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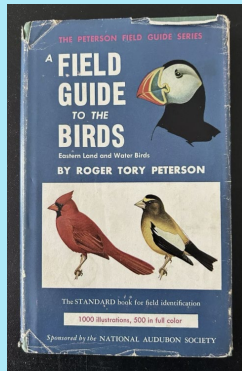
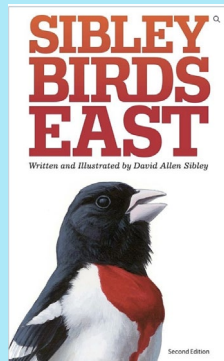
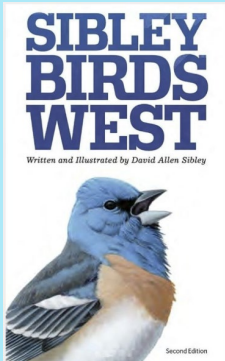
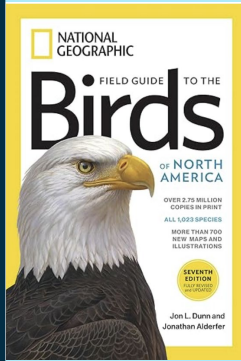
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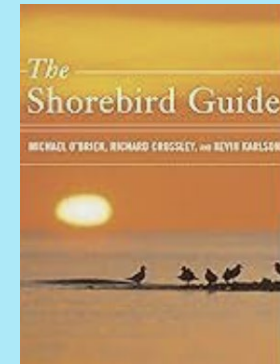
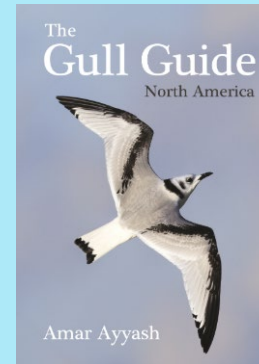
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VIREOS

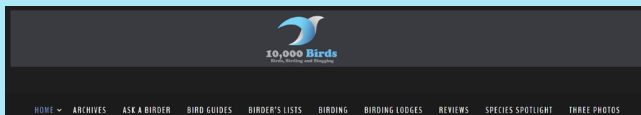
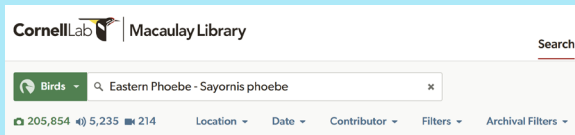
# Field Guides



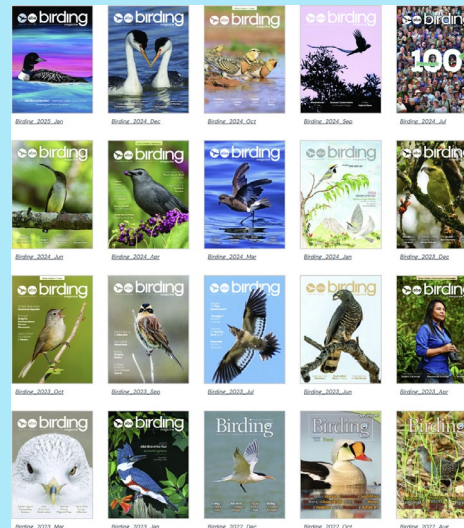
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## How human language could have evolved from birdsong

Linguistics and biology researchers propose a new theory on the deep roots of human speech.

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Review article

Aesthetic evolution by mate choice: Darwin's *really* dangerous idea

Richard O. Prum

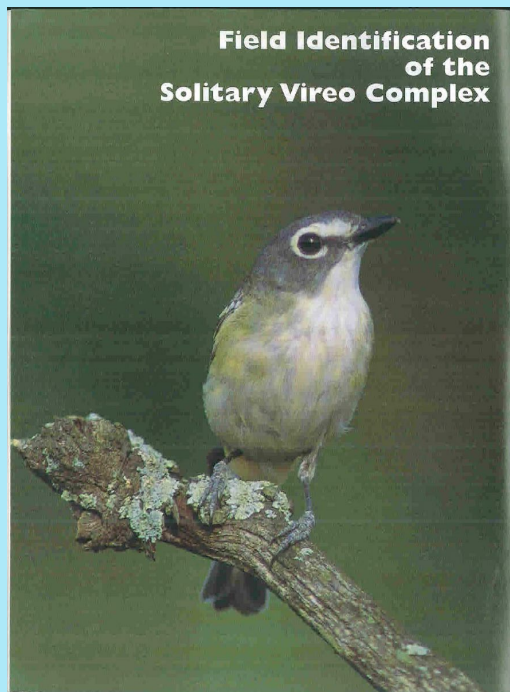
Published: 19 August 2012 | <https://doi.org/10.1098/rstb.2011.0285>

[Abstract](#)



# FIELD IDENTIFICATION OF THE SOLITARY VIREO COMPLEX

## BY MATT T. HEINDEL



MATT T. HEINDEL\*

**T**HE SOLITARY VIREO (*Vireo solitarius*) is a fairly common passerine present throughout much of the U.S. and Canada. This paper focuses on the three main subspecies groups found in the ABA Area. Most individuals are identifiable in the field, and recent guides (e.g., Farrand 1983, NGS 1987) have given a basic, if not oversimplified, understanding of this group. Other works (e.g., Dunn 1976 and Zimmer 1985) have treated the topic in greater detail. Nevertheless, a more thorough analysis is needed.

This article deals primarily with identification, although it also discusses Solitary Vireo taxonomy and distribution. I concentrate on the races occurring north of Mexico, but I also mention races from Baja California and points south where appropriate. The taxonomy south of the border is complex, however, and, while these races are critical to understanding how many species are involved, a complete treatment is beyond the scope of this paper.

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Figure 1. The photograph at left shows the bold contrast typical of Blue-headed Vireo (*V. solitarius*). The entire head is dark blue-gray, whereas the throat (and much of the underparts) is bright white. Note how the gray extends through the coronal area, when it contrasts with the green in the "shoulder" area. The yellow visible at the sides of the breast and in the vent is intense, rarely matched by *cassini*. Photographed by Craig Makina in Michigan in May 1992.

### In Brief

Some taxonomists are urging a split of the Solitary Vireo into two or three distinct species. Most individuals of this complex are identifiable to subspecies in the field if seen well. Characters to concentrate on include the exact color of the head, upperparts, flight-feather edges, and sides and flanks. Identification can be complicated by overlap in many features. In addition, many definitive characters can be subtle and require that the observer has comparative experience with the subspecies and exercises caution.

### Taxonomy

First described as *Muscicapa solitaria* by Wilson (1810), the Solitary Vireo has been the subject of much taxonomic debate. The complex has been divided into three groups, representing four subspecies. In 1957, the AOU recognized three groups as follows:

- "Blue-headed", the northern and eastern race, *V. solitarius*, and *V. alticola* of the Appalachians,
- "Cassini's", the Pacific race, *V. cassini*,
- "Plumbeous", the gray Rocky Mountains and Great Basin race, *V. plumbeus*.

The 1983 A.O.U. *Checklist* did not include subspecies. It did suggest, however, that more than one species may be involved, but any official changes in taxonomy would have to await publication of the relevant data. Barlow et al. (1989) suggested that *V. solitarius* and *V. cassini* overlap in Alberta, yet they behave as separate species. Sibley and Monroe (1990) split this complex into three species, as outlined above. More recently Johnson (1995) has recommended specific status for *plumbeus*.

It is important to note that—from a taxonomic perspective—the degree to which birds may look like one another in the field may have little to do with whether or not they are separate species. From a field identification perspective, however, my enthusiasm for splitting these birds has diminished, due to both the variation within the groups and the need for treatment of the entire Solitary Vireo complex, including those races breeding south of the U.S.-Mexico border.

### Distribution

"Blue-headed" Vireo. This group, comprising *V. solitarius* (Figure 1) and *V. alticola* (Figure 3), nests in a variety of deciduous and coniferous/deciduous woodlands. The breeding range of *V. solitarius* extends from northeastern British Columbia, southwestern Mackenzie, and north-central Alberta east to Nova Scotia, and south to northern Minnesota through the Great Lakes region to New England, New York, Pennsylvania, and northern New Jersey (AOU 1957, Godfrey 1986). *V. alticola* breeds in the Appalachians from northeastern West Virginia, western Maryland, and western Virginia south to northern Georgia. Over the last decade, "Blue-headed" Vireos (subspecies

# SEVEN HABITS OF HIGHLY EFFECTIVE BIRDERS

- 1) Where are we? – County, sub-county...
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- 3) Where is he? – Habitat, micro-habitat...
- 4) GISS & Structure – posture, behavior, primary extension ...
- 5) Bill & Head – length, shape, thickness, use...
- 6) Field Marks – plumage, pattern, behavior...
- 7) Diagnostic Field Marks –

Distribution !!

Identity !!

**RESULTS IN A DIAGNOSIS !!!**

# Do Kings Play Chess On Fine Green Silk

(Order, Family, Genus, Species)

**Domain: Eukarya**

**Kingdom: Anamalia**

**Phylum: Chordata**

**Class: Aves**

**Order: Passeriformes**

**Superfamily: Orioloidea**

**Family: Vireonidae**

**Genus: Vireo**

**34 species**

**HABIT o: WHO?**  
**TAXONOMY**  
**(THE TREE OF LIFE)**

# 1 Genus – 34 species

Black-whiskered vireo, *Vireo altiloquus*

**Black-capped vireo, *Vireo atricapilla***

Cozumel vireo, *Vireo bairdi*

**Bell's vireo, *Vireo bellii***

Slaty vireo, *Vireo brevipennis*

San Andres vireo, *Vireo caribaeus*

Yellow-winged vireo, *Vireo carmioli*

**Cassin's vireo, *Vireo cassinii***

**Thick-billed Vireo, *Vireo crassirostris***

**Yellow-throated vireo, *Vireo flavifrons***

**Yellow-green vireo, *Vireo flavoviridis***

**Warbling vireo, *Vireo gilvus***

Noronha vireo, *Vireo gracilirostris*

Tepui vireo, *Vireo sclateri*

**White-eyed vireo, *Vireo griseus***

Cuban vireo, *Vireo gundlachi*

**Hutton's vireo, *Vireo huttoni***

Golden vireo, *Vireo hypochryseus*

Puerto Rican vireo, *Vireo latimeri*

Brown-capped vireo, *Vireo leucophrys*

**Yucatan vireo, *Vireo magister***

Chocó vireo, *Vireo masteri*

Jamaican vireo, *Vireo modestus*

Flat-billed vireo, *Vireo nanus*

Dwarf vireo, *Vireo nelsoni*

**Red-eyed vireo, *Vireo olivaceus***

Blue Mountain Vireo, *Vireo osburni*

Mangrove vireo, *Vireo pallens*

**Philadelphia vireo, *Vireo philadelphicus***

**Plumbeous vireo, *Vireo plumbeus***

**Blue-headed vireo, *Vireo solitarius***

**Gray vireo, *Vireo vicinior***

Chivi vireo, *Vireo chivi*

Providencia Vireo, *Vireo approximans*

# GETTING ORGANIZED

## 16 VIREOS IN ABA AREA

**Black-capped**

**Bell's**

**Yellow-green**

**Cassin's**

**Gray**

**Yellow-throated**

**Yucatan**

**Thick-billed**

**Warbling**

**White-eyed**

**Philadelphia**

**Hutton's**

**Blue-headed**

**Plumbeous**

**Red-eyed**

**Black-whiskered**

# 4 RARE VIREOS

## Yellow-green

ABA Code 3

Texas coast & south

## Black-whiskered

Texas review species, 42 accepted TBRC records

ABA Code 2

Texas coast

## Yucatan

ABA Code 5

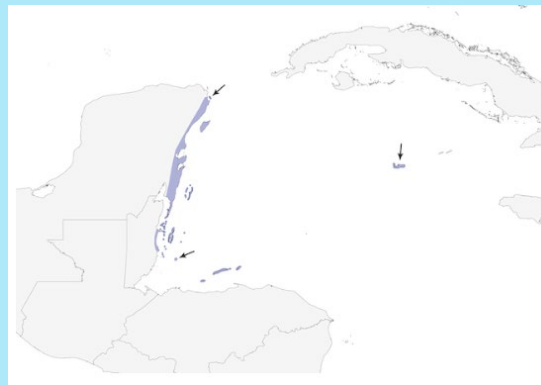
1 accepted TBRC record

6 ebird records in Texas

## Thick-billed

ABA Code 4

occasionally in Florida



# 12 REGULAR VIREOS

**Black-capped**

**Gray**

**Cassin's**

**Hutton's**

**Plumbeous**

**Bell's**

**White-eyed**

**Red-eyed**

**Yellow-throated**

**Philadelphia**

**Blue-headed**

**Warbling**

12 REGULAR VIREOS

6 WESTERN

6 EASTERN

**“WESTERN”  
VIREOS**

**Gray**  
**Black-capped**  
**Cassin’s**  
**Hutton’s**  
**Plumbeous**  
**Bell’s \***

**“EASTERN”  
VIREOS**

**White-eyed**  
**Red-eyed**  
**Yellow-throated**  
**Philadelphia**  
**Blue-headed**  
**Warbling \***







\* Both in the East and West

12 REGULAR VIREOS







4 PLAIN-WINGED


8 WING-BARRED


## “WESTERN” VIREOS

Gray   
Black-capped   
Cassin's   
Hutton's   
Plumbeous   
Bell's \* 

## “EASTERN” VIREOS

White-eyed   
Red-eyed   
Yellow-throated   
Philadelphia   
Blue-headed   
Warbling \* 

 Plain-winged

 Wing-barred

\* Both in the East and West

# 12 REGULAR VIREOS

9 Breeders      2 Migrants

1 Migrant/Winter

## “WESTERN” VIREOS

- Gray 
- Black-capped 
- Cassin's 
- Hutton's 
- Plumbeous 
- Bell's \* 

## “EASTERN” VIREOS

- White-eyed 
- Red-eyed 
- Yellow-throated 
- Philadelphia 
- Blue-headed  
- Warbling \* 

\* Both in the East and West

NOTE:

All also migrate through Texas



Breeds in Texas




Migrates through Texas
















Small numbers winter in Texas


12 REGULAR VIREOS  
8 BREEDERS  
3 MIGRANTS  
1 MIGRANT/WINTER


## “WESTERN” VIREOS

Gray    
Black-capped    
Cassin's    
Hutton's    
Plumbeous    
Bell's \*  

## “EASTERN” VIREOS

White-eyed    
Red-eyed    
Yellow-throated    
Philadelphia    
Blue-headed     
Warbling \*  

 Plain-winged

 Wing-barred

\* Both in the East and West



Breeds in Texas



Migrates through Texas



Small numbers winter in Texas

# VOCAL CLUES ARE THE BEST CLUES


















- ▶ Red-eyed
- ▶ Yellow-throated
- ▶ White-eyed
- ▶ Warbling
- ▶ Bell's
- ▶ Black-capped
- ▶ Hutton's


12 REGULAR VIREOS  
 8 BREEDERS  
 3 MIGRANTS  
 1 MIGRANT/WINTER


## “WESTERN” VIREOS

- Gray  
- Black-capped   
- Cassin’s  
- Hutton’s   
- Plumbeous   
- Bell’s \*   

## “EASTERN” VIREOS

- White-eyed   
- Red-eyed   
- Yellow-throated   
- Philadelphia  
- Blue-headed   
- Warbling \*   

 Plain-winged

 Wing-barred

\* Both in the East and West



Breeds in Texas



Migrates through Texas



Small numbers winter in Texas

# VIREO MINI-QUIZ

1. How many “regular” vireos in ABA? How many rarities?
2. How many are plain-winged? Which ones?
3. Which ones are western?
4. Which ones are both in the east & in the west?
5. Which ones are in the **Solitary Vireo complex**?
6. Which ones did I recommend learning vocalizations?

# VIREO MINI-QUIZ

1. How many “regular” vireos? 12 How many rarities?  
4 rare = thick-billed, Yellow-green, Black-whiskered, Yucatan
2. How many are plain-winged? 4 Which ones?  
Red-eye, Philadelphia, Warbling, Gray
3. Which ones are western?  
Gray, Black-capped, Cassin’s, Hutton’s, Plumbeous, Bell’s
4. Which ones are both in the east & in the west?  
Bell’s, Warbling
5. Which ones are Solitary Vireo complex?  
Cassin’s, Plumbeous, Blue-headed
6. Which ones did I recommend learning vocalizations?  
Red-eyed, Yellow-throated, White-eyed, Warbling, Bells, Black-capped, Hutton’s

**Warbling**



Photo by Darren Clark

**Philadelphia**



Photo by Daniel Irons

**Red-eyed**

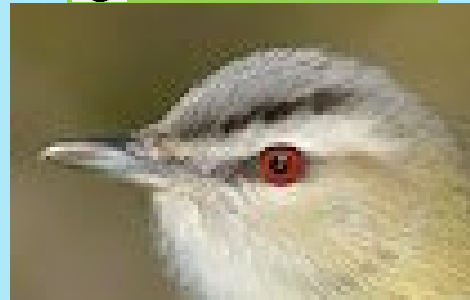


Photo by Jean Guy Chouinard

**Gray**



Photo by Caroline Lambert

**White-eyed**



Photo by Craig Brelsford

**Yellow-throated**



Photo by Andrew Simon

**Bell's**

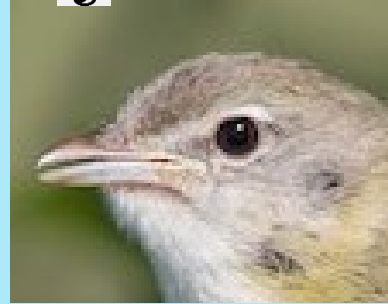


Photo by Jim Hully

**Hutton's**



Photo by Tanner Martin

**Black-capped**



Photo by Chris Taylor

**Blue-headed**

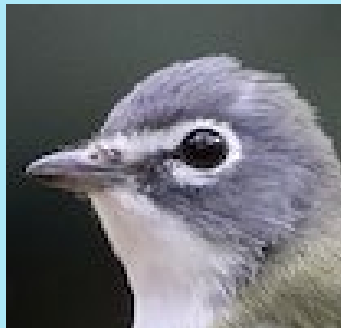


Photo by Dale Graham

**Plumbeous**



Photo by Steve Mlodinow

**Cassin's**



Photo by David M. Bell

# IS IT A VIREO? THE BILL !!!



**Vireo**

**Vireo**



**Kinglet**



**Empid**

**Warbler**



# IS IT A VIREO? BEHAVIOR



Photo by Mike Stewart



Photo by Kalin Ocana



Photo by Ian Davis

# SEVEN HABITS OF HIGHLY EFFECTIVE BIRDERS

- 1) **Where are we? – County, sub-county...**
- 2) **When are we? – Season, month, 1/2 month**
- 3) **Where is he? – Habitat, micro-habitat**

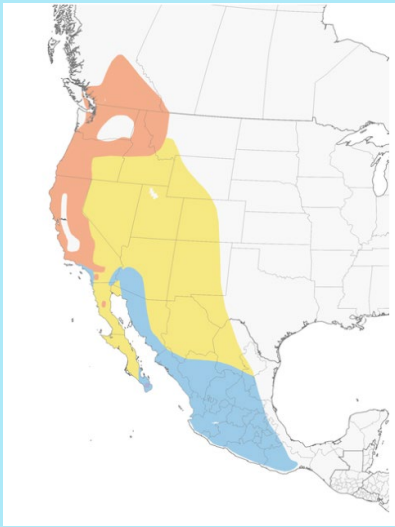
Distribution !!

- 4) GISS & Structure – posture, behavior, primary extension ...
- 5) Bill & Head – length, shape, thickness, use...
- 6) Field Marks – plumage, pattern, behavior...
- 7) Diagnostic Field Marks –

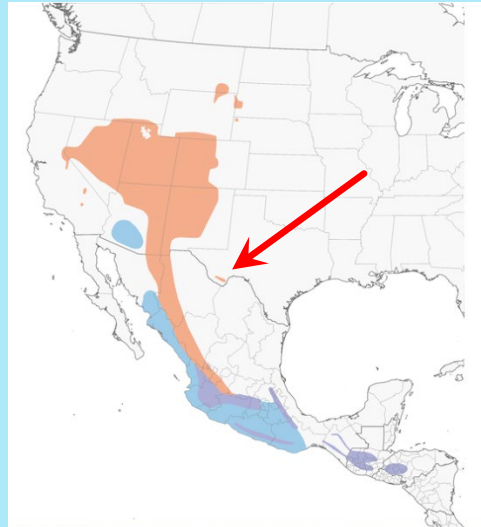
Identity !!

