



Personal understanding of birds can be reframed to allow broader collective action between diverse groups towards a common goal.





Birds are excellent indicators of ecosystem health, the literal canary in the coalmine for the health of our land.

*(Audubon Texas, 2014)*

*One of the last coalmine canaries, ca. 1987*



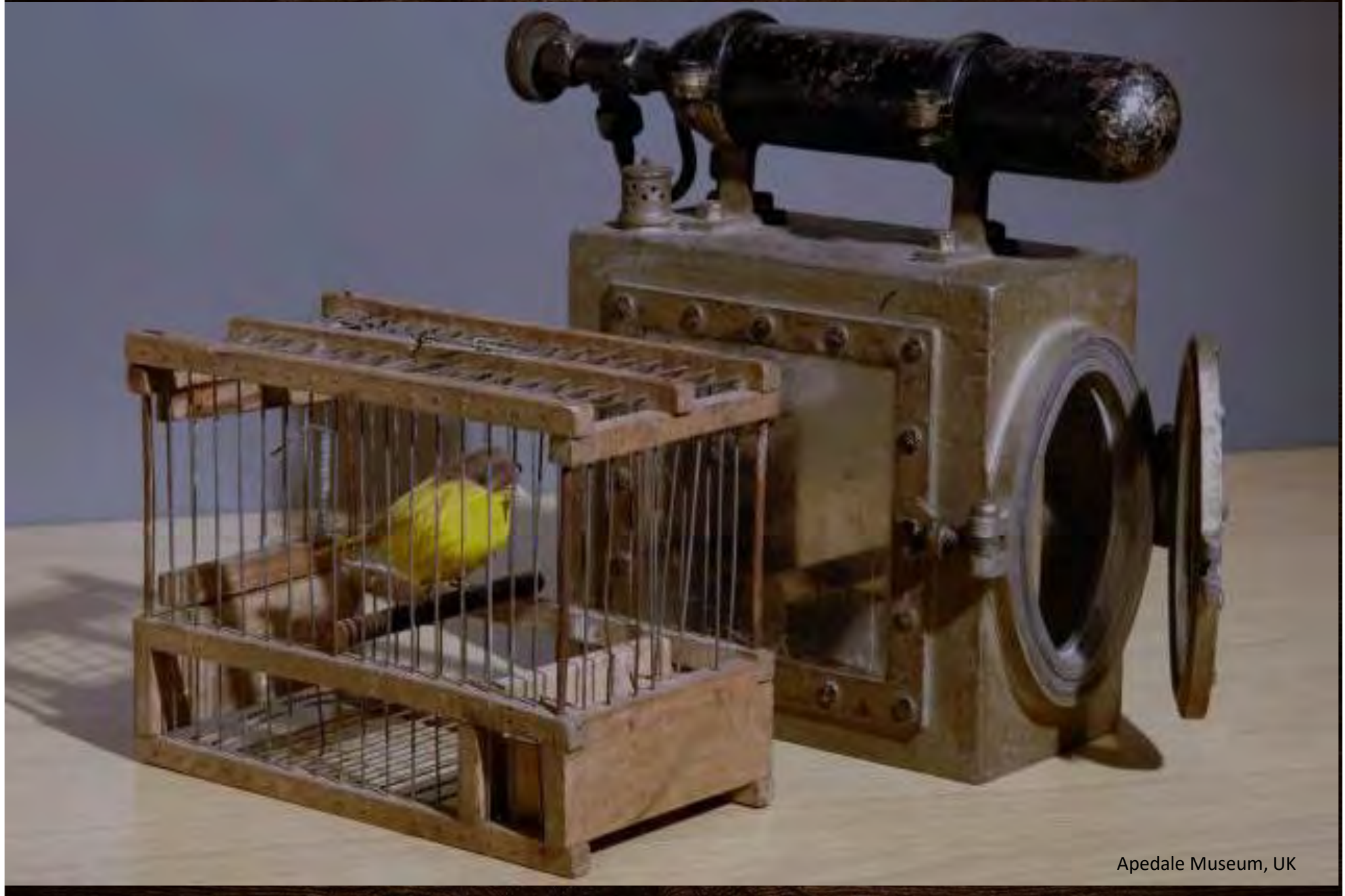


# Canary in the Coalmine

- Sentinel for human safety
- Miners would take canaries into mines to test for buildup of carbon monoxide
- Bird lung physiology
  - Respiratory cycle takes 2 inhalations and exhalations
  - Birds get a double-dose of what's in the air



