Trends Among Migrant Birds in the Dyke Marsh Breeding Bird Survey in a Thirty-Year Period (1993-2023)

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Prominent Results

- **Both land and marsh birds are in decline or have disappeared while others are changing their breeding habits, and some may be adapting to changes in habitat.**
- **This situation may be specific to Dyke Marsh or part of a regional change in conditions.**

Causes for Migrant Decline and Habitat Changes

- **Death of Pumpkin Ash Trees due to Emerald Ash Borer**
  - **Promoting nest exposure and increased predation, primarily by Fish Crows**
- **Changes or decline in prey base**
- **Marsh erosion**
- **Tidal channels widening in response to rising water levels in Potomac River**

The Dyke Marsh Breeding Bird Survey Methodology

Uses behavioral criteria to determine the breeding status of all species found in the survey tract.

Species are placed into one of four categories: confirmed breeder, probable breeder, possible breeder, and present.

The survey tract is along the George Washington Memorial Parkway and encompasses the Belle Haven Park picnic area, the Belle Haven Marina, the open marsh, that portion of the Big Gut known as West Dyke Marsh that extends from under the George Washington Memorial Parkway west to River Towers, the Potomac River from the Virginia shoreline to the channel, and the surrounding woodland from the mouth of Hunting Creek to south of Morningside Lane.

A Contrast in Orioles
Orchard Oriole (Icterus spurius)

- **Orchard Orioles are successfully breeding at Dyke Marsh**
  - **But volunteers report many males are first year breeders with yellow body plumage and a black throat**
- **This may indicate that the habitat has become suboptimal**
  - **And full adults are occupying other more suitable locations**
  - **But birds are still fledging young**

Photo by: Jane Gamble, 18 May 2021

Baltimore Oriole (Icterus galbula)

Photo by: Cornell Laboratory of Ornithology

- **In contrast to the Orchard Oriole, Baltimore Oriole are in decline, at least over the past five years**
- **In recent breeding seasons**
  - **We see few or no birds building nests**
  - **2022**
    - **only one female with nesting material**
    - **And volunteers recorded no fledged young**
  - **2023**
    - **No evidence found of breeding behavior**

The Warbling Vireo (Vireo gilvus)

- **Once easy to locate at Dyke Marsh**
- **They remain common in the Belle Haven Picnic Area and Haul Road**
  - **With over 12 territorial males present in a recent summer**
  - **But have virtually disappeared from the southern portion of the marsh**
- **Despite a seemingly steady population in north, volunteers are finding fewer nests and in 2022 no fledged young**

Photo by: Cornell Laboratory of Ornithology

The Adaptable Eastern Kingbird (Tyrannus tyrannus)

- **Eastern Kingbirds are quite common at Dyke Marsh**
  - **But appear to be modifying their breeding strategy**
- **The birds normally start nest construction by late May**
  - **And feeding nestlings primarily odonates**
  - **But recent studies are indicating a decline in odonate populations (Waggener, Friends of Dyke Marsh)**
- **Broods usually consist of three or four nestlings**

Photo by: Ed Eder, 14 July 2022

Eastern Kingbirds Modify Breeding Behavior

- **Breeding behavior modified by 2022, likely in response to prey base decline**
- **All young appeared to have fledged in 2022 & 2023**
- **2022 BBS**
  - **4 active nests**
  - **Observation of 1st nest under construction not until 22 June, with primary prey base for nestlings being non-odonate insects**
- **2023**
  - **Nests contained no more than two nestlings**

Photo by: Ed Eder, 14 July 2022

Yellow Warbler (Setophaga petechia)

- **A dependable breeder until recently**
  - **Found primarily along the wooded area at the end of the Haul Road peninsula**
- **Their decline parallels that of the Baltimore Oriole**
- **By 2022, volunteers recorded only one nest and a single fledgling**
- **In 2023, we found no evidence of attempted breeding**

Photo by: Ed Eder, 24 May 2014

Northern Parula (Setophaga americana)

- **Usually found during the breeding season**
- **Sometimes confirmed as a breeder before 2020**
- **Presence not detected since 2019**
- **The Acadian Flycatcher seems to be following the same fate**
  - **Down to one or two singing males, breeding has not been confirmed for over five years**

Photo by: Cornell Laboratory of Ornithology

Marsh Wren (Cistothotus palustris)

- **The Marsh Wren was a common sight at Dyke Marsh in the past**
  - **Found almost exclusively in narrowleaf cattails**
  - **Building nests close to the water's edge**
- **By 1999, the birds showed evidence of serious decline at Dyke Marsh**
- **Studies in the 1950 recorded 87 singing males**
- **By 1999, graduate student Sandy Spencer tallied 48 birds***
  - **34 territorial males and only 14 breeding females that produced 11 fledged young**

Photo by: Ed Eder, 11 August 2014

See Sandy Spencer's Masters Thesis, George Mason University, 2000

- Spencer, Sandy. (2000). Population abundance and habitat requirements of the marsh wren (Cistothorus palustris) at Dyke Marsh National Wildlife Preserve. Typescript. Thesis (M.S.)--George Mason University, 2000. Includes bibliographical references (leaves 42-47).

The Marsh Wren Disappears

- **The Marsh Wren continued its decline after Spencer's study**
- **Within a decade, the population had dropped to approximately ten birds**
- **In 2017, a volunteer found one male near an assessed active nest**
  - **That was the last year the species was confirmed as a breeder**

Photo by: Ed Eder, 8 July 2017

Least Bittern (Ixobrychus exilis)

- **The Least Bittern Story is different than that of the Marsh Wren**
- **Ceased breeding activity in the south marsh**
  - **As water levels rose and channels widened**
  - **Since the birds prefer narrow channels in dense cattail habitat**
- **Population does not appear to have declined**
  - **Same number of birds are occupying a smaller area**
  - **Data shows from six to ten breeding pairs with at least three family groups in 2022 and 2023**

Photo by: Ed Eder, 16 June 2017

On a Positive Note: The Prothonotary Warbler (Protonotaria citrea)

- **Nesting well at Dyke Marsh**
  - **Perhaps benefitting from the creation of additional cavities caused by the death of Pumpkin Ash trees**
- **2022 survey**
  - **tallied about ten territorial males**
  - **Observed moving into breeding sites along the Haul Road**
- **At least two breeding pairs produced fledged young along Haul Road during the past two years**

Photo by: Ed Eder, 19 June 2022