



Pasco Audubon Bluebird Conservation Project

**Project Update
&
How to Become a Bluebird Landlord**

Eastern Bluebirds

Eastern Bluebirds are small North American thrushes known for their bright blue back and rusty-colored breast, and their cheery sweet song



The Bluebird of Happiness!

FYI - What is a Thrush

There are 14
species of
Thrushes found in
North America



Species of Bluebirds in North America

There are over 42 species of birds that have blue colors, but only 3 species of Bluebirds



mountain
bluebird



western
bluebird



eastern
bluebird

Bluebird Ranges

Bluebirds have large ranges with relatively little overlap.

The mountain bluebird (*Sialia currucoides*), western bluebird (*Sialia mexicana*), and the eastern bluebird (*Sialia sialis*)



Our Eastern Bluebirds

Males have bright blue heads, backs, and wings, with a rusty-orange breast and a white belly.

Females are similar but are a paler, duller version of the male.



Eastern Bluebirds Habitats & Diet

Eastern Bluebirds prefer open habitats like fields and meadows with scattered trees. Their breeding territory is approximately 2 acres.



- Eastern Bluebirds eat a mix of insects and berries, which changes depending on the season
- In spring and summer, their diet is mostly insects, while in the fall and winter, it changes to wild fruits and berries when insects are scarce.

Cavity Nesting Birds

Cavity-nesting birds are a diverse group of birds that build their nests in pre-existing or excavated holes, such as natural tree hollows, decaying wood, or man-made birdhouses



- They are divided into primary cavity nesters, which excavate their own cavities (e.g., woodpeckers), and
- Secondary cavity nesters, which use cavities created by others or by natural processes (e.g., **bluebirds**, owls)

Examples of Primary Cavity Nesters

(That Nest in Pasco County)

- Red-bellied Woodpeckers
- Pileated Woodpeckers
- Downy Woodpeckers
- Northern Flickers ??
- Carolina Chickadees: Sometimes a primary but most often a secondary cavity nester

Examples of Secondary Cavity Nesters

(That Nest in Pasco County)

- Eastern Bluebirds
- Carolina Chickadees
- Tufted Titmouses
- Eastern Screech-owls
- American Kestrels
- Wood Ducks
- Great Crested Flycatchers
- Brown-headed Nuthatches
- Purple Martins
- Prothonotary Warblers

Why Nest in Cavities?

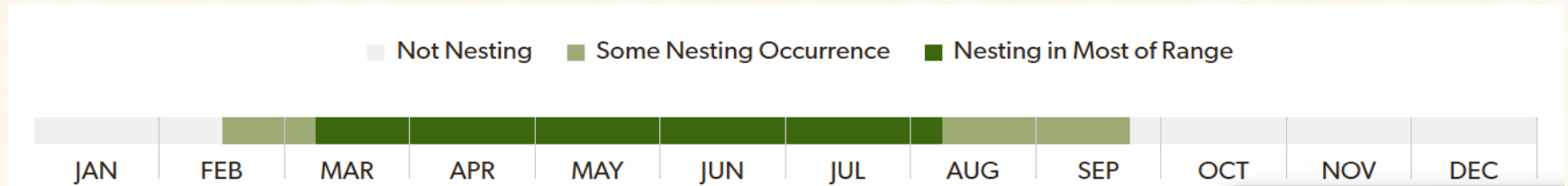
Cavities provide protection from predators and weather

Bluebirds are not equipped to make cavities so they must find a cavity to nest in

Bluebird nest boxes are designed to mimic the abandoned nest holes of smaller woodpeckers, predominantly those of downy woodpeckers



Bluebird Nesting Season



- The Bluebird nesting Season in Pasco County begins in early February and ends by September
- Most nesting activity in August is for the nests that were started in late July
- A Bluebird pair can have up to 3 broods in a Florida nesting season

