

**A Survey of Breeding Birds Present at
Pierce Cedar Creek Institute
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It is important to gain an understanding of the population dynamics in a target area prior to beginning avian population research. The purpose of this study was to survey the avian populations of the Pierce Cedar Creek Institute during the breeding season by means of point counts and mist-netting. By using extensive sampling in the form of mapping results of fixed-radius point counts, general assumptions can be made about the species present in the sampling region. Once the species that are present breeding in the area have been identified, it is then possible to mist-net and band the birds to gain demographic information for each species. Mist-netting is a commonly used technique when mapping the temporal patterns of species abundance (Silkey, Nur, and Geupel 1999). Mist-netting was conducted in the same areas as the fixed-radius point counts to compare data between the two and determine a relationship, as past studies have found mixed results when comparing detections of species using these techniques (Silkey, Nur, and Geupel 1999). Data such as the age and sex of individuals was recorded to be sure that an area which is seemingly abundant in a particular species does not include mostly males, causing it to be a poor location for the study of breeding pairs (Gibbs and Faaborg 1990). These two techniques compliment one another when paired, each partially correcting the other's limitations resulting in more complete data concerning the breeding birds present in a given region.

Methods:*Point Counts:*

Two sets of point counts were conducted within the 661 acres of the Pierce Cedar Creek Institute during the research period. Pierce Cedar Creek is located in Barry County Michigan. The first count began on 24 May 2006, with the second beginning 11 July 2006.

The locations for the points were determined by using the institute's trail system as a starting reference, and mapping distances along the trail roughly every 200 meters (Figure 1). Some points were closer or further than 200 meters, as changes in the habitats were taken into consideration while mapping. These points were entered into a GPS unit and trees were flagged to mark the point visually. Open field habitats were the exception to this procedure. Points in the fields were determined by starting at the forest/field edge and traveling 200 meters down the center of the field. Points were established along a transect for the length of the field, every 200 meters. The widest field included two transects down the length of the field. Points 29-38 were located in fields, and were not marked with a GPS unit.

Point counts were then conducted at each location for 10 minutes. The counts began at approximately 6:45 am for the first set, and 6:30 am for the second. The timing for each was chosen to be within 30 minutes of sunrise, coinciding with maximum activity for the birds. During the count, each bird that was seen or heard within the 10 minute time frame was recorded, including flyovers. While in the fields, birds that were flushed up while transecting from one point to the next were also recorded. The counts

were completed each day before 10:30 am to avoid the midday lull in activity. Vocalizing birds were recorded as males unless visually identified as females.

Mist-Netting:

The mist-netting took place from 31 May to 10 July 2006 using the points determined for the point counts. For the first ten points, five mist-nets were placed within the surrounding area of each marker. The remaining points were coupled each day, and the nets were placed between the two points. The nets were usually placed 20-50 meters apart, and their size varied from 6m, 9m, and 12m in length. Each was approximately 10 feet tall once erected on metal conduit poles. These poles allowed the nets to be easily positioned quickly, but had to be stored in the woods as they were too heavy to carry long distances.

In areas where the ground was too dry and hard to drive in the metal poles, collapsible Avinet poles were used. These poles were lightweight and had a sharp point on one section that could be driven into the ground with a specialized pounder. The downfall of these poles was that the nets had to be taken off of them for storage, increasing the time it takes to erect the nets and increasing the chance of tangles.

Every attempt was made to place the nets in an orientation that was conducive to captures, such as by placing them perpendicular to traffic flow at habitat edges. Once erected, the nets were left to sit alone for 10-15 minutes, and then checked for captures. The captures were identified, sexed, banded, and measurements were taken of wing chord, culmen length, tarsus length, and weight.

Results:*Point Counts:*

The first point count showed the most abundant species (those totaling over 20 males recorded) to be the Common Yellowthroat, Song Sparrow, Red-Eyed Vireo, Field Sparrow, Northern Cardinal, Yellow Warbler, Indigo Bunting, American Robin, Rose-Breasted Grosbeak, Blue-Winged Warbler, Great-Crested Flycatcher, American Goldfinch, Eastern Wood-Pewee and Brown Headed Cowbird, from most abundant to least (Table 1).

The second point count showed the following species from most abundant to least; Common Yellowthroat, Song Sparrow, American Robin, Field Sparrow, Red-Eyed Vireo, American Goldfinch, Black-Capped Chickadee, Northern Cardinal, White-Breasted Nuthatch, Common Grackle, Indigo Bunting, Eastern Wood-Pewee, Acadian Flycatcher, Wood Thrush, Northern Flicker, and Scarlet Tanager. The remaining species had fewer than 20 males recorded (Table 1).

Mist-Netting:

The most frequent captures, those totaling five or more individuals per species were American Robin, Downy Woodpecker, Gray Catbird, Indigo Bunting, Northern Cardinal, Song Sparrow, and Veery (Table 2).

The American Robin, Gray Catbird, and Song Sparrow were captured in the greatest numbers, allowing a comparison among their physical traits. There was generally little variation among the traits of wing chord, culmen length, and tarsus length, but weight was a factor that varied greatly in each species (Figures 2, 3, 4).

Discussion:

Point counts under-represented those birds that vocalize either quietly or infrequently, and do not take into consideration the females in an area. Examples of this could be the light, high pitched song of the Brown Creeper or Tree Swallow, or the airy song of the Eastern Bluebird. A random call of a Great-Crested Flycatcher or mew of the Gray Catbird could easily be drowned out by the loud, melodic song of a Rose-Breasted Grosbeak.

The loudest, most repetitive songs were most easily picked up, while individuals with single or two note, quieter songs are easier to overlook. Many individuals were also picked up toward the 10-minute mark of the count, indicating that these birds either moved into the count range from edges of territories, or vocalized infrequently.

In the majority of counts at each point, both sets of data show roughly the same number of species identified. However, the number of species that were the same for both sets at a point was usually just over or just under half of the total species recorded.

The two sets of counts showed that some species took longer to establish themselves in the area, for example, there was little canopy cover in May, so the Scarlet Tanagers waited to nest until there was a more dense cover. Also, some species were present in larger numbers earlier in the season, such as the early prevalence of Rose-Breasted Grosbeaks and Yellow Warblers. These species may have remained in the area, but were not picked up on point counts later in the season, possibly due to early season breeding.

The second set of point counts showed more individuals than the first which was inconsistent with the breeding season, as the territories should have been established by

the time of the second count. However, more species could have arrived in the area after the first count was conducted, resulting in later establishment of territories for these species, and more vocalizations later in the season. There may also have been other environmental factors that took part in the discrepancy between the two counts. There could have been inadequate canopy cover as well as weather patterns that delayed breeding activity by affecting food sources such as colder weather in mid-May inhibiting the abundance of insects in the area.

Mist-netting is a good companion to the point counts because it is assumed that each bird has the same probability of encountering the net, however there is the limitation of each individual's behavior on their likelihood of being captured.

Gray Catbirds were rarely noted in point counts, but were captured frequently while netting. This may have been due to their erratic, usually single note vocalizations. While concentrating on counting other individuals with more complex songs, it is possible to miss single, unpredictable notes.

The most frequently captured birds were those that prefer lower shrubby areas, and forage on the ground, such as the Gray Catbird. These behaviors increased their likelihood of encountering a net. The bird species that spend more time high in the canopy have inherently lower chances of being captured. An example of this comparison would be American Robins spending a large amount of time foraging for food on the ground, while Scarlet Tanagers nest and collect food high in the canopy. Competition between males over females or territory also increased their likelihood of encountering the nets due to their lack of focus on the environment and more erratic flight while in a chase.

Literature Cited:

Gibbs, J. P. and J. Faaborg. "Estimating the viability of Ovenbird and Kentucky Warbler populations in forest fragments." Conservation Biology 4.2 (1990): 193-196.

Silkey, Mariabeth, Nadav Nur, and Geoffrey R. Geupel. "The Use of Mist-Net Capture Rates to Monitor Annual Variation in Abundance: A Validation Study." The Condor 101.2 (May, 1999): 288-298.

Figure 1- PCCI Map of points used for point counts and mist-netting.
Developed in ArcView GIS (version 3.3) with data downloaded from Thales MobileMapper GPS.

