**LESSON 5: SOUND**

## OBJECTIVES

When you have finished this lesson, you will understand:

- the correct parameters for imported sounds
- modifying sounds in Flash
- the difference between event sounds and stream sounds

and you will have learned:

- how to import sounds into Flash
- how to add sound to a button
- how to set options in the Sound panel of the Frame Properties dialog box
- how to stream sound

## EXERCISES

## ADDING SOUND TO YOUR MOVIE

You can bring sounds into your Flash file by importing them or by opening the Library of another Flash file that contains the sounds.

Wave files (WAV) are the Windows standard for uncompressed sound. AIFF files are the Mac standard. You can think of WAV and AIFF as the sound equivalent of an image bitmap. They are large because they contain a lot of information about the sound.

You import either WAV (PC) or AIFF (Mac) sounds into Flash, just as you would import any other file type. Flash stores sounds in the Library along with bitmaps and symbols. MP3 files cannot be imported into Flash, but Flash makes good use of MP3 at export time.

MP3 has quickly become the new standard for compressing music files because it delivers high-quality sound in a very compact file. It is analogous to the JPEG compression format for images.

You import sounds into Flash in one of the uncompressed formats (WAV or AIFF), and Flash performs the compression according to your specifications. You'll learn about setting specifications in Lesson 6.

Sounds require considerable amounts of RAM and disk space. Keep your sounds small by importing 22kHz 16-bit mono sounds whenever possible (importing a stereo sound doubles the data). Flash can import either 8- or 16-bit sounds at sample rates of 11kHz, 22kHz, or 44kHz. You can convert sounds to lower sample rates when you export.

You need only one copy of a sound file in your Flash file Library to use that sound in any number of ways in your movie.

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In the next exercise, you are going to add a geese-on-a-pond sound that will play when the viewer presses the Duck button and triggers the Down state. The viewer's action is called an "event," and a sound that is triggered by an event is called an "event sound." An event sound is like a movie clip in that it is inserted in one frame and plays until it's finished, independent of what else is happening on the movie Timeline.

Both of the sounds you will import are 16-bit, 44kHz stereo files. This will give you a range of options at compression time, which will come in the Publish lesson coming up next.

### To add sound to an event:

1. Open boat28.fla in the My Work folder or the Lesson5 folder.
2. Click on the **List of Symbols** button at the upper right of the **Timeline** and then click on the **Duck Button** symbol.
   A new window opens, where you can edit the symbol.
3. Click on the **Add Layer** icon to add a new layer. Double-click on the layer and name it sound.
4. Select the **Down** frame of the sound layer. Press **F6** to insert a keyframe.
5. Choose **File › Import**. If you're working on a PC, select **WAV** as the file type and open the geese.wav sound file. If you're working on a Mac, select **AIFF** as the file type and open the geese.aif sound file.
   Nothing changes on the **Stage**, but the sound is added to the **Library**.
6. Press **Ctrl+L** (PC) or **Cmd+L** (Mac) to open the **Library**. With the **Down** frame selected, drag the geese.aif or geese.wav sound and release it on the **Stage**.
   Look for the sound wave in the Down frame. It looks like a straight line.
7. Click on the **Beach** tab to return to the movie or choose **Beach** from the **Edit Scene** list at the upper right of the **Timeline**. Press **Ctrl+Enter** (PC) or **Cmd+Return** (Mac) to test the movie.
   When the **Duck** button is pressed, the sound is triggered. Your animated button looks and sounds great.
8. Save your file as boat29.fla in the My Work folder. Close the file.

The sound that accompanies the Boat scene is treated differently. The ocean sound will be "streamed" during download so the first part of the sound can play while the rest of the sound is being downloaded.

### To add a streaming sound:

1. Open boat29.fla in the My Work folder or the Lesson5 folder.
2. Choose the **Scene List** icon at the upper right of the **Timeline** and select the **Boat** scene.
3. Lengthen the movie by dragging the last frame of each layer (except the Actions layer) to **Frame 60**. To drag a frame, click to select it, release the mouse button, and then drag.
   Notice that the **Motion Tween** is active and generates the required additional frames with no effort on your part. This will give the boat a little more time to navigate the rather extreme ups and downs of the motion guide.
4. Add a layer. Then double-click on the layer and name it Sound.
5. Choose **File › Import**. If you're working on a PC, select **WAV** as the file type and open the ocean.wav sound file. If you're working on a Mac, select **AIFF** as the file type and open the ocean.aif sound file.
6. Double-click on Frame 1 to open the **Frame Properties** dialog box. Click on the **Sound** tab. From the **Sound** pop-up menu, choose ocean.wav (PC) or ocean.aif (Mac).

