

Appendix 4: Bird species observed on the Facebook Living Roof

Photos contributed by Tom Grey and survey participants

Dark-eyed Junco, *Junco hyemalis*

The Dark-eyed Junco is a common species throughout the United States, and a resident backyard bird in the Bay Area. This was the most common species seen on the Facebook roof, observed without fail each month throughout the year with over 800 sightings.

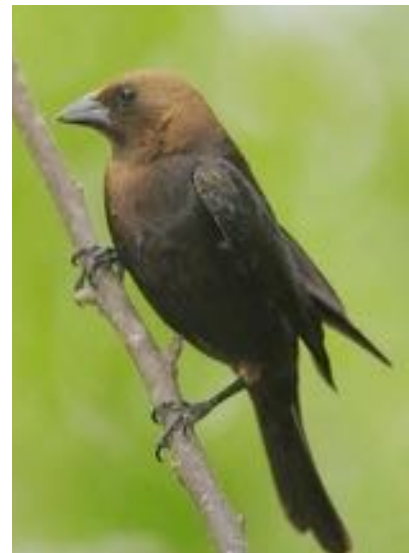


Junco nests are built on the ground or are hidden in low vegetation. They started nesting on the roof before we started the surveys and we observed breeding behavior and juvenile birds as early as June 2015. Juncos feed on seeds and insects, hopping and foraging on the ground. In fall, we saw large flocks of adult and juvenile juncos foraging together.

Brown-headed Cowbird, *Molothrus ater*

Brown-headed Cowbirds are nest parasites – they lay their eggs in the nests of songbirds. The songbirds then unknowingly raise the chicks as their own. Cowbirds in our area commonly parasitize Dark-eyed juncos, and we have witnessed cowbirds chicks begging and being cared for by juncos on the roof. We typically only see them on the roof during the breeding season.

In laboratory experiments, cowbirds learn their host species' songs and behaviors, and attempt to mate with them. In the wild, they learn to act like cowbirds, and mate with their own species. [A recent study](#) shows that young cowbirds roost overnight in the fields where the species typically lives before returning to their foster families the next day. Researchers believe that this behavior gives the cowbirds independence and keeps their species identity.





House Finch, *Carpodacus mexicanus*

House Finches are common throughout the United States and are typically seen feeding from backyard bird feeders. Native to the Southwest, they were brought east by New York pet shop owners who released their birds in 1940. The finches survived, and 50 years later they had colonized the entire country. Male House Finches are vibrant in their coloring – some are yellow to orange, others have a pink or deep-red hue. The females are brown.

House Finches are common on the Facebook roof and have been seen in all of the surveys. They were also observed collecting nesting materials, and are likely breeders on the roof.

American Crow, *Corvus brachyrhynchos* (left) and **Common Raven**, *Corvus corax* (right)

How do you tell crows from ravens? Crows are smaller than Ravens and have a straight tail shape. Ravens are larger and have a wedge-shaped tail. The raven beak is thicker and more pronounced. Crows flock whereas ravens do not.

Crows mate for life. Corvids, including ravens and crows, are the most intelligent bird family, able to learn and [solve problems](#). Both species benefit from urban development, foraging for human food and trash. We have observed an increase in the number of crows that visit the roof as restaurants were established there. Crows have also been observed collecting acorns and caching them in the vegetation.



Lesser Goldfinch, *Carduelis psaltria* and **American Goldfinch** *Spinus tristis*

The Lesser Goldfinch is one of the most common birds on the Facebook roof. They have been observed (and heard) in almost every survey, and we believe these birds may have nested on the roof. We have frequently observed flocks of these birds foraging in trees and shrubs, collecting seeds.



Believed to be the smallest “true finch” in the world, the Lesser Goldfinch is common in parts of the American West, including the Bay Area. They feed on seeds produced by flowers, and typically forage amongst other goldfinches and songbirds.

American Goldfinches are well known across the United States, earning the title of state bird in New Jersey, Iowa, and Washington. Small flocks of the brilliant American Goldfinch were occasionally observed on the roof as well, sometimes in mixed flocks with the Lesser Goldfinch. American Goldfinches are more widely distributed throughout the Country.

