Audacity for Mac

A guide to using our favorite free, open-source audio editing software, aka Audacity, to perform a range of audio editing and production tasks in moments

AudioAcrobat®

1st Edition

Introduction to *Audacity for Mac*

Here at AudioAcrobat, we are often asked which software is recommended to perform basic audio editing functions on our members' Mac computers. While there are many different pieces of software that allow for a wide range of audio editing tasks, we firmly believe that the free, open-source software, Audacity, is by far the easiest and most intuitive audio editing solution out there today.

In *Audacity for Mac*, our readers will find solid base of fundamentals at the beginning, followed by a hearty center of step-by-step walkthroughs which clearly outline solutions to common audio editing scenarios in the middle, and a number of essential how-to tutorials for effects included within the Audacity software as the icing on this homemade digital cake we baked just for you!

GETTING STARTED

This eBook is intended to be a companion guide to accompany you along your way as you not only begin using the powerful Audacity software for Mac, but also while you grow to develop a firm understanding of its more complex capabilities and put them to use in future editing projects and productions.

As this software may not already be installed on your Mac, please continue on to Chapter 2 for installation instructions. If you already have Audacity installed on your Mac, but have not yet integrated the popular MP3 encoder, LAME, please continue on to Installing the LAME MP3 Encoder for an in-depth explanation of this process.

If you already have the software fully setup, but are seeking introductory knowledge on what you see once an audio has been opened, we recommend skipping ahead to Chapter 3. Chapter 4 is an extremely important section which focuses on navigating your audio and shouldn't be overlooked by anyone who values their time, or rather spending the least amount of it on the editing process.

Our (most requested) essential guide to removing unwanted chatter in your audios encompasses Chapter 5, and our 2nd most requested guide, mixing intro music, makes up Chapter 6. The full-fledged effect explanation guide makes for an expansive read in Chapters 7 and 8, which also includes several before + after audio examples for your listening pleasure. The final chapter is a complete guide to exporting in the MP3 format and adding pertinent metadata.

All-in-all, we feel that *Audacity for Mac* will help ease any apprehension you may have toward the often daunting task of cleaning up audios and achieving the audio editing + production goals for you, your company and/or your clients. If there's anything that you feel could be better explained or is simply not included in this eBook, please drop us a line at support@audioacrobat.com or give us a call at (866) 891-0087, and we'll do our best to clear up any questions or concerns you may have.
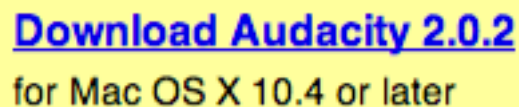
Installing Audacity

Let's begin by walking through the process of installing and setting up Audacity for Mac OS X. After the Basic Setup, readers will also find a quick guide for setting up the ability to export MP3 files using the LAME MP3 Encoder.

Where to Get It ... for FREE!

There are plenty of impostors out there on the web pushing their 'free' audio editing software. Some may even tell you that it's Audacity, but don't be fooled. There is one tried and true location to pick up your free download of Audacity, and that location has been, is and will continue to be in the foreseeable future http://audacity.sourceforge.net/.

Basic Setup

Once the page has loaded, our readers will want to click the link for Mac OS X, as shown here:

A pop-up window should now appear asking where to save the **audacity-macosx-ub-2.0.2** file. Make your selection (we usually choose the **Downloads** folder) and confirm by clicking **Save**.

Hint: If you were not prompted to specify a location, you may need to refer to your internet browser settings to determine the default location of files downloaded from the internet to your computer's hard drive.

Hint: As time moves forward, newer versions of Audacity will become available. The installation process shouldn't change very much and at most, new version numbers and filenames will display.

After the download completes, go ahead and launch the **.dmg** file you've just downloaded to begin the Audacity setup process. A **Finder** window should appear similar to this:
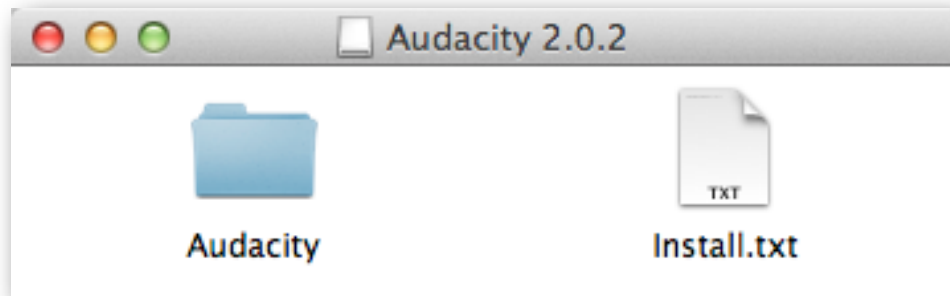

If the **Install.txt** file is opened, there is a simple instruction prompting the user to copy the Audacity folder to **/Applications**.

To perform this action, simply **copy** the Audacity folder (right-click copy, ⌘+C or Edit >> Copy "Audacity") and navigate to your **Applications** folder in **Finder**, where you will **paste** (right-click, ⌘+V or Edit >> Paste "Audacity") the copied folder and its contents.

A simple drag + drop of the Audacity folder into the Applications folder will also perform this same function.

A finished copy + paste into the Applications folder should look like this:
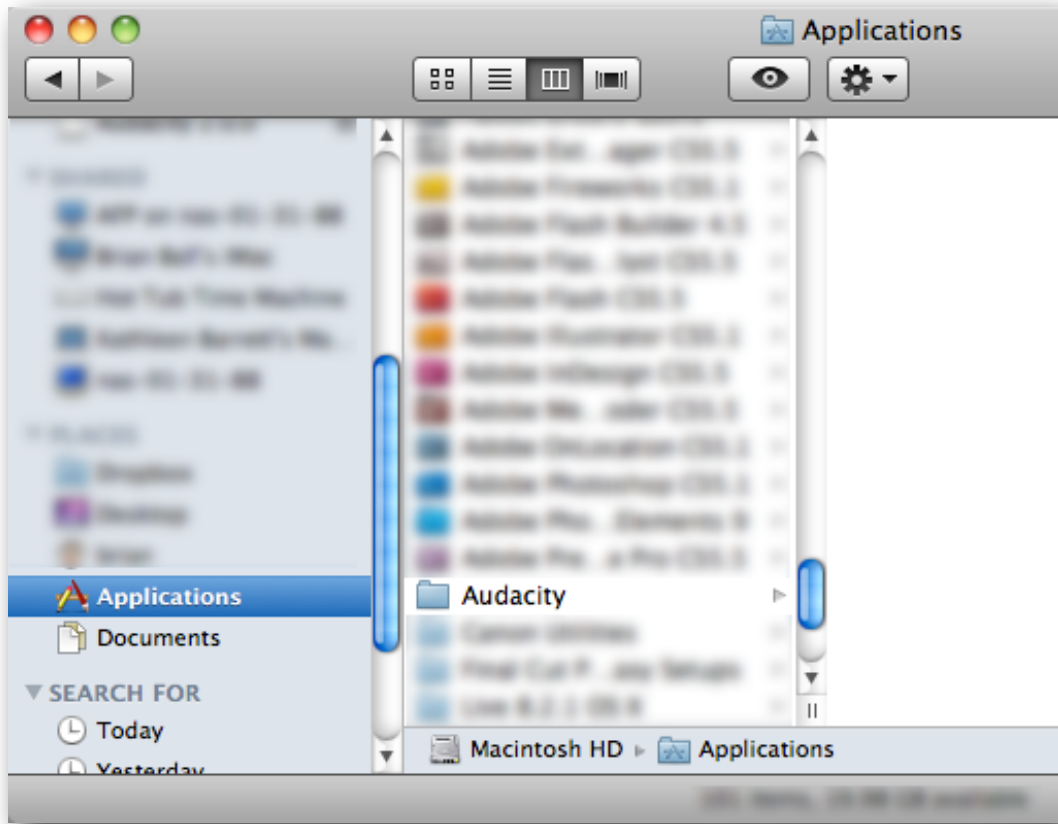
Now that the Audacity folder and its contents have been copied and pasted into the Applications folder on your computer's hard drive, launch the Audacity application by double-clicking the Audacity icon in the Finder window.

Hint: You can also open the Applications folder found on your Dock, click the Audacity folder and click on the Audacity icon to launch the program.

Hint: Want to keep Audacity in your Dock for easy access in the future? Right-click the Audacity icon in the dock, after it has finished bouncing, and choose Options >> Keep In Dock. If you ever wish to remove Audacity from the Dock, you can simply drag + drop it into the Trash.

Here, you should see the application open on your screen, which will look something like this:
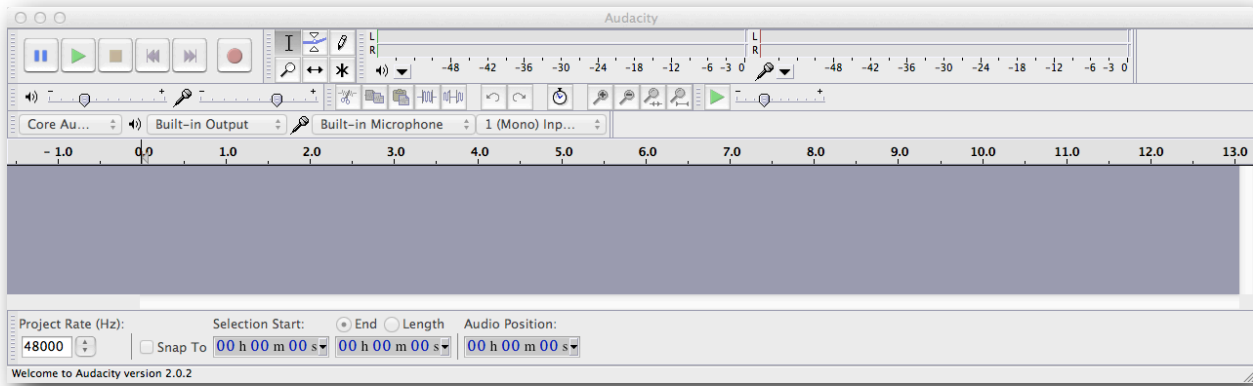
Success -- Audacity has now been installed on your Mac!

Installing the LAME MP3 Encoder

To recap, Audacity has now been installed and is setup to perform a variety of audio editing tasks. However, a very common question will arise when new Audacity users are ready to output their 1st edited file in the MP3 format: *What is this "LAME" file and how do I install it?*

The easiest way to ensure that the LAME MP3 Encoder has been properly installed is to open an audio file of basically any standard format (MP3, WAV, AIFF, etc.) and attempt to export the file in the MP3 format.

Opening files in Audacity is a breeze, and there are several ways to do so. The easiest is to simply drag + drop the file into Audacity, but you can also open file by clicking **File >> Open** or using the keyboard shortcut ⌘**+O**.
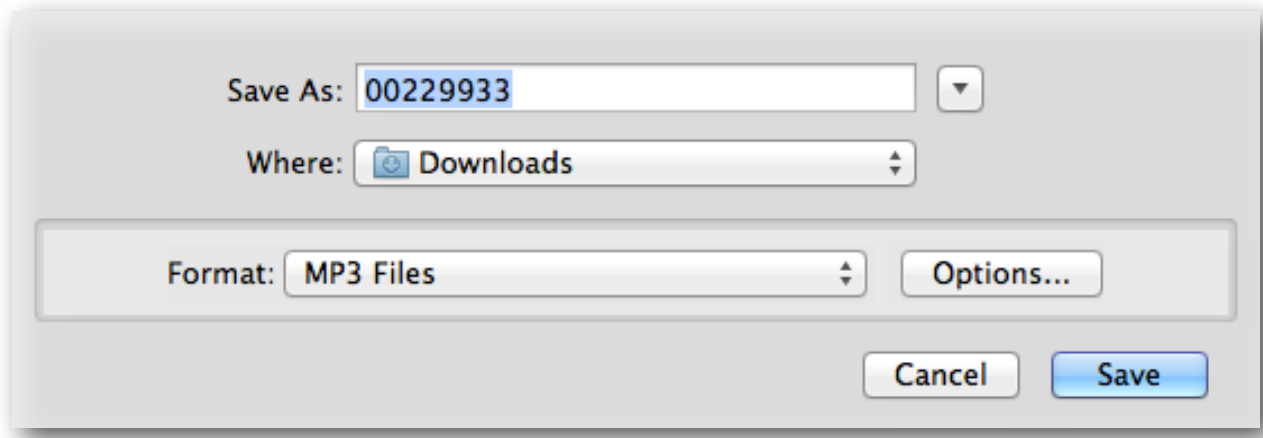
Once the file has been opened in Audacity, the waveform should appear as such:
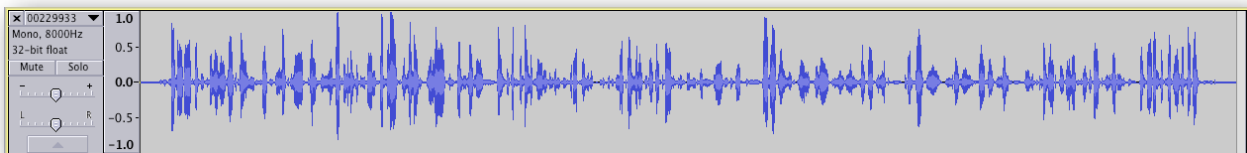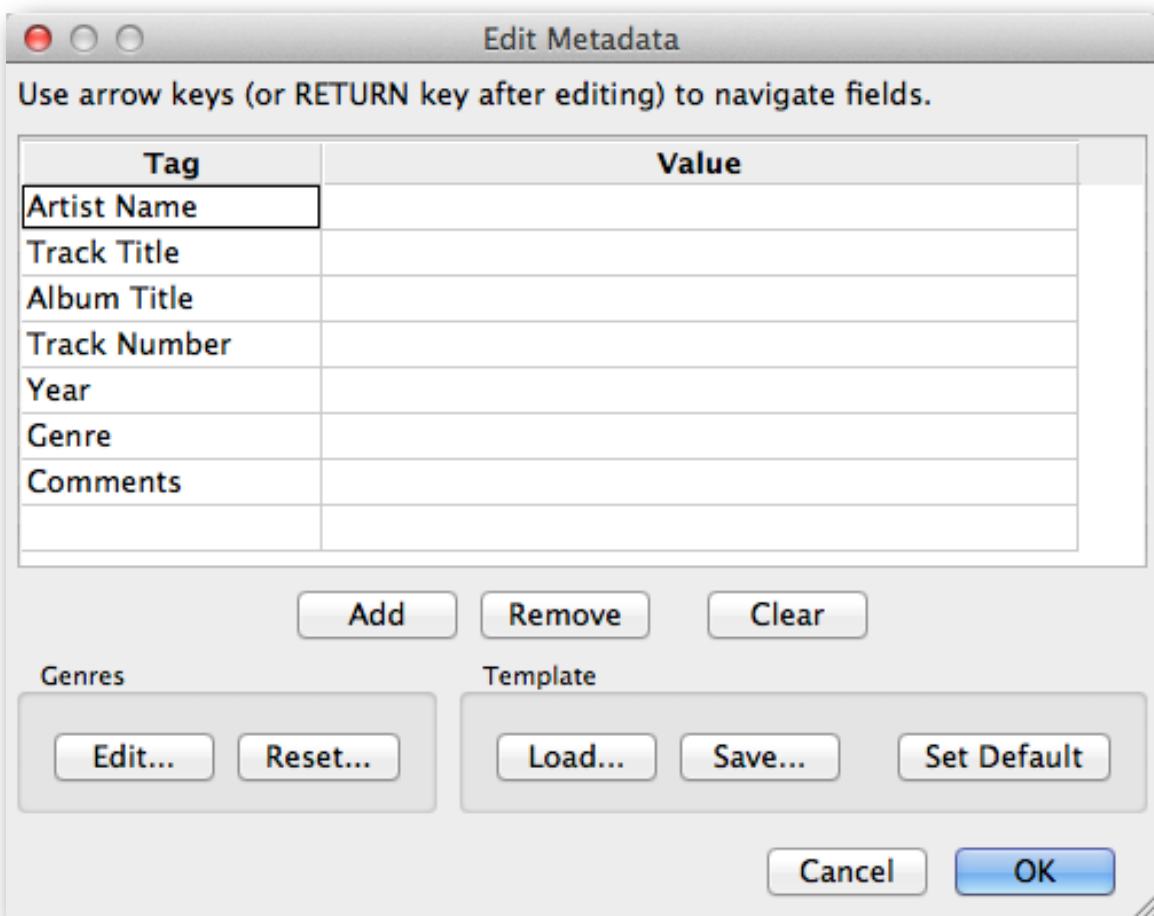

Begin the export process by clicking **File >> Export**.

Make sure to select **MP3 Files** from the **Format** drop-down menu and click **Save** to continue.

Hint: As the exporting of this file is for LAME installation only, feel free to ignore the location of where your newly rendered file will be created.


Here, the **Edit Metadata** pop-up will appear. Click **OK** to continue.

After clicking OK, the following pop-up will appear, notifying you that Audacity needs the **libmp3lame.dylib** file to create MP3s.

This is where 99% of all Audacity installations get stopped due to confusion. Not to worry, as we'll guide you through this process, which is a one-time only installation of the LAME MP3 Encoder.
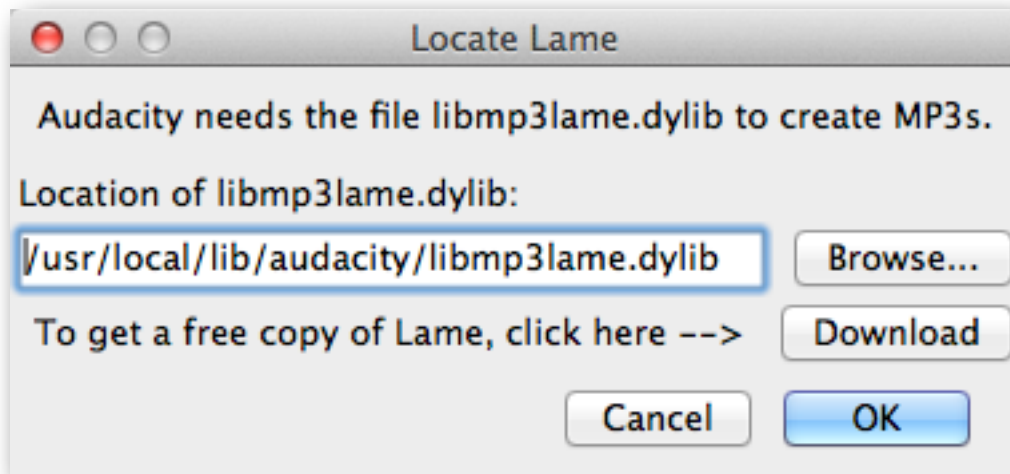
Do you see that friendly looking **Download** button in the **Locate Lame** pop-up window? Click it and your internet browser should take you to this page.

Here, you will want to follow the link under **Mac OS X**: 1. Go to the *LAME download page*.

Once this page opens, make sure to select the version shown below for Mac OS X:

Hint: There are several advertisements on this page that mention Download, Free Download, Download Now, etc., so please be aware that you are looking specifically for the link seen in the image above that points here. Others will take you to products/software that are not relative to the installation of the LAME MP3 Encoder for use with Audacity.

A pop-up window should appear after clicking the link above, asking where to save the **Lame_Library_v3.98.2_for_Audacity_on_OSX** file. Make your selection (we usually choose the **Downloads** folder) and confirm by clicking **Save**.

Hint: If you were not prompted to specify a location, you may need to refer to your internet browser settings to determine the default location of files downloaded from the internet to your computer's hard drive.

Hint: As time moves forward, newer versions of the LAME MP3 Encoder will become available. The installation process shouldn't change very much and at most, new version numbers and filenames will display.

After the download completes, go ahead and launch the **.dmg** file you've just downloaded to begin the LAME MP3 Encoder setup process. A **Finder** window should appear similar to this:
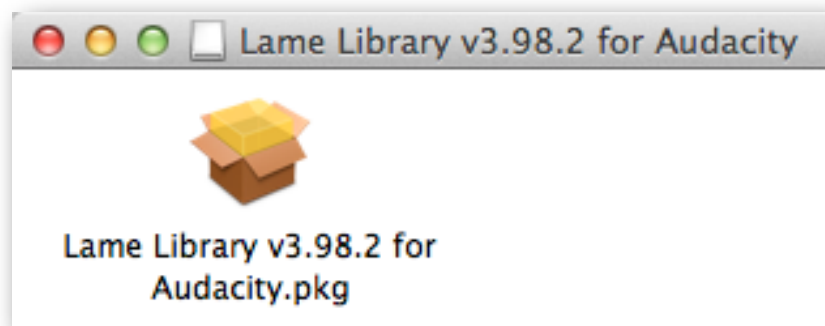
Double-click the .pkg file to continue the installation process. A familiar looking installation window should appear, looking like this:
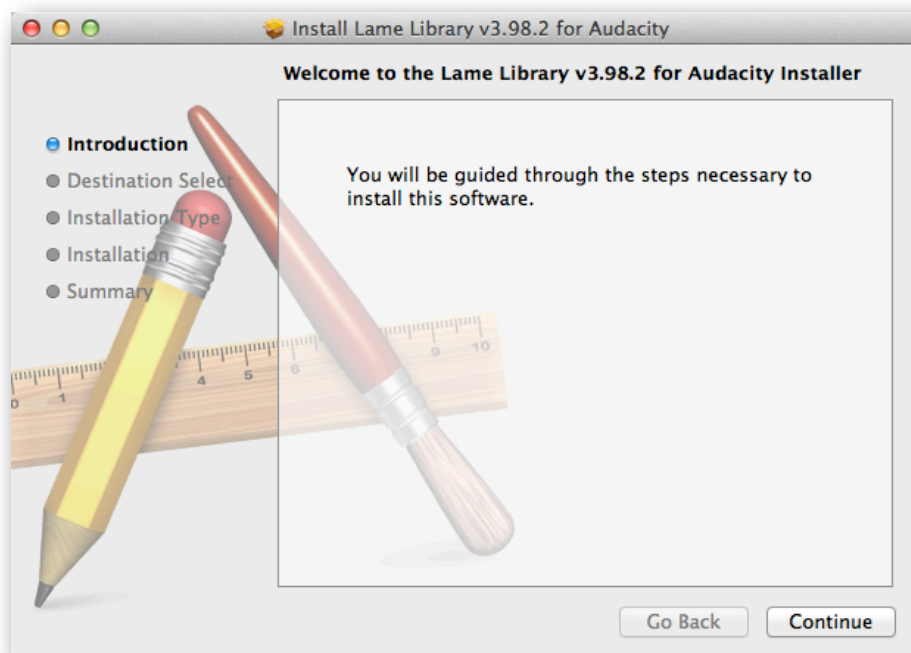
Follow the on-screen prompts in the installation window (Continue, Install, etc.) to complete the installation process. Once completed, you should see the following message:
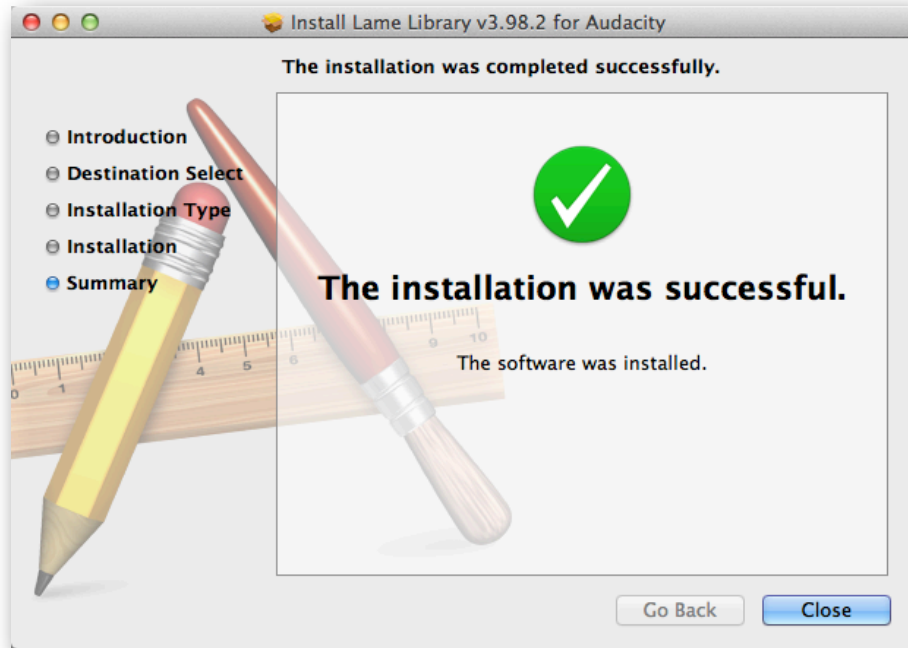
Switching back to the Audacity application and the **Locate Lame** pop-up window, go ahead and click **OK**:
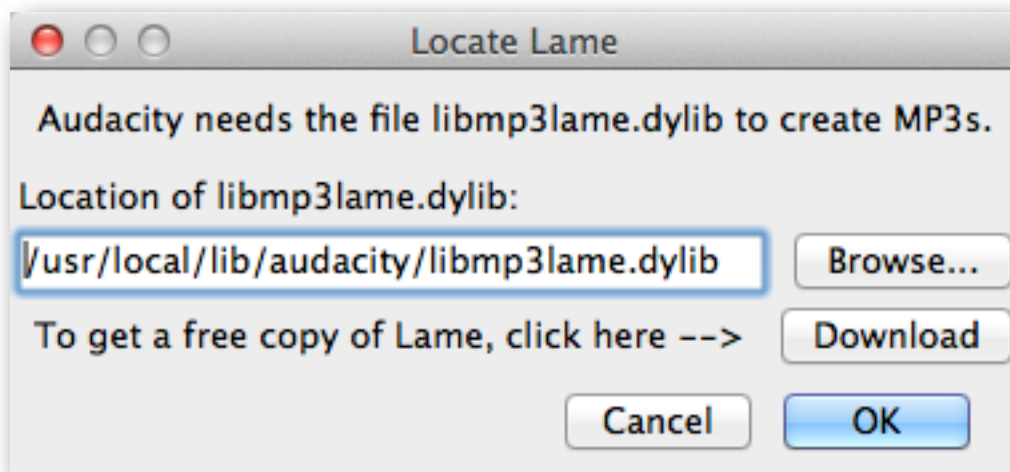
Don't be alarmed if you don't see anything happening on the screen at this point, as rendering MP3 files, especially very short audios, can take only a second or two. Longer audios may cause Audacity to display a progress window while the MP3 file is being created.

