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EMPIDONAX THE “GNATMASTER”

5 EASTERN EMPIDS PART 2: STRUCTURE

*“WHEN LIFE ITSELF SEEMS LUNATIC,
WHO KNOWS WHERE MADNESS LIES?”*

MIGUEL DE CERVANTES SAAVEDRA, DON QUIXOTE



HEAD & BODY PROPORTIONS

EASTERN EMPID BODY PROPORTIONS

INCREASING BODY SIZE

Least

Yellow-bellied



Photo by Michael Bolte

“Trails”
Willow/Alder



Photo by Brendan Klick

Acadian



Photo by Joseph Mileyka

Eastern
Wood-peewee



Photo by Herman Riverol



Least

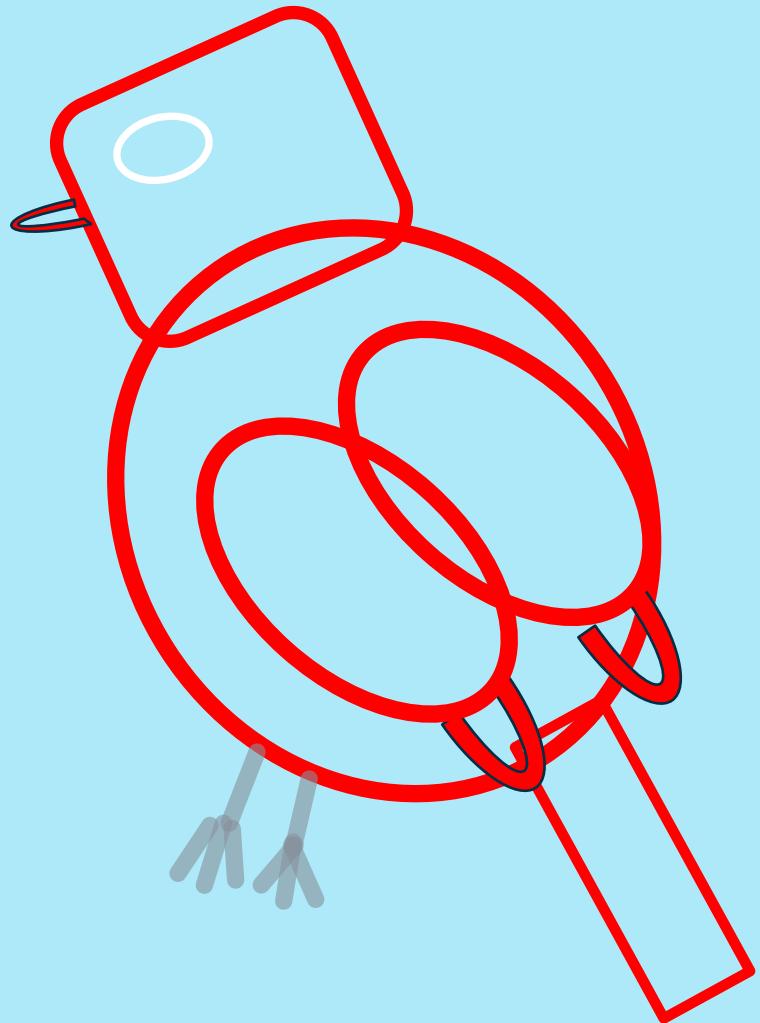


Photo by Ian Davies

Least



How long is the bill?

Eye-ring?

Big-headed look?

Primary extension?



What questions will Jeff be asking his own self?

Small and short-winged?

Least



Photo by Zeke Smith



Photo by Janet Rathjen



Photo by Juan Miguel Artigas Azas



Photo by Denny Swaby

Least

LEAST



Least

Photo by Juan Miguel Artigas Azas



Least

Photo by Henry Trombley



Least

Photo by Janet Rathjen

YELLOW-BELLIED HEAD & BODY STRUCTURE

LEAST VS YELLOW-BELLIED



Least



Yellow-bellied

LEAST VS YELLOW-BELLIED



Least



Yellow-bellied

LEAST VS YELLOW-BELLIED



Least



Yellow-bellied

LEAST VS YELLOW-BELLIED

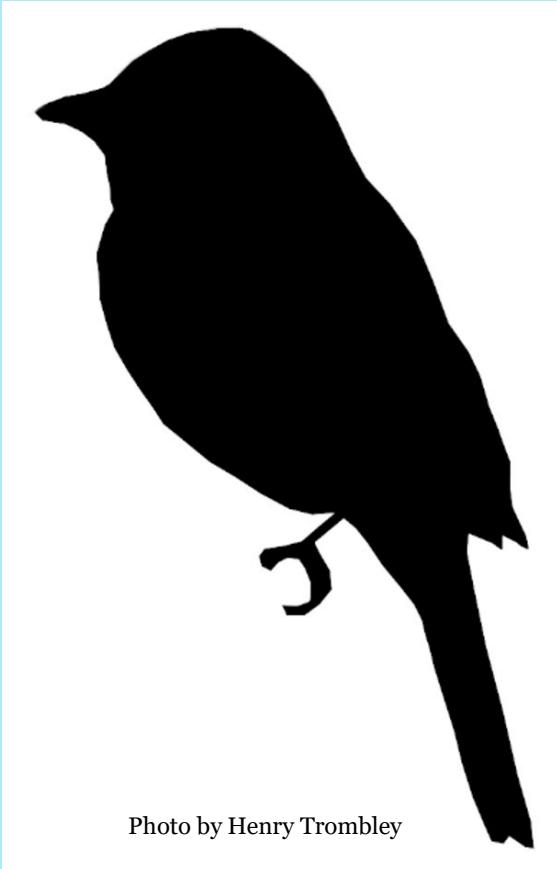


Photo by Henry Trombley

Least



Photo by Brian Sullivan

Yellow-bellied

Yellow-bellied



Yellow-bellied



ACADIAN HEAD & BODY STRUCTURE

LEAST VS ACADIAN



Least



Acadian

LEAST VS ACADIAN



Least



Acadian

LEAST VS ACADIAN

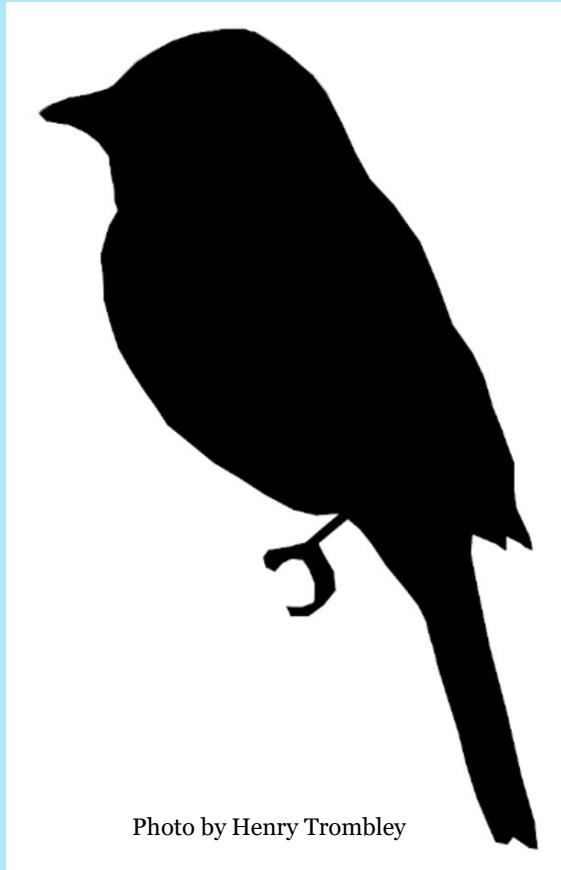


Least

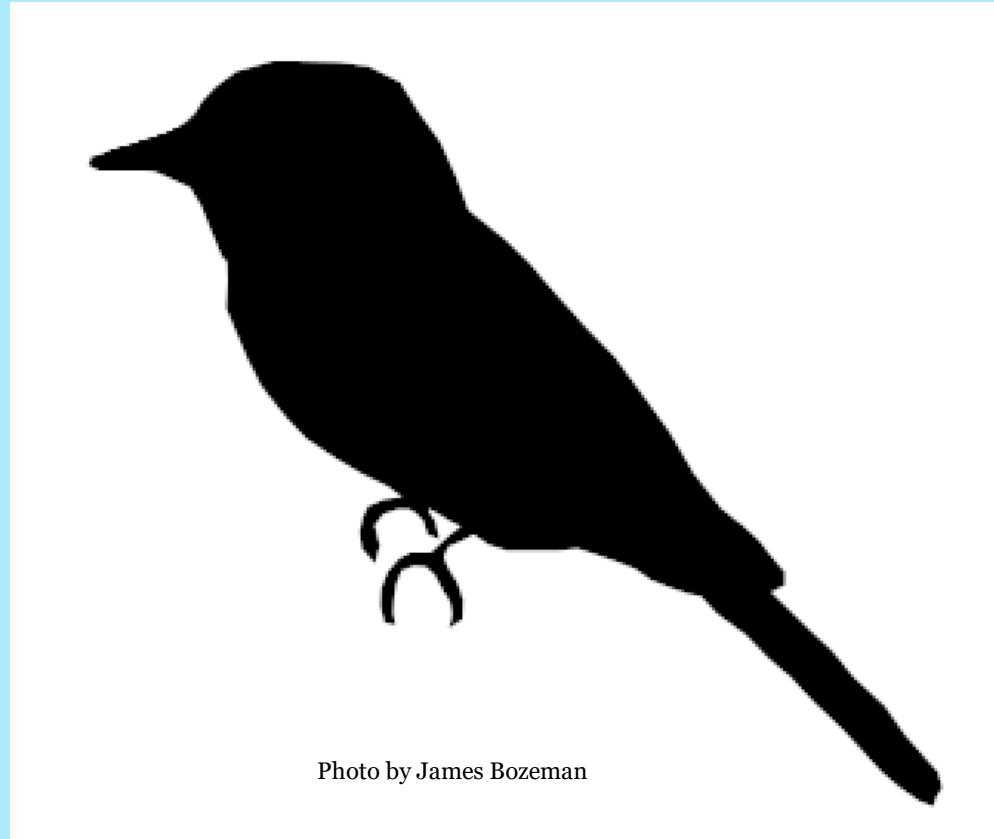


Acadian

LEAST VS ACADIAN



Least



Acadian



Photo by Oscar Wilhelmy



Photo by Ian Gardner



Photo by Jeff Stacy

Acadian

Acadian



“TRAILS” (ALDER) HEAD & BODY STRUCTURE

LEAST VS “TRAILS”



