

Preparing Images for Print and the Web

The Big Picture

Preparing an image for print is different from preparing an image for a website, email, social media, or an online competition. For print, think about:

- Physical print size
- Pixel dimensions
- Resolution in PPI
- Color space
- Output sharpening
- File type

For web, think about:

- Pixel dimensions
- File size
- Color space
- JPEG quality
- Screen sharpening

Key Point: For web use, pixel dimensions matter much more than the PPI number. For printing, pixel dimensions, print size, and PPI work together.

Understanding the Basic Terms

Pixel Dimensions

Pixel dimensions describe the actual number of pixels in the image. Example: **6000 × 4000 pixels** That tells you how much image information the file contains.

Resolution — PPI

PPI means pixels per inch. For printing, PPI describes how densely the pixels will be placed on paper. A 3000-pixel-wide image printed at:

Resolution	Approximate Print Width
300 PPI	10 inches
200 PPI	15 inches
150 PPI	20 inches

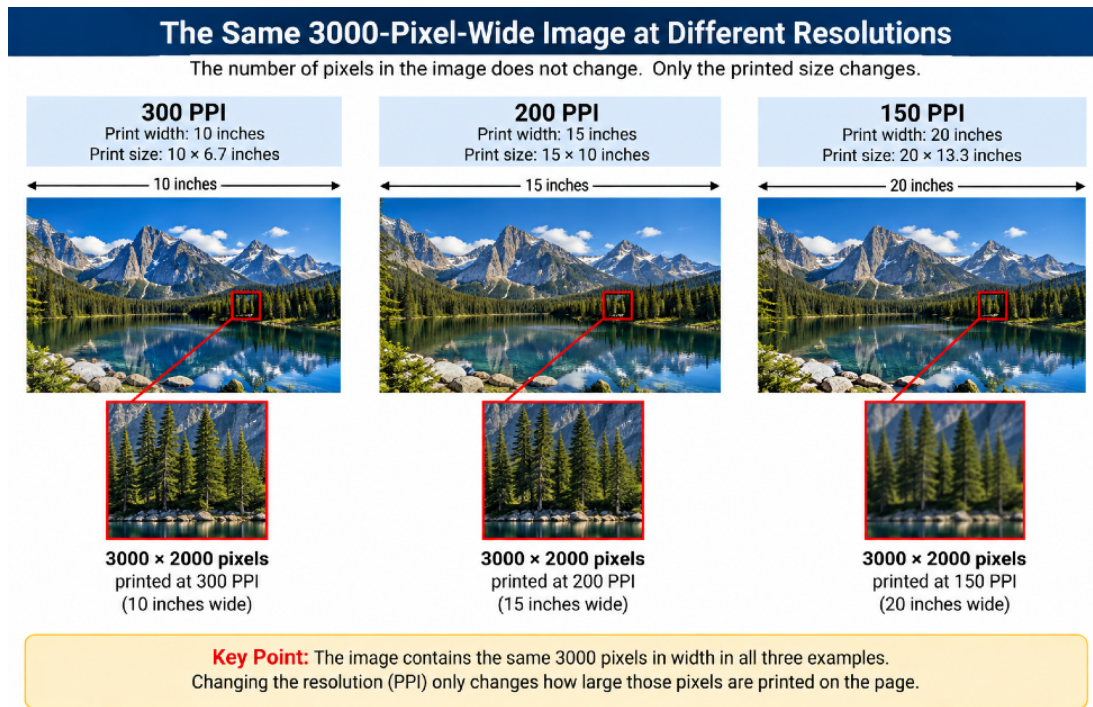


Figure 1. Print width changes with PPI while the pixel count stays the same.

The number of pixels has not changed. Only the size of the print has changed.

Cropping, Resizing and Resolution Are Different

Cropping

Cropping removes part of the photograph. It changes the composition and usually reduces the total number of pixels.

Resizing

Resizing changes the actual pixel dimensions. Example: **6000 × 4000 pixels** becomes: **1920 × 1280 pixels**

Changing Resolution Without Resampling

Changing the PPI value without resampling does not change the number of pixels. It changes how large those pixels will print. Remember:

