Florida Resighting Guidance for Banded Birds

2021

Florida Shorebird Alliance

Florida Fish & Wildlife Conservation Commission

Photo by Ezra Thompson

Bird leg banding is an important method used in avian research to track the movement and survival of individual birds. Each resight (i.e. observation of a banded bird) provides researchers with a time and location for that specific bird. These sightings allow scientists to better understand movement patterns related to migration, nesting, wintering, foraging, etc. and is a driver for conservation for imperiled species. This document provides basic guidance for how to resight and record banded birds.

General Guidance

When resighting bands it is recommended to work in pairs (at a minimum), where one person is delegated to read the band combinations and codes (if field readable codes are present) and the second person records data. It is important that the entire code or color band combination is recorded and band position on the legs are noted. When possible, every combination and code should be read twice, either by the same observer or a second observer, in order to ensure accuracy; colors can be misread due to lighting, faded color bands or grime on the band. Photos are highly encouraged, particularly if this is the first encounter of a uniquely banded individual, the colors are questionable, or anything seems unusual or of concern (e.g., injury, entanglement).

Bands will be located on any of four locations on the legs of shorebirds and seabirds: upper left, lower left, upper right, and lower right. Different types and colors of bands and other markers combine to make each bird's band combination unique. The location of the band, color, code, type of band, and the position of each band at each location on the leg are all important to accurately identify the identity of the bird.

Many banded birds will have a single band or flag on a section of their leg with a metal United States Geological Survey (USGS) band on a different leg or leg position. However, it is not unusual to encounter a bird that does not have a USGS band; sometimes a bird may never have been fit with one, colored UV tape may be placed over the metal band, or in rare instances, the band may have fallen off (due to age or band size).

Shorebirds may have a combination of metal bands, coded flags, and color bands depending on the banding scheme adopted by researchers. Even within the same species, banding schemes vary and individuals may have 1 to 6 markers on their legs.

Band Resighting: Bands and flags that may be encountered in the field

Unique Codes on Bands or Flags

There are a wide variety of shorebird species that have coded bands or flags that are used as a unique identifier. For example, American oystercatchers, black skimmers, piping plover, red knots, sanderlings, semipalmated sandpipers, and Wilson's plovers are commonly banded with a colored flag or band displaying a unique combination of printed numbers, letters and characters (e.g., +, =, @, %); there are typically 2 or 3 per flag or band. The alpha-numeric code is unique and identifies individual shorebirds. The color of the coded band/flag is just as important as the codes and must be recorded. The coded flag or band is typically located on the upper portion of a shorebird's leg and a metal USGS band is often placed on the opposite leg either on the upper portion of the leg or lower portion (i.e., just above the foot).

Band Code Orientation		
Horizontal	CX	15
Vertical	0 8	E2
Triangle	C EU	Recorded as: CEU

Band Orientation

The code should be recorded as the string of alphanumeric or symbol characters. The orientation of the code is critical in determining the banded individual's unique identity. If you encounter a triangular orientation, the characters should be read counter-clockwise starting from the top (e.g., on page 7). If the code was recorded in a vertical position, rotate the characters 90° to read the code horizontally. Vertical codes are the most challenging in terms of recording the correct orientation. Vertical bands can be presented in a stacked or rotated position. However, both are considered to be a vertical orientation. For some species, all of the orientation options are used. For example, for American oystercatcher, you may encounter a black band with white text and the code 'P3'. If the code is recorded in a vertical position, the individual was banded in 2011 as a chick in Virginia and if the code

Vertical Band Orientation examples

is recorded in a horizontal position, the individual was banded in 2010 as a chick in Virginia.

Coded Band/Flag Color

There is an array of possible colors for bands and flags (indicated by an "F" after the color code) with unique character codes and color abbreviation. Generally, each color flag can be tracked back to either country of origin or breeding population region (e.g., for species like piping plover that do not breed outside of the U.S. and Canada). Flags color presented here can also occur without codes. For piping plover flag color origin see here, for other shorebird species flag color origins, see here.

Colored Flags (shorthand)	Example
Light Green/Lime (gF)	
Green (GF)	
Black (KF)	
White (WF)	
Gray (AF)	
Yellow (YF)	
Orange (OF)	
Red (RF)	
Pink (PF)	
Blue (BF)	
Light Blue (bF)	

Band Resighting: Bands and flags that may be encountered in the field, cont.

