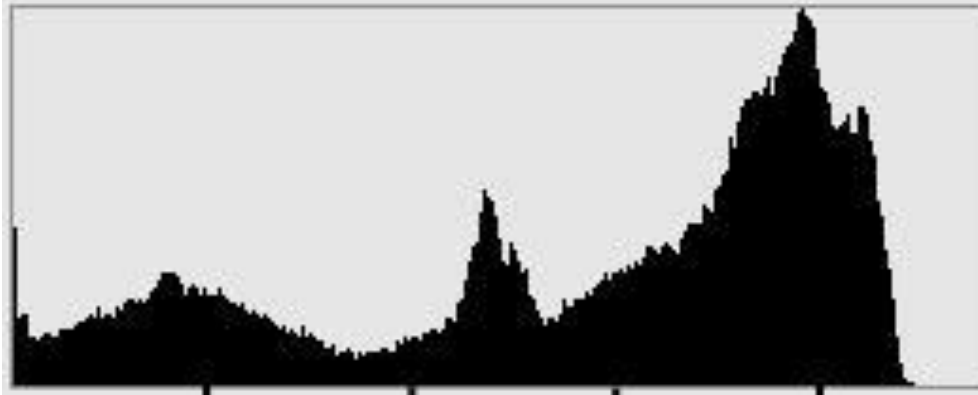


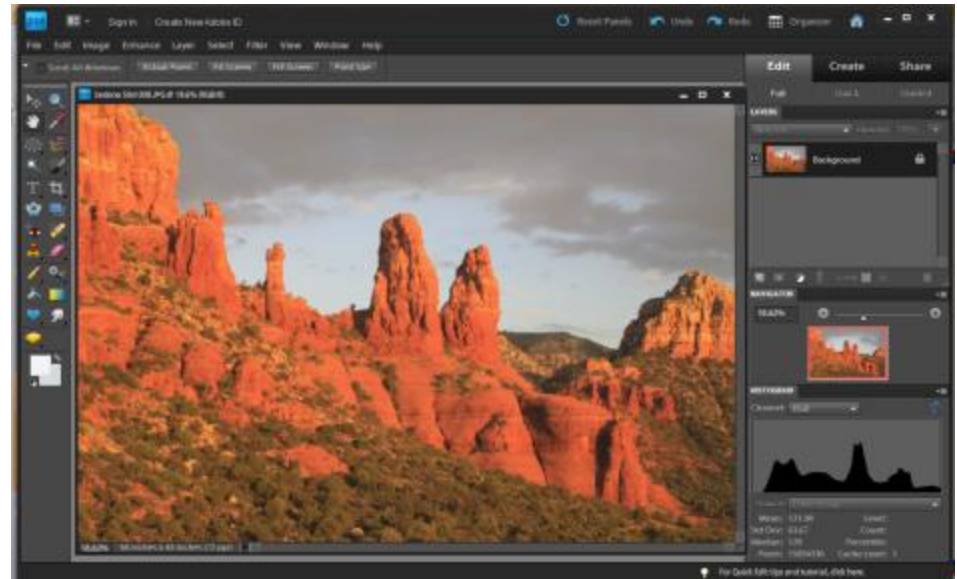
Histograms



Using the histogram in your camera to
improve your photography

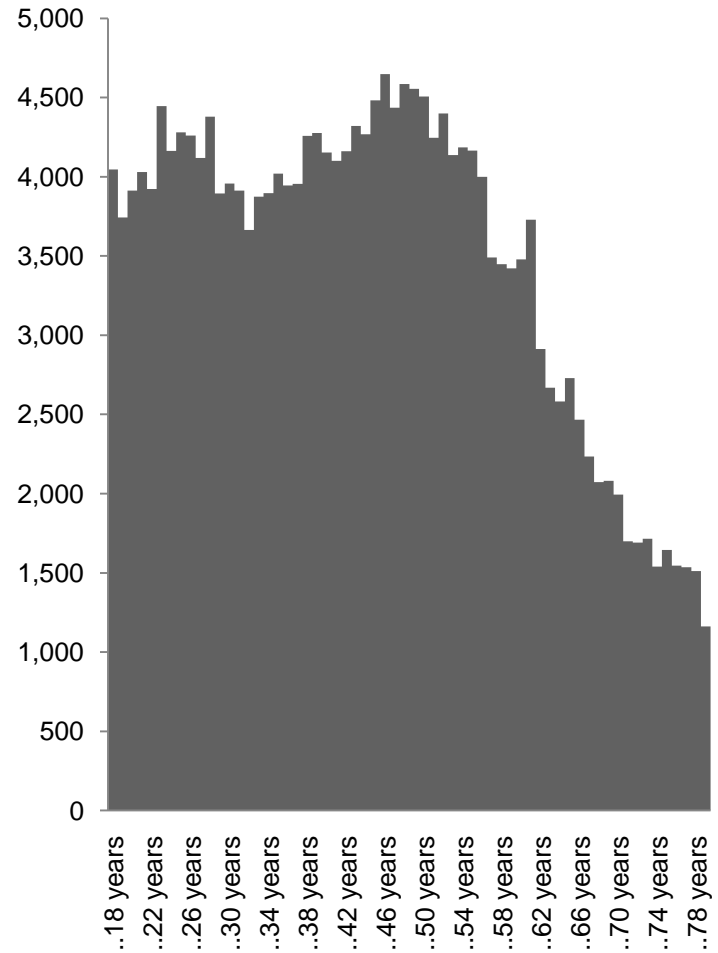
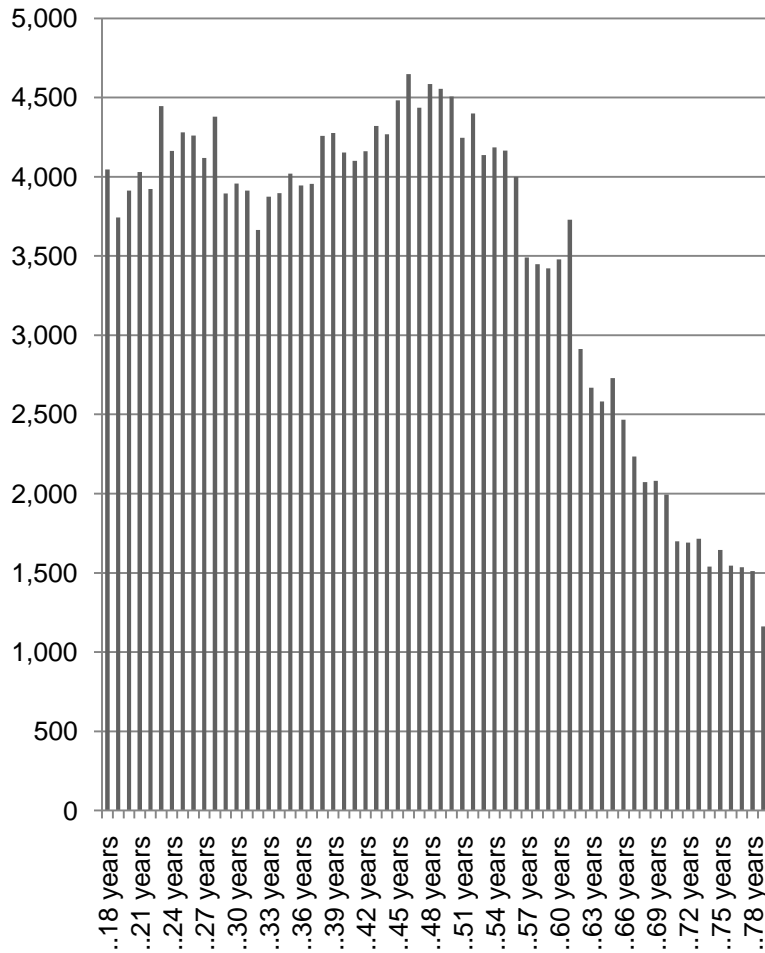
Using photo editing software & the
histogram

