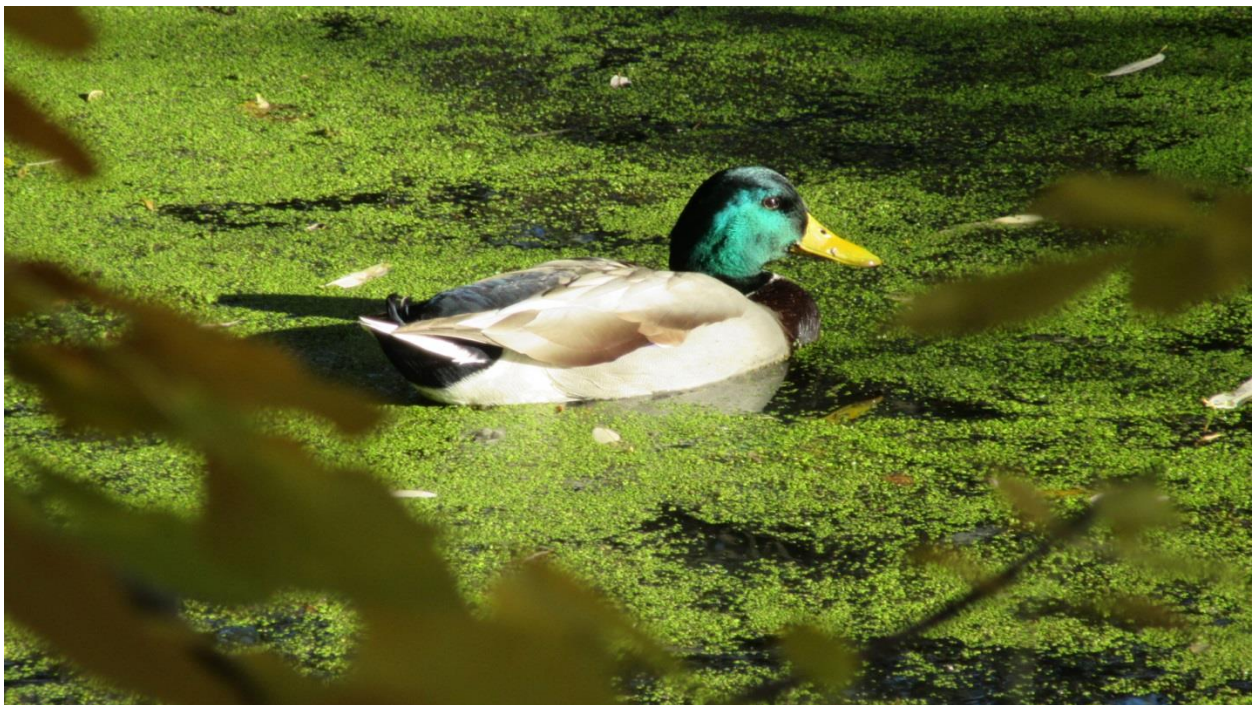


The Birds of North Mountain Park



Brandon Breen

An Analysis of Monthly Surveys
(Sept 1999 – Aug 2016)

Brandon M. Breen

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Background

North Mountain Park in Ashland, Oregon is a beloved birding location for Rogue Valley residents and visitors. At the time of the park's creation eighteen years ago (in 1999), a few forward-thinking birders and citizen scientists initiated a monthly bird survey at the park.

The primary data collectors in this effort have been Barbara Massey, Vince Zauskey, and Bob Quaccia; a few additional birders have also filled in and conducted surveys from time to time.

Today, this data set spans over seventeen years, contains over 5,000 entries, and represents a valuable source of information about our local birdlife in the contexts of global environmental change and habitat restoration. In the following pages you will find the results from an analysis of this long-term data set.



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A local birder ambles through North Mountain Park

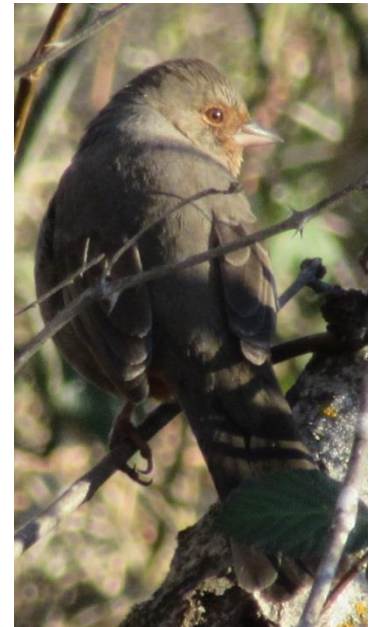
Methods

Data Collection

Skilled birders (primarily Barbara Massey, Bob Quaccia, and Vince Zauskey) have been conducting bird surveys of North Mountain Park once monthly (with a few omissions) since September, 1999. Surveys begin between 8:00 and 10:00am, last for approximately one and a half hours, and follow the same route through the 14-acre park. Surveyors record the total number of distinct individuals of each bird species they encounter by sight and/or sound.

Data Analysis

Linear regression was used to test for increasing or decreasing abundance trends in 51 bird species that had been encountered in sufficient numbers to allow for data analysis. In order to prepare the data for regression analysis, a single value was generated for each species for each year from 1999 to 2016; this value was the mean of their occurrence during those months of the year that they are common at the park. For winter residents, the mean for each year was calculated from their occurrence on surveys from October through April; for summer migrants, the mean for each year was calculated from their occurrence on surveys during either April through July, or May through August, depending on which period best fits a given species' occurrence at the park, according to eBird data. For year-round residents, all months were used to calculate the mean value of abundance for each year.



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California Towhee

Interpretation of Results

Factors Affecting Bird Abundance Trends

This study is not able to provide causal explanations for the observed increasing or decreasing trends of certain bird species because we do not have quantitative data on habitat changes at the park over the time period of the study. That said, we can speak to a few general trends that have been occurring at North Mountain Park over the 17-year study.

There has been an increasing number of visitors to the park combined with increasing residential development in the landscape surrounding the park. Since 1999, a long-term restoration effort has been converting the park (which was formerly farmland) to a more diverse, native flora-rich area through the planting of native species (including in the Bear Creek Floodplain and including oak trees) and the control of invasives. Since at least 2006, the removal of invasive Himalayan blackberry has been a major focus of restoration activities at the park.

Images below from North Mountain Park's 2005 Annual Report



The above photographs were taken from the same photo point behind the N MT Park pavilion. Left photo: spring 2000; Right photo: spring 2004. Notice the change in vegetation.

Data Summary

194 surveys completed (and entered into eBird)

28,284 birds counted from 137 species

The average survey recorded 146 individuals from 27 bird species

Highest species count: 46 species (19 May 2002)

Highest count of a single species: 500 Turkey Vultures (31 October 2004)

24% of all eBird checklists for North Mountain Park come from this monthly survey project (as of April 2017)



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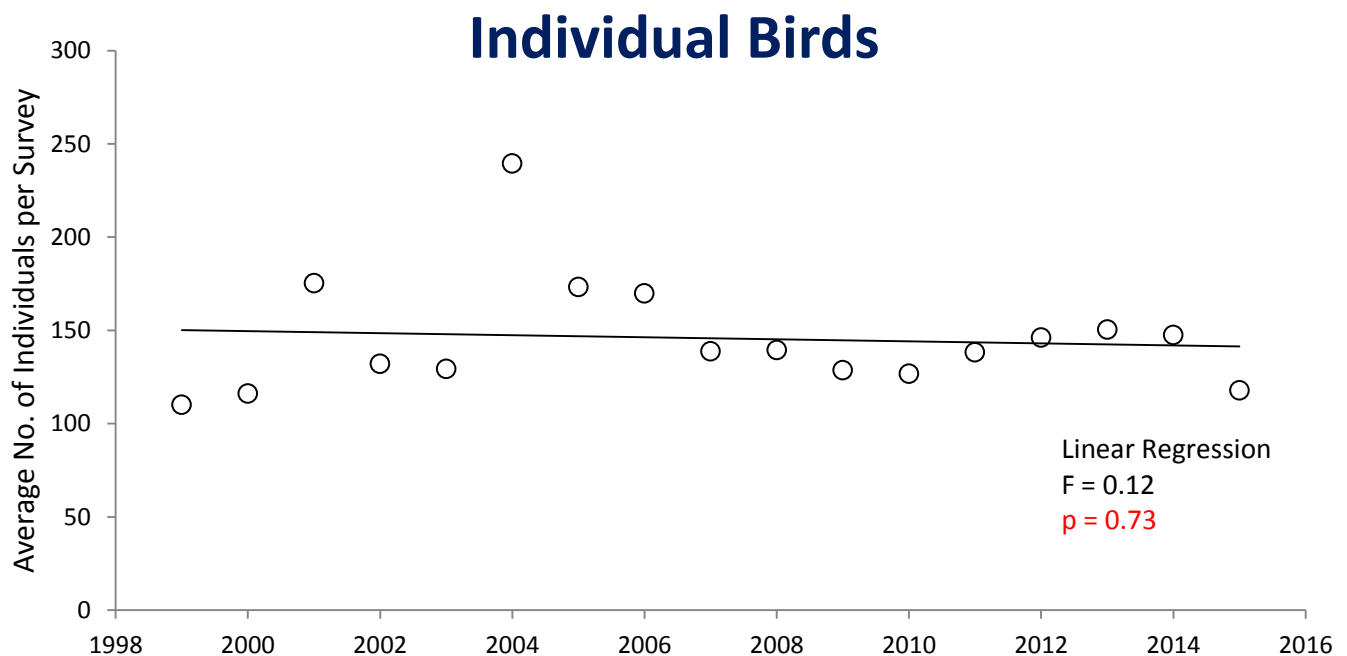
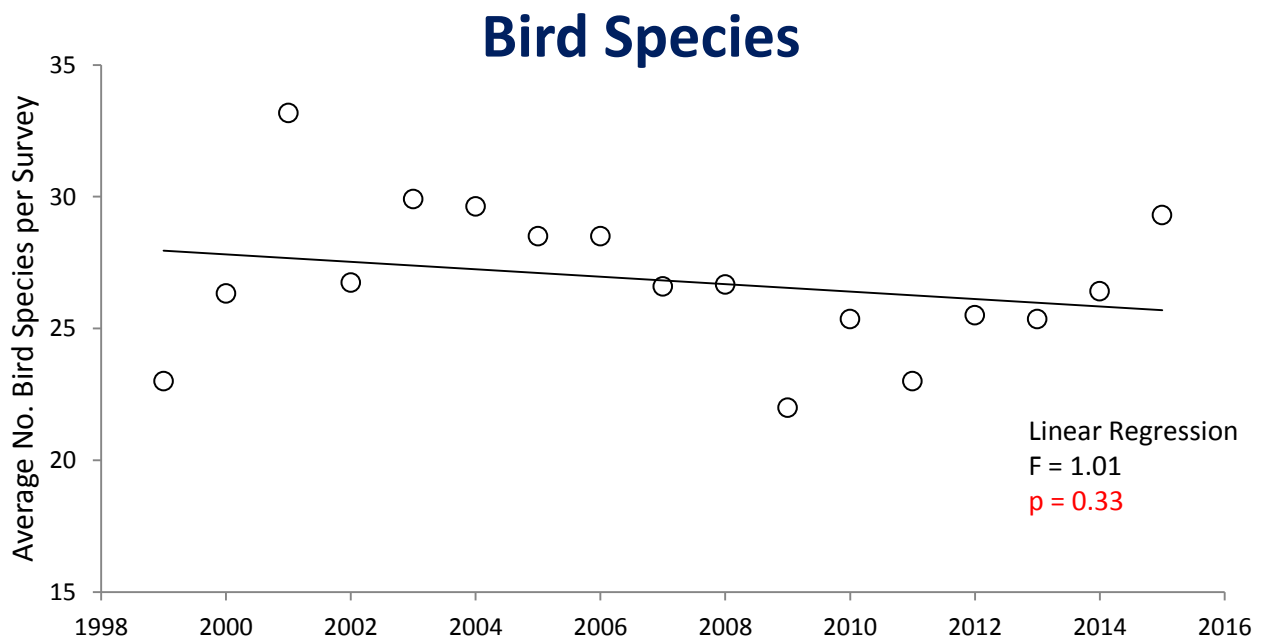
Barbara Massey, one of the originators of the North Mountain Park bird survey project, pictured in the Klamath Basin

Species List *from most to least numerous*

European Starling	Black Phoebe	Willow Flycatcher	Pileated Woodpecker
Golden-crowned Sparrow	Brown-headed Cowbird	Ash-throated	Swamp Sparrow
Red-winged Blackbird	Ring-necked Duck	Flycatcher	Black-crowned Night- Heron
American Robin	Wrentit	American Dipper	Chipping Sparrow
Cedar Waxwing	Common Yellowthroat	American Coot	Cinnamon Teal
Lesser Goldfinch	Great Blue Heron	Violet-green Swallow	Double-crested
California Scrub-Jay	Lincoln's Sparrow	American Kestrel	Cormorant
Brewer's Blackbird	Belted Kingfisher	Bufflehead	Gray Catbird
Tree Swallow	Wilson's Warbler	Ring-necked Pheasant	Hammond's Flycatcher
Song Sparrow	Orange-crowned	Band-tailed Pigeon	Lesser Scaup
Mallard	Warbler	Merlin	Marsh Wren
Dark-eyed Junco	Red-tailed Hawk	Red-breasted	Northern Mockingbird
American Goldfinch	Hermit Thrush	Sapsucker	Northern Shoveler
Turkey Vulture	Common Raven	Brown Creeper	Northern Spotted Owl
Spotted Towhee	Bewick's Wren	Pacific Wren	Red Crossbill
American Crow	Eurasian Collared-Dove	Great Horned Owl	Townsend's Warbler
Mourning Dove	Green Heron	Western Screech-Owl	Tri-colored Blackbird
Canada Goose	Barn Swallow	White-throated	
Pine Siskin	Western Meadowlark	Sparrow	
Black-capped Chickadee	Golden-crowned	Cliff Swallow	
House Finch	Kinglet	Spotted Sandpiper	
Bushtit	Vaux's Swift	Northern Harrier	
White-crowned Sparrow	Oak Titmouse	Osprey	
Northern Flicker	California Towhee	Pacific-slope	
Acorn Woodpecker	Yellow-breasted Chat	Flycatcher	
California Quail	Black-throated Gray	Lazuli Bunting	
Killdeer	Warbler	Hutton's Vireo	
Western Tanager	Yellow Warbler	Golden Eagle	
House Sparrow	Evening Grosbeak	Great Egret	
Wood Duck	Ring-billed Gull	MacGillivray's Warbler	
Ruby-crowned Kinglet	Rufous Hummingbird	American Wigeon	
Rock Pigeon	Warbling Vireo	California Gull	
Purple Finch	Cooper's Hawk	Bald Eagle	
Western Wood-Pewee	Hooded Merganser	Common Goldeneye	
Fox Sparrow	House Wren	Nashville Warbler	
Bullock's Oriole	Common Merganser	Northern Pygmy-Owl	
Downy Woodpecker	Varied Thrush	Peregrine Falcon	
Western Bluebird	Wilson's Snipe	White-tailed Kite	
Black-headed Grosbeak	Red-shouldered Hawk	Steller's Jay	
Anna's Hummingbird	Northern Rough-winged	Swainson's Thrush	
Yellow-rumped Warbler	Swallow	Cassin's Vireo	
Western Kingbird	Sharp-shinned Hawk	Lewis's Woodpecker	
White-breasted Nuthatch	Hairy Woodpecker	Pied-billed Grebe	

Species Richness Over Time

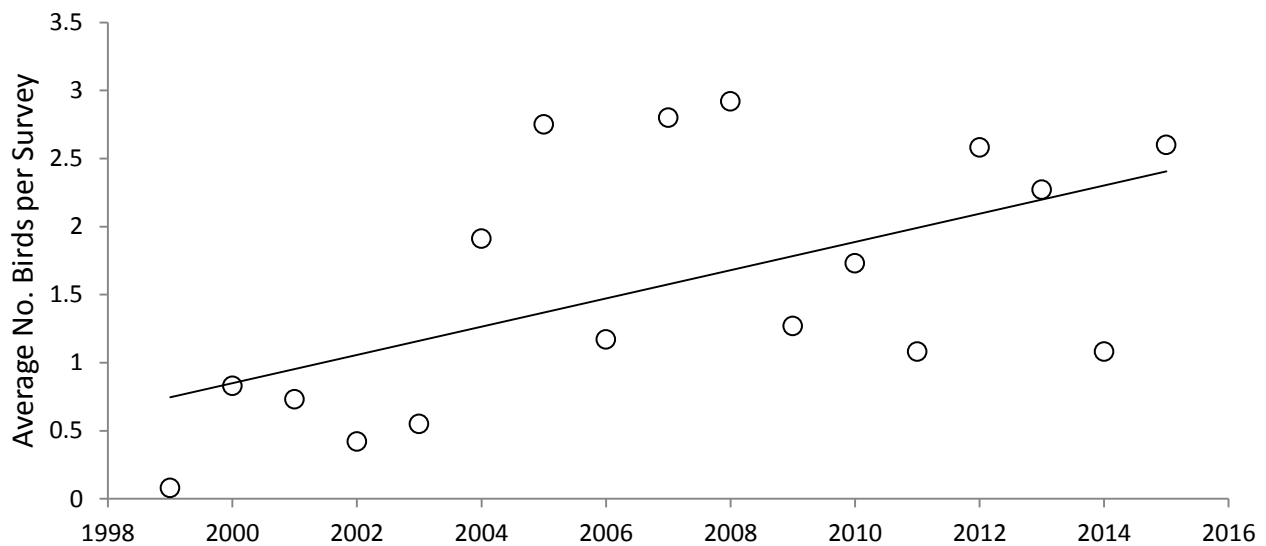
Both species richness (i.e., number of bird species) and number of individual birds detected per monthly survey at North Mountain Park have remained consistent over the 17-year time period of the study.



Birds with Increasing Trends

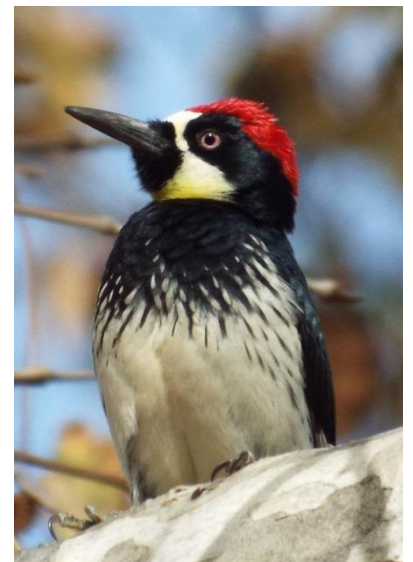
Out of the 51 bird species analyzed for long-term abundance trends at North Mountain Park, six (12%) showed increasing trends over the 17-year study period (1999-2016). Three out of these six species are associated with oak woodlands.

Acorn Woodpecker



Acorn Woodpecker is a year-round resident of North Mountain Park that has increased from an average of about 0.7 to 2.4 birds detected per survey from 1999 to 2015 (Linear regression, $F = 6.85$, $p = 0.02$). Its increasing trend at North Mountain Park is consistent with results from the Breeding Bird Survey indicating this species has increased throughout its U.S. range at the rate of 0.7% per year from 1966 to 2015, and at the rate of 3.3% per year from 2005 to 2015.

Acorn Woodpeckers occur in oak and mixed oak-conifer woodlands where they depend on acorns and storage trees in which they can cache acorns. They are omnivorous, feeding on insects and arthropods, acorn and other nuts, fruit, sap, grass seeds, flower nectar, corn, and more. Threats to this species include loss of oak habitats and loss of nest holes to aggressive European Starlings. Acorn Woodpeckers have proven adept at colonizing suburban areas and using man-made structures for acorn storage.