George McCaa, US Bureau of Mines, 1928



Apedale Museum, UK







*“In memory of Little Joe  
Died November 4<sup>th</sup>,  
1875  
Aged 3 years”*



# An early warning...

...of the dangers at the top of the food chain

- DDT – organochlorine chemical
- Bioaccumulation
- Brown Pelicans and Peregrine Falcons and eggshell thinning
- Direct mortality (American Robins)





## An early warning...

Recent results from a long-term study link DDT exposure to breast cancer

- *In utero* exposure
- Women with the highest DDT exposures were 3.7 times more likely to have a cancer diagnosis



Howard Ignatius, Flickr Creative Commons





## Pacific Trash Gyre & Plastics

In 2017, studies of tapwater in major cities throughout the world revealed prevalent contamination with plastic fibers. 83% of global samples tested positive. 94% of US samples tested positive for plastic contamination.





Birds are deeply embedded in human cultures and societies.



Redteam, Flickr Creative Commons



Heironymus Bosch, 1480-1490, public domain





From the sacred...



to the commercial.



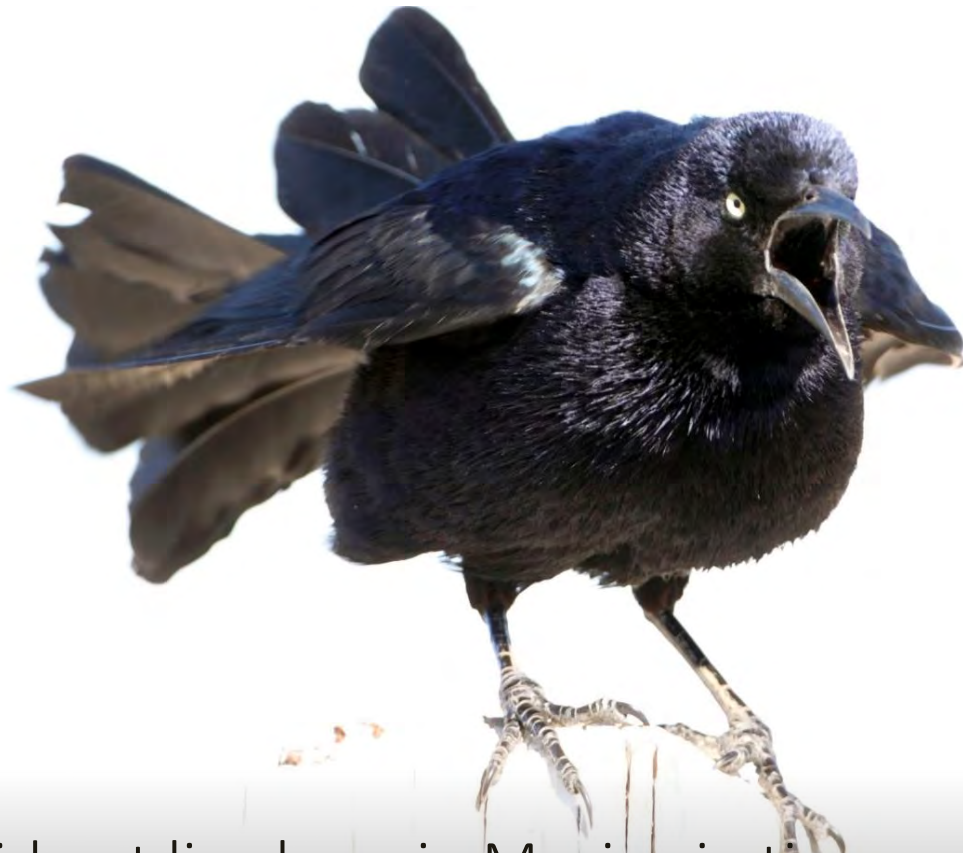


Jorge Gonzalez, Flickr Creative Commons





It is named *teotzanatl* divine, genuine, or marvelous grackle...



because it did not live here in Mexico in times of old. Later, in the time of the ruler Auitzotl it appeared here in Mexico. For he commanded that they be brought here from the provinces of Cuextlan and Totonacapan.



It was made known especially that those which came here were to be fed. But when they multiplied, they scattered, they traveled everywhere, they ate everywhere.



They eat lizards.

And when they were still esteemed, no one might throw stones at them. If anyone stoned them, they chided one another; the common folk said to one another, “What are you doing over there? Do not shout at, do not stone the lord’s birds!”





