

# Trends in Waterfowl Following the Loss of SAV on Lake Mattamuskeet





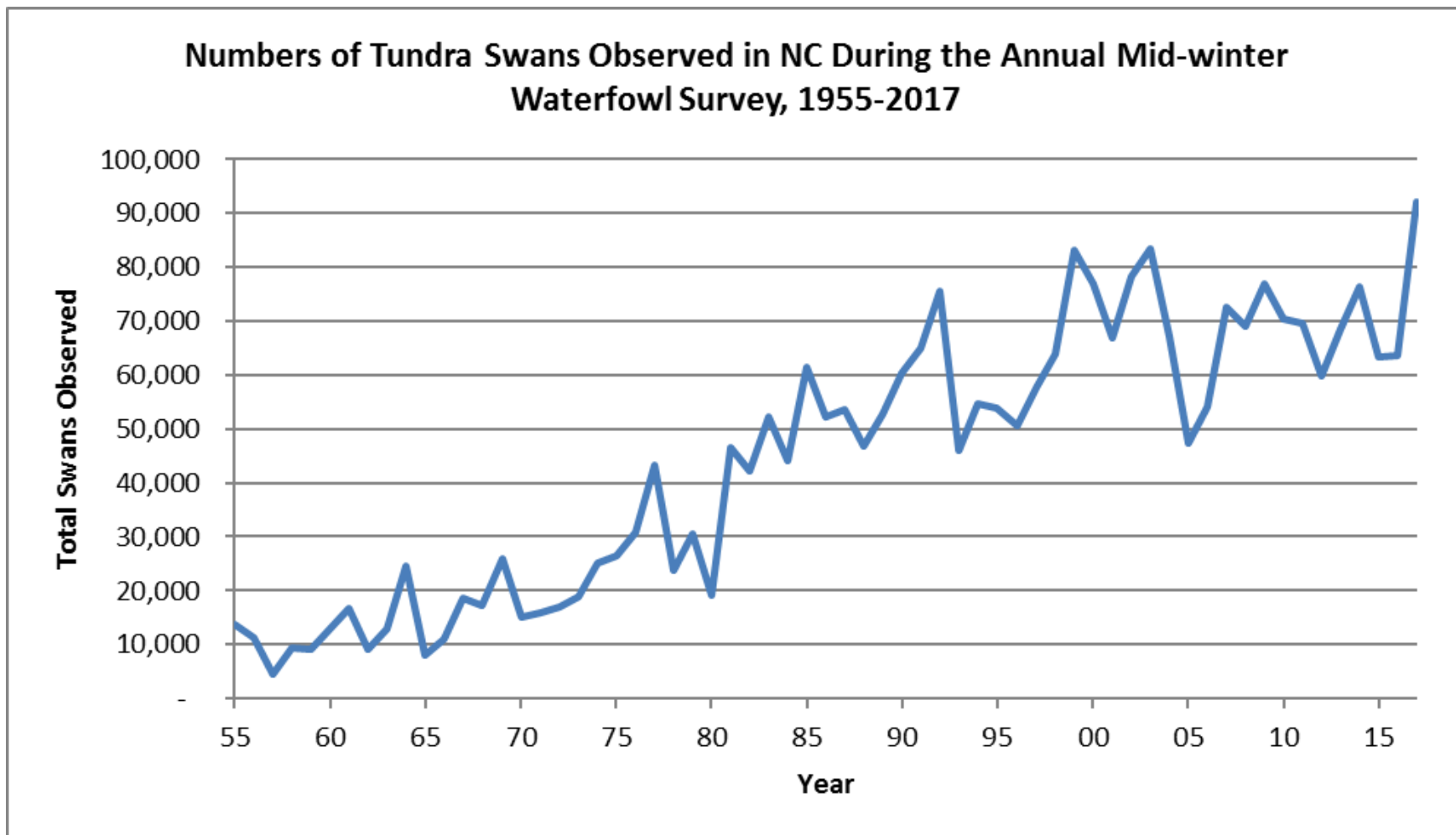
# Tundra Swans



**Significant decline in numbers of tundra swans using Lake Mattamuskeet NWR and surrounding farms since loss of SAV began in 2014**