Black-throated Gray Warbler, *Dendroica nigrescens*

This warbler is rare in our region except during the breeding season. Flocks of Black-throated Gray Warblers migrate through Mexico, arriving to Central America where they winter. In the Bay Area, they spend their summers in the foothills, in open woods of juniper, pinyon pine, or oak. Only one of these birds was observed on the roof, during fall migration - it might have stopped to glean insect in the oak trees.



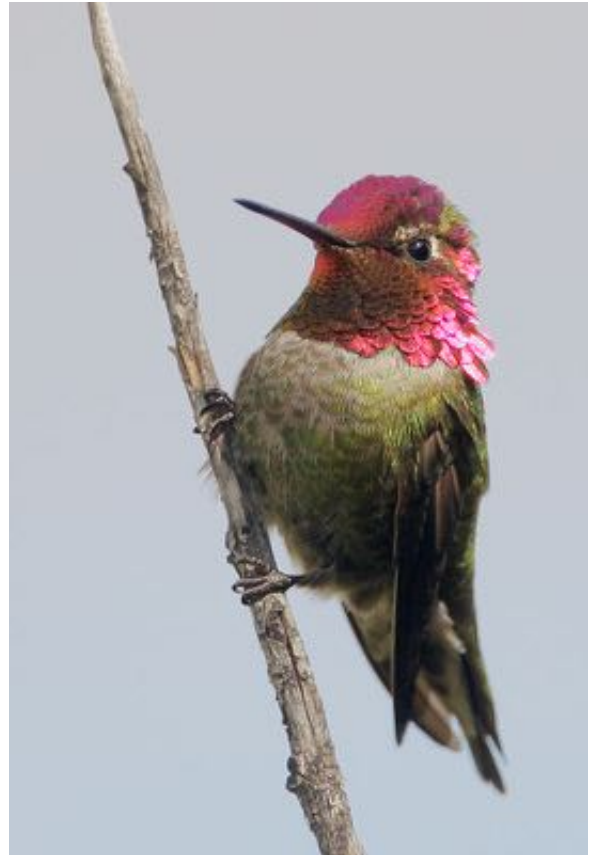
[Anna's Hummingbird](#), *Calypte anna*

One of the most common and most striking birds that have made their home on the roof is the Anna's Hummingbird. These tiny nectar-feeding birds are found all along the US Pacific coast. Since the 1950's suburban development and gardening has aided this species in expanding their breeding range both north and east. Anna's Hummingbirds are very common in much of its range. We have documented evidence of these birds nesting on the roof.

The male Anna's Hummingbird is the only hummingbird in North America to have a red head and throat, which is iridescent in sunlight but otherwise appears black.



Hummingbirds are small but incredibly fast, zooming at a speed averaging about 30 miles per hour. They can hover, beating their wings 10-15 times per second.





[Black Phoebe](#), *Sayornis nigricans*

The Black Phoebe is our local resident flycatcher, feeding on mosquitoes and other small insects. These birds are common in the Southwestern United States, including the Bay Area, and are usually found near water, perched on a fence post, or treetop scanning for insects. Once they eye their prey, they dive off their perch, sometimes hovering in midair before snatching up a meal. These flycatchers particularly like to feast on mosquitoes.

Males and females are physically indistinguishable, boasting their “evening-best” with their classy black and white coloration. Assertive and territorial, Black Phoebes frequently announce their presence on the Facebook roof and particularly enjoy perching on the rooftop entrances.

[Say’s Phoebe](#), *Sayornis saya*

Say’s Phoebes lack the distinguishable contrasting colors of the Black Phoebe although both birds share the same slightly crested head and the ability to wag their tails. Compared to all the other flycatchers, Say’s Phoebes breed farther north in cooler climates. They are typically found in prairies and open space landscapes.

Say’s Phoebes build nests comprising rocks, weeds stems, feathers, grass, spider webs and other materials. They design their nests in the shape of a cup on a ledge to provide them with views of their surroundings, keeping a wary eye out for predators. These flycatchers have taken advantage of human settlements, nesting where they feel safe under bridges and near the tops of buildings.

Only a few were seen on the Facebook roof, possibly due to the wooded landscape and lack of open grassland.



Bushtit, *Psaltriparus minimus*

You'll never see a bushtit without 10-40 identical tiny gray birds chirping and jumping between branches in the trees around it. These little songbirds are very social, found in large family flocks through all seasons on the West coast. They are often observed on the Facebook roof.

