

# Sharing the Shoreline

## 2024 John Martin Reservoir Piping Plover and Interior Least Tern Newsletter



**US Army Corps  
of Engineers**

Prepared by Holly Garnett  
Natural Resources Specialist  
John Martin Reservoir

## The Year in Review

The 2023 nesting season was a challenging season for John Martin Reservoir's plovers and terns, which faced predation by other animals, hail storms, flooding, loss of habitat, and fires on adjacent lands all within a few short months. Although the majority of nesting attempts were unsuccessful, the U.S. Army Corps of Engineers (USACE) collaborated with Colorado Parks and Wildlife (CPW) and the U.S. Geological Survey (USGS) to monitor and protect the birds.

Continue reading for highlights from the past season, updates on new methods to protect these birds adopted this year, and plans for how to improve protection for the 2024 season!

## 2023 Nesting Season

The 2023 season overall saw a decline both in returning adult populations (13 plovers, 2 terns) and overall nest attempts (8 confirmed, 1 suspected) over previous years. Of these, one plover nest was able to persevere through the extreme weather conditions, resulting in a fully fledged chick that provides new hope for the coming years. This season also saw one adult mortality caused by predation.

Thirteen banded plovers returned to John Martin in 2023. Of these, six hatched at John Martin (F37, F47, E11, E12, E14, E42) and an additional four were banded in previous years on the shoreline! (F56, F57, F82, E09). The remaining two (F70, F72) came to us all the way from Carlton Sandpit and Blue Lake, both also in Colorado, in 2019! These two were also our oldest birds at 6 years old this season, and F70 has notably had incredible success in their time at John Martin. Since 2019, F70 has had 5 of its 7 nesting attempts successful, raised between 9 and 12 chicks in total, was one of only 3 successful nests in 2022, and is suspected to be a parent of 2023's only successful nesting attempt!



*F70 foraging along the shoreline.*



*Ranger Garnett floats an egg of a newly discovered nest.*



*Ranger Schuller uses a spotting scope to identify birds from a distance.*

## 2023 Challenges

### Nest Summary:

Total plover nests: 6

- Successful: 1
- Failed: 5
  - 4 due to flooding
  - 1 hail damage
  - 1 abandonment due to parent predation.
  - 1 unknown (eggs missing)

Total tern nests: 1 confirmed, 1 suspected

- Successful: 0
- Failed: 2
  - 2 due to flooding/heavy rains.

### Flooding In Summary

A larger than predicted snow melt in the mountains coupled with heavy rains resulted in unprecedented water levels throughout the months of June and July. Reservoir storage levels increased from 29,764 acre feet of water on June 12th to 103,481 acre feet of water on July 23rd! This resulted in over 18 feet in vertical elevation gain in just over a month!

As monitoring staff worked to safely relocate nests upland, habitat quickly began to shrink from both sides. Rising waters shrank the shoreline, submerged islands, and eliminated bays from the reservoir side, while heavy rains brought late-growing vegetation that shrunk habitat from the upland side. This resulted in a narrow strip of remaining habitat by early-July, likely contributing to the plovers' and terns' early departure for the year by the end of July.

### Summer Hails

In past years, summer hail storms have been a reoccurring problem for these birds, who have in the past seen both adult and egg mortalities due to it. Hail within the eastern plains can range from small pea-size to large baseball-size, and often occurs suddenly and in isolated locations. This year saw a single nest lost due to hail, down from last year's numbers due to the new nest cage techniques tested this year.

### Want To Help?

Keep reading below about 2023 accomplishments and the way forward to learn how you can help these birds in the 2024 season!



U.S. Army Corps of Engineers

*A plover nest sits on a rapidly shrinking island off the shore.*



U.S. Army Corps of Engineers

*Ranger Garnett inspects hail damage to a plover egg.*



U.S. Army Corps of Engineers

*Ranger Garnett holds hail from one of many summer hail storms.*

## 2023 Accomplishments

Despite low visibility, bitterly cold winds, and quickly accumulating snow, USACE, CPW, and volunteers kicked off the 2023 season with habitat prep (**Fig. 1**) and the creation of 10 additional nest cages (**Fig. 3**). Built to be collapsible for easier transport, these new cages tested out two different sized wire tops in hopes of better hail protection. These new cages were a success, with the finer mesh topped cages providing the best protection from hail without an increased rate in nest abandonment.