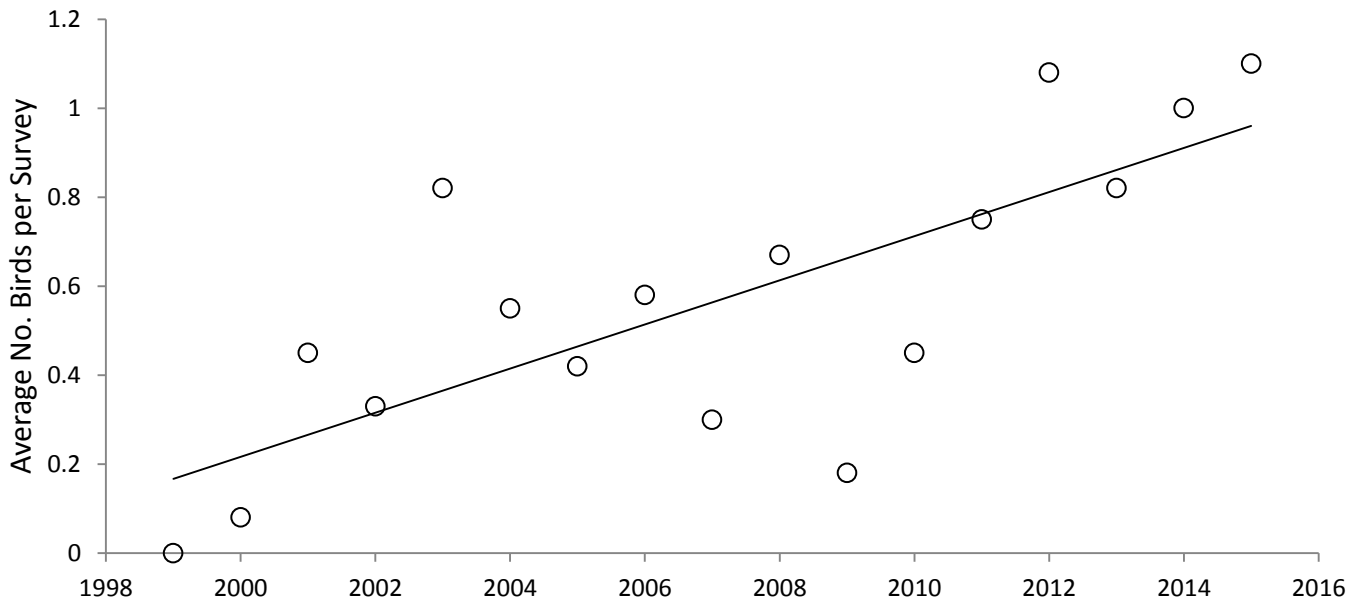


Robert Nunnally

Acorn Woodpecker

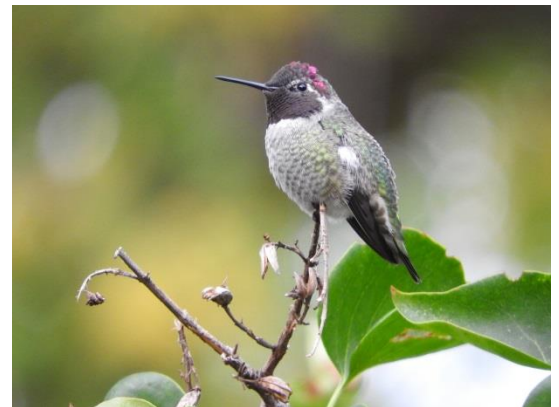
Birds with Increasing Trends

Anna's Hummingbird



Anna's Hummingbird is a year-round resident at North Mountain Park that has increased from an average of about 0.2 to 1.0 birds detected per survey from 1999 to 2015 (Linear regression, $F = 19.1$, $p = 0.0005$). Its increase at North Mountain Park is consistent with the distribution-wide increasing trend for the species, which is a >2% population increase per year from 1966 to 2015, according to the Breeding Bird Survey .

The Anna's Hummingbird has increased its range dramatically since the 1930s owing to a combination of backyard feeders and the presence of ornamental plants that provide nectar throughout the year. Anna's Hummingbirds thrive near human habitations. They have a diverse diet that includes small insects, sap from sapsucker holes, and nectar from many native and exotic plants. Anna's Hummingbirds occur in urban and suburban settings, chaparral and scrub, oak savannas, and open woodlands.

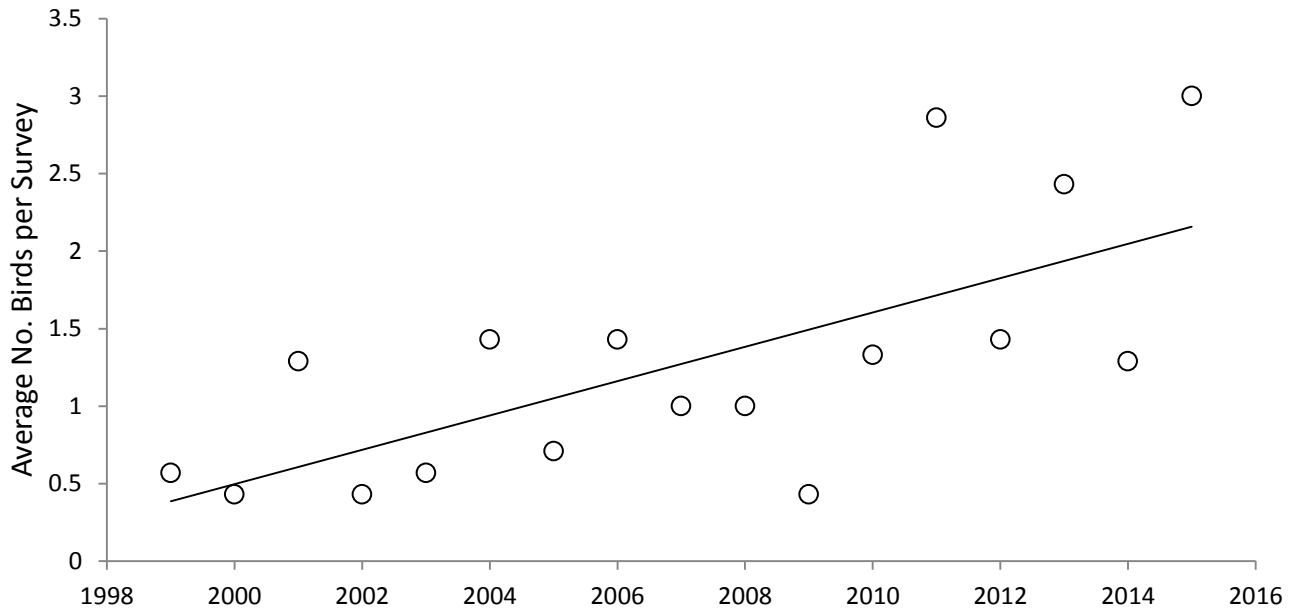


Emmalisa Whalley

Anna's Hummingbird

Birds with Increasing Trends

Fox Sparrow



Fox Sparrow is a winter resident of North Mountain Park that has increased from an average of about 0.4 to 2.1 birds detected per wintertime survey from 1999 to 2015 (Linear regression, $F = 13.6$, $p = 0.002$). Its increasing trend at North Mountain Park is opposite from the species' decreasing population trend in western North America. The species declined by -1.0% per year from 1966 to 2015 in western North America and range-wide it experienced a 51% population reduction over this time period (Breeding Bird Survey). This declining trend slowed in recent years such that the species declined in western North America at the rate of -0.7% per year from 2005 to 2015 (Breeding Bird Survey).

Fox Sparrows in our area during the winter inhabit thickets and chaparral while eating a mixture of invertebrates and plant material. They forage on the ground through leaf litter using scratching methods, often under dense cover.

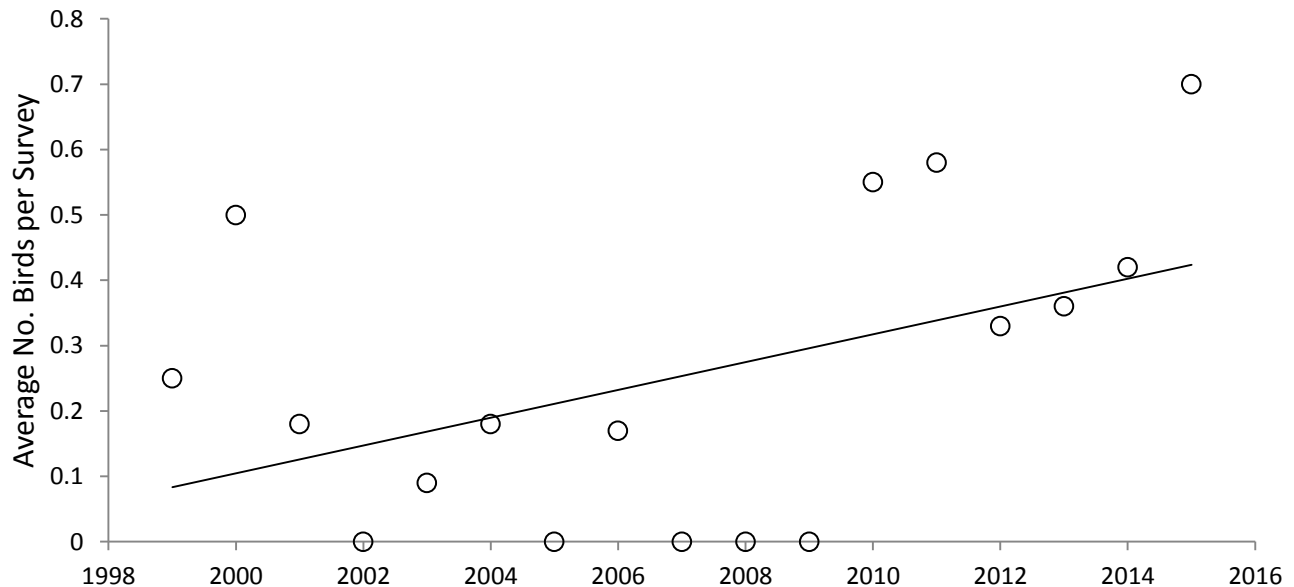


Brandon Breen

Fox Sparrow

Birds with Increasing Trends

Oak Titmouse



Oak Titmouse is a year-round resident of North Mountain Park that has increased from an average of about 0.1 to 0.5 birds detected per survey from 1999 to 2015 (Linear Regression, $F = 4.06$, $p = 0.06$). Its increasing trend at North Mountain Park is not consistent with results from the Breeding Bird Survey indicating this species has decreased throughout its U.S. range at the rate of -1.6% per year from 1966 to 2015 (totaling a 57% population reduction over this time period), and at the rate of -1.2% per year from 2005 to 2015. That said, Breeding Bird Survey data indicate that in Oregon the Oak Titmouse increased at the rate of 0.3% per year from 1966 to 2015, and at the rate of 2.7% per year from 2005 to 2015 (Note: these Oregon data should be interpreted with caution due to a low sample size.)

Oak Titmice live primarily in oak and oak-pine woodlands. They feed on a variety of seeds, other plant materials, and insects and other invertebrates. The Oak Titmouse is on the 2014 U.S. State of the Birds Watch List because it is at risk of being endangered or threatened in the absence of conservation action. Its decline is linked to the explosion of the human population in California during the 20th century and the resultant human impacts on oak habitats.

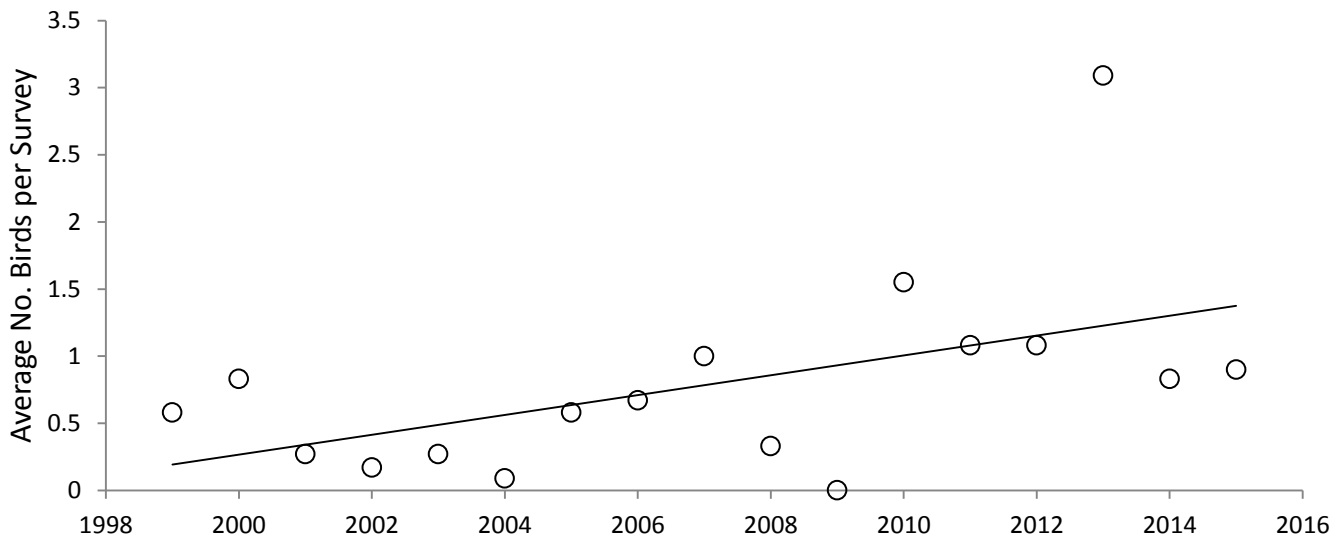


Becky Matsubara

Oak Titmouse

Birds with Increasing Trends

Purple Finch



Purple Finch is a year-round resident at North Mountain Park that has increased from an average of about 0.2 to 1.4 birds detected per survey from 1999 to 2015 (Linear regression, $F = 5.37$, $p = 0.035$). Its increasing trend at North Mountain Park is opposite from the species' decreasing regional population trend. The species declined in western North America by -1.3% per year from 1966 to 2015, resulting in a 52% population reduction over this time period (Breeding Bird Survey). This declining trend slowed in recent years such that the species declined at the rate of -0.6% per year from 2005 to 2015 (Breeding Bird Survey).

The Purple Finch breeds primarily in cool evergreen forests. During the winter it is more widespread, inhabiting forests, shrubby areas, fields, and backyards. Purple Finches feed on seeds of conifers and other trees, soft buds, nectar found in bitten off flower bases, fruit, seeds from low-lying plants in winter, and some insects. The Purple Finch may suffer in some areas due to competition with the House Finch.

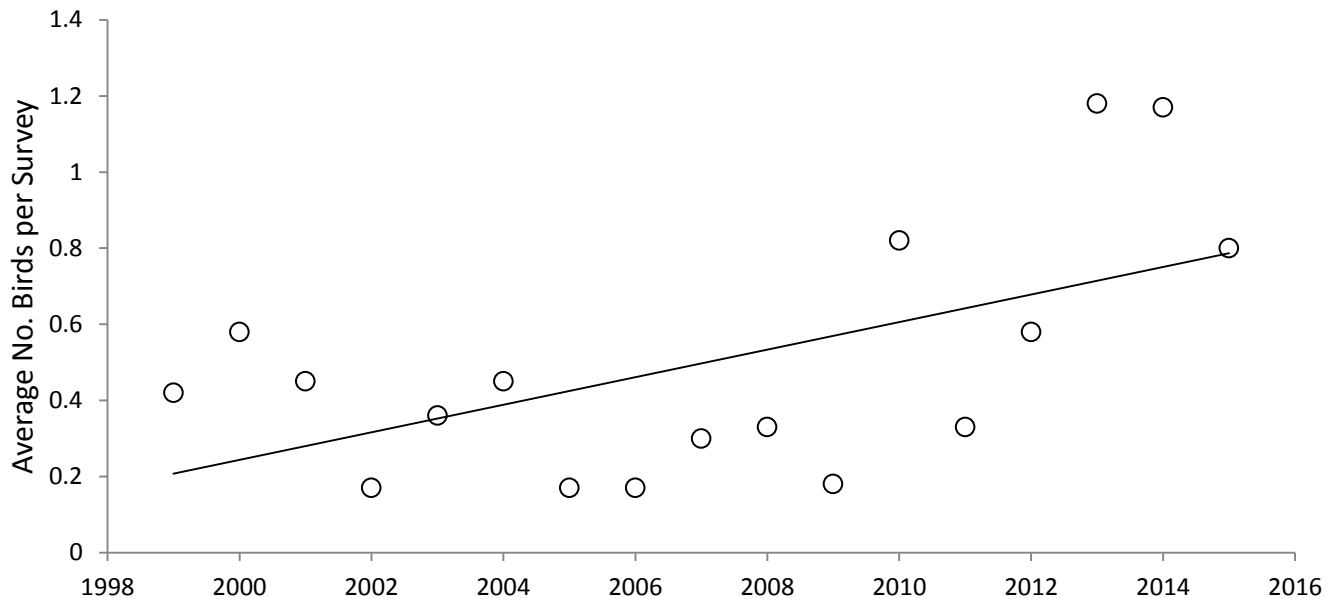


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Purple Finch

Birds with Increasing Trends

White-breasted Nuthatch



White-breasted Nuthatch is a year-round resident of North Mountain Park that has increased from an average of about 0.2 to 0.8 birds detected per survey from 1999 to 2015 (Linear Regression, $F = 7.04$, $p = 0.018$). Its increasing trend at North Mountain Park is consistent with results from the Breeding Bird Survey indicating this species has increased throughout its U.S. range at a steady rate of 1.7% per year from 1966 to 2015.

White-breasted Nuthatches favor deciduous trees over conifers and are found in mature woods as well as woodland edges and open areas such as parks and yards. They feed on insects, insect larvae, spiders, seeds, and nuts. They nest in holes in trees and thus depend on an adequate supply of dead or partially dead trees for nesting sites.



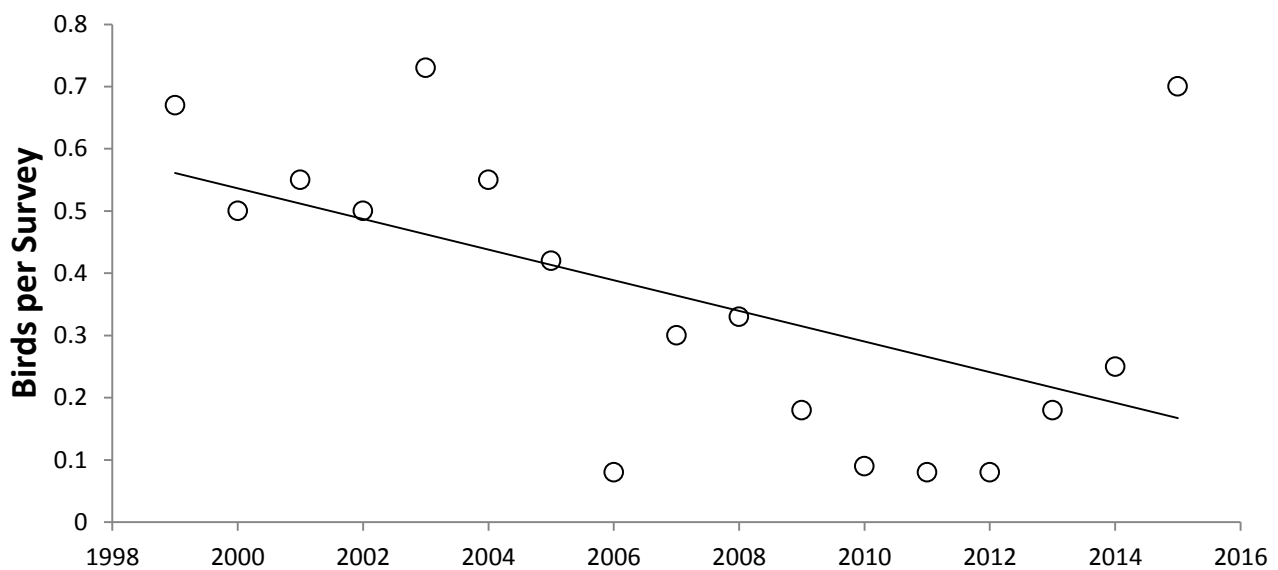
Emmalisa Whalley

White-breasted Nuthatch

Birds with Decreasing Trends

Out of the 51 bird species analyzed for long-term abundance trends at North Mountain Park, eight (16%) showed decreasing trends over the 17-year study period (1999-2016). Most of these birds are associated with streamside or pond habitats.

Belted Kingfisher



Belted Kingfisher is a year-round resident at North Mountain Park that has decreased from an average of about 0.6 to 0.2 birds detected per survey from 1999 to 2015 (Linear regression, $F = 19.1$, $p = 0.0005$). Its decrease at North Mountain Park is consistent with its North American decline of -1.4% per year from 1966 to 2015 (a cumulative population decline of 53%), and of -0.9% per year from 2005 to 2015, according to the Breeding Bird Survey .