Crop = composition

Resize = pixel dimensions

Resolution = relationship between pixels and print size

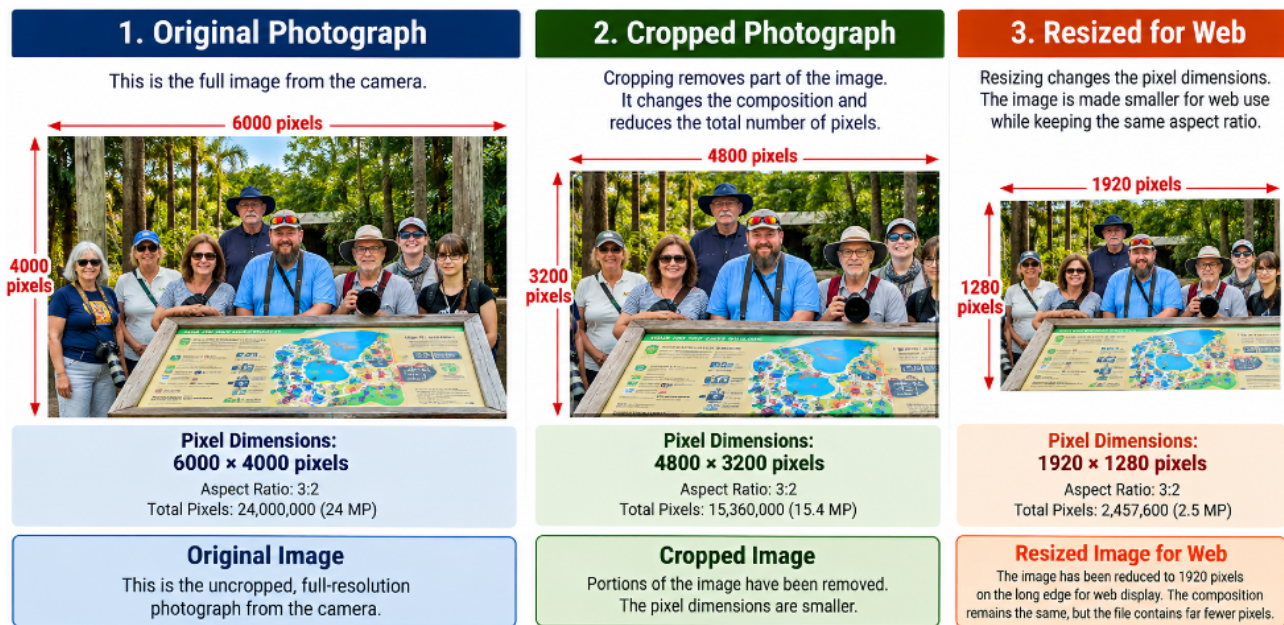


Figure 2. Cropping changes composition; resizing changes pixel dimensions.

Preparing Images in Lightroom Classic

Lightroom Classic is usually the easiest method when you already have your photograph in the Lightroom catalog. You do not have to alter your original file. Lightroom creates a new exported image using the specifications you choose.

Lightroom Classic — Export for Print

Select your finished photograph. Choose: **File > Export**

1. Export Location

Choose where the finished image will be stored. A folder such as: Images for Print can help keep finished files organized.

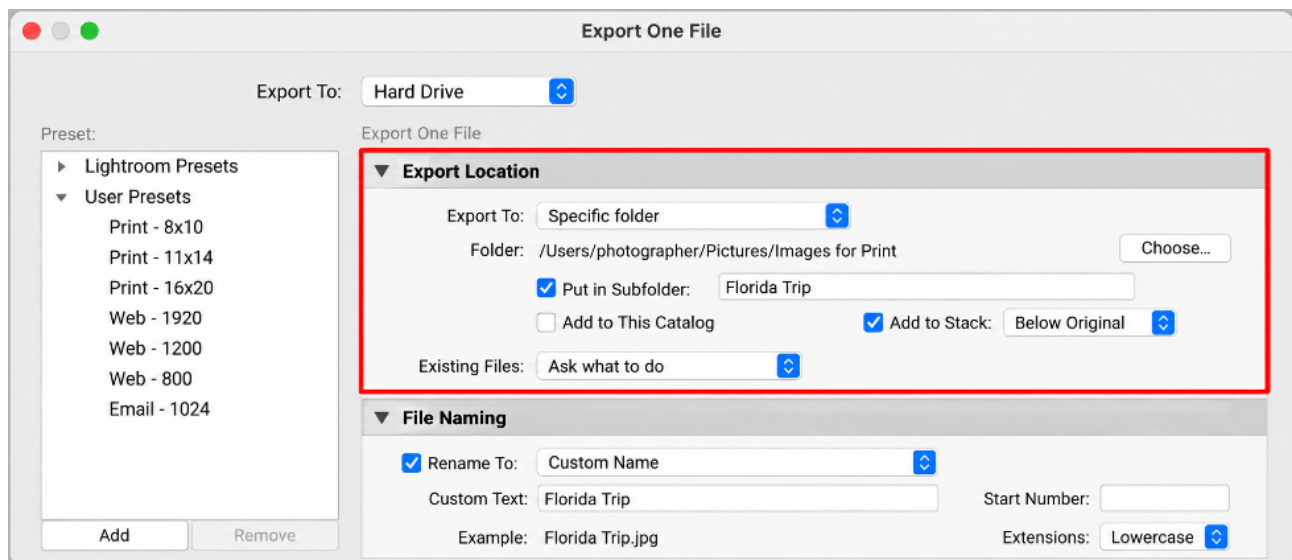


Figure 3. Lightroom Classic Export Location.

2. File Settings

A common starting point is:

Image Format: JPEG

Quality: High

Color Space: Follow your printer or lab specifications If no special color space is requested, sRGB is often the safest general-purpose choice.