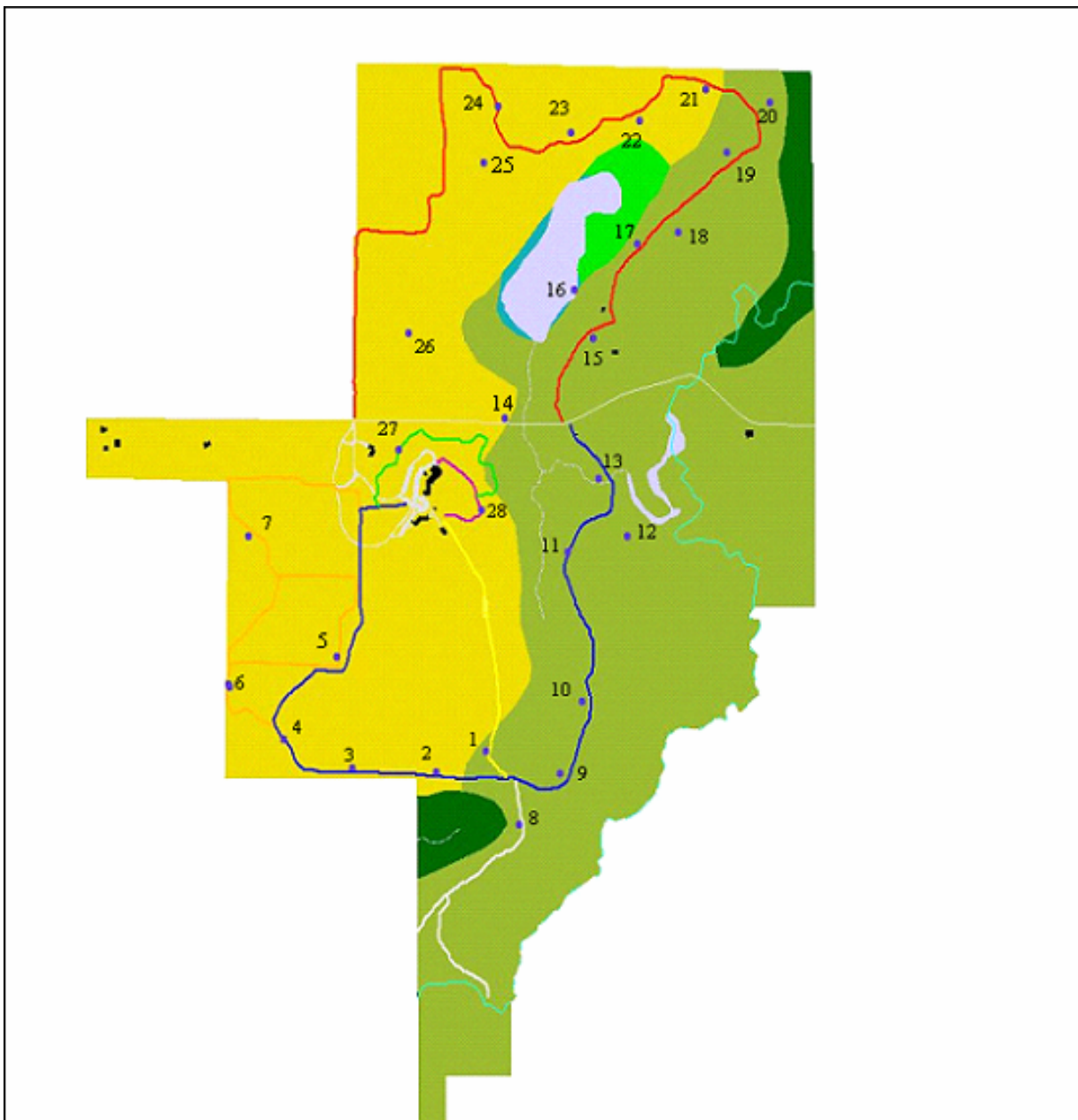


Table 1 – Birds recorded in point counts at PCCI. Species recorded at same point between counts are shown in shaded regions.

PCCI - 1st Point Counts - Beginning 5/24/2006

Point 1: 6:45am 5/24/06	M	F	Flyover
Acadian Flycatcher	1		
American Robin	1		
Downy Woodpecker	1		
Eastern Wood-Pewee	2		
Northern Cardinal	1	1	
Red-Bellied Woodpecker	1		
Red-Eyed Vireo	2		
Rose-Breasted Grosbeak	1		
White-Breasted Nuthatch	1		
Baltimore Oriole	1		
Great-Crested Flycatcher	2		
Ovenbird	1		
Song Sparrow	2		
Tufted Titmouse	1		
Wild Turkey	1		

PCCI - 2nd Point Counts - Beginning 7/11/2006

Point 1: 6:30am 7/11/06	M	F	Flyover
Acadian Flycatcher	2		
American Robin	1		
Downy Woodpecker	1		
Eastern Wood-Pewee	1		
Northern Cardinal	1		
Red-Bellied Woodpecker	1		
Red-Eyed Vireo	2		
Rose-Breasted Grosbeak	1		
White-Breasted Nuthatch	1		
American Crow	1		
Brown-Headed Cowbird	1		
Common Yellowthroat	1		
Eastern Towhee	1		
Pileated Woodpecker	1		
Sandhill Crane	1		
Scarlet Tanager	1		
Wood Thrush	2		

Point 2: 7:00am	M	F	Flyover
Acadian Flycatcher	1		
Field Sparrow	1		
Great-Crested Flycatcher	2		
Northern Cardinal	3		
Ovenbird	1		
Scarlet Tanager	1		
White-Breasted Nuthatch	1		
American Crow	3		
Baltimore Oriole	2		
Blue Jay	1		
Blue-Winged Warbler	2		
Common Yellowthroat	2		
Red-Bellied Woodpecker	1		
Red-Eyed Vireo	3		
Rose-Breasted Grosbeak	1		
Song Sparrow	1		

Point 2: 6:45am	M	F	Flyover
Acadian Flycatcher	2		
Field Sparrow	1		
Great-Crested Flycatcher	1		
Northern Cardinal	2		
Ovenbird	2		
Scarlet Tanager	1		
White-Breasted Nuthatch	1		
American Goldfinch	1		
American Robin	2		
Downy Woodpecker	1		
Eastern Wood-Pewee	1		
Indigo Bunting	1		
Northern Flicker	2		
Wood Thrush	3		

Point 3: 7:14am	M	F	Flyover
Acadian Flycatcher	2		
Eastern Wood-Pewee	1		
Northern Cardinal	1		
Red-Eyed Vireo	2		
Baltimore Oriole	2		
Black-Capped Chickadee	2		

Point 3: 7:00am	M	F	Flyover
Acadian Flycatcher	2		
Eastern Wood-Pewee	2		
Northern Cardinal	1		
Red-Eyed Vireo	3		
American Robin	1		
Black-Billed Cuckoo	1		

Blue Jay	1		
Common Yellowthroat	1		
Great-Crested Flycatcher	2		
Ovenbird	2		
Red-Bellied Woodpecker	1		
Rose-Breasted Grosbeak	1		
Tufted Titmouse	1		

Downy Woodpecker	1		
Northern Flicker	1		
Pileated Woodpecker	1		
Scarlet Tanager	2		
Song Sparrow	1		
White-Breasted Nuthatch	1		
Wood Thrush	1		

Point 4: 7:27am	M	F	Flyover
Blue Jay	1		
Eastern Wood-Pewee	1		
Ovenbird	1		
Red-Eyed Vireo	3		
Scarlet Tanager	1		
Mourning Dove	1		
Northern Cardinal	1		
Red-Bellied Woodpecker	1		

Point 4: 7:14am	M	F	Flyover
Blue Jay	1		
Eastern Wood-Pewee	2		
Ovenbird	2		
Red-Eyed Vireo	3		
Scarlet Tanager	1		
Acadian Flycatcher	4		
American Robin	3		
Downy Woodpecker	1		
Yellow-Throated Vireo	1		

Point 5: 7:41am	M	F	Flyover
American Goldfinch	2		
Blue Jay	1		
Common Yellowthroat	1		
Eastern Wood-Pewee	1		
Indigo Bunting	4	1	
Northern Cardinal	1		
Red-Eyed Vireo	2		
Scarlet Tanager	1		
White-Breasted Nuthatch	1		
American Robin	1		
Cedar Waxwing	1		
Downy Woodpecker	1		
Ovenbird	1		
Red-Bellied Woodpecker	1		
Song Sparrow	1		

Point 5: 7:29am	M	F	Flyover
American Goldfinch	1		
Blue Jay	2		
Common Yellowthroat	1		
Eastern Wood-Pewee	1		
Indigo Bunting	2		
Northern Cardinal	1		
Red-Eyed Vireo	3		
Scarlet Tanager	1		
White-Breasted Nuthatch	2		
Acadian Flycatcher	1		
American Crow	2		
Eastern Towhee	1		
Tufted Titmouse	1		
Yellow-Throated Vireo	2		

Point 6: 7:58am	M	F	Flyover
Black-Capped Chickadee	1		
Eastern Bluebird	1		
Eastern Wood-Pewee	1		
Field Sparrow	1		
Indigo Bunting	3	1	
Northern Cardinal	1		
Song Sparrow	1		
White-Breasted Nuthatch	1		
American Robin	1		
Baltimore Oriole	1		
Blue-Winged Warbler	3		

Point 6: 7:45am	M	F	Flyover
Black-Capped Chickadee	2		
Eastern Bluebird	1		
Eastern Wood-Pewee	1		
Field Sparrow	2		
Indigo Bunting	2		
Northern Cardinal	2		
Song Sparrow	1		
White-Breasted Nuthatch	1		
American Goldfinch	1		
Chipping Sparrow	1		
Common Yellowthroat	2		

Brown-Headed Cowbird	1		
Eastern Towhee	1		
Ovenbird	1		
Rose-Breasted Grosbeak	1		

