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# Longevity and site fidelity of a banded Green Heron (*Butorides virescens*) in Texas, USA

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#### Abstract

We banded two Green Herons (*Butorides virescens*) at Spring Lake, San Marcos, Texas, USA, in 2013. One of the birds (alphanumeric color band code A06) has been re-sighted every year since 2013 in the same general foraging location at Spring Lake. While our sample size is insufficient, our banding efforts do indicate a high degree of foraging site fidelity for this individual and document the oldest known wild breeding Green Heron at 9+ years old since the individual was a breeding adult bird (i.e., after hatch year bird) when initially banded. Our study demonstrates the importance of long-term banding in measuring site fidelity and age estimation.

Key words: Ardeidae, band re-sighting, Green Heron, heron longevity, San Marcos, Texas.

### Introduction

For many species of birds, annual adult survival is the most important vital rate affecting population growth (Sæther and Bakke 2000). This vital rate also tends to be the most difficult to estimate. Aging wild birds is usually accomplished through color band re-sighting data or band-recovery data. However, only a small percentage of color-banded birds are ever observed again and thus lifespan records are generally sparse. The Green Heron (*Butorides virescens*) is a short and stocky waterbird of Central and North America. This solitary wading bird is a common species of wetlands throughout much of its range but there are very few data on Green Heron lifespan and survivorship (Davis and Kushlan 2020).

### Methods, Study Area and Results

As part of a study to examine foraging ecology of Green Herons in relation to human disturbance (Moore *et al.* 2016), we banded two adult (i.e., af-

ter hatch year) Green Herons in 2013 in San Marcos, Texas, USA. One of the birds was a male that we captured via net gun and banded near the wetlands boardwalk at Spring Lake (29° 53' 35" N, 97° 55' 53" W) on 14 May 2013 (Figs. 1-2). Approximate age and sex determination was based upon plumage characteristics (Davis and Kushlan 2020). For the next eight years, the individual was re-sighted during the spring/summer in the same general area, usually only a few meters from where he was banded (29° 53' 28.93" N, 97° 55' 53.62" W) along the wetlands boardwalk. Since the bird was in his second year or older when banded, he would be at least age 9 at our last sighting on 1 May 2021 (Fig. 3).

### Discussion

The banded Green Heron was at least 9 years old at last sighting which establishes a new longevity record for the species. Prior to this publication, the record for oldest Green Heron belonged to a banded individual recovered in Mexico at age 7 years 11 months (Clapp *et al.* 1982). While our sample size is very small, our re-sighting records reveal the oldest documented age for Green Heron in the wild. Additionally, our study suggests for-aging site fidelity of a migratory Green Heron which has also not been documented before.

Since the yearly re-sightings of the banded individual were always in the same area of the wetland boardwalk, these repeated observations also provide evidence for foraging site fidelity from a migratory individual. While foraging site fidelity has been documented in other Ardeidae species (e.g., Great Blue Heron, *Ardea herodias*, Butler 1997), it has not been documented previously in Green Herons. During spring and summer months, it is common to see a dozen or more strategically spaced Green Herons foraging on



Figure 1. Handling and banding of Green Heron (*Butorides virescens*), band number A06, banded at Spring Lake, San Marcos, Texas, USA, on 14 May 2013. Photo by Amanda Haverland.



Figure 2. Resighting of A06 Green Heron (*Butorides virescens*) at Spring Lake, San Marcos, Texas, USA, in May 2013. Photo by Amanda Haverland.



Figure 3. Resighting of A06 Green Heron (*Butorides virescens*) at Spring Lake, San Marcos, Texas, USA, on 1 May 2021. Photo by Eric Carpenter.

Spring Lake. These birds begin fall migration in September and return to the area beginning in May. Records from eBird indicate some Green Herons remain in the area over the winter, however a re-sighting of the banded individual has never been reported during winter months. We can speculate on possible overwintering sites from banding studies where Green Herons that were banded midcontinent were recovered in Texas, Florida, Mexico, Central America, Greater Antilles, and western birds in Mexico (Davis and Kushlan 2020). Birds in central Texas, where Spring Lake is situated, may overwinter in coastal Texas.

Green Herons nest in the habitats around Spring Lake and the San Marcos River (MCG, personal observations). While it is unknown if this individual breeds in the area, the fact that it has been documented annually since 2013 strongly suggests breeding site fidelity; not necessarily to a specific site (e.g., tree or colony) but at least to a particular defined area within the breeding range of the species.

Our small study underscores the importance of long-term banding studies to examine movement, site fidelity and age determination.

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