Was this review ...?

Useful 2

Funny 1

Cool 2



**Anna R.**

Dallas, TX

1 friend

49 reviews

14 photos

6/17/2017 · Updated review

PRO TIP: Don't eat on the patio when the Grackles (demon birds) are out. Their patio is not covered and the birds pooped on my food, in my water, and on my cousin Shelby. Not cool!

Also, the management does not believe in giving refunds for bird poo in the food because it is beyond is their control. Like, I get that, but just close the d \*\*\* patio when you've got 800 squawking birds in the trees immediately above it. Dude, seriously.





## Birds as Literary Metaphor

In *The Rime of the Ancient Mariner*, by Samuel Coleridge, the albatross represents many things, most notably the burden of profound guilt, and was the inspiration for the phrase “an albatross around one’s neck.”





Blackbird singing in the dead of  
night

Take these broken wings and  
learn to fly

All your life

You were only waiting for this  
moment to arise

The Beatles



Mike T, Flickr Creative Commons





Fold 1,000 paper cranes for luck and prosperity.





“Put a bird on it!”



Niklas Montellus, Flickr Creative Commons







New Zealand Dept. of Conservation, Flickr Creative Commons





# How to identify birds for citizen science

*Tips and tricks*





# What do you REALLY need to birdwatch?

- Binoculars
- Scopes
- Field Guides
- Checklists, Life List
- Bird Song CDs, software, etc.



# What do you REALLY need to birdwatch?

- ✓ Time
- ✓ Patience
- ✓ Birds nearby
- ✓ Binoculars
- ✓ Field Guide



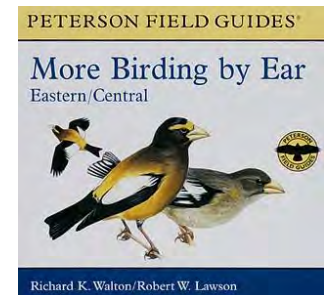
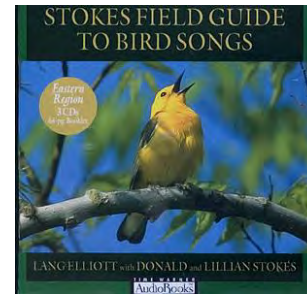
# Useful Resources

*All About Birds* Website

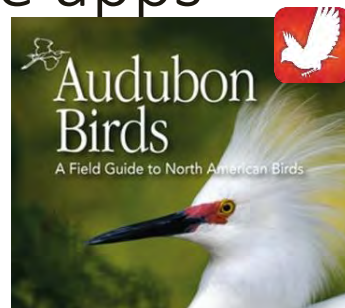


- Bird Song & Birding by Ear CDs  
–Stokes, Peterson

Audubon Bird Guide Online



Smartphone apps



- Classes
- Audubon chapters & birding clubs





## How to ID birds

Memorize all the characteristics of the 9000 species in the world!