In the Sound Frame Properties dialog box are two panes displaying the sound: these are the left and right channels of the sound. Between the two panes is a Timeline, which can be measured in frames or seconds (see Figure 5-1). When the Sound Timeline is set to Frames, it corresponds to the Movie Timeline.

At the beginning and end of the Timeline are vertical gray bars, the Time In and Time Out controls.

**Note:** The sound begins at the In point and ends at the Out point. The Time In and Time Out controls are used to change the In point and Out point of the loop. Remember that if you do not intend to use certain portions of the sound anywhere in the movie, you should edit them out before bringing the sound into Flash. Looping the sound does not increase file size significantly.
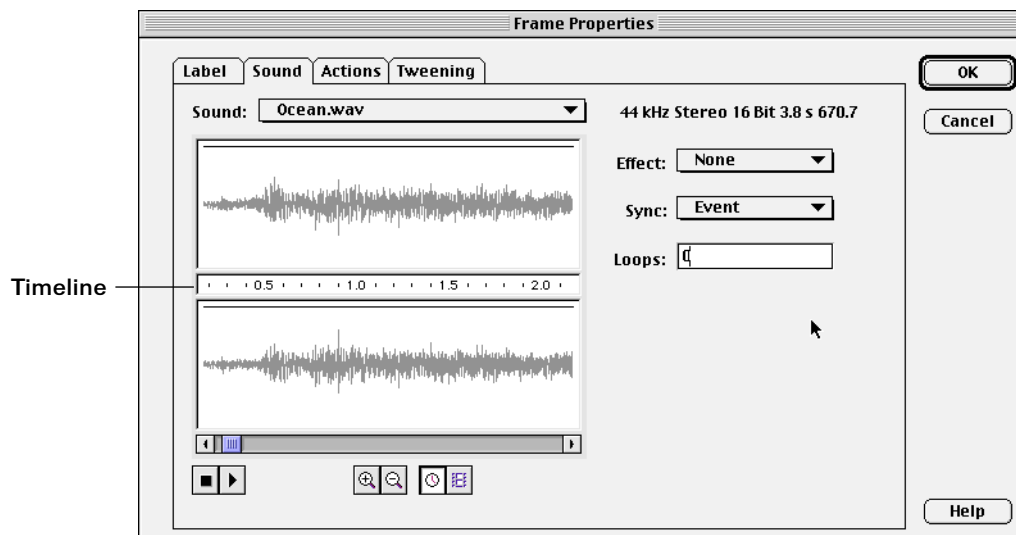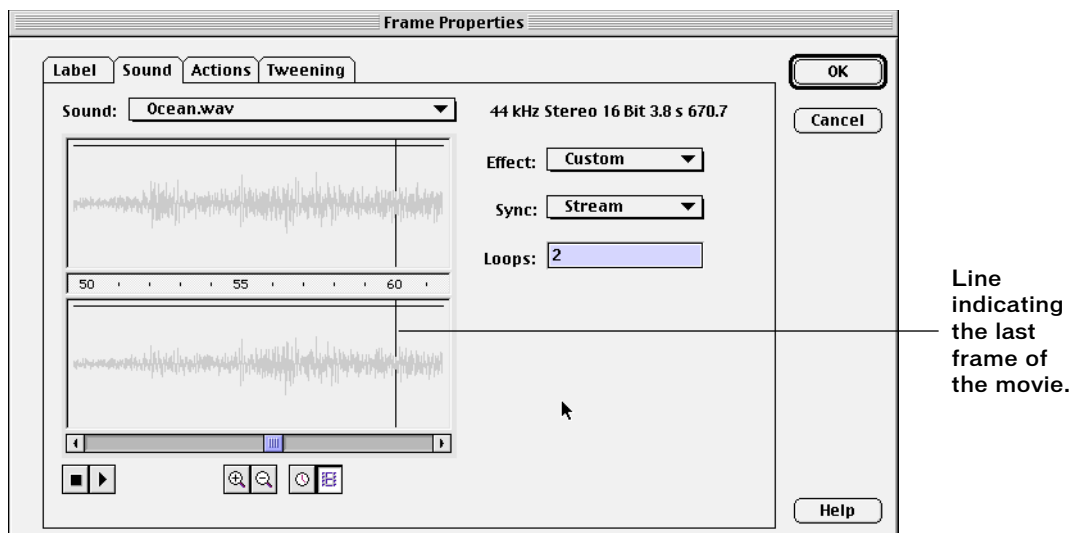


**Figure 5-1**
*The Sound Timeline.*

7. Take a minute to familiarize yourself with the **Sound pane**. Play the sound.

   Click on the **Zoom In** icon to zoom in on the sound waves and then use the scrollbar to navigate back and forth. This sound is a little less than 1 second in length.