Camera & Software Histograms



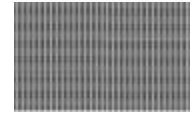
Histograms are not necessarily visible unless you choose to turn the option on.

Bar Charts



USA Adult Population: 18-79 (Thousands)

Histograms



What is a histogram

A graph that allows you to judge the *tonal* range of an image

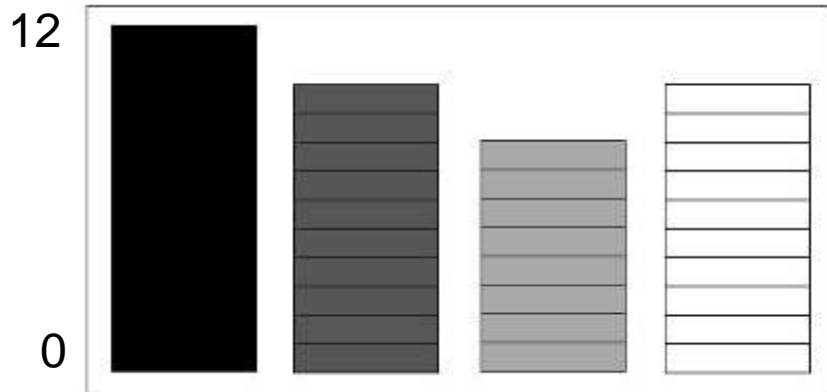
May be based on B&W tone or individual colors

Black 12 ?

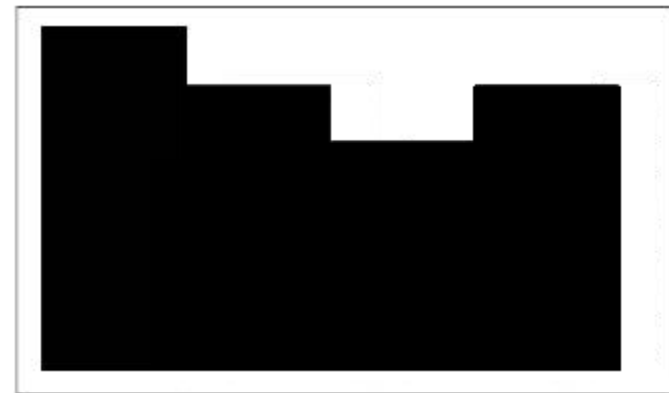
Dark Gray 10 ?

Light Gray 8 ?

White 10 ?



Black ← → White



Black ← → White

Pixels

Digital photos are made up of square pixels



1600% Magnification

Histograms

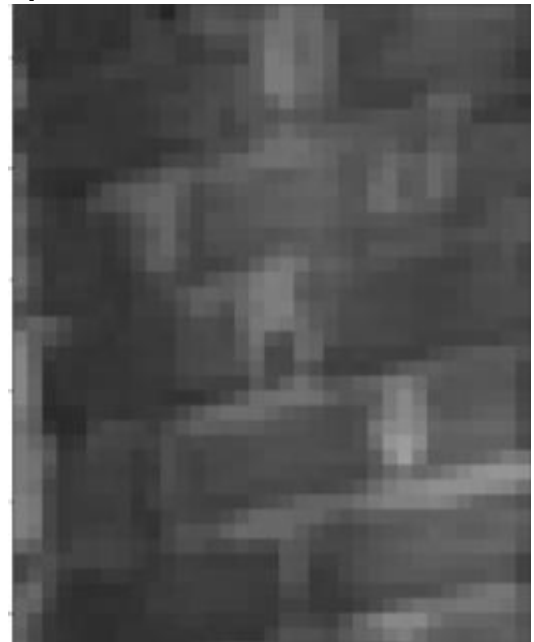
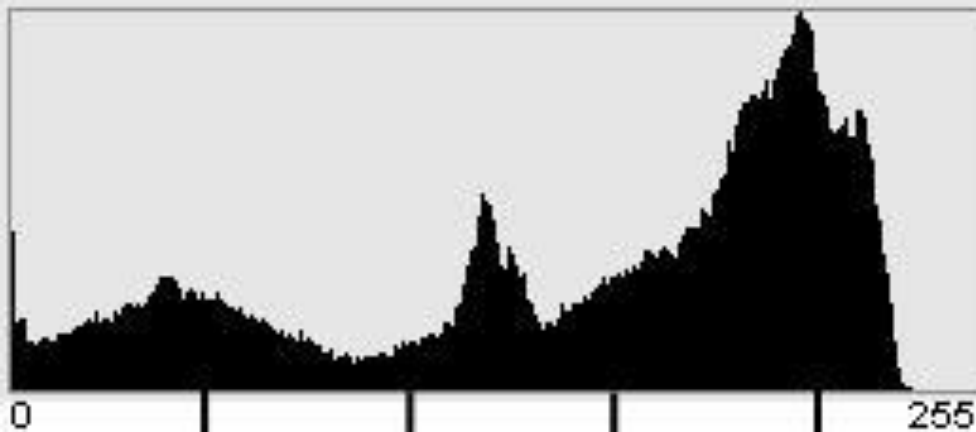
Zero (Pure Black) is on the left
255 (Pure White) is on the right
In between: 254 shades of gray

Each pixel is represented by its shade (0-255)

