

Bird Photography for Everyone

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Types of Gear to Get Started

Camera

- Mid Range point & shoot with *long zoom lens*
- Micro-Four-Thirds mirrorless camera with *a long lens*
- DSLR with *a long lens*

Are you seeing a theme here?

You want *a long lens, which means long focal length*:

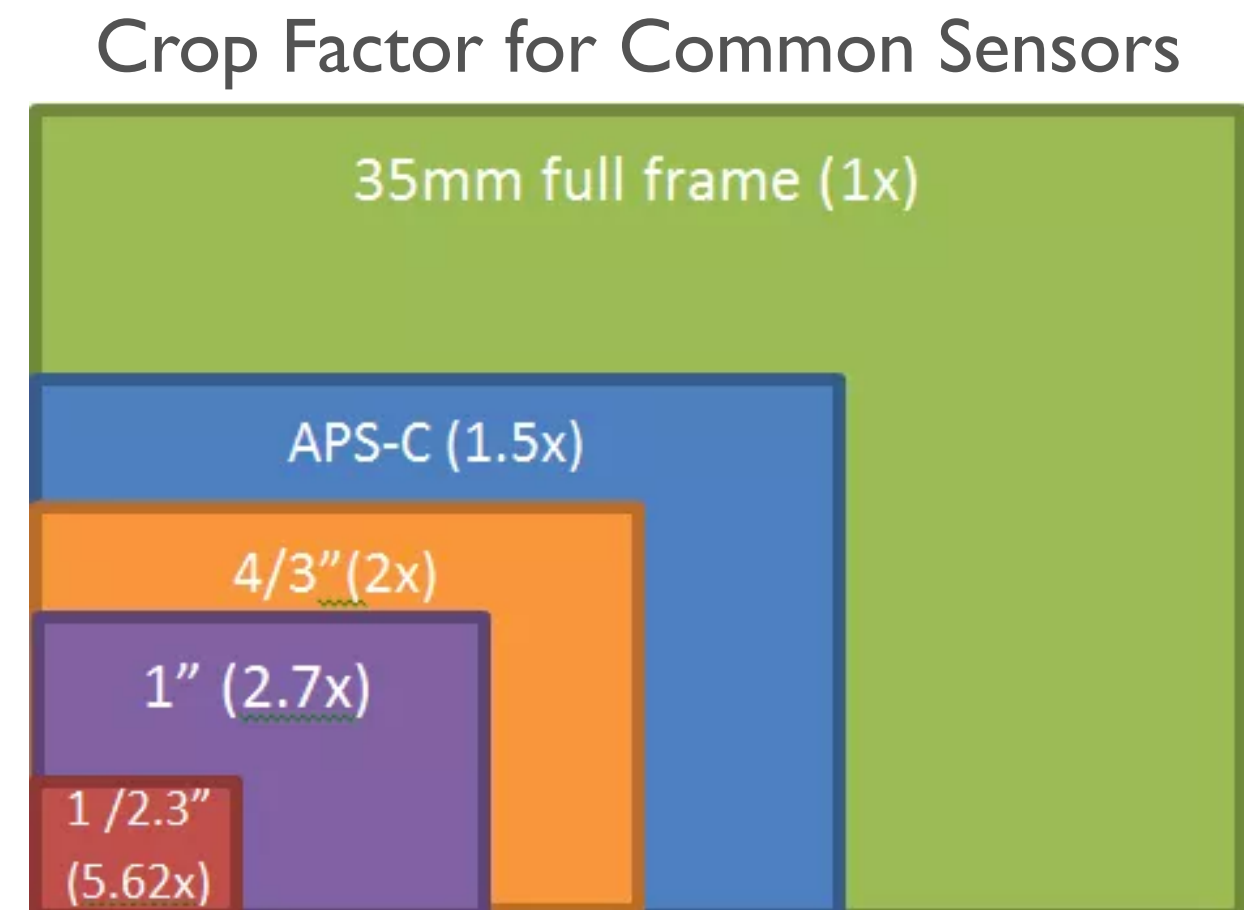
- You can get by with 200mm equivalent focal length, but 300mm or more is best.
- For most bird photography, you can never have too long of a lens.

What does *equivalent focal length* mean?

Equivalent Focal Length = actual focal length x crop factor

- The magnification of a lens is determined by its focal length *and the size of the camera sensor*.
- For cameras with full frame sensors, like the Nikon D850, Canon 5D, etc., actual focal length = equivalent focal length.
- Example for a camera with a smaller sensor:
A Sony camera with a 220mm lens and 1" sensor.