Least



“Trails”
(Alder)

LEAST VS “TRAILS”



Least



“Trails”
(Alder)

LEAST VS “TRAILS”



Least

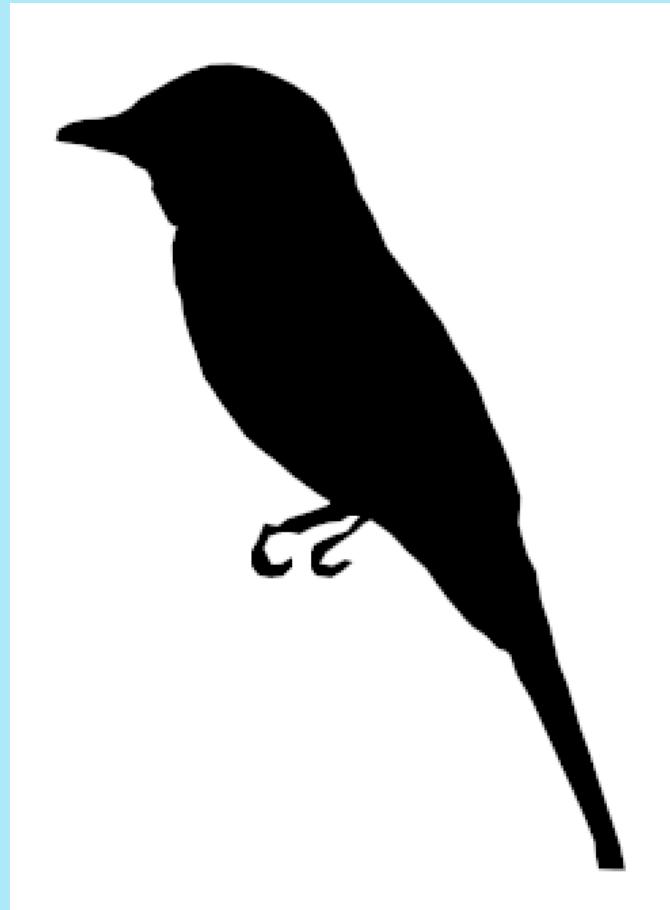


“Trails”
(Alder)

LEAST VS “TRAILS”



Least



“Trails”
(Alder)

“Trails” (Alder)



Photo by Jean Iron



Photo by Larry Sirvio



Photo by Brian Sullican

“Trails” (Alder)



“TRAILS” (WILLOW) HEAD & BODY STRUCTURE

“Trails” (Willow)



Photo by Ryan Sanderson



Photo by Eric Michael



Photo by Ed McGhee



Photo by Lyle Grisedale



Photo by John Reynolds

“Trails” (Willow)



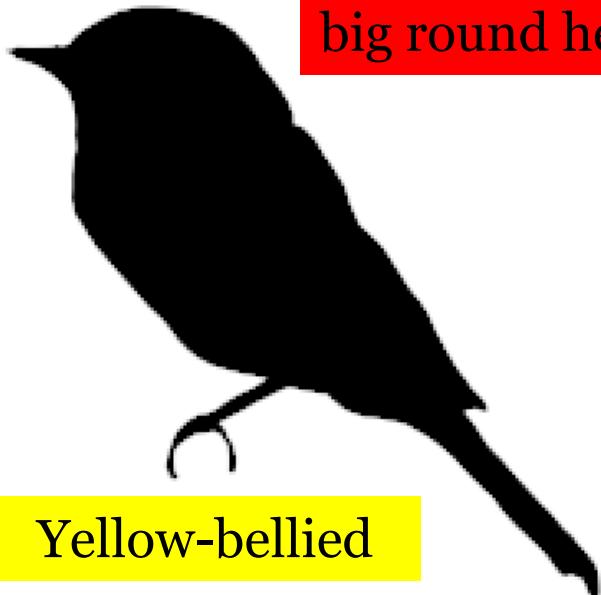
Photo by SK Burroughs



Least

Photo by Henry Trombley

Little guys with
big round heads



Yellow-bellied

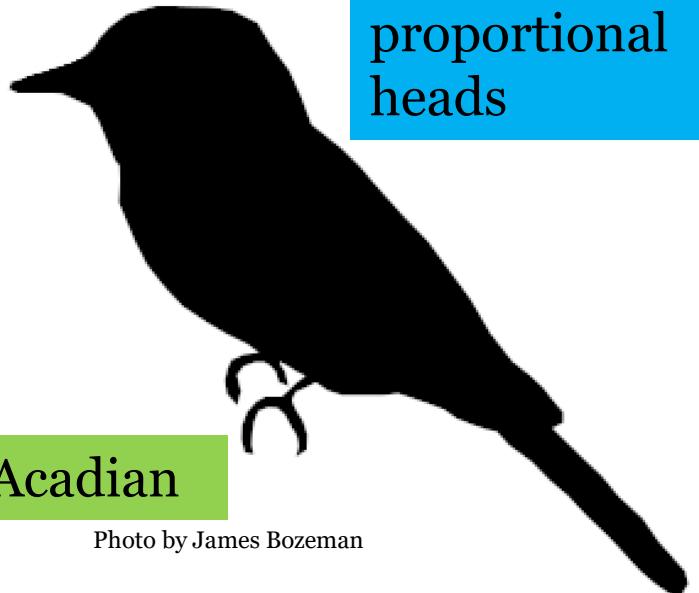
Photo by Brian Sullivan



“Trails”

Photo by Scott Stafford

Long guys with
proportional heads



Acadian

Photo by James Bozeman

EMPID EXERCISE 3

HEAD & BODY PROPORTIONS

PUT A NAME WITH EACH
EASTERN EMPID

(5 PIX ON PAGE A
5 PIX ON PAGE B)



1

Photo by Keith Lowe



5

Photo by Brian Hicks

Empid Exercise 3 (Group A)



2

Photo by Luke Seitz



4

Photo by Bob Bowers



3

Photo by Brendon Klick



1 “Trails”

Photo by Keith Lowe



5 Least

Photo by Brian Hicks

Empid Exercise 3 (Group A) Answers



2 Acadian

Photo by Luke Seitz



4 “Trails”

Photo by Bob Bowers

3 Yellow-bellied



Photo by Brendon Klick

6



Photo by David Turgeon

Empid Exercise 3 (Group B)

7



Photo by Richard Klauke

8



Photo by Roger Beardmore

10



Photo by
Karla Treinen

9



Photo by Jordan Roderick

6 Yellow-bellied



Photo by David Turgeon

Empid Exercise 3 (Group B) Answers

7 "Trails"

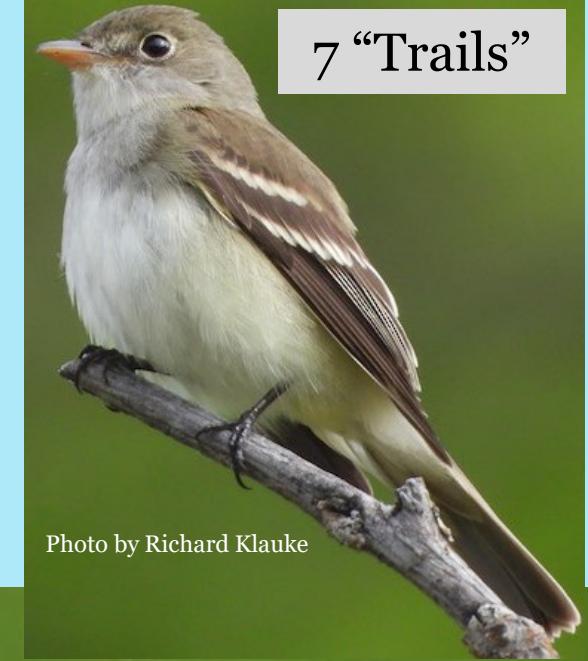
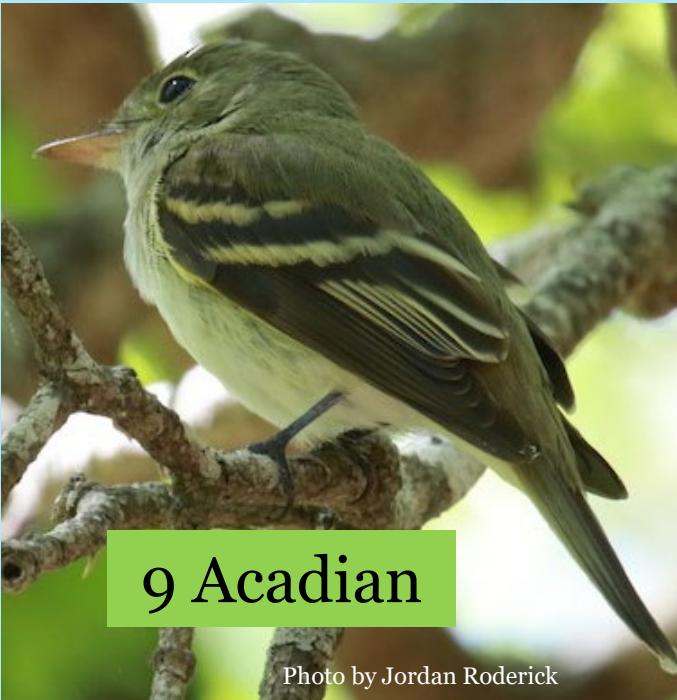


Photo by Richard Klauke

10 Least



Photo by Karla Treinen



9 Acadian

Photo by Jordan Roderick

8 "Trails"



Photo by Roger Beardmore

WING PROPORTIONS & SHAPE

WING PROPORTIONS

Wing Proportions

Primary projection

Short

Medium

Long

Tail length (impression of affected by primary projection)

