cases would be to use a sound emitter.

To create a sound emitter, click on the Sound Emitter button in the toolbar.



You'll see a Select Form pop-up. Use the Filter field to narrow down the list of sounds.

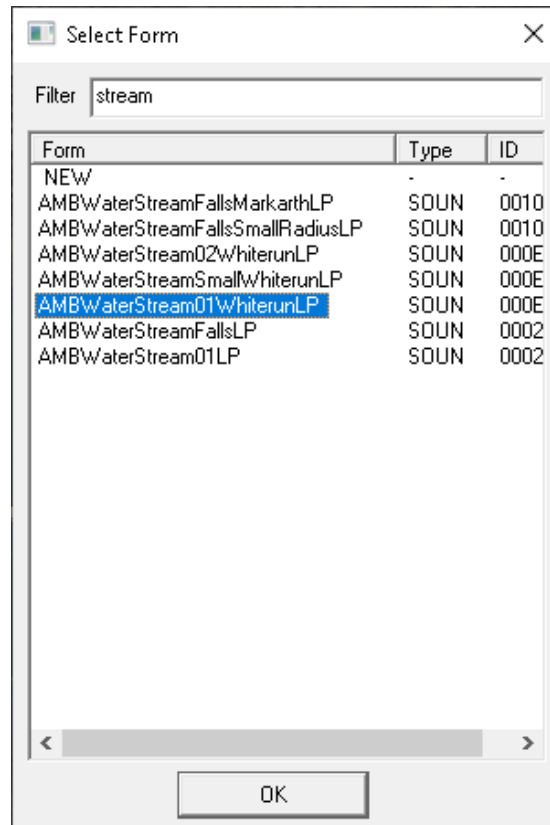


Figure 357 - Selecting a sound to place.

Select the sound you want to add and click OK.

Sound emitters appear as white bars in the render window and can be resized using the scale tool. Usually the scale tool is toggled on when you place a sound emitter, but if it isn't just press '2'.

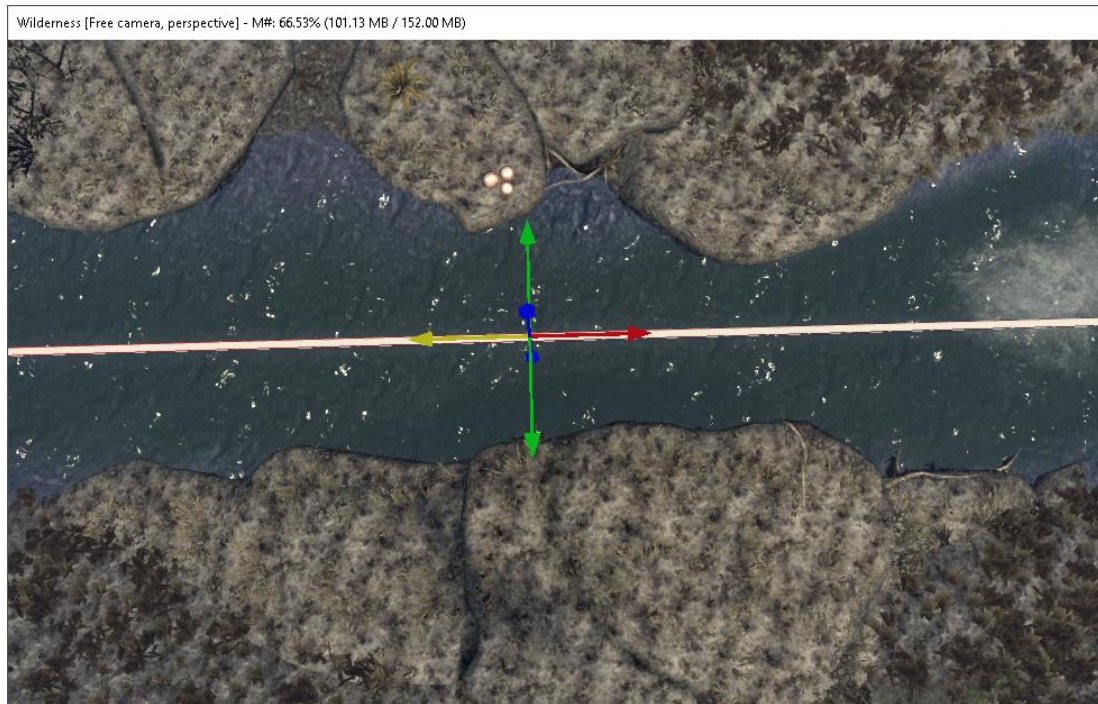


Figure 358 - Resizing the sound emitter.

In the example above, I stretched it to fit this section of the river.

In this example, sound emitters are used to play a loop of crashing waves along the shore.

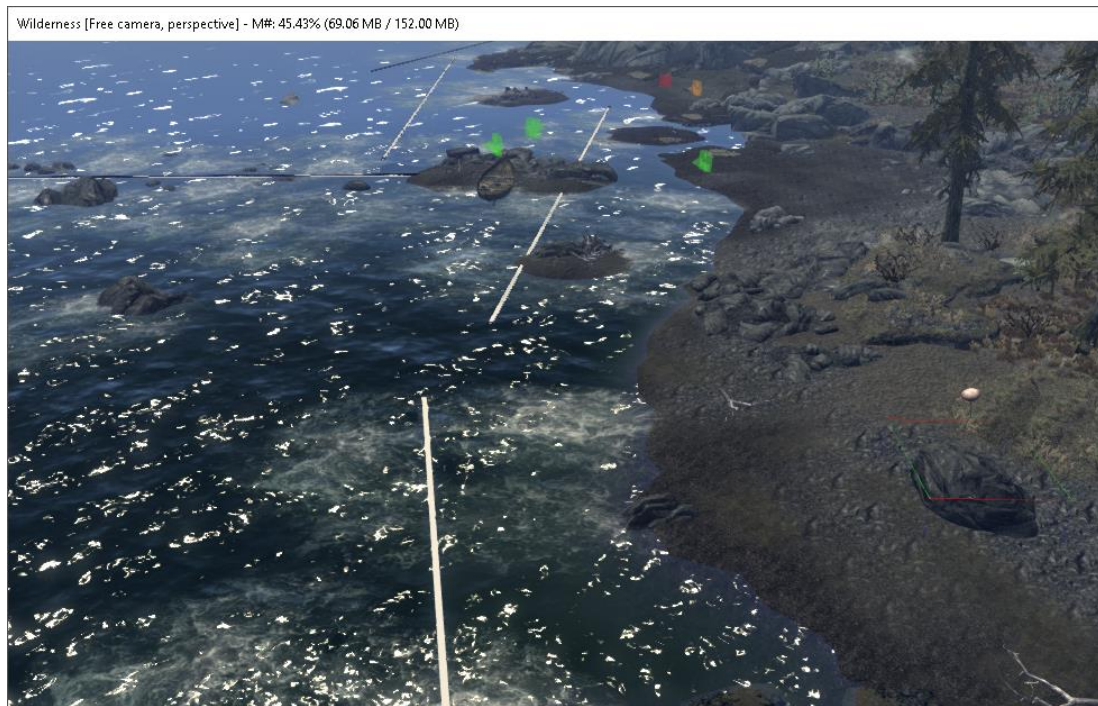


Figure 359 - Sound emitters along a beach.

Lastly, let's take a look at adding new sounds to the game.

There are a few websites that offer royalty free sound effects. The one I typically use is [Freesound.org](https://freesound.org).

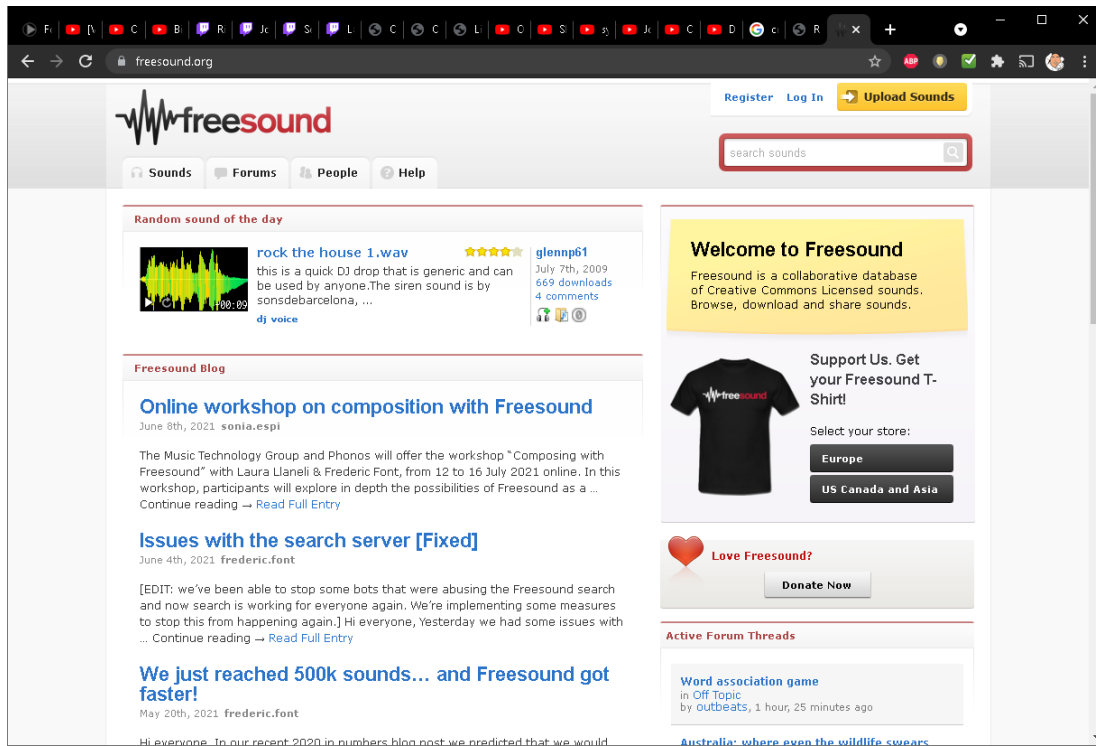


Figure 360 - Freesound.org

Just as an example, let's say we wanted to add in a looping sound of a crow squawking.

Search for 'crow' and look for a good sample.

Ideally, it should have minimal background noise and should be recorded at a quality of at least 44.1 KHz.

This one sounds good.

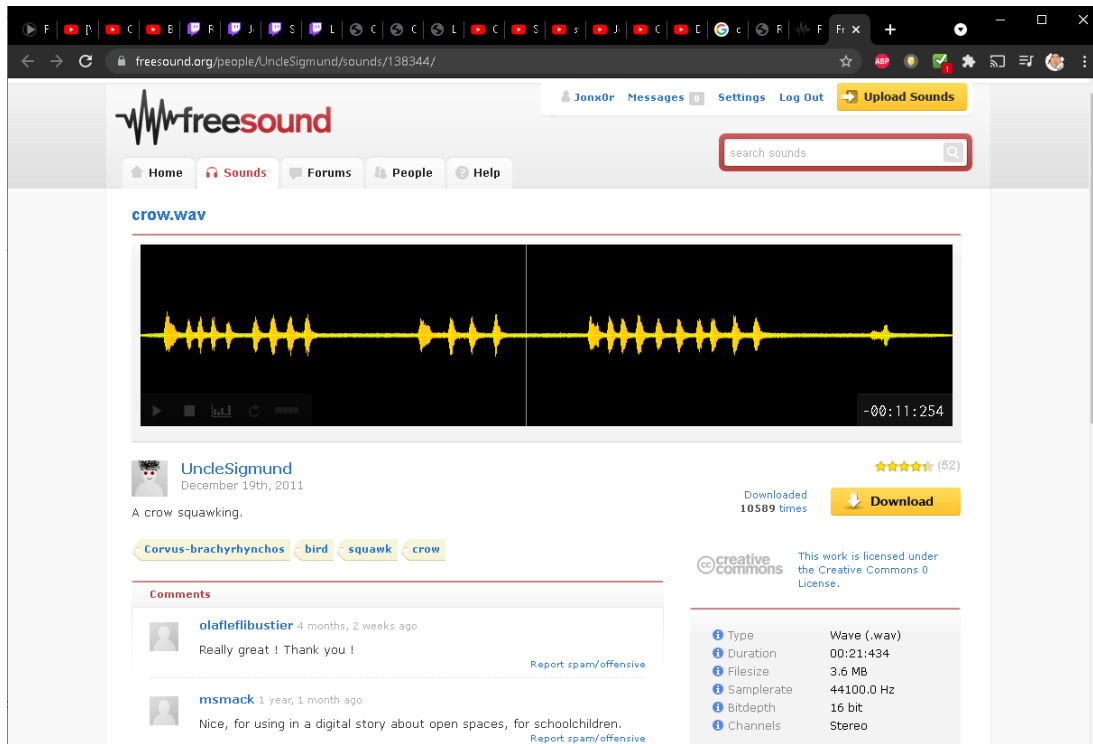


Figure 361 - Found a sample to download.

Click on the Download button to download the sound file.

To clean up the sound file, I'm going to use [Audacity](#) which you can download from their website for free.

Open the sound file in Audacity.

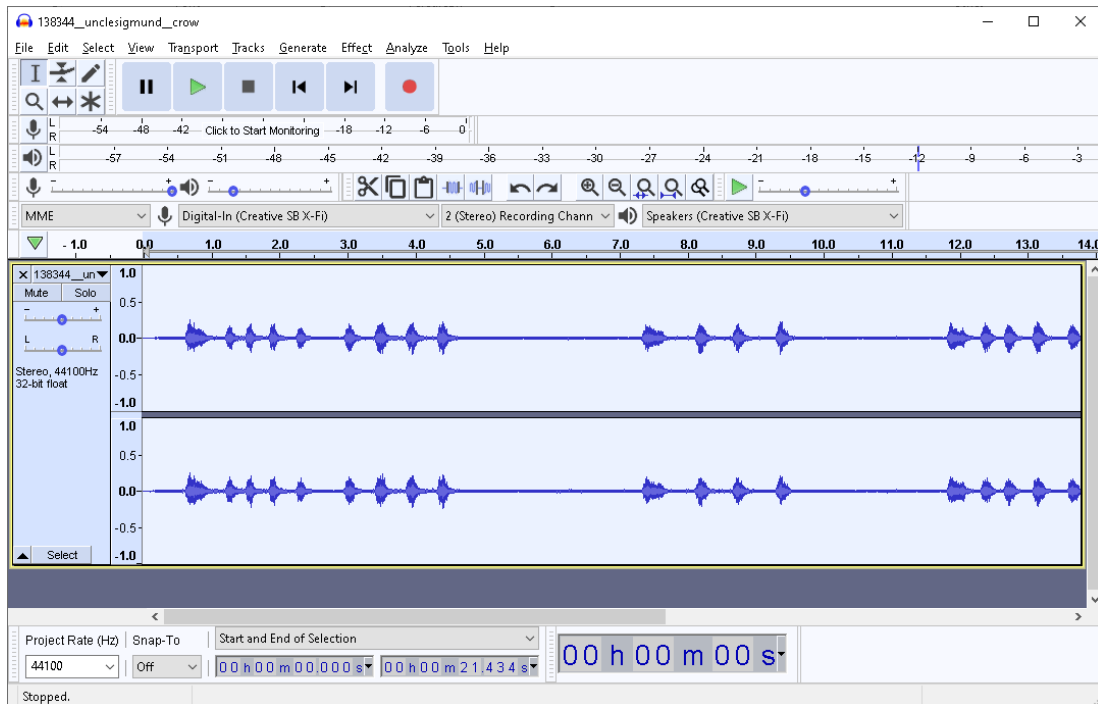


Figure 362 - Importing the sound file into Audacity.

The first thing we need to do is make this a mono track.

Click on the file name in the track and select 'Split Stereo to Mono'.

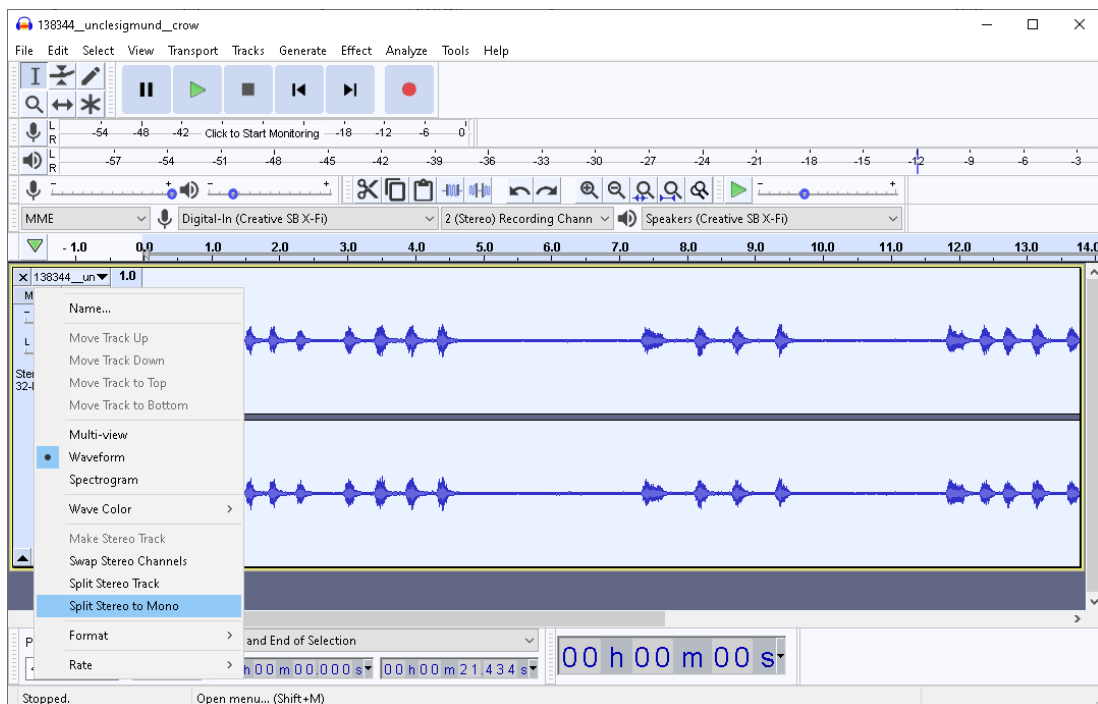


Figure 363 - Split stereo to mono.

We should now have separate tracks for our left and right channels.

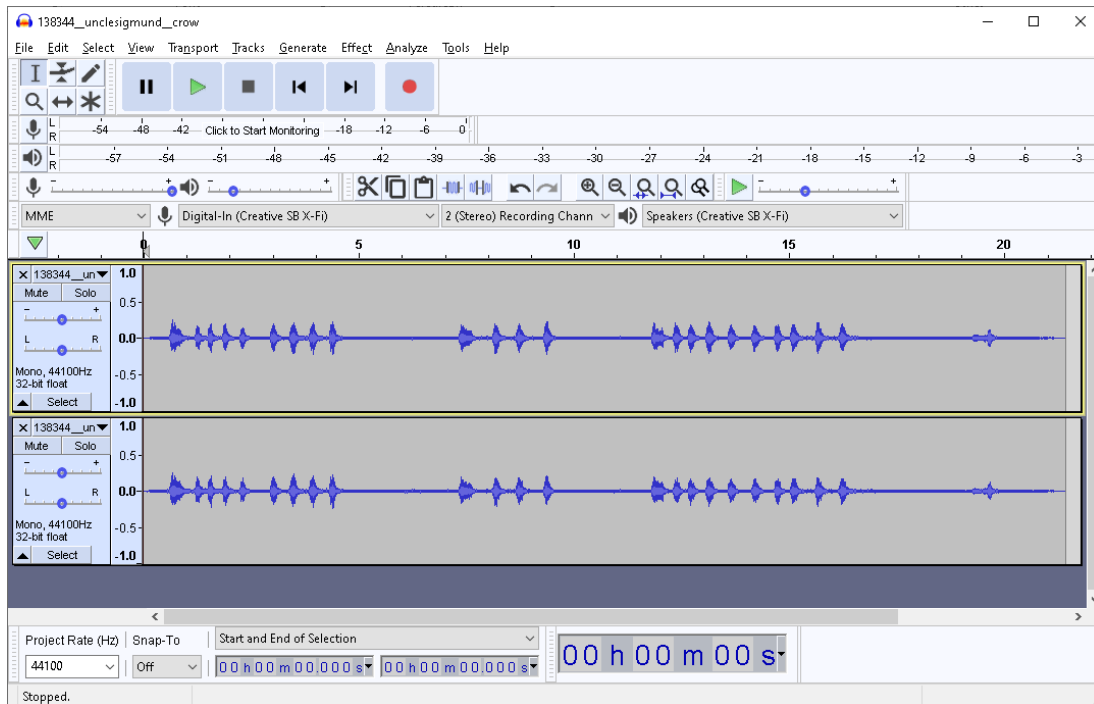


Figure 364 - Separate tracks for left and right channel.

Click 'x' next to one of the channels to remove it.

We should now be left with one channel.

