

# NOTE ON THE USE OF PHOTOGRAPHS

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# SHOREBIRD PLUMAGES

## ▶ Teaching Points

- ▶ 3 plumages – what do they look like? what time of year?
- ▶ Wear & Molt – what do they look like?
- ▶ Brown Vs “frosty” – what does it look like? How to use?

# MODERN BIRDING

- Field guides – the great invention of (primarily) Roger Tory Peterson in the 1930s.
- Mostly plumage-based – “field marks”
- Modern birding – **Structure + Plumage**
  - More emphasis on **shape**
  - GISS
  - Structure
  - Relative Size
  - Plumage

# PLUMAGE

- ▶ *“It is nearly impossible to come up with a set of plumage-based “field marks” that always work.”*
  - ▶ Obrien, Crossley, Karlson
- ▶ Plumage “Topography” – “map” of the feather groups
- ▶ Plumage Variation
  - ▶ Molt
  - ▶ Wear
  - ▶ Age
- ▶ Questions to ask:
  - ▶ What plumage am I looking at?
  - ▶ What feather group am I looking at?

# SHOREBIRD “TOPOGRAPHY”

## FEATHER GROUPS

# VARIATION IN PLUMAGE

- ▶ Differences can be subtle, but sometimes dramatic
- ▶ **Age variation**
  - ▶ Chick
  - ▶ Juvenile
  - ▶ Adult
- ▶ **Seasonal variations**
  - ▶ Fall Transition
  - ▶ **Basic** (winter, non-breeding)
  - ▶ Spring Transition
  - ▶ **Alternate** (summer, breeding)
- ▶ **Gender variation** – Only in a few species
- ▶ **Geographic variation**– Subspecies
- ▶ **Individual variation**
- ▶ **Wear & Molt**
  - ▶ **Wear** –important in aging shorebirds
  - ▶ **Molt**
    - ▶ Protracted in shorebirds
    - ▶ Individuals molt at different times
    - ▶ Species molt using different “strategies”





**Plumage  
differences  
are glaring**



**Secondaries**

(white)

**Scapulars**

**Mantle**

(white)

**Tertials**

**Tail**

**Primaries**

(white)

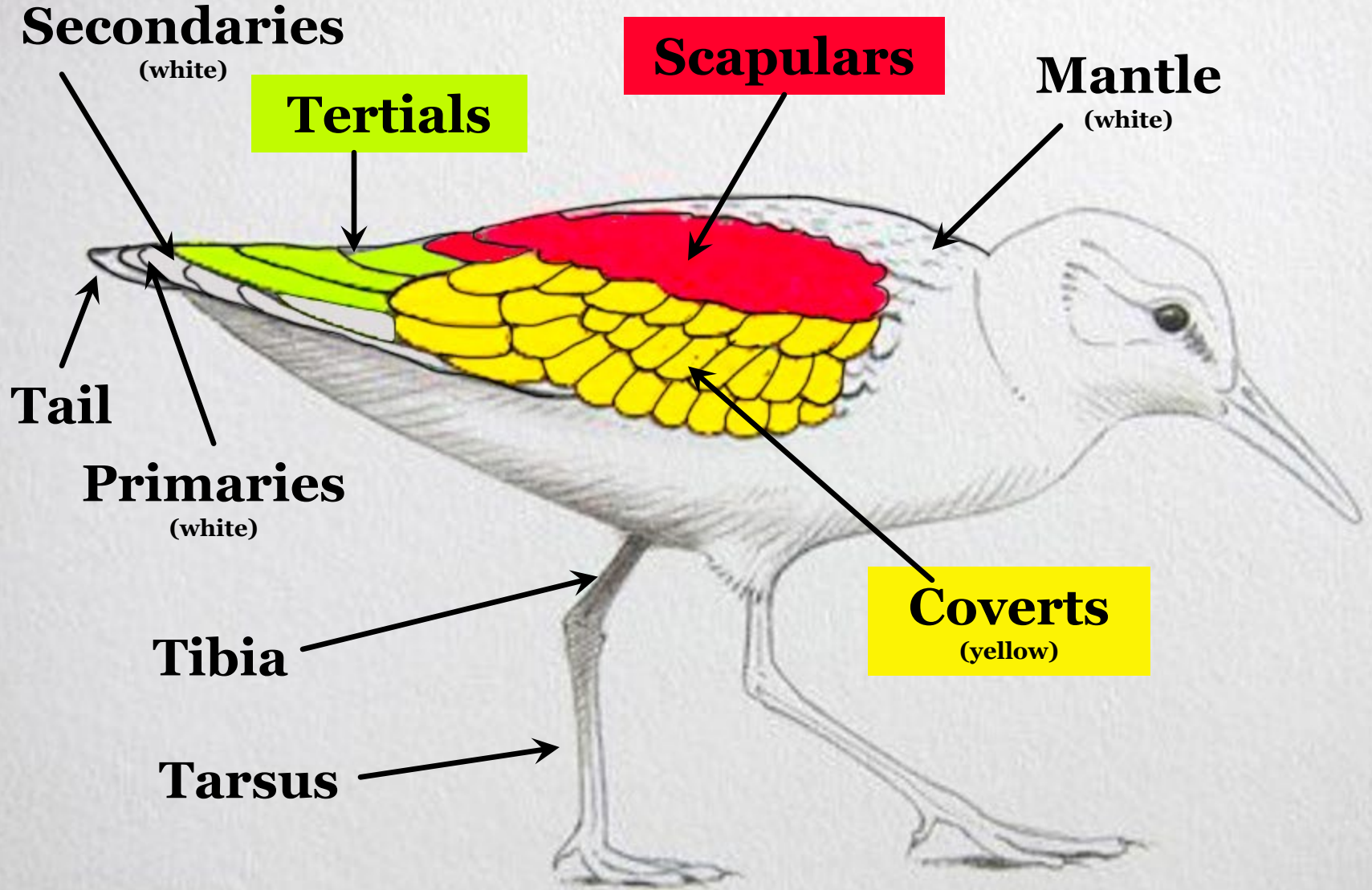
**Coverts**

(yellow)