Eggs

- A nest of eggs or a brood of chicks is called a Clutch
- Each clutch contains 2 to 7 eggs
- Most eggs are a beautiful blue color
- However, 2% of female bluebirds lay white eggs. One pair of bluebirds at our W.H. Jack Mitchell Jr. Park site had 3 broods with white eggs in 2025



Egg Brooding

- Bluebird egg brooding is the process where the female bluebird incubates the eggs by sitting on them to keep them warm until they hatch
- She has a featherless area of skin on its belly that develops during the breeding season to help incubate eggs.
- She starts brooding after the last egg is laid which allows all the eggs to hatch within a 24-hour period
- The male bluebird supports her by bringing her food while she is incubating.
- The incubation period lasts about 13 to 14 days



Hatching Chicks

Chicks hatch in 14 to 17 days

- Both parents feed the babies
- They grow quickly



Developing Young

- The parents care for the chicks in the box for about 17 days, At which point they fledge or leave the nest
- The parents stay with the youngsters for a couple more weeks
- Often the earliest chicks stay around and help raise later chicks



Fledglings

Bluebird fledglings are primarily gray and brown with a speckled appearance, and they have whitish rings around their eyes

They have visible blue feathers on their wing and tail feathers, though the blue is more apparent in males.

The birds will remain in this speckled plumage until they molt into their first adult plumage later in the summer or fall



Summary of Nesting Cycle in Pasco County

- Scouting for nest cavities: Starts in January
- Nest building: Starts in February / March. The female builds the nest, which takes about 2 - 6 days
- Egg laying: The female lays 4 to 6 eggs, usually one per day
- Incubation: The female incubates the eggs for 12 - 14 days
- Hatching: Eggs hatch over a 24 – 72 hour period.
- Fledging: The young birds leave the nest 16 - 21 days after hatching
- Subsequent broods: The female may start a new nest shortly after the previous brood
- The birds will remain in this speckled plumage until they molt into their first adult plumage later in the summer or fall.

Juveniles after Fledging

- After leaving the nest, fledglings will initially stay close to the nest site for several weeks while their parents continue to care for and feed them.
- The fledglings will eventually move further away as they become more independent and learn to forage for their own food – they establish their own territory
- Females travel an average of 1 mile from the nest some some go as far as 12 miles
- Males travel an average of 1 mile



First-Year Survival of Bluebird Fledglings

- Approximately 50% survive their first year
- Most Live 6 – 10 years if survive past the 1st year
- Survival rates are lower in years with poor weather or food supply
- Predation by raptors and snakes is a major cause of death
- Fledglings are more likely to survive if they come from nest boxes with forest cover and undergrowth nearby, which provides protection from predators



Why Bluebirds Need our Help

- **Eastern bluebird populations declined by nearly 90% from the 1930s to the 1970s, reaching their lowest point in the 1970s – they almost went extinct**
- **A “Perfect Storm” of Factors crashed the population**
 - Habitat loss from urban sprawl and changing land use greatly reduced nest cavities: ex. metal vs wood fence posts
 - Competition with invasive species like the European Starling and House Sparrow which aggressively outcompeted native cavity nestors for the limited sites
 - Affects of Pesticide use
 - During this period, severe weather, especially harsh winters, compounded existing pressures reducing survival especially for 1st year birds

What Saved the Eastern Bluebirds

- The Eastern Bluebird was saved from extinction by a conservation movement that involved the installation of thousands of nest boxes, along with monitoring and public education efforts by organizations like the North American Bluebird Society (NABS), founded in 1978.
- These efforts provided crucial nesting sites, which were lost due to factors like habitat loss and competition from invasive species such as the European Starling and House Sparrow.