**RESULTS IN A DIAGNOSIS !!!**

# “Solitary Vireo Complex”



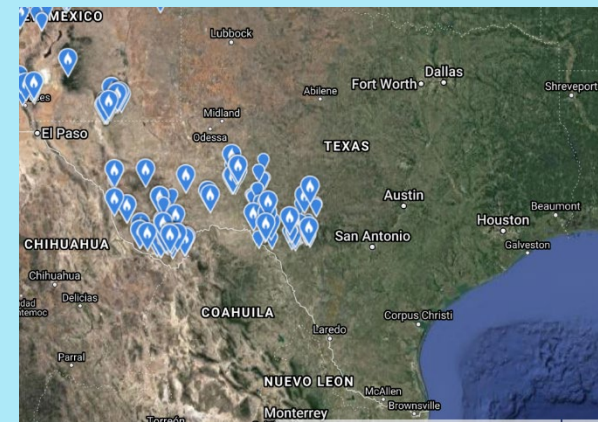
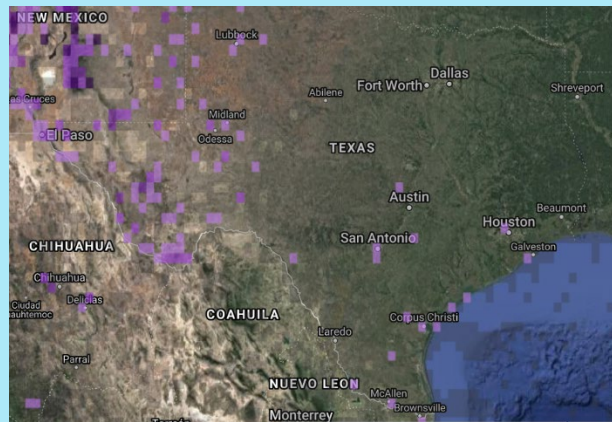
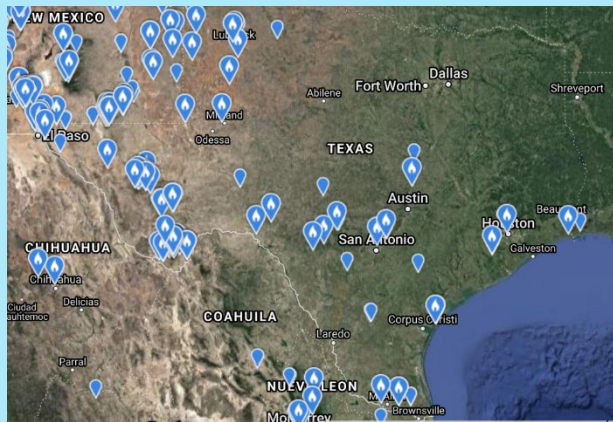
**Cassin's**



**Plumbeous**

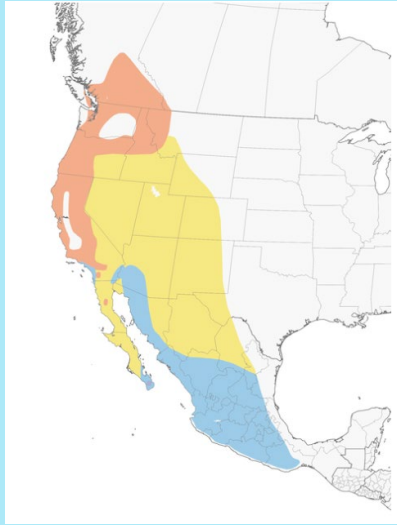


**Gray**



# Western Vireos

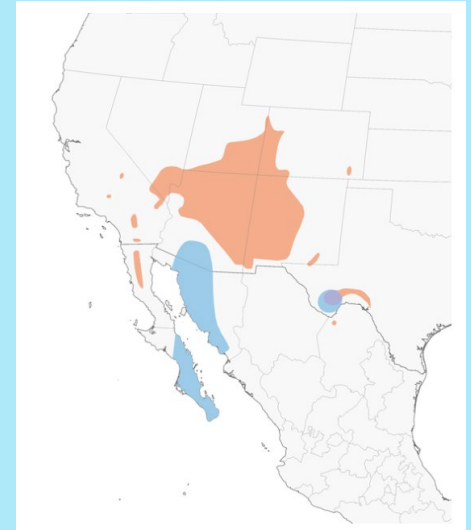
# "Solitary Vireo Complex"



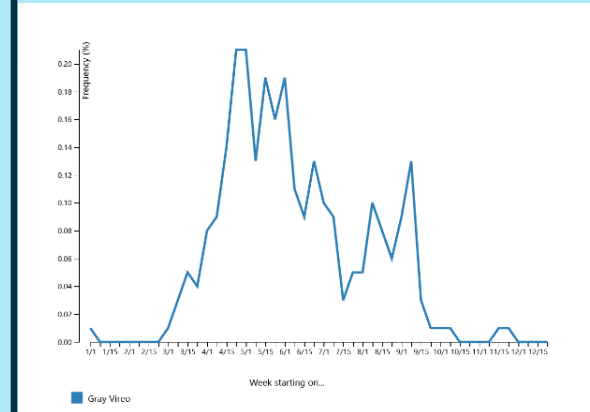
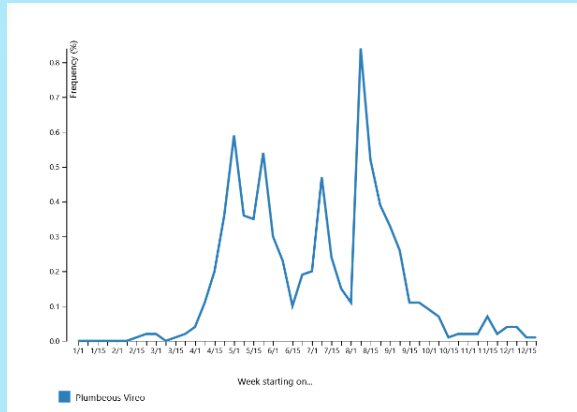
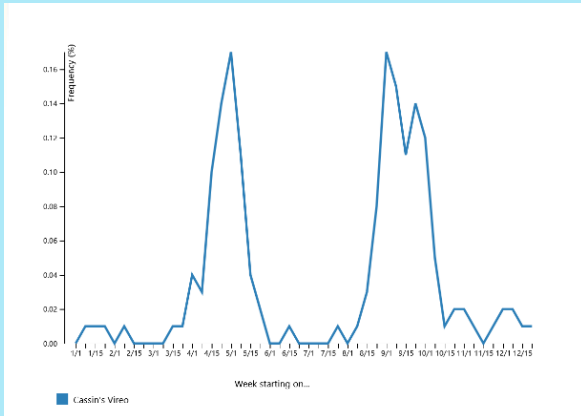
**Cassin's**



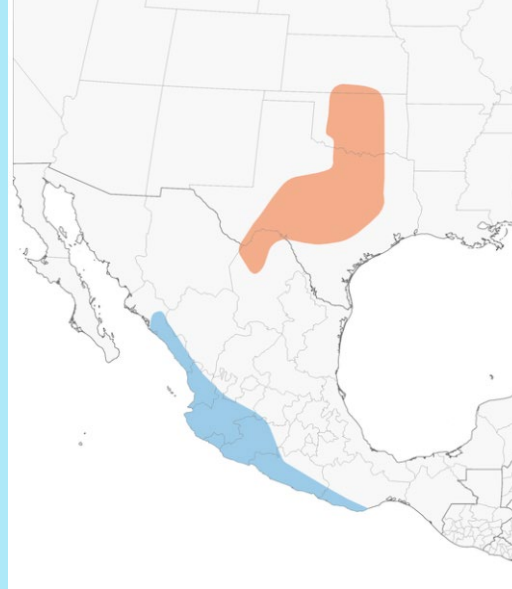
**Plumbeous**



**Gray**



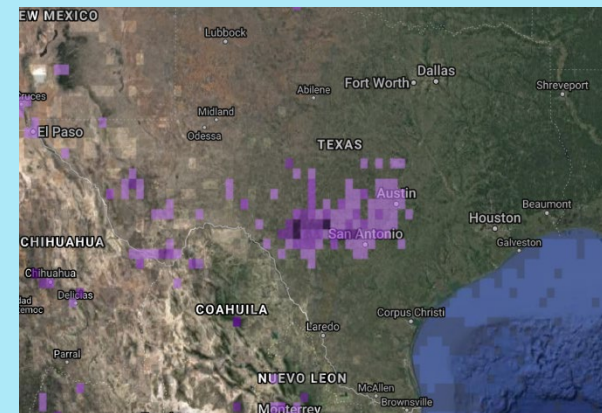
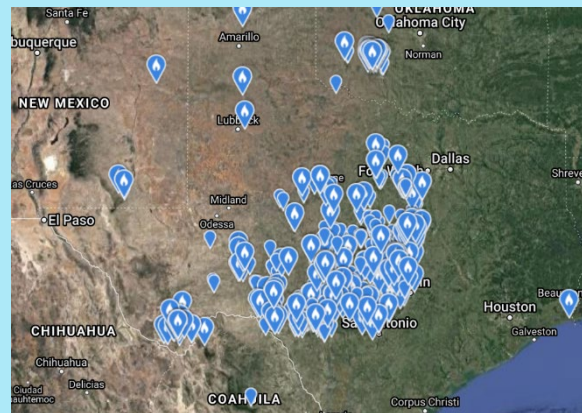
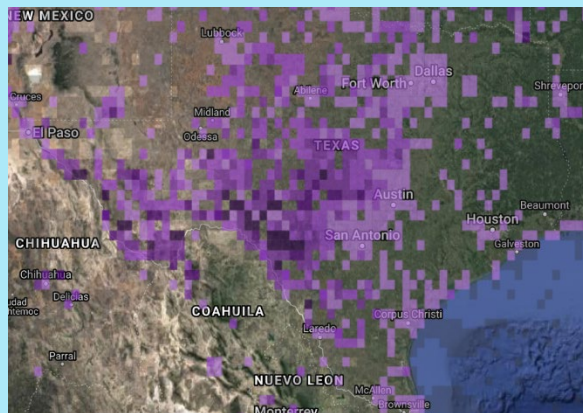
# Western Vireos



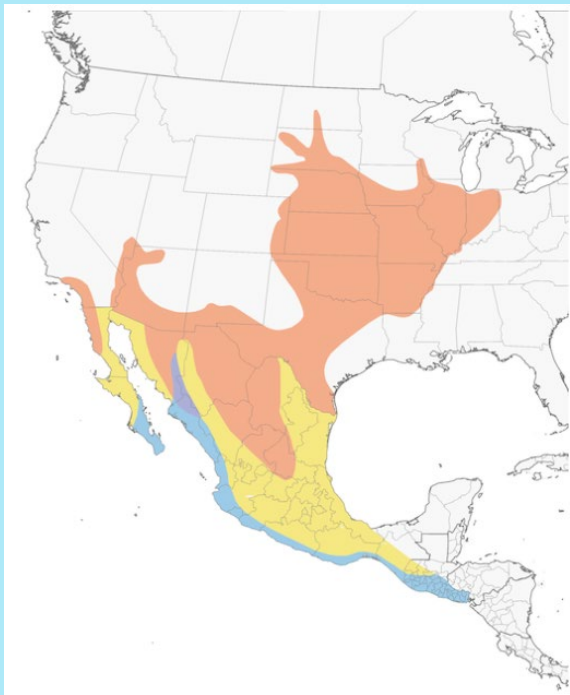
 **Bell's** = 

 **Black-capped** = 

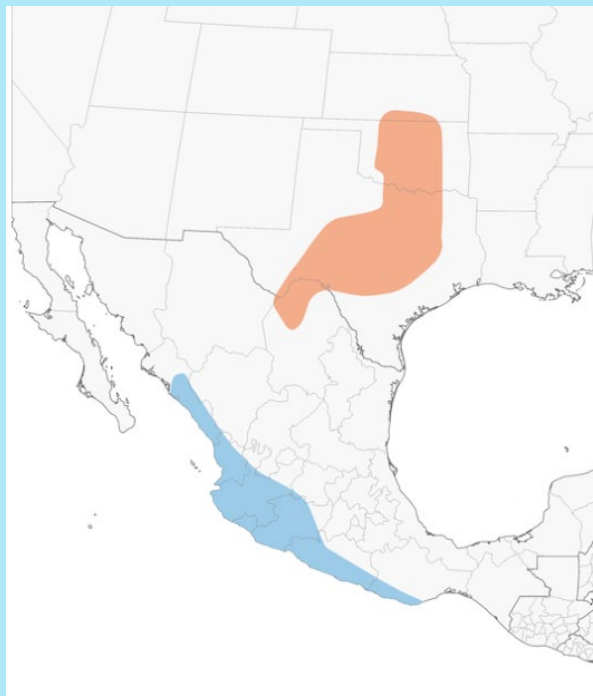
 **Hutton's** = 



# Western Vireos



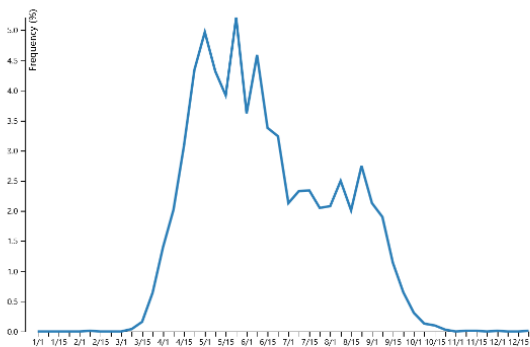
 **Bell's** 



 **Black-capped** 

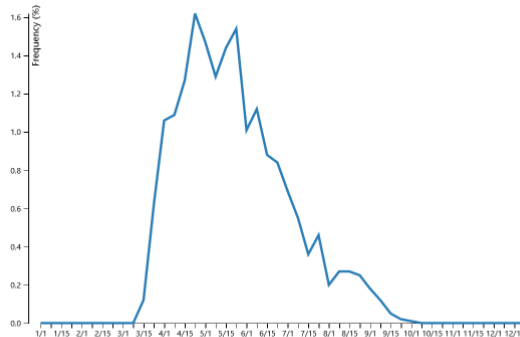


 **Hutton's** 



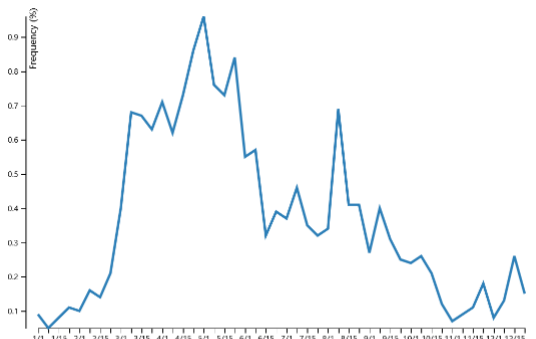
 Bell's Vireo

Week starting on...



 black-capped Vireo

Week starting on...



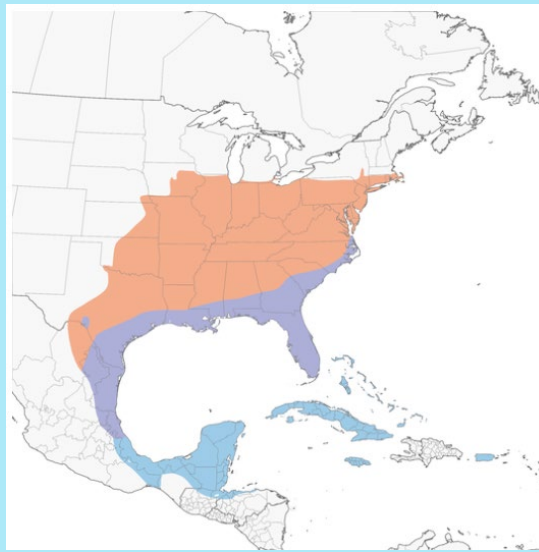
 Hutton's Vireo

Week starting on...

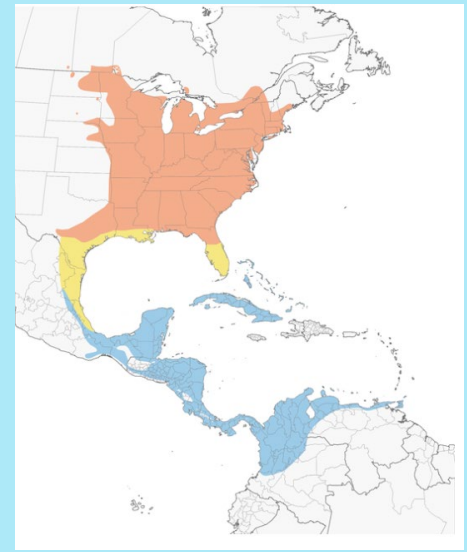
# Western Vireos



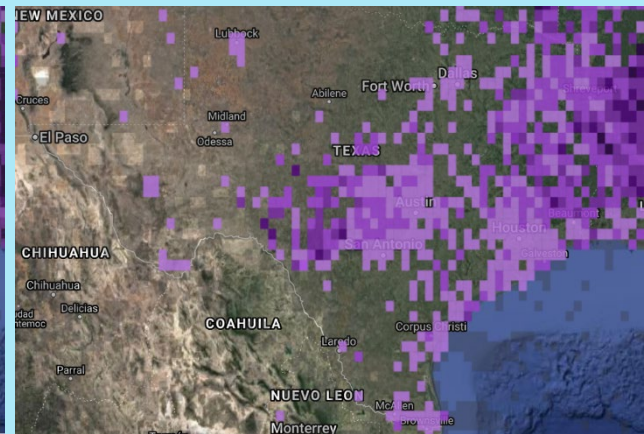
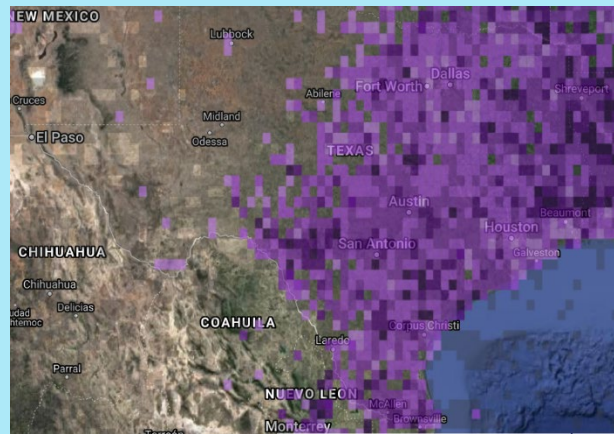
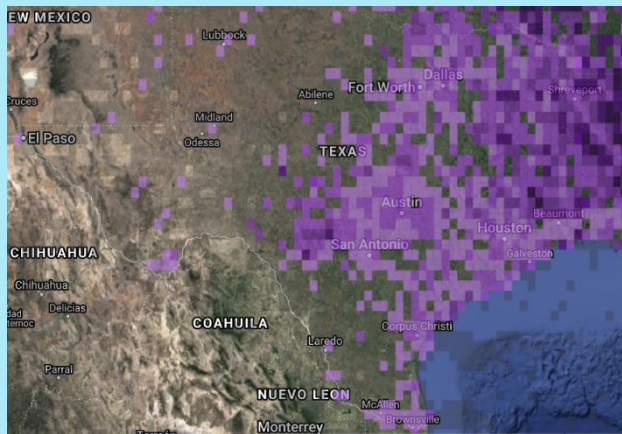
 **Red-eyed**



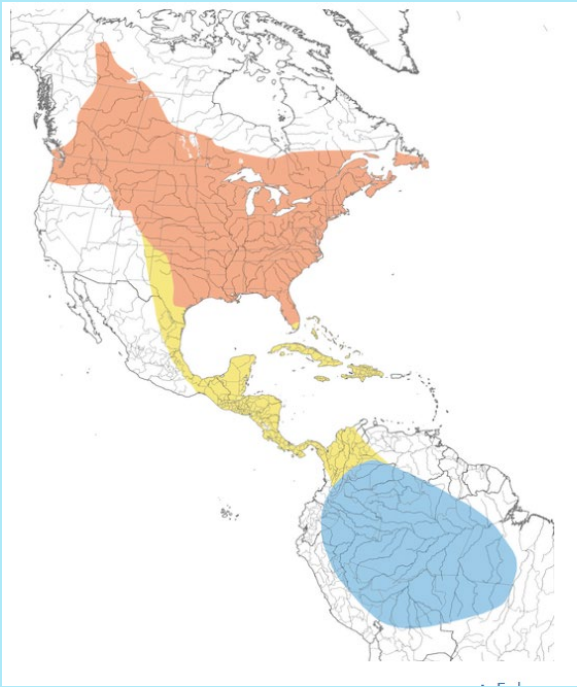
 **White-eyed** 



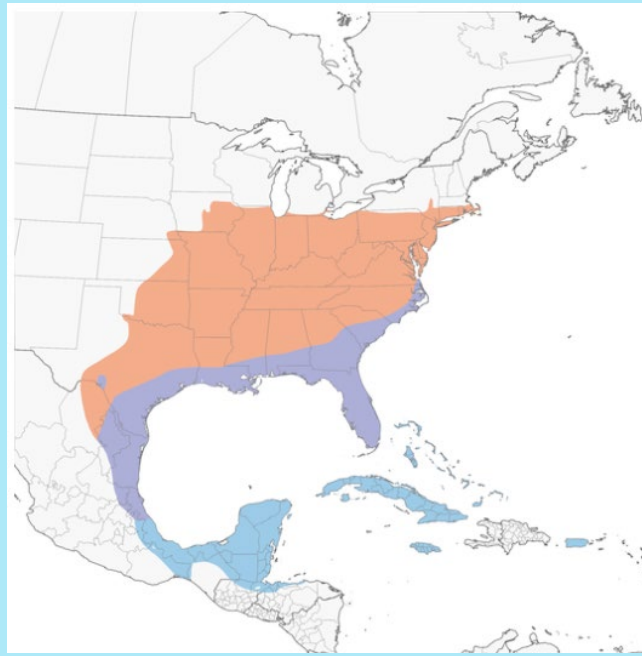
 **Yellow-throated** 



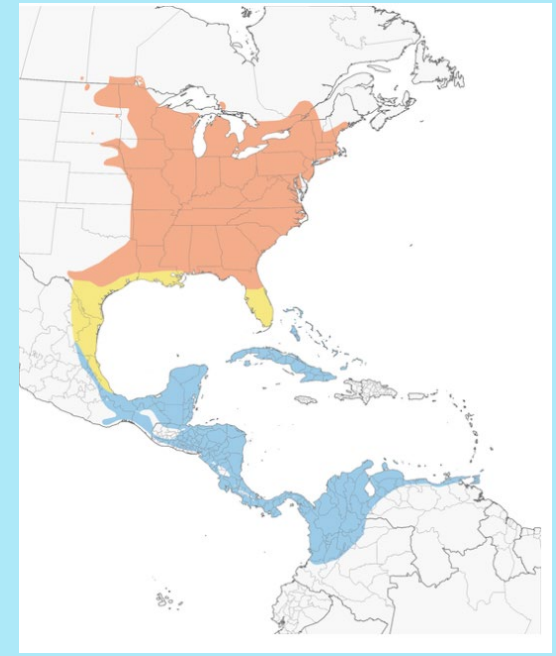
**Eastern Vireos**



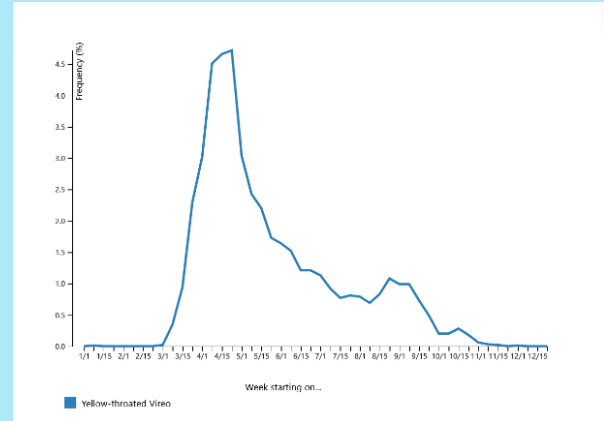
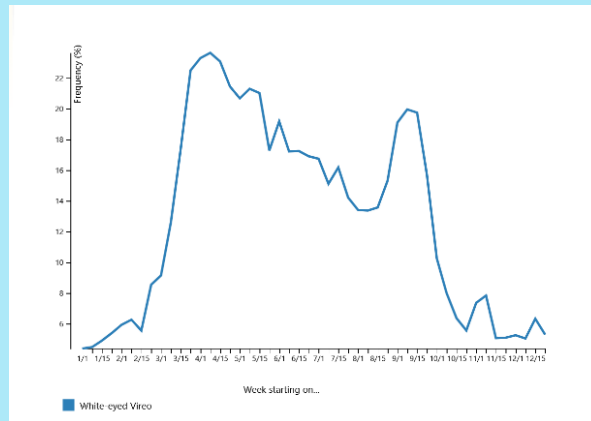
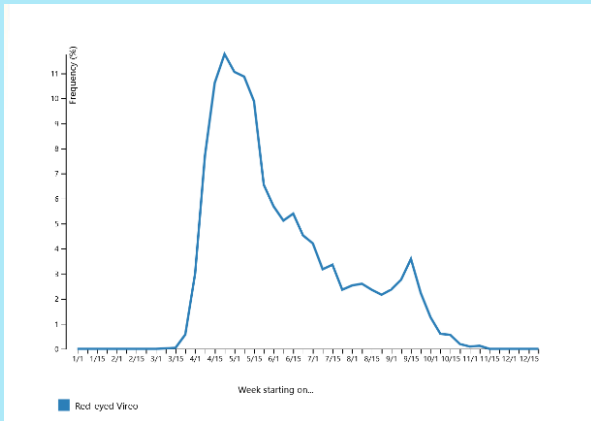
**Red-eyed**