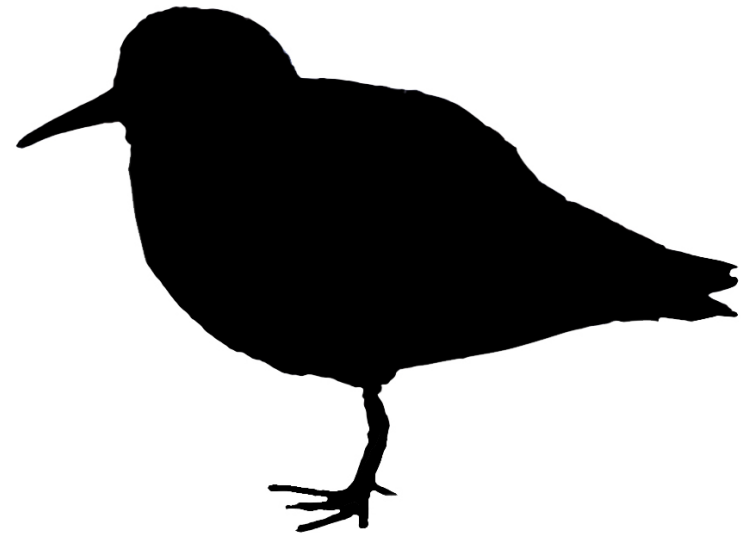
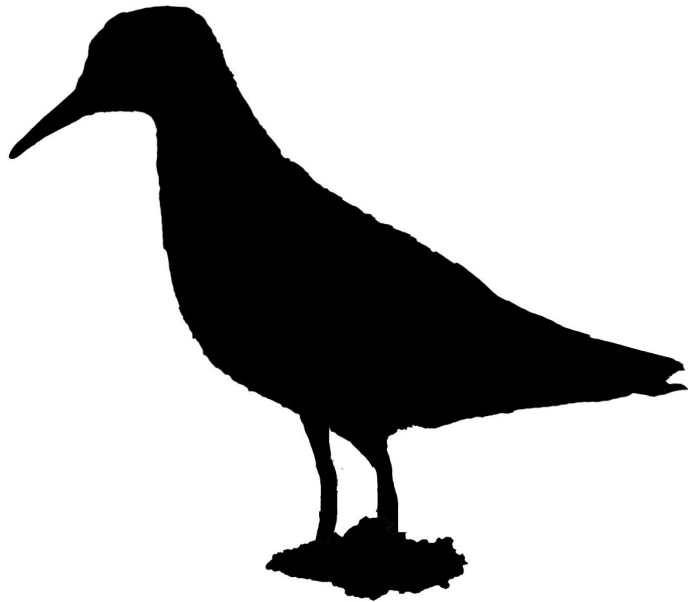
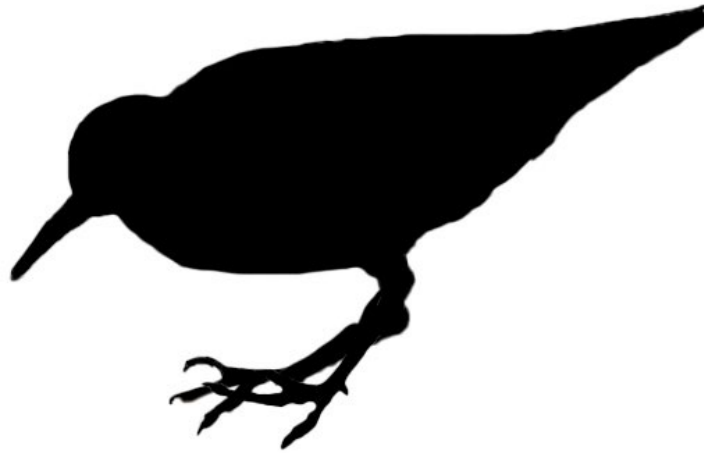
**Tibia**

**Tarsus**

**Least Sandpiper**



# ONLY ONE STRUCTURE !!!!



ONLY ONE STRUCTURE ???  
“WE WON’T GET FOOLED AGAIN !!!”



# BIRDS MOVE, FEATHERS MOVE



# 3 PLUMAGES


- ▶ Only 3 plumages

- ▶ Juvenile


- ▶ Basic (winter, non-breeding)

- ▶ Alternate (spring, breeding)

