

Bird banding analysis for 2009

2009 was the first year we banded year-round at Panola Mountain State Park, having banded primarily September through March in 2007 and 2008. This year we banded 27 times; approximately once every 2 weeks. The station was run once in my absence during my summer vacation. It is wonderful to have the great help necessary to do this. As Jonathan Gray finishes his graduate work at UGA, I welcome Annie Crary as sub-permittee. She has extensive experience banding birds, and what I've seen of her work is excellent.

We had 415 captures (350 banded; 23 unbanded; 55 recaptured) of 36 species, including 16 new species. The 36 species eclipses the 23 caught in 2008 and the 21 caught 2007. 415 captures was more than the cumulative 403 of 2007 and 2008.

The overall capture rate (based on 923.34 net hours and 415 captures) was 0.45 birds per net hour, compared to 1.03 in 2007 and 0.62 in 2008. The difference can be explained, in part, by the fact that we did not band in the breeding season during 2007 or 2008 – traditionally the time of year with lowest capture rates.

The top species captured in 2009 were Song Sparrow (72 birds for 20.6% of total); Eastern Phoebe (71 = 20.3%) and Swamp Sparrow (59 = 16.9%).

New Species caught at Panola Mountain State Park in 2009

(The number caught is in parentheses)

American Kestrel (1)
Wilson's Snipe (1)
Red-bellied Woodpecker (1)
Eastern Wood-pewee (2)
Trail's Flycatcher (Alder or Willow) (1)
Red-eyed Vireo (2)
Northern Rough-winged Swallow (2)
Blue-Gray Gnatcatcher (6)
Yellow Warbler (1)
"Myrtle" Yellow-rumped Warbler (1)
Pine Warbler (1)
Northern Waterthrush (1)
Lincoln's Sparrow (1)
Blue Grosbeak (12)
Common Grackle (1)
Orchard Oriole (4)

Many of the new species are probably due to increased effort during the breeding season. Others are likely due to the necessitated shift in net lanes. Three new species (Wilson's Snipe, Northern Rough-winged Swallow and Northern Waterthrush) are likely a result of flooding, as were many newly observed species, including ducks and waders.

The twelve Blue Grosbeaks represent the most important new species. Blue Grosbeaks are suffering a very steep decline that has been linked primarily to habitat loss. While minimal banding during breeding season may account for our lack of captures in the past, we will pay additional attention to them in the future.

Other new species can be attributed to habitat changes. For 3 years we waited for the Power of Flight area to fill with water, but very heavy rains falling in an area that suffered serious drought for several years caused more than the wetland to hold water - the entire area flooded suddenly on two occasions. This caused substantial changes to net lanes. We lost several net locations, including our most productive lane. So far the new nets are not proving as productive. We plan to run them for a few more months before considering changes. Significantly, the conversion to native vegetation away from hay agriculture to warm season grasses and forbs has reached the net lanes, having progressed well for several years from the western field where it was begun.

After 3 years of prescribed fire, we are starting to see a decline in the wooded treelines that bisect the fields. Along with that we are seeing the expected decline in overall capture rate and captures of bird species that prefer edge habitat. While these treelines attract many species of birds, particularly in migration, they have the negative impact of fragmenting the fields. Large open fields are in much lower supply in most of Georgia than forested areas, so we are attempting to manage more for the steeply declining grassland species that rely on large, intact fields.

We had a significant drop-off in capture rate this year, some of which can be explained by a very late arrival of wintering sparrows, which provide the bulk of our fall and winter captures. This phenological observation was corroborated by field observations here and in other places by other observers. Our first "big sparrow day" in 2008 was September 19, while our first such day in 2009 was not until October 31. We also lost a number of banding days and partial days due to weather. Because the site relies on more volunteers, we can only band on weekends, making it difficult to make up for lost days.

One observation we cannot analyze is the apparent high sparrow activity in the fields away from the net lanes. The half of the peninsula which was burned in 2009 seems "busier" and a small area at the very east end of the peninsula, which was both burned

and treated with herbicide, seems to be the “busiest” area. We have not enjoyed the resources to extend banding into those areas to better study this observation. The park does not plan to burn any portion of the study area in 2010, opting to use chemical removal of exotics from the east half. Based on past experience we anticipate capture rates to increase shortly after this treatment, then decline approximately one month later.

The 2009 Eastern Phoebes production was another anomaly. In 2007 and 2008 we caught a total of ten, and of those, 7 were in fall 2008. So the 71 caught in 2009, with 27 in the month of September is a very large increase, which the net lane changes do not explain.

Now that we have banded for multiple years, recaptures and returns will become a more significant component of our data. A return is the capture of a previously banded bird, which is believed, due to the typical phenology of that species, to have migrated away from the station and back at least once between the original banding and its recapture. Of the 834 birds we have banded, in three years, we have recaptured 75 individuals (8.99%) of 15 species. Quality habitat does more than allow a higher percent of birds to survive a season. Birds that winter in high quality habitat are capable of forming more fat and thus more fit to migrate. This results in a higher site fidelity

Species	Individuals	Recaptures	Returns	Maximum months after banding	Most times caught
Eastern Phoebe	2	2	N/A*	1	2
Carolina Chickadee	2	2	N/A	15	2
Carolina Wren	4	11	N/A	16	6
House Wren	1	2	0	3	3
Ruby-crowned Kinglet	1	2	0	2	3
Eastern Bluebird	2	2	N/A	3	2
Common Yellowthroat	8	18	N/A	17	5
Yellow-breasted Chat	1	1	0	1	2
Field Sparrow	8	8	1	20	2
Savannah Sparrow	1	1	1	10	2
Song Sparrow	28	33	10	13	3
Swamp Sparrow	10	12	1	12	4
Northern Cardinal	4	4	N/A	19	2
Blue Grosbeak	2	4	0	2	4
Indigo Bunting	1	1	0	2	2

*N/A indicates a resident species

Only 14 individuals have been recaptured more than one time, which would appear to indicate low site fidelity, at least in the winter (we cannot talk about breeding season as we have data for only one full season). Half of the species we have recaptured are resident. As the treelines continue to be removed and the fields merged into fewer, larger fields of better grassland habitat, some edgy species (Carolina Wren, Eastern Bluebird, and Northern Cardinal) will decline at the station and be replaced by more migratory species. If habitat management is successful, recapture/return records should indicate higher site fidelity than we currently observe.

Managing bird banding stations is a group effort that could not be done without tremendous support. More than 40 volunteers gave 940 hours of field time. Five of these wonderful people gave more than half of these hours. Uber-volunteer Ashley Harrington gave over 320 Hours. Vanessa Lane, Chris O'Neal and Stephen Sorensen contributed more than 50 hours of their invaluable skills in the data analysis. Thanks also to Carol Ludwig who worked many hours making bird bags and repairing nets.

Thank you to Tim Banks, Phil Delestrez and Jody Rice for making sure this important work could happen, and to Elaine Nash, Tim Keyes and Nathan Klaus for their expertise. With Tim, Tim and Phil now working in other parts of the state, we hope that the new management will recognize the importance of this effort and work hard to ensure our work can continue.

I need to thank my wife Tracey and son Allan for helping me both directly and indirectly, and for always supporting me despite long, strange hours, days and nights away from home, unusual loads of laundry and the sometimes complete takeover of our garage for banding supplies.