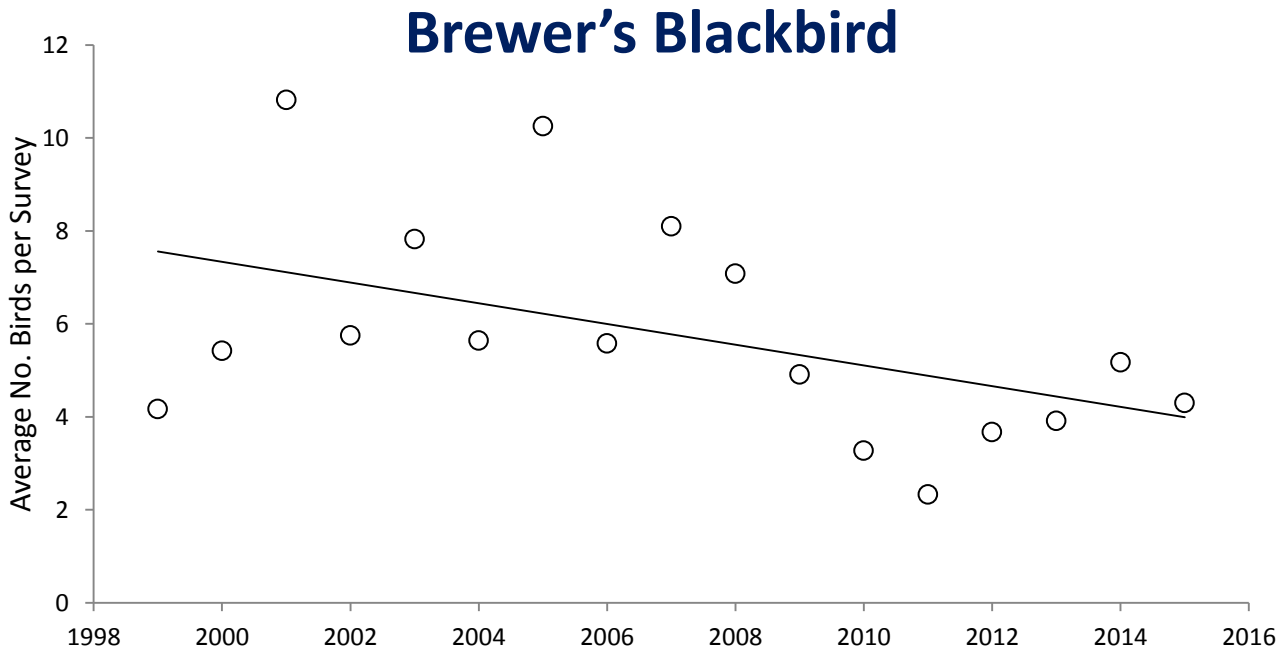
Belted Kingfishers require water bodies for feeding and steep earthen banks for nesting. They are often found near streams, rivers, ponds, lakes, and clear marine waters. They feed mainly on fish but also on crayfish, crustaceans, amphibians and reptiles, young birds, insects, and even berries. Partners in Flight lists the Belted Kingfisher as a Common Bird in Steep Decline. They are sensitive to disturbance by humans and limited by the availability of nest sites.



Emmalisa Whalley

Belted Kingfisher

Birds with Decreasing Trends



Brewer's Blackbird is a year-round resident in the Rogue Valley that has decreased from an average of about 7.6 to 4.0 birds detected per survey at North Mountain Park from 1999 to 2015 (Linear regression, $F = 4.42$, $p = 0.05$). Its decreased number of detections at North Mountain Park is consistent with its decreases in western North America of -2.0% per year from 1966 to 2015 (a cumulative decline of about 69%), and of -1.9% per year from 2005 to 2015, according to the Breeding Bird Survey .

Brewer's Blackbirds occur in a range of habitats from grasslands, marshes, chaparral, woodlands, and meadows to lawns, parks, agricultural fields, and golf courses. They feed mostly on seeds and grains but also feed on insects when they are plentiful. They are listed on the 2014 U.S. State of the Birds Report as a Common Bird in Steep Decline.

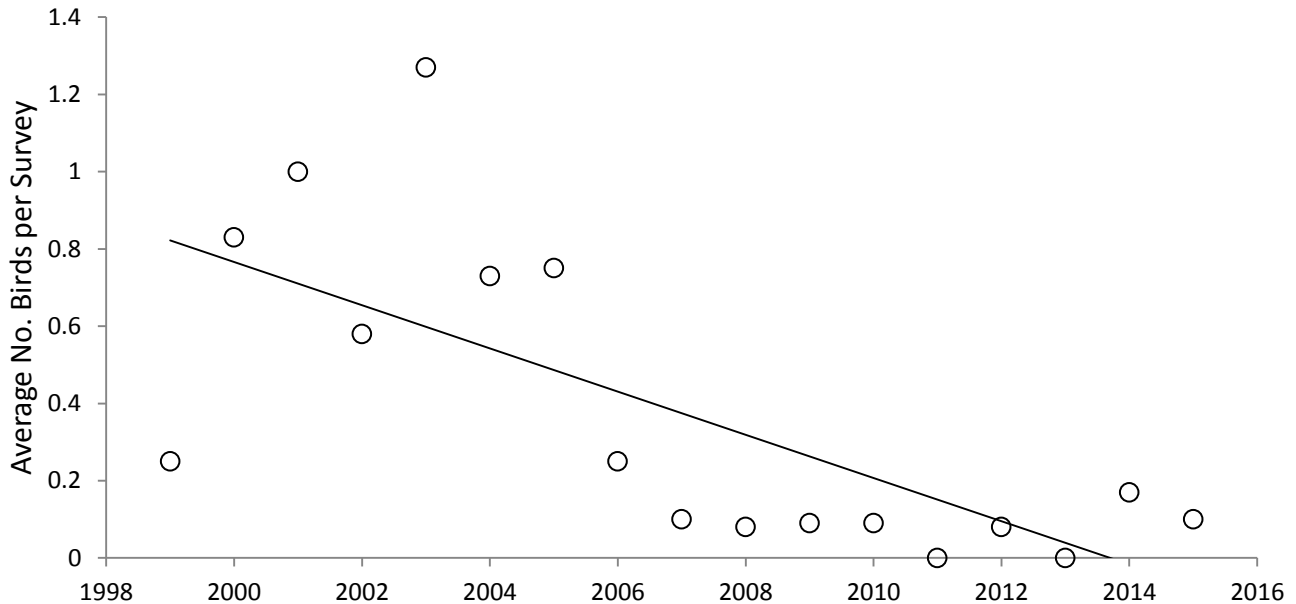


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Brewer's Blackbird

Birds with Decreasing Trends

Great Blue Heron



Great Blue Heron is a year-round resident in the Rogue Valley and its sightings at North Mountain Park have decreased from an average of about 0.8 to almost 0.0 detected per survey from 1999 to 2015 (Linear regression, $F = 19.1$, $p = 0.0005$). Its decrease at North Mountain Park is consistent with its western North American decline of -0.8% per year from 1966 to 2015, and of -0.5% per year from 2005 to 2015, according to the Breeding Bird Survey . That said, across North America the Great Blue Heron shows an increase of 0.5% per year from 1966 to 2015, and of 0.9% per year from 2005 to 2015 (Breeding Bird Survey).

Great Blue Herons occur in both freshwater and saltwater habitats. They typically breed within 2 to 4 miles of feeding areas. They feed on a wide range of animals, including fish, amphibians, reptiles, small mammals and birds, and insects. Great Blue Herons are vulnerable to habitat loss because they depend on wetlands for feeding. They also require mostly undisturbed sites for breeding and human activity can cause them to abandon breeding colonies.

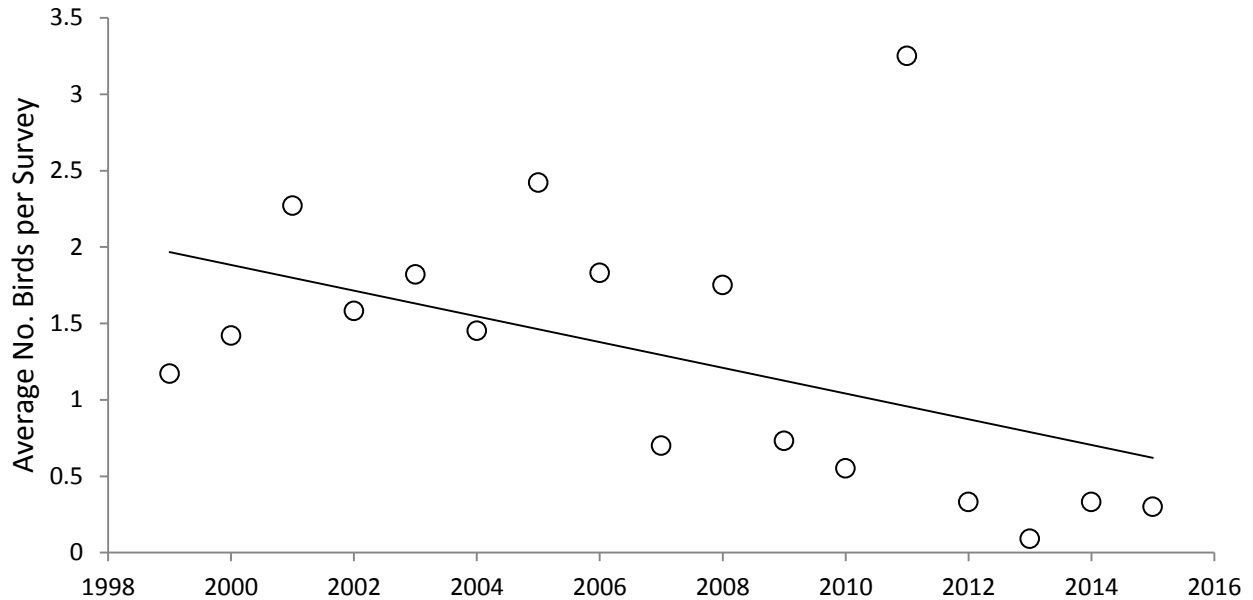


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Great Blue Heron

Birds with Decreasing Trends

Killdeer



Killdeer is a year-round resident in the Rogue Valley that has decreased from an average of about 2.0 to 0.6 birds detected per survey at North Mountain Park from 1999 to 2015 (Linear regression, $F = 4.3$, $p = 0.05$). Its decreased number of detections at North Mountain Park is consistent with its decreases in North America of -1.0% per year from 1966 to 2015 (a cumulative decline of about 47%), and of -0.6% per year from 2005 to 2015, according to the Breeding Bird Survey . In western North America its decreases are more pronounced: down -2.9% per year from 1966 to 2015, and down -3.7% per year from 2005 to 2015 (Breeding Bird Survey).

Killdeer occur in open areas including fields, mudflats, and sandbars. The fields they inhabit usually have grass one inch in height or less. They feed on a variety of invertebrates but are opportunistic and will also consume agricultural seeds and frogs. Killdeer tolerate human-modified habitats well, but can be vulnerable to poisoning from pesticides and collisions with cars and buildings.

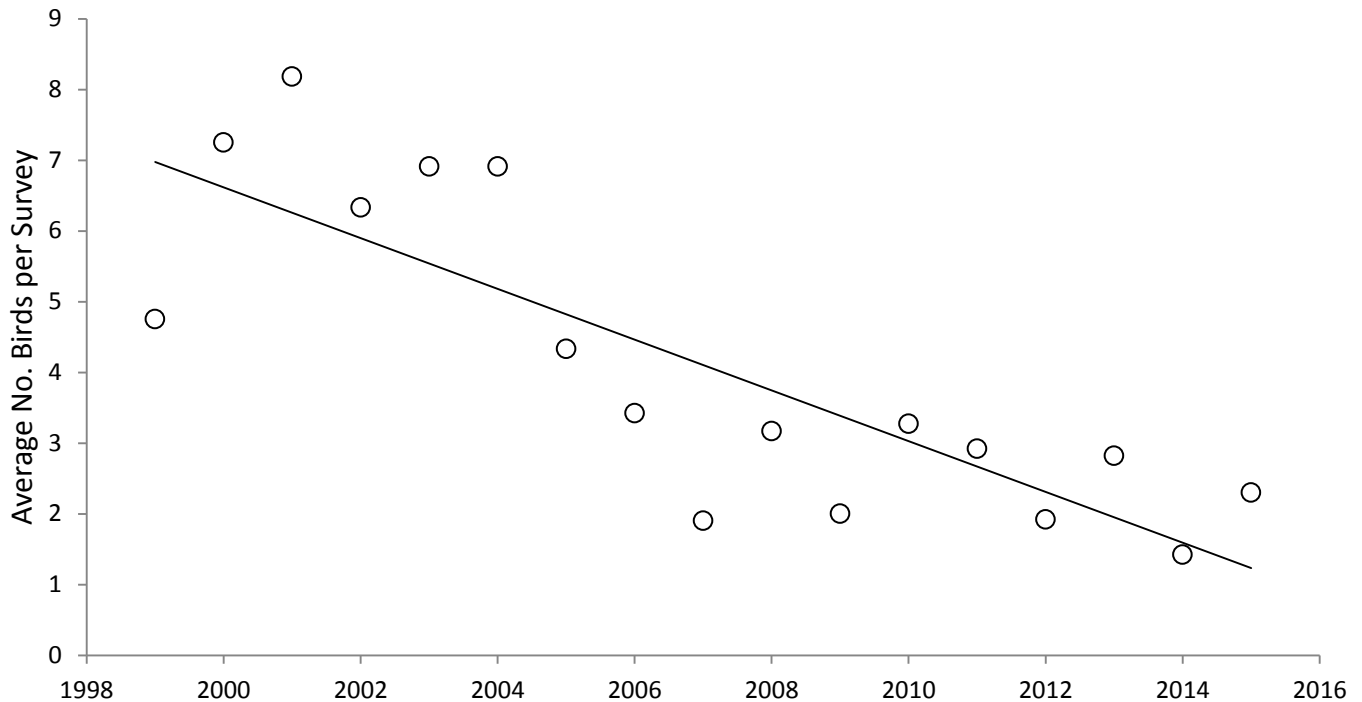


Curt Hart

Killdeer

Birds with Decreasing Trends

Song Sparrow



Song Sparrow is a year-round resident at North Mountain Park that has decreased from an average of about 7.1 to 1.3 birds detected per survey from 1999 to 2015 (Linear regression, $F = 31.85$, $p < 0.0001$). Its decrease at North Mountain Park is consistent with its North American decline of -0.8% per year from 1966 to 2015 (a population decline of over 30%), and of -1.1% per year from 2005 to 2015, according to the Breeding Bird Survey .

Song Sparrows are often found near water and inhabit a tremendous variety of open habitats as well as deciduous and mixed woodlands. They eat seeds, fruit, and invertebrates.

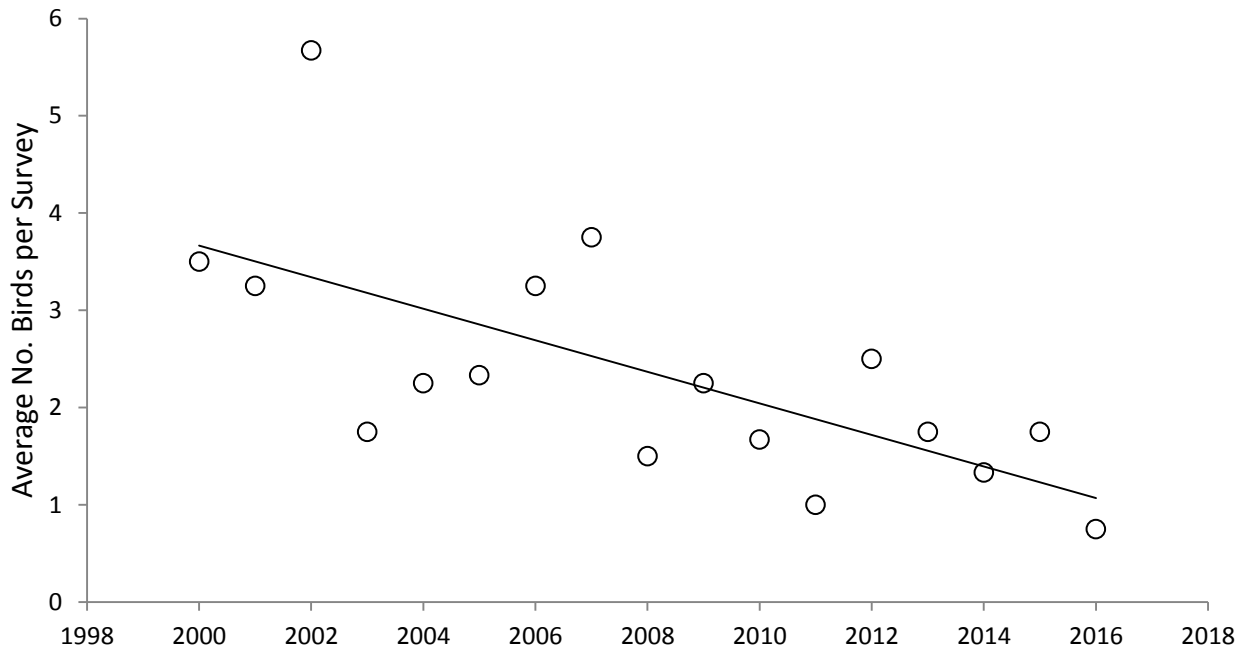


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Song Sparrow

Birds with Decreasing Trends

Western Wood-Pewee



Western Wood-Pewee is a summer resident at North Mountain Park that has decreased from an average of about 3.9 to 1.3 birds detected per summertime survey (May through August) at the Park from 1999 to 2015 (Linear regression, $F = 12.47$, $p = 0.003$). Its decreased number of detections at North Mountain Park is consistent with its decreases in North America of -1.4% per year from 1966 to 2015 (a cumulative decline of about 51%), and in Oregon of -1.0% per year from 2005 to 2015, according to the Breeding Bird Survey .

Western Wood-Pewees breed in open and riparian woodlands and along forest edges. They're diet is made up almost entirely of insects and they eat some berries also. A threat to their future is the destruction of the tropical forests on their wintering grounds.

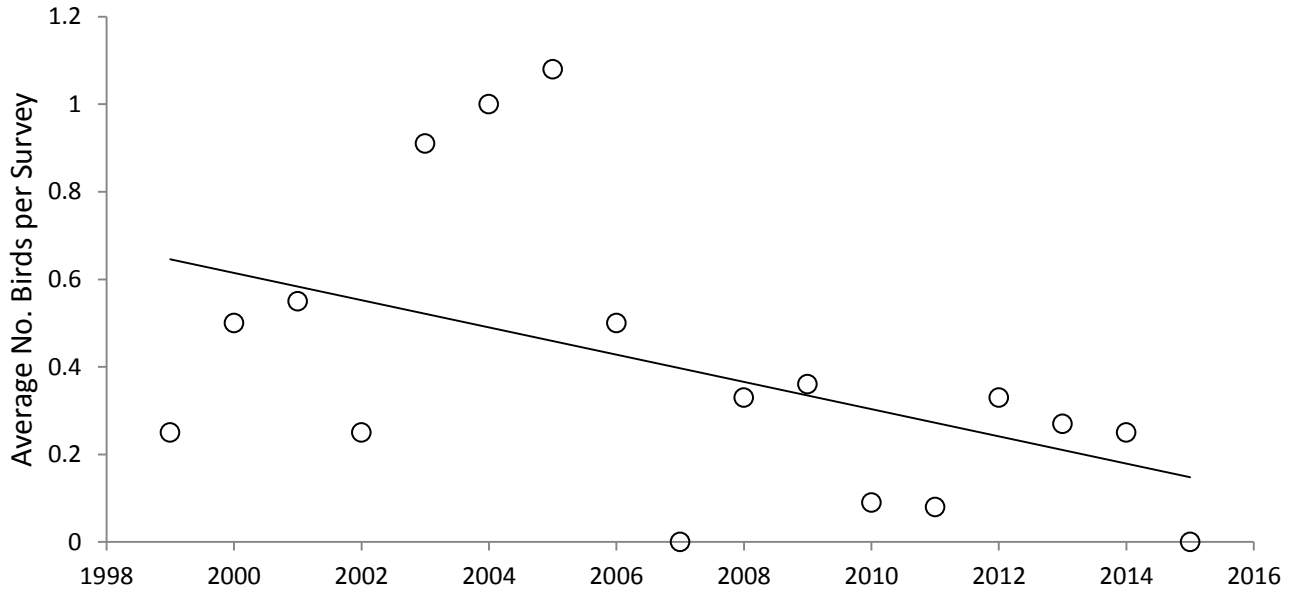


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Western Wood-Pewee

Birds with Decreasing Trends

Wrentit



Wrentit is a year-round resident at North Mountain Park that has decreased from an average of about 0.7 to 0.2 birds detected per survey from 1999 to 2015 (Linear regression, $F = 4.40$, $p = 0.05$). Its decrease at North Mountain Park is consistent with its steady North American decline of -0.7% per year from 1966 to 2015 (a cumulative population decline of 31% over this time period), according to the Breeding Bird Survey .