The equivalent focal length of this lens is
 $220 \text{ mm} * 2.7 = 594$ (about 600) mm
which is excellent for bird photography.



Where to find the Focal Length of Your Lens

All lenses have at least 2 numbers you care about:

The aperture, or $f/\#$ indicates how much light the lens can capture. Smaller number is better.

Focal length determines magnification (or zoom).

For example, a 300mm lens will magnify birds 3 times more than a 100mm lens

For zoom lenses, these numbers will be a range.

For this Sony lens, the largest aperture goes from $f/2.4$ to $f/4$ as you zoom the lens from 8.8mm to 220mm (~600mm *equivalent* focal length).



Mid-Range Bird Photography Camera That is also great for general photography

Sony Rx-10 iv \$1698

Built-in Lens (not interchangeable):

8.8-220mm (24mm-600mm equivalent)

Weight: 2.4 lbs

Magnification:

(if you're used to binocular terms): 12X



Another Mid-Range Bird Photography Setup



Camera: Panasonic Lumix GH4 \$997 (or GH5 \$1698)

Lens: Panasonic 100-300mm (600mm equivalent) \$598

Total Weight: 2.6 lbs

Magnification: 12X

High End Bird Photography Setup



Camera:	Canon 7D Mark II	\$1499
Lens:	Canon 100-400mm II	\$2049
Alternate Lens:	Sigma 150-600mm	\$ 989
Total Weight: 6.1 lbs		
Magnification: 12.8X (Canon) 19.2X (Sigma)		





Pro Bird Photography Setup



Camera: Canon 5DS R \$3700

Lens: Canon 500mm **\$8999**

Canon 2X Extender: \$ 429

Gimbal Mount Wimberley \$ 595

Tripod: Gitzo 5543LS \$1060

Total Weight: 18.8 lb

Magnification: 20X

Teleconverters



- Teleconverters magnify the image by 1.4X or 2X.
- They work better on prime (fixed focal length) lenses than zoom lenses.
- Lowers the maximum aperture of your lens
 - Less light = more motion blur, more noise, or both.
 - Slower focus

Remote Shutter Release When Using a Tripod

Even on a tripod, the camera will shake when you press the shutter. This is more noticeable with long lenses.

A remote shutter release allows you to take a picture without touching the camera.

- Can be used as a cabled shutter release or with a wireless transmitter
- Best for birds that stay in the same place for more than 30 seconds.



Tripod Feet for Dirt and Grass



Gitzo makes spikes with rubber tips

- Good for dirt. OK for short grass.
- The rubber tips are hard to pull off.