Bushtits create intricate nests that are gourd-shaped, woven by twigs, grass and leaves and secured by spider webs. Skilled hunters, they flip upside down to eat insects that hide underneath



leaves. They are the only birds in their family that reside in America; the seven other species reside in Eurasia. They were seen on the roof regularly, and a few bushtit nests were found dangling from oaks on the roof.

Townsend's Warbler, *Setophaga townsendi*



These vibrantly colored birds migrate from their breeding grounds in Canada's northwest to winter along California's coast and in parts of Mexico. Like many birds of the northwest, these warblers seek sustenance and habitat in conifer forests. We have only seen them on the roof in fall 2015 and 2017.

Female Townsend's Warblers can be quite indecisive, partially building a nest in one location just to move it to another. In Mexico, they feed on sugary excretions called honeydew produced by various insects.

European Starlings, *Sturnus vulgaris*

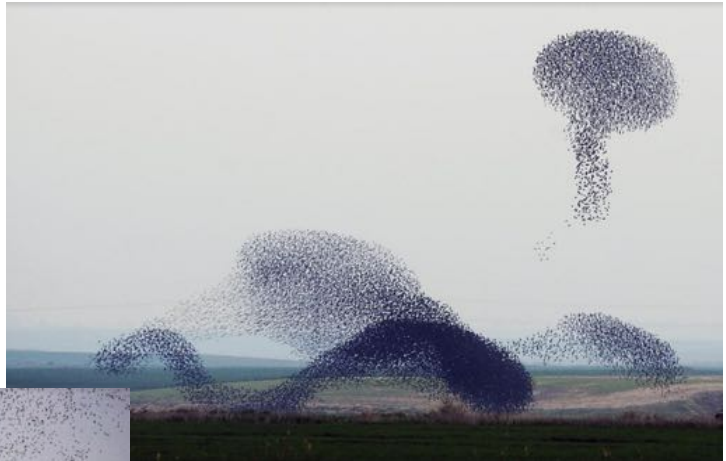
Beautifully speckled and iridescent, the European Starling is an introduced species. About 100 Starlings were deliberately released in New York in the 1890's - part of an effort to bring in all the birds mentioned in Shakespeare to the US. From New York, the birds soon spread across the continent. Starlings aggressively compete with native cavity nesting bird species such as bluebirds and woodpeckers, and may negatively affect these species populations.



European Starlings may gather in immense flocks in fall and winter. Starlings are famous for their flight murmurations, where masses of birds fly together synchronously, swiftly, and gracefully. Studies of this phenomenon found that [starling flocks model a complex physical phenomenon](#), seldom observed in physical and biological systems, known as scale-free correlation.

A flock of migrating starlings over a field near Netivot, Israel, on January 25, 2013. # David Buimovitch/AFP/Getty Images

A large flock of starlings fly over an Algiers park at sunset, on February 15, 2006. # Fayeze Nureldine/AFP/Getty Images



Starlings have been seen on the Facebook roof in low numbers. One pair nested in a cavity under the roof at the northeastern corner of the building.

[Brewer's Blackbird](#), *Euphagus cyanocephalus* and [Red-winged Blackbird](#), *Agelaius phoeniceus*

Both Brewer's and Red-winged Blackbirds have occasionally been observed on the roof. These are social birds that move and nest in colonies, often comprised of several species. They can be found year round in the Bay Area, commonly seen foraging for food alongside Brown-headed Cowbirds and



European Starlings. Their diet is highly adaptable, allowing them to switch from eating seeds to insects or human food.

Iridescent **Brewer's Blackbirds** frequently visit Facebook's roof foraging for tiny scraps of human food scattered around the cafe seating areas.



One of the most common songbirds in North America, **Red-winged Blackbirds** are distinguishable by the bright red flash of feathers on the male's shoulder. Hidden by other body feathers, the red patch is displayed when confident males puff their feathers during a ritual of song and dance to catch the attention of females. These are highly abundant and social birds, however their populations have declined by 30% between 1966 and 2014 - most likely due to habitat-loss and changes in climate. A small group of Red-winged Blackbirds was seen on the Facebook roof in the fall of 2015, but they haven't been seen since.