Wear & Molt



Wear & Molt



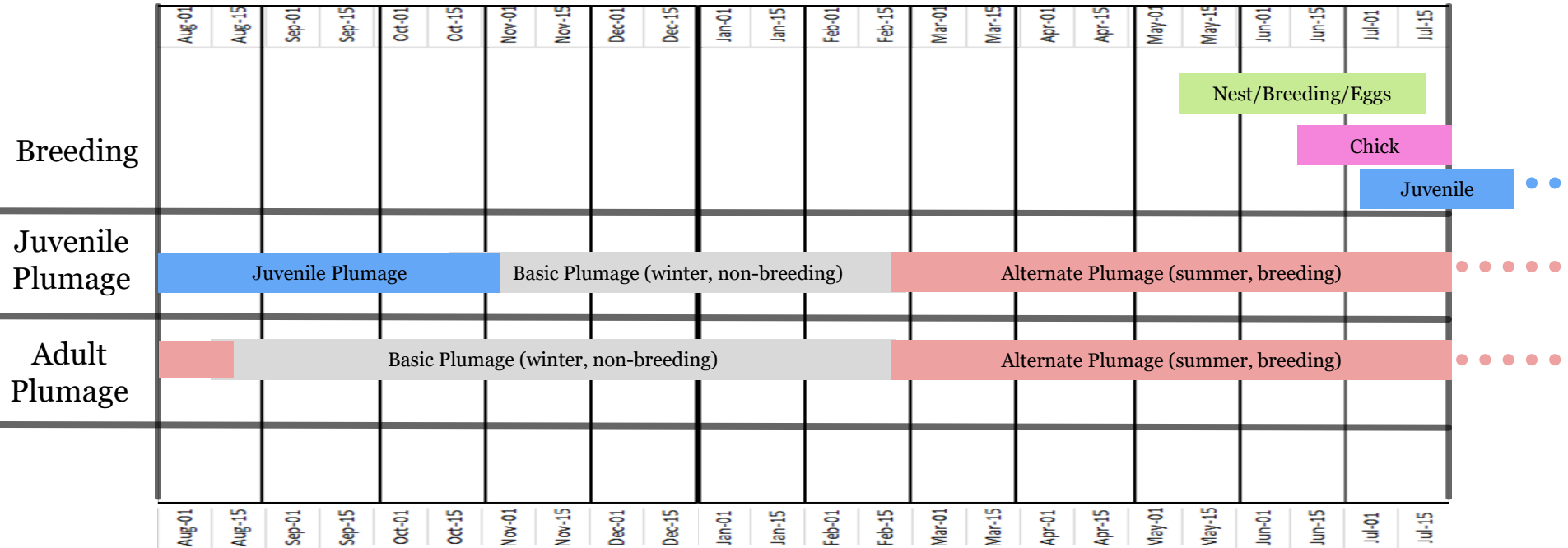
- ▶ Complications

- ▶ Wear & Molt

- ▶ Knowing which plumage can help ID

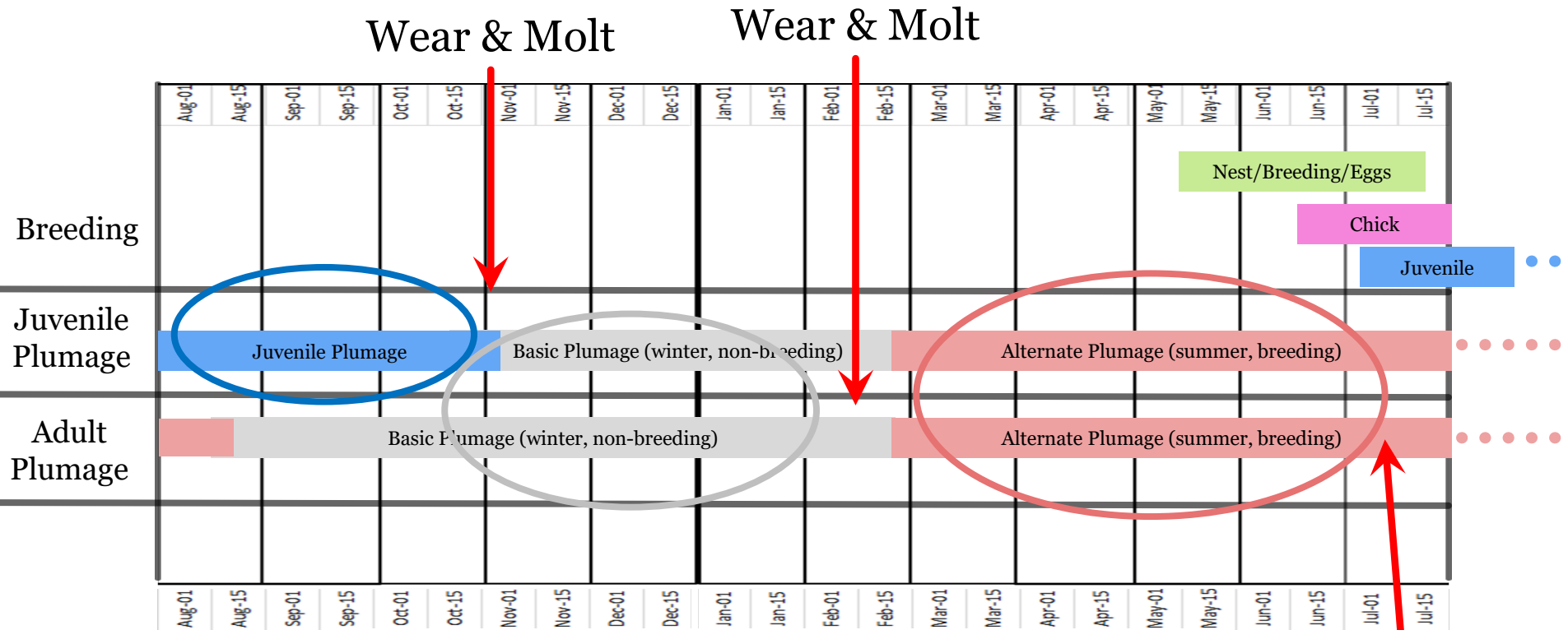
- ▶ Consider time of year !!