Short

Long

Tail width

Wide

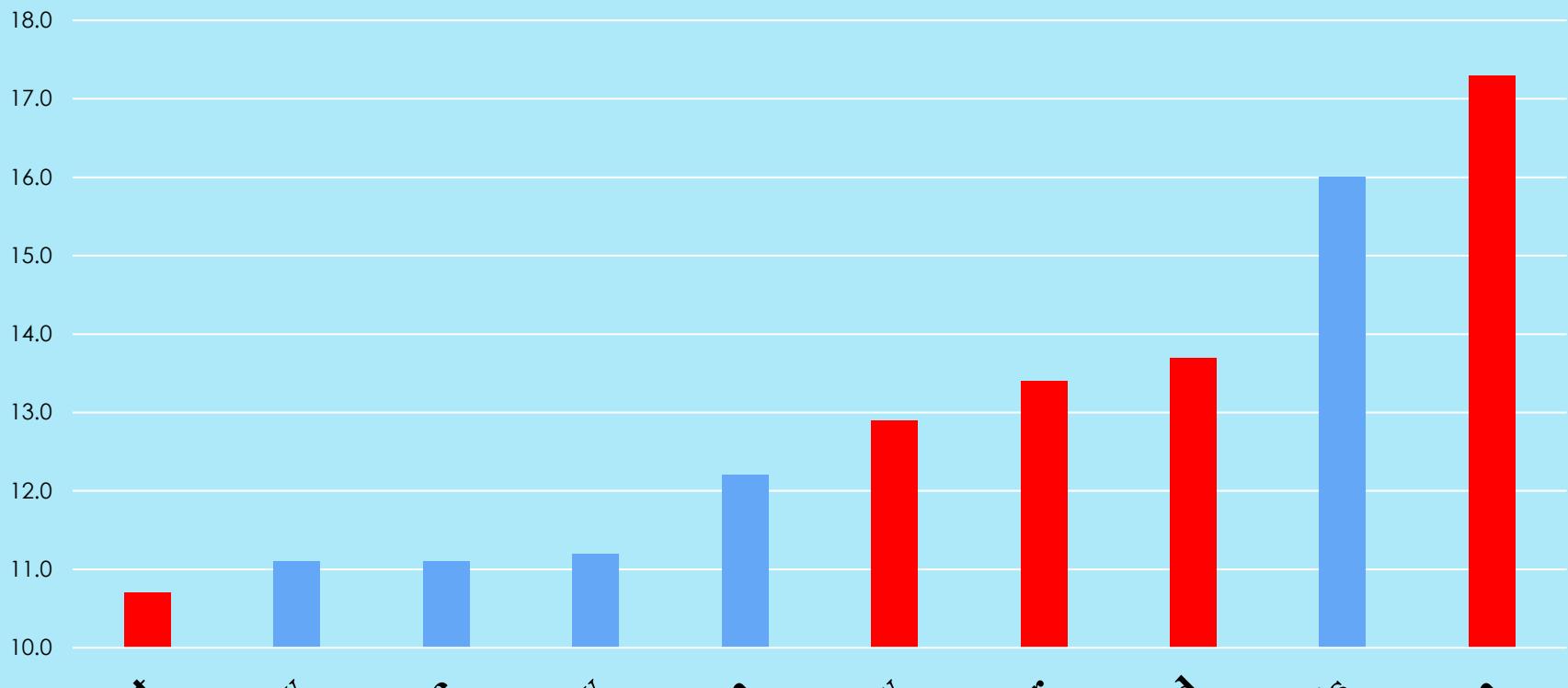
Narrow

Parallel-sided

Narrower at base

Tail notch

Empid Primary Projection (mm)

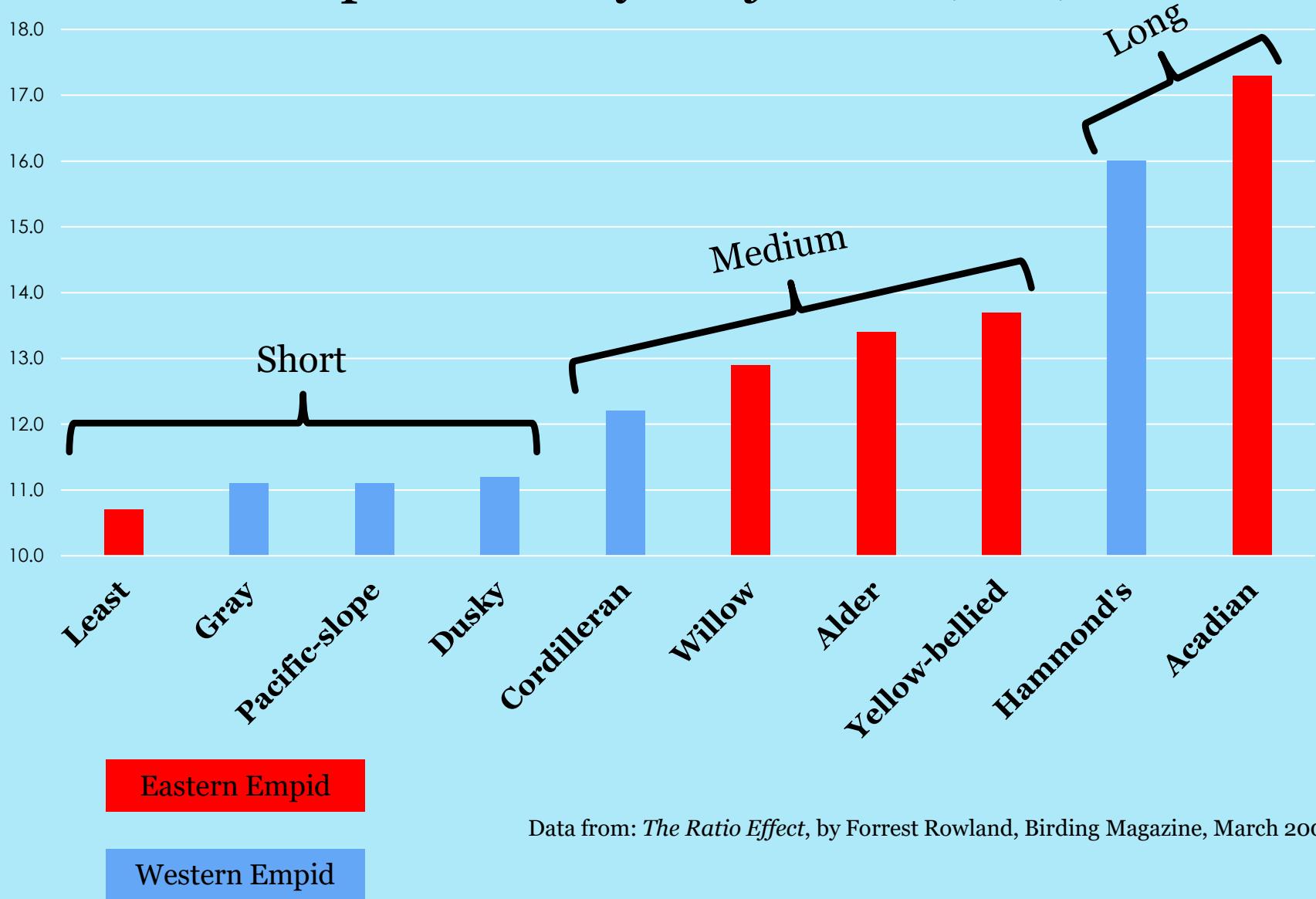


Eastern Empid

Western Empid

Data from: *The Ratio Effect*, by Forrest Rowland, Birding Magazine, March 2009

Empid Primary Projection (mm)