[White-Crowned Sparrow](#), *Zonotrichia leucophrys* and [Golden-crowned Sparrow](#), *Zonotrichia atricapilla*



Every fall, White-crowned and Golden-crowned Sparrows migrate to the Bay Area from their breeding grounds in Canada and Alaska and stay through winter. They are usually found in small flocks mingling with other birds, foraging for seeds and the occasional insect in the understory of shrubs and bushes. They scare easily, and fly to shelter in dense shrubs or in trees when people approach them. In the Bay Area, White-crowned Sparrows are more common on the valley floor and along the bay, whereas Golden-crowned Sparrows are more common in

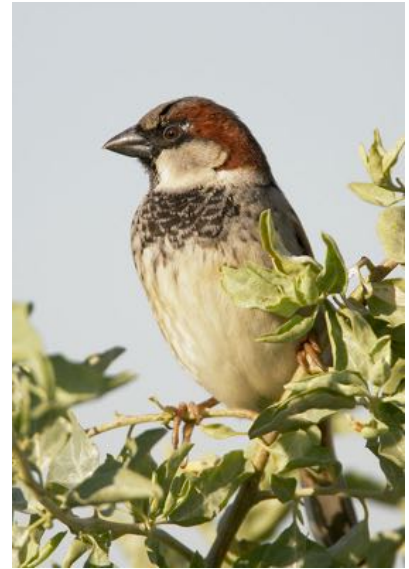
the hills. True to their migration patterns, White-crowned and Golden-crowned Sparrows were spotted on Facebook's roof between November and April of every year.

Like humans, **White-crowned Sparrows** [develop dialect specific to certain areas](#). White-crowned Sparrows that winter in the Bay Area are famous amongst ornithologists for their wide variety of songs - a sparrow in Marin will sound noticeably different from a sparrow in San Jose. As our world becomes more urbanized, the songs of these birds are being drowned out. Remarkably, White-crowned Sparrows have begun to adjust and evolve the frequencies of their songs in order to compete with increased urban noise. Scientists are still investigating how and at what cost these sparrows are able to evolve their language.



House Sparrow, *Passer domesticus*

Native to parts of Europe and Asia, the House Sparrow was introduced into Brooklyn in 1851 along with European Starlings and Rock Pigeons. Flocks of House Sparrows reached the Rocky Mountains by 1900 and the population exploded to around 150 million birds in the 1940's. Other introductions across the world in Australia, Africa, and South America make the House Sparrow the most widely distributed bird today. They thrive amongst human habitations, nesting in cavities of buildings, rain gutters, or backyard trees.



House Sparrow populations have been declining in recent years. The reasons for this decline are not clear. Explanations include increased predation by corvids and house cats, lack of nesting sites (holes and crevices) in modern buildings, pollutants in unleaded fuel, and even electromagnetic radiation from cellphone towers. Researchers believe that solving the riddle is important precisely because of sparrows' long association with humans: sparrows, rather like the miner's canary, can act as a barometer of the health of human environments. In our increasingly urban environment, understanding what makes cities inhospitable for a species that has long called them home is important.

Northern Mockingbird, *Mimus polyglottos*

Northern Mockingbirds are famous for their uncanny ability to mimic not only other bird songs, but also noises generated by the human world, such as the ringing of a cellphone. Male mockingbirds incorporate the songs of many other birds into their own song to attract potential mates. Because of their [singing ability](#), wild populations of these birds were sought after in the 1800's to capture and sell as pets. Extraordinary singers could fetch a price as high as \$50. As a result of the high demand, these birds nearly disappeared from the East Coast but have since made a comeback and are now common throughout the United States.



These backyard birds may sing late into moonlit nights during the breeding season, longing for a returned song from a potential mate. Their diet typically includes insects during spring and summer and fruit during the fall and winter. They

are very territorial birds, known to dive-bomb humans, pets, or other birds that get too close to their nests. A few mockingbirds were attracted to the berries and fruit on Facebook's roof during spring and fall months.

[Yellow-rumped Warbler](#), *Setophaga coronata*



Also known as the Audubon Warbler and affectionately nicknamed “Butterbutt”, Yellow-rumped Warblers winter in the Bay Area while many other songbirds migrate further south. These dietary generalists are able to survive Bay Area winters thanks to their unique ability to digest berry wax, allowing them to supplement their usual diet of insects with wild fruit.