Downy Woodpecker	1		
Scarlet Tanager	1		
Tufted Titmouse	1		

Point 7: 8:20am	M	F	Flyover
Downy Woodpecker	1		
Eastern Wood-Pewee	2		
Indigo Bunting	3		
Ovenbird	1		
Red-Eyed Vireo	3		
Tufted Titmouse	1		
White-Breasted Nuthatch	2		
Brown-Headed Cowbird	2		
Eastern Towhee	1		
Great-Crested Flycatcher	1		
House Wren	1		
Northern Cardinal	2		
Red-Bellied Woodpecker	1		

Point 7: 8:03am	M	F	Flyover
Downy Woodpecker	1		
Eastern Wood-Pewee	1		
Indigo Bunting	1		
Ovenbird	2		
Red-Eyed Vireo	3		
Tufted Titmouse	1		
White-Breasted Nuthatch	1		
Acadian Flycatcher	1		
American Goldfinch	1		
American Robin	1		
Black-Capped Chickadee	2		
Common Yellowthroat	1		
Field Sparrow	1		
Hairy Woodpecker	1		
Yellow-Throated Vireo	1		

Point 8: 8:45am	M	F	Flyover
Acadian Flycatcher	1		
American Robin	2		
Common Yellowthroat	1		
Eastern Wood-Pewee	1		
Great-Crested Flycatcher	1		
Northern Cardinal	1		
Red-Eyed Vireo	2		
Scarlet Tanager	2		
Tufted Titmouse	1		
Wood Thrush	2		
Black-Throated Green Warbler	2		
Ovenbird	1		
Rose-Breasted Grosbeak	1		
Wild Turkey	1		

Point 8: 8:28am	M	F	Flyover
Acadian Flycatcher	2		
American Robin	3		
Common Yellowthroat	1		
Eastern Wood-Pewee	1		
Great-Crested Flycatcher	3		
Northern Cardinal	1		
Red-Eyed Vireo	1		
Scarlet Tanager	1		
Tufted Titmouse	2		
Wood Thrush	1		
Black-Capped Chickadee	1		
Blue Jay	1		
Downy Woodpecker	1		
Northern Flicker	2		
Red-Bellied Woodpecker	1		
Ruby-Throated Hummingbird	1		

Point 9: 9:00am	M	F	Flyover
American Robin	2		
Black-Capped Chickadee	1		
Black-Throated Green Warbler	2		
Downy Woodpecker	1		
Eastern Wood-Pewee	2		
Great-Crested Flycatcher	1		
Northern Cardinal	1		

Point 9: 8:41am	M	F	Flyover
American Robin	5		
Black-Capped Chickadee	2		
Black-Throated Green Warbler	2		
Downy Woodpecker	1		
Eastern Wood-Pewee	1		
Great-Crested Flycatcher	2		
Northern Cardinal	2		

Northern Flicker	1		
Red-Eyed Vireo	3		
Wood Thrush	2		
Brown Creeper	1		
Common Yellowthroat	1		
Rose-Breasted Grosbeak	1		
Tufted Titmouse	1		
Veery	2	1	
White-Breasted Nuthatch	1		

Northern Flicker	2		
Red-Eyed Vireo	2		
Wood Thrush	1		
Acadian Flycatcher	2		
American Crow	3		
Scarlet Tanager	2		

Point 10: 9:22am	M	F	Flyover
American Robin	1		
Eastern Wood-Pewee	2		
Great-Crested Flycatcher	1		
Red-Eyed Vireo	3		
White-Breasted Nuthatch	1		
Wood Thrush	1		
Common Yellowthroat	2		
Ovenbird	1		
Pileated Woodpecker	1		
Rose-Breasted Grosbeak	2		
Ruby-Throated Hummingbird		1	
Song Sparrow	1		
Veery	1		
Wood Duck	1	1	

Point 10: 8:55am	M	F	Flyover
American Robin	4		
Eastern Wood-Pewee	2		
Great-Crested Flycatcher	2		
Red-Eyed Vireo	3		
White-Breasted Nuthatch	2		
Wood Thrush	1		
Acadian Flycatcher	2		
Black-Throated Green Warbler	2		
Northern Cardinal	1		
Red-Bellied Woodpecker	1		
Sandhill Crane	1		

Point 11: 9:40am	M	F	Flyover
Common Yellowthroat	4		
Eastern Wood-Pewee	1		
Great-Crested Flycatcher	1		
Northern Cardinal	1		
Red-Eyed Vireo	1		
Song Sparrow	5		
Tufted Titmouse	2		
Baltimore Oriole	1		
Blue-Winged Warbler	1		
Ovenbird	2		
Rose-Breasted Grosbeak	1		
Yellow Warbler	2		

Point 11: 9:09am	M	F	Flyover
Common Yellowthroat	3		
Eastern Wood-Pewee	1		
Great-Crested Flycatcher	1		
Northern Cardinal	2		
Red-Eyed Vireo	1		
Song Sparrow	3		
Tufted Titmouse	2		
Acadian Flycatcher	1		
American Goldfinch	1		
American Robin	2		
Black-Capped Chickadee	1		
Brown-Headed Cowbird	1		
Eastern Towhee		1	
Indigo Bunting	1		
Scarlet Tanager	1		
White-Breasted Nuthatch	1		
Yellow-Throated Vireo	1		

Point 12: 9:52am	M	F	Flyover
Common Yellowthroat	4		
Northern Cardinal	1		

Point 12: 9:22am	M	F	Flyover
Common Yellowthroat	6		
Northern Cardinal	2		

Red-Winged Blackbird	2		
Song Sparrow	3		
Yellow Warbler	3		
American Crow	1		
American Goldfinch	1		
American Robin	1		
Baltimore Oriole	1		
Mourning Dove	1		

Red-Winged Blackbird	3		
Song Sparrow	1		
Yellow Warbler	2		
Black-Capped Chickadee	3		
Brown Creeper	1		
Brown-Headed Cowbird	1		
Eastern Bluebird	1		
Eastern Kingbird	2		
Gray Catbird	1		
Killdeer	1		
Mallard		1	
Northern Flicker	1		
White-Breasted Nuthatch	2		

Point 13: 10:06am	M	F	Flyover
American Goldfinch	2		
American Robin	1		
Black-Capped Chickadee	1		
Brown-Headed Cowbird	2		
Chipping Sparrow	2		
Common Yellowthroat	4		
Field Sparrow	1		
Red-Winged Blackbird	2		
Song Sparrow	3		
Eastern Kingbird	1		
Gray Catbird	1		
Great-Crested Flycatcher	1		
Northern Cardinal	2		
Turkey Vulture	2		✓
Yellow Warbler	3		

Point 13: 9:36am	M	F	Flyover
American Goldfinch	4		
American Robin	1		
Black-Capped Chickadee	1		
Brown-Headed Cowbird	2	1	
Chipping Sparrow	1		
Common Yellowthroat	5		
Field Sparrow	1		
Red-Winged Blackbird	1		
Song Sparrow	5		
Downy Woodpecker	1		
Eastern Towhee	1		
Indigo Bunting	1		

Point 14: 10:20am	M	F	Flyover
American Robin	1		
Common Yellowthroat	5		
Eastern Towhee	1		
Gray Catbird	1		
Song Sparrow	4		
Baltimore Oriole	1		
Chipping Sparrow	1		
House Wren	1		
Mallard	1		
Red-Eyed Vireo	1		
Tufted Titmouse	1		
Turkey Vulture	1		✓
Yellow Warbler	3		

Point 14: 9:50am	M	F	Flyover
American Robin	2		
Common Yellowthroat	5		
Eastern Towhee	1		
Gray Catbird	1		
Song Sparrow	2		
American Crow	1		✓
American Goldfinch	2		
Barn Swallow	1		✓
Black-Capped Chickadee	2		
Brown-Headed Cowbird	2		
Eastern Bluebird	1		
Field Sparrow	1		
Mourning Dove	3		
Northern Flicker	2		
Ovenbird	1		
Veery	1		

White-breasted Nuthatch	2		
Wood Thrush	1		
Yellow-Throated Vireo	2		

Point 15: 6:39am 5/25/06	M	F	Flyover
American Robin	1		
Black-Capped Chickadee	3		
Chipping Sparrow	2		
Common Yellowthroat	3		
Mourning Dove	1		
Northern Cardinal	3		
Song Sparrow	2		
Blue-Winged Warbler	1		
Brown-Headed Cowbird	1		
Eastern Phoebe	2		
Gray Catbird	1		
Great-Crested Flycatcher	1		
Northern Flicker	1		
Ovenbird	1		
Rose-Breasted Grosbeak	1		
Veery	2		
Yellow Warbler	2		

Point 15: 6:27am 7/12/06	M	F	Flyover
American Robin	1		
Black-Capped Chickadee	1		
Chipping Sparrow	1		
Common Yellowthroat	3		
Mourning Dove	2		
Northern Cardinal	2		
Song Sparrow	2		
Eastern Towhee	1		
House Wren	1		
Red-Eyed Vireo	1		
Scarlet Tanager	1		
Tufted Titmouse	1		
White-Breasted Nuthatch	1		