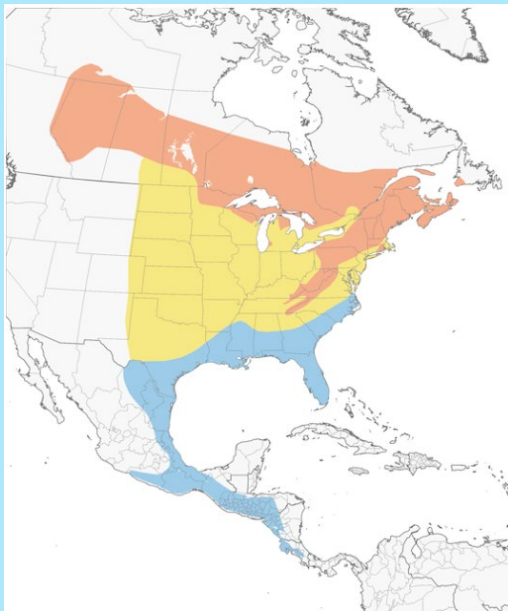
**White-eyed**



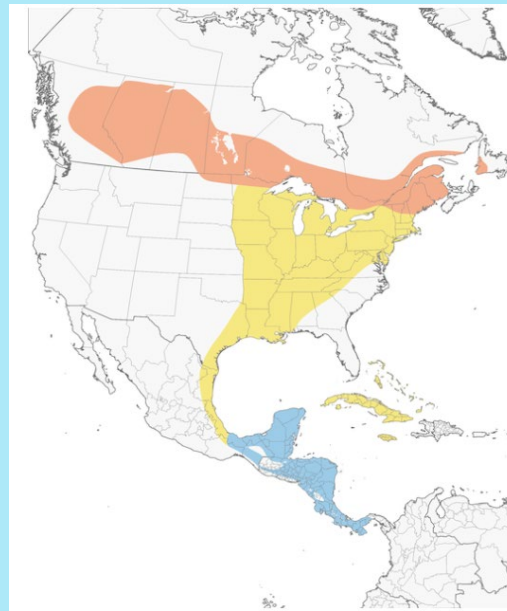
**Yellow-throated**



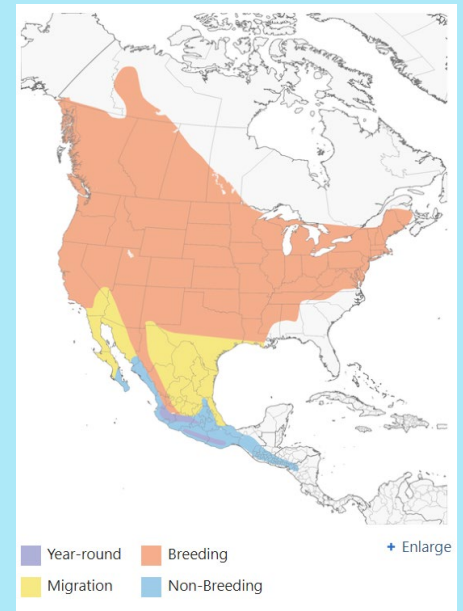
# Eastern Vireos



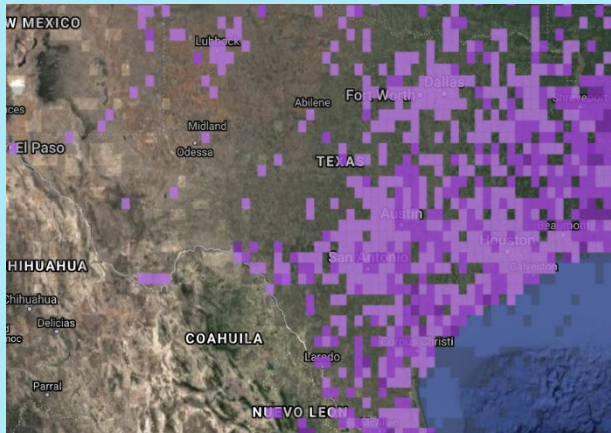
**Blue-headed** 



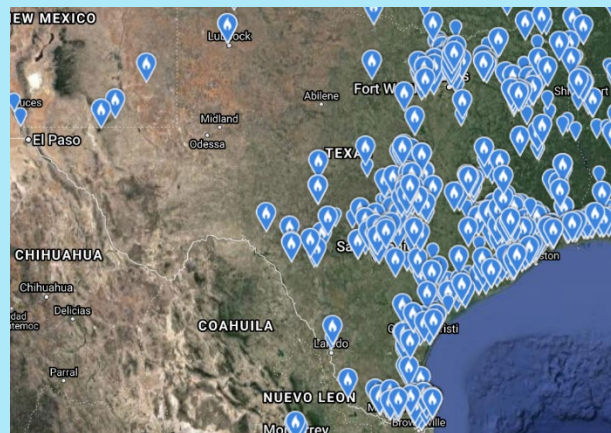
**Philadelphia** 



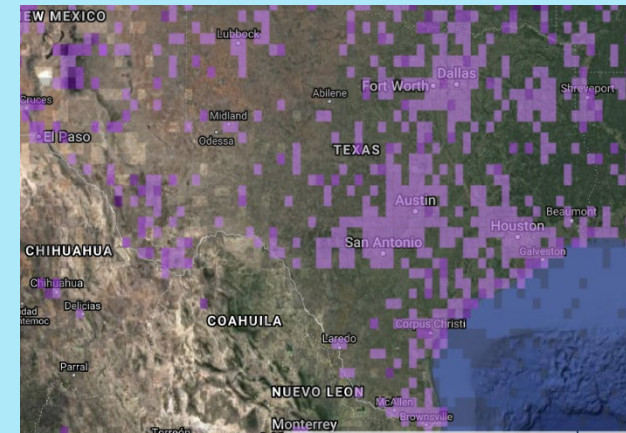
 **Warbling** 

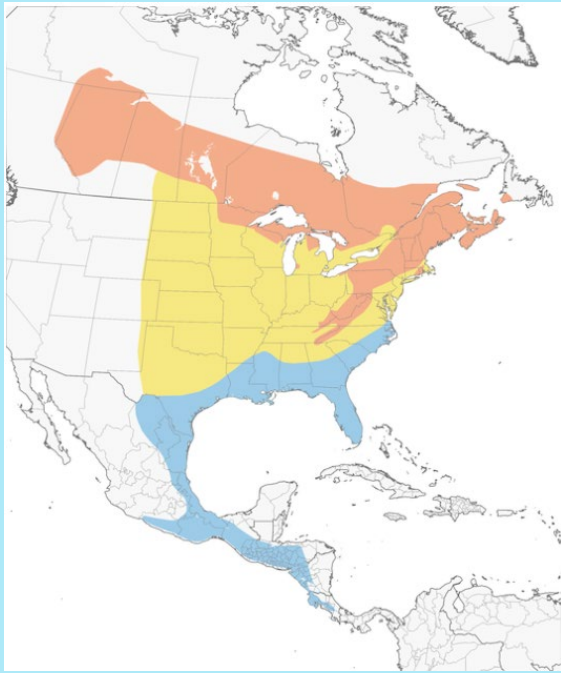


“Solitary Vireo  
Complex”

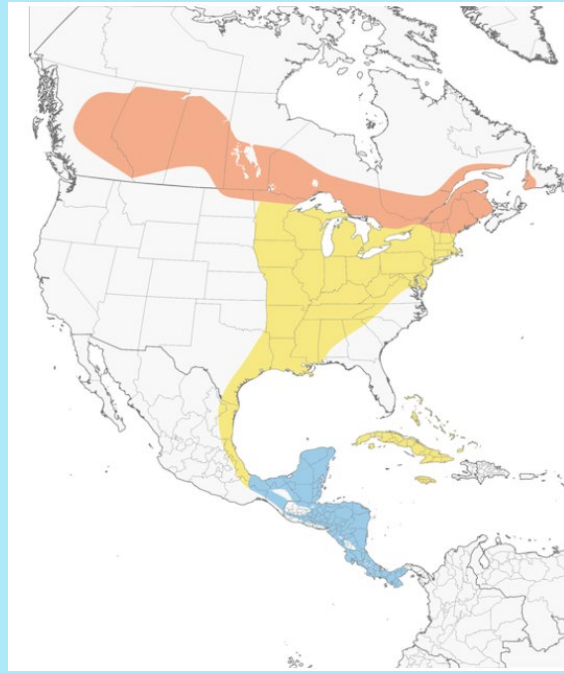


**Eastern Vireos**

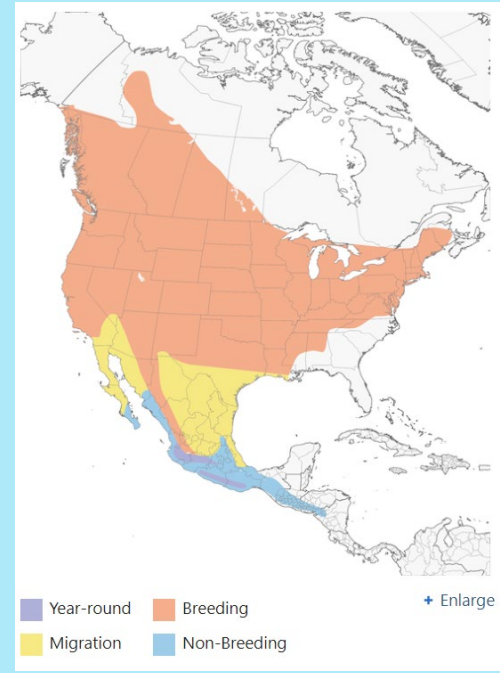




**Blue-headed** 

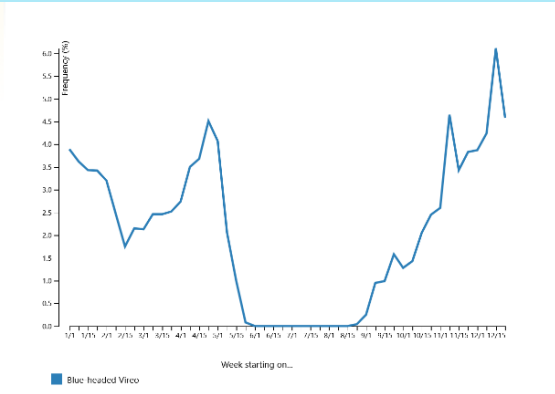


**Philadelphia** 

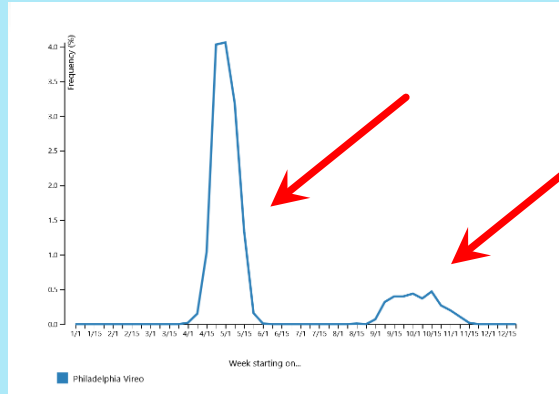


 **Warbling** 

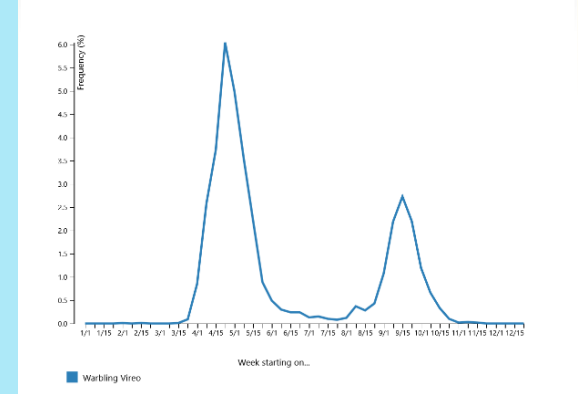
■ Year-round ■ Breeding ■ Migration ■ Non-Breeding + Enlarge

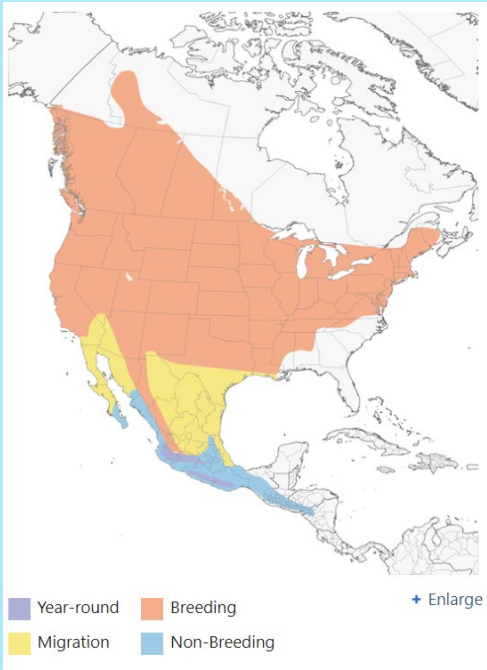


“Solitary Vireo Complex”



**Eastern Vireos**

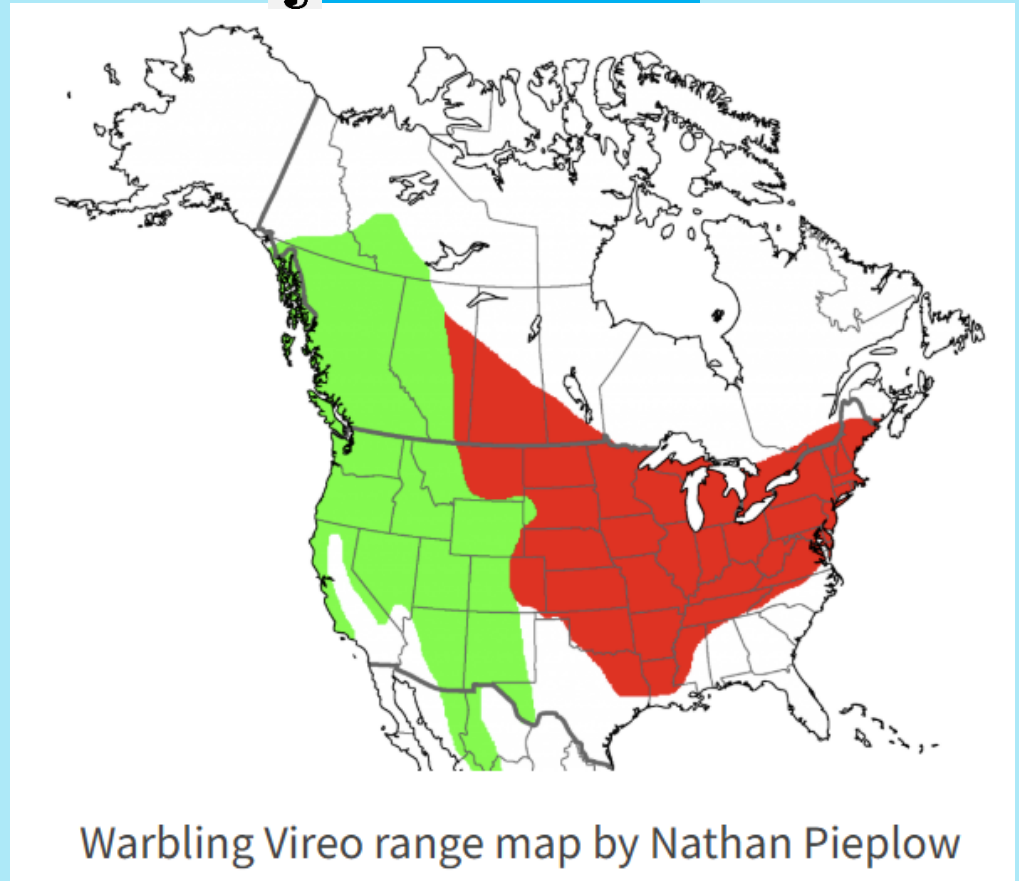




## Warbling



## Warbling



Warbling Vireo range map by Nathan Pieplow

# SEVEN HABITS OF HIGHLY EFFECTIVE BIRDERS

- 1) Where are we? – County, sub-county...
- 2) When are we? – Season, month, 1/2 month...
- 3) Where is he? – Habitat, micro-habitat...

Distribution !!

- 4) **GISS & Structure – posture, behavior, primary extension ..**
- 5) **Bill & Head – length, shape, thickness, use...**
- 6) Field Marks – plumage, pattern, behavior...
- 7) Diagnostic Field Marks –

Identity !!

**RESULTS IN A DIAGNOSIS !!!**

# IDENTIFICATION

- ▶ Easy
- ▶ Intermediate
- ▶ Difficult

♫ Red-eyed

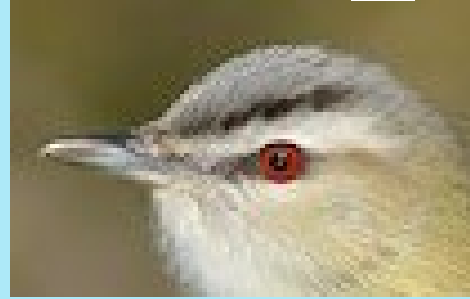


Photo by Jean Guy Chouinard

Gray



Photo by Caroline Lambert

♫ White-eyed



Photo by Craig Brelsford

♫ Yellow-throated



Photo by Andrew Simon

♫ Black-capped



Photo by Chris Taylor

EASY PEASY ID !!!



**Warbling**



Photo by Darren Clark

**Philadelphia**



Photo by Daniel Irons



**Bell's**



Photo by Jim Hully



**Hutton's**



Photo by Tanner Martin

**INTERMEDIATE ID**

# DIFFICULT ID

## THE SOLITARY VIREO COMPLEX

Blue-headed

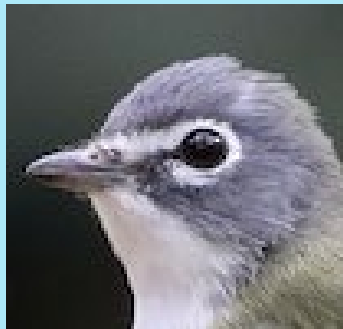


Photo by Dale Graham

Plumbeous



Photo by Steve Mlodinow

Cassin's



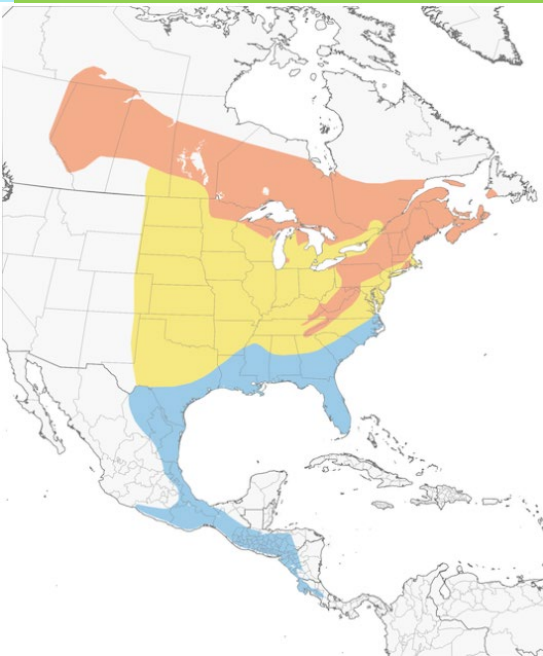
Photo by David M. Bell

# SOLITARY VIREO COMPLEX

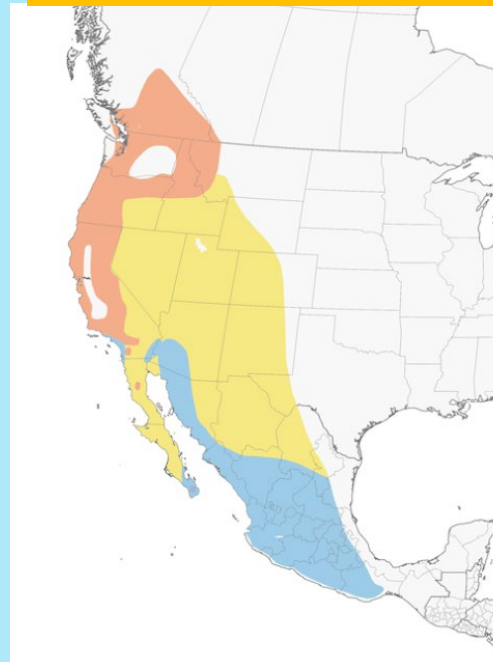
**Solitary Vireo** – split into 3 species in 1997 by AOU

Based on molecular genetic studies showing significant divergence in mitochondrial DNA and enzymes.