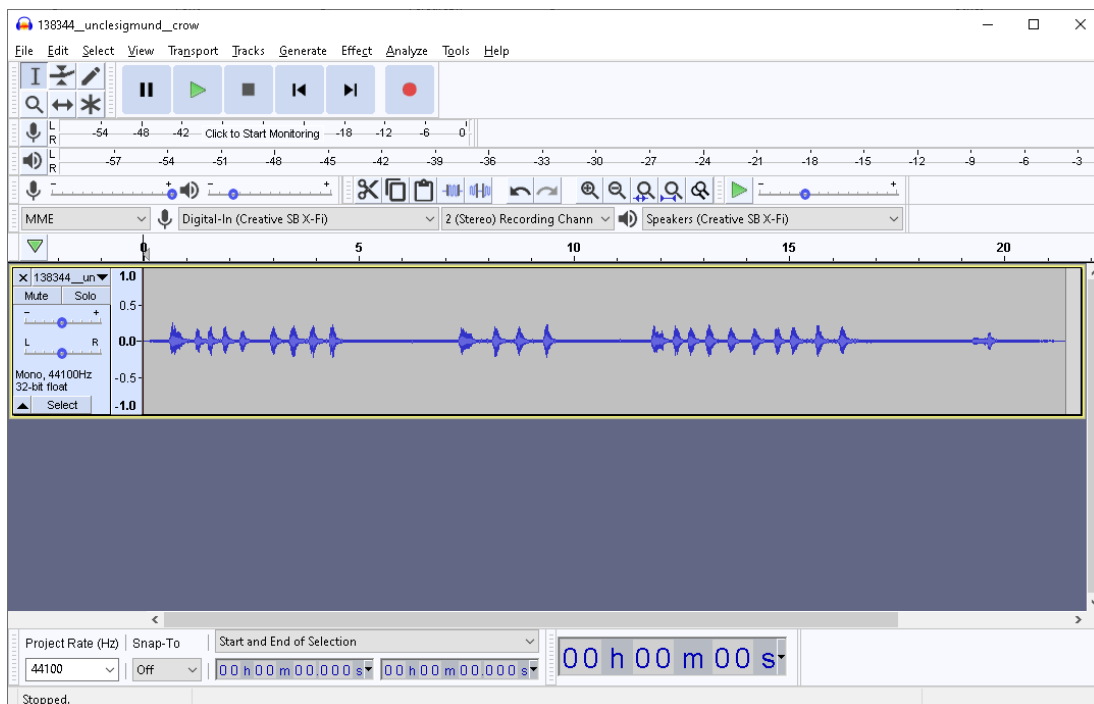


Figure 365 - One channel.

If you play the track, you'll likely notice a fair bit of noise. We'll need to remove that.

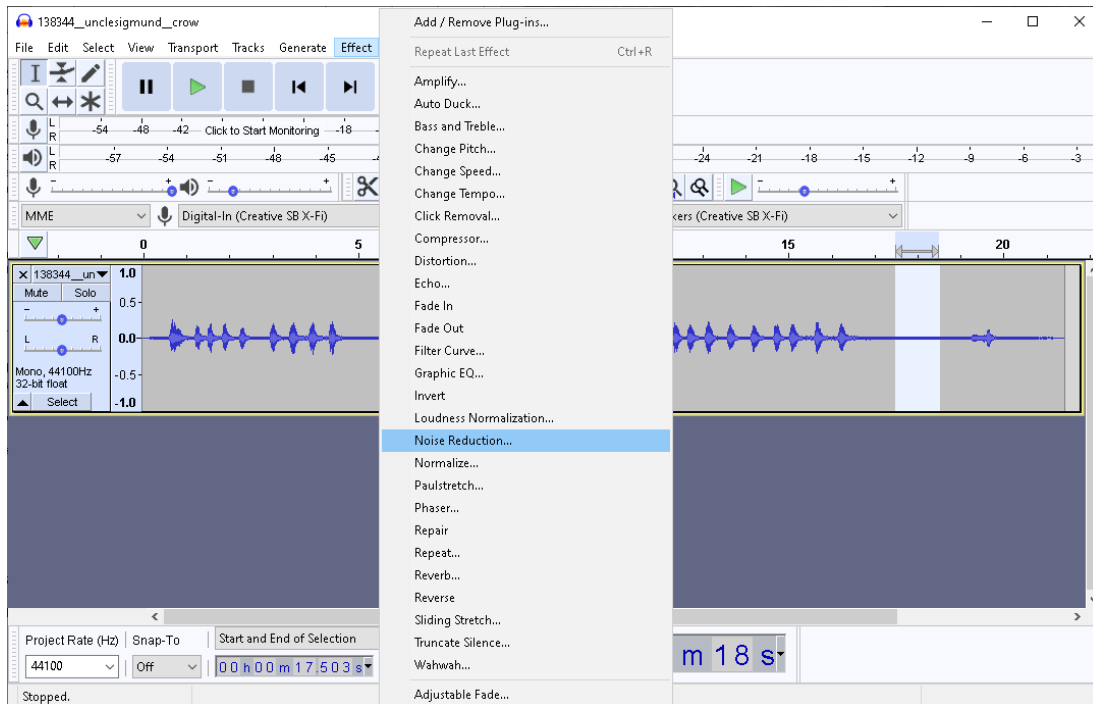


Figure 366 - Running noise reduction.

Select a portion of the background noise and go to Effect > Noise Reduction.

Click on 'Get Noise Profile'.

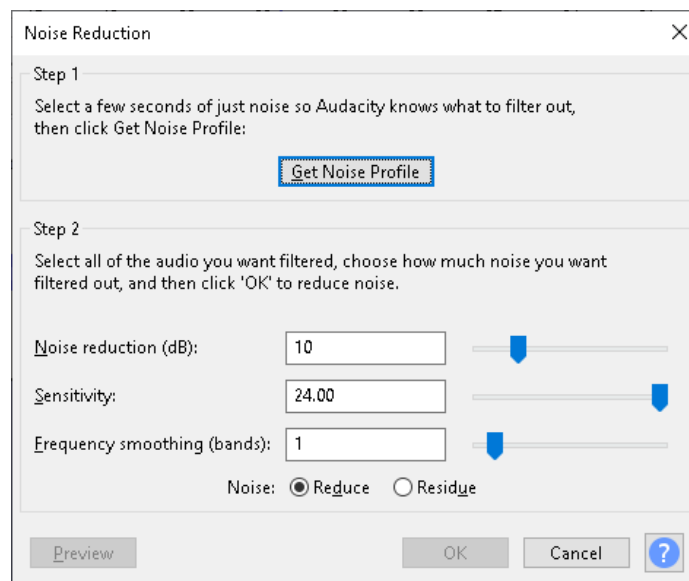


Figure 367 - Setting our noise profile.

Noise Reduction should close automatically.

Select the entire track, then go back to Effect > Noise Reduction.

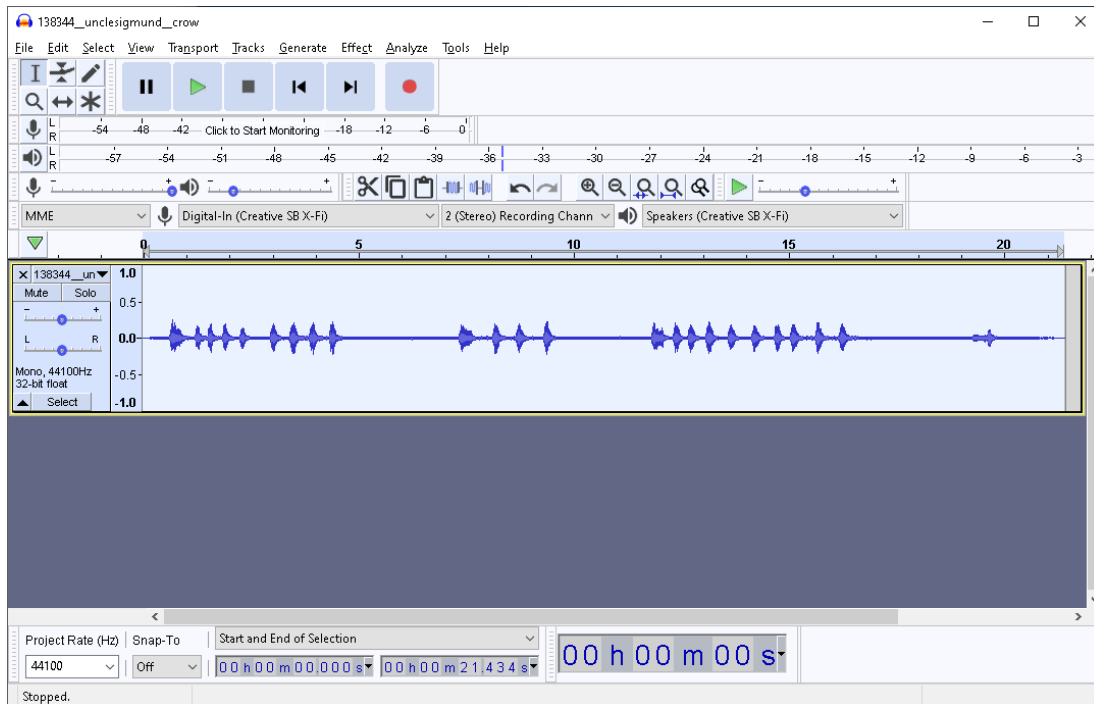


Figure 368 - Entire track selected.

Click Preview to listen to a snippet of audio with the current noise reduction settings.

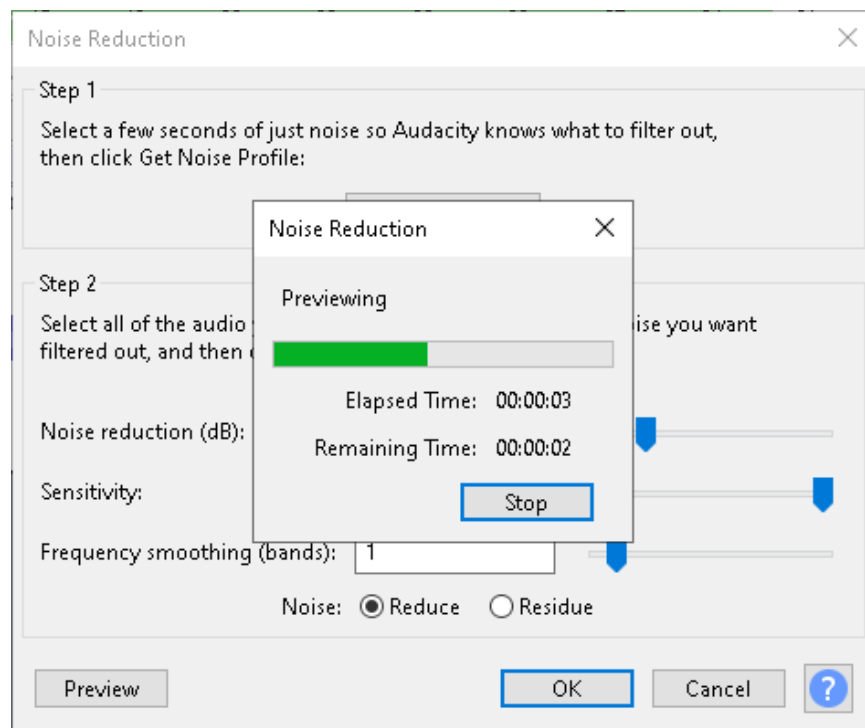


Figure 369 - Previewing noise reduction.

Increase the 'Noise reduction (dB)' slider to reduce the amount of noise. The idea is to reduce noise without distorting the audio too much.

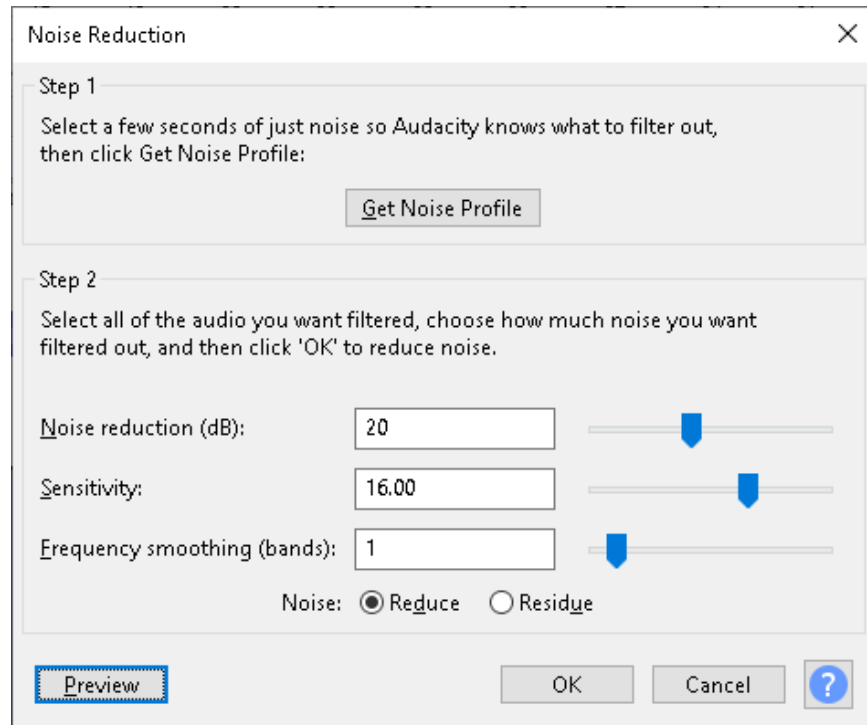


Figure 370 - Changing noise reduction settings.

When you're happy with the results, click OK.

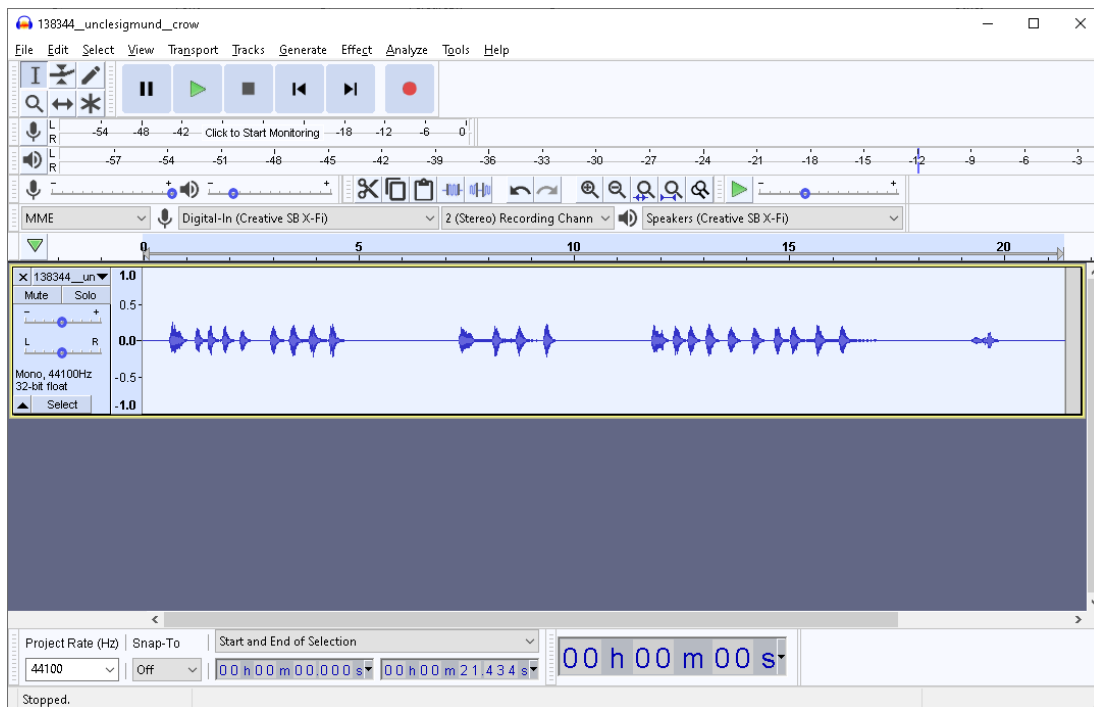


Figure 371 - Noise reduced track.

If your audio file is particularly long, you'll need to trim it. I'd recommend you try keeping looping sounds shorter than 30 seconds in length.

To export our audio, go to File > Export and select 'Export as WAV'.

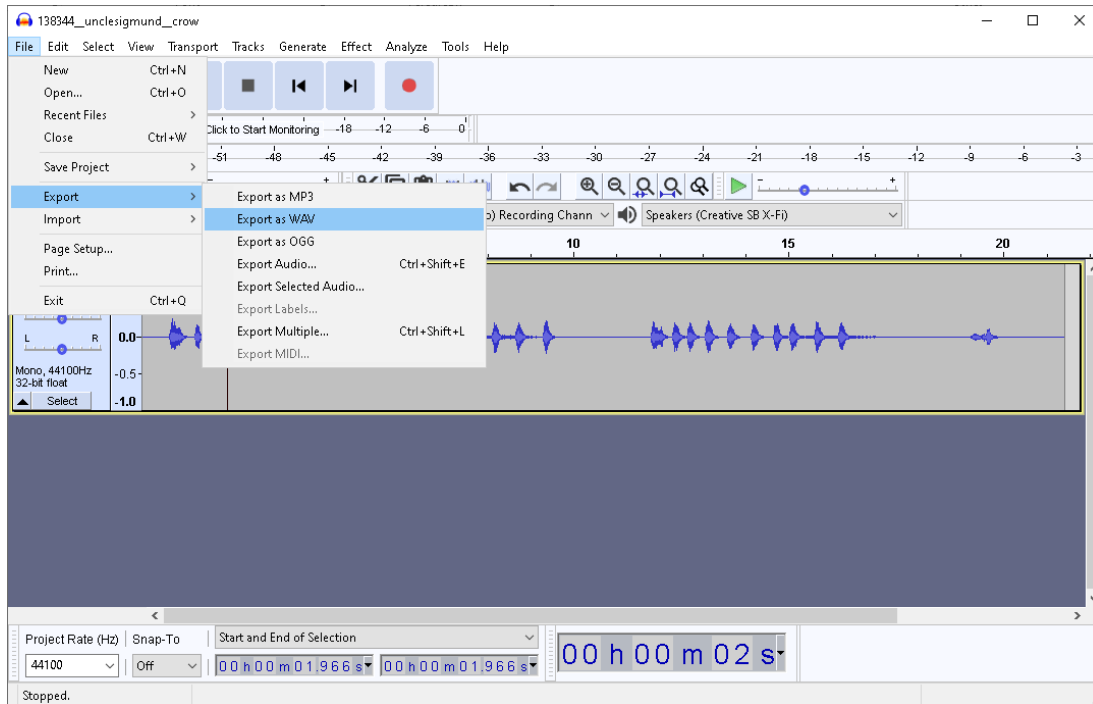


Figure 372 - Exporting audio as .wav.

I'm going to save the file to my Skyrim\Data\Sound\fx\amb folder and set the file name to 'wt_amb_crow_squawk.wav'.

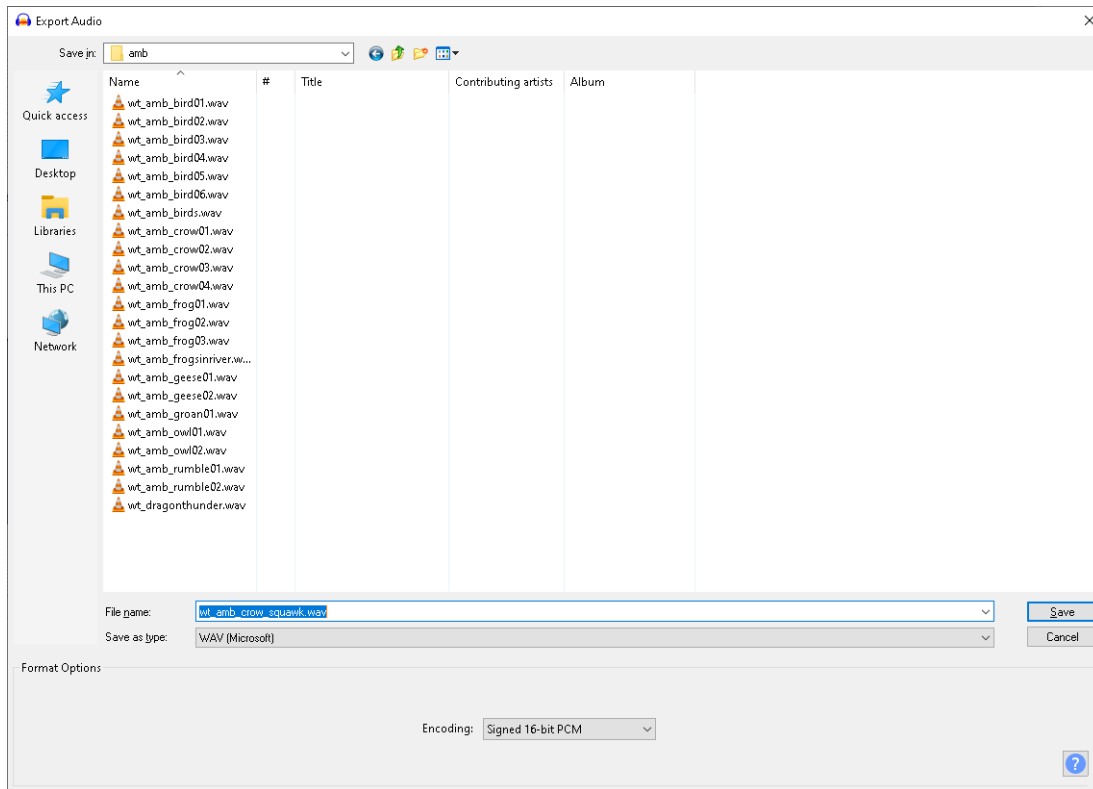


Figure 373 - Setting the file name and location.

Click Save.

Back in the Creation Kit, go to Audio > Sound Descriptor. Right-click on one of the existing sound descriptors and select New.