Solid Color Bands

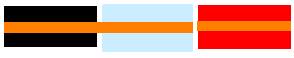
Color bands can be tricky as lighting conditions can change the color shade; blue, green, and red can all appear black when lighting is poor or bands are in the shade. Additionally, several colors are hard to distinguish, even in the best lighting because of the close color shades (e.g., magenta-pink-red or purple-blue). If you are uncertain about colors, take photos and get a second opinion. You can reach out to shorebird banders, contact Shorebird@myFWC.com, contact your Regional Shorebird Biologist, or post on Florida Banded Bird Resightings Facebook page. If you are in anyway uncertain, it is recommended to follow the steps described in this document to ensure an accurate band read. If the band was read incorrectly, be sure to update your records. Lastly, be cautious when recording gray (A) colored bands, these may be metal USGS bands and vice versa.

Split Bands (PIPL, SNPL, WIPL only)

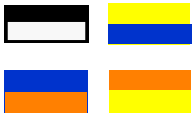
Split bands (or bi-colored) and triple-split bands are often used as a brood-marker or as a chick combo. These types of markers allow researchers to apply unique band combinations while minimizing the number of bands placed on chicks. You may encounter juveniles and adults with these type of markers depending on the banding project. Adults encountered were banded as chicks, but were not recaptured once they became breeders and thus don't have an adult band combination. These type of bands can be in the form of a fused band or UV resistant colored-tape. The colored tape may be placed over a colored band (e.g, a thin light blue tape added to an orange band to create a triple split band, e.g., Light Blue/ Orange/Light Blue: b/O/b) or multiple colors of tape may be soldered to a metal band (e.g., Black/White split band K/W) (see examples below). Currently, the Great Lakes piping plovers are the only region using triple split bands and all should have an orange middle stripe (more info here).

Colored Bands (shorthand)	Example	Colored Bands (shorthand)	Example
Light Green/Lime (g)		Red (R)	
Green (G)		Pink (P)	
Black (K)		Magenta/Mauve (M)	
White (W)		Purple (U)	
Gray (A)		Blue (B)	
Yellow (Y)		Light Blue (b)	
Orange (O)		Metal/ USGS Bands (S)	

Triple Split Examples



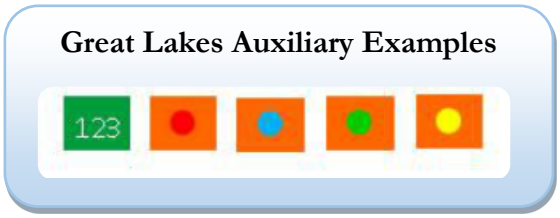
Split Band Examples



Band Resighting: Bands and flags that may be encountered in the field, cont.

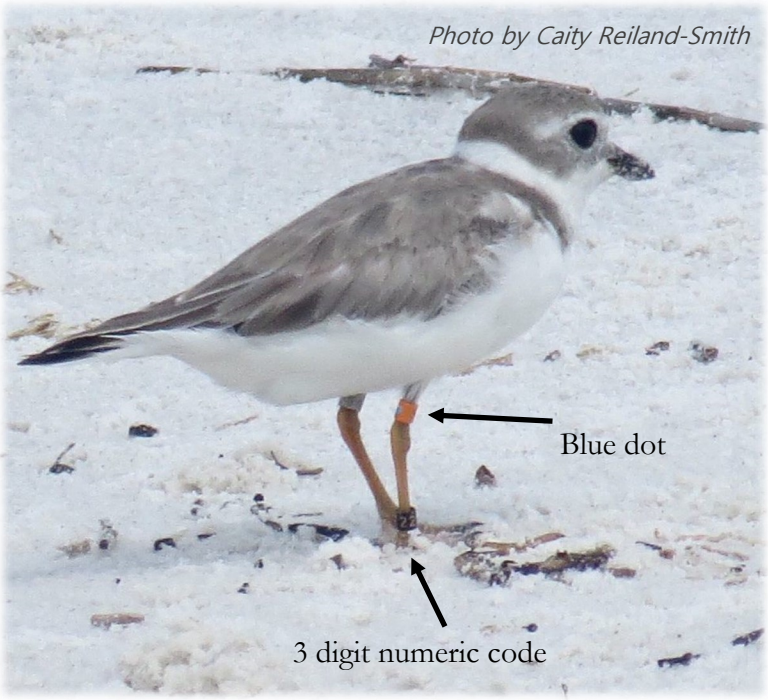
Great Lakes Piping Plover Auxiliary Marking

Great Lakes piping plover researchers are using additional markers on colored bands to enable tracking of broods and chicks while reducing the number of needed markers. These individuals may have triple-split bands or split bands, but may also have colored dots and engraved color bands. Each chick in the brood receives the same band combination, but will receive a unique colored dot and engraved band. The latter are not as visible (in the field) as the Coded Bands and Flags discussed above. All banded piping plovers with brood combinations (i.e., without orange flags) will have a colored dot. The dots may be one of four colors (one color for each chick in the brood): red, blue, green and yellow (see below). The engraved bands can be on any colored band on the lower leg and contain 3 numeric digits. Taking photos may be necessary to record or obtain this specific marking information.