Point 16: 6:52am	M	F	Flyover
American Goldfinch	1		
Common Yellowthroat	2		
Eastern Kingbird	1	1	
Eastern Wood-Pewee	1		
Northern Cardinal	1		
Song Sparrow	3		
Baltimore Oriole	1		
Great-Crested Flycatcher	2		
Mallard	1		
Red-Winged Blackbird	5		
Rose-Breasted Grosbeak	2		
Yellow Warbler	4		

Point 16: 6:25am 7/13/06	M	F	Flyover
American Goldfinch	1		
Common Yellowthroat	3		
Eastern Kingbird	2		
Eastern Wood-Pewee	1		
Northern Cardinal	1		
Song Sparrow	4		
American Robin	1		
Black-Capped Chickadee	1		
Blue Jay	1		
Brown-Headed Cowbird	1		
Chipping Sparrow	2		
Common Grackle	27		✓
Eastern Towhee	1		
Mourning Dove	1		
Ovenbird	1		
Pileated Woodpecker	1		
Red-Bellied Woodpecker	1		
Scarlet Tanager	1		
Tufted Titmouse	2		
White-Breasted Nuthatch	1		
Wild Turkey	1		
Wood Thrush	1		
Yellow-Throated Vireo	1		

Point 17: 7:07am	M	F	Flyover
Common Yellowthroat	2		
Gray Catbird	1		
Indigo Bunting	2		
Mourning Dove	1		
Red-Bellied Woodpecker	1		
Rose-Breasted Grosbeak	2		
Tufted Titmouse	1		
Wood Thrush	2		
American Crow	3		
Black-Capped Chickadee	1		
Blue Jay	1		
Blue-Winged Warbler	1		
Eastern Towhee	1		
Great-Crested Flycatcher	2		
Northern Cardinal	1		
Ovenbird	2		
Pileated Woodpecker	1		

Point 17: 6:40am	M	F	Flyover
Common Yellowthroat	3		
Gray Catbird	1		
Indigo Bunting	2		
Mourning Dove	3		
Red-Bellied Woodpecker	1		
Rose-Breasted Grosbeak	1		
Tufted Titmouse	2		
Wood Thrush	1		
American Goldfinch	2		
American Robin	2		
Brown-Headed Cowbird	2		
Common Grackle	2		✓
Downy Woodpecker	1		
Northern Flicker	1		
Scarlet Tanager	1		
Song Sparrow	2		
White-Breasted Nuthatch	3		

Point 18: 7:21am	M	F	Flyover
American Goldfinch	2		
American Robin	1		
Common Yellowthroat	5		
Downy Woodpecker	1		
Eastern Towhee	1		
Gray Catbird	1		
Northern Cardinal	1		
Song Sparrow	2		
Blue-Winged Warbler	1		
Eastern Kingbird	1	1	
Field Sparrow	2		
Sandhill Crane	2		
Veery	1		
Yellow Warbler	3		

Point 18: 6:55am	M	F	Flyover
American Goldfinch	3		
American Robin	1		
Common Yellowthroat	5	1	
Downy Woodpecker	1		
Eastern Towhee	1		
Gray Catbird	1		
Northern Cardinal	2		
Song Sparrow	3		
Black-Capped Chickadee	6		
Blue Jay	1		
Common Grackle	4		✓
Great-Crested Flycatcher	1		
Indigo Bunting	2		
Mourning Dove	2		
Pileated Woodpecker	1		
Red-Bellied Woodpecker	2		
Red-Eyed Vireo	1		
Tree Swallow	1		✓
White-Breasted Nuthatch	2		

Point 19: 7:37 am	M	F	Flyover
American Goldfinch	1		
American Robin	1		
Common Yellowthroat	1		
Northern Cardinal	2		
Red-Eyed Vireo	1		

Point 19: 7:10am	M	F	Flyover
American Goldfinch	1		
American Robin	2		
Common Yellowthroat	2	1	
Northern Cardinal	2		
Red-Eyed Vireo	3		

Wood Thrush	2		
Blue-Winged Warbler	1		
Great-Crested Flycatcher	1		
Rose-Breasted Grosbeak	2		
Song Sparrow	1		

Wood Thrush	1		
Acadian Flycatcher	2		
Chipping Sparrow	1		
Eastern Towhee	1		
Eastern Wood-Pewee	3		
Gray Catbird	2		
Northern Flicker	1		
Sandhill Crane	1		
Yellow-Throated Vireo	1		

Point 20: 7:52am	M	F	Flyover
Acadian Flycatcher	3		
American Robin	1		
Black-Capped Chickadee	1		
Eastern Wood-Pewee	1		
Great-Crested Flycatcher	2		
Northern Cardinal	1		
Rose-Breasted Grosbeak	2		
Song Sparrow	1		
Black-Throated Green Warbler	2		
Gray Catbird	1		
Red-Eyed Vireo	1		
Veery	1		
Yellow Warbler	2		

Point 20: 7:25am	M	F	Flyover
Acadian Flycatcher	2		
American Robin	2		
Black-Capped Chickadee	2		
Eastern Wood-Pewee	3		
Great-Crested Flycatcher	1		
Northern Cardinal	2		
Rose-Breasted Grosbeak	1		
Song Sparrow	1		
American Crow	2		
Brown-Headed Cowbird	1		
Common Yellowthroat	4		
Mourning Dove	1		
Northern Flicker	2		
White-Breasted Nuthatch	2		
Yellow-Throated Vireo	1		

Point 21: 8:05am	M	F	Flyover
American Robin	3		
Black-Capped Chickadee	1		
Chipping Sparrow	2		
Eastern Wood-Pewee	2		
Northern Cardinal	2		
Red-Eyed Vireo	2		
Black-Throated Green Warbler	2		
Red-Bellied Woodpecker	1		
Rose-Breasted Grosbeak	3		
Wood Thrush	2		

Point 21: 7:40am	M	F	Flyover
American Robin	2		
Black-Capped Chickadee	3		
Chipping Sparrow	1		
Eastern Wood Pewee	1		
Northern Cardinal	2	1	
Red-Eyed Vireo	2		
Acadian Flycatcher	1		
Barred Owl	1		
Common Yellowthroat	1		
Downy Woodpecker	3		
Northern Flicker	3		
Ruby-Throated Hummingbird	1		
White-Breasted Nuthatch	2		
Yellow-Throated Vireo	1		

Point 22: 8:19am	M	F	Flyover
Acadian Flycatcher	1		
Black-Capped Chickadee	1		
Common Yellowthroat	2		
Eastern Wood-Pewee	1		

Point 22: 7:55am	M	F	Flyover
Acadian Flycatcher	1		
Black-Capped Chickadee	1		
Common Yellowthroat	2		
Eastern Wood-Pewee	2		

Great-Crested Flycatcher	3		
Northern Cardinal	2		
Red-Eyed Vireo	3		
Wood Thrush	1		
Tufted Titmouse	2		
Yellow Warbler	2		

Great-Crested Flycatcher	2		
Northern Cardinal	2		
Red-Eyed Vireo	3		
Wood Thrush	3		
American Goldfinch	1		
American Robin	1		
Brown-Headed Cowbird	1		
Scarlet Tanager	3		
Veery	1		
White-Breasted Nuthatch	1		

Point 23: 8:33am	M	F	Flyover
Common Yellowthroat	3		
Eastern Towhee	1		
Eastern Wood-Pewee	1		
Northern Cardinal	2		
Northern Flicker	1		
Ovenbird	1		
Red-Winged Blackbird	2		
Scarlet Tanager	2	1	
Wood Thrush	1		
Blue-Winged Warbler	1		
Great-Crested Flycatcher	1		
Song Sparrow	2		
Tufted Titmouse	1		
Yellow Warbler	3		

Point 23: 8:10am	M	F	Flyover
Common Yellowthroat	2		
Eastern Towhee	1		
Eastern Wood-Pewee	1		
Northern Cardinal	1		
Northern Flicker	1		
Ovenbird	1		
Red-Winged Blackbird	1		
Scarlet Tanager	1		
Wood Thrush	2		
Acadian Flycatcher	1		
American Robin	2		
Black-Capped Chickadee	3		
Blue Jay	1		
Downy Woodpecker	1		
Gray Catbird	1		
Red-Eyed Vireo	2		

Point 24: 8:51am	M	F	Flyover
Acadian Flycatcher	3		
Eastern Wood-Pewee	1		
Northern Cardinal	1		
Red-Eyed Vireo	3		
Scarlet Tanager	2		
Tufted Titmouse	1		
White-Breasted Nuthatch	1		
Wood Thrush	3		
American Robin	1		
Blue Jay	1		
Ovenbird	1		
Red-Bellied Woodpecker	1		
Rose-Breasted Grosbeak	1		
Yellow Warbler	2		

Point 24: 8:25am	M	F	Flyover
Acadian Flycatcher	1		
Eastern Wood-Pewee	2		
Northern Cardinal	3		
Red-Eyed Vireo	2		
Scarlet Tanager	3		
Tufted Titmouse	1		
White-Breasted Nuthatch	2		
Wood Thrush	2		
Black-Capped Chickadee	1		
Chestnut-Sided Warbler	1		
Downy Woodpecker	2		
Eastern Towhee	1		
Northern Flicker	2		
Pileated Woodpecker	1		