Wrentits occur in chaparral, scrub, and dense shrublands. They feed on fruit and insects. The Wrentit is listed on the 2016 U.S. State of the Birds Watch List as a species at risk of endangerment in the absence of conservation action. They have been harmed by the conversion of their chaparral and scrub habitats to development and possibly by the loss of genetic diversity following the isolation of populations from development.

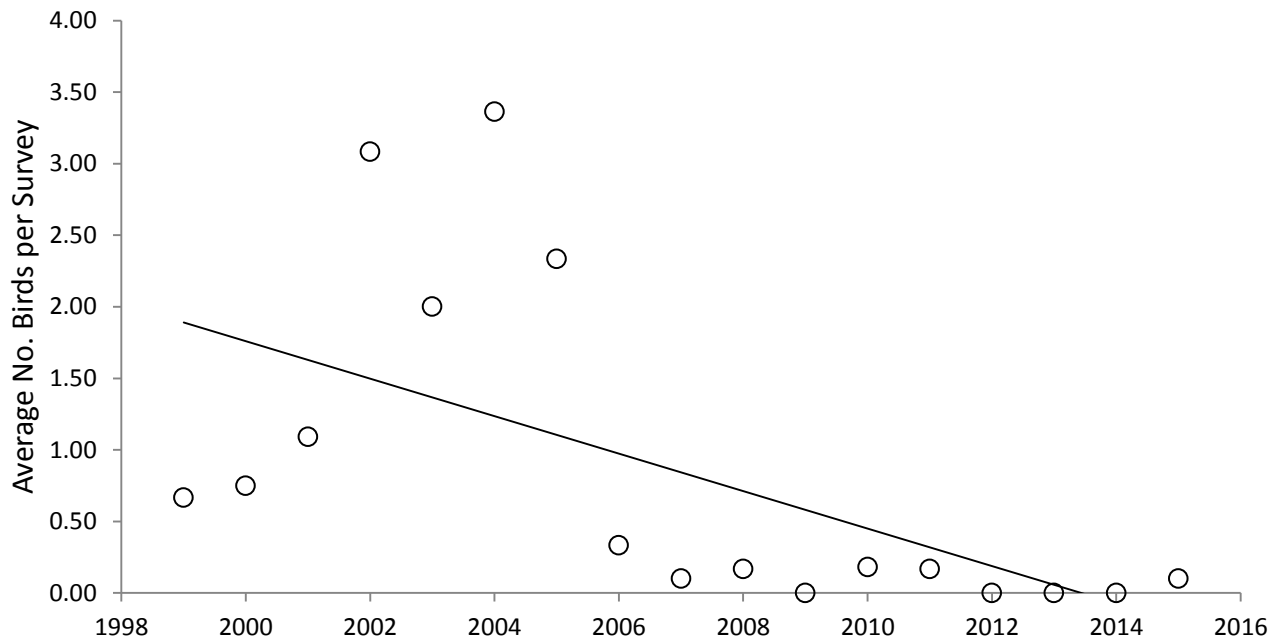


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Wrentit

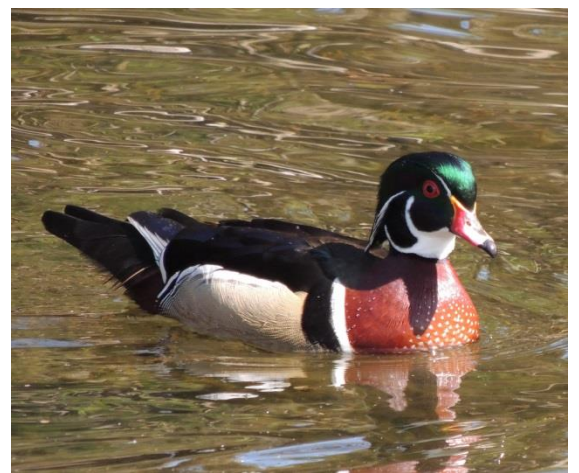
Birds with Decreasing Trends

Wood Duck



Wood Duck is a year-round resident in the Rogue Valley that has decreased from an average of about 1.9 to almost 0.0 birds detected per survey from 1999 to 2015 (Linear regression, $F = 7.73$, $p = 0.01$). Its decreased number of detections at North Mountain Park is not consistent with its North American increase of 1.6% per year from 1966 to 2015, and of 2.7% per year from 2005 to 2015, according to the Breeding Bird Survey .

Wood Ducks do well in a variety of wet habitats including those near streams, rivers, and ponds, and flooded forests, marshes, and bottomland sloughs. They eat mostly plant material such as acorns, seeds and nuts, aquatic vegetation, berries, and grain from fields, and they also eat insects and other invertebrates. They nest in cavities, which can be in scarce supply, but they will nest in nest boxes when provided.



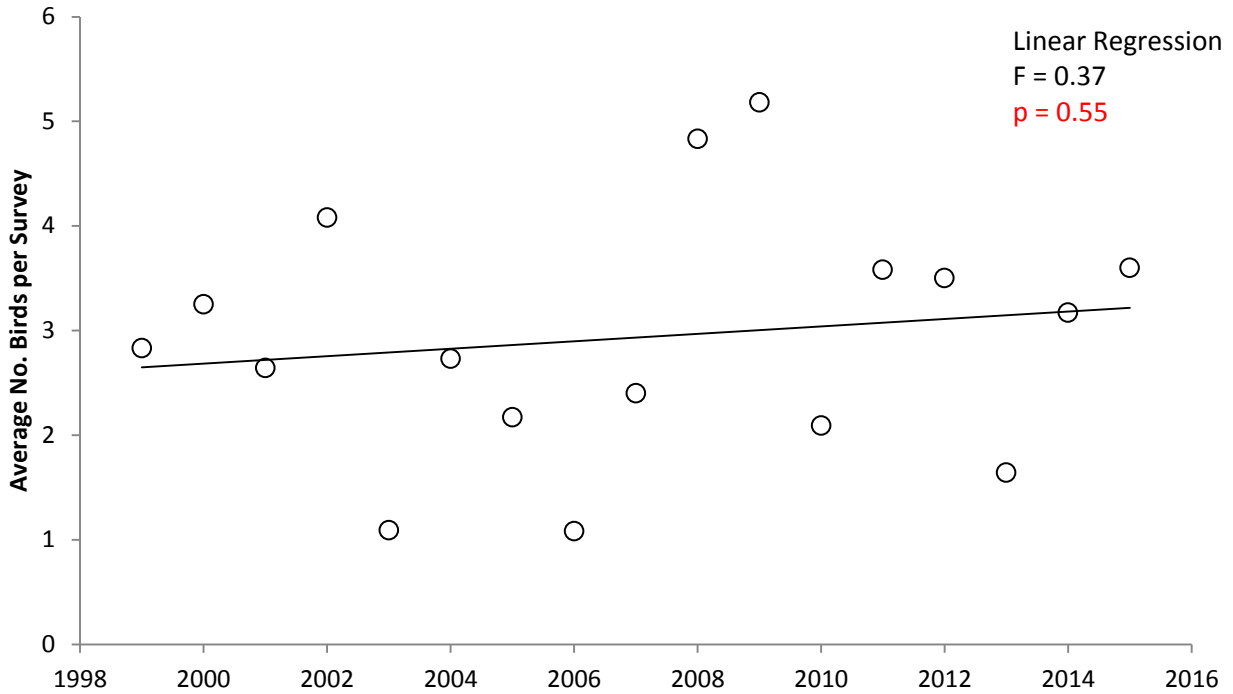
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Wood Duck

