THOUGHTFUL NATURE PHOTOGRAPHY
(It's not about your gear)

This is Me

Wildlife Biology Days
Two Loves

The North

The South
ENOUGH ABOUT ME

THOUGHTFUL NATURE PHOTOGRAPHY
(It's not about your gear)

A PHOTOGRAPHIC SECRET

• Photographers love gear.
• We love to argue about Canon vs. Nikon.
• We love to discuss the virtues of different apertures and ISOs.
• We love to chat about shutter speeds and tripods, wide angles and telephotos.

And Yet None of that Has Anything to Do with Making Better Images.

“YOU TAKE BEAUTIFUL PHOTOS, YOU MUST HAVE A REALLY GOOD CAMERA.”
IT'S TIME TO FORGET ABOUT GEAR

BUT FIRST... WE NEED TO TALK ABOUT GEAR

- Types of Cameras
  - Phones
  - Point and Shoots
  - Mirrorless
  - DSLR - Digital Single Lens Reflex Cameras
- Lenses
  - Wide Angles ~8-35mm
  - Standards ~35-70mm
  - Telephoto >70mm
SENSOR SIZES

- "Full Frame" (35mm equivalent)
- APS-C (1.5-1.7x crop)
- 4/3 or micro 4/3 (2x crop)

A NOTE ON MEGAPIXELS

- Pixels are the light sensitive points on a sensor.
- The more pixels, the higher resolution the final image.
- BUT - It's the quality more than the quantity that is important.
- Too many pixels on too small of a sensor will lead to lots of digital noise and pixelation,
- Megapixel wars have led to low quality in some cases.

In short, lots of megapixels does NOT mean high quality.

AN UNFORTUNATE TRUTH:
YOU NEED TO UNDERSTAND YOUR CAMERA
IN PARTICULAR THESE THREE THINGS:
APERTURE (F-STOP)
SHUTTER SPEED
ISO

APERTURE

- Aperture Plays Two Roles:
  - Controls Light
  - Controls Depth of Field
• Smaller Number = Larger Opening = More Light
• “Faster” Lenses open further
• “Faster” lenses are bigger
• The faster the lens, allow faster shutter speeds
APERTURE AND DEPTH

- Depth of Field: The Amount of the Image from front to back in focus.
- Smaller Number = Larger Opening = More Light = Shallow Depth of Field
- Larger Number = Smaller Opening = Less Light = Deep Depth of Field

SHALLOW DEPTH OF FIELD
DEEP DEPTH OF FIELD
TIP!
SMALL APERTURE = SUNBURSTS!
SHUTTER SPEED

- The length of time from the shutter clicking open to snapping closed.
- Longer Shutter = More Light = Greater Risk of Unintentional Blur
- Shorter Shutter = Less Light = Sharper Image

SHUTTER SPEED:
CONTROLS LIGHT
CONTROLS BLUR

FAST SHUTTER
STOP THE ACTION!
SLOW SHUTTER
USE THE BLUR!
EMBRACE THE DARK!
BLUR ON PURPOSE!
ISO

• Controls the sensitivity of the sensor to light
• ISO: the higher the number the more sensitive the sensor becomes to light
  • High ISO = more digital noise. Becomes a balancing act between noise and sensitivity
  • Cameras vary in their ISO abilities

ISO - How it’s Measured

• 50-200 - Low ISO = Low Noise = Low Sensitivity
• 400-1600 - Medium ISO = Some Noise = Medium Sensitivity
• >1600 - High ISO = Can be Noisy = High Sensitivity

What is Noise?
TIP!
USE DOUBLED ISO FOR BEST RESULTS
50-100-200-400-800-1600-3200-ETC

ISO 100

USING YOUR CAMERA

• Things You Need to Know
• Setting Shutter Speed
• Setting ISO
• Setting Aperture
PUTTING IT ALL TOGETHER

DON'T JUST POINT AND SHOOT
THINK
BE INTENTIONAL
FLOWING WATER
- Conditions: Bright and Sunny.
- You need a slow shutter speed.
- You want a deep depth of field
- ISO High or Low?
- F-Stop big or small?

**Answer**
- Low ISO
- Closed Aperture (big #)

**Settings:** 1/4 second, f32, ISO 100

AURORA
- Conditions: Night, Moonless
- Wide Angle
- You want fastest possible shutter speed
- ISO High or Low?
- F-Stop big or small?
- Shutter Speed Short or Long?

**Answer**
- High ISO
- Open Aperture (small #)
- Long Shutter Speed

**Settings:** 8 seconds, f2.8, ISO 3200

AUTUMN
- Conditions: Late Evening, Sunny
- Handheld (need fast shutter)
- You want deep depth of field
- ISO High or Low?
- F-Stop big or small?

**Answer**
- Medium ISO
- Closed Aperture (big #)

**Settings:** 1/80 second, f8, ISO 400

SUMMARY
- ISO - The higher the number the more sensitive the sensor becomes to light
  - High ISO = more digital noise. Becomes a balancing act between noise and sensitivity
  - Cameras vary in their ISO abilities
- Aperture or F-stop: Larger number = less light = more depth of field
  - Lenses often have the best quality a step or two above their maximum aperture. (If your lens is an f2.8 it will often be sharpest at f5.6 or f8.)
- Shutter Speed: Slower = more light = risk of blur (if too slow)
  - Fast moving objects may require fast shutter speeds to avoid motion blur (unless you want motion blur, which you might)
KNOW THIS!

HOW TO SET YOUR APERTURE
HOW TO SET YOUR SHUTTER
HOW TO SET YOUR ISO

HOMEWORK: CAMERA PRACTICE

1. MAKE AN IMAGE WITH A WIDE APERTURE
2. MAKE AN IMAGE WITH DEEP DEPTH OF FIELD
3. MAKE A BLURRED PHOTO OF A STABLE OBJECT
4. MAKE A SHARP IMAGE OF A MOVING SUBJECT
5. MAKE A HIGH ISO SHOT
6. MAKE A LOW ISO SHOT

QUESTIONS?