# Record Numbers of Swans Observed During Annual Mid-Winter Waterfowl Survey in 2017

(44,000 Swans Observed on Pungo Lake)



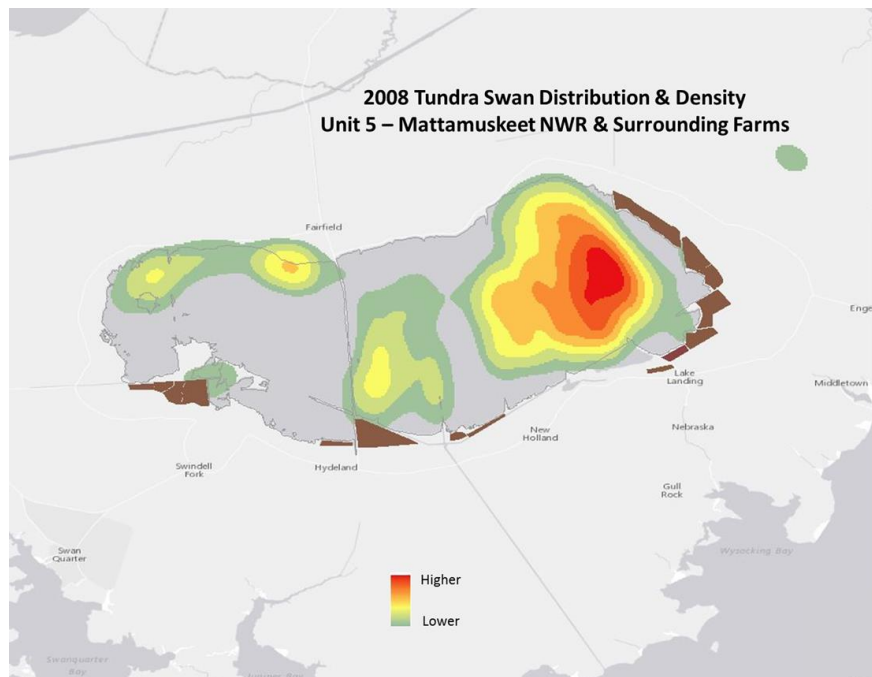
# Annual Mid-Winter Waterfowl Survey

## Unit 5 – Mattamuskeet NWR & Surrounding Farms

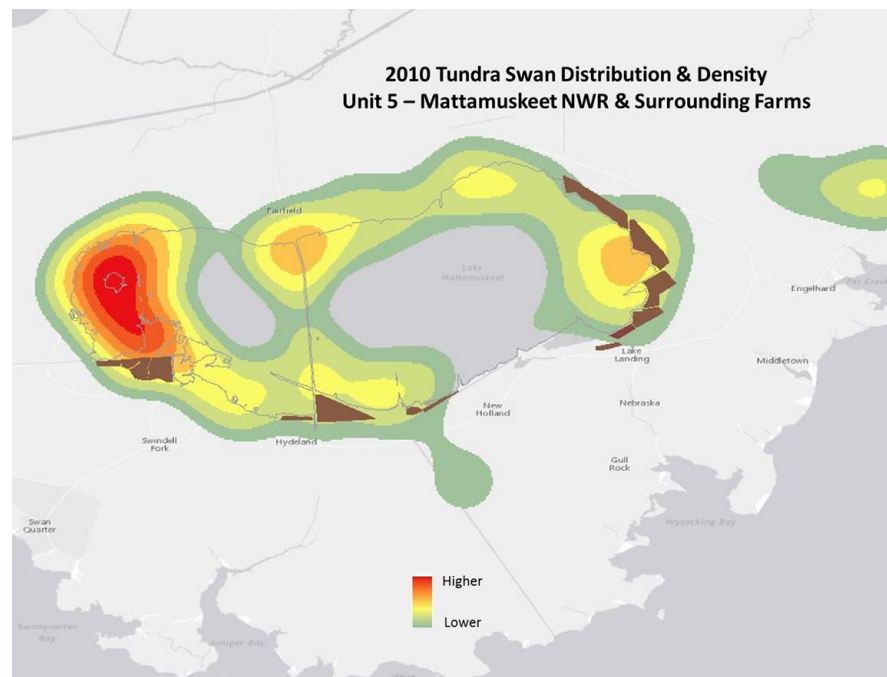




