Adobe®
Photoshop® Elements

User Guide

Adobe

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Welcome to the Adobe® Photoshop® Elements application, an easy-to-use yet powerful image-editing, photo-retouching, and Web-graphics solution. Adobe Photoshop Elements software offers robust features designed specifically for amateur photographers, hobbyists, and business users who want to create professional-quality images for print and the Web.

Registration

Adobe is confident you will find that its software greatly increases your productivity and enables you to explore your creativity. So that Adobe can continue to provide you with the highest quality software, offer technical support, and inform you about new Photoshop Elements software developments, please register your application.

When you first start the Adobe Photoshop Elements application, you're prompted to register online. You can choose to submit the form directly or fax a printed copy. You can also register by filling out and returning the registration card included with your software package.

Installing Adobe Photoshop Elements

You must install the Photoshop Elements application from the Adobe Photoshop Elements CD onto your hard drive; you cannot run the program from the CD.

Follow the on-screen installation instructions. For more detailed information, see the *How_to_Install.wri* (Windows®) or *How_to_Install.txt* (Mac® OS) file on the CD.

Learning Adobe Photoshop Elements

Adobe provides a variety of options for you to learn Photoshop Elements, including a printed user guide, online Help, Hints, Recipes, tutorials, and tool tips. You can also use the free Adobe Online service to easily access a host of continually updated Web resources for learning Photoshop Elements, from tips and tutorials to technical support information.

Adobe Acrobat® Reader™ software, included on the Photoshop Elements CD, lets you view Adobe Portable Document Format (PDF) files. Acrobat Reader or Acrobat is required to view some of the documents included on this CD.

Using the printed documentation

A printed user guide, *Adobe Photoshop Elements User Guide,* is included with the application.

The user guide assumes you have a working knowledge of your computer and its operating conventions, including how to use a mouse and standard menus and commands. It also assumes you know how to open, save, and close files. For help with any of these techniques, please see your Microsoft Windows or Mac OS documentation.

Using online Help

The Adobe Photoshop Elements application includes complete documentation in an accessible HTML-based help system.The help system includes all of the information in the *Adobe Photoshop Elements User Guide.* It contains essential information on using all of the Photoshop Elements commands, features, and tools, as well as tutorials, keyboard shortcuts, and full-color illustrations.

The accessible HTML format provides easy navigation online, as well as easy reading using Web browsers. The file can also be printed out from the HTML version or from an included PDF version to provide a handy desktop reference.

To properly view online Help topics, you need Netscape Communicator 4.X or Microsoft Internet Explorer 4.0, 5.0, or 5.5.

To start online Help:

Do one of the following:

• Choose Help > Help Contents.

• (Windows) Press F1.

Note: To properly view online Help topics, you must open them in Photoshop Elements.

Using Hints, Recipes, and tutorials

Photoshop Elements provides Hints, Recipes, and tutorials to help you learn the application quickly and work knowledgeably.

The Hints palette automatically displays an illustration of and brief description about any palette or tool your mouse pointer is on. The Recipes palette guides you through typical image-editing tasks such as removing red-eye in photos, adding effects to text, and adding GIF animations.

Tutorials are available through the Help system and use included sample files to take you step-by-step through the basics of working with layers, animated GIFs, and merging photos. It is a good idea to work through the layers tutorial in particular, since understanding layers is an important step in understanding Photoshop Elements tools and techniques.

Using context-sensitive menus

Context-sensitive menus display options for tools and palettes, and change depending on the item you've currently selected.

To display context menus:

1 Position the pointer over an image or palette item.

2 Click with the right mouse button (Windows) or hold down Control and press the mouse button (Mac OS).

If no context-sensitive menu appears, no menu is available for that tool or palette.

Using tool tips

The tool tips feature lets you display the name of tools, buttons, or controls.

To identify a tool, button, or control:

Position the pointer over a tool, button, or control, and pause. A tool tip appears showing the name and keyboard shortcut (if any) for the item.

Note: Tool tips are not available in most dialog boxes.

Using Web resources

If you have an Internet connection and a Web browser installed on your system, you can access additional resources for learning Photoshop Elements, located on the Adobe Systems Web site on the World Wide Web. These resources are continually updated.

To access the Adobe home page for your region:

1 Open the Adobe U.S. home page at www.adobe.com.

2 From the Adobe Sites menu, choose your geographical region. The Adobe home page is customized for several geographical regions.

Using Adobe Online

Adobe Online provides access to the latest products and features that expand your application's power, including professional services from Adobe and our partners. Bookmarks are also included to take you quickly to noteworthy Adobe and Photoshop Elements-related sites.

Through Adobe Online, you'll find the following information about how to use and update Photoshop Elements:

• Step-by-step tutorials.

• Quick tips that provide fast answers to common problems.

• Updates, patches, and plug-ins.

• Photoshop Elements Top Issues containing the latest Photoshop Elements technical support solutions.

• Technical guides.

• A searchable database of answers to technical questions.

• Links to user forums.

Adobe Online is constantly changing, so you should click Refresh before you use it. Refreshing through Adobe Online updates bookmarks and buttons so you can quickly access the most current content available. You can use preferences to automatically refresh Adobe Online daily, weekly, or monthly.

When you set up Adobe Online to connect to your Web browser, Adobe can either notify you whenever new information for Adobe Online is available or automatically download that information to your hard disk and install it. If you

choose not to use the automatic download feature, you can still view and download new Adobe Online files whenever they are available by using the Refresh command.

To use Adobe Online:

1 In Photoshop Elements, choose Help > Adobe Online, or click the Adobe icon in the shortcuts bar.

Note: You must have an Internet connection and an Internet browser installed. Adobe Online will launch your browser using your default Internet configuration.

2 Do one of the following:

• Click Refresh to make sure you have the latest version of the Adobe Online window and its buttons, as well as the latest bookmarks. It is important to refresh the screen so that the current options are available for you to choose from.

• Click Preferences to specify connection options. General preferences affect how Adobe Online interacts with all Adobe products installed on your system, and Application preferences affect how Adobe Online interacts with Photoshop Elements. To see an explanation of each preference option, click Setup and follow the prompts. You can also set up an automatic refresh using the Update Options.

• Click any button in the Adobe Online window to open the Web page to which the button is linked.

• Click the bookmark button ( ) to view suggested Web sites related to Photoshop Elements and Adobe. These bookmarks are automatically updated as new Web sites become available.

• Click Close to return to Photoshop Elements.

Customer support

When you register your product, you may be entitled to technical support for a single incident. Terms may vary depending on the country of residence and are only available for retail and upgrade versions. For more information, refer to the technical support card provided with the Photoshop Elements documentation.

Customer support on Adobe Online
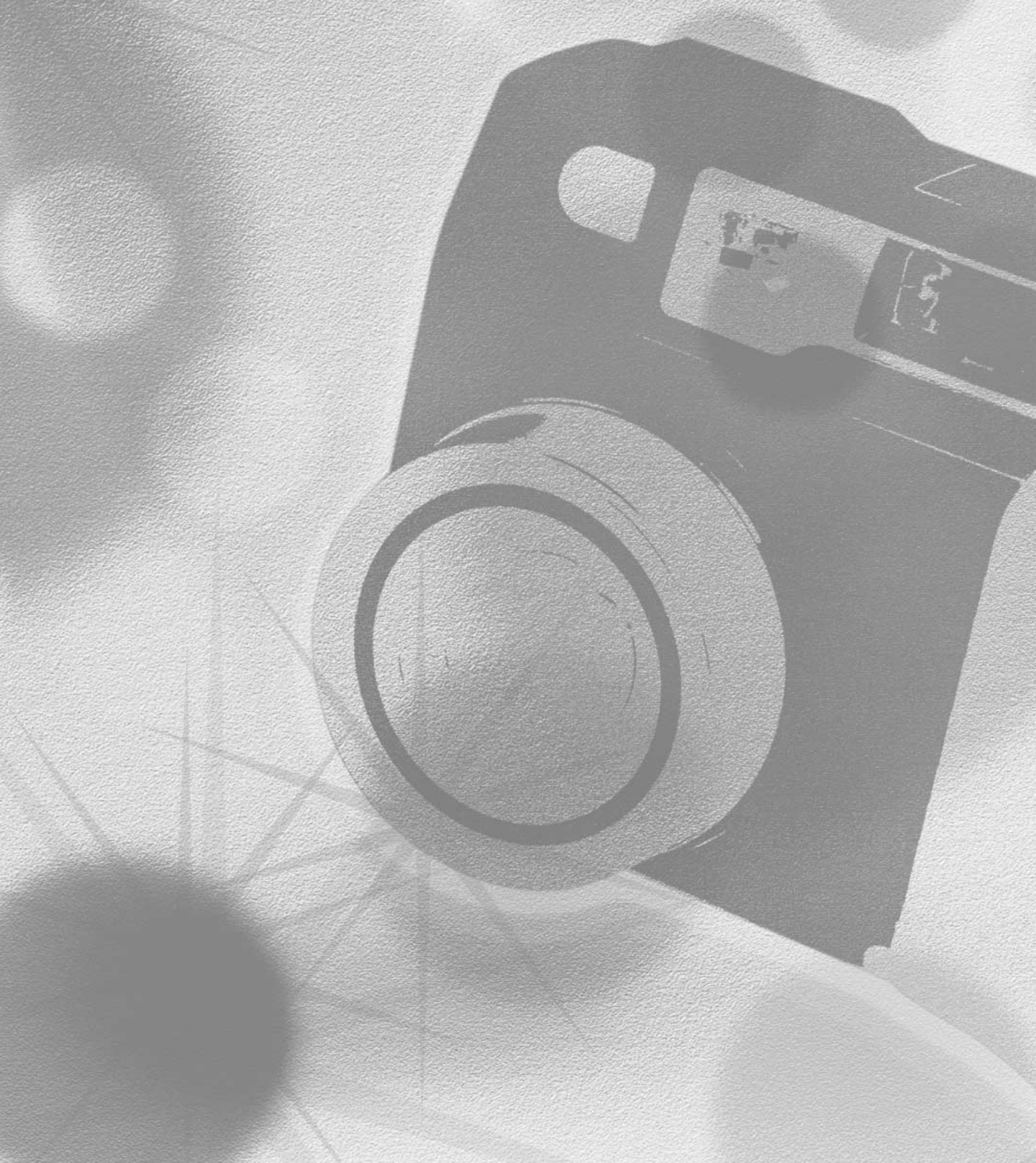
Adobe Online provides access to FAQs (Frequently Asked Questions) and trouble-shooting information that provides solutions to common problems.

Additional customer support resources

Adobe Systems provides several forms of automated technical support:

• See the ReadMe and ReadMe First! files installed with the program for information that became available after this guide went to press.

• Explore the extensive customer support information on the Adobe World Wide Web site (www.adobe.com). To access the Adobe Web site from Photoshop Elements, choose Help > Adobe Online or click the Adobe icon in the shortcuts bar. (See "Using Web resources" on page 3.)

• Read the Top Issues Adobe document that is available from the Help menu.

Overview

This overview of Adobe Photoshop Elements introduces you to the key features of the program. You'll learn how easy access to state-of-the-art tools lets you transform photos captured with digital cameras and scanners into high-impact images. Photoshop Elements provides flexible tools that allow you to freely experiment and get creative with your images. And the versatile output options let you quickly prepare images for print, email, or posting on the Web. Also, be sure to explore Recipes to learn additional digital imaging tools and techniques for perfecting your artwork.

Digital Photography: Capture and Correct

With Photoshop Elements, you can capture photos from digital or traditional cameras and start working with your images immediately. When Photoshop Elements is launched, the Quick Start screen lets you quickly open or create a file, acquire an image from a scanner or digital camera, and more.

Once you have the image in Photoshop Elements, the software offers features designed to help you begin retouching images with ease.

Fix your photos

Photographs are often taken or scanned at a slight angle and as a result may need to be cropped or rotated. Photoshop Elements lets you automatically straighten and crop images by using one of the Straighten Image commands. You can also cut and rotate images by using the crop tool.

Red eye occurs when light from a camera's flash reflects off the back of the eye. You can easily remove red eye from an image using the red eye brush. With the red eye brush, you select the color you want to replace, such as the red in a person's eyes, and replace it with the color you choose. For red eye reduction, you can just click the Default Color button in the options bar for fastest and easiest results. You can even use the red eye brush to retouch other details in an image, such as braces.

Photoshop Elements software can also correct common photographic problems such as improper lighting. The Adjust Backlighting command lets you darken overexposed areas of an image, while the Fill Flash command instantly adjusts underexposed areas.

Adjust the tone

Tools such as dodge, burn, and sponge simulate traditional darkroom techniques and let you easily adjust the tone of specific areas in a photo. The dodge tool lightens areas, while the burn tool darkens them. The sponge tool, meanwhile, lets you subtly alter the color saturation of an area.

Correct color

Photoshop Elements provides an extensive collection of powerful color correction tools that let you eliminate the guesswork from color correction. The Variations command automatically generates multiple color-adjusted versions of an image and displays them side-by-side so you can easily identify the best color adjustment to make. Levels and other professional controls precisely enhance color and dynamic range without sacrificing picture detail. Color Cast Correction offers one-click adjustments to remove color cast problems.

Digital Photography: Explore and Create

Photoshop Elements tools enable you to explore your visual ideas while mastering the elements of digital imaging.

Create panoramas

Adobe Photomerge™ technology automatically resizes, skews, and blends portions of multiple images into seamless panoramas.

Edit art on layers

To create composite images, you can simply drag and drop an object (including text and images) from one file to another. Because these objects exist on separate layers, you have the flexibility to move or modify the objects without affecting the rest of the image. Similarly, you can adjust and store color correction choices in editable layers without altering your original image layer.

Create subtle or spectacular effects

The Liquify command lets you quickly distort an image by interactively twisting and pulling it as if it were made of putty. You can use the command as a touch-up tool to make subtle enhancements as well.

Erase

The Background Eraser lets you easily remove the background of a photo without affecting the foreground. You can then paste the foreground object into another image to create professional, seamless composites.

Easy to Use and Affordable

With an intuitive interface and affordable price, Photoshop Elements enables anyone interested in digital imaging to quickly enhance their images using professional tools.

Search for images by previewing them

If you're searching for an existing file, the integrated file browser lets you find photos simply by viewing thumbnails of images in a folder.

Hints and Recipes

The Hints palette provides context-sensitive illustrations and tips that explain how to use Photoshop Elements tools. The Recipes palette interactively teaches you how to perform a variety of multistep tasks, such as adding gradient effects, yet still gives you full control throughout each task.

Apply effects easily

The Layer Styles palette lets you drag and drop styles including drop shadows, pattern fills, and bevels, that can be applied to everything on a layer. You can scan through a variety of predefined styles in the Layer Styles palette and then apply a style by clicking it. Moreover, you can apply styles cumulatively, giving you the freedom to mix and match styles to achieve just the right effect.

Filters you can preview

Over 90 special-effects filters are provided in the Filters palette. Once you've chosen the filter you want, you can drag and drop the filter onto an image or double-click to apply it.

Undo errors

The History palette provides extensive undo capabilities. You can quickly view your most recent editing operations in the palette and use multiple undo levels to correct mistakes and experiment without worry. Or simply click the Step Backward button or Step Forward button in the shortcuts bar until you've returned to the step you want. You can even configure your preferences for the number of undos Photoshop Elements allows, giving you the ability to optimize the program's performance and usability.

Web Tools

Photoshop Elements provides a series of commands and tools that let you quickly and easily create eye-catching visuals for your Web page.

Add custom effects

You can specify layer settings such as drop shadows, bevels, and glows. This gives you a fast way to create realistic three-dimensional text, buttons, and other effects that look as if you spent hours refining them. Once applied to art on a layer, anytime you edit that art the effect is instantly updated and reapplied to the new art.

GIF animation tools

You can enhance or create animations for the Web by importing or creating GIF animations using layers, in which each frame of the animation is a separate layer. You can then interactively preview the results before saving the file.

Create custom Web galleries

The Web Photo Gallery lets you produce photo gallery Web pages automatically using custom templates, without having to learn HTML.

Minimize file size

The Save for Web command efficiently compresses files for posting on the Web using interactive compression options that let you preview and modify the results before you save files. In this way, you can experiment with real-time image-compression controls to create quality images with minimal file sizes.

Explore Your Creativity

Photoshop Elements software provides endless ways to get creative with your images. Its wide variety of tools and commands provide easy yet powerful ways to create and modify images.

Built-in libraries

You can easily add interesting graphic elements to photos or create Web buttons and banners by choosing from a large library of shapes and symbols and applying effects to them.

Effects

The Effects palette includes drag and drop simplicity for applying complex effects to text, textures, frames, and images. Drag the effect and watch the program automatically jump to life, executing the commands that generate the visually rich results.

Make text changes without dialog boxes

You can freely add and change text, fonts, and type effects (such as warping) directly to these elements without having to make your changes within restrictive dialog boxes.

Art brushes

A wide variety of brush libraries are included that let you add paint strokes that simulate different painting and drawing techniques. For more brushes, you can load other brush libraries, create your own brushes, or modify existing ones. Or you can use the Impressionist tool to quickly give photos the look of an artistic painting.

Produce Outstanding Results

Photoshop Elements software provides highly flexible image capture and output options. You can work with images from digital and film cameras and scanners to easily prepare professional-quality output for print, email, or Web posting.

Incorporate graphics

Once you have created the image you want, you can incorporate your graphics into printed flyers, brochures, and presentations.

Convenient, cost-effective, reliable printing

Photoshop Elements makes it easy to get the most outstanding printed results while also saving time and money. The Picture Package feature automatically generates multiple copies of a photo in different sizes on a single page, similar to the photo packages traditionally sold by portrait studios. This enables you to maximize the use of expensive photo-quality paper, and gives you a simple way to create and print a contact sheet of your images for easy reference. Built-in Adobe color management ensures that the colors you see on-screen match what you get in print.

Multiple file formats, including PDF

You can open, save, and print all major graphics file formats, including layered Photoshop files. In addition, you can open and save your files in Adobe Acrobat Portable Document Format (PDF), giving you an easy way to share your files with anyone who has the free Adobe Acrobat Reader software.

Web-based photo printing

Photoshop Elements provides simple-to-use access to Web photo services, letting you upload your images to supported sites easily from within the program. Depending on the service, you may be able to add borders, create personalized greeting cards, or order prints that are then mailed directly to anywhere you want, such as to friends, family, clients, and customers.

Note: Not all services are available in all geographic regions.

1

Chapter 1: Looking at the Work Area

Welcome to Adobe Photoshop Elements. Photoshop Elements gives you an efficient work area and user interface to create and edit images for both print and the Web.

Getting familiar with the work area

The Photoshop Elements work area is arranged to help you focus on creating and editing images.

About the work area

The work area consists of the following components:

Menu bar The menu bar contains menus for performing tasks. The menus are organized by topic. For example, the Layers menu contains commands for working with layers.

Shortcuts bar The shortcuts bar displays buttons for executing common commands. (See "Using the shortcuts bar" on page 21.)

Options bar The options bar provides options for using a tool. (See "Using the options bar" on page 20.)

Toolbox The toolbox holds tools for creating and editing images. (See "Using the tools" on page 19.)

Palette well The palette well helps you organize the palettes in your work area. (See "Using the palette well" on page 21.)

Palettes Palettes help you monitor and modify images. (See "Using palettes" on page 22.)

Using the tools

Some tools in the toolbox let you select, edit, and view images; other tools let you paint, draw, and type. You can view information about any tool in the toolbox by positioning the pointer over it. The name of the tool appears below the pointer—this is called the *tool tip*. Additional information about the tool appears in the Hints palette. (See "Using the Hints palette" on page 29.)

You must select a tool in order to use it. The currently selected tool is highlighted in the toolbox. Some tools have additional tools beneath them—these are called *hidden tools*. When you see a small triangle at the lower right of the tool icon, you know that there are hidden tools.
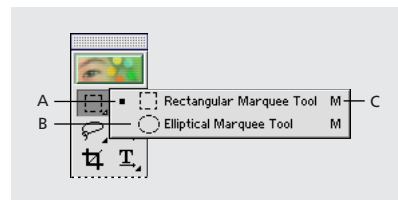
A. Active tool *B.* Hidden tool *C.* Shortcut key

To select a tool:

Do one of the following:

• Click its icon in the toolbox. If the icon has a small triangle at its lower right corner, hold down the mouse button to view the hidden tools. Then, click the tool you want to select.

• Press the tool's keyboard shortcut. The keyboard shortcut is displayed in its tool tip. For example, you can select the move tool by pressing "v."

To cycle through a set of hidden tools:

Hold down Shift and press the tool's shortcut key.

To move the toolbox:

Drag the toolbox by its title bar.

To set tool preferences:

1 Choose Edit > Preferences > General.

2 Set one or more of the following options:

• Show Tool Tips to show or hide tool tips and rollover hints in the Hints palette.

• Use Shift Key for Tool Switch to determine if you need to hold down the Shift key in order to cycle through a set of hidden tools. When this option is deselected, you can cycle through a set of hidden tools by simply pressing the shortcut key (without holding down Shift).

3 Click OK.

Using the options bar

The first thing you should do after you select a tool is to set its options in the options bar. By default, the options bar appears below the shortcuts bar at the top of the work area. The options bar is context sensitive, which means that it changes as you select different tools. Some settings in the options bar are common to several tools, and some are specific to one tool.

Options bar for lasso tool

To use the options bar:

1 Select a tool. (See "Using the tools" on page 19.)

2 Look in the options bar to see the available options. For more information on setting options for a specific tool, search for the tool's name in online Help.

To return a tool or all tools to the default settings:

Do one of the following:

• Click the tool icon in the options bar, then choose Reset Tool or Reset All Tools from the context menu.

• Choose Edit > Preferences > General, click Reset All Tools, and click OK.

To move the options bar:

Drag the options bar by the gripper bar at the left edge. The gripper bar will only appear when the options bar is docked at the top or bottom of the application window.

To collapse the options bar (Windows only):

Double-click the bar at the left edge of the options bar to show only the tool icon.

Using the shortcuts bar

The shortcuts bar displays buttons for common commands. You can keep the shortcuts bar open in the work area and click commands as you need them. To see the name of an icon, position the pointer over the icon and its tool tip appears.

Shortcuts bar

To move the shortcuts bar:

Drag the shortcuts bar by the gripper bar at the left edge. The gripper bar will only appear when the shortcuts bar is docked at the top or bottom of the application window.

To hide the shortcuts bar:

Choose Window > Hide Shortcuts. To redisplay the shortcuts bar, choose Window > Show Shortcuts.

Using the palette well

The palette well helps you organize and manage palettes. Palettes take up space in the work area; therefore, it's desirable to close them to the palette well when you're not using them.
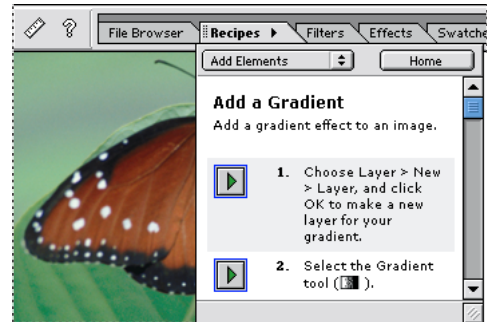
Palette well

Note: *The shortcuts bar must be showing in order to use the palette well. Choose Window > Show Shortcuts to display the shortcuts bar.*

To use a palette in the palette well:

Click the palette's tab. The palette remains open until you click outside it or click the palette's tab.

To store palettes in the palette well:

Drag the desired palette's tab into the palette well so that the palette well is highlighted.

To view information about a palette in the palette well:

1 Position the pointer over the palette's tab.

2 Look at the Hints palette to see a brief description of the palette. (See "Using the Hints palette" on page 29.)

Using palettes

Palettes help you monitor and modify images. There are many ways to organize palettes in the work area. You can store palettes in the palette well to keep them out of your way but easily accessible; or, you can keep frequently used palettes open in the work area. Another option is to group palettes together in the work area, or to dock one palette at the bottom of another palette.

Note: Drag a palette out of the palette well if you want to keep it open.

To display a palette:

Do one of the following:

• Click its tab.

• Choose the appropriate Show command in the Window menu. All palettes are listed in the Window menu.

To change the size of a palette:

Drag any corner of the palette (Windows) or drag the size box at its lower right corner (Mac OS).

Note: Not all palettes can be resized.

To close a palette:

Do one of the following:

• If the palette is in the palette well, click outside the palette in the work area or click the palette's tab. (See "Using the palette well" on page 21.)

• Click the close icon on the palette title bar.

• If the palette is in a palette group, click the close icon on the title bar for the group.

• Choose the appropriate Hide command in the Window menu. If the palette is grouped with other palettes, the entire group is concealed.

To show or hide multiple palettes:

Do one of the following:

• To show or hide all open palettes, the options bar, the shortcuts bar, and the toolbox, press Tab.

• To show or hide all palettes, press Shift+Tab.

To group palettes together:

1 Display the palettes you want to group together. If the palettes are in the palette well, drag at least one of them into the work area.

2 Drag a palette's tab onto the body of the target palette. A thick line appears around the body of the target palette when the pointer is over the correct area.
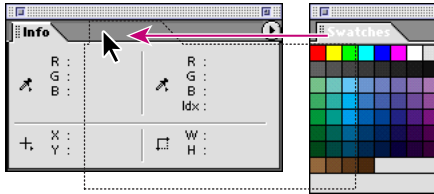
Click palette tab, and drag the palette to group.
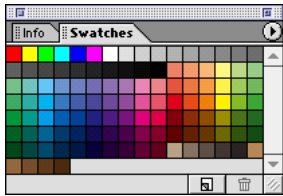
Palettes are grouped.

To move a palette to another group, drag the palette's tab to that group. To separate a palette from a group, drag the palette's tab outside the group.

To dock palettes together:

Drag a palette's tab to the bottom of another palette. A double line appears at the bottom of the target palette when the pointer is over the correct area.

Note: Entire palette groups cannot be docked together at once, but you can dock the palettes from one group to another, one at a time.

To move a palette group:

Drag its title bar.

To collapse a palette group:

Click the Minimize/Maximize box (Windows) or the Zoom box (Mac OS), or double-click a palette's tab.

To reset palettes to their default positions:

Choose Window > Reset Palette Locations.

To always start with the default palette and dialog box positions:

1 Choose Edit > Preferences > General.

2 Deselect Save Palette Locations. The change takes effect the next time you start the application.

Using palette menus

Palette menus are an important part of working with Photoshop Elements. Some commands in palette menus can be found in the menu bar; other commands are exclusive to palette menus.

When a palette has a palette menu, a triangle icon appears at the top of the palette. The exact location and appearance of the triangle icon depends on where the palette is located: in the palette well, in a palette group, or in the options bar.
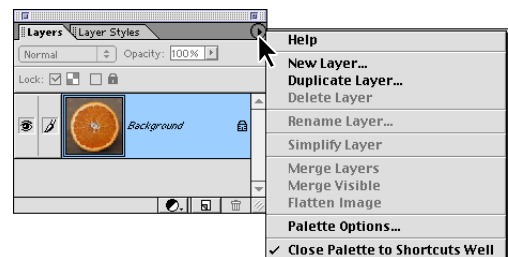
Layers palette menu

To use a palette menu:

1 Select a palette.

2 Do one of the following:

• If the palette is docked in the palette well, click the palette's tab to open the palette, and then click the triangle (▸) on the palette's tab.

• If the palette is in a palette group or docked in the palette well, click the triangle (⊙) in the upper right corner of the palette.

3 Choose a command from the palette menu.

Using pop-up sliders

A number of palettes and dialog boxes contain settings that use pop-up sliders (for example, the Opacity option in the Layers palette). If there is a triangle (▸) next to the text box, you can activate the pop-up slider by clicking the triangle.

To use a pop-up slider:

Do one of the following:

• Position the pointer over the triangle next to the setting, hold down the mouse, and drag the slider or angle radius to the desired value.

• Click the triangle next to the setting to open the pop-up slider box, and drag the slider or angle radius to the desired value. Click outside the slider box or press Enter or Return to close the slider box. To cancel changes, press the Escape key (Esc).

To increase or decrease values in 10% increments when the pop-up slider box is open, hold down Shift and press the Up Arrow or Down Arrow.

Viewing images

The hand tool, the zoom tools, the Zoom commands, and the Navigator palette let you view different areas of an image at different magnifications. You can open additional windows to display several views at once (such as different magnifications) of an image.

Using the document window

The document window is where your image appears. You can open multiple windows to display different views of the same file. A list of open windows appears in the Window menu. Available memory may limit the number of windows per image.

To open multiple views of the same image:

Choose View > New View. Depending on the position of the first window, you may have to move the second window to view both simultaneously.

To arrange multiple windows (Windows only):

Do one of the following:

• Choose Window > Cascade to display windows stacked and cascading from the upper left to the lower right of the screen.

• Choose Window > Tile to display windows edge to edge.

• Choose Window > Arrange Icons to align minimized images along the bottom of the work area.

To close windows:

Do one of the following:

• Choose File > Close to close the active window.

• Click the close icon on the title bar for the active window.

• Choose Window > Close All to close all windows (Windows).

• Choose File > Close All to close all windows (Mac OS).

Magnifying and reducing the view

You can magnify or reduce your view using various methods. The window's title bar displays the zoom percentage (unless the window is too small for the display to fit), as does the status bar at the bottom of the window.

To zoom in:

Do one of the following:

• Select the zoom tool (🔍), and click the Zoom In button (🔍) in the options bar. Click the area you want to magnify. Each click magnifies the image to the next preset percentage, centering the display around the point you click. When the image has reached its maximum magnification level of 1600%, the magnifying glass appears empty.

• Choose View > Zoom In to magnify to the next preset percentage. When the image has reached its maximum magnification level, the command is dimmed.

• Enter a magnification level in the Zoom text box in the status bar. (See "Using the status bar" on page 30.)

• Click the Zoom In button (🔍) on the Navigator palette bar.

To zoom out:

Do one of the following:

• Select the zoom tool (🔍), and click the Zoom Out button (🔍) in the options bar. Click the center of the area of the image you want to reduce. Each click reduces the view to the previous preset percentage. When the file has reached its maximum reduction level so that only 1 pixel is visible horizontally or vertically, the magnifying glass appears empty.

• Choose View > Zoom Out to reduce to the previous preset percentage. When the image reaches its maximum reduction level, the command is dimmed.

• Enter the desired magnification level in the Zoom text box in the status bar. (See "Using the status bar" on page 30.)

💡 *When using the zoom tool, hold down Alt (Windows) or Option (Mac OS) to switch between zooming in and zooming out.*

• Click the Zoom Out button (🔍) on the Navigator palette bar.

To magnify by dragging:

1 Select the zoom tool (🔍), and click the Zoom In button (🔍) in the options bar.

2 Drag over the part of the image you want to magnify.
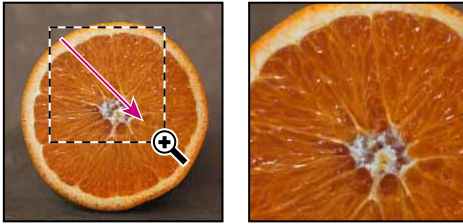
Drag the zoom tool to magnify the view.

The area inside the zoom marquee is displayed at the highest possible magnification. To move the marquee around the image, begin dragging a marquee and then hold down the spacebar while dragging the marquee to a new location.

To display an image at 100%:

Do one of the following:

• Double-click the zoom tool.

• Select the zoom tool or the hand tool, and click Actual Pixels in the options bar.

• Choose View > Actual Pixels.

• Enter 100% in the Status Bar and press Enter or Return (Mac OS).

To change the view to fit the screen:

Do one of the following:

• Double-click the hand tool.

• Select the zoom tool or the hand tool, and click Fit on Screen in the options bar.

• Choose View > Fit on Screen.

These options scale both the zoom level and the window size to fit the available screen space.

To automatically resize the window when magnifying or reducing the view:

With the Zoom tool active, select Resize Windows To Fit in the options bar. The window resizes when you magnify or reduce the view of the image.

When Resize Windows To Fit is deselected, the window maintains a constant size regardless of the image's magnification. This can be helpful when using smaller monitors or working with tiled views.

To automatically resize the window when magnifying or reducing the view using keyboard shortcuts:

Choose Edit > Preferences > General, select the Keyboard Zoom Resizes Windows preference, and click OK.

Navigating the view area

If you have enlarged your image, you can navigate to bring another area of the image into view.

To view another area of an image:

Do one of the following:

• Use the window scroll bars.

• Select the hand tool (🖐) and drag to pan over the image.

To use the hand tool while another tool is selected, hold down the spacebar as you drag in the image.

To move the view of an image using the Navigator palette:

1 Choose Window > Show Navigator, or click the Navigator tab in the palette well.

2 Do one of the following:

• Drag the view box in the thumbnail of the image, which represents the boundaries of the image window.

• Drag the slider in the Navigator palette.

• Click in the thumbnail of the image. The new view includes the area you clicked.
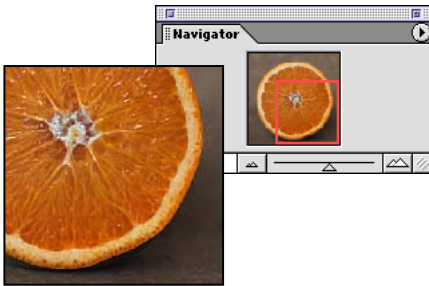
View in Navigator palette, and 142% view of image

To change the color of the Navigator palette view box:

1 Choose Palette Options from the Navigator palette menu.

2 Choose a color:

• To use a preset color, choose an option for Color.

• To specify a different color, click the color box, and choose a color. (See "Using the Adobe Color Picker" on page 77.)

• Choose Custom from the preset list.

3 Click OK.

Using rulers and the grid

Rulers and the grid help you position items (such as selections, layers, and shapes) precisely across the width or length of an image.

When visible, rulers appear along the top and left side of the active window. Markers in the ruler display the pointer's position when you move it. Changing the ruler origin (the (0, 0) mark on the top and left rulers) lets you measure from a specific point on the image. The ruler origin also determines the grid's point of origin.

To show or hide rulers:

Do one of the following:

• Click the Ruler button ($\mathscr{D}$) in the shortcuts bar.

• Choose View > Show Rulers or View > Hide Rulers.

To show or hide the grid:

Choose View > Show Grid or View > Hide Grid.

To change the rulers' zero origin:

Position the pointer over the intersection of the rulers in the upper left corner of the window, and drag diagonally down onto the image. A set of cross hairs appears, marking the new origin on the rulers. The new zero origin will be set where you release the mouse.

Note: *To reset the ruler origin to its default value, double-click the upper left corner of the rulers.*

To change the rulers' settings:

1 Do one of the following:

• Double-click a ruler.

• Choose Edit > Preferences > Units & Rulers.

2 For Rulers, choose a unit of measurement.

Note: Changing the units on the Info palette automatically changes the units on the rulers. (See "Using the Info palette" on page 29.)

3 For Width and Gutter, enter values for the column size. You can also change the units.

Some layout programs use the column width setting to specify the display of an image across columns. The Image Size and Canvas Size commands also use this setting. (See "Changing the print dimensions and resolution of an image" on page 50 and "Changing the size of the work canvas" on page 118.)

4 For Point/Pica Size, choose from the following options:

• PostScript (72 points per inch) if you are printing to a PostScript device.

• Traditional to use printer's 72.27 points per inch.

5 Click OK.

To change the grid settings:

1 Choose Edit > Preferences > Grid.

2 For Color, choose a preset color, or select Custom to choose a custom color.

3 For Style, choose the line style for the grid. Choose Lines for solid lines, or choose Dashed lines or Dots for broken lines.

4 For Gridline every, enter a number value, and then choose the unit of measurement to define the spacing of major grid lines.

5 For Subdivisions, enter a number value to define the frequency of minor grid lines.

6 Click OK.

Duplicating images

Duplicating lets you experiment with and compare multiple versions of the same image. You can duplicate an entire image into available memory without saving to disk.

To duplicate an image:

1 Open the image you want to duplicate.

2 Choose Edit > Duplicate Image.

3 Enter a name for the duplicated image.

4 To duplicate the image without layers, select Duplicate Merged Layers Only.

5 Click OK.

Getting the most out of Photoshop Elements

The Photoshop Elements interface provides a variety of features to help you work efficiently and knowledgeably. Some features—such as the Hints palette and the Recipes palette—provide information about using tools and performing tasks. Other features—such as the Info palette and status bars—provide feedback about the current image

and operation. Yet other features—such as context menus, keyboard commands, and the Quick Start window—provide alternate ways to access commands.

Using the Hints palette

The Hints palette helps you learn how to use tools and palettes. As you drag or click on tools, the Hints palette will give you information on using the tool.

To use the Hints palette:

1 Display the Hints palette by clicking its tab. If the Hints palette isn't showing in the palette well or the work area, choose Window > Show Hints to display the palette.

2 Position the pointer over a tool or palette, and look at the Hints palette to see a brief description of the item.

3 Click the More Help button to find out more information about an item.

Using the Recipes palette

The Recipes palette provides activities that guide you through different image-editing tasks. For example, you can view instructions about restoring an old photograph. Photoshop Elements will even do some of the steps for you.

To use the Recipes palette:

1 Display the Recipes palette by clicking its tab. If the Recipes palette isn't showing in the palette well or the work area, choose Window > Show Recipes to display the palette.

2 Select a category of recipes, and click the recipe you want to use.

3 Follow the instructions in the recipe. You can click the play button (▶), when available, to have Photoshop Elements perform the task for you.

Using the Info palette

The Info palette provides feedback as you use a tool.

Note: Move the Info palette out of the palette well if you want to view information while dragging in the image.

To use the Info palette:

1 Display the Info palette by clicking its tab. If the Info palette isn't showing in the palette well or the work area, choose Window > Show Info to display the palette.

2 Select the desired tool.

3 Move the pointer in the image, or drag in the image to use the tool. The following information may appear, depending on which tool you're using:

(✐) The numeric values for the color beneath the pointer.

(✛) The x- and y-coordinates of the pointer.

(⌗) The width (W) and height (H) of a marquee or shape as you drag, or the width and height of an active selection.

(✛) The x- and y-coordinates of your starting position (when you click in the image).

(⊹) The change in position along the *x*-coordinate (ΔX) and *y*-coordinate (ΔY) as you move a selection, layer, or shape.

(∠) The angle (A) of a line or gradient; the change in angle as you move a selection, layer, or shape; or the angle of rotation during a transformation. The change in distance (D) as you move a selection, layer, or shape.

(▣) The percentage of change in width (W) and height (H) as you scale a selection, layer, or shape.

(⧄) The angle of horizontal skew (H) or vertical skew (V) as you skew a selection, layer, or shape.

To change the mode of color values displayed in the Info palette:

Do one of the following:

• Click an eyedropper icon (✐) in the Info palette, and choose a color mode from the pop-up menu.

• Choose Palette Options from the Info palette menu. Choose a color mode for First Color Readout and/or Second Color Readout, and click OK.

Actual Color displays values in the current color mode of the image; Grayscale displays the grayscale values beneath the pointer; RGB Color displays the RGB values beneath the pointer; Web Color displays the hexadecimal code for the RGB values beneath the pointer; and HSB Color displays the HSB values beneath the pointer. (See "Choosing a color mode" on page 68 for more information.)

To change the unit of measurement displayed in the Info palette:

Do one of the following:

• Click the cross-hair icon (✛) in the Info palette, and choose a unit of measurement from the pop-up menu.

• Choose Palette Options from the Info palette menu. Choose a unit of measurement from the Ruler Units pop-up menu, and click OK.

Using the status bar

The status bar at the bottom of the application window (Windows) or document window (Mac OS) displays useful information and is divided into three sections:

• The leftmost section displays the current magnification. (See "Magnifying and reducing the view" on page 25).

• The middle section displays information about the current file. You can change the type of information that displays.

• (Windows only) The rightmost section provides information as you use a tool. It also displays a progress bar to help you monitor operations. When an operation—such as applying a filter or using the Photomerge command—is in progress, you cannot perform other operations. However, you can interrupt the process or have the program notify you when it has finished.

To display file information in the status bar:

1 Click the triangle (▶) in the status bar.

2 Select a view option:

• Document Dimensions to display the document size of the image. (See "Changing the print dimensions and resolution of an image" on page 50.)

• Document Sizes to display information on the amount of data in the image. The number on the left represents the printing size of the image—approximately the size of the saved, flattened file in Photoshop format. The number on the right indicates the file's approximate size, including layers.

• Document Profile to display the name of the color profile used by the image. (See "Using color management" on page 65.)

• Scratch Sizes to display information on the amount of RAM and scratch disk used to process the image. The number on the left represents the amount of memory that is currently being used by the program to display all open images. The number on the right represents the total amount of RAM available for processing images.

• Efficiency to display the percentage of time actually doing an operation instead of reading or writing the scratch disk. If the value is below 100%, Photoshop Elements is using the scratch disk and, therefore, is operating more slowly.

• Timing to display the amount of time it took to complete the last operation.

• Current Tool to view the name of the active tool.

To cancel operations:

Hold down Esc until the operation in progress has stopped. In Mac OS, you can also press Command+period.

To set notification for completion of operations:

1 Choose Edit > Preferences > General.

2 Select Beep When Done, and click OK.

Viewing file information

You can view copyright and authorship information that has been added to the file. This information includes standard file information and Digimarc® watermarks. Photoshop Elements automatically scans opened images for Digimarc watermarks. If a watermark is detected, Photoshop Elements displays a copyright symbol in the image window's title bar and updates the Copyright & URL section of the File Info dialog box.

To view additional file information:

Choose File > File Info. For section, choose the attribute you want to view.

To read a Digimarc watermark:

1 Choose Filter > Digimarc > Read Watermark. If the filter finds a watermark, a dialog box displays the Creator ID, copyright year (if present), and image attributes.

2 Click OK, or for more information, choose from the following:

• If you have a Web browser installed, click Web Lookup to get more information about the owner of the image. This option launches the browser and displays the Digimarc Web site, where contact details appear for the given Creator ID.

• Call the phone number listed in the Watermark Information dialog box to get information faxed back to you.

Using context menus

In addition to the menus at the top of your screen, context-sensitive menus display commands that are relevant to the active tool, selection, or palette.
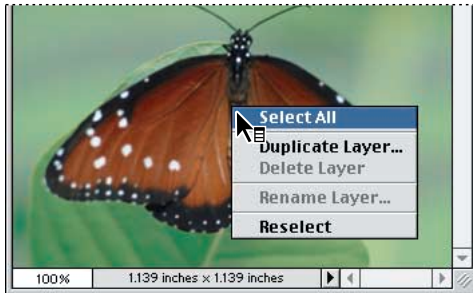
Context menu for a document window

To use a context menu:

1 Position the pointer over an image or palette item.

2 Click with the right mouse button (Windows) or hold down Control and press the mouse button (Mac OS).

3 Choose a command from the menu.

Using keyboard commands and modifier keys

Keyboard commands let you quickly execute commands without using a menu; modifier keys let you alter how a tool operates. When available, the keyboard command appears to the right of the command name in the menu. You can view a complete list of keyboard commands and modifier keys in the Quick Reference Card section of online Help.

Using the Quick Start window

The Quick Start window provides options for creating and opening images, as well as links to online Help and tutorials.

To display the Quick Start window:

Choose Window > Show Quick Start.

Deselect Show this screen at startup if you don't want the Quick Start window to appear when you restart Photoshop Elements.

Correcting mistakes

Most operations can be undone if you make a mistake. Alternatively, you can restore all or part of an image to its last saved version. But available memory may limit your ability to use these options.

For information on how to restore your image to how it looked at any point in the current work session, see "Reverting to any state of an image" on page 33.

To undo the last operation:

Choose Edit > Undo, or click the Step Backward button (⬿) in the shortcuts bar.

If an operation can't be undone, the command is dimmed and changes to Can't Undo.

To redo the last operation:

Choose Edit > Redo, or click the Step Forward button (⤳) in the shortcuts bar.

To free memory used by the Undo command, the History palette, or the Clipboard:

Choose Edit > Purge, and choose the item type or buffer you want to clear. If already empty, the item type or buffer is dimmed.

Important: The Purge command permanently clears from memory the operation stored by the command or buffer; it cannot be undone. Use the Purge command when the amount of information held in memory is so large that Photoshop Elements' performance is noticeably diminished.

To revert to the last saved version:

Choose File > Revert.

Note: Revert is added as a history state in the History palette and can be undone.

Reverting to any state of an image

The History palette lets you jump to any recent state of the image created during the current working session. Each time you apply a change to pixels in an image, the new state of that image is added to the palette.

For example, if you select, paint, and rotate part of an image, each of those states is listed separately in the palette. You can then select any of the states, and the image will revert to how it looked when that change was first applied. You can then work from that state.

Actions that do not affect pixels in the image, such as zooming and scrolling, will not appear in the History palette.

About the History palette

Note the following guidelines when using the History palette:

• Program-wide changes, such as changes to palettes, color settings, and preferences, are not changes to a particular image and so are not added to the History palette.

• By default, the History palette lists the previous 20 states. Older states are automatically deleted to free more memory for Photoshop Elements. To change the number of states that can be displayed in the History palette, choose Edit > Preferences > General, and enter a number for History States. The maximum number of states is 100.

• Once you close and reopen the document, all states from the last working session are cleared from the palette.

• States are added from the top down. That is, the oldest state is at the top of the list, the most recent one at the bottom.

• Each state is listed with the name of the tool or command used to change the image.

• By default, selecting a state dims those below. This way you can easily see which changes will be discarded if you continue working from the selected state.

• Selecting a state and then changing the image eliminates all states that come after. Likewise, deleting a state deletes that state and those that came after it.

• If you select a state and then change the image, eliminating the states that came after, you can use the Undo command to undo the last change and restore the eliminated states.

Using the History palette

You can use the History palette to revert to a previous state of an image and delete an image's states.
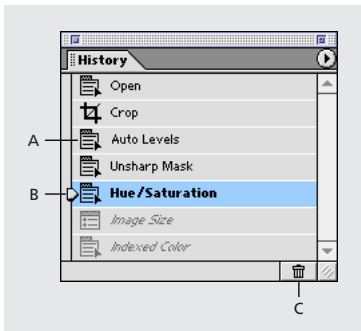
A. History state B. History state slider
C. Trash button

To display the History palette:

Choose Window > Show History, or click the History palette tab.

To revert to a previous state of an image:

Do any of the following:

• Click the name of the state.

• Drag the slider at the left of the state up or down to a different state.

• Click the Step Forward or Step Backward buttons from the shortcuts bar.

• Choose Step Forward or Step Backward from the palette menu or the Edit menu to move to the next or previous state.

To set the keyboard command for Step Forward and Step Backward, choose Edit > Preferences > General, and select an option for Step Back/Fwd.

To delete one or more states of the image:

Do one of the following:

• Click the name of the state, and choose Delete from the History palette menu to delete that change and those that came after it.

• Drag the state to the Trash button (🗑) to delete that change and those that came after it.

• Choose Clear History from the palette menu to delete the list of states from the History palette, without changing the image. This option doesn't reduce the amount of memory used by Photoshop Elements.

• Hold down Alt (Windows) or Option (Mac OS), and choose Clear History from the palette menu to purge the list of states from the History palette (and from the Undo buffer) without changing the image. If you get a message that Photoshop Elements is low on memory, purging states is useful, since the command frees up memory.

Important: This action cannot be undone.

• Choose Edit > Purge > Histories to purge the list of states from the History palette for all open documents.

Important: This action cannot be undone.

To replace an existing document with a selected state:

Drag the state onto the document.

Note: This will replace the original image without changing its name. Make sure to choose File > Save As to rename the image if you want to keep the original image.

Working with presets

Photoshop Elements provides predefined brushes, swatches, gradients, patterns, layer styles, and custom shapes called *presets*. Think of presets as ingredients for creating an image. You select presets through pop-up palettes in the options bar. The Fill dialog box, and Layer Styles, and the Swatches palettes also display presets.

Presets are organized by type into *libraries*. Each type of library has its own file extension and default folder. You can use the Presets Manager to load different preset libraries. The presets you load in the Presets Manager correspond to the presets that appear in pop-up palettes and regular palettes.

Using pop-up palettes

Pop-up palettes appear in the options bar and provide access to libraries of brushes, swatches, gradients, patterns, layer styles, and custom shapes. When closed, pop-up palettes display a thumbnail image of the currently selected preset.

When you click the triangle to the right of the thumbnail image, the pop-up palette opens to show you the currently loaded preset libraries. You can change the display of a pop-up palette to view presets by their names, as thumbnail icons, or with both names and icons.
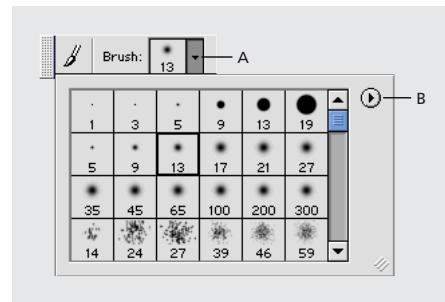
*The Brush pop-up palette in the options bar. **A.** Click to open the pop-up palette. **B.** Click to view the pop-up palette menu.*

To select a preset in a pop-up palette:

1 Click the triangle next to the thumbnail image of the current preset. When selecting a brush or gradient, be careful not to click the thumbnail image—doing so will display the settings editor for the preset.

2 Click a preset in the pop-up palette.

To rename a brush, gradient, or pattern in a pop-up palette:

1 Do one of the following:

• Double-click an item.

• Select an item, click the triangle (⊙) in the upper right corner of the pop-up palette, and choose the Rename command from the palette menu.

2 Enter a new name in the dialog box provided, and click OK.

To delete a brush, gradient, or pattern from a pop-up palette:

Do one of the following:

• Select an item, click the triangle (⊙) in the upper right corner of the pop-up palette, and choose the Delete command from the palette menu.

• Hold down Alt (Windows) or Option (Mac OS) and click an item.

To save a library of brushes, gradients, or patterns for later use:

Choose the Save command from the pop-up palette menu. Then enter a name for the library file, and click Save.

To load a library of brushes, gradients, or patterns:

Choose the Load command from the pop-up palette menu. Then select the library file you want to add to the pop-up palette, and click Load.

Note: Using the Load command will add the brush library to the brushes you have available. If you choose a preset library of brushes, the preset library will replace your current set of brushes.

To replace the current set of brushes, gradients, or patterns in a pop-up palette:

Do one of the following:

• Choose the Replace command from the pop-up palette menu. Then select the library file you want to use, and click Load.

• Choose a library file from the bottom section of the palette menu. Then click OK to replace the current list.

To load to the default library of brushes, gradients, or patterns:

Choose the Reset command from the pop-up palette menu.

To change the display of items in a pop-up palette:

1 Click the triangle (⊚) in the upper right corner of the pop-up palette to view the palette menu.

2 Select a view option:

• Text Only to display the name of each item.

• Small Thumbnail or Large Thumbnail to display a thumbnail of each item.

• Small List or Large List to display the name and thumbnail of each item.

Note: Not all of the above options are available for all pop-up palettes.

Using the Preset Manager

The Preset Manager lets you manage the libraries of brushes, swatches, gradients, and patterns that come with Photoshop Elements. For example, you can create a set of favorite brushes, or you can restore the default presets. The configuration of presets in the Preset Manager corresponds to presets that appear in pop-up palettes and regular palettes.

Each type of library has its own file extension and default folder. Preset files are installed on your computer inside the Presets folder in the Photoshop Elements program folder.

To display the Preset Manager:

Choose Edit > Preset Manager.

To choose a library type:

Choose Brushes, Swatches, Gradients, or Patterns from the Preset Type menu.

To load a library:

Do one of the following:

• Click Load, then select a library from the list. If you want to load a library located in another folder, navigate to that folder, then select the library. By default, preset files are installed on your computer inside the Presets folder in the Photoshop Elements program folder.

• Click the triangle (▸), and choose a library from the bottom section of the pop-up menu.

To restore the default library or replace the currently displayed libraries:

Click the triangle (▸), and choose a command from the pop-up menu.

• Reset to restore the default library for that type.

• Replace to replace the current library with the contents of another library.

To save a subset of a library:

1 Shift-click to select multiple presets. Only the selected presets will be saved to the new library.

2 Click Save Set, then enter a name for the library. If you want to save the library to a folder other than the default, navigate to the new folder before saving.

To rename a preset:

1 Do one of the following:

• Select a preset in the list, and click Rename.

• Double-click a preset in the list.

2 Enter a new name for the preset. If you selected multiple presets, you will be prompted to enter multiple names.

To delete a preset:

Select the preset you want to delete, and click Delete.

To change the display of presets in the Preset Manager:

Click the triangle (▸), and choose a display mode from the middle section of the pop-up menu:

• Text Only to display the name of each preset item.

• Small Thumbnail or Large Thumbnail to display a thumbnail of each preset item.

• Small List or Large List to display the name and thumbnail of each preset item.

Configuring Photoshop Elements

Preferences let you configure Photoshop Elements to best meet your needs. They can be used to control how the program uses memory, and to control the work area environment.

Setting preferences

Preferences are program settings that control general display options, file-saving options, cursor options, transparency options, and options for plug-ins and scratch disks. Most of these options are set in dialog boxes that can be opened through the Preferences submenu in the Edit menu. Preference settings are saved each time you exit the application.

Unexpected behavior may indicate damaged preferences. You can generate a new preferences file with all preference settings returned to their defaults.

To open a preferences dialog box:

1 Choose the desired preference set from the Edit > Preferences submenu.

2 To switch to a different preference set, do one of the following:

• Choose the preference set from the menu at the top of the dialog box.

• Click Next to display the next preference set in the menu list; click Prev to display the previous preference set.

For information on a specific preference option, search for the preference name in the index.

To restore all preferences to their default settings:

In Windows, press and hold Alt+Control+Shift immediately after launching Photoshop Elements. Click Yes to delete the Adobe Photoshop Elements settings file.

In Mac OS, do one of the following:

• Press and hold down Option+Command+Shift immediately after launching Photoshop Elements. Click Yes to delete the Adobe Photoshop Elements settings file.

• Open the Preferences folder in the System Folder, and drag the following files to the Trash: Adobe Save For Web 1.0 Prefs and all files in the Adobe Photoshop Elements Prefs folder.

New Preferences files will be available the next time you start Photoshop Elements.

Using tool pointers

When you select most tools, the mouse pointer matches the tool's icon. The marquee pointer appears by default as cross hairs, the text tool pointer appears as an I-beam, and painting tools default to the Brush Size icon.

To set the tool pointer appearance:

1 Choose Edit > Preferences > Display & Cursors.

2 Choose a tool pointer setting:

• Click Standard under Paintings Cursors, Other Cursors, or both to display pointers as tool icons.

• Click Precise under Painting Cursors, Other Cursors, or both to display pointers as cross hairs.

• Click Brush Size under Painting Cursors to display the painting tool cursors as brush shapes representing the size of the current brush. Brush Size cursors may not display for very large brushes.

3 Click OK.

The Painting Cursors options control the pointers for the eraser, pencil, airbrush, paintbrush, impressionist brush, background eraser, magic eraser, red eye brush, clone stamp, pattern stamp, and the smudge, blur, sharpen, dodge, burn, and sponge tools.

The Other Cursors options control the pointers for the marquee, lasso, magic wand, crop, eyedropper, gradient, paint bucket, shape, hand, and zoom tools.

To toggle between standard and precise cursors in some tool pointers, press Caps Lock. Press Caps Lock again to return to your original setting.

Making previews display more quickly

The Use Pixel Doubling preference option speeds up the preview of a tool's or command's effects by temporarily doubling the size of the pixels (halving the resolution) in the preview. This option has no effect on the pixels in the file; it simply provides faster previews with the tools and commands.

To speed up previews:

1 Choose Edit > Preferences > Display & Cursors.

2 Select Use Pixel Doubling, and click OK.

Resetting all warning dialogs

Sometimes messages containing warnings or prompts regarding certain situations are displayed. You can disable the display of these messages by selecting the Don't Show Again option in the message. You can also globally reset the display of all messages that have been disabled.

