

# HDR (High Dynamic Range) Photography

## Snitzer Photography

- Dynamic Range: The difference between the brightest and darkest elements of a photograph.
- The human eye: We can resolve almost 20 stops of light. Can see an object 500,000x brighter than it's darker counterpart. Eye vs Brain processing?
- Do you need to capture everything? Sometimes dark areas anchor composition.
- Camera settings profoundly impact available dynamic range
  - Raw vs Jpeg: 3-4 stops
  - ISO...64-800: 2-3 stops
- Cameras vary in amounts of dynamic range offered.
  - 35mm Film is typically 6-7 stops.
  - Digital Cameras slowly approaching the capability of the human eye? Canon v Nikon.
    - Gen1 Canon 7d, 5d Mk III & IDX (11.7)
    - Gen 2 Canon 5d Mk IV (\$3,300/13.5), Nikon D810 (\$2,350/14.8), D750 (\$1,500/14.6), D7200 (\$1,000/14.6) Sony A7r II (\$2,700/13.3), A9 (\$4,500/13.3)
    - Gen 3 Nikon D850 (\$3,300 diff: video, sports, 46mp, focus stacking, low light, dyn range + > ISO), D7500 (\$1,250/14.6), Canon 6D MKII (\$2000/12)
    - Battery life: Sony 1/5<sup>th</sup> Nikon.
    - High ISO performance in low light (pixel density)
  - Test results (find your camera or lens!) <https://www.dxomark.com/>
- Better to under or overexpose? ISO Invariance.
- Getting the exposure perfect...provides you the greatest dynamic range. Don't overcook!
  - Can you avoid overcooking in AE?
  - Get the sky right, then bring up foreground in "post".
    - Test shot using sky (meter set to center weighted avg): 90% time your done.
  - Histogram
  - Blinkies (Highlight alert/over exposure warning)
    - Setting for Canon  
<http://www.peachpit.com/articles/article.aspx?p=1608135&seqNum=3>
    - Setting for Nikon  
<http://www.peachpit.com/articles/article.aspx?p=2272157&seqNum=9>
  - Big difference between the camera's Jpeg and Lightroom/Photoshop's RAW (1.5 stops under and 1.5 over!). You have 1.5 more room to the right than the camera says!
- Post processing. Yogi Berra "it ain't over till it's over". Capturing data is only step 1!
  - Coyote Gulch Ex. Tweaking with lightroom brushes (selective adjustment tool: temp, exposure, blacks, clarity and dehaze)
  - Alaska Ex. Taking a boring shot and BAM.

- Grad ND Filters
  - What they do
  - Different types (1,2,3 stop, soft vs hard vs reverse).
  - When to use: Water (sunrise/sunset), reflections, bringing up foreground with flat sky.
  - What type? Lee, H-Tech, Cokin
  - Where to buy/get advice? <http://www.2filter.com/>
  - Best holder to store filters:
    - [https://www.bhphotovideo.com/c/product/1309447-REG/haida\\_hd3262\\_insert\\_filter\\_pouch\\_150.html?sts=pi](https://www.bhphotovideo.com/c/product/1309447-REG/haida_hd3262_insert_filter_pouch_150.html?sts=pi)
- Photoshop Exposure Blends
  - Take two photos...expose one for the sky, the other foreground.
  - Merge using masking tech in Photoshop.
- When to bring in Nuclear Weapons (HDR Software)
  - Extreme dynamic range, indoor architectural photog with bright window exteriors, low dynamic range camera.
  - Antelope Canyon example.
  - How to combine? HDR...Woo!
  - Much HDR looks like Science Experiment.
  - HDR that looks natural.
  - Which software: Photomatix (the Cadillac of HDR v Lightroom v Photoshop)
    - <https://www.hdrsoft.com/>
  - vs. HDR Expose (the Contender/free 30 day trial).
    - <http://pinnacleimaging.com/products/hdr-expose-3>
  - vs. Aurora HDR 2018 (Trey Ratcliff...Stuck in Customs)
    - <https://aurorahdr.com/>
- How to remove noise? HDR Software can be noisy.
- Guess how many pics on trip processed in HDR software?

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