At this point, the LAME MP3 Encoder has been successfully installed on your computer for use with Audacity, so give yourself a pat on the back for a job well done!

Understanding What We See

As mentioned above, the easiest way of opening a new file is to simply drag + drop the file into Audacity, but understanding what we see once the file has been opened is just as important, if not more so, than knowing how to open the file in the first place.
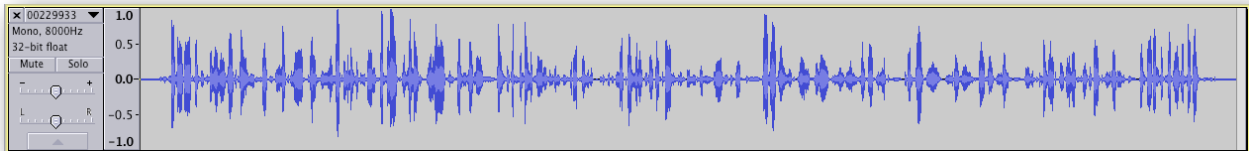
We're not going to get super technical here, but want to make sure that we cover some of the basics in terms of understanding the audio waveform seen in front of us.

Peaks and Valleys

When opening a file in Audacity (and many other audio editing softwares), the audio waveform will appear as a series of lines and curves, which will look something like this:

The peaks on both the positive and negative side of the midpoint (0) represent louder sections of the audio   The farther from 0, the louder the audio.   Where the waveform gets closer to 0 (valleys) represents where the audio is at its quietest. The closer to 0, the quieter the audio.

Hint: When performing basic audio editing tasks, such as removing chatter, unwanted interruptions or nuances (coughing, dog barking, um's and ah's, etc.) the closer to 0 the in/out edit points are will result in a cleaner edit.

Let's take a look at selecting ideal waveform edit points in the screenshot below. See how the beginning and ending points of the highlighted area are closest to 0? These points make ideal in/out points of a basic edit because the volume is quietest at these points and will sound smoothest post-edit.
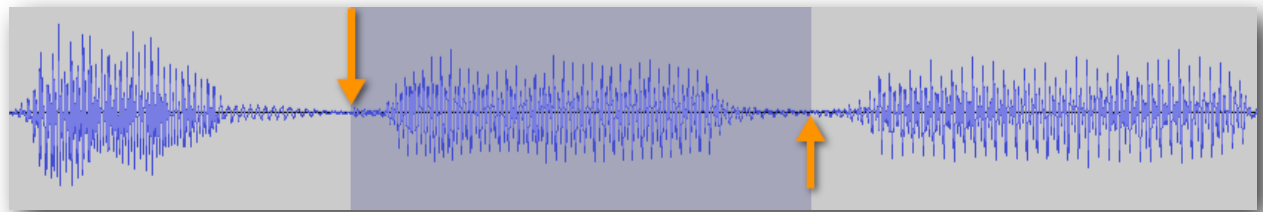
Clipping

If you notice that the peaks of your waveform are not dynamic and seem to be cut off or drawn in a solid fashion across the top/bottom, with no discernible ending points at the edges, chances are you're losing a bit of quality at these loudest points.

Below is an example of a waveform that has a good deal of clipping. See the difference between this and the previous waveform?
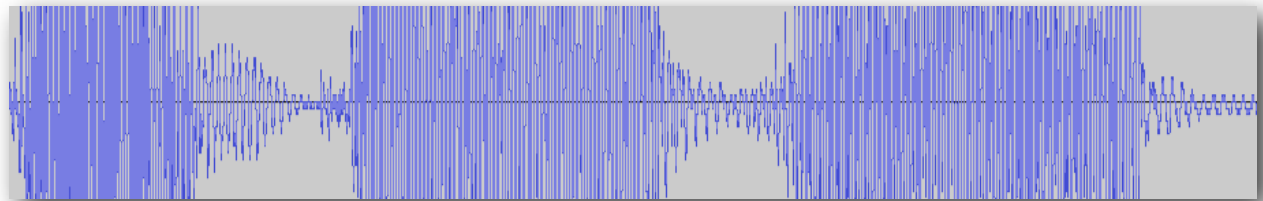
We can anticipate that due to this clipping, our audio will not be sounding its best. While there are ways to [repair clipped audio](#) using Audacity, we'll be getting into that a bit later.

In terms of your audio sounding its best, we always want to keep our peaks high, but not so high that they are clipping. On the contrary, if there is very little diversion from the midpoint (0), our audio will sound extremely quiet, such as the example seen below:
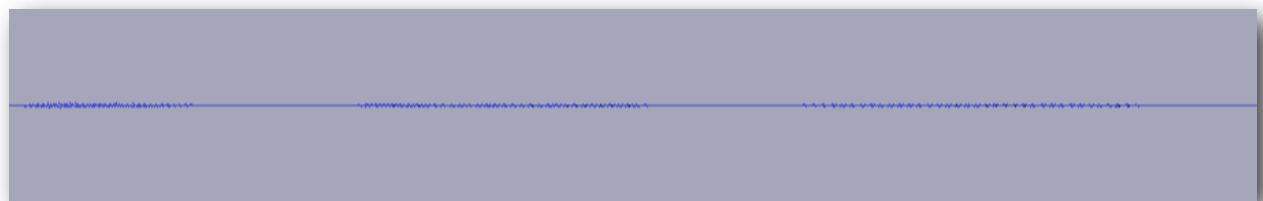
Navigating Our Audio

Now that we know a bit about what we see in front of us after opening our audio, it is important to understand how to best navigate within our audio.

Oftentimes, we like to start by making sure that we can see the full waveform, spanning the entirety of our audio's duration, as large on-screen as possible. Some helpful keyboard shortcuts we like to use immediately after opening our audio in Audacity to achieve these goals are as follows:

Keyboard Shortcuts

Key: ⇧ = Shift | ⌘ = Command

Fit In Window: ⌘+F | The action of this keyboard shortcut can also be found by clicking **View >> Fit In Window**, and allows the entire audio to fit neatly left to right in the visible window. This is especially helpful for viewing the full waveform of longer audios without needing to scroll left/right.

Fit Vertically: ⇧⌘+F | The action of this keyboard shortcut can also be found by clicking **View >> Fit Vertically**, and expands the audio waveform as far to the top/bottom of the visible window as possible, thereby showing a large version of your waveform...perfect for identifying the best edit points!

After expanding our audio using the methods above, we should see something like this:
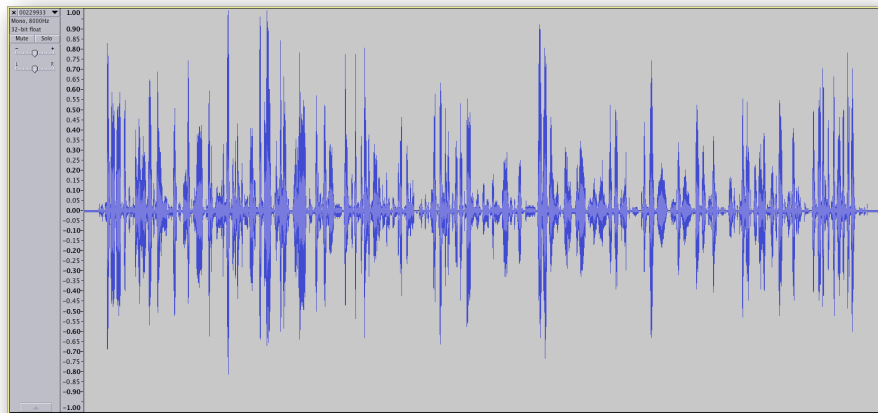
Playback, Zoom & Highlighting

Moving around within our audio can be a very easy process, once the fundamentals have been established. Simply put, using a combination of our mouse and keyboard is essential to simplifying the process and keeping our time spent on editing to a minimum.

When opening an audio, the cursor will always start as far left as possible, at the very beginning of our audio (0:00). Pressing the space bar will toggle the playback/pausing of the audio, beginning wherever our cursor may be, and always moving from left to right. Left being the beginning and right being the end, very much like reading the written English language.

Click with your mouse anywhere within the visible waveform to place your cursor at the desired location and press the space bar. Notice that the audio will begin to play from the point defined by where your mouse was clicked. This is an easy way to jump back and forth within the visible waveform and listen, or re-listen to specific portions of an audio.

If you're unable to see the peak or valley you're aiming for (remember, valleys always make the best starting / ending points) as a start point, you may want to **Zoom In** to get a better view. This can be done in a variety of ways, such as clicking the magnifying glass icon (**Zoom Tool**) at the top and clicking with your mouse where you want to zoom, or our personal favorite, clicking once with the regular cursor (**Selection Tool**) to define the zoom point and using the keyboard shortcut ⌘**+1** to zoom in.

Using our mouse, we can click + drag to highlight a desired section of the audio, and using the space bar, we can play back the highlighted area only. If the highlighted area is what we wish to remove from the audio, such as a dog barking, coughing, sneezing or other unwanted sounds, this can easily be accomplished by pressing the **Delete** key.

After having zoomed in, we can then **Zoom Out** using the keyboard shortcut ⌘**+3** or the **Zoom Normal** shortcut ⌘**+2**. If we want to see the entire audio again, the ⌘**+F** keyboard shortcut will fit the entire audio in the visible window once again. Don't worry if you forget any of the keyboard shortcuts mentioned above, as all of these functions (and more) can be found by clicking the **View** toolbar at the top.

Use these methods to navigate your audio and keep practicing, as they are the fundamentals which will help keep your editing time as short as possible, leaving more time for other aspects of your business such as selling your audio, marketing your products or services and even taking that much needed break at the end of the day.

Removing Unwanted Chatter

Have you ever wanted to remove the first or last couple of minutes from your phone recording?

Perhaps you've recorded a teleconference or telesummit that includes welcome chimes or attendee introductions, or maybe there's a bit of confidential information that needs to be removed prior to posting online?

For whatever reasons you may have to eliminate this unwanted chatter, we'd like to show you how you can remove any length of audio from the beginning, trailing end or anywhere in the middle of your recording, in just a couple easy steps.

Step 1: Open Audio

With the Audacity software open, use the keyboard shortcut **⌘+O** or click **File >> Open** and choose the audio you wish to edit. After the file loads, you should see the waveform appear as such:
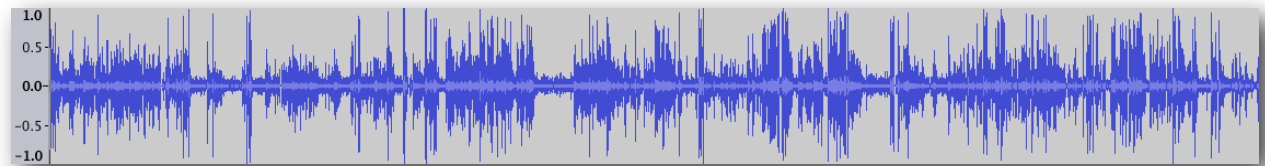
Step 2: Highlight & Delete

The next step is to identify and select (highlight) the area you wish to delete.

Use your mouse to click anywhere along the timeline to place your cursor at the specified time. Audio playback can be easily activated at any time by pressing the space bar on your keyboard. This will play the audio beginning at the cursor's location on the timeline. Press the space bar a second time to stop playback. Press the space bar again to resume from where you left off.

If removing a section from the beginning of an audio, we've found it easiest to begin by placing your cursor at the point in the audio in which you wish the edited version to begin. Then, using the keyboard shortcut ⇧J to highlight the entire area between your cursor and the beginning of the track, pressing the **Delete** key will then remove the unwanted (highlighted) selection.

What's that? The portion you wish to remove is at the end? Indeed, there is a similar method for removing a section from the end of an audio as well.

In this case, the keyboard shortcut ⇧K can be used to highlight the entire area between your cursor and the end of the track. Once highlighted, pressing the **Delete** key will remove the unwanted selection.

This same principal of highlighting a section of audio and using the Delete key to remove it, can also be applied to audio contained within the middle of your audio as well.

Instead of simply placing our cursor at a point within the audio and using a keyboard shortcut to select all the way to the beginning/end of the audio, the click + drag method can be used to select any area of audio, anywhere along the timeline. After making (and listening to) your selection, pressing the **Delete** key will remove the unwanted selection.

Hint: Remember the ideal waveform in/out edit points <u>we mentioned earlier</u>? Use this method for selecting the ideal in/out points of each edit to ensure that a smooth transition is always achieved.

Step 3: Export Audio

When satisfied, select **File >> Export** to save the newly edited version and <u>head over to AudioAcrobat</u> in an internet browser to begin the upload process.

Aside: Using the above steps, you now have the power to not only remove any unwanted chatter from your recordings, but also the knowledge of how to trim the beginning, end, and anywhere in the middle of any audio in your studio.

Adding Intro Music

Have you ever wanted to add a musical intro to your spoken word recording? Perhaps you've purchased a sample pack of royalty-free music and are just *dying* to put it to good use?

In this portion of *Audacity for Mac*, we walk our readers through the process of mixing in a short musical intro to any spoken word audio track, such as interviews, coaching sessions, teleconferences, audiobooks and more for a professional sounding opening which is sure to engage your listeners from the moment they click play!

Step 1: Open Audio

With the Audacity software open, use the keyboard shortcut ⌘**+O** or click **File >> Open** and choose the spoken word audio you wish to add an intro to. After the file loads, you should see the waveform appear as such:
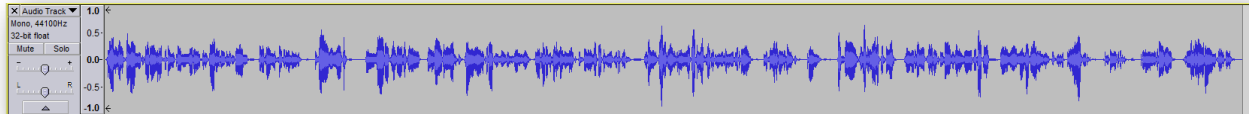
We will now want to add a second track to our Audacity project...you guessed it, the one which contains our intro music. To do this without creating a new project, we'll use the **File** menu and choose to **Import >> Audio**, or use the keyboard shortcut ⇧**+⌘+I** and select the intro audio.

After importing the intro music, you should see both tracks in the same window, aligned on top of one another like this:
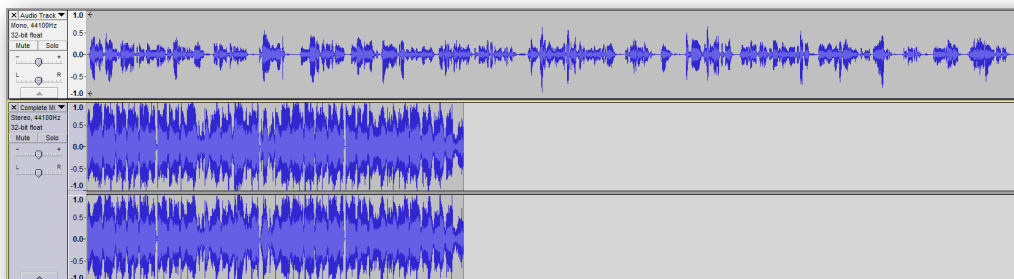
Step 2: Arrangement

Knowing that we want the music to play by itself at the beginning, and after a couple seconds begin to overlap only a short portion of our spoken word track, we will need to move the spoken word track farther to the right, in essence placing the intro music at the very beginning and overlapping just the last short bit before the spoken word is the only track heard.

This can be easily accomplished by clicking the **Time Shift Tool** (the double sided arrow seen in the first screenshot below) icon and clicking + dragging our spoken word track to the desired location, as seen in the second screenshot below:
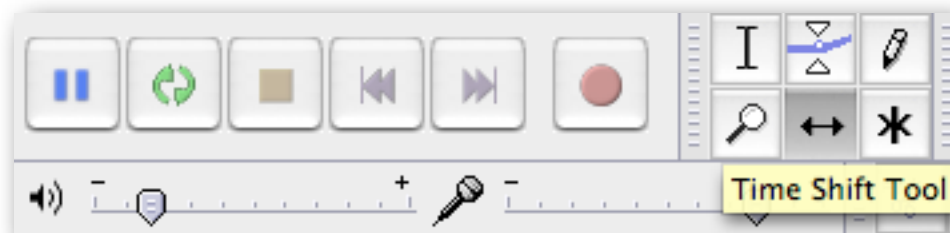

After listening to the arrangement several times, we decided on the placement seen above.

When comparing the two waveforms however, we can tell that the intro music is going to be much louder than the spoken word track. Take a listen below, and you'll hear exactly what we mean:
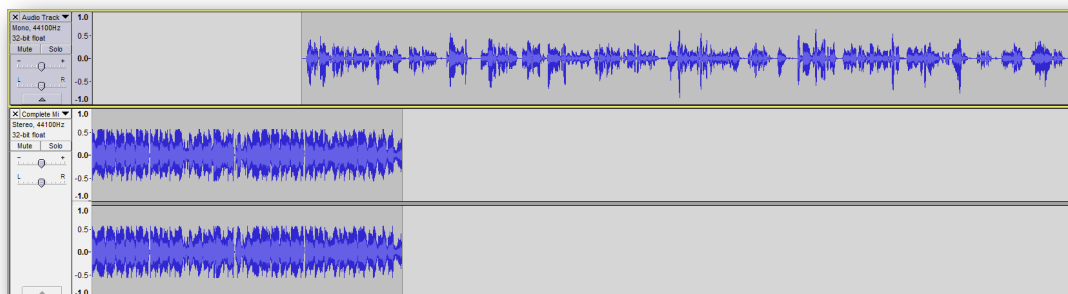
[LISTEN TO THE ABOVE CLIP!](#)

Step 3: Amplify

What we will want to do next is lower the volume of the intro track to better match that of the spoken word. This will keep the sonic distance between the two much closer, for a better sounding end product. To do this, we will click back to the default **Selection Tool** (seen in the first screenshot below) and click + drag to highlight just the intro music, as seen in the second screenshot below:
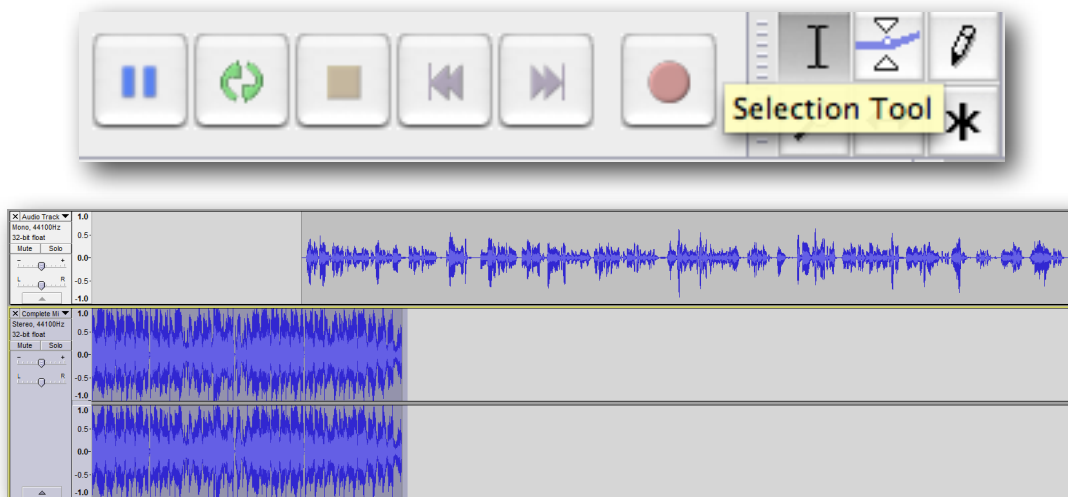
After highlighting just the intro music, we'll select the [Amplify Effect](#) and take it down by about 5dB (this value will differ from project to project).

Our applied effect will render the project to look more even, like this:

[LISTEN TO THE ABOVE CLIP!](#)

Step 4: Fade Out

While this is starting to sound pretty good, there is one more adjustment that will get our intro whipped into shape.

Listening to the overlapping area, we hear the voice ever so slightly overtaken by the intro music. What we can do to help this out is to apply a simple fade to the intro music.

Again using the default **Selection Tool**, click + drag with your cursor to highlight from the very end of the intro music to a short distance prior to where the spoken word begins, like this:

After making our selection, we'll use the [Fade Out](#) effect to smoothly fade the intro music out to silence.

Looking at our newly faded waveform, we can see that the volume smoothly decreases along the length of our selection.

Step 5: Export Audio

When satisfied, select **File >> Export** to save the newly edited version and head over to [AudioAcrobat](#) in an internet browser to begin the upload process.

Aside: Using the above steps, you now have the power to add multiple tracks to an Audacity project and perform a variety of fades and arrangements that will suit many different types of audio editing / mixing projects — yay!

Audio Effects Pt. 1

Located within the vast expanses of the Audacity program menus, users will find an extensive list of effects which can be applied to their audios in an almost infinite amount of ways to accomplish their audio editing / production goals.

Click the **Effect** menu at the top of the page to view the full list, as seen here:

In the following pages, we will quickly walk through the process of using many of the effects seen in the list above, while offering useful insight as to how each effect can be best applied to specific audio editing tasks you may encounter along your way.

Amplify

Is your audio too quiet? Too loud? The **Amplify** effect will help you achieve the ideal volume for your recordings, no matter how far away from perfection they may start.