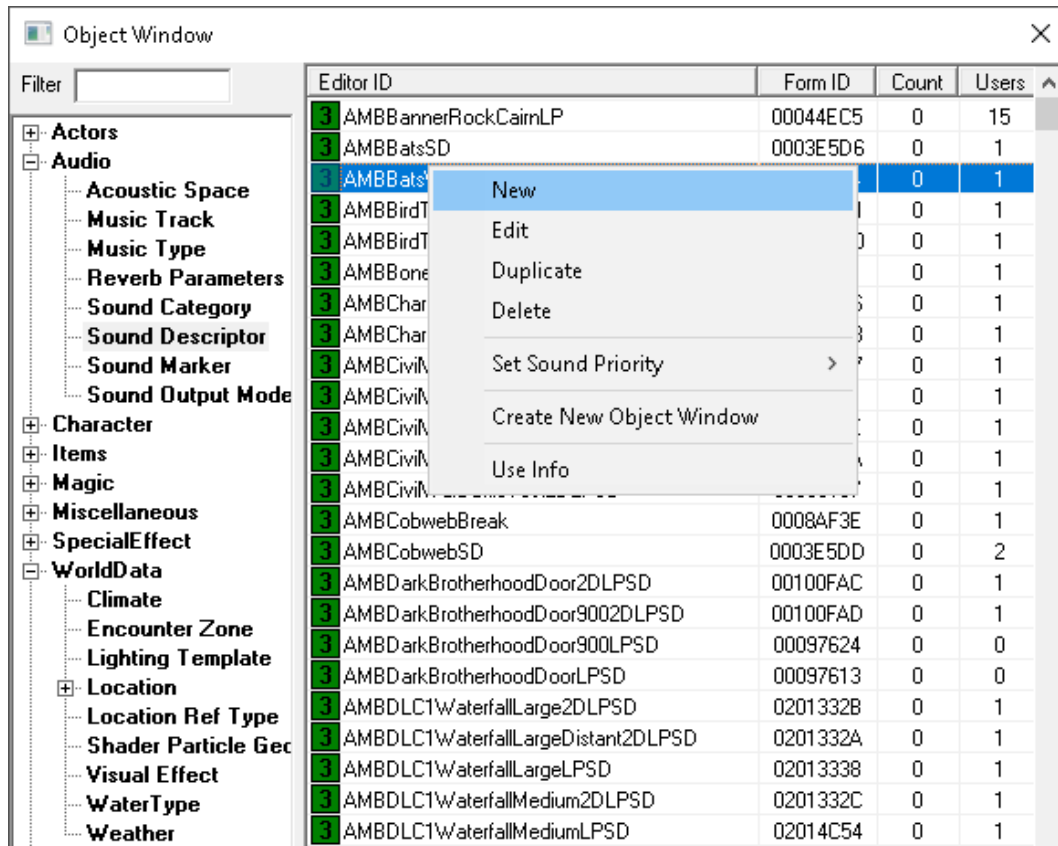


Figure 374 - Creating a new sound descriptor.

This is going to be an ambient sound, so set the Category to AudioCategoryAMB. Set the Output Model to SOMMono02000 and set Looping to Loop.

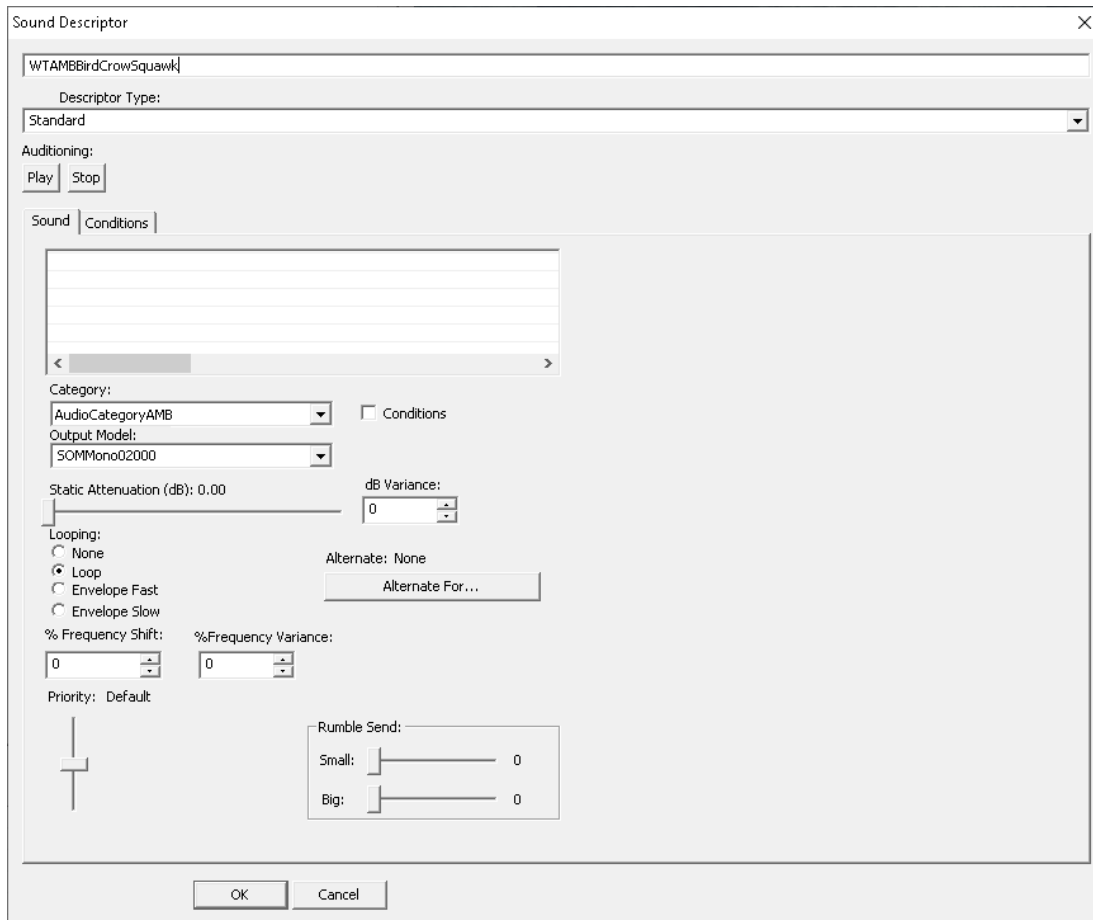


Figure 375 - Setting up our new sound descriptor.

Right-click in the sound list and select New.

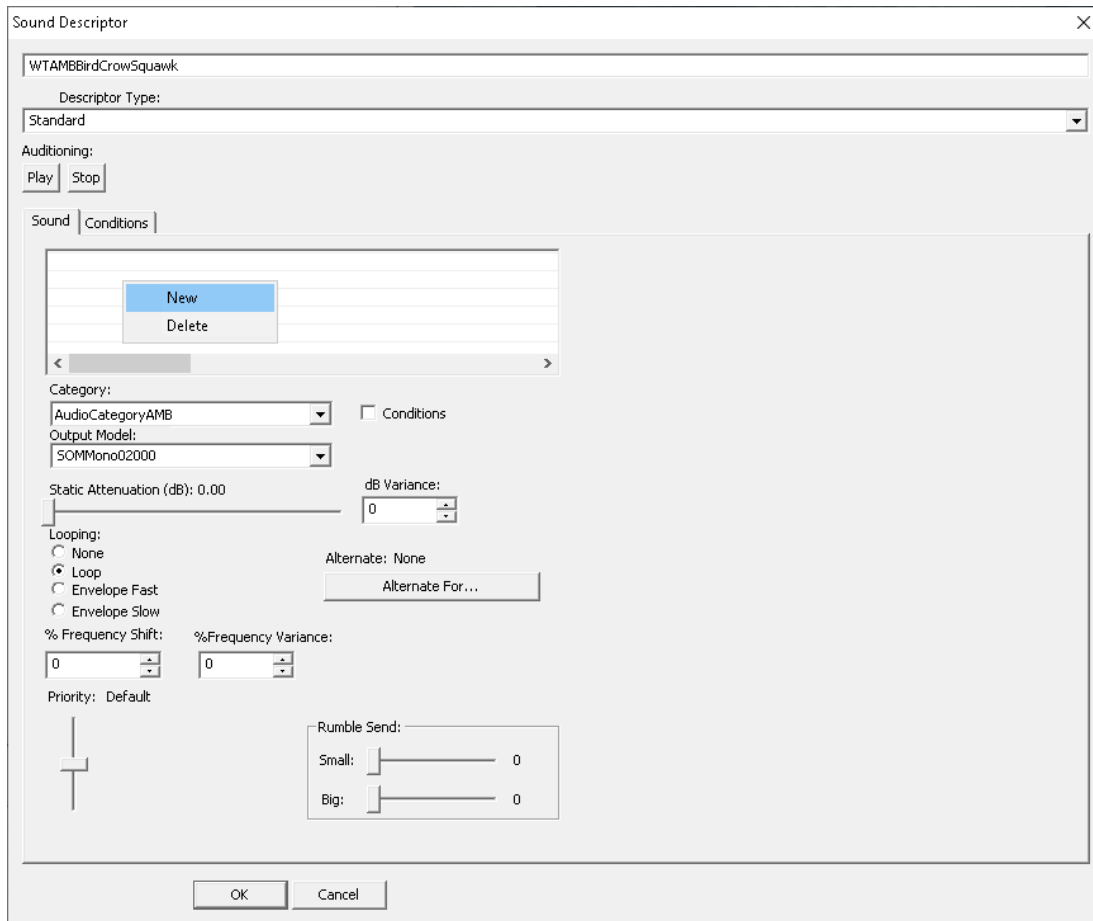


Figure 376 - Adding a .wav file to the sound descriptor.

Select the .wav file. Again, for this example that will be wt_amb_crow_squawk.wav under the Skyrim\Data\Sound\fx\amb folder.

The .wav file should now appear in the sound list.

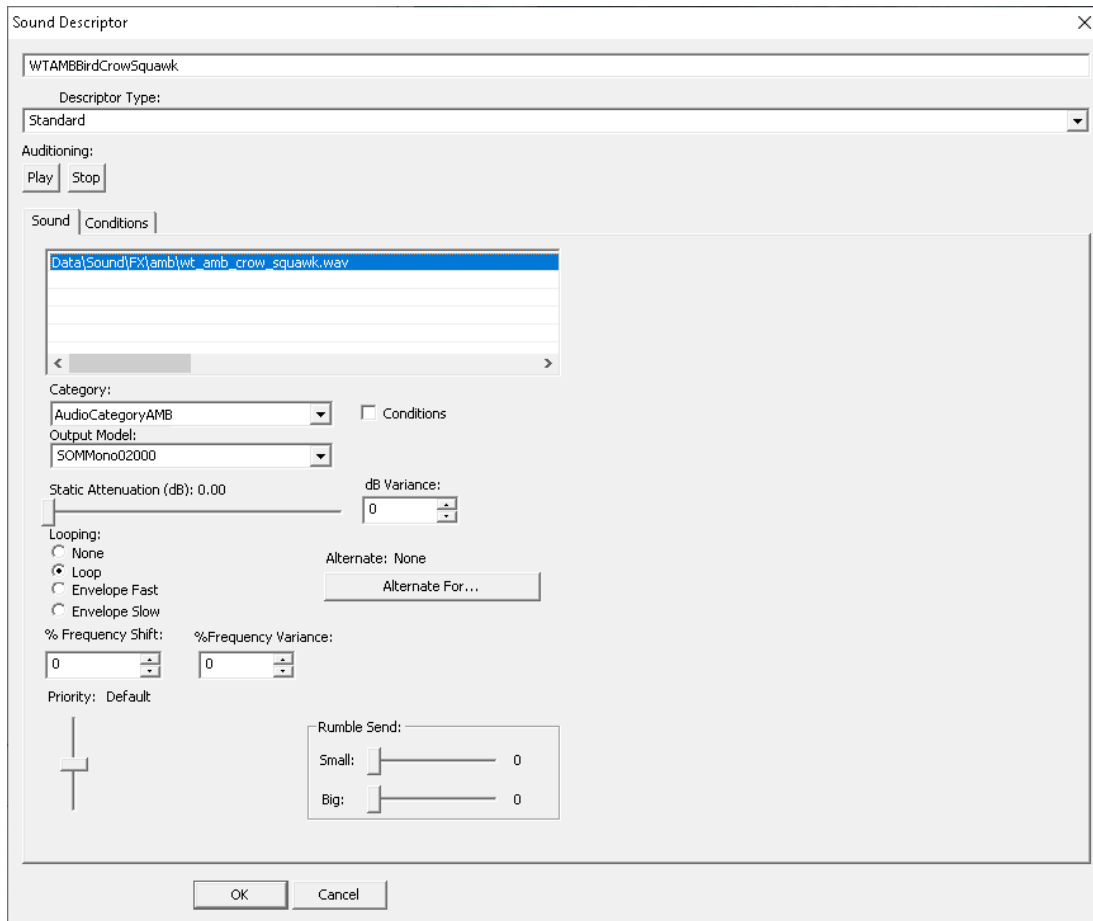


Figure 377 - Sound added to sound descriptor.

Conditions can also be added to sound descriptors. An example of a commonly used condition is to check the time of day, so certain sounds only occur during specific hours.

To add a condition, you need to tick the Conditions checkbox first.

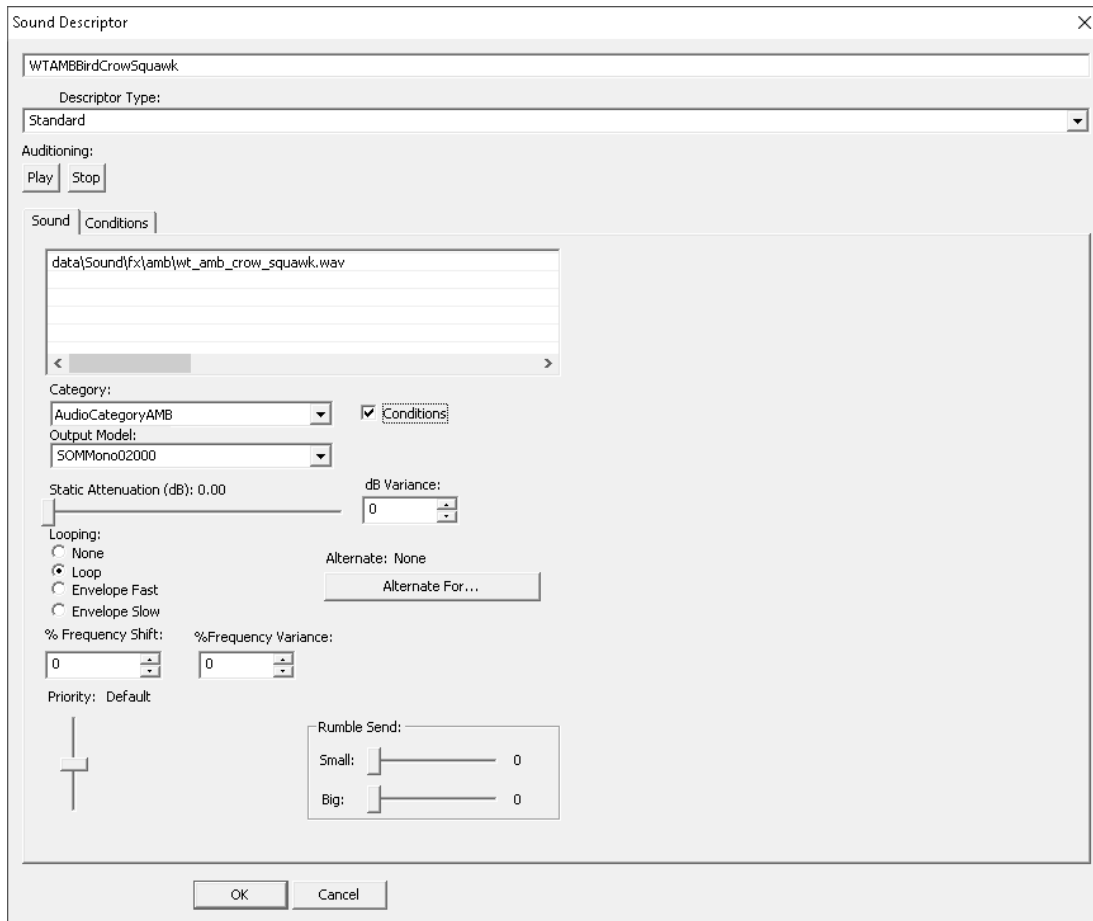


Figure 378 - Conditions enabled.

Conditions are added under the Conditions tab.

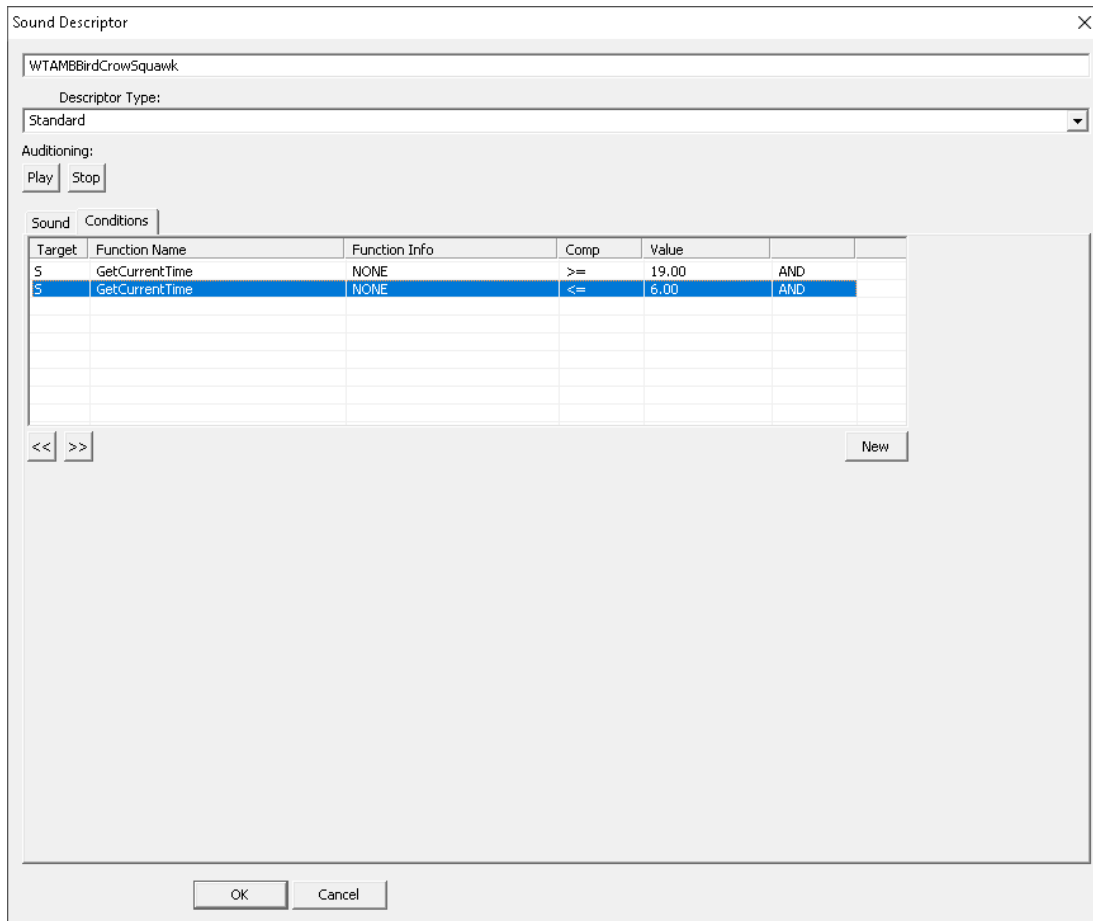


Figure 379 - Conditions added to the sound descriptor.

In the screenshot above, I added two GetCurrentTime condition functions to ensure that the crow squawking sound only plays during daytime hours.

Click OK to close out of the Sound Descriptor properties.

Important: Adding, deleting or modifying sound descriptors may cause the Creation Kit to eventually crash, so make sure you save before continuing.

To create the sound marker, in the Object Window go to Audio > Sound Marker.

Right-click on one of the existing sound markers and select New.

