UNDERSTANDING JPEG vs RAW

Understanding how the camera records an image is essential to making informed creative and technical choices. Most cameras allow you to choose **JPEG, RAW,** or **RAW+JPEG** in the Image Quality menu. Each format has strengths, limitations, and ideal uses.

What is a JPEG

JPEG (Joint Photographic Experts Group) is the most common digital image format.

Key Characteristics

- Universal compatibility — opens in virtually any browser, viewer, or editing program.
- Lossy compression — the camera discards some fine detail (mostly in the highlight, shadow, and smooth similar color areas) to reduce file size.
- Applies all in-camera settings — white balance, sharpening, contrast, picture style, and noise reduction are baked into the file.
- Degrades with repeated saving — each save rewrites the file and can reduce quality.
- Convenient and ready to use — ideal for quick sharing, smaller files, and fast workflows.

What This Means for Photographers

JPEGs are great when you need speed, small files, or immediate usability. The trade-off is reduced flexibility in post-processing and some loss of detail.

What is a RAW file

RAW literally means raw — as in unprocessed. It is the digital equivalent of a film negative.

Key Characteristics

- Lossless compression — no data is discarded.
- Contains all original sensor information before the camera applies processing.
- Requires development — must be processed in software such as Lightroom, Adobe Camera Raw, Capture One, or manufacturer software.
- Camera-specific formats — NEF (Nikon), CR3 (Canon), ARW (Sony), RAF (Fujifilm), etc.
- Settings stored separately — exposure, white balance, sharpening, and picture style are metadata, not baked in. They can be more easily adjusted or changed during post-processing.
- Highly flexible — allows extensive adjustment without degrading the file.
- Can be converted to DNG — a more universal RAW format.

What This Means for Photographers

RAW files give you maximum control, dynamic range, and editing latitude. They require more storage and a processing step, but they preserve the highest image quality.

RAW VS. JPEG AT A GLANCE

Feature	RAW	JPEG
Compression	Lossless	Lossy
File Size	Large	Small
Flexibility in Editing	Very high	Limited
In-Camera Processing	Minimal	Fully applied
In-Camera Processing	Requires specific software	Universal
Best For	Maximum quality, editing, printing	Speed, sharing, small files

UNDERSTANDING DNG (DIGITAL NEGATIVE)

DNG = A Universal RAW File
Created by Adobe, DNG is an open, standardized RAW format designed to work across different cameras and software. It's not proprietary, and many programs support it (CaptureOne does not support DNG).

Why It Matters
Camera brands use their own RAW formats (NEF, CR3, ARW, etc.), which may change or become unsupported over time (some older RAW formats have been discontinued, but continue to be supported by most photo programs). DNG offers a future-proof, consistent way to store RAW image data.

What's Inside a DNG
- Original RAW sensor data
- All metadata (EXIF, camera settings, lens info)
- Optional embedded JPEG preview
- Optional embedded full-size JPEG
- Optional embedded original RAW file (this will make the DNG file size quite large)

Compression Options
- Lossless (most common): smaller files with no loss of data
- Lossy (optional): smaller than RAW, still more flexible than JPEG

Why Photographers Use It
- Smaller RAW files
- Faster performance in Lightroom
- Edits stored inside the file
- No sidecar files to manage
- Long-term archival stability

DNG is a universal, future-friendly RAW format that keeps your image data safe, organized, and easy to edit.

MY WORKFLOW AND FILE STRATEGY

I photograph everything in RAW because it gives me the highest image quality and the most flexibility in post-processing. All of my RAW files are developed in Lightroom Classic, where I can fine-tune exposure, color, contrast, and detail with full control. Shooting RAW ensures I always have a complete digital negative with all the data my camera captured.

When I need images to share quickly—such as for social media, event updates, or client previews—I switch to RAW + Small JPEG. This gives me the best of both worlds:

- A small JPEG that loads fast and is easy to edit lightly
- A full RAW file for detailed processing later

To make those quick JPEGs look good straight out of the camera, I use custom Picture Styles that apply basic in-camera processing: *(these are 2 examples)*

- **Landscape Style** (used for street photography)
  - More sharpening
  - Slightly more contrast
  - A bit more color saturation
  - This gives the JPEGs a crisp, punchy look that works well for bold scenes and everyday moments.
- **Portrait Style** (used for people and events)
  - Less sharpening
  - Softer color and lower saturation
  - Reduced tint
  - This creates a more natural, flattering look for skin tones and candid moments.

Even though the JPEGs are small, I can still make quick adjustments—cropping, exposure tweaks, contrast, or color corrections. Because the files are lightweight, they import and export quickly, making them perfect for fast turnaround.

Later, when I want to refine an image for printing, portfolio use, or client delivery, I return to the RAW files. These contain all the original detail and dynamic range, giving me far more control for precise, high-quality editing.

In short:
I shoot RAW for quality, RAW+JPEG for speed, and use picture styles to get quick, usable JPEGs while preserving full creative control in the RAW files.

EXERCISE: SEE THE DIFFERENCE FOR YOURSELF

This exercise helps you visually compare how RAW and JPEG behave in real-world shooting and editing.

1. Set Up Your Camera

- Choose RAW+JPEG in Image Quality settings.
- Use Manual exposure or a mode of choice Shutter Priority or Aperture Priority, and be sure to get a correct exposure of the subject and scene.
- Set White Balance to a fixed preset for best color depending on the lighting conditions, Auto WB is also an option.
- Turn off any creative filters or special effects. You can do the test again with any of the picture styles, creative filters or special effects to see how the RAW and jpeg differ.

2. Photograph a Simple Scene

Choose a subject with:

- A wide range of tones (shadows + highlights)
- Some fine detail (fabric, leaves, texture)
- A consistent light source

Make 5–10 identical images — same subject, same framing, same exposure.

3. Compare the Files

Open the RAW and JPEG versions side by side in Lightroom, Bridge, or your preferred software.

Look for:

- Highlight recovery — pull back the exposure in RAW and see how much detail returns.
- Shadow recovery — lift shadows and compare noise levels.
- White balance flexibility — adjust WB dramatically and note which file holds up. RAW files give you the ability to easily adjust WB after the capture.
- Detail and sharpness — zoom to 100% and compare fine textures.
- Color depth — push saturation or vibrance and observe differences.

4. Export Your Results

Export:

- One JPEG straight from the camera
- One JPEG created from your RAW file after editing

Compare:

- Detail
- Color
- Noise
- Overall quality

Reflect

- When would they choose RAW? Why?
- When would JPEG be enough? Why?
- How does lighting influence the choice?
- What's your thoughts on DNG?