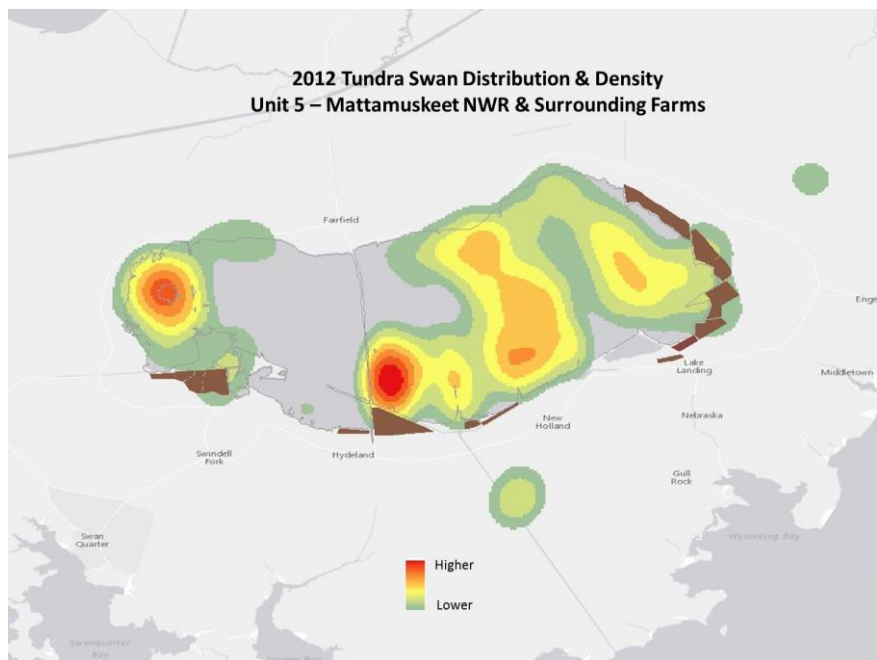
**2008 Tundra Swan Distribution & Density**  
Unit 5 – Mattamuskeet NWR & Surrounding Farms



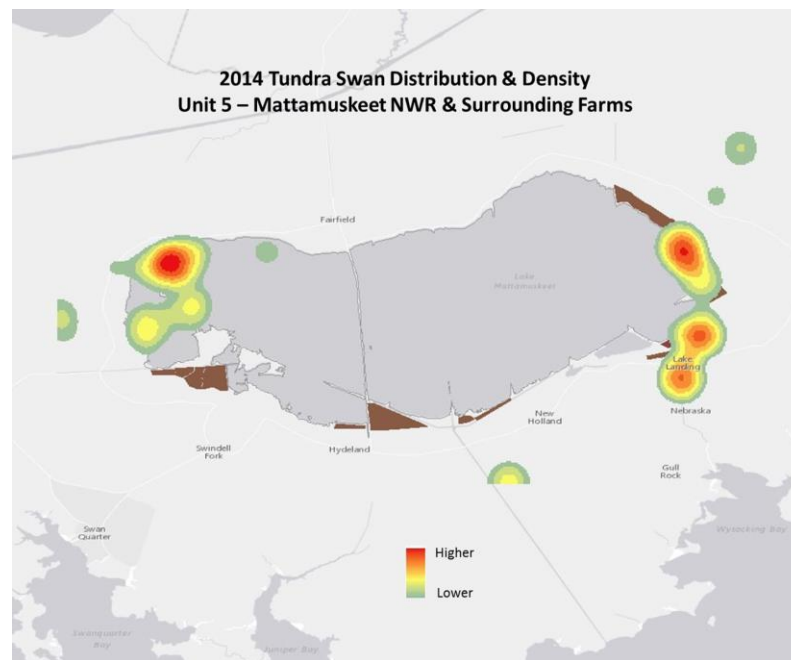
**2010 Tundra Swan Distribution & Density**  
Unit 5 – Mattamuskeet NWR & Surrounding Farms