To reset the display of all warning messages:

1 Choose Edit > Preferences > General.

2 Click Reset All Warning Dialogs, and click OK.

Using plug-in modules

Plug-in modules are software programs developed by Adobe Systems and by other software developers in conjunction with Adobe Systems to add functionality to Photoshop Elements. A number of importing, exporting, and special-effects plug-ins come with your program; they are automatically installed in folders inside the Photoshop Elements Plug-ins folder.

You can select an additional plug-ins folder to use compatible plug-ins stored with another application. You can also create a shortcut (Windows) or an alias (Mac OS) for a plug-in stored in another folder on your system. You can then add the shortcut or alias to the Plug-ins folder to use that plug-in with Photoshop Elements.

Once installed, plug-in modules appear as options added to the Import or Export menu; as file formats in Open and Save As; or as filters in the Filter submenus.

Note: Photoshop Elements can accommodate a large number of plug-ins. However, if the number of installed plug-in modules becomes great enough, Photoshop Elements may not be able to list all the plug-ins in their appropriate menus. Newly installed plug-ins will then appear in the Filter > Other submenu. Depending on the resolution of your monitor, installing a large number of plug-ins may cause the menu to extend beyond the screen.

To install an Adobe Systems plug-in module:

Do one of the following:

• Use the plug-in installer, if provided.

• Copy the module into the appropriate Plug-ins folder in the Photoshop Elements folder (Windows).

• Drag a copy of the module to the appropriate Plug-ins folder inside the Photoshop Elements folder (Mac OS).

Note: When you copy or drag the plug-in files into the Plug-ins folder, make sure that the files are uncompressed.

To install a third-party plug-in module:

Follow the installation instructions that came with the plug-in module.

To select an additional plug-ins folder:

1 Choose Edit > Preferences > Plug-Ins & Scratch Disks.

2 Select Additional Plug-ins Directory.

3 Click Choose, and select a folder or directory from the list. Make sure that you do not select a location inside the Plug-ins folder. To display the contents of a folder, double-click the directory (Windows) or click Open (Mac OS).

The path to the folder will appear in the preferences window.

4 When you have highlighted the additional plug-ins folder, click OK (Windows), Select (Mac OS), or Choose (Mac OS 9.0 and later).

5 Restart Photoshop Elements for the plug-ins to take effect.

To suppress the loading of a plug-in or folder of plug-ins:

Add a tilde character (~) at the beginning of the plug-in name, folder, or directory. That file (or all files in the folder) will be ignored by the application once it has been restarted.

To view information about installed plug-ins:

Choose Help > About Plug-In and select a plug-in from the submenu (Windows) or choose Apple menu > About Plug-In and select a plug-in from the submenu (Mac OS).

Assigning scratch disks

When your system does not have enough RAM to perform an operation, Photoshop Elements uses a proprietary *virtual memory* technology, also called *scratch disks*. A scratch disk is any drive or a partition of a drive with free memory. By default, Photoshop Elements uses the hard drive that the operating system is installed on as its primary scratch disk.

You can change the primary scratch disk or designate a second, third, or fourth scratch disk, to be used when the primary disk is full. Your primary scratch disk should be your fastest hard disk, and should have plenty of defragmented space available.

The following guidelines can help you assign scratch disks:

• You can use up to four scratch disks of any size your file system supports. Photoshop lets you create up to 200 GB of scratch disk space using those scratch disks.

• For best performance, scratch disks should be on a different drive than any large files you are editing.

• Scratch disks should be on a different drive than the one used for virtual memory.

• Scratch disks should be on a local drive. That is, they should not be accessed over a network.

• Scratch disks should be conventional (non-removable) media.

• Raid disks/disk arrays are good choices for dedicated scratch disk volumes.

• Drives with scratch disks should be defragmented regularly.

To change the scratch disk assignment:

1 Choose Edit > Preferences > Plug-Ins & Scratch Disks.

2 Select the desired disks from the menu (you can assign up to four scratch disks).

3 Click OK.

4 Restart Photoshop Elements for the change to take effect.

Important: The scratch disk file that is created by Photoshop Elements must be in contiguous hard disk space. For this reason you should frequently optimize your hard disk. Adobe recommends that you use a disk tool utility, such as Windows Disk Defragmenter or Norton Speed Disk, to defragment your hard drive on a regular basis. See your Windows or Mac OS documentation for information on defragmentation utilities.

Closing files and quitting

To close a file:

1 Do one of the following:

• Choose File > Close.

• Choose Window > Close All (Windows).

• Choose File > Close All (Mac OS).

2 Choose whether or not to save the file:

• Click Yes (Windows) or Save (Mac OS) to save the file.

• Click No (Windows) or Don't Save (Mac OS) to close the file without saving it.
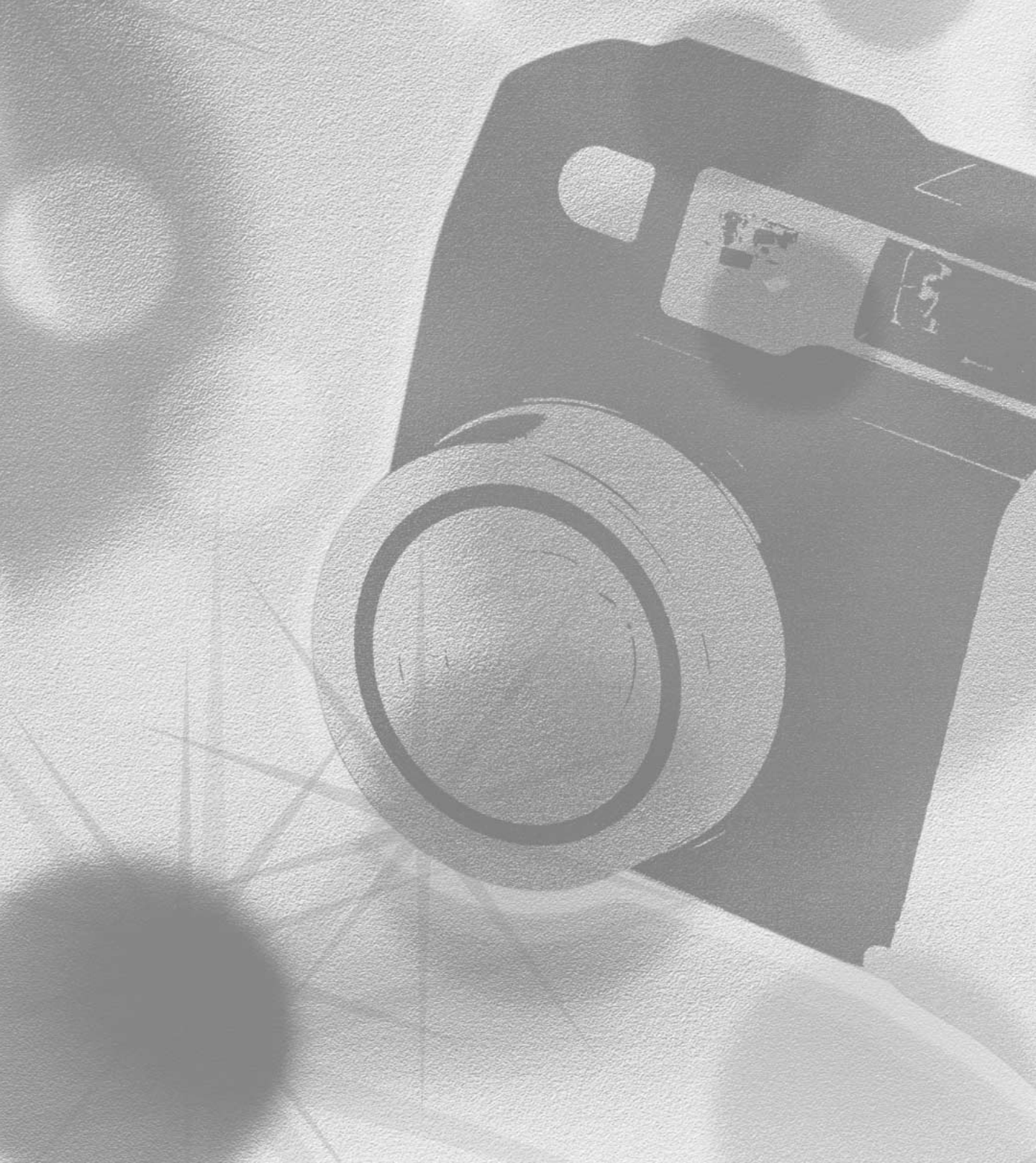
To exit Photoshop Elements:

1 Choose File > Exit (Windows) or File > Quit (Mac OS).

2 Choose whether or not to save any open files:

• Click Yes (Windows) or Save (Mac OS) for each open file to save the file.

• Click No (Windows) or Don't Save (Mac OS) for each open file to close the file without saving it.

2

Chapter 2: Getting Images into Photoshop Elements

Y ou can get digital images from a variety of sources—you can create new images, import them from another graphics application, or capture them using a digital camera. Often you will begin by scanning a photograph, a slide, or an image. To create effective artwork, you must understand some basic concepts about how to work with digital images, how to produce high-quality scans, how to work with a variety of file formats, and how to adjust the resolution and size of images.

About bitmap images and vector graphics

Computer graphics falls into two main categories—*bitmap* and *vector*. You can work with both types of graphics in Photoshop Elements; moreover, a Photoshop Elements file can contain both bitmap and vector data. Understanding the difference between the two categories helps as you create, edit, and import artwork.

Bitmap images   Bitmap images—technically called *raster images*—use a grid of colors known as pixels to represent images. Each pixel is assigned a specific location and color value. For example, a bicycle tire in a bitmap image is made up of a mosaic of pixels in that location. When working with bitmap images, you edit pixels rather than objects or shapes.

Bitmap images are the most common electronic medium for continuous-tone images, such as photographs or digital paintings, because they can represent subtle gradations of shades and color. Bitmap images are resolution-dependent—that is, they contain a fixed number of pixels. As a result, they can lose detail and appear jagged if they are scaled on-screen or if they are printed at a lower resolution than they were created for.

Note: Bitmap images in Photoshop Elements are not the same as images saved using the .bmp file format in Windows.

3:1

24:1

Bitmap images are good for reproducing subtle gradations of color, as in photographs. They can have jagged edges when printed at too large a size or displayed at too high a magnification.

Vector graphics   Vector graphics are made up of lines and curves defined by mathematical objects called *vectors*. Vectors describe an image according to its geometric characteristics. For example, a bicycle tire in a vector graphic is made up of a mathematical definition of a circle drawn with a

certain radius, set at a specific location, and filled with a specific color. You can move, resize, or change the color of the tire without losing the quality of the graphic.

Vector graphics are resolution-independent— that is, they can be scaled to any size and printed at any resolution without losing detail or clarity. As a result, vector graphics are the best choice for representing bold graphics that must retain crisp lines when scaled to various sizes—for example, logos.
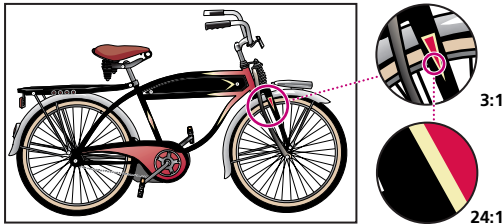
Vector graphics are good for reproducing crisp outlines, as in logos or illustrations. They can be printed or displayed at any resolution without losing detail.

Because computer monitors represent images by displaying them on a grid, both vector and bitmap data is displayed as pixels on-screen.

About image size and resolution

In order to produce high-quality images, it is important to understand how the pixel data of images is measured and displayed.

**Pixel dimensions**   The number of pixels along the height and width of a bitmap image. The display size of an image on-screen is determined by the pixel dimensions of the image plus the size and setting of the monitor.

For example, a 15-inch monitor typically displays 800 pixels horizontally and 600 vertically. An image with dimensions of 800 pixels by 600 pixels would fill this small screen. On a larger monitor with an 800-by-600-pixel setting, the same image (with 800-by-600-pixel dimensions) would still fill the screen, but each pixel would appear larger. Changing the setting of this larger monitor to 1024-by-768 pixels would display the image at a smaller size, occupying only part of the screen.

When preparing an image for online display (for example, a Web page that will be viewed on a variety of monitors), pixel dimensions become especially important. Because your image may be viewed on a 15-inch monitor, you may want to limit the size of your image to less than 800-by-600 pixels to allow room for the Web browser window controls.
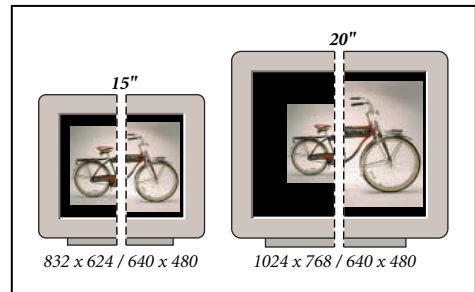
How large an image appears on-screen depends on a combination of factors—the pixel dimensions of the image, the monitor size, and the monitor resolution setting. The examples above show a 620-by-400-pixel image displayed on monitors of various sizes and resolutions.

Image resolution The number of pixels displayed per unit of printed length in an image, usually measured in pixels per inch (ppi). In Photoshop Elements, you can change the resolution of an image because image resolution and pixel dimensions are interdependent.

The amount of detail in an image depends on its pixel dimensions, while the image resolution controls how much space the pixels are printed over. For example, you can modify an image's resolution without changing the actual pixel data in the image—all you change is the printed size of the image. However, if you want to maintain the same output dimensions, changing the image's resolution requires a change in the total number of pixels.
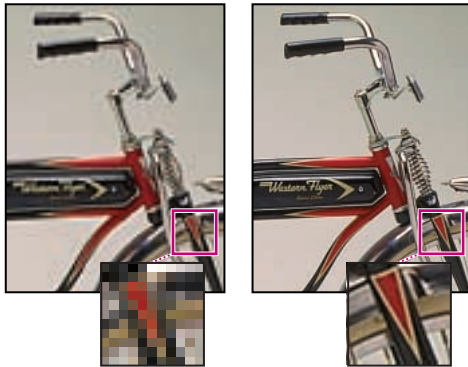
72-ppi and 300-ppi images; inset zoom 200%

When printed, an image with a high resolution contains more, and therefore smaller, pixels than an image with a low resolution. For example, a 1-by-1-inch image with a resolution of 72 ppi contains a total of 5184 pixels (72 pixels wide x 72 pixels high = 5184). The same 1-by-1-inch image with a resolution of 300 ppi contains a total of 90,000 pixels. Higher resolution images usually reproduce more detail and subtler color transitions than lower resolution images. However, increasing the resolution of a low-resolution image only spreads the original pixel information across a greater number of pixels; it rarely improves image quality.

Using too low a resolution for a printed image results in *pixelation*—output with large, coarse-looking pixels. Using too high a resolution (pixels smaller than the output device can produce) increases the file size and slows the printing of the image; furthermore, the device will be unable to reproduce the extra detail provided by the higher resolution image.

Monitor resolution The number of pixels or dots displayed per unit of length on the monitor, usually measured in dots per inch (dpi). Monitor resolution depends on the size of the monitor plus its pixel setting. Most new monitors have a resolution of about 96 dpi, while older Mac OS monitors have a resolution of 72 dpi.

Understanding monitor resolution helps explain why the display size of an image on-screen often differs from its printed size. Image pixels are translated directly into monitor pixels. This means that when the image resolution is higher than the monitor resolution, the image appears larger on-screen than its specified print dimensions. For example, when you display a 1-by-1 inch, 144-ppi image on a 72-dpi monitor, it appears in a 2-by-2 inch area on-screen. Because the monitor can display only 72 pixels per inch, it needs 2 inches to display the 144 pixels that make up one edge of the image.

Printer resolution The number of ink dots per inch (dpi) produced by all laser printers. Most desktop laser printers have a resolution of 600 dpi. Ink jet printers produce a spray of ink, not actual dots; however, most ink jet printers have an approximate resolution of 300 to 600 dpi and produce good results when printing images up to 150 ppi.

File size The digital size of an image, measured in kilobytes (K), megabytes (MB), or gigabytes (GB). File size is proportional to the pixel dimensions of the image. Images with more pixels may produce more detail at a given printed size, but they require more disk space to store and may be slower to edit and print. For instance, a 1-by-1-inch, 200-ppi image contains four times as many pixels as a 1-by-1-inch, 100-ppi image and so has four times the file size. Image resolution thus becomes a compromise between image quality (capturing all the data you need) and file size.

Another factor that affects file size is file format—due to varying compression methods used by GIF, JPEG, and PNG file formats, file sizes can vary considerably for the same pixel dimensions. Similarly, color bit-depth and the number of layers in an image affect file size.

Photoshop Elements supports a maximum file size of 2 GB and maximum pixel dimensions of 30,000 by 30,000 pixels per image. This restriction places limits on the print size and resolution available to an image.

Changing image size and resolution

Once you have scanned or imported an image, you may want to adjust its size. The Image Size command lets you adjust the pixel dimensions, print dimensions, and resolution of an image.

Keep in mind that bitmap and vector data can produce different results when you resize an image. Bitmap data is resolution-dependent; therefore, changing the pixel dimensions of a bitmap image can cause a loss in image quality and sharpness. In contrast, vector data is resolution-independent; you can resize it without losing its crisp edges.

Displaying image size information

You can display information about the current image size using the information box at the bottom of the application window (Windows) or the document window (Mac OS). (See "Using the status bar" on page 30.)

To display the current image size:

Click the file information box, and hold down the mouse button. The box displays the width and height of the image (both in pixels and in the unit of measurement currently selected for the rulers), the number of channels, document dimensions, and the image resolution.

About resampling

Resampling refers to changing the pixel dimensions (and therefore display size) of an image. When you *downsample* (or decrease the number of pixels), information is deleted from the image. When you *resample up* (or increase the number of pixels), new pixels are added based on color values of existing pixels.
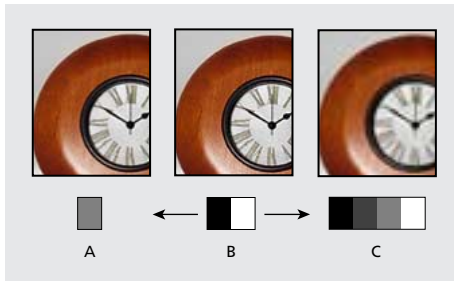
*A. Downsampled B. Original C. Resampled up
(Selected pixels displayed for each image.)*

Keep in mind that resampling can result in poorer image quality. For example, when you resample an image to larger pixel dimensions, the image will lose some detail and sharpness. Applying the Unsharp Mask filter to a resampled image can help refocus the image's details. (See "Sharpening images" on page 98.)

To avoid the need for resampling, scan or create the image at a high resolution. If you want to preview the effects of changing pixel dimensions on-screen or print proofs at different resolutions, resample a duplicate of your file.

About interpolation methods

When an image is resampled, an *interpolation method* is used to assign color values to any new pixels it creates, based on the color values of existing pixels in the image. The more sophisticated the method, the more quality and detail from the original image are preserved.

Photoshop Elements provides three interpolation methods:

• Nearest Neighbor is the fastest but least precise method. This method is recommended for use with illustrations containing non-anti-aliased edges, to preserve hard edges and produce a smaller file. However, this method can result in jagged effects, which become apparent when distorting or scaling an image or performing multiple manipulations on a selection.

• Bilinear is the medium-quality method.

• Bicubic is the slowest but most precise method, resulting in the smoothest tonal gradations.

Changing the pixel dimensions of an image

When preparing images for online distribution, it's useful to specify image size in terms of the pixel dimensions. Keep in mind that changing pixel dimensions affects not only the size of an image on-screen but also its image quality and its printed characteristics—either its printed dimensions or its image resolution. (See "About image size and resolution" on page 46.)

To change the pixel dimensions of an image:

1 Choose Image > Resize > Image Size.

2 Make sure that Resample Image is selected, and choose an interpolation method. (See "About interpolation methods" on page 49.)

3 To maintain the current proportions of pixel width to pixel height, select Constrain Proportions. This option automatically updates the width as you change the height, and vice versa.

4 Under Pixel Dimensions, enter values for Width and Height. To enter values as percentages of the current dimensions, choose Percent as the unit of measurement.

The new file size for the image appears at the top of the Image Size dialog box, with the old file size in parentheses.

5 Click OK to change the pixel dimensions and resample the image.

For best results in producing a smaller image, downsample and apply the Unsharp Mask filter. To produce a larger image, rescan the image at a higher resolution.

Changing the print dimensions and resolution of an image

When creating an image for print media, it's useful to specify image size in terms of the printed dimensions and the image resolution. These two measurements, referred to as the *document size*, determine the total pixel count and therefore the file size of the image; document size also determines the base size at which an image is placed into another application. You can further manipulate the scale of the printed image in the Print Options dialog box; however, changes you make in the Print Options dialog box affect only the printed image, not the document size of the image file. (See "Positioning and scaling images" on page 262.)

If you turn on resampling for the image, you can change print dimensions and resolution independently (and change the total number of pixels in the image). If you turn resampling off, you can change either the dimensions or the resolution— Photoshop Elements adjusts the other value automatically to preserve the total pixel count. For the highest print quality, it's generally best to change the dimensions and resolution first without resampling. Then resample only as necessary.

To change the print dimensions and resolution of an image:

1 Choose Image > Resize > Image Size.

2 Change the print dimensions, image resolution, or both:

• To change only the print dimensions or only the resolution and adjust the total number of pixels in the image proportionately, make sure that Resample Image is selected. Then choose an interpolation method. (See "About interpolation methods" on page 49.)

• To change the print dimensions and resolution without changing the total number of pixels in the image, deselect Resample Image.

3 To maintain the current proportions of image width to image height, select Constrain Proportions. This option automatically updates the width as you change the height, and vice versa.

4 Under Document Size, enter new values for the height and width. If desired, choose a new unit of measurement. Note that for Width, the Columns option uses the width and gutter sizes specified in the Units & Rulers preferences. (See "Using rulers and the grid" on page 27.)

5 For Resolution, enter a new value. If desired, choose a new unit of measurement.

6 Click OK.

To return to the original values displayed in the Image Size dialog box, hold down Alt (Windows) or Option (Mac OS), and click Reset.

To view the print size on-screen:

Do one of the following:

• Choose View > Print Size.

• Select the hand tool or zoom tool, and click Print Size in the options bar.

The magnification of the image is adjusted to display its approximate printed size, as specified in the Document Size section of the Image Size dialog box. Keep in mind that the size and resolution of your monitor affect the on-screen print size.

Scanning images

Before you scan an image, make sure that the software necessary for your scanner has been installed. To ensure a high-quality scan, you should predetermine the scanning resolution and dynamic range your image requires. These preparatory steps can also prevent unwanted color casts from being introduced by your scanner.

Scanner drivers are provided and supported by the manufacturers of the scanners, not Adobe Systems Incorporated. If you have problems with scanning, make sure that you are using the latest version of the appropriate scanner driver.

Importing scanned images

You can import scanned images directly from any scanner that has an Adobe Photoshop-compatible plug-in module or that supports the TWAIN interface. To import the scan using a plug-in module, choose the scanner name from the File > Import submenu. See your scanner documentation for instructions on installing the scanner plug-in. For general plug-in information, see "Using plug-in modules" on page 40.

If your scanner does not have an Adobe Photoshop-compatible scanner driver, import the scan using the TWAIN interface. (See "Importing an image using the TWAIN interface" on page 51.)

If you can't import the scan using the TWAIN interface, use the scanner manufacturer's software to scan your images, and save the images as TIFF, PICT, or BMP files. Then open the files in Photoshop Elements.

Importing an image using the TWAIN interface

TWAIN is a cross-platform interface for acquiring images captured by certain scanners, digital cameras, and frame grabbers. The manufacturer of the TWAIN device must provide a Source Manager and TWAIN Data source for your device to work with Photoshop Elements.

You must install the TWAIN device and its software, and restart your computer, before you can use it to import images into Photoshop Elements. See the documentation provided by your device manufacturer for installation information.

To import an image using the TWAIN interface:

Do one of the following:

• Choose File > Import, and choose the device you want to use from the submenu.

• Click Acquire on the Quick Start screen that appears when you start Photoshop Elements.

Optimizing the dynamic range of the scan

Keep in mind that the human eye can detect a wider tonal range than can be printed. If your scanner allows, set the black and white points before scanning a file to produce the best tonal range and capture the widest dynamic range. Then use Photoshop Elements's color adjustment tools to set the white and black points for the scanned image. (See "Adjusting tonal range" on page 85.)

Eliminating unwanted color casts

If your scanned image contains an unwanted color cast, for example if the colors in the image are all too red in color, you can perform a simple test to determine whether the cast was introduced by your scanner. If it was, you can use the same test file to create a color-cast correction for all images scanned with the scanner.

To identify and correct a color cast introduced by a scanner:

1 Make sure that your monitor has been calibrated. (See "Calibrating your monitor" on page 66.)

2 Open a new file, and use the linear gradient tool (▣) to create a blend from pure black to pure white.

3 Choose Image > Adjustments > Posterize, and posterize the blend using 11 levels.

4 Print the 11-step gray wedge on a black-and-white printer, and then scan it into Photoshop Elements.

Note: You can also perform this test using an 18-percent neutral gray card or an 11-step gray wedge from a photography store.

5 Open the Info palette, and read the RGB values on-screen for each of the gray levels. Uneven R, G, and B values indicate a color cast.

6 Write down the R, G, and B values.

7 Open the scanned image you want to correct, choose Enhance > Brightness/Contrast > Levels, and enter the R, G, and B values you just recorded.

Importing images from a digital camera

Photoshop Elements works with digital camera software to import images directly from a camera. Make sure that the software and drivers that came with your digital camera are properly installed before you import images.

To import images:

1 Follow the procedures in the digital camera software documentation to connect the digital camera to your computer.

2 Choose File > Import, and select your digital camera from the submenu.

Note: If the name of your camera does not appear in the submenu, verify that the software and drivers were installed properly.

3 Once the digital camera software launches, import the desired images as you would if you were downloading them to your computer.

4 Save the imported image as a Photoshop Elements file.

Importing images using WIA (Windows Image Acquisition) Support

Certain digital cameras and scanners can be used to import images using WIA Support. When you use WIA Support, Photoshop Elements works with Windows and your digital camera or scanner software to import images directly into Photoshop Elements.

Note: WIA Support is only available if you are using WindowsME.

To import images from a digital camera using WIA support:

1 Choose File > Import > WIA Support.

2 Choose a destination on your computer for saving your image files.

3 Make sure Open Acquired Images in Photoshop Elements is checked. If you have a large number of images to import, or if you want to edit the images at a later time, deselect it.

4 Make sure Unique Subfolder is selected so that the imported images are put directly into a folder named with the current date.

5 Click Start.

6 Select the digital camera that you want to import images from.

Note: If the name of your camera does not appear in the submenu, verify that the software and drivers were properly installed and that the camera is connected.

7 Choose the image or images you want to import:

• Click the image from the list of thumbnails to import the image.

• Hold Shift down and click on multiple images to import them at the same time.

• Click Select All to import all available images.

8 Click Get Picture to import the image.

To import images from a scanner using WIA Support:

1 Choose File > Import > WIA Support.

2 Choose a destination on your computer to save image files to.

3 Click Start.

4 Make sure Open Acquired Images in Photoshop Elements is checked. If you have a large number of images to import, or if you want to edit the images at a later time, deselect it.

5 Make sure Unique Subfolder is selected so that the imported images are put directly into a folder named with the current date.

6 Select the scanner that you want to use.

Note: If the name of your scanner does not appear in the submenu, verify that the software and drivers were properly installed and that the scanner is connected.

7 Choose the kind of image you want to scan:

• Color picture to use the default settings for scanning color images.

• Grayscale picture to use the default settings for scanning grayscale images.

• Black and White picture or Text to use the default settings.

• Click Adjust the Quality of the Scanned Picture to use custom settings.

8 Click preview to view the scan. Crop the scan if needed by pulling the rectangle so it surrounds the image.

9 Click Scan.

10 The scanned image will be saved in the .bmp file format.

Creating new images

The New command (⬚) lets you create a blank image.

To create a new image:

1 Do one of the following:

• Click New on the Quick Start screen that appears when you start Photoshop Elements.

• To base the image dimensions and resolution on the Clipboard contents, choose File > New. If the Clipboard does not contain image data, the image dimensions and resolution are based on the last image you created.

• To base the image size on the default dimensions and resolution or the last entered settings, hold down Alt (Windows) or Option (Mac OS) when you choose File > New.

• To create an image from data on the Clipboard, select File > Create from Clipboard or click Paste on the Quick Start screen that appears when you start Photoshop Elements.

2 If desired, type a name for the image, and set the width and height.

Ⓠ *To match the width and height of the new image to that of any open image, choose a filename from the bottom section of the Windows menu.*

3 Set the resolution and mode. (See "About image size and resolution" on page 46 and "About color modes" on page 68.)

4 Select an option for the contents of the bottommost layer of the image:

• White to create a white background.

• Background Color to fill the background with the current background color. (See "Choosing foreground and background colors" on page 74.)

• Transparent to make the first layer transparent, with no color values. The resulting document will not have a background layer. (See "About the background layer" on page 166.)

5 Click OK.

Opening and importing images

You can open and import images in various file formats. The available formats appear in the Open dialog box, the Open As dialog box (Windows), or the Import submenu. (See "About file formats" on page 245.)

Note: Photoshop Elements uses plug-in modules to open and import many file formats. If a file format does not appear in the Open dialog box or in the File > Import submenu, you may need to install the format's plug-in module. (See "Using plug-in modules" on page 40.)

Opening files

The Open dialog box provides controls for locating and previewing files. To bypass the Open dialog box, use the Open Recent command.

There may be instances when Photoshop Elements cannot determine the correct format for a file. For example, transferring a file between Mac OS and Windows can cause the format to be mislabeled. In such cases, you must specify the correct format in which to open the file.

To open a file:

1 Choose File > Open (📂).

2 Select the name of the file you want to open. If the file does not appear, select the option for showing all files from the Files of Type (Windows) or Show (Mac OS) pop-up menu.

3 (Mac OS) Click Show Preview to preview the selected file. This option requires the Apple QuickTime extension.

Note: Previews display faster if they are saved with the file. Select Always Save for Image Previews in the Saving Files preferences to always save a preview; select Ask When Saving to save previews on a file-per-file basis.

4 Click Open. In some cases, a dialog box appears, letting you set format-specific options. (See "Opening and importing PDF files" on page 56 and "Opening PostScript artwork" on page 57.)

Note: If a color profile warning message appears, specify whether to convert the pixels based on the file's color profile. (See "Using color management" on page 65.)

To open a recently used file:

Choose File > Open Recent, and select a file from the submenu.

To specify the number of files that are available in the Open Recent submenu, choose Edit > Preferences > Saving Files, and enter a number in the Recent File List Contains text box.

To specify the file format in which to open a file:

Do one of the following:

• (Windows) Choose File > Open As, and select the file you want to open. Then choose the desired format from the Open As pop-up menu, and click Open.

• (Mac OS) Choose File > Open, and choose All Documents from the Show pop-up menu. Then select the file you want to open, choose the desired file format from the Format pop-up menu, and click Open.

Important: If the file does not open, then the chosen format may not match the file's true format, or the file may be damaged.

Opening files with File Browser

File Browser helps you quickly locate image files on your computer.

To open a file using File Browser:

1 Choose Window > Show File Browser.

2 Select one of the following from the drop-down list:

• Hard disk drive to show the directories and files on the hard disk drive.

• Desktop to show the files saved on the desktop of your computer. Thumbnails of image files are displayed to identify each image.

• The name of any other drive or removable media such as a Photo CD.

3 Double-click a file folder to view its contents.

4 Do one of the following to open the image in Photoshop Elements:

• Double-click an image file.

• Drag and drop an image file.

• Select an image file and then press Return.

Opening and importing PDF files

Portable Document Format (PDF) is a versatile file format that can represent both vector and bitmap data and can contain electronic document search and navigation features. PDF is the primary format for Adobe Illustrator 9.0 and Adobe Acrobat.

Photoshop Elements recognizes two types of PDF files: Photoshop PDF files and Generic PDF files. You can open both types of PDF files; however, you can only save images to Photoshop PDF format.

Photoshop PDF files Are created using the Photoshop Elements Save As command. Photoshop PDF files can contain only a single image.

Photoshop PDF format supports all of the color modes and features that are supported in standard Photoshop format. Photoshop PDF also supports JPEG and ZIP compression, except for Bitmap-mode images, which use CCITT Group 4 compression.

Generic PDF files Are created using applications other than Photoshop Elements, such as Adobe Acrobat and Adobe Illustrator, and can contain multiple pages and images. When you open a Generic PDF file, Photoshop Elements rasterizes the image.

You can also bring PDF data into Photoshop Elements using the Place command, the Paste command, and the drag-and-drop feature. (See "Placing files" on page 60, "Using drag and drop to copy between applications" on page 112, and "Using the Clipboard to copy between applications" on page 112.)

To open a PDF file:

1 Choose File > Open.

2 Select the name of the file, and click Open. You can change which types of files show by selecting an option from the Files of Type (Windows) or Show (Mac OS) pop-up menu.

3 If you are opening a Generic PDF file, do the following:

• If the file contains multiple pages, select the page you want to open, and click OK.

• Indicate the desired dimensions, resolution, and mode. If the file has an embedded ICC profile, you can choose the profile from the mode pop-up menu.

• Select Constrain Proportions to maintain the same height-to-width ratio.

• Select Anti-aliased to minimize the jagged appearance of the artwork's edges as it is rasterized.

• Click OK.

To import images from a PDF file:

1 Choose File > Import > PDF Image, select the file you want to import images from, and click Open.

2 Select the image you want to open:

• To open a specific image, select it and click OK. You can use the arrows to scroll through the images, or click Go to Image to enter an image number.

• To open each image as a separate file, click Import All Images.

Press Esc to cancel the import operation before all images are imported.

Opening PostScript artwork

Encapsulated PostScript® (EPS) can represent both vector and bitmap data and is supported by virtually all graphic, illustration, and page-layout programs. Adobe applications that produce PostScript artwork include Adobe Illustrator, Adobe Dimensions, and Adobe Streamline. When you open an EPS file containing vector art, it is *rasterized*—the mathematically defined lines and curves of the vector artwork are converted into the pixels or bits of a bitmap image.

You can also bring PostScript artwork into Photoshop Elements using the Place command, the Paste command, and the drag-and-drop feature. (See "Placing files" on page 60, "Using drag and drop to copy between applications" on page 112, and "Using the Clipboard to copy between applications" on page 112.)

To open an EPS file:

1 Choose File > Open.

2 Select the file you want to open, and click Open.

3 Indicate the desired dimensions, resolution, and mode. To maintain the same height-to-width ratio, select Constrain Proportions.

4 Select Anti-aliased to minimize the jagged appearance of the artwork's edges as it is rasterized.

5 Click OK.

Opening Photo CD files

You can open Kodak® Photo CD™ (PCD) files, including high-resolution files from Pro Photo CD discs.

Note: You cannot save files in PCD format from Photoshop Elements.

To open a Photo CD file:

1 Choose File > Open.

2 Select the PCD file you want to open, and click Open. If the file does not appear, select the option for showing all files from the Files of Type (Windows) or Show (Mac OS) menu.

3 Select options for the source image:

• Pixel Size to specify the pixel dimensions of the image. Keep in mind that the on-screen size of the opened image depends on both the pixel size and resolution you choose. (See "About image size and resolution" on page 46.)

• Profile to specify a device profile for color management. (See "Using color management" on page 65.)

4 Select options for the destination image:

• Resolution to specify the resolution of the opened image.

• Color Space to specify a color profile for the opened image. (See "Using color management" on page 65.)

• Landscape or Portrait to specify the orientation of the opened image.

5 Click OK.

Opening Raw files

The Raw format is designed to accommodate images saved in undocumented formats, such as those created by scientific applications. Compressed files, such as PICT and GIF, cannot be opened using this format.

To open a file using the Raw format:

1 Choose File > Open or File > Open As (Windows).

2 Choose Raw from the file format list, and click Open.

3 For Width and Height, enter values for the dimensions of the file.

4 To reverse the order of the width and height, click Swap.

5 Enter the number of channels.

6 Select Interleaved if the file was saved with an interlaced data option.

7 Select a color depth and, if necessary, a byte order.

8 For Header, enter a value.

9 If you are missing the dimensions or header value, you can have Photoshop Elements estimate the parameters. Either enter the correct height and width values to estimate the header size, or enter the correct header size to estimate the height and width, and then click Guess.

10 To have Photoshop Elements retain the header when you save the file, select Retain When Saving.

11 Click OK.

Importing anti-aliased PICT files (Mac OS)

Choose File > Import > Anti-aliased PICT to import object-oriented PICT files (such as those created with MacDraw and Canvas) as smooth-edged, or anti-aliased, images. Because the entire PICT file must be held in memory for this module to operate, you may not be able to use the module with large PICT files.

The Anti-aliased PICT dialog box indicates the current file size and dimensions. To change the image dimensions, enter new values for Width and Height. The file size is then updated. To maintain image proportions, select Constrain Proportions.

You can choose Grayscale or RGB color mode for an anti-aliased PICT file.

Importing PICT resources (Mac OS)

The PICT Resource module lets you read PICT resources from a file—for example, from another application. To open a PICT resource, choose File > Import > PICT Resource.

To preview a resource, click Preview. Click the arrow buttons to step forward and backward through the resources. Note that the number displayed for Resource refers to the resource's position in ascending order in the resource fork and not to the resource's identification number.

Note: In Photoshop Elements, you can also open a file in the PICT Resource file format by choosing File > Open, choosing All Documents from the Show pop-up menu, selecting the file you want to open, choosing PICT Resource from the Format pop-up menu, and clicking Open. However, the Open command automatically opens the first resource in the file and does not display any other PICT resources in the file.

Opening images in EPS TIFF or EPS PICT Preview format

These formats let you open images saved in file formats that create previews but are not supported by Adobe Photoshop Elements (such as QuarkXPress®). An opened preview image can be edited and used like any other low-resolution file. EPS PICT Preview is available only in Mac OS.

Placing files

You can use the File > Place command to place artwork into a new layer in an image. In Photoshop Elements, you can place PDF, Adobe Illustrator, and EPS files.

When you place a PDF, Adobe Illustrator, or EPS file, it is rasterized; you cannot edit text or vector data in placed artwork. Keep in mind that artwork is rasterized at the resolution of the file into which it is placed.

To place a PDF, Adobe Illustrator, or EPS file:

1 Open the Photoshop Elements image into which you want to place the artwork.

2 Choose File > Place, select the file you want to place, and click Place.

3 If you are placing a PDF file that contains multiple pages, select the page you want to place in the provided dialog box, and click OK.

The placed artwork appears inside a bounding box at the center of the Photoshop Elements image. The artwork maintains its original aspect ratio; however, if the artwork is larger than the Photoshop Elements image, it is resized to fit.

4 If desired, reposition the placed artwork by doing one or more of the following:

• Position the pointer inside the bounding box of the placed artwork, and drag.

• In the options bar, enter a value for X to specify the distance between the center point of the placed artwork and the left edge of the image. Enter a value for Y to specify the distance between the center point of the placed artwork and the top edge of the image.

5 If desired, scale the placed artwork by doing one or more of the following:

• Drag one of the handles at the corners or sides of the bounding box. Hold down Shift as you drag a corner handle to constrain the proportions.

• In the options bar, enter values for W and H to specify the width and height of the artwork. By default, these options represent scale as a percentage; however, you can enter another unit of measurement (in, cm, or px). To constrain the proportions of the artwork, click the Constrain Proportions icon (⬚); the option is on when the icon has a white background.

6 If desired, rotate the placed artwork by doing one or more of the following:

• Position the pointer outside the bounding box of the placed artwork (the pointer turns into a curved arrow), and drag.

• In the options bar, enter a value (in degrees) for the Rotation option (∠).

7 If desired, skew the placed artwork by holding down Ctrl (Windows) or Command (Mac OS), and dragging a side handle of the bounding box.

8 Set the Anti-alias option in the options bar as desired. To blend edge pixels during rasterization, select the Anti-alias option. To produce a hard-edged transition between edge pixels during rasterization, deselect the Anti-alias option.

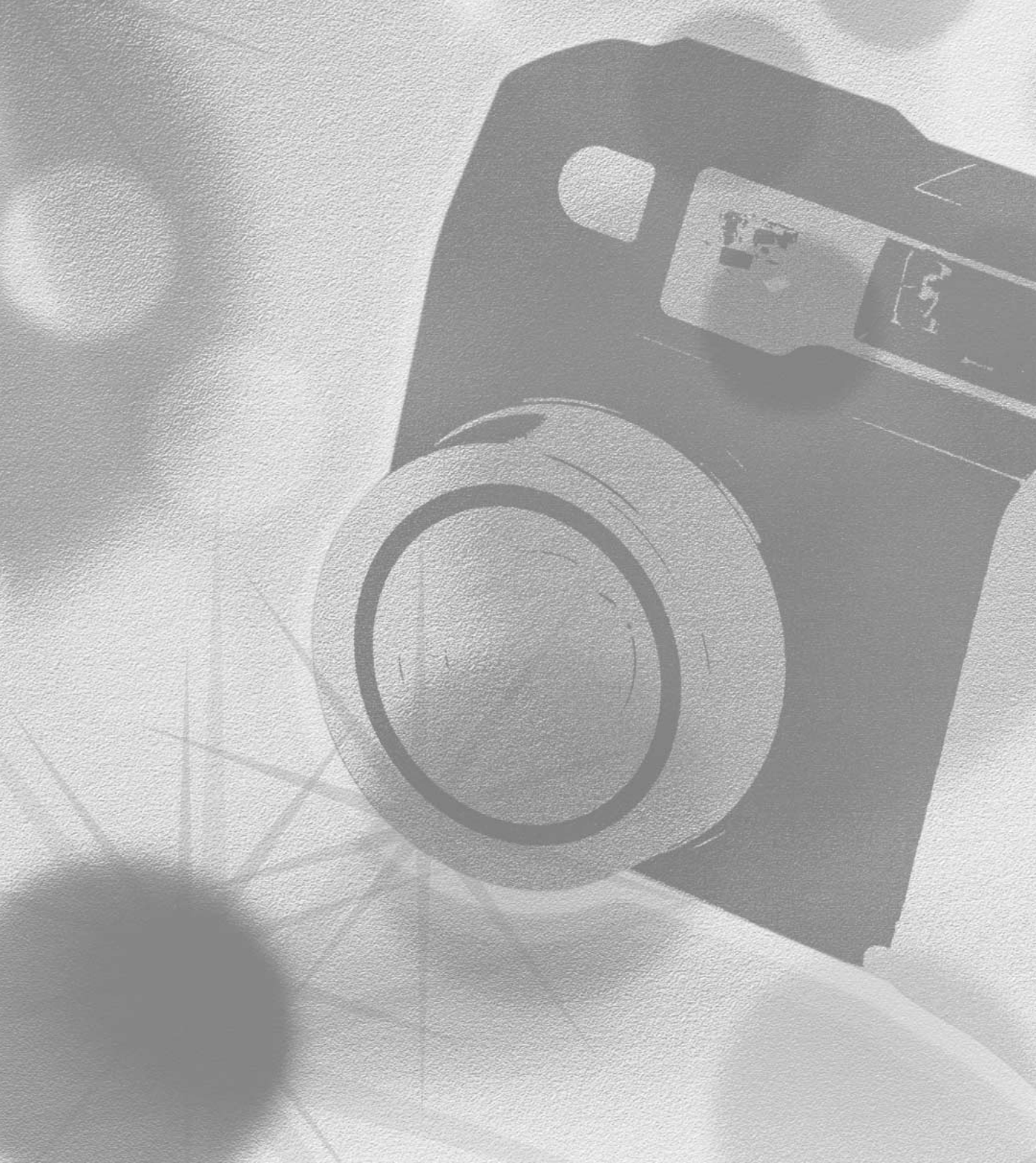**9** To commit the placed artwork to a new layer, do one of the following:

• Click the OK button (☑) in the options bar.

• Press Enter or Return.

To cancel the placement, click the Cancel button (☒) in the options bar, or press Esc.

3

Chapter 3: Working with Color

Familiarity with color theory and terminology can help you understand how color is measured and how Adobe Photoshop Elements uses this information to define, display, and print color values. You can apply colors and make color and tonal adjustments using the color information of an image.

About color and computer graphics

Objects appear to be certain colors because of their ability to reflect, absorb, or transmit light, which we perceive as color. Our eyes are sensitive enough to perceive thousands of different colors in the spectrum of visible light—including many colors that cannot be displayed on a color monitor or printed on a desktop printer.

When creating computer graphics, each piece of equipment you work with to reproduce color—such as a scanner, color monitor, and desktop printer—is called a *device*. Each type of device reproduces a different range of color, called a *color gamut*. Even similar devices, such as two monitors made by the same manufacturer, can show the same color differently. As you move an image from one device to another, its colors can shift in appearance, sometimes resulting in dramatic changes.

Using color management

A color management system is used to achieve color consistency between different devices. Ideally, this means that the colors on your monitor accurately represent both the colors in the scanned image and the colors you will see when the image is printed. Photoshop Elements follows a color management workflow based on conventions developed by the International Color Consortium (ICC).

An ICC workflow uses *color profiles* to determine how colors in a file translate to actual color appearances. By associating, or *tagging,* an image with a color profile, you provide a definition of actual color appearances in the image; changing the associated profile changes the color appearances. Images without associated profiles are known as *untagged* and contain only raw colors.

To create a color-managed image:

1 Open a file and choose Edit > Color Settings.

2 Select a color management option, and click OK:

• No color management to associate no color profile with the image.

• Limited color management to tag the image with a standard color profile for Web graphics.

• Full color management to tag the image with a standard color profile for print graphics. The exact color profile depends on the color mode of the image.

3 Choose File > Save As, and select ICC Profile (Windows) or Embed Color Profile (Mac OS) in the Save As dialog box.

4 Finish saving the image, as described in "Saving images" on page 246.

Calibrating your monitor

For color management to work effectively, you must calibrate your computer monitor. The Adobe Gamma utility, which is automatically installed into your Control Panels folder, lets you calibrate and characterize your monitor to a standard and then save the settings as an ICC-compliant profile. This calibration helps you eliminate any color cast in your monitor, make your monitor grays as neutral as possible, and standardize image display across different monitors.

Monitor color performance changes and degrades over time; recharacterize your monitor every month or so. If you find it difficult or impossible to calibrate your monitor to a standard, it may be too old and faded.

Monitor calibration involves adjusting video settings, which may be unfamiliar to you. A monitor profile uses these settings to precisely describe how your monitor reproduces color.

Brightness and contrast The overall level and range, respectively, of display intensity. These parameters work just as they do on a television set. Adobe Gamma helps you set an optimum brightness and contrast range for calibration.

Gamma The brightness of the midtone values. The values produced by a monitor from black to white are nonlinear—if you graph the values, they form a curve, not a straight line. The gamma value defines the slope of that curve halfway between black and white. Gamma adjustment compensates for the nonlinear tonal reproduction of output devices such as monitor tubes.

Phosphors The substance that monitors use to emit light. Different phosphors have different color characteristics.

White point The coordinates (measured in the CIE XYZ color space) at which red, green, and blue phosphors at full intensity create white.

To calibrate your monitor using Adobe Gamma:

1 Do the following before you start the calibration process:

• Make sure your monitor has been turned on for at least a half hour. This gives it sufficient time to warm up for a more accurate color reading.

• Make sure your monitor is displaying thousands (16 bits) of colors or more.

• Remove colorful background patterns on your monitor desktop. Busy or bright patterns surrounding a document interfere with accurate color perception. Set your desktop to display neutral grays only, using RGB values of 128. For more information, see the documentation for your operating system.

2 Start the Adobe Gamma utility:

• In Windows, start Adobe Gamma, located in the Control Panels folder or in the Program Files/Common Files /Adobe/Calibration folder on your hard drive.

• In Mac OS, choose Control Panels > Adobe Gamma from the Apple menu.

3 Do one of the following:

• To use a version of the utility that will guide you through each step, select Step by Step, and click OK. Then, follow the instructions described in the utility. Start from the default profile for your monitor if available, and enter a unique description name for the profile. When you are finished with Adobe Gamma, save the profile using the same description name. (If you do not have a default profile, contact your monitor manufacturer for appropriate phosphor specifications.)

• To use a compact version of the utility with all the controls in one place, select Control Panel, and click OK. This version is recommended if you have experience creating color profiles.

At any time while working in the Adobe Gamma control panel, you can click the Wizard (Windows) or Assistant (Mac OS) button to switch to the wizard for instructions that guide you through the same settings as in the control panel, one option at a time.

Describing color

The human eye perceives color in terms of three characteristics—hue, saturation, and brightness (HSB), while computer monitors display colors by generating varying amounts of red, green, and blue (RGB) light. Photoshop Elements lets you use the HSB and RGB *color models* to select and manipulate color.

HSB model

Based on the human perception of color, the HSB model describes three fundamental characteristics of color:

• *Hue* is the color reflected from or transmitted through an object. It is measured as a location on the standard color wheel, expressed as a degree between 0° and 360°. In common use, hue is identified by the name of the color such as red, orange, or green.

• *Saturation*, sometimes called *chroma*, is the strength or purity of the color. Saturation represents the amount of gray in proportion to the hue, measured as a percentage from 0% (gray) to 100% (fully saturated). On the standard color wheel, saturation increases from the center to the edge.

• *Brightness* is the relative lightness or darkness of the color, usually measured as a percentage from 0% (black) to 100% (white).

Although you can use the HSB model in Photoshop Elements to define a color in the Color Picker dialog box, there is no HSB mode available for creating and editing images.
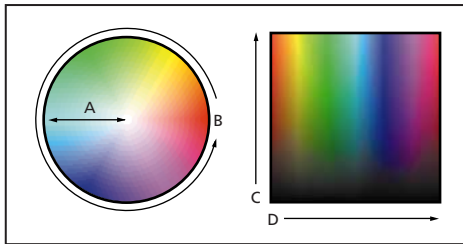
A. Saturation B. Hue C. Brightness D. All hues

RGB model

A large percentage of the visible spectrum can be represented by mixing red, green, and blue (RGB) colored light in various proportions and intensities. Where the colors overlap, they create cyan, magenta, yellow, and white.

Because the RGB colors combine to create white, they are also called *additive colors*. Adding all colors together creates white—that is, all light is transmitted back to the eye. Additive colors are used for lighting, video, and monitors. Your monitor, for example, creates color by emitting light through red, green, and blue phosphors.
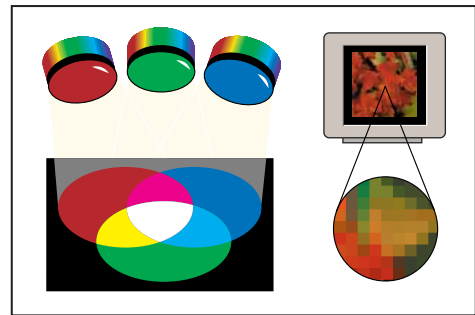
Additive colors (RGB)

Choosing a color mode

Photoshop Elements provides several color modes for displaying and printing images. The color mode you choose determines the number of colors that can be displayed in an image and can also affect the file size of the image.

About color modes

Photoshop Elements provides four color modes: RGB, Bitmap, Grayscale, and Indexed color.

RGB mode RGB is the default mode for new Photoshop images. It uses the RGB color model to assign an intensity value to each pixel ranging from 0 (black) to 255 (white) for each of the RGB components in a color image. For example, a bright red color might have an R value of 246,

a G value of 20, and a B value of 50. When the values of all three components are equal, the result is a shade of neutral gray. When the value of all components is 255, the result is pure white; when the value is 0, pure black.

RGB images use three colors, or channels, to reproduce up to 16.7 million colors on-screen. In addition to being the default mode for new Photoshop images, the RGB model is used by computer monitors to display colors.

Bitmap mode This mode uses one of two color values (black or white) to represent the pixels in an image. Images in Bitmap mode are called bitmapped 1-bit images because they have a bit depth of 1.

Grayscale mode This mode uses up to 256 shades of gray. Every pixel of a grayscale image has a brightness value ranging from 0 (black) to 255 (white). Grayscale values can also be measured as percentages of black ink coverage (0% is equal to white, 100% to black). Images produced using black-and-white or grayscale scanners typically are displayed in Grayscale mode.

Indexed Color mode This mode uses at most 256 colors. When converting to indexed color, Photoshop Elements builds a color lookup table (CLUT), which stores and indexes the colors in the image. If a color in the original image does not appear in the table, the program chooses the closest one or simulates the color using available colors.

By limiting the palette of colors, indexed color can reduce file size while maintaining visual quality— for example, for a Web page. Limited editing is available in this mode. For extensive editing you should convert temporarily to RGB mode. (See "Converting to indexed color" on page 71.)

Converting between color modes

When you choose a different color mode for an image, you permanently change the color values in the image. Consequently, before converting images, it's best to do the following:

• Do as much editing as possible in RGB mode.

• Save a backup copy before converting. Be sure to save a copy of your image that includes all layers in order to edit the original version of the image after the conversion.

• Flatten the file before converting it. The inter-action of colors between layer blending modes will change when the mode changes.

To convert an image to another mode:

Choose Image > Mode, and choose the mode you want from the submenu. Modes not available for the active image appear dimmed in the menu.

Note: Images are flattened when you convert them to Bitmap or Indexed Color mode, because these modes do not support layers.

Converting between Grayscale and Bitmap modes

Converting an image to Bitmap mode reduces the image to two colors, greatly simplifying the color information in the image and reducing its file size. To convert an image to Bitmap mode, you must first convert it to Grayscale mode. This removes the hue and saturation information from the pixels and leaves just the brightness values. However, because few editing options are available for Bitmap-mode images, it's usually best to edit the image in Grayscale mode and then convert it.

Keep in mind that a Bitmap-mode image edited in Grayscale mode may not look the same when converted back to Bitmap mode. For example, consider a pixel that is black in Bitmap mode and then edited to a shade of gray in Grayscale mode. If the gray value of the pixel is light enough, it will become white when converted back to Bitmap mode.

To convert an image to Bitmap mode:

1 Do one of the following:

• If the image is in color, choose Image > Mode > Grayscale. Then choose Image > Mode > Bitmap.

• If the image is grayscale, choose Image > Mode > Bitmap.

2 For Output, enter a value for the output resolution of the Bitmap-mode image, and choose a unit of measurement. By default, the current image resolution appears as both the input and the output resolutions.

3 Select one of the following bitmap conversion methods, and click OK:

50% Threshold Converts pixels with gray values above the middle gray level (128) to white and below to black. The result is a very high-contrast, black-and-white representation of the image.

Pattern Dither Converts an image by organizing the gray levels into geometric configurations of black and white dots.

Diffusion Dither Converts an image by using an error-diffusion process, starting at the pixel in the upper left corner of the image. If the pixel's value is above middle gray (128), the pixel is changed to white—if below, to black. Because the original pixel is rarely pure white or pure black, error is inevitably introduced. This error is transferred to

surrounding pixels and diffused throughout the image, resulting in a grainy, filmlike texture. This option is useful for viewing images on a black-and-white screen.
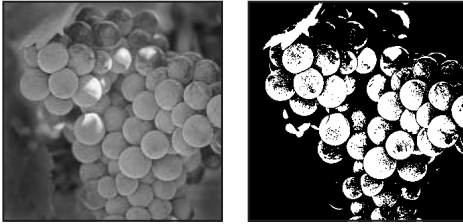
Original grayscale image, and 50% Threshold conversion method
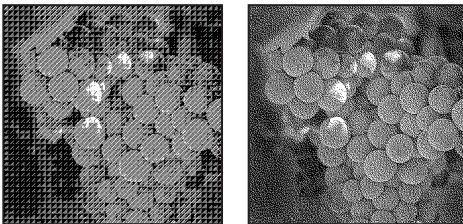
Pattern Dither conversion method, and Diffusion Dither conversion method

To convert a Bitmap-mode image to grayscale:

1 Choose Image > Mode > Grayscale.

2 Enter a value between 1 and 16 for the size ratio.

The size ratio is the factor for scaling down the image. For example, to reduce a grayscale image by 50%, enter 2 for the size ratio. If you enter a number greater than 1, the program averages multiple pixels in the Bitmap-mode image to produce a single pixel in the grayscale image. This process lets you generate multiple shades of gray from an image scanned on a 1-bit scanner.

