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A New Longevity Record for Blue Grosbeak. Documentation of Site Fidelity at the Edge of Breeding Range

Beginning in 1993, the Black Swamp Bird Observatory has operated an annual breeding bird monitoring program at the Ostrich Lane Station (41.5354° N, 83.8442° W) in Oak Openings Preserve Metropark, Lucas County, OH. Following the MAPS program protocol, mist netting efforts were commenced to monitor avian abundance, species richness, habitat use and avian response to habitat management in the area. Designated as a state important bird area by the National Audubon Society (National Audubon Society 2017), the Oak Openings region encompasses 337 square km of northwestern Ohio and southeastern Michigan, and consists of oak savannah and wet prairie established on sand and clay soils deposited by historic glacial activity (Forsyth 1993, Moseley 1928). The study site comprises approximately 24 ha within the metropark and monitors four of the unique floral communities found within the region (degraded grassland shrub-scrub, grassland, managed oak savannah, unmanaged oak woodland).

A Blue Grosbeak (*Passerina caerulea*) (#2281-42527) was first encountered at the Ostrich Lane Station on 14 June 2008 and banded as a second-year female as determined by presence of a molt-limit and extensive brown body plumage (Pyle 1997). The bird was recaptured at the same site the following year on 18 June 2009, and was not encountered again until 05 July 2017. This represents a longevity record of 10 years and 1 month, surpassing the previous record of 7 years and 2 months by nearly three years as reported by the Bird Banding Laboratory (USGS Bird Banding Laboratory 2017).

With a seven year gap between encounters, questions remain as to where this bird resided during the interim breeding seasons. No changes were made to the station protocol or net locations during this time period. However, an EF4 tornado passed through much of Northwest Ohio in early June 2010, impacting more than 40 ha of Oak Openings Preserve Metropark, including a portion of the Ostrich Lane Station. The subsequent habitat changes as a result of the tornado may have affected this individual's movement within the immediate area and caused displacement to other available habitat outside the station's scope of detectability.

Much of the Ostrich Lane Station has returned to resemble its pre-tornado state and is congruent with described Blue Grosbeak habitat (Lowther and Ingold 2011). Adjacent to mature forest, the site contains microhabitats with limited shrub and tree growth, and heavy forb and graminoid ground cover interspersed with dry open sand, with mist nets positioned to best capture birds moving within the area. The station averages less than one Blue Grosbeak caught per year, and this individual is the only Blue Grosbeak to be recaptured in any year. Limiting factors such as small sample size and MAPS protocol's restricted mist netting effort during breeding bird monitoring (once every ten days) could also account for the seeming absence of this individual bird.

It is notable that this longevity record comes from the northern edge of the species' range. Generally characterized as a breeding bird of the southern U.S., overall Blue Grosbeak numbers have increased both locally and range-wide, and the species has been expanding northward (Sauer et al. 2017). In Ohio, historic breeding sites have been limited to counties in the southern half of the state, concentrated near the Ohio River. The first confirmed breeding pair was documented in 1942, and annual breeding records

followed beginning in the 1970's (Peterjohn 1989). Following this stronghold in southern Ohio, the first documented breeding Blue Grosbeak elsewhere in the state was in 1988 with a failed attempt made in the Oak Openings of Lucas County, 240-320 km north of the species' known breeding range at the time and within three km of the Ostrich Lane Station (Kemp et al. 1988). In subsequent years, Blue Grosbeak successfully nested in Ohio's Oak Openings, eventually becoming an annual breeder in the region (Rodewald et al. 2016).

While established breeding areas continue to swell, particularly along the northern edge of Bird Conservation Region 24 in Ohio and Indiana (NABCI 2017, Sauer et al. 2017), the Oak Openings breeding area remains in geographic isolation, approximately 200 km away from established southern regions. Other northern breeding occurrences have been documented in Ohio (Rodewald et al. 2016), as well as southern Michigan, where its first breeding pair was documented in 2004 (Chartier 2011). Unlike these other peripheral breeding cases that appear to be isolated pairs, the Oak Openings remains a significant perennial breeding area in northern Ohio with documented recurrence, demonstrating that as this species continues to expand, even disjunct areas with suitable habitat may be colonized within just a few decades.

Much of the biology of Blue Grosbeak remains poorly known (Lowther and Ingold 2011), and this individual bird adds both a new longevity record as well as broader natural history information about this species. Through multiple encounters with this individual Blue Grosbeak at the Ostrich Lane Station over nearly a decade, and the isolated nature of the Oak Openings ecosystem, evidence indicates that this Neotropical migrant species can show strong site fidelity, even on the leading edge of an expanding range.

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Ryan R. Jacob
Black Swamp Bird Observatory
13551 W. State Route 2
Oak Harbor, OH 43449
ryanjacob@bsbo.org

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