# Generic Shorebird Life Cycle (3 plumages)



NOTE: Timing shown is for the species rather than a single individual

# GENERIC SHOREBIRD LIFE CYCLE (3 PLUMAGES)



NOTE: Timing shown is for the species rather than a single individual

Wear & Molt

WHAT DO THESE  
3 PLUMAGES  
LOOK LIKE?

# 3 Plumages

Western  
Sandpiper



Juvenile

Wear & Molt



Basic

Wear & Molt



Alternate

Wear  
& Molt



Least  
Sandpiper



Time

# 3 Plumages

Western  
Sandpiper



Juvenile



Basic



Alternate

Least  
Sandpiper



**BASIC**  
**(WINTER, NON-BREEDING)**

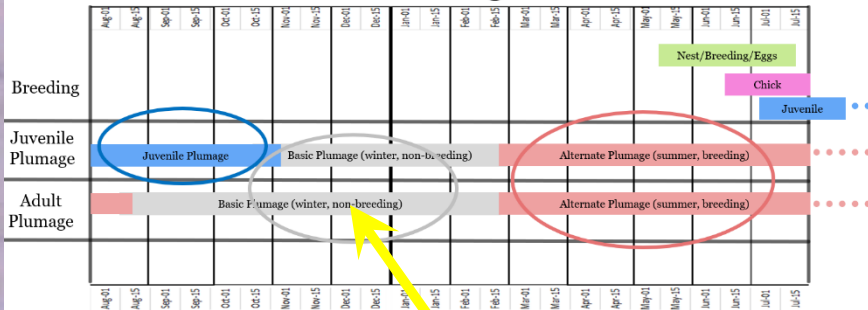
Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec

Adult Basic  
(non-breeding, winter)

# Western Sandpiper



## 3 Plumages



NOTE: Timing shown is for the species rather than a single individual

Photo by Jeffrey E. Patterson

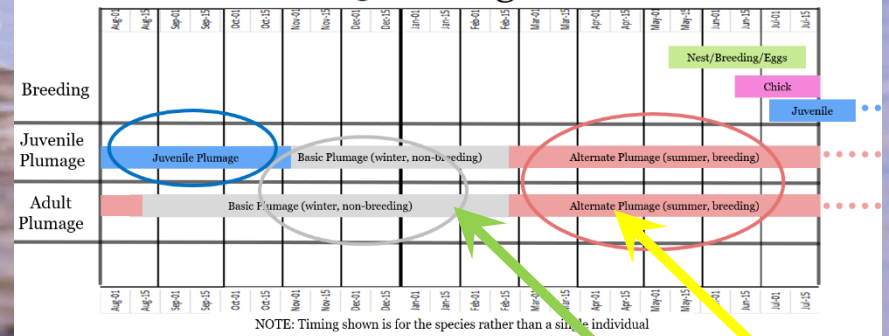
Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec

Adult Basic  
(non-breeding, winter)

# Western Sandpiper



## 3 Plumages



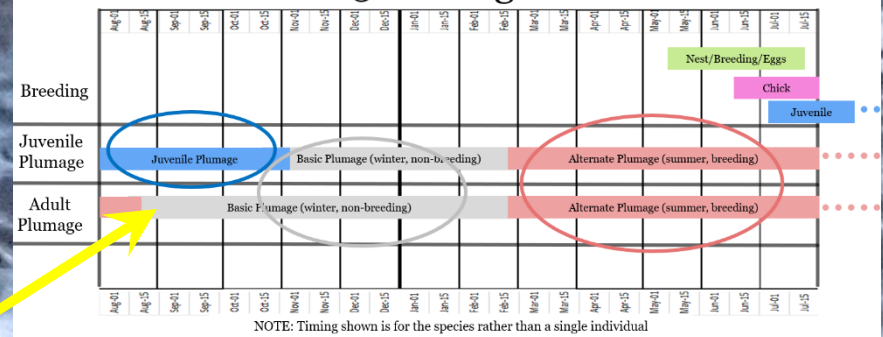
Jan Feb Mar Apr May Jun Jul **Aug** Sep Oct Nov Dec

# Least Sandpiper

Adult  
Basic



## 3 Plumages



ALTERNATE  
(SUMMER, BREEDING)

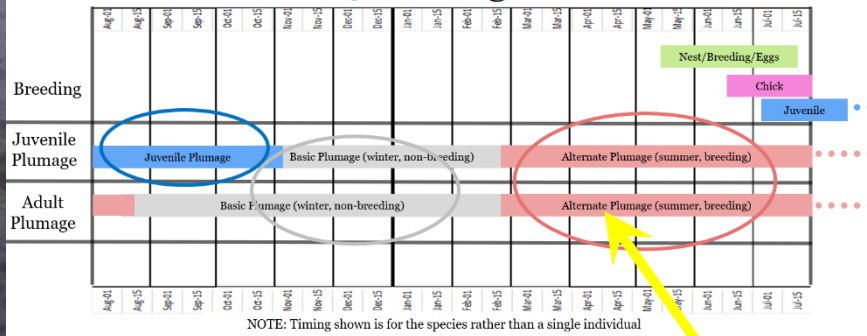
Jan Feb Mar **Apr** May Jun Jul Aug Sep Oct Nov Dec

# Western Sandpiper

Adult Alternate  
(breeding, summer)