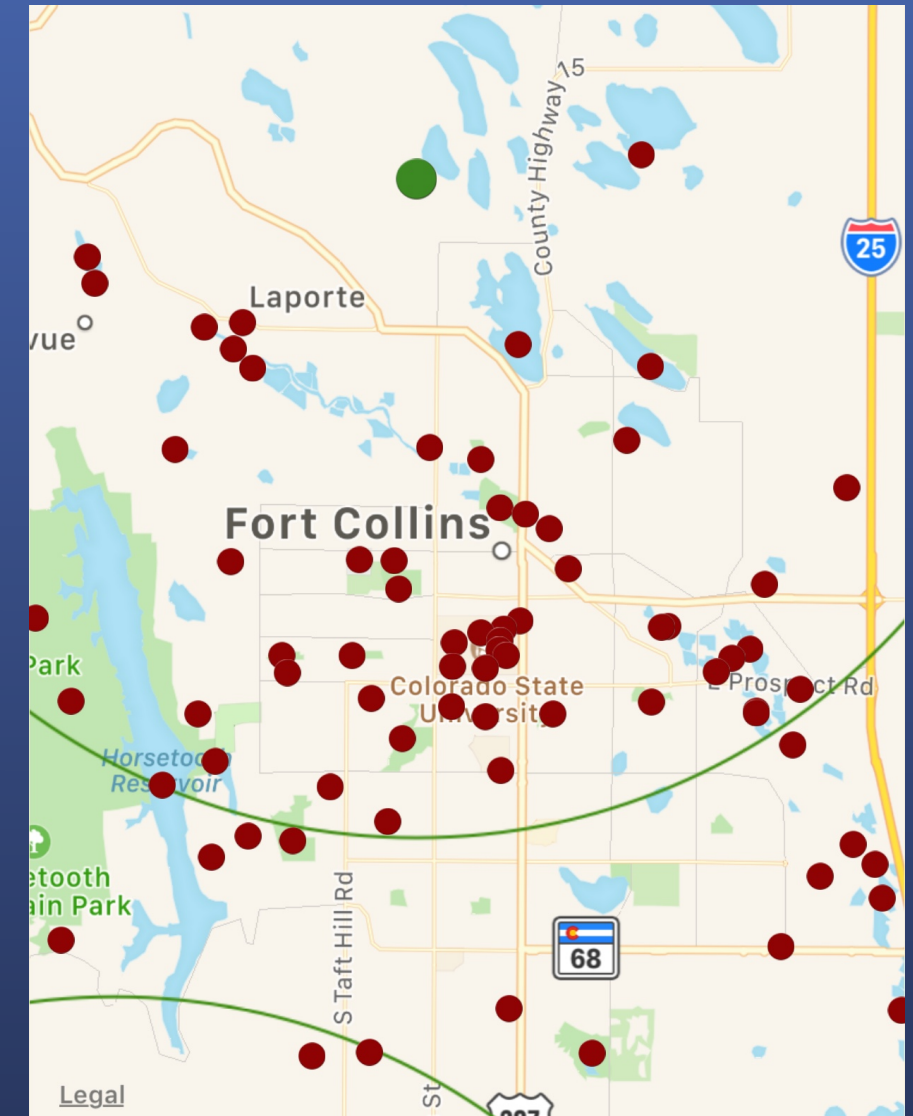


Really Right Stuff long spike feet.

- Excellent for dirt, mud, thick grass
- Use caution not to stab people or scratch floors.

Where to go

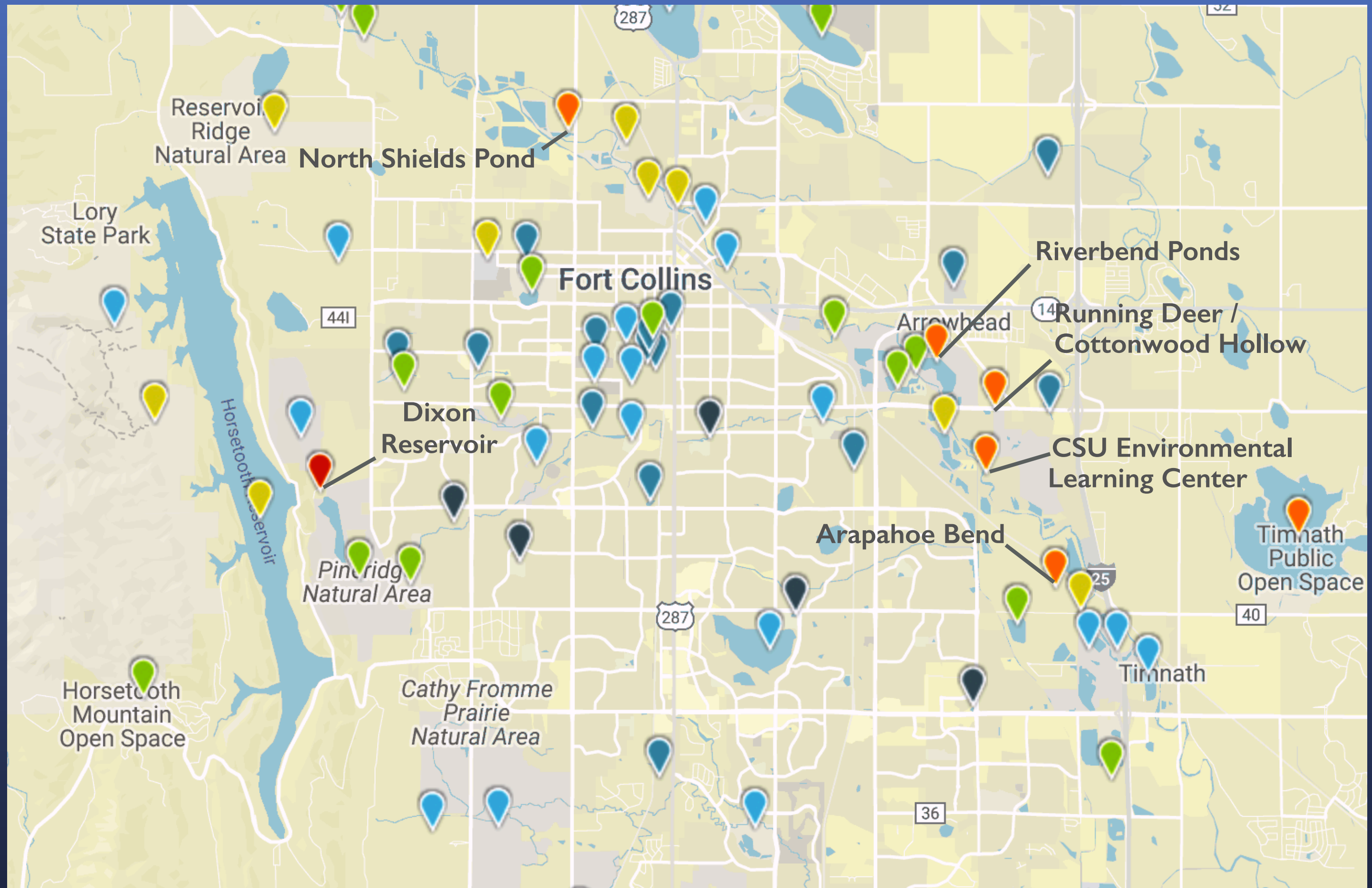
- Start with your back yard - great place to practice
- Go on trips with local birding club: Ft. Collins Audubon Society.
- *Go where birds eat, take shelter, breed, or where they raise their young. This usually involves trees, vegetation, or water.*
- *Birds Eye app for your phone*