The more pixels of a given shade, the higher the peak

Dark

Light



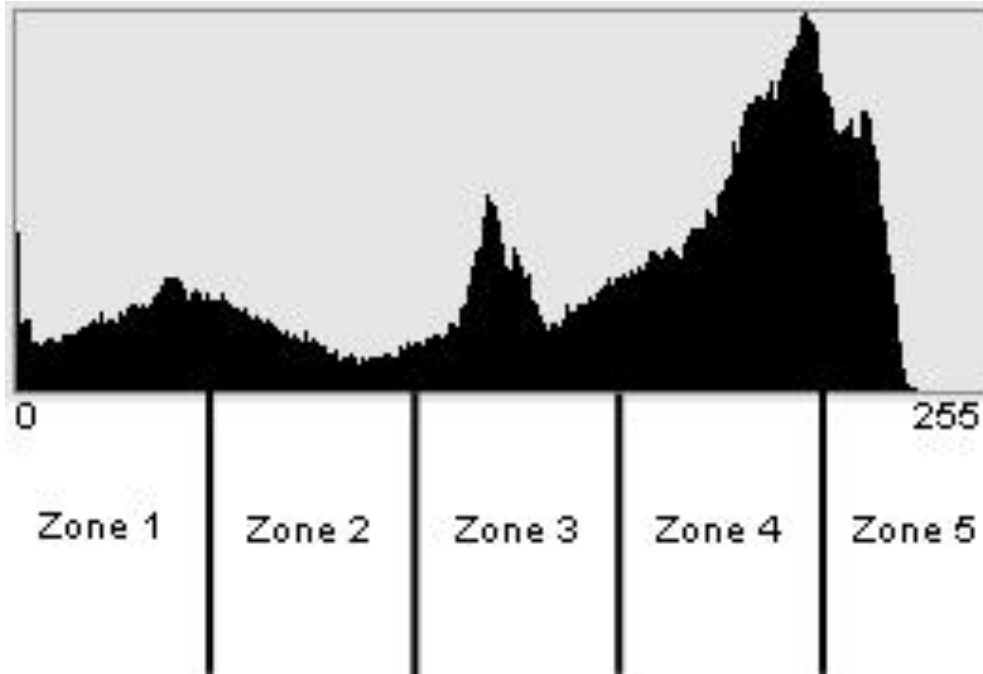
Histograms

The sensor on your camera has a “dynamic” range of about 5 stops

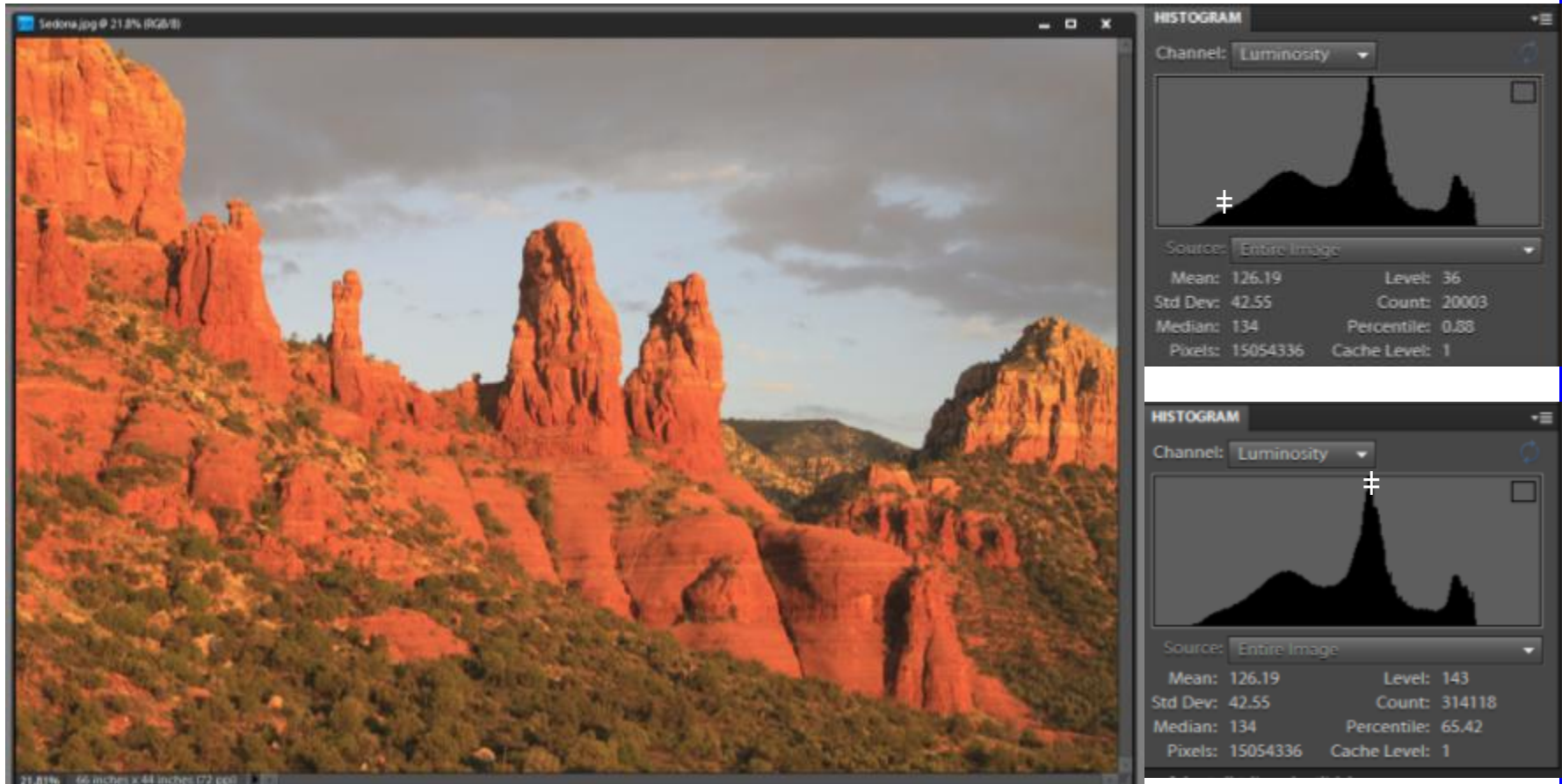
Your eye has a range of about 10 stops

If the range of the “scene” is greater than 5 stops, something gets lost

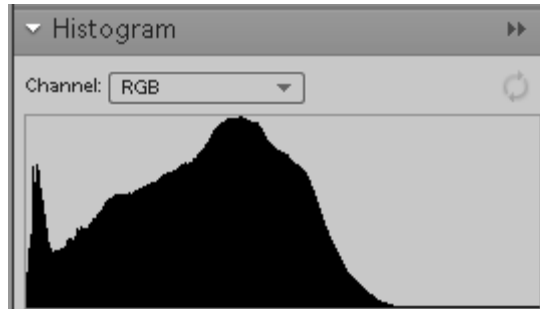
HDR (High Dynamic Range) software can combine photos to compensate