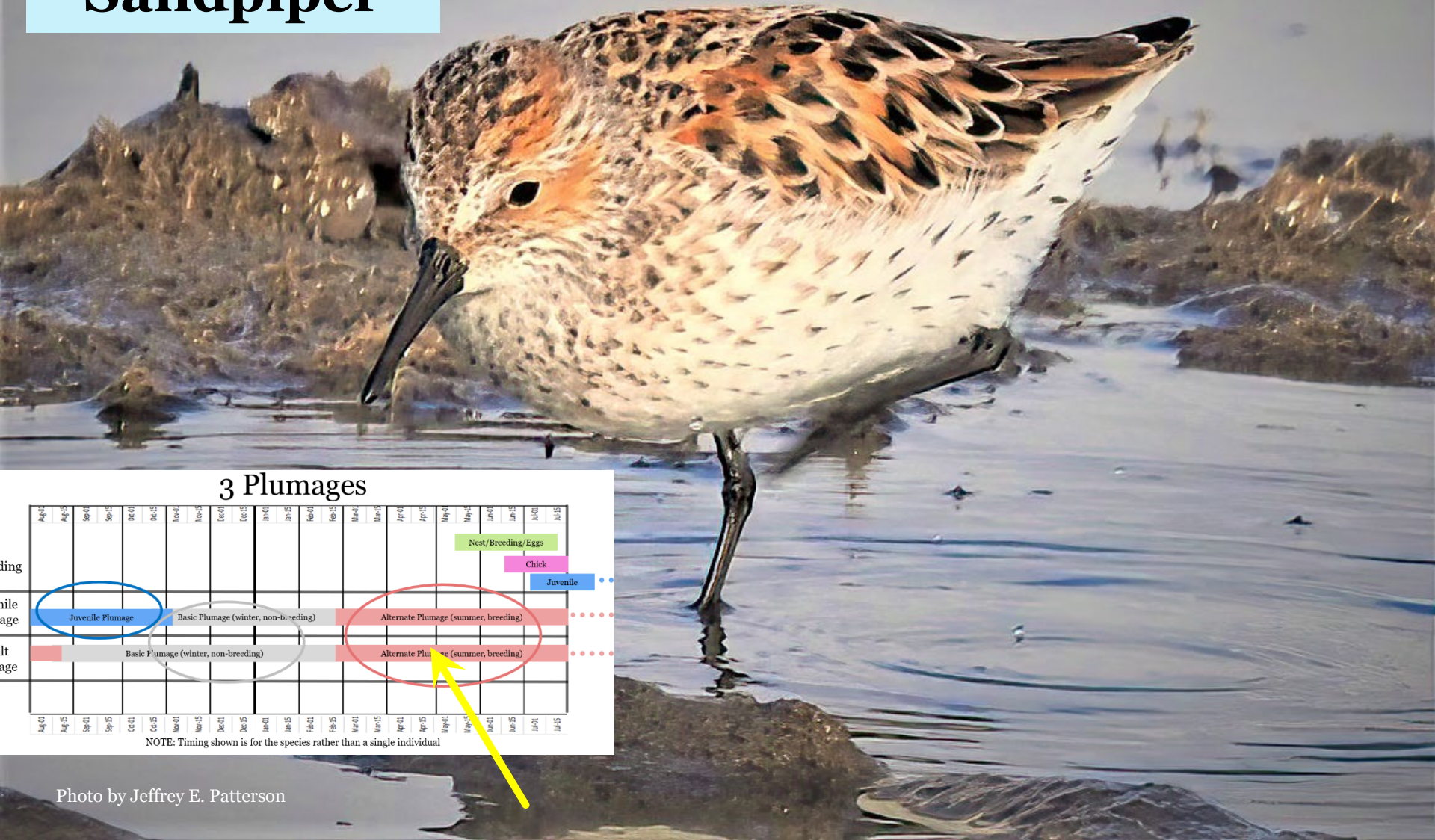
## 3 Plumages



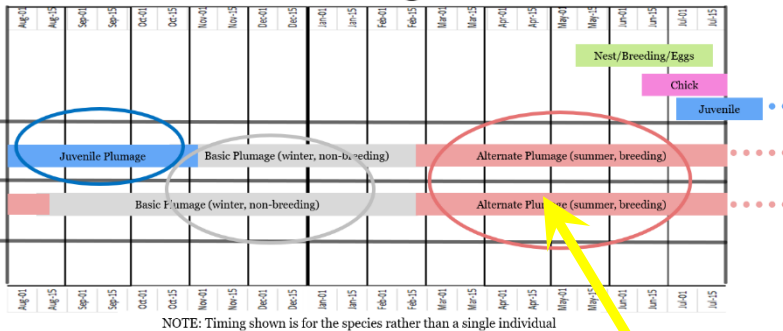
Jan Feb Mar **Apr** May Jun Jul Aug Sep Oct Nov Dec

# Western Sandpiper

Adult Alternate  
(breeding, summer)



## 3 Plumages



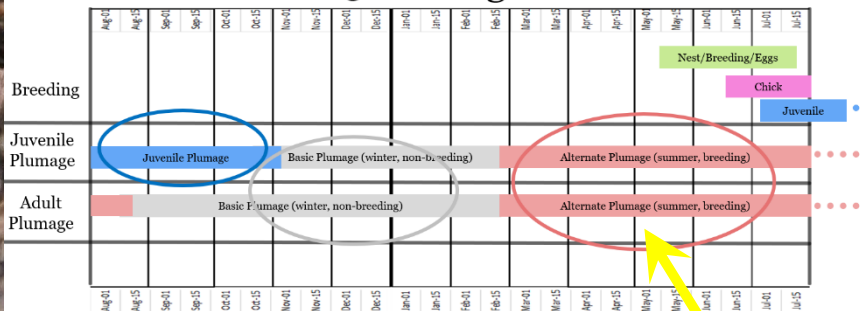
Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec

# Least Sandpiper

Adult  
Alternate



## 3 Plumages



NOTE: Timing shown is for the species rather than a single individual

Photo by Jeffrey E. Patterson

Jan Feb Mar **Apr** May Jun Jul Aug Sep Oct Nov Dec

# White-rumped Sandpiper

Adult  
Alternate

**JUVENILE  
ONLY IN THE FALL  
(JULY~OCTOBER)**

Jan Feb Mar Apr May Jun **Jul** Aug Sep Oct Nov Dec

# Black-necked Stilt

Juvenile

- Back feathers are:
- 1) Uniformly fresh,
  - 2) Relatively small,
  - 3) Of similar size,
  - 4) Crisply pale edged.

