

# The RAW Truth

RAW vs JPEG

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# The RAW Truth

- RAW vs JPEG
  - Differences
  - Which one to use?
- Exposing for RAW
- Non-destructive editing
- Available software
- Learning more

# Choices

- Most cameras let you choose an image file format
  - JPEG
    - Various sizes and resolutions
  - RAW
  - RAW + JPEG

# JPEG

- “Joint Photographic Experts Group”
  - Created the standard in the 1990s
- Characteristics
  - Probably most used standard format for image exchange
  - sRGB colour space - limited colours
  - Compresses image data - loss of colour and detail every time a new copy is saved
    - Smaller the file, the more data loss

# Taking JPEGs

- Every camera setting matters
  - Exposure, f stop, shutter speed, white balance
  - Colour, sharpness, noise reduction & more
- Camera “develops” your image using the camera settings and creates a JPEG
  - Settings are “baked in”
- Settings – particularly exposure and white balance - need to be very close to what you want

# RAW

- The raw sensor data
  - Think of it as undeveloped film
- Different for every camera
- Needs to be "developed" using software
- Software needs to be updated for every new camera

# Taking RAW

- Only 3 camera settings matter
  - ISO, f stop, shutter speed
- Everything else you control when you edit it
  - Even white balance
- Exposure does not have to be perfect
  - It actually shouldn't be!

# Exposure for RAW

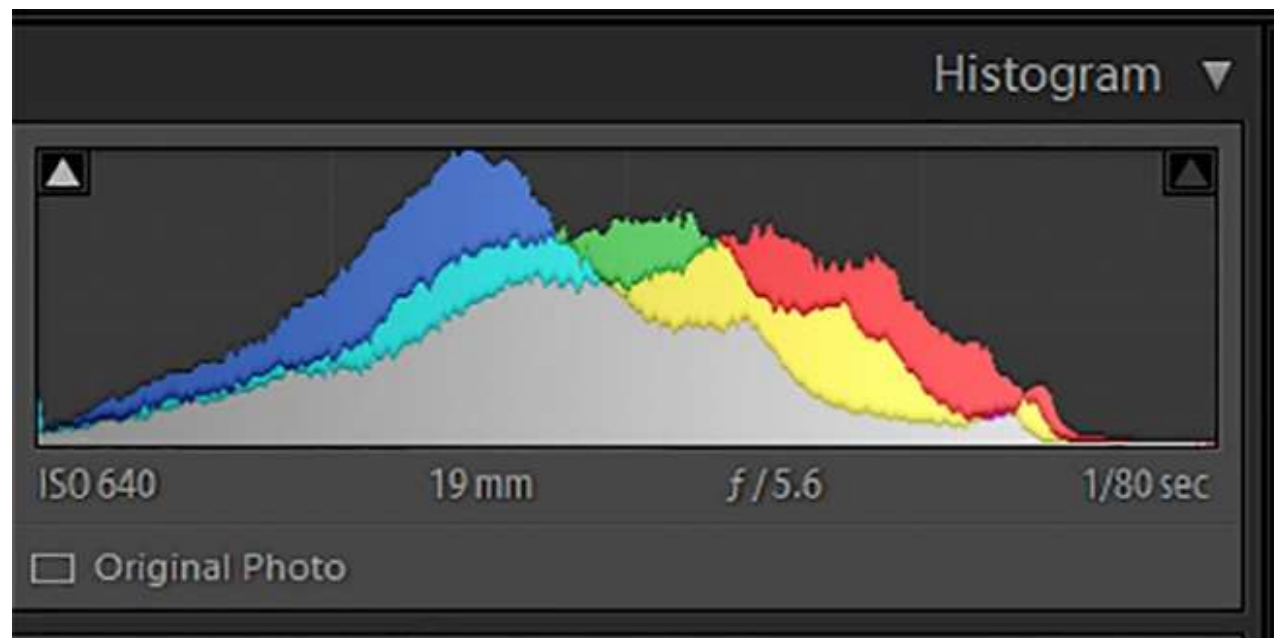
- In any digital image the most noise is in the shadows
- Goal is to make the shadows as bright as possible without blowing out the detail in the highlights
- Adjust the image in the RAW editing software to get the look you want