PRIMARY PROJECTION COMPARISON

INCREASING PRIMARY PROJECTION

Least
Short

Yellow-bellied
Short to Medium

Willow/Alder
Medium

Acadian
Long

**Eastern
Wood-peewee**
Very long



Photo by Kyle Tansley



Photo by Andrew Orgill



Photo by Daniel Casey



Photo by Joseph Mileyka

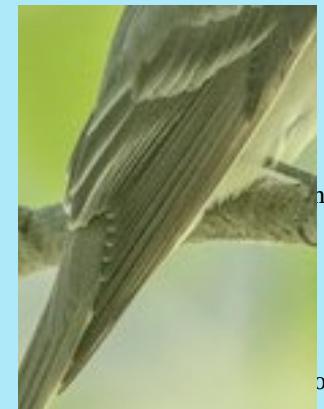


Photo by Brendan Klick



Photo by Michael Bolte



Photo by Dan Jones



Photo by Tom Johnson



Photo by Doug Hitchcox



Photo by Jim Carroll

PRIMARY PROJECTION COMPARISON

INCREASING PRIMARY PROJECTION

Least
Short



Photo by Kyle Tansley

Yellow-bellied
Short to Medium

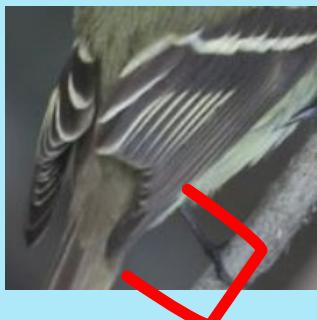


Photo by Andrew Orgill

Willow/Alder
Medium



Photo by Daniel Casey

Acadian
Long



Photo by Joseph Mileyka

**Eastern
Wood-pewee**
Very long

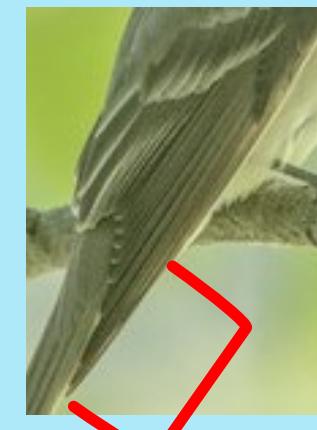


Photo by Brendan Klick

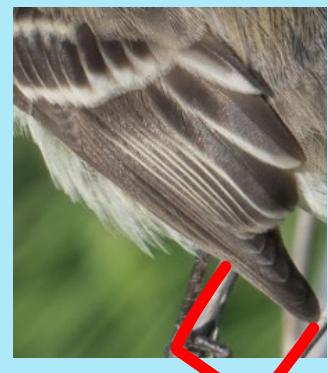


Photo by Michael Bolte



Photo by Dan Jones



Photo by Tom Johnson

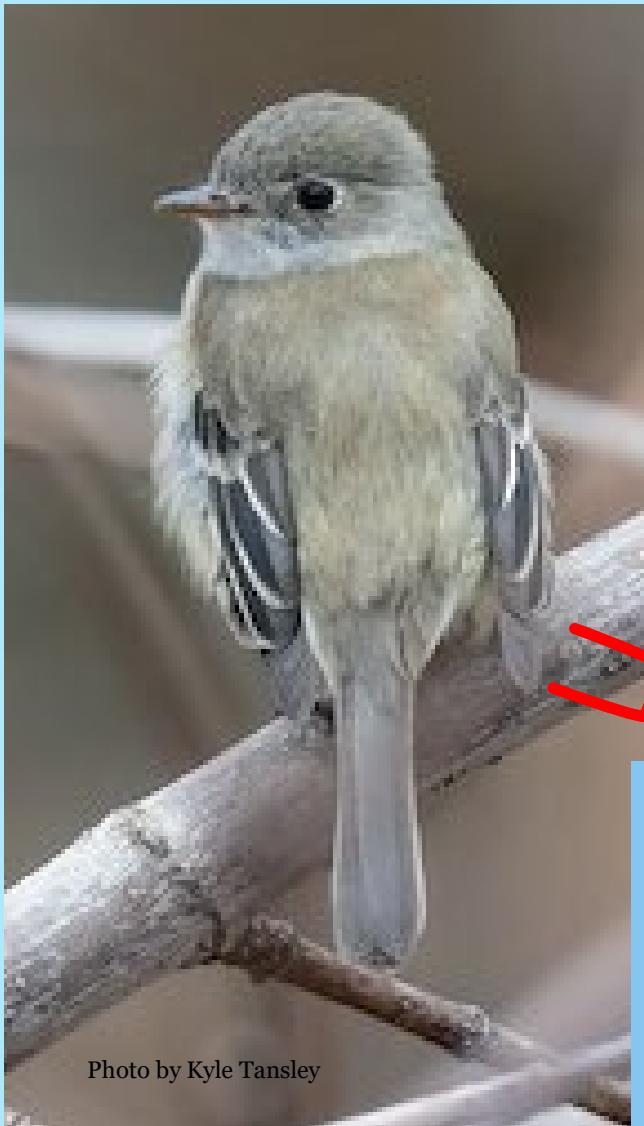


Photo by Doug Hitchcox



Photo by Jim Carrol

PRIMARY PROJECTION – LEAST



Short primary projection.

Short wings – barely project to base of tail.



PRIMARY PROJECTION – LEAST



Short primary projection.

Short wings –
barely project to
base of tail.



PRIMARY PROJECTION – YELLOW-BELLIED



Photo by Andrew Orgill

Relatively long wings.
Short to moderate primary projection.



Photo by Dan Jones

PRIMARY PROJECTION – YELLOW-BELLIED



Photo by Jeremiah Tremble

Relatively long wings.
Short to moderate primary projection.

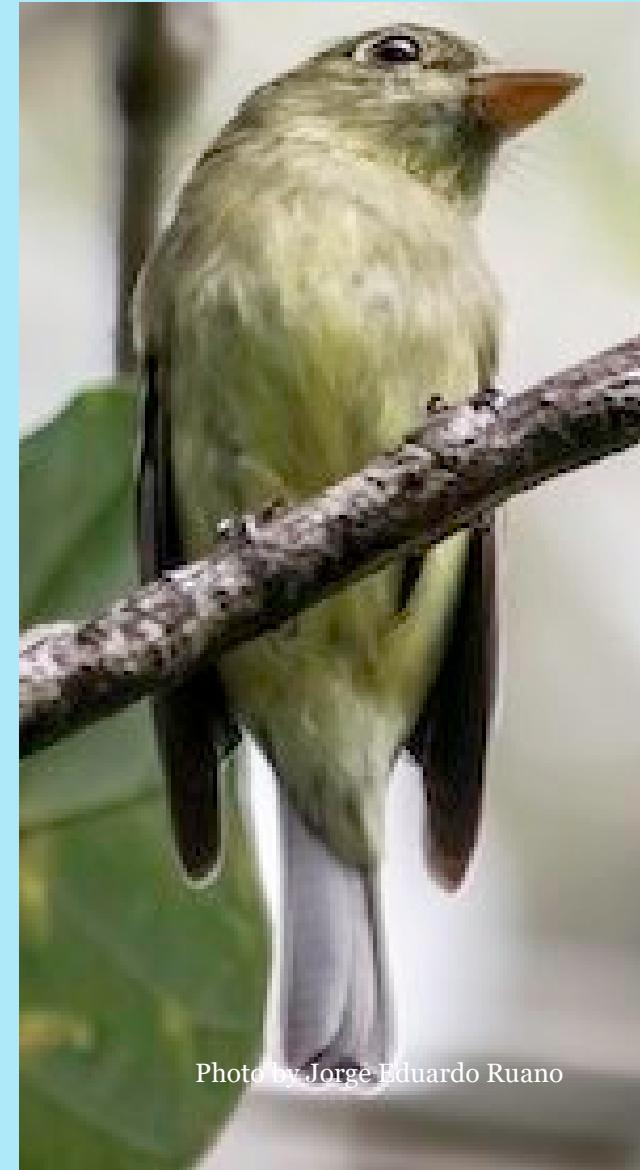


Photo by Jorge Eduardo Ruano

PRIMARY PROJECTION – YELLOW-BELLIED



Photo by Paul Suchanek

Relatively long wings.
Short to moderate primary projection.



Photo by Jacob Collison

PRIMARY PROJECTION – ACADIAN



Long primary projection.
Long-winged.

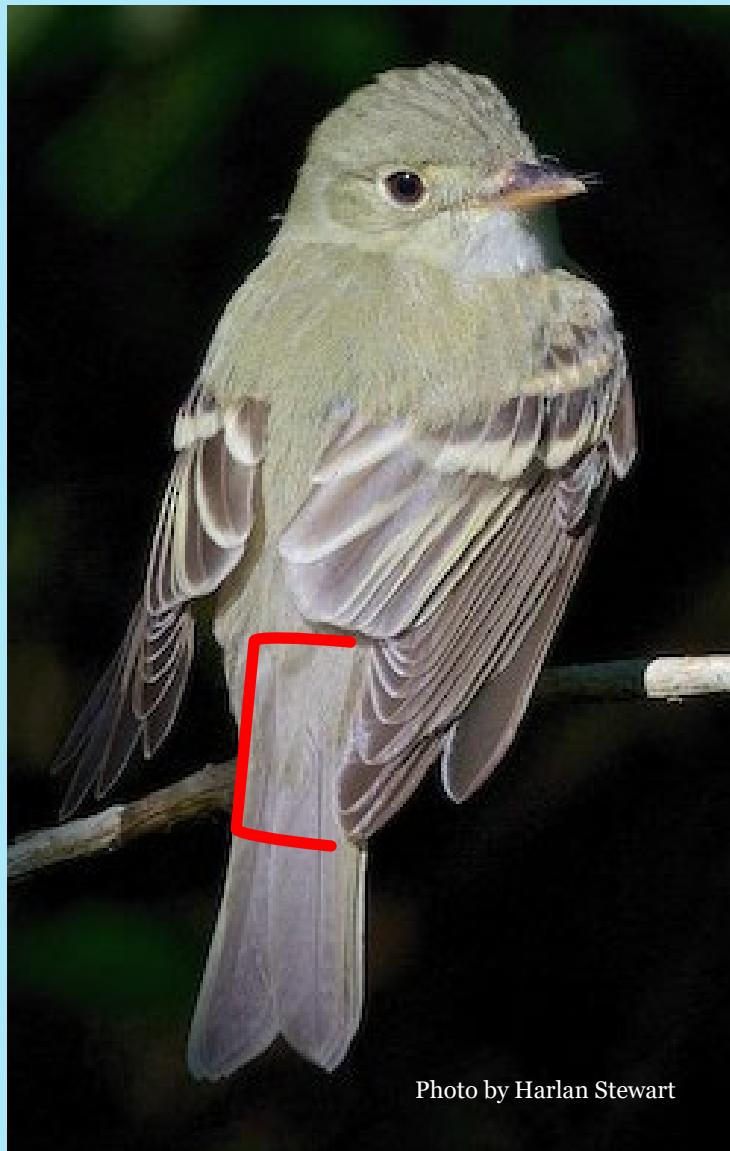
PRIMARY PROJECTION – ACADIAN



Long primary
projection.
Long-winged.



PRIMARY PROJECTION – ACADIAN



Long primary projection.
Long-winged.

Photo by Harlan Stewart

PRIMARY PROJECTION – WILLOW



Moderate
primary
projection.



PRIMARY PROJECTION – WILLOW



Photo by Kyle Blaney

Moderate
primary
projection.

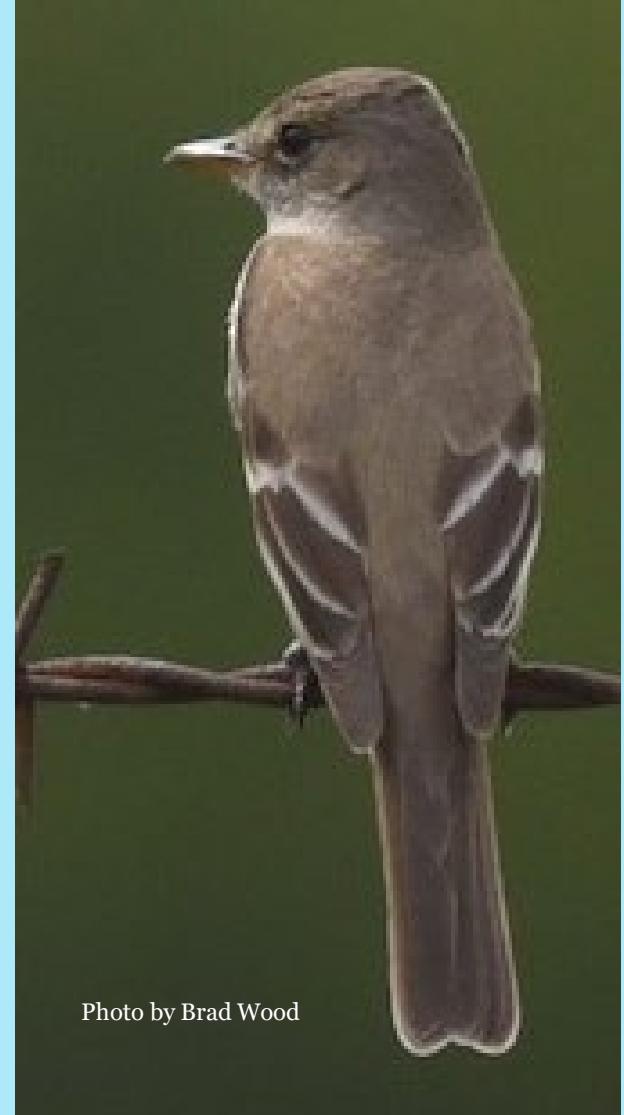


Photo by Brad Wood

PRIMARY PROJECTION – WILLOW



Photo by Brendan Klick

Moderate
primary
projection.

