

## HY/AHY ratio of newly banded Ruby-throated Hummingbirds

### APES Bird Banding Lab Activity #1

At the Warner Park Nature Center banding station, Ruby-throated hummingbirds are banded regularly each fall as they migrate through Tennessee. Some of these birds breed here, but most that we catch are breeding further north.

During their fall migration, trained researchers can tell the difference between an HY bird (a Hatching Year bird, born that summer) and an AHY bird (After Hatching Year, born before this past summer).

The ratio between HY/AHY birds can be a strong indicator of how the overall population of birds migrating through Tennessee is faring.

1. **Graph the data in Table 1 where the x-axis is the year and y-axis is the ratio. Be sure to include a trend line.**
2. **What overall trend does this data suggest?**
3. **If the HY/AHY ratio is increasing, what might that mean for the overall population and why?**



**Table 1:** Ratio of HY/AHY Ruby-throated Hummingbirds banded between August and September of each year

Year	RTHU # HY	RTHU # AHY	Total Birds	Ratio of HY/AHY
2011	55	32	87	1.71875
2012	88	38	126	2.315789
2013	55	21	76	2.619048
2014	47	19	66	2.473684
2015	107	26	133	4.115385
2016	62	24	86	2.583333
2017	76	28	104	2.714286
2018	186	52	238	3.576923
2019	111	36	147	3.083333



## Gray-cheeked Thrush Migration and Fidelity Data

### APES Bird Banding Lab Activity #2

Gray-cheeked Thrush 'GCTH 12420' was tagged September 13, 2017 north of Quebec, Canada during fall migration. As it moved, the tagged bird was detected by transmitter stations at locations provided in Table 1.

*NOTE: GCTH 12420 was tagged a few years BEFORE the transmitter station was installed at Warner Park Nature Center and there are very few stations in the southeastern states along its route between Pennsylvania and Florida.*

**Use the data on GCTH Map Table 1 to plot the fall migration route of this thrush using the following guidelines:**

1. Use the detection data in the table to plot the locations on the map.
2. Connect the dots and draw arrowheads on the track in the direction of bird movement.
3. Using the scale on the map and a ruler, estimate and label the total flight track distance.
4. Choose two detections and calculate the flight speed between locations (distance/time as km/hr). Label this on the map.

Excerpt from [Stopover Habitats and What Birds Need on Migration](https://abcbirds.org/stopover-habitats-birds-need-migration/)

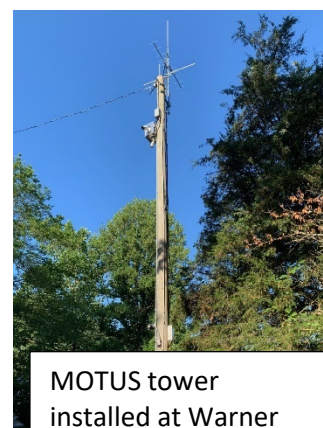
<https://abcbirds.org/stopover-habitats-birds-need-migration/>

Stop-over sites provide crucial resources: food that fuels ... long-haul flights, safe places to roost and rest, and somewhere to ride out unfavorable conditions or events. Like links in a chain, these stopover sites sustain birds' remarkable long-distance migrations...some birds literally double their body weight at these sites, building fat stores that will sustain them as they fly thousands of miles across continents and oceans. Researchers long thought these refueling stops could be made at any point along the birds' migratory journeys, but recent studies suggest otherwise. We now know that individual birds often take long, multi-day breaks at just three or four key points during their migration.