Step 1: Open Audio

With the Audacity software open, use the keyboard shortcut ⌘**+O** or click **File >> Open** and choose the audio you wish to edit. After the file loads, you should see the waveform appear as such:
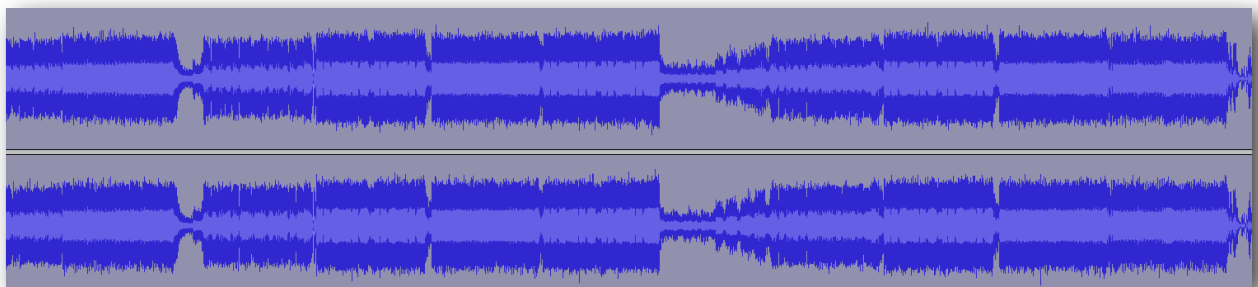

Step 2: Highlight & Amplify

It really is that simple. Click + drag with the mouse cursor or for those keyboard enthusiasts out there use ⇧ **+ Left / Right** arrow keys to make a selection.

For the **Amplify** effect, our readers will want to make sure to select the area which encompasses the intended duration for which the effect is to be applied.

Here our readers will want to select **Effect >> Amplify**.

Immediately after selecting the Amplify effect, the following pop-up window will appear:
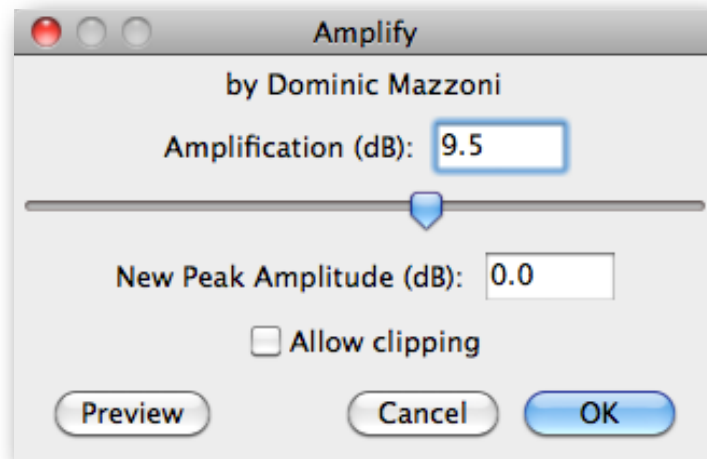
Use the **Amplification (dB)** slider to increase (make louder) / decrease (make quieter) the Amplification effect to be applied. Use the **Allow clipping** check box to allow the adjusted waveform to exceed 0dB post-effect (not recommended). An extremely useful feature of this effect is that when loaded, it will display the maximum positive value which can be applied to the audio without applying clipping in the Amplification (dB) field.

After applying the **Amplify** effect, our readers will see the waveform in the selected area either increase or decrease in size, depending on if they've chosen a positive or negative Amplification (dB) effect.

For the example seen here, we've chosen a positive Amplification value, which will cause the audio to become louder (and the waveform to become larger), as seen below:
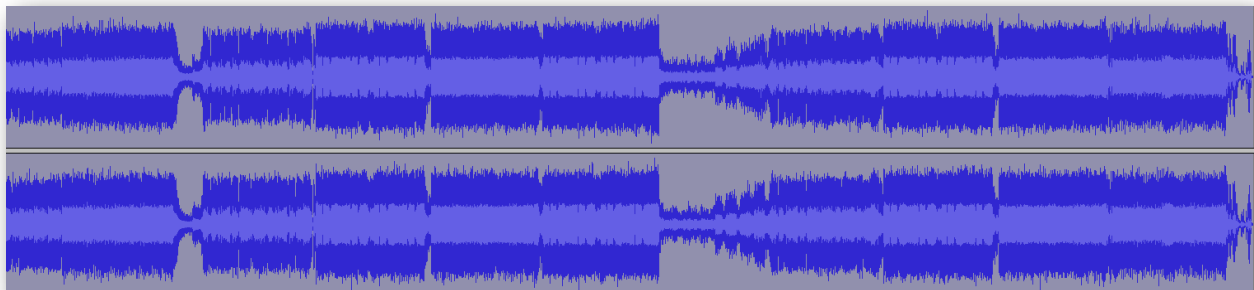

Aside: This is one of the most useful effects found within the Audacity software, and will be your go-to tool anytime volume adjustments of any magnitude are needed.

BassBoost

Does your drum sample require a deeper bass tone? Is your vocal track mostly treble? The **BassBoost** effect will aid you in adding the perfect amount of bass to an otherwise timid audio.

Step 1: Open Audio

With the Audacity software open, use the keyboard shortcut ⌘**+O** or click **File >> Open** and choose the audio you wish to edit. After the file loads, you should see the waveform appear as such:
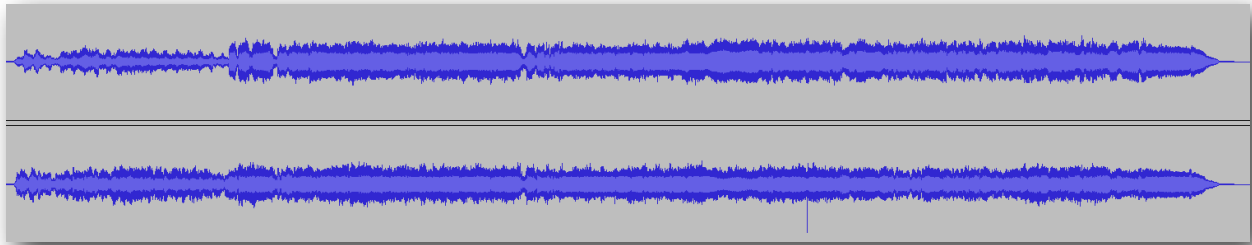

Step 2: Highlight & BassBoost

It really is that simple. Click + drag with the mouse cursor or for those keyboard enthusiasts out there use ⇧ **+ Left / Right** arrow keys to make a selection.

For a **BassBoost** effect, our readers will want to make sure to select the area which encompasses the intended duration for which the effect is to be applied.

Here our readers will want to select **Effect >> BassBoost**.

Immediately after selecting the **BassBoost** effect, the following pop-up window will appear:
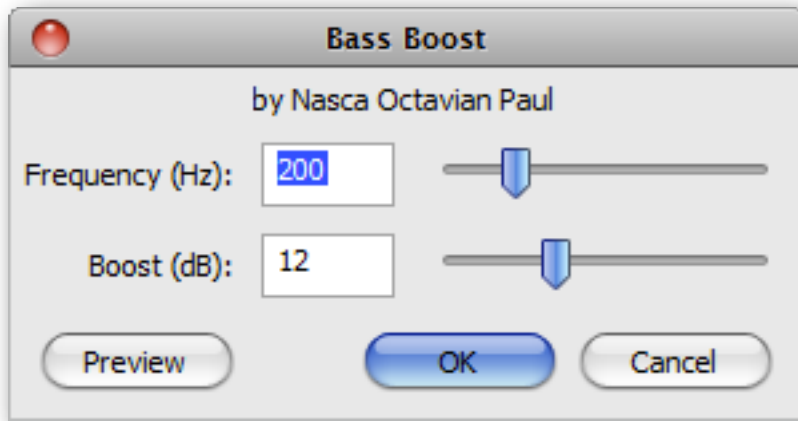
Use the **Frequency (Hz)** slider to decrease (deepen the bass) / increase (heighten the bass) the frequency to be boosted. Use the **Boost (dB)** slider to adjust the amplitude (amount) of the boost.

Use the **Preview** button to sample the effect before making a commitment and press **OK** to confirm the settings and apply the effect.

After applying the **BassBoost** effect, our readers will see the waveform of the selected area increase in size, depending on the amount of the **Boost (dB)** effect and selected **Frequency (Hz)**. For this example, we've chosen the default values of **200 (Hz)** and **12 (dB)**, and the effect can be seen applied below:
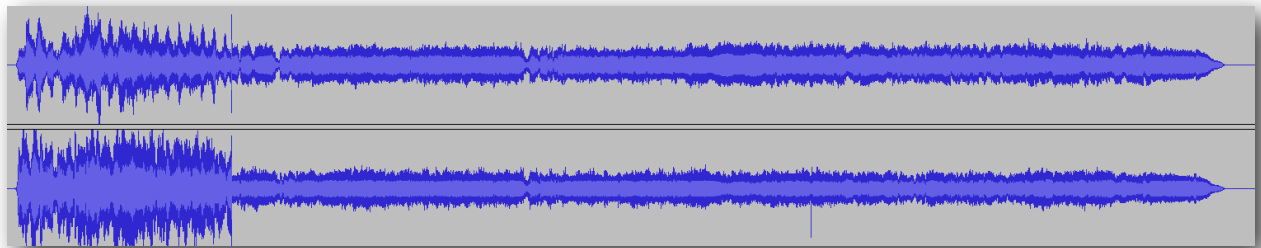
Aside: Compare this to the original waveform seen earlier in this example and see if you can pinpoint the area we boosted.

Change Pitch

Have you ever wanted to replicate the 'Chipmunk' vocal effect? How about taking your voice waaaaaaay down low to sound like Darth Vader / James Earl Jones? The **Change Pitch** effect can help you achieve either of these effects, and much more!

Step 1: Open Audio

With the Audacity software open, use the keyboard shortcut ⌘+O or click **File >> Open** and choose the audio you wish to edit.

Step 2: Highlight & Change Pitch

It really is that simple. Click + drag with the mouse cursor or for those keyboard enthusiasts out there use ⇧ **+ Left / Right** arrow keys to make a selection.

For the **Change Pitch** effect, our readers will want to make sure to select the area which encompasses the intended duration for which the effect is to be applied.

Here our readers will want to select **Effect >> Change Pitch**.

Immediately after selecting the **Change Pitch** effect, the following pop-up window will appear:
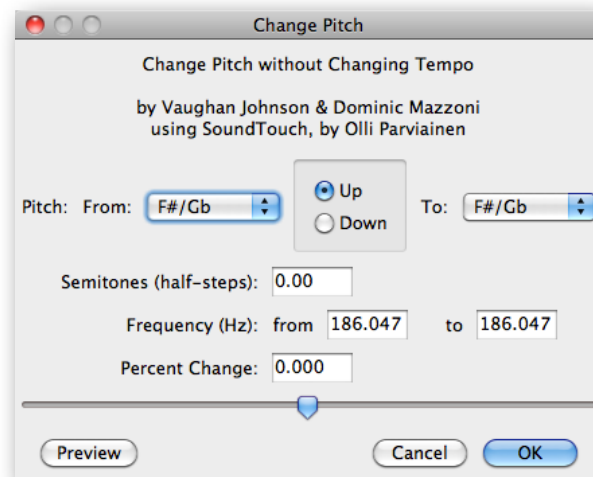
Use the **Frequency (Hz)** values to isolate the frequency to be changed. Use the **Pitch: From: / To:** drop-down menus and the **Up / Down** radio buttons to select from preset notes to move between. Go even more granular with the **Semitones (half-steps)** value box.

Use the **Preview** button to sample the effect before making a commitment and press **OK** to confirm the settings and apply the effect.

Change Speed

Do you import your vinyl records into iTunes? Digitize old cassette or reel-to-reel tapes? Have the desire to control the overall speed of your recordings, while affecting both tone and pitch? Use the **Change Speed** effect to set the pace, no matter how "off" the source material may be.

Step 1: Open Audio

With the Audacity software open, use the keyboard shortcut ⌘+O or click **File >> Open** and choose the audio you wish to edit.

Step 2: Highlight & Change Speed

It really is that simple. Click + drag with the mouse cursor or for those keyboard enthusiasts out there use ⇧ **+ Left / Right** arrow keys to make a selection.

For the **Change Speed** effect, our readers will want to make sure to select the area which encompasses the intended duration for which the effect is to be applied, which will usually be the entire audio.

Here our readers will want to select **Effect >> Change Speed**.

Immediately after selecting the **Change Speed** effect, the following pop-up window will appear:
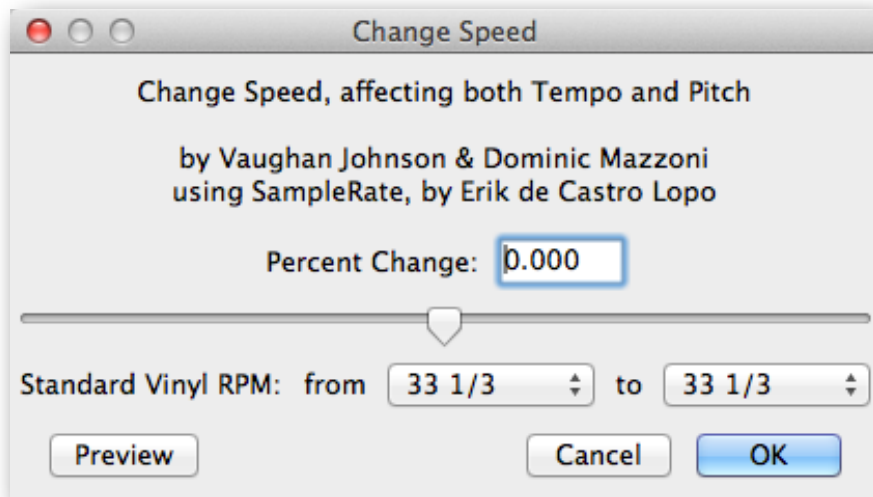
Use the **Percent Change** value / slider to apply a custom change of speed. Use the **Standard Vinyl RPM from/to** drop-down menus to use the included presets for switching between standard vinyl RPM's.

This can be really helpful if you are looking to save some time in the digitization process by recording a 33 1/3 RPM record at either 45 or 78 RPM and are now looking to slow it back down here in post-processing.

Use the **Preview** button to sample the effect before making a commitment and press **OK** to confirm the settings and apply the effect.

Change Tempo

Is Beethoven an idol of yours? Do you wish to make your BPM a bit more 'andante'? Whatever pickle you may find yourself in needing to change the tempo of your audio recordings (without changing pitch), this effect will help you become your own metronome through the application a **Change Tempo** effect.

Step 1: Open Audio

With the Audacity software open, use the keyboard shortcut ⌘**+O** or click **File >> Open** and choose the audio you wish to edit.

Step 2: Highlight & Change Tempo

It really is that simple. Click + drag with the mouse cursor or for those keyboard enthusiasts out there use **⇧ + Left / Right** arrow keys to make a selection.

For the **Change Tempo** effect, our readers will want to make sure to select the area which encompasses the intended duration for which the effect is to be applied.

Here our readers will want to select **Effect >> Change Tempo**.

Immediately after selecting the **Change Tempo** effect, the following pop-up window will appear:
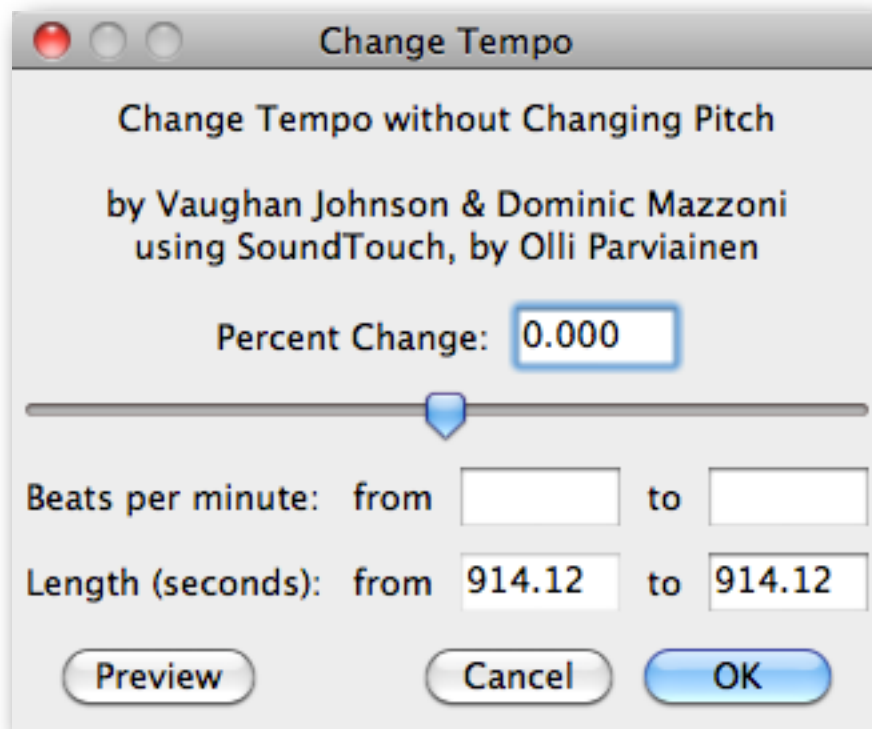
Use the **Percent Change** value / slider to adjust the **Length (seconds)** or type in a custom value in either box for specific adjustments. Use the **Beats per minute** value boxes to set a custom BPM.

Use the **Preview** button to sample the effect before making a commitment and press **OK** to confirm the settings and apply the effect.

Aside: This effect is very helpful if you enjoy the tone of your audio but still need to adjust the overall speed/length.
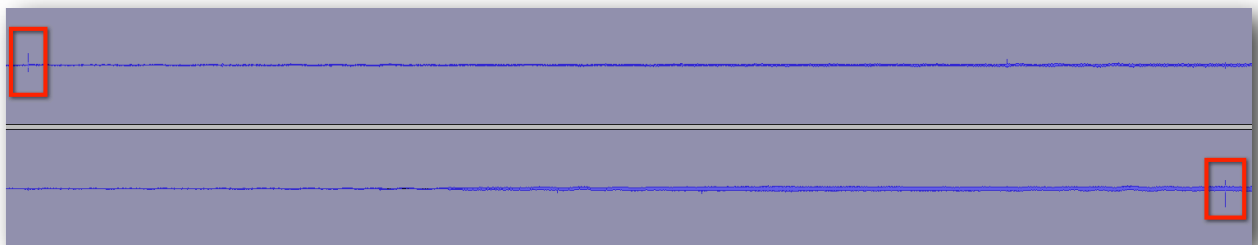
Click Removal

If you enjoy the sound of Rice Krispies when listening to your audio then this effect is not for you. If your audio contains unwanted clicks and pops and you are searching for an easy fix, please read on, as this is exactly what you will learn to control with this effect.

Get started removing these Rice Krispie-sounding nuances, without degrading the rest of the audio, through the application of a **Click Removal** effect.

Step 1: Open Audio

With the Audacity software open, use the keyboard shortcut ⌘**+O** or click **File >> Open** and choose the audio you wish to edit.   Once the file opens in Audacity, our readers will see something like this:

Enlarge the image above and you should see the (2) spikes aka 'clicks' that we're going to remove in this example. The first can be seen near the top-left and the second near the bottom-right.

Step 2: Highlight & Click Removal

It really is that simple. Click + drag with the mouse cursor or for those keyboard enthusiasts out there use ⇧ **+ Left / Right** arrow keys to make a selection.

For the **Click Removal** effect, our readers will want to make sure to select the area which encompasses the intended duration for which the effect is to be applied.

Here our readers will want to select **Effect >> Click Removal**.

Immediately after selecting the **Click Removal** effect, the following pop-up window will appear:
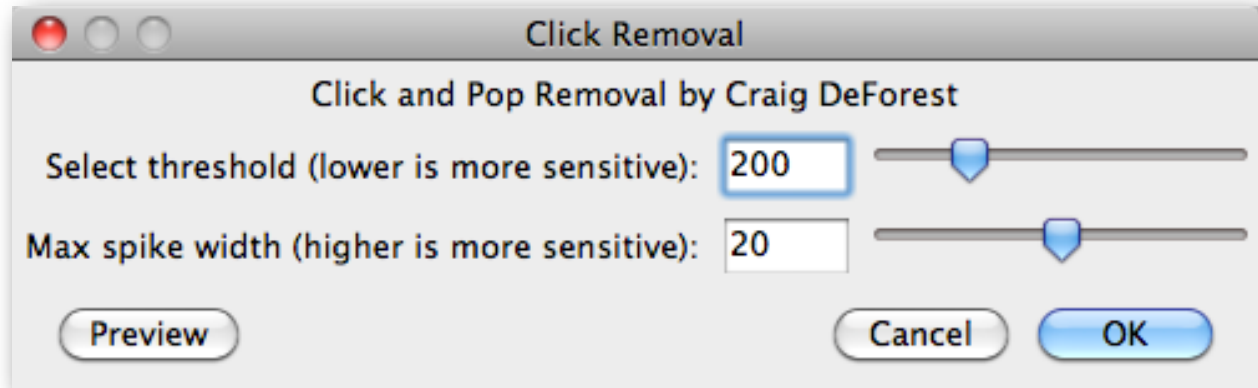
In this example, we will be using the default values seen above, but you are welcome to use the **Select Threshold** and **Max Spike Width** value(s) / slider(s) to fine-tune this effect per your specific needs.

Use the **Preview** button to sample the effect before making a commitment and press **OK** to confirm the settings and apply the effect.

Here, we see that the two spikes pointed out earlier in this post have been removed, without affecting the surrounding audio:
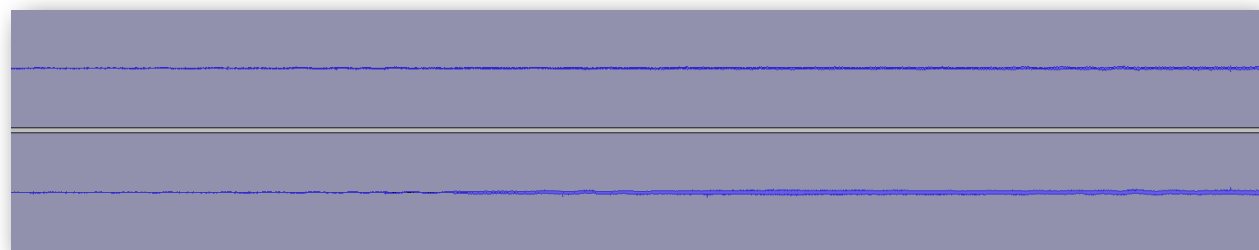
Clip Fix

There are only a couple main reasons why [clipping](#) would be present in an audio. One is that the audio has been "overproduced" or, for a better lack of terminology, is battling against others in the loudness wars. The second is that it has been recorded at too high of a volume or has been processed in a way that pushed its boundaries beyond the audible spectrum.

In this example we walk our readers through fixing this clipping and restoring the recording to a normal, non-distorted state!

If your audio sounds too loud or is noticeably distorted, and when looking at the waveform, appears similar to the image below, this example will show you exactly how to repair the audio as best as possible, without having to re-record!

Step 1: Open Audio

With the Audacity software open, use the keyboard shortcut ⌘+O or click **File >> Open** and choose the audio you wish to edit. Once the file opens in Audacity, our readers will see something like this:
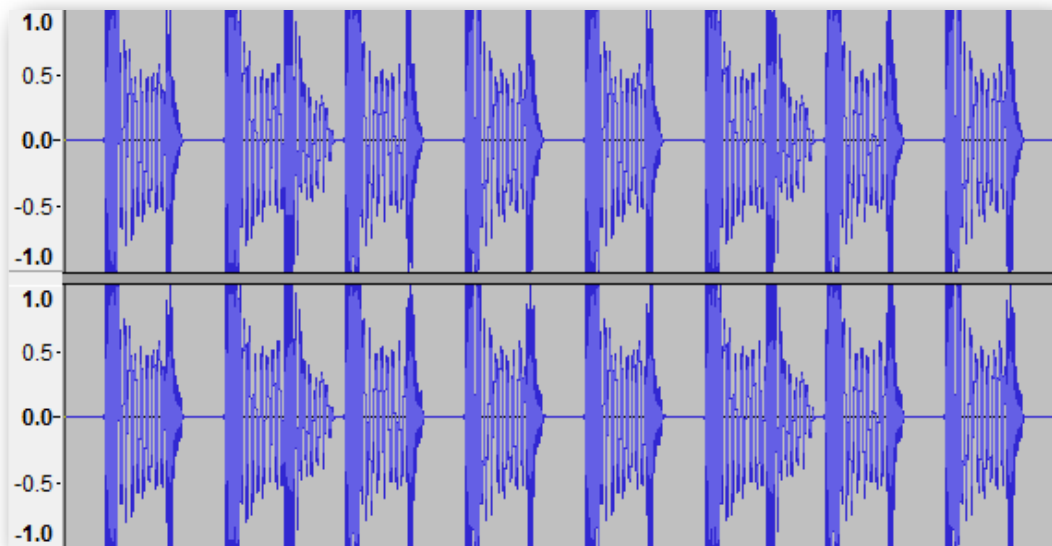
[LISTEN TO THE ABOVE CLIP!](#)

Step 2: Highlight & Amplify

This part is really simple but extremely necessary. Click + drag with the mouse cursor over the area you want to apply the effect, or for those keyboard enthusiasts out there, use ⇧ **+ Left / Right** arrow keys to make your selection.