Converting to indexed color

Converting to indexed color reduces the number of colors in the image to at most 256—the standard number of colors supported by the GIF and PNG-8 formats and many Web browsers. This conversion reduces file size by deleting color information from the image.

Note: To convert to indexed color, you must start with either a grayscale or RGB image.

To convert an image to indexed color:

1 Choose Image > Mode > Indexed Color.

2 Click OK to flatten layers.

Note: This will flatten all visible layers and discard hidden layers.

For grayscale images, the conversion happens automatically. For RGB images, the Indexed Color dialog box appears.

3 Select Preview the Indexed Color dialog box to display a preview of the changes.

4 Specify conversion options as described in the following sections.

5 Click OK.

Palette types for indexed-color images

A number of palette types are available for converting an image to indexed color.

Exact Creates a palette using the exact colors appearing in the RGB image—an option available only if the image uses 256 or fewer colors. Because the image's palette contains all colors in the image, there is no dithering.

System (Mac OS) Uses the Mac OS default 8-bit palette, which is based on a uniform sampling of RGB colors.

System (Windows) Uses the Windows system's default 8-bit palette, which is based on a uniform sampling of RGB colors.

Web Uses the 216 colors that Web browsers, regardless of platform, use to display images on a monitor limited to 256 colors. This palette is a subset of the Mac OS 8-bit palette. Use this option to avoid browser dither when viewing images on a monitor display limited to 256 colors.

Uniform Creates a palette by uniformly sampling colors from the RGB color cube. For example, if Photoshop Elements takes 6 evenly spaced color levels each of red, green, and blue, the combination produces a uniform palette of 216 colors (6 cubed = 6 x 6 x 6 = 216). The total number of colors displayed in an image corresponds to the nearest perfect cube (8, 27, 64, 125, or 216) that is less than the value in the Colors text box.

Perceptual Creates a custom palette by giving priority to colors for which the human eye has greater sensitivity.

Selective Creates a color table similar to the Perceptual color table, but favoring broad areas of color and the preservation of Web colors. This option usually produces images with the greatest color integrity.

Adaptive Creates a palette by sampling the colors from the spectrum appearing most commonly in the image. For example, an RGB image with only the colors green and blue produces a palette made primarily of greens and blues. Most images

concentrate colors in particular areas of the spectrum. To control a palette more precisely, first select a part of the image containing the colors you want to emphasize. Photoshop Elements weights the conversion toward these colors.

Custom Creates a custom palette using the Color Table dialog box. Either edit the color table and save it for later use or click Load to load a previously created color table. (See "Customizing indexed color tables" on page 73.) This option also displays the current adaptive palette, which is useful for previewing the colors most often used in the image.

Previous Uses the custom palette from the previous conversion, making it easy to convert several images with the same custom palette.

Number of colors in indexed-color images

For the Uniform, Perceptual, Selective, or Adaptive palette, you can specify the exact number of colors to be displayed (up to 256) by entering a value for Colors. The Colors text box controls only how the indexed color table is created.

Color inclusion and transparency in indexed-color images

To specify colors to be included in the indexed color table or to specify transparency in the image, choose from the following options:

Forced Provides options to force the inclusion of certain colors in the color table. Black and White adds a pure black and a pure white to the color table; Primaries adds red, green, blue, cyan, magenta, yellow, black, and white; Web adds the 216 Web-safe colors; and Custom lets you define custom colors to add.

Transparency Specifies whether to preserve transparent areas of the image during conversion. Selecting this option adds a special index entry in the color table for transparent colors. Deselecting this option fills transparent areas with the matte color, or with white if no matte color is chosen.

Matte Specifies the background color used to fill anti-aliased edges that lie adjacent to transparent areas of the image. With Transparency selected, the matte is applied to edge areas to help blend the edges with a Web background of the same color. With Transparency deselected, the matte is applied to transparent areas. Choosing None for the matte creates hard-edged transparency if Transparency is selected; otherwise, all transparent areas are filled with 100% white.

Dithering in indexed-color images

Unless you're using the Exact color table option, the color table may not contain all the colors used in the image. To simulate colors not in the color table, you can dither the colors. Dithering mixes the pixels of the available colors to simulate the missing colors.

Choose a dither option from the menu, and enter a value for the dither amount. A higher amount dithers more colors, but may increase file size. You can choose from the following dither options:

None Does not dither colors but instead uses the color closest to the missing color. This tends to result in sharp transitions between shades of color in the image, creating a posterized effect.

Diffusion Uses an error-diffusion method that produces a less structured dither than the Pattern option. To protect colors in the image that contain entries in the color table from being dithered, select Preserve Exact Colors. This is useful for preserving fine lines and text for Web images.

Pattern Uses a halftone-like square pattern to simulate any colors not in the color table.

Noise Helps to reduce seam patterns along the edges of image slices.

Customizing indexed color tables

The Color Table command lets you make changes to the color table of an indexed-color image. You can edit colors in the color table to produce special effects, or assign transparency in the image to a single color in the table.

To edit colors in the color table:

1 Open the indexed-color image.

2 Choose Image > Mode > Color Table.

3 Click or drag in the table to choose the color or range of colors you want to change.

4 Choose a color, as explained in "Using the Adobe Color Picker" on page 77, and click OK.

If you are changing a range of colors, Photoshop Elements creates a gradient in the color table between the starting and ending colors. The first color you choose in the Color Picker is the beginning color for the range. When you click OK, the Color Picker reappears so that you can choose the last color in the range.

The colors you selected in the Color Picker are placed in the range you selected in the Color Table dialog box.

5 Click Preview to view the results of the changes you have made to the image.

6 Click OK in the Color Table dialog box to apply the new colors to the indexed-color image.

To assign transparency to a single color:

1 Choose Image > Mode > Color Table.

2 Select the eyedropper, and click the desired color in the table or in the image. The sampled color is replaced with transparency in the image.

3 Click OK to close the color table.

To use a predefined color table:

1 Choose Image > Mode > Color Table.

2 Select an option from the Table menu:

Black Body Displays a palette based on the different colors a blackbody radiator emits as it is heated—from black to red, orange, yellow, and white.

Grayscale Displays a palette based on 256 levels of gray—from black to white.

Spectrum Displays a palette based on the colors produced as white light passes through a prism—from violet, blue, and green to yellow, orange, and red.

System (Windows) Displays the standard Windows 256-color system palette.

System (Mac OS) Displays the standard Mac OS 256-color system palette.

To save a color table for use with other images:

Click the Save button in the Color Table dialog box. (See "Using the Swatches palette" on page 76 for information on saving color tables.)

To load a saved color table:

Click the Load button in the Color Table dialog box. Once you load a color table into an image, the colors in the image change to reflect the color positions they reference in the new color table.

Note: You can also load saved color tables into the Swatches palette. (See "Using the Swatches palette" on page 76.)

Choosing foreground and background colors

Photoshop Elements uses the *foreground* color to paint, fill, and stroke selections and shapes, and the *background* color to make gradient fills and fill in the erased areas of an image. The foreground and background colors are also used by some special effects filters.

You can designate a new foreground or background color using the eyedropper tool, the Swatches palette, or the Adobe Color Picker.

Using color settings in the toolbox

The current foreground color appears in the upper color selection box in the toolbox; the current background color appears in the lower box.

The Info palette and the Adobe Color Picker let you display color values using a number of color models. (See "About color modes" on page 68.)

To change the foreground or background color:

1 Do one of the following:

• To change the foreground color, click the upper color selection box in the toolbox.

• To change the background color, click the lower color selection box in the toolbox.

2 Choose a color in the Adobe Color Picker. (See "Using the Adobe Color Picker" on page 77.)

To reverse the foreground and background colors:

Click the Switch Colors icon (↰) in the toolbox.

To set current colors to black and white:

Click the Default Colors icon (◨) in the toolbox.

Using the eyedropper tool

The eyedropper tool samples color from an image to designate a new foreground or background color. You can sample from the active image or from another image. (When you're using the eyedropper, you can click in a background image without making it the active image.)

You can also specify the area sampled by the eyedropper tool. For example, you can set the eyedropper to sample the color values of a 3-by-3-pixel area under the pointer. Modifying the sample size of the eyedropper affects the color readouts displayed in the Info palette.

To select the foreground or background color:

1 Select the eyedropper tool (🖋).

2 To change the sample size of the eyedropper, choose an option from the Sample Size menu:

• Point Sample to read the precise value of the pixel you click.

• 3 by 3 Average or 5 by 5 Average to read the average value of the specified number of pixels within the area you click.

3 Select a color:

• To select a new foreground color from an image, click the color you want.

• To select a new background color from an image, Alt-click (Windows) or Option-click (Mac OS) the color you want.

As you drag the eyedropper tool, the foreground color selection box changes dynamically. Alt-drag (Windows) or Option-drag (Mac OS) to activate the background color selection box. Release the mouse button to pick the new color.

💡 *To use the eyedropper tool temporarily while using most painting tools, hold down Alt (Windows) or Option (Mac OS).*

Using the Swatches palette

You can choose a foreground or background color from the Swatches palette, or you can add or delete colors to create a custom swatch library. You can also save a library of swatches and reload them for use in another image. Although you can add many colors to the Swatches palette, you should manage its size and organization. You can load, save, and manage libraries of swatches using the Preset Manager. (See "Working with presets" on page 35.)

To display the Swatches palette:

Choose Window > Show Swatches, or click the Swatches palette tab.

To select a foreground or background color:

Do one of the following:

• To choose a foreground color, click a color in the Swatches palette.

• To choose a background color, Alt-click (Windows) or Option-click (Mac OS) a color in the Swatches palette.

To add a color to the Swatches palette:

1 Use the eyedropper tool (✐) or the Adobe Color Picker to select the color you want to add. (See "Using the Adobe Color Picker" on page 77.)

2 Position the pointer over an empty space in the bottom row of the Swatches palette (the pointer turns into the paint bucket tool), and click to add the color. Or choose New Swatch from the Swatches palette menu.

3 Enter a name for the new color and click OK.

To delete a color in the Swatches palette:

Ctrl-click (Windows) or Command-click (Mac OS) a color in the Swatches palette.

Managing swatches

The Swatches palette can hold many swatches. Creating libraries of swatches can help you group related or special swatches and manage palette size. The Adobe Photoshop Elements program folder includes files containing various swatch libraries. When you create custom libraries, saving them to the same folder allows your libraries to be automatically displayed in the palette menu.

To save and use custom swatch sets:

Choose one of the following commands from the Swatches palette menu:

• Select the name of a swatch library to load it.

• Reset Swatches to return to the default swatches palette. You can also replace the current swatch library.

• Load Swatches to add swatches stored in a file to the palette.

• Replace Swatches to replace the current swatch library with swatches stored in a file.

• Save Swatches to save a swatch library in a file.

You can also load or save swatches using the Preset Manager. (See "Working with presets" on page 35.)

Exiting Photoshop Elements saves the contents of the current palette in the Preferences file.

Changing views of the palette

You can change the view of the palette to display swatches in different ways.

To change the view of the Swatches palette:

Choose one of the following views from the Swatches palette menu:

• Thumbnail to display a thumbnail of each swatch. This is the default view.

• Small List to display the name and thumbnail of each swatch.

To replace or insert a color in the Swatches palette:

Use the eyedropper tool or the Adobe Color Picker to select the color you want to add.

To delete a color from the Swatches palette:

Hold down Ctrl (Windows) or Command (Mac OS), position the pointer over a swatch (the pointer turns into scissors), and click.

To return to the default Swatches palette:

1 Choose Reset Swatches from the Swatches palette menu. Or choose Edit > Preset Manager, select Swatches from the Preset Type list, and then select Reset Swatches from the palette menu.

2 Return to the default palette and click OK to replace the current swatches with the default set.

Using the Adobe Color Picker

You can use the Adobe Color Picker to select the foreground or background color by choosing from a color spectrum or by defining colors numerically. In addition, you can select colors based on HSB and RGB color models, or choose to use only Web-safe colors. By default, the program uses the Adobe Color Picker.

To display the Adobe Color Picker:

Click the foreground or background color selection box in the toolbox.

Specifying a color using the color field and color slider

With HSB and RGB color modes, you can use the color field and the color slider in the Color Picker dialog box to select a color. The color slider displays the range of color levels available for the selected color component (for example, R, G, or B). The color field displays the range for the remaining two components—one on the horizontal axis, one on the vertical.

For example, if the current color is black and you click the red component (R) using the RGB color model, the color slider displays the range of color for red (0 is at the bottom of the slider and 255 is at the top). The color field displays the values for blue along its horizontal axis, for green along its vertical axis.

To specify a color using the color field and color slider:

1 Click a component next to the HSB or RGB values.

2 Select a color:

• Drag the white triangles along the slider.

• Click inside the color slider.

• Click inside the color field.

When you click in the color field, a circular marker indicates the color's position in the field.

As you adjust the color using the color field and color slider, the numerical values change to reflect the new color. The color rectangle to the right of the color slider displays the new color in the top section of the rectangle. The original color appears at the bottom of the rectangle.

Specifying a color using numeric values

In the Adobe Color Picker, you can select a color by specifying numeric values for each color component.

To specify a color using numeric values:

Do one of the following:

• In RGB color mode (the mode your monitor uses), specify component values from 0 to 255 (0 is black, and 255 is the pure color).

• In HSB color mode, specify saturation and brightness as percentages; specify hue as an angle from 0° to 360° that corresponds to a location on the color wheel. (See "About color modes" on page 68 for information on the color wheel.)

Using Web-safe colors

The *Web-safe colors* are the 216 colors used by browsers regardless of the platform. The browser will change all colors in the image to these colors when displaying the color on an 8-bit screen. The 216 colors are a subset of the Mac OS 8-bit color palettes. By working only with these colors, you can be sure that art you prepare for the Web will not dither on a system set to display in 256 colors.

To identify Web-safe colors in the Adobe Color Picker:

• Click the Only Web Colors option in the lower left corner of the color picker, and then choose any color in the color picker. Any color you pick with this option selected is Web-safe.

• Choose a color in the color picker. If you choose a non-Web color, an alert cube (⬡) appears next to the color rectangle in the color picker. Click the alert cube to select the closest Web color. (If no alert cube appears, the color you chose is Web-safe.)

Using other color pickers

In addition to the default Adobe Color Picker, you can use the built-in color pickers on your system or a plug-in color picker to select colors. Any plug-in color pickers you install appear under Color Picker in the General Preferences dialog box. For information on installing and using a plug-in color picker, see the documentation that came with the plug-in.

To use the Windows Color Picker (Windows):

1 Choose Edit > Preferences > General.

2 Choose Windows from the Color Picker menu, and click OK.

For more information, see your Windows documentation.

To use the Apple Color Picker (Mac OS):

1 Choose Edit > Preferences > General.

2 For Color Picker, choose Apple, and click OK.

The exact appearance of the Apple Color Picker varies between different system software versions. For more information, see your Mac OS documentation.

To return to the Adobe Color Picker after using another color picker:

1 Choose Edit > Preferences > General.

2 Choose Adobe from the Color Picker menu, and click OK.

4

Chapter 4: Making Color and Tonal Corrections

The color and tonal correction tools in Photoshop Elements are used with images that were taken with a digital camera or scanned. You can correct the colors in an entire image, or just portions of an image.

About correcting images

It may be necessary to correct the color and tone in an image for several reasons. The original photograph may have a color cast caused by using incorrect film or lighting. Or the scan may have been imperfect—scanners can introduce color casts or artifacts. Or the colors in your original art may be out of printable range.

Complete the following steps to correct the color balance and tonal range of an image:

Calibrate your monitor Use Adobe Gamma to calibrate your monitor. Otherwise, the image on your monitor may look very different from the same image when printed or when viewed on another monitor. (See "Calibrating your monitor" on page 66.)

View all pixels View the image at 100% before making any color corrections. The accuracy of color corrections may vary if all the pixels in the image aren't visible.

Check the scan quality and tonal range Look at the image's histogram to evaluate whether the image has sufficient detail to produce high-quality output. The greater the range of values in the histogram, the greater the detail. Poor scans and photographs without much detail can be difficult if not impossible to correct. Too many color corrections can also result in a loss of pixel values and too little detail. (See "Checking scan quality and tonal range" on page 84.)

Adjust the tonal range Begin tonal corrections by adjusting the values of the extreme highlight and shadow pixels in the image, setting an overall tonal range that allows for the sharpest detail possible throughout the image. This process is known as *setting the highlights and shadows* or *setting the white and black points.* (See "Adjusting tonal range" on page 85.)

Setting the highlights and shadows typically redistributes the midtone pixels appropriately. When pixel values are concentrated at either end of the tonal range, however, you may need to adjust your midtones manually. It is not usually necessary to adjust midtones in images that already have a concentrated amount of midtone detail.

Adjust the color balance After correcting the tonal range, you can adjust the image's color balance to remove unwanted color casts or to correct oversaturated or undersaturated colors. (See "Using the Color Cast command" on page 92.)

Make other special color adjustments Once you have corrected the overall color balance of your image, you can make optional adjustments to enhance colors or produce special effects. (See "Applying special color effects to images" on page 95.)

Sharpen the edges of the image As a final step, use the Unsharp Mask filter to sharpen the clarity of edges in the image. This step helps restore focus to images that have undergone resampling as a result of tonal adjustments. (See "Sharpening images" on page 98.)

Checking scan quality and tonal range

A *histogram* illustrates how pixels in an image are distributed by graphing the number of pixels at each color intensity level. This can show you whether the image contains enough detail in the shadows (shown in the left part of the histogram), midtones (shown in the middle), and highlights (shown in the right part) to make a good correction.

The histogram also gives a quick picture of the tonal range of the image, or the image *key type*. A low-key image has detail concentrated in the shadows; a high-key image has detail concentrated in the highlights; and an average-key image has

detail concentrated in the midtones. An image with full tonal range has a high number of pixels in all areas. Identifying the tonal range helps determine appropriate tonal corrections.
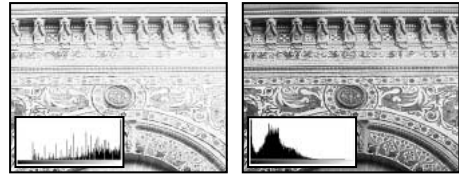
Original with insufficient detail, and sufficient detail
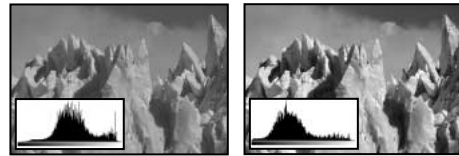
Original, and corrected average-key image
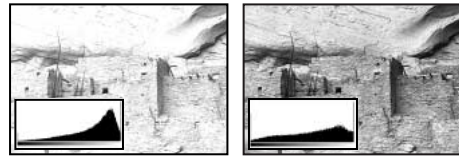
Original, and corrected high-key image
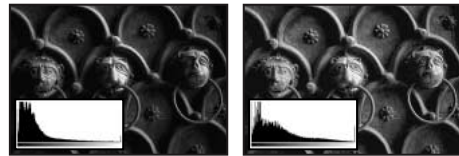
Original, and corrected low-key image

To display the histogram for an image:

1 To display histogram data for a portion of the image, first select that portion. By default, the histogram displays the tonal range of the entire image.

2 Choose Image > Histogram.

The horizontal axis of the histogram represents the intensity values, or levels, from darkest (0) at the far left to brightest (255) at the far right; the vertical axis represents the total number of pixels with a given value.

Note: The histogram for an adjustment layer reflects the data for all visible layers beneath it.

3 For RGB images, choose an option from the Channel menu. You can plot either the luminance of the composite channel (Luminosity) or the intensity values of an individual channel.

4 To view information about a specific point on the histogram, place the pointer there. To view information about a range of values, drag in the histogram to highlight the range. When you are finished, click OK to close the histogram.

Statistical information about the intensity values of the pixels appears below the histogram:

Mean Represents the average intensity value.

Standard deviation (Std Dev) Represents how widely intensity values vary.

Median Shows the middle value in the range of intensity values.

Pixels Represents the total number of pixels used to calculate the histogram.

Level Displays the intensity level of the area underneath the pointer.

Count Shows the total number of pixels corresponding to the intensity level underneath the pointer.

Percentile Displays the cumulative number of pixels at or below the level underneath the pointer. This value is expressed as a percentage of all the pixels in the image, from 0% at the far left to 100% at the far right.

Cache Level Shows the setting for the image cache. If the Use Cache for Histograms option is selected in the Memory and Image Cache (Windows) or Image Cache (Mac OS) preferences, the histogram displays more quickly and is based on a representative sampling of pixels in the image (based on the magnification), rather than on all of the pixels (equivalent to a cache level of 1). Deselect this option if you want to check for posterization in the image. You can press Shift while choosing Image > Histogram to generate the histogram using all pixels in the image.

Adjusting tonal range

You can adjust the tonal relationships between pixels in an image using a variety of commands. Some commands—such as Auto Levels and Auto Contrast—automatically correct the tonal range of an image. Other commands—such as Adjust Backlighting, Fill Flash, and Brightness/ Contrast—give you more control over the tonal adjustments. Finally, the Levels dialog box gives you the most precision when adjusting the tonal relationships in an image.

Using the Auto Levels command

The Auto Levels command defines the lightest and darkest pixels in an image, and then redistributes intermediate pixel values proportionately. Because Auto Levels adjusts each color channel (red, green, and blue) individually, it may remove or introduce color casts.

Auto Levels gives good results when an image with an average distribution of pixel values needs a simple contrast adjustment.

To use the Auto Levels command:

Do one of the following:

• Choose Enhance > Auto Levels.

• Open the Levels dialog box. (See "Using the Levels dialog box" on page 87.) Then, click Auto, and click OK.

To change the amount of white and black values clipped:

1 Hold down Alt (Windows) or Option (Mac OS), and click Options in the Levels dialog box.

2 In the Auto Range dialog box, enter the percentage of extreme highlight and shadow pixels to ignore, and click OK. A value between 0.5% and 1% is recommended.

Using the Auto Contrast command

The Auto Contrast command adjusts the overall contrast and mixture of colors in an image automatically. Because it does not adjust each color channel (red, green, and blue) individually, Auto Contrast does not introduce or remove color casts. It maps the lightest and darkest pixels in the image to white and black, which makes highlights appear lighter and shadows appear darker.

Auto Contrast can improve the appearance of many photographic or continuous-tone images. It does not improve flat-color images.

To use the Auto Contrast command:

Choose Enhance > Auto Contrast.

Using the Adjust Backlighting command

When taking pictures, you can use backlighting to emphasize the shape of the subject and bring out details in the background of a digital photo or image. However, backlighting can cause underexposure in the subject of a picture. You can use the Adjust Backlighting command to correct this problem.

Original image, and Backlighting applied

To use the Adjust Backlighting command:

1 Choose Enhance > Adjust Backlighting.

2 Drag the Darker slider or enter a value in the text box to adjust the tonal variation in the image. Values can range from 0 to 100.

3 Click OK.

Using the Fill Flash command

When taking pictures in bright light, shadows in the image can get so dark that they show little detail. You can lighten such shadows using the Fill Flash command.

Original image, and Fill Flash applied

To use the Fill Flash command:

1 Choose Enhance > Fill Flash.

2 Drag the Lighter slider or enter a value in the text box to adjust the tonal variation in the image. Values can range from 0 to 100.

3 Click OK.

Using the Brightness/Contrast command

The Brightness/Contrast command lets you make simple adjustments to the tonal range of an image.

To use the Brightness/Contrast command:

1 Do one of the following:

• Choose Enhance > Brightness/Contrast > Brightness/Contrast.

• Create a new Brightness/Contrast adjustment layer, or open an existing Brightness/Contrast adjustment layer. (See "Using adjustment layers and fill layers" on page 181.)

2 Drag the sliders to adjust the brightness and contrast.

Dragging to the left decreases the level; dragging to the right increases it. The number at the right of each slider value displays the brightness or contrast value. Values can range from –100 to +100.

3 Click OK.

Using the Levels dialog box

The Levels dialog box lets you correct the tonal range and color balance of an image by adjusting intensity levels of the image's shadows, midtones, and highlights. The Levels histogram serves as a visual guide for adjusting the image's key tones.

Dragging the Brightness and Contrast sliders changes all the pixels in the image. Note that dragging the gray slider in Levels has no effect on the black and white points of the image. You can set the highlights and shadows in an image by moving Input sliders to the first group of pixels on both ends of the Levels histogram. This maps these pixels—the darkest and lightest pixels in each channel—to black and white, increasing the tonal range of the image. The corresponding pixels in the other channels are adjusted proportionately to

avoid altering the color balance. You can use the middle Input slider to change the intensity values of the middle range of gray tones without dramatically altering the highlights and shadows.

To adjust tonal range using Levels:

1 Do one of the following:

• Choose Enhance > Brightness/Contrast > Levels.

• Create a new Levels adjustment layer, or open an existing Levels adjustment layer. (See "Using adjustment layers and fill layers" on page 181.)

2 To adjust values for a specific color channel (red, green, or blue), choose an option from the Channel menu.

3 To adjust the shadows and highlights, do one of the following:

• Drag the black and white Input Levels sliders to the edge of the first group of pixels on either end of the histogram. You can also enter values directly into the first and third Input Levels text boxes.

• Drag the black and white Output Levels sliders to define new shadow and highlight values. You can also enter values directly in the Output Levels text boxes.

For example, suppose you want to increase the contrast in an image with pixels that currently cover a range of only 0–233. If you drag the Input Levels white triangle to 233, pixels with intensity values of 233 and higher (in each channel of the

image) are mapped to 255; pixels with lower intensity values are mapped to corresponding lighter values. This remapping lightens the image, increasing the contrast in highlight areas.
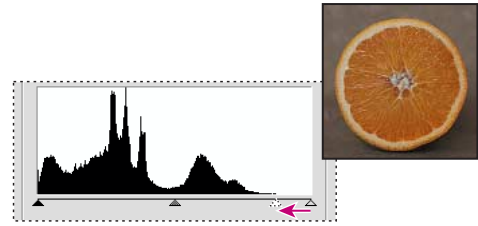
Original
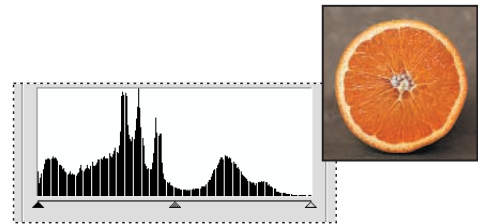
Resulting histogram and image

Suppose instead you want to decrease the contrast in the image. If you drag the Output Levels white triangle to 220, pixels with intensity values of 255 are remapped to 220, and pixels with lower intensity values are mapped to corresponding darker values. This darkens the image, decreasing the contrast in highlight areas.

***Note:** You can click Auto to move the highlight and shadow sliders automatically to the brightest and darkest points. This is the same as using the Auto Levels command and may be adequate for an average-key image. (See "Using the Auto Levels command" on page 86.)*

4 If your image needs midtone corrections, use the gray Input Levels slider. Drag the slider to the right to darken the midtones; drag it to the left to lighten the midtones. You can also enter values directly in the middle Input Levels text box.

5 Click OK.

6 To view the adjusted histogram, reopen the Levels dialog box.

The gaps in the adjusted histogram do not indicate a perceptible problem in the image unless they are large or accompanied by a low pixel count.

Setting target colors for highlights, neutral grays, and shadows

In addition to setting the tonal range, you can use Levels to set target colors for the lightest and darkest areas of detail in the image, as well as areas of neutral gray.

When identifying the lightest and darkest areas of an image, it's important to identify representative highlights and shadows. Otherwise the tonal range may be expanded unnecessarily to include extreme pixel values that don't give the image detail. A highlight area must be a printable highlight, not *specular white.* Specular white has no detail, and so no ink is printed on the paper. For example, a spot of glare is specular white, not a printable highlight.

To set target colors for highlights, neutral grays, and shadows:

1 Select the eyedropper tool, and choose 3 by 3 Average from the Sample Size menu in the eyedropper tool options. This ensures a representative sample of an area rather than the value of a single screen pixel.

2 Choose View > Actual Pixels to make sure that you are viewing the image at 100%.

3 Open the Levels dialog box. (See "Using the Levels dialog box" on page 87.)

When you open Levels, the eyedropper tool ($\mathscr{P}$) is still active outside the dialog box. You still have access to the scroll controls and to the hand and zoom tools by using keyboard shortcuts.

4 Identify areas of representative highlights, known grays, and shadows in the image. One way to do this is to move the pointer around the image, and look at the Info palette to find the lightest, neutral, and darkest areas. (See "Using the Info palette" on page 29.)

5 Double-click the Set White Point eyedropper tool ($\mathscr{P}$) in the Levels dialog box to display the Color Picker. Enter the color values you want to assign to the lightest area in the image, and click OK. Follow these guidelines:

• When you are printing on white paper, you can achieve a good highlight in an average-key image using RGB values of 244, 244, 244. An approximate grayscale equivalent is a 4% dot.

• You can approximate these target values quickly by entering 96 in the Brightness (B) text box under the HSB section of the Color Picker.

• With a low-key image, you might want to set the highlight to a lower value to avoid too much contrast. Experiment with Brightness values between 96 and 80.

6 In the image, click the highlight you identified in step 4. If you accidentally click the wrong highlight, hold down Alt (Windows) or Option (Mac OS), and click Reset in the Levels dialog box.

The pixel values throughout the image are adjusted proportionately to the new highlight values. Any pixels lighter than the area you clicked become specular white. The Info palette shows the values both before and after the color adjustment.

7 Double-click the Set Gray Point eyedropper tool (🖋) in the Levels dialog box to display the Color Picker. Enter the color values you want to assign to the neutral gray area in the image, and click OK. In general, assign equal red, green, and blue values to produce a neutral gray in an RGB image.

8 In the image, click the neutral gray you identified in step 4.

9 Double-click the Set Black Point eyedropper tool (🖋) in the Levels dialog box to open the Color Picker. Enter the values you want to assign to the darkest area in the image, and click OK. Follow these guidelines:

• When you're printing on white paper, you can achieve a good shadow in an average-key image using RGB values of 10, 10, 10. An approximate grayscale equivalent is a 96% dot.

• You can approximate these same values quickly by entering 4 in the Brightness (B) text box under the HSB section of the Color Picker.

• With a high-key image, you might want to set the shadow to a higher value to maintain detail in the highlights. Experiment with Brightness values between 4 and 20.

10 In the image, click the shadow you identified in step 4.

11 Click OK.

To use Threshold mode to identify the lightest and darkest areas in an image:

1 Do one of the following:

• Choose Enhance > Brightness/Contrast > Levels.

• Create a new Levels adjustment layer, or open an existing Levels adjustment layer. (See "Using adjustment layers and fill layers" on page 181.)

2 Click Preview in the Levels dialog box.

3 Hold down Alt (Windows) or Option (Mac OS), and drag the white or black Input Levels triangle.

The image changes to Threshold mode, and a high-contrast preview image appears. The visible areas of the image indicate the lightest parts of the image if you are dragging the white slider, and the

darkest parts if you are dragging the black slider. If a color channel is selected in the Levels dialog box, the black area indicates where none of the given color component exists.
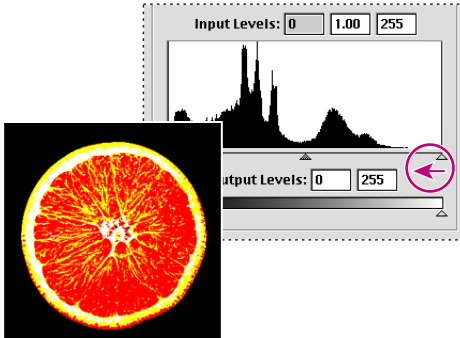
4 Slowly drag the slider to the center of the histogram to identify the light or dark areas in the image. Use these pixels for targeting the black point and white point in your image.

Adjusting color

You can adjust the image's color balance to remove unwanted color casts or to correct oversaturated or undersaturated colors.

About the color wheel

Because there are numerous ways to achieve similar results in color balance, it's useful to consider the type of image you have and the effect you want to produce. If you're new to adjusting color components, it helps to keep a diagram of the color wheel on hand. You can use the color wheel to predict how a change in one color component affects other colors.
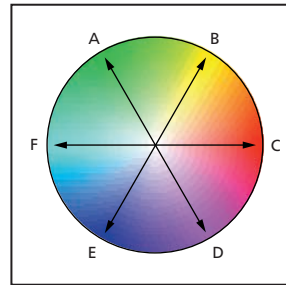
A. Green *B.* Yellow *C.* Red
D. Magenta *E.* Blue *F.* Cyan

You can decrease the amount of any color in an image by increasing the amount of its opposite on the color wheel—and vice versa. Similarly, you can increase and decrease a color by adjusting the two adjacent colors on the wheel, or even by adjusting the two colors adjacent to its opposite. For example, in an RGB image you can decrease magenta by removing red and blue or by adding green. This results in an overall color balance containing less magenta.

Using the Color Cast command

The Color Cast command changes the overall mixture of colors in an image for generalized color correction.

To use the Color Cast command:

1 Choose Enhance > Color > Color Cast.

2 Use the eyedropper tool to click an area in the image that should be gray, white, or black. The image will change according to the color you selected.

To undo the changes made to the image, click the Reset button.

3 Click OK once the colors have been corrected.

Using the Hue/Saturation command

The Hue/Saturation command lets you adjust the hue, saturation, and lightness of the entire image or of individual color components in an image. Adjusting the hue, or color, represents a move around the color wheel. Adjusting the saturation, or purity of the color, represents a move across its radius.
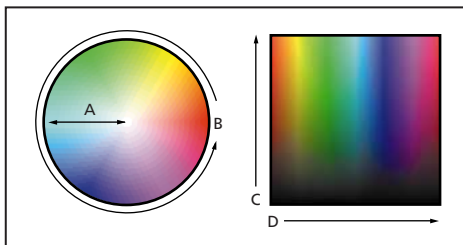
A. Saturation B. Hue C. Brightness D. All hues

You can also use the Colorize option to add color to a grayscale image converted to RGB, or to an RGB image—for example, to make it look like a duotone by reducing its color values to one hue.

To use the Hue/Saturation command:

1 Do one of the following:

• Choose Enhance > Color > Hue/Saturation.

• Create a new Hue/Saturation adjustment layer, or open an existing Hue/Saturation adjustment layer. (See "Using adjustment layers and fill layers" on page 181.)

The two color bars in the dialog box represent the colors in their order on the color wheel. The upper color bar shows the color before the adjustment; the lower bar shows how the adjustment affects all of the hues at full saturation.

2 For Edit, choose which colors to adjust:

• Choose Master to adjust all colors at once.

• Choose one of the other preset color ranges listed for the color you want to adjust. An adjustment slider appears between the color bars, which you can use to edit any range of hues. (For information on how to modify the slider's range, see the instructions following this procedure.)

3 For Hue, enter a value or drag the slider until the colors appear as you want.

The values displayed in the text box reflect the number of degrees of rotation around the wheel from the pixel's original color. A positive value indicates clockwise rotation, a negative value counterclockwise rotation. Values can range from −180 to +180.

4 For Saturation, enter a value or drag the slider to the right to increase the saturation or to the left to decrease it.

The color shifts away from or toward the center of the wheel, relative to the beginning color values of the selected pixels. Values can range from –100 to +100.

5 For Lightness, enter a value or drag the slider to the right to increase the lightness or to the left to decrease it. Values can range from –100 to +100.

6 Click OK.

To modify the range of an adjustment slider:

1 Choose an individual color from the Edit menu in the dialog box.

2 Do any of the following to the adjustment slider:

• Drag one of the white triangles to adjust the amount of color fall-off without affecting the range.

• Drag one of the light gray bars to adjust the range without affecting the amount of fall-off.

• Drag the dark gray center part to move the entire adjustment slider, selecting a different color area.

• Drag one of the vertical white bars next to the dark gray center part to adjust the range of the color component. Increasing the range decreases the fall-off, and vice versa.

• Ctrl-drag (Windows) or Command-drag (Mac OS) the color bar so that a different color is in the center of the bar.
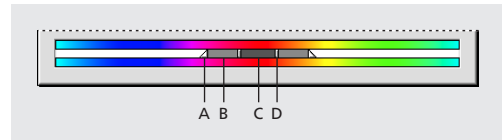
*A. Adjusts fall-off without affecting range **B.** Adjusts range without affecting fall-off **C.** Moves entire slider **D.** Adjusts range of color component*

If you modify the adjustment slider so that it falls into a different color range, the name changes to reflect this. For example, if you choose Yellow and alter its range so that it falls in the red part of the color bar, the name changes to Red 2. You can convert up to six of the individual color ranges to varieties of the same color range (for example, Red through Red 6).

Note: *By default, the range of color selected when you choose a color component is 30° wide, with 30° of fall-off on either side. Setting the fall-off too low can produce banding in the image.*

3 To edit the range by choosing colors from the image, select the eyedropper tool (✐) in the dialog box and click in the image. Use the eyedropper + tool to add to the range; use the eyedropper – tool to subtract from the range.

While the eyedropper tool is selected, you can also press Shift to add to the range or Alt (Windows) or Option (Mac OS) to subtract from it.

To colorize a grayscale image or create a monotone effect:

1 If you are colorizing a grayscale image, choose Image > Mode > RGB to convert the image to RGB.

2 Open the Hue/Saturation dialog box.

3 Select Colorize. The image is converted to the hue of the current foreground color, if the foreground color is not black or white. The lightness value of each pixel does not change.

4 Use the Hue slider to select a new color if desired. Use the Saturation and Lightness sliders to adjust the saturation and lightness of the pixels.

5 Click OK.

Using the Remove Color command

The Remove Color command converts the colors in the image to gray values. For example, it assigns equal red, green, and blue values to each pixel in an RGB image to make it appear grayscale. The lightness value of each pixel does not change. The Remove Color command can also be used on a selection only.

This command has the same effect as setting Saturation to –100 in the Hue/Saturation dialog box.

Note: If you are working with a multilayer image, Remove Color converts the selected layer only.

To use the Remove Color command:

Choose Enhance > Color > Remove Color.

Using the Replace Color command

The Replace Color command lets you create a mask around specific colors and then replace those colors in the image. You can set the hue, saturation, and lightness of the area identified by the mask. The mask is temporary.

To use the Replace Color command:

1 Choose Enhance > Color > Replace Color.

2 Select a display option:

• Selection to display the mask in the preview box. Masked areas are black and unmasked areas are white. Partially masked areas (areas covered with a semitransparent mask) appear as varying levels of gray according to their opacity.

• Image to display the image in the preview box. This option is useful when you are working with a magnified image or have limited screen space.

3 Click in the image or in the preview box to select the areas exposed by the mask. Shift-click or use the eyedropper + button to add areas; Alt-click (Windows), Option-click (Mac OS), or use the eyedropper – button to remove areas.

4 Adjust the tolerance of the mask by dragging the Fuzziness slider or entering a value. This controls the degree to which related colors are included in the selection.

5 Drag the Hue, Saturation, and Lightness sliders (or enter values in the text boxes) to change the color of the selected areas.

6 Click OK.

Using the Variations command

The Variations command lets you adjust the color balance, contrast, and saturation of an image by showing you thumbnails of alternatives.

This command is most useful for average-key images that don't require precise color adjustments. It does not work on indexed-color images.

To use the Variations command:

1 Choose Enhance > Variations.

The two thumbnails at the top of the dialog box show the original selection (Original) and the selection with its currently selected adjustments (Current Pick). When you first open the dialog box, these two images are the same. As you make adjustments, the Current Pick image changes to reflect your choices.

2 Select Show Clipping if you want to display a neon preview of areas in the image that will be clipped by the adjustment—that is, converted to pure white or pure black. Clipping can result in undesirable color shifts, as distinct colors in the original image are mapped to the same color. Clipping does not occur when you adjust midtones.

3 Select what to adjust in the image:

• Shadows, Midtones, or Highlights to indicate whether you want to adjust the dark, middle, or light areas.

• Saturation to change the degree of hue in the image. If you exceed the maximum saturation for a color, it may be clipped.

4 Drag the Fine/Coarse slider to determine the amount of each adjustment. Moving the slider one tick mark doubles the adjustment amount.

5 Adjust the color and brightness:

• To add a color to the image, click the appropriate color thumbnail.

• To subtract a color, click the thumbnail for its opposite color. (See "About the color wheel" on page 91.) For example, to subtract cyan, click the More Red thumbnail.

• To adjust brightness, click a thumbnail on the right side of the dialog box.

Each time you click a thumbnail, other thumbnails change. The center thumbnail always reflects the current choices.

6 Click OK.

Applying special color effects to images

The Invert, Equalize, Threshold, and Posterize commands change colors or brightness values in an image but are typically used for enhancing color and producing special effects, rather than for correcting color.

Using the Invert command

The Invert command inverts the colors in an image. You might use this command to make a positive black-and-white image negative or to make a positive from a scanned black-and-white negative.

Note: Because color print film contains an orange mask in its base, the Invert command cannot make accurate positive images from scanned color negatives. Be sure to use the proper settings for color negatives when scanning film on slide scanners.

When you invert an image, the brightness value of each pixel in the channels is converted to the inverse value on the 256-step color-values scale. For example, a pixel in a positive image with a value of 255 is changed to 0, and a pixel with a value of 5 is changed to 250.

To use the Invert command:

Do one of the following:

• Choose Image > Adjustments > Invert.

• Create an Invert adjustment layer. (See "Using adjustment layers and fill layers" on page 181.)

Using the Equalize command

The Equalize command redistributes the brightness values of the pixels in an image so that they more evenly represent the entire range of brightness levels. When you apply this command, Photoshop Elements finds the brightest and darkest values in the composite image and remaps them so that the brightest value represents white and the darkest value represents black. Photoshop Elements then attempts to equalize the brightness—that is, to distribute the intermediate pixel values evenly throughout the grayscale.

You might use the Equalize command when a scanned image appears darker than the original and you want to balance the values to produce a lighter image. Using Equalize together with the Histogram command lets you see before-and-after brightness comparisons.

To use the Equalize command:

1 Choose Image > Adjustments > Equalize.

2 If you selected an area of the image, select what to equalize in the dialog box, and click OK:

• Equalize Selected Area Only to evenly distribute only the selection's pixels.

• Equalize Entire Image Based on Selected Area to evenly distribute all image pixels based on those in the selection.

Using the Threshold command

The Threshold command converts grayscale or color images to high-contrast, black-and-white images. You can specify a certain level as a threshold. All pixels lighter than the threshold are converted to white; and all pixels darker are converted to black. The Threshold command is useful for determining the lightest and darkest areas of an image.

To use the Threshold command to convert images to black and white:

1 Do one of the following:

• Choose Image > Adjustments > Threshold.

• Create a new Threshold adjustment layer, or open an existing Threshold adjustment layer. (See "Using adjustment layers and fill layers" on page 181.)

The Threshold dialog box displays a histogram of the luminance levels of the pixels in the current selection.

2 Drag the slider below the histogram until the threshold level you want appears at the top of the dialog box, and click OK. As you drag, the image changes to reflect the new threshold setting.

To use the Threshold command to identify representative highlights and shadows:

1 Open the Threshold dialog box.

2 Select Preview.

3 To identify a representative highlight, drag the slider to the far right until the image becomes pure black. Drag the slider slowly toward the center until some solid white areas appear in the image.

4 To identify a representative shadow, drag the slider to the far left until the image becomes pure white. Drag the slider slowly toward the center until some solid black areas appear in the image. These represent the darkest pixels areas in the image.

5 Reset the dialog box by pressing Alt (Windows) or Option (Mac OS).

6 Click Cancel to close the Threshold dialog box without applying changes to the image.

Using the Posterize command

The Posterize command lets you specify the number of tonal levels (or brightness values) for each channel in an image and then maps pixels to the closest matching level. For example, choosing two tonal levels in an RGB image gives six colors, two for red, two for green, and two for blue.

This command is useful for creating special effects, such as large, flat areas in a photograph. Its effects are most evident when you reduce the number of gray levels in a grayscale image. But it also produces interesting effects in color images.
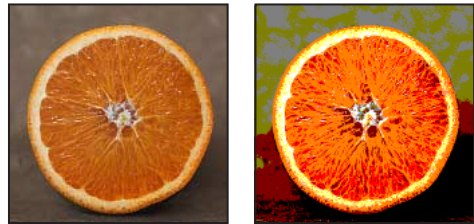
Original image, and Posterize applied

If you want a specific number of colors in your image, convert the image to grayscale and specify the number of levels you want. Then convert the image back to the previous color mode, and replace the various gray tones with the colors you want.

To use the Posterize command:

1 Do one of the following:

• Choose Image > Adjustments > Posterize.

• Create a new Posterize adjustment layer, or open an existing Posterize adjustment layer. (See "Using adjustment layers and fill layers" on page 181.)

2 Enter the number of tonal levels you want, and click OK.

Using the Gradient Map command

The Gradient Map command maps the equivalent grayscale range of an image to the colors of a specified gradient fill. If you specify a two-color gradient fill, for example, shadows in the image map to one of the endpoint colors of the gradient fill, highlights map to the other endpoint color, and midtones map to the gradations in between.

To use the Gradient Map command:

1 Do one of the following:

• Choose Image > Adjustments > Gradient Map.

• Create a new Gradient Map adjustment layer, or open an existing Gradient Map adjustment layer. (See "Using adjustment layers and fill layers" on page 181.)

2 Specify the gradient fill you want to use:

• To choose from a list of gradient fills, click the triangle to the right of the gradient fill displayed in the Gradient Map dialog box. Click to select the desired gradient fill, and then click in a blank area of the dialog box to dismiss the list. (See "Working with presets" on page 35 for information on customizing the gradient fill list.)

• To edit the gradient fill currently displayed in the Gradient Map dialog box, click the gradient fill. Then modify the existing gradient fill or create a new gradient fill. (See "Creating or editing gradient fills" on page 151.)

By default, the shadows, midtones, and highlights of the image are mapped respectively to the starting (left) color, midpoint, and ending (right) color of the gradient fill.

3 Select either, none, or both of the Gradient Options:

• Dither adds random noise to smooth the appearance of the gradient fill and reduce banding effects.

• Reverse switches the direction of the gradient fill, reversing the gradient map.

4 Click OK.

Sharpening images

Unsharp masking, or *USM*, is a traditional film compositing technique used to sharpen edges in an image. The Unsharp Mask filter corrects blurring introduced during photographing, scanning, resampling, or printing. It is useful for images intended for both print and online viewing.

Unsharp Mask locates pixels that differ from surrounding pixels by the threshold you specify and increases the pixels' contrast by the amount you specify. In addition, you specify the radius of the region to which each pixel is compared. The effects of the Unsharp Mask filter are far more pronounced on-screen than in high-resolution output. If your final destination is print, experiment to determine what settings work best for your image.

For information on other filters for sharpening images, see "Sharpen filters" on page 202.

To use Unsharp Mask to sharpen an image:

1 Choose Filter > Sharpen > Unsharp Mask. Make sure the Preview option is selected.

Click on the image in the preview window to see how the image looks without the sharpening. Drag in the preview window to see different parts of the image, and click + or – to zoom in or out.

2 Do one of the following:

• Drag the Amount slider or enter a value to determine how much to increase the contrast of pixels. For high-resolution printed images, an amount between 150% and 200% is usually recommended.

• Drag the Radius slider or enter a value to determine the number of pixels surrounding the edge pixels that affect the sharpening. For high-resolution images, a Radius between 1 and 2 is usually recommended. A lower value sharpens only the edge pixels, whereas a higher value sharpens a wider band of pixels. This effect is much less noticeable in print than on-screen, because a 2-pixel radius represents a smaller area in a high-resolution printed image.

• Drag the Threshold slider or enter a value to determine how different the sharpened pixels must be from the surrounding area before they are considered edge pixels and sharpened by the filter. To avoid introducing noise (in images with flesh-tones, for example), experiment with Threshold values between 2 and 20. The default Threshold value (0) sharpens all pixels in the image.

3 Click OK.
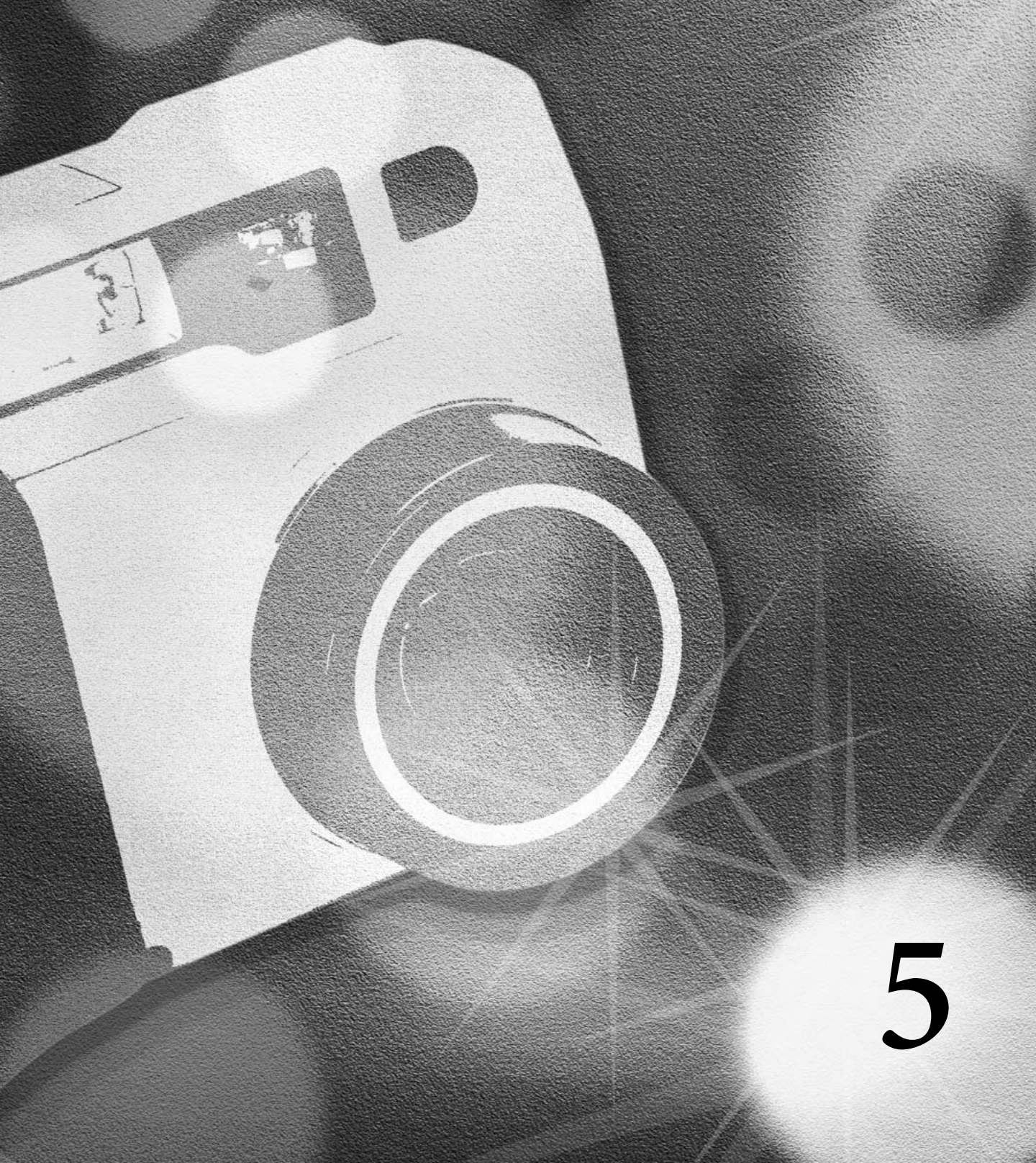
5

Chapter 5: Selecting

To modify part of an image in Adobe Photoshop Elements, you first select the area you want to edit in the currently active layer. You can choose from a variety of specialized tools for creating selection borders.

About selections

A selected area is indicated by a dotted selection border, also called a selection marquee. The area outside the selection border is protected while you move, copy, paint, or apply special effects to the isolated area. Selections can only be made on the active layer.

Since there are two different types of image data—bitmap and vector—you need to use different tools to make selections of each type. Bitmap selection tools include the rectangle marquee tool (⬚), elliptical marquee tool (○), lasso tool (⬭), polygonal lasso tool (⬠), and magnetic lasso tool (⬯). Vector selection tools include the shape selection tool (▸) and the magic wand tool (⬩).

For more information about bitmap images and vector graphics, see "About bitmap images and vector graphics" on page 45.

Making pixel selections

When you select pixels, you are selecting resolution-dependent information in the image. You can select pixels in an image by dragging with the marquee tools or lasso tools, or by isolating color areas with the magic wand tool. Making a new selection replaces the existing one. Additionally, you can create selections that can be added to or subtracted from existing selections.

Using the Select menu

You can use commands in the Select menu to select all pixels, to deselect, or to reselect.

To select all pixels on a layer within the canvas boundaries:

1 Select the active layer in the Layers palette.

2 Choose Select > All.

To deselect selections:

Do one of the following:

• Choose Select > Deselect.

• If you are using the rectangle marquee, elliptical marquee, or lasso tool, click anywhere in the image outside the selected area.

To reselect the most recent selection:

Choose Select > Reselect.

Using the marquee tools

The marquee tools draw rectangular and elliptical selection borders. By default, a selection border is dragged from its corner.

To use the marquee tools:

1 Select a marquee tool:

• Rectangle marquee (⬚) to make a rectangular selection.

• Elliptical marquee (◯) to make an elliptical selection.

2 In the options bar, specify whether to create a new selection (▪), add to a selection(▪), subtract from a selection (▪), or select an area intersected by other selections (▪).

3 Specify a feathering setting in the options bar. Turn anti-aliasing on or off for the elliptical marquee. (See "Softening the edges of a selection" on page 108.)

4 Choose a style in the options bar:

• Normal to determine marquee proportions by dragging.

• Constrained Aspect Ratio to set a height-to-width ratio. Enter values (decimal values are valid) for the aspect ratio. For example, to draw a marquee twice as wide as it is high, enter **2** for the width and **1** for the height.

• Fixed Size to specify set values for the marquee's height and width in inches, centimeters, or pixels. If you are using pixels, enter the pixel values in whole numbers. Keep in mind that the number of pixels needed to create a 1-inch selection depends on the resolution of the image. (See "About image size and resolution" on page 46.)

5 To make a selection, drag over the area you want to select. Hold down Shift as you drag to constrain the marquee to a square or circle. To drag a marquee from its center, hold down Alt (Windows) or Option (Mac OS) after you begin dragging.

To reposition a selection border without changing an image, first drag to create the border, keeping the mouse button depressed. Then hold down the spacebar and continue to drag. If you have finished drawing the border, drag from inside the selection to move it.

Using the lasso, polygonal lasso, and magnetic lasso tools

The lasso and polygonal lasso tools let you draw both straight-edged and freehand segments of a selection border. With the magnetic lasso tool, the border snaps to the edges of defined areas in the image.

The magnetic lasso tool is especially useful for quickly selecting objects with complex edges set against high-contrast backgrounds.

To use the lasso tool:

1 Select the lasso tool (𝒫), and select options. (See "Setting options for the lasso, polygonal lasso, and magnetic lasso tools" on page 106.)

2 Drag to draw a freehand selection border.

3 To draw a straight-edged selection border, hold down Alt (Windows) or Option (Mac OS), and click where segments should begin and end. You can switch between drawing freehand and straight-edged segments.