**Blue-headed** –  
eastern North America



**Cassin's** – Pacific  
coast & northwest

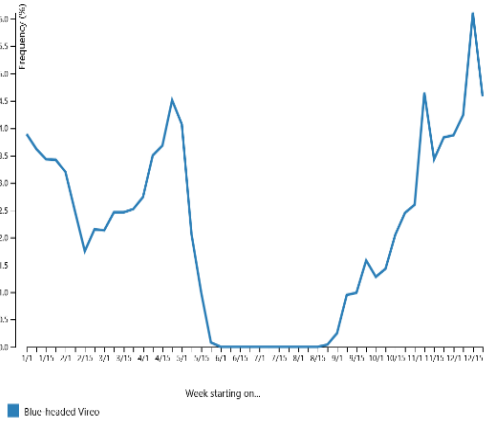


**Plumbeous** –  
Inter-mountain west



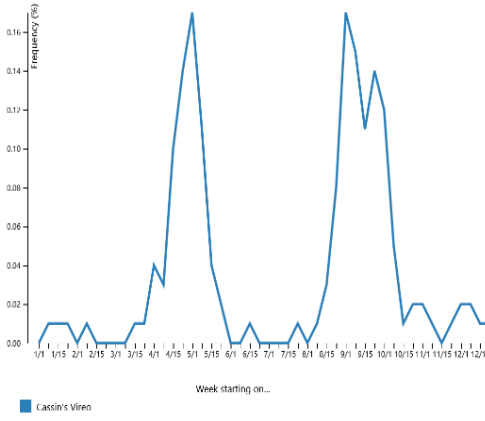
# SOLITARY VIREO COMPLEX IN TEXAS (EBIRD)

## Blue-headed



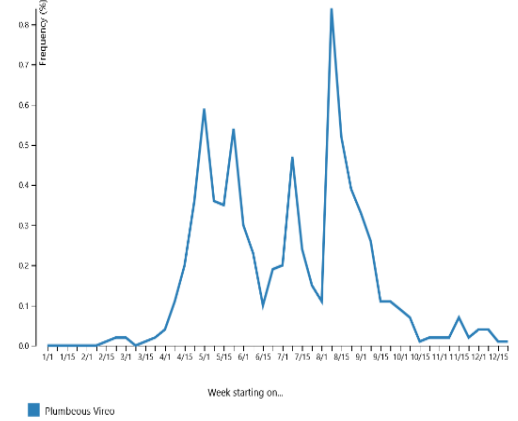
**Nov-Feb**

## Cassin's

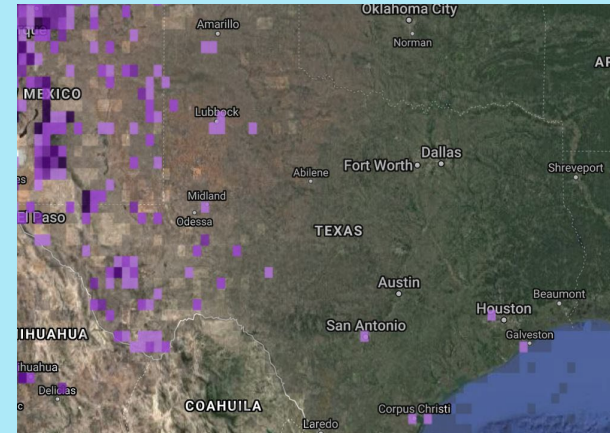
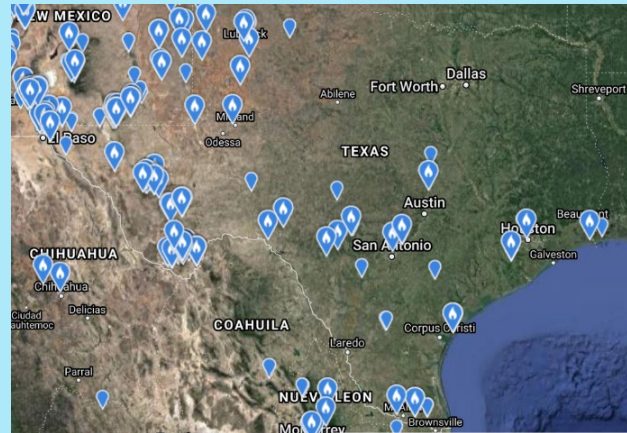
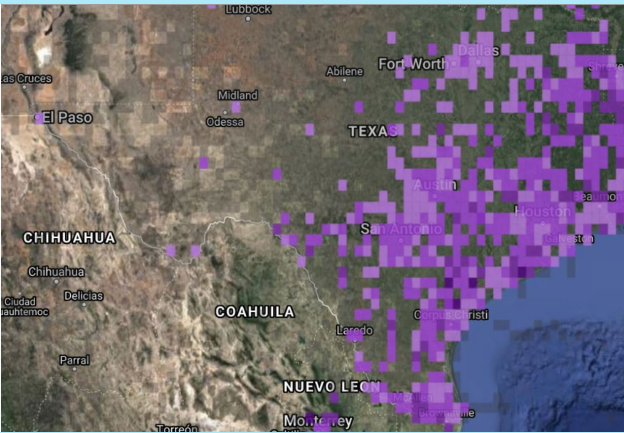


**All Months**

## Plumbeous



**May-August**



# SOLITARY VIREO COMPLEX

- ▶ Formerly considered conspecific (the same species), the Solitary Vireo was split into the **Plumbeous**, **Cassin's**, and **Blue-headed** Vireos in 1997 based on genetic studies which demonstrated sufficient differences to be considered separate species.
- ▶ Key ID points:
  - ▶ ~~Song~~
  - ▶ ~~GISS/Structure~~
  - ▶ ~~Behavior~~
  - ▶ Plumage
  - ▶ Location – during breeding period only

# SOLITARY VIREO COMPLEX

- ▶ Key plumage ID points:
  - ▶ Much variety
  - ▶ Comparative approach
  - ▶ Not all birds should be IDed
  - ▶ Exact color of:
    - ▶ **Head & throat**
    - ▶ **Upperparts**
    - ▶ **Edges of flight-feathers**
    - ▶ **Sides/flanks**

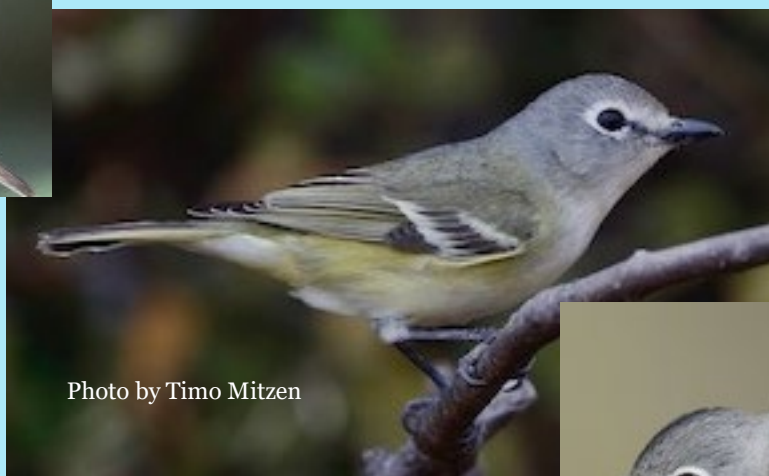
# SOLITARY VIREO COMPLEX

Increasing Color & Contrast

Blue-headed 



Cassin's 



Plumbeous 



# CLINE

Solitary Vireo complex forms (what Sibley calls) a “**cline**” from west to east of increasing contrast and color.



- ▶ a continuum with an infinite number of gradations from one extreme to the other.
- ▶ In Biology: a gradation in one or more characteristics within a species or other taxon, especially between different populations.

# REFERENCE



## FIELD IDENTIFICATION OF THE SOLITARY VIREO COMPLEX

MATT T. HEINDEL  
BIRDING MAGAZINE,  
DECEMBER 1996

# EXACT COLOR OF HEAD

**Blue-headed**



Blue gray to slaty gray contrasts sharply with throat and back

**Cassin's**



Gray mixed with green or all green.

Increasing Demarcation & Contrast

All gray

**Plumbeous**



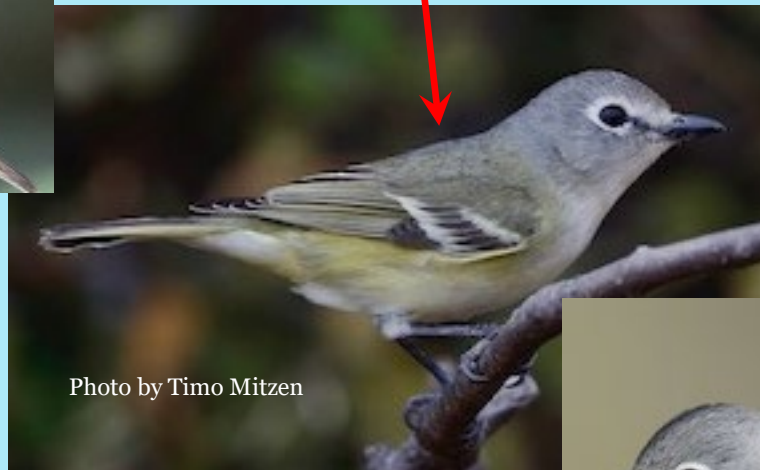
# EXACT COLOR OF UPPER PARTS

**Blue-headed** 



Entirely green, usually not as bright as Blue-headed.

**Cassin's** 



Usually entirely bright green or bright green with gray mixed in.

Usually entirely gray. Some have slight olive hue to rump.

**Plumbeous** 



# EXACT COLOR OF EDGES OF FLIGHT FEATHERS \*\*

Remiges = secondaries & primaries  
Retrices = tail feathers

## **Blue-headed** =



Flight feathers **usually**  
**edged greenish.**

## **Cassin's** =



White edges to flight  
feathers **usually**  
**bolder than in**  
**others.**

## **Plumbeous** =



Edges to flight  
feathers **usually**  
**greenish.**

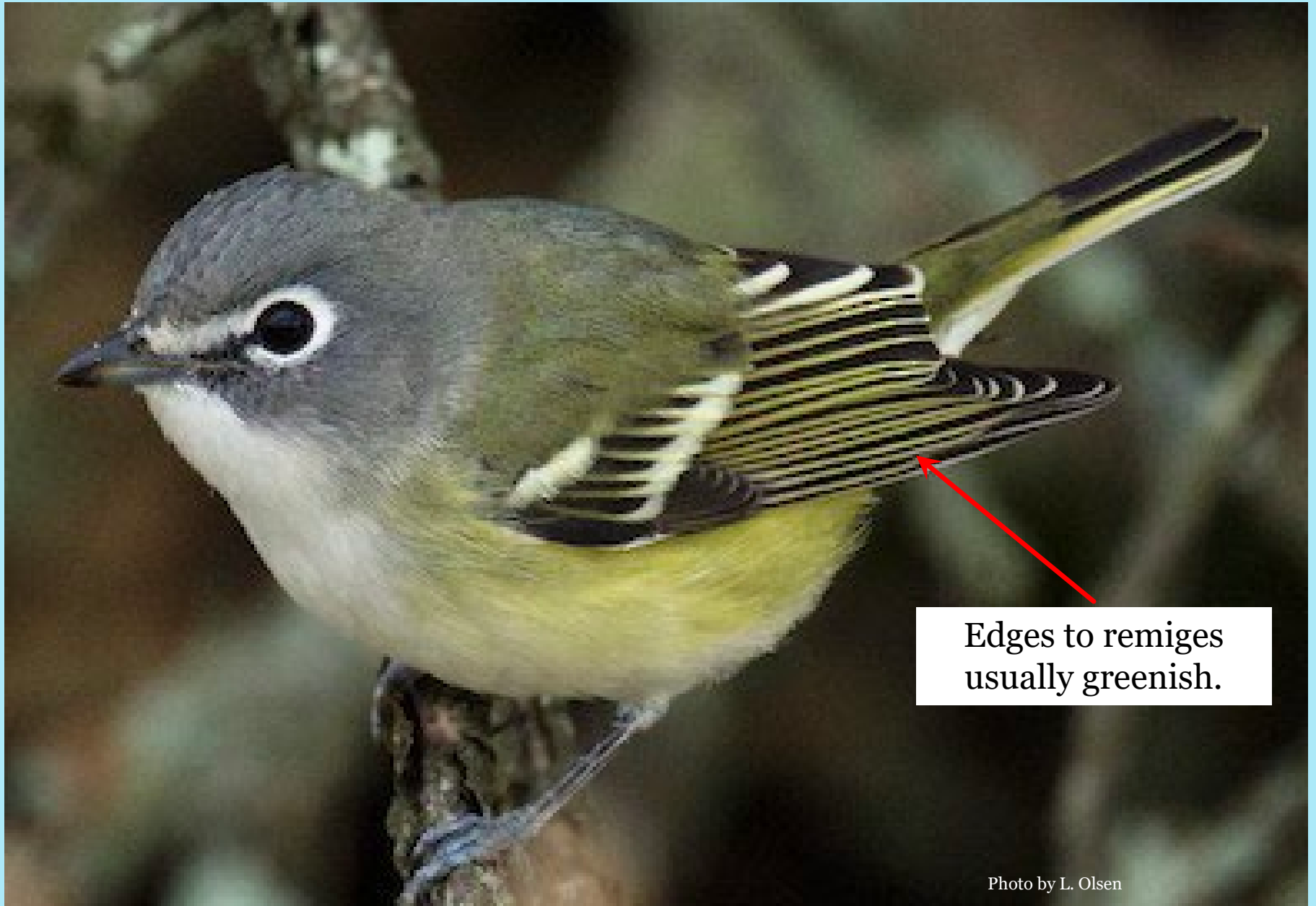
Photo by Dale Graham

Photo by Timo Mitzen

Photo by William Higgins

**Blue-headed** =

EXACT COLOR OF  
EDGES OF FLIGHT FEATHERS



Edges to remiges  
usually greenish.

Flight feathers usually  
edged greenish.

# EXACT COLOR OF EDGES OF FLIGHT FEATHERS

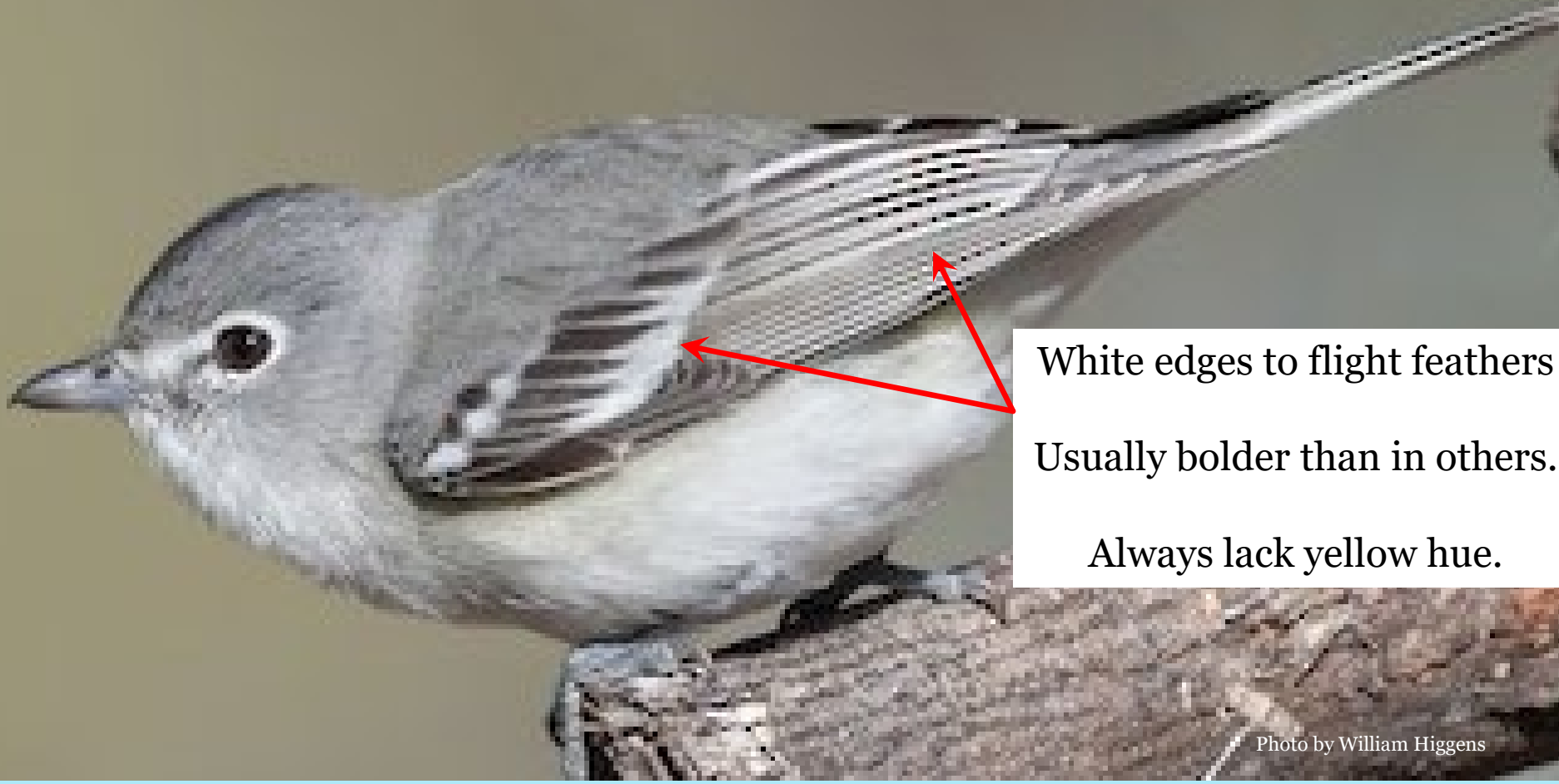
**Cassin's** 



Photo by Jim Merritt

# EXACT COLOR OF EDGES OF FLIGHT FEATHERS

**Plumbeous** =



White edges to flight feathers

Usually bolder than in others.

Always lack yellow hue.

# SOLITARY VIREO COMPLEX

## ID SUMMARY

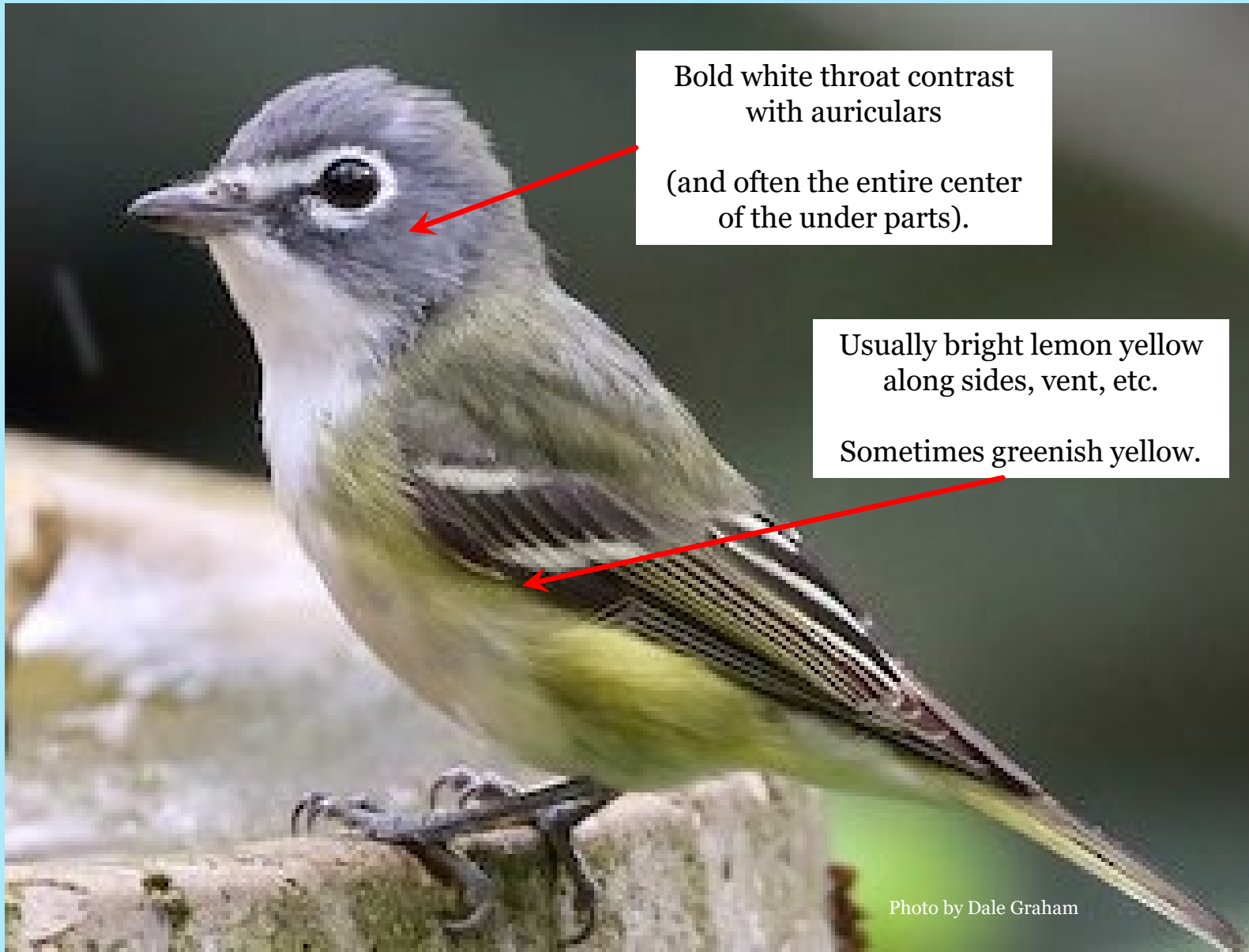
### REPRODUCED FROM HEINDEL 1996

	BLUE-HEADED	CASSIN'S	PLUMBEOUS
Head Color	Blue gray to gray or slaty gray, some with green mixed with gray	Gray mixed with green or all green.	All gray.
Upper Parts	Usually entirely bright green or bright green with gray mixed in; some <i>alticola</i> have slaty backs	Entirely green, usually not as bright as Blue-headed, except some fall birds.	Usually entirely gray. Some have slight greenish tinge to rump.
Flight-Feather Edges	Wingbars usually yellow, sometimes greenish or whitish. Extensive white in tail feathers. Edges to flight feathers usually greenish.	Wingbars greenish yellow, but can be yellow or whitish; Flight feathers usually edged greenish.	White wingbars usually bold. White edges to flight feathers usually bolder than in other species.
Under Parts	Bold white throat (and often the entire center of the under parts). Usually bright lemon yellow along sides, vent, etc., sometimes greenish yellow.	Dingy white throat and under parts. Flanks usually greenish yellow, occasionally bright yellow.	Rather bold white throat, but dingy under parts. Usually grayish along flanks, but can have olive at sides of the breast or pale yellow along lower flanks.