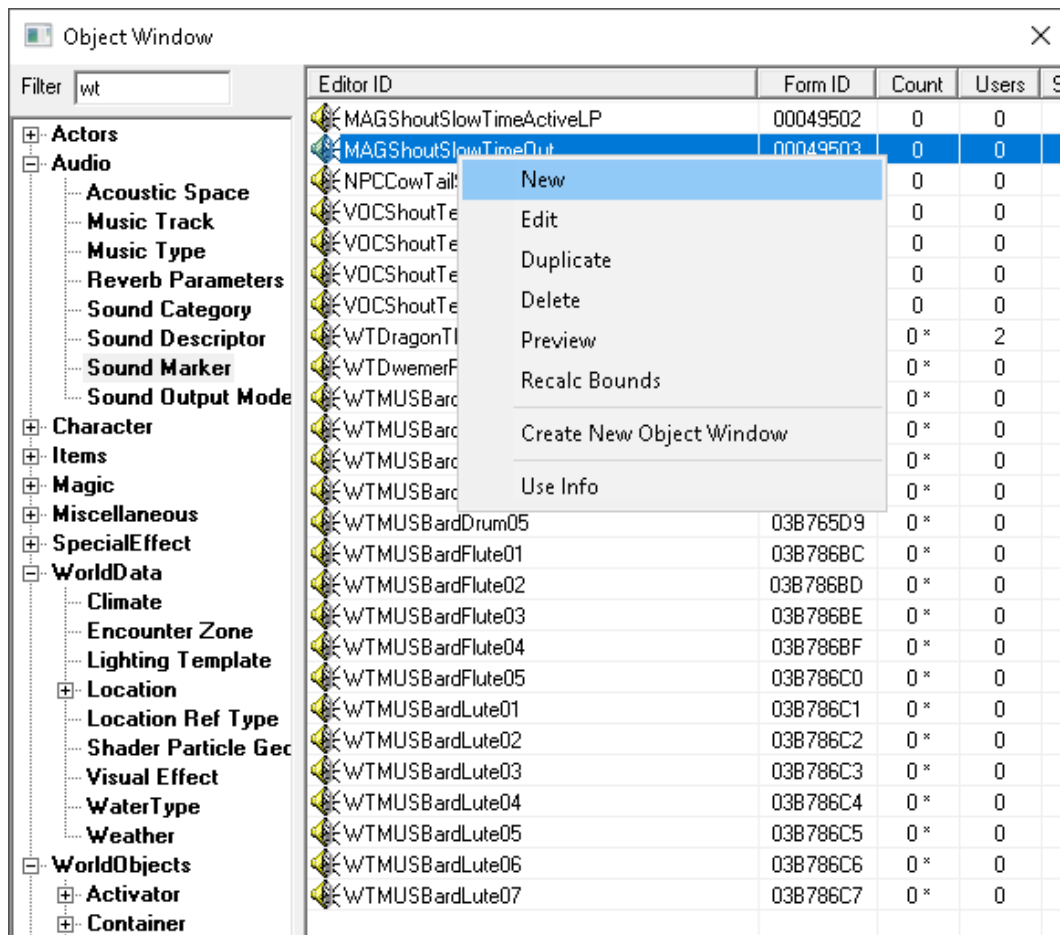


Figure 380 - Creating a new sound marker.

Select your sound descriptor and enter in an ID. I set it to match the name of the sound descriptor, but appended 'LP' to the end to indicate that it's a loop.

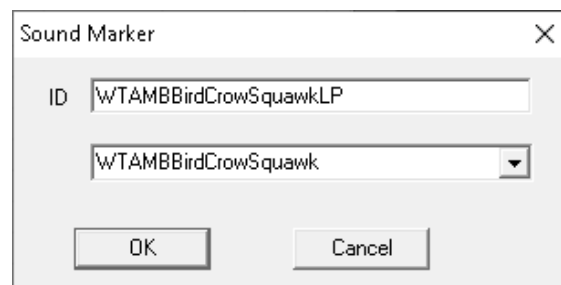


Figure 381 - Configuring the sound marker.

Click OK.

Now you can drag and drop the new sound marker into the render window to add it to your world space.



Figure 382 - The new sound marker added to a custom world space.

Alternatively, if you're setting up this sound to use as a regional ambient sound, go back to the sound descriptor and set Looping to None.

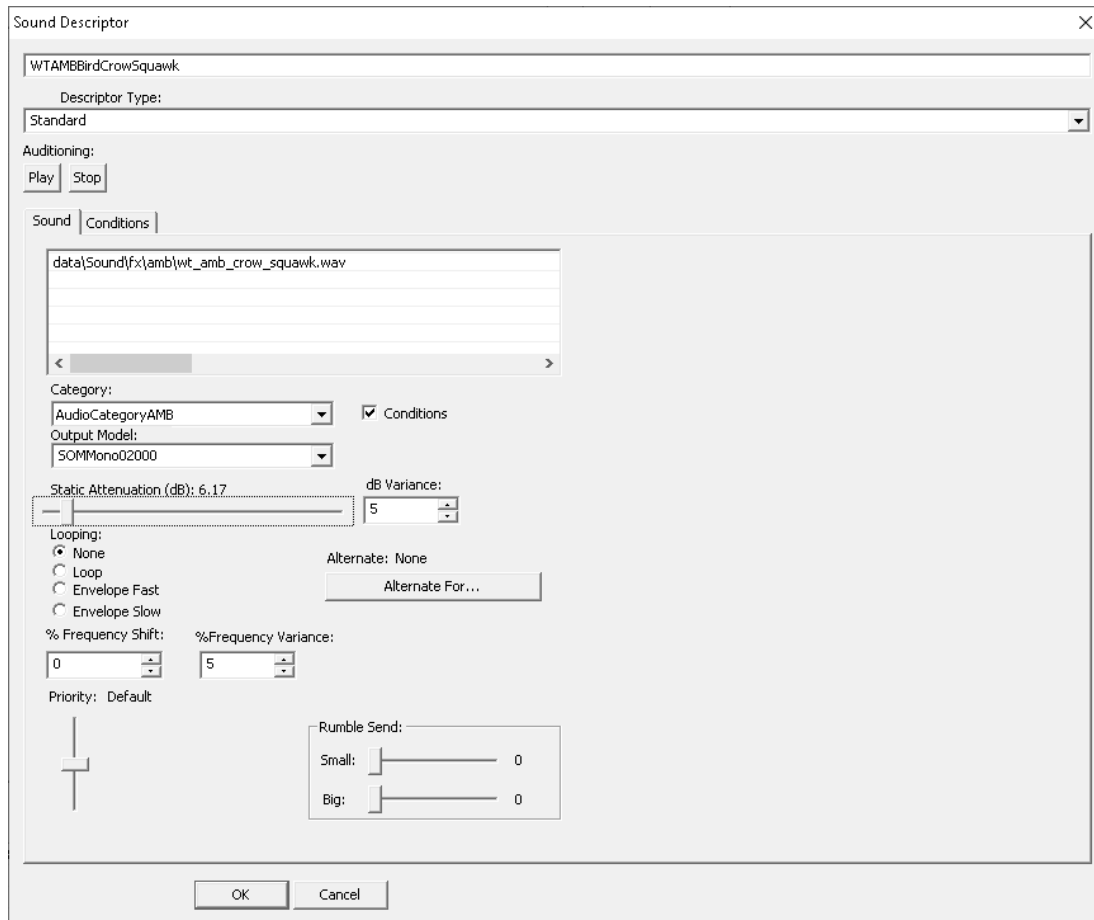


Figure 383 - Changing the sound descriptor for use as a regional ambient sound.

I also set the dB Variance to 5 and the %Frequency Variance to 5 to add some slight variation in the loudness of the sound every time it plays. You could also set a % Frequency Shift if you want to. This will affect the pitch of the sound every time it plays, but in my example I'm not going to do that.

Click OK to save these changes.

You can then drag and drop the sound descriptor into the list of sounds on the Sound tab of your Region.

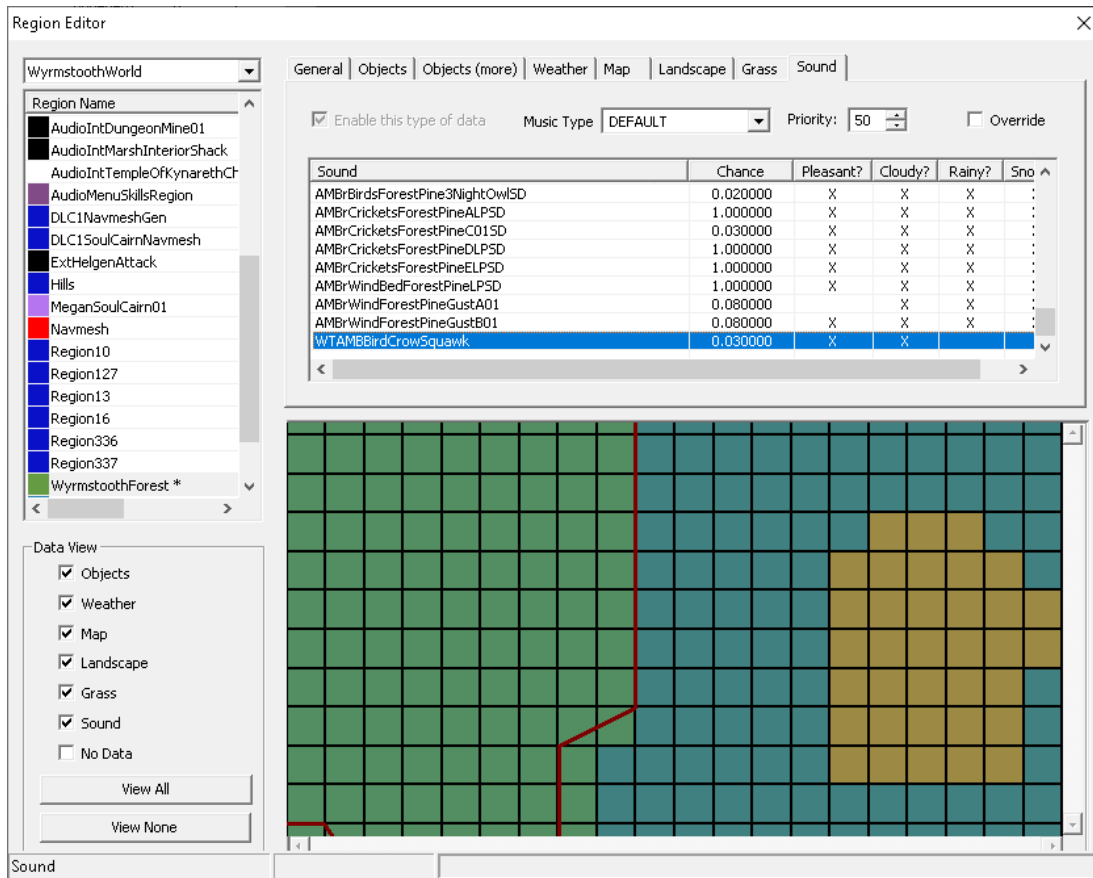


Figure 384 - Adding our new sound descriptor to a region.

See the section on [Regions](#) for detailed steps on setting them up.

To add an acoustic space, click on Acoustic Space in the toolbar.

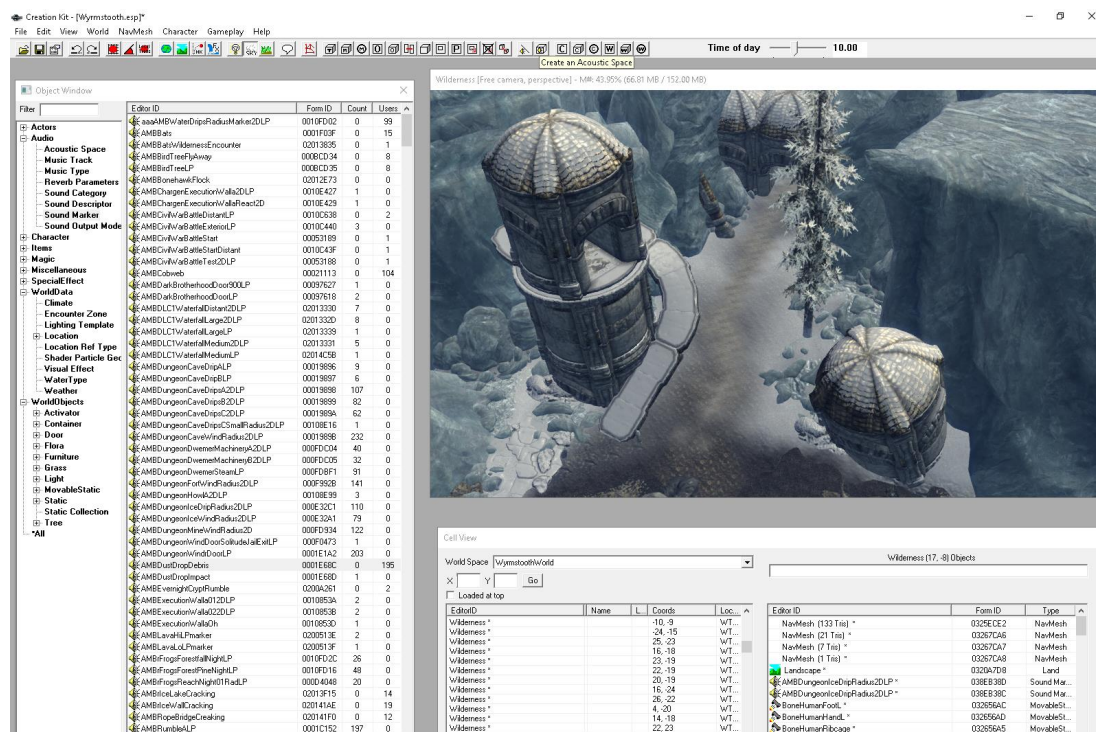


Figure 385 - Adding an acoustic space.

You'll see a Select Form pop-up. Use the Filter field to narrow down the list of acoustic spaces.

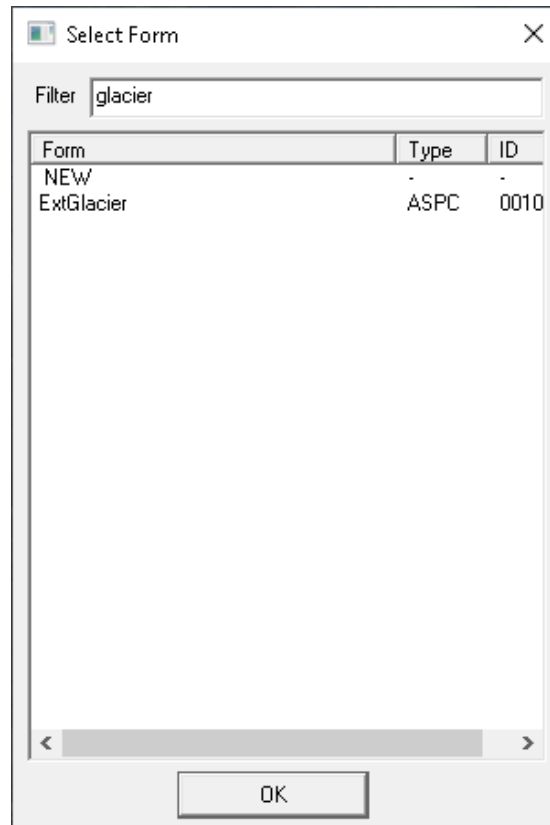


Figure 386 - Selecting an acoustic space to place.

Select the acoustic space you want to add, such as ExtGlacier, and click OK.

I like to use ExtGlacier in between glaciers, where you would expect sound to bounce around.



Figure 387 - An acoustic space in between glaciers.

A list of acoustic spaces can be found in the Object Window under Audio > Acoustic Space.

Object Window

Filter

Actors

Audio

Acoustic Space

Music Track

Music Type

Reverb Parameters

Sound Category

Sound Descriptor

Sound Marker

Sound Output Mode

Character

Items

Magic

Miscellaneous

SpecialEffect

WorldData

Climate

Encounter Zone

Lighting Template

Location

Editor ID	Form ID	Count	Users
DLC1IntDarkDungeonCave	0200680D	0	1
DLC1IntFalmerValleyLargeStoneBossChapel	02014C61	1	0
ExtDragonsreach	0010D1...	1	0
ExtDungeonMountain	0010CB82	0	13
ExtForestPineBlindMansGrotto	0010B1F9	1	0
ExtForestPineForstmereCrypt	0010CB83	0	8
ExtForestPineTownAcousticSpace	000FD93F	0	0
ExtForestPineTownAcousticSpace02	0009174C	0	5
ExtGlacier	0010B11C	14	0
ExtHelgenAttackAS	0010D8AA	1	0
ExtJaphetsFolly	0010CBB7	1	10
ExtKarthspireRedoubt	0010CBD3	1	0
ExtMountainHeavyAcousticSpace	0002F78E	6	0
ExtMQFlashbackInteriorAcousticSpace	0010FE9E	1	0
IntDA14Interior	000FECFB	0	1
IntDungeonBlackreachAcousticSpace	0010EE74	2	0
IntDungeonCatacombsAcousticSpace	0001AA4D	7	92
IntDungeonCatacombsLargeAcousticSpace	0010273E	17	2
IntDungeonCatacombsSemiExteriorAcousticS...	0001E1A0	8	2

Figure 388 - List of acoustic spaces.

To add a new acoustic space, right-click on one of the existing ones and select New.

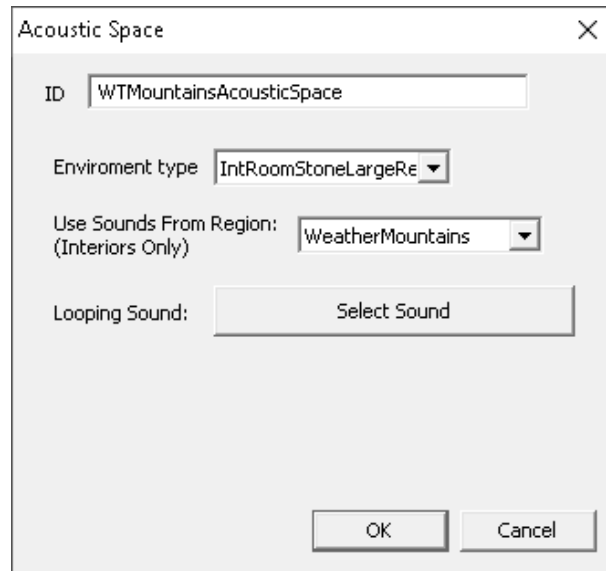


Figure 389 - New acoustic space.

Set the ID. In my example, I just set it to MountainsAcousticSpace and added the 'WT' prefix.

Say for example we wanted to add an acoustic space to a narrow mountain pass, where we'd hear sound bouncing off the cliff sides.

To accomplish this, I set the 'Environment type' field to IntRoomStoneLargeReverb and the 'Use Sounds from Region' field to WeatherMountains.

Optionally, you can add a specific looping sound by clicking on the Select Sound button, but in my example I'm not going to do that.

Click OK to create the new acoustic space.

But what if you wanted to create a specific environment type? Maybe something that would work better in between mountain peaks?

In the Object Window navigate to Audio > Reverb Parameters.

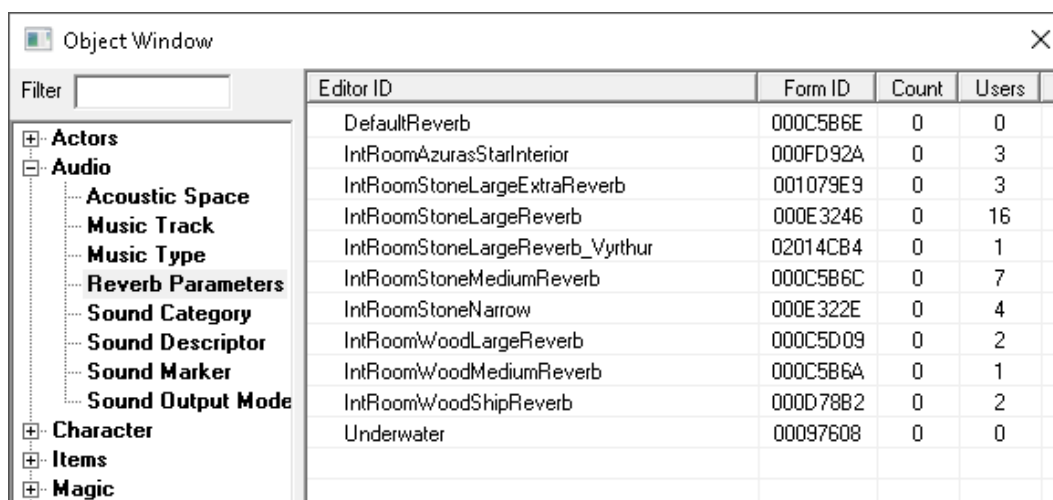


Figure 390 - Reverb parameters.

Create a new reverb parameter by right-clicking and selecting New.

Set the ID. For my example, I'm just going to call it MountainsReverb with a 'WT' prefix.

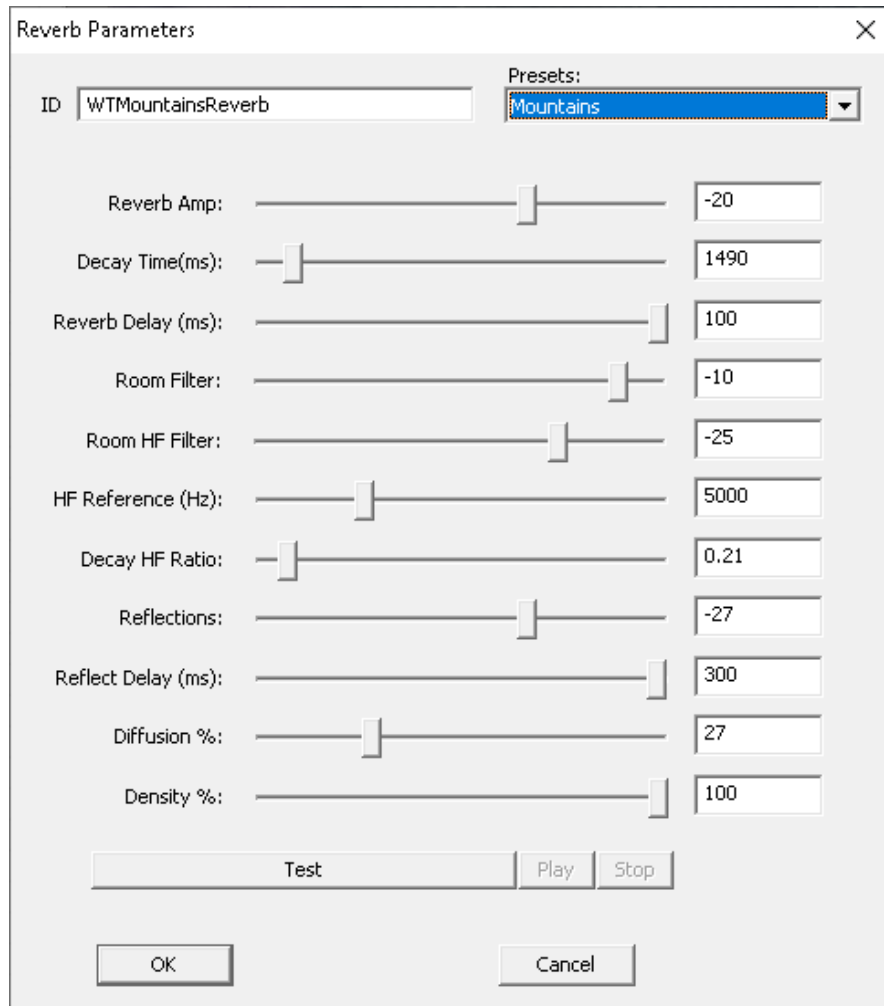


Figure 391 - New reverb parameters.