Prior to applying the **Clip Fix** effect, you will want to bring the volume of your source file down far enough to leave room for the interpretation and repair of the boosted (clipped) peaks. To do this, we will use the Amplify effect.

For the **Amplify** effect, our readers will want to select **Effect >> Amplify**.

Immediately after selecting **Amplify**, the following pop-up window will appear:
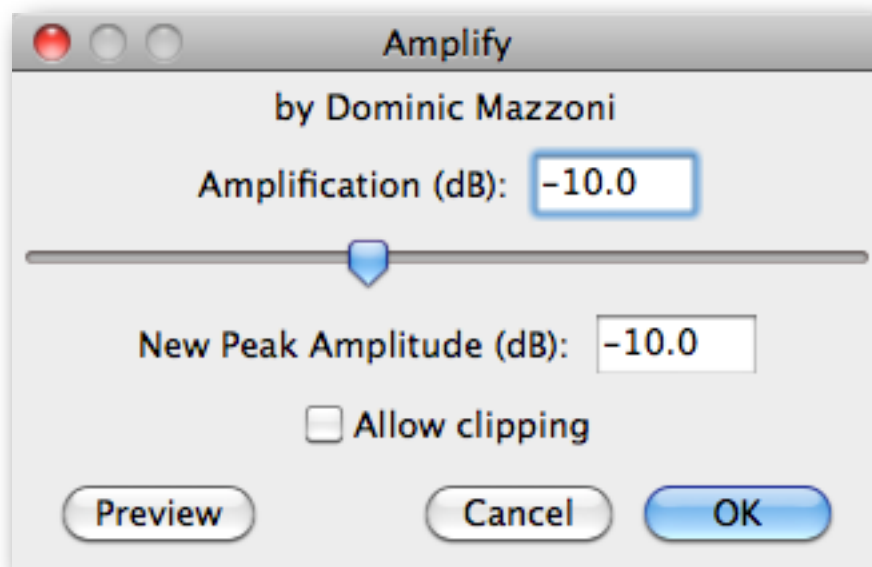
By default, the **Amplification (dB)** value will display a positive number. Change this number to a value of **negative 10.0 dB**, as seen above, and click OK.

Step 3: Highlight & Clip Fix

If for any reason the waveform isn't already highlighted, go ahead and do so at this time.

For the **Clip Fix** effect, our readers will want to select **Effect >> Clip Fix**.

Immediately after selecting **Clip Fix**, the following pop-up window will appear:
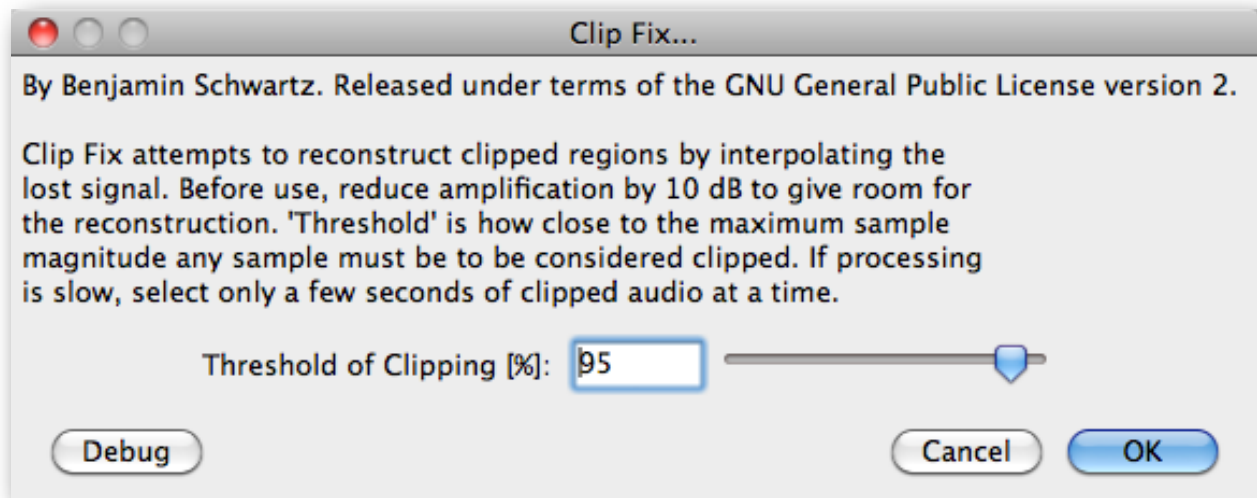
For today's example, we've left the settings at their defaults, but please feel free to experiment with the value / slider seen above to fine-tune the effect to your liking.

Threshold of Clipping [%] is defined as *"how close to the maximum sample magnitude any sample must be to be considered clipped"* and can either close the window of focus (raising the percentage to be closer to 100%) or open this window even further by lowering the % to be closer to 0%.

Here's what our audio looks like after applying the above settings:
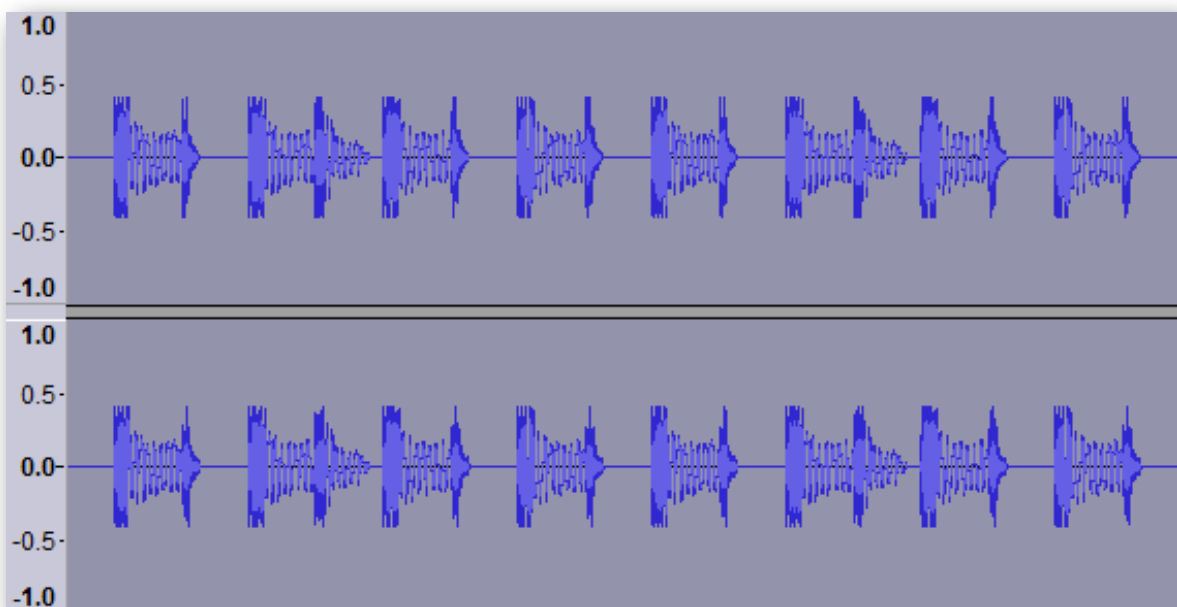
Step 4: Highlight & Amplify

Making sure that the audio is highlighted, we will again apply the Amplify effect as seen in [Step 2](#), except this time we will not be modifying the **Amplification (dB)**, and leaving it at the default (positive) value, which will in turn raise the volume as much as possible without clipping.

Here's what our waveform looks like after applying the Amplify effect yet again:
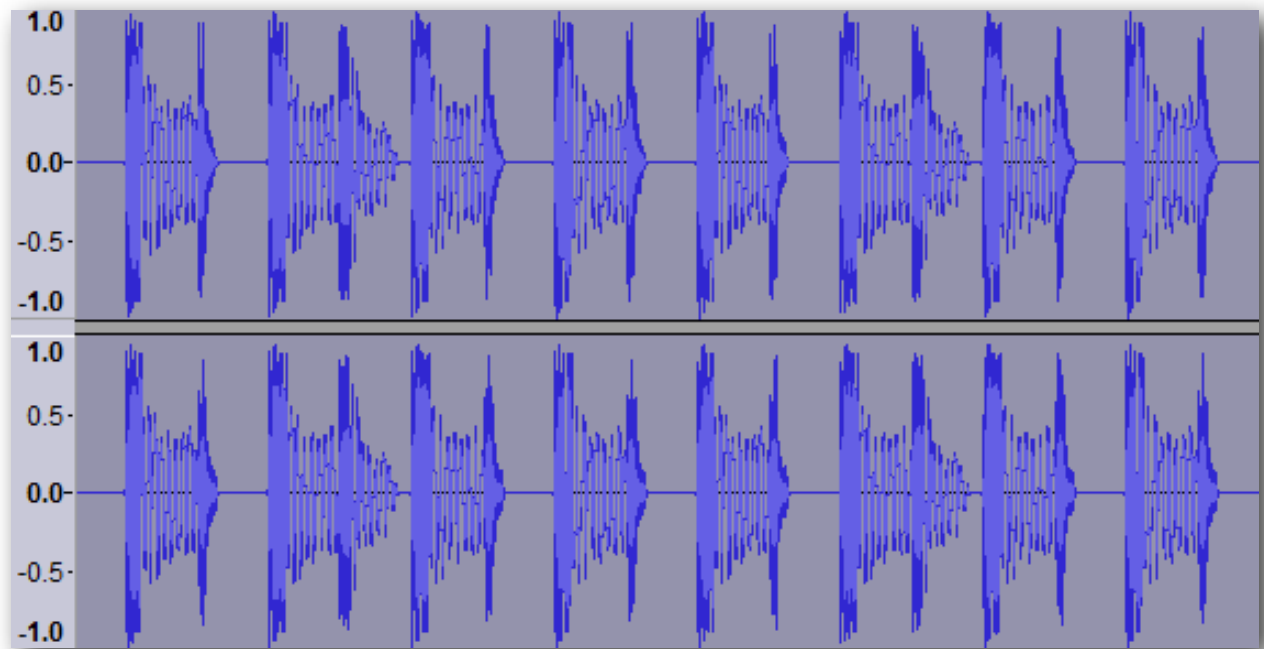
LISTEN TO THE ABOVE CLIP!

Aside: Notice how the finished clip sounds less distorted during the loudest parts? Also notice how the highest points are visible, not cut off. This is by design, and confirms that the effect was successfully completed, thus restoring the audio to a state in which the listener is able to hear the full audible spectrum without any distortion.
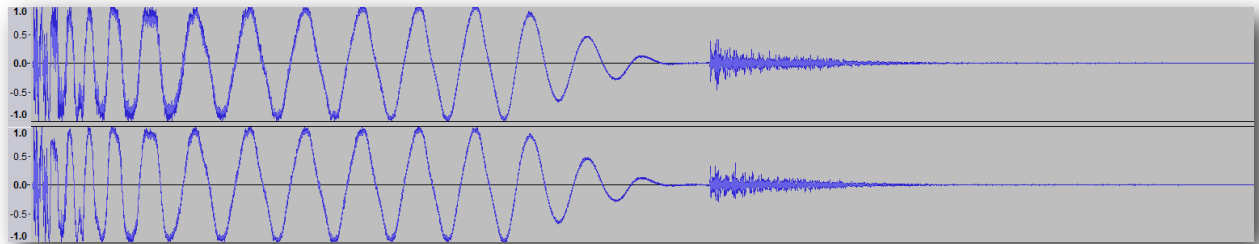
Compressor

Does your audio sound like the person speaking was at one end of a tunnel and the microphone was at the opposite end? Do the juxtaposition of large peaks and shallow valleys in your audio waveform clip or distort when applying a [Volume or Gain increase](#)?

Not to fear, as here we will walk through the steps of increasing the RMS level of your audio waveform aka how loud the audio sounds, without degrading the Noise Floor or clipping the highs, through the application of a **Compressor** effect.

Step 1: Open Audio

With the Audacity software open, use the keyboard shortcut ⌘**+O** or click **File >> Open** and choose the audio you wish to edit. Once the file opens in Audacity, our readers will see something like this:


Step 2: Highlight & Compressor

It really is that simple. Click + drag with the mouse cursor or for those keyboard enthusiasts out there use ⇧ **+ Left / Right** arrow keys to make a selection.

For the **Compressor** effect, our readers will want to make sure to select the area which encompasses the intended duration for which the effect is to be applied.

Here our readers will want to select **Effect >> Compressor**.

Immediately after selecting the **Compressor** effect, the following pop-up window will appear:
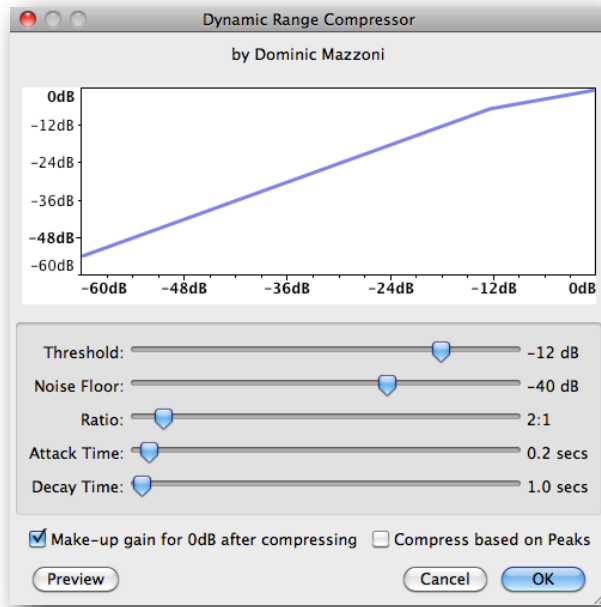
In this example, we played with each of the settings and applied the **Compressor** effect several times to achieve our goal of boosting the lows without sending them into the distorted land of clipping. The outcome will depend on the area selected and levels prior to applying the effect, along with any settings chosen in this popup window.

All modifications using the **Threshold**, **Noise Floor**, **Ratio**, **Attack** and **Decay Time** sliders, along with the **Make-up gain for 0dB after compressing** and **Compress based on Peaks** check boxes can be sampled before committing using the **Preview** button. Select **OK** to confirm the settings and apply the effect.

For a truly great break-down of what action each slider / check box provides, we recommend checking out the Audacity wiki HERE.

Looking at our final product, we see several of the quieter areas boosted, without clipping; which offers a much louder-sounding audio overall:
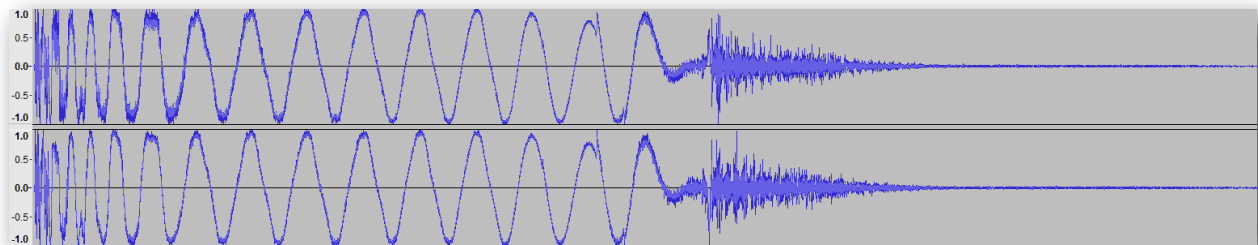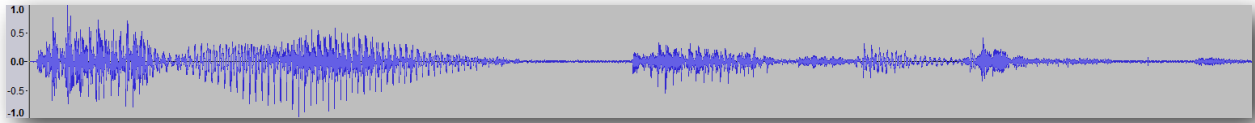
Delay

Sometimes a simple <u>echo</u> is, well, just too simple. In this case, the production will call for a more complex echo effect…which brings us to this here example!

Here we will walk our readers through applying not just one, but multiple echo effects!

If you have the need for a unique repeating pattern (echo) in your audio production, with fully customizable succession, amplitude and pitch — this is the effect for you!

Step 1: Open Audio

With the Audacity software open, use the keyboard shortcut ⌘**+O** or click **File >> Open** and choose the audio you wish to edit. Once the file opens in Audacity, our readers will see something like this:


<u>LISTEN TO THE ABOVE CLIP</u>!

Step 2: Highlight & Delay

This part is really simple but extremely necessary. Click + drag with the mouse cursor over the area you want to apply the effect, or for those keyboard enthusiasts out there, use ⇧ **+ Left / Right** arrow keys to make your selection.

For the **Delay** effect, our readers will want to select **Effect >> Delay**.

Immediately after selecting **Delay**, the following pop-up window will appear:
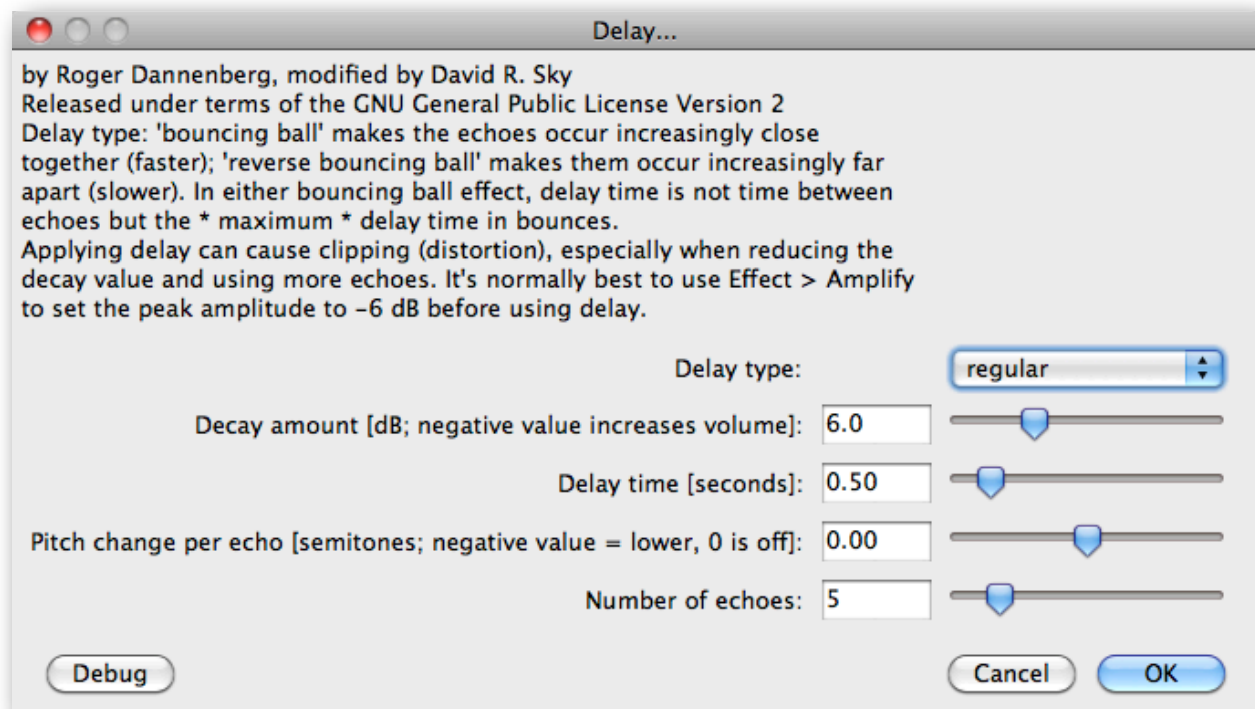
For today's example, we've left the settings at their defaults, but please feel free to experiment with the values / sliders seen above to fine-tune the effect to your liking.

If you'd like to reference the more technical side of this effect (**Decay amount**, **Delay time**, **Pitch change per echo**, **Number of echoes**), we recommend peeking at the Audacity Manual.

Here's what our finished version looks like after applying the above settings:
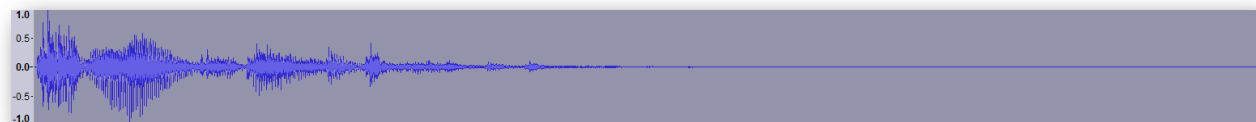
LISTEN TO THE ABOVE CLIP!

Aside: Notice how the clip has been elongated? Do you also hear the cavernous sound of the echo? This is by design, and confirms that the effect has been successfully applied.
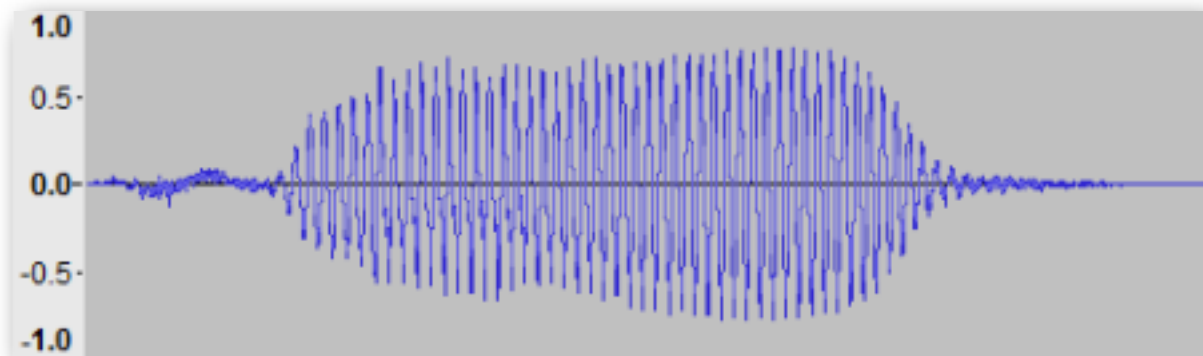
Echo

While you could take a drive to the Grand Canyon and yell at the top of your lungs to achieve that nifty echo effect heard in your favorite productions, and while this process could be considered 'organic' in nature, we believe that there is a much more 'economically-aware' solution.

Here, we will walk through the steps of producing a repeating sound which gradually fades into silence through the application of an **Echo** effect.

Step 1: Open Audio

With the Audacity software open, use the keyboard shortcut ⌘**+O** or click **File >> Open** and choose the audio you wish to edit. Once the file opens in Audacity, our readers will see something like this:


Step 2: Highlight & Echo

It really is that simple. Click + drag with the mouse cursor or for those keyboard enthusiasts out there use ⇧ **+ Left / Right** arrow keys to make a selection.

For the **Echo** effect, our readers will want to make sure to select both the area which encompasses the intended sample for which the effect is to be applied and any space after the intended selection for which the additional repetitions (echo) will be applied.

Hint: Make sure there is plenty of silence present after the point in your audio you wish to echo. If there is not sufficient 'room' left after the portion of your audio to be echoed, it is possible that no echo will be applied.

Here our readers will want to select **Effect >> Echo**.