3. Image Sizing

Under Image Sizing, Lightroom provides options including:

- Width & Height
- Dimensions
- Long Edge
- Short Edge
- Megapixels

For printing, determine the desired physical dimensions and the resolution required by the printer.

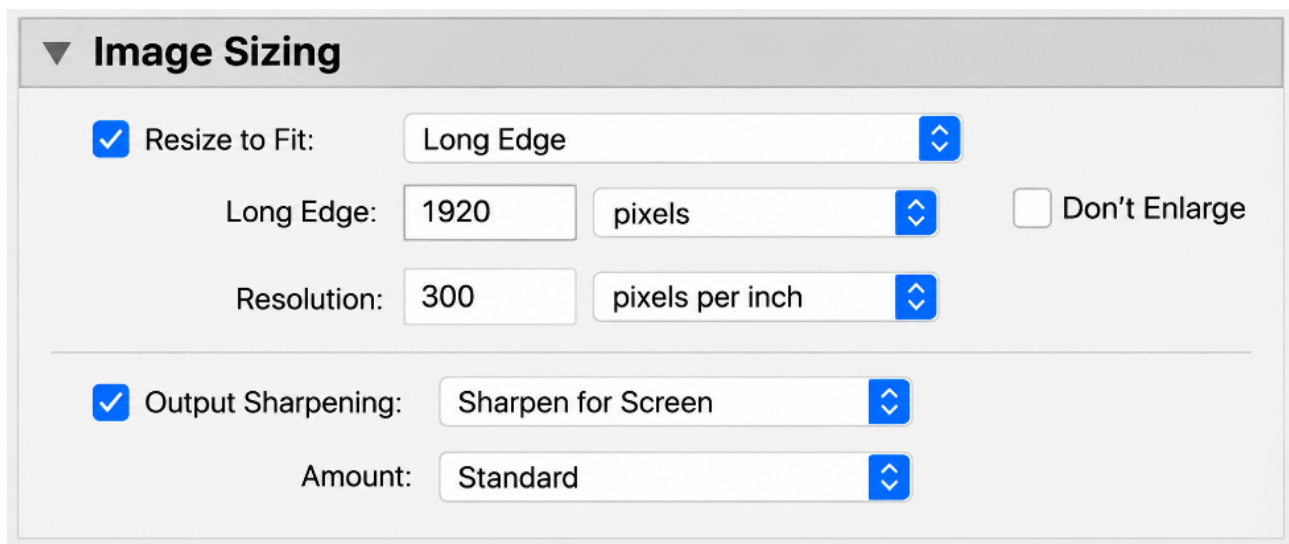


Figure 4. Lightroom Classic Image Sizing and screen sharpening controls.

4. Resolution

A common starting point for photographic printing is: 300 pixels per inch This is not an absolute requirement. Printers, labs, print processes, and viewing distances may allow lower or require different resolutions. Always follow the specifications of the printer or photo lab.

5. Output Sharpening

Under Output Sharpening, Lightroom lets you select: **Sharpen For:**

- Matte Paper
- Glossy Paper

Then choose:

- Low
- Standard
- High

Standard is usually a good starting point.

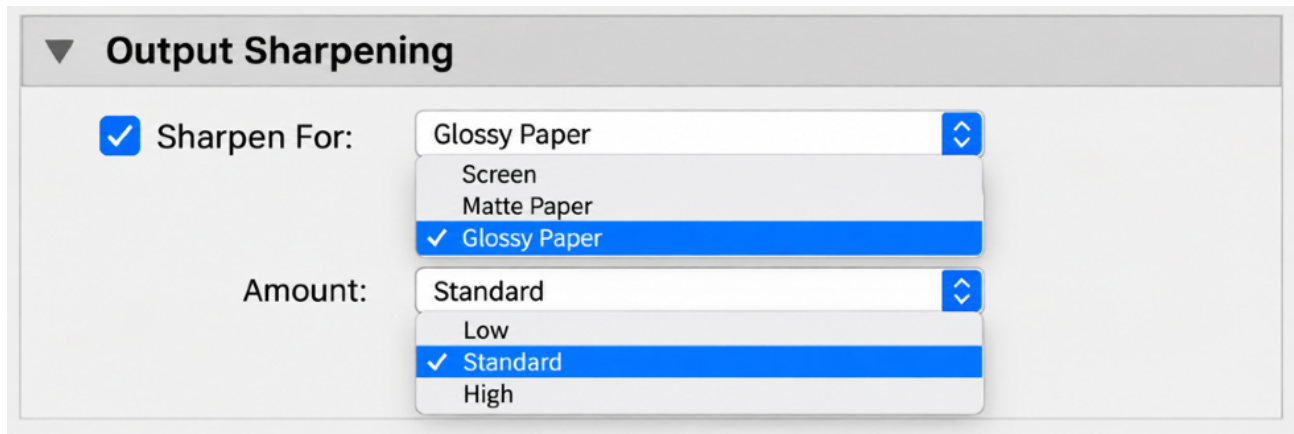


Figure 5. Lightroom Classic output sharpening for paper.