“Scaley” look



Jan Feb Mar Apr May Jun Jul **Aug** Sep Oct Nov Dec

# Least Sandpiper

Juvenile

- Back feathers are:
- 1) Uniformly fresh,
  - 2) Relatively small,
  - 3) Of similar size,
  - 4) Crisply pale edged.

“Scaley” look

White marks on scapulars & mantel often form a line



Jan Feb Mar Apr May Jun Jul Aug **Sep** Oct Nov Dec

Juvenile

Crisply pale-fringed  
(scaly look)

Brown

**Pectoral  
Sandpiper**

Jan Feb Mar Apr May Jun Jul **Aug** Sep Oct Nov Dec

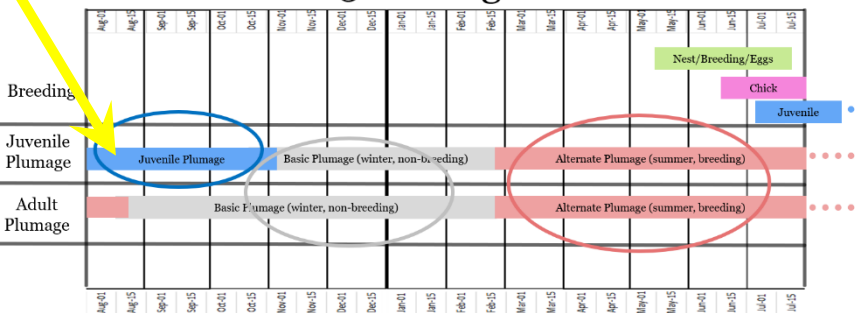
# Western Sandpiper

Juvenile  
(fresh)

Fresh, crisp pale edges,  
relatively small feathers  
of similar size  
“scaly” look



## 3 Plumages



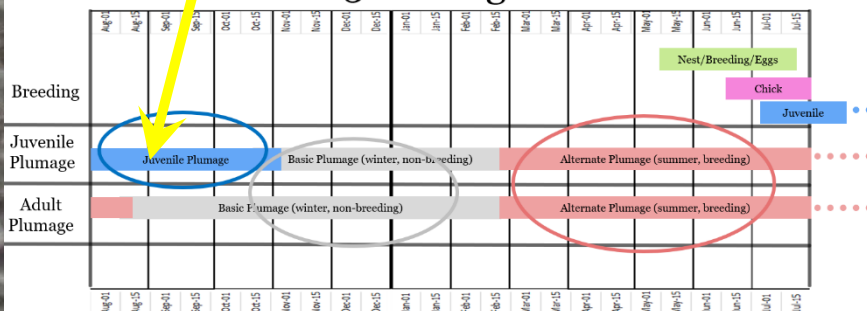
Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec

# Semipalmated Plover

Juvenile



## 3 Plumages



NOTE: Timing shown is for the species rather than a single individual

Photo by Jeffrey E. Patterson

# 3 Plumages

Western  
Sandpiper



Juvenile

Wear & Molt



Basic

Wear & Molt



Alternate

Wear  
& Molt



Least  
Sandpiper



Time

WHAT DO  
WEAR & MOLT  
LOOK LIKE?

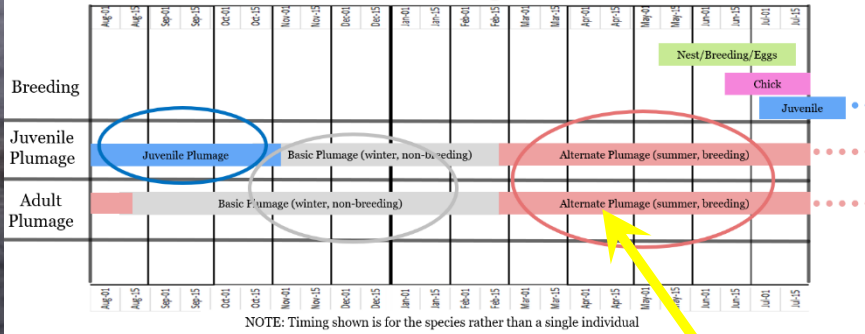
Jan Feb Mar **Apr** May Jun Jul Aug Sep Oct Nov Dec

# Western Sandpiper

Adult Alternate  
(breeding, summer)