Resilient and adaptable, Yellow-rumped Warblers forage for food in every niche from the ground to the tops of trees, frequently making their presence known with a soft “chit” call. They act like tiny acrobats, zipping out of trees to snatch insect’s midair or stealing a fly caught in a spider web. Male Yellow-rumped Warblers tend to forage for food higher in trees than females during the breeding season.

Given that these are the most common wintering warbler in North America, we were not surprised to see these birds frequently on Facebook’s roof between October and March.

[Red-breasted Nuthatch](#), *Sitta canadensi*

Winter visitors to the Bay Area, Red-breasted Nuthatches prefer to spend most seasons in the cooler climate of the North in places like Canada, Washington, and Idaho. They favor dense coniferous forest habitat and can be found high up in the mountains, scouring tree bark for insects or foraging for conifer seeds. These clever birds collect conifer resin and plaster it in and around their nests - the sticky substance serves as a protection from predators looking to make a meal out of their eggs or chicks. To avoid getting stuck in the resin themselves, the nuthatches dive gracefully through the entrance.

A lack of conifer trees on the Facebook roof is probably the reason why only one was sighted in 2015.



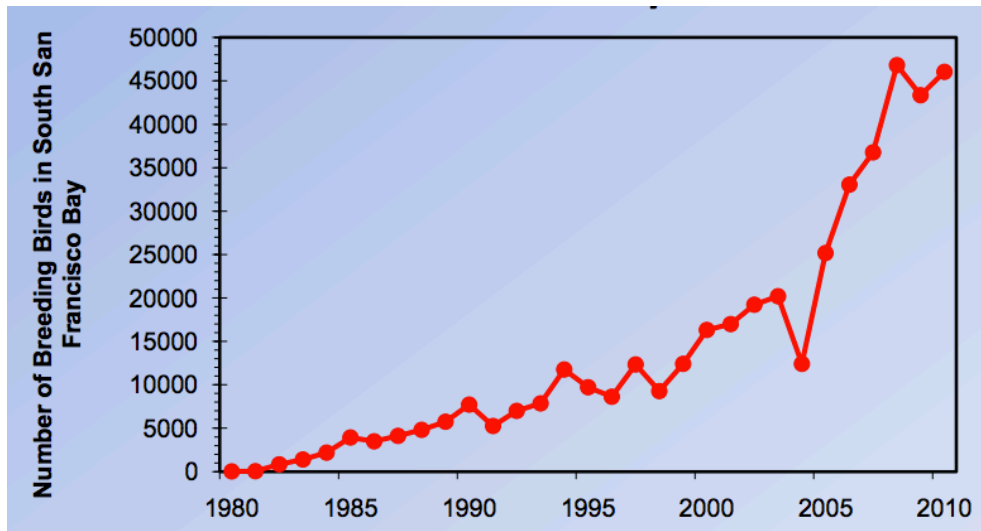
California Gull, *Larus californicus*

The Bay Area's California Gull population has increased exponentially over the last thirty years, exploding from less than 200 birds in the 1980's to more than 47,000 birds today. Their success is largely contributed to their ability to survive on human waste and they are often found scavenging through landfills, parking lots, and agricultural fields.



California Gulls have been impacting populations of breeding birds in the Bay Area, displacing water birds from preferred nesting sites and preying on the eggs of Foster's Terns and the federally endangered Western Snowy Plover. California Gulls were mostly seen flying over the Facebook roof in the winter and summer months.

The California Gull is Utah's state bird and is honored by a monument in Salt Lake City for saving Mormon settler's crops from grasshopper plagues in the 1800's.



This graph shows the exponential growth of breeding California Gulls in the Bay Area from 1980 to 2010. Source: Salt Pond Restoration Project – www.southbayrestoration.org

Bewick's Wren, *Thryomanes bewickii* and House Wren, *Troglodytes aedon*

Pronounced "Buick" (like the car), Bewick's Wrens are widespread and common in the West and are year round residents of the Bay Area. Bold white eyebrows, vigorous songs, and a cocked tail make these noisy, hyperactive birds easy to identify. A young male wren will develop his song by listening to neighboring males outside of his father's territory and making slight tweaks to his own father's song. He will retain this song for the rest of his life and use it to attract mates.