Lightroom Classic — Export for the Web

Suppose an online competition requires:

JPEG

sRGB 1920 pixels on the long edge Maximum file size: 5 MB Choose: **File > Export** Then use:

Image Format: JPEG

Color Space: sRGB Under Image Sizing:

Resize to Fit: Long Edge

Long Edge: 1920 pixels If you do not want Lightroom to enlarge a smaller image: Check: Don't Enlarge

Resolution for Web

The PPI number is generally not important for normal web display. A file that is: **1920 × 1280 pixels** still contains exactly the same number of pixels whether its metadata says:

- 72 PPI
- 96 PPI
- 300 PPI

For the web, think in pixels — not inches.

Lightroom Web Output Sharpening

Choose: **Sharpen For: Screen** A good starting point is:

Amount: Standard If a website imposes a maximum file size, reduce JPEG quality only as much as necessary.

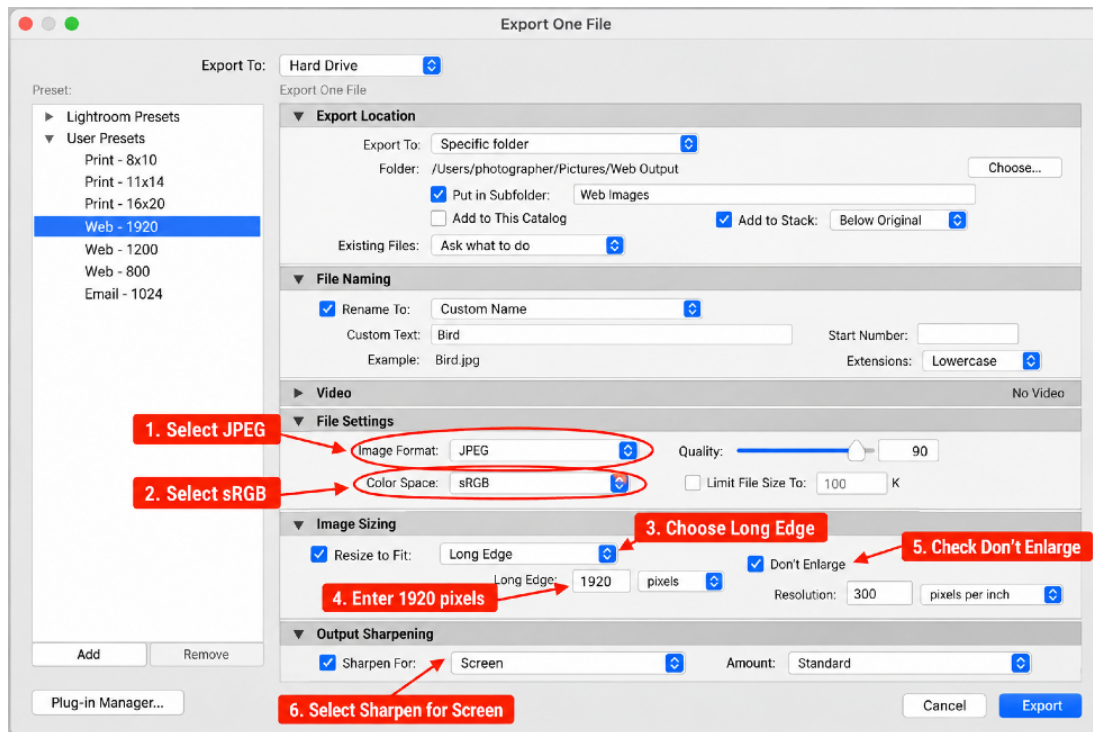


Figure 6. Lightroom Classic export settings for the web.

Preparing Images with Apple Preview

Apple Preview is useful when you simply need to:

- Crop an image
- Resize an image
- Change resolution
- Create a smaller JPEG

You do not need Lightroom or Photoshop for these basic tasks.

Cropping in Preview

Open the photograph in Preview. Choose: Rectangular Selection Drag over the area you want to keep. Then open the tools menu and press crop Crop