From: ***Field Identification of the Solitary Vireo Complex***, Heindel, Matt, T., *Birding Magazine*, December 1996.  
 (subspecies names updated to species names).

# EXACT COLOR OF UNDER PARTS

**Blue-headed**



Bold white throat contrast  
with auriculars

(and often the entire center  
of the under parts).

Usually bright lemon yellow  
along sides, vent, etc.

Sometimes greenish yellow.

# BLUE- HEADED



Photo by Owen Strickland



Photo by Nick Dorian

# EXACT COLOR OF UNDER PARTS

**Cassin's** 

Dingy white throat.

Dingy under parts.



Flanks usually greenish  
yellow.

Occasionally bright yellow.

# CASSIN'S



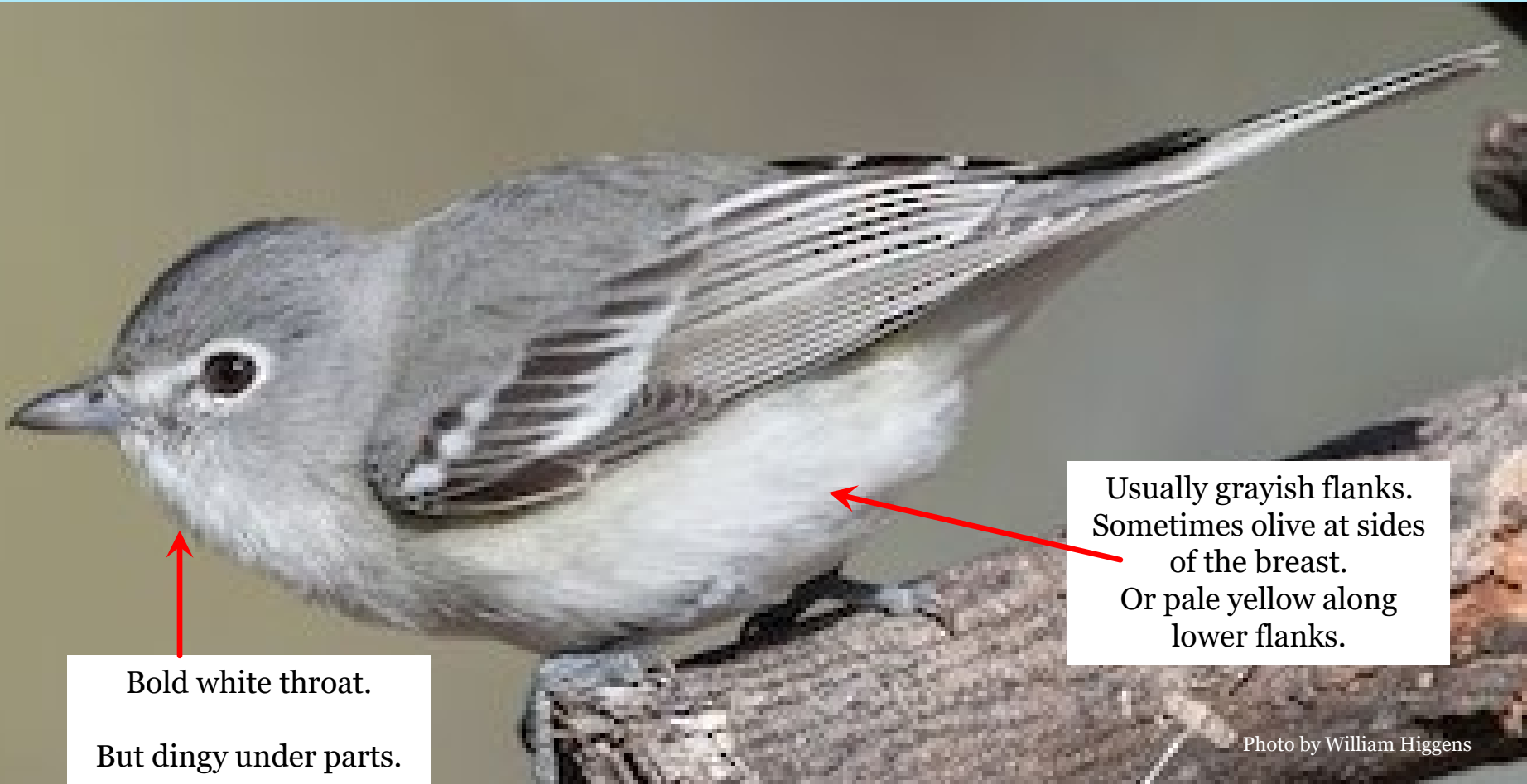
Photo by Juan Miguel Artigas Azas



Photo by Grace Oliver

# EXACT COLOR OF UNDER PARTS

**Plumbeous**  
**V** 



Bold white throat.

But dingy under parts.

Usually grayish flanks.  
Sometimes olive at sides  
of the breast.  
Or pale yellow along  
lower flanks.

**“PLUMBEOUS  
V”**



Jeff's  
Rapper  
Alter-ego



# PLUMBEOUS

V =



Photo by Garrett Lau



Photo by William Higgins



Photo by Rob Lowry

 **Warbling** 



Photo by Darren Clark

**Philadelphia** 



Photo by Daniel Irons

 **Bell's** 

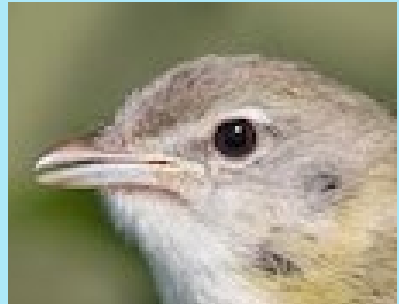


Photo by Jim Hully

 **Hutton's** 

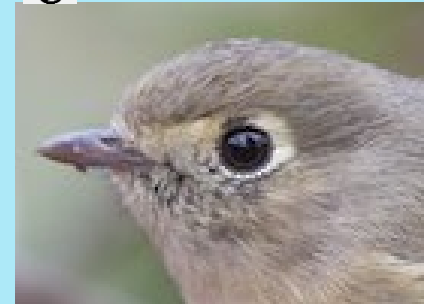


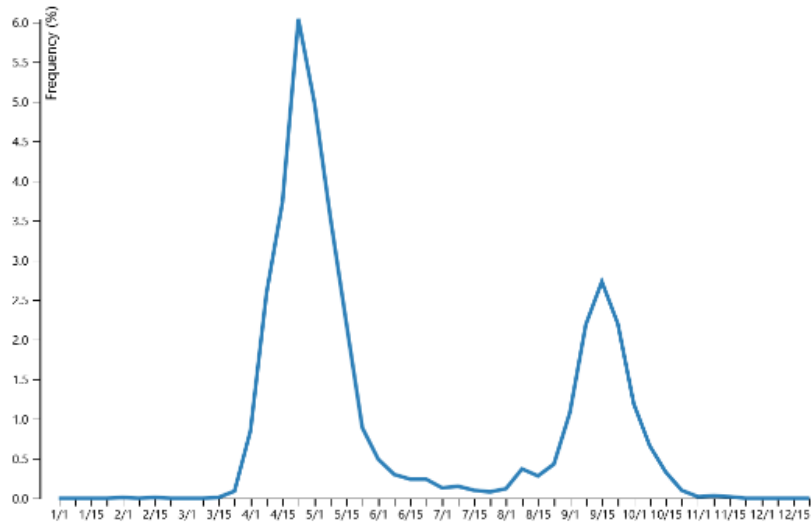
Photo by Tanner Martin

**INTERMEDIATE ID**

# WARBLING VS PHILADELPHIA

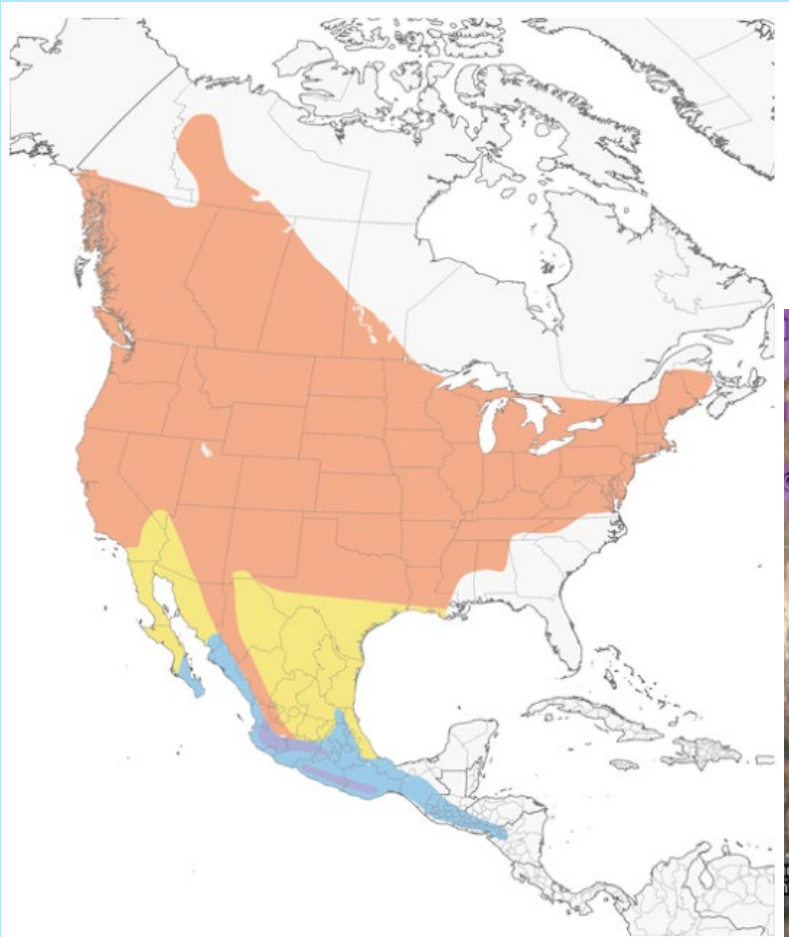
- ▶ Key ID points:
  - ▶ Facial patterns
  - ▶ Location of yellow on undersides
  - ▶ Song

# WARBLING



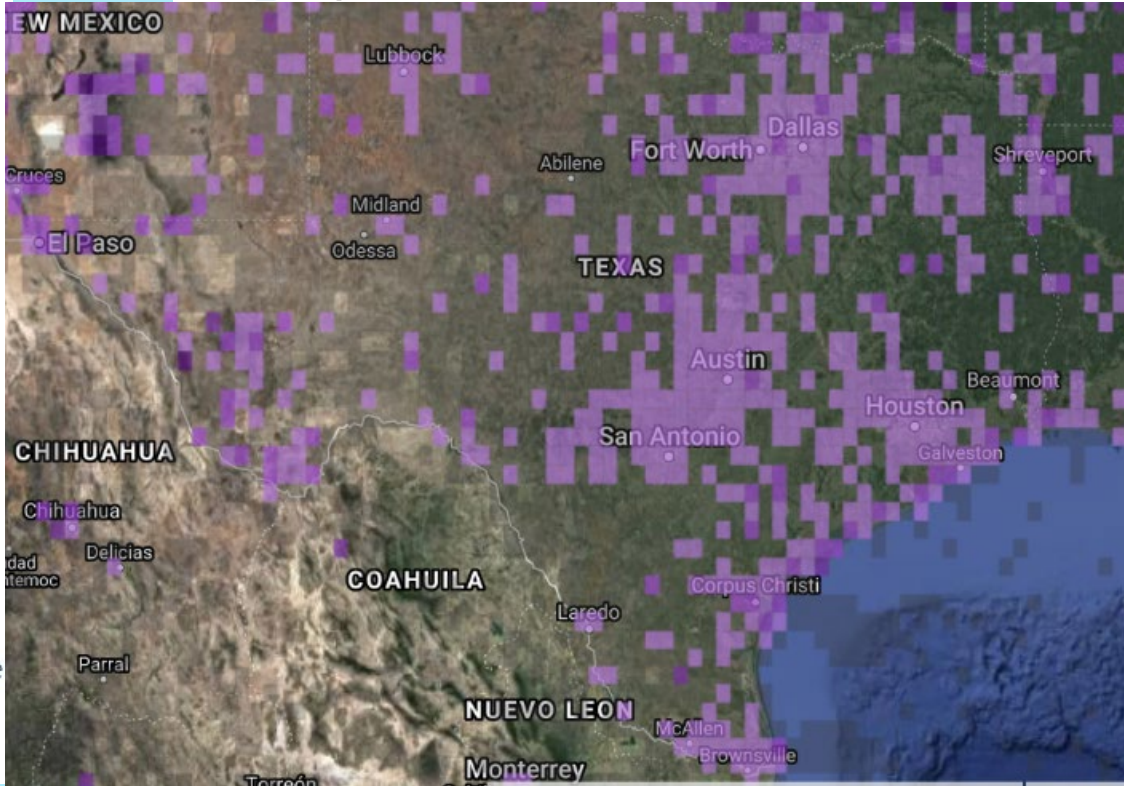
Warbling Vireo

Week starting on...

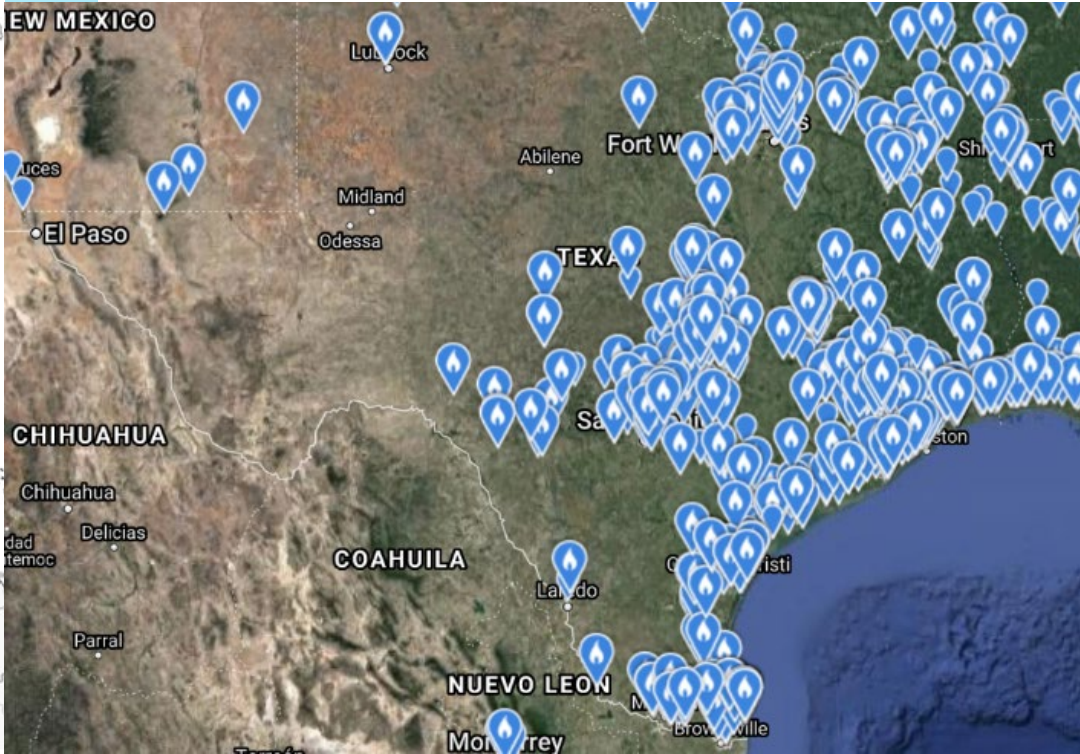
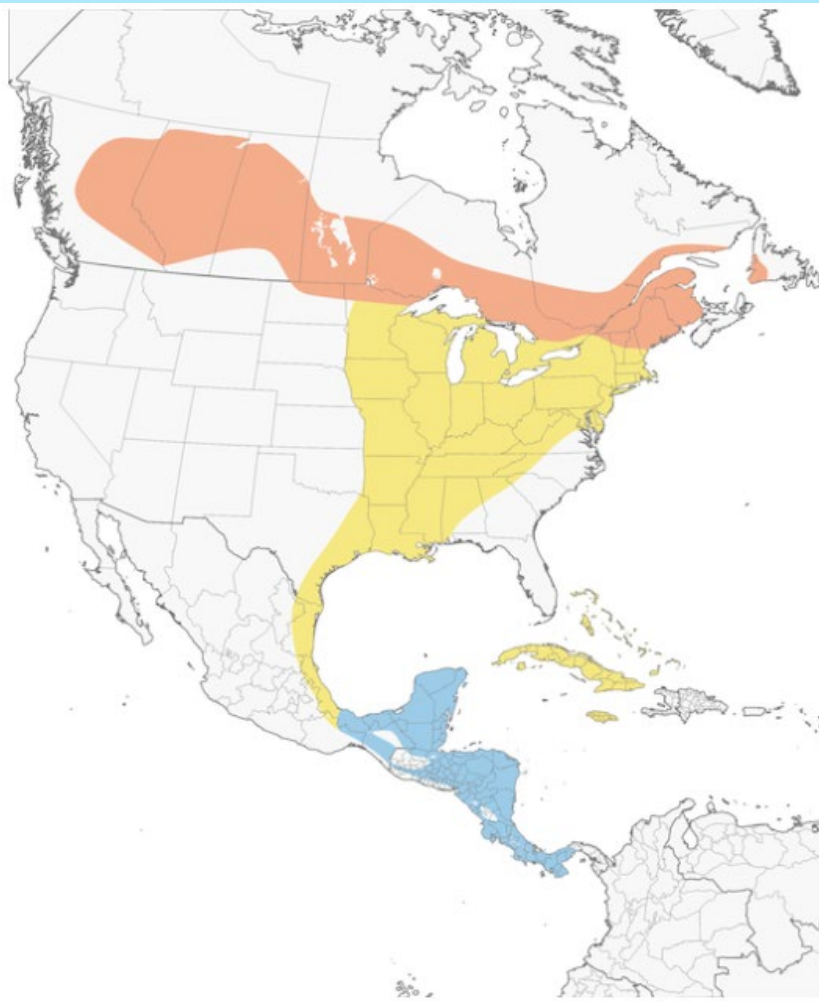
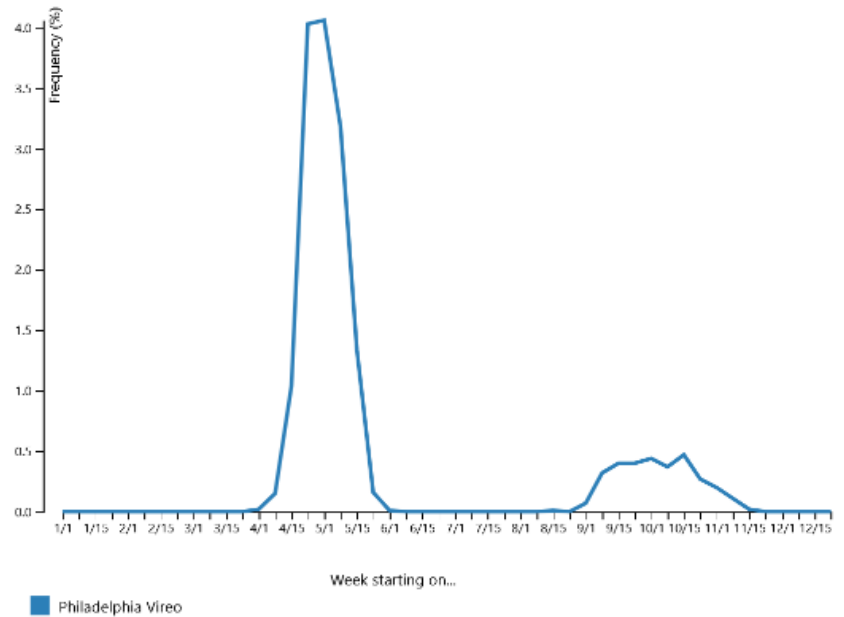