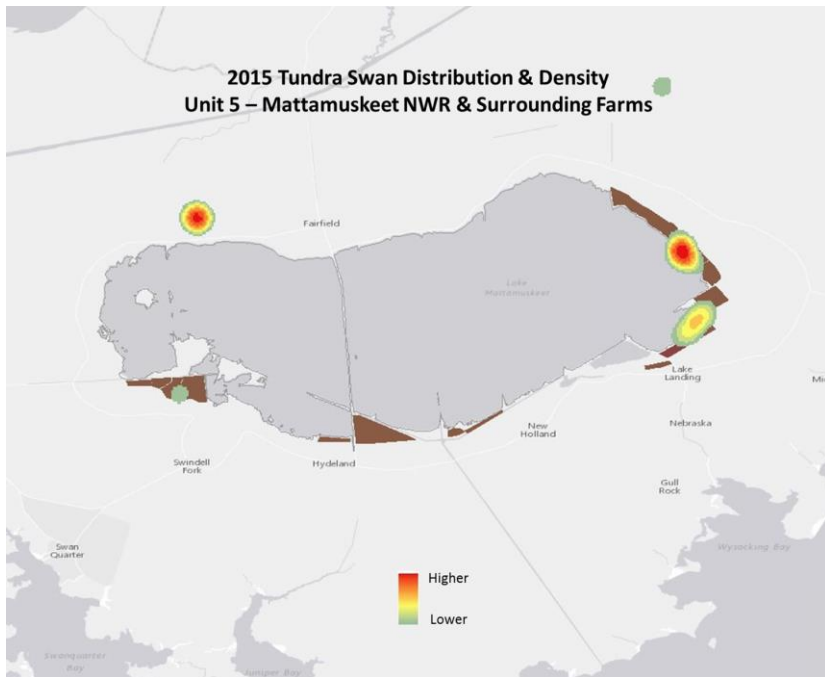
**2012 Tundra Swan Distribution & Density**  
Unit 5 – Mattamuskeet NWR & Surrounding Farms



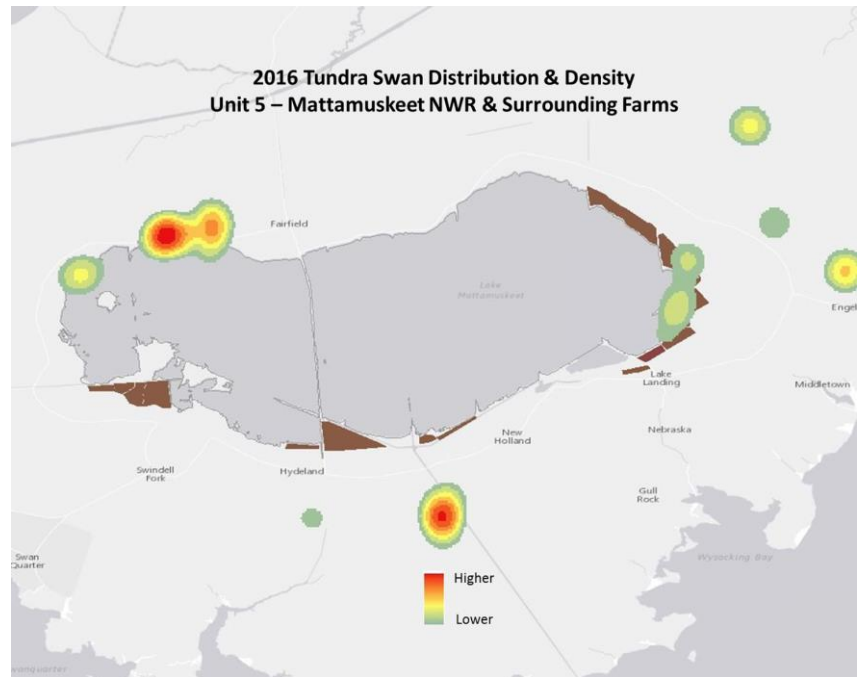
**2014 Tundra Swan Distribution & Density**  
Unit 5 – Mattamuskeet NWR & Surrounding Farms