Key Conservation Efforts

- Nest box programs by citizens and conservation groups
- Monitoring: Volunteers actively monitored these "bluebird trails"
- Public education: Organizations like NABS educated the public about the bluebird's decline and how they could help, raising awareness and promoting conservation
- Habitat preservation: Efforts also focused on preserving open grassy areas and trees, which bluebirds need for foraging
- Legislative action: In some cases, local legislation was passed to officially declare the bluebird the state bird, which helped to bring national attention to its plight

Local Bluebird Conservation

- **Our Pasco Audubon Bluebird Conservation Project**
- The Florida Bluebird Society an affiliate of the NABS
- Audubon chapters including throughout Florida
- Nest boxes by citizens throughout Pasco County
- Florida Fish and Wildlife Conservation Commission (FWC) are involved in broader wildlife conservation that benefits bluebirds
- The National Park Service also protects bluebird habitats
- The University of Florida's Institute of Food and Agricultural Sciences (UF/IFAS) conducts bluebird research and monitors nest boxes through local programs

The Amazing Comeback of Eastern Bluebirds

- Eastern Bluebird populations began to stabilize in the 1960s and early 1970s
- Starting in the 1970s, the North American Breeding Bird Survey shows a consistent increase, with an average annual growth rate of **2.4%**
- The widespread installation and maintenance of bluebird-specific nest boxes, like those used by our Pasco Audubon Conservation Project, is the primary reason for the Eastern Bluebird population increase
- The Partners in Flight estimate a current global breeding population of about 23 million. This is considered a low conservation concern species today, thanks to conservation efforts.

Status of Bluebird Population in Florida

- Eastern Bluebird status in Florida is stable and a "least concern" species overall, with recent population increases attributed to conservation
- The population status of bluebirds in Florida is mixed, with some areas experiencing declines and others showing recovery.
- Populations in southeastern Florida have been particularly hit by habitat loss and are at risk of extirpation in some locations.
- Ongoing monitoring: The Florida Bluebird Society conducts a Statewide Bluebird Blitz twice a year to gather data and better understand the specific population status across the state, but it is still too soon to draw firm conclusions from
- A reintroduction program in Everglades National Park from 1997-2001 has had challenges with low population growth.

Pasco Audubon Bluebird Project

- The Pasco Audubon Bluebird Conservation project was started in 2009 when Ken Tracey built and placed 11 Bluebird nest boxes in Starkey Park
- In 2012 the chapter started a monitoring program