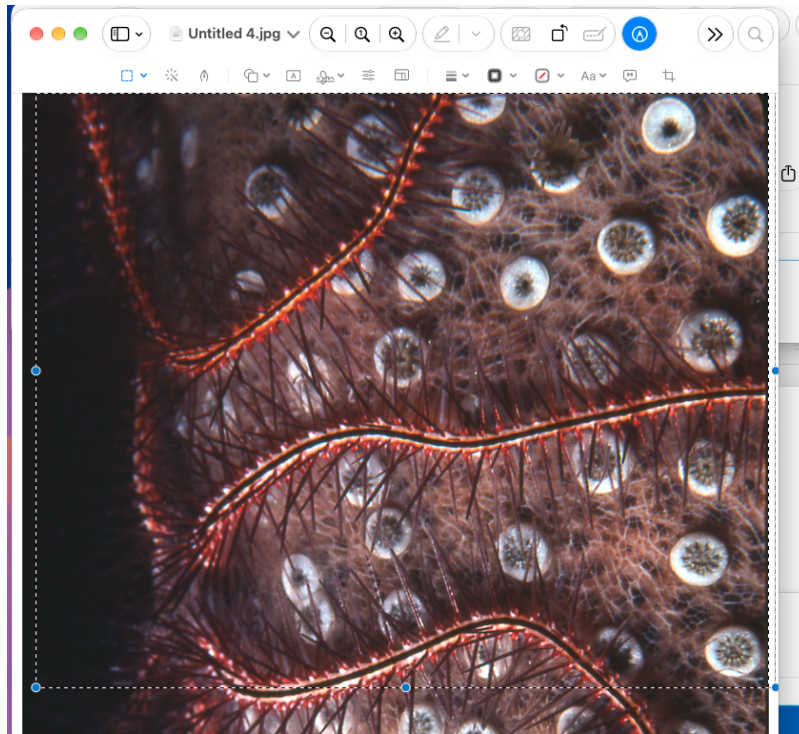


Figure 7. Making a rectangular selection in Apple Preview.

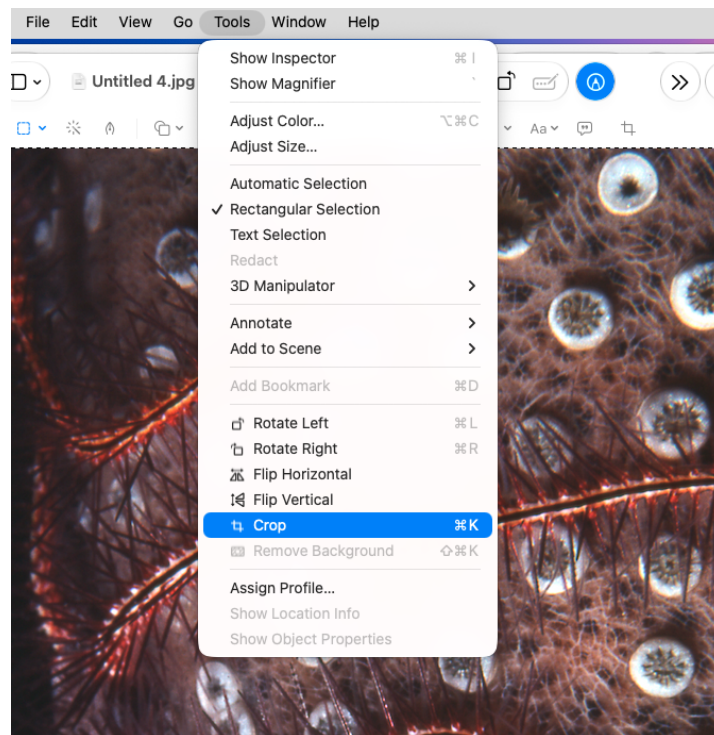


Figure 8. The Crop command in Apple Preview.

Resizing in Preview

Choose: **Tools > Adjust Size** The Adjust Size window provides controls for:

- Width
- Height
- Resolution
- Units
- Scale proportionally
- Resample image

Preview — Preparing an Image for the Web

In: **Tools > Adjust Size** Change the units to: pixels Enter the desired width or height. Example: **Width: 1920 pixels**
Make sure:

- Scale proportionally

is selected. Select:

- Resample image

when you want Preview to actually reduce the number of pixels.

Preview — Understanding Resolution for Print

Open: **Tools > Adjust Size** Turn Resample image OFF. Now change the resolution. For example: **240 PPI → 300 PPI**

Watch what happens. The pixel dimensions remain unchanged. The physical print dimensions become smaller.

Nothing has been added to the photograph. The same pixels are simply being printed more densely.

Preparing Images with Windows Photos

Microsoft Photos is useful for:

- Cropping
- Straightening
- Rotating
- Basic tonal adjustments
- Creating a simplified edited copy

Cropping in Windows Photos

Open the photograph in Photos. Choose: Edit image or press: Ctrl + E Choose: Crop You can:

- Drag the crop boundaries
- Select a preset aspect ratio
- Rotate
- Straighten
- Flip the image

When finished, save a copy rather than replacing your only original.

An Important Windows Photos Limitation

Windows Photos is not as complete as Preview, Lightroom, or Photoshop for preparing exact print dimensions and PPI. It is excellent for basic cropping and editing, but for precise print preparation, Lightroom or Photoshop gives

you much greater control. Windows Photos is best treated as a basic image-editing tool rather than a complete print-preparation application.

Preparing Images in Photoshop

Photoshop provides the greatest control over:

- Cropping
- Pixel dimensions
- Print dimensions
- Resolution
- Resampling
- Color space
- Sharpening
- File format

Cropping in Photoshop

Select the: Crop Tool You can crop freely or select a specific aspect ratio. Examples: **4 × 5** **8 × 10** **16 × 20**

Remember: An 8 × 10 aspect ratio establishes the shape of the image. It does not necessarily mean the file has already been prepared as an 8 × 10-inch print.