4 To close the selection border, release the mouse without holding down Alt (Windows) or Option (Mac OS).

To use the polygonal lasso tool:

1 Select the polygonal lasso tool ($\bowtie$), and select options. (See "Setting options for the lasso, polygonal lasso, and magnetic lasso tools" on page 106.)

2 Click in the image to set the starting point.

3 Do one or more of the following:

• To draw a straight segment, position the pointer where you want the first straight segment to end, and click. Continue clicking to set endpoints for subsequent segments.

• To draw a freehand segment, hold down Alt (Windows) or Option (Mac OS), and drag. When finished, release Alt or Option and the mouse button.

• To erase recently drawn straight segments, press the Delete key.

4 Close the selection border:

• Position the polygonal lasso tool pointer over the starting point (a closed circle appears next to the pointer), and click.

• If the pointer is not over the starting point, double-click the polygonal lasso tool pointer, or Ctrl-click (Windows) or Command-click (Mac OS).

To use the magnetic lasso tool:

1 Select the magnetic lasso tool ($\bowtie$), and select options. (See "Setting options for the lasso, polygonal lasso, and magnetic lasso tools" on page 106.)

2 Click in the image to set the first fastening point. Fastening points anchor the selection border in place.

3 To draw a freehand segment, move the pointer along the edge you want to trace. (You can also drag with the mouse button depressed.)

The most recent segment of the selection border remains active. As you move the pointer, the active segment snaps to the strongest edge in the image, based on the detection Width set in the options bar. Periodically, the magnetic lasso tool adds fastening points to the selection border to anchor previous segments.

4 If the border doesn't snap to the desired edge, click once to add a fastening point manually. Continue to trace the edge, and add fastening points as needed.

5 To switch temporarily to the other lasso tools, do one of the following:

• To activate the lasso tool, hold down Alt (Windows) or Option (Mac OS), and drag with the mouse button depressed.

• To activate the polygonal lasso tool, hold down Alt (Windows) or Option (Mac OS), and click.

6 To erase recently drawn segments and fastening points, press the Delete key until you've erased the fastening points for the desired segment.

7 Close the selection border:

• To close the border with a freehand magnetic segment, double-click, press Enter or Return, or click anywhere outside the document window.

• To close the border with a straight segment, hold down Alt (Windows) or Option (Mac OS), and double-click.

• To close the border, drag back over the starting point and click.

• To close the border, click anywhere outside the active window.

Setting options for the lasso, polygonal lasso, and magnetic lasso tools

The lasso tool options let you customize how the different lasso tools detect and select edges.

To set options for the lasso tools:

1 If needed, select the tool.

2 In the options bar, specify whether to create a new selection (▪), add to an existing selection (▫), subtract from a selection (▫), or select an area intersected by other selections (▫).

3 Specify feather and anti-aliasing options. (See "Softening the edges of a selection" on page 108.)

4 For the magnetic lasso tool, set any of these options:

• To specify a detection width, enter a pixel value between 1 and 40 for Width. The magnetic lasso detects edges only within the specified distance from the pointer.

• To specify the lasso's sensitivity to edges in the image, enter a value between 1% and 100% for Edge Contrast. A higher value detects only edges that contrast sharply with their surroundings; a lower value detects lower-contrast edges.

• To specify the rate at which the lasso sets fastening points, enter a value between 0 and 100 for Frequency. A higher value anchors the selection border in place more quickly.

On an image with well-defined edges, try a higher width and higher edge contrast, and trace the border roughly. On an image with softer edges, try a lower width and lower edge contrast, and trace the border more precisely.

• To change the lasso cursor to indicate the lasso Width value in the options bar, press the Caps Lock key on the keyboard. Change the cursor while the tool is selected but not in use.

• If you are working with a stylus tablet, select or deselect the Stylus Pressure option. When the option is selected, an increase in stylus pressure will cause the edge width to decrease.

While creating a selection, you can press] to increase the magnetic lasso edge width by 1 pixel; press [to decrease the width by 1 pixel.

Using the magic wand tool

The magic wand tool lets you select a consistently colored area (for example, a red flower) without having to trace its outline. You specify the color range, or *tolerance*, for the magic wand tool's selection.

Note: *You cannot use the magic wand tool on an image in Bitmap mode.*

To use the magic wand tool:

1 Select the magic wand tool (✎).

2 In the options bar, specify whether to create a new selection (▣), add to an existing selection (▣), subtract from a selection (▣), or select an area intersected by other selections (▣). The magic wand cursor changes depending on which option is selected.

3 For Tolerance, enter a range of pixel values, ranging from 0 to 255. Enter a low value to select colors very similar to the pixel you click, or enter a higher value to select a broader range of colors.

4 To define a smooth edge, select Anti-aliased. (See "Softening the edges of a selection" on page 108.)

5 To select only adjacent areas using the same colors, select Contiguous. Otherwise, all pixels using the same colors will be selected.

6 To select colors using data from all the visible layers, select Use All Layers. Otherwise, the magic wand tool selects colors from the active layer only.

7 In the image, click the color you want to select. If Contiguous is selected, all adjacent pixels within the tolerance range are selected.

Adjusting pixel selections

You can adjust and refine your pixel selections using the selection tools and a variety of commands in the Select menu.

In addition, you can apply geometric transformations to change the shape of a selection border. (See "Transforming layers, selections, and shapes" on page 126.)

Moving, hiding, or inverting a selection

You can move a selection border around an image, hide a selection border, and invert a selection so that the previously unselected part of the image is selected.

To move a selection border:

1 Using any selection tool, select new selection (▣) from the options bar, and position the pointer inside an existing selection border. The pointer changes to indicate that you can move the selection (▷).

2 Drag the border to enclose a different area of the image. You can drag a selection border partly beyond the canvas boundaries. When you drag it back, the original border reappears intact. You can also drag the selection border to another image window.

To control the movement of a selection:

• To constrain the direction to multiples of 45°, begin dragging, and then hold down Shift as you continue to drag.

• To move the selection in 1-pixel increments, use an arrow key.

• To move the selection in 10-pixel increments, hold down Shift, and use an arrow key.

To select the unselected parts of an image:

Choose Select > Inverse.

💡 *You can use this option to select an object placed against a solid-colored background. Select the background using the magic wand tool and then inverse the selection.*

Adjusting selections manually

You can use the selection tools to add to or subtract from existing pixel selections.

For consistent results, before manually adding to or subtracting from a selection, set the feather and anti-aliased values in the options bar to the same settings used for the original selection. (See "Softening the edges of a selection" on page 108.)

To add to a selection or select an additional area:

1 Make a selection.

2 Do one of the following from inside the selection:

• Select the Add to Selection option (▣) in the options bar, and drag inside the selection.

• Hold down Shift (a plus sign appears next to the pointer), and drag from inside the selection to add another selection.

• For the magic wand tool, click another color in the active image to add it to the selection.

To subtract from a selection:

1 Make a selection.

2 Do one of the following:

• Select the Subtract from Selection option (▣) in the options bar, and drag inside the selection to subtract it.

• Hold down Alt (Windows) or Option (Mac OS) (a minus sign appears next to the pointer), and drag inside the selection to subtract another selection.

• For the magic wand tool, click a selected color to remove it from the selection.

To select only an area intersected by other selections:

1 Make a selection.

2 Do one of the following:

• Select the Intersect with Selection option (▣) in the options bar, and drag inside the selection.

• Hold down Alt+Shift (Windows) or Option+Shift (Mac OS) (a cross appears next to the pointer), and drag inside the selection over the portion of the original selection that you want to select.

• For the magic wand tool, click another color in the active image.

Softening the edges of a selection

You can smooth the hard edges of a selection by anti-aliasing and by feathering.

Anti-aliasing Smooths the jagged edges of a selection by softening the color transition between edge pixels and background pixels. Since only the edge pixels change, no detail is lost. Anti-aliasing is useful when cutting, copying, and pasting selections to create composite images.

Anti-aliasing is available for the lasso, polygonal lasso, magnetic lasso, rectangular marquee, elliptical marquee, and magic wand tools. (Select a tool to display its options bar.) You must specify this option before using these tools. Once a selection is made, you cannot add anti-aliasing.

Feathering Blurs edges by building a transition boundary between the selection and its surrounding pixels. This blurring can cause some loss of detail at the edge of the selection.

You can define feathering for the marquee, lasso, polygonal lasso, or magnetic lasso tool as you use the tool, or you can add feathering to an existing selection. Feathering effects become apparent when you move, cut, copy, or fill the selection.

To use anti-aliasing:

1 Select the lasso, polygonal lasso, magnetic lasso, rectangular marquee, elliptical marquee, or magic wand tool.

2 Select Anti-aliased in the options bar.

To define a feathered edge for a selection tool:

1 Select any of the lasso or marquee tools.

2 Enter a Feather value in the options bar. This value defines the width of the feathered edge and can range from 1 to 250 pixels.

To define a feathered edge for an existing selection:

1 Choose Select > Feather.

2 Enter a value for the Feather Radius, and click OK.

Note: A small selection made with a large feather radius may be so faint that its edges are invisible and thus not selectable. If a message appears stating "No pixels are more than 50% selected," either decrease the feather radius or increase the selection's size. Or click OK to accept the current setting and create a selection where you cannot see the edges.
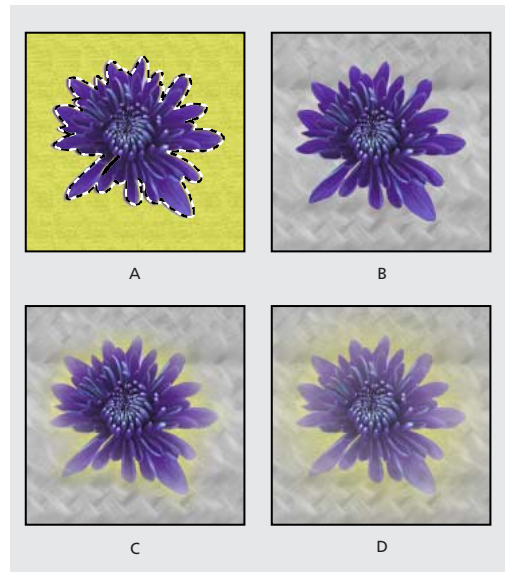
A. Original selection B. Feather: 0 C. Feather: 10 D. Feather: 30

Moving, copying, and pasting selections and layers

You can move or copy selections and layers within or between images—and also between images in other applications.

Moving selections and layers within an image

The move tool lets you drag a selection or layer to a new location in the image. With the Info palette open, you can track the exact distance of the move.

To specify move tool options:

1 Select the move tool (▸⊕).

2 Select any of the following in the options bar:

• Auto Select Layer to select the topmost layer that has pixels under the move tool, rather than the selected layer.

• Show Bounding Box to display the bounding box around the selected item.

• If multiple items are selected, you can choose one of the alignment options.

To move a selection or layer:

1 Select the move tool (▸⊕).

To activate the move tool when another tool is selected, hold down Ctrl (Windows) or Command (Mac OS). (This technique does not work with the hand tool (✋).)

2 Do one of the following:

• Move the pointer inside the selection border, and drag the selection to a new position. If you have selected multiple areas, all move as you drag.

• Select the layer you want to move. Then drag the layer to a new position in the Layers palette.

Copying selections or layers

You can use the move tool to copy selections as you drag them within or between images, or you can copy and move selections using the Copy, Copy Merged, Cut, and Paste commands. Dragging with the move tool saves memory because the Clipboard is not used as it is with the Copy, Copy Merged, Cut, and Paste commands.

• The Copy command copies the selected area on the active layer.

• The Copy Merged command makes a merged copy of all the layers in the selected area.

• The Paste command pastes a cut or copied selection into the center of the image or into another image as a new layer.

• The Paste Into command pastes a cut or copied selection as a floating selection in the existing layer.

Keep in mind that when a selection or layer is pasted between images with different resolutions, the pasted data retains its original pixel dimensions. This can make the pasted portion appear out of proportion to the new image. Use the Image Size command to make the source and destination images the same resolution before copying and pasting.

Depending on your color management settings and the color profile associated with the file (or imported data), you may be prompted to specify how to handle color information in the file (or imported data). For more information, see "Using color management" on page 65.

To copy a selection:

1 Select the area you want to copy.

2 Do one of the following:

• Choose Edit > Copy to copy the selection to the Clipboard.

• Choose Edit > Copy Merged to copy all layers in the selected area to the Clipboard.

To copy a selection while dragging:

1 Select the move tool (▶✚), or hold down Ctrl (Windows) or Command (Mac OS) to activate the move tool.

2 Hold down Alt (Windows) or Option (Mac OS), and drag the selection you want to copy and move.

When copying between images, drag the selection from the active image window into the destination image window. If nothing is selected, the entire active layer is copied. As you drag the selection over another image window, a border highlights the window if you can drop the selection into it.

To create multiple copies of a selection within an image:

1 Select the move tool (▶✚), or hold down Ctrl (Windows) or Command (Mac OS) to activate the move tool.

2 Copy the selection:

• Hold down Alt (Windows) or Option (Mac OS), and drag the selection.

• To copy the selection and offset the duplicate by 1 pixel, hold down Alt or Option, and press an arrow key.

• To copy the selection and offset the duplicate by 10 pixels, press Alt+Shift (Windows) or Option+Shift (Mac OS), and press an arrow key.

As long as you hold down Alt or Option, each press of an arrow key creates a copy of the selection and offsets it by the specified distance from the last duplicate.

To paste one selection into another:

1 Cut or copy the part of the image you want to paste.

2 Select the part of the image into which you want to paste the selection as a floating selection. Note that the pasted image will only appear in the selected area. If you move the pasted image out of the selection, it is not visible.

3 Choose Edit > Paste Into.

4 Select the move tool (▶✚), then drag the pasted image to the proper location.

5 If you are satisfied with the results, deselect the pasted image to lock the layer.

Using drag and drop to copy between applications

The drag-and-drop feature lets you copy and move images between Photoshop Elements and other applications.

In Windows, the application must be OLE-compliant. To duplicate an entire image by dragging and dropping, use the move tool to drag the image. To copy an OLE object that contains .psd data, use the OLE Clipboard. (See your Windows documentation.)

In Mac OS, the application must support Mac OS Drag Manager, and you must be running System 8.6 or higher.

Dragging vector artwork (shapes or text) from Adobe Illustrator or from other applications that use the Illustrator Clipboard rasterizes the artwork—the mathematically defined lines and curves of the vector art are converted into the pixels or bits of a bitmap image.

Using the Clipboard to copy between applications

You can often use the Cut or Copy command to copy selections between Photoshop Elements and other applications. The cut or copied selection remains on the Clipboard until you cut or copy another selection.

In some cases, the contents of the Clipboard are converted to a *raster* image. Photoshop Elements prompts you when vector artwork will be rasterized.

Note: The image is rasterized at the resolution of the file into which you paste it.

To change the Export Clipboard preference:

1 Choose Edit > Preferences > General.

2 Make sure Export Clipboard is selected to save any Photoshop Elements contents on the Clipboard when you exit from Photoshop Elements. If you leave this deselected, the contents are deleted when you exit from the program.

3 Click OK.

To paste PostScript artwork from another application:

1 In the supporting application, select your artwork, and choose Edit > Copy. Applications that produce PostScript artwork include Adobe Photoshop, Adobe Illustrator (versions 5.0 through 9.0), Adobe Dimensions®, and Adobe Streamline™. (See "About file formats" on page 245.)

2 In Photoshop Elements, select the image into which you'll paste the selection.

3 Choose Edit > Paste.

4 In the dialog box, select from the following options:

• Paste as Pixels to have the artwork rasterized as it is pasted. Rasterizing converts mathematically defined vector artwork to pixels.

• Paste as Shape Layer to create a new shape layer that uses the path as a layer clipping path.

5 If you chose Paste as Pixels in the previous step, you can choose Anti-alias in the options bar to make a smooth transition between the edges of the selection and the surrounding pixels.
(See "Softening the edges of a selection" on page 108.)

6 Click OK.

Deleting selections

To delete a selection, choose Edit > Clear, or press Backspace (Windows) or Delete (Mac OS). To cut a selection to the Clipboard, choose Edit > Cut.

Deleting a selection on a background or on a layer with the Lock Transparency option selected in the Layers palette replaces the original location with the background color. Deleting a selection on a layer without Lock Transparency selected replaces the original area with the layer transparency.

6

Chapter 6: Transforming and Retouching

You can transform and retouch images in many ways. For example, you can manipulate areas of a layer as if the pixels in the area had been melted, and scale, rotate, or flip selections or images.

Cropping images

Cropping is the process of selecting and removing a portion of an image to create focus or strengthen its composition. You can crop an image using the crop tool or the Crop command. In addition, you can use the Straighten and Crop Image command to automatically correct a skewed image. (See "Straightening images" on page 126.)

To crop an image using the crop tool:

1 Select the crop tool (🔲).

2 If you want to specify the size or resolution of the crop, enter the values in the Width, Height, or Resolution text boxes in the options bar. You can also click Front Image to enter the values of the currently active image.

3 Drag over the part of the image you want to keep. When you release the mouse button, the crop marquee appears as a bounding box with handles at the corners and sides.

4 If necessary, select the Shield cropped area option to show the cropping shield. To adjust the color and opacity of the cropping shield, use the color selection box and the opacity pop-up slider in the options bar.

5 Adjust the crop marquee:

• To move the marquee to another position, place the pointer inside the bounding box, and drag.

• To scale the marquee, drag a handle. To constrain the proportions, hold down Shift as you drag a corner handle.

• To rotate the marquee, position the pointer outside the bounding box (the pointer turns into a curved arrow (↶)), and drag.

Note: You can't rotate the crop tool marquee for an image in Bitmap mode.

6 Do one of the following to crop the image:

• Click the OK button (✅) in the options bar.

• Double-click inside the crop marquee.

• Select a different tool in the toolbox.

• Press Enter (Windows) or Return (Mac OS).

Click the Cancel button (❌) in the options bar to cancel the cropping operation.

To crop an image using the Crop command:

1 Select the part of the image you want to keep. (See "Using the marquee tools" on page 103.)

2 Choose Image > Crop.

Changing the size of the work canvas

The Canvas Size command lets you add or remove work space around an existing image. You can crop an image by decreasing the canvas area. Added canvas appears in the currently selected background color or transparent as the background.

To use the Canvas Size command:

1 Choose Image > Resize > Canvas Size.

2 Choose the units of measurement you want. The Columns option measures width in terms of the columns specified in the Rulers & Units preferences.

3 Enter the dimensions in the Width and Height boxes.

4 For Anchor, click a square to indicate where to position the existing image on the new canvas.

5 Click OK.
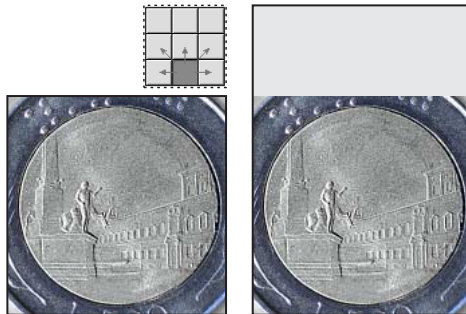
Original canvas, and canvas added to top of image

Creating panoramic images using Photomerge

The Photomerge™ command lets you create a seamless, panoramic image from multiple photographs.

About using Photomerge

You can use the Photomerge command to combine several photographs into one continuous image. For example, you can take five overlapping photographs of a city skyline, and then assemble them into a panorama. The Photomerge command is capable of assembling photos that are tiled horizontally as well as vertically.

Taking pictures for use with Photomerge

Your source photographs play a large role in the success of your panoramic composition. To avoid problems, follow these guidelines when taking pictures for use with Photomerge:

Image overlap Images should have an overlap of approximately 30% to 50% of the image area. If the overlap is less, Photomerge may not be able to automatically assemble the panorama. However, keep in mind that the images shouldn't overlap too much. If images overlap by 70% or more, it can be difficult to work with them, and blending may not be as effective. Try to keep the individual photos at least somewhat distinct from each other.

Focal length Use a consistent focal length. Avoid using the zoom feature of your camera while taking a series of images for use with Photomerge.

Alignment Keep the camera level. Although slight rotations between images are tolerated, a tilt of more than a few degrees can result in errors when automatically assembling the panorama.

A typical situation where rotation comes into play is when photographing a panoramic scene from a high place. The natural inclination is to keep the horizon level in the viewfinder. However, if you're photographing the horizon from an elevated position, this actually produces a noticeable rotation between images. Keep the camera level when taking photographs in this situation.

Using a tripod with a rotating head helps maintain camera alignment and viewpoint.

Viewpoint Take pictures from the same viewpoint. Don't change your position as you take a series of photographs. Small changes in viewpoint are tolerated, but if you walk to a new position while taking photographs, you'll likely disrupt the continuity of your images. Using the optical viewfinder with the camera held close to the eye helps keep the viewpoint consistent.

Image Size Don't try to merge images that are larger than 2 megapixels. Larger file sizes will take longer for Photoshop Elements to process, and too many large files could generate memory errors. Use the Image Size Reduction option in the Photomerge Setup dialog box to keep the output panorama to a reasonable size.

Lens Avoid using lenses, such as fish-eye lenses, that cause noticeable distortion to the image. Small amounts of barrel distortion (found in many cameras at the wide-angle setting) are tolerated, but strong distortions interfere with the automatic registration process.

Exposure The advanced blending feature in Photomerge helps smooth out different exposures, but extreme differences make alignment difficult. Some cameras have an "AE Lock" feature for fixing the exposure just for this purpose. Avoid using the flash in some pictures and not in others.

Setting up a Photomerge composition

The setup information you provide instructs Photoshop Elements which source files to use and how to process them. You can choose to let Photoshop Elements create a composition automatically, in which case it tries to find similar image areas and align them. Or, you can choose to simply load the source images and assemble the composition yourself. If you choose to have Photoshop Elements automatically detect and align your images, you can still override the results in the assembly window.

To set up a new Photomerge composition:

1 Choose File > Photomerge.

2 Click Add in the Photomerge dialog box.

3 Navigate to the source files and select the files for your Photomerge composition.

4 Click Open to add the files to the Source Files list in the Photomerge dialog box. You can always remove a file from the Source Files list by selecting the file and clicking Remove.

Note: For information on opening an existing composition, see "Saving and opening Photomerge compositions" on page 123.

5 Specify an Image Size Reduction value to set the size at which the source files are imported. A reduction value of at least 50% is recommended for 2 megapixels or larger.

6 Do one of the following:

• Select Attempt to Automatically Arrange Source Images if you want the Photomerge command to attempt to assemble the source images for you.

• Deselect Attempt to Automatically Arrange Source Images if you want to assemble the source images manually.

7 If you selected Attempt to Automatically Arrange Source Images, you can select additional options. These options determine how Photoshop Elements processes the source images when assembling the composition.

• Apply Perspective to correct perspective across the assembled composition.

8 Click OK. The source images open automatically, and then the Photomerge new composition dialog box appears.

If Photoshop Elements is unable to automatically assemble the composition, a message to this effect appears on-screen. You can still assemble the composition manually in the Photomerge dialog box. However, you may want to review the information in "Taking pictures for use with Photomerge" on page 118 to make sure that your source images follow the recommended guidelines.

Using the Photomerge dialog box

You use the Photomerge dialog box to edit a panoramic composition. This dialog box contains tools for manipulating the composition, a lightbox for storing source images that are not in use, a work area for assembling the composition, and options for viewing and editing the composition.

How source images appear in the Photomerge dialog box depends on how you set up the composition in the Photomerge Setup dialog box. If you selected Attempt to Automatically Arrange Source Files, Photoshop Elements attempts to assemble a composition for you in the work area. If Photoshop Elements can't determine how to place a source image, the image appears in the lightbox. If you deselected Attempt to Automatically Arrange Source Files, all source images appear in the lightbox, and you must manually assemble the composition by dragging each image from the lightbox to the work area.

Note: A tutorial is available for learning how to use the Photomerge command. Click the Tutorial button in the Photomerge dialog box.

To change your view of a composition:

Do one or more of the following:

• Select the hand tool (☜) and drag in the work area to move the view.

• Drag the view box in the Navigator thumbnail. The view box represents the boundaries of the work area.

• Use the magnification controls below the Navigator thumbnail to zoom in or zoom out.

Editing a Photomerge composition

When assembling a panoramic composition, your goal is to align the separate pieces and blend them into a seamless image. Because of differences in perspective, the pieces may not line up exactly. Photoshop Elements lets you adjust the perspective and blend exposure differences to produce the best possible effect.

To assemble a composition in the work area:

1 Select the select image tool (➤).

2 Do one or more of the following:

• Drag an image in the work area to reposition it. Hold down Shift to constrain the movement to a horizontal path, a vertical path, or a 45° angle.

• Drag an image from the lightbox to the work area to add it to the composition.

• Drag an image from the work area to the lightbox to remove it from the composition.

• Double-click an image in the lightbox to place the first image in the work area. For moving subsequent images, use any of the three previous methods.

3 If desired, modify the Tool Settings options to determine how images appear as you drag them in the work area:

• Dragging to control the interaction between overlapping images. Choose Ghost to make an image partially transparent while you are dragging it. Ghosting allows you to visually align common elements in overlapping areas.

• Snap to Image to turn snapping on or off. Select Snap to Image to automatically snap overlapping images into place when a commonality is detected.

Sometimes it's difficult to select an image that is partially obscured by another overlapping image. Hold down Alt (Windows) or Option (Mac OS) as you move the mouse in the work area. The image, whose center is nearest to the pointer, is highlighted. You can then click to select the image.

To adjust the perspective of a composition:

1 Select the Use Perspective option.

2 Select the vanishing point tool ($\div$), and click on an image in the work area to make it the vanishing point image.

The vanishing point image is used to correct the perspective for the entire composition and has a light blue border when it is selected (as opposed to a red border). By default, the first image you drag into the work area is the vanishing point image. In an automatically assembled composition, the middle image is the default vanishing point image. There can only be one vanishing point image per composition.

3 If necessary, adjust the position of the non-vanishing point images. A non-vanishing point image has a red border when it is selected (as opposed to a blue border).

When you apply perspective correction to a composition, the non-vanishing point images are linked to the vanishing point image. You can break this link by separating the images in the work area or by dragging the vanishing point image back to the lightbox. Once the link is broken, images return to their original shapes.

The perspective correction only works up to approximately a 120° angle of view. For a wider angle of view, the Use Perspective option should be deselected.

To change the perspective of a composition, select the vanishing point tool, and click on a non-vanishing point image in the work area. Notice how the perspective of the composition changes depending on which image is the vanishing point image.

To rotate an image in the work area:

1 Select the select image tool ($\blacktriangle$), and click on the image you want to rotate.

2 Select the rotate tool ($\circlearrowright$).

3 Click near the edge of the image and drag in a circular motion around the center of the image. Hold down Shift to constrain the rotation to 45° increments.

To clear a composition:

Hold down Alt (Windows) or Option (Mac OS), and click New. All images in the work area are returned to the lightbox.

Previewing a Photomerge composition

The Cylindrical Mapping and Advanced Blending options are used to process the final image. The results of applying these options are visible only in Preview mode or in the final, generated image.

To preview a Photomerge composition:

1 Select Composition options as desired:

• Cylindrical Mapping to reduce the "bow tie" distortion that can occur when you apply perspective correction. You must select the Use Perspective option in order to apply cylindrical mapping.

Original

Cylindrical Mapping applied

• Advanced Blending to minimize color inconsistencies that result from blending images with exposure differences. When this option is selected, broad colors and tones are blended over a large area, while detailed colors and tones are blended over a smaller area.

2 Click Preview.

To return to edit mode:

Click Exit Preview.

Saving and opening Photomerge compositions

You can save a composition so that you can reaccess it at a later time. You may want to create multiple compositions in order to experiment with different alignments and settings.

To save a Photomerge composition:

Click Save As, and enter a name for the composition. The composition is automatically saved in the same folder as the source images. Files are saved with a .pmg extension.

Important: Do not move the composition from the same folder as the source images. Doing so will prevent you from reopening the composition.

To open an existing Photomerge composition:

1 Choose File > Photomerge.

2 Click Open in the Photomerge dialog box.

3 Navigate to the existing composition and click Open.

Generating a panoramic image

When you're satisfied with your Photomerge composition, you can generate the panorama. The final image appears in a new Photoshop file and is editable like any other image.

To generate a panoramic image:

Click OK in the Photomerge dialog box.

Using the Liquify filter

The Liquify filter makes it easy to manipulate areas of an image as if those areas had been melted. You work with a preview image of the current layer, using special tools to warp, twirl, expand, contract, shift, and reflect areas of the image. When you're finished, you can apply the changes to the actual image.
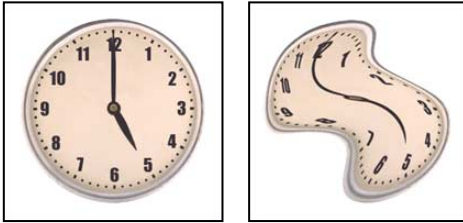
Original image, and with distortion and reconstruction

Note: *The Liquify filter is not available for images in Bitmap mode or Indexed Color mode.*

To distort an image:

1 Select the layer you want to distort. If you want to change only part of the current layer, select the area or areas to be changed.

You can use a selection to zoom in on an area to be displayed in the preview image. You can't zoom within the preview.

2 Choose Filter > Liquify. A dialog box displays the preview image, tools for editing the image, and tool and view options.

Note: *If a type or shape layer is selected, you must simplify the layer before proceeding. The type will become uneditable. To distort type without simplifying the type layer, use the Warp options for the type tool.*

3 Adjust the brush size and pressure of the tools as needed:

• To change the brush size for the tools, enter a Brush Size value or drag the slider. The brush size can range from 1 to 150 pixels.

• To change the brush pressure for the tools, enter a Brush Pressure value or drag the slider. Brush pressure can range from 1% to 100%.

A low brush pressure makes changes occur more slowly, so it's easier to stop them at exactly the right moment.

• Use the Tool Options settings to adjust stylus size and pressure when using a stylus tablet.

4 Use any of the following tools to distort the preview image:

• The warp tool ( ) to push pixels forward as you drag.

• The twirl clockwise tool ( ) to rotate pixels clockwise as you hold down the mouse button or drag.

• The twirl counterclockwise tool (✲) to rotate pixels counterclockwise as you hold down the mouse button or drag.

• The pucker tool (✲) to move pixels toward the center of the brush area as you hold down the mouse button or drag.

• The bloat tool (◇) to move pixels away from the center of the brush area as you hold down the mouse button or drag.

• The shift pixels tool (▤) to move pixels perpendicular to the stroke direction. Drag to move pixels to the left, and Alt-drag (Windows) or Option-drag (Mac OS) to move pixels to the right.

• The reflection tool (⟋) to copy pixels to the brush area. Drag to reflect the area perpendicular to the direction of the stroke (to the left of or below the stroke). Alt-drag (Windows) or Option-drag (Mac OS) to reflect the area in the direction opposite to that of the stroke (for example, the area above a downward stroke). Use overlapping strokes to create an effect similar to a reflection in water.

You can Shift-click with the warp, shift pixels, and reflection tools to create the effect of dragging in a straight line between the current point and the previous point that you clicked or Shift-clicked.

5 Click OK to apply the changes in the preview image to the actual image.

To restore a preview image to a previous state:

Do one of the following:

• Select the reconstruct tool (⟋), and hold down the mouse button or drag over the distorted areas. The restoration occurs more quickly at the brush center. Shift-click to reconstruct in a straight line between the current point and the previous point that you clicked or Shift-clicked.

• Click Revert, or Alt-click (Windows) or Option-click (Mac OS) Reset, to restore the entire preview image to its state when you opened the dialog box. Revert also resets the tools to their previous setting.

Rotating and straightening images

You can rotate, flip, and straighten an entire image using the commands in the Image > Rotate submenu. To rotate a layer, see "Rotating layers, selections, and shapes" on page 127.

Rotating and flipping images

Rotating an image turns it around its center point, while flipping an image inverts it across its horizontal or vertical axis.

To rotate or flip an entire image:

Choose Image > Rotate, and choose one of the following commands from the submenu:

• Canvas 90° Left to rotate the image counterclockwise by a quarter-turn.

• Canvas 90° Right to rotate the image clockwise by a quarter-turn.

• Canvas 180° to rotate the image by a half-turn.

• Canvas Custom to rotate the image by the angle you specify. If you choose this option, enter an angle between –359.99 and 359.99 in the angle text box, and then select Right or Left to rotate clockwise or counterclockwise. Click OK.

• Flip Canvas Horizontal to flip the image horizontally.

• Flip Canvas Vertical to flip the image vertically.

Straightening images

Skewed images are a common by-product of the scanning process. For example, if you lay a photograph on the scanner at an angle, the image will appear rotated when you open it in Photoshop Elements. You can quickly correct a rotated image using one of the Straighten Image commands.

To straighten an image:

Do one of the following:

• To straighten and crop the image, choose Image > Rotate > Straighten and Crop Image.

Note: The Straighten and Crop Image command may not produce good results if the edges of the rotated scan are too close to the image window boundaries. In this case, you can use the Canvas Size command to enlarge the work canvas. (See "Changing the size of the work canvas" on page 118.)

• To straighten the image and leave the canvas size the same, choose Image > Rotate > Straighten Image. Using this command results in an image with a transparent border at its edges.

Transforming layers, selections, and shapes

You can scale, rotate, skew, distort, and apply perspective to entire layers, selected parts of layers, and shapes.

Specifying what to transform

You can apply a transformation to a selection on a layer or to an entire layer. You can also link layers in order to transform them together.

To specify what to transform:

Do one of the following:

• To transform the entire layer, make the layer active, and make sure nothing is selected. (See "Using the Layers palette" on page 166.)

Important: You cannot transform the background layer. However, you can convert a background layer to a regular layer. (See "Adding layers" on page 170.)

• To transform part of a layer, make the layer active, and then select part of the image on that layer. (See "Making pixel selections" on page 103).

• To transform multiple layers, link the layers together in the Layers palette. (See "Linking layers" on page 170.)

• To transform a shape on a layer, use the shape selection tool (➤) to select the shape. (See "Transforming shapes" on page 159.)

Setting the reference point

All transformations are performed around a fixed point called the *reference point*. By default, this point is at the center of the layer or selection.

To set the reference point for a transformation:

1 Select a transformation command, as described in the following topics. A bounding box appears in the image.

2 In the options bar, click a square on the reference point locator (⁣▦⁣). Each square represents a point on the bounding box. For example, to set the reference point to the top left corner of the bounding box, click the top left square on the reference point locator.

Rotating layers, selections, and shapes

Rotating a layer, a selection on a layer, or a shape turns it around the reference point. By default, this point is at the center of the layer or selection; however, you can move it to another location.

To rotate or flip a layer, selection, or shape:

1 Select the layer, area, or shape you want to transform. (See "Specifying what to transform" on page 126.)

2 Choose Image > Rotate, and choose one of the following commands from the submenu:

• 90° Left to rotate the layer, area, or shape counterclockwise by a quarter-turn.

• 90° Right to rotate the layer, area, or shape clockwise by a quarter-turn.

• 180° to rotate the layer, area, or shape by a half-turn.

• Flip Horizontal to flip the layer, area, or shape horizontally.

• Flip Vertical to flip the image layer, area, or shape vertically.

To freely rotate a layer, selection, or shape:

1 Select the layer, area, or shape you want to transform. (See "Specifying what to transform" on page 126.)

2 Choose Image > Rotate > Free Rotate.

3 To rotate around a point other than the center of the layer or selection, see "Setting the reference point" on page 126.

4 Do one of the following:

• Move the pointer outside of the bounding border (it becomes a curved, two-sided arrow) (↰), and then drag. Press Shift to constrain the rotation to 15° increments.

• Specify an angle of rotation in the options bar.

5 If desired, switch to a different type of transformation by clicking the Scale button (▣) or the Skew button (▱) in the options bar, or by selecting a command from the Image > Transform submenu.

6 When you're satisfied with the results, click the OK button (✔) in the options bar, or press Enter (Windows) or Return (Mac OS), to commit the transformation.

Scaling layers, selections, and shapes

Scaling a layer, a selection on a layer, or a shape enlarges or reduces it relative to its reference point. You can scale horizontally, vertically, or both horizontally and vertically.

To scale a layer, selection, or shape:

1 Select the layer, area, or shape you want to transform. (See "Specifying what to transform" on page 126.)

2 Choose Image > Resize > Scale.

3 To scale in relation to a point other than the center of the layer or selection, see "Setting the reference point" on page 126.

4 Do one of the following:

• Drag a handle. Press Shift as you drag a corner handle to scale proportionately. When positioned over a handle, the pointer becomes a double arrow (↖↘).

• Specify a percentage for the horizontal scale and/or the vertical scale in the options bar. Click the Maintain Aspect Ratio button (🔗) to scale proportionately.

5 If desired, switch to a different type of transformation by clicking the Rotate button (△) or the Skew button (▱) in the options bar, or by selecting a command from the Image > Transform submenu.

6 When you're satisfied with the results, click the OK button (✔) in the options bar, or press Enter (Windows) or Return (Mac OS), to commit the transformation.

Skewing, distorting, and applying perspective to layers, selections, and shapes

Skewing, distorting, and applying perspective are transformations that change the geometry of a layer, a selection on a layer, or a shape. Skewing lets you slant a layer vertically and horizontally; distorting lets you stretch a layer in all directions; applying perspective lets you apply one-point perspective to a layer. You apply each type of transformation by dragging a handle on the bounding box in the document window.

You can use the Free Transform command to skew, distort, and apply perspective, as well as rotate, scale, and move, in a continuous operation. (See "Using the Free Transform command" on page 129.)

To skew, distort, or apply perspective to a layer, selection, or shape:

1 Select the layer, area, or shape you want to transform. (See "Specifying what to transform" on page 126.)

2 Do one of the following:

• Choose Image > Transform > Skew, and drag a side handle to slant the bounding box.

• Choose Image > Transform > Distort, and drag a corner handle to stretch the bounding box.

• Choose Image > Transform > Perspective, and drag a corner handle to apply perspective to the bounding box.

Note: If you are transforming a shape with the shape tool selected, the Transform menu becomes the Transform Path menu.

3 If desired, switch to a different type of transformation by clicking the Rotate button (⬜), the Scale button (⬜), or the Skew button (⬜) in the options bar, or by selecting a command from the Image > Transform submenu.

4 When you're satisfied with the results, click the OK button (☑) in the options bar, or press Enter (Windows) or Return (Mac OS), to commit the transformation.

To duplicate a layer when transforming it:

Hold down Alt (Windows) or Option (Mac OS) when selecting the Transform command.

Using the Free Transform command

The Free Transform command lets you apply transformations (rotate, scale, skew, distort, and perspective) in one continuous operation. Instead of choosing different commands, you simply hold down a key on your keyboard to switch between transformation types.

To freely transform a layer:

1 Select the layer, area, or shape you want to transform. (See "Specifying what to transform" on page 126.)

2 Choose Image > Transform > Free Transform. If you are transforming a shape with the custom shape tool selected, choose Image > Transform Path > Free Transform Shape.

3 Do one or more of the following:

• To scale, drag a handle. Press Shift as you drag a corner handle to scale proportionately. When positioned over a handle, the pointer becomes a double arrow (⬉).

• To rotate, move the pointer outside of the bounding border (it becomes a curved, two-sided arrow) (↳), and then drag. Press Shift to constrain the rotation to 15° increments.

• To rotate around a point other than the center of the layer or selection, see "Setting the reference point" on page 126.

• To distort freely, press Ctrl (Windows) or Command (Mac OS), and drag a handle.

• To skew, press Ctrl+Shift (Windows) or Command+Shift (Mac OS), and drag a side handle. When positioned over a side handle, the pointer becomes a white arrowhead with a small double arrow (⬌).

• To apply perspective, press Ctrl+Alt+Shift (Windows) or Command+Option+Shift (Mac OS), and drag a corner handle. When positioned over a corner handle, the pointer becomes a gray arrowhead (▶).

💡 *To undo the last handle adjustment, choose Edit > Undo.*

4 Click the OK button (☑) in the options bar, or press Enter (Windows) or Return (Mac OS), to commit the transformation.

Transforming objects in three dimensions

The 3D Transform filter lets you manipulate a flat, two-dimensional image as if it were a solid, three-dimensional object. Take, for example, a perspective photograph of a cereal box. You specify the corners of the box using a wire frame, and you can then manipulate the box as if it were a three-dimensional object. You can reposition the box, turn or rotate it, shrink or enlarge it, and change its field of view.

Transforming and manipulating objects

You can transform a two-dimensional object into a cube, sphere, or cylinder and manipulate it using wire frames based on that shape. Cylinders can include anything from simple objects, such as a can of soup, to shapes whose sides are lathed, such as a bottle or a lamp.

You can create and manipulate any grouping of cubes, spheres, and cylinders in the same image. For example, you can create and rotate a box, three spheres, and a bottle together in the same image.

To transform and manipulate an object in three dimensions:

1 Select the layer, area, or shape you want to transform. (See "Specifying what to transform" on page 126.)

2 Do one of the following:

• Choose Filter > Render > 3D Transform.

• Double-click 3D Transform in the Filters palette.

• Drag the 3D Transform thumbnail from the Filters palette to the image.

3 Select one of these tools in the dialog box:

• Cube (⬚) to map the image (such as a file cabinet) to a cubic surface.

• Sphere (⬤) to map the image (such as a globe or ball) to a spherical surface.

• Cylinder (⬚) to map the image (such as a can or bottle) to a cylindrical surface.

4 Drag to create a cubic, cylindrical, or spherical wire frame over the image.

5 Move or reshape the wire frame, as described later in this section. The anchor points should line up with the corners of the box, or the top and bottom of the sphere or cylinder you want to manipulate.

6 Manipulate the object in three dimensions, as described later in this section.

7 Click OK.

To move or reshape the wire frame:

1 Select the selection tool (⬟) or direct selection tool (⬠) in the 3D Transform dialog box.

2 Do either of the following:

• Drag an edge of the wire frame to move the entire frame.

• With the direct selection tool, drag an anchor point on the wire frame to move that anchor point.

Note: The wire frame turns red if you try to make a wire frame that would be impossible to re-create in three dimensions.

3 If you are creating a complex cylinder, do any of the following:

• To add an anchor point to a cylinder, select the add anchor point tool (♟⁺) in the dialog box, and click the right side of the wire frame. For example, you can add an anchor point to more closely fit the cylindrical wire frame to a picture of a bottle.

• To change an added anchor point from a smooth anchor point to a corner anchor point and vice versa, select the convert anchor point tool (⌐), and click the point. A smooth anchor point creates a gentle curve when you adjust it; a corner anchor point creates a sharp corner.

• To delete an added anchor point, select the delete anchor point tool (♟⁻), and click the point. Only round or diamond-shaped points can be deleted.

4 For Field of View, enter a value between 1 and 130. Alternatively, drag the slider to the left to increase the apparent field-of-view, right to decrease it. This can make the wire frame fit the image better. If you know the field of view angle used to photograph the image, you can enter it here.

To delete a wire frame:

1 Select the selection tool (▶) in the 3D Transform dialog box.

2 Select the wire frame, and press Backspace (Windows) or Delete (Mac OS).

To manipulate the object in three dimensions:

Do any of the following in the 3D Transform dialog box:

• To move the object, click the pan camera tool (⊹) in the dialog box, and drag the object.

• To rotate the object in any direction, click the trackball tool (◉), and drag the object.

• For Dolly Camera, enter a value between 0 and 99. Alternatively, drag the slider to the left to magnify the transformed object, right to shrink it. This has the same effect as if you were dollying, or moving, the camera further from or closer to the image.

• For Field of View, enter a value between 1 and 130, or drag the slider to the left to increase the apparent field of view, right to decrease it.

The 3D Transform dialog box previews only the active layer. As you manipulate an object in three dimensions, you can align it with the contents of underlying layers.

To align an object with an underlying layer:

1 Duplicate the layer with which you want to align.

2 Within the existing stacking order, place this duplicate layer directly under the layer you are transforming.

3 Merge the layer to be transformed with the duplicated layer.

4 With the Display Background option enabled in the 3D Transform options, manipulate the object on the layer.

5 When the layer is aligned, disable the Display Background option, and click OK.

Modifying the preview image

Use the zoom and hand tools in the 3D Transform dialog box to change your preview of an image. These actions do not modify the transformation itself, only your view of it.

To magnify or shrink the preview image:

1 Select the zoom tool ( ) in the 3D Transform dialog box.

2 Click the image to zoom in, or Alt-click (Windows) or Option-click (Mac OS) to zoom out.

To move the view of the preview image:

Select the hand tool ( ) in the 3D Transform dialog box, and drag the preview image. This works only if you are zoomed in on the image.

Setting 3D rendering options

You can set the resolution and anti-aliasing of rendered images and specify whether to show the background from the original image in the 3D preview.

To set 3D rendering options:

1 Click Options in the 3D Transform dialog box.

2 Do any of the following:

• For Resolution, choose the quality of the rendered image. The setting has little effect on the image quality of cubes, but will produce smoother curved surfaces in cylinders and spheres.

• For Anti-aliasing, choose the level of anti-aliasing to apply to the rendered image.

• Select Display Background to include the portions of the original image outside of the wire frame in the preview and with the rendered image. Turn this option off to separate the transformed object from the original background.

3 Click OK.

Retouching an image

You can retouch images using the clone stamp, pattern stamp, red eye brush, smudge, focus, toning, and sponge tools.

Note: These tools cannot be used with Bitmap or Indexed Color mode.

Using the clone stamp tool

The clone stamp tool takes a sample of an image, which you can then apply over another image or part of the same image. Each stroke of the tool paints on more of the sample. Cross hairs mark the original sampling point.
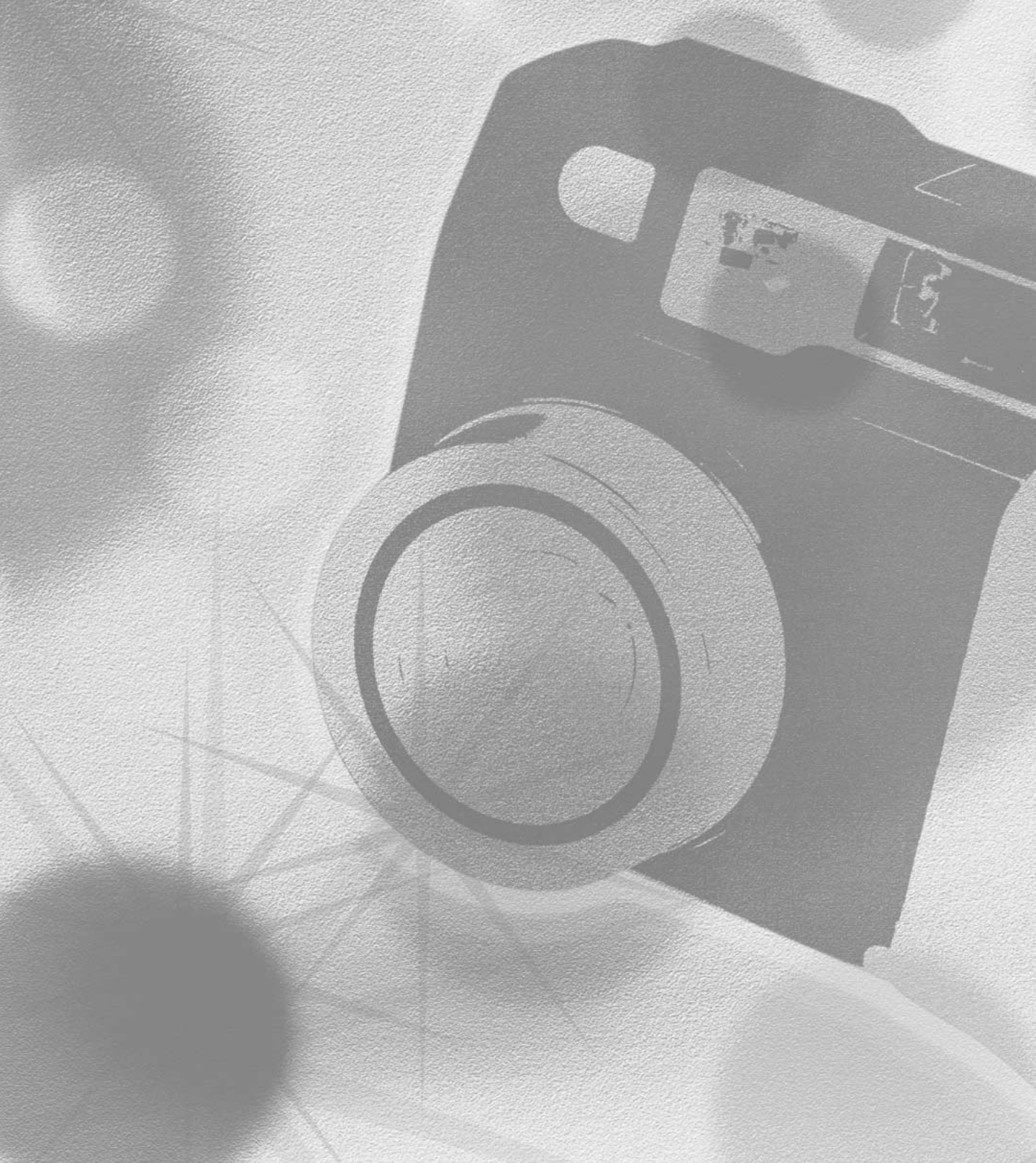
To use the clone stamp tool:

1 Select the clone stamp tool ( ).

2 Choose a brush size from the pop-up palette in the options bar. To learn more about using pop-up palettes, see "Using pop-up palettes" on page 35.

3 Specify a blending mode and opacity. (See "Setting options for painting and editing tools" on page 147.)

4 Select Aligned to apply the entire sampled area once, regardless of how many times you stop and resume painting. This option is useful when you want to use different-sized brushes to paint an image. You can also use the Aligned option to duplicate two halves of a single image and place them at different locations.

If Aligned is deselected, the sampled area is applied from the initial sampling point each time you stop and resume painting. Because the clone stamp tool samples the entire image, this option is useful for applying multiple copies of the same part of an image to different images.

5 Select Use All Layers to sample data from all visible layers. If this is deselected, the tool samples only from the active layer.

6 If you are using a pressure-sensitive drawing tablet, specify the effects of stylus pressure. (See "Specifying the effect of stylus pressure" on page 149.)

7 Position the pointer on the part of any open image you want to sample, and Alt-click (Windows) or Option-click (Mac OS). This sample point is the location from which the image is duplicated as you paint.

8 Drag to paint with the tool.

Using the pattern stamp tool

The pattern stamp tool lets you paint with a pattern. You can select a pattern from the pattern libraries or create your own patterns.

To use the pattern stamp tool:

1 Select the pattern stamp tool ( ).

2 Choose a brush size from the pop-up palette in the options bar. To learn more about using pop-up palettes, see "Using pop-up palettes" on page 35.

3 Specify a blending mode and opacity. (See "Setting options for painting and editing tools" on page 147.)

4 Choose a pattern from the pop-up palette in the options bar.

To load additional pattern libraries, select a library name from the pop-up palette menu or choose Load and navigate to the folder where the library is stored. To learn more about patterns and pattern libraries, see "Creating and editing patterns" on page 161.

5 Select Aligned to repeat the pattern as contiguous, uniform tiles. The pattern is aligned from one paint area to the next.

If Aligned is deselected, the pattern is centered on the pointer each time you stop and resume painting.

6 If you are using a pressure-sensitive drawing tablet, specify the effects of stylus pressure. (See "Specifying the effect of stylus pressure" on page 149.)

7 Drag to paint with the tool.

Using the red eye brush

Red eye occurs when light from an on-camera flash reflects off the back of the eye. You can easily remove red eye from an image using the red eye brush. You can also use the red eye brush to retouch other details in an image, such as braces.

To use the red eye brush:

1 Select the red eye brush (🖌).

2 Choose a brush size from the pop-up palette in the options bar. To learn more about using pop-up palettes, see "Using pop-up palettes" on page 35.

3 Specify a target color (the color you want to remove) by doing one of the following:

• To set the target color when you click in the image, choose First Click from the Sampling pop-up menu.

• To use the default target color, choose Current Color from the Sampling pop-up menu. Then click Default Colors.

• To pick a custom target color, choose Current Color from the Sampling pop-up menu. Then click the Current color swatch. When the color picker appears, click in the image on the color you want to remove. Alternately, you can choose a target color using the color picker.

4 Specify a replacement color by doing one of the following:

• To use the default replacement color, click Default Colors.

Note: Clicking Default Colors also resets the target color.

• To pick a custom replacement color, click the Replacement color swatch, and pick the color that you want to use for the correction.

5 Specify a value for Tolerance. The tolerance defines how similar in color a pixel must be to be replaced. A low percentage replaces adjacent pixels within a range of color values very similar to the pixel you click. A high percentage replaces adjacent pixels within a broader range of color values.

If a person has pinkish skin, the red eye brush might have problems differentiating between the pupil's red eye and the face. Specifying a lower tolerance might help.

6 If desired, click the Brush Dynamics button (🖌), and set brush dynamics options. (See "Specifying the effect of stylus pressure" on page 149 and "Specifying a paint fade-out rate" on page 149.)

7 Drag in the image over the details you want to correct. Any pixels that match the target color are colorized with the replacement color.

Using the smudge tool

The smudge tool simulates the actions of dragging a finger through wet paint. The tool picks up color where the stroke begins and pushes it in the direction you drag.

To use the smudge tool:

1 Select the smudge tool (🖌).

2 Choose a brush size from the pop-up palette in the options bar. To learn more about using pop-up palettes, see "Using pop-up palettes" on page 35.

If a brush is too large to fit in the palette, it appears as a smaller brush with a number indicating the actual diameter in pixels.

3 Specify a blending mode and pressure. (See "Setting options for painting and editing tools" on page 147.)

4 Select Use All Layers to smudge using color data from all visible layers. If this is deselected, the smudge tool uses colors from only the active layer.

5 Select Finger Painting to smudge using the foreground color at the beginning of each stroke. If this is deselected, the smudge tool uses the color under the pointer at the beginning of each stroke.

6 If you are using a pressure-sensitive drawing tablet, specify the effects of stylus pressure. (See "Specifying the effect of stylus pressure" on page 149.)

7 Drag in the image to smudge color.

Press Alt (Windows) or Option (Mac OS) as you drag with the smudge tool to use the Finger Painting option.

Using the focus tools

The focus tools consist of the blur tool and the sharpen tool. The blur tool softens hard edges or areas in an image to reduce detail. The sharpen tool focuses soft edges to increase clarity or focus. For information on other ways to adjust sharpness, see "Sharpening images" on page 98 and "Improving performance with filters" on page 193.

To use the blur or sharpen tool:

1 Select the blur tool (◊) or sharpen tool (△).

2 Choose a brush size from the pop-up palette in the options bar. To learn more about using pop-up palettes, see "Using pop-up palettes" on page 35.

If a brush is too large to fit in the palette, it appears as a smaller brush with a number indicating the actual diameter in pixels.

3 Specify a blending mode and pressure. (See "Setting options for painting and editing tools" on page 147.)

4 Select Use All Layers to blur or sharpen using data from all visible layers. If this is deselected, the tool uses data from only the active layer.

5 If you are using a pressure-sensitive drawing tablet, specify the effects of stylus pressure. (See "Specifying the effect of stylus pressure" on page 149.)

6 Click and drag over the part of the image you want to blur or sharpen.

Using the toning tools

The toning tools consist of the dodge tool and the burn tool. Used to lighten or darken areas of the image, the dodge and burn tools are based on a traditional photographer's technique for regulating exposure on specific areas of a print. Photographers hold back light to lighten an area on the print (dodging) or increase the exposure to darken areas on a print (burning).

To use the dodge or burn tool:

1 Select the dodge tool (🔍) or burn tool (✍).

2 Choose a brush size from the pop-up palette in the options bar. To learn more about using pop-up palettes, see "Using pop-up palettes" on page 35.

