Monarch Migration Report 2024

By Audrey Anderson, Monarch Biologist and Assistant Hawkwatcher

Project Overview

The Coastal Virginia Wildlife Observatory's Monarch Migration Project just completed its 27th year monitoring and collecting Monarch Migration Data on Virginia's Eastern Shore. CVWO first began collecting data in 1997, recording and reporting data to major international organizations such as Monarch Watch. Depending on the year, Monarch migration data is collected from the beginning of September to the end of October or November. Peak migration has previously been recorded in mid-October. The project's efforts consist of observational data collection through point counts and physical data, which is collected through tagging. CVWO's mission to actively contribute yearly Monarch migration data allows researchers, butterfly enthusiasts and the general public to better understand the worldwide downward trend of this incredible species. While directly contributing data, another major focus of the project is public outreach. An essential part of the growing awareness of Monarch migration and of environmental importance, outreach is achieved through providing educational programs, tagging demonstrations and conducting various presentations to private groups and organizations.

Monarch tagged at Kiptopeke State Park. Photo by Audrey Anderson

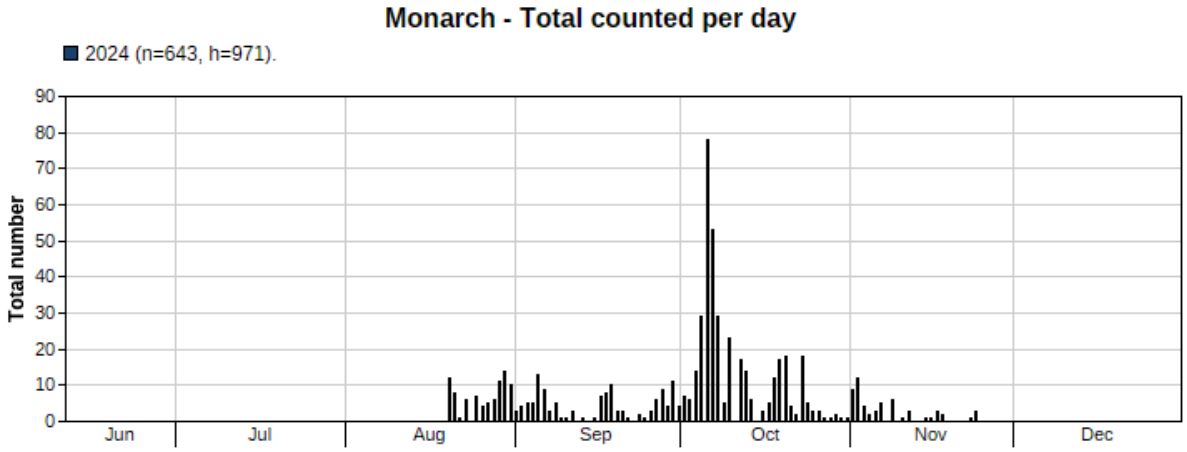
Global Monarch Population Trends

The Central Mexican overwintering population of Monarchs, which is the same population that travels through Virginia's Eastern Shore every fall, has been on an 80% decline since the 1990s. Recent reports have shown that within the last year, there has been a 60% drop in the overall population of Monarchs in the Americas. Major migration challenges for Monarchs include increasing urbanization and drought, affecting major nectar resources along essential migratory routes. Many organizations are taking action to try to secure the future of Monarchs, aiding in their migration through research and the encouragement of citizen involvement. Coastal Virginia Wildlife Observatory is an active member in the collection of essential migratory Monarch data on the Eastern Shore, helping better understand these changing trends.

2024 Monarch Point Counts

Point count data for the CVWO's Monarch Migration Project was collected from the Hawkwatch Platform at Kiptopeke State Park from August 23 to November 30. The last Monarch recorded for the season was on November 25. All data on Monarchs were recorded and uploaded on Hawkcount and Trektellen. Kicking the season off, the last week of August

yielded a total of 49 individuals, which led into September with a total of 142 monarchs. October had the highest total number of recorded individuals totaling 394. Peak migration was recorded in early October and the highest number of Monarchs recorded was on October 8 with 78 individuals. November was relatively slow, which is to be expected at the end of migration season, with a total of 58. A season total of 643 Monarchs were reported from the Hawkwatch.



Butterfly Point Counts

Along with recording Monarch movements, experimental data collection of other butterfly species was also conducted at the Hawkwatch Platform using Trektellen. Species including an Orange Sulphur and Red-spotted Purples were recorded in the overall 2024 data set. Clear movements of Red Admirals and Cloudless Sulphurs throughout the season were also noticeable but were only recorded sporadically throughout the season, so no clear conclusions can be drawn. However, this lays the groundwork for potentially recording various butterfly movements at Kiptopeke in future years.

2024 Monarch Tagging

Audrey Anderson with her Monarch net.