- Year-round
- Breeding
- Migration
- Non-Breeding

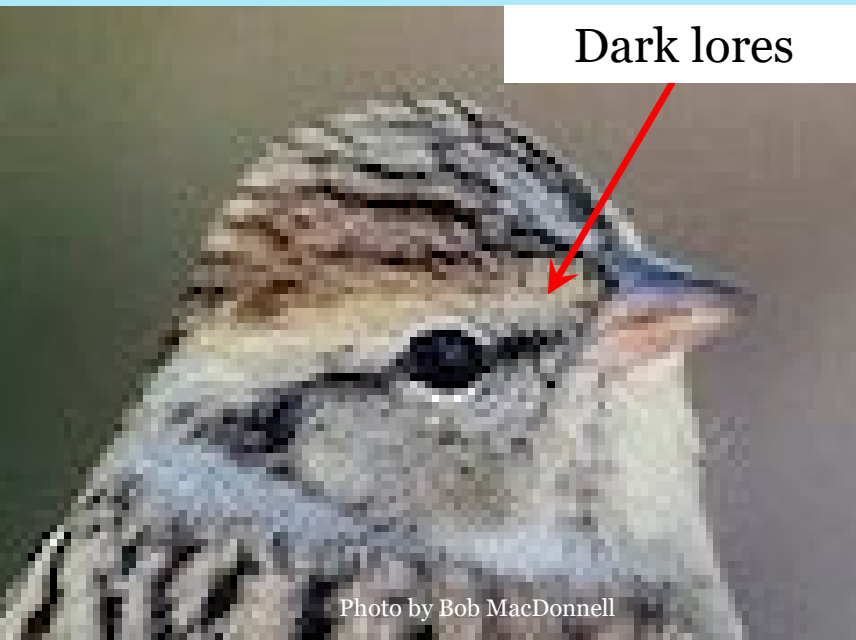
+ Enlarge



# PHILADELPHIA VIREO



# CHIPPING VS CLAY-COLORED SPARROW



**Chipping**



**Clay-color**

# PHILADELPHIA VS WARBLING

Dark lores



Pale lores

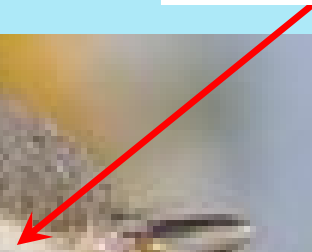


Photo by Zack DeBruine

Photo by John F. Gatchet

**Philadelphia**



**Warbling**

Philadelphia (the city) is dark & dingy

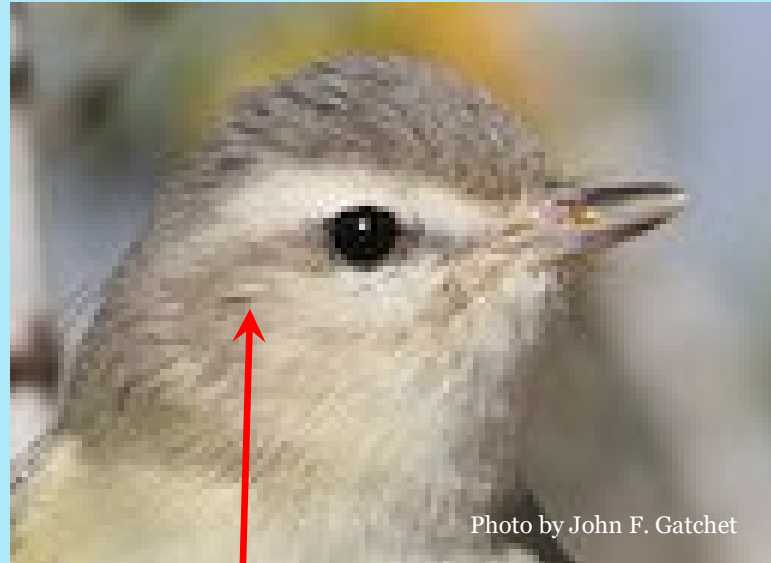
# PHILADELPHIA VS WARBLING

bolder  
facial  
markings



well-defined, broad  
postocular stripe

**Philadelphia**



postocular stripe not  
as noticeable

**Warbling**

# WARBLING VS PHILADELPHIA

**Philadelphia**



Photo by Don Danko

Brightest yellow on sides, never center breast & throat

**Warbling**



Photo by Henry Trombley

Yellowish wash, especially across breast

# WARBLING VS PHILADELPHIA

**Philadelphia**



Yellow throat,  
brightest in  
center

Photo by Glenn Waleck

Brightest  
yellow on  
sides, never  
center breast  
& throat



**Warbling**

Photo by Todd Hooe

# WARBLING VS PHILADELPHIA

Philadelphia



Photo by Don Danko

Warbling



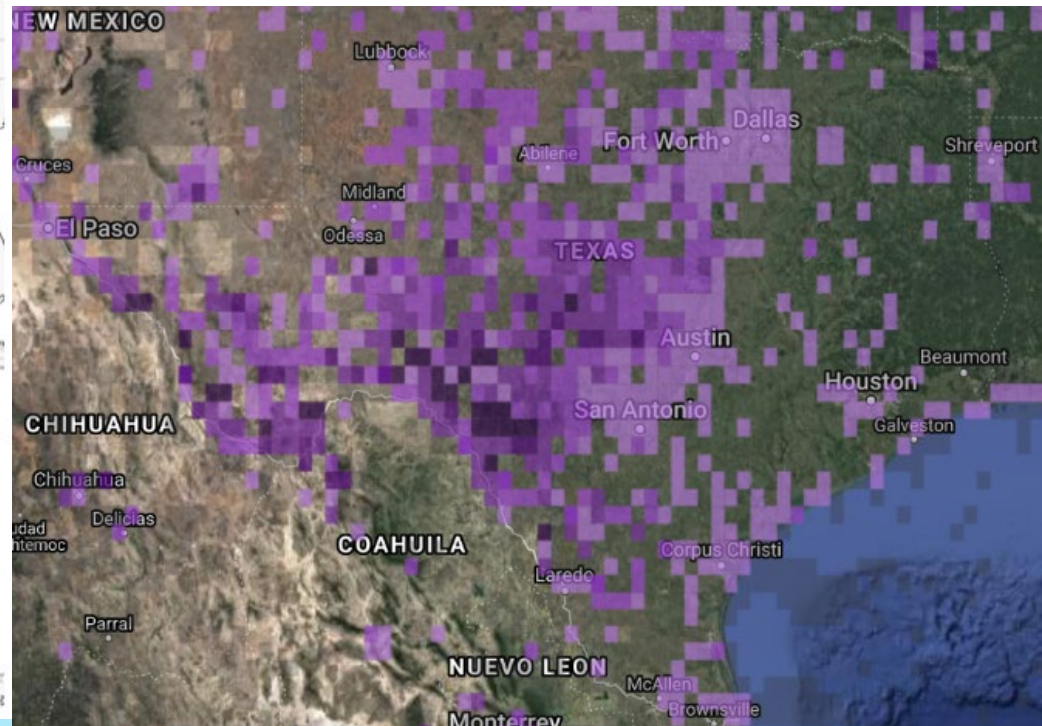
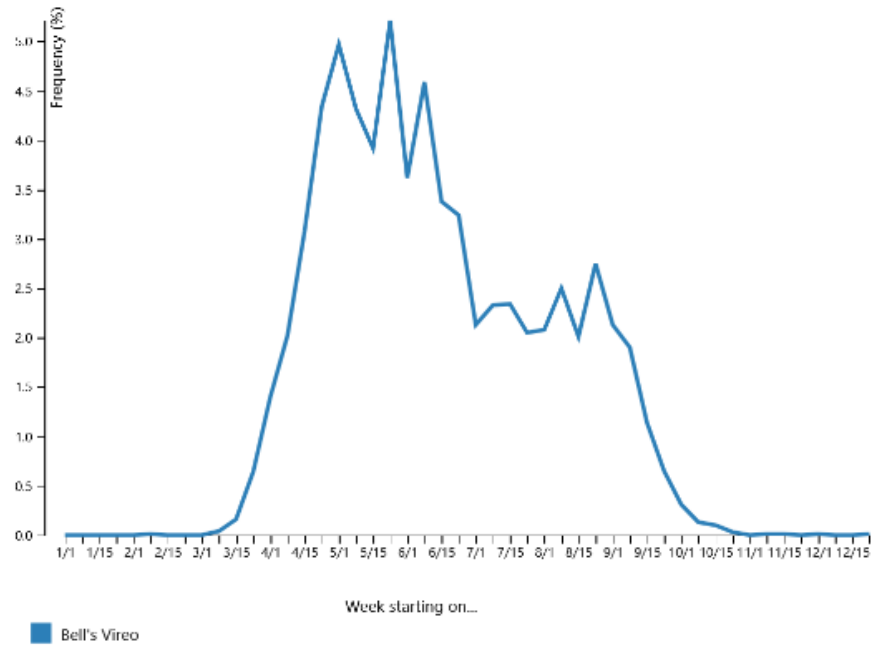
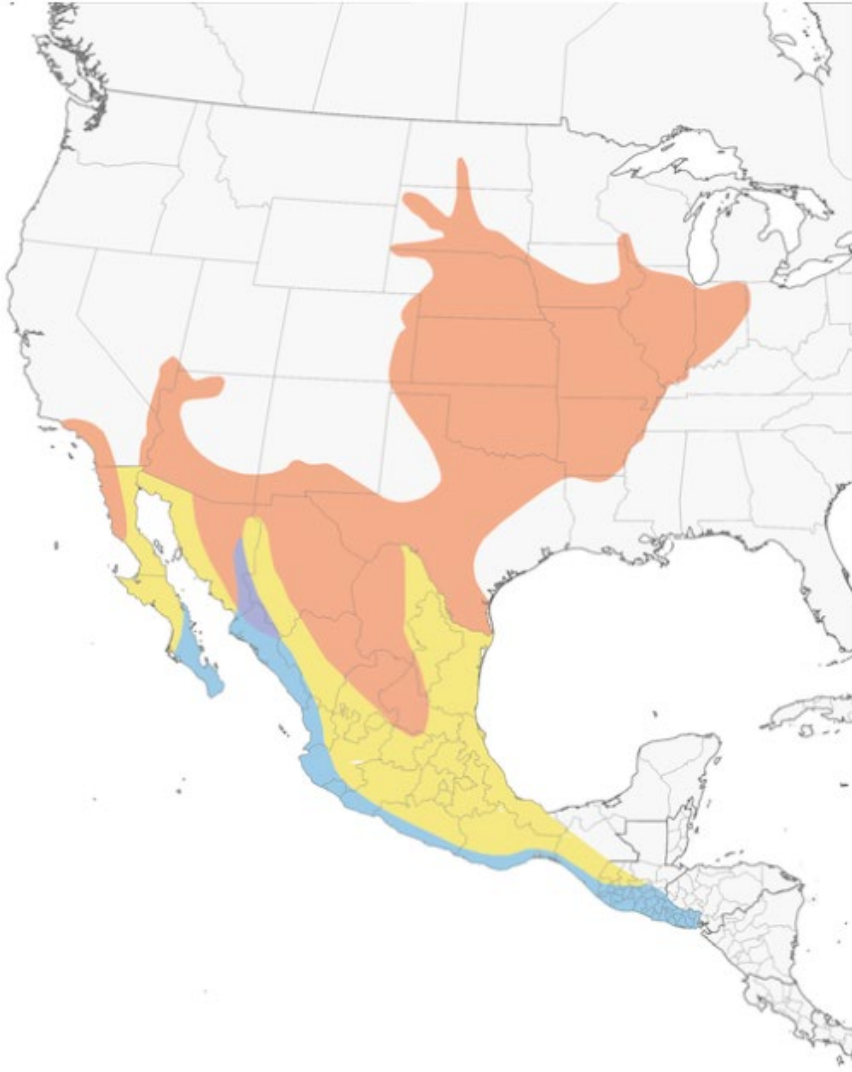
Photo by Henry Trombley



- ▶ Key ID points:
  - ▶ Song
  - ▶ Song
  - ▶ Song
  - ▶ GISS/Structure
  - ▶ Behavior



# BELL'S





# BELL'S =

# Lucy's Warbler



Photo by Randy Hesford



Photo by Randy Hesford



Photo by David Sarkozi

# BELL'S POPULATION CHANGES

- ▶ Recent northward expansion of breeding range
  - ▶ More observers?
  - ▶ habitat alterations?
  - ▶ other?
- ▶ Increase/decrease in various regions/localities:
  - A. Habitat changes (euro-american settlers)
    1. Water projects – change riparian scrub.
    2. Development of hedgerows, windbreaks, and parks.
    3. Changes in farming practices.
    4. Deforestation, clearing development of riparian and upland scrub.
    5. Surface mining.
  - B. Cowbird brood parasitism.

**♩ BELL'S =**

**“Back East”  
Illinois & Missouri**



Photo by William Baldrige

More colorful



Photo by Benjamin Murphy

Smaller bill



Photo by Dave Z.

 **BELL'S** 

**Texas**

Broken eye-ring

Long, de-curved bill



Photo by Pierre Marin

Drabber than  
“back east”



Photo by Stephen McDonald



Photo by Troy Hibbets

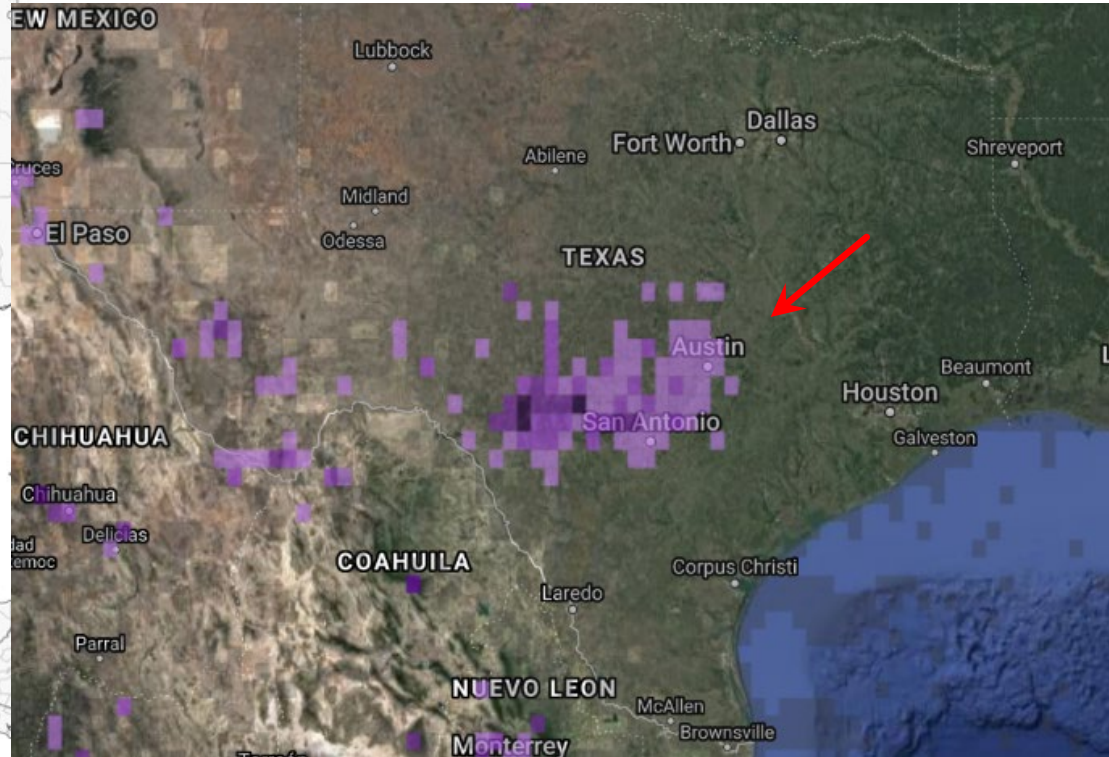
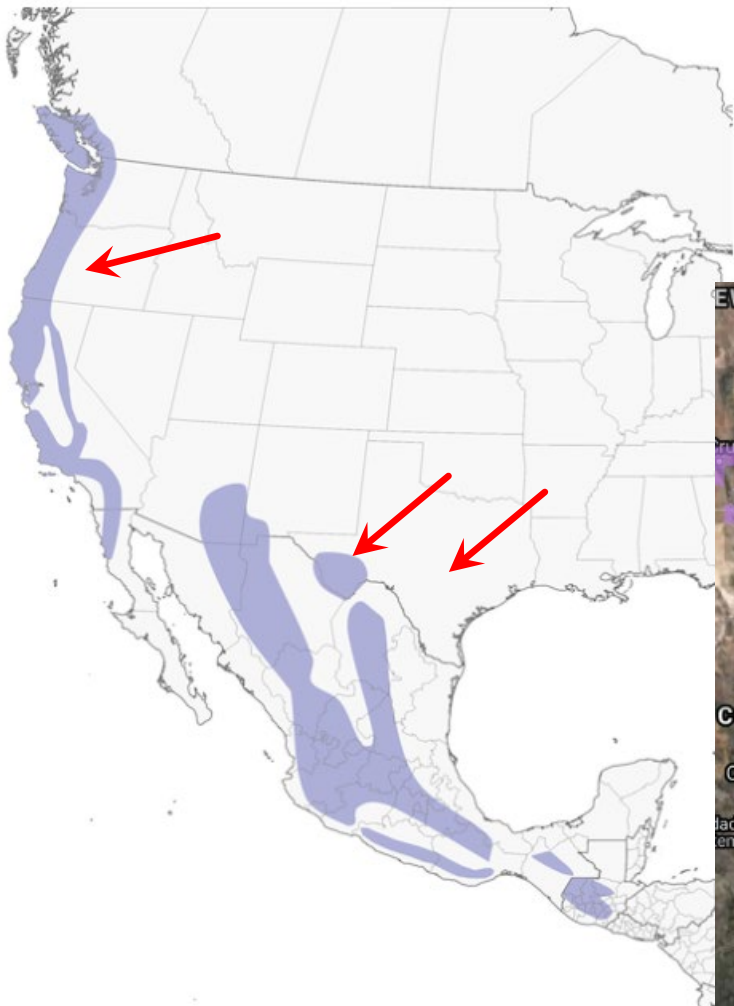
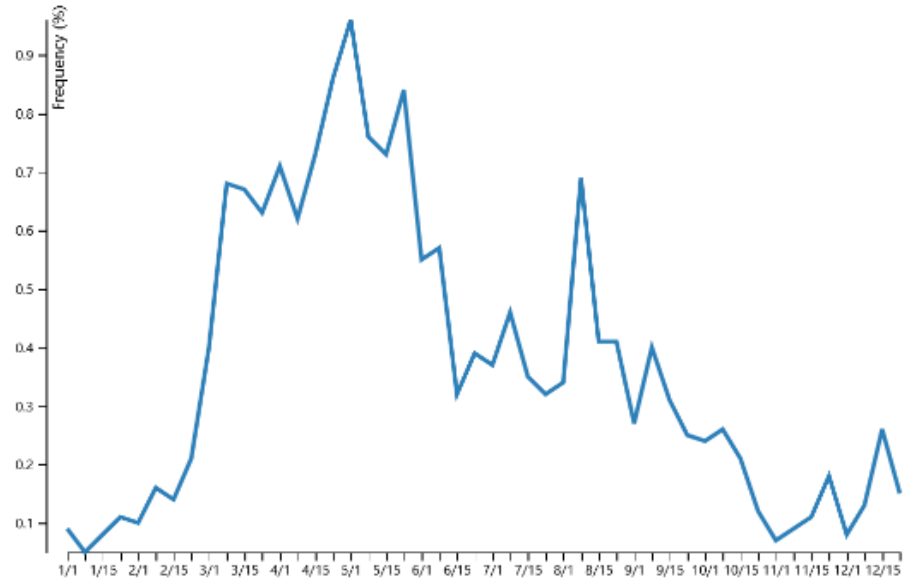


# HUTTON'S



- ▶ Key ID points:
  - ▶ Song – “persistent, but insipid 2-part”
  - ▶ GISS/Structure
  - ▶ Bill
  - ▶ Behavior

# 🎵 HUTTON'S



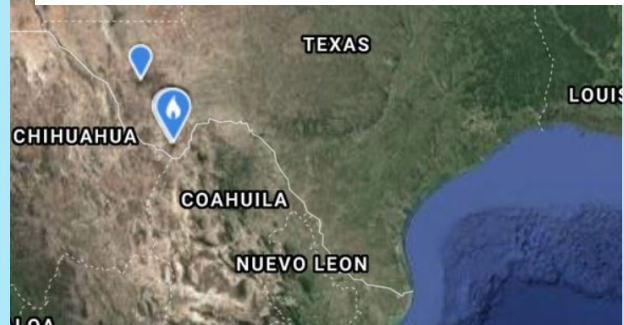


# HUTTON'S POPULATIONS IN TEXAS (EIBIRD)

BBS data (1970–2014):  
population increased by ~60%  
(U.S. and Canada).

First reported breeding Edwards  
Plateau 1990 – now well established.

Year-round observations increasing.