Point 25: 9:12am	M	F	Flyover
Common Yellowthroat	1		
Eastern Wood-Pewee	1		

Point 25: 8:45am	M	F	Flyover
Common Yellowthroat	1		
Eastern Wood-Pewee	2		

Northern Cardinal	1	1	
Red-Eyed Vireo	2		
White-Breasted Nuthatch	1		
Blue Jay	1		
Blue-Winged Warbler	1		
Brown-Headed Cowbird	1		
Ovenbird	1		
Red-Bellied Woodpecker	2		
Rose-Breasted Grosbeak	2		
Scarlet Tanager	2		
Tufted Titmouse	1		
Yellow Warbler	1		

Northern Cardinal	1		
Red-Eyed Vireo	2		
White-Breasted Nuthatch	1		
Acadian Flycatcher	1		
American Robin	1		
Black-Capped Chickadee	1		
Gray Catbird	1		
Great-Crested Flycatcher	3		
Indigo Bunting	1		
Northern Flicker	1		
Wood Thrush	3		
Yellow-Throated Vireo	1		

Point 26: 9:32am	M	F	Flyover
American Robin	1		
Brown-Headed Cowbird	1		
Common Yellowthroat	1		
Eastern Towhee	1		
Great-Crested Flycatcher	1		
Hairy Woodpecker	1		
House Wren	1		
Indigo Bunting	1		
Ovenbird	1		
Red-Bellied Woodpecker	1		
Red-Eyed Vireo	1		
Rose-Breasted Grosbeak	2		
Tufted Titmouse	1		
White-Breasted Nuthatch	1	1	
Baltimore Oriole	1		
Blue Jay	1		
Downy Woodpecker	1		
Song Sparrow	1		
Yellow Warbler	1		

Point 26: 9:07am	M	F	Flyover
American Robin	1		
Brown-Headed Cowbird	1		
Common Yellowthroat	2		
Eastern Towhee	1		
Great-Crested Flycatcher	1		
Hairy Woodpecker	2		
House Wren	1		
Indigo Bunting	3		
Ovenbird	1		
Red-Bellied Woodpecker	2		
Red-Eyed Vireo	1		
Rose-Breasted Grosbeak	1		
Tufted Titmouse	1		
White-Breasted Nuthatch	2		
Acadian Flycatcher	1		
Black-Capped Chickadee	2		
Eastern Wood-Pewee	1		
Northern Cardinal	1		

Point 27: 9:52am	M	F	Flyover
American Robin	2		
Black-Capped Chickadee	1		
Common Yellowthroat	3		
Field Sparrow	2		
House Sparrow	1		
House Wren	1		
Indigo Bunting	1		
Red-Winged Blackbird	2	2	
Song Sparrow	2		
Baltimore Oriole	2		
Blue-Winged Warbler	1		
Eastern Bluebird	1		
Scarlet Tanager	2		

Point 27: 9:29am	M	F	Flyover
American Robin	1		
Black-Capped Chickadee	1		
Common Yellowthroat	2		
Field Sparrow	2		
House Sparrow	1	1	
House Wren	1		
Indigo Bunting	2		
Red-Winged Blackbird	1	3	
Song Sparrow	2		
American Goldfinch	3		
Blue Jay	1		
Brown-Headed Cowbird	3	1	
Chipping Sparrow	1		

Tree Swallow	1	1	
Yellow Warbler	1		

Gray Catbird	1		
Mourning Dove	2	1	
Yellow-Throated Vireo	3	1	

Point 28: 10:09am	M	F	Flyover
American Goldfinch	1		
Blue Jay	1		
Chipping Sparrow	2		
Eastern Bluebird	1		
Indigo Bunting	2		
Tufted Titmouse	1		
White-Breasted Nuthatch	2		
Baltimore Oriole	1		
Brown-Headed Cowbird	4		
Downy Woodpecker	1		
Eastern Kingbird	1		
Field Sparrow	1	1	
House Sparrow	1		
Rose-Breasted Grosbeak	1		
Tree Swallow	1		

Point 28: 9:52am	M	F	Flyover
American Goldfinch	7		
Blue Jay	1		
Chipping Sparrow	2		
Eastern Bluebird	1		
Indigo Bunting	2		
Tufted Titmouse	1		
White-Breasted Nuthatch	1		
American Crow	1		
American Robin	2		
Common Yellowthroat	1		
Eastern Towhee	1		
Mourning Dove	1		
Red-Bellied Woodpecker	1		
Yellow-Throated Vireo	2		

Point 29: 6:36am 5/26/06	M	F	Flyover
Brown-Headed Cowbird	2		
Common Yellowthroat	2		
Field Sparrow	4		
Indigo Bunting	1		
American Robin	2		
Barn Swallow	2		
Blue-Winged Warbler	1		
Chipping Sparrow	2	2	
Eastern Bluebird	1	1	
Eastern Phoebe	1		
Song Sparrow	2		

Point 29: 6:20am 7/14/06	M	F	Flyover
Brown-Headed Cowbird	1		
Common Yellowthroat	1		
Field Sparrow	2		
Indigo Bunting	2		
American Goldfinch	3		
House Wren	1		
Red-Winged Blackbird	7		

Point 30: 6:56am	M	F	Flyover
Common Yellowthroat	2		
Field Sparrow	2	1	
American Goldfinch	1		
Blue-Winged Warbler	1		
Indigo Bunting	1	1	

Point 30: 6:35am	M	F	Flyover
Common Yellowthroat	3		
Field Sparrow	2		
Song Sparrow	1	1	

Point 31: 7:14am	M	F	Flyover
Common Yellowthroat	3		
Field Sparrow	2	1	
Blue-Winged Warbler	4		
Brown-Headed Cowbird	1		
Great Blue Heron	1		✓

Point 31: 6:50am	M	F	Flyover
Common Yellowthroat	4		
Field Sparrow	2		
American Robin	1		
Eastern Bluebird	1		
Song Sparrow	1		

Indigo Bunting	1		
Red-Bellied Woodpecker	1		
Wood Duck		1	

Point 32: 7:36am	M	F	Flyover
Eastern Kingbird	1		
Field Sparrow	5	1	
Song Sparrow	2		
American Goldfinch	2	1	
Blue-Winged Warbler	1		
Common Yellowthroat	1		
Eastern Phoebe	1		
Indigo Bunting	3	2	
Sandhill Crane	2		
Wood Duck	1		

Point 33: 8:03am	M	F	Flyover
Common Yellowthroat	3		
Field Sparrow	4		
Indigo Bunting	2	1	
Song Sparrow	2		
American Goldfinch	2		
American Robin	1		
Blue-Winged Warbler	2		
Brown-Headed Cowbird	1		
Red-Bellied Woodpecker	1		
Red-Winged Blackbird	1	1	

Point 34: 8:22am	M	F	Flyover
Common Yellowthroat	2		
Field Sparrow	6	1	
Indigo Bunting	1		
Song Sparrow	2		
American Goldfinch	1	1	
Blue-Winged Warbler	1		

Point 35: 8:37am	M	F	Flyover
American Robin	2		
Common Yellowthroat	1		
Song Sparrow	2		
American Crow	2		
Blue Jay	2		
Blue-Winged Warbler	1		
Brown-Headed Cowbird	1		
Chimney Swift	4		✓
Indigo Bunting	3		
Mourning Dove	2		

Point 32: 7:03am	M	F	Flyover
Eastern Kingbird	1		
Field Sparrow	6		
Song Sparrow	2		

Point 33: 7:30am	M	F	Flyover
Common Yellowthroat	4		
Field Sparrow	6	1	
Indigo Bunting	1		
Song Sparrow	3		

Point 34: 7:47am	M	F	Flyover
Common Yellowthroat	1		
Field Sparrow	4		
Indigo Bunting	1		
Song Sparrow	2	1	

Point 35: 8:02am	M	F	Flyover
American Robin	1		
Common Yellowthroat	1		
Song Sparrow	3	1	
American Goldfinch	1		
Field Sparrow	4	1	
Gray Catbird	1		

Point 36: 8:56am	M	F	Flyover
Chipping Sparrow	1	1	
Field Sparrow	1		
Northern Flicker	1		
Blue Jay	1		
Blue-Winged Warbler	1		
Brown-Headed Cowbird	1		
Common Yellowthroat	1		
Scarlet Tanager	1		

Point 36: 8:22am	M	F	Flyover
Chipping Sparrow	2		
Field Sparrow	2	1	
Northern Flicker	1		
American Goldfinch	2		
American Kestrel	1		
Black-Capped Chickadee	1		
Blue Jay	2		
Cooper's Hawk	1		
Eastern Kingbird	2		
Eastern Phoebe	1		
Eastern Towhee	1		
Indigo Bunting	3	2	
Mourning Dove	1		
Northern Cardinal	1		
Pileated Woodpecker	1		
Song Sparrow	7	2	
White-Breasted Nuthatch	2		

Point 37: 9:20am	M	F	Flyover
American Goldfinch	8		
Brown-Headed Cowbird	1		
Indigo Bunting	1		
Red-Bellied Woodpecker	1		
American Crow	1		
Wild Turkey	1	7	

Point 37: 8:55am	M	F	Flyover
American Goldfinch	1		
Brown-Headed Cowbird	1		
Indigo Bunting	2		
Red-Bellied Woodpecker	2		
Blue Jay	2		
Chipping Sparrow	1		
Common Yellowthroat	1		
Field Sparrow	1		
Mourning Dove	2		
Song Sparrow	3		

Point 38: 9:32am	M	F	Flyover
Field Sparrow	3		
American Crow	1		
American Robin	1		
Brown-Headed Cowbird	1		
Great Blue Heron	2		✓
Savannah Sparrow	1		

Point 38: 9:10am	M	F	Flyover
Field Sparrow	2		
American Goldfinch	1		
Eastern Phoebe	1	1	
Indigo Bunting	2		
Song Sparrow	5		

Table 2 – Birds captured in nets at PCCI. Species shown in standard four-letter code.