3 Select what to change in the image:

• Midtones to change the middle range of grays.

• Shadows to change the dark areas.

• Highlights to change the light areas.

4 Specify the exposure for the tool. (See "Specifying opacity, pressure, or exposure" on page 149.)

5 If you are using a pressure-sensitive drawing tablet, specify the effects of stylus pressure. (See "Specifying the effect of stylus pressure" on page 149.)

6 Click and drag over the part of the image you want to modify.

Using the sponge tool

The sponge tool subtly changes the color saturation of an area. In Grayscale mode, the tool increases or decreases contrast by moving gray levels away from or toward the middle gray.

To use the sponge tool:

1 Select the sponge tool (🟤).

2 Choose a brush size from the pop-up palette in the options bar. To learn more about using pop-up palettes, see "Using pop-up palettes" on page 35.

3 Select how to change the color:

• Saturate to intensify the color's saturation.

• Desaturate to dilute the color's saturation.

4 Specify the pressure for the tool. (See "Specifying opacity, pressure, or exposure" on page 149.)

5 If you are using a pressure-sensitive drawing tablet, specify the effects of stylus pressure. (See "Specifying the effect of stylus pressure" on page 149.)

6 Drag over the part of the image you want to modify.

7

Chapter 7: Painting and Drawing

There are several tools you can use to paint and draw objects in Photoshop Elements. You can create different effects with the painting and drawing tools by customizing the options for each tool. You can also create and edit shapes using the shape tools. Other tools and commands let you transform and retouch an image.

About painting and drawing

When creating graphics on a computer, there is a distinction between painting and drawing.

Painting involves changing the colors of pixels using a painting tool. You can apply colors gradually, with soft edges and transitions, and manipulate individual pixels using powerful filter effects. When you use a painting tool, the color is applied to the currently selected layer.

Drawing involves creating shapes that are defined as geometric objects. For example, if you draw a circle using the ellipse tool, the circle is defined by a specific radius, location, and color. You can quickly select the entire circle and move it to a new location. When you use a drawing tool, a new layer is automatically created.

Using the painting tools

You can use the paintbrush, pencil, or airbrush to paint color on an image. The three tools create different effects:

• The paintbrush tool creates soft strokes of color.

• The pencil tool creates hard-edged freehand lines.

• The airbrush tool applies gradual tones (including sprays of color) to an image, simulating traditional airbrush techniques. The edges of the stroke are more diffused than those created with the paintbrush tool. The pressure setting for the airbrush tool controls how quickly the spray of paint is applied. If you hold down the mouse button without dragging, you can build up color.

To use a painting tool:

1 Specify a foreground color. (See "Choosing foreground and background colors" on page 74.)

2 Select the paintbrush tool ( ), pencil tool ( ), or airbrush tool ( ).

3 Click the inverted arrow ( ) next to the brush sample and choose a size for the brush from the pop-up palette menu in the options bar. To learn more about using pop-up palettes, see "Using pop-up palettes" on page 35.

If a brush is too large to fit in the palette, it appears as a smaller brush with a number indicating the actual diameter in pixels.

4 Specify a blending mode to control how painting affects existing pixels in the image. (See "Selecting a blending mode" on page 147.)

5 Specify opacity for the paintbrush or pencil tool, or pressure for the airbrush tool. (See "Specifying opacity, pressure, or exposure" on page 149.)

6 Set additional options:

• For the paintbrush tool, select Wet Edges to paint with a watercolor effect. The paint builds up along the edges of the brush stroke.

• For the pencil tool, select Auto Erase to paint the background color over areas containing the foreground color.

7 Specify the rate at which a brush stroke fades dynamically. (See "Specifying a paint fade-out rate" on page 149.)

8 Drag in the image to paint.

💡 *To draw a straight line with one of the painting tools, click a starting point in the image. Then hold down Shift, and click an ending point.*

Erasing

The eraser and magic eraser tools let you erase areas of an image to transparency or to the background color. The background eraser tool lets you erase to transparency on a layer.

You can also use the Auto Erase option with the pencil tool to erase the foreground color to the background color as you paint, unless the area does not contain the foreground color. In that case the area is painted with the foreground color.

Using the eraser tool

The eraser tool changes pixels in the image as you drag through them. If you're working in the background or in a layer with transparency locked, the pixels change to the background color; otherwise, the pixels are erased to transparency.

To use the eraser tool:

1 Select the eraser tool (✐).

2 Choose a brush size from the pop-up palette in the options bar. To learn more about using pop-up palettes, see "Using pop-up palettes" on page 35.

If a brush is too large to fit in the palette, it appears as a smaller brush with a number indicating the actual diameter in pixels.

3 Choose the tool Mode you want to use as an eraser—paintbrush, airbrush, pencil, or block.

4 Specify an opacity to define the strength of the erasure. An opacity of 100% erases pixels to complete transparency. A lower opacity erases pixels to partial transparency. (This option is not available for block mode.)

5 If you're using the paintbrush eraser, select Wet Edges to erase with a watercolor effect. When this is selected, the erased effect builds up along the edges of the brush stroke.

6 Specify the rate at which a brush stroke fades dynamically. (See "Specifying a paint fade-out rate" on page 149.)

7 Drag through the area you want to erase.

Using the magic eraser tool

When you click in a layer with the magic eraser tool, the tool automatically changes all similar adjacent pixels. If you're working in the background, or in a layer with locked trans-

parency, the pixels change to the background color; otherwise, the pixels are erased to transparency. You can choose to erase contiguous pixels only or all similar pixels on the current layer.

Erasing similar pixels

To use the magic eraser tool:

1 Select the magic eraser tool ( ).

2 Enter a tolerance value. This defines the range of colors that can be erased. A low tolerance erases pixels within a range of color values very similar to the pixel you click. A high tolerance erases pixels within a broader range.

3 Select Anti-aliased to smooth the edges of the area you erase.

4 Select Contiguous to erase only pixels contiguous to the one you click, or leave unselected to erase all similar pixels in the image.

5 Select Use All Layers to sample the erased color using combined data from all visible layers.

6 Specify an opacity to define the strength of the erasure. An opacity of 100% erases pixels to complete transparency. A lower opacity erases pixels to partial transparency.

7 Click in the part of the layer you want to erase.

Using the background eraser tool

The background eraser tool lets you erase pixels on a layer to transparency as you drag; this allows you to erase the background while maintaining the edges of an object in the foreground. The background eraser samples the color in the center of the brush, also called the *hotspot*, and deletes that color wherever it appears inside the brush. It also performs color extraction at the edges of any foreground objects, so that color halos are not visible if the foreground object is later pasted into another image.

Note: The background eraser overrides the lock transparency setting of a layer.

To use the background eraser tool:

1 In the Layers palette, select the layer containing the areas you want to erase.

2 Select the background eraser tool ( ).

3 Choose a brush size from the pop-up palette in the options bar. To learn more about using pop-up palettes, see "Using pop-up palettes" on page 35.

If a brush is too large to fit in the palette, it appears as a smaller brush with a number indicating the actual diameter in pixels.

4 Choose a Limits mode for erasing:

• Discontiguous to erase the sampled color wherever it occurs under the brush.

• Contiguous to erase areas that contain the sampled color and are connected to one another.

5 For Tolerance, enter a value or drag the slider. A low tolerance limits erasure to areas that are very similar to the sampled color. A high tolerance erases a broader range of colors.

6 Specify the rate at which a brush stroke fades dynamically. (See "Specifying a paint fade-out rate" on page 149.)

7 Drag through the area you want to erase. The background eraser tool pointer appears as a brush shape with a cross hair indicating the tool's hotspot (⊕).

Using the Auto Erase option

The Auto Erase option for the pencil tool lets you paint the background color over areas containing the foreground color.

To use the Auto Erase option:

1 Specify foreground and background colors. (See "Choosing foreground and background colors" on page 74.)

2 Select the pencil tool (✐).

3 Select Auto Erase.

4 Drag over the image.

If you begin dragging over the foreground color, the area is erased to the background color. If you begin dragging from an area that doesn't contain the foreground color, the area is painted with the foreground color.

Using the impressionist brush tool

The impressionist brush tool lets you paint with stylized strokes. By experimenting with different paint style, fidelity, size, and tolerance options, you can simulate the texture of painting with different colors and artistic styles.

A. Original B. Square brush C. Large brush D. Small brush

To use the impressionist brush tool:

1 Select the impressionist brush tool (✺).

2 Choose a brush from the pop-up menu in the options bar. (See "Using pop-up palettes" on page 35.)

3 Choose a mode from the drop-down list.

4 Specify opacity for the paint. (See "Setting options for painting and editing tools" on page 147.)

5 Choose an option from the Style menu to control the shape of the paint stroke.

6 For Fidelity, enter a value or drag the slider to control how much the paint color deviates from the color in the source state or snapshot. The lower the fidelity, the more the color will vary from the source.

7 For Area, enter a value to specify the area covered by the paint strokes. The greater the size, the larger the covered area and the more numerous the strokes.

8 For Spacing, enter a value or drag the slider to limit the regions where paint strokes can be applied. A low spacing tolerance lets you paint unlimited strokes anywhere in the image. A high spacing tolerance limits paint strokes to areas that differ considerably from the color in the source state or snapshot.

9 If you are using a pressure-sensitive tablet, set any of the following brush dynamics (✎) options in the options bar to Stylus:

• Size to have increased pressure result in a larger area covered by the paint. (Size refers to the area of coverage, not the brush size.)

• Opacity to have increased pressure result in more opaque paint.

If you do not have a stylus, you can set these options to Fade. (See "Specifying a paint fade-out rate" on page 149.)

10 Drag in the image to paint.

Customizing brush libraries

The brush sizes and shapes available for painting and editing appear in the pop-up palette in the options bar for the painting and editing tools. You can customize the brushes and settings for each of the painting tools (airbrush, paintbrush, eraser, and pencil) and editing tools (clone stamp, smudge, focus, toning, and red eye brush).

In Photoshop Elements, you can save libraries, load, replace, save, rename brushes in libraries, reset, or delete new brushes or libraries of brushes using the Preset Manager. (See "Working with presets" on page 35.)

Creating and editing brushes

You can create new brushes and delete brushes you no longer need, and you can use part of an image to create a custom brush. You can also create a temporary brush that you only expect to use one time.
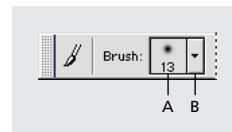
A. Brush options B. Pop-up palette

To create a brush:

Do one of the following:

• Click the inverted arrow (▾) next to the brush sample to display the pop-up palette in the options bar, and choose New Brush from the pop-up palette menu. The preview box in the lower right corner of the New Brush dialog box shows the current brush tip. The box in the lower left corner

shows the current brush angle and roundness. As you enter new options, the brushes in these boxes update. Set the brush options as described in"Setting brush options" on page 145, then click OK.

• Click the brush sample in the options bar to display the options of the selected brush. Then click New (▭) to save this brush as a preset. Enter a name for the brush, and set the brush options as described in "Setting brush options" on page 145.

The new brush is selected in the options bar and is added at the bottom of the pop-up palette.

To create a temporary brush or temporarily change a brush:

1 Click the brush sample in the options bar.

2 Set the brush options. (See "Setting brush options" on page 145.)

3 Draw in the image.

To delete a brush:

Do one of the following:

• In the pop-up palette in the options bar, press Alt (Windows) or Option (Mac OS), and click the brush you want to delete.

• Click the brush in the pop-up palette, and choose Delete Brush from the pop-up palette menu.

• Choose Edit > Preset Manager, select Brushes from the Preset Type list, select the brush from the list in the dialog box, and click Delete.

To create a custom brush shape:

1 Use the rectangle marquee (⬚) with Feather set to 0 px to select part of an image to use as a custom brush.

The brush shape can be up to 1024 pixels by 1024 pixels in size. To be most effective, the shape should appear on a solid white background. If you want to define brushes with soft edges, select brush shapes composed of pixels with gray values. (Colored brush shapes appear as gray values.)

2 Choose Define Brush from the Edit menu.

3 Name the brush and click OK.

You can set the spacing and anti-alias options by selecting the brush from the pop-up palette in the options bar and clicking the brush sample. If you make changes, click the New Preset button (▣) to save your changes as a new preset item.

Pear painted with custom brush shown in inset

You can easily save, load, replace, or delete brushes using the pop-up palette menu. You can also customize the view of the pop-up palette. (See "Using pop-up palettes" on page 35.) You can also load or save brushes using the Preset Manager. (See "Working with presets" on page 35.)

Exiting Photoshop Elements saves the contents of the current pop-up palette in the Preferences file.

Setting brush options

You can define a number of options for the default brushes. For custom brushes, only the name, spacing, and anti-aliased options can be changed.

To set brush options:

1 Do one of the following:

• To edit the current brush, click the brush sample in the options bar.

• To edit a different brush, select the brush you want in the pop-up palette, then click the brush sample in the options bar.

2 Set the options for Diameter, Hardness, Spacing, Angle, and Roundness. For custom brushes, enter a new name if desired, then set the options for Spacing and Anti-aliased.

3 Click New Preset (▣) to create a new preset brush.

Diameter Controls the size of the brush. Enter a value in pixels or drag the slider.

While using a preset brush, you can press the [key to decrease the brush width by 10 pixels. Press the] key to increase the width by 10 pixels. Press Shift+ the] key to increase the brush hardness. Press Shift+ the [key to decrease the brush hardness.
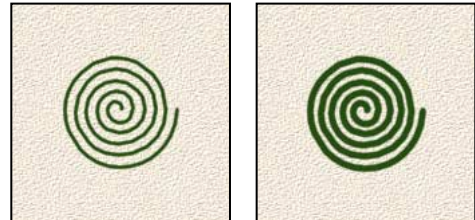
Brush strokes with different diameter values

Hardness Controls the size of the brush's hard center. Type a number, or use the slider to enter a value that is a percentage of the brush diameter.
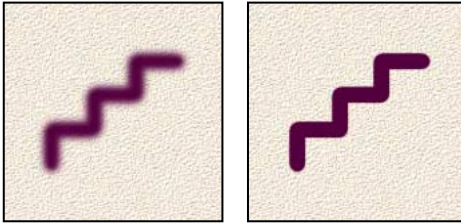
Brush strokes with different hardness values

Spacing Controls the distance between the brush marks in a stroke. To change the spacing, type a number, or use the slider to enter a value that is a percentage of the brush diameter. To paint strokes without defined spacing, deselect this option.
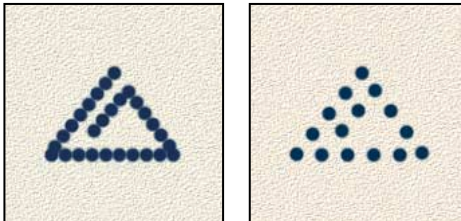
Increasing the spacing makes the brush skip.

Angle Specifies the angle by which an elliptical brush's long axis is offset from horizontal. Type a value in degrees, or drag the horizontal axis in the left preview box.
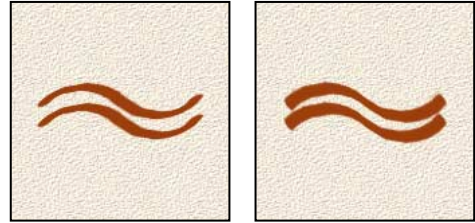
Angled brushes create a chiseled stroke.

Roundness Specifies the ratio between the brush's short and long axes. Enter a percentage value, or drag the points in the left preview box. A value of 100% indicates a circular brush, a value of 0% indicates a linear brush, and intermediate values indicate elliptical brushes.
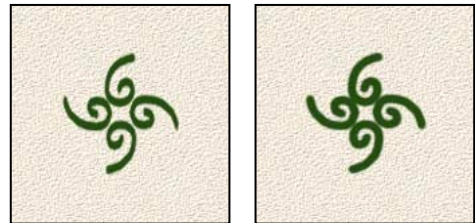
Adjusting roundness affects shape of brush tip.

Setting options for painting and editing tools

You set options for a painting or editing tool in the options bar for that tool.

Selecting a blending mode

The blending mode specified in the options bar controls how pixels in the image are affected by a painting or editing tool. It's helpful to think in terms of the following colors when visualizing a blending mode's effect:

• The *base color* is the original color in the image.

• The *blend color* is the color being applied with the painting or editing tool.

• The *result color* is the color resulting from the blend.

To select a blending mode for a tool:

Choose from the Mode menu in the options bar.

Normal Edits or paints each pixel to make it the result color. This is the default mode. (Normal mode is called *Threshold* when you're working with a bitmapped or indexed-color image.)

Dissolve Edits or paints each pixel to make it the result color. However, the result color is a random replacement of the pixels with the base color or the blend color, depending on the opacity at any pixel location. This mode works best with the paint-brush or airbrush tool and a large brush.

Behind Edits or paints only on the transparent part of a layer. This mode works only in layers with Lock Transparency deselected and is analogous to painting on the back of transparent areas in a sheet of acetate.

Multiply Looks at the color information in each channel and multiplies the base color by the blend color. The result color is always a darker color. Multiplying any color with black produces black. Multiplying any color with white leaves the color unchanged. When you're painting with a color other than black or white, successive strokes with a painting tool produce progressively darker colors. The effect is similar to drawing on the image with multiple felt-tipped pens.

Screen Looks at each channel's color information and multiplies the inverse of the blend and base colors. The result color is always a lighter color. Screening with black leaves the color unchanged. Screening with white produces white. The effect is similar to projecting multiple photographic slides on top of each other.

Overlay Multiplies or screens the colors, depending on the base color. Patterns or colors overlay the existing pixels while preserving the highlights and shadows of the base color. The base color is not replaced but is mixed with the blend color to reflect the lightness or darkness of the original color.

Soft Light Darkens or lightens the colors, depending on the blend color. The effect is similar to shining a diffused spotlight on the image.

If the blend color (light source) is lighter than 50% gray, the image is lightened, as if it were dodged. If the blend color is darker than 50% gray, the image is darkened, as if it were burned in. Painting with pure black or white produces a distinctly darker or lighter area but does not result in pure black or white.

Hard Light Multiplies or screens the colors, depending on the blend color. The effect is similar to shining a harsh spotlight on the image.

If the blend color (light source) is lighter than 50% gray, the image is lightened, as if it were screened. This is useful for adding highlights to an image. If the blend color is darker than 50% gray, the image is darkened, as if it were multiplied. This is useful for adding shadows to an image. Painting with pure black or white results in pure black or white.

Color Dodge Looks at the color information in each channel and brightens the base color to reflect the blend color. Blending with black produces no change.

Color Burn Looks at the color information in each channel and darkens the base color to reflect the blend color. Blending with white produces no change.

Darken Looks at the color information in each channel and selects the base or blend color—whichever is darker—as the result color. Pixels lighter than the blend color are replaced, and pixels darker than the blend color do not change.

Lighten Looks at the color information in each channel and selects the base or blend color—whichever is lighter—as the result color. Pixels darker than the blend color are replaced, and pixels lighter than the blend color do not change.

Difference Looks at the color information in each channel and subtracts either the blend color from the base color or the base color from the blend color, depending on which has the greater brightness value. Blending with white inverts the base color values; blending with black produces no change.

Exclusion Creates an effect similar to but lower in contrast than the Difference mode. Blending with white inverts the base color values. Blending with black produces no change.

Hue Creates a result color with the luminance and saturation of the base color and the hue of the blend color.

Saturation Creates a result color with the luminance and hue of the base color and the saturation of the blend color. Painting with this mode in an area with no (0) saturation (gray) causes no change.

Color Creates a result color with the luminance of the base color and the hue and saturation of the blend color. This preserves the gray levels in the image and is useful for coloring monochrome images and for tinting color images.

Luminosity Creates a result color with the hue and saturation of the base color and the luminance of the blend color. This mode creates an inverse effect from that of the Color mode.

Specifying opacity, pressure, or exposure

You can specify opacity, pressure, or exposure for a variety of tools:

• Opacity is used by the gradient fill, pencil, paintbrush, clone stamp, pattern stamp, and impressionist brush tools.

• Pressure of action is applied by the airbrush, smudge, blur, sharpen, and sponge tools.

• Amount of exposure is used by the dodge and burn tools.

To specify opacity, pressure, or exposure:

Enter a value, or drag the slider for Opacity, Pressure, or Exposure in the options bar.

Opacity, pressure, or exposure can range from 1% to 100%. For transparent paint or a weak effect, specify a low percentage value; for more opaque paint or a strong effect, specify a high value.

If you have selected a tool without an opacity option in its options bar, press a number key to set the opacity in multiples of 10% (pressing 1 sets to 10%, pressing 0 sets to 100%).

Specifying the effect of stylus pressure

Photoshop Elements is compatible with most pressure-sensitive digitizing tablets such as the Wacom® tablets. With Control Panel software for your tablet installed, you can specify the type of effect that results when you vary stylus pressure.

These stylus pressure options affect the magnetic lasso, magnetic pen, pencil, paintbrush, airbrush, eraser, clone stamp, pattern stamp, impressionist brush, smudge, blur, sharpen, dodge, burn, and sponge tools.

To specify the effect of stylus pressure:

Click the Brush Dynamics button ( ) in the options bar, and choose Stylus for each of the options you want to set:

• Size to have increased pressure create a broader brush stroke.

• Opacity/Pressure to have increased pressure make the paint more opaque or more intense.

• Color if you want light pressure to paint with the background color, making a transition to the foreground color as the pressure increases. (This option is only available when using a tool that supports color.)

Note: If the highest pressure of your stylus does not reach 100%, contact your tablet vendor. This problem is caused by the driver software, not Photoshop Elements.

Specifying a paint fade-out rate

If you don't have a stylus, you can still simulate actual brush strokes by setting the rates at which most of the drawing and painting tools fade out from their beginning strokes. You can specify which options dynamically change over the course of a brush stroke: opacity, size, and color can all be individually set.

To specify a paint fade-out rate:

1 Click the Brush Dynamics button (✍) in the options bar, and choose Fade for each of the following options you want to set:

• Size to decrease the brush stroke size over the length of a brush stroke.

• Opacity/Pressure to reduce the opacity over the length of a stroke.

• Color to cause the color to fade in intensity over the length of a stroke. (This option is only available when using a tool that supports color.)

2 Enter a value for Steps. The value represents the number of steps in the fade. A smaller value causes the stroke to fade quickly.

Each step is equal to one mark of the brush tip. The value can range from 1 to 9999. For example, entering 10 steps produces a fade in 10 increments. For smaller brushes, you may want to set a value of 25 or larger. If strokes fade too quickly, increase the values.
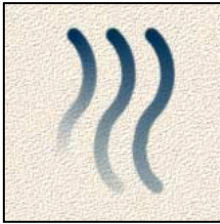
Fade-out showing setting of 40, 60, and 80 steps

Using the gradient tools

The gradient tools create a gradual blend between multiple colors. You can choose from existing gradient fills or create your own.

Linear gradient (▨) Shades from the starting point to the ending point in a straight line.

Radial gradient (◧) Shades from the starting point to the ending point in a circular pattern.

Angular gradient (▨) Shades in a counter-clockwise sweep around the starting point.

Reflected gradient (▨) Shades using symmetric linear gradients on either side of the starting point.

Diamond gradient (◪) Shades from the starting point outward in a diamond pattern. The ending point defines one corner of the diamond.

Note: The gradient tools cannot be used with images in Bitmap, indexed-color, or 16-bits per channel mode.

Applying a gradient fill

You fill an area with a gradient by dragging in the image or in a selection. The starting point (where the mouse is pressed) and ending point (where the mouse is released) affect the gradient appearance, depending on the gradient tool used.

To apply a gradient fill:

1 To fill part of the image, select the desired area. Otherwise, the gradient fill is applied to the entire active layer.

2 Select the gradient tool (▯).

3 In the options bar, click the desired gradient type (linear, radial, angular, reflected, or diamond).

4 Choose a gradient fill from the pop-up palette in the options bar. To learn more about using pop-up palettes, see "Using pop-up palettes" on page 35.

5 Specify a blending mode and opacity for the paint. (See "Setting options for painting and editing tools" on page 147.)

6 To reverse the order of colors in the gradient fill, select Reverse.

7 To create a smoother blend with less banding, select Dither.

8 To use a transparency mask for the gradient fill, select Transparency. (See "Specifying the gradient transparency" on page 153.)

9 Position the pointer in the image where you want to set the starting point of the gradient, and drag to define the ending point. To constrain the line angle to a multiple of 45°, hold down Shift as you drag.

Creating or editing gradient fills

The Gradient Editor dialog box lets you define a new gradient by modifying a copy of an existing gradient. You can also edit fills by adding intermediate colors to a gradient, or creating a blend between more than two colors.
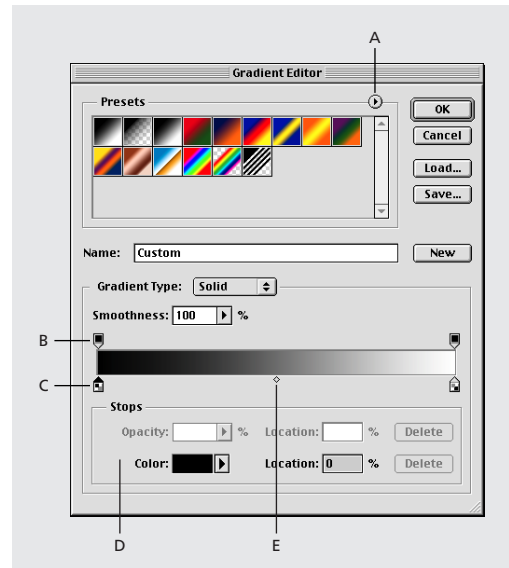
A. Palette menu B. Opacity stop C. Color stop D. Adjust values or delete the selected opacity or color stop E. Midpoint

To create a gradient:

1 Select the gradient tool (▯).

2 To display the Gradient Editor dialog box, do one of the following:

• Click the Edit button next to the gradient sample.

• Click the gradient sample in the options bar.

3 Select a gradient from the list to create a new gradient based on the gradient you selected.

4 To define the starting color of the gradient, click the left color stop under the gradient bar. The triangle above the stop turns black, indicating that the starting color is being edited.

5 To choose a color, do one of the following:

• Double-click the color stop, or click the color swatch below the gradient bar. Choose a color, and click OK. For information on choosing a color, see "Using the Adobe Color Picker" on page 77.

• Choose foreground from the color pop-up menu in the Gradient Editor dialog box to use the current foreground color.

• Choose background from the color pop-up menu to use the current background color.

• Position the pointer over the gradient bar (the pointer turns into the eyedropper), and click to sample a color, or click anywhere in the image to sample a color from the image.

6 To define the ending color, click the right color stop under the gradient bar. Then choose a color as described in step 5.

7 To adjust the location of the starting point or ending point, do one of the following:

• Drag the corresponding color stop left or right to the location you want.

• Click the corresponding color stop, and enter a value for Location. A value of 0% places the point at the far left end of the gradient bar, a value of 100% at the far right end.

8 To adjust the location of the midpoint (where the gradient displays an even mix of the starting and ending colors), drag the diamond below the gradient bar to the left or right, or click the diamond and enter a value for Location.

9 To delete the color stop you are editing, click Delete.

10 To set the smoothness for the entire gradient, enter a value or drag the slider.

11 If desired, set transparency values for the gradient. (See "Specifying the gradient transparency" on page 153.)

12 Enter a name for the new gradient.

13 To save the gradient as a preset, click New after you have finished creating the gradient.

14 Click OK to exit the dialog box, and the newly created gradient is selected and ready to use.

To add intermediate colors to a gradient:

In the Gradient Editor dialog box, click below the gradient bar to define another color stop. Specify the color and adjust the location and midpoint for the intermediate point as you would for a starting or ending point. To remove an intermediate color, drag the color stop down and off the gradient bar, or select the color stop and press Delete.

Applying gradient fill to text

You can fill text using the gradient tool.

To apply gradient fill to text:

1 Do one of the following:

• Select the Horizontal Type tool to enter horizontal text.

• Select the Vertical Type tool to enter vertical type.

2 In the options bar, make sure that the Create a Text Layer button is selected. Select a font family and a font size.

3 Enter the type you want and then click the OK button in the options bar to commit the text.

4 Choose Layer > Simplify Layer to convert the image to a bitmapped image.

5 Control-click (Windows) or Command-click (Mac OS) on the text layer in the Layers palette to select the text.

6 Select the Gradient tool.

7 In the options bar, click the desired gradient type (linear, radial, angular, reflected, or diamond).

8 Choose a gradient fill from the Gradient Picker pop-up palette.

9 Position the pointer on the text where you want to set the starting point of the gradient, and drag to define the ending point.

Specifying the gradient transparency

Each gradient fill contains settings that control the opacity of the fill at different locations on the gradient. For example, you can set the starting color to 100% opacity and have the fill gradually blend into an ending color with 50% opacity. The checkerboard pattern indicates the amount of transparency in the gradient preview.

To specify the gradient transparency:

1 Create a gradient as described in steps 1 through 10 of "Creating or editing gradient fills" on page 151.

2 To adjust the starting opacity, click the left opacity stop above the gradient bar. The triangle below the stop turns black, indicating that the starting transparency is being edited.

3 Set the Opacity by doing one of the following:

• Enter a value between 0 (fully transparent) and 100% (fully opaque).

• Drag the arrow on the Opacity slider.

4 To adjust the opacity of the endpoint, click the right transparency stop above the gradient bar. Then set the opacity as described in step 3.

5 To adjust the location of the starting or ending opacity, do one of the following:

• Drag the corresponding opacity stop to the left or right.

• Select the corresponding opacity stop, and enter a value for Location.

6 To adjust the location of the midpoint opacity (the point midway between the starting and ending opacities), do one of the following:

• Drag the diamond above the gradient bar to the left or right.

• Select the diamond and enter a value for Location.

7 To delete the opacity stop you are editing, click Delete.

8 To add an intermediate opacity, click above the gradient bar to define a new opacity stop. You can then adjust and move this opacity as you would for a starting or ending opacity. To remove an intermediate opacity, drag its transparency stop up and off the gradient bar.

9 To create a preset gradient, click New. This creates a new gradient preset with the transparency setting you specified.

10 Click OK to exit the dialog box and select the newly created gradient.

Creating noise gradient fills

In addition to creating smooth gradients, the Gradient Editor dialog box lets you define a new noise gradient. A noise gradient is a gradient that contains randomly distributed colors within the range of colors that you specify.
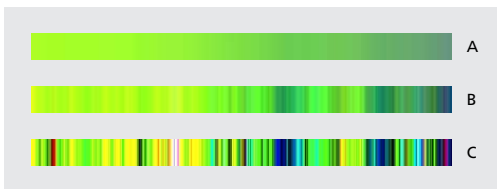
A. 10% noise B. 50% noise C. 90% noise

To create a noise gradient:

1 Select the gradient tool (▭).

2 Click in the gradient sample in the options bar to display the Gradient Editor dialog box.

3 Select a gradient from the list. The new gradient will be based on this gradient.

4 Set Gradient Type to Noise.

5 To set the roughness for the entire gradient, enter a value, or drag the slider.

6 To define the color model, choose a color model from the Color Model list.

7 To adjust the range of colors, drag the sliders. For each color component of the color model you've selected, you can drag the sliders to define the range of acceptable values. For example, if you choose the HSB model, you can restrict the gradient to blue-green hues, high saturation, and medium brightness.

8 Set the options to restrict colors or to add transparency.

9 To randomize a gradient that conforms to the settings, click the Randomize button until you find a setting you like.

10 Enter a name for the new gradient.

11 To create a preset gradient, click New. This creates a new preset gradient with the settings you specified.

12 Click OK to exit the dialog box and select the newly created gradient.

Managing gradients

By saving and loading libraries of gradients, you can customize the gradient list that appears in the gradient options bar and the Gradient Editor dialog box. For information on using the pop-up palette in the Gradient Editor dialog box, see "Using pop-up palettes" on page 35. You can also manage gradients using the Preset Manager. (For more information on the Preset Manager, see "Working with presets" on page 35.)

You can change the view of the pop-up palette to display gradients different ways. You can use the same method to change the view of the gradients in the Gradient Editor dialog box.

Using the paint bucket tool

The paint bucket tool fills adjacent pixels that are similar in color value to the pixels you click.

Note: The paint bucket tool cannot be used with images in Bitmap mode.

To use the paint bucket tool:

1 Specify a foreground color. (See "Choosing foreground and background colors" on page 74.)

2 Select the paint bucket tool (🪣).

3 Specify whether to fill the selection with the foreground color, or in Photoshop Elements, with a pattern. (See "Filling and stroking selections and layers" on page 159.)

4 Specify a blending mode and opacity for the paint. (See "Setting options for painting and editing tools" on page 147.)

5 If you choose to fill the selection with a pattern, click the inverted arrow(▾) next to the pattern sample and select a pattern for the fill. (See "Creating and editing patterns" on page 161.)

6 Enter the tolerance for the fill.

The tolerance defines how similar in color a pixel must be to be filled. Values can range from 0 to 255. A low tolerance fills pixels within a range of color values very similar to the pixel you click. A high tolerance fills pixels within a broader range.

7 To smooth the edges of the filled selection, select Anti-aliased. (See "Softening the edges of a selection" on page 108.)

8 To fill pixels based on the merged color data from all visible layers, select All Layers. (See "Sampling from all layers" on page 178.)

9 To fill only pixels contiguous to the one you click, select Contiguous; leave unselected to fill all similar pixels in the image.

10 Click the part of the image you want to fill. All specified pixels within the specified tolerance are filled with the foreground color or pattern.

If you're working on a layer and don't want to fill transparent areas, make sure that the layer's transparency is locked in the Layers palette. (See "Locking layers" on page 178.)

Drawing shapes

You use the shape tools to draw lines, rectangles, rounded rectangles, polygons, ellipses, and custom shapes in an image.

💡 *The shape tools provide an easy way to create buttons, navigation bars, and other items used on Web pages.*

Creating shapes

A shape layer can contain a single shape or multiple shapes, depending on the shape area option you select. You can change the color of a shape by editing its fill layer and applying layer styles to it.

To create a shape:

1 Select the rectangle tool (□), rounded rectangle tool (○), ellipse tool (○), polygon tool (◇), line tool (\), or custom shape tool (♥).

To select a hidden drawing tool, position the pointer on the visible tool and hold down the mouse button until the tools list appears. Then click the tool you want.

2 In the options bar, do the following:

• Select the Create New Shape Layer option (□).

• Click the color swatch to specify the color with which you want to fill the shape. (See "Using the Adobe Color Picker" on page 77.)

• Select a layer style from the Layer Style pop-up palette to apply a predefined layer style to the shape. (See "Using layer styles" on page 175.)

• If you're using the custom shape tool, select a predefined shape from the Shape pop-up palette.

• Set additional, tool-specific options. (See "Setting shape tool options" on page 156.)

3 Drag in the image to draw the shape.

To create multiple shapes in the same layer:

1 Select a layer in the Layers palette.

2 If desired, select a different tool in the options bar or the toolbox to create a different type of shape.

3 Before you draw, select a shape area option to determine what happens at the intersection of overlapping shapes.

• Add (⬚) to add the new area to the existing shapes or path.

• Subtract (⬚) to remove the overlapping area from the existing shapes or path.

• Intersect (⬚) to restrict the area to the inter-section of the new area and the existing shapes or path.

• Exclude (⬚) to exclude the overlap area in the consolidated new and existing areas.

4 Drag in the image to draw new shapes.

Setting shape tool options

Each shape tool provides specific options; for example, you can set options that allow you to draw a rectangle with fixed dimensions or a line with arrowheads.

Select a shape in the options bar, and click the inverted arrow to display options for the selected shape.

To set tool-specific options:

1 Select a shape tool.

2 In the options bar, set the options that are available for the active shape tool. Click the inverted arrow (▾) next to the shape buttons to view additional options for the active tool.

Arrowheads Start and End Renders a line with arrowheads. Select Start, End, or both to specify on which end of the line arrows are rendered. The shape options appear in the pop-up dialog box. Enter values for Width and Length to specify the proportions of the arrowhead as a percentage of the line width (10% to 1000% for Width, and 10% to 5000% for Length). Enter a value for the concavity of the arrowhead (from −50% to +50%). The concavity value defines the amount of curvature on the widest part of the arrowhead, where the arrowhead meets the line.

Circle Constrains an ellipse to a circle.

Defined Proportions Renders a custom shape based on the proportions with which it was created.

Defined Size Renders a custom shape based on the size at which it was created.

Fixed Size Renders a rectangle, rounded rectangle, ellipse, or custom shape as a fixed shape based on the values you enter in the Width and Height text boxes.

From Center Renders a rectangle, rounded rectangle, ellipse, or custom shape from the center.

Indent Sides By Renders a polygon as a star. Enter a percentage in the text box to specify the portion of the star's radius taken up by the points. A 50% setting creates points that are half the total radius of the star; a larger value creates sharper, thinner points; a smaller value creates fuller points.

Proportional Renders a rectangle, rounded rectangle, or ellipse as a proportional shape based on the values you enter in the Width and Height text boxes.

Radius For rounded rectangles, specifies the corner radius. For polygons, specifies the distance from the center of a polygon to the outer points.

Sides Specifies the number of sides in a polygon.

Smooth Corners or Smooth Indents Renders a polygon with smooth corners or indents.

Snap to Pixels Snaps edges of a rectangle or rounded rectangle to the pixel boundaries.

Square Constrains a rectangle or rounded rectangle to a square.

Unconstrained Lets you set the width and height of a rectangle, rounded rectangle, ellipse, or custom shape by dragging.

Weight Determines the width of a line in pixels.

Editing shapes

Some of the benefits of using shapes are that you can select, move, and combine shapes; change the color of shapes; and apply layer styles to shapes with just a few clicks. You can also simplify a shape layer to convert it to a regular layer.

Changing the color of shapes

In the Layers palette, shape layers are distinguished by two thumbnail icons to the left of the layer name. The left icon is the color thumbnail and displays the fill color for all shapes on the layer; the right icon is the clipping path thumbnail and displays the outline of all shapes on the layer. You can change the color of a shape by double-clicking its color thumbnail in the Layers palette.

To change the color of all shapes on a layer:

1 In the Layers palette, double-click the color thumbnail for the shape layer.

2 Use the color picker to select a new color. (See "Using the Adobe Color Picker" on page 77.)

If the color of a shape doesn't change when you pick a new color for it, check to see if the layer has a layer style (represented by an "f" icon in the Layers palette). Some layer styles override the base color of a shape. For information on clearing layer styles, see "Editing layer styles" on page 176.

Applying layer styles to shapes

You apply effects—such as drop shadows and bevels—to shapes quickly and easily using layer styles. Keep in mind that a layer style applies to all shapes on a layer. For example, if you apply a drop shadow style to a layer that contains multiple shapes, all of the shapes will display a drop shadow.

To apply a layer style to a shape:

1 Select the shape using the shape selection tool. (See "Using the shape selection tool" on page 158.)

2 Click the Layer Styles thumbnail in the options bar.

3 Scroll through the layer styles in the palette. To view additional layer styles, choose a category from the drop-down list.

4 Apply the style to the shape:

• Drag a style from the pop-up palette onto a shape in the image.

• Click a style to apply it to the shape layer.

Using the shape selection tool

The shape selection tool allows you to select shapes with one click. After you select a shape, you can move, resize, and rotate the shape.

Note: After a shape is converted to a bitmap image by simplifying the layer, the shape selection tool will no longer select the shape.

To use the shape selection tool:

Do one of the following:

• Select the shape selection tool ( ) in the toolbox. The shape selection tool may be hidden beneath another drawing tool. To select a hidden tool, position the pointer on the visible tool and hold down the mouse button until the tools list appears. Then select the desired tool.

• If another shape tool is active, click the shape selection tool in the options bar.

Moving shapes

If a layer contains multiple shapes, you can reposition all the shapes together using the move tool. However, if you want to reposition a specific shape in a layer, you must use the shape selection tool. The shape selection tool is grouped with the shape tools in the toolbox.

To move a shape:

1 Select the shape selection tool (➤).

2 Drag the shape to a new position in the image.

Transforming shapes

You can alter a shape by applying transformations to it. For example, you can scale, rotate, skew, distort, and apply perspective to a shape.

To transform a shape:

1 Select the shape selection tool (➤).

2 Do one of the following:

• Double-click the shape you want to transform.

• Select the shape you want to transform, choose Image > Transform Path, and choose a transformation command.

3 Transform the shape as described in "Transforming layers, selections, and shapes" on page 126.

Simplifying shape layers

Simplifying a shape layer converts it to a regular, raster layer. Simplifying a layer is necessary when you want to paint on a shape or apply filters to it.

To simplify a shape layer:

1 Select a shape layer in the Layers palette.

2 Do one of the following:

• Choose Layer > Simplify Layer.

• Select a shape tool in the toolbox, and click Simplify in the options bar.

Filling and stroking selections and layers

Photoshop Elements provides a variety of ways to fill a selection or a layer with colors and patterns. You can also paint a border around a selection or a layer. Layer styles allow you to fill or stroke a selection or layer to create a live editable effect, while you can also paint a fill or border to create a softer effect. (See "Managing layered images" on page 173.)

To increase the contrast between your image and the surrounding work canvas, you can fill the canvas with a color.

Filling a selection or layer with colors or patterns

You can fill a selection or layer with the foreground color, the background color, or a pattern. In Photoshop Elements, you can use patterns from the pattern libraries provided or create your own patterns. You can also fill a shape using the Color, Gradient, or Pattern Overlay effects or the Solid Color, Gradient, or Pattern fill layers on the Layers palette. When you use fill layers to fill a selection,

you can easily change the type of layer being used. (See "Using the Layers palette" on page 166 and "Using adjustment layers and fill layers" on page 181.)

To fill a selection or a layer with a foreground or background color:

1 Specify a foreground or background color. (See "Choosing foreground and background colors" on page 74.)

2 Select the area you want to fill. To fill an entire layer, select the layer in the Layers palette.

3 Choose Edit > Fill to fill the selection or layer.

4 In the Fill dialog box, for Use, choose one of the following options or select a Custom Pattern:

• Foreground Color, Background Color, Black, 50% Gray, or White to fill the selection with the specified color.

⬡ *To apply a foreground color fill only to the areas that contain pixels, press Alt+Shift+Backspace (Windows) or Option+Shift+Delete (Mac OS). This preserves the transparency of the layer. To apply a background color fill only to the areas that contain pixels, press Ctrl+Shift+Backspace (Windows) or Command+Shift+Delete (Mac OS).*

• Pattern to fill the selection with a pattern. Click the inverted arrow (▾) next to the pattern sample and select a pattern from the pop-up palette. You can load additional patterns using the pop-up palette menu. Select the name of a library of patterns or choose Load and navigate to the folder containing the patterns you want to use.

5 Specify the blending mode and opacity for the paint. (See "Setting options for painting and editing tools" on page 147.)

6 If you're working in a layer and want to fill only areas containing pixels, choose Preserve Transparency.

7 Click OK to fill the selection.

To fill the work canvas:

1 Set the foreground color you want to use for the canvas.

2 Select the paint bucket tool (⬧).

3 In the options bar, set Fill to Foreground.

4 Hold down Shift, and click in the work canvas.

Note: You need to be in full screen mode and viewing the menus to fill the work canvas.

To fill a selection with a pattern:

1 Select the part of the image you want to fill.

2 Do one of the following:

• Choose Edit > Fill. In the Fill dialog box, for Use, choose Pattern, select a pattern from the pop-up palette, and click OK.

If Pattern is dimmed, you need to load a pattern library before you can select this option. (See "Working with presets" on page 35.)

• Select the paint bucket tool (⌖). In the options bar, set Fill to Pattern and click the inverted arrow next to the pattern sample and select a pattern from the pop-up palette. Then click to fill the selected area with the pattern.

Note: You can load additional pattern libraries into the pop-up palette prior to making a selection. (See "Using pop-up palettes" on page 35.)

Stroking a selection or layer with color

You can use the Stroke command to paint a colored border around a selection or layer. This allows you to create a softer border than one created using the Stroke layer style. The Stroke layer style provides a resolution-independent method to stroke a shape. (See "Managing layered images" on page 173.) You can use the Stroke layer effect when you want to stroke the entire layer. If you want a quick way to create a stroke on the current layer—without necessarily following the edge of the layer—use the Stroke command.

To stroke a selection or layer:

1 Specify a foreground color. (See "Choosing foreground and background colors" on page 74.)

2 Select the area or layer you want to stroke.

3 Choose Edit > Stroke.

4 In the Stroke dialog box, specify the width of the hard-edged border. Values can range from 1 to 16 pixels.

5 For Location, specify whether to place the border inside, outside, or centered over the selection or layer boundaries.

6 Specify an opacity and a blending mode. (See "Setting options for painting and editing tools" on page 147.)

7 If you're working in a layer and want to stroke only areas containing pixels, select the Preserve Transparency option. (See "Locking layers" on page 178.)

8 Click OK to stroke the selection or layer.

Creating and editing patterns

In addition to using the libraries of patterns provided with Photoshop Elements, you can create your own custom patterns. Once you've created patterns, you can save them in a library, then load and manage libraries of patterns using the Preset Manager. This allows you to easily use multiple patterns in an image. You can also use the pattern stamp tool to paint with a pattern. (See "Using the pattern stamp tool" on page 133).

To create a custom pattern:

1 Make a rectangular selection around the part of the image you want to use as the pattern, or you can use the entire image. Note that large patterns may become hard to manage.

2 Choose Edit > Define Pattern.

3 Enter a name for the pattern in the Pattern Name dialog box.

The pattern you defined is repeated as tiles within the selection. If you want to reuse patterns, you can create a library of defined patterns.

To define a pattern for use with the pattern tool:

1 Use the rectangle marquee tool (⬚) on any open image to select an area to use as a pattern. Feather must be set to 0 px.

2 Choose Edit > Define Pattern and enter a name for the pattern.

3 Deselect the rectangle.

Note: If you are using a pattern from one image and applying it to another, Photoshop Elements converts the color mode.

To use a preset pattern from the PostScript Patterns folder:

1 Choose File > Open. Each preset file in the PostScript Patterns folder (which comes with Photoshop Elements) contains a single pattern in the Adobe Illustrator format. You can scale and render these patterns at any resolution.

2 Select the pattern file you want to use, and click Open.

3 Select any rasterizing options. (See "Opening and importing images" on page 55.)

4 Click OK.

5 Make a rectangular selection around the pattern, or choose Select > All.

6 Choose Edit > Define Pattern. The pattern is defined as an Adobe Photoshop Elements pattern.

7 Enter a name for the pattern in the Pattern Name dialog box.

8 Click OK.

Managing patterns

The pop-up palette in the options bar for the pattern stamp tool and the paint bucket tool, and the pop-up palette in the Layer Style dialog box can hold many patterns. You can also change how those patterns are viewed. (See "Using pop-up palettes" on page 35.) In addition, you can load or save patterns using the Preset Manager. (See "Working with presets" on page 35.)

Exiting Photoshop Elements saves the contents of the current pop-up palette in the Preferences file.

8

Chapter 8: Using Layers

L ayers are the basis for creating and editing images in Photoshop Elements. Layers help you to customize your images, and can give your images different artistic effects. Layers also make managing components in your images easier.

About layers

When you create, import, or scan an image in Photoshop Elements, the image consists of a single layer. If you're simply retouching the image, you don't have to create new layers. However, if you plan to add different elements to your image, layers will make your task a lot easier.

The power of layers is that they allow you to work on one element of your image without disturbing the others. Until you combine, or *merge*, the layers, each layer remains independent. This means you can experiment freely with different compositions without making permanent changes to your overall image. In addition, special features such as adjustment layers, fill layers, and layer styles let you create sophisticated effects.

A good way to think of layers is as sheets of acetate stacked one on top of the other. Where there is no image on a layer, you can see through to the layers below. Behind all of the layers is the background. In the following illustration, each animal and the map are on separate layers. The dark texture is the background. Depending on how you stack and position the layers, the composition changes.
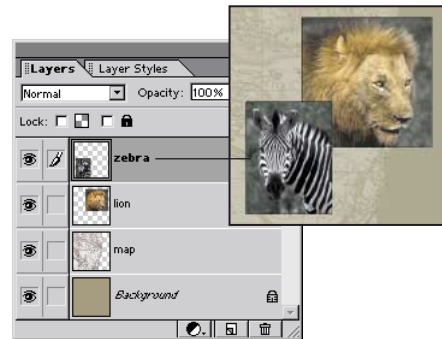
Zebra is on topmost layer.
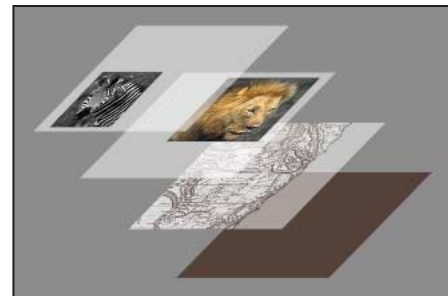
Transparent areas on a layer let you see through to the layers below.

Using the Layers palette

The Layers palette lists all layers in an image, starting with the topmost layer. The order of layers in the Layers palette indicates the order of layers in the image—the topmost layer in the Layers palette is the topmost layer in the image. You can change the stacking order of layers by dragging a layer to a new position in the Layers palette.

About the background layer

When you create a new image with a white background or a colored background, the bottommost image in the Layers palette is called *Background*. You cannot change the stacking order of a background, change its blending mode, or change its opacity. However, you can convert a background to a regular layer. (See "Adding layers" on page 170.)

When you create a new image with transparent contents, the bottommost layer is called Layer 1. This layer is not constrained like the background layer; you can move it anywhere in the Layers palette, and change its opacity and blending mode.

Because the background can never be transparent, it's helpful to have a background when you want to create an image that will not have any transparent regions. If you want to create an image with transparent regions—for example, for a transparent GIF on a Web page—you'll want to create an image without a background. For information on converting a layer to a background, see "Adding layers" on page 170.

About the Layers palette

Changes to an image affect only the highlighted or *active* layer. You select a layer to make it active, and only one layer can be active at a time. You can accomplish many tasks—such as creating, hiding, displaying, copying, and deleting a layer—using the icons in the Layers palette. You can access additional commands and options in the Layers palette menu and the Layers menu.

The Layers palette uses icons to provide information about layers. The leftmost column in the palette displays an eye icon next to visible layers and no eye icon to hidden layers.

The second column from the left shows a paintbrush icon next to the active layer; layers without the paintbrush icon cannot be modified. It also shows a link icon for layers that are linked to the active layer.

The right column lists the layer's name and may display additional icons. By default, this column also shows a thumbnail image that is updated as you edit the layer. You can change the thumbnail size or choose not to show thumbnails in the Layers palette.
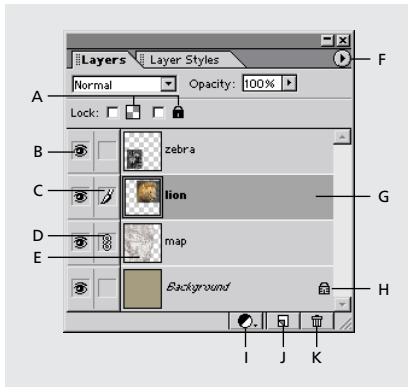
A. Layer lock options (from left to right): Transparency, All B. Show/Hide C. Paintbrush icon D. Link/Unlink E. Thumbnail F. Palette menu G. Highlighted layer is active layer. H. Partially locked layer I. New fill or adjustment layer J. New layer K. Trash

Note: If you open a file that was created in Photoshop 6.0, the image may contain layer sets. Layer sets are indicated by a folder icon and can contain multiple layers. Although Photoshop Elements does not support layer sets, it displays preexisting layer sets in their collapsed state. You can simplify a layer set to convert it to a single, editable, raster layer. (See "Simplifying layers" on page 173.)

Displaying the Layers palette

When you open Photoshop Elements for the first time, the Layers palette appears on the right side of your work area grouped with the Layer Styles palette. You can move the palette anywhere on your screen. You can close the palette to the palette well or hide it completely. (See "Using the palette well" on page 21.)

To display the Layers palette:

Choose Window > Show Layers.

Using the Layers palette menu

The Layers palette menu contains commands and options for working with layers.

To use the Layers palette menu:

1 Click the triangle (▶) at the top right corner of the palette.

2 Choose a command or option from the menu.

Selecting layers

If your image has multiple layers, you must choose what layer you want to work on. Any changes you make to the image affect only the *active* layer. You select a layer to make it active, and only one layer can be active at a time.

If you don't see the desired results when using a tool or applying a command, you may not have the correct layer selected. Check the Layers palette to make sure that you're working on the desired layer.

To select a layer:

Do one of the following:

• In the Layers palette, click a layer to make it active.

• Select the move tool, right-click (Windows) or Control-click (Mac OS) in the image, and choose the layer you want from the context menu. The context menu lists all the layers that contain pixels under the current pointer location.

You can also select layers interactively as you use the move tool. If Auto Select Layer is selected in the Move tool options, the topmost layer containing pixels under the cursor will be selected. (See "Moving selections and layers within an image" on page 110.)

Viewing layers

With the Layers palette, you can control whether a layer is visible, whether a preview or *thumbnail* of its contents is displayed, and also how transparency is displayed. Turning off thumbnails or reducing their size can save space in the Layers palette, and reduce memory usage.

To show or hide a layer:

Do one of the following:

• In the Layers palette, click the eye icon next to a layer to hide that layer. Click in the column again to redisplay the layer.

• Drag through the eye column to show or hide multiple layers.

• Alt-click (Windows) or Option-click (Mac OS) the eye icon for a layer to display just that layer. Alt/Option-click in the eye column again to redisplay all the layers.

Note: Only visible layers are printed.
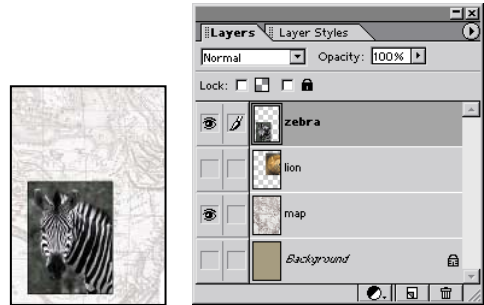
Lion layer, and background hidden

To change the display of layer thumbnails:

1 Choose Palette Options from the Layers palette menu.

2 Select a size or select None to turn off the thumbnails, and then click OK.

To change the transparency display:

1 Choose Edit > Preferences > Transparency.

2 For Grid Size, choose a pattern size. By default, the transparent areas of a document appear as a checkerboard pattern. If you choose None, transparent areas in the layer appear white.

3 For Grid Colors, choose an option:

• Light, Medium, or Dark to specify a gray pattern.

• Any other color from the list to display the checkerboard in that color.

• Custom to choose a color that does not appear in the list. Then click either of the color selection boxes to specify a custom color.

4 Click OK.

Changing the stacking order of layers

The stacking order determines whether a layer appears in front of or behind other layers.

To change the order of a layer:

1 In the Layers palette, select the layer that you want to move.

2 Choose Layer > Arrange, and choose an option from the submenu to arrange the layer:

• Bring to Front to make the layer the topmost layer.

• Bring Forward to move the layer one level up in the stacking order.

• Send Backward to move the layer one level down in the stacking order.

• Send to Back to make the layer the bottommost layer in the image (except for the background).

To change the order of layers by dragging:

1 In the Layers palette, select the layer that you want to move.

2 Drag the layer up or down in the Layers palette. When the highlighted line appears in the desired position, release the mouse button.

Original image
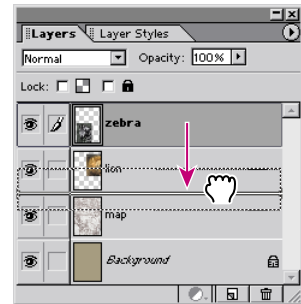
Zebra layer dragged below lion layer
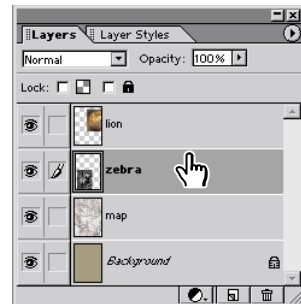
Note: *By default, the background cannot be moved from the bottom of the layer list. To move the background, first convert it to a layer. (See "Adding layers" on page 170.)*

Linking layers

By linking two or more layers, you can move their contents together. You can also copy, paste, merge, and apply transformations to linked layers.

