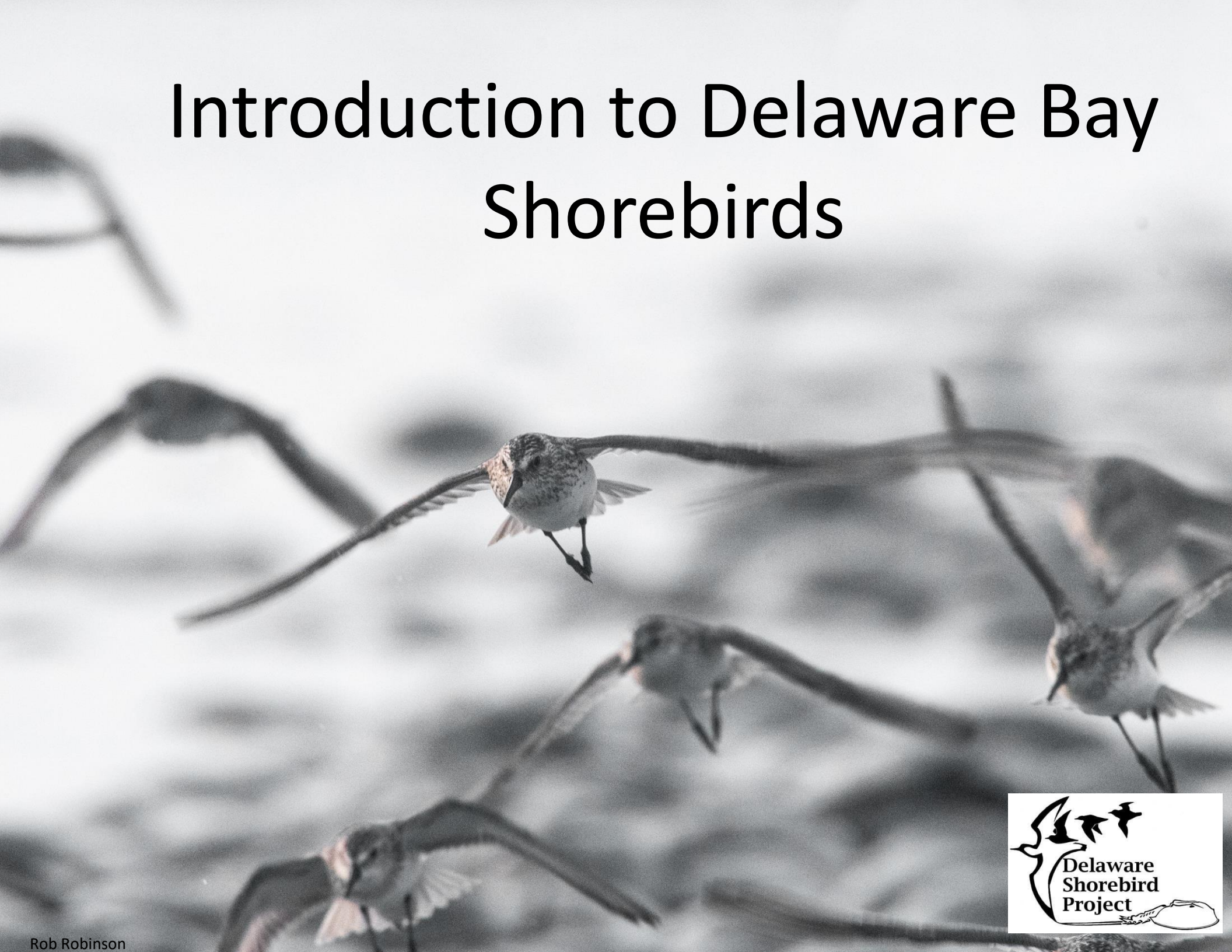


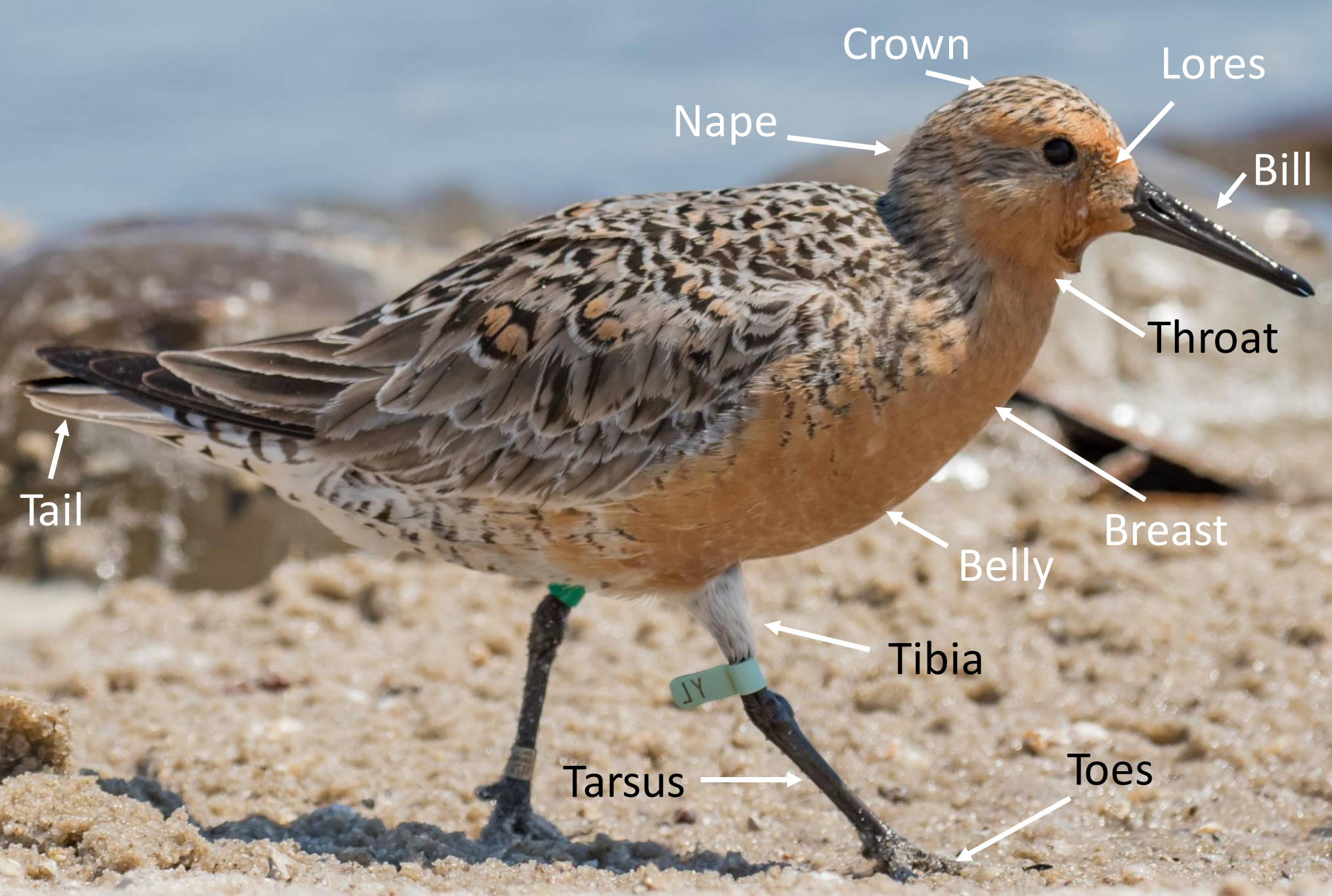
# Introduction to Delaware Bay Shorebirds



## Order Charadriiformes

- There are 19 families and 383 species under the order Charadriiform.
- Many birds in Charadriiform live near water or are pelagic.
- Shorebird, or wader, is a term for birds in the order Charadriiforme that live, feed, and breed on shorelines of oceans, bays, rivers, and/or lakes.

# Bird Topography



Crown

Lores

Nape

Bill

Throat

Tail

Breast

Belly

Tibia

Tarsus

Toes

# Plumage *a bird's feathers collectively*

Juvenal Plumage—July to November

Basic Plumage (winter)—September to April

Alternate Plumage (summer)—April to August

Photo examples: (1) Red Knot juvenal plumage, (2) red knot basic plumage, (3) red knot alternate plumage

# Molt *the process of growing new feathers that (usually) push out and replace old ones*

- Shorebirds molt twice each year
- Pre-basic molt occurs from late summer to early fall
- Pre-alternate molt occurs from late winter to early spring
- Incomplete molt – only body and head feathers replaced
- Complete molt – all feathers are replaced .