# How to Expose for RAW

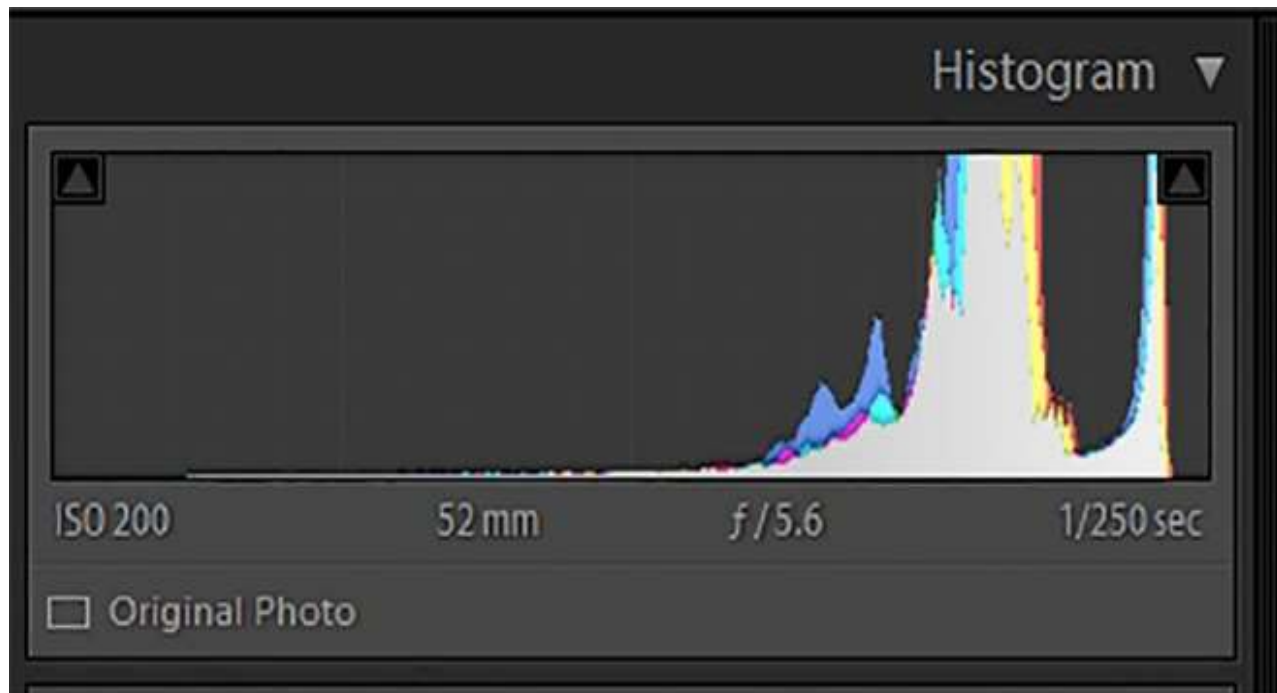
- Use exposure compensation to alter (usually increase) exposure as much as possible without blowing out highlights
  - Two methods
    - Check "blinkies" indicating blown highlights
      - In electronic viewfinder (mirrorless)
      - Image review (DSLRs)
    - Look at histogram
      - In viewfinder in some cameras or image review
      - Should be as far to the right as possible without touching