PRIMARY PROJECTION – ALDER



Photo by Tim Atanaitis

Moderate
primary
projection.



Photo by Brian Sullivan

PRIMARY PROJECTION – ALDER



Photo by Jeff Chapman

Moderate
primary
projection.



Photo by Jeff Dyck

PRIMARY PROJECTION – ALDER

Moderate
primary
projection.



Photo by Tom Johnson

ANOTHER CLUE:
SHAPE OF PRIMARY TIPS

ANOTHER CLUE SHAPE OF PRIMARY TIPS

Least



Photo by Jeremiah Trimble

Acadian



Photo by Joseph Mileyka

ANOTHER CLUE: **SHAPE OF PRIMARY TIPS**

Least



Photo by Jeremiah Trimble

Acadian

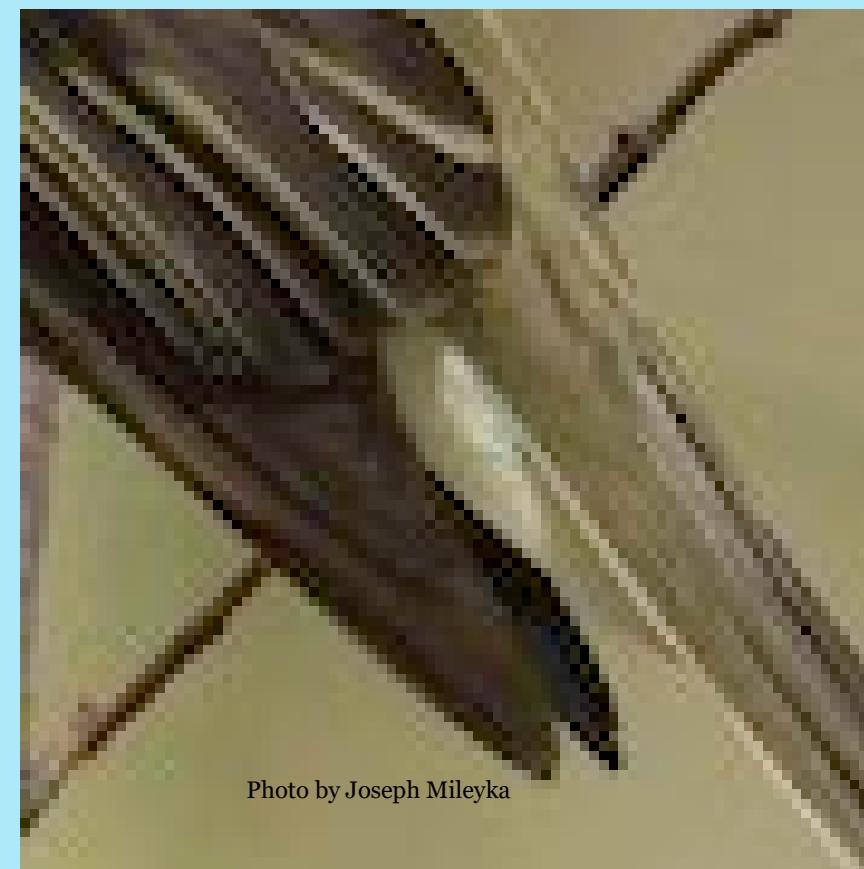


Photo by Joseph Mileyka

EXERCISE 4: PRIMARY PROJECTION

(EACH PAGE = 3 PHOTOS, 1 SPECIES)

EXERCISE 4: PRIMARY PROJECTION – SPECIES 1



Photo by Jeremiah Tremble



Photo by Robert Johnson

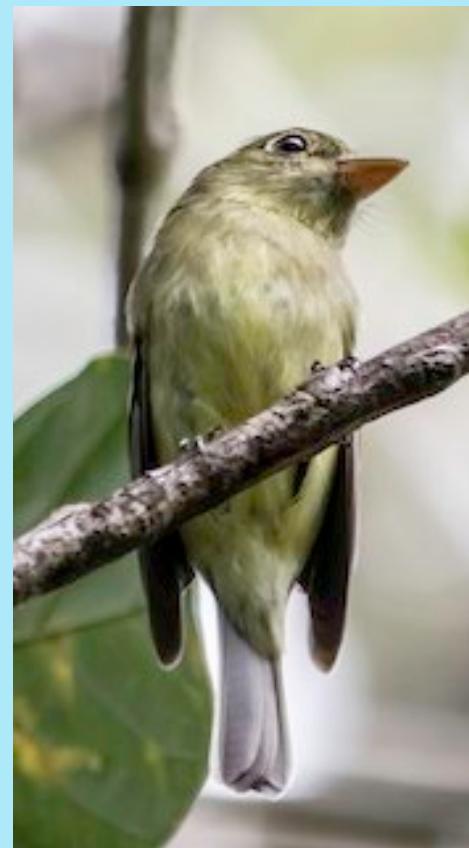


Photo by Jorge Eduardo Ruano

EXERCISE 4: PRIMARY PROJECTION – SPECIES 2



Photo by Brendon Klick



Photo by Joe Wing



Photo by Daniel Casey

EXERCISE 4: PRIMARY PROJECTION – SPECIES 3



Photo by Kyle Tansley



Photo by Diane St Jaques



Photo by Malcom GOld

EXERCISE 4: PRIMARY PROJECTION – SPECIES 4



Photo by Robb Bell



Photo by Jeff Chapman



Photo by Brian Sullivan

EXERCISE 4: PRIMARY PROJECTION – SPECIES 5



Photo by James (Jim) Holmes



Photo by Van Remson



Photo by Dan Vickers

EXERCISE 4: PRIMARY PROJECTION – SPECIES 1 – YELLOW-BELLIED



Photo by Jeremiah Tremble



Photo by Robert Johnson

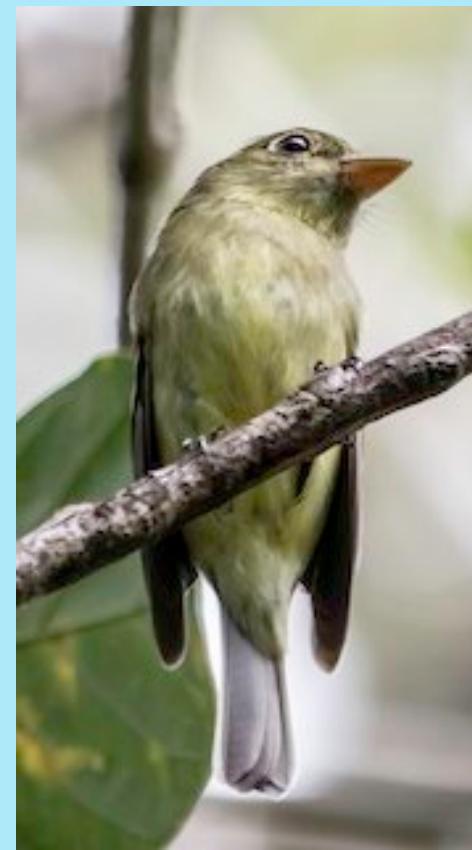


Photo by Jorge Eduardo Ruano

EXERCISE 4: PRIMARY PROJECTION – SPECIES 2 – “TRAILS” (WILLOW)



Photo by Brendon Klick



Photo by Joe Wing



Photo by Daniel Casey

EXERCISE 4: PRIMARY PROJECTION – SPECIES 3 – LEAST



Photo by Kyle Tansley



Photo by Diane St Jaques



Photo by Malcom Gold

EXERCISE 4: PRIMARY PROJECTION – SPECIES 4 – “TRAILS” (ALDER)