When to go

- Early in the morning - more birds, better lighting

Hotspots Near Ft. Collins from ebird.org/hotspots



Think of the Reasons You're Taking Pictures *Today*

- Have fun
- Learn about your gear
 - Don't be afraid to experiment with settings*
- ID new or rare birds you see
 - Don't worry about composition - get different views*
- Improve your technique
 - Work on composition, timing, settings*
- Get some great pictures to enjoy, share or publish
 - Look for interesting behavior, good lighting, nice background*

What Settings Should You Use?

Here's a good place to start:

- Mode: Aperture Preferred (Av)
- Aperture setting: largest aperture the lens has (smallest number, like f/4, f/5.6)
- ISO 800 in the morning, ISO 400 on bright day
- Center focus zone  There are often multiple options - use smallest.
- Continuous Focus
- Burst mode
- Image Stabilization ON
- ADVANCED: Back-button focus

Completely Natural to Completely Staged Photos

Natural History Picture	Attracted Birds	Outdoor Studio	Captive Birds
• Bird in it's natural environment • Exhibiting natural behavior • No man-made objects: telephone poles, power wires, buildings, jet trails, roads, or cultivated plants. • Bird has not been attracted using any techniques.	• Food • Water • Bird calls • Shelter • Decoys • Perches • Live Bait	• Backdrops • Lighting • Modified environment	• Pet birds • Rehabilitation birds • Education birds • Birds in zoos • Trained birds.



Natural History Photo: Wild Golden Eagle, natural setting, natural behavior.
Horsetooth Mountain Open Space, Fort Collins



Wild Mississippi Kite, natural behavior, not attracted, but tree is cultivated.
This in someone's front yard in Sterling, Colorado



Wild Lazuli Bunting, natural behavior, attracted by seed feeder.
The wild rose branch is from a planted bush.



Wild Snowy Owl, natural environment attracted by mouse
(natural food); mouse provided by zoologist guide.
Rural, northern Canada



Wild Broad-tailed Hummingbird, attracted by sugar water feeder.
Artificial painted background, 4 strobe lights (1/64 power)



Captive Barn Owl. Education bird. Attracted with raw meat.
Arizona-Sonora Desert Museum.

Ethics to Consider

- All types of bird photography have their place, from pure natural history photos, to completely staged photos.
- What is considered ethical varies between birders, photographers, locations, species, time of year, and why you are taking the picture.
- If you see signs you are stressing a bird (i.e., any change in behavior), back off.
- Set a good example for other birders, other photographers, and the public.
- When appropriate, be honest about techniques used to get the photo and edit the photo. Requirements for contests and magazines varies.

Types of Photo Editing

Picture 100% matches reality	Minor Adjustments	Major Adjustments	Artistic Interpretation
Not Physically Possible: • All cameras, lenses, sensors, printers, displays, and programs modify the color and tone. • Color perception is effected by everything in our view, so unless the entire field of view is reproduced, the original perception cannot be exactly reproduced.	• Crop • Brightness • White balance • Adjust shadows, highlights, tone • Dodge/burn • Sharpening • Noise reduction Most Common edits Usually still considered a natural history photograph	• Remove items • Add items • Clone brush	• Combine multiple pictures • Apply strong effects, like oil brush • Draw on the picture with brushes

Tips for Good Composition

- Have bird at eye level, and focus on the eye
- Background that is not-too-bright, back from the bird, simple, and natural looking
- Diffuse light, such as early morning or evening, or on a cloudy day
- Try to catch the bird doing something interesting
- Best if bird is not looking away from you - even a little. Bird should be looking sideways to almost at you.