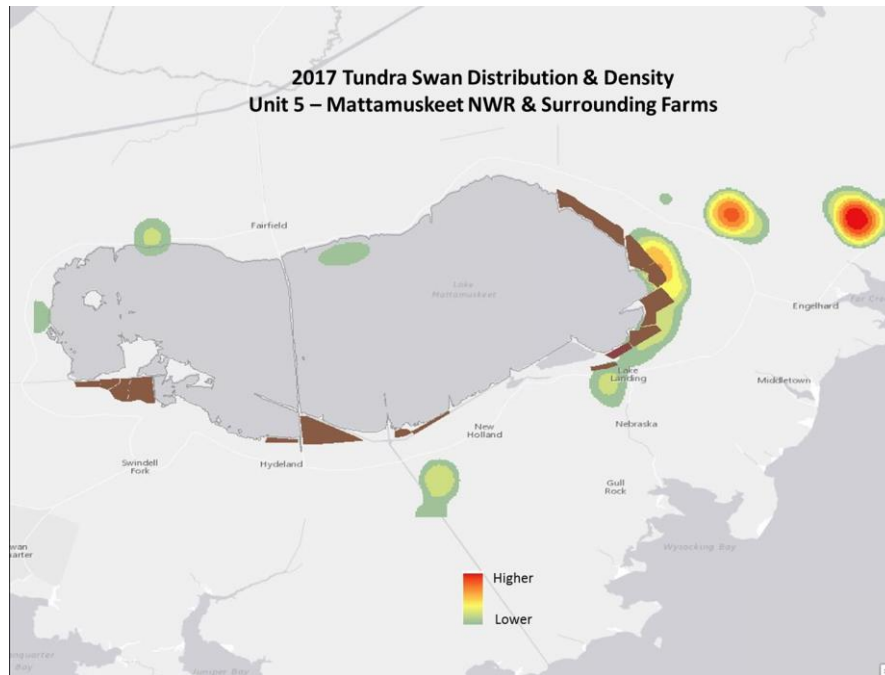
**2015 Tundra Swan Distribution & Density**  
**Unit 5 – Mattamuskeet NWR & Surrounding Farms**



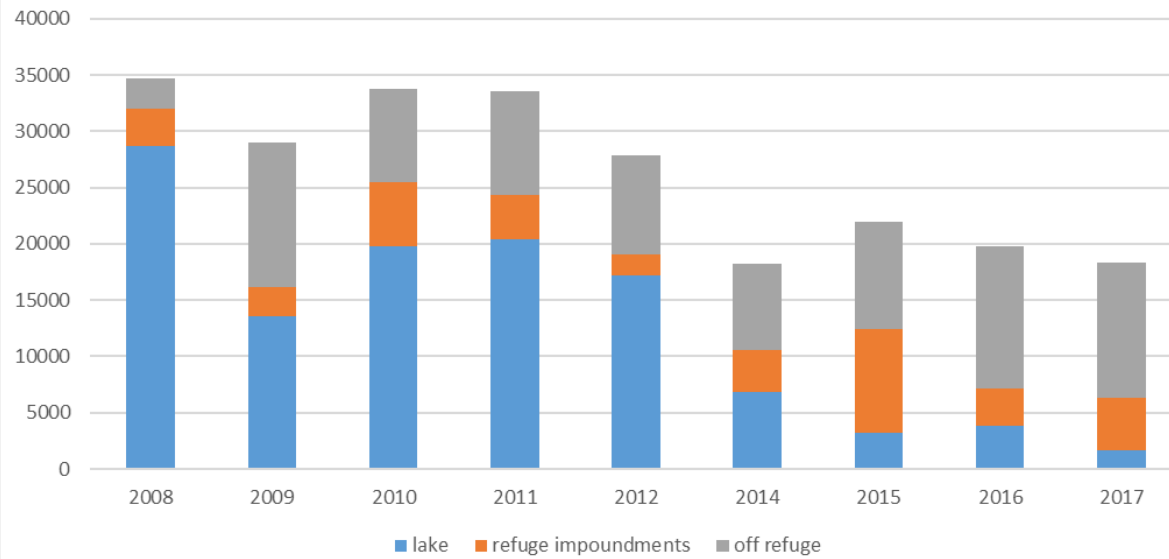
**2016 Tundra Swan Distribution & Density**  
**Unit 5 – Mattamuskeet NWR & Surrounding Farms**