R = Recapture FR = Foreign Recapture			Bird Banding Record 5/31/06-7/10/06						
Pt #	Date	Species	Sex	Band Prefix	Band #	Culmen (mm)	Weight (g)	Tarsus (mm)	Wing Chord (mm)
1	5/31/06	ACFL	M	2480	49801	N/A	N/A	N/A	N/A
1	5/31/06	BLJA	M	1603	50101	N/A	N/A	N/A	N/A
1	6/1/06	RBWO	F	1232	20701	N/A	N/A	N/A	N/A
1	6/1/06	AMRO	M	1232	20702	N/A	N/A	N/A	N/A
1	6/1/06	ACFL	M	2480	49801-R	N/A	N/A	N/A	N/A
1	6/1/06	AMRO	M	1232	20703	N/A	N/A	N/A	N/A
1	6/1/06	ACFL	M	2480	49802	N/A	N/A	N/A	N/A
1	6/1/06	AMRO	M	1232	20704	N/A	N/A	N/A	N/A
2	6/2/06	SCTA	M	2261	10301	N/A	N/A	N/A	N/A
5	6/7/06	DOWO	F	2261	10302	N/A	N/A	N/A	N/A
6	6/8/06	INBU	F	1601	68301	N/A	N/A	N/A	N/A
6	6/8/06	EATO	M	1232	20705	N/A	N/A	N/A	N/A
6	6/8/06	EATO	F	1232	20706	N/A	N/A	N/A	N/A
6	6/8/06	INBU	M	1601	68302	N/A	N/A	N/A	N/A
8	6/12/06	VEER	M	2261	10303	9.00	32.0	33.60	103.0
8	6/12/06	ACFL	M	2480	49803	9.00	15.0	17.00	77.0
9	6/13/06	AMRO	M	1232	20707	14.00	74.0	39.20	133.0
9	6/13/06	WOTH	M	2211	24601	13.00	52.0	39.40	113.0
9	6/13/06	AMRO	M	1232	20708	14.00	77.0	37.10	126.0
10	6/14/06	VEER	M	2261	10304	9.25	29.5	34.00	105.0
10	6/14/06	AMRO	M	1232	20709	13.30	81.0	40.05	129.0
10	6/14/06	NOCA	F	1232	20710	13.80	47.0	32.20	100.0
11/12	6/15/06	GRCA	M	2211	24602	11.00	32.0	32.20	87.5
11/12	6/15/06	ETTI	M	2261	10305	9.95	24.5	25.50	81.0
11/12	6/15/06	SOSP	M	2261	10306	N/A	24.0	25.30	N/A
11/12	6/15/06	GRCA	M	2211	24603	11.25	35.5	32.65	91.0
13/14	6/19/06	VEER	M	2261	10307	8.70	32.5	36.20	99.0
13/14	6/19/06	CHSP	M	2480	49804	6.90	17.5	24.60	63.0
15/16	6/20/06	DOWO	M	2261	10309	14.80	25.0	18.45	91.0
15/16	6/20/06	SOSP	M	2261	10308	7.40	21.0	22.50	63.0
15/16	6/20/06	SOSP	F	2261	10310	9.50	22.0	25.10	64.0
15/16	6/20/06	EAPH	F	1601	68303	10.40	19.5	20.40	82.0

15/16	6/20/06	SOSP	M	2261	10311	8.80	22.0	25.40	69.0
17/18	6/21/06	GRCA	M	2211	24604	11.70	35.0	31.30	90.0
17/18	6/22/06	SOSP	M	2261	10313	9.10	21.0	25.35	67.0
17/18	6/22/06	SOSP	M	2261	10314	9.35	21.5	25.40	68.0
17/18	6/22/06	GRCA	M	2211	24606	12.05	35.0	31.00	93.0
17/18	6/22/06	DOWO	M	2261	10312	19.90	26.0	17.10	93.0
17/18	6/22/06	NOCA	F	1232	20711	12.60	41.0	29.60	93.0
17/18	6/22/06	COYE	M	1601	68304	7.75	11.5	23.60	57.0
17/18	6/22/06	GRCA	M	2211	24605	12.20	33.0	32.20	89.0
17/18	6/22/06	GRCA	M	2211	24607	11.10	36.0	31.30	90.0
17/18	6/22/06	GRCA	M	2211	24605-R	N/A	N/A	N/A	N/A
19/20	6/23/06	VEER	M	2261	10315	10.15	31.5	35.15	104.0
19/20	6/23/06	VEER	M	2261	10316	10.00	30.5	35.50	98.0
19/20	6/23/06	AMRO	M	1232	20712	13.70	99.0	40.05	130.0
19/20	6/23/06	AMRO	M	1232	20713	13.10	75.0	34.80	127.0
19/20	6/23/06	AMRO	M	1232	20714	14.15	78.5	38.30	131.0
19/20	6/23/06	AMRO	JUV	1232	20715	11.70	70.0	36.20	119.0
19/20	6/23/06	BCCH	JUV	1601	68305	N/A	N/A	N/A	N/A
19/20	6/23/06	VEER	M	2261	10317	7.40	30.5	32.60	97.0
19/20	6/23/06	DOWO	M	2261	10318	13.00	27.0	17.20	105.0
19/20	6/23/06	DOWO	JUV	2261	10319	13.80	28.0	19.10	93.0
19/20	6/23/06	BCCH	M	1601	68306	7.45	9.5	19.70	63.0
21/22	6/26/06	GRCA	M	2211	24608	11.40	31.0	31.20	89.0
21/22	6/26/06	AMGO	F	1601	68307	7.60	13.0	16.70	70.0
21/22	6/26/06	NOCA	F	1232	20716	12.20	42.0	28.65	90.0
21/22	6/26/06	COYE	F	1601	68308	9.90	9.0	23.90	51.0
21/22	6/26/06	SOSP	F	2261	10320	9.00	23.0	24.20	63.0
21/22	6/26/06	GRCA	F	2211	24609	11.70	42.0	32.30	89.0
21/22	6/26/06	LEFL	M	2480	49805	8.55	13.5	19.30	77.0
21/22	6/26/06	NOCA	M	1232	20717	13.10	45.5	28.50	97.0
23/24	6/27/06	GRCA	M	2211	24610	11.40	36.0	34.35	92.0
23/24	6/27/06	PIWO	JUVM	0934	32601	48.55	N/A	39.65	234.0
23/24	6/27/06	LEFL	M	2480	49806	9.40	14.0	18.00	75.0
25/26	6/29/06	DOWO	JUV	1232	20718	12.80	26.5	18.00	89.0
25/26	6/29/06	AMRO	F	1232	20719	12.70	75.0	38.60	122.0

25/26	6/29/06	COYE	M	1601	68309	7.85	11.0	22.40	59.0
27	6/30/06	INBU	M	1601	68310	6.90	14.0	18.75	64.0
27	6/30/06	AMRO	M	1232	20720	13.30	82.0	39.80	126.0
27	6/30/06	AMGO	F	1601	68311	7.60	12.5	15.60	70.0
27	6/30/06	AMRO	M	1232	20721	12.80	83.0	37.60	127.0
27	6/30/06	HOSP	M	2261	10321	11.10	28.5	22.40	73.0
27	6/30/06	HOSP	M	2261	10322	10.25	28.0	22.65	79.0
27	6/30/06	SOSP	M	2241	16923-FR	8.60	22.0	24.55	62.0
27	6/30/06	RWBL	F	2211	24611	14.20	38.0	28.80	94.0
27	6/30/06	BHCO	F	2261	10323	11.75	41.0	26.30	98.0
27	6/30/06	RWBL	F	2211	24613	13.60	39.0	28.95	98.0
27	6/30/06	RWBL	JUVM	2211	24612	15.70	60.0	35.80	112.0
28	7/5/06	AMRO	M	1232	20722	13.00	77.0	36.60	124.0
28	7/5/06	AMRO	JUVM	1232	20723	10.60	69.0	38.80	123.0
28	7/5/06	FISP	M	1601	68312	7.20	14.0	21.35	63.0
28	7/5/06	SCTA	F	2261	10324	10.70	29.0	22.00	88.0
29-32	7/6/06	GRCA	M	2211	24614	11.75	37.0	31.85	88.0
29-32	7/6/06	FISP	F	1601	68313	10.70	14.0	20.00	61.0
29-32	7/6/06	FISP	F	1601	68314	7.50	14.0	22.00	64.0
29-32	7/6/06	EABL	JUVM	2261	10325	9.10	31.0	24.40	94.0
29-32	7/6/06	NOCA	JUVM	1232	20724	11.50	42.5	27.80	93.0
29-32	7/6/06	INBU	JUVM	1601	68315	8.10	16.0	22.00	63.0
29-32	7/6/06	COYE	M	1601	68316	N/A	N/A	N/A	N/A
29-32	7/6/06	INBU	M	1601	68317	8.50	15.5	19.85	68.0
33-35	7/7/06	SOSP	F	2261	10326	N/A	N/A	N/A	N/A
33-35	7/7/06	SOSP	M	2261	10327	8.25	19.0	23.45	62.0
33-35	7/7/06	AMGO	F	1601	68318	8.80	13.0	17.75	71.0
33-35	7/7/06	FISP	M	1601	68319	6.75	13.5	20.95	66.0
36-38	7/10/06	EAPH	F	1601	68320	8.30	18.0	21.25	82.0
36-38	7/10/06	CHSP	M	2480	49807	7.35	13.5	18.60	68.0

