



# Purple Martin Colony Success 2025

## Sachi DeWinter

### Muscatine Community College



### Summary

I monitored the Purple Martin population at Nahant Marsh by periodically checking artificial nesting cavities and noting the contents of each one.

My goal was to observe the reproductive success of this year's breeding season and compare it to similar data from the past two years.

### Introduction

Purple Martins (*Progne subis*) are a species of songbird which migrates to South America (usually Brazil) for the winter and returns to North America for the breeding season.

East of the Rocky Mountains, Purple Martins have adapted to be almost entirely reliant on artificial housing provided by humans.

Nahant Marsh currently has two sets of artificial gourds (AG) installed, as well as one woodhouse (WH). In total, these three housing units provide 48 available nesting spaces.

As with certain other bird species, they are experiencing population decline, with possible factors including environmental toxins, climate change, and pesticides.

Throughout this summer's research study, I conducted regular nest checks for each housing unit to keep track of the martins' growth and reproductive success.

### Methods

Every 3-7 days during midmorning hours, I checked on all three housing units, spending no more than 20 minutes per unit. In every nest I noted numbers of eggs, hatchlings, and/or fledglings, as well as any other observations such as lost eggs or stages of nestling growth. I added each day's data to a spreadsheet after every check, also including weather, date, and total egg/hatchling/fledgling counts.

At the end of my data collection period, total egg, hatchling, and fledgling counts for the 2025 season were calculated and graphed alongside similar totals from the 2023 and 2024 breeding seasons. I also calculated the hatch, fledge, and overall breeding success rates for 2025 as percentages and compared them to the success rates from 2023 and 2024.

### Results

As of August 6, 2025, the total counts across the three housing units were 195 eggs, 121 hatchlings, and 109 fledglings.

This leads to a hatch rate (% of eggs that hatched) of 62.1%, fledge rate (% of hatchlings that fledged) of 90.1%, and overall success rate (% of eggs that resulted in fledglings) of 55.9%.

Purple Martin Productivity Data 2023-2025

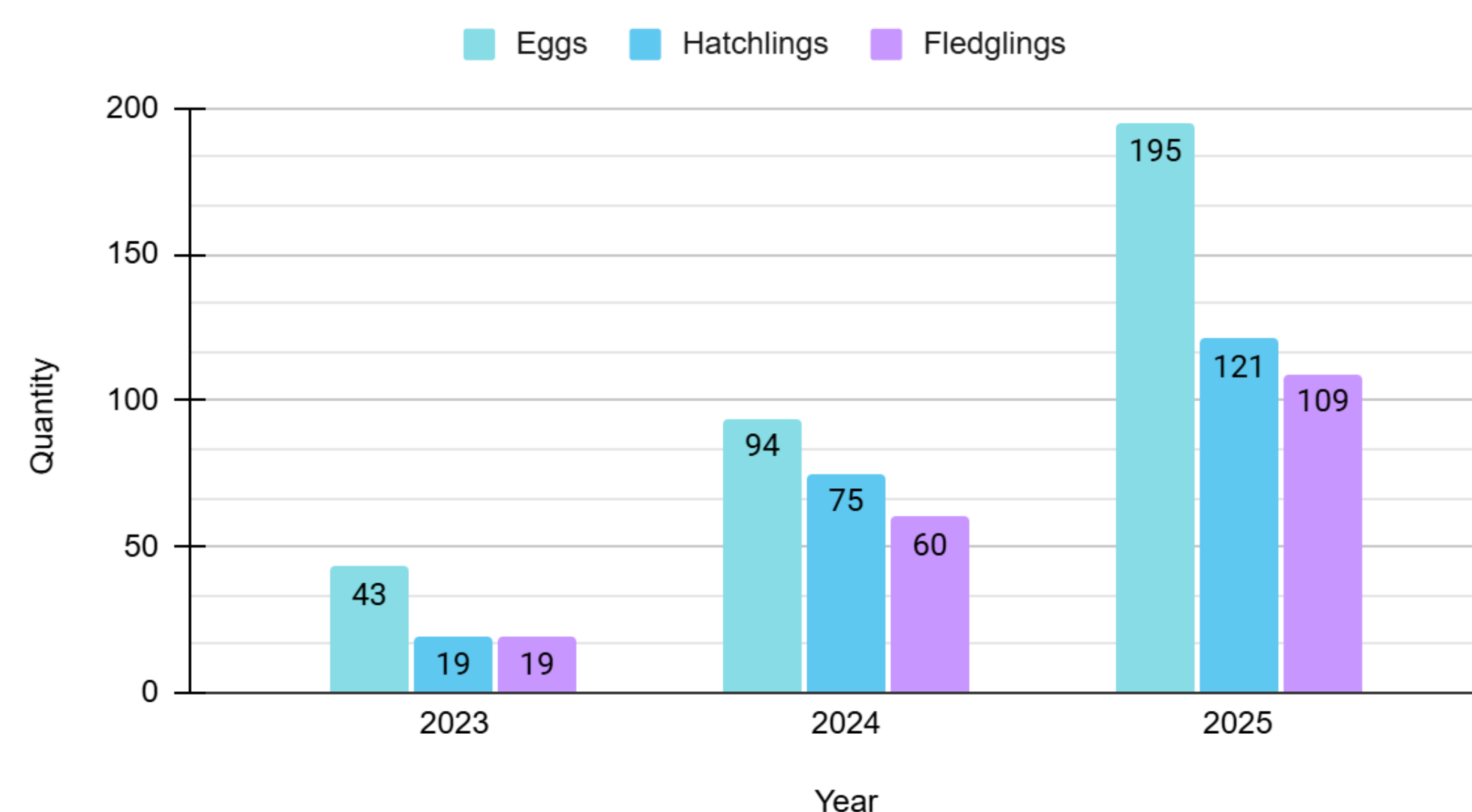


Figure 1: Purple Martin population numbers from the 2023-2025 breeding seasons. Total egg, hatchling, and fledgling counts from each year are shown in comparison to each other.