To link layers:

1 Select a layer in the Layers palette.

2 Click in the column immediately to the left of any layers you want to link to the active layer. The link icon appears in the column.

To unlink layers:

In the Layers palette, click the link icons to remove them.

Creating a layered image

Photoshop Elements lets you create up to 8000 layers in an image, each with its own blending mode and opacity. However, the amount of memory in your system may put a lower limit on the number of layers possible in a single image.

Adding layers

Newly added layers appear above the selected layer in the Layers palette. You can add layers to an image in a variety of ways:

• By creating new layers or turning selections into layers.

• By converting a background to a regular layer or adding a background to an image.

• By pasting selections into the image. (See "Copying selections or layers" on page 110.)

• By using the type tool or by using a shape tool. (See "Creating type" on page 213 and "Drawing shapes" on page 156.)

To create a new layer using default options:

Click the New Layer button (▣) at the bottom of the Layers palette. The layer uses Normal mode with 100% opacity and is named according to its order of creation.

To add a new layer and specify options:

1 Do one of the following:

• Choose Layer > New > Layer.

• Choose New Layer from the Layers palette menu.

• Alt-click (Windows) or Option-click (Mac OS) the New Layer button at the bottom of the Layers palette.

2 Name the layer, and set other layer options. (See "Specifying opacity and blending options" on page 179 and "Creating grouped layers" on page 180.)

3 Click OK.

To turn a selection into a new layer:

1 Make a selection.

2 Choose Layer > New, and choose a command from the submenu:

• To copy the selection into a new layer, choose Layer Via Copy.

• To cut the selection and paste it into a new layer, choose Layer Via Cut.

The selection contents appear in the same position relative to the image boundaries.
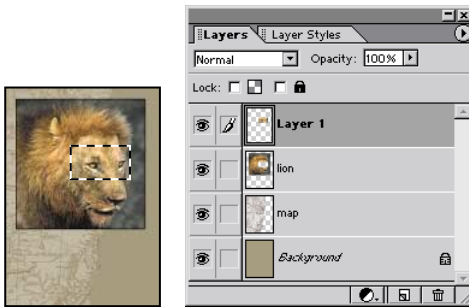
Selection cut and pasted into new layer

To convert a background into a layer:

1 Do one of the following:

• Double-click Background in the Layers palette.

• Choose Layer > New > Layer from Background.

2 Rename the layer, and click OK.

To convert a layer into a background:

1 Select a layer in the Layers palette.

2 Choose Layer > New > Background from Layer.

Duplicating layers

You can duplicate any layer (including the background) within an image. And you can copy any layer (including the background) from one image to another.

When copying layers between images, keep in mind that the printed size of the copied layer depends on the resolution of the destination image. (See "About image size and resolution" on page 46.)

To duplicate a layer in an image:

1 Select the layer in the Layers palette.

2 Duplicate the layer:

• To duplicate and rename the layer, choose Layer > Duplicate Layer, or choose Duplicate Layer from the Layers palette menu. Name the duplicate layer, and click OK.

• To duplicate without naming, select the layer and drag it to the New Layer button (◫) at the bottom of the Layers palette.

• (Windows only) Right-click on the layer bar (not the thumbnail) and choose Duplicate Layer.

To copy a layer between images:

1 Open the two images you want to use.

2 In the Layers palette of the source image, select the layer that you want to copy.

3 Do one of the following:

• Drag the layer's name from the Layers palette of the source image into the destination image.

• Use the move tool (⊹) to drag the layer from the source image to the destination image. The copied layer appears in the destination image where you release the mouse button (and above the active layer in the Layers palette). If the layer you're dragging is larger than the destination image, only part of the layer is visible. You can use the move tool to drag other sections of the layer into view.

💡 *Hold down Shift as you drag a layer to copy it in the same position it occupied in the source image (if the source and destination images have the same pixel dimensions) or to the center of the destination image (if the source and destination images have different pixel dimensions).*

• Choose Select > All to select all of the pixels on the layer, and choose Edit > Copy. Then make the destination image active, and choose Edit > Paste.

To copy multiple layers into another image:

1 Make sure that both the source and destination images are open, and select one of the layers you want to copy.

2 In the Layers palette, click in the column immediately to the left of any additional layers you want to copy. The link icon appears in the column.

3 Use the move tool (⊹) to drag the linked layers from the source image to the destination image.

To duplicate a layer into another image or a new image:

1 If you plan to copy a layer to an existing image, open both the source and destination images.

2 In the source document's Layers palette, select the name of the layer you want to duplicate.

3 Choose Layer > Duplicate Layer, or choose Duplicate Layer from the Layers palette menu.

4 Type a name for the duplicate layer.

5 Choose a destination document for the layer:

• To duplicate the layer to an existing image, choose a filename from the Document pop-up menu.

• To create a new document for the layer, choose New from the Document pop-up menu, and enter a name for the new file. An image created by duplicating a layer has no background.

6 Click OK.

Repositioning layers

You can quickly adjust the composition of an image by repositioning its layers. Using the move tool, you can make minute adjustments or radically change the position of a layer. The layer's content is preserved even if you move it outside the image area.

To reposition layers:

1 In the Layers palette, select the layer that you want to reposition. To reposition multiple layers at the same time, link the layers together in the Layers palette. (See "Linking layers" on page 170.)

2 Select the move tool (⊹).

3 Do one of the following:

• Drag in the image to move the selected layer to the desired position.

• Hold down Shift as you drag to move the layer directly up or down, directly to the side, or on a 45° diagonal. In other words, using the Shift key in this way constrains the movement to multiples of 45°.

• Press the arrow keys on the keyboard to move the layer in 1-pixel increments, or press Shift and an arrow key to move the layer in 10-pixel increments.

Managing layered images

After you add layers to an image, you can use the Layers palette to manage them. You can rename layers, delete layers, simplify layers, merge two or more layers, or flatten all layers in an image into one layer.

Renaming layers

As you add more layers to an image, it's helpful to rename layers based on their content. Using descriptive layer names allows you to easily identify layers in the Layers palette.

To rename a layer:

1 Do one of the following:

• Double-click the layer's name in the Layers palette.

• Select the layer in the Layers palette, and choose Layer > Rename Layer.

• Select the layer in the Layers palette, and choose Rename Layer from the Layers palette menu.

2 Type a new name for the layer, and click OK.

Simplifying layers

You can simplify a type layer, shape layer, solid color layer, gradient layer, pattern fill layer, or an imported layer set in order to convert the layer's content into a flat, raster image. Once you simplify a layer, you can apply filters to it and edit it with the painting tools. However, you can no longer make changes to the layer using the type- and shape-editing options.

To simplify a layer:

1 Select the layer you want to simplify.

2 Do one of the following:

• Choose Layer > Simplify Layer.

• Choose Simplify Layer from the Layers palette menu.

• Click the Simplify button in the options bar.

Deleting layers

Deleting layers that you no longer need reduces the size of your image file.

To delete a layer:

1 Select the layer in the Layers palette.

2 Do one of the following:

• Click the Trash button at the bottom of the Layers palette, and click Yes.

• Choose Layer > Delete Layer, or choose Delete Layer from the Layers palette menu.

• Alt-click (Windows) or Option-click (Mac OS) the Trash button at the bottom of the Layers palette.

• Drag the layer to the Trash button.

Merging layers

Merging layers combines several layers into one and keeps file size manageable. When you've finalized the characteristics and positioning of a layer's contents, you can merge the layer with one or more layers to create partial versions of your composite image. The intersection of all transparent areas in the merged layers remains transparent. You can also merge the layers in a linked group or grouped layer. (See "Creating grouped layers" on page 180.)

For information on merging adjustment layers, see "Merging adjustment layers or fill layers" on page 185.

Note: Merging any layer with the background creates a background layer.

To merge a layer with the layer below it:

1 Make sure that the two layers you want to merge are visible. Select the top layer of the pair in the Layers palette.

2 Choose Layer > Merge Down, or choose Merge Down from the Layers palette menu.

To merge all visible linked layers:

1 Make visible all layers you want to merge, and link them together.

2 Choose Layer > Merge Linked, or choose Merge Linked from the Layers palette menu.

To merge all the visible layers in an image:

1 Hide any layers you do not want to merge. Make sure that no hidden layers are linked to the visible layers.

2 Choose Layer > Merge Visible, or choose Merge Visible from the Layers palette menu.

To create a new, merged layer from all visible layers, while keeping the original layers intact:

1 Hide any layers you do not want to merge. Make sure that no hidden layers are linked to the visible layers.

2 Hold down Alt (Windows) or Option (Mac OS), and choose Layer > Merge Visible.

Flattening all layers

In a flattened image, all visible layers are merged into the background, greatly reducing file size. Flattening an image discards all hidden layers and fills the remaining transparent areas with white. In most cases, you won't want to flatten a file until you have finished editing individual layers.

Note: Converting an image between some color modes flattens the file. Be sure to save a copy of your file that includes all layers if you want to edit the original image after the conversion.

To flatten an image:

1 Make sure that all the layers you want to keep are visible.

2 Choose Layer > Flatten Image, or choose Flatten Image from the Layers palette menu.
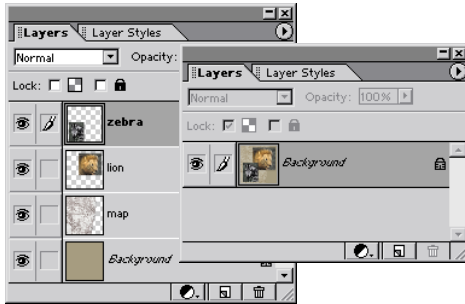
Layered file, and flattened file

Tracking file size

File size depends on the pixel dimensions of an image and the number of layers contained in the image. Images with more pixels may produce more detail when printed, but they require more disk space to store and may be slower to edit and print. You should keep track of your file sizes to make sure the files are not becoming too large for your purposes. If the file is becoming too large, reduce the number of layers in the image or change the image size.

To track file size:

Select the Document Sizes option in the status bar. (See "Using the status bar" on page 30.)

The first (left) value indicates the size of the file if flattened. The second (right) value shows the estimated file size of the unflattened file.

Using layer styles

Layer styles let you quickly apply effects to a layer's content. You can scan through a variety of predefined layer styles in the Layer Styles palette and apply a style with just a click of the mouse.

About layer styles

Layer styles allow you to apply effects—such as drop shadows and bevels—to a layer's content. The boundaries of the effect are automatically updated when you edit that layer. For example, if you apply a drop shadow style to a text layer, the shadow will change automatically when you edit the text.

Layer styles are cumulative, which means that you can create a complex effect by applying multiple styles to a layer. You can also change a layer's style settings to adjust the final effect.

Using the Layer Styles palette

The Layer Styles palette lets you view and select layer styles. Depending on the palette display options that you choose, you can view layer styles as a list of thumbnails or as a list with both names and thumbnails. The layer styles that come with Photoshop Elements are grouped into sets. For example, one set contains drop shadow styles; another set contains bevel styles. You can apply multiple styles to the same layer to create a complex effect.

To display the Layer Styles palette:

Choose Window > Show Layer Styles, or click the Layer Styles tab in the palette well.

To change the set of styles in the Layer Styles palette:

Select a style set from the pop-up list at the top of the Layer Styles palette.

To change how styles are displayed in the Layer Styles palette:

Choose a display option from the Layer Styles palette menu: Thumbnail or List.

Applying layer styles

When you apply a style to a layer, an "f" icon (𝐟) appears to the right of the layer's name in the Layers palette. Layer effects are linked to the layer contents. When you move or edit the contents of the layer, the effects are modified correspondingly.
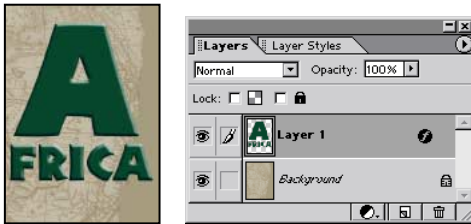
Layer style added

By default, layer styles are cumulative. For example, if you apply two styles to the same layer, the attributes of the second style are added to the attributes of the first style. You can replace the attributes of the first style with those of the second style by using a keyboard modifier.

To remove a layer style, click the Step Backward button (↩) in the shortcuts bar.

To apply a layer style to a layer:

Do one of the following:

• Click a style in the Layer Styles palette to apply it to the currently selected layer.

• Drag the style onto a layer in the Layers palette.

• Drag the style to the document window, and release the mouse button when the pointer is over the layer content to which you want to apply the style.

• Hold down Shift while dragging the style to replace any existing effects on the destination layer.

To hide or show all layer styles in the image:

Choose Layer > Layer Style > Hide All Effects, or choose Layer > Layer Style > Show All Effects.

Editing layer styles

You can edit a layer's style settings to adjust the effect. You can also copy style settings between layers and remove a style from a layer.

To edit a layer's style settings:

1 Do one of the following:

• Double-click the "f" icon (𝐟) in the Layers palette.

• Choose Layer > Layer Style > Style Settings.

2 To preview the changes in your image, select Preview.

3 Adjust one or more of the following settings, and click OK. If a setting is dimmed, it is not present in the effect you are using, and therefore you cannot adjust it.

Lighting Angle Specifies the lighting angle at which the effect is applied to the layer.

Use Global Light Applies the lighting angle to all styles in the image. Using a global angle gives the appearance of a consistent light source shining on the image.

Shadow Distance Specifies the distance of a drop shadow from the layer's content.

Outer Glow Size Specifies the size of a glow that emanates from the outside edges of the layer's content.

Inner Glow Size Specifies the size of a glow that emanates from the inside edges of the layer's content.

Bevel Size Specifies the size of beveling along the inside edges of the layer's content.

Bevel Direction Specifies the direction of the bevel, either Up or Down.

To change the scale of a layer style:

1 In the Layers palette, select the layer containing style effects you want to scale.

2 Choose Layer > Layer Style > Scale Effect.

3 To preview the changes in your image, select Preview.

4 Specify how much you want to scale the effects. Scaling applies only to shadow distance, outer glow size, inner glow size, and bevel size. For example, at 200%, the shadow distance, outer glow size, inner glow size, and bevel size are doubled; at 100%, the scale remains the same.

5 Click OK.

To copy style settings between layers:

1 In the Layers palette, select the layer containing the style settings you want to copy.

2 Choose Layer > Layer Style > Copy Layer Style.

3 Select the destination layer in the Layers palette, and choose Layer > Layer Style > Paste Layer Style.

To remove a layer style:

1 In the Layers palette, select the layer containing the style you want to remove.

2 Do one of the following:

• Choose Layer > Layer Style > Clear Layer Style.

• Click Default Style in the Layer Styles palette.

Editing layers

A newly created layer is transparent. You can add color values to the layer using the painting and editing tools, and then apply filters or use special effects to modify the layer. All painting and editing occurs on the active layer.

Locking layers

You can fully or partially lock layers to protect their contents. When a layer is locked, a lock displays to the right of the layer name. The lock is solid when the layer is fully locked so that no editing is possible; it is hollow when only the layer's transparency is locked. Locked layers can be moved to a different location within the stacking order of the Layers palette, but they cannot be deleted. When a layer is fully locked, you cannot edit the pixels, move the image, or change the opacity, blending mode, or layer style applied to that layer. When a layer's transparency is locked, painting and editing are confined to those areas of a layer already containing pixels. For example, you can lock a layer's transparency if you want to edit an object (adding special effects, changing color) without adding pixels to the transparent area outside the object.

To lock all layer properties:

1 Select the layer in the Layers palette.

2 Click the Lock All icon (🔒) at the top of the Layers palette.

To confine editing to the opaque portions of a layer:

1 Select the layer in the Layers palette.

2 Click the Lock Transparency icon (▦) at the top of the Layers palette.

Note: For type and shape layers, transparency is locked by default and cannot be unlocked.

Painting with transparency locked

Sampling from all layers

By default, when working with the magic wand, smudge, blur, sharpen, or clone stamp tool, you are applying color sampled only from pixels on the active layer. This means you can smudge or sample in a single layer even when other layers are visible, and you can sample from one layer and paint in another one.

Alternatively, you can choose to paint using sampled data from all the visible layers. For example, you can use the clone stamp tool to clone an area containing pixels from all the visible layers.

To sample from all visible layers:

1 Select the magic wand tool (✎), smudge tool (✍), blur tool (◊), sharpen tool (△), or clone stamp tool (⚘).

2 In the options bar, select Use All Layers.

Cloning with zebra layer, and with merged data from all layers

Selecting opaque areas on a layer

You can quickly select all the opaque areas on a layer within the layer boundaries. This is useful when you want to exclude transparent areas from a selection.

To select all opaque areas on a layer:

Do one of the following:

• In the Layers palette, Ctrl-click (Windows) or Command-click (Mac OS) the layer thumbnail.

• Right-click (Windows) on the layer thumbnail in the Layers palette.
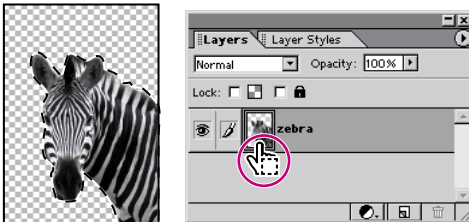
Layer pixels loaded as selection

• To add the pixels to an existing selection, press Ctrl+Shift (Windows) or Command+Shift Mac OS), and click the layer thumbnail in the Layers palette.

• To subtract the pixels from an existing selection, press Ctrl+Alt (Windows) or Command+Option (Mac OS), and click the layer thumbnail in the Layers palette.

• To load the intersection of the pixels and an existing selection, press Ctrl+Alt+Shift (Windows) or Command+Option+Shift (Mac OS), and click the layer thumbnail in the Layers palette.

Specifying opacity and blending options

Keep in mind that a layer's opacity and blending mode interact with the opacity and mode of the tools you use to paint and edit the pixels on the layer. For example, suppose you are working on a layer that uses the Dissolve mode and an opacity of 50%. If you paint on this layer using the paint-brush tool set to Normal mode with an opacity of 100%, the paint will appear in Dissolve mode with a 50% opacity because this is the maximum the layer can display. On the other hand, suppose you are working on a layer created using Normal mode and 100% opacity. If you use the eraser tool with an opacity of 50%, only 50% of the paint will disappear as you erase.

Specifying opacity

A layer's opacity determines to what degree it obscures or reveals the layer beneath it. A layer with 1% opacity appears nearly transparent, while one with 100% opacity appears completely opaque.
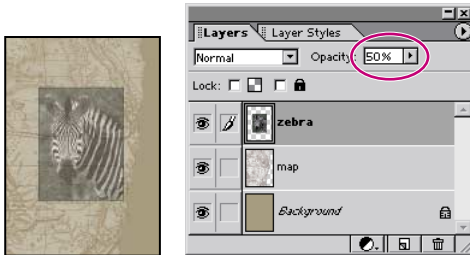
Zebra layer with 50% opacity

To specify opacity for a layer:

1 Select the layer in the Layers palette.

2 In the Layers palette, enter a value for Opacity or drag the Opacity pop-up slider.

Specifying layer blending modes

You use layer blending modes to determine how the pixels in a layer or set of layers are blended with underlying pixels in the image. By applying modes to layers, you can create a variety of special effects.

For a description of each blending mode, see "Selecting a blending mode" on page 147.

To specify a blending mode for a layer:

1 Select the layer in the Layers palette.

2 Choose an option from the Blending Mode pop-up menu.

Filling a new layer with a neutral color

Some filters (such as the Lighting Effects filter) cannot be applied to layers with no pixels. Selecting Fill with Neutral Color in the New Layer dialog box resolves this problem by first filling the layer with a preset, neutral color. The neutral color is assigned based on the layer's blending mode and is invisible. If no effect is applied, filling with a neutral color has no effect on the remaining layers. The Fill with Neutral Color option is not available for layers that use the Normal, Dissolve, Hue, Saturation, Color, or Luminosity modes.

Creating grouped layers

In grouped layers, the bottommost layer, or *base layer*, defines the boundaries for the entire group. For example, you might have a shape on one layer, a photographic image on the overlying layer, and some text on the topmost layer. If you define all three layers as grouped, the texture and the text appear only through the shape on the base layer, and take on the opacity of the base layer.

Note that only successive layers can be included in a group. The name of the base layer in the group is underlined, and the thumbnails for the overlying layers are indented. Additionally, the overlying layers display a grouped layer icon (⌐).
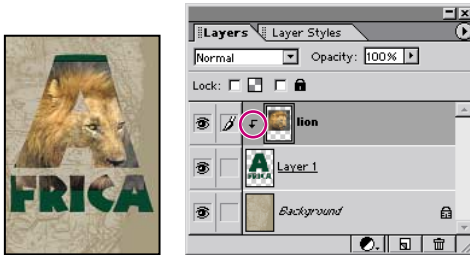
Grouped layer with Layer 1 and lion layers

To create grouped layers:

1 Do one of the following:

• Hold down Alt (Windows) or Option (Mac OS), position the pointer over the line dividing two layers in the Layers palette (the pointer changes to two overlapping circles (•◉)), and click.

• Select a layer in the Layers palette, and choose Layer > Group with Previous.

• Link together the desired layers in the Layers palette. (See "Linking layers" on page 170.) Then choose Layer > Group Linked.

• When creating a new layer, select Group with Previous in the New Layer dialog box.

The grouped layer is assigned the opacity and mode attributes of the bottommost layer in the group.

To remove a layer from a grouped layer:

Do one of the following:

• Hold down Alt (Windows) or Option (Mac OS), position the pointer over the line separating two grouped layers in the Layers palette (the pointer changes to two overlapping circles (•◉)), and click.

• In the Layers palette, select a layer in the grouped layer, and choose Layer > Ungroup. This command removes the selected layer and any layers above it from the grouped layer.

To ungroup all layers:

1 In the Layers palette, select the base layer in the grouped layer.

2 Choose Layer > Ungroup.

To merge grouped layers:

1 Make visible all the layers in the group that you want to merge (any hidden layers in the group are discarded when you merge).

2 Select the base layer in the group.

3 Choose Layer > Merge Group, or choose Merge Group from the Layers palette menu.

Using adjustment layers and fill layers

Adjustment layers and fill layers add another level of flexibility to working with layers. Adjustment layers allow you to experiment with color and tonal adjustment to an image; fill layers allow you to quickly add color, pattern, and gradient elements to an image. If you change your mind about the results, you can go back and edit or remove the adjustment or fill at any time.

About adjustment layers

Adjustment layers let you experiment with color and tonal adjustments to an image without permanently modifying the pixels in the image. The color and tonal changes reside within the adjustment layer, which acts as a veil through which the underlying image layers appear. Keep in mind that an adjustment layer affects all the layers below it. This means that you can correct multiple layers by making a single adjustment, rather than making the adjustment to each layer separately.
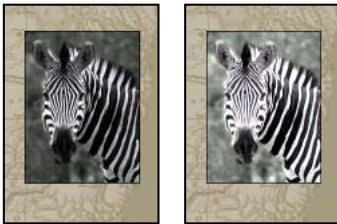
Original, and levels adjustment applied
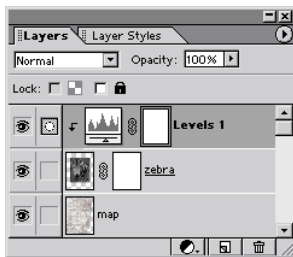
Layers palette with adjustment layer

About fill layers

Fill layers let you fill a layer with a solid color, a gradient, or a pattern. Unlike adjustment layers, fill layers do not affect the layers underneath them.

Creating adjustment layers or fill layers

Adjustment layers and fill layers have the same opacity and blending mode options as image layers and can be rearranged in order, deleted, hidden, and duplicated in the same manner as image layers. By default, adjustment layers and fill layers take the name of the adjustment/fill type. Adjustment layers display a partially filled circle to the right of the layer name.
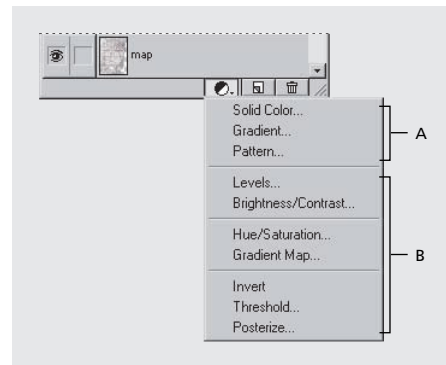
A. Fill layers B. Adjustment layers

To create an adjustment layer or fill layer:

1 To confine the effects of the adjustment layer or fill layer to a selected area, make a selection. To confine the effects of an adjustment layer to the layers immediately below it, create a grouped layer consisting of these layers. (See "Creating grouped layers" on page 180.)

2 Do one of the following:

• Click the New Adjustment Layer button (⬤) at the bottom of the Layers palette, and choose the layer type you want to create.

• Choose Layer > New Fill Layer, and choose an option from the submenu. Then name the layer, set other layer options, and click OK. (See "Specifying opacity and blending options" on page 179 and "Creating grouped layers" on page 180.)

• Choose Layer > New Adjustment Layer, and choose an option from the submenu. Then name the layer, set other layer options, and click OK. (See "Specifying opacity and blending options" on page 179 and "Creating grouped layers" on page 180.)

3 Choose from the following layer properties, and then click OK.

Solid Color Specify a color. (See "Using the Adobe Color Picker" on page 77.)

Gradient Click the gradient to display the Gradient Editor, or click the inverted arrow ($\triangledown$) and choose a gradient from the pop-up palette. (See "Creating or editing gradient fills" on page 151.) Set additional options if desired. Style specifies the shape of the gradient. Angle specifies the angle at which the gradient is applied. Scale changes the size of the gradient. Reverse flips the orientation of the gradient. Dither reduces banding by applying dithering to the gradient. Align With Layer uses the bounding box of the layer to calculate the gradient fill. You can use the mouse to move the center of the gradient by clicking and dragging in the image window.

Pattern Click the pattern, and choose a pattern from the pop-up palette. Click Scale and enter a value or drag the slider to scale the pattern. Click Snap to Origin to position the origin of the pattern with that of the document window. (See "Using rulers and the grid" on page 27.) Select Link With Layer to specify that the pattern moves with the fill layer as it is relocated. When Link With Layer is selected, you can drag in the image to position the pattern while the Pattern Fill dialog box is open. You can edit the pattern settings, then click the New Preset button ($\boxminus$) to create a new preset pattern. For more information on creating patterns and loading pattern presets, see "Creating and editing patterns" on page 161 and "Working with presets" on page 35.

Levels Specify values for the highlights, shadows, and midtones. (See "Using the Levels dialog box" on page 87.)

Brightness/Contrast Specify values for Brightness and Contrast. (See "Using the Brightness/Contrast command" on page 87.)

Hue/Saturation Choose which colors to edit, and specify values for Hue, Saturation, and Lightness. (See "Using the Hue/Saturation command" on page 92.)

Gradient Map Choose a gradient and set gradient options. (See "Using the Gradient Map command" on page 98.)

Invert Invert adjustment layers don't have options. (See "Using the Invert command" on page 96.)

Threshold Specify a threshold level. (See "Using the Threshold command" on page 96.)

Posterize Specify the number of tonal levels for each color channel. (See "Using the Posterize command" on page 97.)

Editing adjustment layers or fill layers

Once you create an adjustment or fill layer, you can easily edit the settings, or dynamically replace it with a different adjustment or fill type.

You can also edit the *mask* of an adjustment layer or fill layer. A layer mask protects sections of a layer (or the entire layer) from being edited and can be used to show or hide sections of an image. When the layer mask is attached to an adjustment or fill layer, it is used to control the effect that the layer has on the image. By default, all areas of an adjustment or fill layer are "unmasked" and, therefore, are showing.

The layer mask is a grayscale image, so what you paint in black will be hidden, what you paint in white will show, and what you paint in gray shades will show in various levels of transparency. Masks can be edited like a grayscale image.
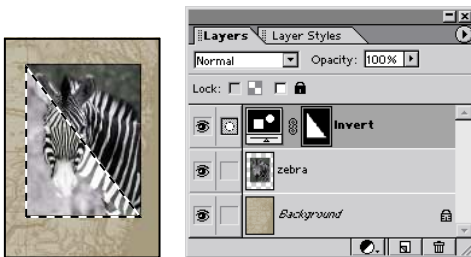
Adjustment layer with triangular mask added

To edit an adjustment or fill layer:

1 Do one of the following:

• Double-click the adjustment or fill layer's thumbnail in the Layers palette.

• Choose Layer > Layer Content Options.

2 Make the desired adjustments, and click OK.

Note: Inverted adjustment layers do not have editable settings.

To change the content of an adjustment or fill layer:

1 Select the adjustment layer or fill layer that you want to change.

2 Choose Layer > Change Layer Content and select a different fill or adjustment layer from the list.

To edit the layer mask for an adjustment or fill layer:

1 Select the adjustment layer or fill layer in the Layers palette.

2 Select any painting or editing tool.

3 Use the following methods to view the layer mask:

• Alt-click (Windows) or Option-click (Mac OS) the adjustment layer thumbnail to view only the grayscale mask. Alt/Option-click the thumbnail again to redisplay the other layers.

• Hold down Alt+Shift (Windows) or Option+Shift (Mac OS), and click the adjustment layer thumbnail to view the mask in a rubylith masking color. Hold down Alt/Option+Shift and click the thumbnail again to turn off the rubylith display.

• Shift-click the adjustment layer thumbnail to turn off the masking effects temporarily; click the thumbnail again to turn on the mask.

4 Edit the layer mask:

• To constrain editing to part of the mask, make a selection. (See "Making pixel selections" on page 103.)

• To remove the adjustment effect or fill, paint the layer mask with black.

• To display the full effect of the adjustment or fill over the image layers beneath, paint the layer mask with white.

• To partially remove the adjustment effect or fill, paint the layer mask with gray. The extent to which the effect or fill is removed depends on the tones of gray you use to paint.

Merging adjustment layers or fill layers

You can merge an adjustment or fill layer several ways: with the layer below it, with the layers in its own grouped layer, with the layers it is linked to, and with all other visible layers. You cannot, however, use an adjustment layer or fill layer as the target layer for a merge. When you merge an adjustment layer or fill layer with the layer below it, the adjustments are rasterized and become permanently applied within the merged layer. (See "Merging layers" on page 174.) You can also rasterize a fill layer without merging it. (See "Simplifying layers" on page 173.)

Adjustment layers and fill layers whose masks contain only white values do not add significantly to the file size, so it is not necessary to merge these adjustment layers to conserve file space.

9

Chapter 9: Applying Filters and Effects

A photographer places filters over the camera lens to create visual effects. Adobe Photoshop Elements provides filters you can use to simulate photographic effects and to create visual effects beyond the bounds of traditional photography.

Using filters

Filters let you apply special effects to your images, such as impressionistic or mosaic effects, lighting effects, and distortions. You can also create your own effects using the Custom filter, or you can install plug-in filters sold by non-Adobe software developers.

Filters appear in the Filters palette and in the Filter menu. Keep in mind the following guidelines when selecting a filter:

• Filters are applied to the active, visible layer.

• Filters cannot be applied to Bitmap-mode or indexed-color images.

• The last filter applied appears at the top of the Filter menu.

Using the Filters palette

The Filters palette lets you view and select filter effects.
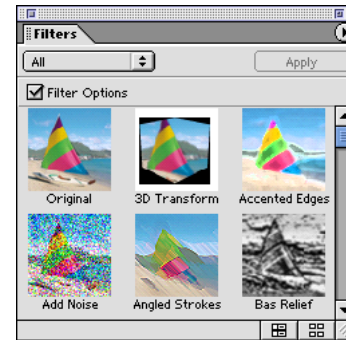
Filters palette

To display the Filters palette:

Choose Window > Show Filters Browser, or click the Filters tab in the palette well.

To change the visible filters in the Filters palette:

Select a set of filters from the pop-up list at the top of the Filters palette. Select All to view a list of all filters.

To change how filter effects are displayed in the Filters palette:

Do one of the following:

• Click the List View button (⊞) at the bottom of the Filters palette to view the filters by their names. When you select a filter name, a thumbnail of the filter effect displays on the left side of the palette.

• Click the Thumbnail View button (⊞) at the bottom of the Filters palette to view the filters as thumbnails.

• Choose a display option from the Filters palette menu: List View or Thumbnail View. (See "Using palette menus" on page 23.)

Previewing and applying filters

Applying filters—especially to large images—can be time-consuming. You can view an example of the effect in the Filters palette. Some filters also let you preview the effect before you apply it to your image.

💡 *To save time when trying various filters, experiment on a small, representative part of your image.*

To preview and apply a filter:

1 To apply a filter to an area of a layer, select that area. To apply a filter to the entire layer, leave the layer unselected.

2 Do one of the following:

• In the Filters palette, select the filter you want to apply. If the filter provides optional settings, select Filter Options to view the options, or deselect Filter Options to apply the default filter settings. (Filter Options are not available for all filters.) Then, double-click the filter, select the filter and click Apply, or drag a filter into the image.

• Choose a filter from the submenus in the Filter menu. If a filter name is followed by ellipses (…), a dialog box appears.

3 If a dialog box appears, enter values or select options.

💡 *To display the dialog box for the last filter you applied, press Ctrl+Alt+F (Windows) or Command+Option+F (Mac OS).*

4 If the dialog box contains a preview window, use the following navigation methods to preview the effect:

• Click in the image window to center a specific area of the image in the preview window.

Note: This does not work with all preview windows.

• Drag in the preview window to center a specific area of the image in the window.

• Use the + or – button under the preview window to zoom in or zoom out on the preview.

A flashing line beneath the preview size indicates that the preview is still being rendered.

5 If available, select the Preview option to preview the filter effect on the entire image.

6 Click OK to apply the filter.

A progress indicator in the status bar (Windows) or progress bar (Mac OS) lets you gauge the time remaining until the filter is applied.

Loading images and textures

To produce their effects, some filters load and use other images, such as textures and displacement maps. These filters include the Conté Crayon, Displace, Glass, Lighting Effects, Rough Pastels, Texture Fill, Texturizer, Underpainting, and Custom.

Not all of these filters load images or textures in the same way. (See "Using the Lighting Effects filter" on page 207.)

To load images and textures:

1 Use the Filters palette to apply the desired filter, or choose the filter from the appropriate submenu in the Filter menu.

2 Choose Load Texture in the Texture pop-up menu. Locate and open a texture image.

All textures must be in the Photoshop format. Most filters use only the grayscale information of a color file.

3 Click OK.

Defining undistorted areas

The Displace, Shear, and Wave filters in the Distort submenu and the Offset filter in the Other submenu let you treat areas undefined by the filter in the following ways:

• Wrap Around fills the undefined space with content from the opposite edge of the image.

• Repeat Edge Pixels extends the colors of pixels along the image's edge in the direction specified. Banding may result if the edge pixels are different colors.

• Set to Background (Offset filter only) fills the selected area with the current background color.

Using texture and glass surface controls

The Conté Crayon, Glass, Rough Pastels, Texturizer, and Underpainting filters have texturizing options. These options make images appear as if they were painted onto textures such as canvas and brick or viewed through glass blocks.

To use texture and glass surface controls:

1 Use the Filters palette to apply the desired filter, or choose the filter from the appropriate submenu in the Filter menu.

2 For Texture, choose a texture type or choose Load Texture to specify a Photoshop file.

3 Drag the Scaling slider to enlarge or reduce the effect on the image surface.

4 Drag the Relief slider (if available) to adjust the depth of the texture's surface.

5 Select Invert to reverse the surface's light and dark colors.

6 For Light Direction, indicate the direction of the light source on the image.

7 Click OK.

Using effects

Effects let you achieve complex effects through the automatic sequencing of filters, layer styles, and/or program functions. You can scan through a variety of effects in the Effects palette.

Effects palette

To display the Effects palette:

Choose Window > Show Effects Browser, or click the Effects tab in the palette well.

To apply an effect:

1 To apply an effect to an area of an image, select that area. To apply an effect to the entire image, make sure that no areas are selected in the image.

2 Do one of the following:

• Select an effect in the Effects palette, and click Apply.

• Drag an effect from the Effects palette to the image.

3 When prompted, click Yes to keep the effect, or click No to discard the effect.

Note: To undo multiple actions effects, such as Blizzard, you must undo multiple times to clear all the actions.

To change the visible effects in the Effects palette:

Select a set of effects from the pop-up list at the top of the Effects palette. Select All to view a list of all effects.

To change how effects are displayed in the Effects palette:

Do one of the following:

• Click the List View button (⊞) at the bottom of the Effects palette to view the effects by their names. When you select an effect name, a thumbnail of the effect displays on the left side of the palette.

• Click the Thumbnail View button (⊞) at the bottom of the Effects palette to view the effects as thumbnails.

• Choose a display option from the Effects palette menu: List View or Thumbnail View. (See "Using palette menus" on page 23.)

Tips for applying special filter effects

Try the following techniques to apply special effects with filters.

Apply edge effects You can use various techniques to treat the edges of a filter effect applied to only part of an image. To leave a distinct edge, simply apply the filter. For a soft edge, feather the edge, and then apply the filter.

Apply filters to layers You can apply filters to individual layers or to several layers in succession to build up an effect. For a filter to affect a layer, the layer must be visible and must contain pixels— for example, a neutral fill color. (See "Filling a new layer with a neutral color" on page 180.)

Apply backgrounds By applying filter effects to solid-color or grayscale images, you can generate a variety of backgrounds and textures. You might then blur these textures. Although some filters have little or no visible effect when applied to solid colors (for example, Glass), others produce interesting effects. You might try Add Noise, Chalk & Charcoal, Clouds, Conté Crayon, Craquelure, Difference Clouds, Glass, Grain, Graphic Pen, Halftone Pattern, Mezzotint, Mosaic Tiles, Note Paper, Patchwork, Pointillize, Reticulation, Rough Pastels, Sponge, Stained Glass, Texture Fill, Texturizer, and Underpainting.

Improve image quality and consistency You can disguise faults, alter or enhance, or make a series of images look related by applying the same effect to each.

Improving performance with filters

Some filter effects can be memory intensive, especially when applied to a high-resolution image. You can use these techniques to improve performance:

• Try out filters and settings on a small portion of an image.

• Free up memory before running the filter by using the Purge command. (See "Correcting mistakes" on page 32.)

• Allocate more RAM to Photoshop Elements. If necessary, exit from other applications to make more memory available to Photoshop Elements.

• Try changing settings to improve the speed of memory-intensive filters, such as Lighting Effects, Cutout, Stained Glass, Chrome, Ripple, Spatter, Sprayed Strokes, and Glass filters. (For example, with the Stained Glass filter, increase cell size. With the Cutout filter, increase Edge Simplicity, or decrease Edge Fidelity, or both.)

Choosing a filter effect

The built-in filters are grouped into sets. In addition, any third-party filters installed appear at the bottom of the Filter menu.

Artistic filters Achieve a painterly or special effect for a fine arts or commercial project. For example, use the Cutout filter for collages or type treatment. These filters replicate natural or traditional media effects. (See "Artistic filters" on page 195.)

Blur filters Soften a selection or an image. Blur filters are useful for retouching. They smooth transitions by averaging the pixels next to the hard edges of defined lines and shaded areas in an image. (See "Blur filters" on page 196.)

Note: To apply a Blur filter to the edges of a layer, be sure to unlock the transparency in the Layers palette. (See "Locking layers" on page 178.)

Brush Stroke filters Like the Artistic filters, the Brush Stroke filters give a painterly or fine-arts look using different brush and ink stroke effects. Some of the filters add grain, paint, noise, edge detail, or texture to an image for a pointillist effect. (See "Brush Stroke filters" on page 197.)

Distort filters Geometrically distort an image, creating reshaping effects. Note that these filters can be very memory intensive. (See "Distort filters" on page 197.)

Noise filters Add or remove *noise*, or pixels with randomly distributed color levels. This helps to blend a selection into the surrounding pixels. Noise filters can create unusual textures or remove problem areas, such as dust and scratches, from an image. The Add Noise filter can be used to reduce banding in feathered selections or graduated fills or to give a more realistic look to heavily retouched areas. (See "Noise filter" on page 199.)

Pixelate filters Sharply define a selection by clumping pixels of similar color values in cells. (See "Pixelate filters" on page 200.)

Render filters Create 3D shapes, cloud patterns, refraction patterns, and simulated light reflections in an image. You can also manipulate objects in 3D space, create 3D objects (cubes, spheres, and cylinders), and create texture fills from grayscale files to produce 3D-like effects for lighting. (See "Render filters" on page 201.)

When using the Clouds filter, generate a more stark cloud pattern by holding down Alt (Windows) or Option (Mac OS) as you choose Filter > Render > Clouds.

Sharpen filters Focus blurry images by increasing the contrast of adjacent pixels. They include the Sharpen Edges and Unsharp Mask filters, which find and sharpen areas where significant color changes occur (such as the edges). The Unsharp Mask filter is commonly used for high-end color correction. (See "Sharpen filters" on page 202.)

Sketch filters Add texture to images, often for a 3D effect. The filters also are useful for creating a fine-arts or hand-drawn look. Many of the Sketch filters use the foreground and background color as they redraw the image. (See "Sketch filters" on page 202.)

For a truer effect, change the foreground color to one of the common Conté Crayon colors (black, sepia, sanguine) before applying the filter.

Stylize filters Produce a painted or impression-istic effect on a selection by displacing pixels and by finding and heightening contrast in an image. After using filters such as Find Edges and Trace Contour that highlight edges, you can apply the

Invert command to outline the edges of a color image with colored lines or to outline the edges of a grayscale image with white lines. (See "Stylize filters" on page 203.)

Texture filters Give images the appearance of depth or substance, or add an organic look. (See "Texture filters" on page 205.)

Video filters Include the NTSC (National Television Standards Committee) Color filter, which restricts the gamut of colors to those acceptable for television reproduction, and the De-Interlace filter, which smooths moving images captured on video. (See "Video filters" on page 205.)

Other filters Let you create your own custom filter effects, offset a selection within an image, and make quick color adjustments. (See "Other filters" on page 206.)

Digimarc filter Lets you view a Digimarc watermark. (See "Viewing file information" on page 31.)

Artistic filters

Choose an Artistic filter to replicate natural or traditional media effects.

Colored Pencil Draws an image using colored pencils on a solid background. Important edges are retained and given a rough crosshatch appearance; the solid background color shows through the smoother areas.

For a parchment effect, change the background color just before applying the Colored Pencil filter to a selected area.

Cutout Portrays an image as though it were made from roughly cut-out pieces of colored paper. High-contrast images appear as if in silhouette, while colored images are built up from several layers of colored paper.

Dry Brush Paints the edges of the image using a dry brush technique (between oil and watercolor). The filter simplifies an image by reducing its range of colors to areas of common color.

Film Grain Applies an even pattern to the shadow tones and midtones of an image. A smoother, more saturated pattern is added to the image's lighter areas. This filter is useful for eliminating banding in blends and visually unifying elements from various sources.

Fresco Paints an image in a coarse style using short, rounded, and hastily applied dabs.

Neon Glow Adds various types of glows to the objects in an image and is useful for colorizing an image while softening its look. To select a glow color, click the Glow Color box and select a color from the color picker.

Paint Daubs Lets you choose from various brush sizes (from 1 to 50) and types for a painterly effect. Brush types include simple, light rough, dark rough, wide sharp, wide blurry, and sparkle.

Palette Knife Reduces detail in an image to give the effect of a thinly painted canvas that reveals the texture underneath.

Plastic Wrap Coats the image in shiny plastic, accentuating the surface detail.

Poster Edges Reduces the number of colors in an image (posterizes) according to the posterization option you set, and finds the edges of the image and draws black lines on them. Large broad areas of the image have simple shading while fine dark detail is distributed throughout the image.

Rough Pastels Makes an image appear as if stroked with colored pastel chalk on a textured background. In areas of bright color, the chalk appears thick with little texture; in darker areas, the chalk appears scraped off to reveal the texture. For more on the filter options, see "Using texture and glass surface controls" on page 191.

Smudge Stick Softens an image using short diagonal strokes to smudge or smear the darker areas of the images. Lighter areas become brighter and lose detail.

Sponge Creates images with highly textured areas of contrasting color, appearing to have been painted with a sponge.

Underpainting Paints the image on a textured background, and then paints the final image over it. For more on the filter options, see "Using texture and glass surface controls" on page 191.

Watercolor Paints the image in a watercolor style, simplifying details in an image, using a medium brush loaded with water and color. Where significant tonal changes occur at edges, the filter saturates the color.

Blur filters

The Blur filters soften a selection or an image, and are useful for retouching. They smooth transitions by averaging the pixels next to the hard edges of defined lines and shaded areas in an image.

Note: To apply a Blur filter to the edges of a layer, be sure to deselect the Lock transparent pixels option in the Layers palette.

Blur and Blur More Eliminate noise where significant color transitions occur in an image. Blur filters smooth transitions by averaging the pixels next to the hard edges of defined lines and shaded areas. The Blur More filter produces an effect three or four times stronger than that of the Blur filter.

Gaussian Blur Quickly blurs a selection by an adjustable amount. Gaussian refers to the bell-shaped curve that is generated when Photoshop Elements applies a weighted average to the pixels. The Gaussian Blur filter adds low-frequency detail and can produce a hazy effect.

Motion Blur Blurs in a particular direction (from −360º to +360º) and at a specific intensity (from 1 to 999). The filter's effect is analogous to taking a picture of a moving object with a fixed exposure time.

Radial Blur Simulates the blur of a zooming or rotating camera to produce a soft blur. Choose Spin, to blur along concentric circular lines, and then specify a degree of rotation; or Zoom, to blur along radial lines, as if zooming in or out of the image, and specify an amount from 1 to 100. Blur quality ranges from Draft for the fastest but grainy

results; or Good and Best for smoother results, which are indistinguishable except on a large selection. Specify the origin of the blur by dragging the pattern in the Blur Center box.

Smart Blur Precisely blurs an image. You can specify a radius, to determine how far the filter searches for dissimilar pixels to blur; a threshold, to determine how different the pixels' values should be before they are eliminated; and a blur quality. You also can set a mode for the entire selection (Normal), or for the edges of color transitions (Edge Only and Overlay Edge). Where significant contrast occurs, Edge Only applies black-and-white edges, and Overlay Edge applies white.

Brush Stroke filters

Like the Artistic filters, the Brush Stroke filters give a painterly or fine-arts look using different brush and ink stroke effects. Some of the filters add grain, paint, noise, edge detail, or texture to an image for a pointillist effect.

Accented Edges Accentuates the edges of an image. When the edge brightness control is set to a high value, the accents resemble white chalk; when set to a low value, the accents resemble black ink.

Angled Strokes Repaints an image using diagonal strokes. The lighter areas of the image are painted in strokes going in one direction, while the darker areas are painted in strokes going the opposite direction.

Crosshatch Preserves the details and features of the original image while adding texture and roughening the edges of the colored areas in the image with simulated pencil hatching. The appearance of the hatching can be adjusted with the Stroke Length and Sharpness options. The Strength option controls the number of hatching passes, from 1 to 3.

Dark Strokes Paints dark areas of an image closer to black with short, tight strokes, and paints lighter areas of the image with long, white strokes.

Ink Outlines Redraws an image with fine narrow lines over the original details, in pen-and-ink style.

Spatter Replicates the effect of a spatter airbrush. Increasing the options simplifies the overall effect.

Sprayed Strokes Repaints an image, using its dominant colors with angled, sprayed strokes of color.

Sumi-e Paints an image in Japanese style, as if with a wet brush full of black ink on rice paper. The effect is soft blurry edges with rich blacks.

Distort filters

The Distort filters geometrically distort an image, creating 3D or other reshaping effects. Note that these filters can be very memory intensive.

Diffuse Glow Renders an image as though it were viewed through a soft diffusion filter. The filter adds see-through white noise to an image, with the glow fading from the center of a selection.

Displace Uses an image, called a *displacement map*, to determine how to distort a selection. For example, using a parabola-shaped displacement map, you can create an image that appears to be printed on a cloth held at its corners.

This filter creates displacement maps, using a file with flattened layers saved in Photoshop format (except Bitmap mode images). You can also use the files included with your software (search for the Displacement maps folder).

To use Displace:

1 Choose Filter > Distort > Displace, or use the Filters palette to apply the Displace filter.

2 Enter the scale for the magnitude of the displacement.

When the horizontal and vertical scales are set to 100%, the greatest displacement is 128 pixels (because middle gray produces no displacement).

3 If the displacement map is not the same size as the selection, choose how the map will fit the image—Stretch to Fit to resize the map, or Tile to fill the selection by repeating the map in a pattern.

4 Choose Wrap Around or Repeat Edge Pixels to determine how undistorted areas of the image will be treated. (See "Defining undistorted areas" on page 191.)

5 Click OK.

6 Select and open the displacement map. The distortion is applied to the image.

The Displace filter shifts a selection using a color value from the displacement map—0 is the maximum negative shift, 255 is the maximum positive shift, and a gray value of 128 produces no displacement.

Glass Makes an image appear as if it is being viewed through different types of glass. You can choose a glass effect or create your own glass surface as a Photoshop file and apply it. You can adjust scaling, distortion, and smoothness settings. When using surface controls with a file, follow the instructions for the Displace filter. For more information about Glass filter controls, see "Using texture and glass surface controls" on page 191.

Ocean Ripple Adds randomly spaced ripples to the image's surface, making the image look as if it were under water.

Pinch Squeezes a selection. A positive value up to 100% shifts a selection toward its center; a negative value up to –100% shifts a selection outward.

Polar Coordinates Converts a selection from its rectangular to polar coordinates, and vice versa, according to a selected option. You can use this filter to create a cylinder *anamorphosis*—art popular in the 18th century—in which the distorted image appears normal when viewed in a mirrored cylinder.

Ripple Creates an undulating pattern on a selection, like ripples on the surface of a pond. For greater control, use the Wave filter. Options include the amount and size of ripples.

Shear   Distorts an image along a curve. Specify the curve by dragging the line in the box to form a curve for the distortion. You can adjust any point along the curve. Click Default to return the curve to a straight line. In addition, you choose how to treat undistorted areas. (See "Defining undistorted areas" on page 191.)

Spherize   Gives objects a 3D effect by wrapping a selection around a spherical shape, distorting the image and stretching it to fit the selected curve.

Twirl   Rotates a selection more sharply in the center than at the edges. Specifying an angle produces a twirl pattern.

Wave   Works in a similar way to the Ripple filter, but with greater control. Options include the Number of Generators, Wavelength (distance from one wave crest to the next), Amplitude, Scale (the height of the wave), and Type: Sine (rolling), Triangle, or Square. The Randomize option applies random values. You can also define Undefined Areas. (See "Defining undistorted areas" on page 191.)

To replicate wave results on other selections, click Randomize, set the Number of Generators to 1, and set the minimum and maximum Wavelength and Amplitude parameters to the same value.

ZigZag   Distorts a selection radially, depending on the radius of the pixels in your selection. The Ridges option sets the number of direction reversals of the zigzag from the center of the selection to its edge. You also choose how to displace the pixels: Pond Ripples displaces pixels to the upper left or lower right, Out From Center displaces pixels toward or away from the center of the selection, and Around Center rotates pixels around the center.

Liquify filter

Lets you warp, twirl, expand, contract, shift, and reflect areas of the image. (See "Using the Liquify filter" on page 124.) The Liquify filter is accessible in the Filters menu and in the Filters palette under All filters and Distort filters.

Noise filter

The Noise filters add or remove *noise*, or pixels with randomly distributed color levels. This helps to blend a selection into the surrounding pixels. Noise filters can create unusual textures or remove problem areas, such as dust and scratches, from an image.

Add Noise   Applies random pixels to an image, simulating the effect of shooting pictures on high-speed film. The Add Noise filter can also be used to reduce banding in feathered selections or graduated fills or to give a more realistic look to heavily retouched areas. Options include noise distribution: Uniform distributes color values of noise using random numbers between 0 and plus or minus the specified value for a subtle effect; Gaussian distributes color values of noise along a bell-shaped curve for a speckled effect. The Monochromatic option applies the filter to only the tonal elements in the image without changing the colors.

Despeckle Detects the edges in an image (areas where significant color changes occur) and blurs all of the selection except those edges. This blurring removes noise while preserving detail.

Dust & Scratches Reduces noise by changing dissimilar pixels. To achieve a balance between sharpening the image and hiding defects, try various combinations of radius and threshold settings. Or apply the filter on selected areas in the image.

To use the Dust & Scratches filter:

1 Choose Filter > Noise > Dust & Scratches, or use the Filters palette to apply the Dust & Scratches filter.

2 If necessary, adjust the preview zoom ratio until the area containing noise is visible.

3 Drag the Threshold slider left to 0 to turn off the value, so that all pixels in the selection or image can be examined.

The Threshold determines how different the pixels' values should be before they are eliminated.

Note: The Threshold slider gives greater control for values between 0 and 128—the most common range for images—than for values between 128 and 255.

4 Drag the Radius slider left or right, or enter a value in the text box from 1 to 100 pixels. The radius determines how far the filter searches for differences among pixels.

Adjusting the radius makes the image blurry. Stop at the smallest value that eliminates the defects.

5 Increase the threshold gradually by entering a value or by dragging the slider to the highest value possible that eliminates defects.

6 Click OK.

Median Reduces noise in an image by blending the brightness of pixels within a selection. The filter searches the radius of a pixel selection for pixels of similar brightness, discarding pixels that differ too much from adjacent pixels, and replaces the center pixel with the median brightness value of the searched pixels. This filter is useful for eliminating or reducing the effect of motion on an image.

Pixelate filters

The filters in the Pixelate submenu sharply define a selection by clumping pixels of similar color values in cells.

Color Halftone Simulates the effect of using an enlarged halftone screen on the image. The filter divides the image into rectangles and replaces each rectangle with a circle. The circle size is proportional to the brightness of the rectangle.

To use the Color Halftone filter:

1 Choose Filter > Pixelate > Color Halftone, or use the Filters palette to apply the Color Halftone filter.

2 Enter a value in pixels for the maximum radius of a halftone dot, from 4 to 127.

3 Enter a screen-angle value (the angle of the dot from the true horizontal) for one or more channels:

• For Grayscale images, use only channel 1.

• For RGB images, use channels 1, 2, and 3, which correspond to the red, green, and blue channels.

• Click Defaults to return all the screen angles to their default values. Or press Alt (Windows) or Option (Mac OS) to switch the Cancel button to a Reset button.

4 Click OK.

Crystallize Clumps pixels into a solid color in a polygon shape.

Facet Clumps pixels of solid or similar colors into blocks of like-colored pixels. You can use this filter to make a scanned image look hand painted or to make a realistic image resemble an abstract painting.

Fragment Creates four copies of the pixels in the selection, averages them, and offsets them from each other.

Mezzotint Converts an image to a random pattern of black-and-white areas or of fully saturated colors in a color image. To use the filter, choose a dot pattern from the Type menu in the Mezzotint dialog box.

Mosaic Clumps pixels into square blocks. The pixels in a given block are the same color, and the colors of the blocks represent the colors in the selection.

Pointillize Breaks up the color in an image into randomly placed dots, as in a pointillist painting, and uses the background color as a canvas area between the dots.

Render filters

The Render filters create 3D shapes, cloud patterns, refraction patterns, and simulated light reflections in an image. You can also manipulate objects in 3D space, create 3D objects (cubes, spheres, and cylinders), and create texture fills from grayscale files to produce 3D-like effects for lighting.

3D Transform Maps images to cubes, spheres, and cylinders, which you can then rotate in three dimensions. (See "Transforming objects in three dimensions" on page 130.)

Clouds Generates a soft cloud pattern using random values that vary between the foreground and the background color. To generate a more stark cloud pattern, hold down Alt (Windows) or Option (Mac OS) as you choose Filter > Render > Clouds.