Combinations of Colored Bands and Flags

Most species are marked with some combination of flag, metal band, and color bands. When you see an individual that has a combination of marker types, it is recommended that you record all markers observed. For some species and associated banding schemes, individuals can be identified by the either the band code or the color band combination. For example, many USGS banded piping plover (yellow flag with alpha-numeric codes) receive both a unique coded flag and band combination. The combination of markers helps increase detection (i.e., an accurate band read) for uniquely marked individuals. For example, depending on the lighting, you may not be able to determine the colors used, but can read the flag code. Conversely, the flag angle has to be just right to read clearly. You may be able to confirm color bands and are unable to confirm the flag before the individual flies off. In this scenario, the individual can be determined given either type of information. For other species, such as snowy plover banded in Florida, individuals may have the same color combination, but the placement of the metal band on the upper leg signifies the unique identify. ***It is safer to assume, that all markers on an encountered shorebird or seabird are necessary for identification and record all markers observed.*** Taking photos of observed birds, particularly on first encounters, may be necessary to confirm bands in all leg positions, particularly bands placed on the upper legs that may be hidden by feathers.



Band Resighting Basics

Bands can be placed on any of four locations on the legs of shorebirds and seabirds: upper left, lower left, upper right, and lower right.

When determining band position, note the location on the ***bird's left and right, not yours***; regardless of how the bird is facing you (see examples below). If you were unable to view one of the four positions on the birds' legs, do not assume there was no band. Birds may stand on one leg, stand in water, or fluff their belly feathers, all of which can hide bands.

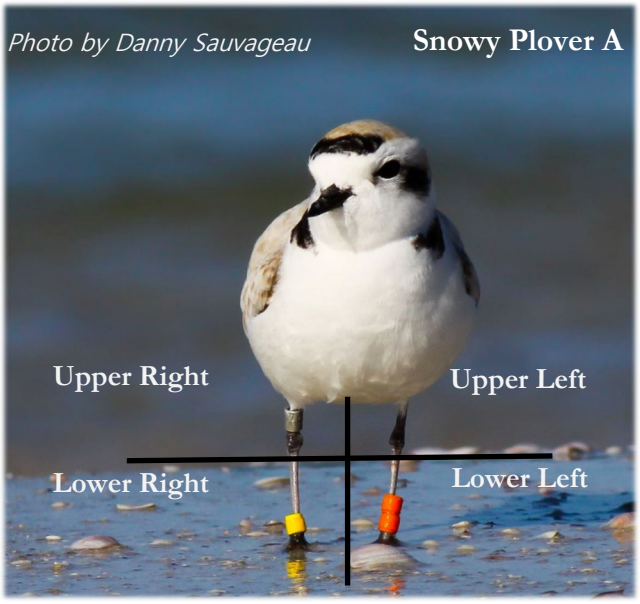
If two bands are on the same section of the leg write top color over bottom color, for example Red over White would be recorded as RW. If the band is a split band, write the color codes with a backslash (/). For example, a triple-split band (Black/Orange/Black) over Red in one leg position should be recorded as K/O/KR. It is also important to relay to banders when no bands were observed on any of the four leg locations. An X should be used to indicate no bands were observed. It may seem like a new language to record band colors. However, here we provide you with directions on how to read bands and how to record band using a standardized shorthand. See page 8 for a list of bands shorthand and notes.

From examples below:

Snowy Plover A: Upper Left: **X**, Lower Left: **OO***, Upper Right: **S**, Lower Right: **Y**

Snowy Plover B: Upper OK, Lower Left: **X**, Upper Right: **bK**, Lower Right: **X**

Example	Species	Upper Left	Lower Left	Upper Right	Lower Right	Flag/ band Code	Flag/ Band color	Orientation	Dot Color
SNPL A	SNPL	X	OO	S	Y	-	-	-	-
SNPL B	SNPL	OK	X	bK	X	-	-	-	-



**When printed, the Orange bands may appear Red*

See the next page on how to record band observations that include codes, flags, colored dots, and more details specific to piping plover.