Hatch, Fledge and Overall Success Rates 2023-2025

Expressed as percentages

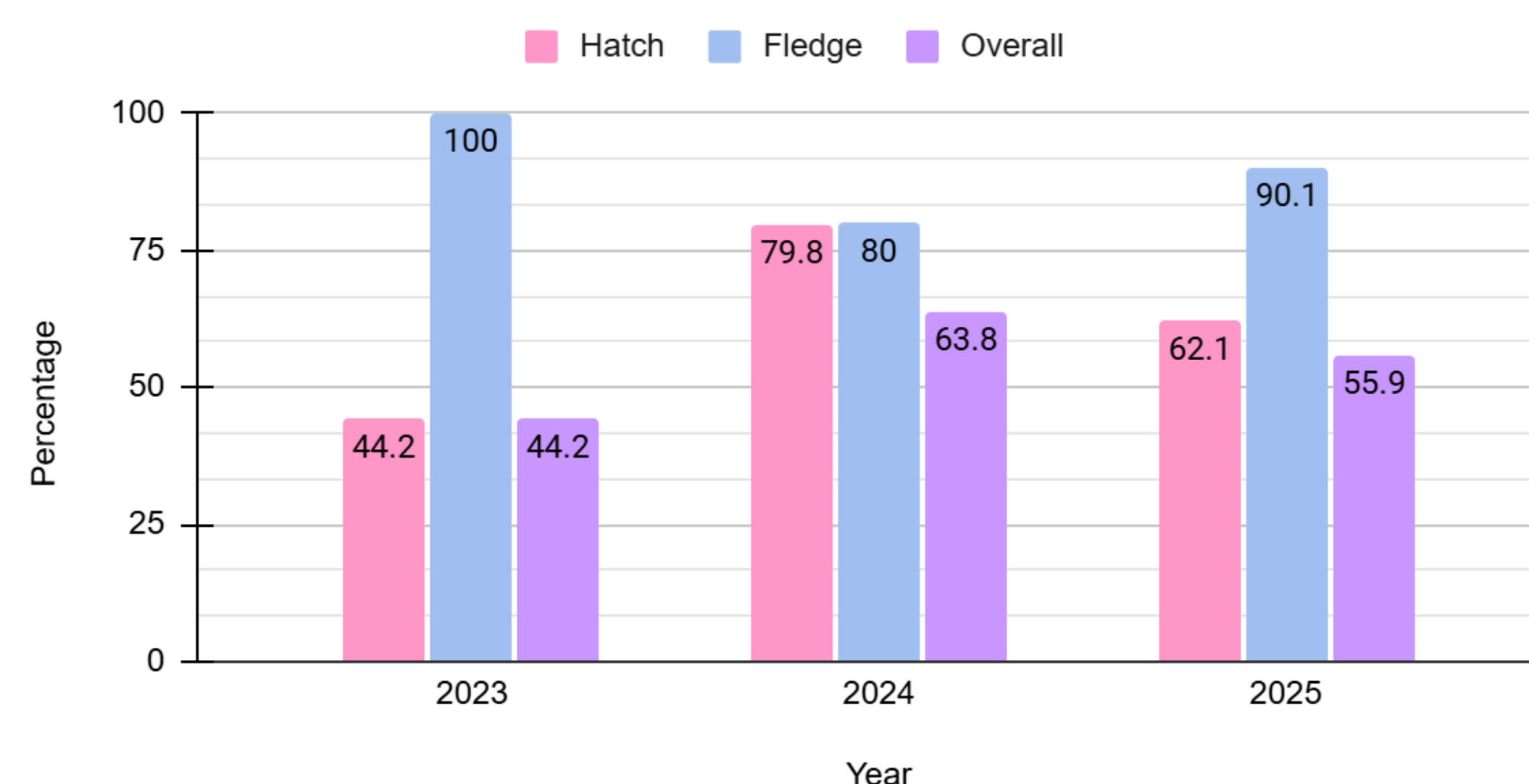


Figure 2: Hatch, fledge, and overall success rates from the 2023-2025 breeding seasons, expressed as percentages.

### Discussion

The data shows a positive trend in the total numbers of eggs, hatchlings, and fledglings from 2023 to 2025, with all totals showing significant increases. The 2025 fledge rate was also higher than in 2024, with over  $\frac{3}{4}$  of this year's hatchlings being able to successfully fledge.

Although this year's hatch rate and overall success rate are lower than in 2024, this may be because a number of this year's eggs were infertile and/or experienced predation, leading to them never hatching and thus lowering those two rates.

Predation/attacks were also factors in the deaths of several hatchlings, juveniles, and adults; unfortunately, this is not an unusual threat for Purple Martins, as they can be attacked by not only typical predators such as snakes and hawks but also other birds such as European Starlings and House Sparrows who want the martins' nesting sites. These birds can be very aggressive towards the martins and fatally injure them.

Two nests experienced ant infestations, and several were observed to have low to moderate amounts of mites, but neither seemed to be widespread problems for the colonies at large.

With Purple Martin population numbers on the decline, research such as this summer's study will help us monitor these birds and figure out how best to help them in the future.



### Acknowledgements

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