Figure 9. Photoshop Crop Tool with a 4 × 5 aspect ratio.

Photoshop — Image Size

Choose: **Image > Image Size** The Image Size dialog displays:

- Width
- Height
- Pixel dimensions
- Resolution
- Resample



Figure 10. Photoshop Image Size controls.

Photoshop — Resample OFF

Turn: Resample OFF Now change: 240 PPI to: 300 PPI The pixel dimensions remain unchanged. The physical print dimensions change. This is one of the most important concepts in preparing photographs for print.

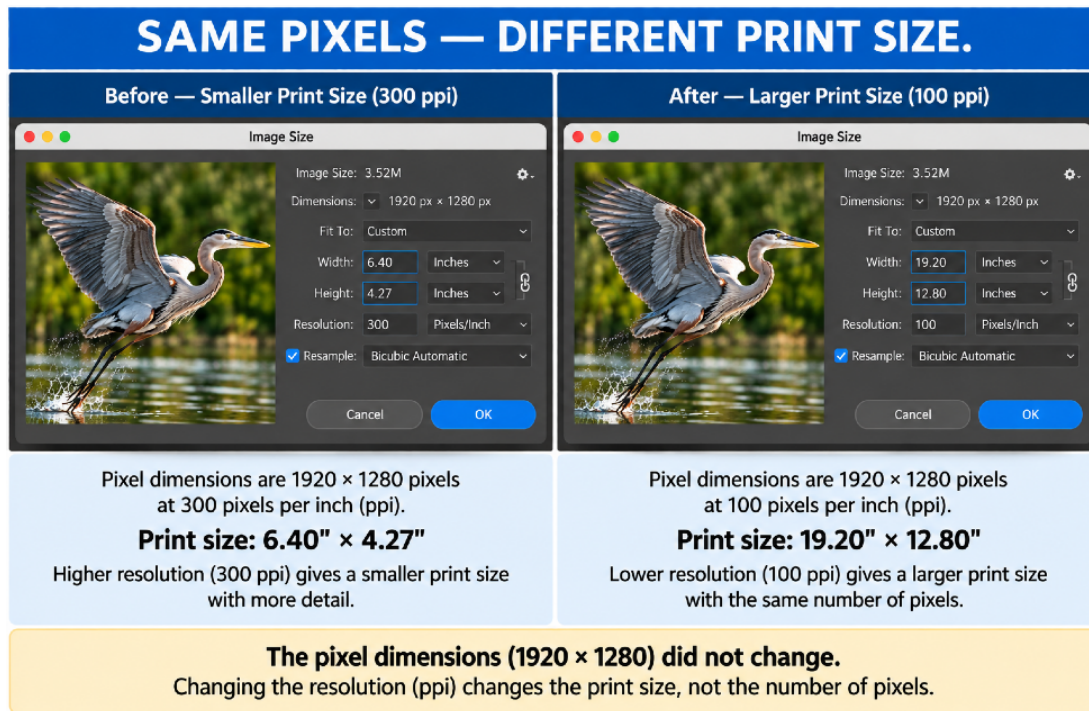


Figure 11. The same pixels at different print sizes with Resample turned off.

Photoshop — Resample ON

Turn: Resample ON Now Photoshop can add or remove pixels. For example: **6000 × 4000 pixels** can be reduced to: **1920 × 1280 pixels** for web use. When enlarging beyond the original pixel dimensions, Photoshop must create additional pixels through interpolation. This may improve the appearance of an enlargement, but it does not mean the camera captured additional original detail.

Preparing a Print in Photoshop

A practical workflow:

1. Finish your editing Complete color and tonal adjustments.
2. Crop to the desired aspect ratio Example: **8 × 10** or **16 × 20**
3. Choose Image > Image Size
4. Turn Resample OFF Check the available resolution at the desired print dimensions.
5. Resample only if necessary If you must change the actual number of pixels, turn Resample ON.
6. Apply output sharpening Sharpen after the image has been resized for the final output.
7. Save a separate copy Never overwrite your master file.