Eveling Fernandez



Mark Peck



Hannah Tripp



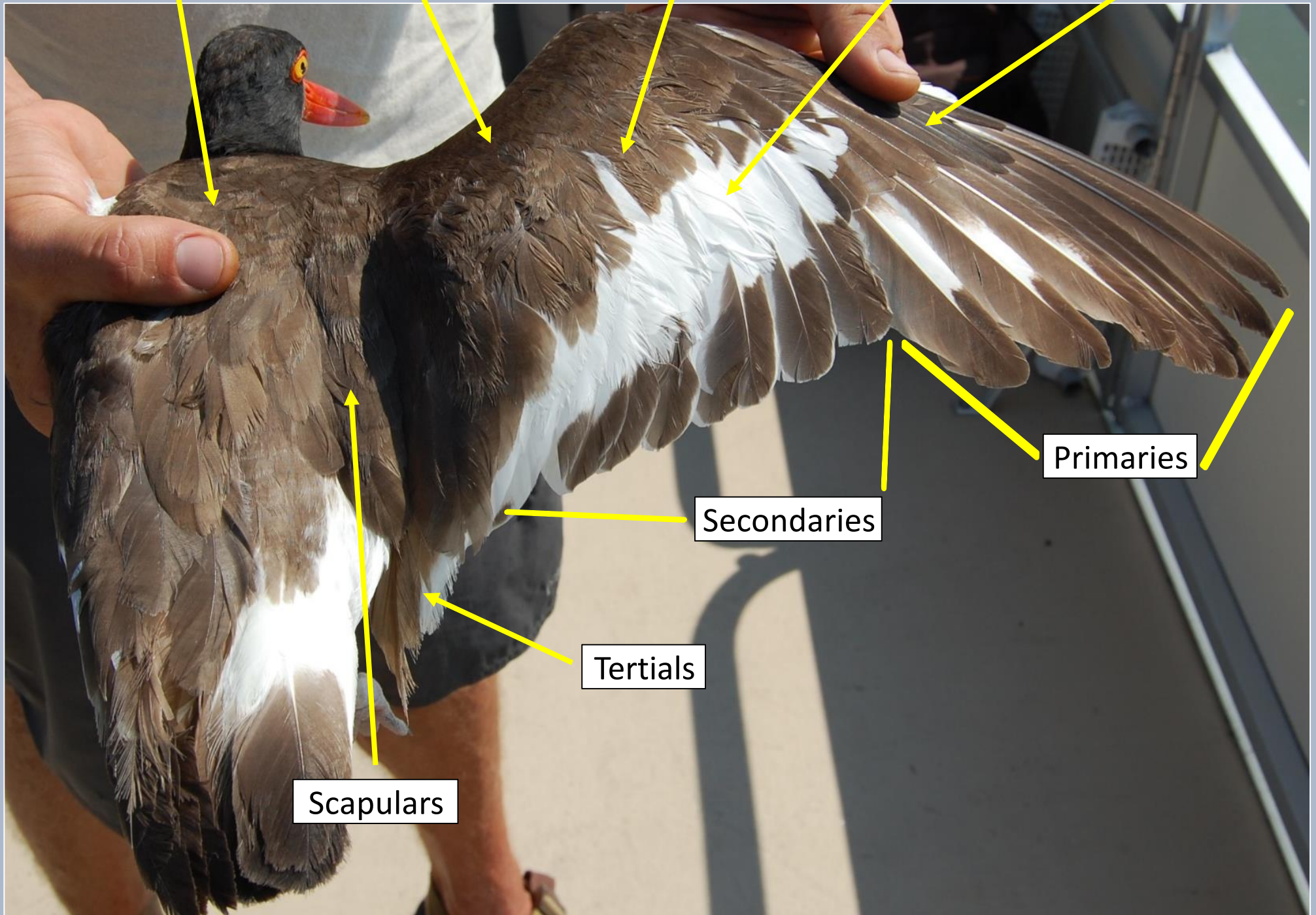
Mantle

Lesser Coverts

Median Coverts

Greater Coverts

Primary Coverts



Primaries

Secondaries

Tertiaries

Scapulars

# Delaware Shorebirds

Andre Duiven



American  
oystercatcher



Black-necked  
stilt

Rob Robinson



Short-billed  
dowitcher

Ruth Walker

# Piping plover



# Semipalmated plover



# Black-bellied plover



# Killdeer



## Semipalmated sandpiper



## Ruddy Turnstone



## Red knot



## Sanderling





Rob  
Robinson



Laughing  
Gull

Hannah  
Tripp



Herring Gull



Ring-billed Gull

Chris  
Bennet

Great Black-  
Backed Gull