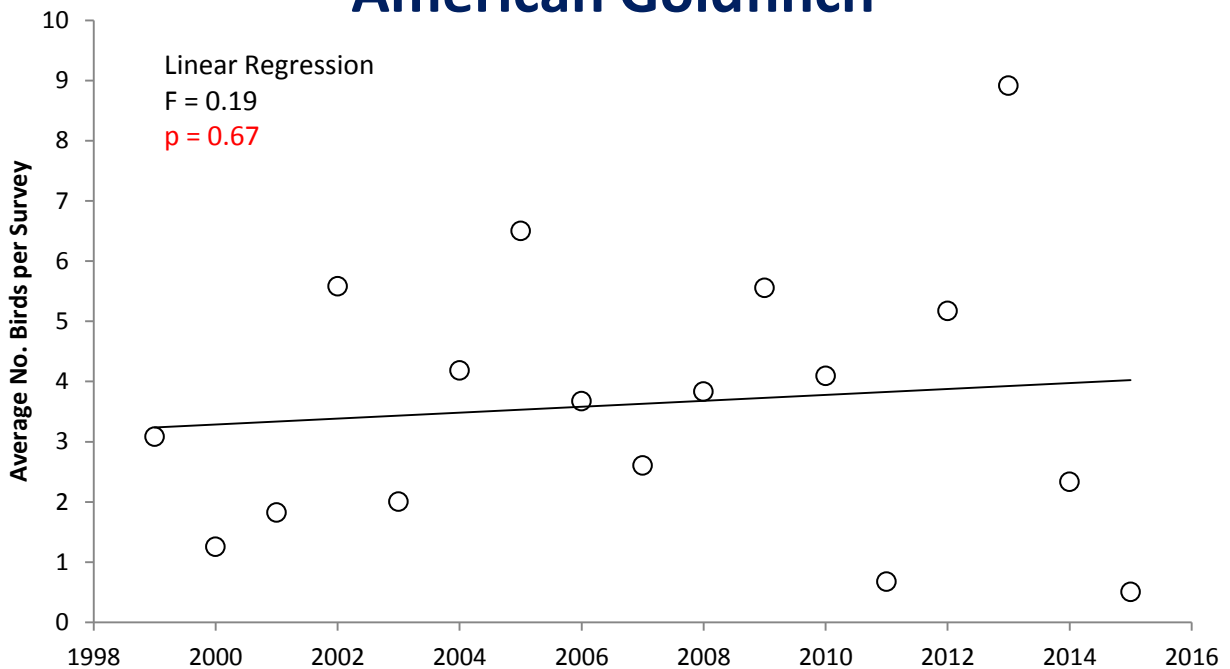
Birds with No Evident Trends

Year-round Residents

American Crow



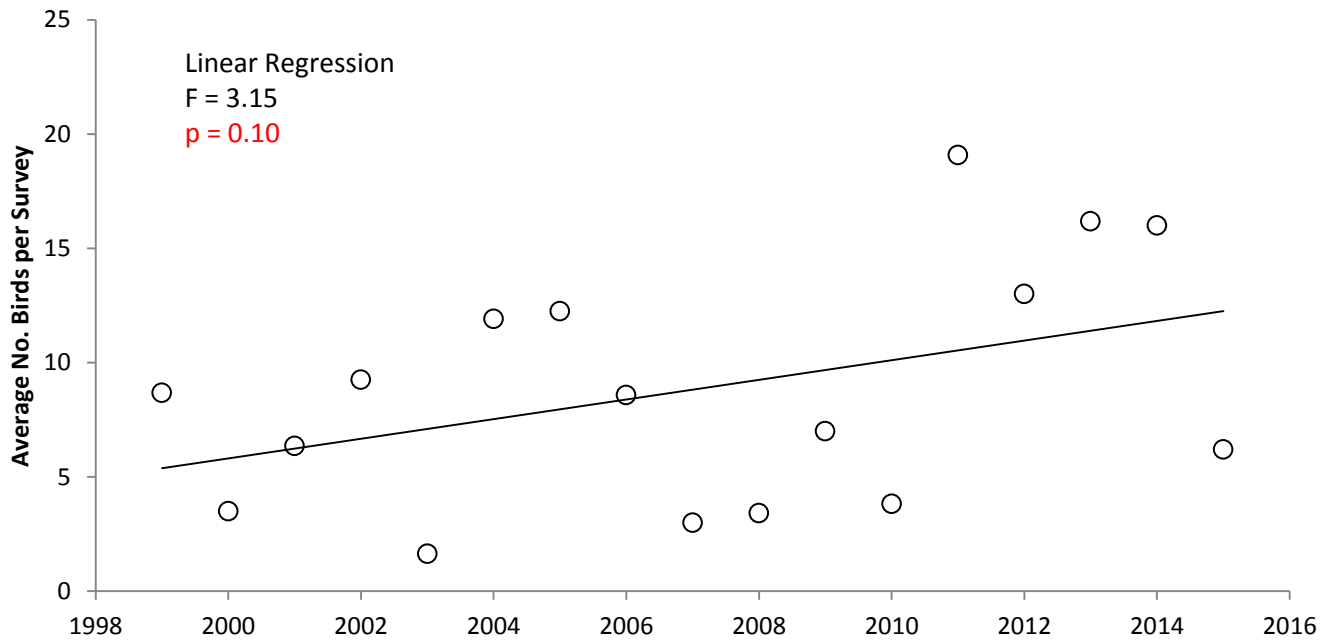
American Goldfinch



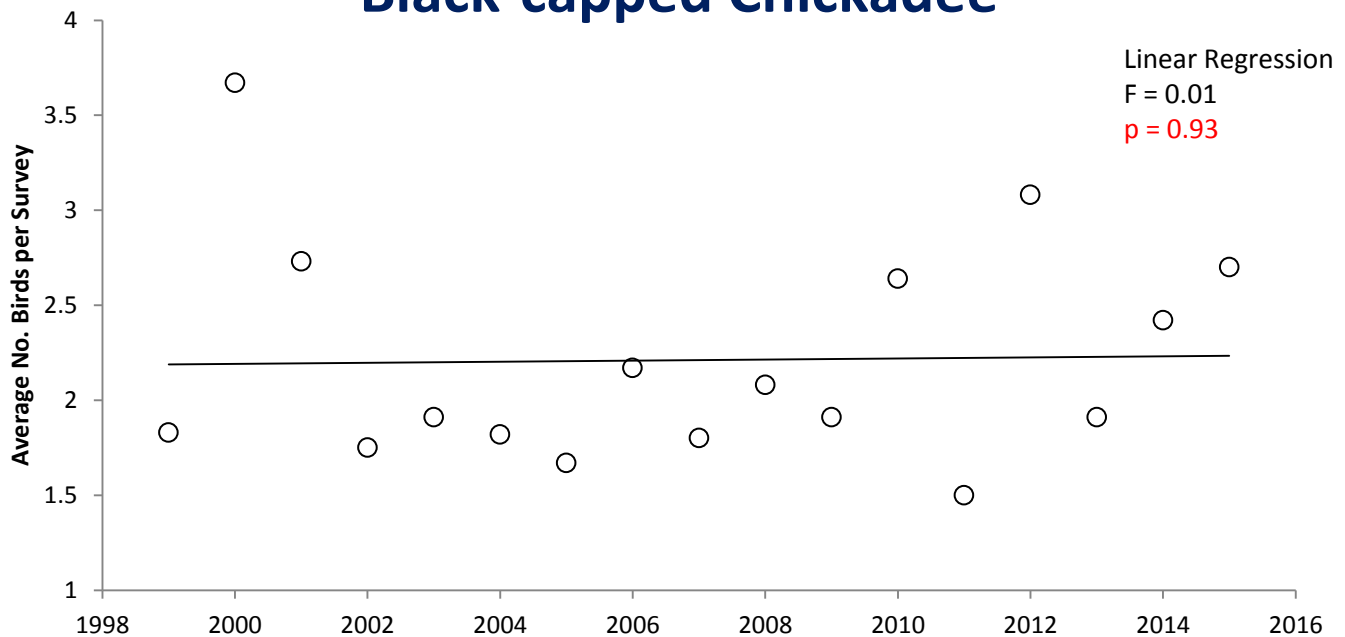
Birds with No Evident Trends

Year-round Residents

American Robin



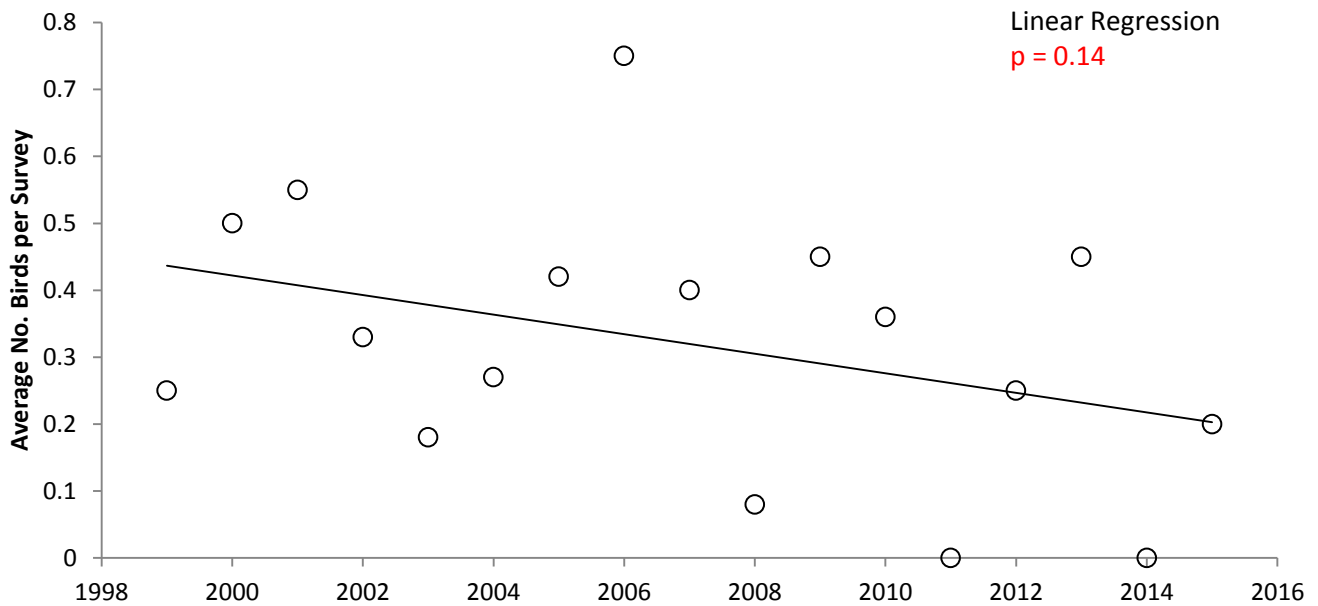
Black-capped Chickadee



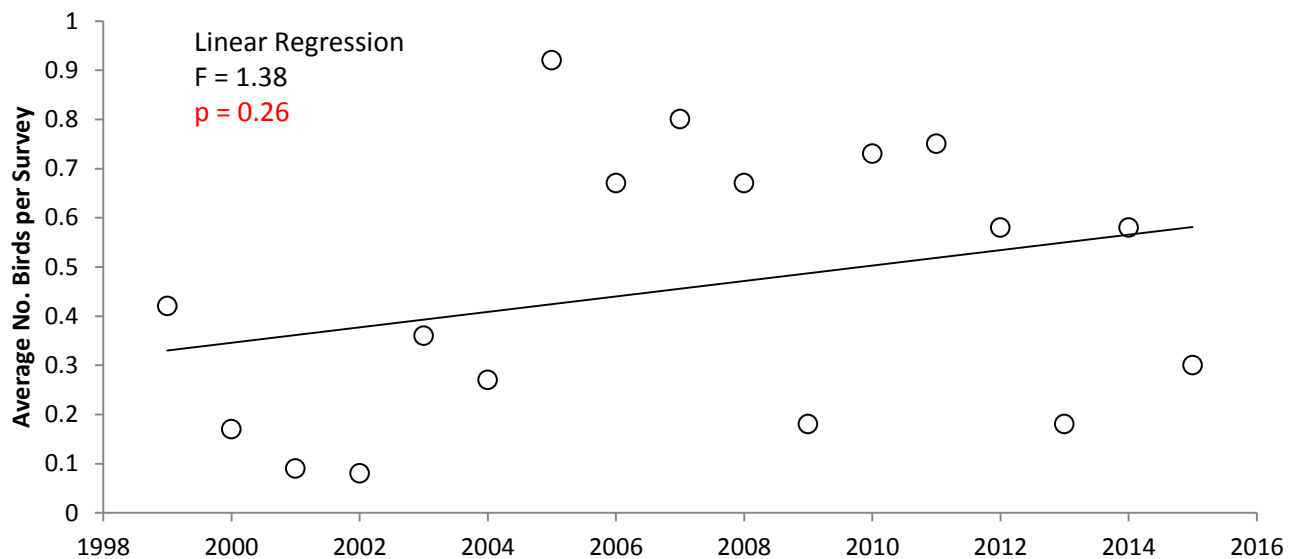
Birds with No Evident Trends

Year-round Residents

Bewick's Wren



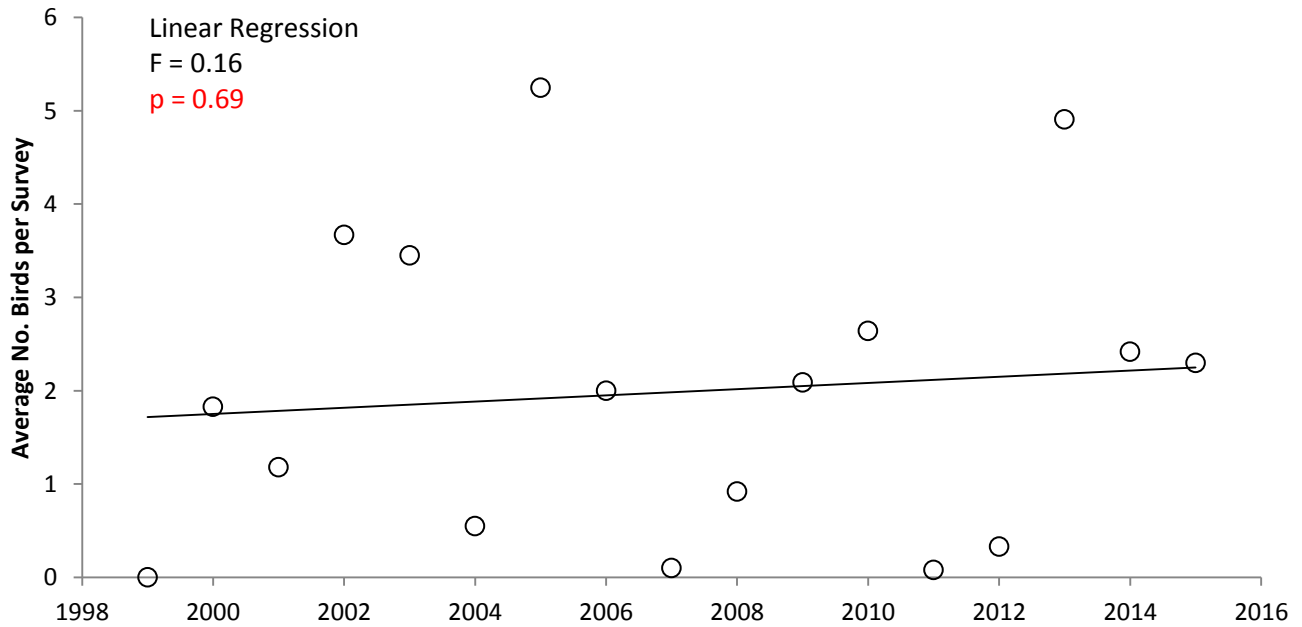
Black Phoebe



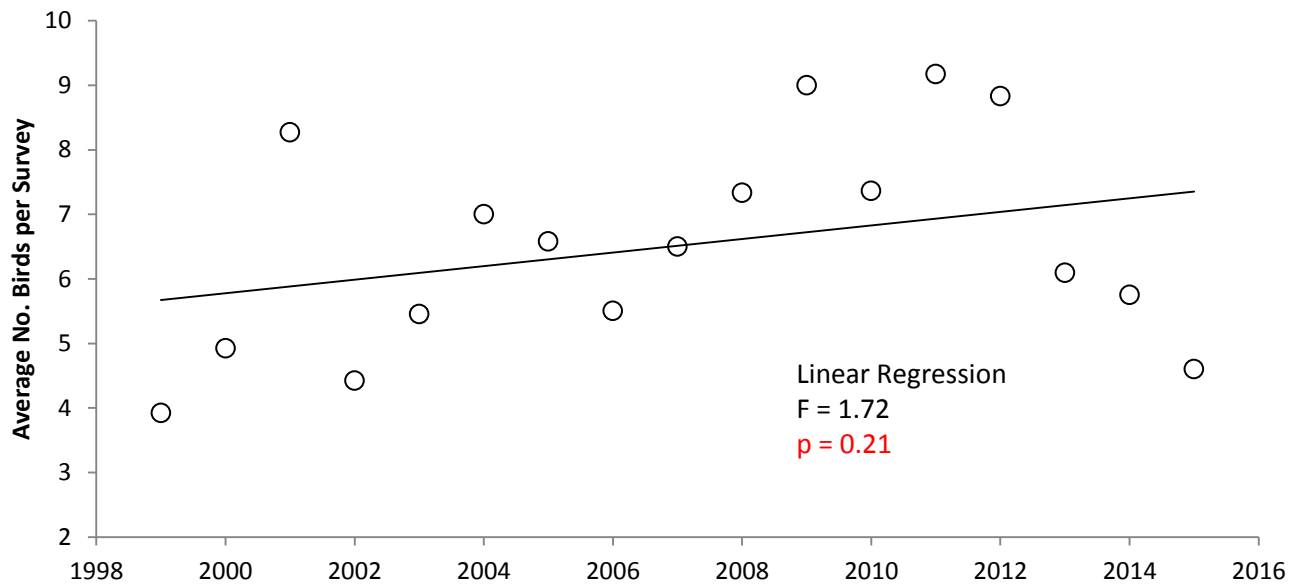
Birds with No Evident Trends

Year-round Residents

Bushtit



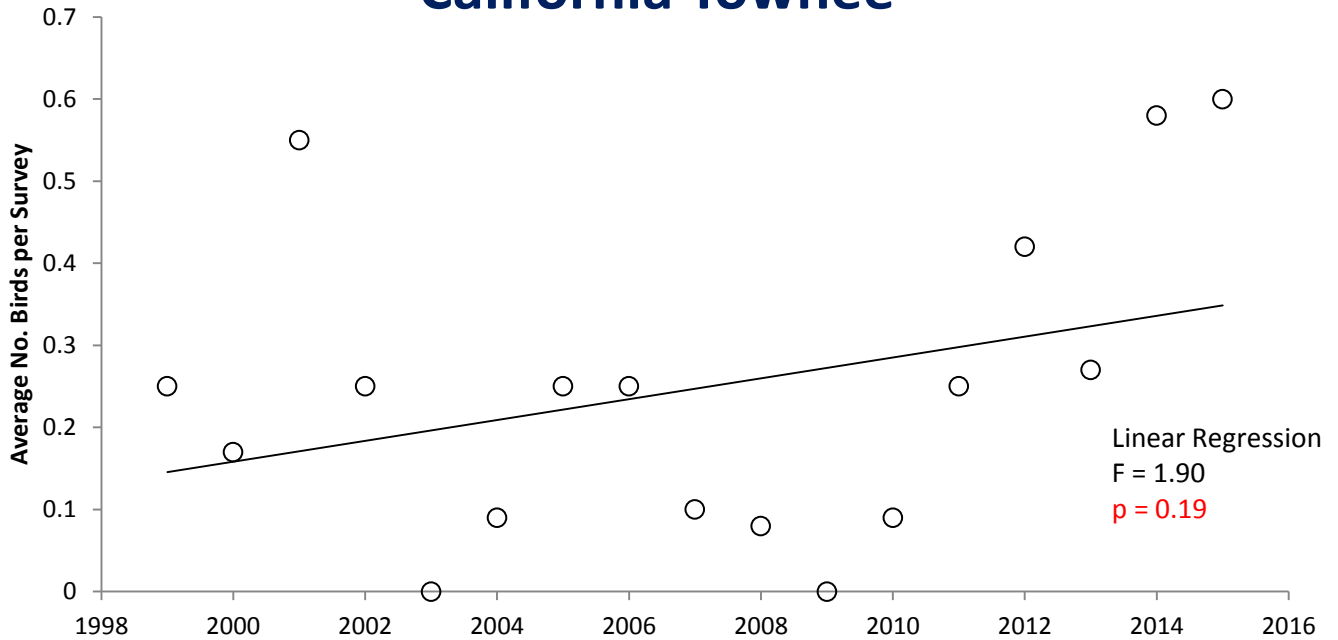
California Scrub-Jay



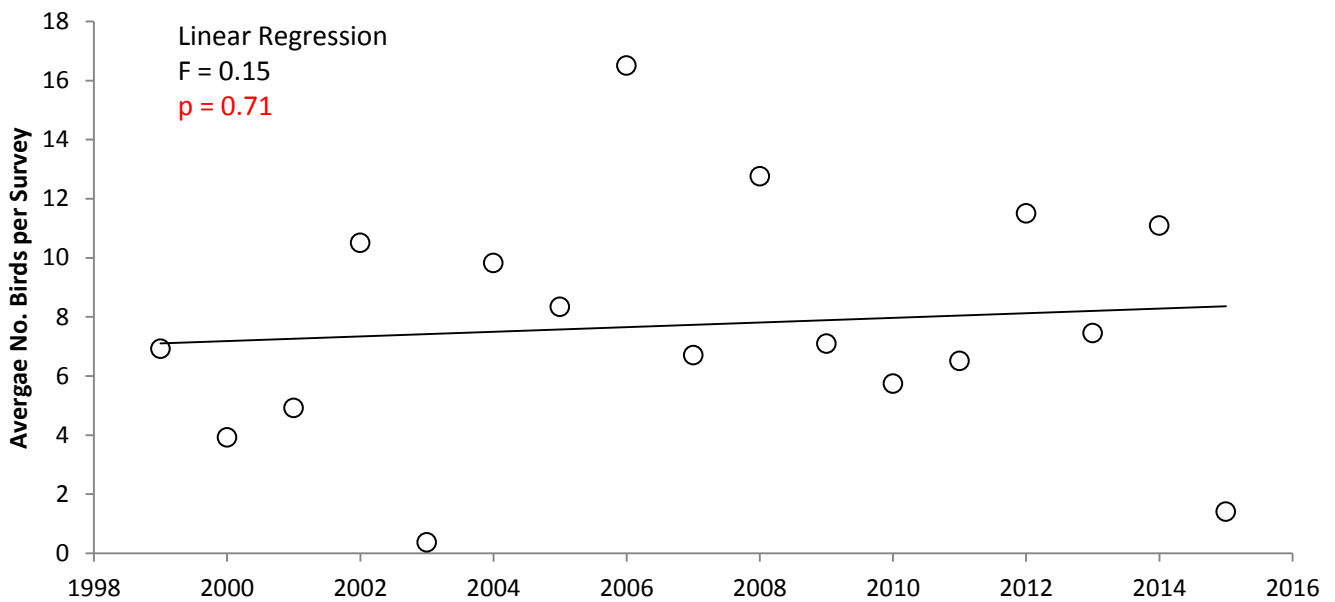
Birds with No Evident Trends

Year-round Residents

California Towhee



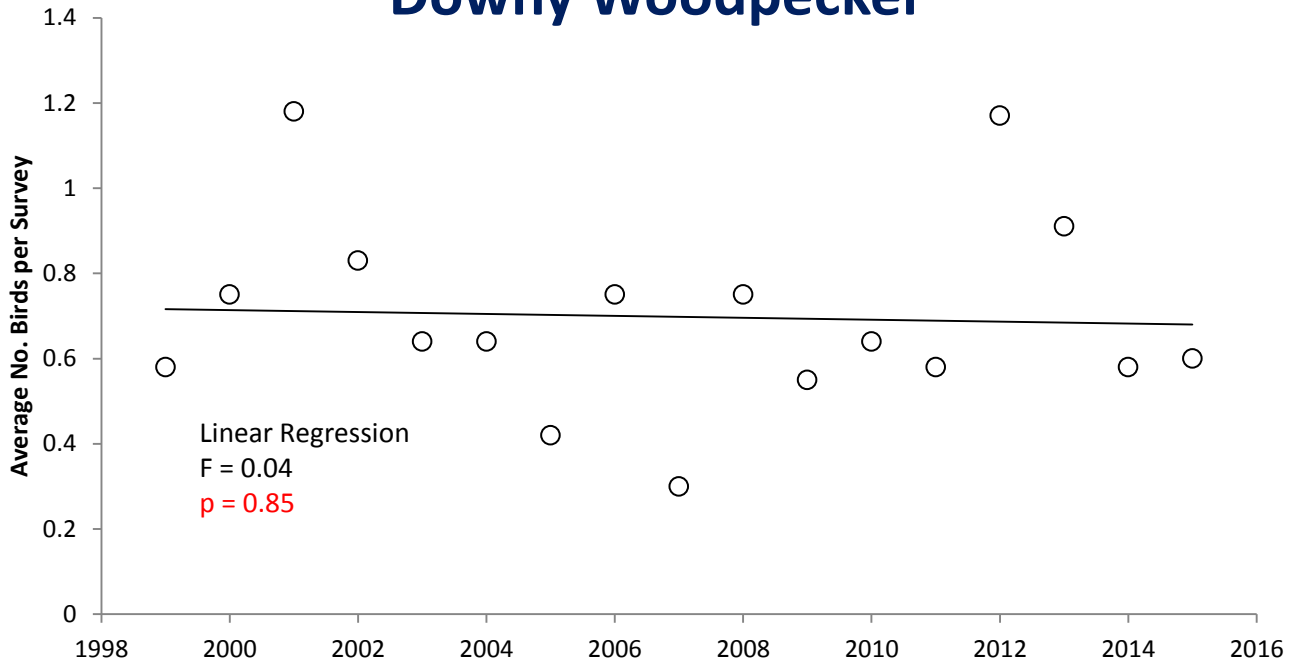
Cedar Waxwing



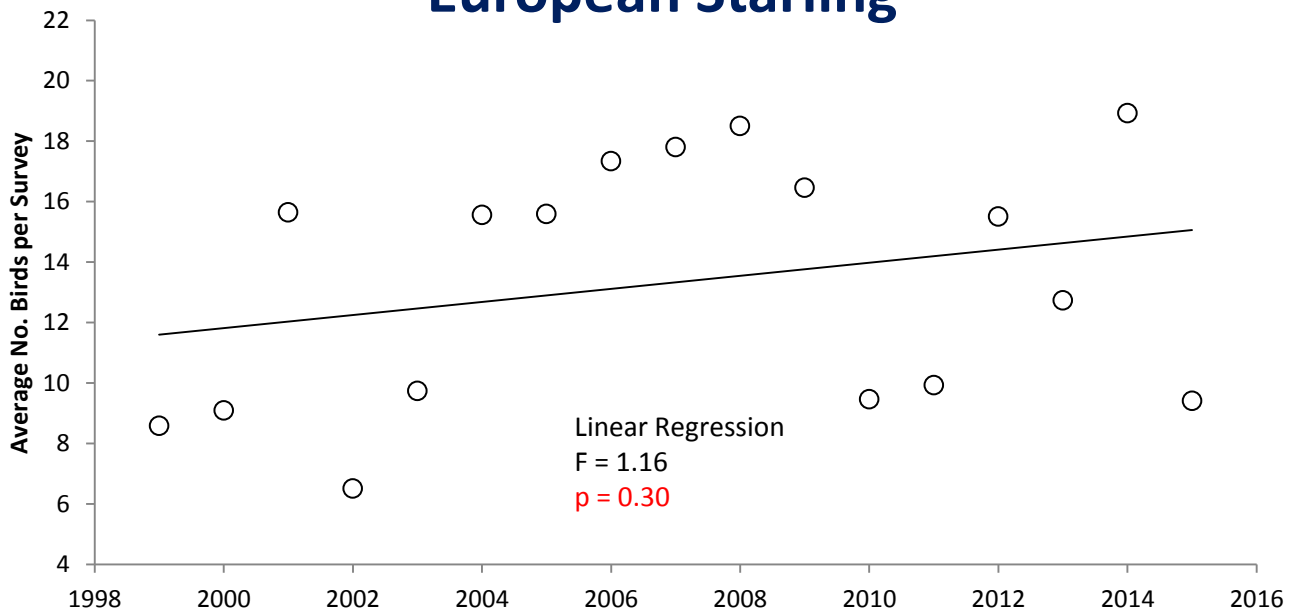
Birds with No Evident Trends

Year-round Residents

Downy Woodpecker



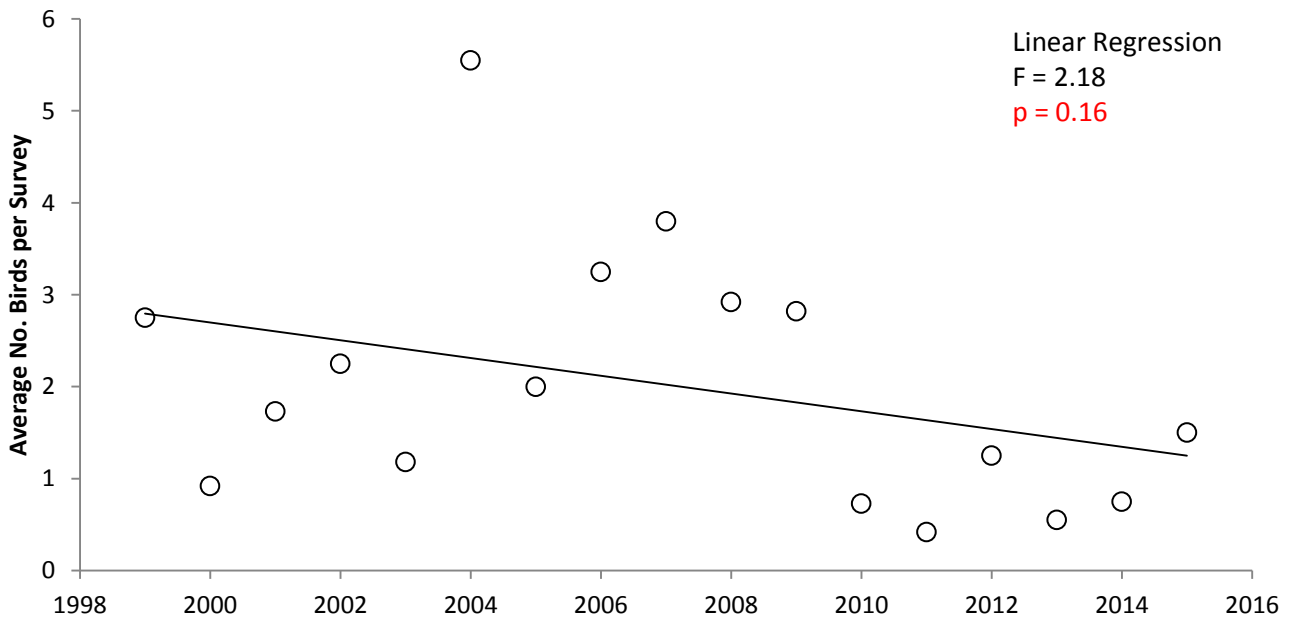
European Starling



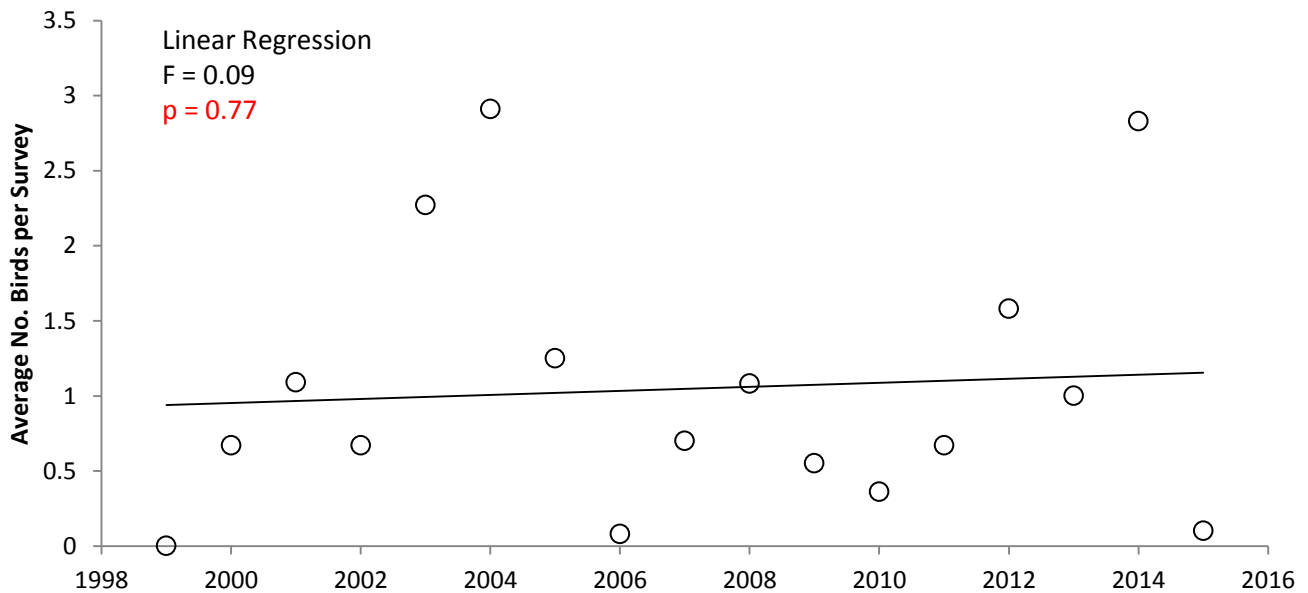
Birds with No Evident Trends

Year-round Residents

House Finch



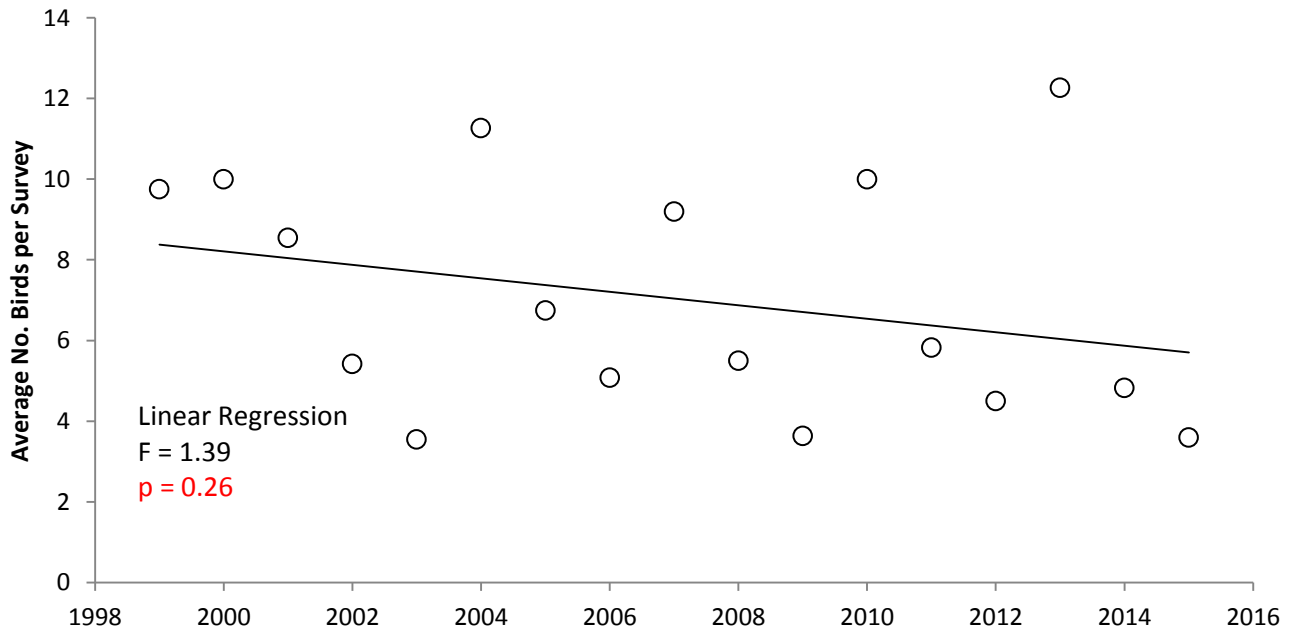
House Sparrow



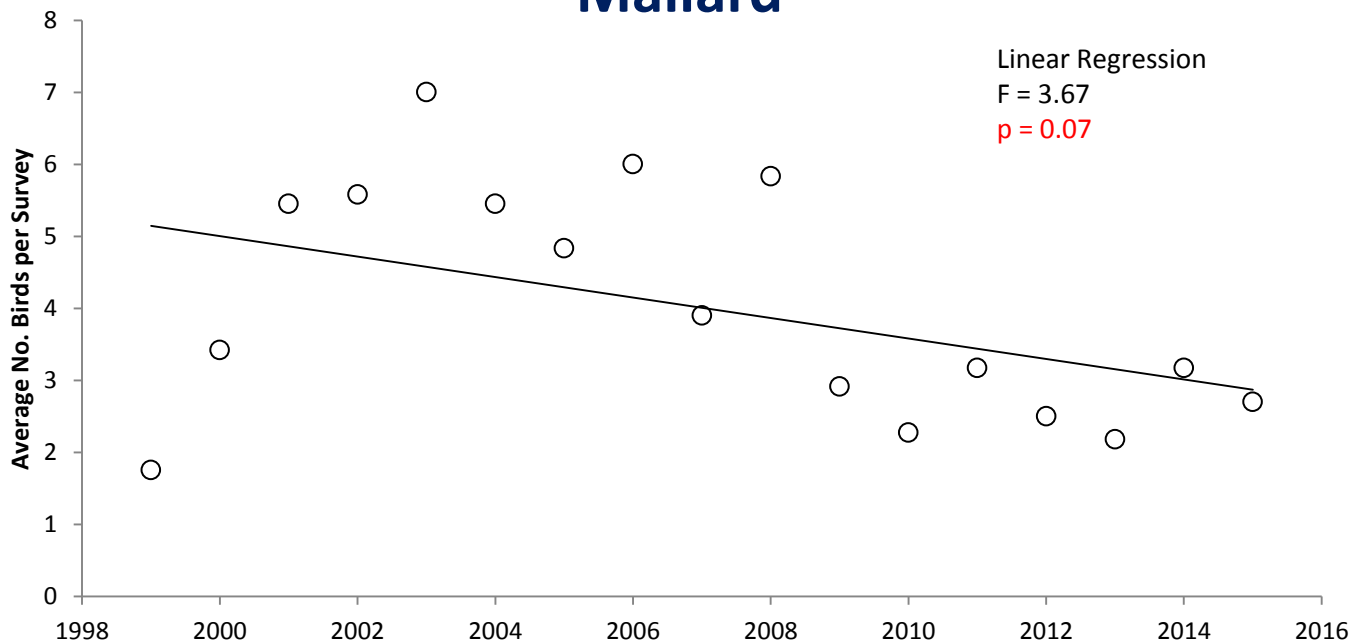
Birds with No Evident Trends

Year-round Residents