In the Presets drop-down I selected Mountains.

For a description of what each slider does, see the [Reverb Parameters](#) article on the Creation Kit wiki.

Click OK.

Now we can go back to the acoustic space we created earlier and change the 'Environment type' to the reverb parameters we just created.

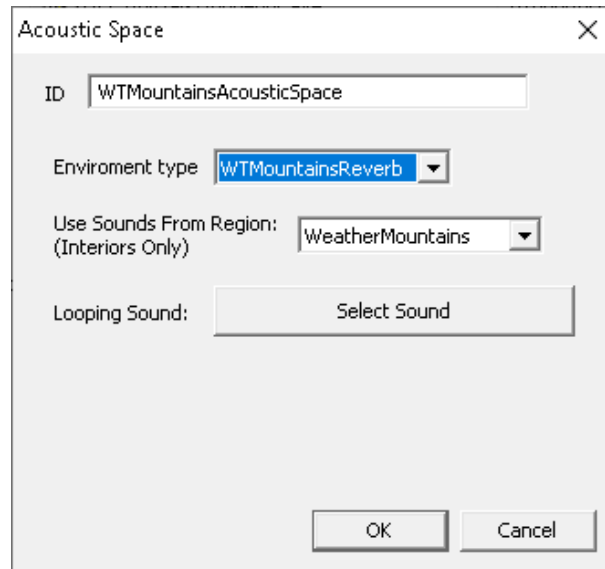


Figure 392 - Using our new reverb parameters.

Click OK to save and close.

For steps on how to set up region sounds, see the section on [Regions](#).

ADDING MUSIC

Music can be added to a world space, a region within a world space, or to specific cells.

Music tracks need to be converted to the .xwm format first before they can be used in-game.

To convert a .wav or .mp3 file to .xwm we'll need the [Skyrim Audio Converter](#) utility which is available on Nexusmods.

Launch SkyrimAudioConverter.exe.

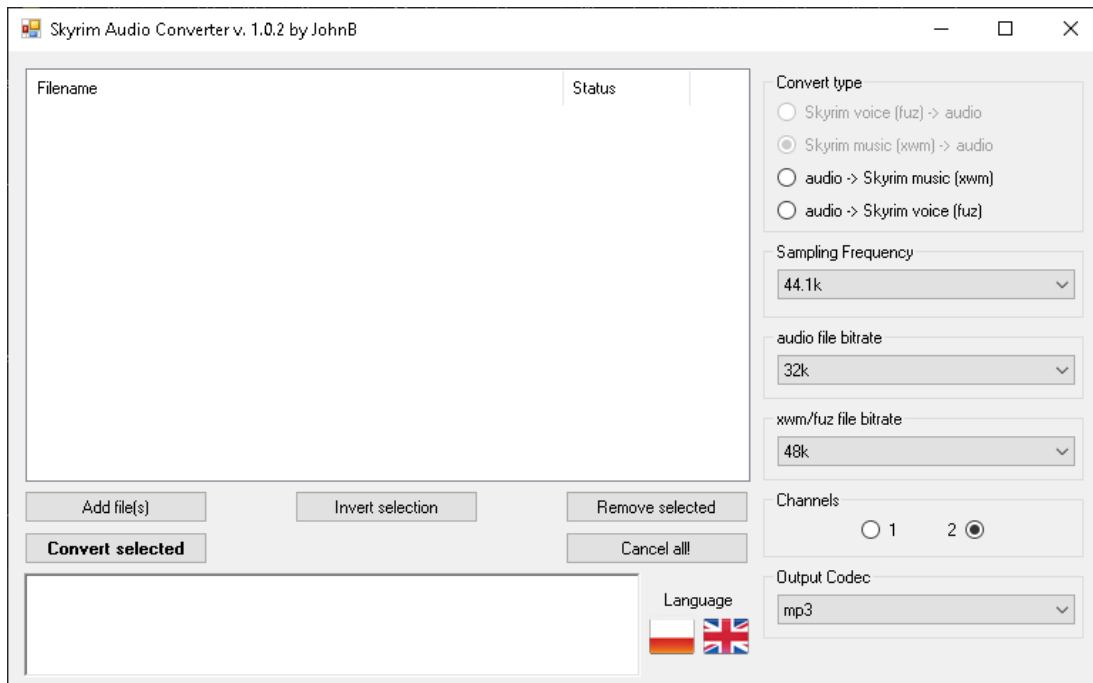


Figure 393 - *Skyrim Audio Converter*.

Under the 'Convert type' section, select 'audio -> Skyrim music'.

The other settings below it can be left at their defaults.

Click on the 'Add file(s)' button.

Select the audio file(s) you want to convert to .xwm and click Open.

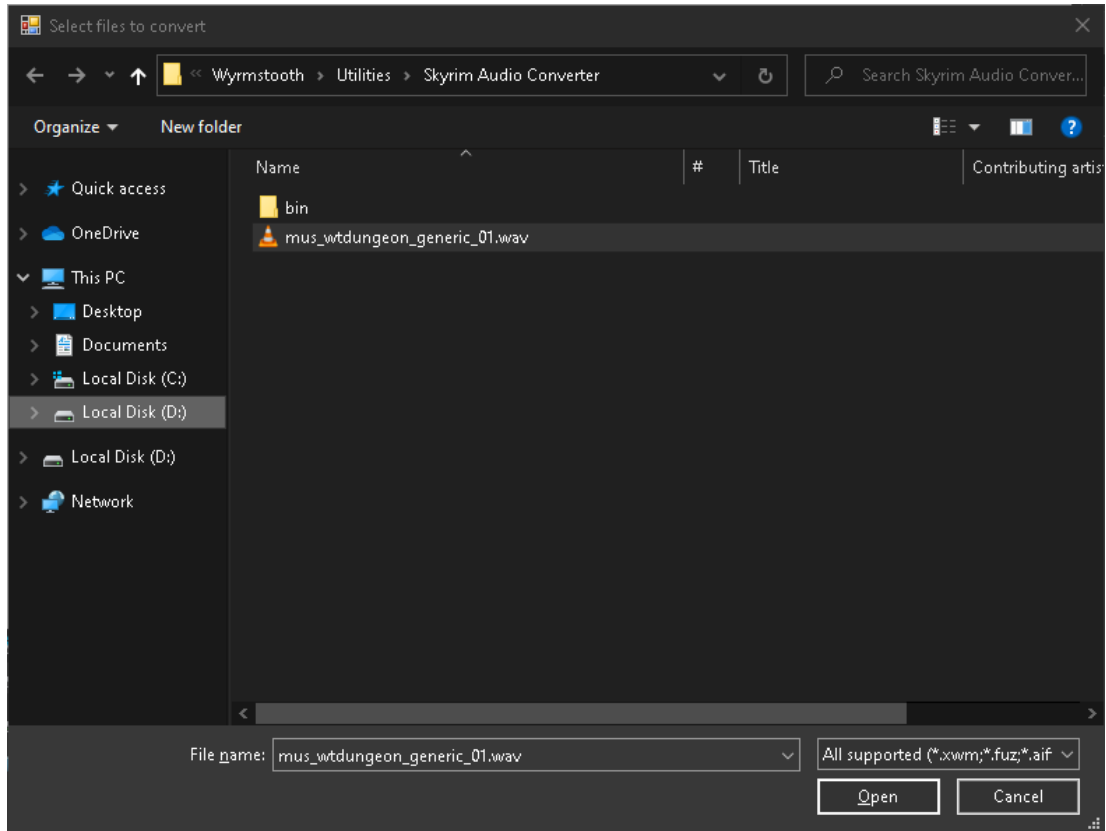


Figure 394 - Selecting the audio files to convert to .xwm.

In the example above, I'm going to be using a track composed by [León van der Stadt](#) specifically for the Wyrmostooth mod.

Confirm the audio file(s) are listed in the utility and the status shows 'Ready'.

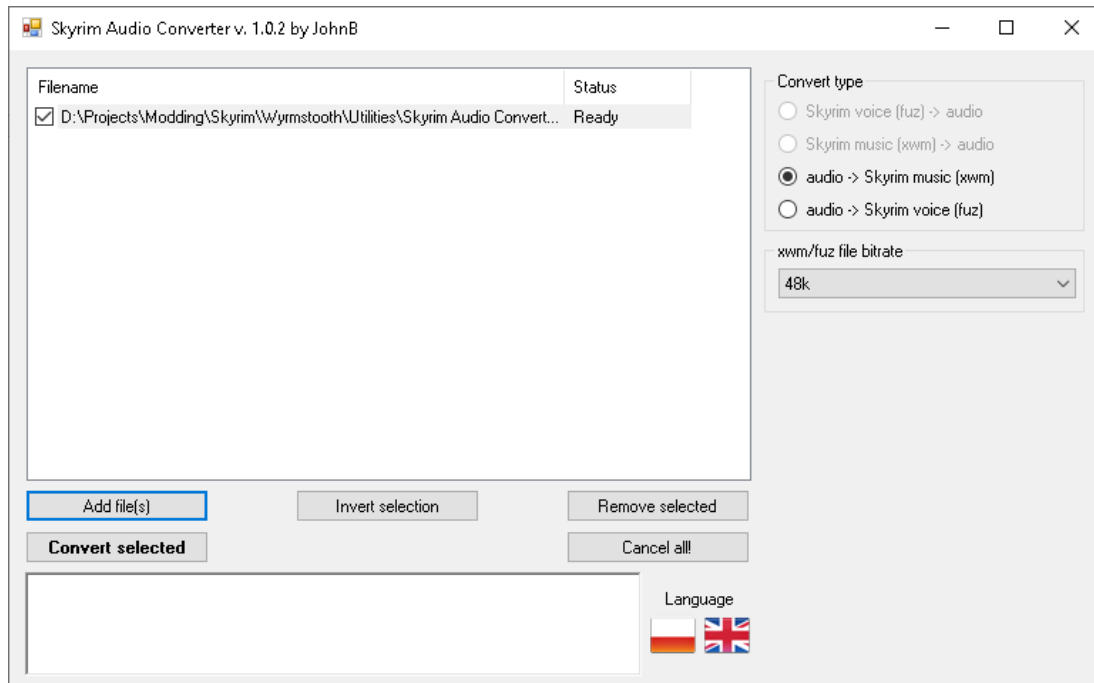


Figure 395 - Audio files to convert are listed in the utility.

Click on the 'Convert selected' button to begin converting the selected audio files to the .xwm format.

When conversion is complete, the audio files should be automatically unticked.

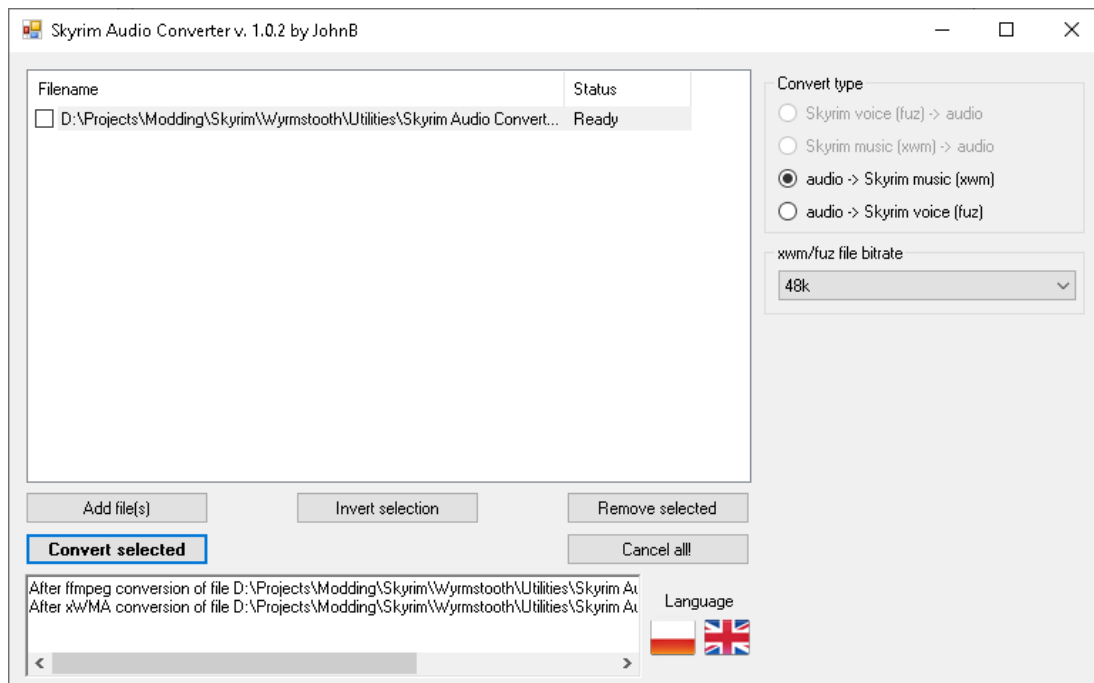


Figure 396 - Conversion finished.

Important: If your mod includes an .xwm music file and you pack it into a .bsa archive, I would recommend either not compressing the .bsa archive or use a third party utility to compress it instead. I've run into issues before where the game would crash when trying to play an .xwm music file from a .bsa archive compressed with Bethesda's archive.exe utility.

The new .xwm file(s) should be placed in the same folder you as the source audio files.

Next, we need to create new tracks for each .xwm file in the Creation Kit.

In the Object Window, go to Audio > Music Track.

Right-click on one of the existing tracks and select New.

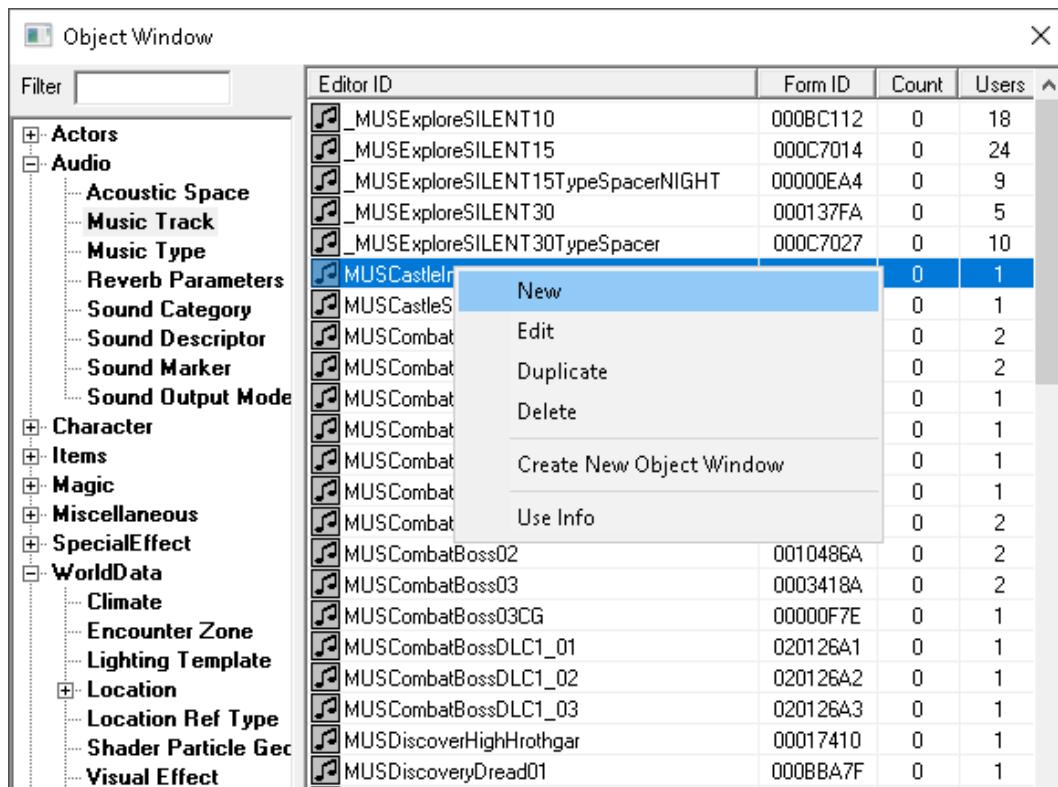


Figure 397 - Creating a new music track.

Set the Track Type to Single Track.

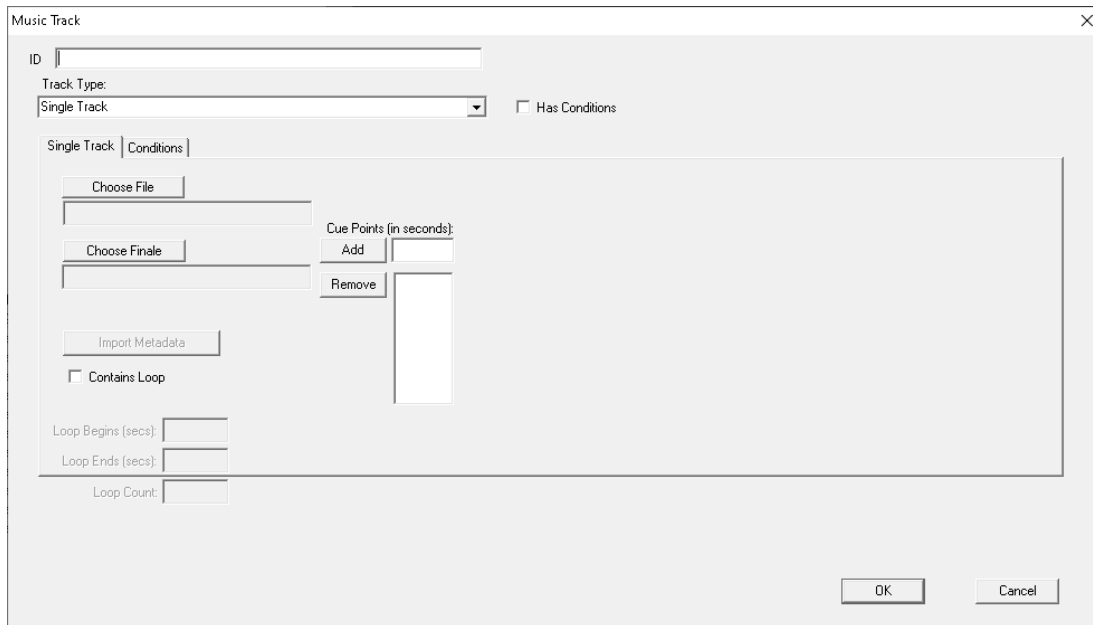
The screenshot shows a 'Music Track' dialog box with a close button (X) in the top right corner. It features an 'ID' text field. Below it, 'Track Type:' is set to 'Single Track' in a dropdown menu, with a 'Has Conditions' checkbox to its right. A tabbed interface shows 'Single Track' as the active tab, with 'Conditions' as an alternative. The 'Single Track' tab contains a 'Choose File' button above a text field, and a 'Choose Finale' button above another text field. To the right of these is a 'Cue Points (in seconds)' section with an 'Add' button and a text field, and a 'Remove' button below it. Further down is an 'Import Metadata' button, a 'Contains Loop' checkbox, and three text fields for 'Loop Begins (secs):', 'Loop Ends (secs):', and 'Loop Count:'. At the bottom right are 'OK' and 'Cancel' buttons.

Figure 398 - A new music track.

Click on Choose File.

The file needs to be copied to your Skyrim\Data\Music directory. For example, for Wyrmsooth I put music tracks under Skyrim\Data\Music\wyrmsooth.

When choosing a file, the file extension needs to be in .wav format. If you've already converted the files to .xwm we'll need to change the file extension to .wav, add the file to the Music Track properties, then rename the extension back to .xwm.

Right-click on the music file you want to add and change its extension from .xwm to .wav.

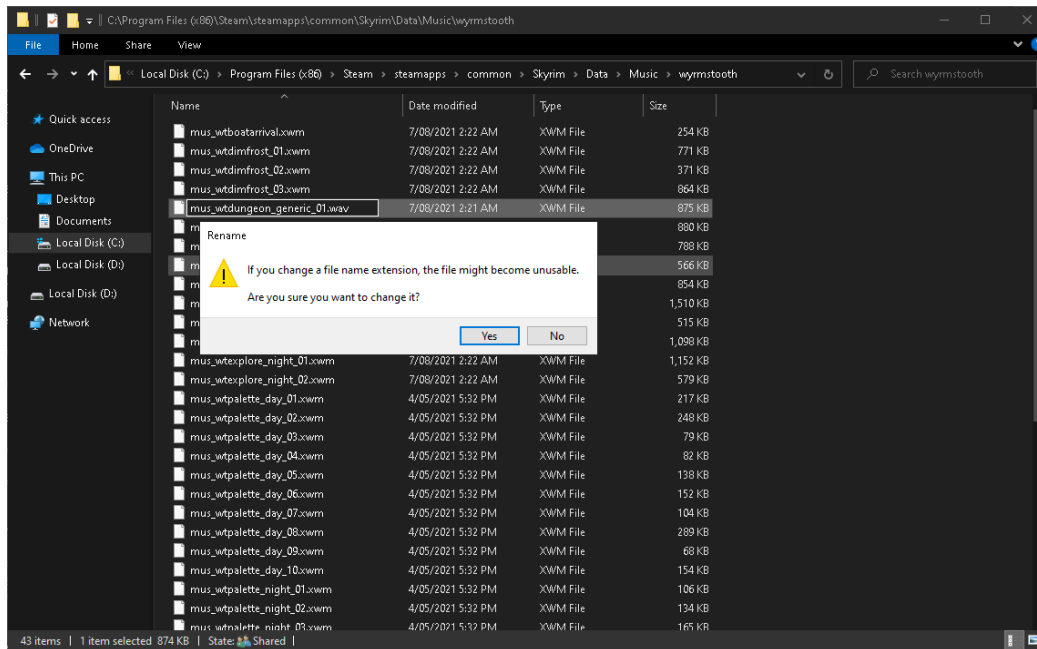


Figure 399 - Renaming the .xwm file back to .wav temporarily.