These tiny insect-eaters require natural and manmade cavities to nest in. At least one Bewick's Wren has been seen in every survey since the fall of 2016. Just within the last few decades, populations of Bewick's Wrens have been nearly extirpated east of the Mississippi River. Although reasons for the rapid decline are unknown, range expansion of House Wrens may be to blame given that they are known to remove Bewick's Wren eggs from nests. In contrast to the east, Bewick's wrens are year-round residents to the Bay Area and all along the Pacific Coast.



Similar to Bewick's wrens, House Wrens nest in cavities and are common to the California coast year round. Unlike any other songbird in the world, House Wrens range from Canada to the southernmost point of South America. These birds have figured out a way to fight parasite infestation in their nests by adding spider eggs into the nest materials. Once the eggs hatch, tiny spiders devour the mites and other parasites that feed on the fledglings. Adult wrens can be very territorial, harassing, attacking, and sometimes even killing other adult birds or puncturing eggs in nearby nests. Only one House Wren was seen on the Facebook roof, most likely due to the lack of nesting cavities.



[Mourning Dove](#), *Zenaida macroura* and [Eurasian Collared-Dove](#), *Streptopelia decaocto*

According to the biblical story, Noah sent a dove to see whether the great flood's water had receded. The dove returned with an olive branch, showing that trees were no longer submerged and the Ark could safely reach land. Ever since then, doves and olive branches have symbolized peace.

The mournful cooing of the Mourning Dove is one of our most familiar bird sounds. Mourning Doves are native to North America and are abundant from Canada to Central Mexico. Like other pigeons and doves, Mourning Doves are flocking birds that feed primarily on seeds.



Most people see Mourning Doves along freeways, perched in flocks on telephone and electrical wires together with pigeons. Why do they do this? Freeways provide doves and pigeons with an open, safe place to perch and watch for potential predators such as hawks and other raptors.

Mourning Doves are frequently observed on the roof foraging on the ground.

As their name suggests, the Eurasian Collared-Dove can be distinguished from Mourning Doves by the black half-collar around their neck. These doves made their way to the United States in the early 1980's, after 50 birds escaped during a pet store robbery in the Bahamas. Populations of Eurasian Collared-Doves grew rapidly as they colonized most of North America, making their first appearance in the Bay Area in 2001. They are now considered an invasive species.



Eurasian Collared-Doves were sighted flying over Facebook's roof, perched on nearby Pylons and powerlines, and in the ground level garden.

Rock Pigeon, *Columba livia*



Few birds have been associated with humans so closely as the Rock Pigeon. Remarkably, ancient hieroglyphics and Egyptian tablets suggest that humans first domesticated this bird over 5,000 years ago. Since then, the birds have been introduced all around the world, making its first appearance in North America in the early 1600's.

Rock Pigeons original natural habitat included rock formations in Asia and the Middle East (hence their name). These birds are raised for food, used in research, trained for racing, and utilized as messengers, carrying messages over

incredible distances. How do they find their way? A unique ability to sense Earth's magnetic field allows the pigeon to navigate on long journeys, guiding them back to their homes.

Rock Pigeons are almost always found on the Facebook roof, flying overhead, or perched on nearby pylons and wires.

California Towhee, *Pipilo crissalis*

The California Towhee is a true California bird – it is endemic to the Pacific seaboard, from southern Oregon to Baja. This plain brown bird is a common backyard bird in the Bay Area and can be found year round. California Towhees have a shrill song that sound like a smoke alarm. They prefer to use their legs for locomotion (they aren't very strong fliers) and are almost always seen scratching through leaf litter, looking for seeds and insects to eat.



Towhees sometimes peck at rear view mirrors on cars or backyard windows. Territorial males perceive their reflection as another bird and attack the opponent, failing to realize they are actually challenging themselves.