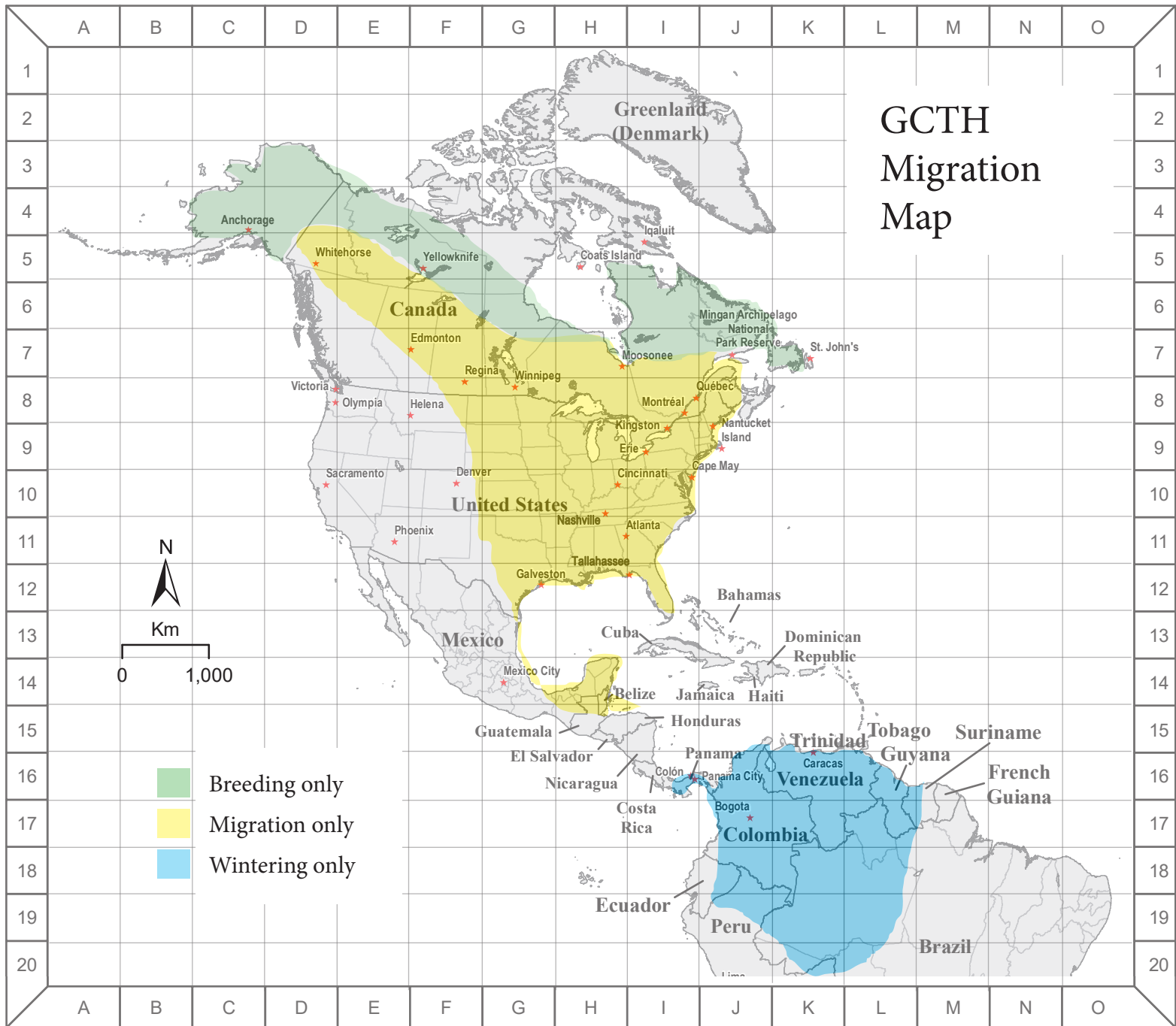
In the fall of 2020, nine (9) migrating Gray-cheeked Thrushes were banded and tagged at the Warner Park Nature Center banding station in Nashville, TN.

**Refer to your fall migration map, the article above and the data in Table 2 and answer the following questions:**

1. How long did it take for the GCTH 12420 to travel from Erie to Tallahassee?
2. What was the longest length of stay detected for GCTH 12420?
3. What role might the habitat in Warner Park Nature Center play in the life of Gray-cheeked Thrushes?
4. What might we detect in the fall of 2021 now that our tower is installed?



MOTUS tower  
installed at Warner  
Park July 2020



**Table 1:** Tagged Gray-cheeked Thrush detected along migration route in fall of 2017

Date	Location	Nearest City	Length of Stay
Sept 13	J7	Mingan Park	0 days, 5min
Sept 20	I8	Quebec	0 days, 3min
Sept 22	I9	Erie	0 days, 12min
Oct 16	I12	Tallahassee	0 days, 5min
Oct 24	J16	Panama City	0 days, 4min

**Table 2:** Tagged Gray-cheeked Thrushes detected at Nashville Warner Park banding station

Date	Tag #	# Days
Sept 18	30455	2
Sept 29	30465	9
Sept 29	30460	3
Sept 29	30462	22
Oct 2	30452	14
Oct 2	30461	12
Oct 6	30468	11
Oct 6	30453	9

## Indigo Bunting Population Trend at Warner Park Nature Center

### APES Bird Banding Lab Activity #3

A recent study shows there are 2.9 billion fewer birds breeding in North America than there were in 1970. Specific declines include migratory birds with a -28% loss. Read the following and answer the questions below to determine if we see a similar trend in our local data.

Indigo Buntings, Magnolia Warblers and Common Yellowthroats are all migratory birds that over-winter in Central or South America. Indigo Buntings and Common Yellowthroats breed in Warner Park in the summer and Magnolia Warblers fly through each year on their way to breeding grounds further north. With 30 years of banding data, we can compare the national trend to the population change of these birds.

**Table:** Total of newly captured birds

- 1. Graph the data in the Table, creating 3 separate graphs – one for each species. Be sure to include a trend line in each graph.**
- 2. What overall trend does this data suggest? How does it compare to the national data?**
- 3. What other interesting patterns do you notice in this data?**

Year	# Indigo Buntings	# Magnolia Warblers	# Common Yellowthroats
1991	19	16	1
1992	18	6	5
1993	25	9	9
1994	11	11	4
1995	10	13	3
1996	18	11	1
1997	16	8	5
1998	17	4	3
1999	8	2	2
2000	13	4	1
2001	17	10	0
2002	13	7	8
2003	20	10	2
2004	8	9	8
2005	14	22	2
2006	7	17	1
2007	14	7	6
2008	13	4	3
2009	13	3	2
2010	3	8	1
2011	20	14	1
2012	18	7	2
2013	4	5	1
2014	8	6	1
2015	8	7	0
2016	7	5	3
2017	11	11	1
2018	13	4	1
2019	7	4	0



**Male Indigo Bunting**