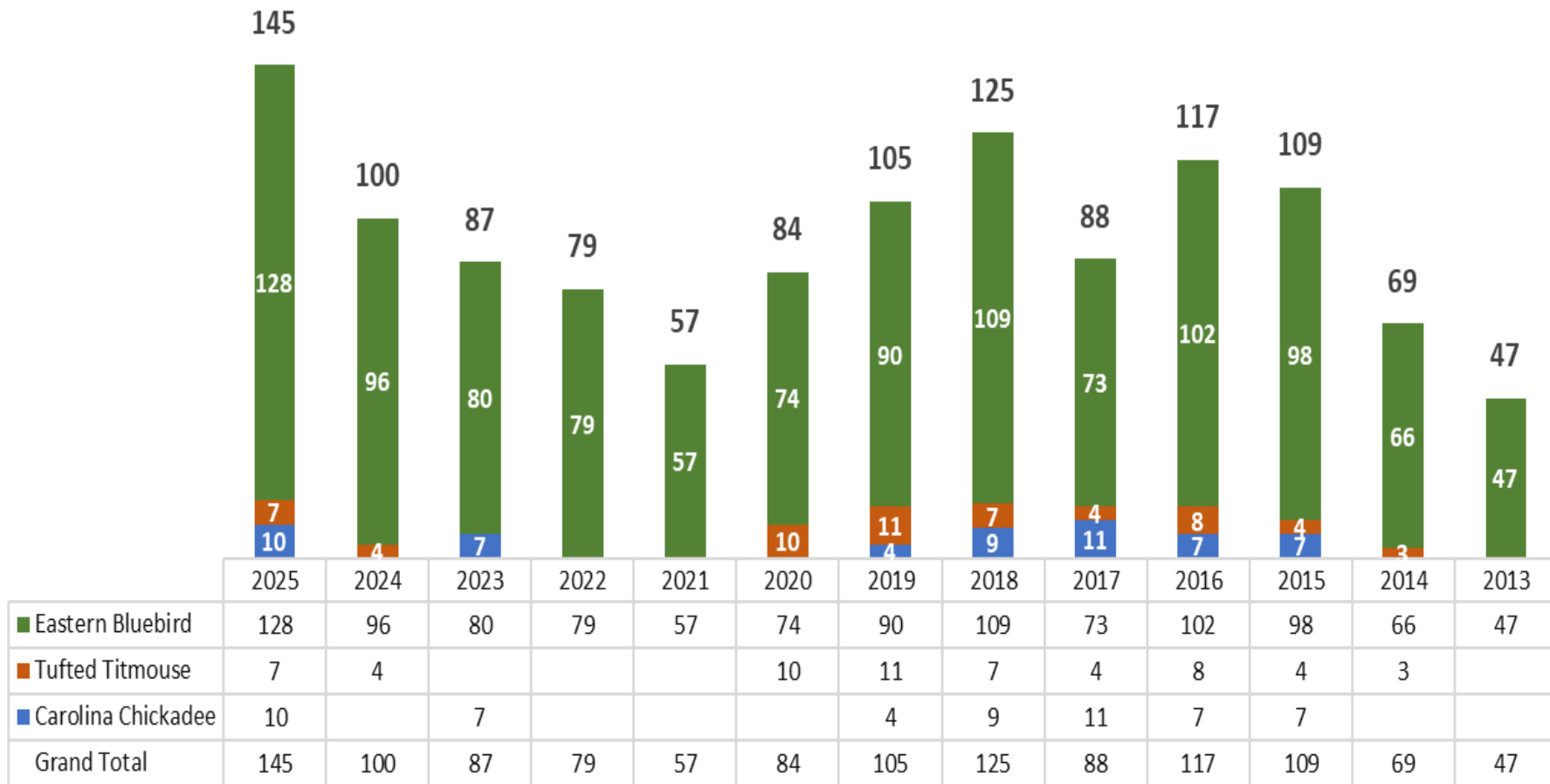


- J Mike Kell has recorded over a dozen years of detailed data on each of the bluebird nest boxes
- He adds this information to our website.
(Truly a labor of love for bluebirds)

History of Success for Pasco Audubon

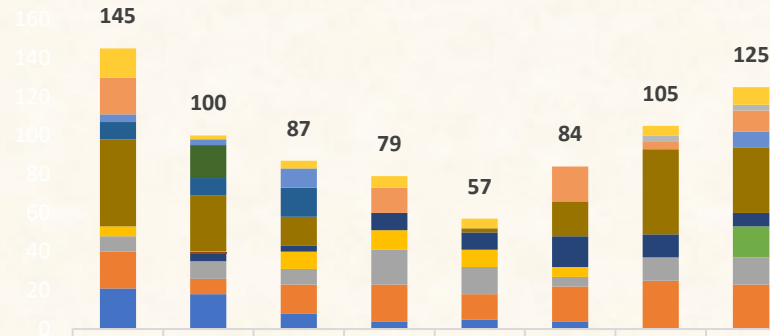
Over 1,210 Birds Successfully Fledged in our Nest Boxes