Immediately after selecting the **Echo** effect, the following pop-up window will appear:
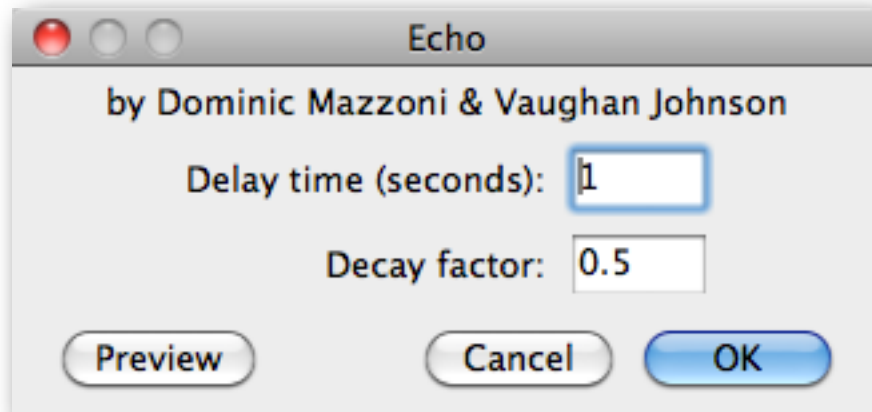
As the Audacity wiki states, the **Delay time (seconds)** option refers to how much time will take place between each echo. The **Decay factor** option represents how quickly the echo will either fade to silence or amplify, depending on whether a value less than one (for fade to silence), equal to one (no fade or amplification) or greater than one (for amplification) has been selected.

In this example, we have selected our one-shot audio sample and about (30) seconds of silence immediately after, and have chosen the default selections of (1) for **Delay time (seconds)** and (0.5) for the **Decay factor**.

Click the **Preview** button to preview your echo in real-time. If you do not hear the echo being applied, make sure you have ample space present and selected after the sample you wish to echo. Select **OK** to confirm your selection and Audacity will immediately render the effect.

Looking at our final product, we see several repeated (echoed) copies of our original sample, each 1/2 (0.5) the amplitude of the original, and eventually fading to silence:
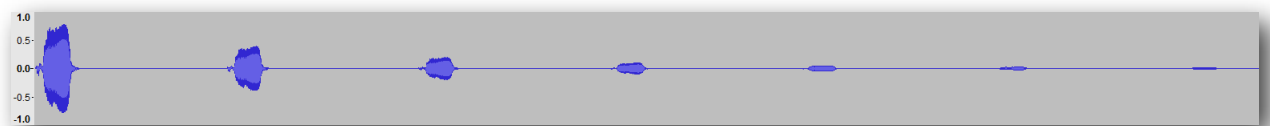
Equalization

While the phrase "Nobody's Perfect" might apply to humans, animals or possibly even make-believe friends, the term can also be adapted to things that aren't quite, oh what's the word … visible? Yes, things that generally can't be seen, like audio, can often times be sub-par, if you will.

In this example, we will walk through the steps of fine-tuning the bass, mid-range and highs of your audio through the application of an **Equalization** effect.

Step 1: Open Audio

With the Audacity software open, use the keyboard shortcut ⌘**+O** or click **File >> Open** and choose the audio you wish to edit.

Step 2: Highlight & Equalization

It really is that simple. Click + drag with the mouse cursor or for those keyboard enthusiasts out there use ⇧ **+ Left / Right** arrow keys to make a selection.

For the **Equalization** effect, our readers will want to make sure to select the area which encompasses the intended duration of which the effect is to be applied.

Here our readers will want to select **Effect >> Equalization**.

Immediately after selecting the **Equalization** effect, the following pop-up window will appear:

Equalization, by Martyn Shaw & Mitch Golden
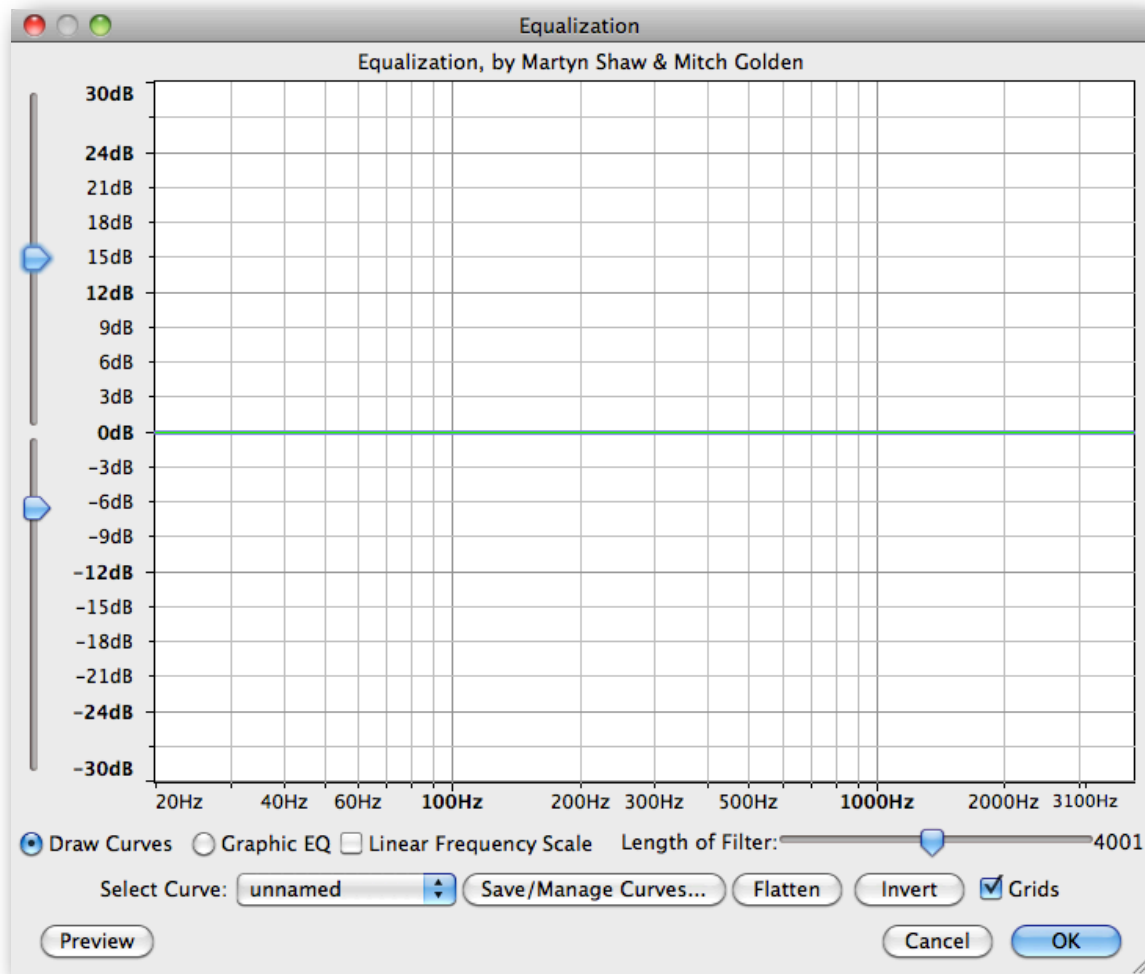
If you're not already familiar with the range of frequencies seen above (**20Hz – 4000Hz**), generally anything left of center affects the 'low end' aka 'bass' frequencies. Anything to the right of center generally affects the 'high end' aka 'treble' frequencies. As you may have guessed, anything found near the center will generally affect mid range frequencies aka 'mids'.

By default, the **Draw Curves** option is selected and we are able to click on the blue line to add handle points, which in turn can be clicked + dragged vertically or horizontally along the axes seen above. A vertical positioning above (0dB) would be considered a 'boost', while vertical positioning beneath (0dB) will decrease the frequency's perceived volume by the listener.

If you require a 'zoomed in' or 'zoomed out' view of the grid, the sliders found along the left side of this pop-up will allow for just that.
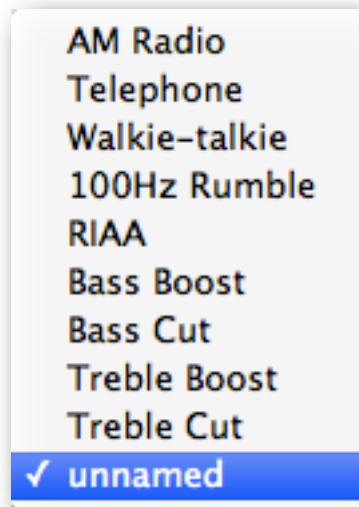
There are several preset equalization curves built-in to the default Audacity installation, all of which can be accessed through the **Select Curve** drop-down menu. Click on various options such as **Bass Boost**, **Bass Cut**, **Treble Boost** and **Treble Cut** to see how the blue line (**Curve**) changes based on your selection.
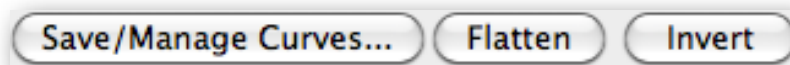
Should you come up with your own custom **Curve** that you'd like to save as a preset (like the others included in the **Select Curve** drop-down menu), the **Save/Manage Curves** button will allow you to do just that. Click **Flatten** to restore the curve to its default setting and click **Invert** to flip anything above/below (0dB).

Click the **Preview** button to preview your equalization in real-time. Select **OK** to confirm your selection and Audacity will immediately render the effect.

Fade In / Fade Out

Have you ever needed a sound to start off very softly and 'fade' in to a higher volume level? How about the need to 'fade' out to complete silence? In this example, we will take our readers through the steps of accomplishing just that by applying a **Fade In** and **Fade Out** effect to the beginning and end of an audio file.

Step 1: Open Audio

With the Audacity software open, use the keyboard shortcut ⌘**+O** or click **File >> Open** and choose the audio you wish to edit. Once the file opens in Audacity, our readers will see something like this:
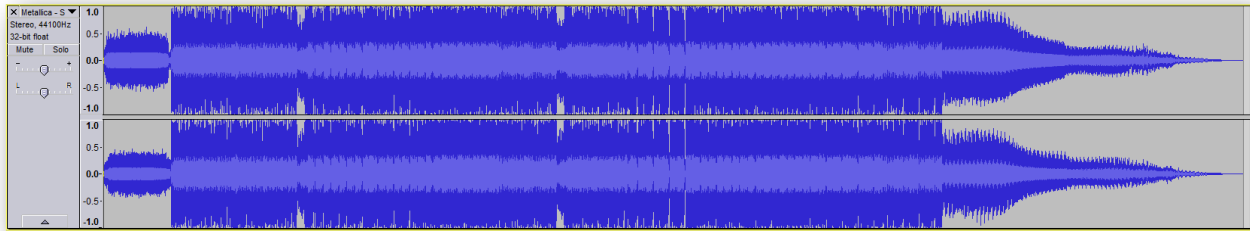
It really is that simple. Click + drag with the mouse cursor or for those keyboard enthusiasts out there use ⇧ **+ Left / Right** arrow keys to make a selection.

For a **Fade In** effect, our readers will want to make sure to place their cursor as far left of the beginning of the audio as possible and make their selection to the right for the intended fade duration.

After highlighting the desired section of the audio, our readers should see something similar to the following:
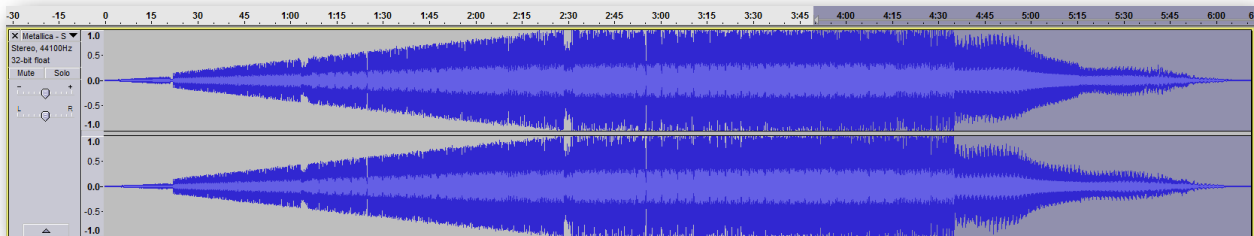

Here our readers will want to select **Effect >> Fade In**.

After selecting **Fade In**, our readers will see the selected area 'fade' in from (-) infinity to (0dB) throughout the entire duration of area selected:
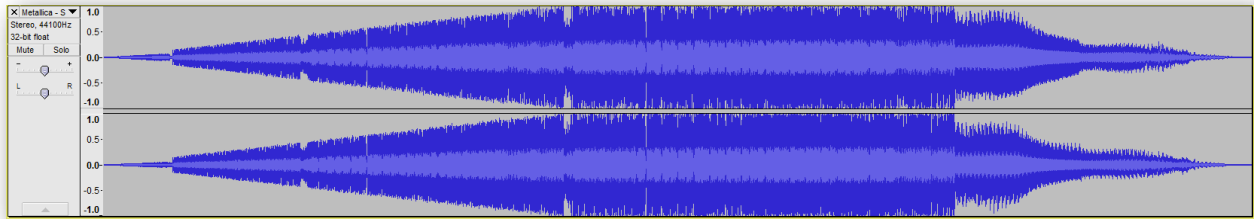
Next we will select an area to fade out, also making sure to select as far right of the end of the audio as possible. After highlighting the desired section of the audio, our readers should see something similar to the following:

Here our readers will want to select **Effect >> Fade Out**.

After selecting **Fade Out**, our readers will see the selected area fade out from (0dB) to (-) infinity throughout the entire duration of area selected:

As seen above, the beginning of the audio fades in from (-) infinity to (0dB), as does the audio fade out from (0dB) to (-) infinity.

Audio Effects Pt. 2

Invert (DIY Karaoke Songs)

What's more fun than heading out to your favorite local joint on a Thursday evening to sing Karaoke?   How about making your own Karaoke songs and practicing at home … before busting out a Sir Mix-A-Lot song and falling off stage!

Step 1: Identify your Song

Yes, this step does seem a bit trivial, but how can you make a Karaoke song without knowing what you want to sing?

Step 2: Open Audio

With the Audacity software open, use the keyboard shortcut ⌘+O or click **File >> Open** and choose the song you wish to create an alternate Karaoke version of.

For this example we're using a song by Red Hot Chili Peppers titled, "Under The Bridge".

Once the file opens in Audacity, our readers will see something like this:
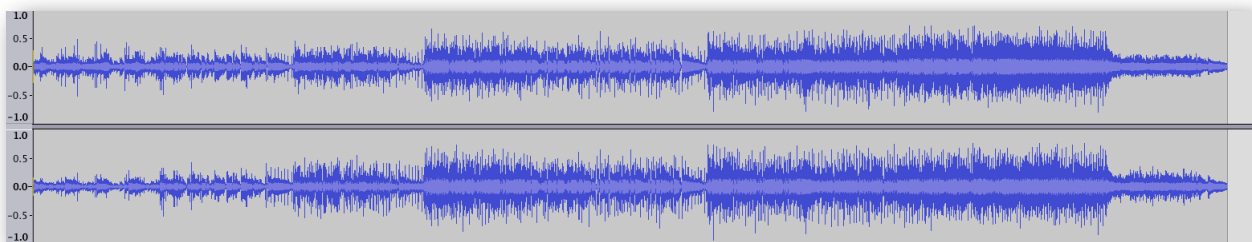
Step 3: Split Stereo Track

In order to begin creating our Karaoke version of this classic 90′s song, we will need to split our (1) stereo track into (2) individual (L) and (R) tracks.
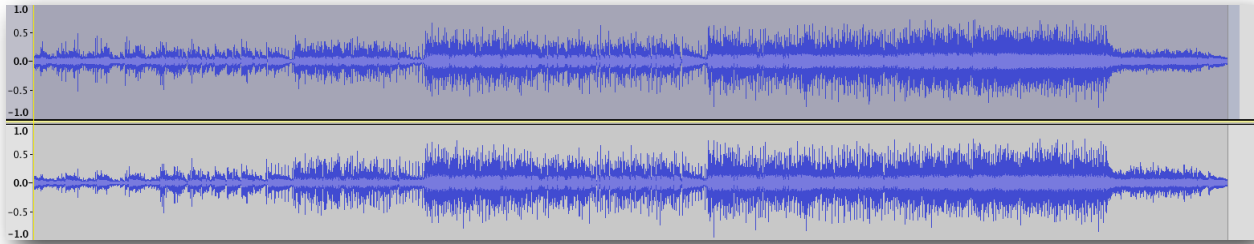
This is accomplished by using the triangular **Track Pop-Down Menu** found near the track title on the left side of our screen. After clicking the triangle, the menu appears and we'll select **Split Stereo Track**.
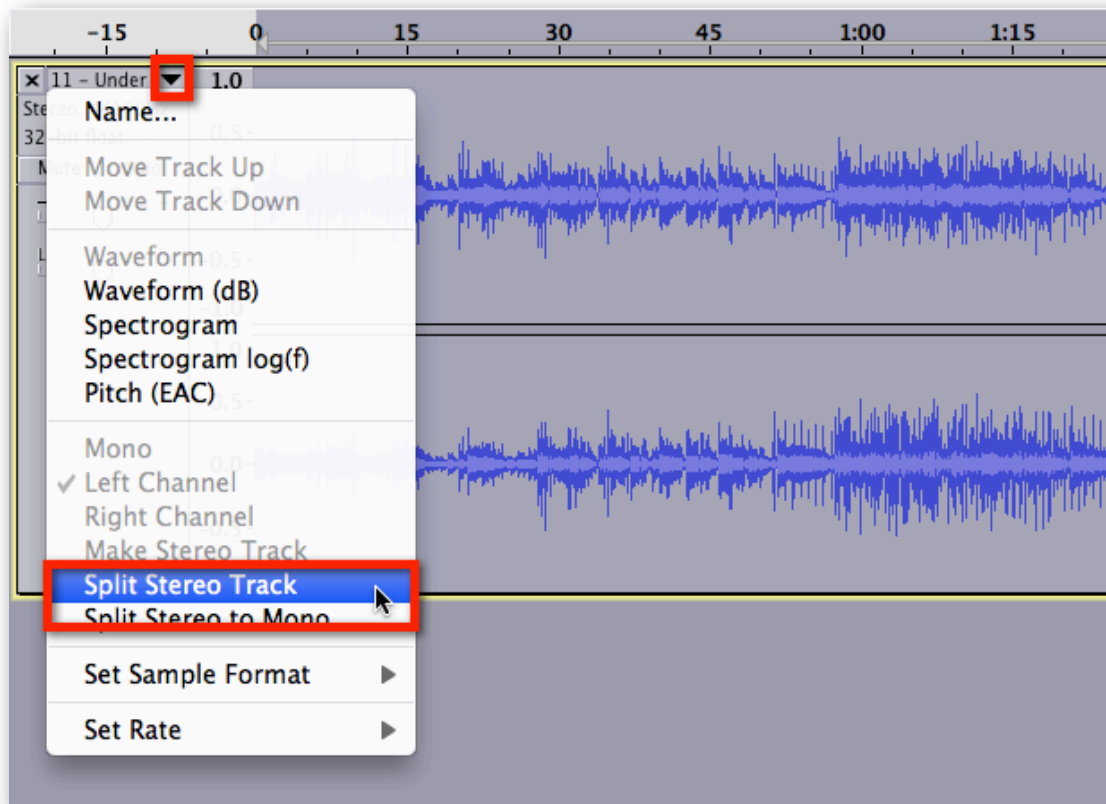

Step 4: Highlight & Invert

After splitting our (1) stereo track into (2) individual (L) and (R) tracks, we will want to highlight either the (L) or the (R) track, but not the other. This can be done easily by clicking and dragging with our mouse cursor from one edge of the track to the other.

Here's an example of what your waveform will look like with just one track highlighted. Notice the (L) track on top is darker than the (R) track on the bottom:

With our track highlighted and using the **Effect** drop-down menu, we will select **Invert**.

Using this effect we will see the highlighted channel flip along the horizontal axis of (0.0), which runs through the center of our track. An example of our inverted waveform can be seen below:
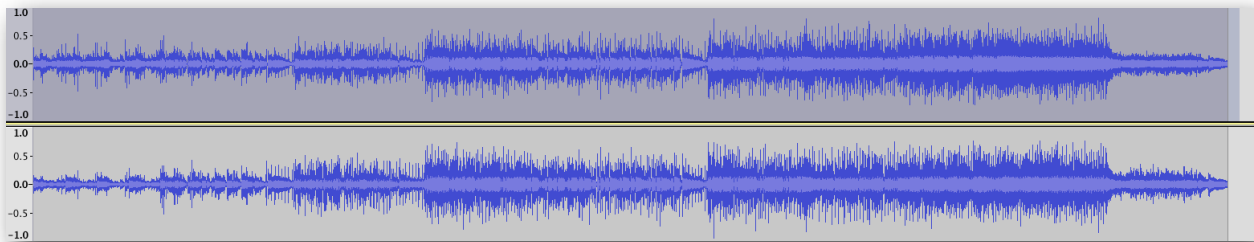
Step 5: Make Stereo Track

Now that one of the two channels have been inverted, we will re-join them together into a single stereo track using the triangular **Track Pop-Down Menu** found near the track title on the left side of our screen.

After clicking the triangle, the menu appears and we'll select **Make Stereo Track**.
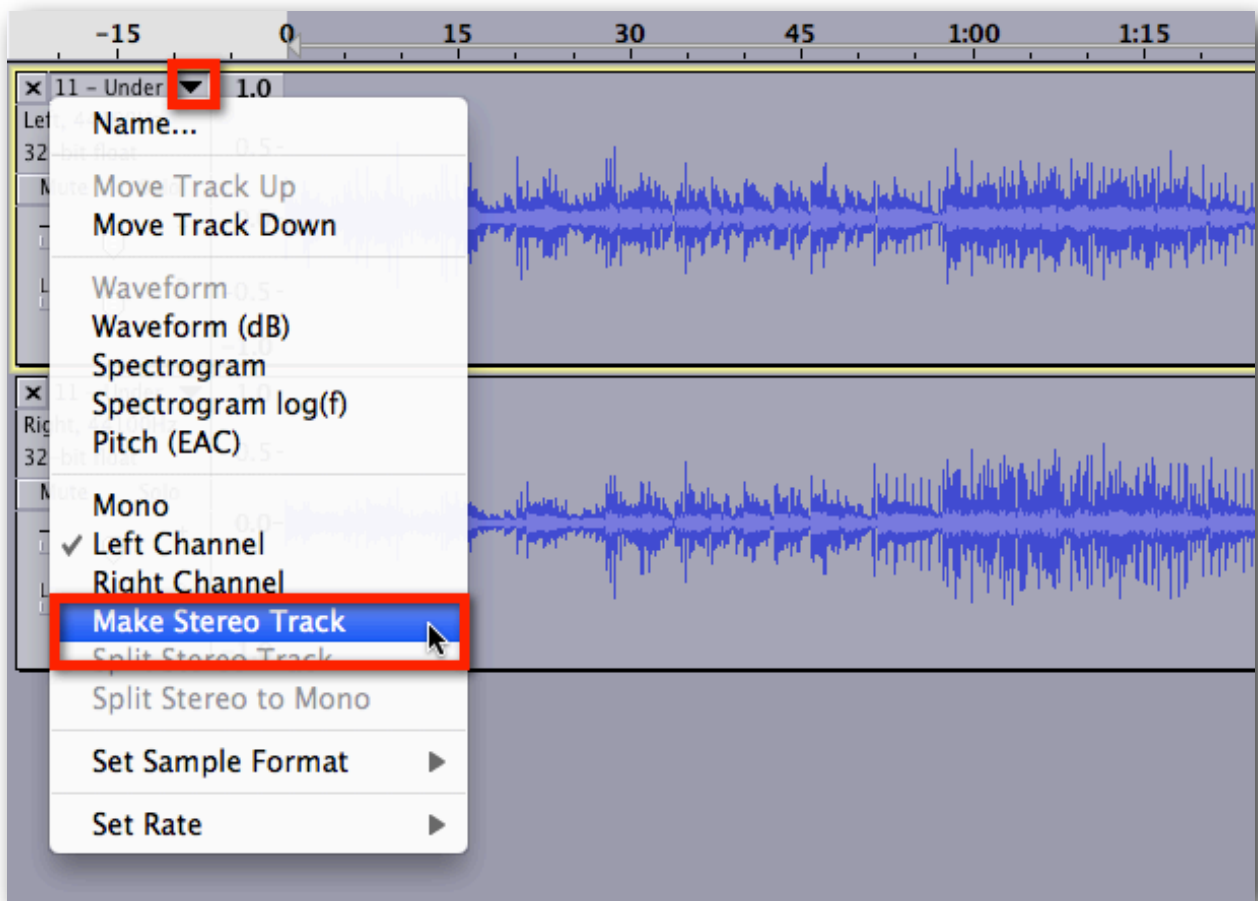
Now with our newly-created Karaoke version of "Under The Bridge" (or whichever song you've chosen), select **File >> Export** to save the file to your computer's hard drive. Let the Karaoke singing commence!