## 3 Plumages



Jan Feb Mar Apr May Jun **Jul** Aug Sep Oct Nov Dec



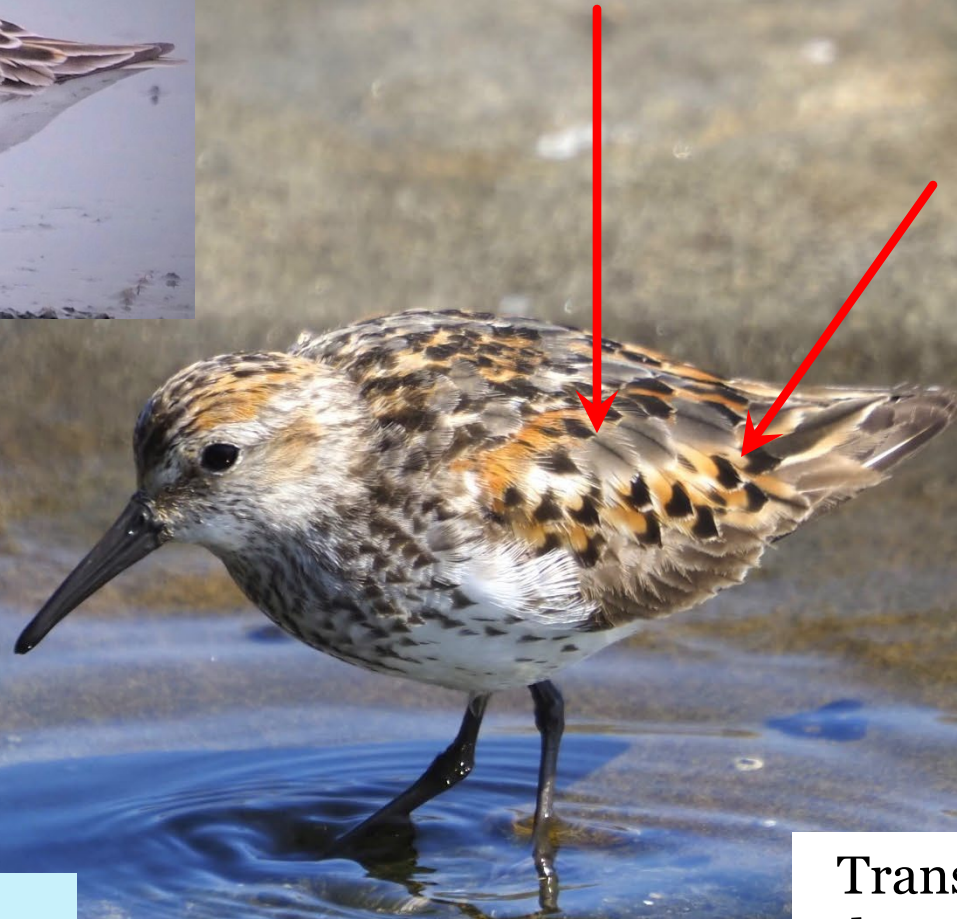
Very Worn  
Alternate

## Western Sandpiper

Colors fade &  
white edges of feathers abrade, making the  
bird much darker

Photo by Tom Edell

Jan Feb Mar Apr May Jun **Jul** Aug Sep Oct Nov Dec



**Western  
Sandpiper**

Transition from  
Alternate to Basic

Jan Feb Mar Apr May Jun Jul **Aug** Sep Oct Nov Dec

Gray feathers  
begin to emerge

## Western Sandpiper

Transition from  
(worn) Alternate to  
Basic

Jan Feb Mar **Apr** May Jun Jul Aug Sep Oct Nov Dec

## Least Sandpiper

More colorful feathers push out the gray (basic) feathers



Transition from  
Basic to Alternate

Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec

1

2

3

# Least Sandpiper



Basic



Very Worn Alternate



Alternate

Photos by Jeffrey E. Patterson

Jan Feb Mar Apr May Jun Jul Aug Sep **Oct** Nov Dec

Transition from  
Juvenile to Basic

**Western  
Sandpiper**

BROWN  
VS  
“FROSTY”

**THE ULTIMATE  
BROWN VS “FROSTY”  
(LEAST SANDPIPER VS SANDERLING)**



Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec

**Which are Brown?**  
**Which are “Frosty” ?**



Photo by Jeffrey E. Patterson

Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec

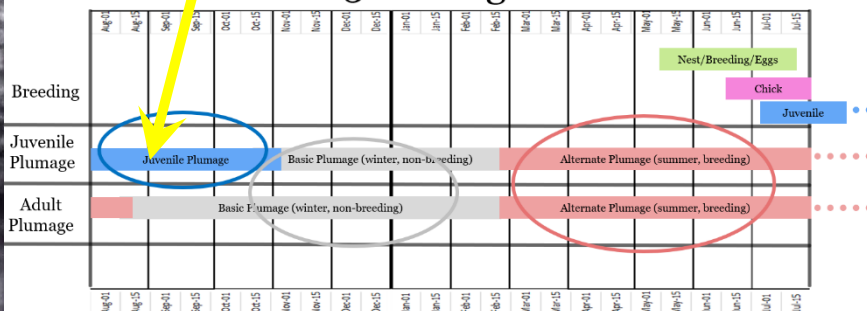
# Semipalmated Sandpiper

Juvenile

“Frosty”



## 3 Plumages



NOTE: Timing shown is for the species rather than a single individual

Photo by Jeffrey E. Patterson

Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec

# Semipalmated Sandpiper

Juvenile

“Frosty”

Brown vs “frosty”  
is  
relative

Brown

## 3 Plumages

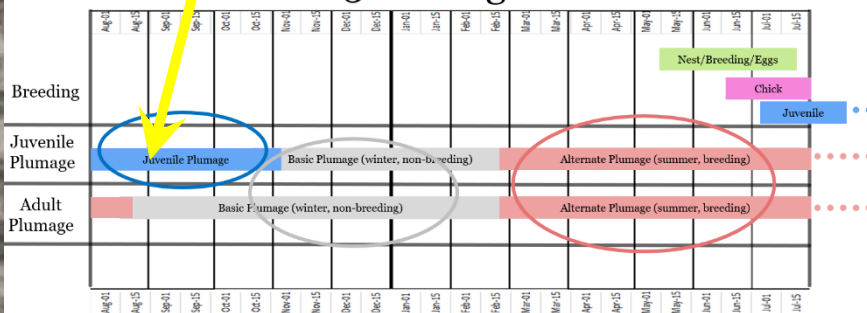


Photo by Jeffrey E. Patterson

Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec

“Frosty”