**Pasco Audubon Bluebird Project
Number of Birds Fledged by Type & Year**



Pasco Audubon Bluebird Project

Number of Birds Fledged by Year & Location



	2024	2023	2022	2021	2020	2019	2018	2017	2016	2015	2014	2013	
■ Aripeka Road Weeki Wachi Preserve - 3 Boxes	15	2	4	6	5		5	9	10	9	14	2	
■ Chasco Elementary School - 1 Boxes							3	3		3	4		
■ Heartwood Preserve off Starkey Blvd - 4 Boxes	19			13		18	4	11					
■ Hudson Sugar Creek - 3 Boxes	4	3	10					8					
■ Jay B. Starkey Wilderness Park Bike Trail - 4 Boxes		17								5	13	13	
■ Jay B. Starkey Wilderness Park Edge of Timber Greens - 2 Boxes	9	9	15										
■ Jay B. Starkey Wilderness Park South of Entrance Road - 12 Boxes	45	29	15		2	18	44	34	22	29	12	18	23
■ Magnolia Valley Golf Course - 1 Boxes											10	9	6
■ San Antonio Elementary School, San Antonio FL Hwy 54 - 1 Boxes		1											
■ Seven Springs Golf & Country Club - 3 Boxes		4	3	9	9	16	12	7	18	15	16	9	8
■ Sunlake Blvd Community on Hwy 54 west of Hwy 41 - 4 Boxes								16	8	24	15	9	
■ Taser Ln - 1 Boxes											5		
■ Timber Oaks Common Area - 1 Boxes	5		9	10	9	5							
■ Trinity College - 2 Boxes	8	9	8	18	14	5	12	14	8	12	8	9	10
■ Veterans Memorial Park Hudson, FL - 3 Boxes	19	8	15	19	13	18	25	23	22	20	12		
■ W.H. Jack Mitchell Jr. Park - 4 Boxes	21	18	8	4	5	4							
Grand Total	145	100	87	79	57	84	105	125	88	117	109	69	47

Pasco Audubon Bluebird Project

(People Who Have Volunteered on and/or Contributed to this Project)

Ken Tracy – Project Founder

Mike Kell – Project Leader & Box Monitor

Bob Burkard – Project Leader & Box Monitor

Kimberly Snaric – Project Benefactor

Christine Rowland – Pasco Audubon President & Box Monitor

Bluebird Nest Box Monitors

Marie Branch

Zeke Isaacson

Joe Colantonio

Joanne Laspina

Peter Day

Mike Ranck

Mitch Dormont

Kim Rexroat

Michelle Glasi

JoAnn Sinatra

Frank Gotto

David Waltz

Mary Ellen Gotto

Judith Leslie Zollo

Becoming a Bluebird Landlord

- Provide the right habitat
- Build or buy a proper nest box
- Install your nest box on a metal pole with a predator guard
- Monitor the box regularly to ensure the success of the nest birds and protect it from predators
- Enjoy this great hobby!



Select the Correct Bluebird Habitat

- Bluebirds prefer open, grassy areas like meadows, large lawns, or pastures, or golf courses to hunt insects
- Scattered trees: These areas should have scattered trees or tree lines nearby for perching
- Nearby forest or underbrush for fledglings to hide
- A nearby water source can also be helpful in attracting bluebirds
- Bluebirds like to be near People



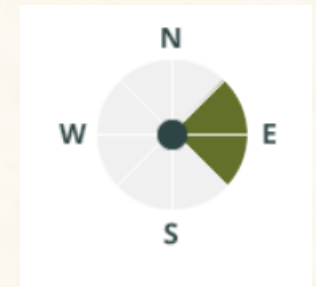
Build or Purchase your Bluebird Nest Boxes

- There are many different styles of bluebird nest boxes. I like a modified version of the one recommended by the North American Bluebird Society
- I find that 1"x 6" cedar boards work best. Pine is OK, but do not use treated wood, exterior plywood, metal, or PVC in our hot summers
- Eastern Bluebird houses should have a 1½-inch entrance hole
- Bluebird houses should not have a perch
- It is important that all nest boxes can be opened -- side, front, or roof. Opening is a matter of personal preference -- each has pros and cons



Place your Boxes

- Mount the box 5-10 feet high
- Always use metal pole to discourage predators – Do not put on trees
- Install a predator baffle on the metal pole
- Recommend that a box entrance faces east
- Place nesting box where squirrels cannot jump on top of the nest box
- For best results, place boxes about 100 yards apart. Bluebirds are very territorial during the breeding season



Monitor your Bluebird Boxes

Monitoring allows us to check the productivity of the nest make changes so failures don't repeat and do repairs as needed.