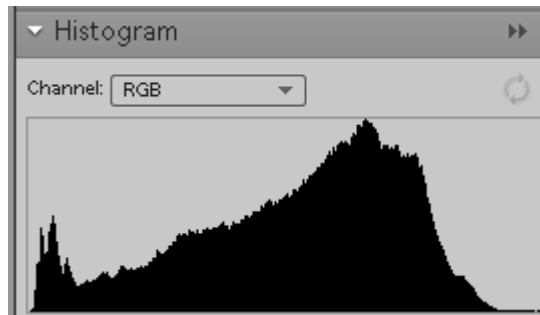
Checking Actual Count



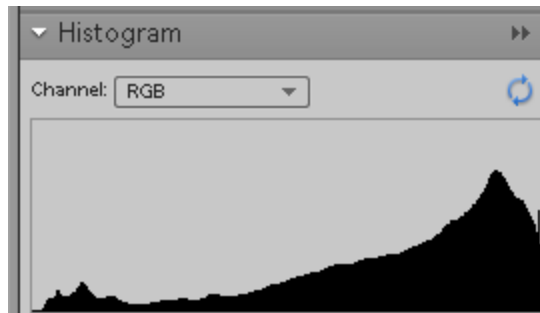
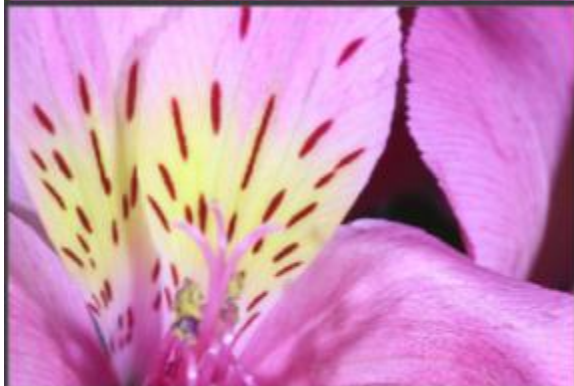
Histogram Examples



f/32 too far left



f/22 middle



f/16 too far right

Match the Histogram

A



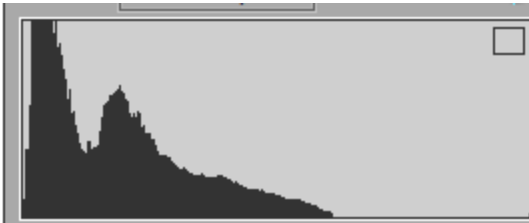
B



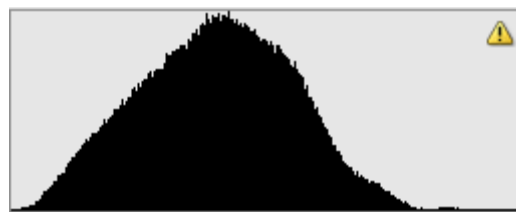
C



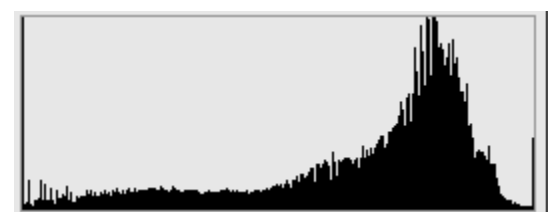
1



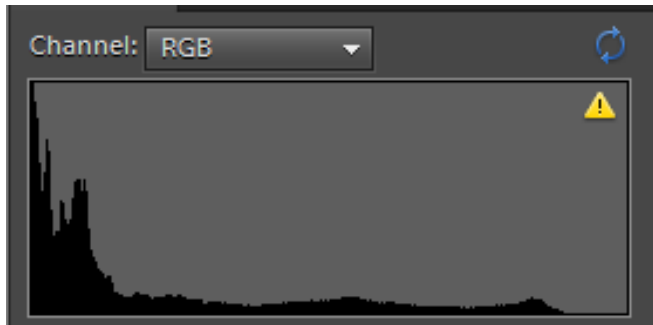
2



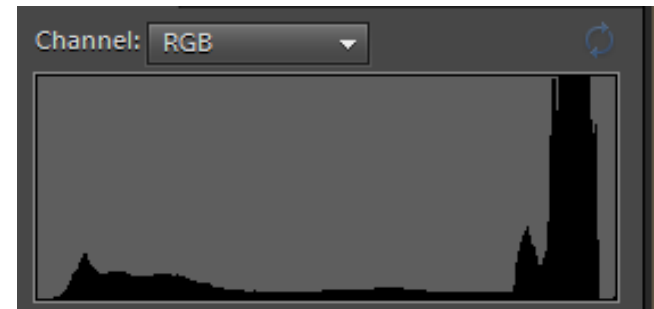
3



Interpreting a Histogram



Your Opinion?



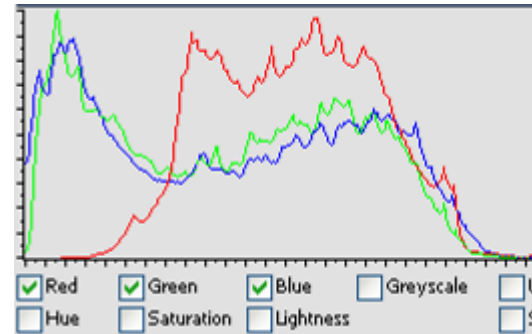
Histogram Guidelines

- Histograms are guides, not Gods
- There are no “bad” histograms
- There are no “good” histograms
- Blown highlights = no information
- There is usually more detail in dark
- Adjusting exposure in Elements is not a substitute for correct exposure