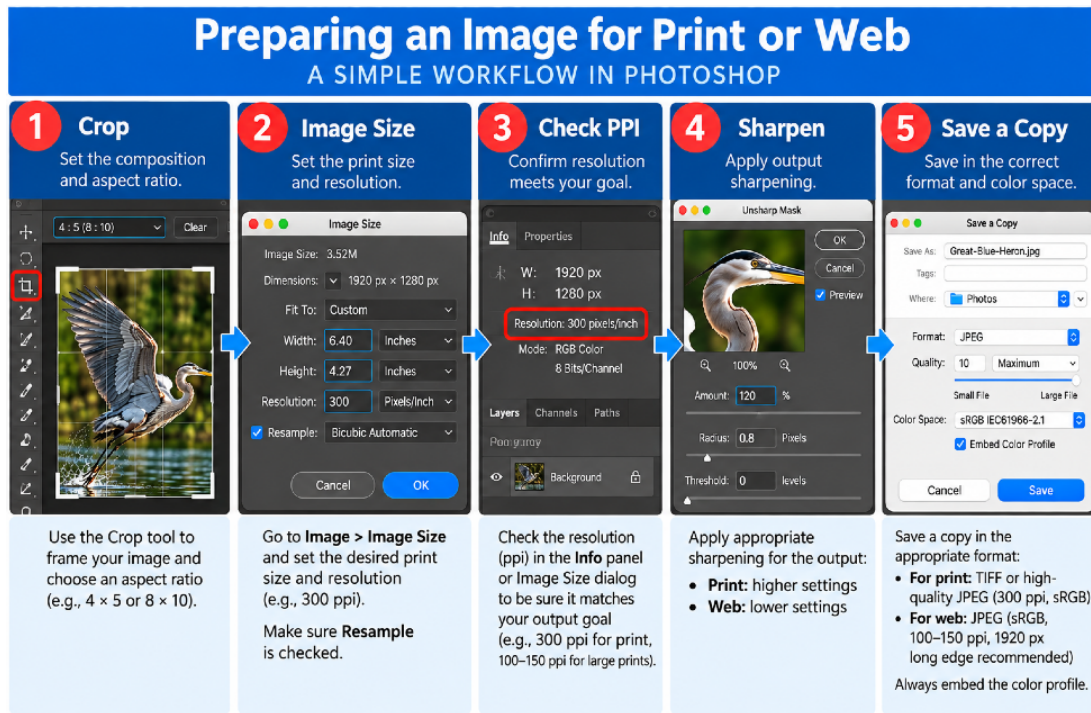


Figure 12. A Photoshop workflow for preparing a print or web file.

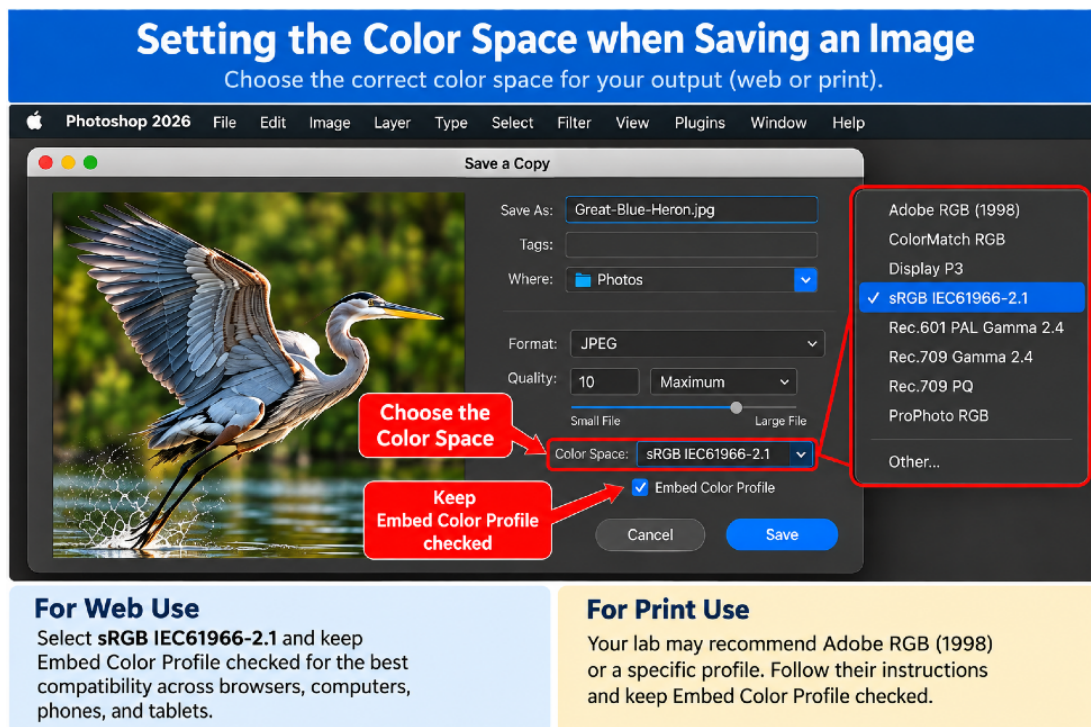


Figure 13. Choosing a color space when saving an image.

Preparing a Web Image in Photoshop

Choose: **Image > Image Size** Turn: **Resample** ON Set the desired pixel dimension. Example: Long edge: 1920 pixels The corresponding short dimension will be calculated automatically if proportions are locked. Then save or export the file as:

JPEG and normally use:
sRGB unless the destination specifies something else.