# Histogram



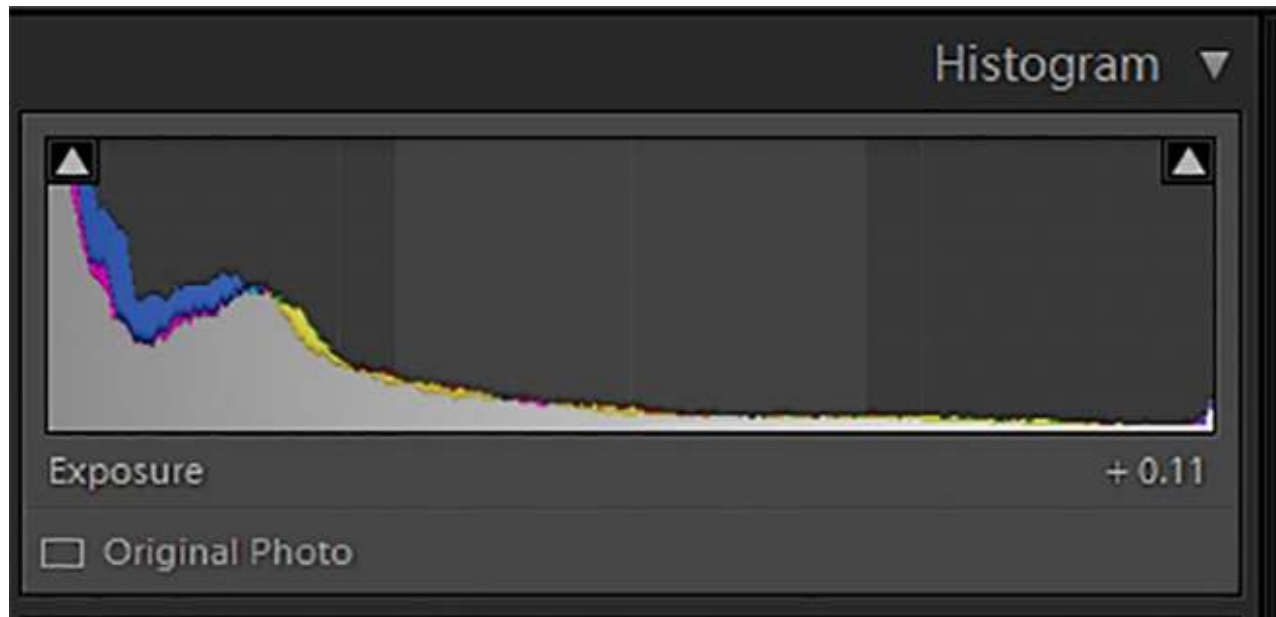
Typical tone distribution

# Histogram



Mostly light tones

# Histogram



Mostly dark tones with  
some specular highlights

# Which one to use?

- For maximum flexibility shoot RAW
- JPEG
  - Large volume and/or tight deadlines
  - Camera should have very accurate white balance
  - Exposure should be bang on
- Shoot RAW + JPEG

# RAW Image Processors

- Non-destructive "editing"
  - RAW file is never updated
    - Output is a TIFF, PSD or JPG
- You can change your adjustments as many times as you want without losing image data
  - Even years later with a better RAW processor

# RAW Image Processors

- Adobe
  - Lightroom
  - Photoshop
- Phase One
  - Capture One
- DXO
  - DXO OpticsPro

# Lightroom / Photoshop

- Most commonly used image editing software
- Both contain the same RAW processing engine
- Licensing
  - One time fee for Lightroom 6 US\$149
  - Lightroom CC & Photoshop CC US\$9.99/month
- Lightroom is officially called “Photoshop Lightroom”



# Lightroom

- Lightroom may be all you need
  - Track and keyword all of your images
  - Nondestructive Edit RAW, JPEG, TIFF
  - B&W, HDR, Photomerge, perspective corrections
  - Print / Slide Show / Upload to Flickr, etc.
  - Windows and MAC
  - Lots of instructional material available

# Learning more

- [www.luminous-landscape.com](http://www.luminous-landscape.com)
- Canadian photographer Michael Reichmann
- \$US12 annual subscription for all content
- Many multi-hour instructional courses
  - Including Lightroom and Capture One