Band Resighting Basics - Closer look at Piping Plover

Example	Species	Upper Left	Lower Left	Upper Right	Lower Right	Flag/ Band Code	Flag/ Band Color	Orienta-tion	Dot Color
PIPL A	PIPL	O	X	S	Y	165	Y	Horizontal	B
PIPL B	PIPL	OF	YY	S	G	-	O	-	-
PIPL C	PIPL	GF	X	B	X	PEV	G	Horizontal	-

Piping Plover Example A required viewing bands from various angles to obtain the blue dot on the orange band and the engraved code '165' on the yellow color band. Note: the dot may look black in the photo due to lighting but we know researchers in the Great Lakes only use 4 colors (blue, red, green, and yellow) and have confirmed that the dot is blue. The good news is that only bright colors are now used by GL researchers.

Band Resighting Basics- Other species you may encounter

All of the banded species you may encounter in Florida coastal areas are banded following different marking schemes. It is important to not get overwhelmed by the variety of bands, flags and other types of markers you may encounter in the field, but to remember to record what you see on each leg position, including when there are no bands on a leg position (X). The examples below comprise different species, code orientations, band colors, and marker types. Despite the diversity in bands, each of these individuals can be linked back to specific research projects as a unique individual.

Example	Species	Upper Left	Lower Left	Upper Right	Lower Right	Flag/ Band Code	Flag/ Band Color	Orienta-tion	Dot Color
A	REKN	gF	X	X	S	8C5	g	Horizontal	-
B	AMOY	R	X	R	S	X34	R	Triangle	
C	BLSK	X	G	X	X	B79	G	Vertical	-

Band Resighting Basics- Band color codes

It is important to note that there are many ways to record observed band combinations and researchers throughout the globe may use different short-hand characters to demarcate observed markers.

Colors	Shorthand Code	Notes
Black	**K**	Some banders record black bands as L. Use K in association with this guidance.
Black Flag	**KF**	See notes for K
Blue	**B**	Some banders record blue bands as C or cobalt. Use B in association with this guidance. You may encounter various shades of blue, and it may fade to periwinkle.
Blue Flag	**BF**	See notes for B
Gray	**A**	Gray may be confused with metal bands, look at texture and shininess.
Gray Flag	**AF**	
Green	**G**	
Green Flag	**GF**	
Light Green/Lime/ Mint	**g**	You may encounter various shades of light green and some banders record light green bands in different ways. You may see bands recorded as M, L or Lg. Use g in association with this guidance for all observed light green bands
Light Green Flag	**gF**	See notes for g
Light Blue	**b**	You may see bands recorded as Lb. Use b in association with this guidance for all observed light blue bands. When entering data, check autocorrect for lowercase.
Light Blue Flag	**bF**	See notes for b
Orange	**O**	
Orange Flag	**OF**	
Pink	**P**	Bands may fade overtime. Various shades of pink possible.
Pink Flag	**PF**	See notes for P
Purple	**U**	Some banders record purple bands as V or Violet. Use U in association with this guidance. These bands can be challenging to determine color, take photos when observed.
Red	**R**	Red bands may be prone to fading and may appear in various shades. This is particularly true of color spiral bands
Red Flag	**RF**	
Magenta/Mauve	**M**	These bands can be challenging to determine color, take photos when observed.
USGS/Service/Metal	**S**	Banders record metal bands in different ways, you may see bands recorded as M or X. In Florida, S is used for the metal bands.
White	**W**	What bands can appear dirty or grimy over time.
White Flag	**WF**	
Yellow	**Y**	Yellow bands may fade. Various shades of yellow, from marigold to pale lemon.
Yellow Flag	**YF**	
Geo Locator	**Geo**	Geolocators are most commonly observed on Red Knots (may include other species), record the color of the Geolocator in the comments
No band	**X**	Some banders record metal bands as X; in Florida, S should be used for metal band and X for no band.

Band Resighting Reporting Resources

Banded bird sighting reports are vital to the conservation and long-term survival of many of our imperiled bird species. For this reason, it is critical to provide this data to the research projects that banded the birds.

For details on were to report banded birds, see the Florida Shorebird Alliance (FSA) Banded Bird page. The page will be updated regularly and provides details on banding contacts.

If you are unsure where to report a banded bird, email Shorebird@MyFWC.com or visit the Florida Banded Bird Resightings Facebook page the for more information. *The Facebook page is not a reporting site, but members can help direct you to where and how to report.*