Now we can add it to the Creation Kit.

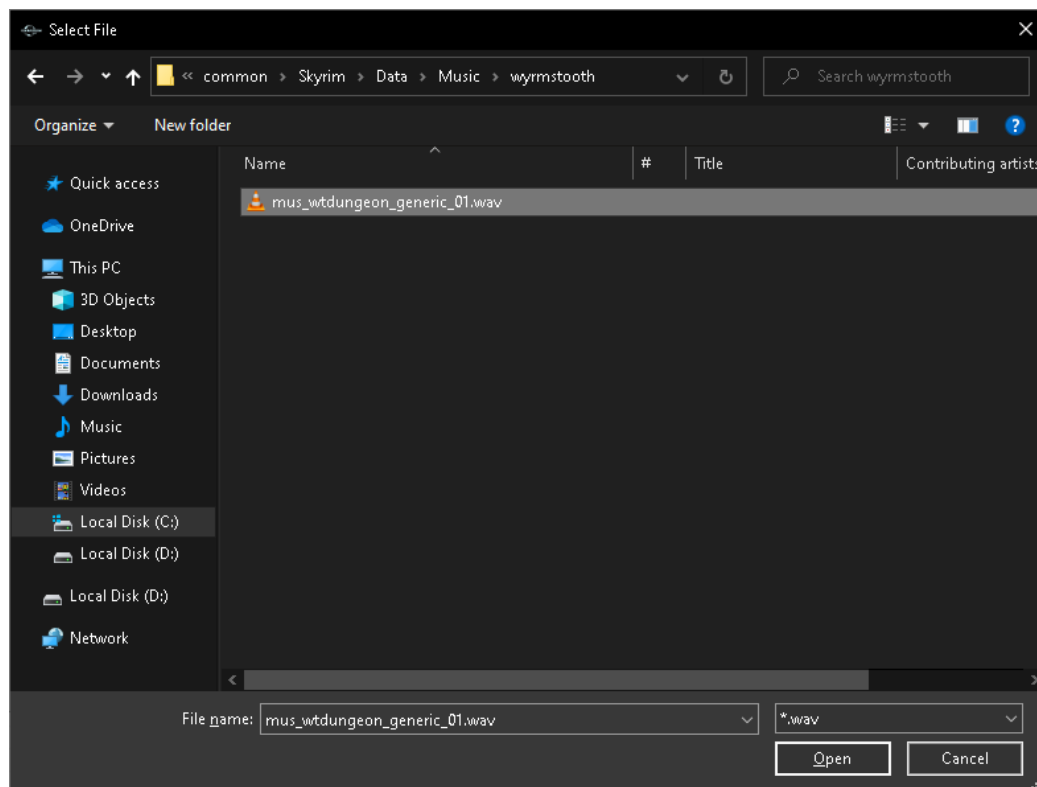


Figure 400 - Selecting the music file to add to the new music track.

Once the music file has been added as a .wav file, rename the .wav file back to .xwm.

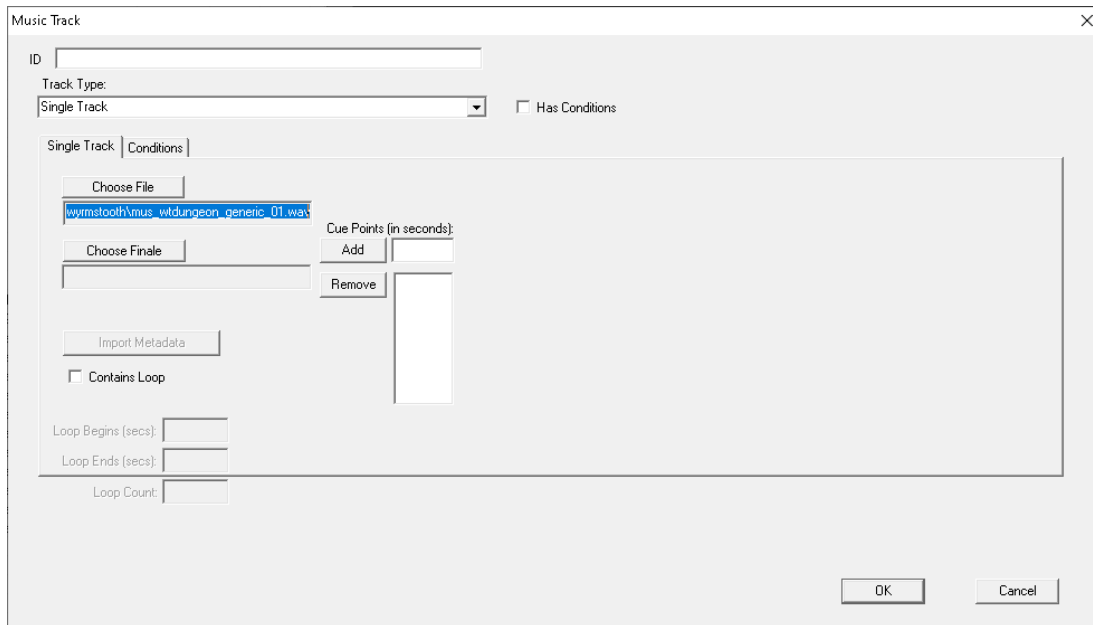


Figure 401 - Added as a .wav file in the new music track.

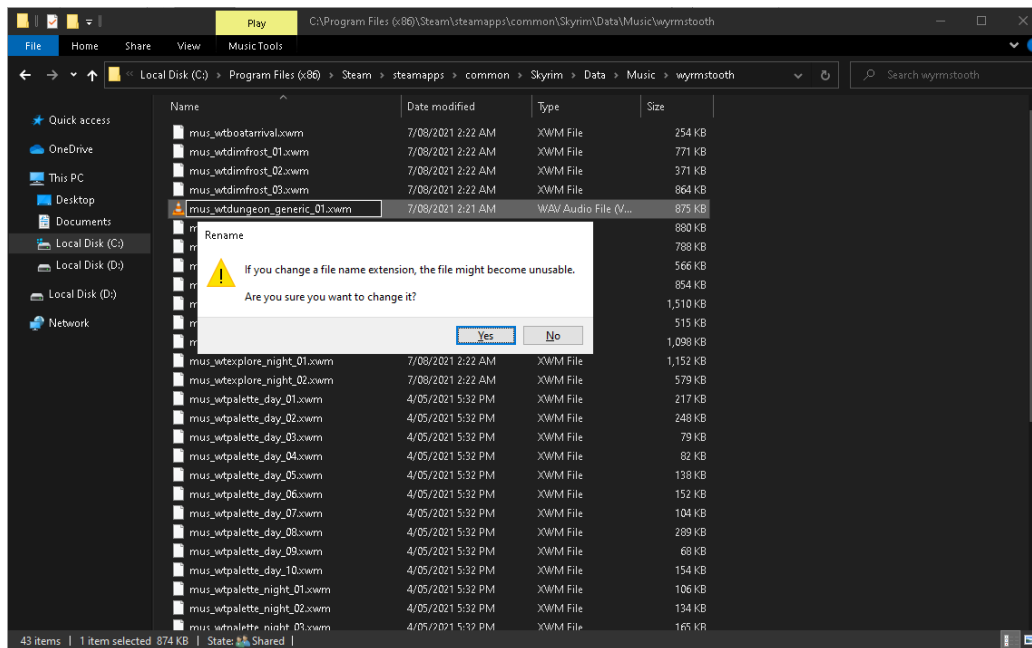


Figure 402 - Renaming the file extension back to .xwm.

Set the ID. In my example, I'm going to call the track MUSDungeon01 with the 'WT' prefix.

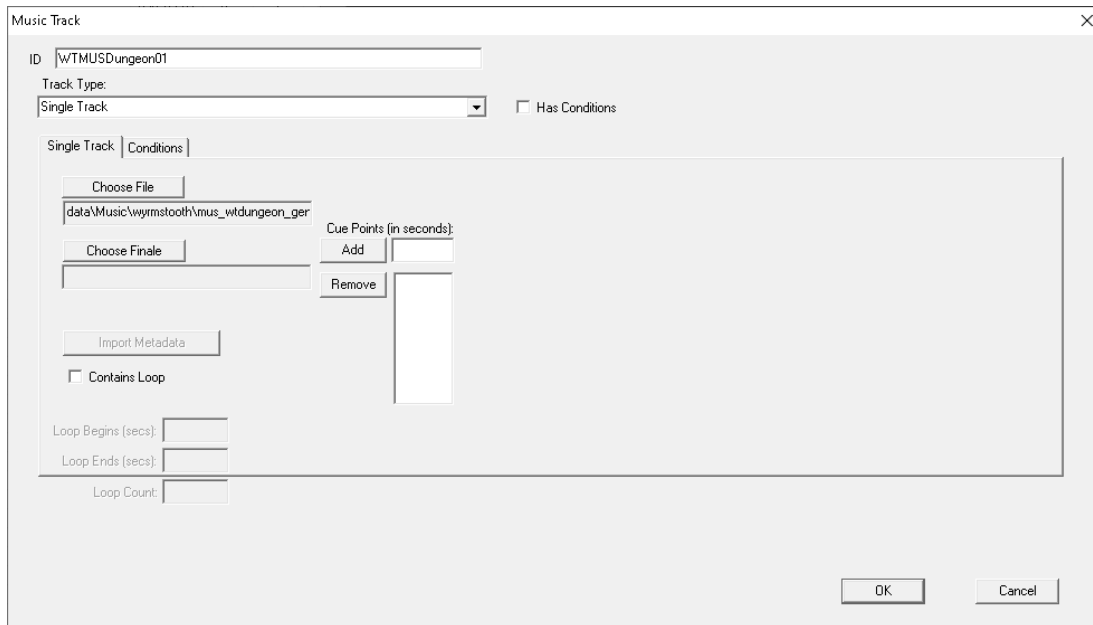


Figure 403 - Added the track ID.

If you want to add conditions to the track to only play the track under certain circumstances, tick 'Has Conditions'.

In the following screenshots, I'll be showing you a track that I set up only to play during daytime hours.

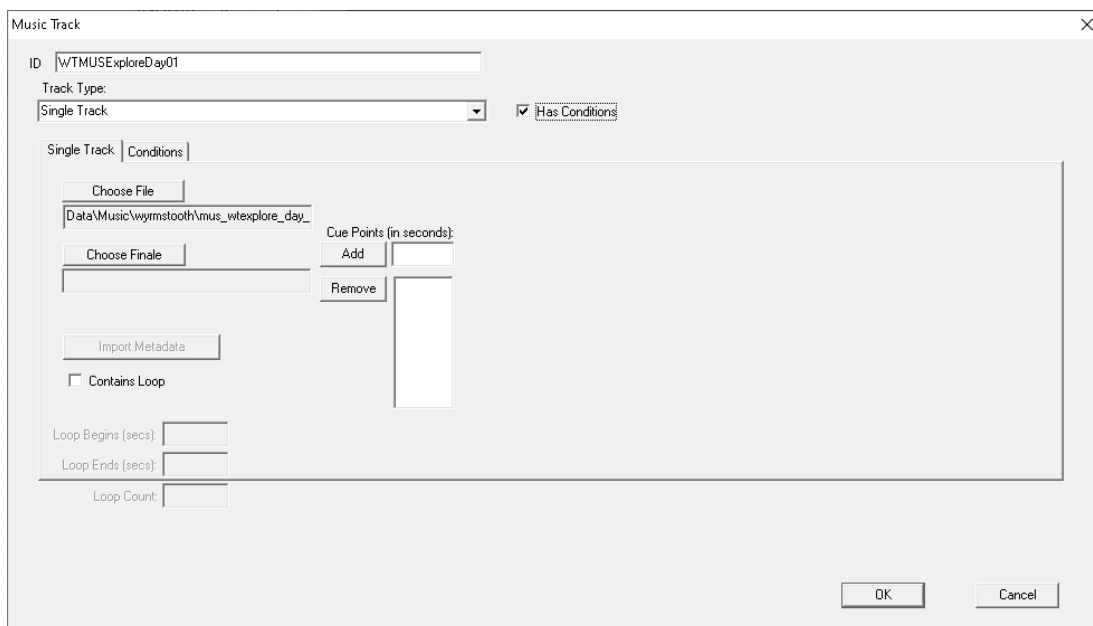


Figure 404 - Enabling conditions on a music track.

Go to the Conditions tab.

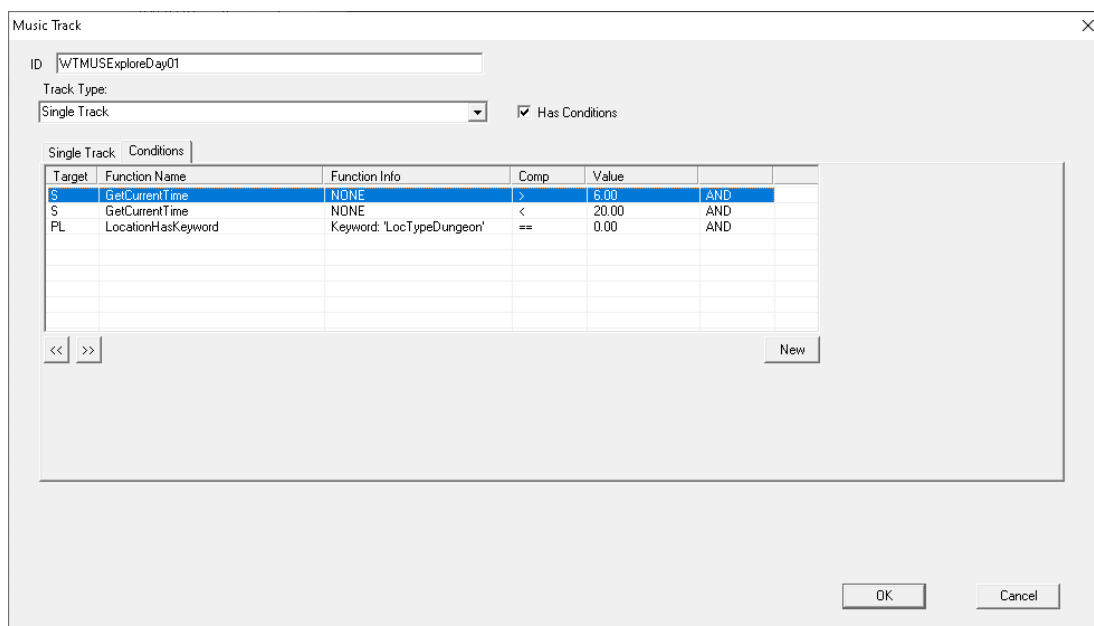


Figure 405 - Music track conditions.

In the screenshot above, I added two GetCurrentTime conditions to only play the track during daytime hours. I also added a LocationHasKeyword condition to ensure the track doesn't play in dungeons, where I want a different music track to play.

To add a new condition, right-click on the conditions list and click New.

Click OK when you're done here to close out of Music Track properties.

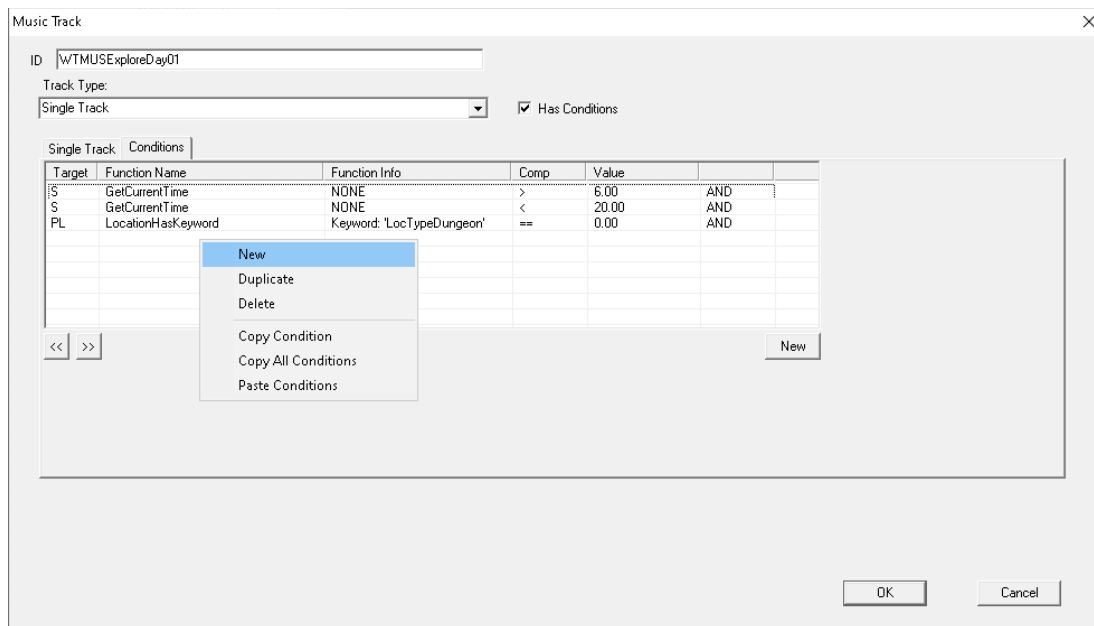


Figure 406 - Adding a new condition.

Important: It's important to mention that adding, modifying or deleting Music Types may eventually cause the Creation Kit to crash, so save your mod now before that happens.

Next, we'll need to create a new Music Type.

A Music Type is a collection of music tracks that can be referenced by a world space, region, location, or cell.

To create a new music type, in the Object Window go to Audio > Music Type. Right-click on one of the existing music types and select New.

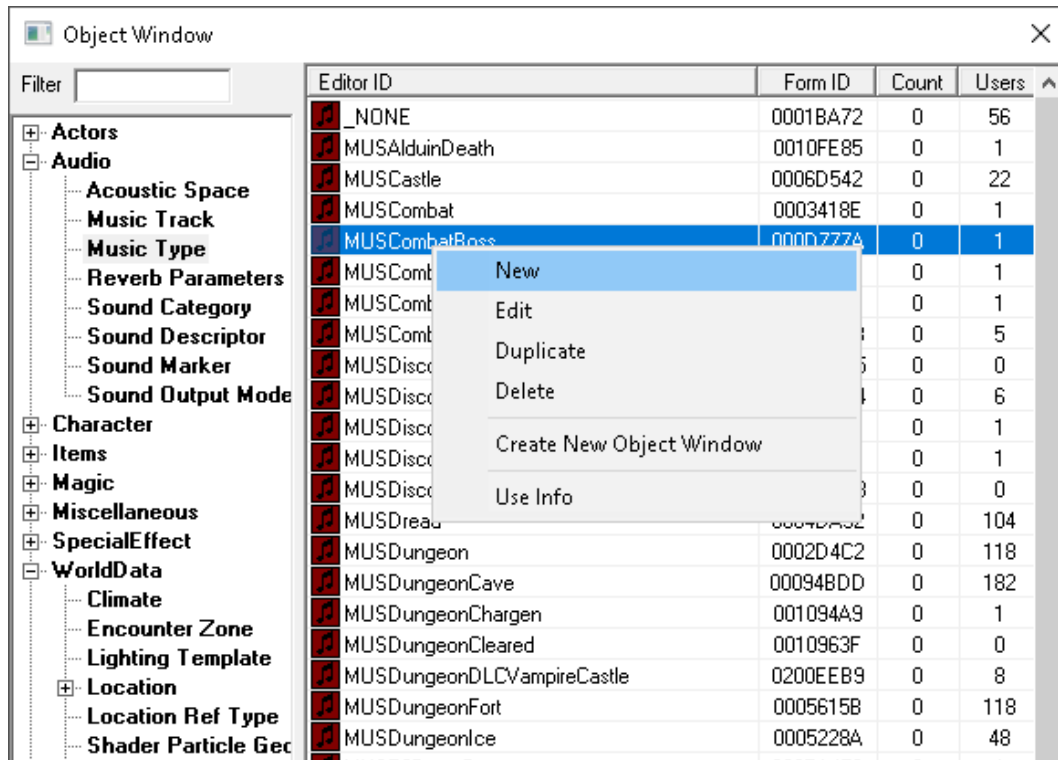


Figure 407 - Creating a new music type.

To add a music track, right click in the track list and select New.