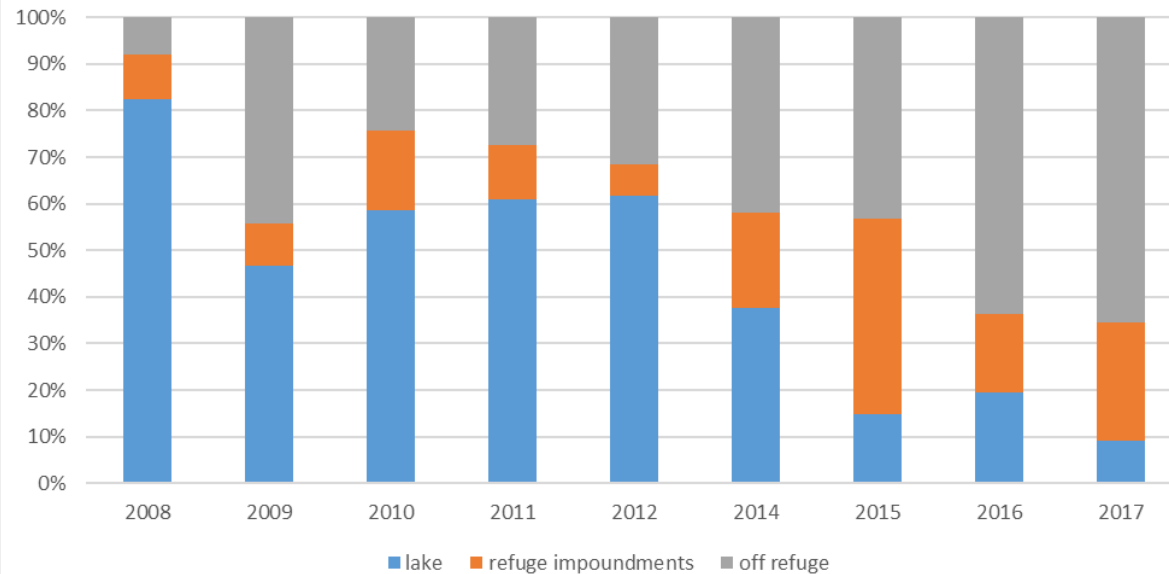
**2017 Tundra Swan Distribution & Density**  
**Unit 5 – Mattamuskeet NWR & Surrounding Farms**