Difference Clouds Uses randomly generated values that vary between the foreground and background color to produce a cloud pattern. The filter blends the cloud data with the existing pixels in the same way that the Difference mode blends colors. The first time you choose this filter, portions of the image are inverted in a cloud pattern. Applying the filter several times creates rib and vein patterns that resemble a marble texture.

Lens Flare Simulates the refraction caused by shining a bright light into the camera lens. Specify a location for the center of the flare by clicking anywhere inside the Flare Center thumbnail or by dragging its cross hair. Enter a value to control the Brightness of the flare or specify a Lens Type to adjust the shape of the flare.

Lighting Effects Lets you produce myriad lighting effects on RGB images by varying 17 light styles, 3 light types, and 4 sets of light properties. You can also use textures from grayscale files (called *bump maps*) to produce 3D-like effects and save your own styles for use in other images. (See "Lighting Effects filter" on page 207.)

Texture Fill Fills a selection with a grayscale file or part of a file. To add the texture to the document or selection, you open the grayscale document you want to use as the texture fill.

Sharpen filters

The Sharpen filters focus blurry images by increasing the contrast of adjacent pixels.

Sharpen and Sharpen More Focus a selection and improve its clarity. The Sharpen More filter applies a stronger sharpening effect than does the Sharpen filter.

Sharpen Edges and Unsharp Mask Find the areas in the image where significant color changes occur and sharpen them. The Sharpen Edges filter sharpens only edges while preserving the overall smoothness of the image. Use this filter to sharpen edges without specifying an amount. For professional color correction, use the Unsharp Mask filter to adjust the contrast of edge detail and produce a lighter and darker line on each side of the edge. This process will emphasize the edge and create the illusion of a sharper image. (See "Sharpening images" on page 98.)

Sketch filters

Filters in the Sketch submenu add texture to images, often for a 3D effect. The filters also are useful for creating a fine-arts or hand-drawn look. Many of the Sketch filters use the foreground and background color as they redraw the image.

Bas Relief Transforms an image to appear carved in low relief and lit to accent the surface variations. Dark areas of the image take on the foreground color, light areas use the background color.

Chalk & Charcoal Redraws an image's highlights and midtones with a solid midtone gray background drawn in coarse chalk. Shadow areas are replaced with black diagonal charcoal lines. The charcoal is drawn in the foreground color, the chalk in the background color.

Charcoal Redraws an image to create a posterized, smudged effect. Major edges are boldly drawn, while midtones are sketched using a diagonal stroke. Charcoal is the foreground color, and the paper is the background color.

Chrome Treats the image as if it were a polished chrome surface. Highlights are high points and shadows are low points in the reflecting surface. After applying the filter, use the Levels dialog box to add more contrast to the image.

Conté Crayon Replicates the texture of dense dark and pure white Conté crayons on an image. The Conté Crayon filter uses the foreground color for dark areas and the background color for light areas. For a truer effect, change the foreground color to one of the common Conté Crayon colors (black, sepia, sanguine) before applying the filter.

For a muted effect, change the background color to white with some foreground color added to it before applying the filter. (See "Using texture and glass surface controls" on page 191.)

Graphic Pen Uses fine, linear ink strokes to capture the details in the original image and is especially striking with scanned images. The filter replaces color in the original image, using the foreground color for ink and background color for paper.

Halftone Pattern Simulates the effect of a halftone screen while maintaining the continuous range of tones. There are line, circle, and dot options for the pattern type.

Note Paper Creates an image that appears to be constructed of handmade paper. The filter simplifies an image and combines the effects of the Stylize > Emboss and Texture > Grain filters. Dark areas of the image appear as holes in the top layer of paper, revealing the background color.

Photocopy Simulates the effect of photocopying an image. Large areas of darkness tend to copy only around their edges, and midtones fall away to either solid black or white.

Plaster Molds an image from 3D plaster, and then colorizes the result using the foreground and background color. Dark areas are raised, light areas are sunken.

Reticulation Simulates the controlled shrinking and distorting of film emulsion to create an image that appears clumped in the shadow areas and lightly grained in the highlights.

Stamp Is best used with black-and-white images. The filter simplifies the image to appear stamped with a rubber or wood stamp.

Torn Edges Is particularly useful for images consisting of text or high-contrast objects. The filter reconstructs the image as ragged, torn pieces of paper, and then colorizes the image using the foreground and background color.

Water Paper Uses blotchy daubs that appear painted onto fibrous, damp paper, causing the colors to flow and blend.

Stylize filters

The Stylize filters produce a painted or impressionistic effect on a selection by displacing pixels and by finding and heightening contrast in an image. After using filters like Find Edges and Trace Contour that highlight edges, you can apply the Invert command to outline the edges of a color image with colored lines or to outline the edges of a grayscale image with white lines. (See "Using the Invert command" on page 96.)

Diffuse Shuffles pixels in a selection to make the selection look less focused according to the selected option: Normal moves pixels randomly, ignoring color values; Darken Only replaces light pixels with darker pixels; and Lighten Only replaces dark pixels with lighter pixels.

Emboss Makes a selection appear raised or stamped by converting its fill color to gray and tracing the edges with the original fill color. Options include an embossing angle (from –360° to lower (stamp) the surface, to +360° to raise the surface), height, and a percentage (1% to 500%) for the amount of color within the selection.

Extrude Gives a 3D texture to a selection or layer.

To use the Extrude filter:

1 Choose Filter > Stylize > Extrude, or use the Filters palette to apply the Extrude filter.

2 Choose a 3D type:

• Blocks creates objects with a square front face and four side faces.

• Pyramids creates objects with four triangular sides that meet at a point.

3 Enter a value in the Size text box to determine the length of any side of the object's base, from 2 to 255 pixels.

4 Enter a value in the Depth text box to indicate how far the tallest object appears to protrude from the screen, from 1 to 255.

5 Choose a depth option:

• Random to give each block or pyramid an arbitrary depth.

• Level-based to make each object's depth correspond to its brightness—bright protrudes more than dark.

6 Select Solid Front Faces to fill the front face of each block with an averaged color of the block. Deselect Solid Front Faces to fill the front face of each block with the image. This option is not available for Pyramids.

7 Select Mask Incomplete Blocks to hide any object extending beyond the selection.

8 Click OK.

Find Edges Identifies the areas of the image with significant transitions and emphasizes the edges. Like the Trace Counter filter, Find Edges outlines the edges of an image with dark lines against a white background and is useful for creating a border around an image.

Glowing Edges Identifies the edges of color and adds a neon-like glow to them.

Solarize Blends a negative and a positive image— similar to exposing a photographic print briefly to light during development.

Tiles Breaks up an image into a series of tiles, off-setting the selection from its original position. You can choose one of the following to fill the area between the tiles: Background Color, Foreground Color, Inverse Image, or Unaltered Image, which puts the tiled version on top of the original and reveals part of the original image underneath the tiled edges.

Trace Contour Finds the transitions of major brightness areas and thinly outlines them for an effect similar to the lines in a contour map.

To use the Trace Contour filter:

1 Choose Filter > Stylize > Trace Contour, or use the Filters palette to apply the Trace Contour filter.

2 Choose an Edge option to outline areas in the selection: Lower outlines where the color values of pixels fall below the specified level, and Upper outlines where the color values fall above.

3 Enter a threshold (Level) for evaluating color values (tonal level), from 0 to 255. Experiment to see what values bring out the best detail in the image.

Use the Info palette in Grayscale mode to identify a color value that you want traced. Then enter the value in the Level text box. (See "Using the Info palette" on page 29.)

4 Click OK.

Wind Creates tiny horizontal lines in the image to simulate a wind effect. Methods include Wind; Blast, for a more dramatic wind effect; and Stagger, which offsets the wind lines in the image.

Texture filters

Use the Texture filters to give an image the appearance of depth or substance, or to add an organic look.

Craquelure Paints an image onto a high-relief plaster surface, producing a fine network of cracks that follow the contours of the image. Use this filter to create an embossing effect with images that contain a broad range of color or grayscale values.

Grain Adds texture to an image by simulating different kinds of grain—regular, soft, sprinkles, clumped, contrasty, enlarged, stippled, horizontal, vertical, and speckle. The sprinkles and stippled options use the background color.

Mosaic Tiles Draws the image as if it were made up of small chips or tiles and adds grout between the tiles. (In contrast, the Pixelate > Mosaic filter breaks up an image into blocks of different-colored pixels.)

Patchwork Breaks up an image into squares filled with the predominant color in that area of the image. The filter randomly reduces or increases the tile depth to replicate the highlights and shadows.

Stained Glass Repaints an image as single-colored adjacent cells outlined in the foreground color.

Texturizer Allows you to select a texture from a list or select a file to use as a texture. (See "Using texture and glass surface controls" on page 191.)

Video filters

The Video submenu contains the De-Interlace and NTSC Colors filters.

De-Interlace Smooths moving images captured on video by removing either the odd or even interlaced lines in a video image. You can choose to replace the discarded lines by duplication or interpolation.

NTSC Colors Restricts the gamut of colors to those acceptable for television reproduction to prevent oversaturated colors from bleeding across television scan lines.

Other filters

Filters in the Other submenu let you create your own filter effects, use filters to modify masks, offset a selection within an image, and make quick color adjustments.

Custom Lets you design your own filter effect. With the Custom filter, you can change the brightness values of each pixel in the image according to a predefined mathematical operation known as *convolution*. Each pixel is reassigned a value based on the values of surrounding pixels.

You can save the custom filters you create and use them with other Photoshop images.

To apply a Custom filter effect:

1 Choose Filter > Other > Custom, or use the Filters palette to apply the Custom filter.

2 Select the center text box, which represents the pixel being evaluated. Enter the value by which you want to multiply that pixel's brightness value, from –999 to +999.

3 Select a text box representing an adjacent pixel. Enter the value by which you want the pixel in this position multiplied.

For example, to multiply the brightness value of the pixel to the immediate right of the current pixel by 2, enter **2** in the text box to the immediate right of the center text box.

Note: To avoid turning the image completely white or black, the sum of the values in the matrix should equal 1.

4 Repeat steps 2 and 3 for all pixels to include in the operation. You don't have to enter values in all the text boxes.

5 For Scale, enter the value by which to divide the sum of the brightness values of the pixels included in the calculation.

6 For Offset, enter the value to be added to the result of the scale calculation.

7 Click OK. The custom filter is applied to each pixel in the image, one at a time.

Use the Save and Load buttons to save and reuse custom filters.

DitherBox™ Creates a custom dither pattern for a selected RGB color. (See "Creating and applying custom dither patterns" on page 237.)

High Pass Retains edge details in the specified radius where sharp color transitions occur and suppresses the rest of the image. (A radius of 0.1 pixel keeps only edge pixels.) The filter removes low-frequency detail in an image and has an effect opposite to that of the Gaussian Blur filter.

It is helpful to apply the High Pass filter to a continuous-tone image before using Image > Adjustment > Threshold or converting the image to Bitmap mode. The filter is useful for extracting line art and large black-and-white areas from scanned images.

Minimum and Maximum Are useful for modifying masks. The Minimum filter has the effect of applying a spread—spreading out black areas and shrinking white areas. The Maximum filter has the effect of applying a choke—spreading out white areas and choking in black areas. Like the Median filter, the Maximum and Minimum filters look at

individual pixels in a selection. Within a specified radius, the Maximum and Minimum filters replace the current pixel's brightness value with the greatest or least brightness value of the surrounding pixels.

Offset Moves a selection a specified amount horizontally to the right or vertically down, leaving an empty space at the selection's original location. Depending on the size of the selection, you can fill the empty area with a transparent background, with the edge pixels, or with pixels from the right or bottom edges of an image. (See "Defining undistorted areas" on page 191.)

Lighting Effects filter

The Lighting Effects filter lets you produce myriad lighting effects on RGB images. You can also use textures from grayscale files (called *bump maps*) to produce 3D-like effects and save your own styles for use in other images.

Using the Lighting Effects filter

The Lighting Effects filter allows adjustment of light styles, light types, light properties, and a texture channel.

To use the Lighting Effects filter:

1 Choose Filter > Render > Lighting Effects, or use the Filters palette to apply the Lighting Effects filter.

2 For Style, choose a style. (See "Choosing a Lighting Effects style" on page 209.)

3 For Light Type, choose a type from the menu. If you're using multiple lights, select and deselect On to turn individual lights on and off. (See "Choosing a Lighting Effects type" on page 208.)

4 To change the color of the light, click the color box in the Light Type section of the dialog box.

The color picker chosen in the General Preferences dialog box opens. For information on choosing a color picker, see "Using the Adobe Color Picker" on page 77, or "Using other color pickers" on page 79.

5 To set light properties, drag the corresponding slider for the following options:

• Gloss determines how much the surface reflects light (as on the surface of a piece of photographic paper) from Matte (low reflectance) to Shiny (high reflectance).

• Material determines whether the light or the object on which the light is cast reflects more light. Plastic reflects the light's color, Metallic reflects the object's color.

• Exposure increases the light (positive values) or decreases the light (negative values). A value of 0 has no effect.

• Ambience diffuses the light as if it were combined with other light in a room, such as sunlight or fluorescent light. Choose a value of 100 to use only the light source, or a value of –100 to diffuse the light source. To change the color of the ambient light, click the color box and use the color picker that appears.

To duplicate a light, Alt-drag (Windows) or Option-drag (Mac OS) the light within the preview window.

6 To use a texture fill, choose a color in the Texture Channel pop-up menu. (See "Using a Lighting Effects texture" on page 210.)

7 Click OK to apply the filter.

Choosing a Lighting Effects type

You can choose from several light types.

• Omni shines light in all directions from directly above the image—like a light bulb over a piece of paper.

• Directional shines light from one angle—like the parallel light rays of the sun.

• Spotlight casts an elliptical beam of light. The line in the preview window defines the light direction and angle, and the handles define the edges of the ellipse.

To adjust an Omni light:

1 Choose Filter > Render > Lighting Effects, or use the Filters palette to apply the Lighting Effects filter.

2 For Light Type, choose Omni.

3 Adjust the light:

• To move the light, drag the center circle.

• To increase or decrease the size of the light (like a light moving closer or farther away), drag one of the handles defining the edges of the light.

4 Click OK to apply the filter.

To adjust the angle and height of the Directional light using the preview window:

1 Choose Filter > Render > Lighting Effects, or use the Filters palette to apply the Lighting Effects filter.

2 For Light Type, choose Directional.

3 Adjust the light:

• To move the light, drag the center circle.

• To change the direction of the light, drag the handle at the end of the line to rotate the light's angle. Ctrl-drag (Windows) or Command-drag (Mac OS) to keep the light's height (line length) constant.

• To change the light's height, drag the handle at the end of the line. Shorten the line for a bright light, lengthen it for a less intense one. A very short line produces pure white light, a very long one no light. Shift-drag to keep the angle constant and change the light's height (line length).

4 Click OK to apply the filter.

To adjust the angle and height of the Spotlight using the preview window:

1 Choose Filter > Render > Lighting Effects, or use the Filters palette to apply the Lighting Effects filter.

2 For Light Type, choose Spotlight.

3 Adjust the light:

• To move the light, drag the center circle.

• To increase the light angle, drag the handle at the end of the line to shorten the line. To decrease the light angle, drag to lengthen the line.

• To stretch the ellipse or rotate the light, drag one of the handles. Shift-drag to keep the angle constant and change only the size of the ellipse. Ctrl-drag (Windows) or Command-drag (Mac OS) to keep the size constant and change the angle or direction of the spotlight.

• To set the light focus (or spotlight intensity) and control how much of an ellipse is filled with light, drag the Intensity slider: full intensity (a value of 100) is brightest; normal intensity is about 50; negative intensity takes away light; and 0 intensity produces no light. Use the Focus slider to control how much of the ellipse is filled with light.

4 Click OK to apply the filter.

Choosing a Lighting Effects style

Use the Style menu in the Lighting Effects dialog box to choose from 17 light styles. You can also create your own lighting style by adding lights to any setting. The Lighting Effects filter requires at least one light source. Only one light can be edited at a time, but all added lights will be used to create the effect.

2 o'clock Spotlight A yellow spotlight with medium (17) intensity and wide (91) focus.

Blue Omni A blue overhead omni light with full (85) intensity and no focus.

Circle of Light Four spotlights. White has full (100) intensity and a concentrated (8) focus. Yellow has strong intensity (88) and a concentrated focus (3). Red has medium (50) intensity and a concentrated (0) focus. Blue has full (100) intensity and medium (25) focus.

Crossing A white spotlight with medium (35) intensity and a wide (69) focus.

Crossing Down Two white spotlights with medium (35) intensity and wide (100) focus.

Default A white spotlight with a medium (35) intensity and a wide (69) focus.

Five Lights Down/Five Lights Up Five white spotlights down or up with full (100) intensity and wide (60) focus.

Flashlight An omni yellow light with medium (46) intensity.

Flood Light A white spotlight with medium (35) intensity and wide (69) focus.

Parallel Directional A directional blue light with full (98) intensity and no focus, or a white directional light with medium (50) intensity and no focus.

RGB Lights Red, blue, and green lights that produce a light of medium (60) intensity and wide (96) focus.

Soft Direct Lights Two unfocused white and blue directional lights. White has a soft (20) intensity. Blue has a medium (67) intensity.

Soft Omni A soft omni light of medium (50) intensity.

Soft Spotlight A white spotlight with full (98) intensity and wide (100) focus.

Three Down Three white spotlights with medium (35) intensity and wide (96) focus.

Triple Spotlight Three spotlights with medium (35) intensity and wide (100) focus.

To add a light:

In the Lighting Effects dialog box, drag the light icon at the bottom of the dialog box into the preview area. Repeat as desired for a maximum of 16 lights.

To delete a light:

In the Lighting Effects dialog box, drag the light by its center circle to the Trash button at the bottom right of the preview window.

To create a new style:

1 In the Lighting Effects dialog box, choose any style from the Style menu.

2 Drag the light icon at the bottom of the dialog box into the preview area. The light source can be placed outside the image area. Repeat as desired for a maximum of 16 lights.

To save a style:

1 In the Lighting Effects dialog box, click Save.

2 Name the style, and click OK.

Saved styles include all of the settings for each light and appear in the Style menu whenever you open an image in Photoshop Elements.

To delete a style:

In the Lighting Effects dialog box, choose a style, and then click Delete.

Note: Default style cannot be deleted.

Using a Lighting Effects texture

The Texture Channel control in the Lighting Effects dialog box lets you manipulate how light reflects off an image. You can create a texture effect based on the light and dark areas of the red, green, and blue color information in your image. You can also choose to use the layer transparency of the active layer to create a texture effect.

To use the Texture Channel in the Lighting Effects dialog box:

1 In the Lighting Effects dialog box, choose a color from the Texture Channel pop-up menu.

2 Select White is High to raise the light parts of the channel from the surface. Deselect this option to raise the dark parts.

3 Drag the Height slider to vary the depth of the texture from Flat (0) to Mountainous (100).

4 Click OK.

About plug-in filters

You can install plug-in filters developed by non-Adobe software developers. Once installed, the plug-in filters should appear at the bottom of the Filter menu unless specified by the developer. Plug-in filters must be created and installed by the filter developer especially for Photoshop Elements for previews to appear in the Filters browser.

If you are interested in creating plug-in modules, contact Adobe Systems Developer Support. (See "Using plug-in modules" on page 40.)

Note: If you have problems or questions about a third-party plug-in, contact the plug-in's manufacturer for support.
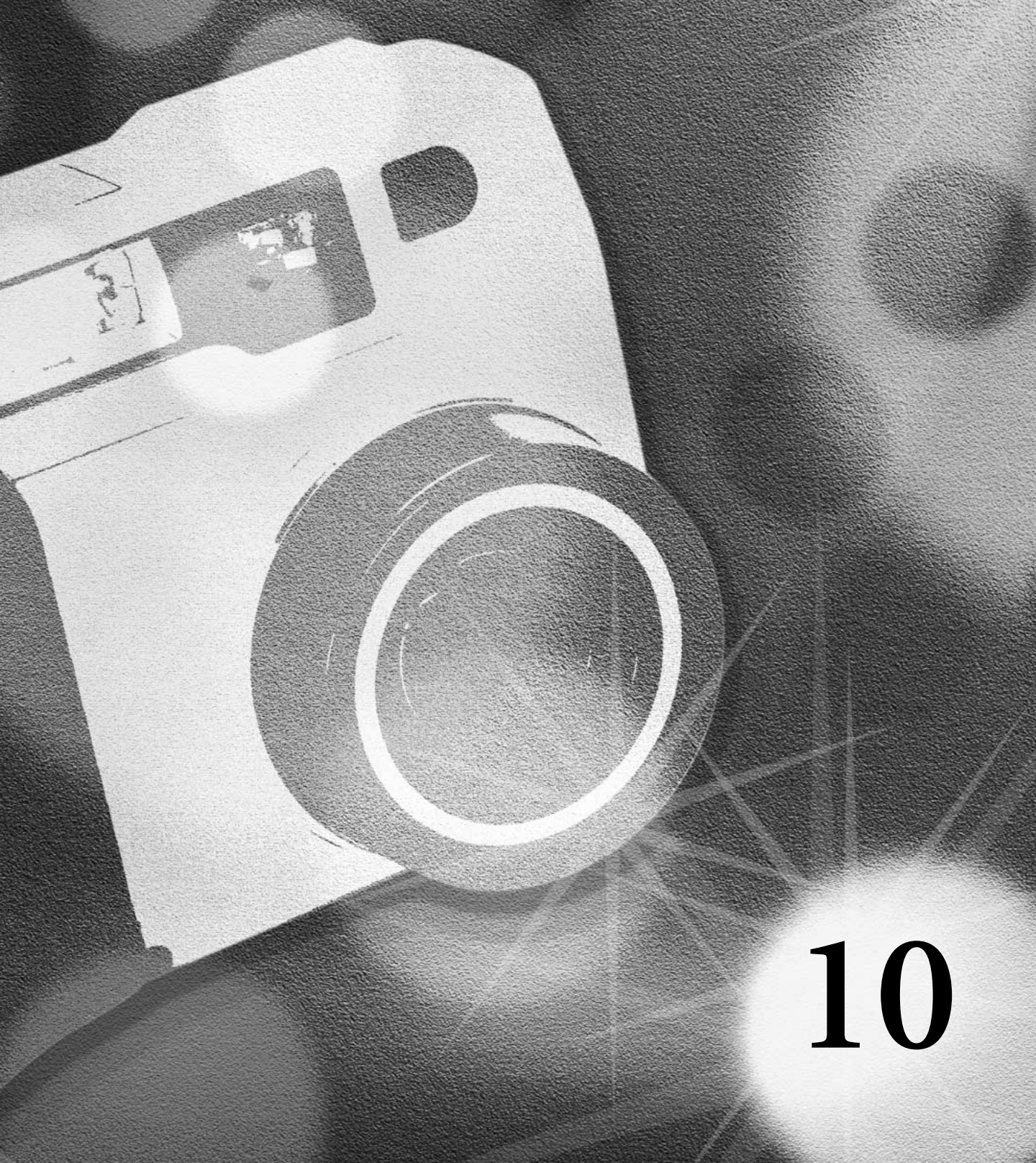
10

Chapter 10: Using Type

Adobe Photoshop Elements lets you add type to images with flexibility and precision. You can create and edit type directly on-screen (instead of in a dialog box) and quickly change the font, style, size, and color of the type.

About type

Type consists of mathematically defined shapes that describe the letters, numbers, and symbols of a *typeface*. Many typefaces are available in more than one format, the most common formats being Type 1 (also called PostScript fonts), TrueType, and OpenType.

Creating type

In Photoshop Elements, you create and edit type directly on-screen (instead of in a dialog box). This is advantageous because you can always see how the type fits into your composition.

When you select a type tool, the options bar displays a variety of options for creating type. You can choose to create type on a new type layer, or you can create a selection border in the shape of the type. You can also set the font, style, size, and color of the type in the options bar.

Note: Bitmap mode and Indexed Color mode do not support layers. In these image modes, type appears on the background and cannot be edited with the type tool.

About using the type tools

Clicking in an image with a type tool puts the type tool in edit mode. You can enter and edit characters when the tool is in edit mode; however, you must commit changes to the type layer before you can perform other operations. For example, you cannot select a command from the Layer menu while the type tool is in edit mode. To determine if the type tool is in edit mode, look in the options bar—if you see the OK button (☑) and Cancel button (☒), the type tool is in edit mode.

To commit changes to a type layer:

Do one of the following:

• Click the OK button (☑) in the options bar.

• Press the Enter key on the numeric keypad.

• Press Ctrl+Enter on the main keyboard (Windows) or Command+Return (Mac OS).

• Click in the image, select a tool in the toolbox, or click in a palette.

Entering type

You can enter type horizontally or vertically, depending on which type tool you select. Each line of type you enter is independent—the length of a line grows or shrinks as you edit it, but it doesn't wrap to the next line.

To enter type:

1 Select the horizontal type tool (**I**) or the vertical type tool (**↓T**).

2 Make sure that the Create a text layer button (**T**) in the options bar is selected.

3 Click in the image to set an insertion point for the type. The small line through the I-beam marks the position of the type *baseline*. For horizontal type, the baseline marks the line on which the type rests; for vertical type, the baseline marks the center axis of the type characters.

4 Select additional type options in the options bar. (See "Formatting characters" on page 217.)

5 Enter the characters you want. Press Enter on the main keyboard (Windows) or Return (Mac OS) to begin a new line.

6 Commit the type layer. (See "About using the type tools" on page 213.)

The type you entered appears in a new type layer.

Note: Clicking the Cancel button (✖*) discards the type layer.*

Creating a type selection border

You can use a type tool to create a selection in the shape of type. Type selections appear on the active layer instead of creating a type layer. The selections can be moved, copied, filled, or stroked just like any other selection. For example, you can use the paint bucket tool to fill the type selection with a pattern.

To create a type selection border:

1 Select a layer in the Layers palette. For best results, create the type selection border on a normal image layer, not on a type layer.

2 Select the horizontal type tool (**I**) or the vertical type tool (**↓T**).

3 Click the Create a selection button (⬚) in the options bar.

4 Select additional type options in the options bar. (See "Formatting characters" on page 217.)

5 Enter type in the document window. A red background appears to help you see the selected areas created by the type tool. (See "Entering type" on page 213.)

6 Commit the type entry. The text appears as a selection on the active layer.

Working with type layers

Once you create a type layer, you can edit the type and apply layer commands to it. You can change the orientation of the type, apply anti-aliasing, and warp the type into a variety of shapes. You can move, restack, copy, and change the layer options of a type layer as you do for a normal layer. You can also make the following changes to a type layer and still edit its text:

• Apply transformation commands, except for Perspective and Distort.

Note: To apply the Perspective or Distort commands, or to transform part of the type layer, you must simplify the type layer, making the type uneditable.

• Use layer styles.

• Use fill shortcuts. To fill with the foreground color, press Alt+Backspace (Windows) or Option+Delete (Mac OS); to fill with the background color, press Ctrl+Backspace (Windows) or Command+Delete (Mac OS).

Note: After committing a type layer, clicking in the text area with the move tool (▸₊) will select the type layer. A bounding box appears around the selected text if Show Bounding Box is selected in the options bar. Clicking outside the bounding box will deselect the type layer if Auto Select Layer is selected in the options bar. You can always click in the text area to select a type layer if the Relaxed Text Selection preference is selected. If this preference is not selected, you need to click the actual type strokes to select a type layer.

Editing text in type layers

You can insert new text, change existing text, and delete text in type layers. If any styles are applied to a type layer, all text will inherit the style attributes.

To edit text in a type layer:

1 Select the horizontal type tool (**T**) or the vertical type tool (**ᵢT**). If you click in an active type, the type tool changes at the insertion point to match the orientation of the layer.

2 Select the type layer in the Layers palette, or click in the text flow to automatically select a type layer.

3 Position the insertion point in the text, and do one of the following:

• Click to set the insertion point.

• Select one or more characters you want to edit.

4 Enter text as desired.

5 Commit the changes to the type layer. (See "About using the type tools" on page 213.)

Changing type layer orientation

The orientation of a type layer determines the direction of type lines in relation to the document window. When a type layer is vertical, the type lines flow up and down; when a type layer is horizontal, the type lines flow from left to right.

To change the orientation of a type layer:

1 Select the type layer in the Layers palette.

2 Do one of the following:

• Select a type tool, and click the Flip Orientation button (⅍) in the options bar.

• Choose Layer > Type > Horizontal, or choose Layer > Type > Vertical.

Specifying anti-aliasing

Anti-aliasing lets you produce smooth-edged type by partially filling the edge pixels. As a result, the edges of the type blend into the background.
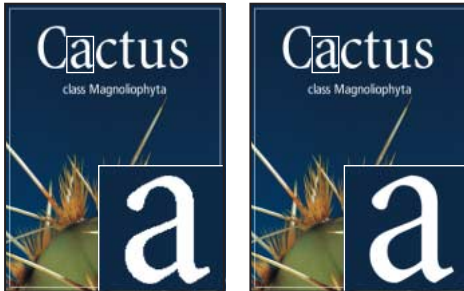
Anti-aliasing off, and anti-aliasing on

When creating type for online use, consider that anti-aliasing greatly increases the number of colors in the original image. This limits your ability to reduce the number of colors in the image and thus reduce the optimized file size, and may cause stray colors to appear along the edges of the type. When file size and limiting the number of colors are most important, leaving type without anti-aliased edges may be preferable, despite the jagged edges.

To apply anti-aliasing to a type layer:

Select the type layer in the Layers palette and do one of the following:

• Choose Layer > Type > Anti-Alias On, or choose Layer > Type > Anti-Alias Off.

• Select the Anti-aliased option in the options bar.

Warping type layers

Warping allows you to distort type to conform to a variety of shapes; for example, you can warp type in the shape of an arc or a wave. Warping applies to all characters on a type layer—you cannot warp individual characters. The warp style you select determines the basic shape of the warped layer, while warping options let you control the orientation and perspective of the warp effect.
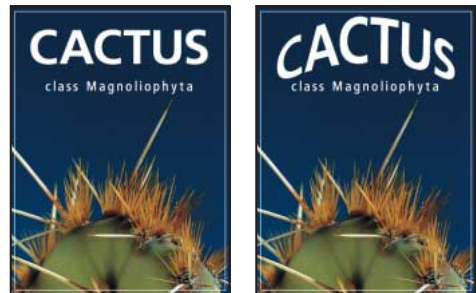
Original image, and type layer with warp applied

Note: *You cannot apply warp to Faux Bold formatting.*

To warp type:

1 Select a type layer.

2 Do one of the following:

• Select a type tool, and click the Warp button (T) in the options bar.

• Choose Layer > Type > Warp Text.

3 Choose a warp style from the Style pop-up menu.

4 Select an orientation for the warp effect— Horizontal or Vertical.

5 If desired, specify values for additional warping options:

• Bend to specify how much warp is applied to the layer.

• Horizontal Distortion and Vertical Distortion to apply perspective to the warp.

6 Click OK.

To unwarp type:

1 Select a type layer that has warping applied to it.

2 Select a type tool, and click the Warp button (T..) in the options bar; or choose Layer > Type > Warp Text.

3 Choose None from the Style pop-up menu, and click OK.

Simplifying type layers

Simplifying a type layer converts it to a regular, raster layer. Simplifying a type layer is necessary when you want to paint on type or apply filters to it. Once you simplify a type layer, you can no longer edit its text.

To simplify a type layer:

1 Select a type layer in the Layers palette.

2 Choose Layer > Simplify Layer.

The T icon (**T**) no longer shows in the simplified layer in the Layers palette. Instead, a thumbnail of the simplified text appears in the layer.

Formatting characters

Photoshop Elements gives you precise control over individual characters in type layers, including font, size, and color. You can set type attributes before you enter characters or reset them to change the appearance of selected characters in a type layer.

Selecting characters for formatting

Before you can format individual characters, you must select them. You can select one character, a range of characters, or all characters in a type layer.

To select characters:

1 Select a type tool.

2 Select the type layer in the Layers palette, or click in the text flow to automatically select a type layer.

3 Position the insertion point in the text, and do one of the following:

• Drag to select one or more characters.

• Double-click to select a single word.

• Triple-click to select an entire line of text.

• Click in the text and then Shift-click to select a range of characters.

• Choose Select > All to select all the characters in the layer.

• To use the arrow keys to select characters, hold down Shift and press the Right Arrow or Left Arrow key. To use the arrow keys to select words, hold down Shift+Ctrl (Windows) or Shift+Command (Mac OS) and press the Right Arrow or Left Arrow key.

Note: You cannot select a paragraph by quadruple-clicking in the text.

4 To select all the characters in a layer without positioning the insertion point in the text flow, select the type layer in the Layers palette, and then double-click the layer's type icon (**T**).

Note: Selecting and formatting characters in a type layer puts the type tool into edit mode. You must commit the changes before you can perform other operations. (See "About using the type tools" on page 213.)

Choosing a typeface

A typeface is a set of characters— letters, numbers, or symbols—that share a common weight, width, and style. When you select a font, you can select the *font family* and its *type style* independently. The font family is a collection of fonts sharing an overall typeface design; for example, Times. A type style is a variant version of an individual font in the font family, for example, Regular, Bold, or

Italic. The range of available type styles varies with each font. If a font doesn't include the style you want, you can apply *faux* (fake) versions of bold and italic.

Note: A faux font is a computer-generated version of a font that approximates an alternative typeface design, used only if no corresponding font for a given faux treatment is available.

To choose a font family and style:

1 If you're working with an existing layer, select one or more characters whose font you want to change. To change the font of all characters in a layer, select the type layer in the Layers palette, and then select a type tool.

2 In the options bar, choose a font family from the Font Family pop-up menu.

You can choose a font family and style by typing the desired name in the text box. As you type, the name of the first font or style beginning with that letter appears. Continue typing until the correct font or style name appears. Be sure to deselect the font name before entering new type in the image.

3 Do one of the following:

• Choose a font style from the Font Style pop-up menu in the options bar.

• If the font family you chose does not include a bold or italic style, click the Text Options button (✂) in the options bar. Choose Faux Bold, Faux Italic, or both; then click OK.

Choosing a type size

The *type size* determines how large the type appears in the image. The default unit of measurement for type is *points*, which is approximately 1/72 of an inch in a 72-ppi image. However, you can change the default unit of measurement in the Units & Rulers section of the Preferences dialog box. You can also choose which point size definition to use—PostScript or Traditional.

Note: Choose PostScript (72 points per inch) if you are printing on a PostScript device, otherwise choose Traditional (72.27 points per inch).

The physical size of the font depends on the resolution of the image. 72-point text is approximately 1-inch high in an image that is 72 dpi. Higher resolutions reduce the effective size of a given text point size because the pixels are packed tighter in higher resolution images.

To choose a type size:

1 If you're working with an existing layer, select one or more characters whose size you want to change. To change the size of all characters in a layer, select the type layer in the Layers palette, and then select a type tool.

2 In the options bar, enter or select a new value for Size (T). To use an alternate unit of measurement, enter the unit (in, cm, pt, px, or pica) after the value in the Size text box. The value you enter is converted to the default unit of measurement. You can enter a size larger than 72 points.

To specify the default unit of measurement for type:

1 Choose Edit > Preferences > Units & Rulers.

2 Select a unit of measurement for Type.

To specify the point size definition:

1 Choose Edit > Preferences > Units & Rulers.

2 Select an option for Point/Pica Size. Traditional points are slightly smaller than PostScript points.

Changing the type color

The type you enter gets its color from the current foreground color; however, you can change the type color before or after you enter type. When editing existing type layers, you can change the color of individual characters or all type in a layer. You can also apply a gradient to text in a type layer. (See "Applying gradient fill to text" on page 153.)

To change the type color:

1 If you're working with an existing layer, select one or more characters whose color you want to change. To change the color of all characters in a layer, select the type layer in the Layers palette, and then select a type tool.

2 In the options bar, click the Color selection box, and select a color using the color picker.

Applying underline and strikethrough

You can apply a line under horizontal type or to the right side of vertical type. You can also apply a line through horizontal or vertical type. The line is always the same color as the type color.

To apply an underline or strikethrough:

1 If you're working with an existing layer, select one or more characters whose font you want to change.

2 Click the Text Options button (✂) in the options bar.

3 Do one or both of the following:

• Select Underline to apply a line below horizontal type or on the right side of vertical type.

• Select Strikethrough to apply a line through the middle of the type.

Aligning type

You can *align* type to change its relationship to the initial cursor position (where you clicked when you first entered the type). Alignment affects all type on a layer—you cannot align some characters on a layer, but not others.

To specify alignment:

1 If you're working with an existing layer, select the type layer in the Layers palette and then select a type tool.

2 In the options bar, click an alignment option.

The options for horizontal type are:

(≡) Aligns the left edge of each type line in the layer to the initial cursor position.

(≡) Aligns the center of each type line in the layer to the initial cursor position.

(≡) Aligns the right edge of each type line in the layer to the initial cursor position.

The options for vertical type are:

(▥) Aligns the top edge of each type line in the layer to the initial cursor position.

(▥) Aligns the center of each type line in the layer to the initial cursor position.

(▥) Aligns the bottom edge of each type line in the layer to the initial cursor position.

Setting options for Asian type

Photoshop Elements provides several options for working with Asian type. Asian fonts are often referred to as *double-byte fonts* or *CJK fonts.* CJK fonts means Chinese, Japanese, and Korean fonts.

Displaying Asian text options

In order to view and set options for working with Chinese, Japanese, and Korean type, you must select Show Asian Text Options in the Preferences dialog box. You can also control how font names are displayed—in English or in the native language.

To display Asian type options:

Choose Edit > Preferences > General, and select Show Asian Text Options.

To display Asian font names in English:

Choose Edit > Preferences > General, and select Show Font Names in English.

Adjusting tsume

Tsume reduces the space around a character by a specified percentage value. The character itself is not stretched or squeezed as a result. Instead, the space around the character is compressed. When tsume is added to a character, spacing around both sides of the character is reduced by an equal percentage.

To reduce spacing between characters:

1 If you're working with an existing layer, select the type layer in the Layers palette and then select a type tool.

2 Select the characters you want to adjust.

3 Click the Text Options button (✂) in the options bar.

4 Enter or select a percentage for Tsume (🔳), and click OK. The greater the percentage, the tighter the compression between characters. At 100% (the maximum value), there is no space between the character's bounding box and its em box.

Note: *An em box is a space whose height and width roughly correspond to the width of the letter "M," also called a mutton.*

Using tate-chuu-yoko

Tate-chuu-yoko (also called *kumimoji* and *renmoji*) is a block of horizontal type laid out within a vertical type line.
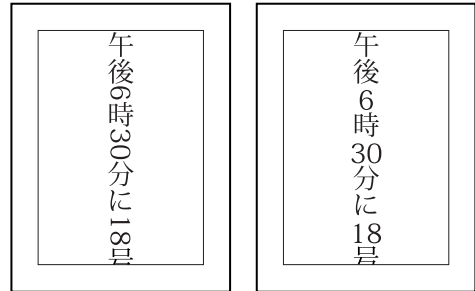
Before and after tate-chuu-yoko applied

To turn on or turn off tate-chuu-yoko:

1 If you're working with an existing layer, select the type layer in the Layers palette and then select a type tool.

2 Select the characters that you want to rotate.

3 Click the Text Options button (✂) in the options bar.

4 Select Tate-Chuu-Yoko, and click OK.

Note: *Using tate-chuu-yoko does not prevent you from editing and formatting type; you can edit and apply formatting options to rotated characters as you do to other characters.*

Using mojikumi

Mojikumi determines spacing between punctu-ation, symbols, numbers, and other character classes in Japanese type. When mojikumi is off, full-width spacing is applied to these characters. When mojikumi is on, half-width spacing is applied to these characters.

以下参照。（図 1 、 2 ）

以下参照。（図 1 、 2 ）
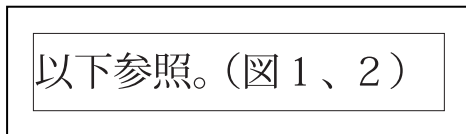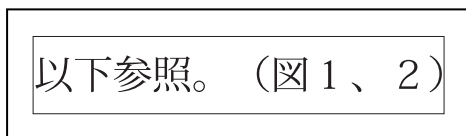
Mojikumi on, and Mojikumi off

To turn on or turn off mojikumi:

1 If you're working with an existing layer, select the type layer in the Layers palette and then select a type tool.

2 Click the Text Options button (⅟₂) in the options bar.

3 Select Mojikumi, and click OK.

11

Chapter 11: Optimizing Images for the Web

Adobe Photoshop Elements lets you optimize the display and file size of your images for effective Web publishing results. In general, the file size of an image should be small enough to allow reasonable download times from a Web server but large enough to represent desired colors and details in the image.

About optimization

Optimization is the process of fine-tuning an image for use on the Web and is an important step in producing an image with good display quality and a small file size for use on the Web. Creating small graphic files is key to distributing images on the World Wide Web. With smaller files, Web servers can store and transmit images more efficiently, and users can view and download images more quickly.

There are three major graphic file formats used on the Web: GIF (Graphics Interchange Format), JPEG (Joint Photographic Experts Group), and PNG-8 or PNG-24 (Portable Network Graphics, with 8-bit or 24-bit color). You can optimize images in these formats using one of the following methods:

• For precise optimization, you can use the Save for Web command to preview optimized images in different file formats. You can view the original image and the optimized image simultaneously and modify optimization settings to select the best combination of settings for your needs. You can also use the layers in your original image to generate an animated GIF. When you save the optimized file, you can choose to generate an HTML file for the image. This file contains all the necessary code to display your image in a Web browser.

• For basic optimization, the Save As command lets you save an image as a GIF, JPEG, or PNG file. Depending on the file format, you can specify image quality, background transparency or matting, color display, and downloading method.

For complete information on using the Save As command to save an image as a GIF, JPEG, or PNG file, see "About file formats" on page 245.

Using the Save For Web dialog box

You use the Save For Web dialog box to select optimization options and view optimized images.

To display the Save For Web dialog box:

Choose File > Save for Web, or click the Save for Web button (🖫) in the shortcuts bar.

Viewing images during optimization

You use a dual image window to view both the original and optimized images in the Save For Web dialog box. This lets you compare the two images and determine which optimization settings work the best. If the entire image is not visible in the view area, you can use the hand tool to bring another area of the image into view. You can also use the zoom tool to magnify or reduce the view.

To navigate in a view:

1 Select the hand tool ($\text{\small ✋}$) in the Save For Web dialog box, or hold down the spacebar.

2 Drag in the view area to pan over the image.

To zoom in or zoom out:

Do one of the following:

• Select the zoom tool ($\text{\small 🔍}$) in the Save For Web dialog box, and click in a view to zoom in.

• Hold down Alt (Windows) or Option (Mac OS) and click in a view to zoom out.

• Choose a magnification level from the Zoom menu or enter a value in the Zoom text box, then press tab.

Viewing optimization information

The annotation area in the Save For Web dialog box provides valuable optimization information. The annotation for the original image shows the file name and file size. The annotation for the optimized image shows the current optimization options, the size of the optimized file, and the estimated download time using the selected modem speed. You can select a modem speed in the Preview pop-up menu.

To select a modem speed:

1 Click the triangle ($\text{\small ▶}$) to the right of the optimized image to view the Preview pop-up menu.

2 Choose a modem speed: 14.4 Kbps Download Rate, 28.8 Kbps Download Rate, 56.6 Kbps Download Rate, 128 Kbps Download Rate, or 256 Kbps Download Rate.

When you change the modem speed, the estimated download time in the annotation area is updated.

Adjusting color display for cross-platform variations

How an image appears on different monitors is an important consideration when optimizing the image for the Web. In general, an image appears darker on a Windows system than on a Mac OS computer. You can simulate cross-platform display differences in the Save For Web dialog box.

To adjust color display for cross-platform variations:

1 Click the triangle ($\text{\small ▶}$) to the right of the optimized image to view the Preview pop-up menu.

2 Choose a display option:

• Uncompensated Color (the default option) to view the image with no color adjustment.

• Standard Windows Color to view the image with color adjusted to simulate a standard Windows monitor.

• Standard Macintosh Color to view the image with color adjusted to simulate a standard Macintosh monitor.

• Photoshop Compensation to view the image with color adjusted as it appears in a Photoshop Elements document window, which is different from the Save For Web dialog box. No color profile information is applied to the display in Save For Web.

Note: These options adjust color display only. No changes are made to pixels in the image.

Choosing a file format for optimization

The file format you choose for an optimized image is determined by the color, tonal, and graphic characteristics of the original image. In general, continuous-tone images, such as photographs, should be compressed as JPEG files. Illustrations with flat color or sharp edges and crisp detail, such as type, should be compressed as GIF or PNG-8 files.

PNG-24 file format is suitable for continuous-tone images. However, PNG-24 files are often much larger than JPEG files of the same image. PNG-24 format is recommended only when working with a continuous-tone image that includes multilevel transparency. (Multilevel transparency is

supported by the PNG-24 format but the JPEG format does not support any transparency. See "Making transparent and matted images" on page 233.)
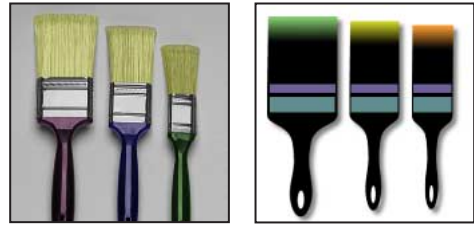
A photograph suitable for compression as a JPEG or PNG-24 image, and artwork suitable for compression as a GIF or PNG-8 image

Choose a format that contains sufficient pixel depth to display the color information in the image. PNG-8 and GIF files support 8-bit color, which means that they can display up to 256 color values. JPEG and PNG-24 files support 24-bit color, which means that they can display roughly 16 million color values. Depending on the format, you can specify image quality, background transparency or matting, color display, and downloading method.

The appearance of an image on the Web also depends on the computer platform, color display system, operating system, and browser used to display the image. Preview images in different browsers on different platforms to see how the images will appear on the Web.

About JPEG format

The JPEG format supports 24-bit color and preserves the broad range and subtle variations in brightness and hue found in photographs and other continuous-toned images. JPEG is supported by most browsers.

JPEG compresses file size by selectively discarding data. Because it discards data, JPEG compression is referred to as *lossy*. A higher quality setting results in less data being discarded, but the JPEG compression method can degrade sharp detail in an image, particularly in images containing type or vector art.

Note: Artifacts, such as wave-like patterns or blocky areas of banding, are created each time you save an image in JPEG format. These artifacts accumulate each time you resave the image as the same JPEG file; therefore, you should always save JPEG files from the original image, not from a previously saved JPEG.
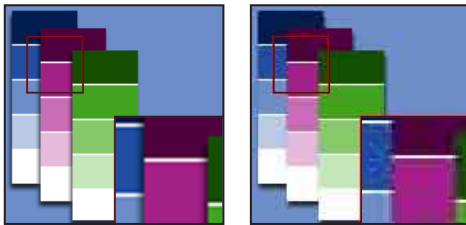
Original image, and JPEG with Low quality setting

You can create a *progressive* JPEG file, in which a low-resolution version of the image appears in a browser while the full image is downloading.

The JPEG format does not support transparency. When you save an image as a JPEG file, transparent pixels are filled with the Matte color, as specified in the Optimize palette. If you know the background color of the Web page where you will place the image, you can match the Matte color to the Web page background color to simulate the effect of background transparency. If your image contains transparency and you do not know the Web page background color, or if the background will be a pattern, you should use a format that supports transparency (GIF, PNG-8, or PNG-24).

About GIF format

The GIF format uses 8-bit color and efficiently compresses solid areas of color while preserving sharp detail, such as that in line art, logos, or illustrations with type. You also use the GIF format to create animated images. GIF is supported by most browsers.

The GIF format uses LZW compression, which is a *lossless* compression method. However, because GIF files are limited to 256 colors, optimizing an original 24-bit image as an 8-bit GIF can result in the loss of color information.
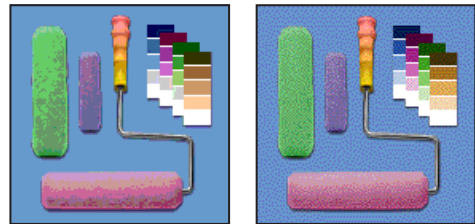
GIF image with 0% dither, and with 100% dither

You can reduce the number of colors in a GIF image and choose options to control the way colors dither in the application or in a browser. GIF supports background transparency and

background matting, in which you blend the edges of the image with a Web page background color. (See "Previewing and controlling dithering" on page 235.)

About PNG-8 format

The PNG-8 format uses 8-bit color. Like the GIF format, PNG-8 efficiently compresses solid areas of color while preserving sharp detail, such as that in line art, logos, or illustrations with type.

Because PNG-8 is not supported by all browsers, it may be advisable to avoid this format for situations in which your image must be accessible to the widest possible Web viewing audience. For more information on browser support for PNG, see your browser's documentation.

PNG-8 files use more advanced compression schemes than GIF, and can be 10–30% smaller than GIF files of the same image, depending on the image's color patterns. Although PNG-8 compression is considered lossless, optimizing an original 24-bit image as an 8-bit PNG file can result in the loss of color information.

Note: With certain images, especially those with very few colors and very simple patterns, GIF compression can create a smaller file than PNG-8 compression. View optimized images in GIF and PNG-8 format to compare file size.

As with the GIF format, you can reduce the number of colors in the image and choose options to control the way colors dither in the application or in the browser. The PNG-8 format supports background transparency and background

matting, in which you blend the edges of the image with a Web page background color. (See "Previewing and controlling dithering" on page 235.)
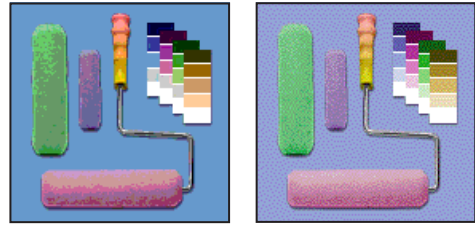
PNG-8 with 0% dither, and with 100% dither

About PNG-24 format

The PNG-24 format supports 24-bit color. Like the JPEG format, PNG-24 preserves the broad range and subtle variations in brightness and hue found in photographs. Like the GIF and PNG-8 formats, PNG-24 preserves sharp detail, such as that in line art, logos, or illustrations with type.

The PNG-24 format uses the same lossless compression method as the PNG-8 format. For that reason, PNG-24 files are usually larger than JPEG files of the same image. PNG-24 browser support is similar to that for PNG-8.

In addition to supporting background transparency and background matting, the PNG-24 format supports multilevel transparency. Multilevel transparency allows you to preserve up to 256 levels of transparency to blend the edges of an image smoothly with any background color. However, multilevel transparency is not supported by all browsers.

Optimizing images

Optimization options appear on the right side of the Save For Web dialog box. You can choose a predefined setting for quick optimization, or select format-specific options to fine-tune the optimization to your image.

Using predefined optimization settings

The easiest way to optimize an image is to choose a predefined optimization setting. Predefined settings are tailored to meet the optimization needs of different types of images. (See "Choosing a file format for optimization" on page 227.)

The name of each predefined setting reflects its function. For example, choose JPEG High if you want to optimize an image in JPEG file format with High compression quality. Choose GIF 32 Dithered if you want to optimize an image in GIF file format, reduce the colors in the image to 32, and apply dithering.

You can change the options in a predefined setting; however, when the options no longer match the predefined setting, the Settings menu displays the term "Custom." You cannot save a custom setting.

To apply a predefined optimization setting to an image:

Choose a setting name from the Settings pop-up menu.

Setting optimization options for JPEG format

JPEG is the standard format for compressing continuous-tone images such as photographs. (See "About JPEG format" on page 228.)
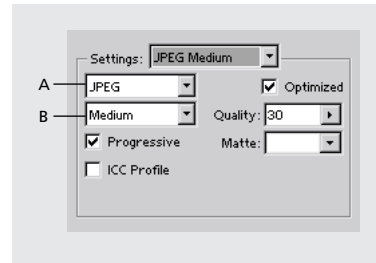
Optimization options for JPEG format:
A. Optimization format B. Compression quality

To optimize an image in JPEG format:

1 Choose JPEG for the optimization format.

2 Do one of the following to specify the compression quality:

• Choose an option from the Quality pop-up menu.

• Drag the Quality pop-up slider. (See "Using pop-up sliders" on page 24.)

• Enter a value in the Quality text box.

The higher the Quality setting, the more detail is preserved in the optimized image. However, using a high Quality setting results in a larger file size than using a low Quality setting. View the optimized image at several quality settings to determine the best balance of quality and file size.

3 To create an enhanced JPEG with a slightly smaller file size, select Optimized. The Optimized JPEG format is recommended for maximum file compression; however, some older browsers do not support this feature.

4 Select Progressive to create an image that displays progressively in a Web browser. The image will display as a series of overlays, enabling viewers to see a low-resolution version of the image before it downloads completely.

Progressive JPEGs require more RAM for viewing, and are not supported by some browsers.

5 To preserve the ICC profile of the image with the file, select ICC Profile.

ICC profiles are used by some browsers for color correction. The ICC profile preserved depends on your current color setting. (See "Using color management" on page 65.)

6 If the original image contains transparency, select a Matte color that matches the background of your Web page. (See "Making transparent and matted images" on page 233.)

Setting optimization options for GIF and PNG-8 formats

GIF is the standard format for compressing images with flat color and crisp detail, such as line art, logos, or illustrations with type. (See "About GIF format" on page 228.) Like the GIF format, PNG-8

efficiently compresses solid areas of color while preserving sharp detail; however, not all Web browsers can display PNG-8 files. (See "About PNG-8 format" on page 229.)
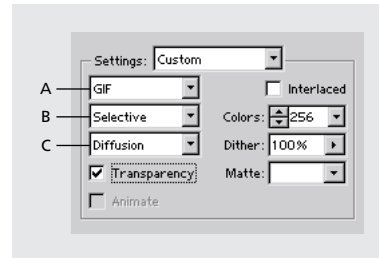
Optimization options for GIF format:
*A. Optimization format **B.** Color reduction*
*algorithm **C.** Dither algorithm*

GIF format and PNG-8 format can use up to 256 colors to describe an image. The process of determining which colors to use is called *indexing* (which is why images in GIF and PNG-8 formats are sometimes called *indexed color* images). To convert an image to indexed color, Photoshop Elements builds a color lookup table, which stores and indexes the colors in the image. If a color in the original image does not appear in the color lookup table, the program chooses the closest one or simulates the color using available colors.

To optimize an image in GIF or PNG-8 format:

1 Choose GIF or PNG-8 for the optimization format.

2 Choose a color reduction algorithm for generating the color lookup table:

• Perceptual to create a custom color table by giving priority to colors for which the human eye has greater sensitivity.

• Selective to create a color table similar to the Perceptual color table, but favoring broad areas of color and the preservation of Web colors. This color table usually produces images with the greatest color integrity. Selective is the default option.

• Adaptive to create a custom color table by sampling colors from the spectrum appearing most commonly in the image. For example, an image with only the colors green and blue produces a color table made primarily of greens and blues. Most images concentrate colors in particular areas of the spectrum.

• Web to use the standard 216-color color table common to the Windows and Mac OS 8-bit (256-color) palettes. This option ensures that no browser dither is applied to colors when the image is displayed using 8-bit color. (This palette is also called the Web-safe palette.) If your image has fewer colors than the total number specified in the color palette, unused colors are removed. Using the Web palette can create larger files, and is recommended only when avoiding browser dither is a high priority. (See "Previewing and controlling dithering" on page 235.)

• Custom to preserve the current color table as a fixed palette that does not update with changes to the image.

3 To specify the maximum number of colors in the color palette, select a number from the Colors pop-up menu, enter a value in the text box, or use the arrows to change the number of colors. If the image contains fewer colors than the number specified, the color table will contain only the number of colors in the image.