Lesser Goldfinch



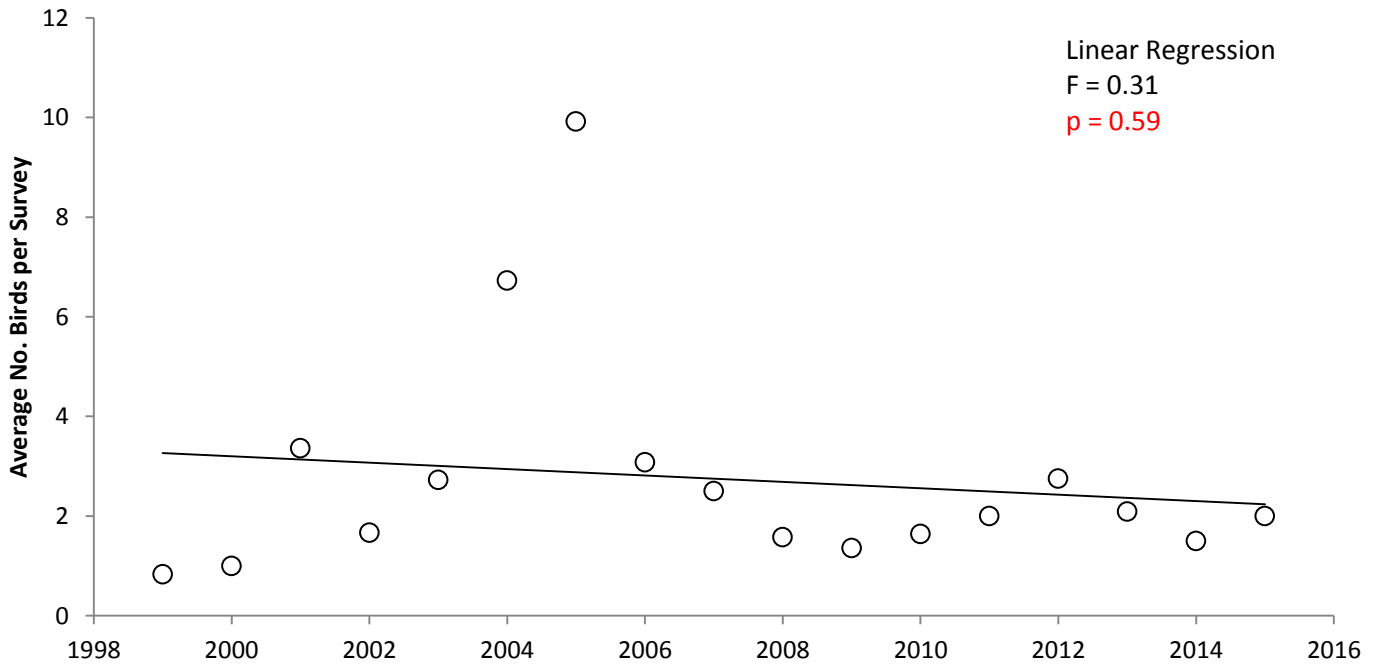
Mallard



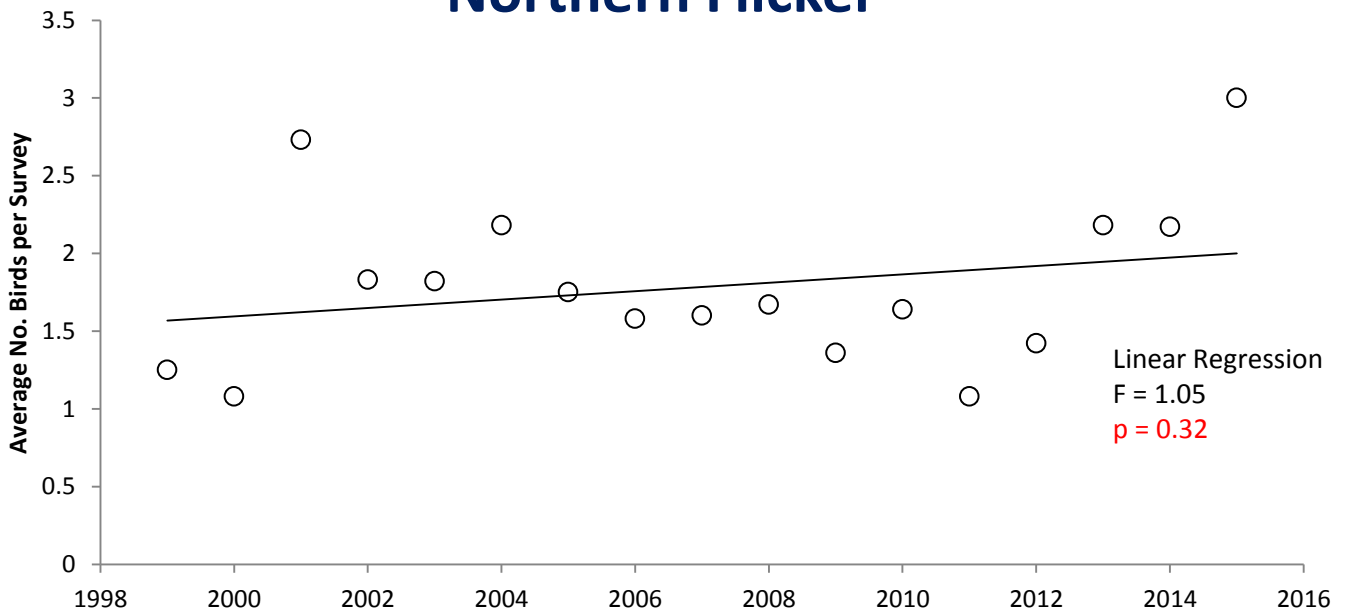
Birds with No Evident Trends

Year-round Residents

Mourning Dove



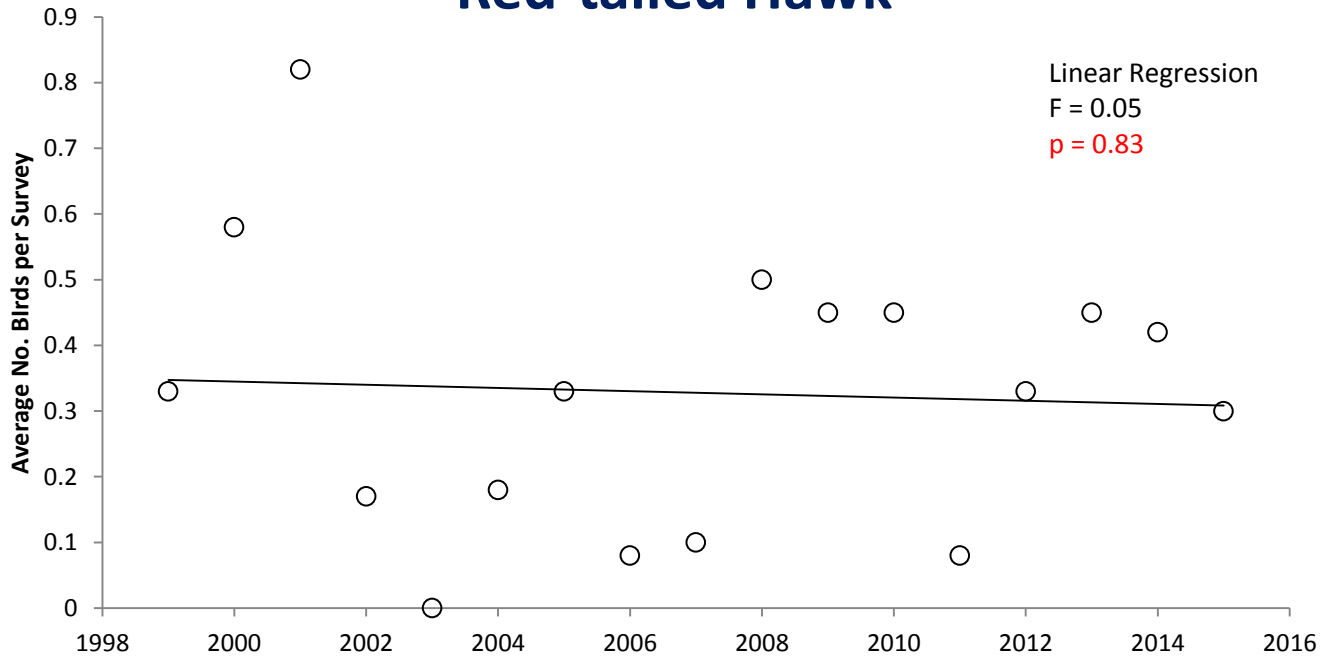
Northern Flicker



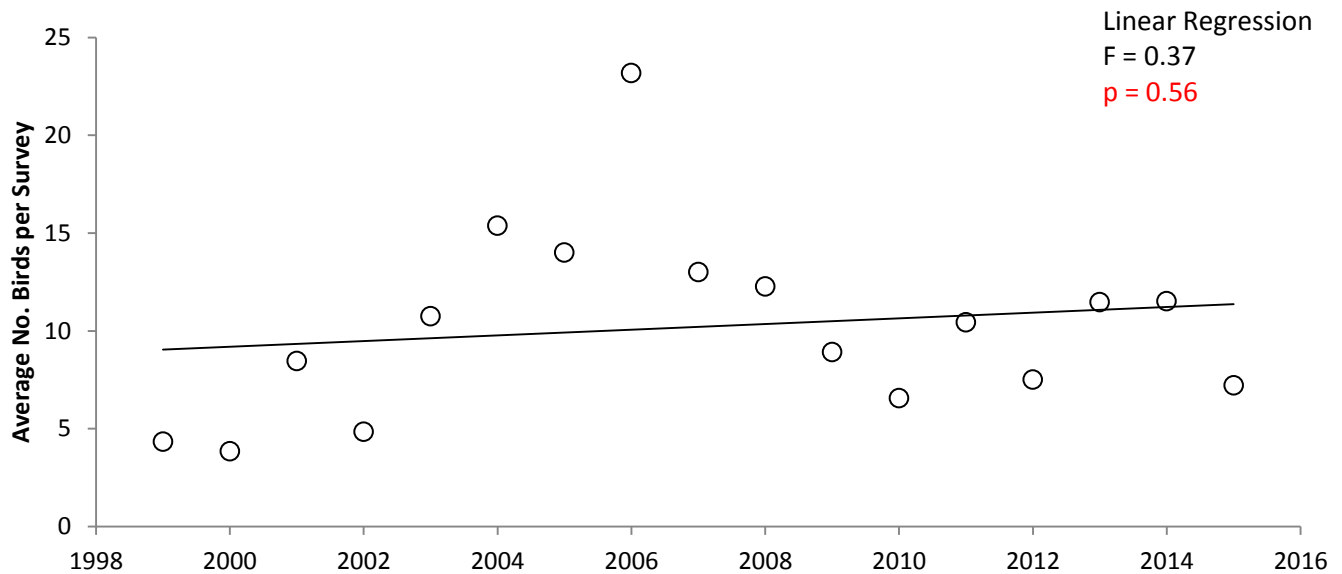
Birds with No Evident Trends

Year-round Residents

Red-tailed Hawk



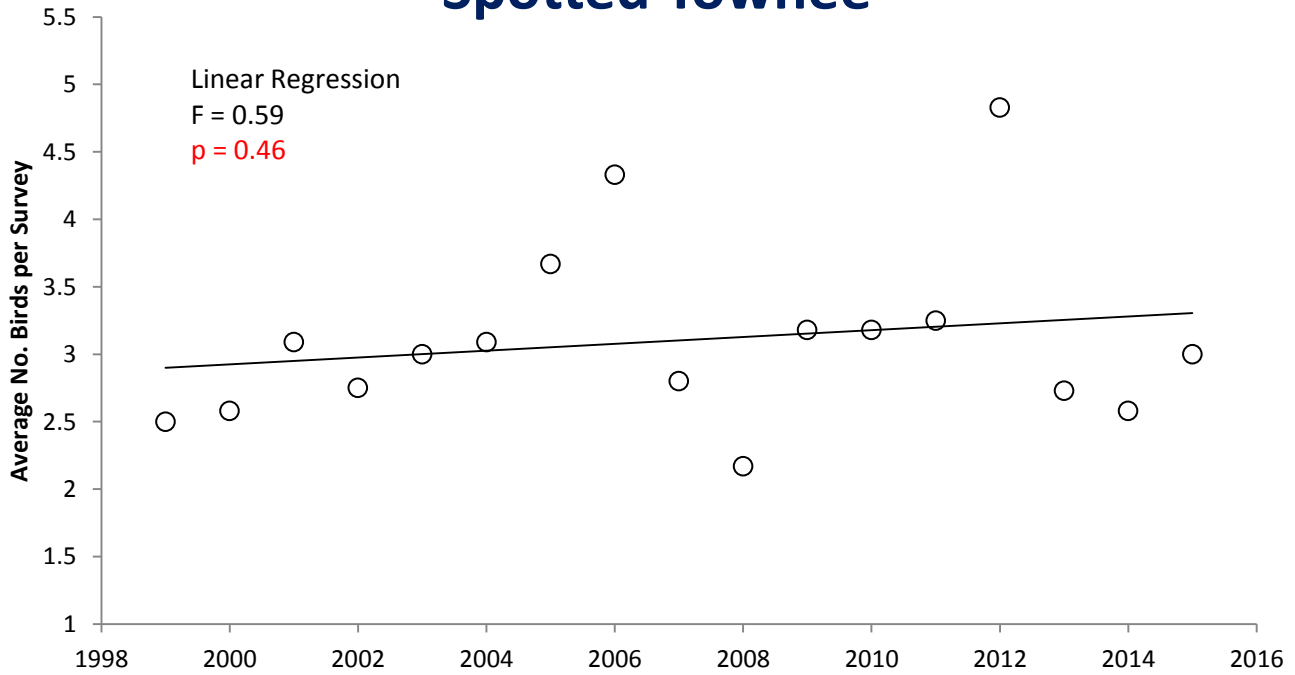
Red-winged Blackbird



Birds with No Evident Trends

Year-round Residents

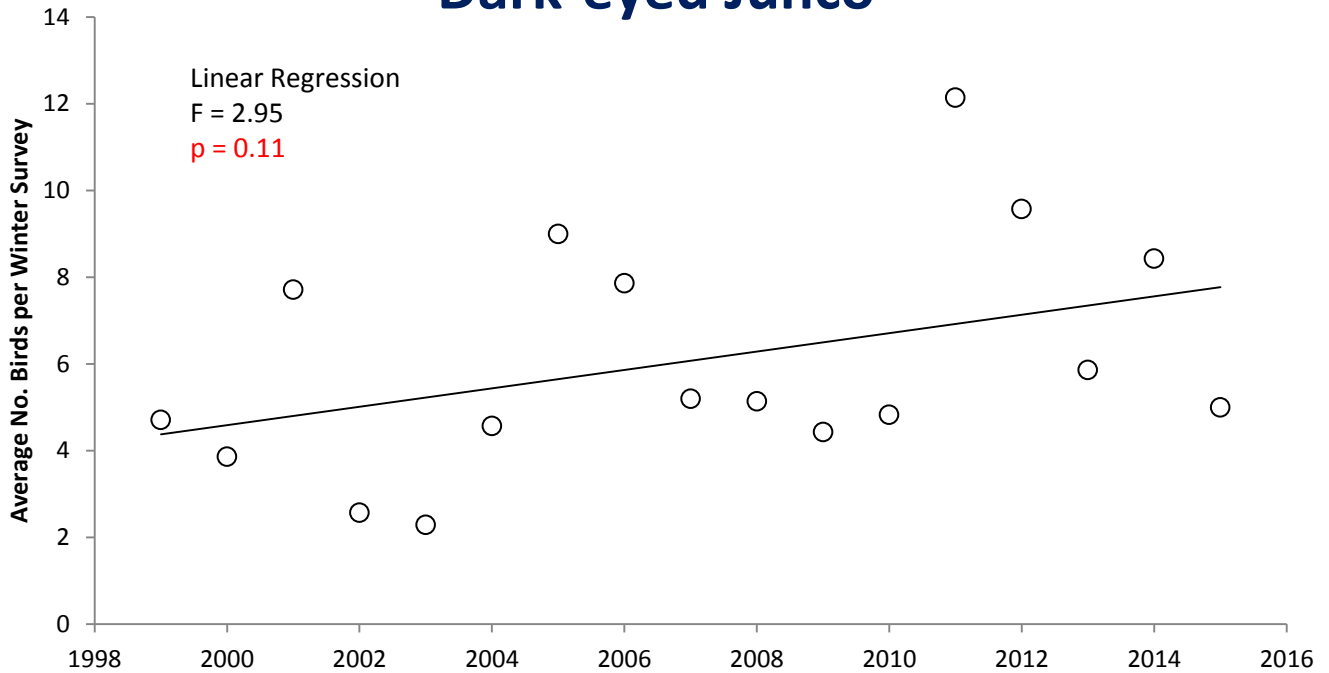
Spotted Towhee



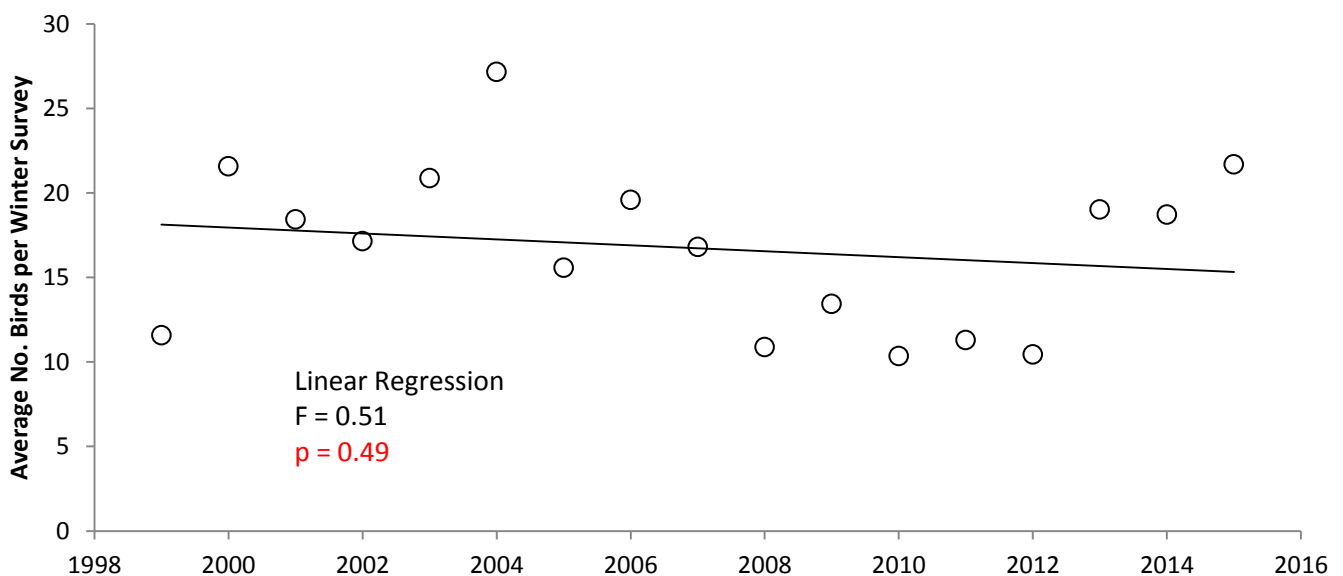
Birds with No Evident Trends

Winter Residents

Dark-eyed Junco



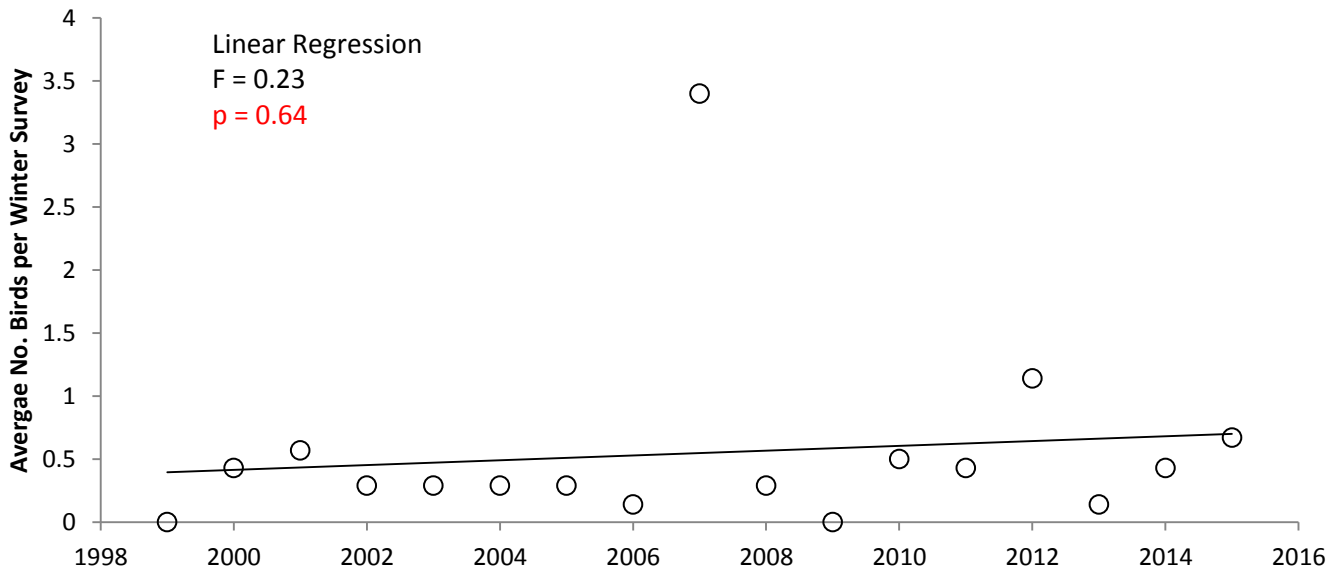
Golden-crowned Sparrow



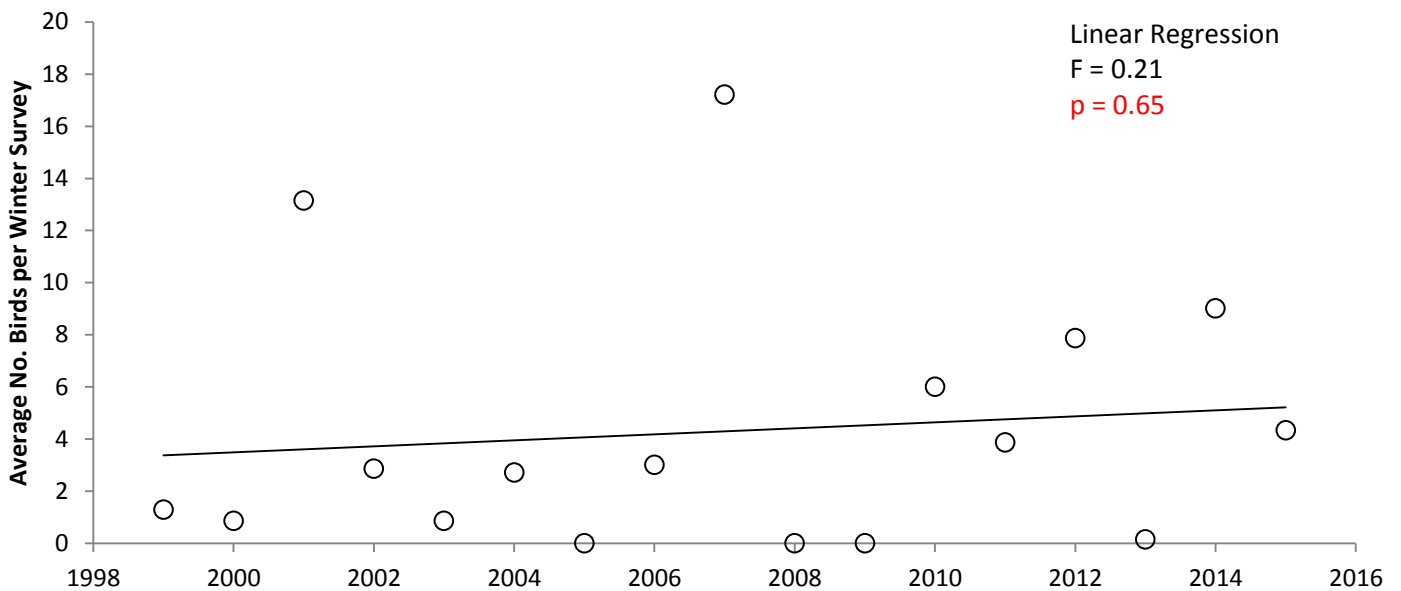
Birds with No Evident Trends

Winter Residents

Hermit Thrush



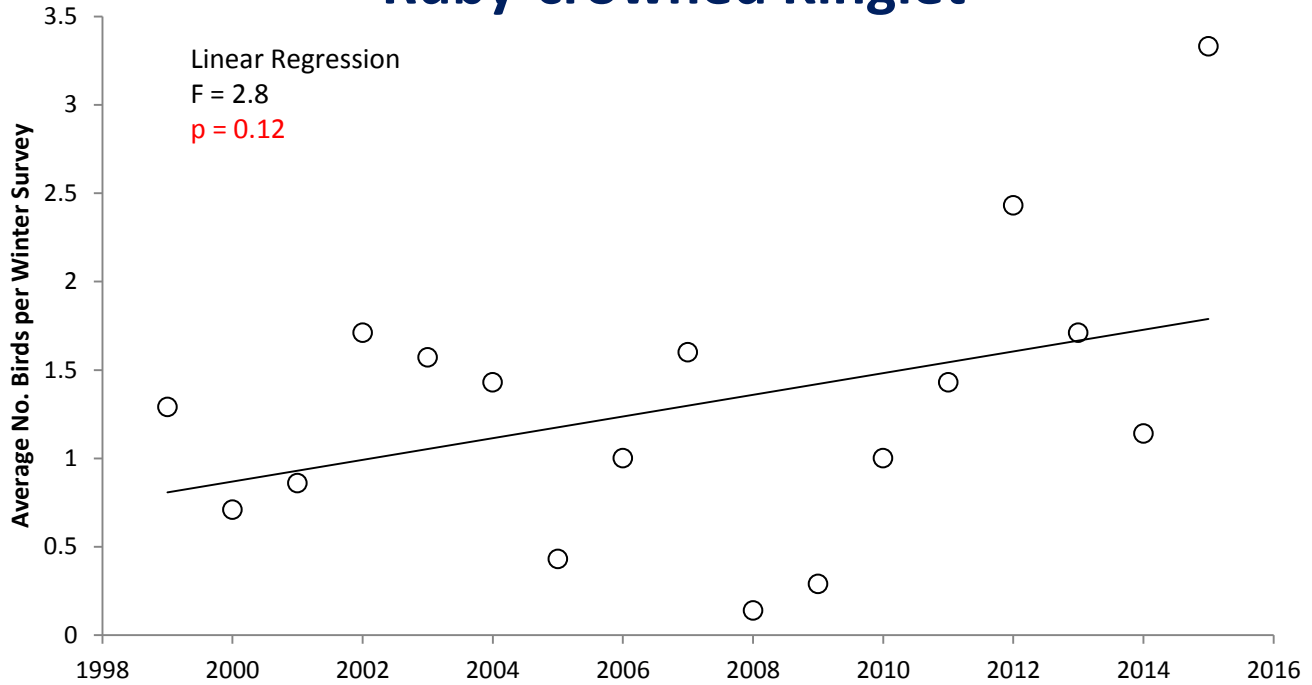
Pine Siskin



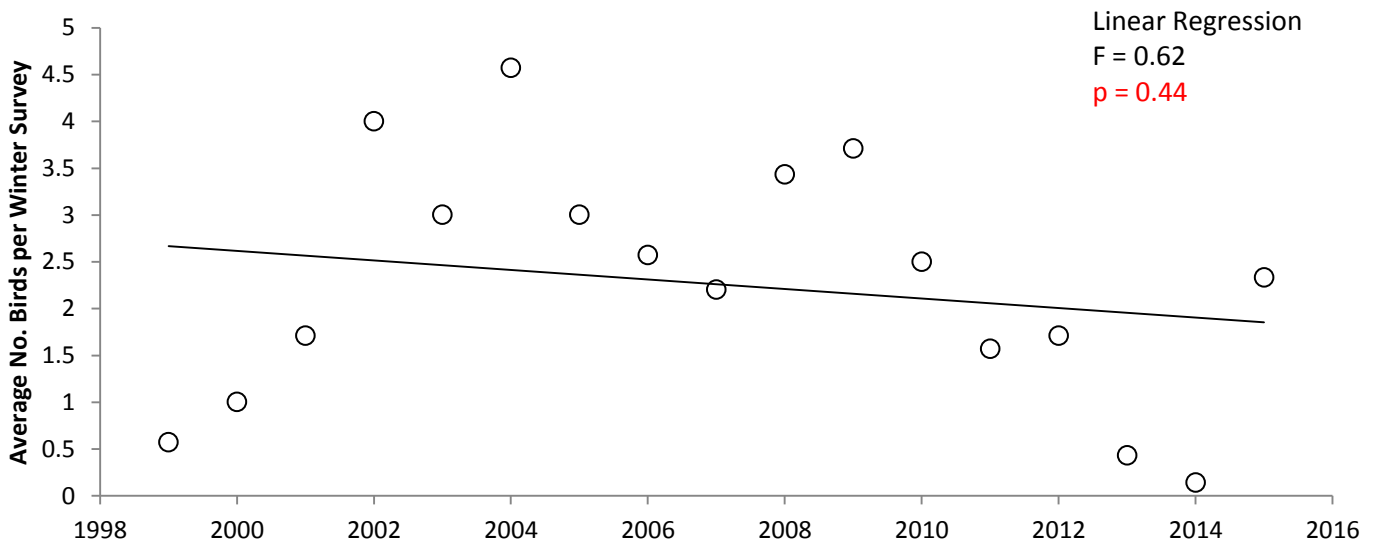
Birds with No Evident Trends

Winter Residents

Ruby-crowned Kinglet



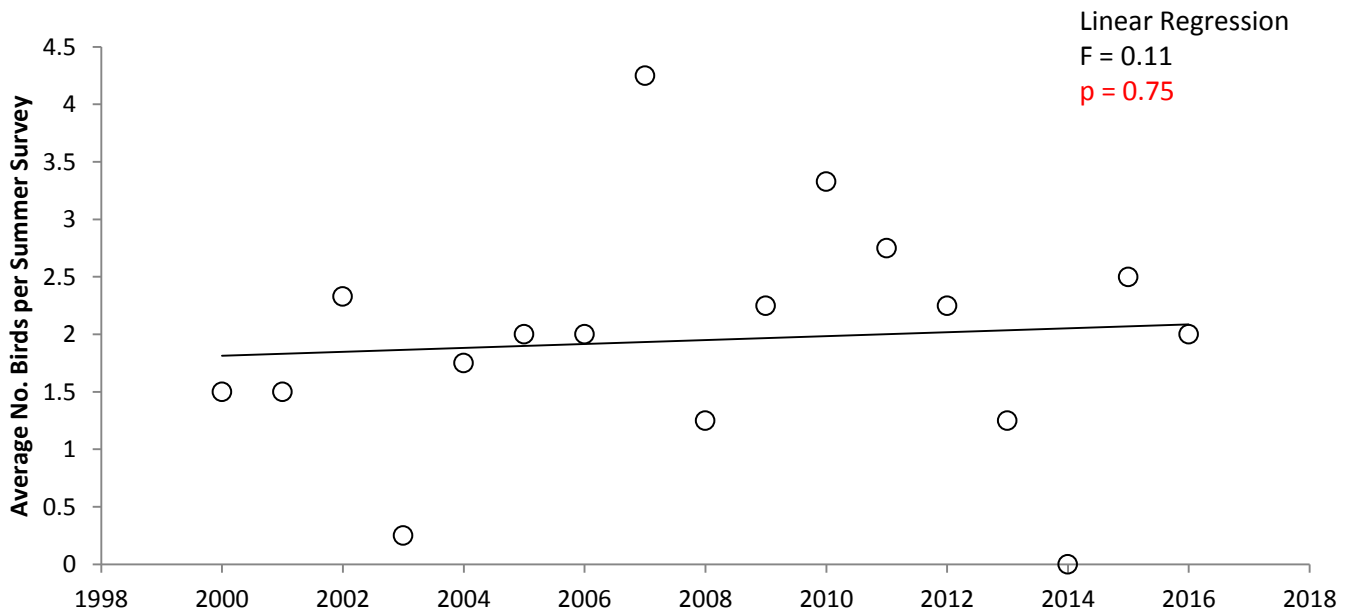
White-crowned Sparrow



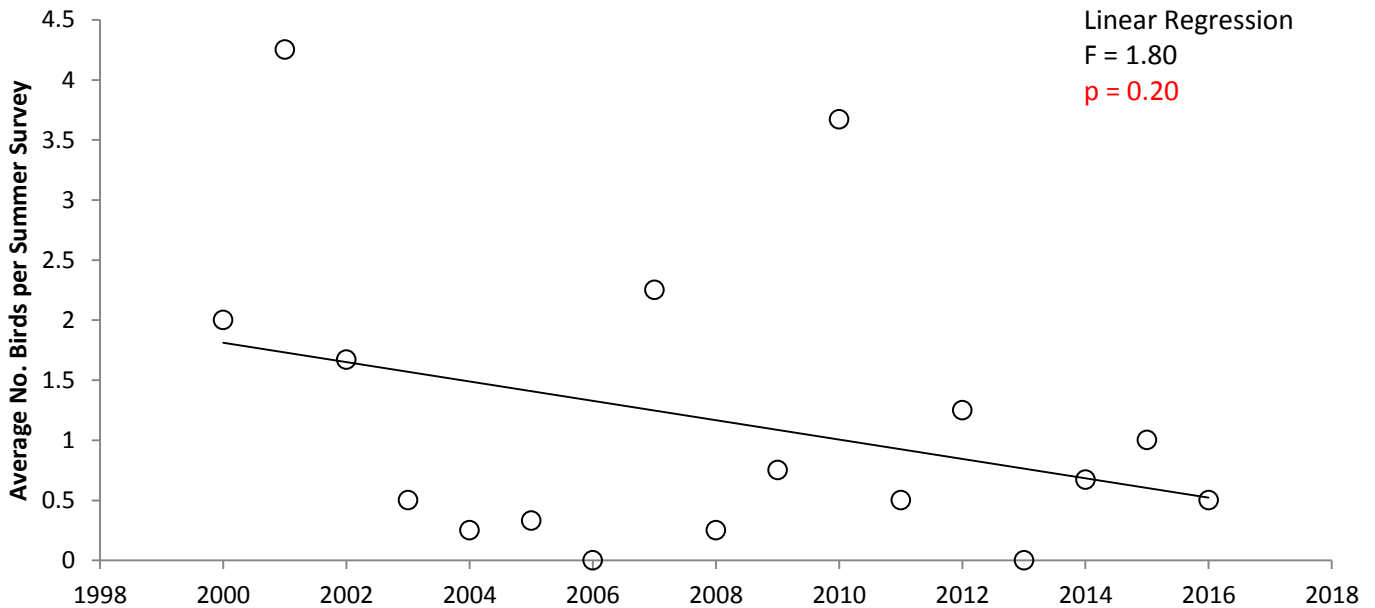
Birds with No Evident Trends

Summer Migrants

Black-headed Grosbeak



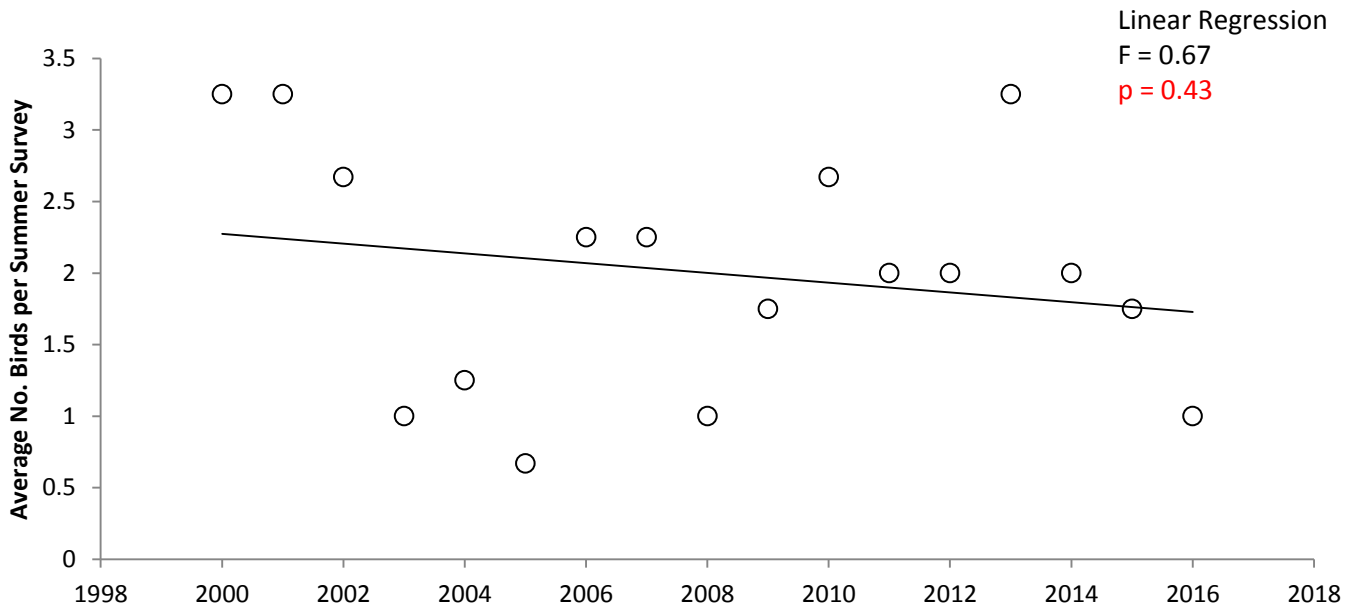
Brown-head Cowbird



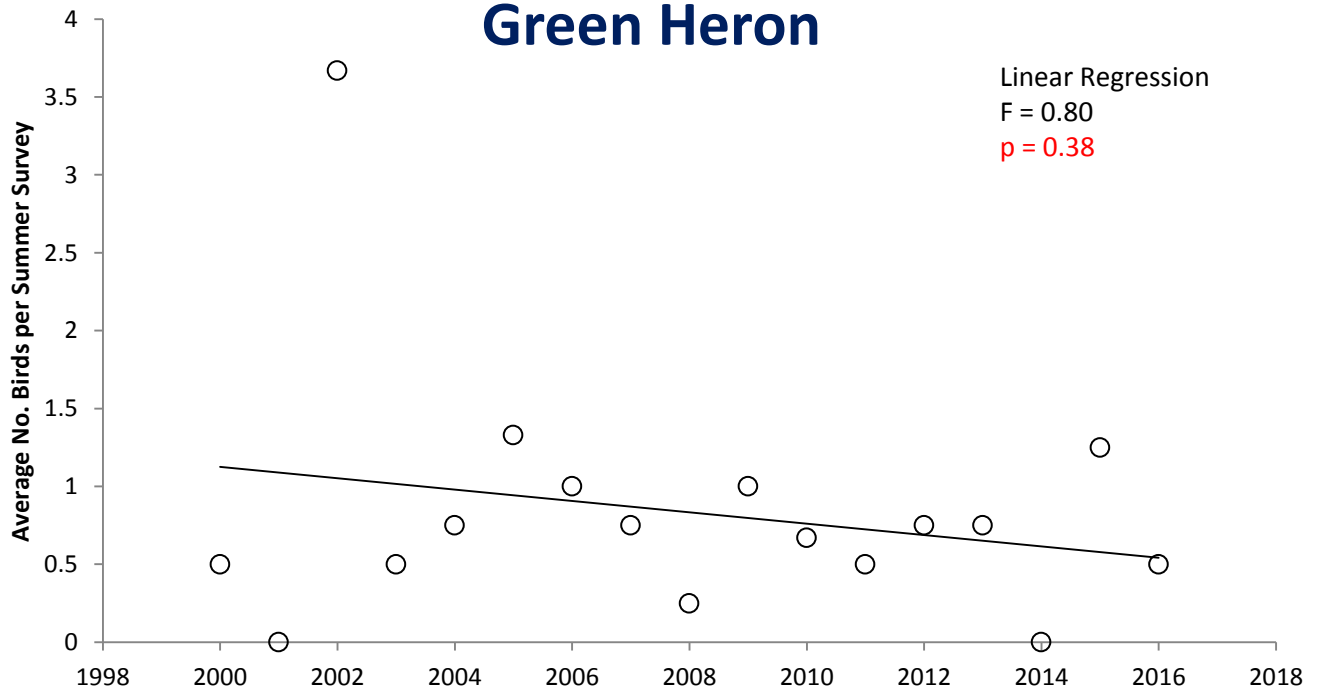
Birds with No Evident Trends