Photo by Robb Bell



Photo by Jeff Chapman



Photo by Brian Sullivan

EXERCISE 4: PRIMARY PROJECTION – SPECIES 5 – ACADIAN



Photo by James (Jim) Holmes



Photo by Van Remson



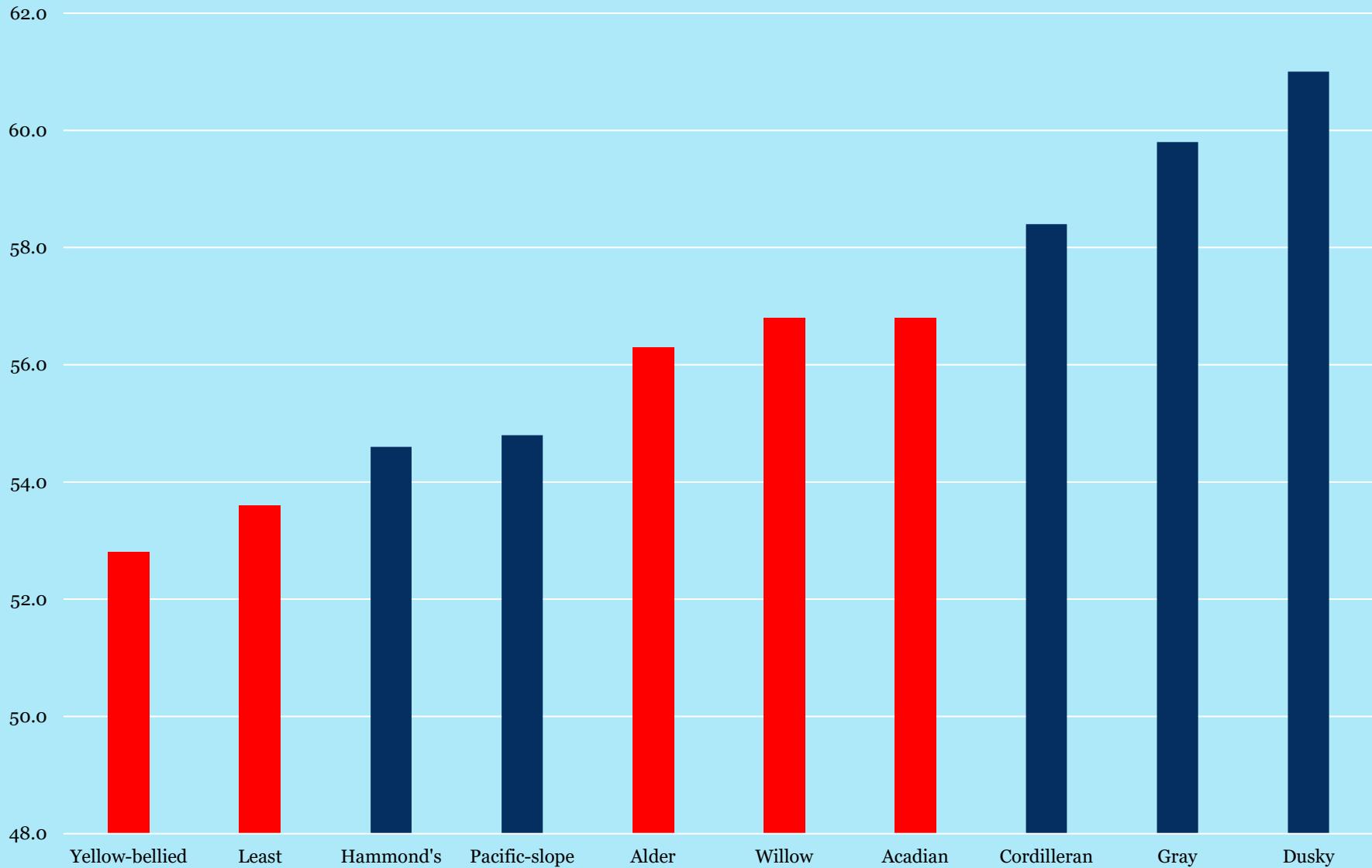
Photo by Dan Vickers

TAIL PROPORTIONS & SHAPE

1. Tail Proportions

- a) Length (affected by primary projection)
 - i. Short
 - ii. Long
- b) Width
 - i. Wide
 - ii. Narrow
- c) Shape
 - a) Parallel sides
 - b) Tapered at base
- d) Tail notch

Empid Tail Length (mm)

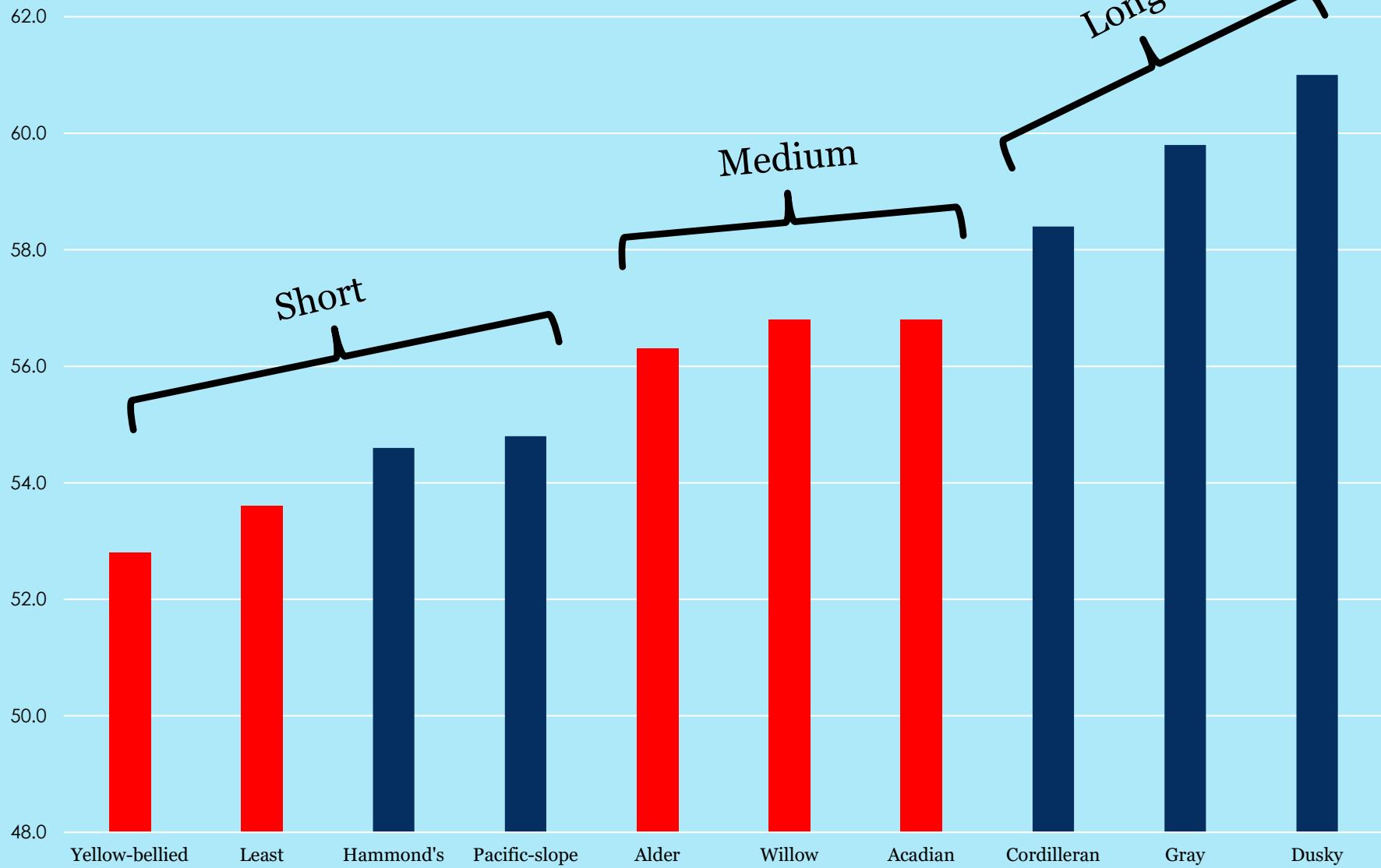


Eastern Empid

Western Empid

Data from: *The Ratio Effect*, by Forrest Rowland, Birding Magazine, March 2009

Empid Tail Length (mm)



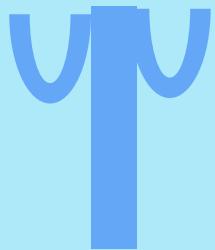
Eastern Empid

Western Empid

Data from: *The Ratio Effect*, by Forrest Rowland, Birding Magazine, March 2009

EASTERN EMPID TAILS

Least



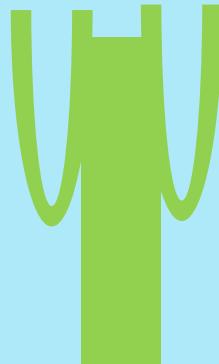
Short, narrow tail.
Reminiscent of a popsicle stick.

Yellow-bellied



Short narrow tail is constricted at the base rather than parallel sided.

Acadian



Medium length. Broad at the base & nearly parallel sided. May appear relatively short due to the long primary projection.

“Trails”



Medium to longish tail. Broad-based & nearly parallel sided. Looks noticeably broad compared to the tails of smaller Empids.

EASTERN EMPID TAILS

Least



Photo by Kyle Tansley

Yellow-bellied



Photo by John Kendall

Acadian



Photo by Jim Sweeney

“Trails”



Photo by Joe Wing

Short, narrow tail.
Reminiscent of a popsicle stick.

Short narrow tail is constricted at the base rather than parallel sided.

Medium length. Broad at the base & nearly parallel sided. May appear relatively short due to the long primary projection.

Medium to longish tail. Broad-based & nearly parallel sided. Looks noticeably broad compared to the tails of smaller Empids.

TAIL PROPORTIONS – LEAST



Photo by Kyle Tansley

Short, narrow tail.
Reminiscent of a
popsicle stick.



Photo by Ian Davies

TAIL PROPORTIONS– YELLOW-BELLIED



Photo by Andrew Orgill



Photo by Dan Jones

TAIL PROPORTIONS– YELLOW-BELLIED



Photo by Jeremiah Tremble



Photo by Jorge Eduardo Ruano

TAIL PROPORTIONS– YELLOW-BELLIED



Photo by Paul Suchanek



Photo by Jacob Collison

TAIL PROPORTIONS– YELLOW-BELLIED



Photo by Steve Tucker

TAIL PROPORTIONS – ACADIAN



Photo by Van Remson



Photo by Doug Hitchcox

Medium length tail.
Broad at base & nearly parallel sided.
May look short due to long primary projection.

TAIL PROPORTIONS- ACADIAN



Medium length tail.
Broad at base & nearly parallel sided.
May look short due to long primary projection.

Photo by Harlan Stewart

TAIL PROPORTIONS— “TRAILS” (WILLOW)



Photo by Brendan Klick

Moderately long, broad-based and parallel-sided – a sturdy tail.

Other Empids have narrow-based tails and slight to moderate flaring.