Leveller (Need Distortion?)

If your audio production is lacking that certain 'crunchiness', then man oh man have we got an easy-to-follow tutorial for you!

In this example we will walk our readers through the process of boosting bass levels, reducing treble and introducing a bit of (welcome) distortion, all in one fell swoop.

Step 1: Open Audio

With the Audacity software open, use the keyboard shortcut ⌘**+O** or click **File >> Open** and choose the audio you wish to edit.

Step 2: Highlight & Leveller

It really is that simple. Click + drag with the mouse cursor or for those keyboard enthusiasts out there use ⇧ **+ Left / Right** arrow keys to make a selection.

For the **Leveller** effect, our readers will want to make sure to select the area which encompasses the intended duration for which the effect is to be applied.

Here our readers will want to select **Effect >> Leveller**.

Immediately after selecting the Leveller effect, the following pop-up window will appear:
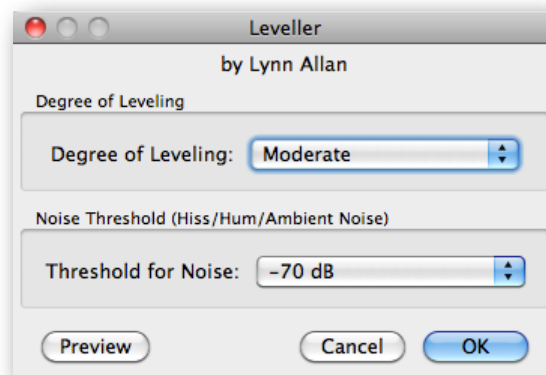
To best explain what exactly these settings represent, we'd like to share an excerpt from the Audacity manual regarding the Leveller effect:

The Leveller effect makes quiet passages louder and loud passages quieter. It does this in a way that is different from the [Compressor](#) effect. As a result it does add some distortion to the processed audio. The only way to be sure if the effect does what you want is to try it. For example, applying this effect twice at its Heaviest setting on a normally-recorded voice can produce an "air traffic controller" effect.

Click the **Preview** button to preview your levelling in real-time. Select **OK** to confirm your selection and Audacity will immediately render the effect.

Noise Removal

Have you ever needed to remove background noise in an audio recording? In this example, we will take our readers through the steps of accomplishing just that by applying a **Noise Removal** effect.

Step 1: Open Audio

With the Audacity software open, use the keyboard shortcut ⌘**+O** or click **File >> Open** and choose the audio you wish to edit. Once the file opens in Audacity, our readers will see something like this (the red box outlines the 'noise' we wish to remove in this example):
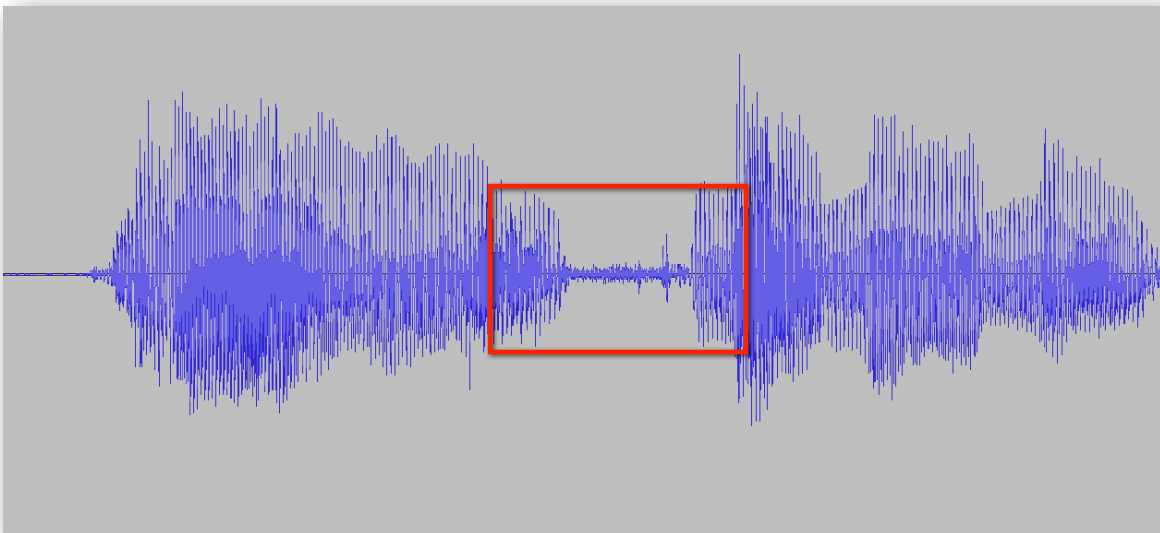
Step 2: Highlight & Remove Noise

It really is that simple. Click + drag with the mouse cursor or for those keyboard enthusiasts out there use **⇧ + Left / Right** arrow keys to make a selection.
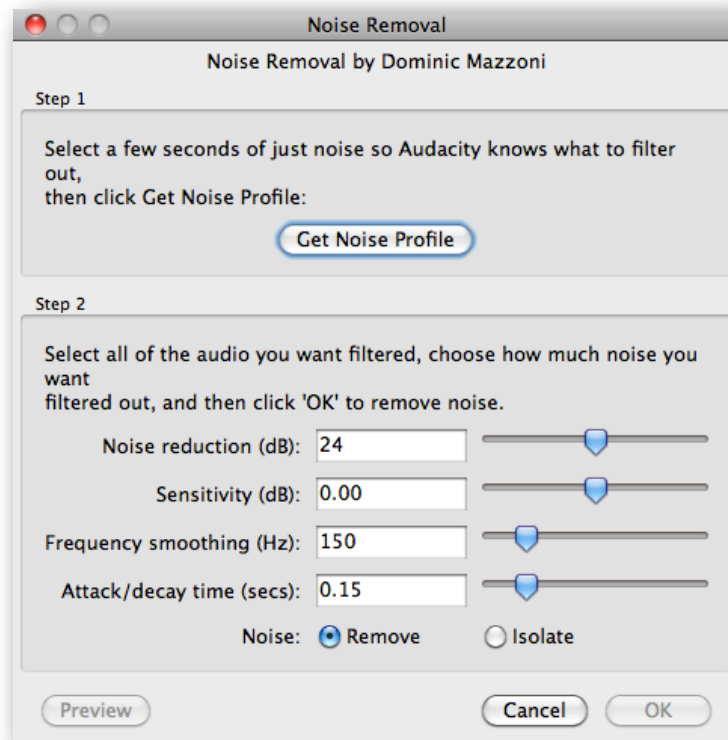
For a **Noise Removal** effect, our readers will want to make sure to select the area which encompasses the intended duration for which the effect will be applied.

After highlighting the desired section of the audio, our readers should see something similar to the following:
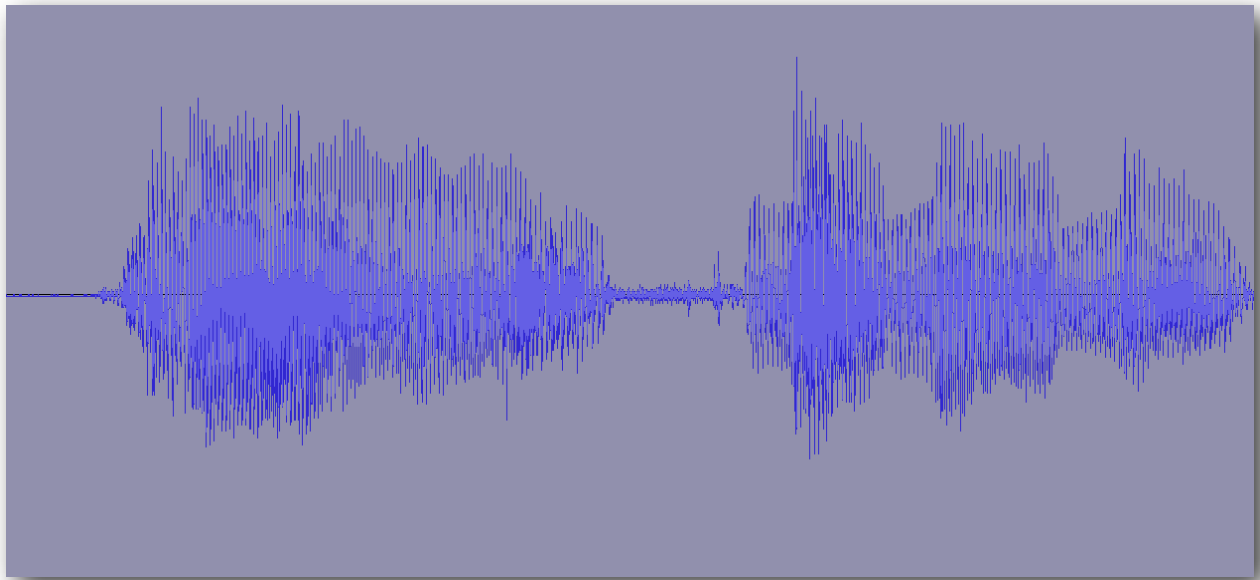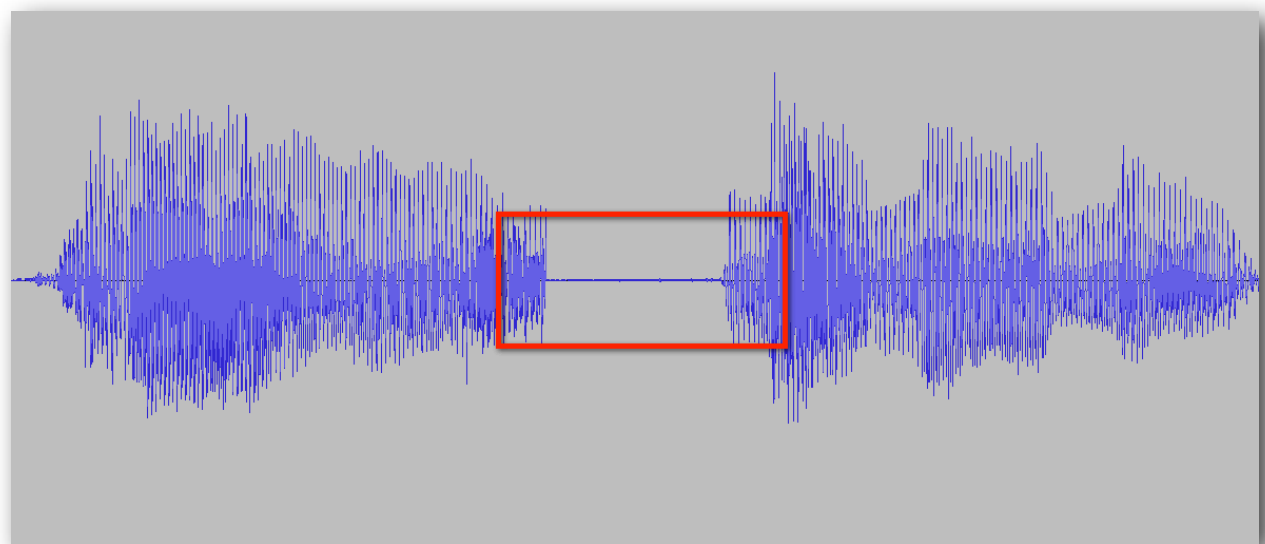

Here our readers will want to select **Effect >> Noise Removal**.

Immediately after selecting the **Noise Removal** effect, the following pop-up window will appear:

For specifics on what each value found here does, we recommend checking out the wiki and this forum.

After applying the **Noise Removal** effect, our readers will see the 'noise' in the selected area dissipate:
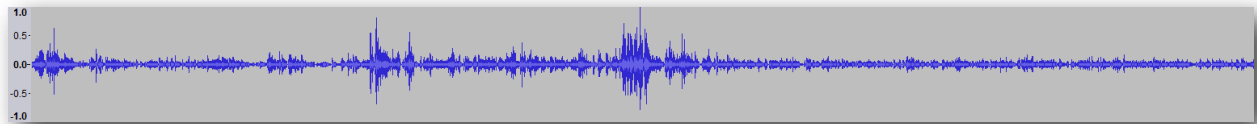
Normalize

While there are times when recordings come out flawlessly on the first take, it's not terribly often that this happens in many real-life situations we're faced with on a day-to-day basis. In these cases, it's quite helpful to have an ally who likes to keep things "normal".

In this example we will walk our readers through the process of bringing down the highs, raising the lows and even removing [DC bias](#) in just a couple of clicks.

Step 1: Open Audio

With the Audacity software open, use the keyboard shortcut ⌘**+O** or click **File >> Open** and choose the audio you wish to edit. Once the file opens in Audacity, our readers will see something like this:


Step 2: Highlight & Normalize

It really is that simple. Click + drag with the mouse cursor or for those keyboard enthusiasts out there use ⇧ **+ Left / Right** arrow keys to make a selection.

For the **Normalize** effect, our readers will want to make sure to select the area which encompasses the intended duration for which the effect is to be applied.

Here our readers will want to select **Effect >> Normalize**.

Immediately after selecting the **Normalize** effect, the following pop-up window will appear:
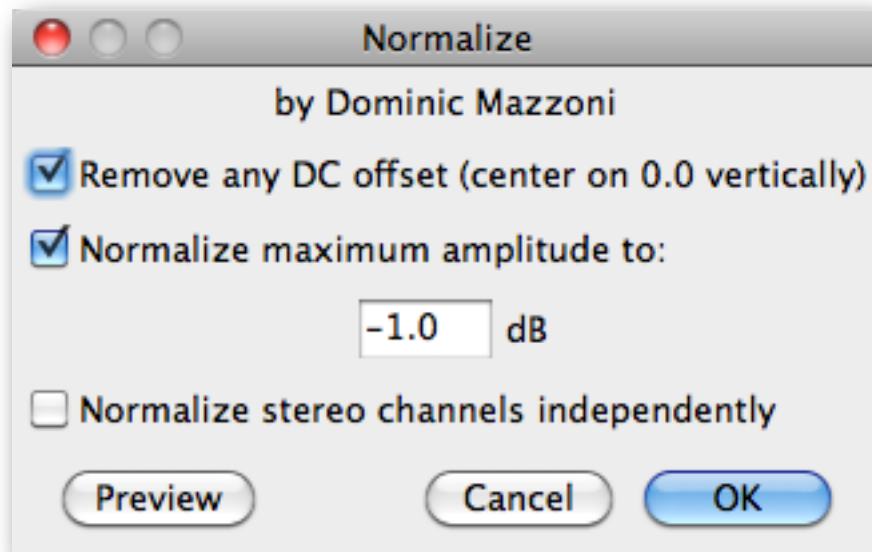
To best explain what exactly these settings represent, we'd like to share an excerpt from the Audacity manual regarding the Normalize effect:

Use the Normalize effect to set the peak amplitude of single or multiple tracks, equalize the peak amplitude of the left and right channels of stereo tracks and optionally remove any DC offset from the tracks.

Click the **Preview** button to preview your equalization in real-time. Try adjusting the default negative value in the **Normalize Maximum Amplitude To:** box and **Preview** your changes.

Select **OK** to confirm your selection and Audacity will immediately render the effect.

Here's what our waveform looks like after entering a value of (-5dB). See the difference?
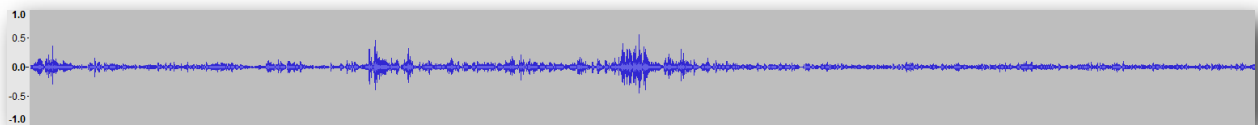
Phaser

If you've ever had the pleasure of listening to the phased out guitars of Small Faces' "[Itchycoo Park](#)" or Queen's "[Sheer Heart Attack](#)", then you're already fully prepped for what we have in store for you!

In today's example we will walk our readers through the process of filtering and modulating audio in the style of 60′s psychedelic rock in just a couple of clicks.

Step 1: Open Audio

With the Audacity software open, use the keyboard shortcut ⌘**+O** or click **File >> Open** and choose the audio you wish to edit.
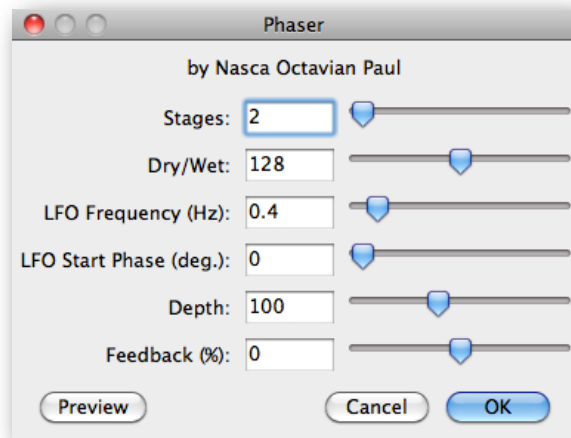
Step 2: Highlight & Phase Shift

It really is that simple. Click + drag with the mouse cursor or for those keyboard enthusiasts out there use ⇧ **+ Left / Right** arrow keys to make a selection. ⌘**+A** should also do the trick if you'd like to apply the effect to the entire audio.

For the **Phaser** effect, our readers will want to make sure to select the area which encompasses the intended duration for which the effect is to be applied.

Here our readers will want to select **Effect >> Phaser**.

Immediately after making your selection, the following pop-up window will appear:

Phaser
by Nasca Octavian Paul
Stages: 2
Dry/Wet: 128
LFO Frequency (Hz): 0.4
LFO Start Phase (deg.): 0
Depth: 100
Feedback (%): 0
Preview   Cancel   OK

To best explain the theory behind this effect, we'd like to share an excerpt from the Audacity manual regarding the Phaser effect:

The name "Phaser" comes from "Phase Shifter", because it works by combining phase-shifted signals with the original signal. The movement of the phase-shifted signals is controlled using a Low Frequency Oscillator (LFO).

While that doesn't provide very much detail on the specifics of the pop-up window displayed above, this eHow article is sure to satiate even the thirstiest of fine-tuners.

After moving the sliders around a bit, go ahead and click the **Preview** button to listen to your modifications in real-time.

Select **OK** to confirm your selection and Audacity will immediately render the effect.

Repair (Vinyl Pops & Clicks)

Hey Mac users — do you digitize vinyl?! We know you do. We also know that not every digital 'rip' is free of vinyl skips, pops and crackle. This is why today's post was written especially for you!

Previously, we've explored using a Click Removal process for the entire track, but in this example we will walk our readers through the process of isolating and repairing individual 'poppy' nuances.

Step 1: Open Audio

With the Audacity software open, use the keyboard shortcut ⌘+O or click **File >> Open** and choose the audio you wish to edit. Once the file opens in Audacity, our readers will see something like this:
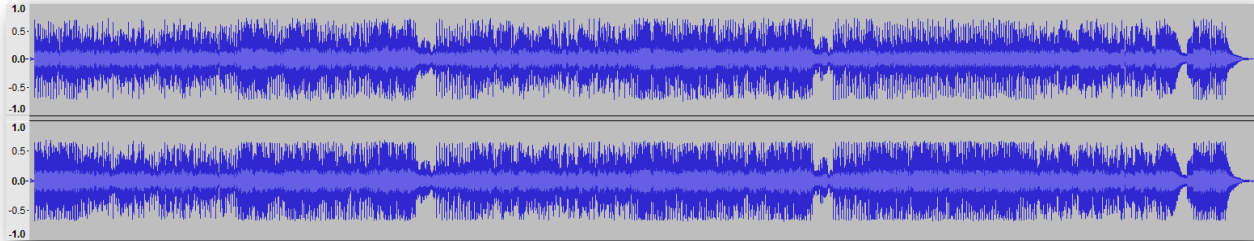
Since today's walkthrough is focusing on a very small, zoomed-in selection, we will be taking a much closer look at the waveform, identifying that annoying pop, skip or crackle, such as the one seen below, as taken from a vinyl rip of Funky Kings' "Mattress On The Roof":
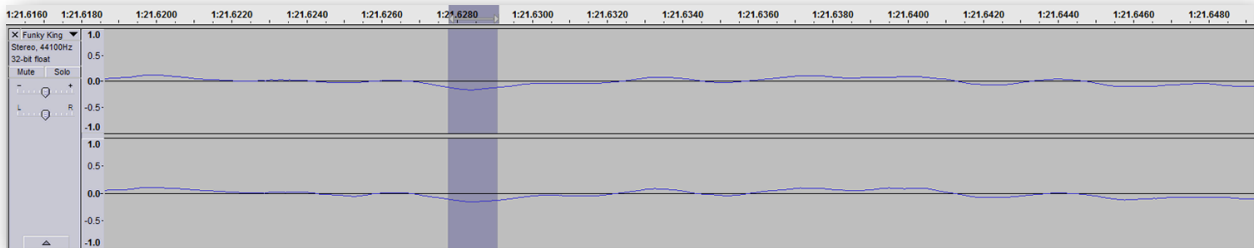

Step 2: Highlight & Repair

It really is that simple. Click + drag with the mouse cursor or for those keyboard enthusiasts out there use ⇧ **+ Left / Right** arrow keys to make a selection.

For the **Repair** effect, our readers will want to make sure to select the area which encompasses the intended duration for which the effect is to be applied.

Here our readers will want to select **Effect >> Repair**.

Immediately after selecting **Repair**, the effect will take place and, when compared to our original zoomed-in waveform above, we can see a small adjustment being made to the waveform.

If you receive the following error message, you'll need to zoom in further and narrow your selection:
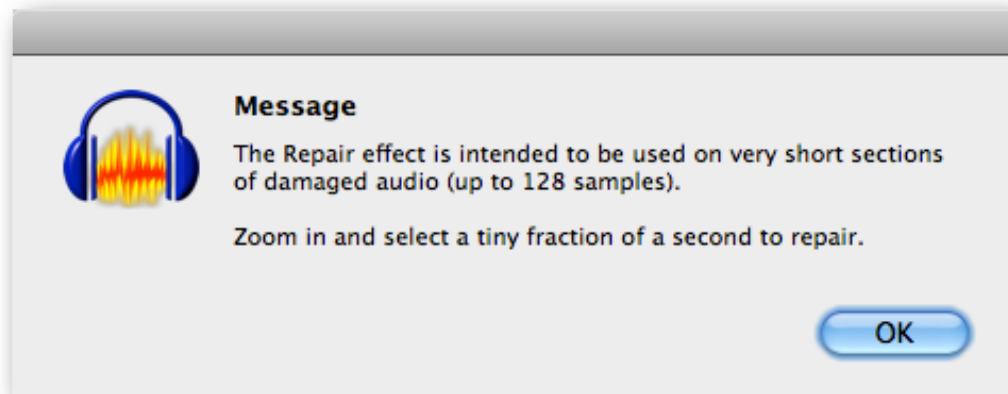
Here's an example of the same waveform as above, but repaired using the effect:
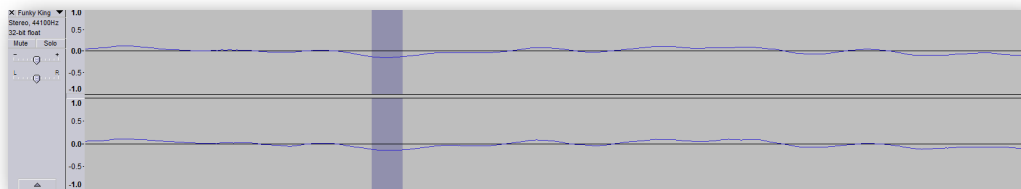
If you were to enlarge the image above, you will see that the bottom of the highlighted area is slightly 'flatter' than before.

To best explain the theory behind this effect, we'd like to share an excerpt from the Audacity manual regarding the Repair effect:

Repair removes a very short region of damaged or destroyed audio, replacing it with an estimated region of audio based on what is happening either side of the region. It may be used for example to repair a click on a vinyl record, or a tape drop-out.

Take a listen to the identified area (and the immediate areas surrounding it) and, if need be, make any further repairs.

Repeat

Take short audio samples and loop them to a desired length in just seconds!

In this example we walk our readers through the process of transforming those short clips into a seamless loop of any desired length.