Figure 2:
Variation in Gray Catbird Measurements of Culmen, Weight, Tarsus
and Wing Chord

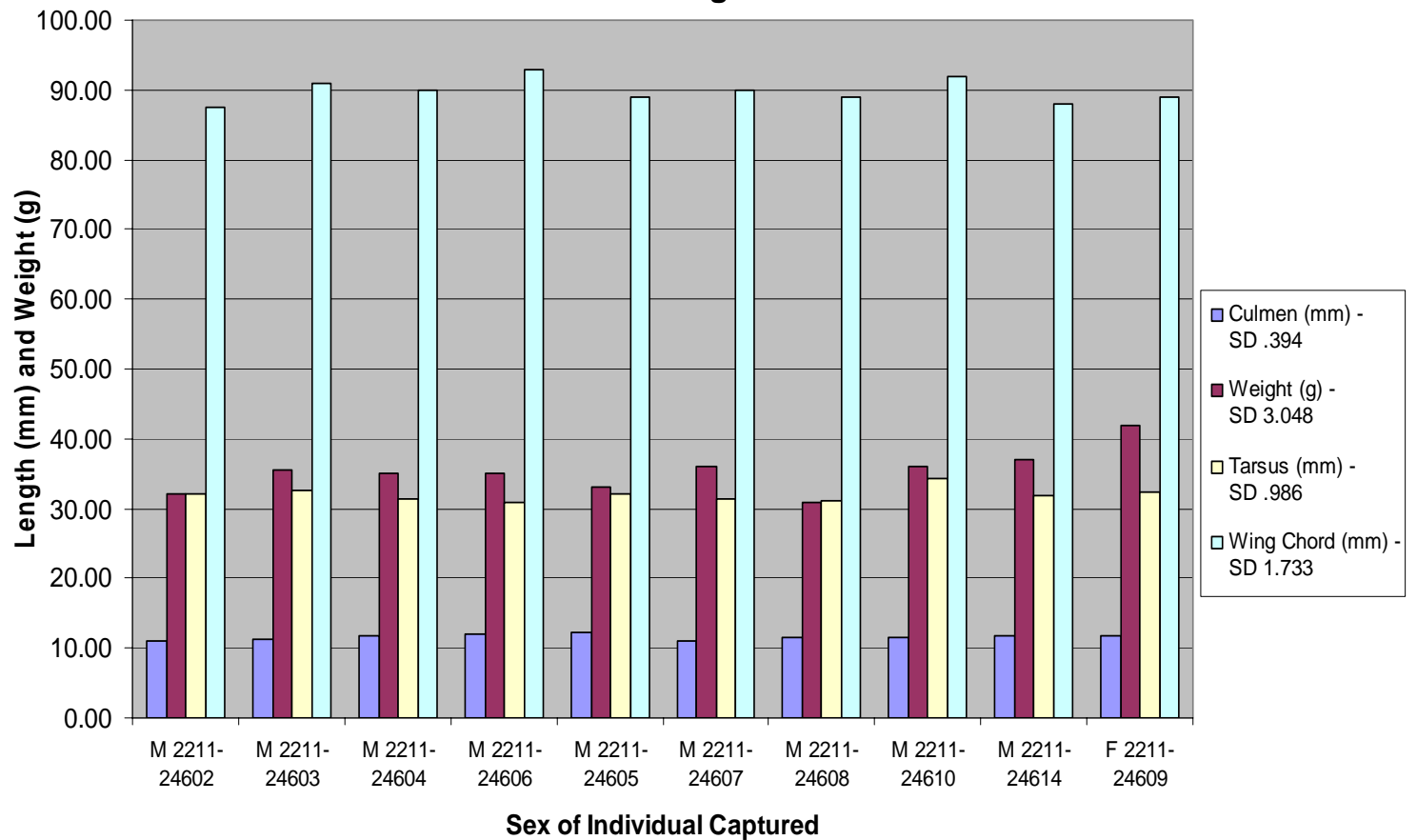


Figure 3:
Variation in Song Sparrow Measurements of Culmen, Weight, Tarsus
and Wing Chord

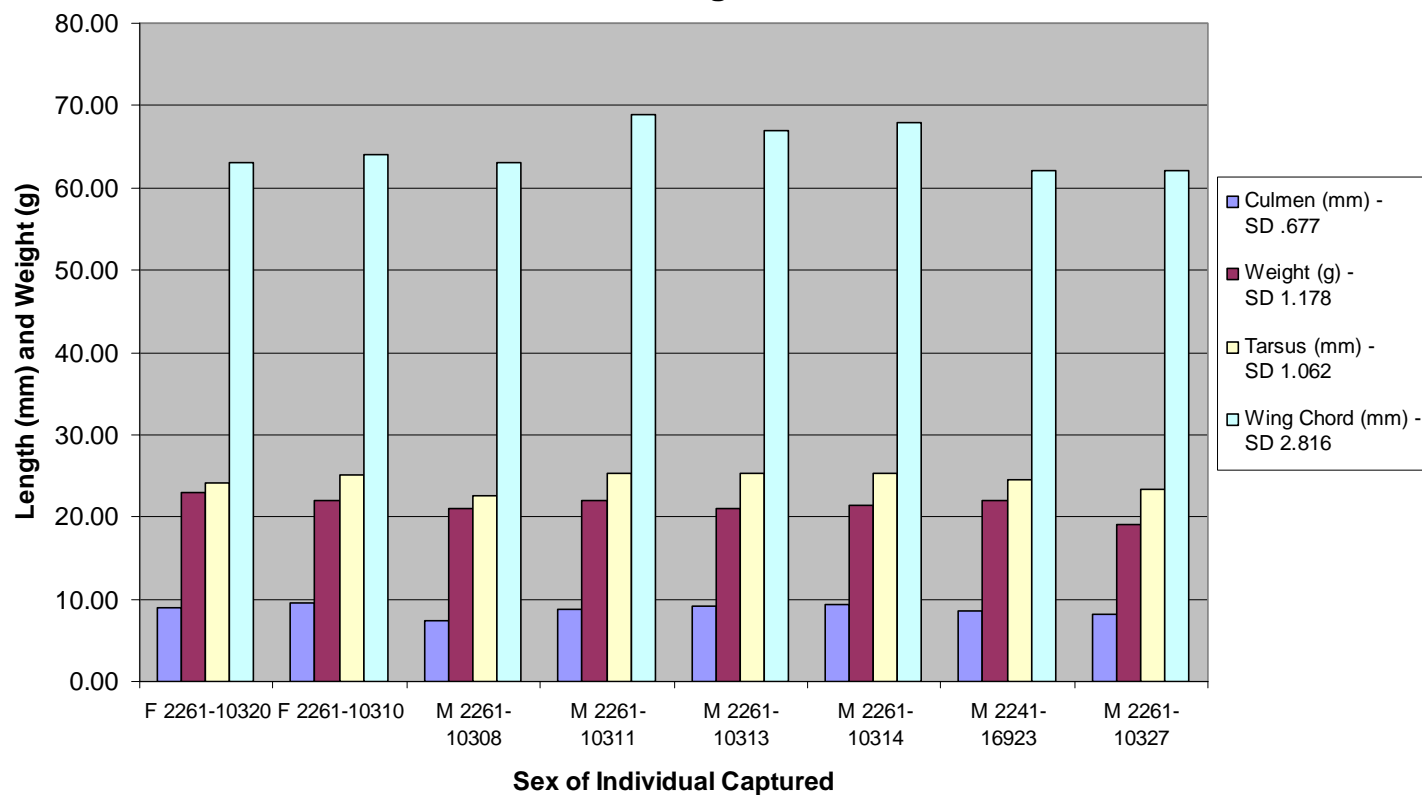


Figure 4:
Variation in American Robin Measurements of Culmen, Weight, Tarsus and Wing Chord