TAIL PROPORTIONS— “TRAILS” (WILLOW)



Photo by Kyle Blaney

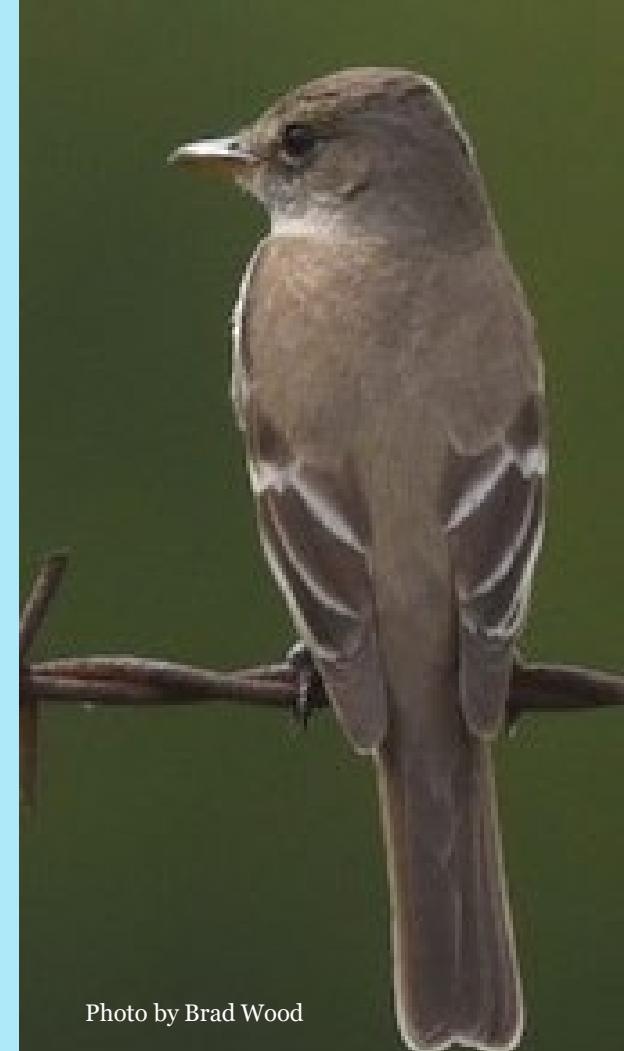


Photo by Brad Wood

Moderately long, broad-based and parallel-sided – a sturdy tail.

Other Empids have narrow-based tails and slight to moderate flaring.

TAIL PROPORTIONS— “TRAILS” (ALDER)

Moderately long, broad-based and parallel-sided – a sturdy tail.

Other Empids have narrow-based tails and slight to moderate flaring.



Photo by Brian Sullivan

TAIL PROPORTIONS— “TRAILS” (ALDER)



Photo by Jeff Chapman



Photo by Jeff Dyck

Moderately long, broad-based and parallel-sided – a sturdy tail.

Other Empids have narrow-based tails and slight to moderate flaring.

THE EMPID CHECKLIST

FIELD MARKS (ATTRIBUTES)

EMPIDONAX CHECKLIST:			
#	ATTRIBUTE		Rank
1	Structure	Wings	Wing proportions (wing length & primary projection)
2			Shape of primary tips
3		Tail	Tail proportions & shape
4		Bill	Bill size, shape & color(s)
5		Head	Head shape & proportion to body
6			Crown of head (peak, crest)
7			Forehead slope
8		Body	Body shape
9			Eye-ring
10			Wing-bars
11	Plumage		Throat color & contrast
12			Color of upper parts
13			Color of lower parts
14			Molt
15			Habitat/Micro-habitat
16			Behavior
17			Song
18	Other		Call
19			Migration
20			Similar species

Bill size, shape & color(s)

EASTERN EMPID BILLS

All photos from:
Kaufman Field Guide to Advanced Birding
Understanding What you See and Hear
Kaufman, Kenn, 2011

INCREASING BILL SIZE



Least



Yellow-bellied



“Trails”



Acadian

EASTERN EMPID BILLS

All photos from:
Kaufman Field Guide to Advanced Birding
Understanding What you See and Hear
Kaufman, Kenn, 2011

INCREASING BILL SIZE



Photo by Jeffrey E. Patterson



Photo by Robert Johnson



Photo by Isaias Morataya



Photo by Kris Peterson

Least

Yellow-bellied

“Trails”

Acadian

→

EASTERN EMPID BILLS

All photos from:
Kaufman Field Guide to Advanced Birding
Understanding What you See and Hear
Kaufman, Kenn, 2011

INCREASING BILL SIZE



Photo by Johnathan Irons



Photo by Kevin Pero



Photo by Matt Mason



Photo by Peter Brannon

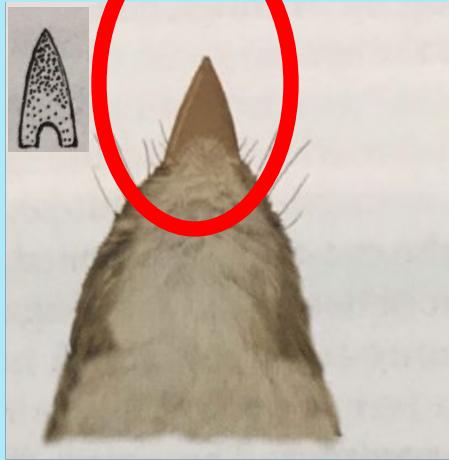
Least

Yellow-bellied

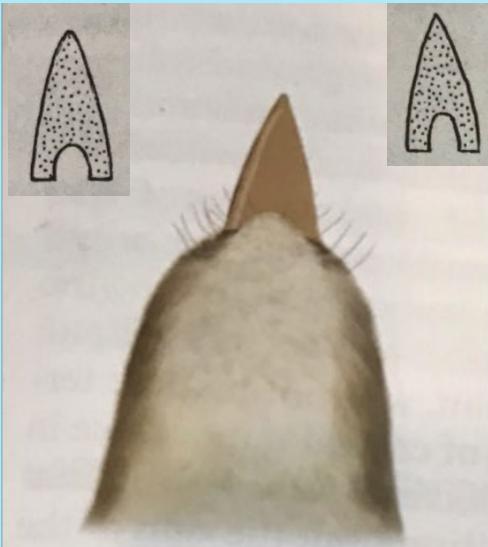
“Trails”

Acadian



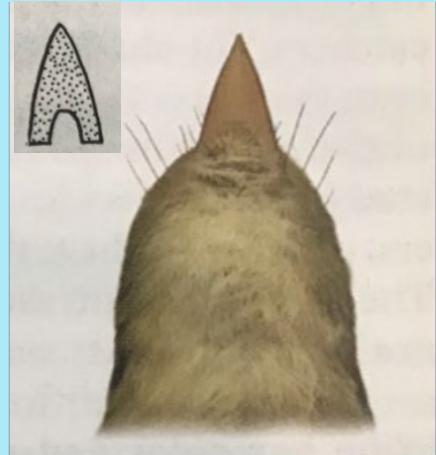


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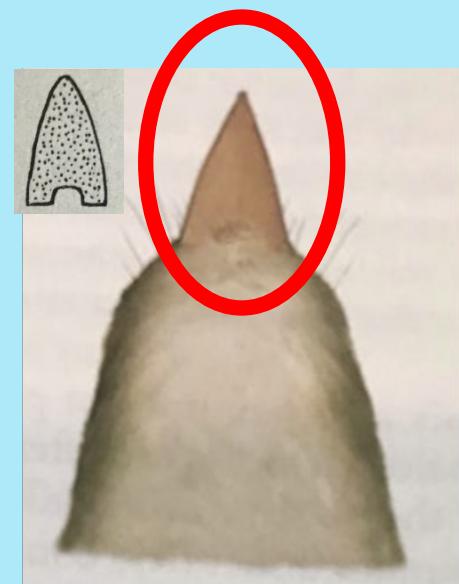


Willow/Alder

EASTERN EMPIIDS BILLS



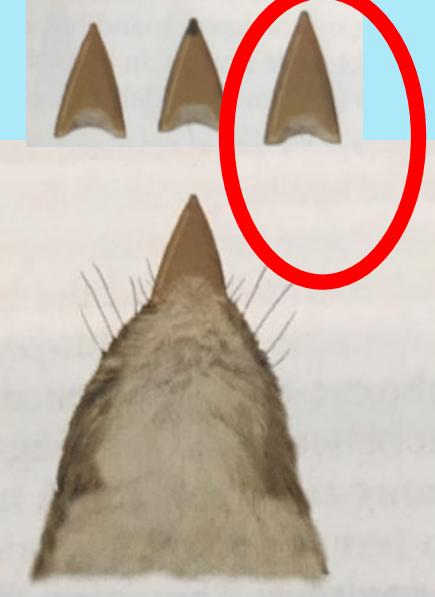
Yellow-bellied



Acadian

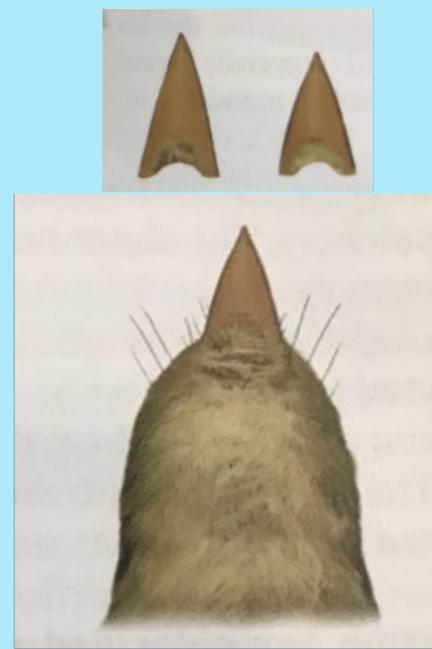
Photos from:
*Kaufman Field Guide to Advanced Birding
Understanding What you See and Hear*
Kaufman, Kenn, 2011

Illustrations from:
Birding in the American West
Zimmer, Kevin J., 2000



Least

EASTERN EMPIIDS BILLS



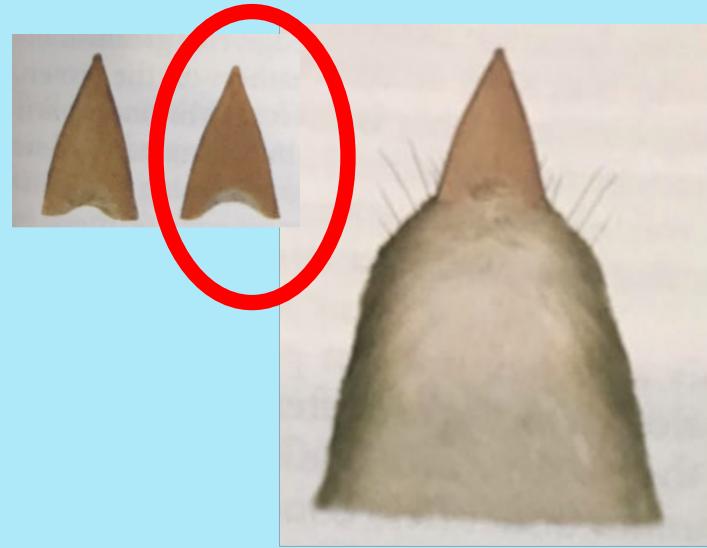
Yellow-bellied



Willow/Alder



Willow



Acadian

All photos from:
Kaufman Field Guide to Advanced Birding
Understanding What you See and Hear
Kaufman, Kenn, 2011