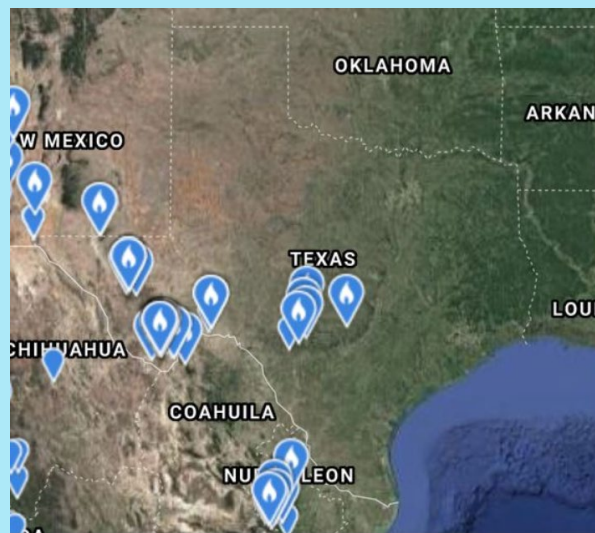
1960s



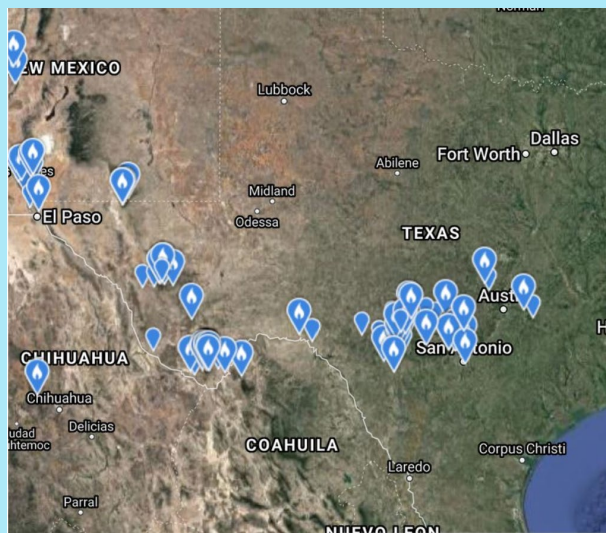
1970s



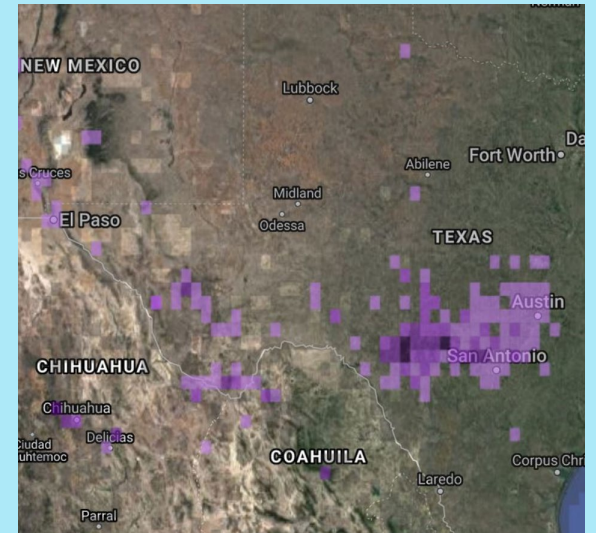
1980s



1990s



2000s



2010s

Kinglet  
Dark bar below white wingbar  
Thinner bill  
Different behavior

Photo by Brendon Klick



**Ruby-crowned Kinglet**



Photo by Matt Davis

♫ HUTTON'S ≡



Photo by Isacc Denzer



Photo by Ryan Shain



**Red-eyed**



Photo by Jean Guy Chouinard

**Gray**



Photo by Caroline Lambert



**White-eyed**



Photo by Craig Brelsford



**Yellow-throated**



Photo by Andrew Simon



**Black-capped**



Photo by Chris Taylor

**EASY PEASY ID !!!**

**GRAY VIREO**



**GRAY**

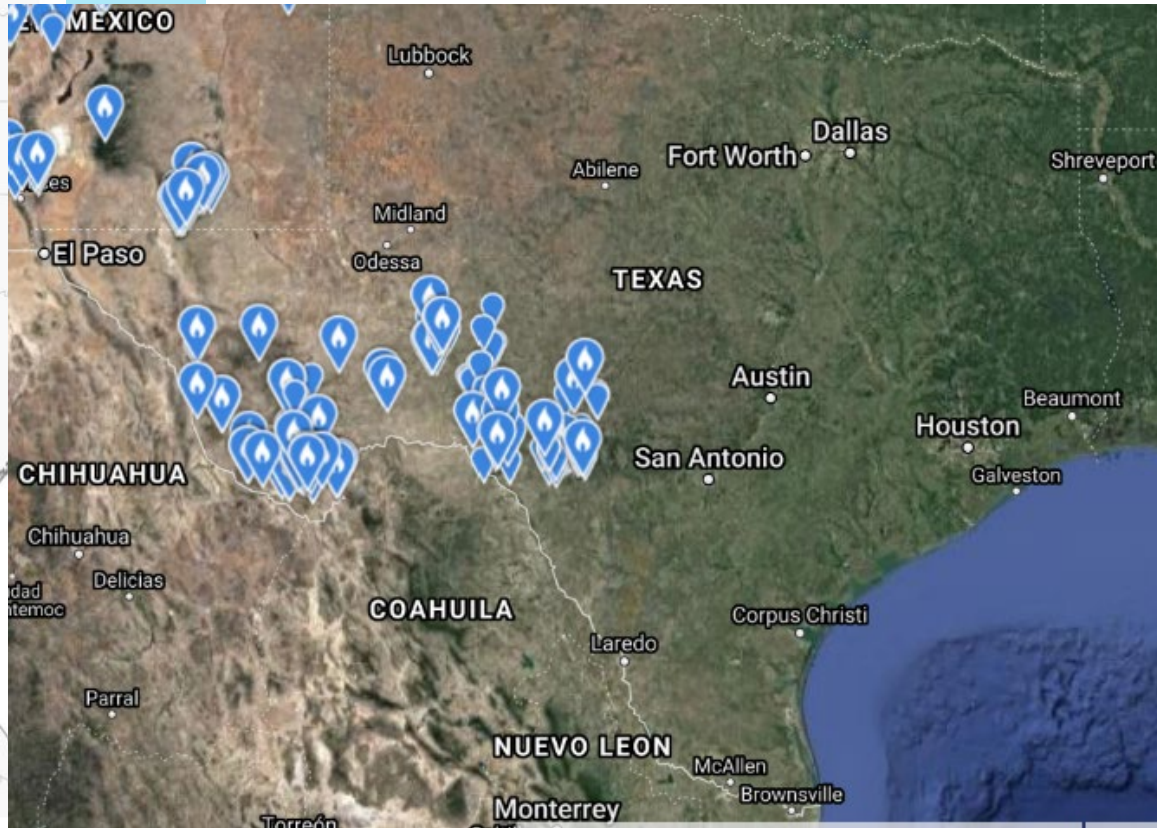
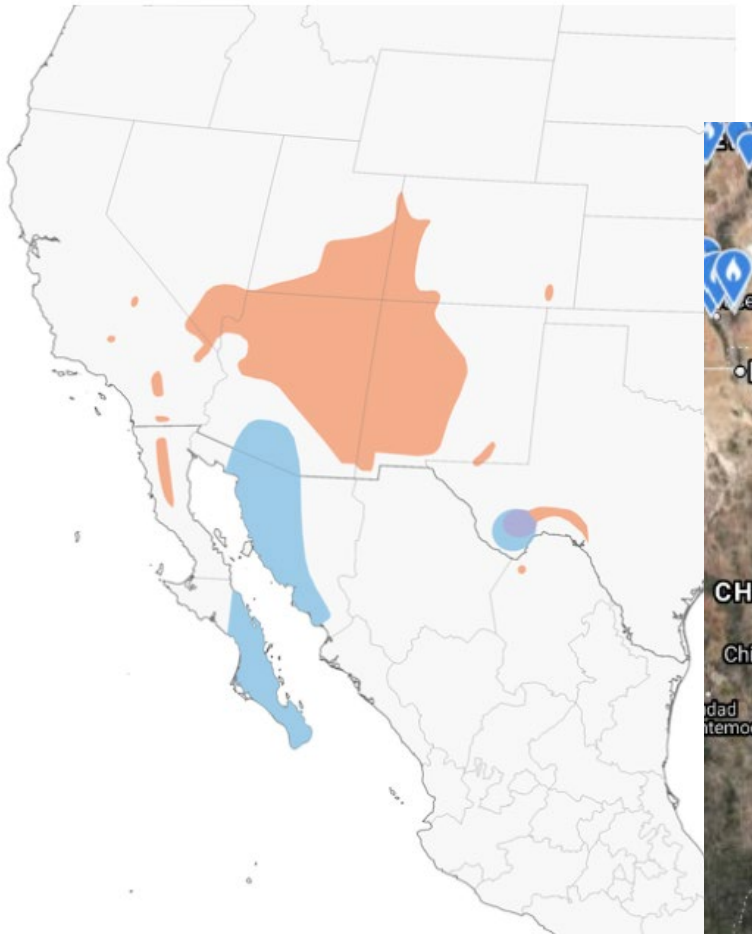
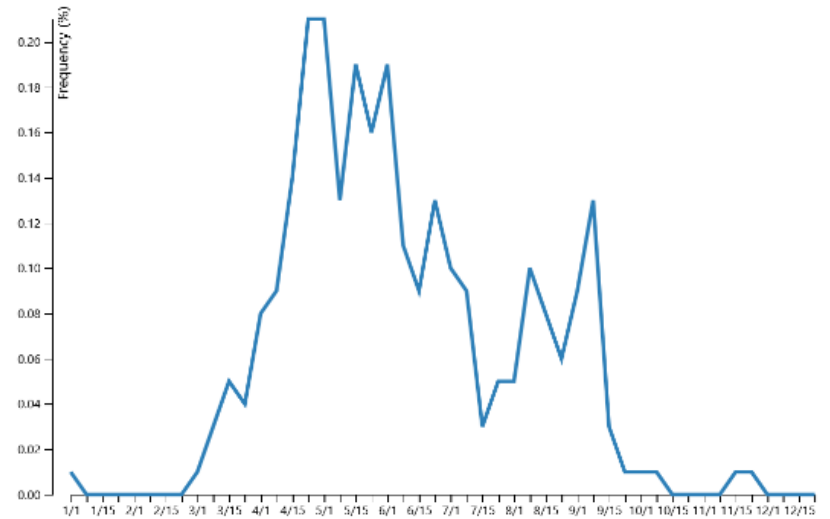


Photo by Alan Shimierer



Photo by Alan Shimierer

# GRAY



# CONFUSERS



Photo by Jim Hulley

Bell's



Gray



Photo by Max Leibowitz



Photo by Adam Jackson

# CONFUSERS

## Gray Vireo



Photo by Jim Merrit

Gray  
Flycatcher

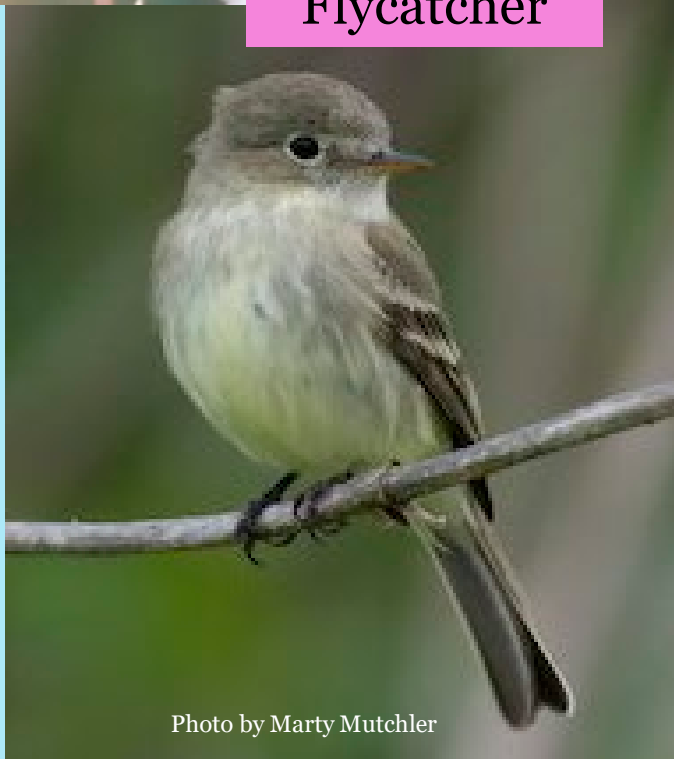


Photo by Marty Mutchler



Photo by Alan Shimierer

# CONFUSERS

**Gray Vireo**



Photo by Kalin Ocana

**Bushtit**



Photo by Kris Lewellyn



Photo by Darren Clark

# CONFUSERS

## Gray Vireo



Photo by Johnathon Nikkila

## Gnatcatchers



Photo by Michael Anderson



Photo by Tanner Martin

# CONFUSERS

## Gray Vireo



Photo by Brian Johnson

## Plumbeous Vireo



Photo by William Higgins



Photo by Robert Raker

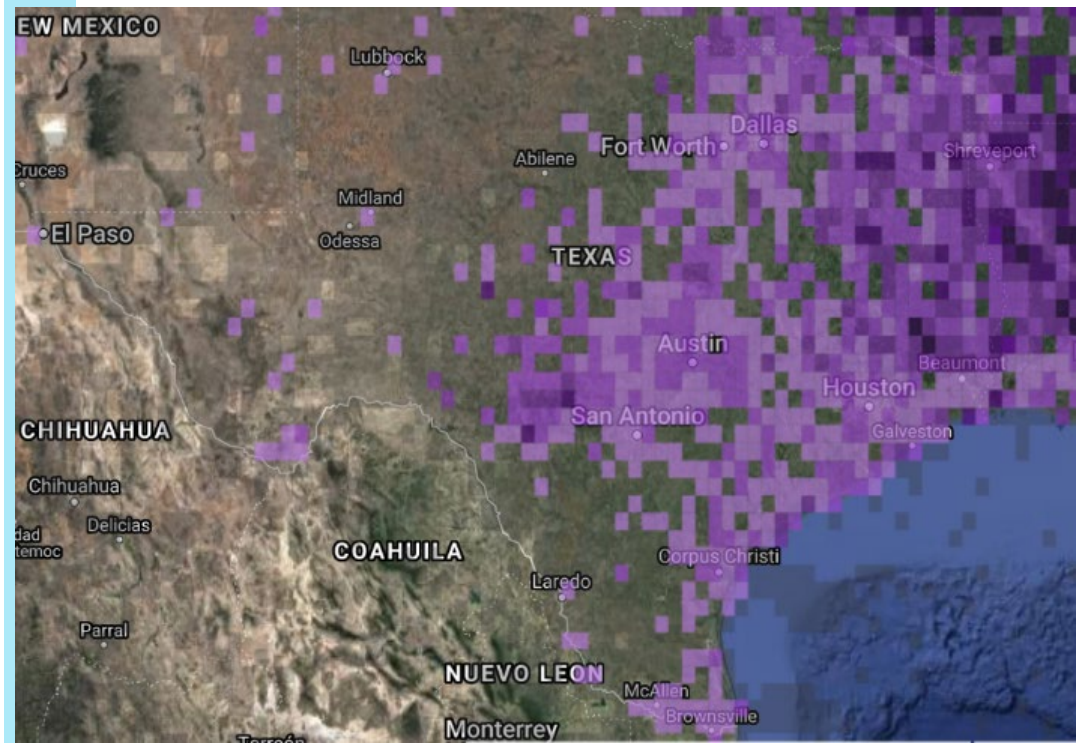
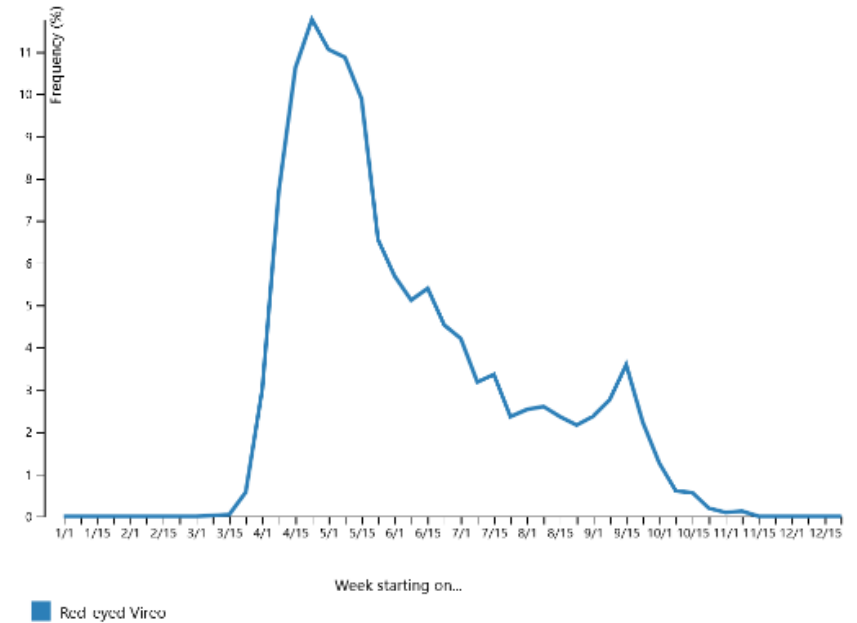


RED-EYED VIREO





# RED-EYED VIREO





# RED-EYED VIREO



Photo by Kyle Blaney

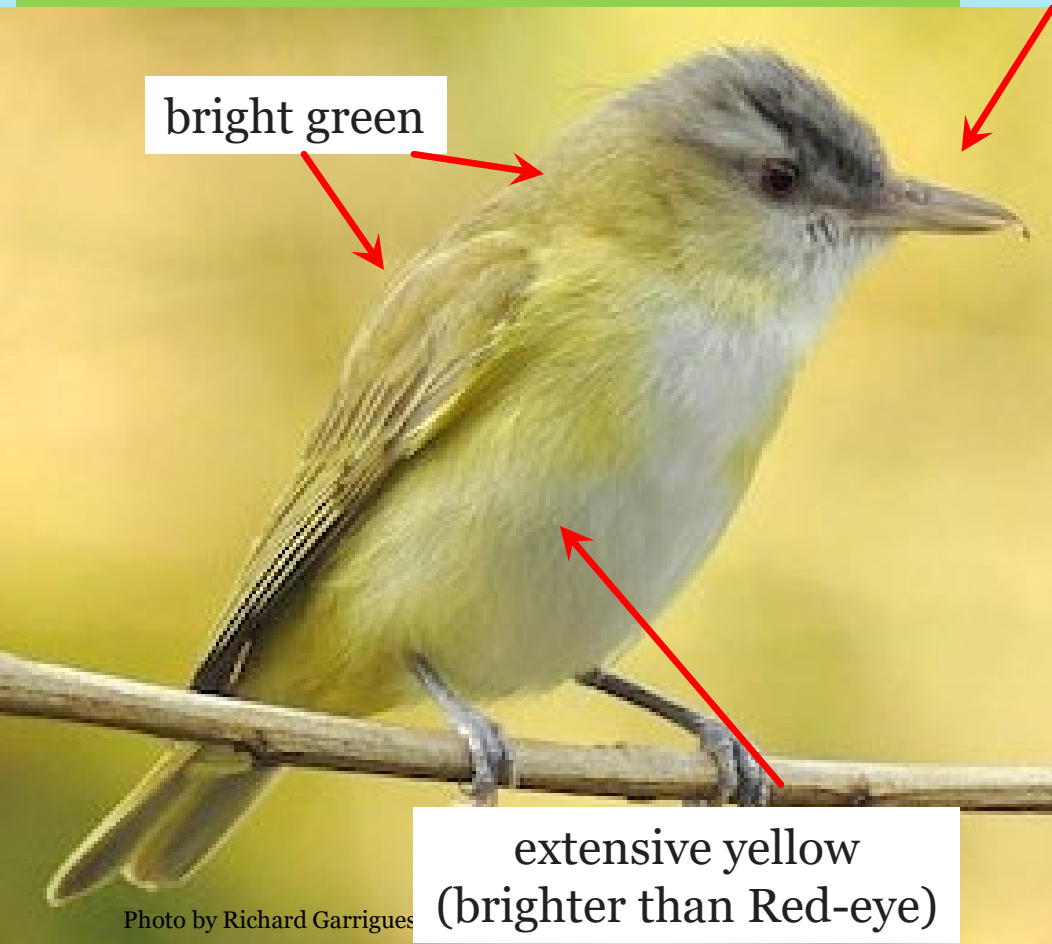


Photo by Van Remson



Photo by Doug Hitchcox

# YELLOW-GREEN



bright green

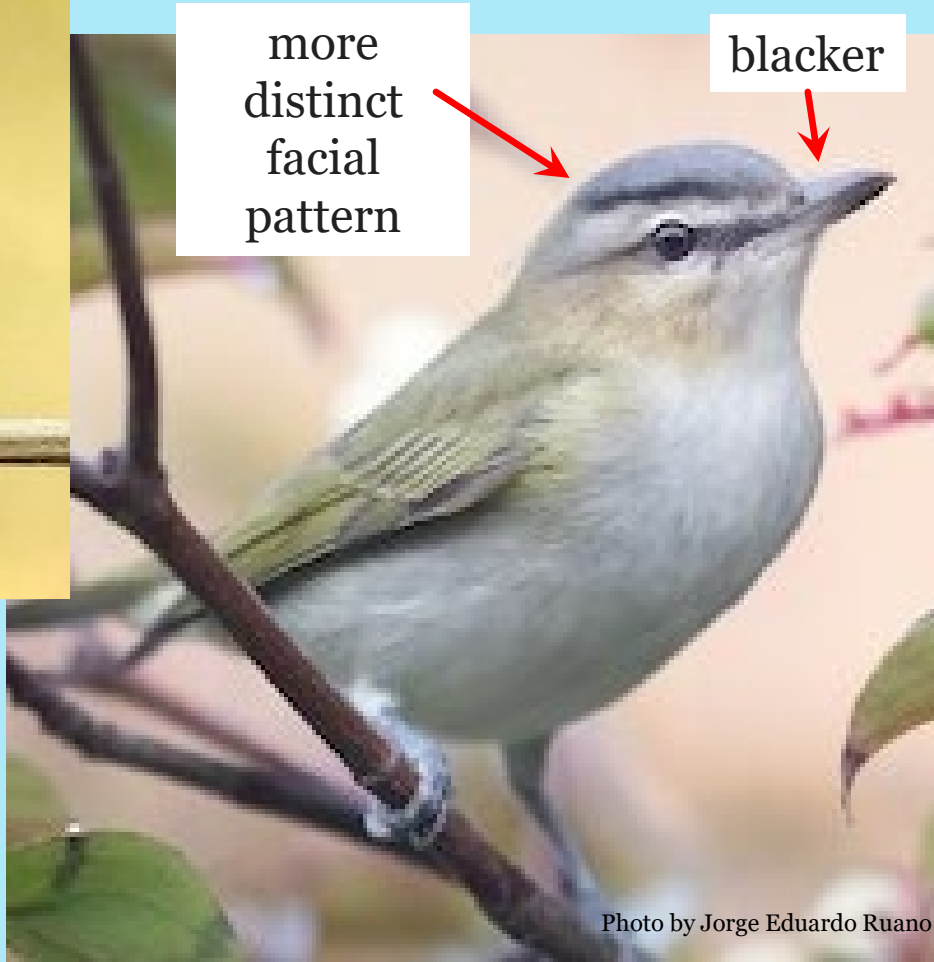
extensive yellow  
(brighter than Red-eye)