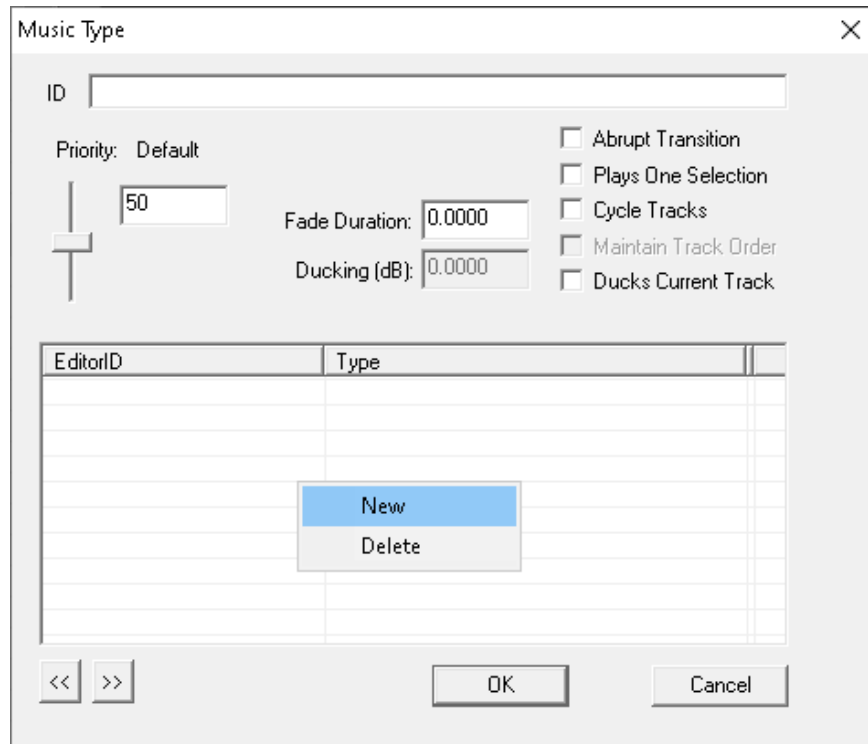


Figure 408 - Adding a new track to the music type.

Select the tracks you want to add and press OK.

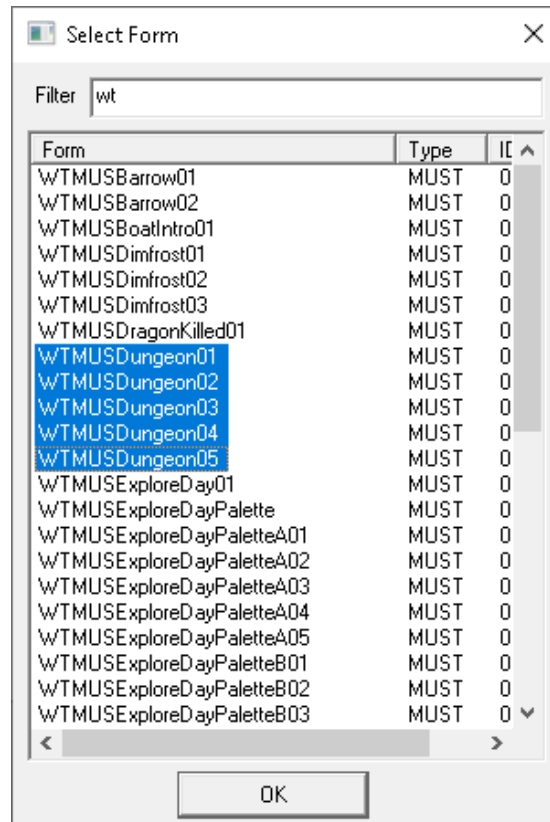


Figure 409 - Selecting the tracks to add.

Set the ID. For my example, I'm going to add it MUSDungeon and add the 'WT' prefix.

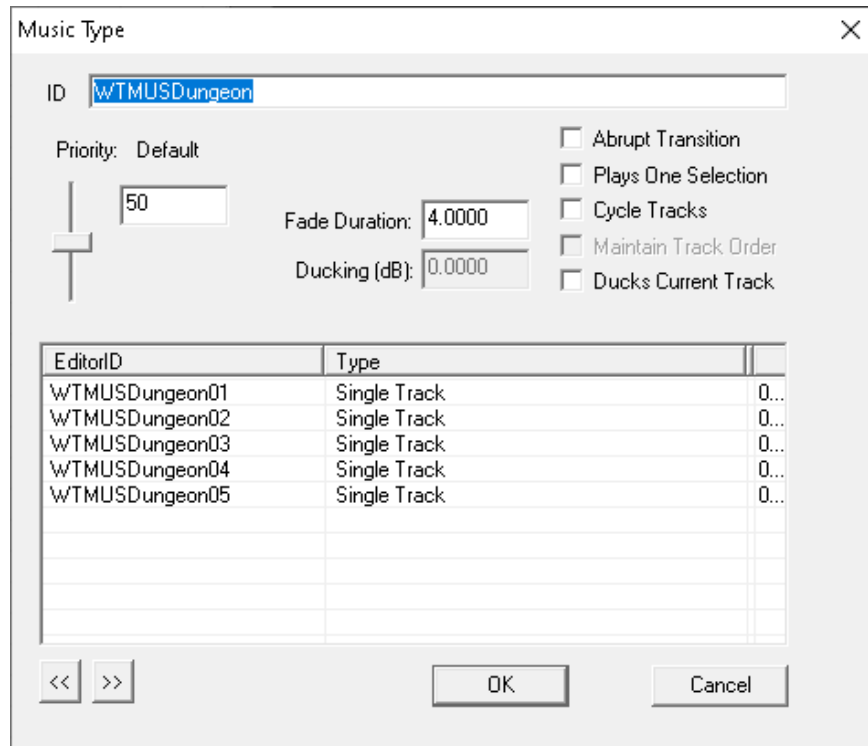


Figure 410 - Configuring the music type.

I also set the Fade Duration to 4.0000 to fade between tracks.

Click OK to close out of the music type properties.

To add a music type to a world space, go to World > World Spaces.

Select the world space you want to add it to from the list down the left hand side.

Set the music type you want to play in the Music field then click OK.

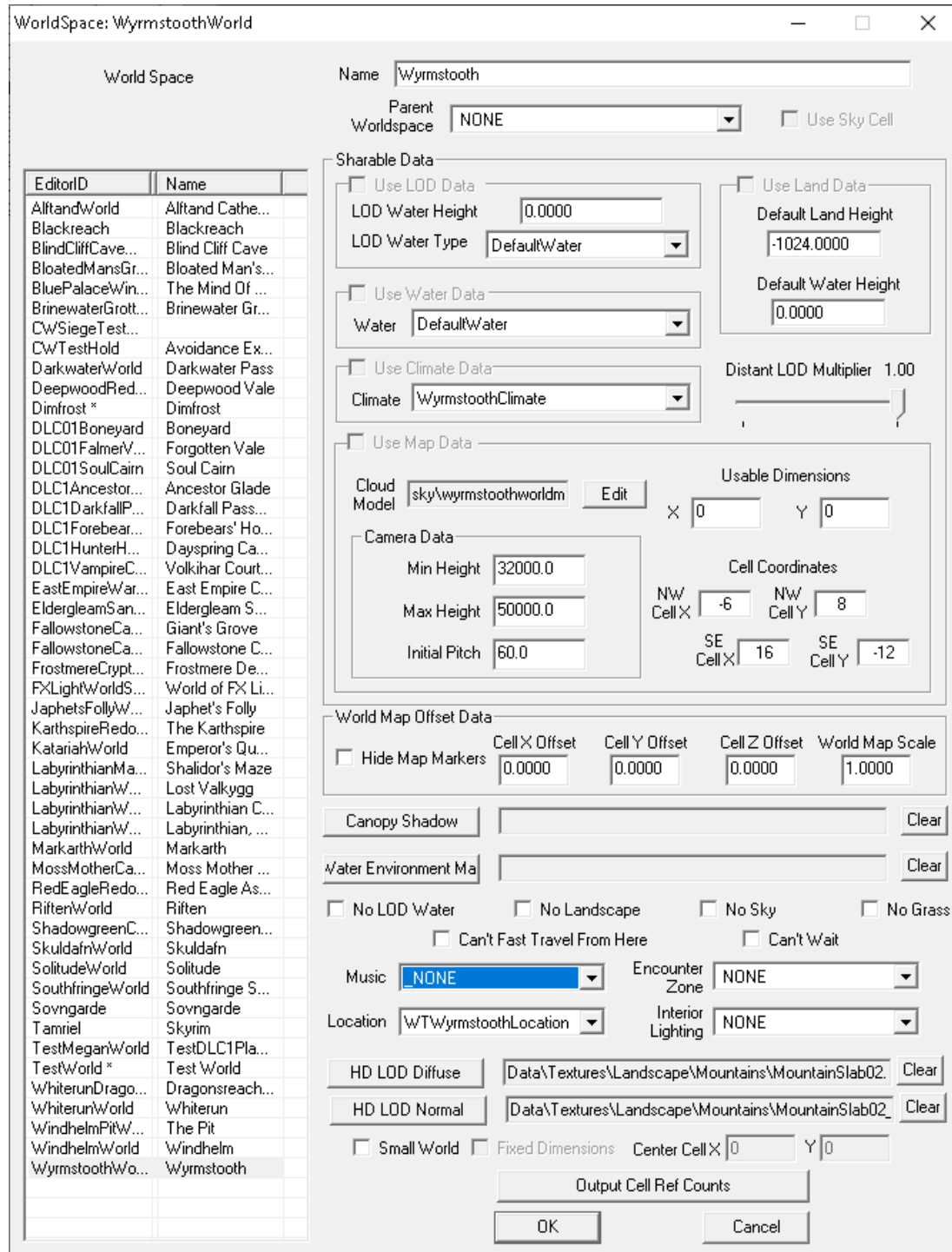


Figure 411 - Adding a music type to a world space.

To add a music type to a specific region only, go to World > Regions.

Select the world space in the drop-down menu then click on the region in the list below it.

Go to the Sound tab and set the music type you want to play in the Music Type field then click OK.

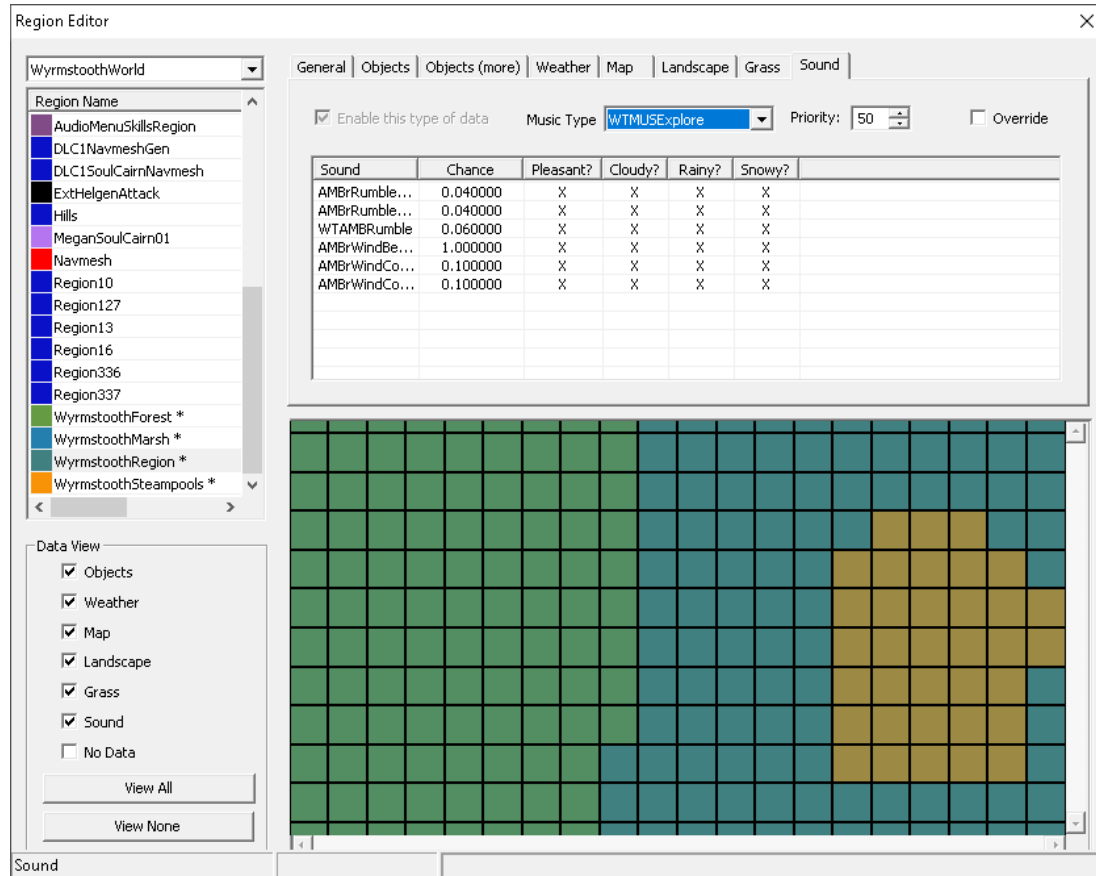


Figure 412 - Adding a music type to a region.

For WyrmsTooth, I set the day/night exploration music on the border region (WyrmsToothRegion) rather than on the world space, which is the same way the default Tamriel world space is set up.

To add music to a specific cell, right-click on the cell in the Cell View window and select Edit. Set the music type you want to play in the Music Type field then click OK.

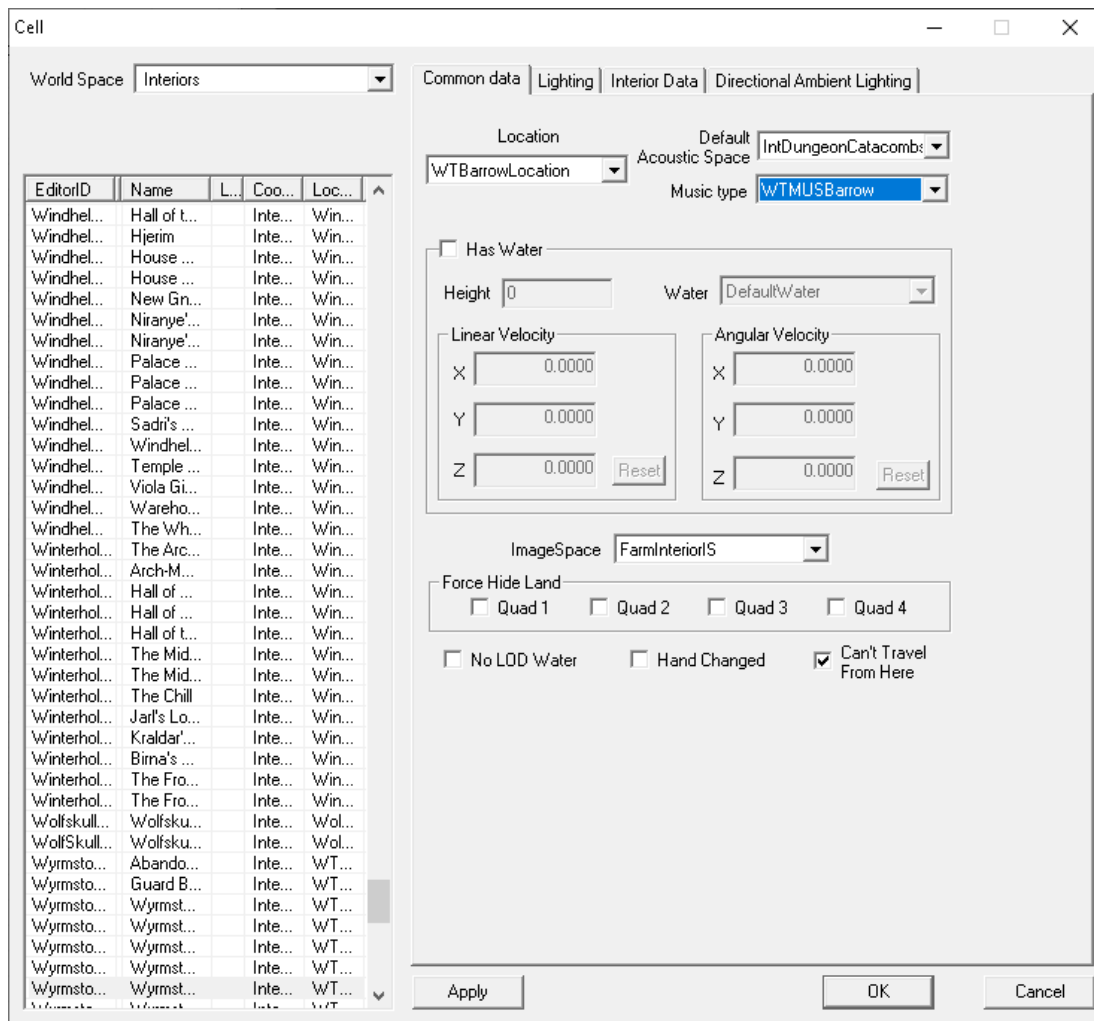


Figure 413 - Adding a music type to a cell.

In the screenshot above, I'm playing the WTMUSBarrow music type in the Wyrmsooth Barrow cells instead of the day/night exploration music to help build a different kind of mood for the player when they're exploring this dungeon.

A music type can also be assigned to a location, and will play in any cells that have been assigned to that location.

Go to WorldData > Location and open the location you want to assign a music type to.

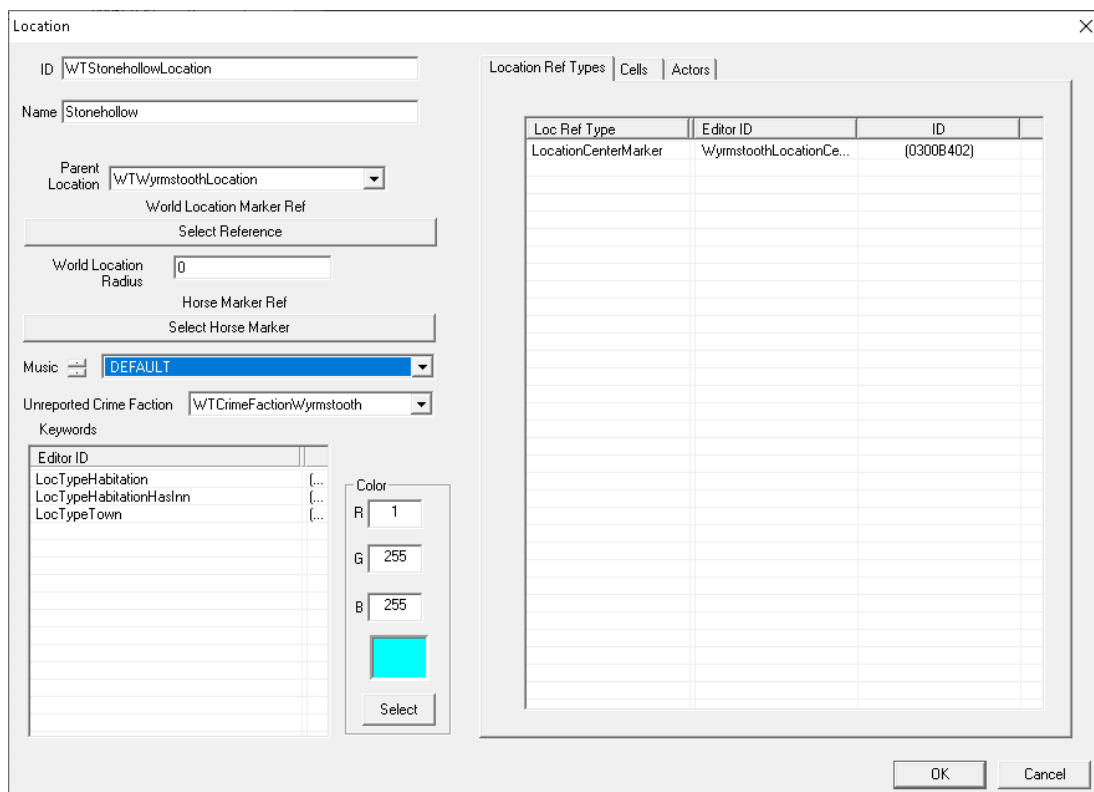


Figure 414 - Specifying a music type for a location.

The music type can be assigned in the Music drop-down.

Click OK to close out of Location properties.

Some tracks can be scripted to play at specific points in a quest. Increasing its priority and ticking 'Ducks Current Track' will play this track above any other currently playing tracks.

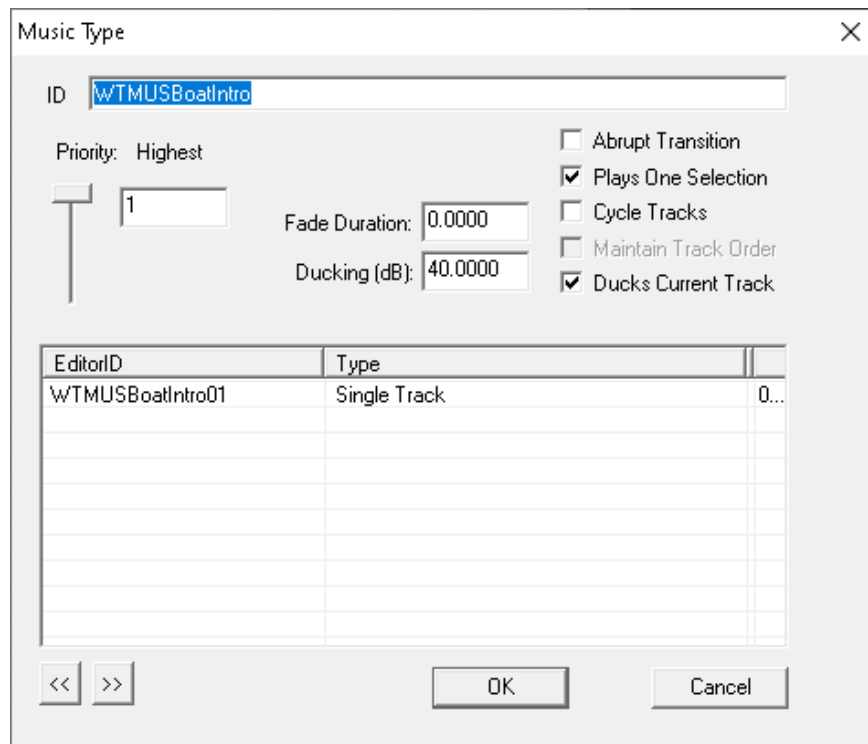


Figure 415 - Music type for a high priority scripted track.