   Click on the **Frames** icon to change the **Timeline's** display from seconds to frames. This sound is 45 frames in length.

8. Click on **OK** to close the **Frame Properties** window and return to the movie.

9. Use the scrollbar in the **Timeline** to scroll to the end of this scene.

   The Boat scene is 60 frames long.

10. Rewind the movie and play the scene.

    The animation lasts longer than the sound you just added. You need to lengthen the sound to last until the end of the animation.

11. Double-click on **Frame 1** of the **Sound 1** layer to reopen the **Sound** pane in the **Frame Properties** dialog box. In the **Loops** text box, type 2.

This will play the sound twice, doubling its playback time. Your sound will now play for 90 frames. A vertical line appears at the beginning and end of the sound graph in each sound channel, indicating the location of the last frame of the animation (see Figure 5-2).

**Note:** The looped sound is shaded in the display.



**Figure 5-2**
*The waveform after you have set the sound to loop twice.*

12. Click on the **Play** icon to hear your changes.

When the sound reaches its end point, it loops back to the beginning and plays the sound a second time.

**Note:** Beware—looping does not always work well with sounds that were not created to be looped.

13. Save your file as boat30.fla in the My Work folder and close the file.

## WORKING WITH ENVELOPE LINES

At the top of each channel's Sound window is a thin black line. This Envelope line represents the playback volume of the channel. You can use the Envelope to create such effects as fading in, fading out, and fading from side to side.

**Note:** Fading from side to side causes the sound to fade from one channel to the other, which creates an illusion of movement because the sound is heard now in one ear and now in the other.

**To control the transitions for your sound:**

1. Open your file boat30.fla from the My Work folder or the Lesson5 folder. Make sure that the **Sound 1** layer is active. Double-click on any frame that contains the sound to open the **Frame Properties** dialog box.

   The **Sound Timeline** should be set to frames, not seconds.

2. Choose **Fade Out** from the **Effect** pop-up menu.

Look at the envelope line at 35 frames. The line begins to descend from the envelope handle, reaching its lowest point at the end of the first loop. The envelope continues in a flat line until the end of the second loop. You want to begin the fadeout later so the sound doesn't completely fade out until the end of your animation.

3. Drag one of the top envelope handles to the beginning of the second loop (you might need to zoom out to see the whole segment you are working on).

4. Drag one of the bottom envelope handles to the end of the second loop to create a slow fadeout that will last until the end of the animation (see Figure 5-3).

   The **Effect** changes to **Custom** when you manipulate the envelope.

5. Set **Sync** to **Stream** and click on **OK** to close the window.
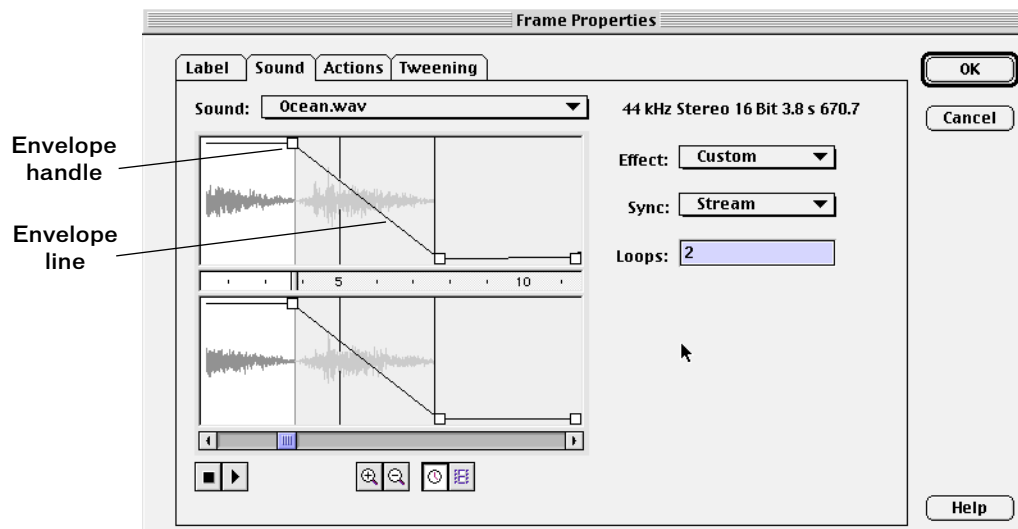


**Figure 5-3**
*The envelope line, which indicates volume.*

6. Rewind and play the movie.

   Now your sound lasts as long as the animation, and then fades out gradually.

7. Save your file as boat31.fla in the My Work folder.

## SECTION ASSIGNMENT

- Attach a sound to the Over state of the Duck button.

- Add a sound to the first frame of the Beach scene.