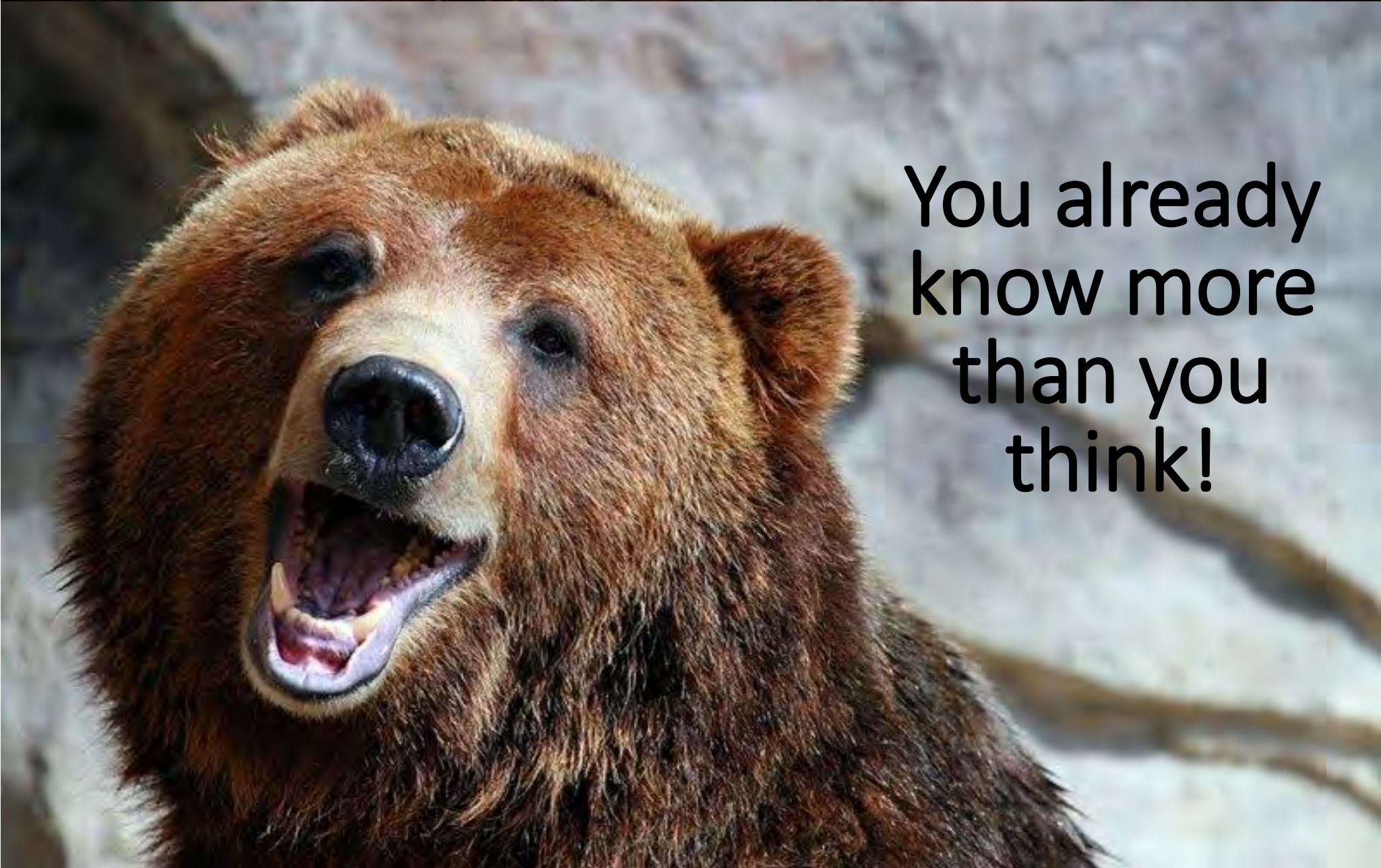
(Remember that there can be differences between males and females, juveniles, immatures, and seasonal plumage changes)







You already  
know more  
than you  
think!







A great mentor is  
priceless!