We can then call this track using papyrus scripting. In the following example, I added BoatMusicIntro as a MusicType property on the 'Barrow of the Wyrms' quest in Wyrmsstooth.

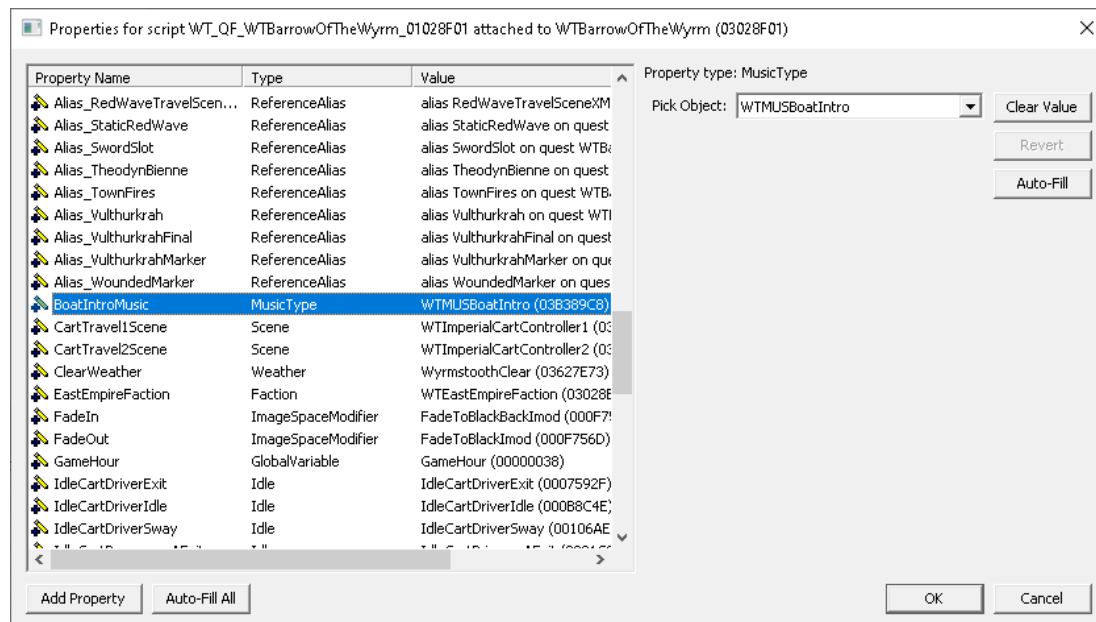


Figure 416 - Music type added to a script's properties.

I reference this music type on stage 50 with the following command:

```
BoatIntroMusic.Add()
```

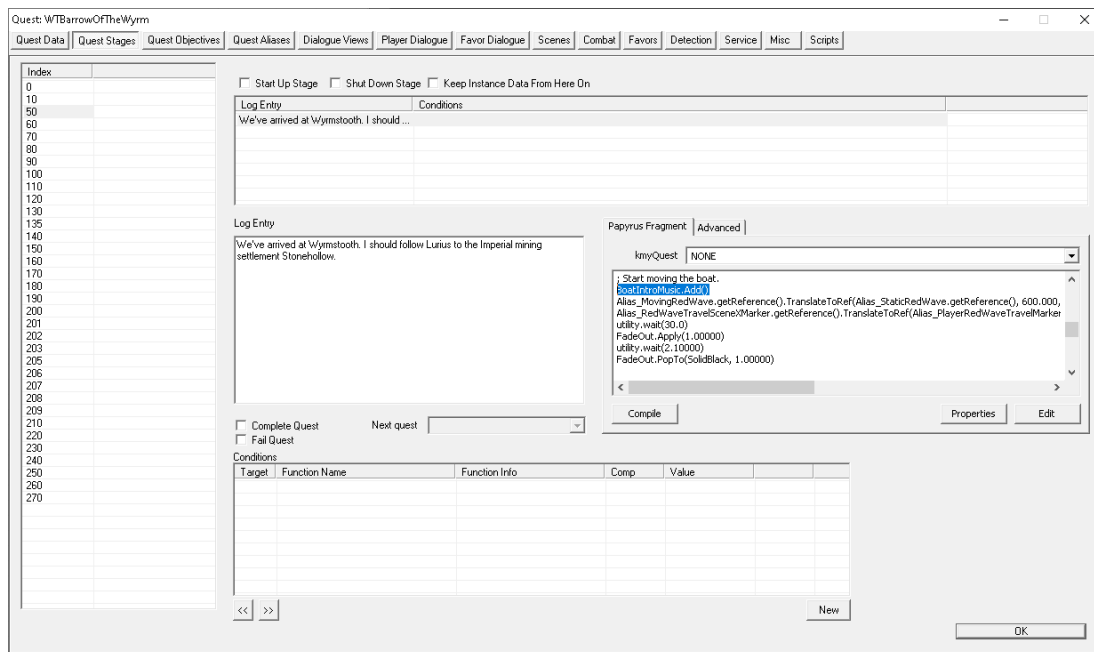


Figure 417 - Papyrus on stage 50 of Barrow of the Wym.

For more information on the [Add\(\)](#) command, see the article on the Creation Kit wiki.

You can also force music to stop playing with the [Remove\(\)](#) command.

Lastly, let's take a look at adding music triggers.

Music triggers allow us to play a track at a specific location. For example, when entering a large cave to emphasize how amazing it looks, or just before a boss fight to impose a sense of dread on the player.

First, click on an object in the render window roughly where you want to create the music trigger.

Click on Create Trigger in the toolbar.

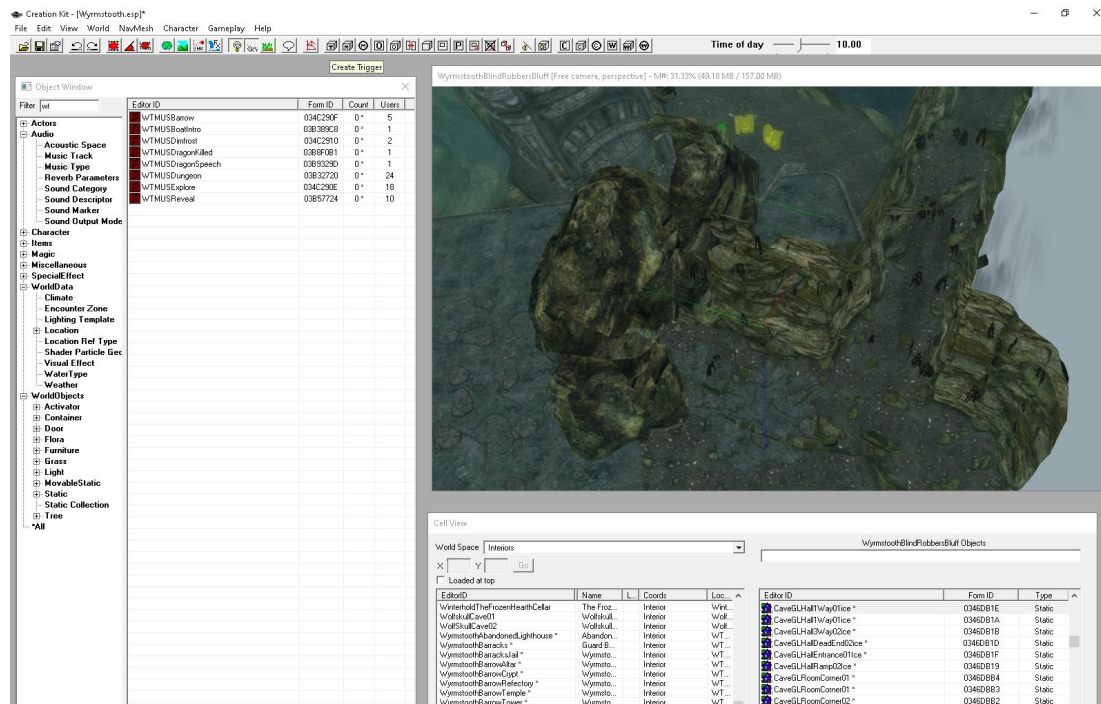


Figure 418 - Creating a new music trigger.

Filter by 'music' and select 'defaultAddMusicTrigger'.

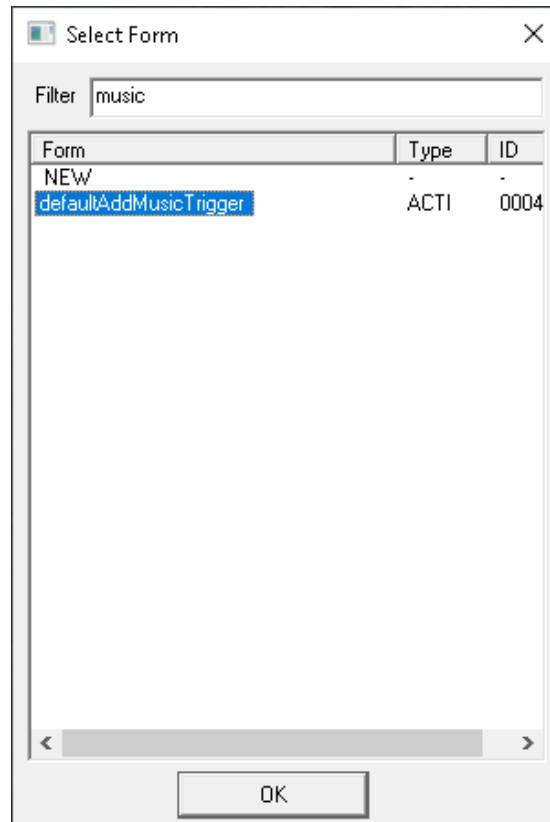


Figure 419 - Selecting defaultAddMusicTrigger.

A trigger box should appear in the render window covering the object you had selected.

Use the resize gizmo to change the width and height of the trigger box.



Figure 420 - Resizing the music trigger.

In my example, I'm adding the trigger to a pathway into a large cavern, so I'd need to make sure the trigger is wider than the pathway so the player can't walk around it. It also needs to be tall enough so the player can't jump over it.

In the Cell View window, right-click on the trigger and select Edit.

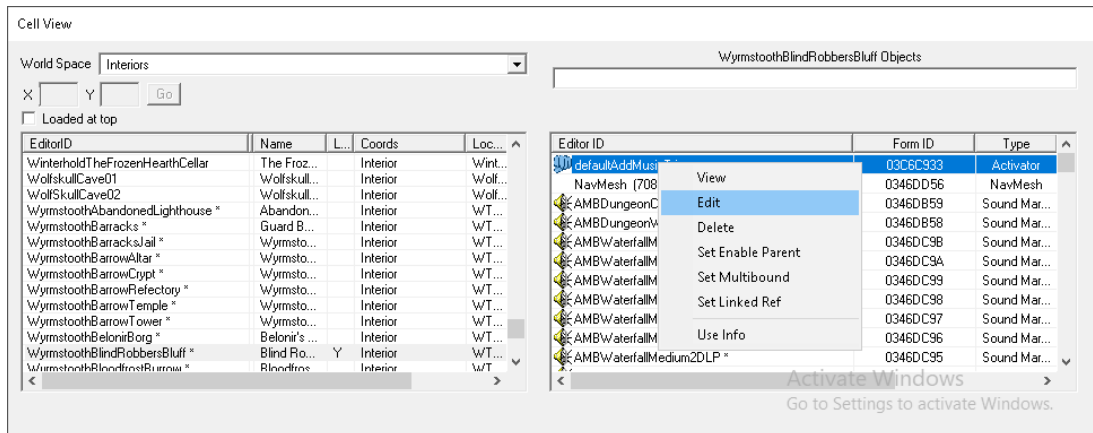


Figure 421 - Editing the music trigger's reference properties.

Go to the Scripts tab, ensure defaultAddMusicSCRIPT is highlighted then click on the Properties button.

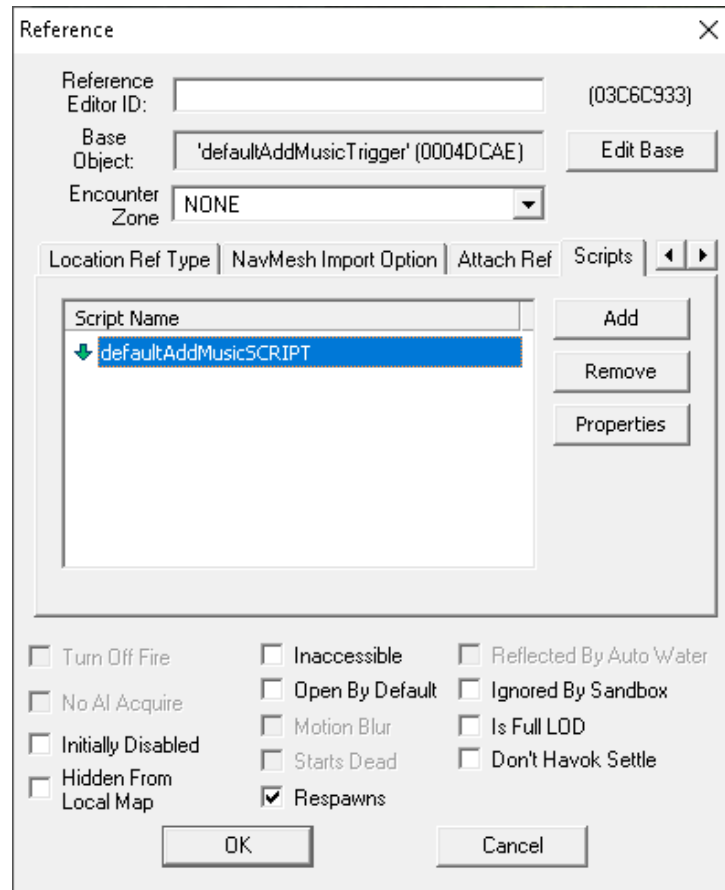


Figure 422 - Scripts tab.

Highlight myMusic and click on the Edit Value button.

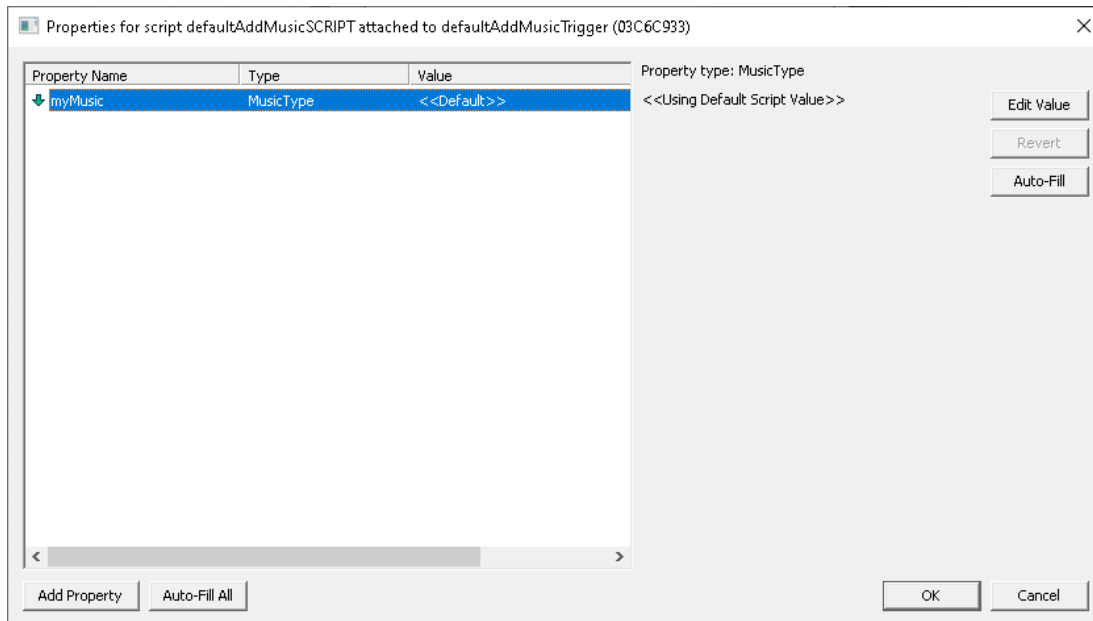


Figure 423 - Changing the music type that will be played.

Choose the music type you want to play when the player enters this trigger.

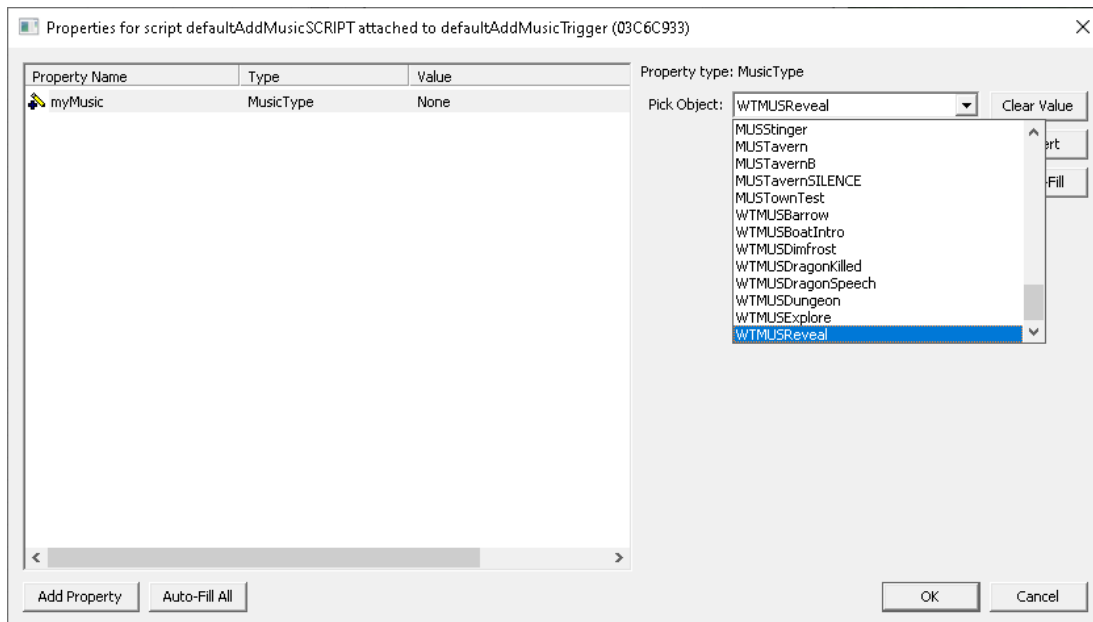


Figure 424 - Choosing the music type.

In the example above, I'm going to pick a custom music type. In the base game, MUSReveal is played when entering amazing looking places, and MUSDread is typically played before boss fights or to foreshadow that something bad is about to happen.

Click OK to close out of the script properties window.

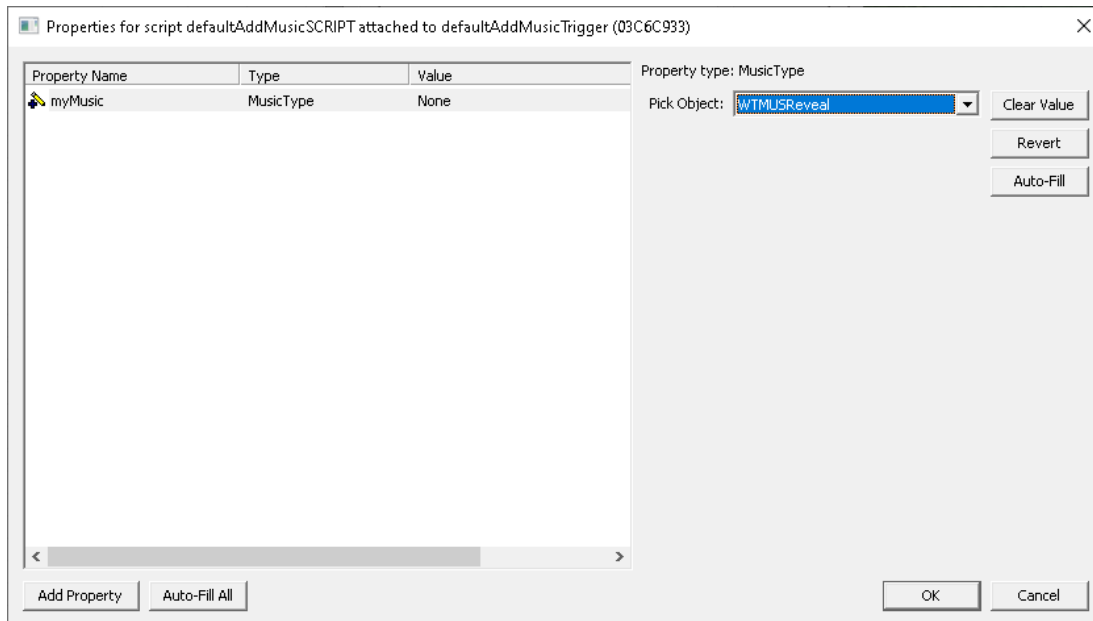


Figure 425 - Our music type has been set.

Click OK again to close out of the reference properties window.

The track you specified should now play in-game when the player passes through the trigger box.