Plover monitors were also able to successfully test out nest relocation methods as the water levels rapidly rose (**Fig. 2**). Staff were able to relocate two nests a total of 8 times without abandonment of either nest. While these nests ultimately failed due to water level rising faster than relocation allowed and a loss of remaining habitat, the methods for relocation were proven to be successful and will be used in future years.



**Figure 1.** USACE & CPW staff brave the snow to prepare habitat.



**Figure 2.** USACE Rangers successfully relocate a nest at risk of flooding.



**Figure 3.** CPW Intern J. Fender sets up a new, collapsible nest cage.

## Hidden In "Plains" Sight

Shorebirds and their eggs are not only notoriously difficult to find, but also very wary of humans. Bird monitors will use binoculars, spotting scopes, and even small camouflaged cameras in order to get photos of and identify these birds. Because visitors can accidentally step on hidden eggs and chicks, USACE and CPW close nesting areas with T-posts, signs, and brightly colored twine to allow these birds a safe place to raise their young!

Want a peek through the spotting scope? Test out your skill with the activity below.

<p><b>A. How many terns are in this photo?</b></p> 	<p><b>B. How many plovers are in this photo?</b></p> 
<p><b>C. How many eggs are in this photo?</b></p> 	

A: 2 Terns B: 2 Plovers C: 4 Eggs

# John Martin Reservoir Hall of Fame

John Martin Reservoir is home to some awesome birds, and monitoring staff get to know them all! Below are some records and achievements from the 2023 season. Alphanumeric codes refer to individual birds.

## Eager Beaver

### **Plover F57**

F57 surprised monitoring staff by being the first to nest this year on approximately April 30th, a full 11 days before any other plover!



*F57 walks along the shoreline.*

## Old but Gold

### **Plover F72**

F72 was banded as a juvenile at Blue Lake in 2017, began nesting at John Martin in 2018, and returned this season for his 5th season in 2023 at 6 years old! For reference, the oldest recorded Piping Plover was at least 16 years old.



*F72 distracts monitors by pretending to sit on a nest on the beach.*

## In Memory

### **Plover E14**

Born at John Martin in 2021, E14 perished on June 6th, 2023, while defending their eggs. E14 was 2 years old and known for fiercely defending their nest and distracting monitors while they attempted to check eggs.



*E14 grooms their plumage during a break from nest duties.*

## Stronger Together

### **Plovers F82 & F55, F70 & F57, and F40 & F37**

Paired up in 2021 and remained together in 2022.

## Lifetime Achievement Award

### **Plover F70**

First banded as a juvenile at Cartlon Sand Pits in 2017, F70 has returned to nest at John Martin every year since for a total of 7 attempts. Of these attempts, ~71% were successful, and could have resulted in as many as 12 chicks!



*F70 forages along the beach.*

# All About Plovers and Terns

## What Are Piping Plovers and Interior Least Terns?

Written by Dr. Sara Harrod

Piping Plovers (*Charadrius melodus*) and Interior Least Terns (*Sterna antillarum athalassos*) are small, migratory shorebirds. Every spring they travel hundreds of miles to their breeding grounds. One of the places they choose to raise their chicks is John Martin Reservoir.

Adult plovers (**Fig. 4**, top left) have a sandy-colored back, white belly, black collar and “unibrow,” orange and black bill, and orange legs. Juveniles (**Fig. 4**, top right) appear similar to adults but lack the collar and unibrow and have an all-black bill.

Adult terns (**Fig. 4**, bottom left) have black heads with a white triangle on the forehead, grey backs, and yellow bills and legs. Young birds (**Fig. 4**, bottom right) have black bills and a black smudge behind their eye.

## When Are They Here?

Plovers and terns leave their wintering grounds and travel hundreds of miles to southeastern Colorado. While plovers arrive in mid-April, terns show up in May. The birds leave us at the end of August and spend their winter along the Atlantic Coast of North and South America, as well as in the Bahamas and Caribbean Islands.