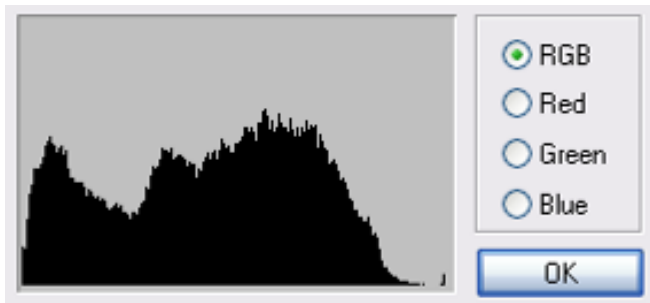
Software Differences



Elements 7

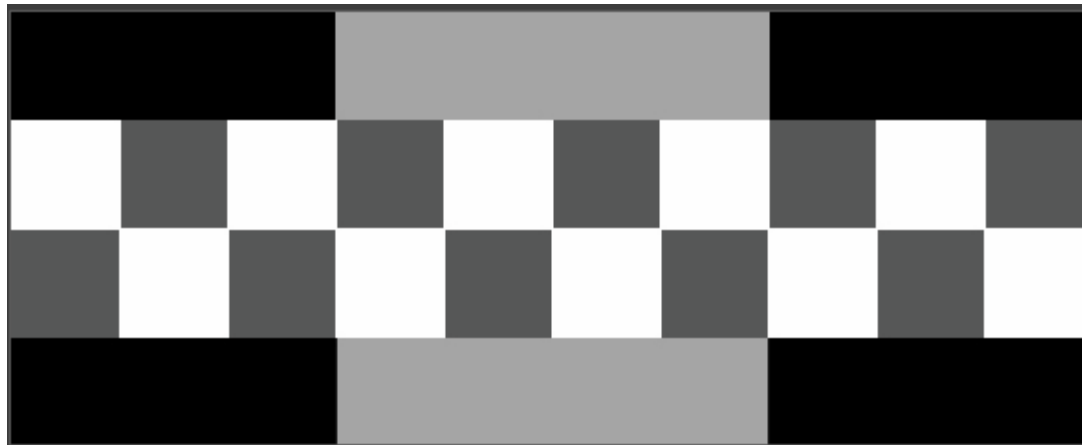
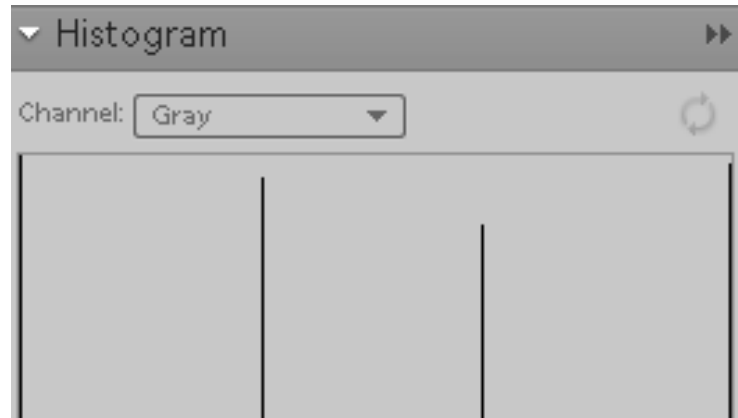


Paintshop Pro X

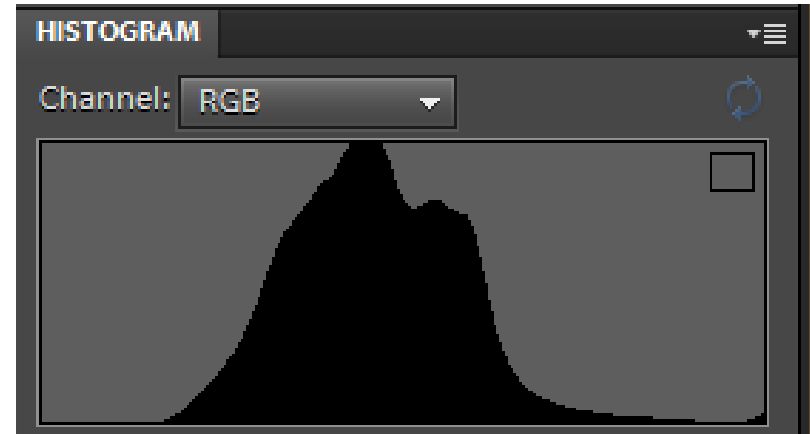


PhotoStudio 5

What created this histogram?