Atmospheric Blurring from Heat Waves

Pawnee National Grasslands



7:00 am

Canon 500mm f/4 @ f/13,
1/800 sec ISO 400



8:00 am

Canon 500mm f/4 @ f/13, 1/1000
sec ISO 400

Atmospheric Blurring Up Close



7:00 am

Early in the morning, most of our pictures looked like this.



8:00 am

An hour later as the field warmed up, our pictures looked like this, so we left.

How to to get closer to birds

- Stay in your car.
 - A car makes an excellent blind.
 - Turn off the engine to avoid vibration
 - On clear, sunny days, shoot through the side of the car not in the sun, if possible. This is to avoid heat waves off the car.
- Go to a place with birds and just sit. After 5-10 minutes, birds often return to familiar areas if nothing is moving around.
- Keep your camera near your face and be ready to shoot. If a bird flys near and you reach for your camera, or bring your camera to your face, that motion may spook the bird.
- In the spring when birds are focused on singing and attracting a mate, they will tolerate people closer to them.
- In the spring, young birds often aren't as skittish as adults.

Capture the Bird Doing Something Interesting

- Eating - for example a bug or fish in its mouth
- Singing
- Landing or taking off
- Interacting with another bird
- Building its nest
- Feeding its young

































A Secret

“Only show people your best pictures.”

- Quantity dilutes Quality - a few good pictures is better than a few good pictures mixed with a few mediocre pictures
- You will often be torn between several equally good pictures of the same bird. You will be tempted to show more than one.
DON'T DO IT
Show one picture of each bird.
- Exceptions: ID pictures, unusual behavior, or a sequence of pictures that tell a story.



































Photographing Birds In Flight

- Use continuous focus (AF-C on Nikon, AI Servo on Canon) and shoot in short bursts of 3-5 shots.
- Shutter speed should be 1/1000sec or faster. 1/2000 is better.
- Use largest aperture.
- Avoid shooting with clouds as the background, unless they are dark compared to the bird.
- You may need to set exposure compensation +1-2 stops (over-exposed) so the bird isn't a black blob.

Auto Exposure



Simulated Auto Exposure + 2 stops



Editted to brighten a little more and sharpen





Experiment with Framing

- Include some context around the bird

vs

- Frame just the bird - reveals more details of the birds eyes, feathers, beak, feet.







Rainy Weather = Opportunities !

- Birds still have to eat, so they'll be out.
- The colors on vegetation are deeper when wet.
- The lighting is often excellent before, during, or after rain.
- Better chance for a unique picture
- Fewer people around to scare birds









Photographing in Winter

- When you take your camera out, let it cool down for 10 minutes to avoid thermal air waves from blurring your pictures.
- Before bringing your camera back inside, put it in an airtight container, like a camera case or white garbage bag. Let it warm up inside for half an hour before getting it out of the bag. This will prevent condensation. This also applies to binoculars.
- Vegetation can look drab in winter. Use the largest possible aperture so the background vegetation is out of focus. With enough blur, a bunch of dead sticks and dirt can look pleasingly artistic.
- When photographing birds in snow, avoid direct sunlight as it creates harsh shadows. Diffuse light is best, where there's a slight soft direction to the light.











Photographing Birds on the Water and the Shore

- Reflections off the water can make or break a picture
 - * A polarizer can help, but takes away half the light.
After experimenting for years, I rarely use a polarizer on water birds.
 - * Reflections of trees or foliage are best, blue sky can be OK, but reflections of clouds are worst.
- Get as low as you can. Pictures at eye level are more interesting.
- Keep an eye on the sky. Incoming birds make excellent pictures.
- Shoot with sun to side or slightly behind you.











Hummingbirds















~ *Fín* ~

Extra 2 slides when talking to birders

Digiscoping



Digiscoping Tips

Works with any camera phone



1. Extend eyepiece cup

2. Use low magnification

3. Focus scope

4. Hold camera flat to eyepiece
and center the image

5. Take picture

Avoid stray light getting in the eyepiece from around the phone.
Have a friend shade it, or buy a digiscoping attachment (\$15-\$149)