Total number of tundra swans observed in various locations - Unit 5



Proportion of tundra swans observed in various locations - Unit 5



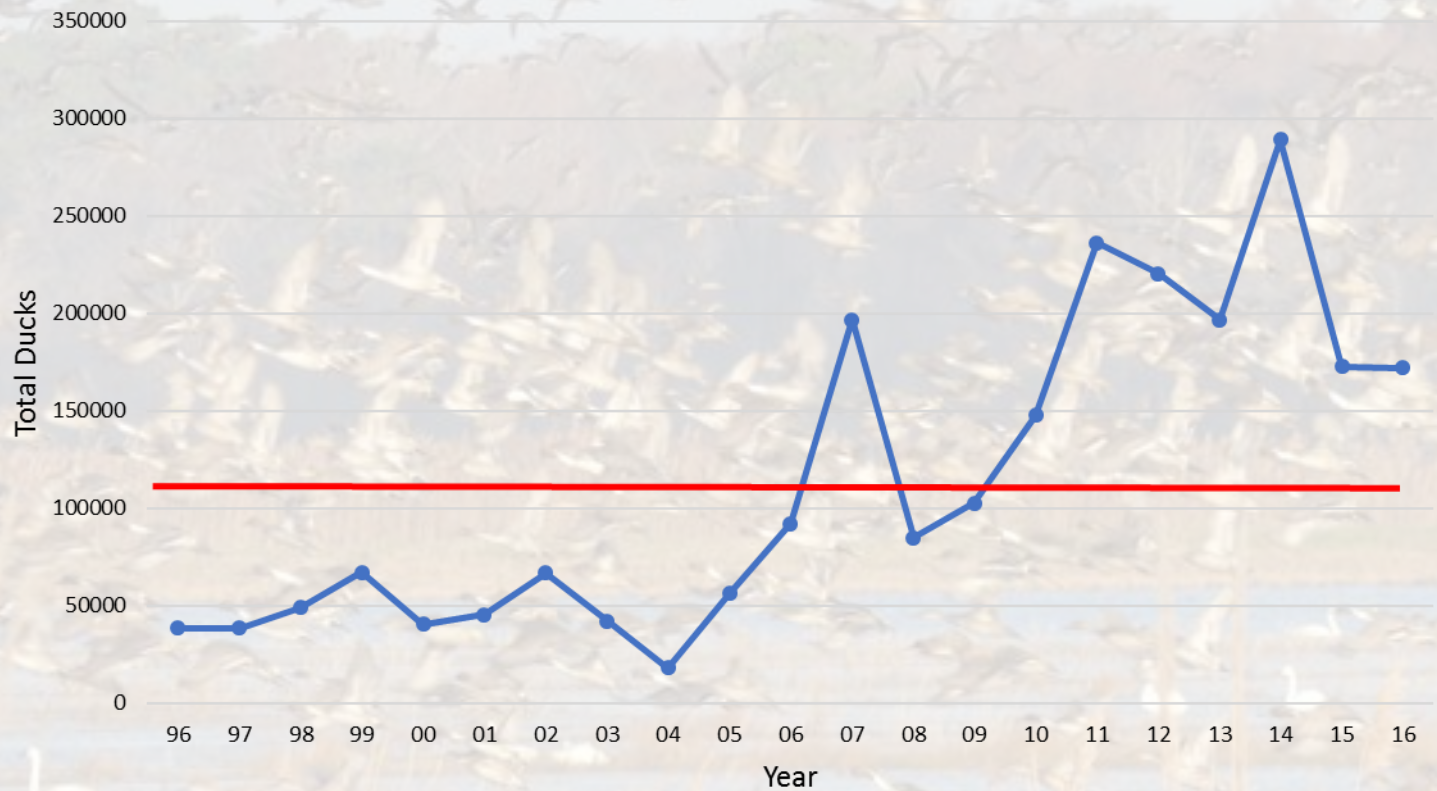
# Ducks

A large flock of ducks is captured in flight over a body of water. The ducks are scattered across the sky, with some in the foreground and others further back. The water below is dark, and a line of trees is visible in the background under a clear blue sky.

**More difficult to attribute any trends in duck numbers on the refuge to the loss of SAV**



**Total Ducks Observed - January Aerial Waterfowl Survey  
Mattamukeet NWR  
1996-2016**





# Ducks

A large flock of ducks is captured in flight over a body of water. The ducks are silhouetted against a warm, orange-hued sky, suggesting a sunset or sunrise. The water below is dark and reflects the light from the sky. The ducks are in various stages of flight, with some wings spread wide and others tucked. The overall scene is dynamic and captures a moment of mass migration.

**No large-scale duck migration from NC as a result of the loss of SAV on the lake – maybe local shifts in use**

**On the refuge, duck numbers are likely to reach some lower equilibrium closer to the long-term average**

gettyimages

Robbie George

**Refuge impoundments will be more critical in providing daily energetic demands of ducks**

# Questions?

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