All tagging for the 2024 migration season was completed at various sites within Kiptopeke State Park. The first Monarch tagged was a female on September 8 at Hawk Field, tag number AJEU 150. The last Monarch tagged was a male on October 26 at Hawk Field, tag number AJEU 405. A total of 252 Monarchs were tagged this season. The highest number of monarchs was tagged from October 8-9. 65 Monarchs were tagged on October 8 and 73 individuals on October 9. 73 Monarchs were the most tagged in a day this season. There are a few different aspects recorded when a Monarch is tagged including the sex of an individual, the length of their forewing and the length of their hindwing. A Monarch tag is essentially a little sticker, provided by Monarch Watch, that is

gently yet securely attached to the hindwing before the individual continues on its miraculous journey.

Tagging Sites

Hawk Field | Located east of the Hawkwatch platform, Hawk Field provided a plethora of Goldenrod from late September into October. This is also the site of the Kiptopeke Butterfly Garden which offered plants such as Mist Flower and Mountain Mint, both highly utilized by Monarchs throughout the season. A total of 161 Monarchs were tagged at this site.

Kiptopeke Beach | A total of 65 Monarchs were tagged at this site. This tagging site was a personal favorite as the Seaside Goldenrod was thick with Monarchs during those peak days in October. Monarchs could be seen in groups of up to six individuals per plant along the beach feeding. There was no roost sites found this season, but the most Monarchs seen feeding at a time was at this site. In the evenings, Monarchs could be seen retreating from the beach towards the pines, but in no particular general direction.

Sunday Fields | This site in previous years has been known to be extremely productive due to its plethora of Goldenrod. Like much of the pollinator habitat in Kiptopeke State Park, it has grown up over the years, making it slightly harder to capture and attract Monarchs. A total of eight Monarchs were tagged at this site.

Taylor Pond | A total of 18 Monarchs were tagged at this site. There is a wonderful Butterfly Garden near Taylor Pond which provides Mist Flower and Mountain Mint along with other pollinator friendly plants. The surrounding habitat also has large amounts of Goldenrod naturally attracting Monarchs.

Tagging Data

Wing Measurements | Measurements for the hindwing and forewing of each captured Monarch are taken and recorded in millimeters. There is a lot of variability when it comes to Monarch size; this data is collected to establish which size is potentially more advantageous for successful migration. As mentioned before, two measurements are taken on the monarch: the forewing and the hindwing. The forewing measurement extends from where the Monarch's wing connects to its upper abdomen out to one of the wing tips of the forewing. The average forewing of females was 52 mm, and the average for males was 52 mm. The smallest forewing measurement was a female at 45 mm, and the largest was a male at 58 mm. The hindwing measurements are taken from the central edge along the Monarch's abdomen to the central outer edge of one of the hindwings. The average hindwing of females was 34 mm, and the average for males was 34 mm. The smallest hindwing measurement was a female at 28 mm, and the largest measurement was a male at 40 mm.

Sex Ratios | Out of the 252 Monarchs tagged, 85 of the individuals captured were females and 167 were males. Of the 2024 data set, 35% were female, and 65% were males; this trend

is not unusual in this region. In 2023, 70% of the individuals were male, and 30% of the individuals were female. Data collected in 2022 matches this year's ratio exactly, with 65% of their captures being male and 35% being female.

Recapture Data | A total of eight Monarchs were recaptured this season. All individuals were recaptured in the same location they were tagged in; all recaptures were at Hawk Field. Monarch AJEU 151 was recaptured twice and was present for a total of three days in early September. All other recaptures took place the day after the Monarch was originally tagged.

2024 Educational Outreach and Interpretive Presentations

This season, the platform had multiple different individuals and groups come out to witness Monarch migration and tagging in action—from elementary and middle school classes, locals, friendly journalists and their dogs, curious park visitors and many more. Raising awareness of Monarch migration and showcasing the imperative role each person plays is essential in the recovery and understanding of declining species. Demonstrating the aspects of Monarch tagging and giving formal and informal presentations on their migration was a constant this season. For a few days in October, I was also aided by Ocean Church, a high school volunteer, who learned how to safely capture, tag and record the physiological data required in the project. To help people actively connect with Monarchs and experience them in a scientific light is a truly wonderful and rewarding aspect of Coastal Virginia Wildlife Observatory's Monarch Migration Project.

Audrey Anderson greets and discusses Monarch tagging with a park visitor.

A Personal Note

The Coastal Virginia Wildlife Observatory is an extraordinary organization, and I cannot express my gratitude for the opportunities provided to me this season. Virginia's Eastern Shore is a spectacular and unique place, from the nature to the people, the impact it has had on my life is inexplicable. For three months, Kiptopeke felt like home, thank you to every single person who made it feel that way. A huge thank you to Brian Taber and Nancy Barnhart, along with the rest of Coastal Virginia Wildlife Observatory, for everything they did this season. Thank you to my co-hawkwatcher, Sage Church—from raptors to Monarchs, this season was truly a team effort. I am forever grateful.

Thank you to Kiptopeke State Park and Sean Dixon for being excellent hosts. A special thank you to Bob Ake, Paul Anderson, Harry and Liz Armistead, Mario Balitbit, Rudy Cashwell, Ocean Church, Lynn Davidson, Kai Dickson, Chris and Betsy Foster, Deborah Humphries, Daniel Irons, Jonathan Irons, Andrew Rapp, Steve Thornhill, Wayne Valentine and Hal Wierenga.