Step 1: Open Audio

With the Audacity software open, use the keyboard shortcut ⌘**+O** or click **File >> Open** and choose the audio you wish to edit. Once the file opens in Audacity, our readers will see something like this:
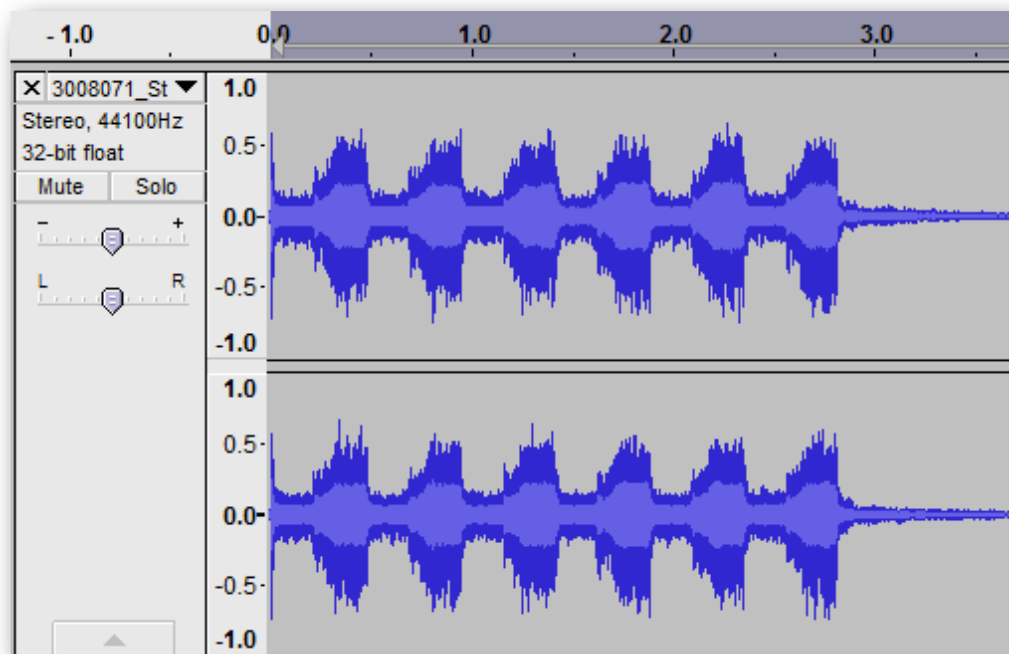
Aside: Notice how our clip starts with a brief peak, continues with (6) wider peaks and trails out to near silence? This gives the loop we're about to create a clean start and a smooth finish, not to mention a nice falling + rising feeling as the clip repeats.

Step 2: Highlight & Repeat

It really is that simple. Click + drag with the mouse cursor or for those keyboard enthusiasts out there use ⇧ **+ Left / Right** arrow keys to make a selection.

For the **Repeat** effect, our readers will want to make sure to select the area which encompasses the intended duration for which the effect is to be applied.

Here our readers will want to select **Effect >> Repeat**.

Immediately after selecting **Repeat**, the following pop-up should appear:
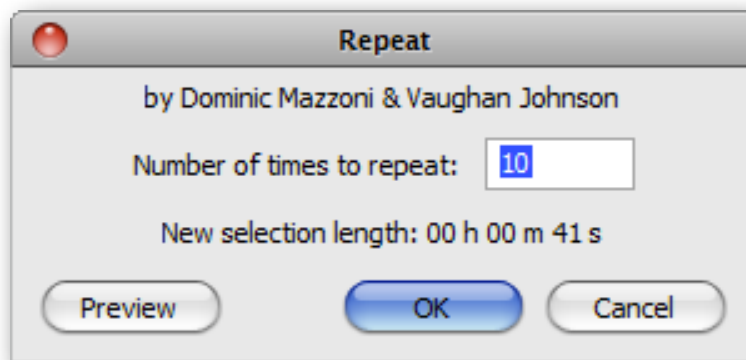
Here is where a bit of either simple math, or trial and error, will come into effect.

If you know the desired length of the intended loop, we'll just say **(x)** seconds in length, you will want to divide it into the length of the original clip, which we'll call **(y)** seconds in length to determine the number of times to repeat (we'll call this **(z)**), resulting in the following equation:

x/y = (z+1)

Using the image above, if we added **(10)** repetitions **(z)** to our **(1)** clip we'd have a total of **(11)** occurrences **(10+1)**. Total loop length **(x)** is **(41)** seconds and we can solve for **(y)** with:
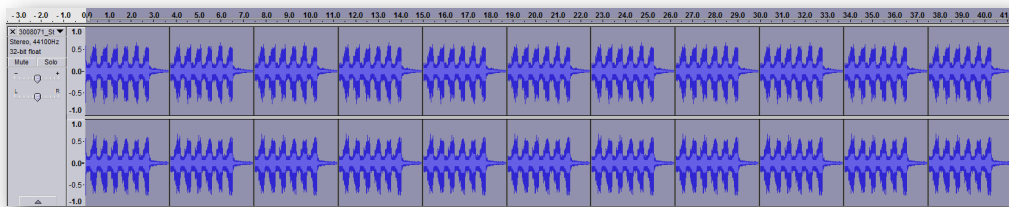
41/y = 11

…or **41/11 = y**

y = 3.72727272727273

Not that this math is really necessary, but the above equations are extremely valuable to those who know their clip length **(y)** and the desired loop length **(x)**, but need to determine how many repetitions **(z)** are required to make the magic happen.

We went with **(10)** repetitions and are happy to show off our brand-new loop right here:

LISTEN TO THE ABOVE CLIP!

You should now have created a loop from a single audio clip, custom-tailored to the exact length you require!
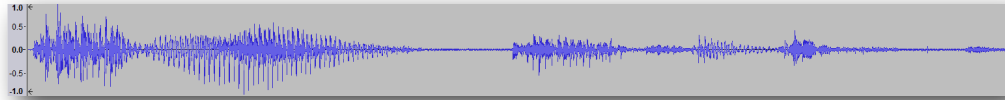
Reverse esreveR

Whether creating a "clean" version of an audio that contains profanity, conjuring subliminal messages or simply having fun with backwards sounds, the need to have audio played in reverse is very real, and very easy to accomplish.

In this example we walk our readers through the process of switching the beginning and end points of your audio for reverse playback.

Step 1: Open Audio

With the Audacity software open, use the keyboard shortcut ⌘+O or click **File >> Open** and choose the audio you wish to edit. Once the file opens in Audacity, our readers will see something like this:
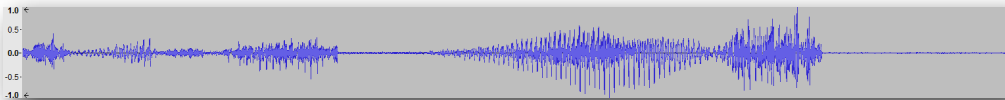

LISTEN TO THE ABOVE CLIP!

Step 2: Highlight & Reverse

It really is that simple. Click + drag with the mouse cursor or for those keyboard enthusiasts out there use ⇧ **+ Left / Right** arrow keys to make a selection.

For the **Reverse** effect, our readers will want to make sure to select the area which encompasses the intended duration for which the effect is to be applied.

Here our readers will want to select **Effect >> Reverse**.

Immediately after selecting **Reverse**, the start and end points of the highlighted selection will then be reversed, and the audio will play from the original end point to the original start point, or in "reverse", which visually will look something like this:

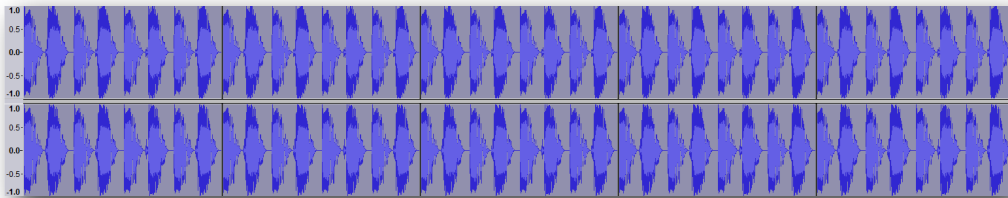LISTEN TO THE ABOVE CLIP!

Sliding Time Scale / Pitch Shift

While many of our previous examples have been overtly simple, straight-forward and use no more than minimal algebraic equations, this one may require an extra ounce or two of brain power to fully take advantage of. Even our senior staff members had to mull it over once or twice before truly understanding the full potential of this useful effect.

It's not brain surgery, but in this example we walk our readers through the process of applying Tempo changes without changing Pitch, and applying Pitch changes without changing Tempo … or both of them at the same time!

Gone a bit cross-eyed? We did too at first, but never fear, we will turn you into a pro in just a couple minutes!

Step 1: Open Audio

With the Audacity software open, use the keyboard shortcut ⌘**+O** or click **File >> Open** and choose the audio you wish to edit. Once the file opens in Audacity, our readers will see something like this:


LISTEN TO THE ABOVE CLIP!

Step 2: Highlight & Time Scale

This part is really simple. Click + drag with the mouse cursor over the area you want to apply the effect, or for those keyboard enthusiasts out there, use ⇧ **+ Left / Right** arrow keys to make your selection.

For the **Sliding Time Scale/Pitch Shift** effect, our readers will want to select **Effect >> Sliding Time Scale/Pitch Shift**.

Immediately after selecting **Sliding Time Scale/Pitch Shift**, the following pop-up window will appear:
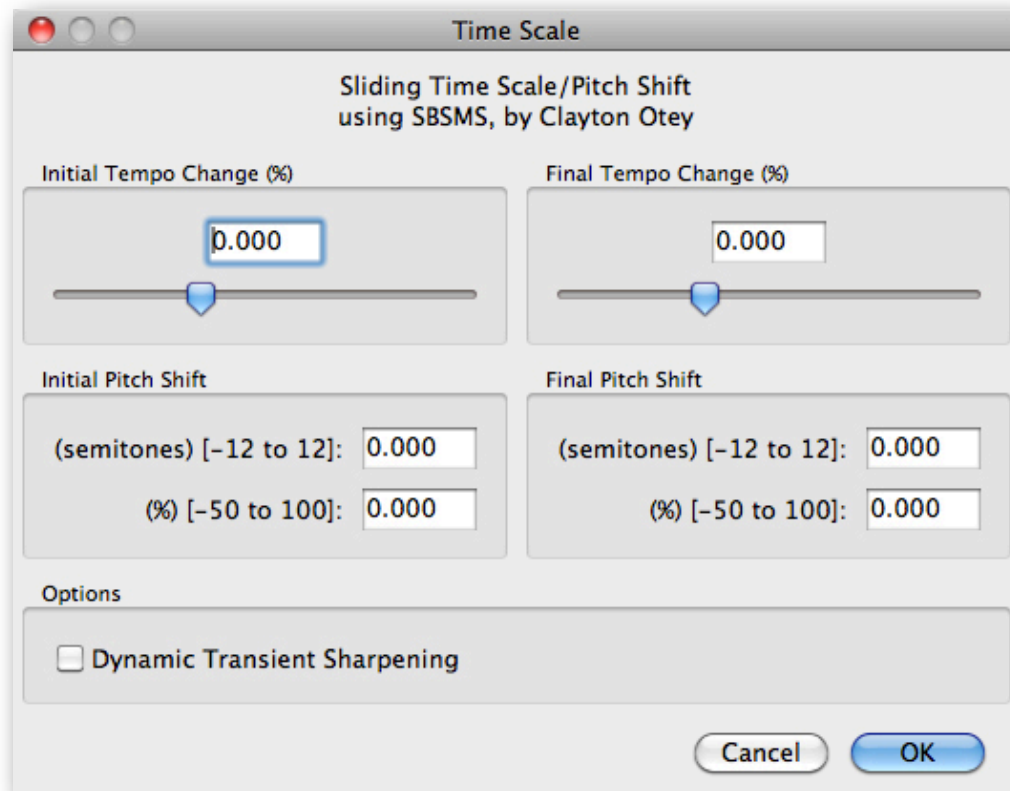
This is where the brain power comes in. Let's let the Audacity manual do it's best to sum this up, shall we?

Excerpt 01:

This effect allows you to make a continuous change to the tempo and/or pitch of a selection by choosing initial and/or final change values.

Tempo changes made without selecting a pitch change preserve the original pitch, and pitch changes made without selecting a tempo change preserve the original tempo. By changing only one of tempo and pitch and choosing the same initial and final value, you can use Sliding Time Scale / Pitch Shift in the same way as Change Tempo or Change Pitch to produce a high quality fixed change. However Sliding Time Scale / Pitch Shift lets you for example set the initial tempo change to -50% while also setting the final tempo change to +20%, the initial pitch change to +3 semitones and the final pitch change to +1 semitones.

Because of the high quality algorithm used, Sliding Time Scale / Pitch Shift is normally slower compared to performing the same effect with Change Tempo or Change Pitch.

Time Tracks can be used to bend tempo more flexibly (also affecting pitch) using Envelope Tool.

<center>

Excerpt 02:

</center>

Current Audacity now has an alternative time stretch effect called Sliding Time Scale/Pitch Shift. This uses an alternative time stretching library known as "Subband Sinusoidal Modeling" (sbsms). Sliding Time Scale / Pitch Shift allows you to change tempo (without changing pitch) while simultaneously changing pitch (without changing tempo). It can also set a different tempo or pitch change value for the start and end of the audio. Artifacts are still expected at more extreme settings, although no length changes arise from changing pitch, and changing tempo should not result in removed content or silences at the end of the selection. Note: this effect is several times slower than SoundTouch and might not work properly on low-powered machines.

Well, it looks good on ~~paper~~ the screen…but let's try some extremes to see what this baby can really do, shall we?!

Test 1: Tempo
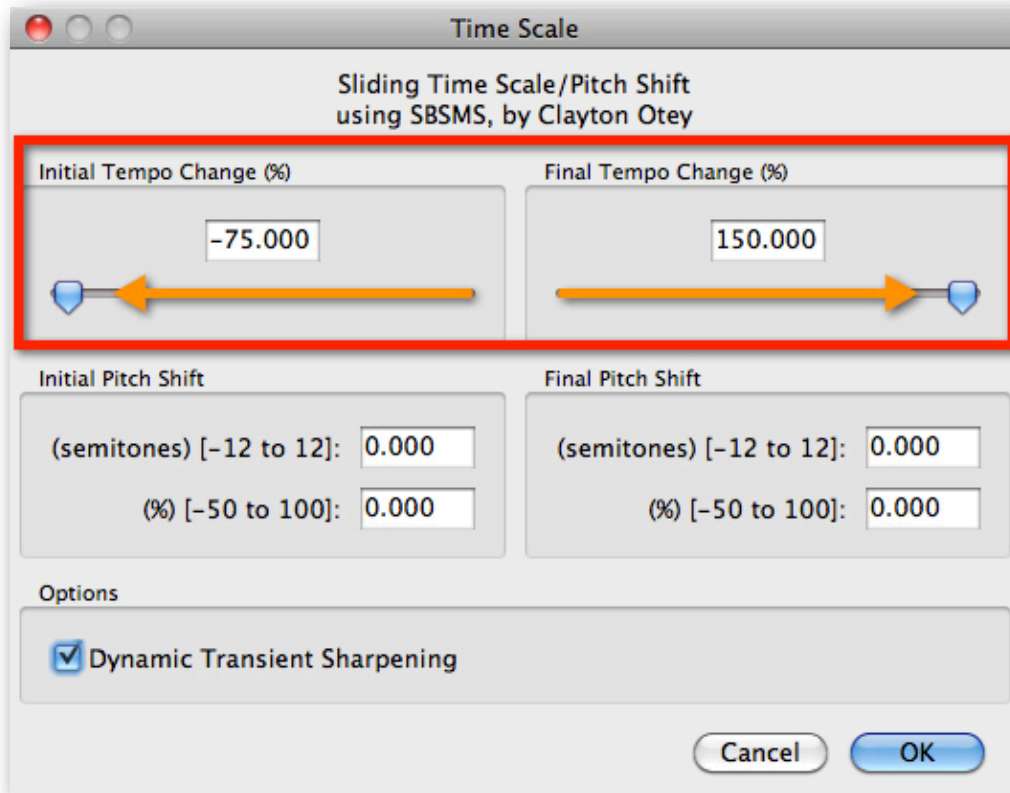
Comparing the above screenshot to the original, we see that the **Initial** and **Final Tempo Change (%)** sliders have been moved all the way left, and all the way right, respectively. From this step, select **OK** to confirm changes.

Looking at the waveform below, we can see a large change in Tempo, starting very slow (-75%) and increasing to 1.5x time (+150%). Listening to the audio, we confirm what our eyes told us and also hear that the Pitch has not been changed, despite the large range of Tempo… which is awesome!
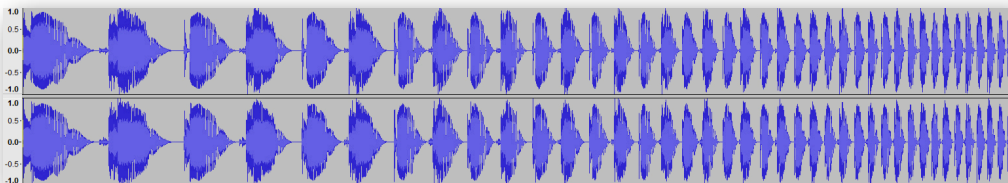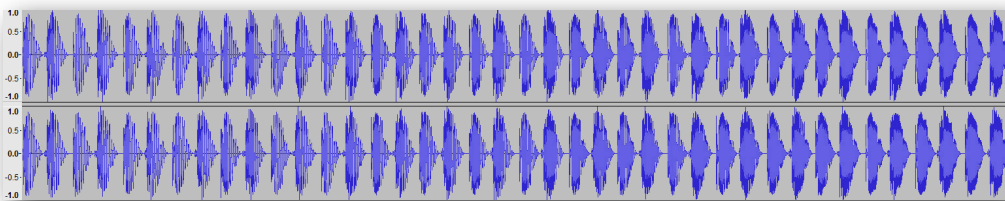

LISTEN TO THE ABOVE CLIP!

Test 2: Pitch
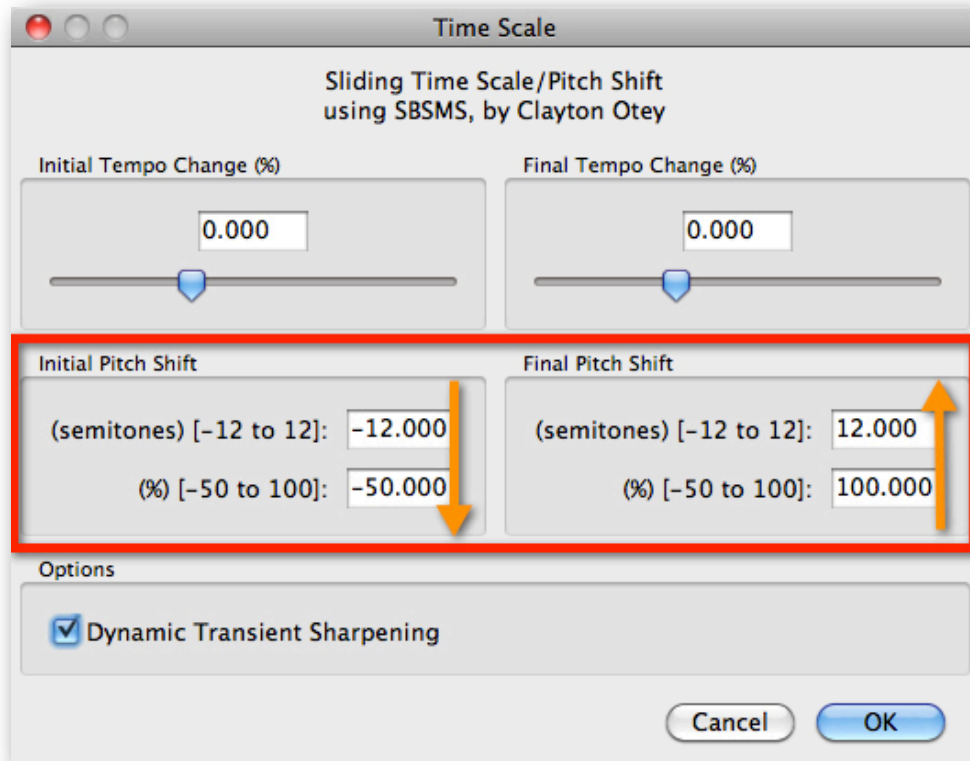
Comparing this screenshot to the original, we see that the **Initial** and **Final Pitch Shift** values have been moved to -50% and +100%, respectively. From here, select **OK** to confirm changes.

Looking at the waveform below, we don't see very much of a change from our original, which is a good thing, as the only thing changing would be Pitch, as opposed to the previous example's Tempo change.

Listening to the audio, we do hear a BIG difference as the low beginning of the beat steadily pumps along, winding up to a high-pitched finish!
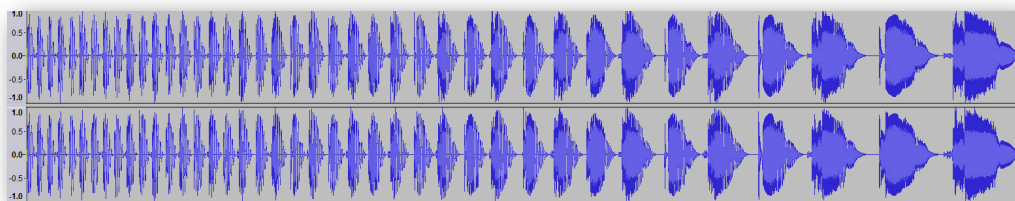

LISTEN TO THE ABOVE CLIP!

Test 3: Tempo + Pitch
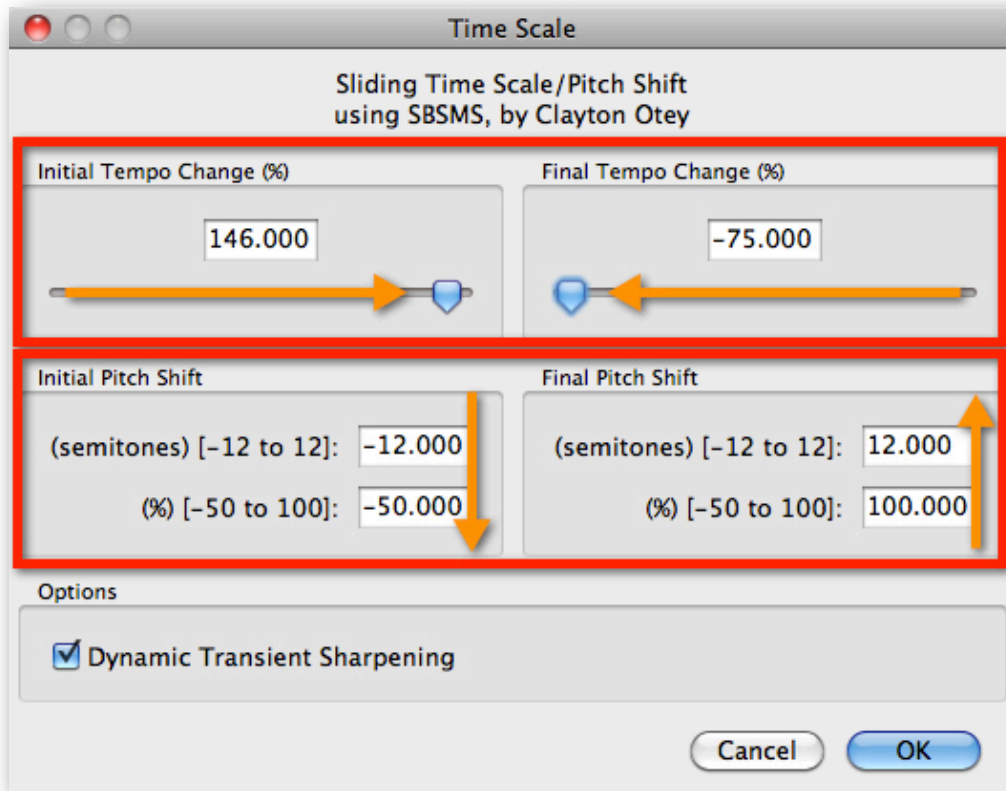
Looking at the above combination of tempo and pitch change (tempo switched from Test 1 and pitch carried over from Test 2), we are able to come up with a somewhat predictable outcome:

We should see and hear a fast start with a low pitch, gradually changing to a slow ending with a high pitch. Here's what the waveform looks like (just as we predicted):
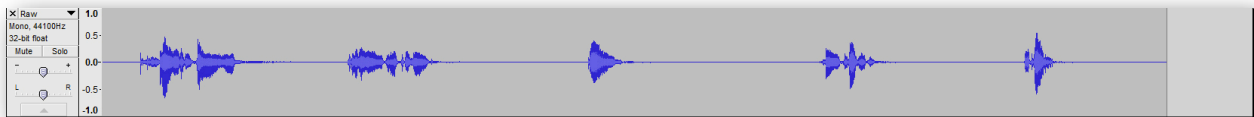

LISTEN TO THE ABOVE CLIP!