## Why Are They Important?

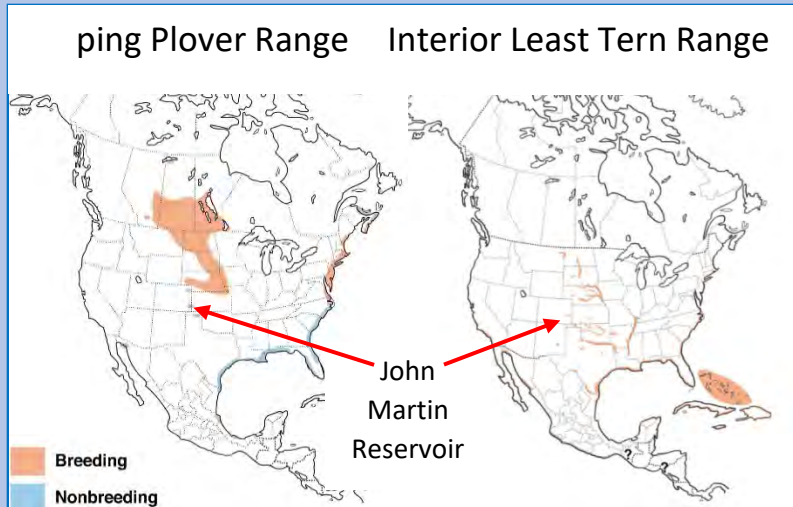
Both species have seen population declines in recent decades, due in large part to habitat loss. Additionally, the populations at John Martin Reservoir are small and isolated (**Fig. 5**). Piping Plovers are federally threatened, whereas Interior Least Terns are classified as endangered by the state of Colorado.



**Figure 4.** Adult (top left) and juvenile (top right) Piping Plovers. Adult (bottom left) and juvenile (bottom right) Interior Least Terns.

## Did you know?

Males and females of both species play an active role in parenting. They take turns keeping eggs warm and chicks fed.



**Figure 5.** The ranges of Piping Plovers and Interior Least Terns in North America. The John Martin Reservoir populations are indicated by the red arrows. Maps courtesy of the Cornell Lab of Ornithology.

## The Way Forward:

With all of the threats these birds face, monitoring staff are working hard to identify better ways to protect their dwindling population at John Martin Reservoir. Plans for 2024 include converting all nest cages to ones that provide hail protection, preparing more habitat to limit the impacts of predators and water level fluctuations, and training additional staff of nest flood risk analysis and nest relocation. But with 47 miles of shoreline, we need your help!

## How Can I help?

Reach out to the USACE office (see page 9) directly to get started in helping these birds! Volunteers are needed to help with everything from habitat preparation to nest cage preparation to trash cleanup and more.

You can also help by spreading the word about plovers and terns! Talk to your local schools and youth groups and encourage them to reach out to schedule an in-person or virtual talk with the Rangers about threatened and endangered species.

While out visiting the reservoir, keep an eye out for these birds! If you see any visitors entering a closure line or if you see these birds outside of a closure in an area they may be disturbed by the public, please contact a USACE or CPW Ranger immediately.

Not ready to volunteer? No worries! You can still help protect these birds by being a good steward and staying away from nesting areas. Keep clear of closure lines, which are marked with t-posts and signs (**Fig. 8**). While adult plovers and terns are able to escape humans, off-leash dogs may injure or kill a plover in their excitement. Eggs and chicks (**Fig. 7**) are not as mobile and can be very difficult to see when walking!

While visiting our project, be sure to pick up all litter and pack it out home with you. Litter left on the beach, including food scraps, can attract predators that may endanger our birds. Fishing hooks and line may also entangle and harm wildlife, and should be packed out at the end of the day as well.

## Have Questions?

We're happy to help! See the next page for information on how to contact the USACE Ranger team by phone, email, or Facebook messenger!



U.S. Army Corps of Engineers

**Figure 6.** Ranger Garnett hand removes vegetation from the South Shore.



U.S. Army Corps of Engineers

**Figure 7.** 3 piping plover eggs hide among the rocky shoreline.



U.S. Army Corps of Engineers

**Figure 8.** An example of an area closure sign.



### Found a Dead Bird?

Please contact us immediately (see below) if you find a dead plover or tern. Take a picture and coordinates and let us know where the bird is. This information is very important and helps us immensely.

### Please Let Us Know

If you see someone in a closed area, please let us (number below) or CPW know (John Martin State Park Office (719) 829-1801). A Park Ranger will go and explain why the area is closed.

### Contact Information

US Army Corps of Engineers-John Martin Reservoir  
29955 CR 25.75  
Hasty, CO 81044

**Office:** (719) 336-3476 ext. 3478

**Website:**

[www.spa.usace.army.mil/Missions/Civil-Works/Recreation/John-Martin-Reservoir/](http://www.spa.usace.army.mil/Missions/Civil-Works/Recreation/John-Martin-Reservoir/)

**Email:** [JohnMartin@usace.army.mil](mailto:JohnMartin@usace.army.mil)

**Facebook:** [@USACE John Martin Reservoir](https://www.facebook.com/USACEJohnMartinReservoir)