Photo by Richard Garrigues

upper  
mandible is  
pale dusky or  
grayish horn



# RED-EYED



more  
distinct  
facial  
pattern

blacker

Photo by Jorge Eduardo Ruano

# YELLOW-GREEN

yellowish edges to wing and tail feathers

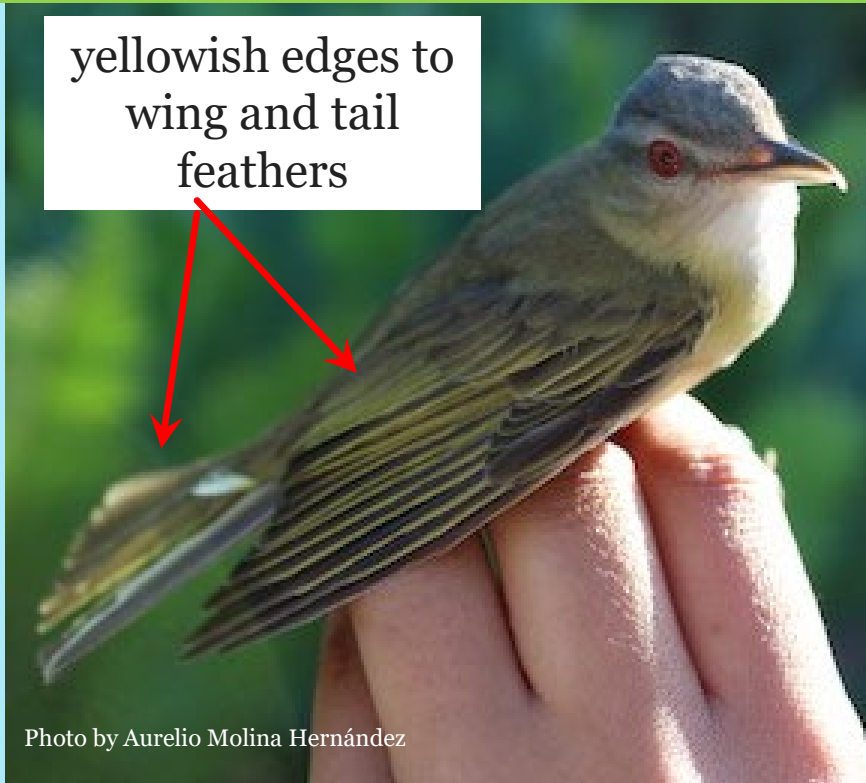
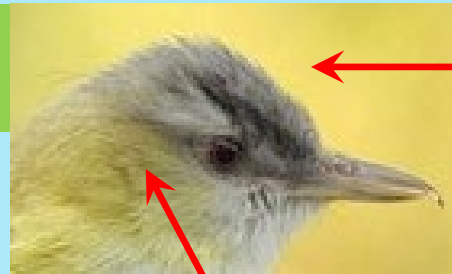


Photo by Aurelio Molina Hernández



Gray of crown blends in & has less distinct dark edges

eye line very indistinct or absent behind eye



Photo by Stephen Knox

bright yellow-green rump and uppertail coverts



RED-EYED

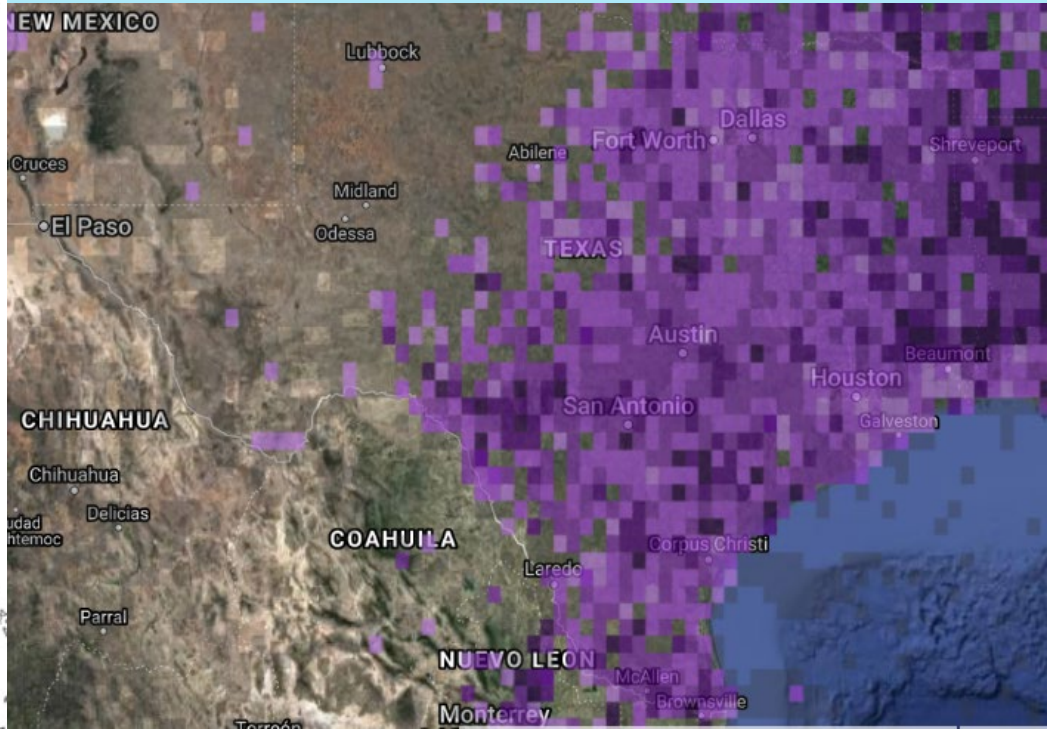
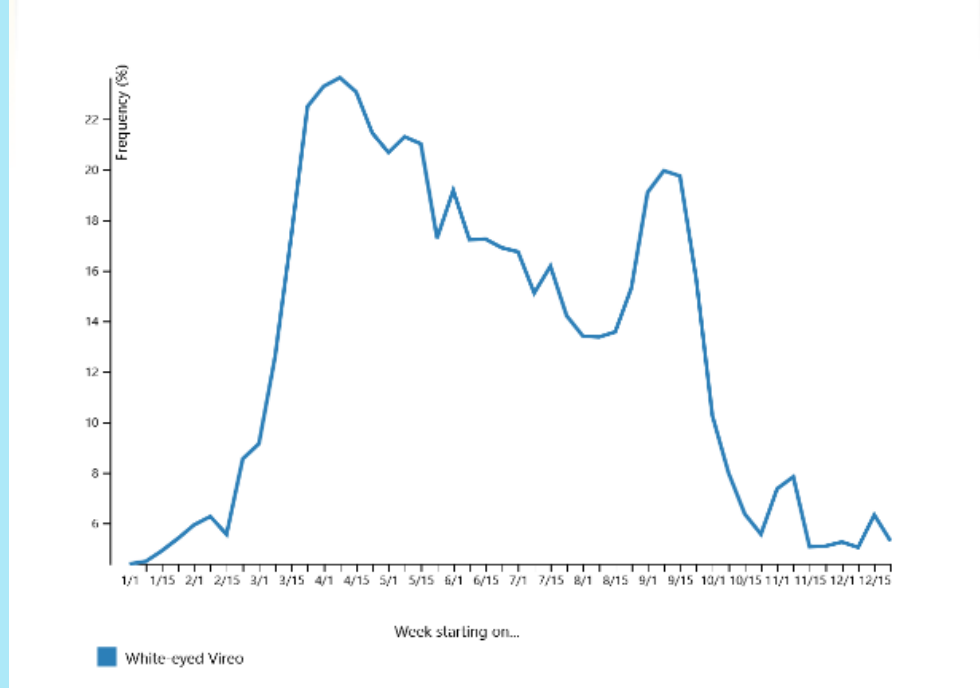
Photo by Kyle Blaney



# WHITE-EYED VIREO



# WHITE-EYED VIREO





# WHITE-EYED



Yellow  
spectacles

Gray nape

Photo by Mike Stewart

Whitish  
throat

Pale yellow  
flanks

Juveniles lack  
the white iris



Photo by Richard Poort



Photo by Sue Barth

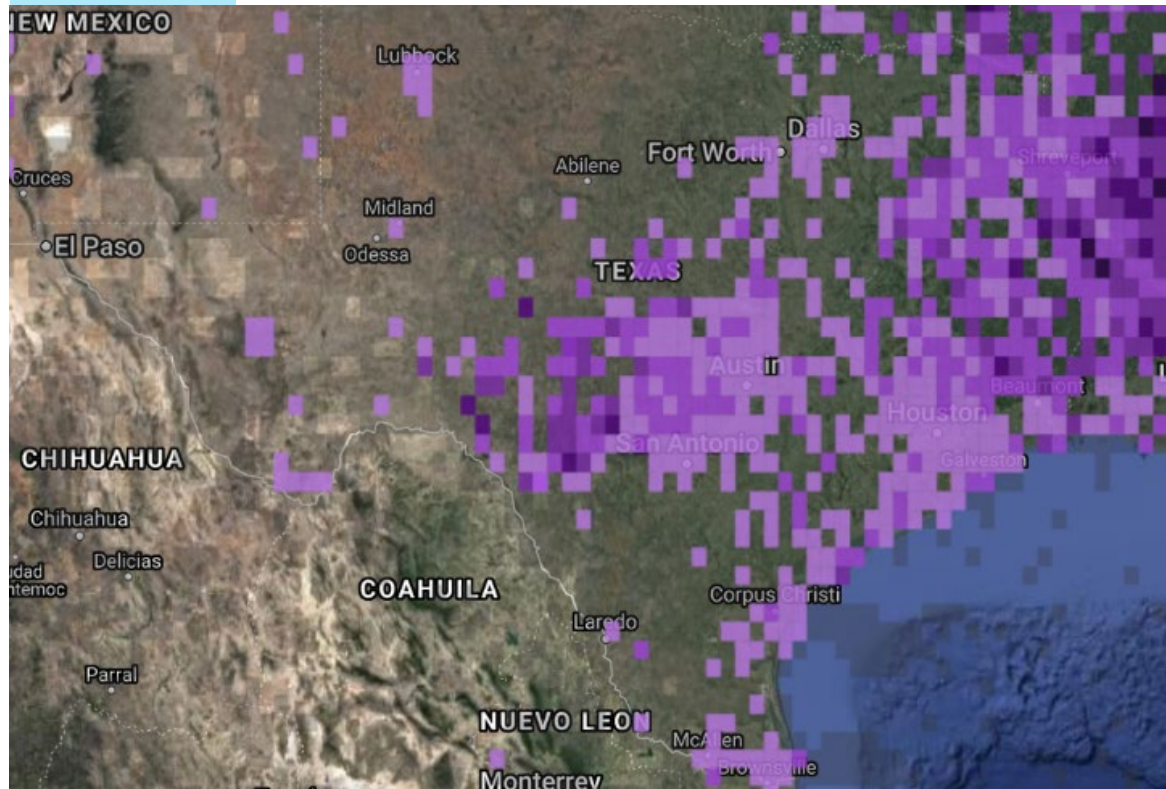
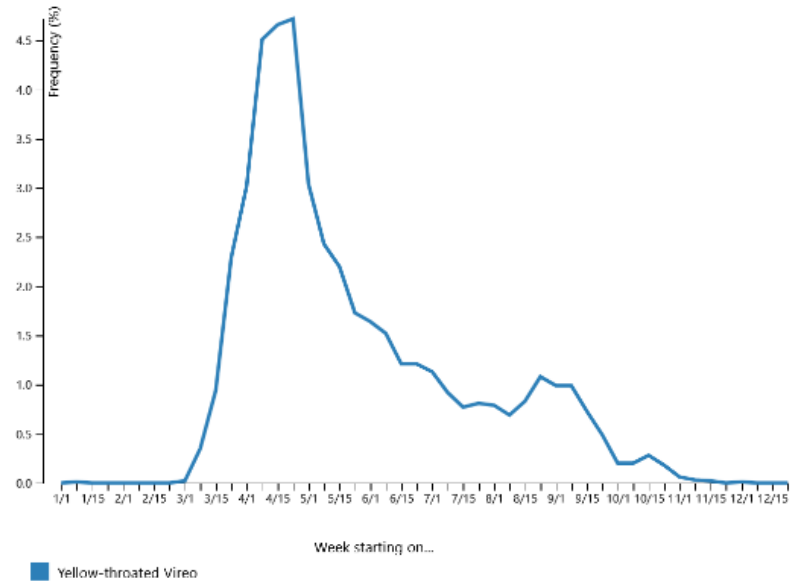


# YELLOW-THROATED VIREO





# YELLOW-THROATED VIREO



Yellow  
spectacles

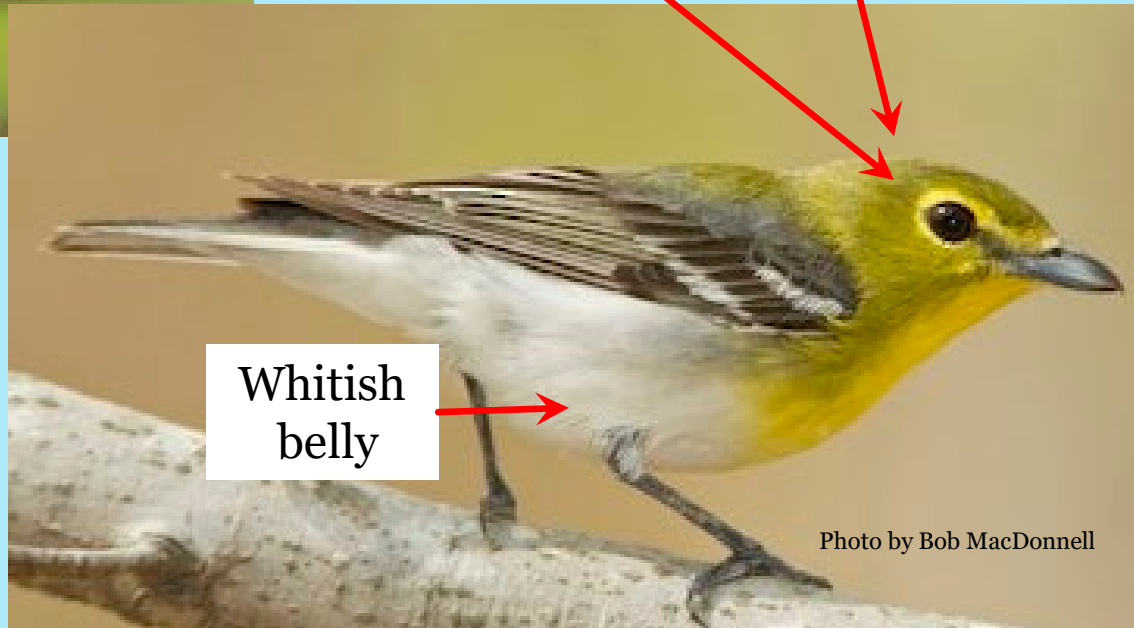
# ♫ YELLOW-THROATED



Photo by Drew Goldberg

Dark eye

Bright  
yellow  
throat



Whitish  
belly

Photo by Bob MacDonnell

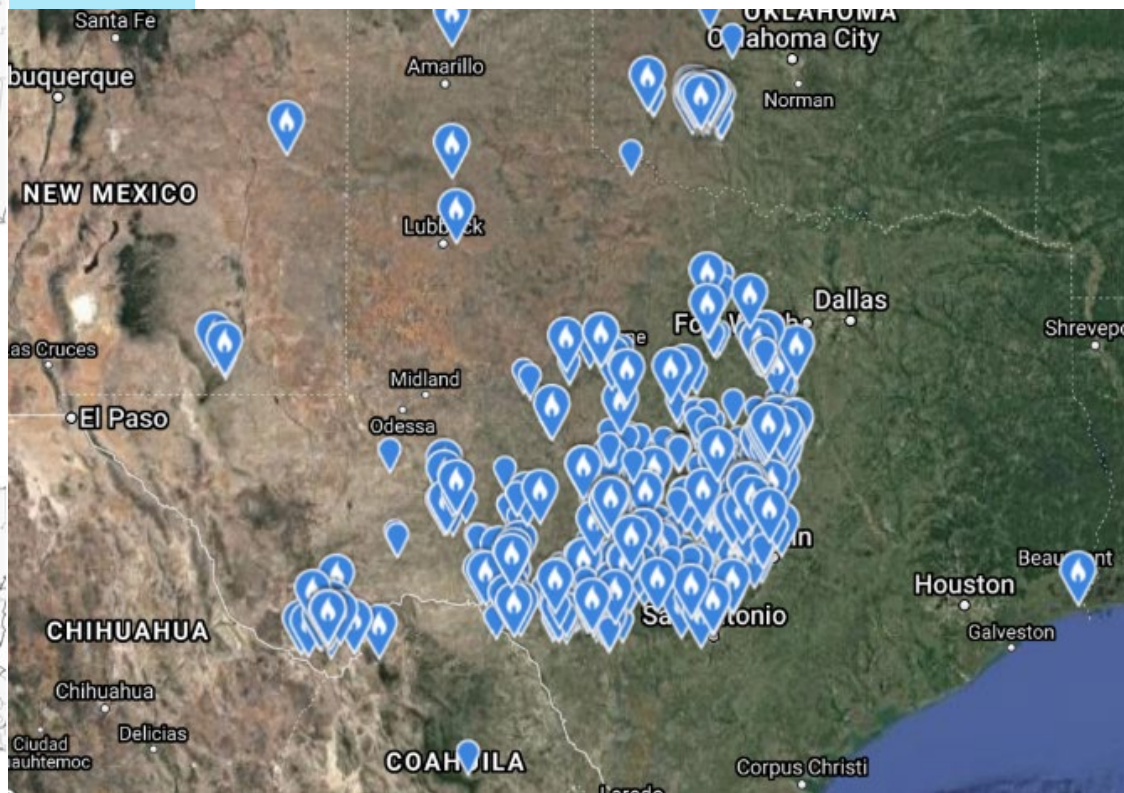
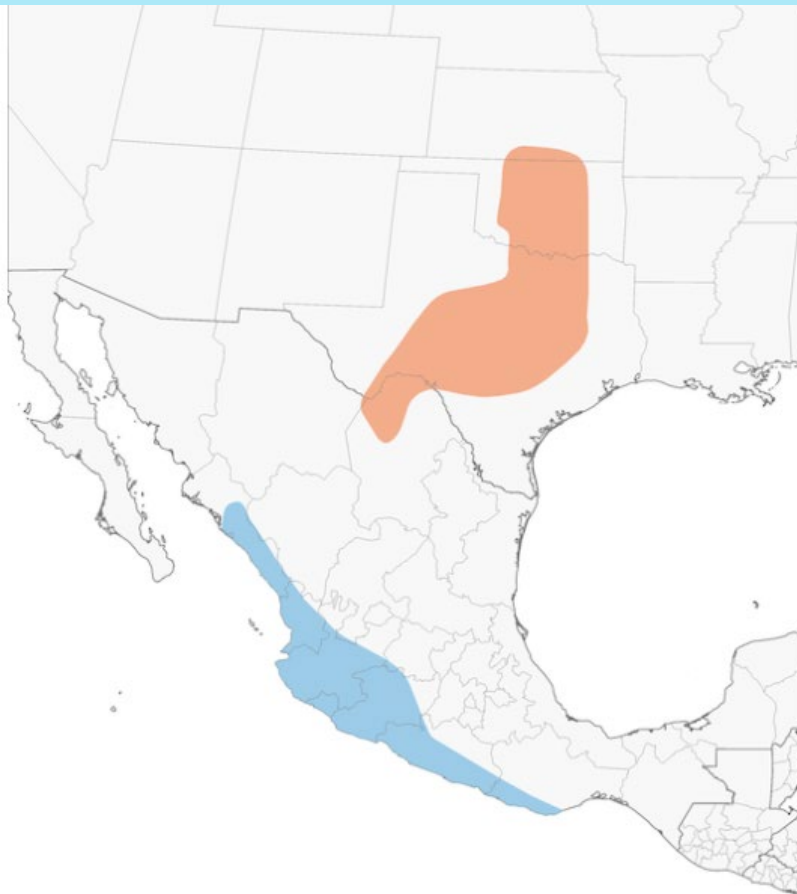
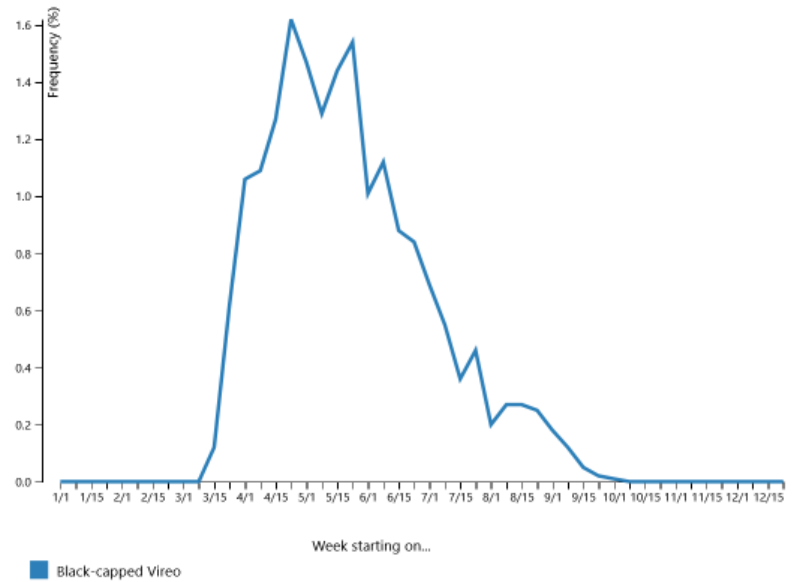


# BLACK-CAPPED VIREO





# BLACK-CAPPED VIREO





# BLACK-CAPPED



Black cap

White lores  
(spectacles)

Photo by Jonathan Batkin

Female  
is less  
bright



Photo by Bryan Calk

# SUMMARY

## TAS B3 -- VIREO ID SUMMARY

	ID STATUS	STATUS IN TEXAS	HABIT 1,2,3		HABIT 4	HABIT 5	HABIT 6	HABIT 7		
			LOCATION	SEASON	GISS/STRUCTURE	BILL	PLUMAGE FIELD MARKS	DIAGNOSTIC PLUMAGE FIELD MARKS	SONG	
White-eyed	easy	breeder		summer			X	X	X	
Black-capped	easy	localized breeder	X	summer			X	X	X	
Bell's	intermediate	breeder		summer	X	X	~	~	X	
Hutton's	intermediate	localized breeder	X	year round	X	X	~	~	X	
Yellow-throated	easy	breeder		summer	X		X	X	X	
Cassin's	difficult	migrant (mostly)		migration			X	diagnosis		
Plumbeous							X			
Blue-headed							X			
Red-eyed	easy	breeder		summer	X	~	X	X	X	
Yellow-Green	intermediate	rarity	X	migration (mostly)			~	X	X	
Black-whiskered	intermediate	rarity	X	migration			~	X	X	
Philadelphia	intermediate	migrant		migration	X		X	diagnosis	?	
Warbling	intermediate	Breeder north of Austin		migration and summer (north of Austin)					X	X
Gray	easy	localized breeder	X	year round	X	~	X	~	?	