You can choose the Auto option when working with a fixed color palette. This option determines the number of colors in the color table based on the frequency of colors in the image. Choose Auto if you want Photoshop Elements to determine the optimal number of colors in the color table.

4 Choose a dithering algorithm option, and specify a percentage for Dither. (See "Previewing and controlling dithering" on page 235.)

5 If the image contains transparency, select Transparency to preserve transparent pixels as transparent; deselect Transparency to fill fully and partially transparent pixels with the Matte color. (See "Making transparent and matted images" on page 233.)

6 Select Interlaced to create an image that displays as low-resolution versions in a browser while the full image file is downloading. Interlacing can make downloading time seem shorter and assures viewers that downloading is in progress.

Setting optimization options for PNG-24 format

PNG-24 format is suitable for compressing continuous-tone images. However, PNG-24 files are often much larger than JPEG files of the same image. PNG-24 format is recommended only when working with a continuous-tone image that includes multilevel transparency. (See "About PNG-24 format" on page 229.)

To optimize an image in PNG-24 format:

1 Choose PNG-24 for the optimization format.

2 Select Interlaced to create an image that displays low-resolution versions in a browser while the full image file is downloading. Interlacing can make downloading time seem shorter, and assures viewers that downloading is in progress.

3 If the image contains transparency, select Transparency to preserve transparent pixels as transparent; deselect Transparency to fill fully and partially transparent pixels with the Matte color. (See "Making transparent and matted images" on page 233.)

Making transparent and matted images

Transparency makes it possible to place a nonrectangular graphic object against the background of a Web page. Background transparency, supported by GIF and PNG formats, preserves transparent pixels in the image. These pixels allow the Web page background to show through in a browser.

Background matting, supported by GIF, PNG, and JPEG formats, simulates transparency by filling or blending transparent pixels with a matte color that you choose to match the Web page background on which the image will be placed. Background matting works better if the Web page background will be a solid color, and if you know what that color will be.

The original image must contain transparent pixels in order for you to create background transparency or background matting in the optimized image. You can create transparency when you create a new layer.

Note: You can use the magic eraser tool or the background eraser tool to easily create transparency in an image. (See "Using the magic eraser tool" on page 140 and "Using the background eraser tool" on page 141.)

Preserving transparency in GIF and PNG images

GIF format and PNG-8 format support one level of transparency—pixels can be fully transparent or fully opaque, but not partially transparent. PNG-24 format, on the other hand, supports multilevel transparency, letting you preserve up to 256 levels of transparency in an image.

To preserve background transparency in a GIF or PNG image:

1 Open or create an image that contains transparency, and choose File > Save for Web.

2 In the Save For Web dialog box, select GIF, PNG-8, or PNG-24 as the optimization format.

3 Select Transparency.

4 For GIF and PNG-8 format, decide how you want to treat partially transparent pixels in the original image. You can blend partially transparent pixels with a matte color, or you can create hard-edged transparency. (See "Creating background matting in GIF and PNG images" on page 234 and "Creating hard-edged transparency in GIF and PNG-8 images" on page 234.)

Creating background matting in GIF and PNG images

When you know the Web page background color on which an image will be displayed, you can use the matting feature to fill or blend transparent pixels with a matte color that matches the Web page background.

The results of matting GIF and PNG-8 images depend on the Transparency option. If you select Transparency, only the partially transparent pixels, such as those at the edge of an anti-aliased image, are matted. When the image is placed on a Web page, the Web background shows through the transparent pixels, and the edges of the image blend with the background. This feature prevents the halo effect that results when an anti-aliased image is placed on a background color that differs from the image's original background. This feature also prevents the jagged edges that result with GIF hard-edged transparency.

If you deselect Transparency, fully transparent pixels are filled with the matte color, and partially transparent pixels are blended with the matte color.
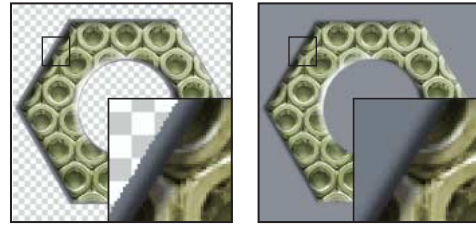
GIF with Transparency option selected, and with Transparency option deselected

To create a matted GIF or PNG image:

1 Open or create an image that contains transparency, and choose File > Save for Web.

2 In the Save For Web dialog box, select GIF, PNG-8, or PNG-24 as the optimization format.

3 For GIF and PNG-8 format, select or deselect the Transparency option as desired.

4 Select a color from the Matte pop-up menu: Eyedropper (to use the color in the eyedropper sample box), White, Black, or Other (to select a color using the color picker).

Creating hard-edged transparency in GIF and PNG-8 images

When working with GIF or PNG-8 files, you can create hard-edged transparency, in which all pixels that are more than 50% transparent in the original image are fully transparent in the optimized image, and all pixels that are more than 50% opaque in the original image are fully opaque in

the optimized image. Use hard-edged transparency when you don't know the background color of a Web page or when the Web page background is a pattern. However, keep in mind that hard-edged transparency can cause jagged edges in the image.
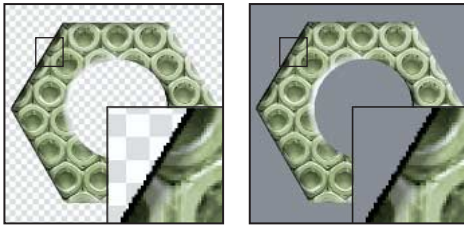
GIF with hard-edged transparency, and displayed in browser (inset at 300% magnification)

To create hard-edged transparency in a GIF or PNG-8:

1 Open or create an image that contains transparency, and choose File > Save for Web.

2 In the Save For Web dialog box, select GIF or PNG-8 as the optimization format.

3 Select Transparency.

4 Select None from the Matte pop-up menu to make all pixels with greater than 50% transparency fully transparent, and all pixels with 50% or less transparency fully opaque.

Creating background matting in JPEG images

When creating a JPEG from an original image that contains layer transparency, you must matte the image against a matte color. Since the JPEG format does not support transparency, blending with a matte color is the only way to create the appearance of background transparency in a JPEG. Fully transparent pixels are filled with the matte color, and partially transparent pixels are blended with the matte color. When the JPEG is placed on a Web page with a background that matches the matte color, the image appears to blend with the Web page background.

To create a matted JPEG image:

1 Open or create an image that contains transparency, and choose File > Save for Web.

2 In the Save For Web dialog box, select JPEG as the optimization format.

3 Select a color from the Matte pop-up menu: None, Eyedropper (to use the color in the eyedropper sample box), White, Black, or Other (to select a color using the color picker).

Note: When you select None, white is used as the matte color.

Previewing and controlling dithering

Most images viewed on the Web are created using 24-bit color displays (millions of colors mode), but many Web browsers are used on computers using only 8-bit color displays (256-color mode), so that Web images often contain colors not available to many Web browsers. Computers use a technique called *dithering* to simulate colors not available in the color display system. Dithering creates adjacent pixels of different colors to give

the appearance of a third color. For example, a red color and a yellow color may dither in a mosaic pattern to produce the illusion of an orange color that does not appear in the color palette.

When optimizing images, keep in mind that two kinds of dithering can occur:

• *Application dither* occurs in GIF and PNG-8 images when Photoshop Elements attempts to simulate colors that appear in the original image but not in the color lookup table. You can choose a dithering pattern to be applied to the image. In addition, you can create customized dither patterns for GIF or PNG-8 images using the DitherBox™ filter. (See "Creating and applying custom dither patterns" on page 237.)

• *Browser dither* occurs when a Web browser using an 8-bit color display (256-color mode) attempts to simulate colors that appear in an optimized image but not in the color palette used by the browser. Browser dither can occur with GIF, PNG, or JPEG images and can occur in addition to application dither in GIF or PNG-8 images. You can control the amount of browser dither by shifting selected colors in the image to Web-safe colors. Options in the color picker let you specify Web-safe colors when choosing a color.

Previewing and controlling application dither

You can preview application dither in GIF and PNG-8 images. The Dither Algorithm pop-up menu lets you choose a dithering method for the image. Images with primarily solid colors may work well with Dither set to none. Images with continuous-tone color (especially color gradients) may require dithering to prevent color banding.

To control application dither:

1 Choose an option from the Dither Algorithm pop-up menu:

• No Dither to apply no application dither to the image.

• Pattern to apply a halftone-like square pattern to simulate any colors not in the color table.

• Diffusion to apply a random pattern that is usually less noticeable than Pattern dither. The dither effects are diffused across adjacent pixels.

• Noise to apply a random pattern similar to the Diffusion dither method, but without diffusing the pattern across adjacent pixels. No seams appear with the Noise dither method.

2 If you chose Diffusion as the dithering algorithm, drag the Dither slider or enter a value to select a dithering percentage.

The Dither percentage controls the amount of dithering that is applied to the image. A higher dithering percentage creates the appearance of more colors and more detail in an image,

but can also increase the file size. For optimal compression, use the lowest percentage of application dither that provides the color detail you require.

Previewing browser dither

You can preview browser dither directly in Photoshop Elements or in a browser that uses an 8-bit color display (256-color mode).

To preview browser dither:

Choose Browser Dither from the document panel menu in the Save For Web dialog box. (To view the menu, click on the triangle near the upper right corner of the document panel.)

To preview browser dither in a browser:

1 Set your computer's color display to 8-bit color (256 colors). See your computer operating system's documentation for information on changing the color display.

2 Select a browser from the Preview pop-up menu in the Save For Web dialog box.

Minimizing browser dither

Using colors in the Web palette ensures that colors won't dither when displayed in browsers on either Windows or Macintosh operating systems capable of displaying at least 256 colors. When creating an original image, you can use the color picker to choose Web-safe colors. (See "Using Web-safe colors" on page 78.)

Creating and applying custom dither patterns

You can use the DitherBox™ filter to create a custom dither pattern for a selected RGB color. You can then fill a selection or a layer in an image with the dither pattern regardless of the RGB colors within the selection. You can save custom dither patterns in groups called *collections*, and use the dither patterns with other images.

To create and apply a custom dither pattern:

1 With an image displayed in the document window, use the eyedropper tool ( ) to select a foreground color that you want to simulate with a customized dither pattern. (The foreground color becomes the basis for the custom dither pattern in DitherBox™.)

Note: You create custom dither patterns while in the main Photoshop Elements work area (not in the Save For Web dialog box). Make sure the image is in RGB color mode.

2 Use the selection tools or the Layers palette to select an area or a layer in the image that you want to fill with the custom dither pattern.

3 Choose Filter > Other > DitherBox, or use the Filters palette to apply the DitherBox filter.

The RGB swatch in the DitherBox dialog box displays the current foreground color. To choose another RGB color on which to base the dither pattern, click the RGB swatch, select a new color in the color picker, and then press the Arrow button ( ) to transfer it to the pattern box.

4 Choose one of the following from the color palette pop-up menu in the DitherBox dialog box:

• Web Safe Colors to create a dither pattern using colors from the Web palette.

• Load to load another color palette and create a dither pattern using those colors. Then navigate to the color palette and open it.

Note: If you use non-Web palette colors in a custom dither pattern, the colors will dither in a browser using an 8-bit color display. Using non-Web colors is recommended only for non-Web display.

By default, a new dither pattern you create is saved in the current dither pattern collection.

5 Select a pixel pattern for the custom dither pattern from the pattern list, between 2 and 8 pixels square.

6 Click the Arrow button (▣) to display the dither pattern that most closely matches the selected RGB color in the Pattern preview box. If no dither patterns are currently saved in a collection in the DitherBox filter, the Pattern preview box displays the dither pattern that matches the RGB color.
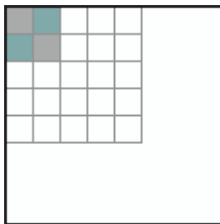
Dither pattern

7 To edit the custom dither pattern, do one of the following:

• To add a color to the dither pattern, click a color in the color palette. Then select the pencil tool (𝒴) in the DitherBox dialog box and click in the dither pattern grid to add the color.

• To delete a color from the dither pattern, select the eraser tool (⌀) in the DitherBox dialog box and click the color in the dither pattern grid.

The Pattern preview box displays the changes you make to the dither pattern.

8 When you are satisfied with the dither pattern, click Fill to fill the selected area or layer in the current image.

The custom dither pattern is applied to the image, and the DitherBox dialog box closes.

To apply a previously saved custom dither pattern to an image:

1 Select an area or a layer in the image that you want to fill with the custom dither pattern.

2 Choose Filter > Other > DitherBox.

3 Select the collection containing the dither pattern you want to use from the Collection pop-up menu.

4 Select the dither pattern you want to use from the Collection contents list.

5 Click Fill.

The dither pattern is applied to the image, and the DitherBox dialog box closes.

To edit dither pattern collections:

Do one of the following in the DitherBox dialog box:

• (Windows) To rename a collection, select the collection from the Collection pop-up menu. Then select Rename from the Collection pop-up menu. Enter a new name for the collection, and click OK.

• To create a new collection, select New from the Collection pop-up menu. Enter a name for the collection, and click OK.

• To delete a collection and all of its contents, select the collection from the Collection pop-up menu, and then select Delete from the Collection pop-up menu.

Creating animated GIFs

Animations that you view in a Web browser are called *animated GIFs*. Animated GIFs create the illusion of movement by displaying a sequence of images, or *frames*, over time. Photoshop Elements provides a powerful, easy way to create animated GIFs from a multiple-layer image.

Setting up animated GIFs

Working with layers is an essential part of creating an animated GIF. Placing the contents of each frame on its own layer enables Photoshop Elements to generate an optimized animation.

To set up an animated GIF:

1 Place the image you want to appear in each frame of the animation on a separate layer.

2 Choose File > Save for Web, or click the Save for Web button (🖺) in the shortcuts bar.

3 Optimize the image in GIF format. (See "Using predefined optimization settings" on page 230 or "Setting optimization options for GIF and PNG-8 formats" on page 231.)

4 Select the Animate option.

5 Set additional options in the Animation palette:

• Loop to continuously repeat the animation when it is viewed in a Web browser.

• Frame Delay to specify the number of seconds that each frame is displayed when the animation is viewed in a Web browser. Use a decimal value to specify fractions of a second. For example, one-quarter second is specified as .25.

Note: Saving a multilayer image by choosing Save As GIF and selecting the Layers as Frames option will open the Save GIF dialog box, which has the same animation options as the Save for Web dialog box.

Previewing animated GIFs

You can preview an animation in the Save For Web dialog box or in a Web browser. The Save For Web dialog box shows the animation as still frames. You must preview the animation in a browser to view the frames in timed sequence.

To preview an animation in the Save For Web dialog box:

Do one of the following:

• Click the Next Frame button (ı▷) to view the next frame in the animation.

• Click the Previous Frame button (◁ı) to view the previous frame in the animation.

• Click the Last Frame button (▷▷) to view the last frame in the animation.

• Click the First Frame button (◁◁) to view the first frame in the animation.

To preview an animation in a Web browser:

1 Choose a browser from the Preview pop-up menu, or click the browser icon to launch your default Web browser.

2 Use the browser's Stop and Reload commands to stop or replay the animation.

Opening animated GIFs

You can open an existing animated GIF in Photoshop Elements using the Open command. The file is opened as a stack of layers. Each layer corresponds to one frame. If you want to view a specific frame in the document window, make the layer for that frame visible in the Layers palette and hide all the other layers in the Layers palette.

Opening existing animated GIF files in Photoshop Elements is useful primarily for applying optimization settings to the files. The one-layer-per-frame structure of imported animated GIF files may make it impractical to edit animation frames in other ways.

Previewing an image in a browser

You can preview an optimized image in any browser installed on your system. The browser displays the image with a caption listing the image's file type, pixel dimensions, file size, and compression specifications in the first paragraph, and filename and other HTML information in the second paragraph.

To preview an optimized image in a browser:

In the Save For Web dialog box, choose a browser from the Preview In pop-up menu, or click the browser icon to launch your default Web browser.

To add a browser to the Preview pop-up menu:

1 Create a shortcut (windows) or an alias (Mac OS) for the browser you want to add to the menu.

2 Drag the icon for the shortcut or alias into the Preview In folder, located in the Helpers folder in the Photoshop Elements program folder.

3 Restart Photoshop Elements.

Saving optimized images

You must save an optimized image before you can use it on the Web.

To save an optimized image:

1 Apply optimization settings in the Save For Web dialog box, and click OK. (See "Optimizing images" on page 230.)

2 Type a filename, and choose a location for the resulting file or files.

3 Select Save HTML File to generate an HTML file that contains code for displaying the optimized image on the Web. Deselect Save HTML File if you want to save only an image file.

4 Click Save.

Creating Web photo galleries

You use the Web Photo Gallery command to automatically generate a Web photo gallery from a set of images. A Web photo gallery is a Web site that features a home page with thumbnail images and gallery pages with full-size images. Each page contains links that allow visitors to navigate the site. For example, when a visitor clicks a thumbnail image on the home page, a gallery page with the associated full-size image loads.

Photoshop Elements provides a variety of styles for your gallery, which you can select using the Web Photo Gallery command. If you are an advanced user who has knowledge of HTML, you can also customize a style by editing a set of HTML template files or create a new style.

To create a Web photo gallery:

1 Choose File > Automate > Web Photo Gallery.

2 Under Files, click Source. Then select the folder containing the images that you want to appear in the gallery, and click OK. Select Include All Subdirectories to include images inside any subfolders of the selected folder.

3 Click Destination. Then select the destination folder that you want to contain the images and HTML pages for the gallery, and click OK.

4 For Styles, choose a style for the gallery. A preview of the home page for the chosen style appears in the dialog box.

5 To set options for the banner that appears on each page in the gallery, choose Banner from the Options pop-up menu. Then do the following:

• For Site Name, enter the title of the gallery.

• For Photographer, enter the name of the person or organization that deserves credit for the photos in the gallery.

• For Date, enter the date that you want to appear on each page of the gallery. By default, Photoshop Elements uses the current date.

• For Font and Font Size, choose options for the banner text.

6 To set options for the gallery pages, choose Gallery Images from the Options pop-up menu. Then do the following:

• For Border Size, enter the width of the border around the image in pixels.

• To have Photoshop Elements resize the source images for placement on the gallery pages, select Resize Images. Then choose an option for the image size from the pop-up menu or enter a size in pixels. For JPEG Quality, choose an option from the pop-up menu, enter a value between 0 and 12, or drag the slider. A higher value results in better image quality but larger file size.

7 To set options for the home page, choose Gallery Thumbnails from the Options pop-up menu. Then do the following:

• For Caption, select Use Filename to display the filename under each thumbnail.

• Select Use File Info Caption to display caption text from the File Info dialog box under each thumbnail and on each gallery page.

• For Font and Font Size, choose options for the thumbnail text.

• For Size, choose an option for the thumbnail size from the pop-up menu or enter a value in pixels for the width of each thumbnail.

• For Columns and Rows, enter the number of columns and rows that you want to be used to display the thumbnails on the home page. This option doesn't apply to galleries that use the Horizontal Frame Style or Vertical Frame Style.

• For Border Size, enter the width of the border around each thumbnail in pixels.

8 To set options for colors of elements in the gallery, choose Customize Colors from the Options pop-up menu. To change the color of a particular element, click its color swatch, and then select a new color using the color picker. The Background option lets you change the background color of each page. The Banner option lets you change the background color of the banner.

9 Click OK to create the gallery.

Photoshop places the following HTML and JPEG files in your destination folder:

• A home page for your gallery named index.htm. Open this file in any Web browser to preview your gallery.

• JPEG images inside an images subfolder.

• HTML pages inside a pages subfolder.

• JPEG thumbnail images inside a thumbnails subfolder.

12

Chapter 12: Saving Images

Adobe Photoshop Elements supports a variety of file formats to suit a wide range of output needs. You can save or export your image to any of these formats. You can also use special Photoshop Elements features to add information to files, and set up multiple image layouts.

About file formats

You can use various file formats to get images into and out of Photoshop Elements. Graphic file formats differ in the way they represent graphic information, in how they compress image data, and in which Photoshop Elements features they support.

Note: If a supported file format does not appear in the appropriate dialog box or submenu, you may need to install the format's plug-in module. (See "Using plug-in modules" on page 40.)

Choosing a file format

Different file formats cater to the needs of different applications. The file format you choose depends on the content of your image and how you plan to use it. For example, if you're saving an image for use in a page-layout application, TIFF format and Photoshop EPS format are your best bets. If you're saving an image for use on the Web, you should choose JPEG, GIF, or PNG format. Then there are the specialized formats for use in specific applications, such as Filmstrip, PCX, Pixar, and Targa.

Until you've finished creating an image and have decided how you want to use it, you should save the image in Photoshop format or Photoshop PDF format. Photoshop format (PSD) is the default file format for newly created images and supports all image data that Photoshop Elements is capable of producing—layers, shapes, editable type, and so on. Photoshop PDF format (PDP) also supports all of Photoshop Elements' features and is portable to other Adobe applications, such as Adobe Acrobat and Adobe Illustrator. Saving your image in either of these formats guarantees that you will be able to access all of the image data when you reopen the image.

Note: If you choose a format that does not support all of the data in an image, a warning appears at the bottom of the Save As dialog box. If you see this warning, it is recommended that you save a copy of the file in Photoshop format or Photoshop PDF format in order to support all of the image data.

For more information about specific file formats, see "Saving images in specific formats" on page 247.

Understanding file compression

Many image file formats use compression techniques to reduce the storage space required by bitmap image data. Compression techniques are distinguished by whether they remove detail and color from the image. *Lossless* techniques

compress image data without removing detail; *lossy* techniques compress images by removing detail. The following are commonly used compression techniques:

RLE Run Length Encoding is a lossless compression technique supported by Photoshop and some common Windows file formats. In images with multiple layers containing transparency, RLE compression will compress the transparent portions of each layer.

LZW Lemple-Zif-Welch is a lossless compression technique that provides the best results in compressing images that contain large areas of single color, such as screenshots or simple paint images.

JPEG Joint Photographic Experts Group is a lossy compression technique that provides the best results with continuous-tone images, such as photographs. When you choose JPEG compression, you specify the image quality by choosing an option from the Quality menu, dragging the Quality pop-up slider, or entering a value between 1 and 12 in the Quality text box. For the best printed results, choose maximum-quality compression.

CCITT CCITT encoding is a family of lossless compression techniques for black-and-white images. CCITT is an abbreviation for the French spelling of International Telegraph and Telekeyed Consultive Committee.

ZIP ZIP encoding is a lossless compression technique. Like LZW, ZIP compression is most effective for images that contain large areas of a single color.

Saving images

You can use the following commands to save images:

• Save to save changes you've made to the current file in the current format.

• Save As to save an image with a different location, filename, and/or format. The available options vary depending on the format you choose.

• Save for Web to save an optimized image for the Web. (See "Saving optimized images" on page 240.)

To save changes to the current file:

Choose File > Save, or click the Save button (🖫) in the shortcuts bar.

To save an image with a different name and location:

1 Choose File > Save As.

2 Type a filename, and choose a location for the file.

3 Click Save.

To save an image in a different file format:

1 Choose File > Save As, and choose a format from the Format pop-up menu.

If you choose a format that does not support all of the data in an image, a warning appears at the bottom of the Save As dialog box. If you see this warning, it is recommended that you save a copy of the file in Photoshop format or Photoshop PDF format in order to support all of the image data.

2 Specify a filename and location.

3 Select saving options, and click Save. With some image formats, a format-specific dialog box appears. (See "Saving images in specific formats" on page 247.)

To set file saving options:

In the Save As dialog box, select one or more of the following options:

As a Copy Saves a copy of the file while keeping the current file open on your desktop.

Layers Preserves all layers in the image. If this option is disabled or unavailable, all visible layers are flattened or merged (depending on the selected format). The Layers As Frames option is available, when saving your file in GIF format. This option preserves the layers used as frames in an animated GIF and opens the Save for Web dialog box.

ICC Profile (Windows), or Embed Color Profile (Mac OS) Embeds a color profile in the image. This option is available on certain formats only. (See "Using color management" on page 65.)

Thumbnail (Windows) Saves thumbnail data for the file. In order to select or deselect this option, you must choose Ask When Saving for the Image Previews option in the Preferences dialog box. (See "Setting preferences for saving files" on page 254.)

Image Previews options (Mac OS) Saves thumbnail data for the file. Thumbnails display in the Open dialog box. You can set these image preview options: Icon to use the preview as a file icon on the desktop, Full Size to save a 72-ppi version for use in applications that can only open low-resolution Photoshop Elements images,

Macintosh Thumbnail to display the preview in the Open dialog box, and Windows Thumbnail to save a preview that can display on Windows systems. Keep in mind that Windows thumbnails increase the size of files as delivered by Web servers.

Use Lower Case Extensions (Windows) Makes the file extension lowercase.

File Extension options (Mac OS) Specifies the file extension for the selected file format. Select Append to add the format's extension to the filename and Use Lower Case to make the extension lowercase. Some Unix file servers do not recognize uppercase extensions.

Important: To display image preview and file extension options in the Save As dialog box in Mac OS, select Ask When Saving for the Image Previews option and the Append File Extension option in the Preferences dialog box. (See "Setting preferences for saving files" on page 254.)

Saving images in specific formats

Photoshop Elements can save images to various file formats. (See "About file formats" on page 245.) While you're developing an image, you should always save your work in Photoshop (PSD) format. This practice ensures that all of the image data is saved.

When you're finished developing an image, you can save it in an alternate format. The format you choose depends on how you plan to use the image. To save an image in one of the following formats, choose File > Save As, and choose the format from the Format pop-up menu. After you click Save, additional options may appear.

BMP format

BMP is a standard Windows image format on DOS and Windows-compatible computers. You can specify either Microsoft® Windows or OS/2® format and a bit depth for the image. For 4-bit and 8-bit images using Windows format, you can also specify RLE compression.

Filmstrip format

Filmstrip format lets you open, edit, and save movie files created by Adobe Premiere®. The Save As Filmstrip option is only available for Filmstrip format files. If you resize, resample, change the color mode, or change the file format of a Filmstrip file in Photoshop Elements, you won't be able to save it back to Filmstrip format. For further guidelines, see the *Adobe Premiere User Guide*.

GIF format

Graphics Interchange Format (GIF) is the file format commonly used to display indexed-color graphics and images in hypertext markup language (HTML) documents over the World Wide Web and other online services. GIF is an LZW-compressed format designed to minimize file size and electronic transfer time.

You can save an image as one or more GIF files using the Save for Web command. (See "Optimizing images" on page 230.)

To save a file in GIF format:

1 Choose File > Save As, and choose CompuServe GIF Format from the format list.

2 If necessary, deselect the Layers as Frames option.

3 Specify a filename and location, and click Save.

4 For RGB images, the Indexed Color dialog box appears. Specify conversion options as described in "Choosing a color mode" on page 68, and click OK.

5 Select a row order for the GIF file and click OK:

• Normal to create an image that displays in a browser only when it is fully downloaded.

• Interlaced to create an image that displays as low-resolution versions in a browser while the full image file is downloading. Interlacing can make downloading time seem shorter and assures viewers that downloading is in progress. However, interlacing also increases file size.

To save an animated GIF file:

1 Choose File > Save As, and choose CompuServe GIF from the format list.

2 Select the Layers as Frames option, specify a filename and location, and click Save.

When the Save GIF dialog box appears, set optimization options as described in "Optimizing images" on page 230. If necessary, select Animate. Then set the animation options as described in "Creating animated GIFs" on page 239.

3 Click OK to save the file.

JPEG format

Joint Photographic Experts Group (JPEG) format is commonly used to save photographs and other continuous-tone images. JPEG format retains all color information in an image but compresses file size by selectively discarding data. You can choose what level of compression you want when you save a JPEG file. A higher level of compression results in lower image quality and a smaller file size; a lower level of compression results in better image quality and a larger file size. In most cases, the Maximum quality option produces a result indistinguishable from the original.

JPEG is one of the standard formats for displaying images over the World Wide Web and other online services. You can save an image as a JPEG file. (See "Optimizing images" on page 230.)

To save a file in JPEG format:

1 Choose File > Save As, and choose JPEG from the format list.

2 Specify a filename and location, select saving options (as described in "Saving images" on page 246), and click Save, which opens the JPEG Options dialog box.

3 If the image contains transparency, select a Matte color to simulate the appearance of background transparency. (See "Making transparent and matted images" on page 233.)

4 Do one of the following to specify the image quality:

• Choose an option from the Quality menu.

• Drag the Quality pop-up slider.

• Enter a value between 1 and 12 in the Quality text box.

5 Select a format option:

• Baseline ("Standard") to use a format that is recognizable to most Web browsers.

• Baseline Optimized to optimize the color quality of the image and produce a slightly smaller file size. This option is not supported by all Web browsers.

• Progressive to create an image that displays gradually as it is downloaded to a Web browser—in a series of scans (you specify how many) showing increasingly detailed versions of the entire image. Progressive JPEG images files are slightly larger in size, require more RAM for viewing, and are not supported by all applications and Web browsers.

6 To view the estimated download time of the image, select a modem speed from the Size pop-up menu. (The Size preview is only available when Preview is selected.)

Note: If you find that a Java application cannot read your JPEG file (in any color mode), try saving the file without a thumbnail preview.

7 Click OK.

PCX format

PCX format is commonly used by IBM PC-compatible computers. Most PC software supports version 5 of PCX format. A standard VGA color palette is used with version 3 files, which do not support custom color palettes. PCX supports the RLE compression method. Images can have a bit depth of 1, 4, 8, or 24.

Photoshop format

Photoshop format (PSD) is the default file format for newly created images. You can open PSD files that were created in Adobe Photoshop; however, you may not be able to access all file data. For example, Photoshop Elements does not support layer sets, layer color coding, paragraph type, advanced type formatting, or annotations. No data is discarded when you resave a file that contains unsupported features from Photoshop Elements.

Photoshop 2.0

(Mac OS) You can use this format to open an image in Photoshop version 2.0 format or to export an image to an application supporting only Photoshop 2.0 files. Saving in Photoshop 2.0 format flattens your image and discards layer information.

Photoshop EPS format

You can use Encapsulated PostScript (EPS) format to share Photoshop files effectively with many graphic, illustration, and page-layout programs. For best results, print documents with EPS images to PostScript-enabled printers.

To save a file in Photoshop EPS format:

1 Choose File > Save As, and choose Photoshop EPS from the format list.

2 Specify a filename and location, select saving options (as described in "Saving images" on page 246), and click Save.

3 For Preview, choose a low-resolution preview type. To share an EPS file between Windows and Mac OS systems, use a TIFF preview. The 8-bit preview option results in better display quality but larger file size than does the 1-bit preview option. You must save a preview of an EPS image to view the image in the destination application.

Note: To use the JPEG preview option in Mac OS, you must have QuickTime installed.

4 For Encoding, choose an encoding method: ASCII, Binary, or a JPEG option. ASCII-encoded files contain about twice as many characters as binary files and may be slower to work with. JPEG-encoded files are smaller than binary files; however, using JPEG encoding decreases the image quality. (See "Choosing a print encoding method" on page 263.)

5 To display white areas in the image as transparent, select Transparent Whites. This option is available only for images in Bitmap mode.

6 If you are saving to EPS format, select PostScript Color Management to instruct a PostScript printer to convert the file data to the printer's color space. Do not select PostScript Color Management if you're planning to place the image into another color-managed document. Doing so may disrupt color management in your page-layout application.

7 Select Image Interpolation if you want to anti-alias the printed appearance of a low-resolution image.

8 Click OK.

Photoshop PDF format

Portable Document Format (PDF and PDP) is a flexible, cross-platform, cross-application file format. PDF files accurately display and preserve fonts, page layouts, and both vector and bitmap graphics.

Note: PDF and PDP are the same except that PDPs are opened in Photoshop and PDFs are opened in Acrobat.

To save a file in Photoshop PDF format:

1 Choose File > Save As, and choose Photoshop PDF from the format list.

2 Specify a filename and location, select saving options (as described in "Saving images" on page 246), and click Save.

3 Select an encoding method. (See "About file formats" on page 245.)

Note: Bitmap-mode images are automatically encoded using CCITT compression—the PDF Options dialog box does not appear.

4 Select Save Transparency if you want to preserve transparency when the file is opened in another application that supports PDF transparency. When reopening the file in Photoshop Elements, transparency is always preserved, regardless of whether you select or deselect this option.

5 Select Image Interpolation if you want to anti-alias the printed appearance of a low-resolution image.

6 Click OK.

PICT File format

PICT File format is widely used among Mac OS graphics and page-layout applications as an intermediary file format for transferring images between applications. PICT File format is especially effective at compressing images with large areas of solid color.

When saving an RGB image in PICT File format, you can choose either a 16-bit or 32-bit pixel resolution. For a grayscale image, you can choose from 2, 4, or 8 bits per pixel. In Mac OS with QuickTime installed, four JPEG compression options are available.

PIXAR format

PIXAR format is designed specifically for exchanging files with PIXAR image computers. PIXAR workstations are designed for high-end graphics applications, such as those used for three-dimensional images and animation. PIXAR format supports RGB and grayscale images.

PNG format

Developed as a patent-free alternative to GIF, Portable Network Graphics (PNG) format is used for lossless compression and for display of images on the World Wide Web. Unlike GIF, PNG supports 24-bit images and produces background transparency without jagged edges; however, some Web browsers do not support PNG images. PNG preserves transparency in grayscale and RGB images. For information on when to use PNG format to optimize images, see "Choosing a file format for optimization" on page 227.

To save a file in PNG format:

1 Choose File > Save As, and choose PNG from the format list.

2 Specify a filename and location, select saving options (as described in "Saving images" on page 246), and click Save.

3 Select an Interlace option, and click OK:

• None to create an image that displays in a Web browser only after downloading is complete.

• Interlaced to create an image that displays low-resolution versions in a browser while the full image file is downloading. Interlacing can make downloading time seem shorter and assures viewers that downloading is in progress. However, interlacing also increases file size.

Raw format

Raw format is a flexible file format for transferring images between applications and computer platforms. Raw format consists of a stream of bytes describing the color information in the image.

Each pixel is described in binary format, with 0 representing black and 255 white. You can specify the file extension (Windows), file type (Mac OS), file creator (Mac OS), and header information.

In Mac OS, the file type is generally a four-character ID that identifies the file—for example, TEXT identifies the file as an ASCII text file. The file creator is also generally a four-character ID. Most Mac OS applications have a unique file creator ID that is registered with the Apple Computer Developer Services group.

You can save the image in an interleaved or noninterleaved format. If you choose interleaved, the color values (red, green, and blue, for example) are stored sequentially. Your choice depends on requirements of the application that will open the file.

The header parameter specifies how many bytes of information appear in the file before actual image information begins. This value determines the number of zeros inserted at the beginning of the file as placeholders. By default, there is no header (header size = 0). You can save the file without a header and then use a file-editing program, such as HEdit (Windows) or Norton Utilities® (Mac OS), to replace the zeros with header information.

Targa format

TGA (Targa®) format is designed for systems using the Truevision® video board and is commonly supported by MS-DOS color applications. When saving an RGB image in this format, you can choose a pixel depth of 16, 24, or 32 bits per pixel.

TIFF format

Tagged-Image File Format (TIFF) is used to exchange files between applications and computer platforms. TIFF is a flexible bitmap image format supported by virtually all paint, image-editing, and page-layout applications. Also, virtually all desktop scanners can produce TIFF images.

To save a file in TIFF format:

1 Choose File > Save As, and choose TIFF from the format list.

2 Specify a filename and location, select saving options, and click Save.

3 Select a byte order to determine file compatibility with IBM PC or Macintosh computers.

4 Select LZW Compression to compress the image and reduce the file size.

5 Click OK.

To save a file with advanced TIFF options:

1 Choose Edit > Preferences > Saving Files, and select Enable advanced TIFF save options.

2 Choose File > Save As, and choose TIFF from the format list.

3 Specify a filename and location, select saving options (as described in "Saving images" on page 246), and click Save.

4 Select a compression method. (See "Understanding file compression" on page 245.) Keep in mind that some applications cannot open TIFF files that are saved with JPEG or ZIP compression. If you plan to open the TIFF file in an application other than Photoshop Elements, LZW compression is recommended.

5 Select a byte order to determine file compatibility with IBM PC or Macintosh computers.

6 Select Save Image Pyramid to create a pyramid data structure that contains multiresolution information. The highest resolution is the image's resolution when you save it.

Note: Photoshop Elements doesn't provide options for opening multiresolution files such as PNG format or Photo CD; however, Adobe InDesign and some image servers provide support for opening multiresolution formats.

7 Select Save Transparency if you want to preserve transparency when the file is opened in another application that supports PDF transparency. When reopening the file in Photoshop Elements, transparency is always preserved, regardless of whether you select this option.

8 Click OK.

Adding file information

In Windows, you can add file information to files saved in Photoshop, TIFF, JPEG, EPS, and PDF formats. In Mac OS, you can add file information to files in any format.

Note: File information cannot be saved in GIF format, when converting a file from a different format.

To enter information about a file:

1 Choose File > File Info.

2 For Section, choose an attribute. To move forward through the sections, click Next; to move backward, click Previous.When you've finished, click OK.

You can choose the following sections:

• Caption to enter text that can be printed under an image or displayed in a Web browser's title bar. To print the caption, choose File > Print Preview, and select Caption. Then print as usual. (See "Setting output options" on page 262 for more information.)

• Copyright & URL to enter copyright infor-mation. Select Mark as Copyrighted to display a copyright symbol in the image window's title bar. Enter the desired text in the Copyright Notice text box. Specify a URL in the Image URL text box if information about an image can be found on a Web site. Click Go To URL to test the link.

Note: If Photoshop Elements detects a Digimarc watermark in the image, the Copyright & URL section is automatically updated.

• EXIF to view information imported from your digital camera, such as the date and time the picture was taken, resolution in ppi, the ISO speed rating, f/stop, compression, and exposure time. For more information about EXIF annotations, see your digital camera documentation.

Setting preferences for saving files

In Photoshop Elements, you can set preferences for saving image previews, using file extensions, and maximizing file compatibility.

To set file saving preferences:

Choose Edit > Preferences > Saving Files, and set the following options:

Image Previews Choose an option for saving image previews: Never Save to save files without previews, Always Save to save files with specified previews, or Ask When Saving to assign previews on a file-by-file basis.

In Mac OS, you can also select one or more of the following preview types (to speed the saving of files and minimize file size, select only the previews you need):

• Icon to use the preview as a file icon on the desktop.

• Macintosh Thumbnail to display the preview in the Open dialog box.

• Windows Thumbnail to save a preview that can display on Windows systems.

• Full Size to save a 72-ppi version of the file for use in applications that can only open low-resolution Photoshop Elements images. For non-EPS files, this is a PICT preview.

File Extension (Windows) Choose an option for the three-character file extensions that indicate a file's format: Use Upper Case to append file extensions using uppercase characters or Use Lower Case to append file extensions using lowercase characters.

Append File Extension (Mac OS) File extensions are necessary for files that you want to use on or transfer to a Windows system. Choose an option for appending extensions to filenames: Never to save files without file extensions, Always to append file extensions to filenames, or Ask When Saving to append file extensions on a file-by-file basis. Select Use Lower Case to append file extensions using lowercase characters.

In Mac OS, to append a file extension to the current file, hold down Option as you choose a file format from the Save As dialog box.

Maximize Backwards Compatibility in Photoshop Format Select this option to maximize file compatibility with earlier versions of Photoshop and with other applications. This includes saving merged data for applications that don't support layers and saving a rasterized version of each layer for applications that don't support vector data.

Note: Selecting Maximize Backwards Compatibility results in larger file sizes and increases the length of time required to save files.

Enable Advanced TIFF Save Options Select this option if you want to set advanced options when saving a file in TIFF format. (See "TIFF format" on page 253.)

Recent File List Contains: _ Files Enter a value from 0 to 30 to specify how many files are available in the File > Open Recent submenu. (See "Opening files" on page 55.)

To display a preview file icon (Windows only):

1 Save the file in Photoshop format with a thumbnail preview.

2 Right-click the file on the desktop (or in any Windows or Photoshop Elements dialog box that displays a file list), and choose Properties from the context menu that appears.

3 Click the Photoshop Image tab.

4 Select an option for generating thumbnails, and click OK.

Preview icons appear on the desktop and in file lists (when the view is set to Large Icons).

Using the Batch command

You can automatically convert multiple images to the same file format, size, and resolution using the Batch command. This is especially useful when importing images from a digital camera or scanner, or when processing images for use on the Web.

Note: If the plug-in module for your camera or scanner does not support importing multiple images, it may not work optimally during batch-processing. Contact the plug-in's manufacturer for further information.

To batch-process files using the Batch command:

1 Choose File > Automate > Batch.

2 For Files to Convert, specify which files you want to process:

• Folder to process files already stored on your computer. Click Source to locate and select the folder. Select Include All Subfolders to process files in subfolders.

• Import to import and process images from a PDF file, a digital camera, or a scanner. Select an import option from the From pop-up menu. The available options depend on the plug-in modules that are installed on your computer. (See "Using plug-in modules" on page 40.)

• Opened Files to play the action on all open files.

3 For Conversion Options, choose the format to which you want to convert files. For more information about file formats, see "Saving images in specific formats" on page 247.

4 To change the size and/or resolution of processed images, select Convert Image Size. Then choose the resolution to which you want to convert the images. Additionally, you can specify the width and height of the processed images. However, entering values for Width and Height may change the aspect ratio of the images, resulting in distorted final images.

5 To save modified versions of the files with new names (leaving the originals unchanged), select Rename Files and set naming options:

• Select items from the pop-up menus or enter text into the fields to be combined into the default names for all files. Elements include document name, serial number or letter, file creation date, and file extension. The fields let you change the order and formatting of the filename parts. You must include at least one field that is unique for every file (for example, filename, serial number, or serial letter) to prevent files from overwriting each other.

• For File Name Compatibility, choose Windows, Mac OS, and UNIX to make filenames compatible with Windows, Mac OS, and UNIX operating systems.

6 Click Destination to locate and select a destination folder for the processed files.

7 Click OK.

Creating multiple-image layouts

You can export multiple images automatically as contact sheets and picture packages using Automate commands.

Creating contact sheets

By displaying a series of thumbnail previews on a single page, contact sheets let you easily preview and catalog groups of images. You can automatically create and place thumbnails on a page using the Contact Sheet II command.

Note: Make sure that the images are closed before applying this command.

To create a contact sheet:

1 Choose File > Automate > Contact Sheet II.

2 Click Choose to specify the folder containing the images you want to use. Select Include All Subdirectories to include images inside any subfolders of the chosen folder.

3 Under Document, specify the dimensions, resolution, and color mode for the contact sheet, using the menus to specify measurement units.

4 Under Thumbnails, specify layout options for the thumbnail previews:

• For Place, choose whether to arrange thumbnails across first (from left to right, then top to bottom) or down first (from top to bottom, then left to right).

• Enter the number of columns and rows that you want per contact sheet. The maximum dimensions for each thumbnail are displayed to the right, along with a visual preview of the specified layout.

• Select Use Filename As Caption to label the thumbnails using their source image filenames. Use the menu to specify a caption font.

5 Click OK to create the contact sheet.

Creating picture packages

With the Picture Package command, you can place multiple copies of a source image on a single page, similar to the photo packages traditionally sold by portrait studios. You can choose from a variety of size and placement options to customize your package layout.

To create a picture package from a single image:

1 Choose File > Automate > Picture Package.

2 Specify the source image you want to use:

• Click Choose to specify a saved image file as the source.

• Select Use Frontmost Document to use the image currently active in Photoshop Elements as the source.

3 For Layout, choose a preset layout option. Layout dimensions are measured in inches, and a preview of the chosen layout appears in the dialog box.

4 Enter a resolution value for the package layout, using the menu to specify resolution units.

5 Choose a color mode appropriate to the package layout.

6 Click OK to create the package layout.

Customizing picture package layouts

You can customize existing layouts or create new layouts using a text-editing application. The layout options in the Picture Package dialog box are determined by text files that are stored in the Layouts folder (inside the Presets folder).

For example, the following text describes a layout with two 5 x 7 images:

I 8 10
(2) 5x7
0.5 0 7 5
0.5 5 7 5

First line Defines the unit of measurement and the document size.

Second line Contains the name of the layout as it appears in the Picture Package dialog box.

Subsequent lines Define the position and dimensions of each image in the layout.

To customize a new picture package layout:

1 In a text-editing application, create a new file, or open an existing file in the Layouts folder (inside the Presets folder).

2 In the first line of the file, enter the following elements (separated by a space):

• A letter for the unit of measurement: i or I (for inches), p or P (for pixels), or c or C (for centimeters). All numbers in the file use the specified unit.

• The width of the document.

• The height of the document.

Note: The width and height of the document should not exceed the printable area of the paper. For example, if you plan to print on 11 x 17 paper, specify 10 x 16 as the document size.

3 In the second line of the file, enter the name of the layout as you want it to appear in the Picture Package dialog box. You can enter up to 75 characters.

4 In the subsequent lines of the file, enter the position and dimensions for images in the layout using the following elements (separated by a space):

• The position of the image in relation to the left edge of the document (the x position of the image).

• The position of the image in relation to the top edge of the document (the y position of the image).

• The width of the image.

• The height of the image.

Enter the position and dimensions for each image in the layout on a separate line. You can specify up to 50 images per layout.

5 To add comments to the file, start the line with a semicolon (;). Lines beginning with a semicolon are ignored, as are blank lines.

6 Save the file in the Layouts folder.

13

Chapter 13: Printing

Setting up your image files for printing is easy using Adobe Photoshop Elements. You can adjust the positioning, scaling, and output options for your image. You can also use color management to help ensure a close match between on-screen and printed colors.

Printing images

To print any type of image, you first select general printing options and then specify settings for a particular image type. You can preview how the image and selected options will appear on the printed page and adjust the position and scale of the image.

Photoshop Elements provides three printing-related dialog boxes: Print Preview, Page Setup, and Print. Some printing options may appear in multiple dialog boxes depending on your printer, the print drivers, and your computer's operating system. For example, you may be able to access output options in both the Print Preview and Page Setup dialog boxes.

To print an image with its current print options:

Do one of the following:

• Choose File > Print, or click the Print button (🖨) in the shortcuts bar. Then click Print or OK.

• Hold down Alt (Windows) or Option (Mac OS) and choose File > Print One.

Note: By default, Photoshop Elements prints a composite of all visible layers. To print an individual layer, make it the only visible layer in the Layers palette before choosing the Print command. (See "Viewing layers" on page 168.)

To select print options:

1 Choose File > Page Setup, and select an installed printer from the pop-up menu at the top of the dialog box. (You can also select an installed printer in the Print dialog box.)

2 Select a paper size and orientation, and click OK.

3 Choose File > Print Preview, or click the Print Preview button (🖺) in the shortcuts bar, to do the following:

• Adjust the position and scale of the image in relation to the selected paper size and orientation. (See "Positioning and scaling images" on page 262.)

• Set output options. (See "Setting output options" on page 262.)

• Set other printing options. (See "Printing part of an image" on page 263 and "Choosing a print encoding method" on page 263.)

• Set color management options. (See "Using color management when printing" on page 264.)

4 Click OK to save the print options for the image, or click Print to print the image. Hold down Alt (Windows) or Option (Mac OS) and click Print One to print the image without displaying the Print dialog box.

Positioning and scaling images

You can adjust the position and scale of an image in the Print Preview dialog box and preview how the image will be printed on the selected paper. The shaded border at the edge of the paper represents the margins of the selected paper; the printable area is white. Photoshop Elements cannot override the borders settings for your printer's unprintable areas. Inkjet printers commonly have a 1/8- to 1/4-inch border around the perimeter of all printed pages onto which the printers cannot print.

The base output size of an image is determined by the document size settings in the Image Size dialog box. (See "Changing the print dimensions and resolution of an image" on page 50.) Scaling an image in the Print Preview dialog box changes the size and resolution of the printed image only. For example, if you scale a 72-ppi image to 50% in the Print Preview dialog box, the image will print at 144 ppi; however, the document size settings in the Image Size dialog box will not change.

Important: The Print Preview dialog box may not reflect accurate values for Scale, Height, and Width if you set a scaling percentage in the Page Setup dialog box. To avoid inaccurate scaling, specify scaling in the Print Preview dialog box rather than the Page Setup dialog box; do not enter a scaling percentage in both dialog boxes.

To reposition an image on the paper in the Print Preview dialog box:

Do one of the following:

• Click Center Image to center the image in the printable area.

• Enter values for Top and Left to position the image numerically.

• Select Show Bounding Box, and drag the image in the preview area.

To scale the print size of an image in the Print Preview dialog box:

Do one of the following:

• Click Scale to Fit Media to fit the image within the printable area of the selected paper.

• Enter values for Height and Width to rescale the image numerically.

• Select Show Bounding Box, and drag a bounding box handle in the preview area to achieve the desired scale.

Setting output options

Output options let you select items that print in addition to the image. For example, you can choose to print a border around the image, or you can choose to print crop marks. The output

options aren't visible by default in the Print Options dialog box; you must select Show More Options (located below the image preview area) in order to see them.

Note: Depending on your printer and print drivers, output options may also appear in the Page Setup dialog box. The advantage of using the Print Preview dialog box to set output options is that you can preview the selected options prior to printing.

To set output options:

1 Choose File > Print Preview, or click the Print Preview button (⊡) in the shortcuts bar.

2 Click Show More Options and choose Output from the pop-up menu.

3 Select one or more of the following options. Options not supported by the designated printer are dimmed.

Background Lets you select a background color to be printed on the page outside the image area. For example, a black or colored background may be desirable for slides printed to a film recorder. To use this option, click Background, and then select a color from the Color Picker dialog box. This is a printing option only; it does not affect the image itself.

Border Lets you print a black border around an image. Type in a number and choose a unit value to specify the width of the border.

Caption Prints any caption text entered in the File Info dialog box. (See "Adding file information" on page 254.) Caption text always prints as 9-point Helvetica plain type.

Corner Crop Marks Prints crop marks where the page is to be trimmed.

Printing part of an image

You can use the Print Selected Area option to print a specific part of an image.

To print part of an image:

1 Use the rectangle marquee tool to select the part of an image you want to print.

2 Choose File > Print Preview, or click the Print Preview button (⊡) in the shortcuts bar.

3 Select Print Selected Area, and click Print.

Choosing a print encoding method

By default, the printer driver transfers binary information to printers; however, you can choose to transfer image data using JPEG or ASCII encoding.

JPEG-encoded files are smaller than binary files, and therefore require less time to print; however, using JPEG encoding decreases the image quality. Only PostScript Level 2 (or higher) printers support JPEG encoding; sending a JPEG-encoded file to a PostScript Level 1 output device may result in PostScript language errors.

Some print spooler programs, computer networks, and third-party printer drivers don't support files that are binary or JPEG-encoded, and some PostScript output devices accept binary and JPEG-encoded image data only through their AppleTalk and Ethernet ports, not their parallel or serial ports. In these situations, you can select the ASCII encoding method. However, ASCII files contain about twice as many characters and require about twice as much time to transfer as binary files. (See "Photoshop EPS format" on page 250.)

To change the encoding method:

1 Choose File > Print Preview, or click the Print Preview button in the shortcuts bar.

2 Select an option from the Encoding menu.

Using color management when printing

Understanding when to use color management requires an understanding of how colors are represented in digital images. Photoshop Elements uses a grid of elements known as *pixels* to represent images. When you view an image on your monitor, pixels are displayed using red, green, and blue light. When you print an image on a desktop printer, pixels are reproduced using colored inks. The number of inks used in the printing process, as well the exact color value of each ink and the size of the dots printed, are determined by the printer manufacturer.

Because your monitor operates in a different color space than your printer, and different printers have different color spaces, the colors you see on your monitor can vary drastically from those in the printed image. Color management provides a solution to this dilemma. In a color-managed workflow, you use *color profiles* to ensure that the colors remain consistent. (See "About color and computer graphics" on page 65.)

Converting colors to a different color space usually involves an adjustment of the source or image colors to accommodate the gamut of the destination printer or output device color space. Different translation methods use different rules to determine how the source colors are adjusted; for example, colors that fall inside the destination gamut may remain unchanged, or they may be adjusted to preserve the original range of visual relationships as translated to a smaller destination gamut. These translation methods are known as *rendering intents* because each technique is optimized for a different intended use of color graphics.

To determine if you need to use color management when printing:

1 Print an image without color management.

2 Compare the colors in the printed image with those on your monitor. If the color fidelity is not acceptable, use color management.

To color-manage an image while printing:

1 Choose File > Print Preview, or click the Print Preview button (🖻) in the shortcuts bar.

2 Select Show More Options (located below the image preview area), and choose Color Management from the pop-up menu.

The Source Space section of the dialog box displays the image's color profile. (See "Using color management" on page 65.)

3 In the Print Space section of the dialog box, choose an option for Profile:

• Choose Same As Source if you want the printer to output color based only on the image's color profile. No additional conversions will be performed on the colors of the document when it is printed. This option will not take any printer profiles into account.

• Choose Printer Color Management or PostScript Color Management if you want to manage color conversions using the print driver. PostScript Color Management is only available when printing to a PostScript device.

• If available, choose a predefined color profile for your printer. These profiles are installed with graphics applications and print drivers. Choosing a predefined profile will result in an automatic color conversion when printing.

4 Under Print Space, for Intent, choose a rendering intent to use when converting colors to the destination profile space:

Perceptual Known as the Image intent in Adobe PageMaker and Illustrator 9, Perceptual aims to preserve the visual relationship between colors in a way that is perceived as natural to the human eye, although the color values themselves may change. This intent is most suitable for photographic images.

Saturation Known as the Graphics intent in Adobe PageMaker and Illustrator 8, Saturation aims to create vivid color at the expense of accurate color. It scales the source gamut to the destination gamut, but preserves relative saturation instead of hue, so when scaling to a smaller gamut, hues may shift. This rendering intent is suitable for business graphics, where the exact relationship between colors is not as important as having bright saturated colors.

Absolute Colorimetric Leaves colors that fall inside the destination gamut unchanged. This intent aims to maintain color accuracy at the expense of preserving relationships between colors. When translating to a smaller gamut, two colors that are distinct in the source space may be mapped to the same color in the destination space. Absolute Colorimetric can be more accurate if the image's color profile contains correct *white point* (extreme highlight) information. This rendering intent is suitable when you want to match the color of one substrate on another substrate, in addition to matching the non-black ink, and have all the colors give the most accurate match possible. One example would be when reproducing the appearance of a printed sheet of

newsprint onto a sheet of bright white inkjet paper. The substrate of the bright white inkjet paper would be printed over with a dingy gray to simulate the actual newsprint appearance.

Relative Colorimetric This intent is identical to Absolute Colorimetric except for the following difference: Relative Colorimetric compares the white point of the source color space to that of the destination color space and shifts all colors accordingly. When used in the Absolute Colorimetric example given, the Relative Colorimetric rendering intent would match the colors and the black ink printed on the newsprint, but not the substrate color of the newsprint. So the substrate of the bright white inkjet paper would show through as bright white.

Printing over the Web

If you don't have a printer or want to get high-quality reproductions, you can send images from Photoshop Elements to an online service for printing.

To use an online service for printing:

1 Choose File > Online Services.

2 Choose a service from the list, and click Next.

3 Specify which images you want to print, and provide login information as prompted. If this is your first time using the online service, you may need to sign up before proceeding; a Sign-Up button is provided.

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Production Notes

This book was created electronically using Adobe FrameMaker®. Art was produced using Adobe Illustrator and Adobe Photoshop. The Minion® and Myriad® families of typefaces are used throughout this book.

Photography

The following photographers and stock agencies have supplied the photographs and artwork seen throughout this book.

Adobe Image Library
Horse (page 141)

CMCD, Inc.
Bike (page 45)

Definitive Stock
Cactus (page 195)

Eyewire Photography
Filter and effects gallery; Sailboat (page 189)

George Matthews
Chicago skyline (page 9)

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