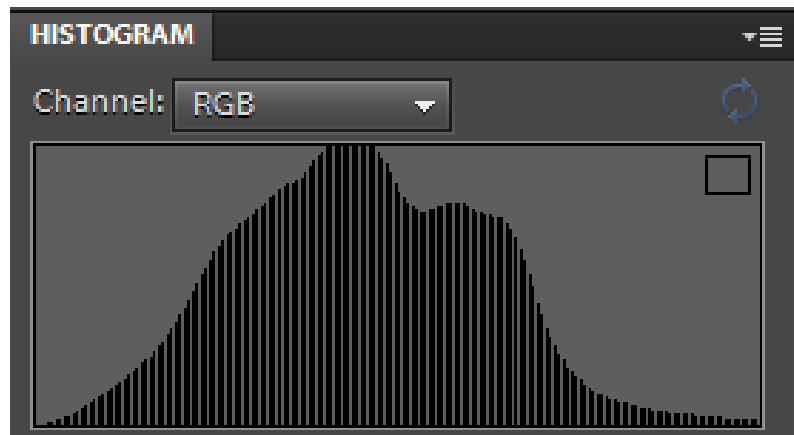


Low Contrast Histograms



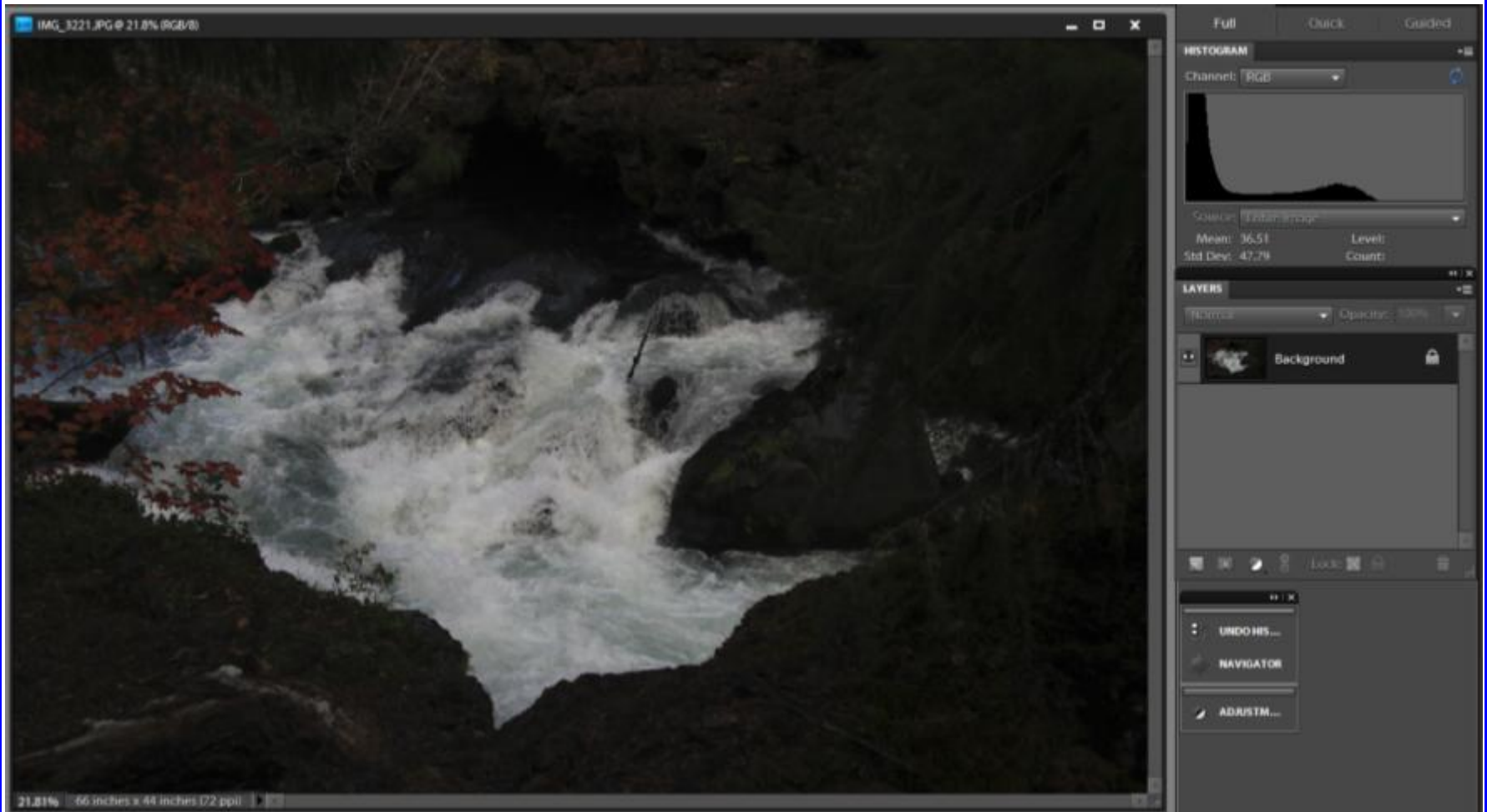
Original

Low Contrast Histograms

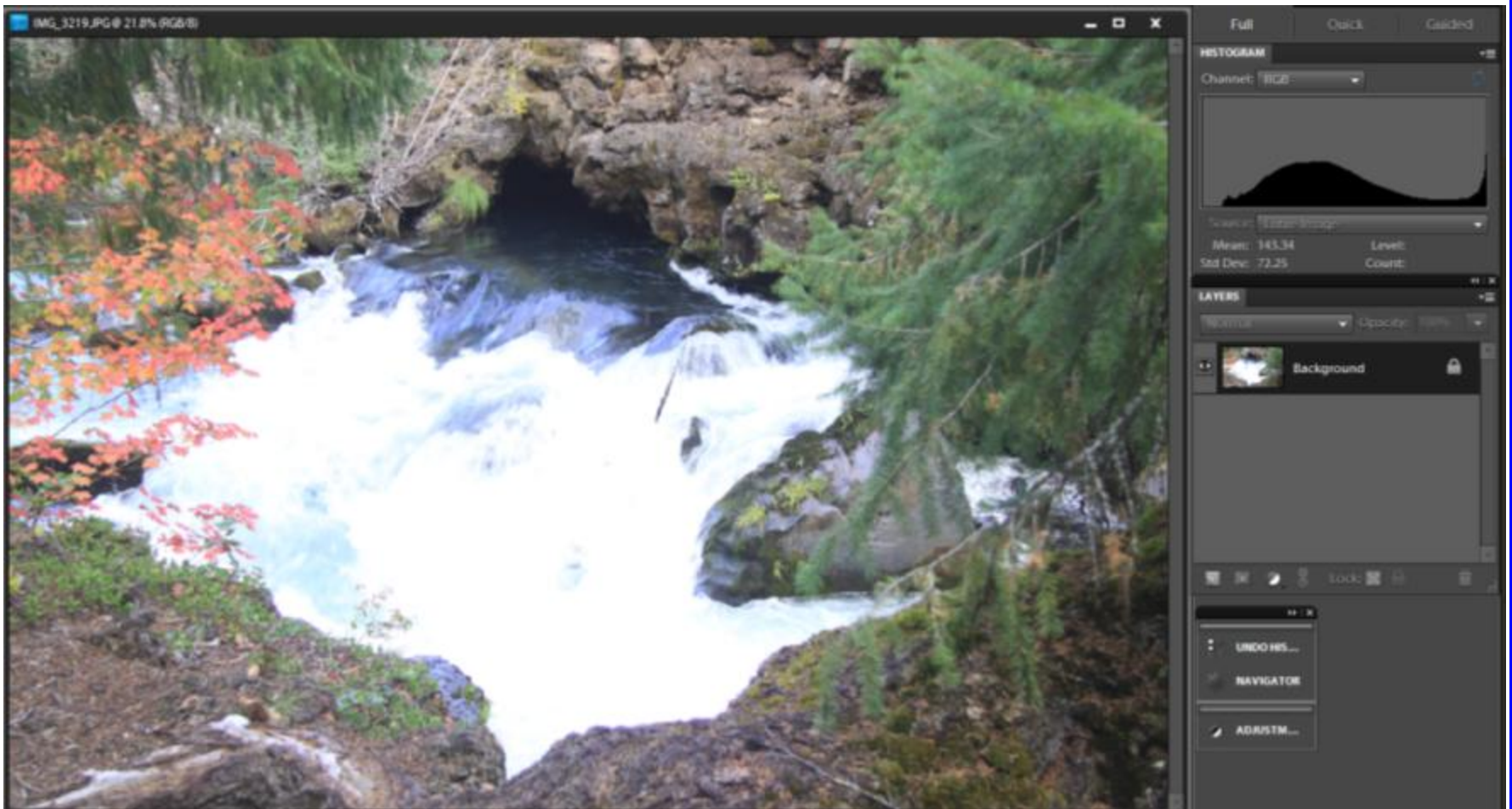


“Photoshopped”