Chris  
Bennet

Rob  
Robinson



Forster's  
Tern



Least Tern

Kevin  
Kalasz

Andre  
Duvien



Royal Tern



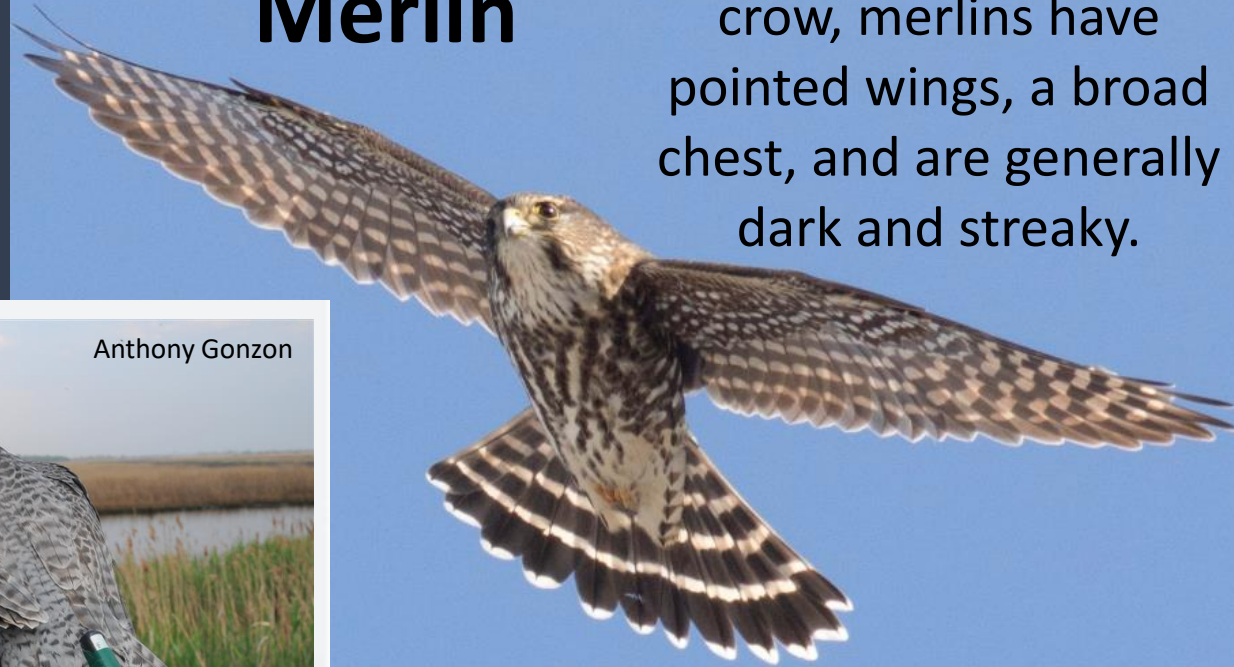
Black Skimmer

Kevin  
Kalasz

While not shorebirds, these raptors may be sighted during surveys and should be noted as a disturbance.

## Merlin

Slightly smaller than a crow, merlins have pointed wings, a broad chest, and are generally dark and streaky.



David Brown- McCaulay Library

Anthony Gonzon



Anthony Gonzon

## Peregrine Falcon



Peregrines are crow sized raptors with blue-grey backs, long pointed wings, and a long tail. They are barred underneath and have dark heads with thick sideburns.