Summer Migrants

Bullock's Oriole



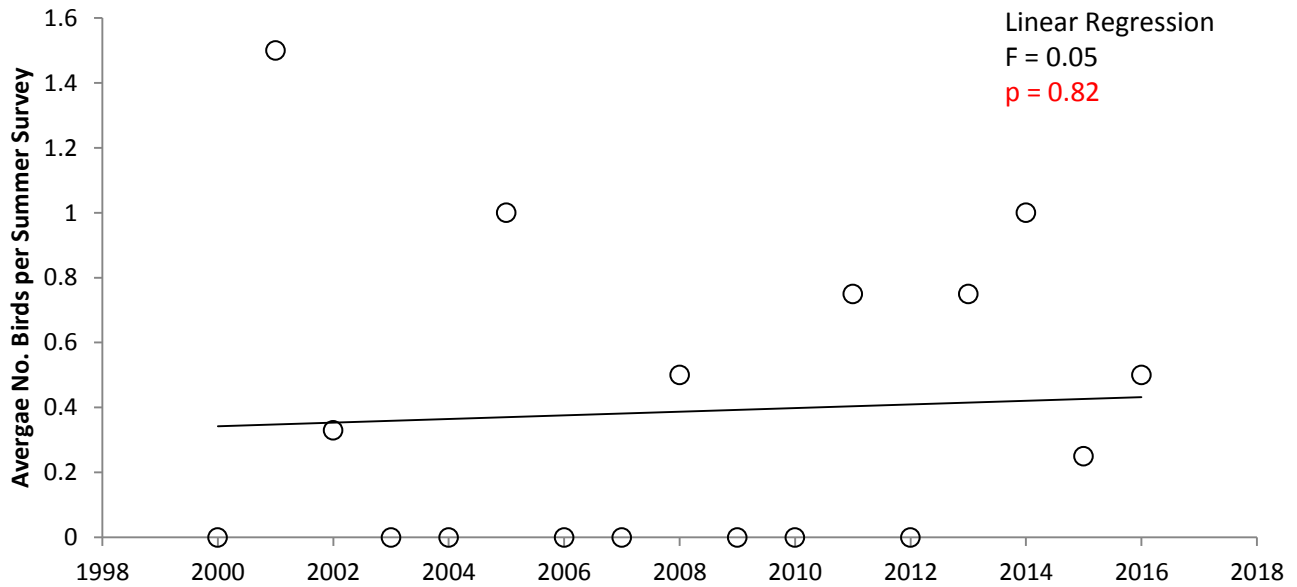
Green Heron



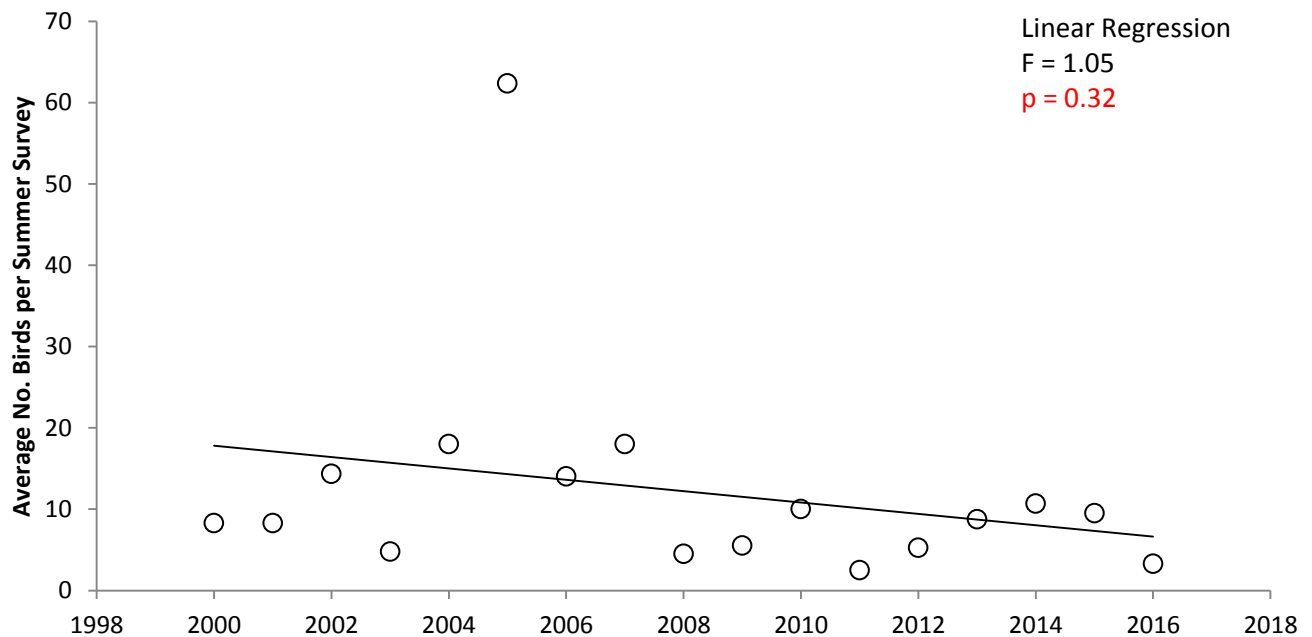
Birds with No Evident Trends

Summer Migrants

House Wren



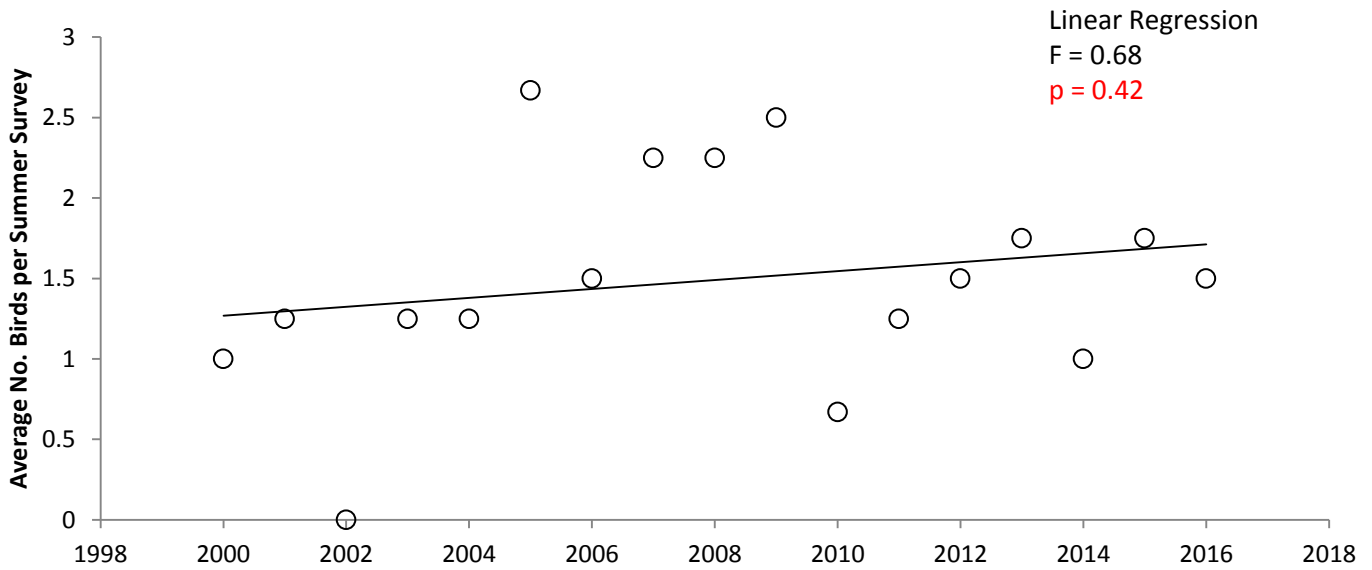
Tree Swallow



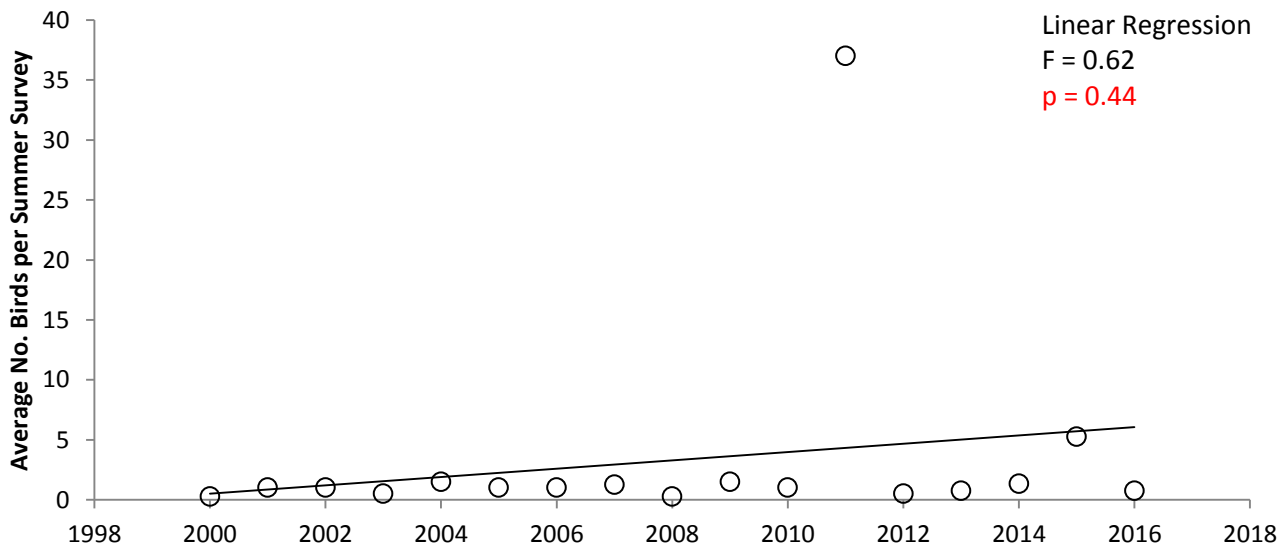
Birds with No Evident Trends

Summer Migrants

Western Kingbird



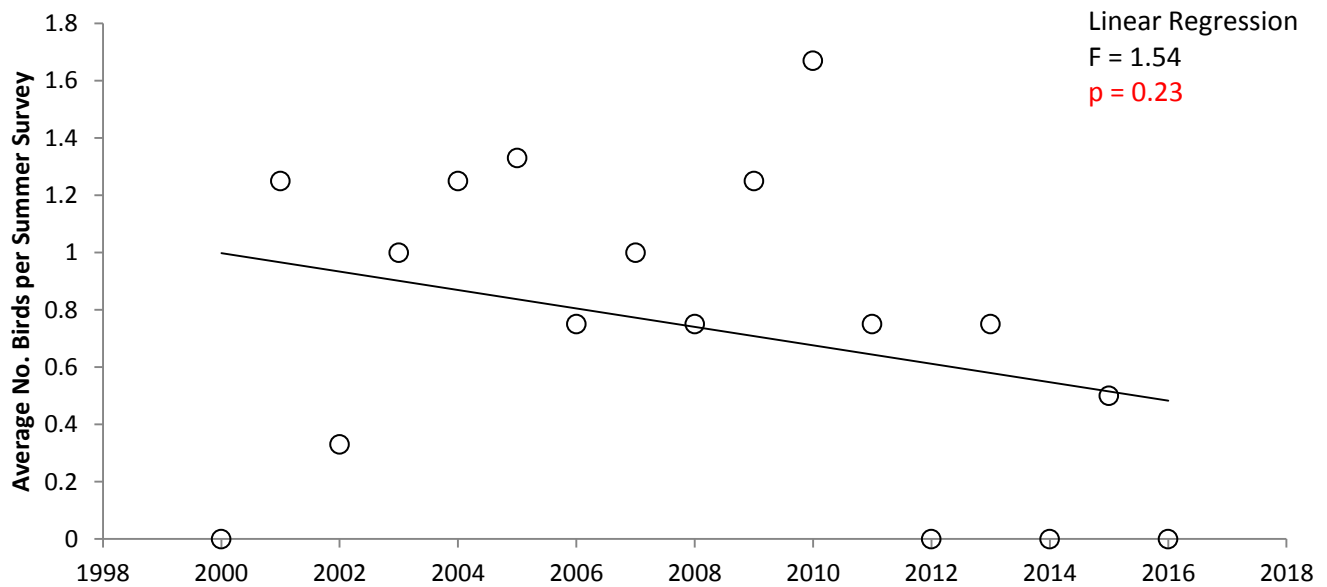
Western Tanager



Birds with No Evident Trends

Summer Migrants

Yellow-breasted Chat



Conclusion

While modest in size at 14 acres, North Mountain Park is a premier birding site in the Rogue Valley featuring native forest, shrub, riparian, pond, and grassland habitats that provide shelter and sustenance for over 150 bird species (eBird). As a testament to the wise stewardship of the park since its creation in 1999, the bird species richness has held steady (see page 6) in an era of increasing human population and footprint.

Interestingly, the abundances of the Purple Finch and the Fox Sparrow have both increased at North Mountain Park between 1999 and 2016 despite declines by both species throughout western North America over a similar time period (Breeding Bird Survey). In contrast, over the course of this study the Wood Duck has declined at North Mountain Park despite a population increase on the continental scale. This local decline may be related to the species' sensitivity to human activity combined with increasing human use of the park.

As expected with a study of this nature, more questions are raised than answered and the avenues for future research are numerous. Upcoming actions related to this study will include the creation of a tri-fold pamphlet for visitors to North Mountain Park, a presentation of results to a local audience, and the creation of a popular article covering the state of bird conservation in the West, the results from this study, and the role of citizen science efforts in increasing our understanding of birds and bird conservation.

References

Cornell Lab of Ornithology. (2015) *All About Birds: Online Guide to Birds and Birdwatching*. Retrieved from <https://www.allaboutbirds.org/>

Ehrlich, P., Dobkin, D.S. and D. Wheye. 1988. *The Birder's Handbook: A Field Guide to the Natural History of North American Birds*. Simon and Schuster Inc., New York.

Sauer, J. R., D. K. Niven, J. E. Hines, D. J. Ziolkowski, Jr, K. L. Pardieck, J. E. Fallon, and W. A. Link. 2017. *The North American Breeding Bird Survey, Results and Analysis 1966 - 2015. Version 2.07.2017* USGS Patuxent Wildlife Research Center, Laurel, MD