Aside: Notice how all (3) tests were the exact same length as the original (00:19)? This is not by coincidence, it is by design. While this useful effect outlined here allows for a great deal of change to the sonic quality of your audio, it does not mean you must compromise the audio's duration…woo ha!

Truncate Silence

If you record spoken word for a podcast or radio show and have extra silence in-between segments or mid-sentence, this silence-removing effect is for you! Also, if you find yourself often removing a lot of silence from your recordings, this is an excellent way to automate the process.

Step 1: Open Audio

With the Audacity software open, use the keyboard shortcut ⌘**+O** or click **File >> Open** and choose the audio you wish to edit. Once the file opens in Audacity, our readers will see something like this:


[LISTEN TO THE ABOVE CLIP!](#)

Step 2: Highlight & Truncate Silence

This part is really simple. Click + drag with the mouse cursor over the area you want to apply the effect, or for those keyboard enthusiasts out there, use ⇧ **+ Left / Right** arrow keys to make your selection.

For the **Truncate Silence** effect, our readers will want to select **Effect >> Truncate Silence**.

Immediately after selecting **Truncate Silence**, the following pop-up window will appear:
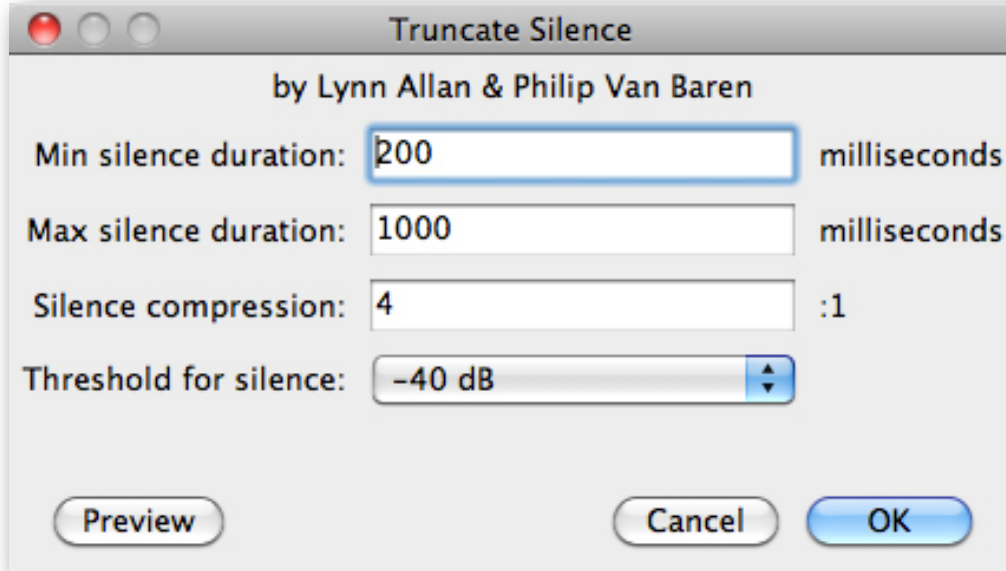
For this example, we've left the settings at their defaults, but could easily tighten up the **Max silence duration** as far as a value of 200 milliseconds without sounding too "squished".

If you'd like to reference the more technical side of this effect (**Min/Max silence duration**, **Silence compression**, **Threshold for silence**), we recommend peeking at the Audacity Manual.

Here's what our finished version looks like after applying the above settings:
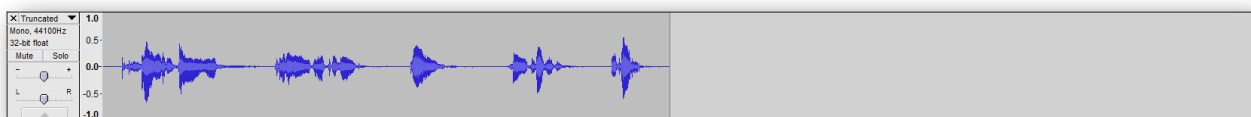
LISTEN TO THE ABOVE CLIP!

Aside: Notice how the truncated clip is much shorter overall, and with the gaps of silence being closed up sounds much more fluid than the original (raw) recording. This is what this effect does best! It's also helpful to review your recording before exporting, just to make sure your audience is receiving the highest possible quality!
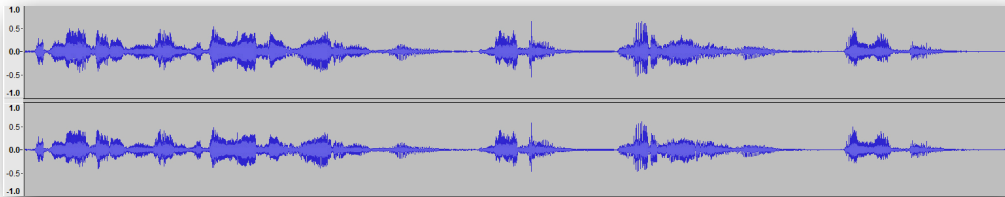
WahWah

If you enjoy the wah wah sound featured on guitar tracks in popular songs like Jimi Hendrix's "[Voodoo Chile](#)" and Alice In Chains' "[Man In The Box](#)", this effect is sure to perk your interest!

In this example we walk our readers through the process of mimicking the popular wah wah sound featured prominently in the above (2) songs, along with many others since the 70's!

If you are looking for that certain sound to spice up your productions, or are afraid of dropping cold hard cash on a wah wah pedal, and prefer to introduce it to your recordings "in post", as opposed to the raw recording, then this is the effect for you.

Step 1: Open Audio

With the Audacity software open, use the keyboard shortcut ⌘**+O** or click **File >> Open** and choose the audio you wish to edit. Once the file opens in Audacity, our readers will see something like this:


[LISTEN TO THE ABOVE CLIP!](#)

Step 2: Highlight & Wahwah

his part is really simple. Click + drag with the mouse cursor over the area you want to apply the effect, or for those keyboard enthusiasts out there, use ⇧ **+ Left / Right** arrow keys to make your selection.

For the **Wahwah** effect, our readers will want to select **Effect >> Wahwah**.

Immediately after selecting **Wahwah**, the following pop-up window will appear:
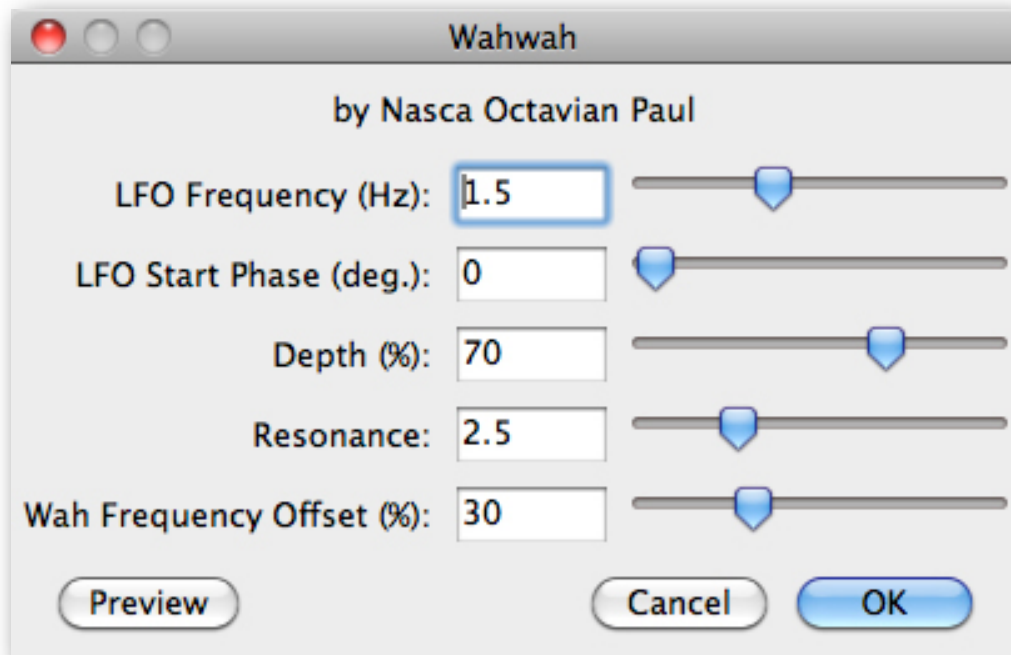
For today's example, we've left the settings at their defaults, but please feel free to experiment with the values / sliders seen above to fine-tune the effect to your liking.

If you'd like to reference the more technical side of this effect (**LFO Frequency (Hz)**, **LFO Start Phase (deg.)**, **Depth (%)**, **Resonance** and **Wah Frequency Offset (%)**), we recommend peeking at the Audacity Manual.

Here's what our finished version looks like after applying the above settings:
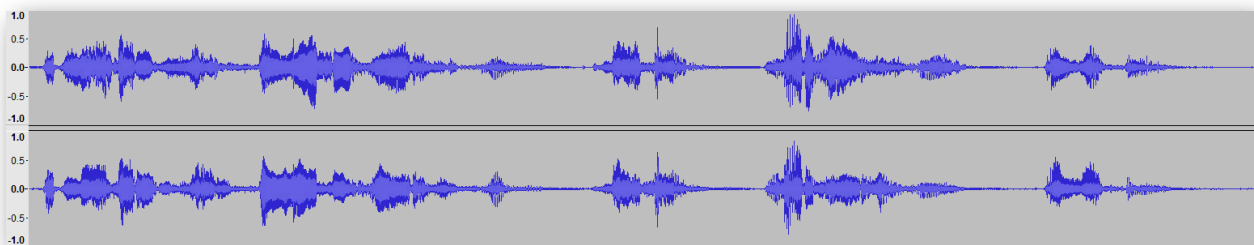
LISTEN TO THE ABOVE CLIP!

Aside: Notice how the applied clip sounds almost "under water"? The effect most certainly does exude that quality, by design. Try applying it to something other than vocals or guitars, and see just how far the potential can reach!

Convert to MP3

Have you ever heard the phrase, "There's more than one way to skin a cat"? We're not quite sure the exact origin of this saying, but we know now that it can be easily applied to the task of converting virtually any file format (WAV, AIFF, etc.) to MP3. Not that there's any skinning involved, just that there are literally thousands of ways to achieve this task … especially using Mac OS X.

In this example, we will take our readers through the steps of converting a WAV file to the MP3 format using. Difficulty rating? On a scale of (1) to (10), with (1) being the easiest and (10) being most difficult, this sits right around the (1) region!

Step 1: Open Audio

With the Audacity software open, use the keyboard shortcut ⌘+O or click **File >> Open** and choose the audio you wish to edit.

Step 2: Export Audio

Here our readers will see we've selected the WAV file we're choosing to convert to MP3. Even better, it's a new(-ish) [Toddla T](#) song remixed by [SebastiAn](#) — too cool!
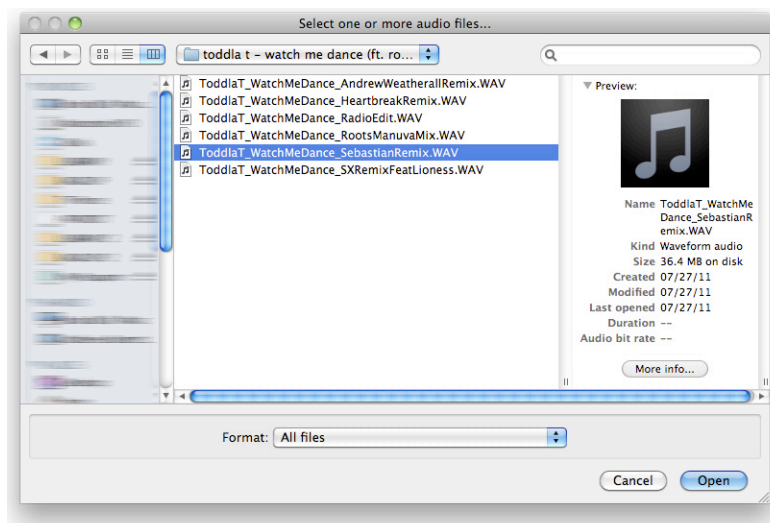
Click **Open** once you've made your selection in order to continue. Next, click on the **File** menu in the top-left and choose to **Export** your audio.
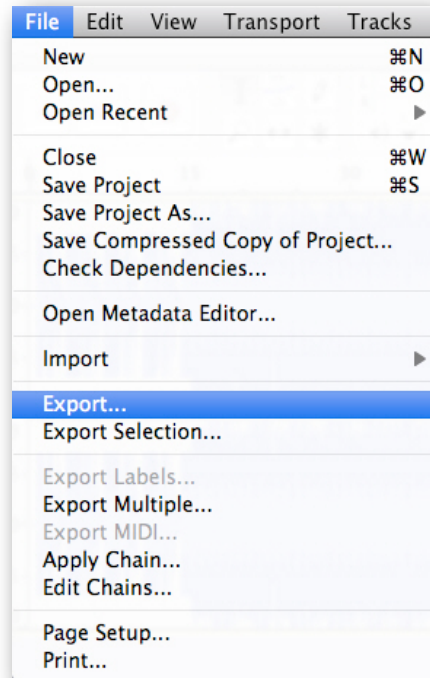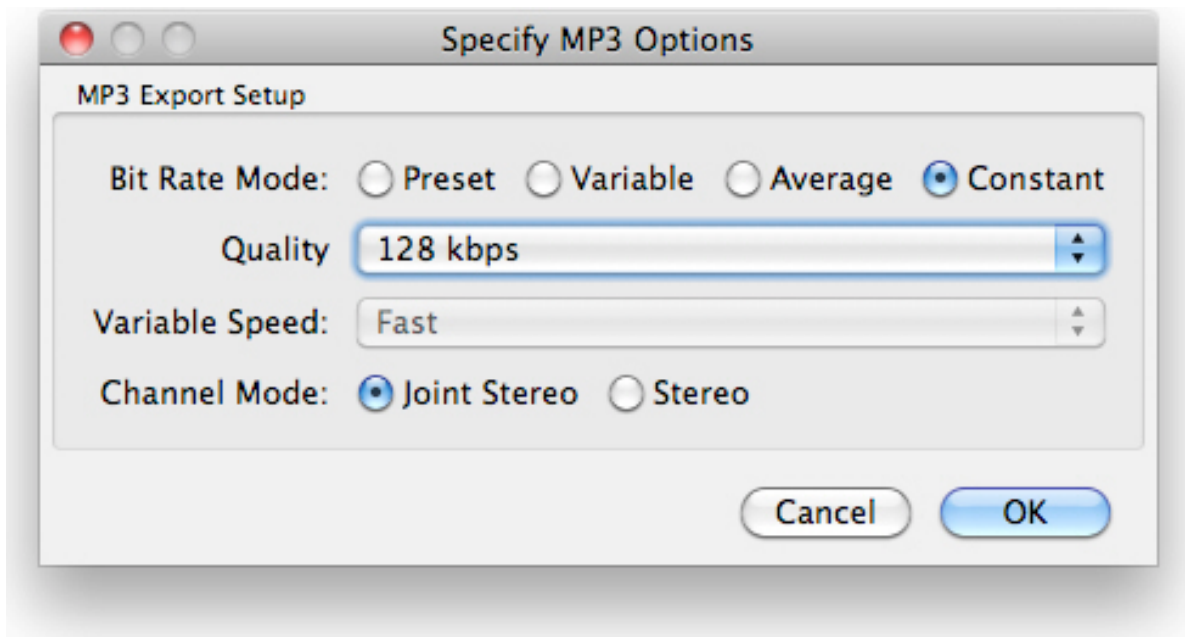

This will begin the process of rendering our project in a user-selected **Format**; which in today's walk-through will be the **MP3** file type.
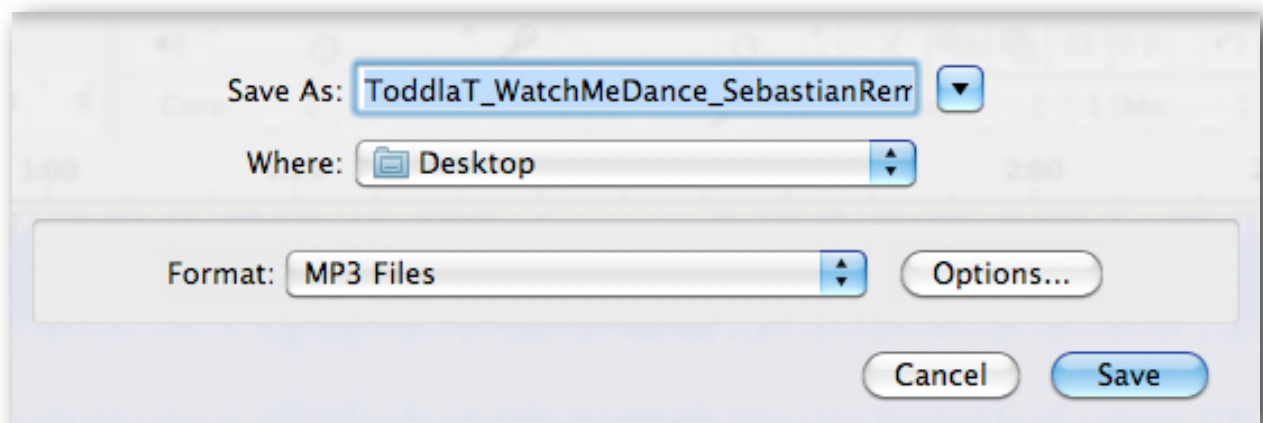
MP3 Bit Rate (Quality)

Clicking **Options…** allows us to set specific parameters for the file to be rendered to disk.

Typically, we will choose to use a **Constant** bit rate, but if you'd like to create a Variable bit rate MP3, you can do so by clicking the radio button left of **Variable** in the **Bit Rate Mode** section.

Next we'll want to click the **Quality** drop-down menu and select the desired bit rate for our MP3 file.
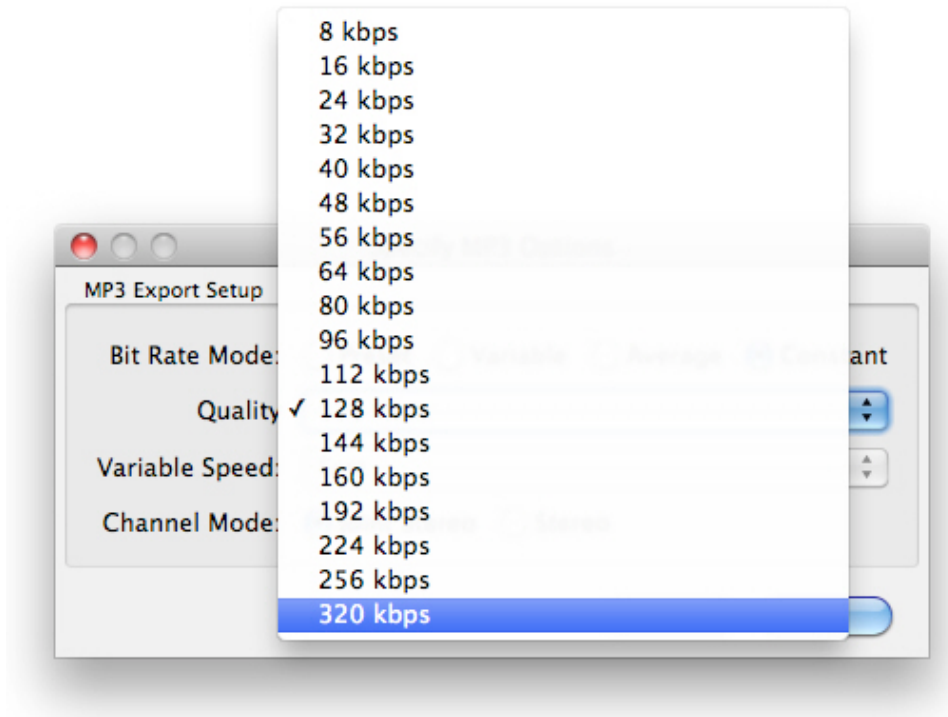
This process allows the user to select a pre-defined quality (bit rate) for the file to be rendered to disk. While the default is set to **128 kbps** as seen above, you are welcome to choose any quality up to **320 kbps**, which is the highest quality MP3 possible.

Hint: The larger the number, the higher the quality, and respectively the larger the file size. The smaller the number, the lower the quality and smaller the file size…

Once selected, click **OK** to confirm and **Save** to continue.

Edit MP3 Metadata

During the last step of exporting our MP3 file, we can add any pertinent metadata, such as the **Artist Name**, **Track Title**, **Album Title**, **Year** + More!
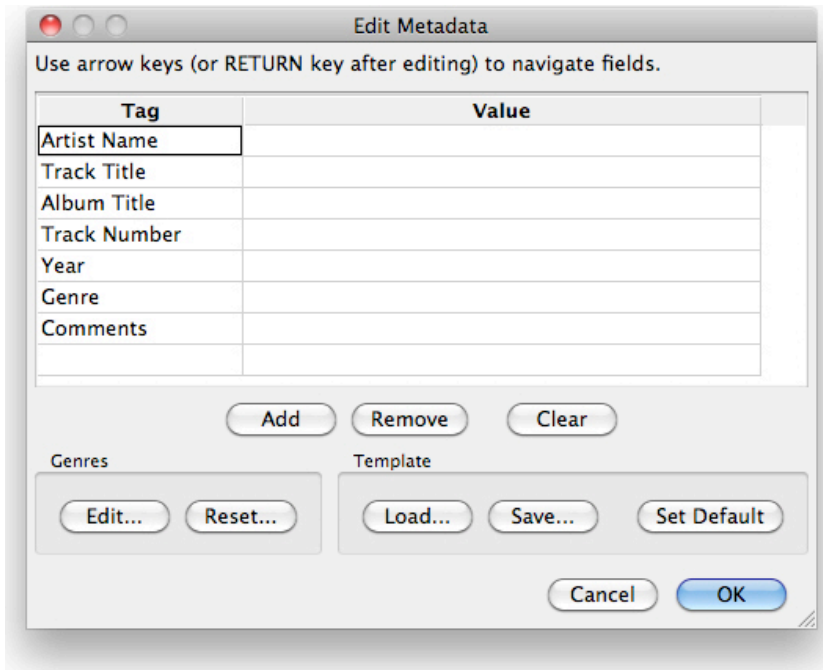
Click **OK** and watch as your new MP3 file is created.

Aside: If you were to open the Metadata Editor again, or open the file in any other MP3 playback software (iTunes, Windows Media Player, Winamp, etc.), the newly added metadata will now appear — yay!

Aside: If you are unable to export to the MP3 format, we recommend making sure that the LAME MP3 Encoder has been properly installed on your computer.

Final Thoughts on *Audacity for Mac*

We hope you've enjoyed your journey through *Audacity for Mac*, and have found as many nuggets of useful information as you were hoping for, including but not limited to a general understanding of [the installation process](#), [MP3 encoding](#) and [navigating your audio](#) using the Audacity software.

After completing this eBook, we believe that you will now have a firm grasp on many of the capabilities Audacity provides, and perhaps even an enriched appreciation for the hard work that went into the creation of this free, open-source software contributed to by so many generous individuals throughout the world.

IN CLOSING

We sincerely hope that in reading *Audacity for Mac,* any apprehension you may have had toward the often daunting task of cleaning up audios and achieving the audio editing + production goals yourself, your company and/or your clients have set, have been alleviated, and that you've gained the confidence needed to emphatically jump in to future audio-related projects. If there's anything that you feel could be better explained or is simply not included in this eBook, please drop us a line at support@audioacrobat.com or simply give us a call at (866) 891-0087, and we'll do our best to clear up any questions or concerns you may have.

Thank you again for reading, we sure have had a lot of fun filling these pages!