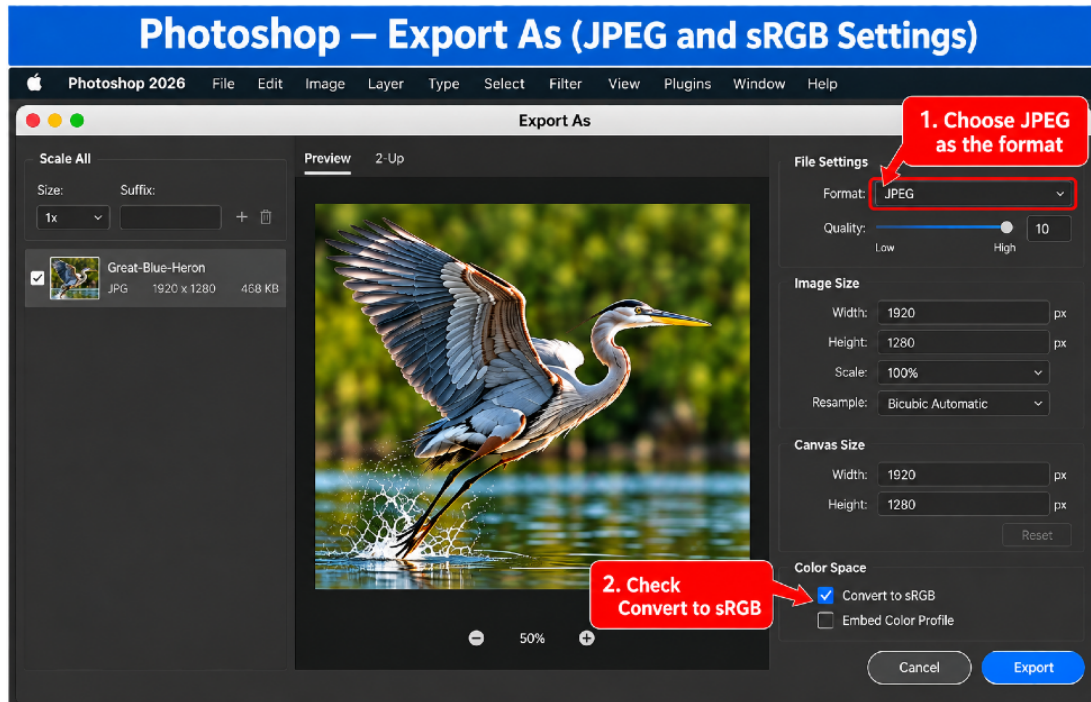


Figure 14. Photoshop export settings for JPEG and sRGB.

A Simple Example

Start with a photograph that is: **6000 × 4000 pixels** At: 300 PPI it can print approximately: **20 × 13.3 inches** without resampling. For web use, the same photograph might be exported as: **1920 × 1280 pixels** The two files may look almost identical on a computer display, but they contain very different amounts of image information.

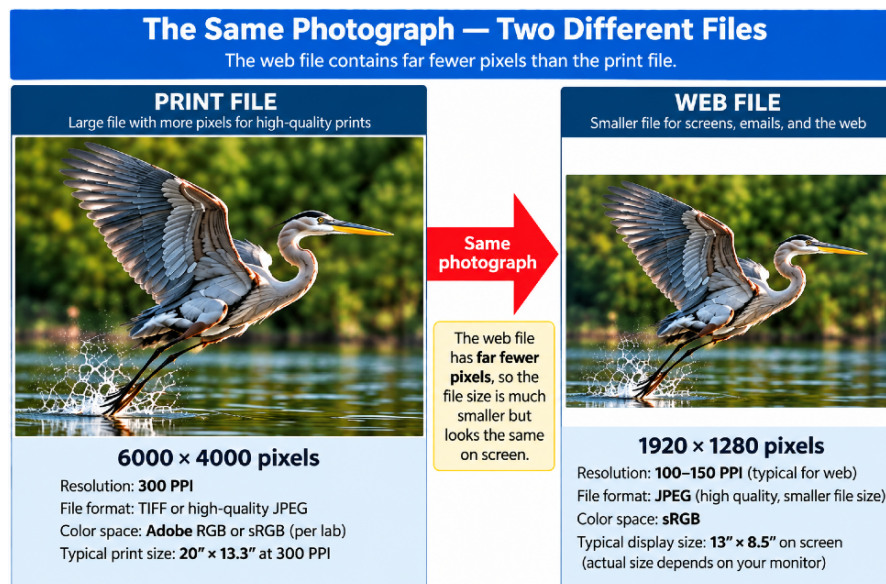


Figure 15. Print and web versions of the same photograph contain different numbers of pixels.

Quick Reference

For Web, Email and Online Competitions

A good starting point:

JPEG

sRGB

Use the required pixel dimensions

Sharpen for Screen

Adjust JPEG quality only as needed to meet file-size limits

For Printing

A good starting point:

JPEG or TIFF as required

Correct aspect ratio

Color space specified by the printer

Approximately 300 PPI when sufficient pixels are available

Output sharpening appropriate for the paper or printing process

Final Rule

Always prepare the photograph for its final destination. For printing, think:

Pixel Dimensions + Print Size + PPI For the web, think:

Pixel Dimensions + Color Space + File Type + File Size And when a printer, competition, website, or publication provides specifications: **Follow their specifications first.**