Monitoring increases fledging success by as much as 90% over natural cavities



Monitoring identifies and addresses problems like parasites or invasive species, ensures the nest is in good condition, and tracks population data. Frequent, but non-disruptive, monitoring helps manage the nest box environment, protects the young from threats, and provides data for conservation efforts.

Predators of Bluebirds

- Snakes
- Squirrels
- Raccoons
- House Cats
- Crows
- Hawks
- Fire Ants



Native Competitors for nest Sites

Other native birds use bluebird nest boxes, and this is encouraged and supported by our conservation project

These three birds can fit through a 1 ½ Inch entrance hole

- **Tufted Titmouses**
- **Carolina Chickadees**
- **Carolina Wrens**



Native Competitors for nest Sites

Other native birds cannot fit through the 1 ½ inch entrance hole

This is a Great Crested Flycatcher leaving a bluebird nest box with a hole that had been enlarged by a Woodpecker

This is why you need hole protectors



Non-native Species that Compete for nest Sites

The most devastating competitors for bluebird nest boxes are two non-native bird species.

- **House Sparrows:** House Sparrows are highly aggressive and will attack and kill adult bluebirds and their nestlings to take over a nest box. They may even build their nest directly on top of the victims
- **European Starlings:** Due to their larger size, starlings cannot fit through the standard 1 ½ inch entrance hole of a properly designed bluebird box



Protecting from House Sparrows and Starlings

House Sparrows and Starlings are not a problem everywhere in Pasco county. However, you need to be aware and deal with them if they compete for your bluebird box.

- To protect Eastern Bluebird boxes from House Sparrows and European Starlings, use a combination of methods
- A correctly sized entrance hole of 1 ½ inches
- A metal hole protector
- Regularly monitoring and removing House Sparrow nests
- Trapping and removing house sparrows which are non-native and not protected by law
- Nest removal: Regularly check the boxes and remove any nests built by house sparrows. They will rebuild quickly, so consistency is key.

How to Monitor your Eastern Bluebird Boxes

- Approach the box slowly talking to inhabitants
- Lightly tap or scratch gently on side of the box
- Open flap and look inside (Suggest standing to one side when opening)
- Count or quickly take photo and reclose flap
- Sometimes Female is sitting on eggs, just close and count at next inspection
- Visiting every week to ten days will not bother the Bluebirds and will allow you to monitor progress



Helping our Eastern Bluebirds

- **Opportunities to help conserve our Eastern Bluebird**
 - Install a Blue bird box and become an Eastern Bluebird Landlord
 - Become a Pasco Audubon Bluebird Conservation Project monitor
 - Contribute to our Pasco Audubon Bluebird Conservation Project
 - Help us build and install our bluebird nest boxes

Ways to Learn More About Eastern Bluebirds

- **You have already started by participating in this discussion**
- **Join a Bluebird House Monitor as they check on their nesting Birds**
- **Great Sources of Information on Eastern Bluebirds**
 - Our Pasco Audubon Website: <https://www.pascoaudubon.com>
 - North American Bluebird Society: <https://www.nabluebirdsociety.org>
 - Florida Bluebird Society: <https://floridabluebirdsociety.org>
 - Sialis: <https://www.sialis.org>
 - The Bluebird Book: The Complete Guide to Attracting Bluebirds By Donald Stokes, Lillian Stokes, Lillian Q. Stokes, et al.

Questions

Thank you for attending
our Pasco Audubon
Bluebird Conservation
Project Discussion

And Thank you for Pasco
Audubon's Support of
our Bluebird
Conservation Project