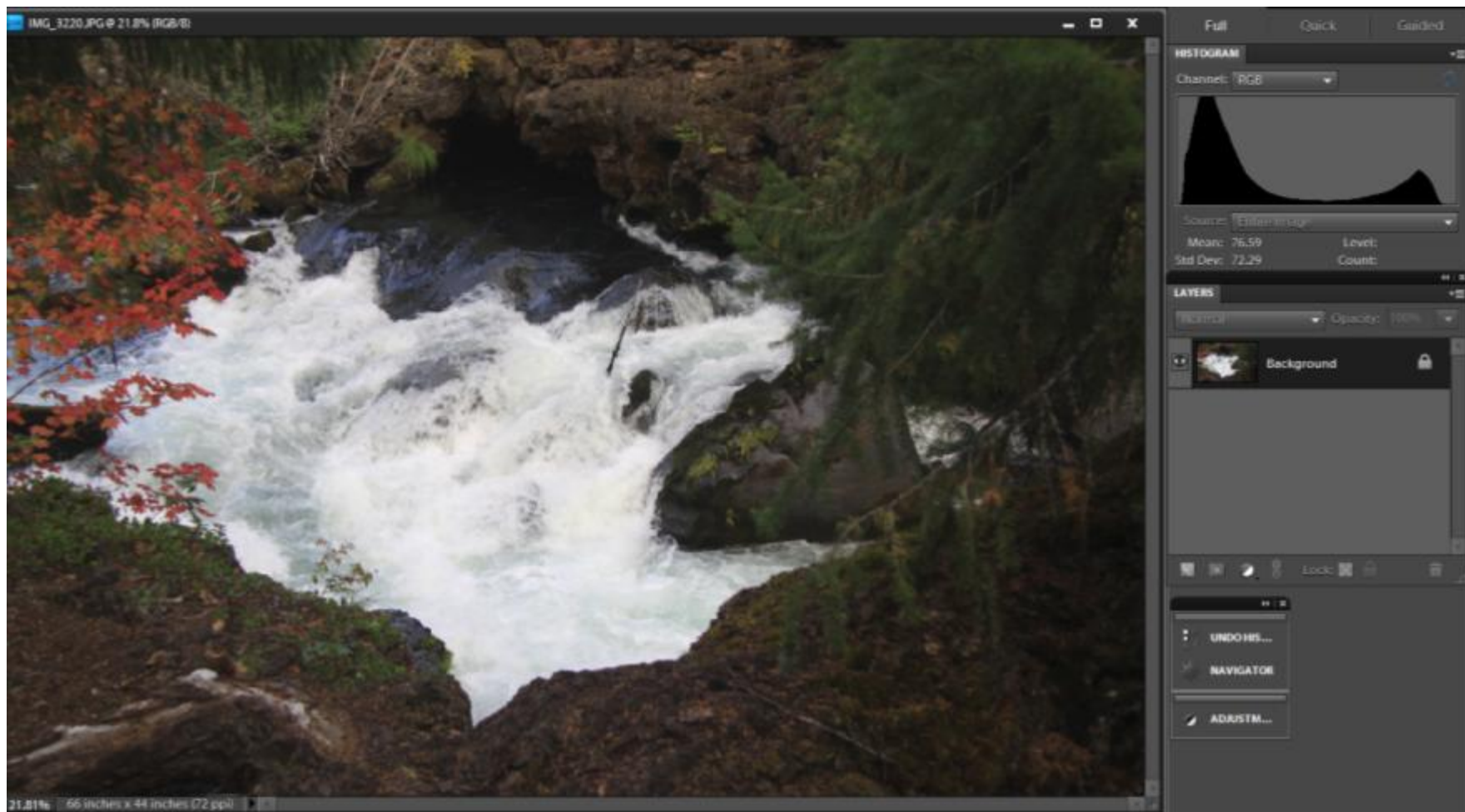
Clipped on dark side



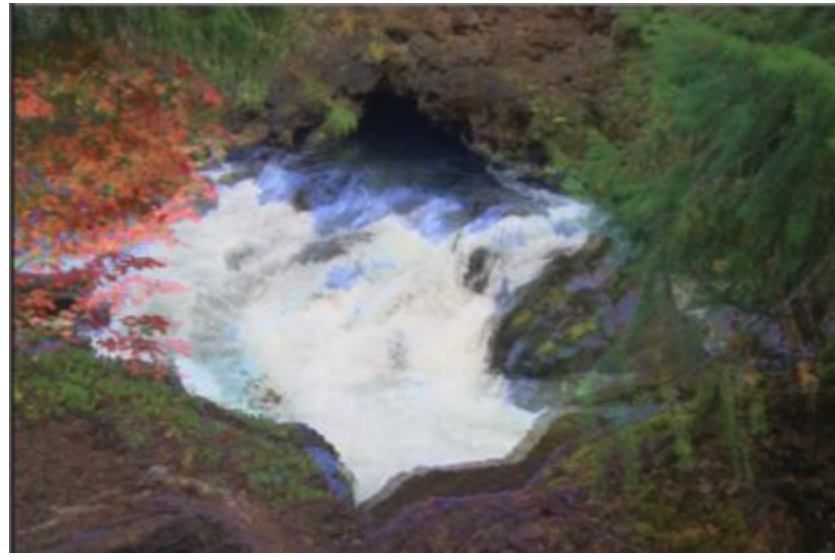
Clipped on light side



Non-clipped



Over/Under/Correct



Impossible Without Help



In-Camera Adjustment – Clipped on one side

If you are unhappy with the photo.....

If the histogram is biased left or right, but not both

Using Program, Shutter or Aperture priority

If too far to the left, + Exposure Compensation

If too far to the right, - Exposure Compensation

Using Manual

Using aperture or shutter speed

If too far to the left, open 1 stop

If too far to the right, close 1 stop

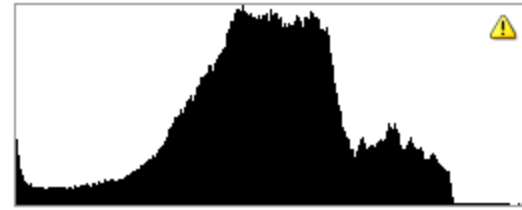
Clipping both black & white

Decision Time – What is important?



Clipping both black & white

Another Choice – Graduated Neutral Density Filter
“Somewhat” similar to using a gradient tool



Clipping both black & white

If everything is important:

- Use balanced fill flash on the foreground
- Use a graduated neutral density filter
- Take multiple exposures and merge them digitally (HDR)
- Go home or come back later (magic hours)

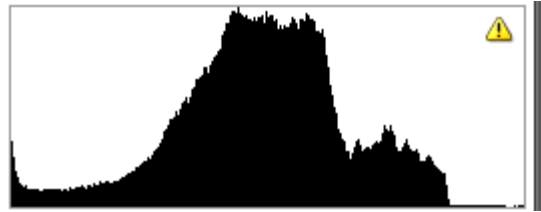
If highlights are important:

- Expose so highlights are “near” the right and let the shadows go

If shadows are important:

- Expose so shadows are “near” the left and let the highlights go

Histogram Cache ⚠



Edit>Preference>Performance Cache Levels

1 = Constant update of histogram

Slows editing display update

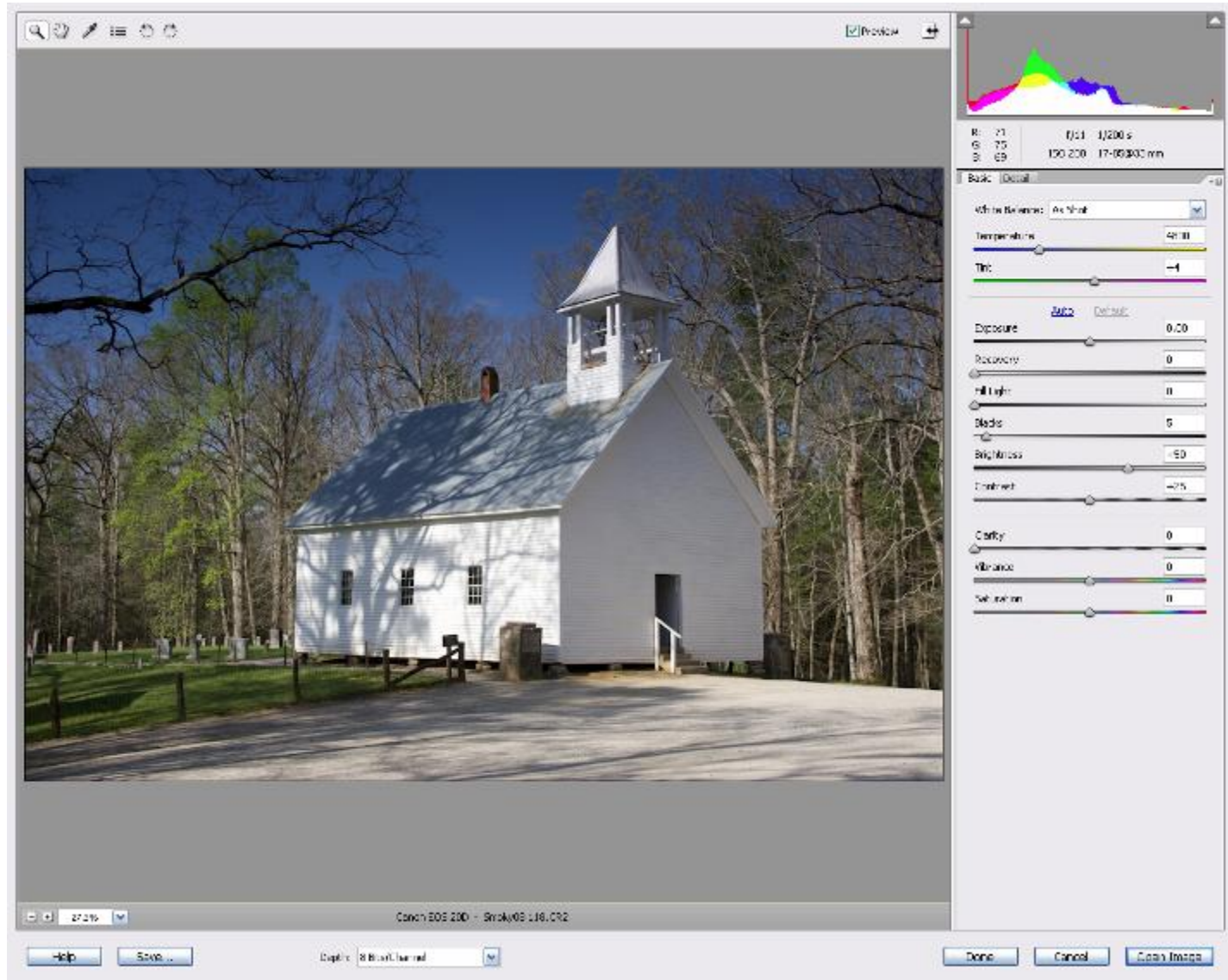
8 = Holds changes to histogram

Much faster display update

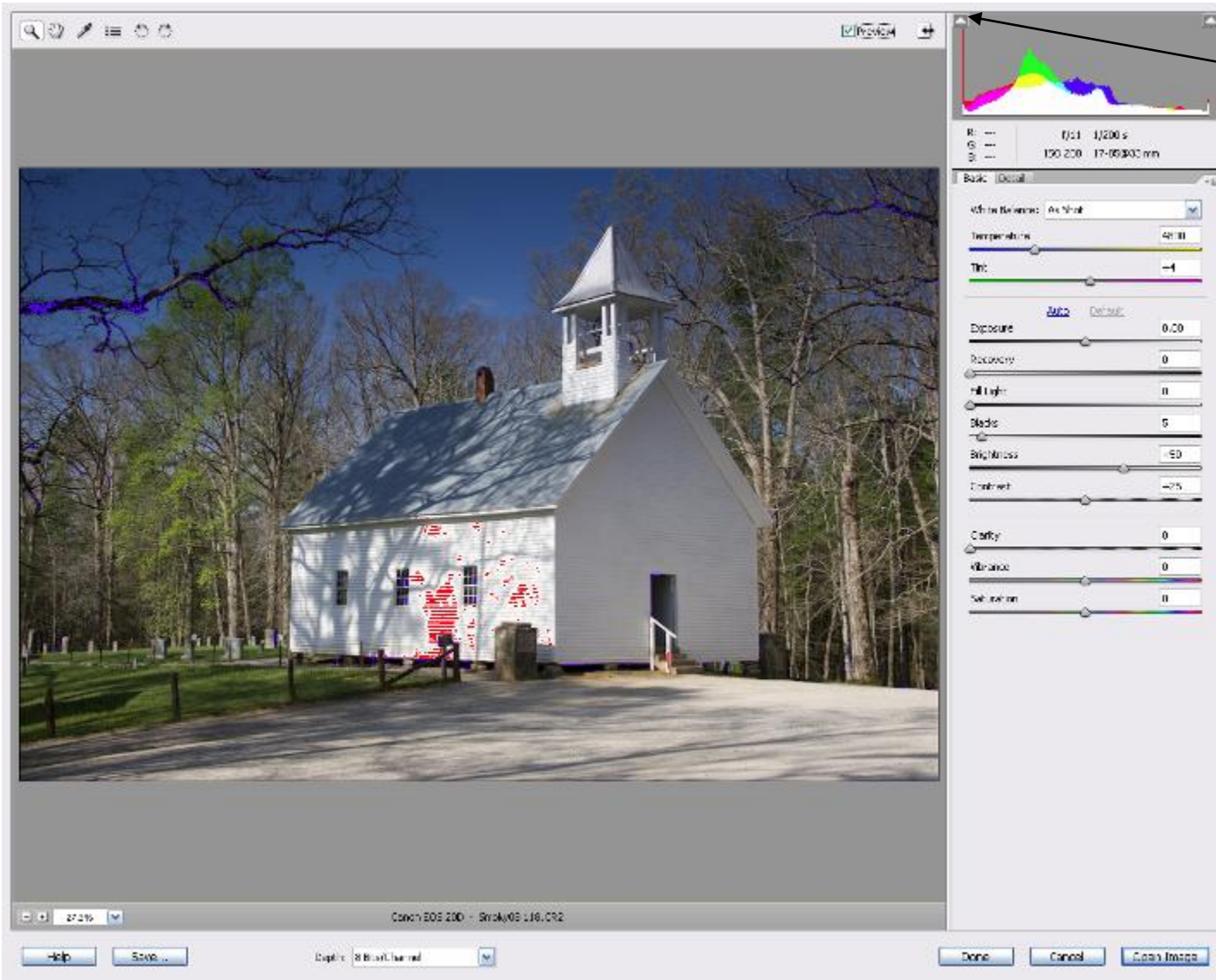
Preference changes when restarting Elements

Recommend 8, click on ⚠ to update histogram

View in Adobe Camera Raw (ACR)



View in Adobe Camera Raw (ACR)



Highlight
Shadow

Click to turn
off/on

Editing Examples