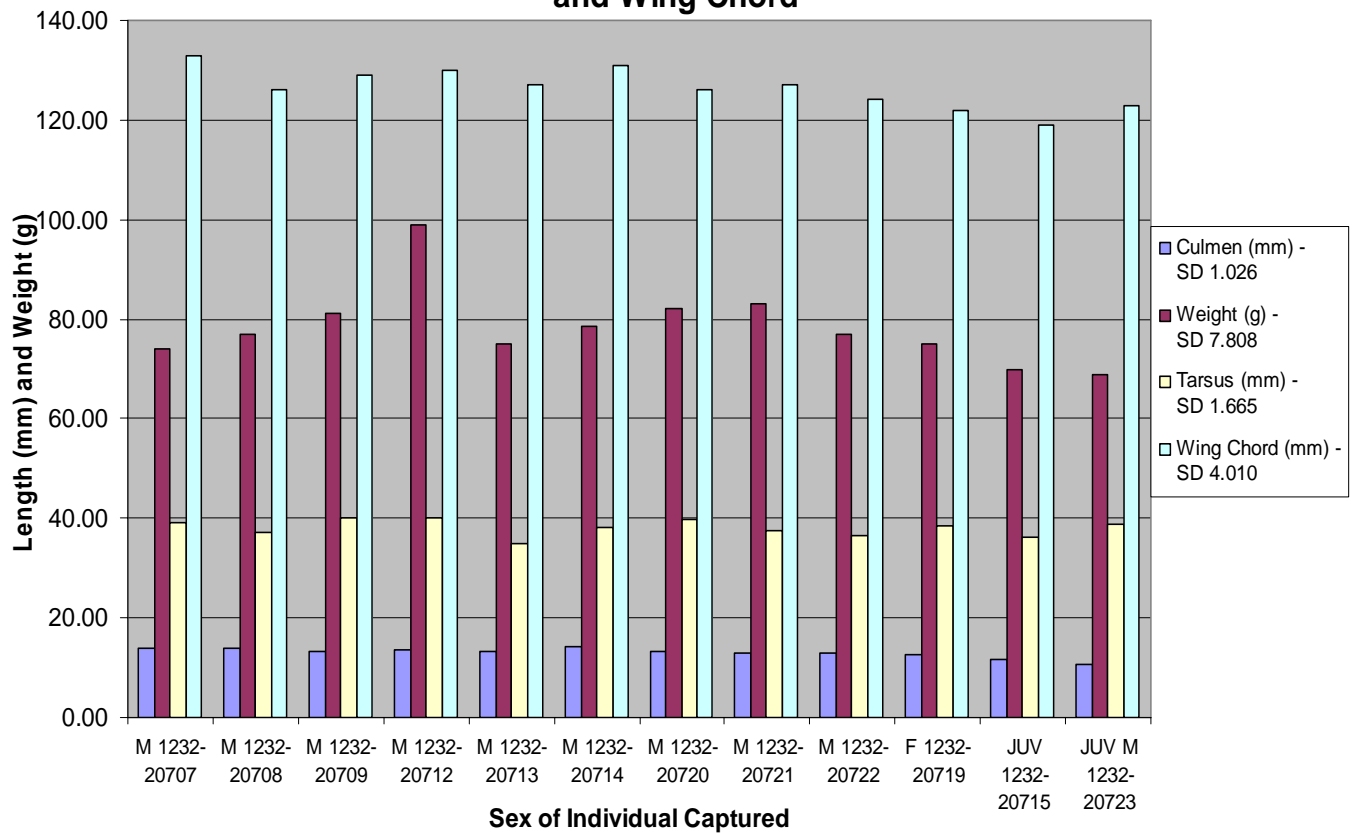


Table 3 – Cumulative list of birds captured during mist-netting and/or counted during point counts.

Common Name	Scientific Name	4-Letter Code	Counted	Captured
Acadian Flycatcher	<i>Empidonax vireescens</i>	ACFL	✓	✓
American Crow	<i>Corvus brachyrhynchos</i>	AMCR	✓	
American Goldfinch	<i>Carduelis tristis</i>	AMGO	✓	✓
American Kestrel	<i>Falco sparverius</i>	AMKE	✓	
American Robin	<i>Turdus migratorius</i>	AMRO	✓	✓
Baltimore Oriole	<i>Icterus galbula</i>	BAOR	✓	
Barn Swallow	<i>Hirundo rustica</i>	BARS	✓	
Barred Owl	<i>Strix varia</i>	BDOW	✓	
Black-Billed Cuckoo	<i>Coccyzus erythrophthalmus</i>	BBCU	✓	
Black-Capped Chickadee	<i>Poecile atricapilla</i>	BCCH	✓	✓
Black-Throated Green Warbler	<i>Dendroica virens</i>	BTNW	✓	
Blue Jay	<i>Cyanocitta cristata</i>	BLJA	✓	✓
Blue-Winged Warbler	<i>Vermivora pinus</i>	BWWA	✓	
Brown Creeper	<i>Certhia americana</i>	BRCR	✓	
Brown-Headed Cowbird	<i>Molothrus ater</i>	BHCO	✓	✓
Cedar Waxwing	<i>Bombycilla cedrorum</i>	CEDW	✓	
Chestnut-Sided Warbler	<i>Dendroica pensylvanica</i>	CSWA	✓	
Chimney Swift	<i>Chaetura pelagica</i>	CHSW	✓	
Chipping Sparrow	<i>Spizella passerina</i>	CHSP	✓	✓
Common Grackle	<i>Quiscalus quiscula</i>	COGR	✓	
Common Yellowthroat	<i>Geothlypis trichas</i>	COYE	✓	✓
Cooper's Hawk	<i>Accipiter cooperii</i>	COHA	✓	
Downy Woodpecker	<i>Picoides pubescens</i>	DOWO	✓	✓
Eastern Bluebird	<i>Sialia sialis</i>	EABL	✓	✓
Eastern Kingbird	<i>Tyrannus tyrannus</i>	EAKI	✓	
Eastern Phoebe	<i>Sayornis phoebe</i>	EAPH	✓	✓
Eastern Towhee	<i>Pipilo erythrophthalmus</i>	EATO	✓	✓
Eastern Wood-Pewee	<i>Contopus virens</i>	EAWP	✓	
Field Sparrow	<i>Spizella pusilla</i>	FISP	✓	✓
Gray Catbird	<i>Dumetella carolinensis</i>	GRCA	✓	✓
Great Blue Heron	<i>Ardea herodias</i>	GBHE	✓	
Great-Crested Flycatcher	<i>Myiarchus crinitus</i>	GCFL	✓	
Hairy Woodpecker	<i>Picoides villosus</i>	HAWO	✓	
House Sparrow	<i>Passer domesticus</i>	HOSP	✓	✓
House Wren	<i>Troglodytes aedon</i>	HOWR	✓	
Indigo Bunting	<i>Passerina cyanea</i>	INBU	✓	✓
Killdeer	<i>Charadrius vociferus</i>	KILL	✓	
Least Flycatcher	<i>Empidonax minimus</i>	LEFL		✓
Mallard	<i>Anas platyrhynchos</i>	MALL	✓	
Mourning Dove	<i>Zenaida macroura</i>	MODO	✓	
Northern Cardinal	<i>Cardinalis cardinalis</i>	NOCA	✓	✓

Northern Flicker	<i>Colaptes auratus</i>	YSFL	✓	
Ovenbird	<i>Seiurus aurocapillus</i>	OVEN	✓	
Pileated Woodpecker	<i>Dryocopus pileatus</i>	PIWO	✓	✓
Red-Bellied Woodpecker	<i>Melanerpes carolinus</i>	RBWO	✓	✓
Red-Eyed Vireo	<i>Vireo olivaceus</i>	REVI	✓	
Red-Winged Blackbird	<i>Agelaius phoeniceus</i>	RWBL	✓	✓
Rose-Breasted Grosbeak	<i>Pheucticus ludovicianus</i>	RBGR	✓	
Ruby-Throated Hummingbird	<i>Archilochus colubris</i>	RTHU	✓	
Sandhill Crane	<i>Grus canadensis</i>	SACR	✓	
Savannah Sparrow	<i>Passerculus sandwichensis</i>	SAVS	✓	
Scarlet Tanager	<i>Piranga olivacea</i>	SCTA	✓	✓
Song Sparrow	<i>Melospiza melodia</i>	SOSP	✓	✓
Tree Swallow	<i>Tachycineta bicolor</i>	TRES	✓	
Tufted Titmouse	<i>Baeolophus bicolor</i>	ETTI	✓	✓
Turkey Vulture	<i>Cathartes aura</i>	TUVU	✓	
Veery	<i>Catharus fuscescens</i>	VEER	✓	✓
White-Breasted Nuthatch	<i>Sitta carolinensis</i>	WBNU	✓	
Wild Turkey	<i>Meleagris gallopavo</i>	WITU	✓	
Wood Duck	<i>Aix sponsa</i>	WODU	✓	
Wood Thrush	<i>Hylocichla mustelina</i>	WOTH	✓	✓
Yellow Warbler	<i>Dendroica petechia</i>	YWAR	✓	
Yellow-Throated Vireo	<i>Vireo flavifrons</i>	YTVI	✓	