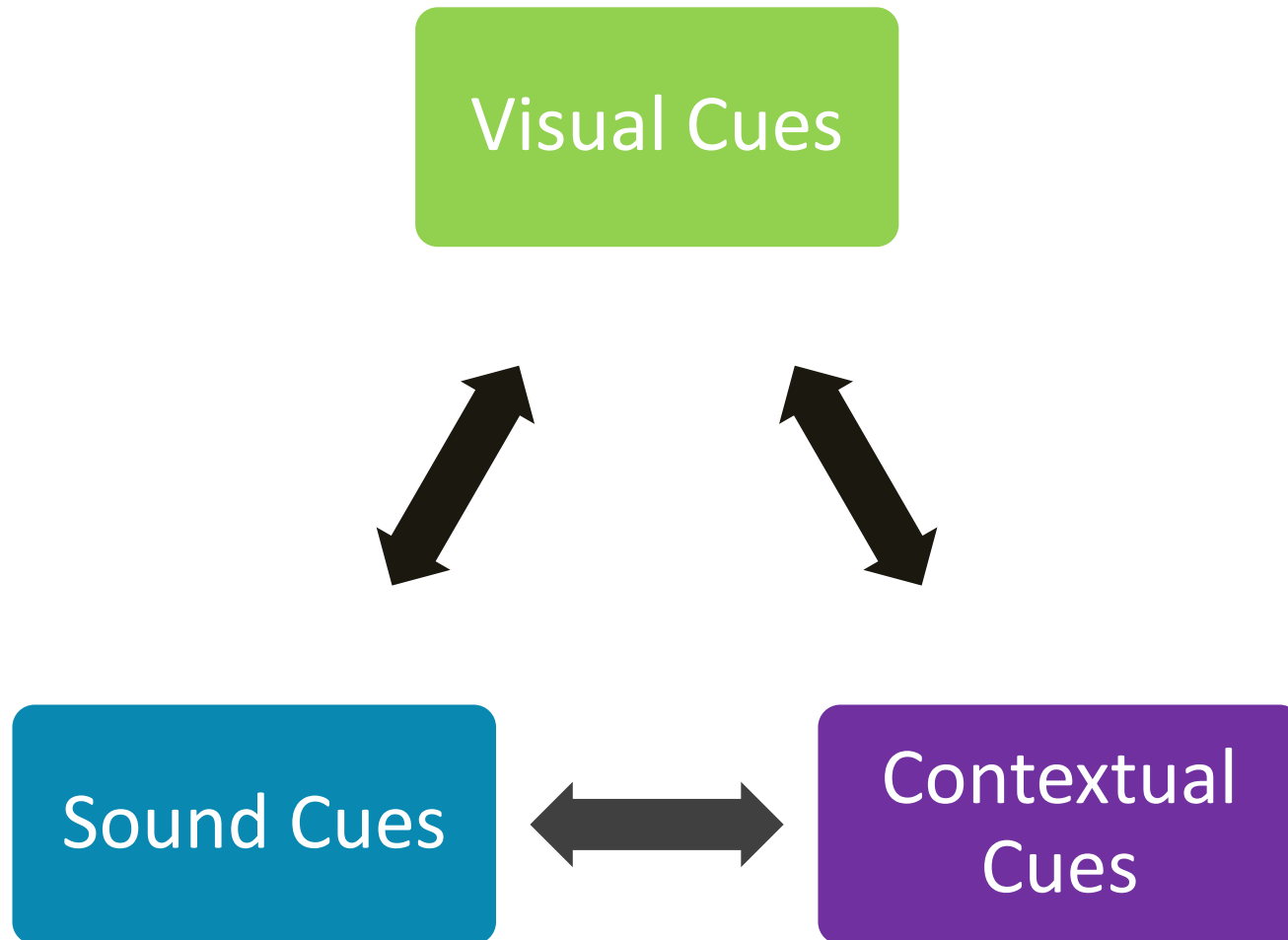


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# Bird ID Basics





# Bird ID Strategy

Shape

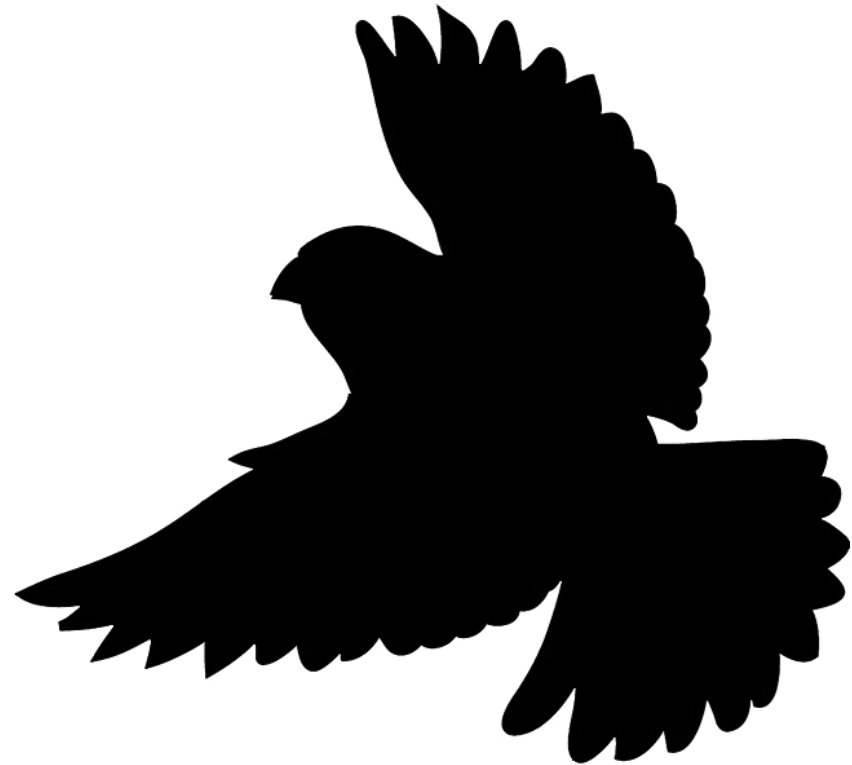
Size

Field marks

Sound

Habitat

Behavior





# Shape & Silhouette