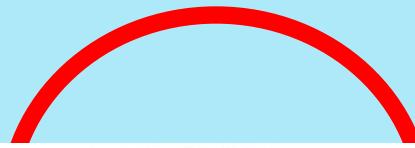
THE EMPID CHECKLIST FIELD MARKS (ATTRIBUTES)

- The Empid Bill
- Has been touted
- Difficult to observe
- Variable
- Can be diagnostic
- Can also confuse
- More useful for Western Empids
- **My recommendation:
downgrade to “supporting”**

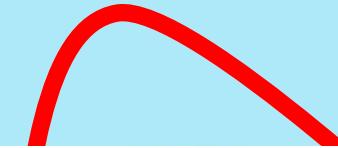
EMPIDONAX CHECKLIST:			
#		ATTRIBUTE	Rank
1	Structure	Wing proportions (wing length & primary projection)	A
2		Shape of primary tips	
3		Tail proportions & shape	B
4		Bill size, shape & color(s)	B
5	Head	Head shape & proportion to body	A
6		Crown of head (peak, crest)	
7		Forehead slope	
8		Body shape	A
9	Plumage	Eye-ring	A
10		Wing-bars	
11		Throat color & contrast	B
12		Color of upper parts	B
13		Color of lower parts	B
14	Other	Molt	
15		Habitat/Micro-habitat	
16		Behavior	
17		Song	A'
18		Call	B
19		Migration	
20		Similar species	

CROWN & FOREHEAD SHAPE

CROWN SHAPE

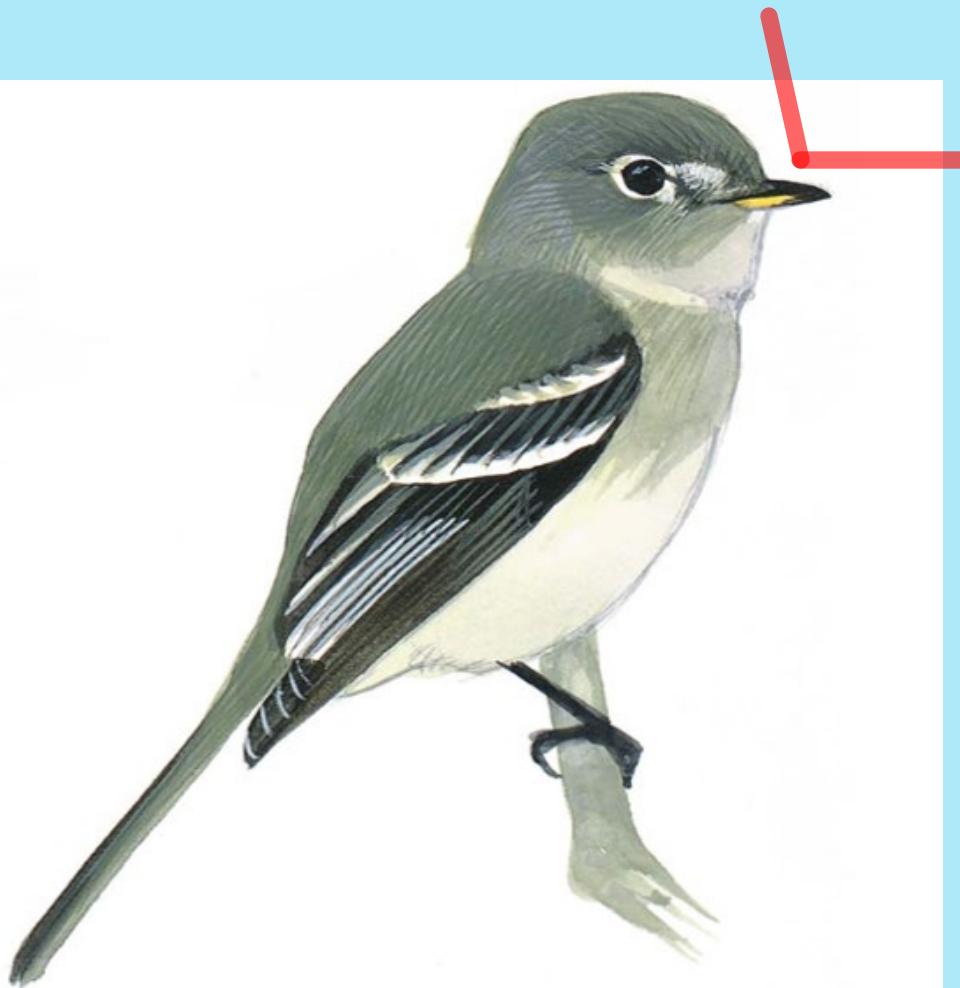


Rounded Crown



Rear Peaked Crown

FOREHEAD ANGLE



Steep Forehead



Flat Forehead

EASTERN EMPIDS BY DAVID A. SIBLEY

Least



Yellow-bellied



Acadian



**“Trails”
(Willow)**



**“Trails”
(Alder)**



All Illustrations
by David A. Sibley
From *Sibley Birds* app

CROWN & FOREHEAD

Least



Photo by Jeffrey E. Patterson

Crown Shape: Roundish crown.

Forehead Angle: Steep forehead.

CROWN & FOREHEAD

Least

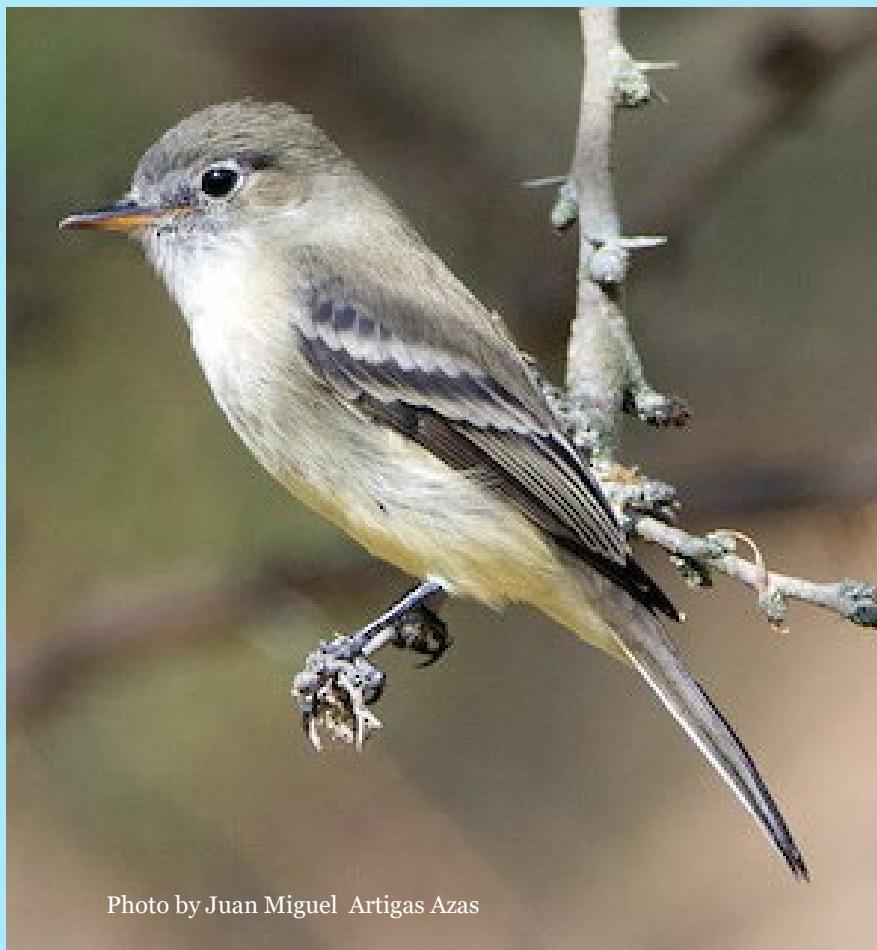


Photo by Juan Miguel Artigas Azas

Crown Shape: Roundish crown.

Forehead Angle: Steep forehead.

CROWN & FOREHEAD

Least



Photo by Deny Swaby

Crown Shape: Roundish crown.

Forehead Angle: Steep forehead.

CROWN & FOREHEAD

Yellow-bellied



Photo by Luke Seitz

Crown Shape: Usually smoothly rounded, only occasionally with slight crested effect.

Forehead Angle: Steep forehead.

CROWN & FOREHEAD

Yellow-bellied



Photo by Steve Tucker

Crown Shape: Usually smoothly rounded, only occasionally with slight crested effect.

Forehead Angle: Steep forehead.

CROWN & FOREHEAD

Acadian



Crown Shape: Forehead and fore part of the crown look flat, often sloping up gradually to a point or corner at the rear edge of crown.

But crown also can look low and smoothly rounded in the rear.

Forehead Angle: Flat forehead.

CROWN & FOREHEAD

Acadian



Photo by Will Sweet

Crown Shape: Forehead and fore part of the crown look flat, often sloping up gradually to a point or corner at the rear edge of crown.

But crown also can look low and smoothly rounded in the rear.

Forehead Angle: Flat forehead.

CROWN & FOREHEAD

“Trails” (Alder)



Photo by Ian Davis

Crown Shape: Sometimes gently rounded, sometimes peaked toward the rear, but always slender.

Forehead Angle: Shallow to medium.

CROWN & FOREHEAD

“Trails” (Alder)



Crown Shape: Sometimes gently rounded, sometimes peaked toward the rear, but always slender.

Forehead Angle: Shallow to medium.

“Trails” (Willow)

CROWN & FOREHEAD

Crown Shape: Distinct peak on rear crown..

Forehead Angle: Relatively flat.



Photo by Ethan Maynard

“Trails” (Willow)

CROWN & FOREHEAD



Photo by Ceredig Roberts

Crown Shape: Distinct peak on rear crown..

Forehead Angle: Relatively flat.

EASTERN EMPIDS: ONE MORE LOOK

Least



Yellow-bellied



Acadian



“Trails” (Willow)



“Trails” (Alder)



THE EASTERN EMPID THOUGHT PROCESS

(VISUAL DIAGNOSES)