Brown



3 Plumages

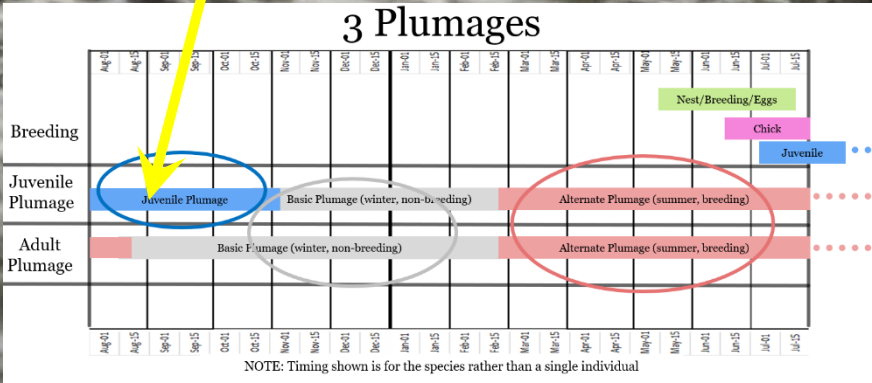


Photo by Jeffrey E. Patterson

# BROWN VS “FROSTY”

“Frosty” probably  
Semipalmated Sandpiper

“Frosty” phalaropes

Most shorebirds at Hornsby  
are brown-hued

WESTERN SANDPIPER  
YEAR IN PLUMAGE

Juvenile

1



Fresh Juvenile

August

No Photo yet

2

September

Juvenile Transition to Basic

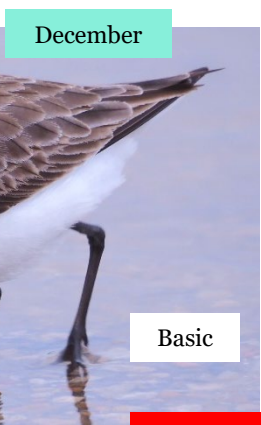
No Photo yet

October

3

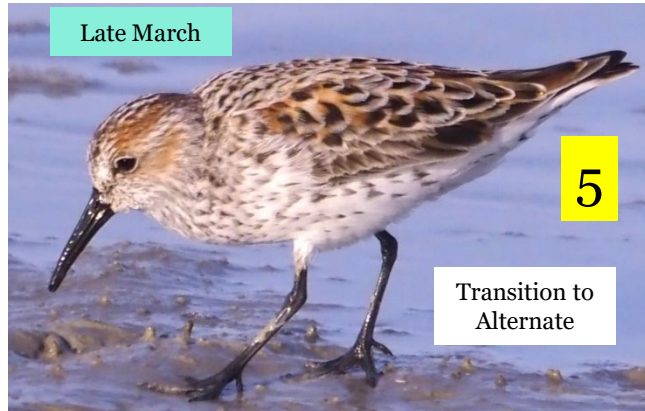
Juvenile Transition to Basic

4



December

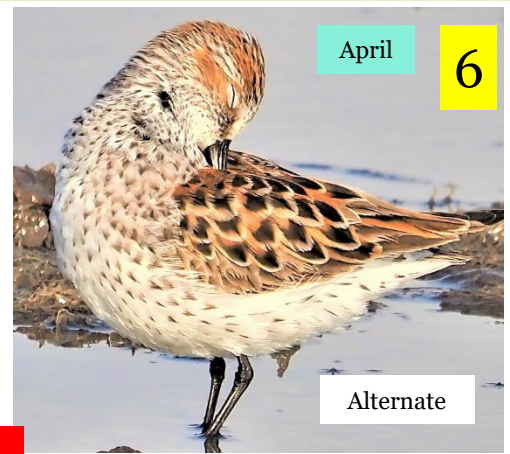
Basic



Late March

5

Transition to Alternate



April

6

Alternate

# A Year of Western Sandpiper Plumage

7



July

Worn Alternate



July

Very Worn Alternate



August

9

Transition to Basic

Juvenile

1

August

Fresh Juvenile

Uniformly fresh plumage with crisply pale edges, relatively small scapulars and coverts – a “scaley” look.

2

September

Juvenile Transition to Basic

A few replaced scapulars look larger & plain gray

3

October

Juvenile Transition to Basic

Juveniles only molt most head & body feathers & some wing coverts during their first Pre-basic molt.  
A few replaced scapulars look larger & plain gray.

4

December

Basic

For Adults all feathers will be molted in the Pre-basic molt. Non-breeding plumage shows no contrast between coverts and scapulars

5

Late March

Transition to Alternate

Birds in transition may show any combination of old, worn feathers from one plumage & new, fresh feathers from the next.

6

April

Alternate

Only body & head feathers will be molted in the Pre-alternate molt, (primaries, secondaries, tertials, & wing coverts are not molted, generally).  
Some have very bright scapulars & head, & have chevrons on chest & flanks

Adult

## Comments on A Year of Western Sandpiper Plumage

7

June

Worn Alternate

By summer feather wear is apparent

8

July

Very Worn Alternate

Colors fade & white edges of feathers abrade, making the bird much darker

9

August

Transition to Basic

By fall-migration gray scapular & covert feathers of basic plumage begin to emerge