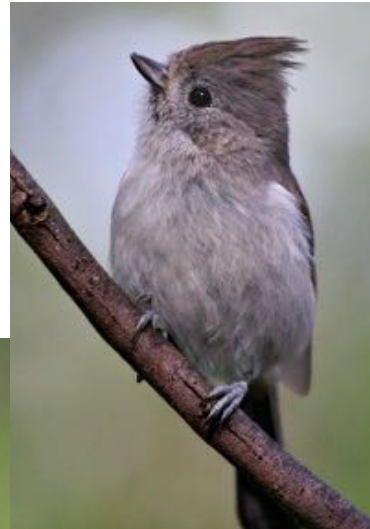
As the shrubbery on the roof has become more mature and dense, we have seen an increase in the number of California Towhees. They are now seen in almost every survey.

Oak Titmouse, *Baeolophus inornatus*

Early naturalists described these little songbirds as the “voice and soul of the oaks”. Boasting a prominent crest of feathers on its head, the Oak Titmouse can be found throughout Bay Area’s oak forests.

These songbirds are wooed easily, selecting a mate within their first fall and remaining together for life. Despite their small size, titmice are extremely aggressive when it comes to defending their territory from other birds. They are also avid hunters, foraging at a rate of 40 attacks on insects in 15 minutes.

Oak Titmice fly low from oak to oak and typically don’t reach great heights. For that reason, we were pleasantly surprised to find them on the Facebook roof.



Chestnut-backed Chickadee, *Poecile rufescens*

Perhaps the most colorful of all chickadees, Chestnut-backed Chickadees are low flying birds that prefer the dark, dense coniferous forests of the Northern Pacific Coast. They are year round residents of the Bay Area and a common backyard bird.

These birds use fur from mammals to create their nests in holes of dead limbs and trees. Usually hole-nesting birds are more successful than open-cup nesters, however the chickadees are still subjugated to predation from squirrels, mice, snakes, corvids and even black bears.

Chestnut-backed Chickadees are skilled at gleaning insects off of trees and may sometimes supplement their diet with seeds and berries. Conifer trees benefit from the presence of chickadees, relying on the birds to disperse their seeds. These relationships are considered mutualistic: both the bird and the

trees benefit. Conifers (Monterey pines) were planted on Facebook’s ground level, attracting the few Chestnut-backed Chickadees that we observed on campus.

California Scrub Jay (“Western Scrub Jay”), *Aphelocoma californica*

Commonly referred to as “blue jays”, California Scrub Jays are abundant, year round residents of the Bay Area. Recent genetic testing has led to a split in what used to be thought of California’s sole species of scrub jay: the Western Scrub Jay. Now, the name “California Scrub Jay” is designated for birds along the Pacific coast and “Woodhouse’s Scrub Jay” for those in the far eastern reaches of the state.



These birds are [an essential part of the oak woodlands](#) that they live in. In preparation for winter, scrub jays can collect up to 5,000 acorns from oak trees, hiding them in different caches around their territory. Like other members of the corvid family (i.e. crows and ravens), scrub jays are extremely intelligent, and can remember the location of these acorns for 250 days. Forgotten acorns eventually sprout into oak trees, contributing to the health and growth of our native forests.

California Scrub Jays are common to the bay area oak forests as well as backyards. They are often seen perched in oak trees with an acorn in their beak, vocalizing aggressively to other birds as they defend their food and territory. California Scrub Jays were seen on Facebook’s roof demonstrating this same behavior.





[Red-shouldered Hawk](#), *Buteo lineatus*

In our first year of surveys, hawks were rarely seen on the Facebook roof. Red-shouldered Hawks are common in Northern California and are usually seen along creek corridors. They often nest in Eucalyptus trees. We have occasionally seen these hawks on the roof, usually perched in a place that allows them to look for prey on the roof and its immediate surroundings. Red-shouldered Hawks are confrontational, known for squabbling with crows.

Deforestation in eastern North America has led to a decline of Red-shouldered Hawks in places that historically supported large numbers of them.

[Cooper's Hawk](#), *Accipiter cooperii*

Like Bald Eagles, Peregrine Falcons, and many other North American raptors, Cooper's Hawks were once threatened by the widespread use of the pesticide DDT. Insects living in soil sprayed with DDT contained miniscule levels of the pesticide themselves, transferring it to birds, rodents, and other lower-level consumers once the insects were preyed upon. The pesticide would then accumulate in the fatty tissues of top predators such as hawks and other raptors over the course of their lives.

Why was DDT so lethal to birds? The chemical components and breakdown products of DDT alter calcium metabolism, resulting in thin eggshells that break easily when either parent tries to incubate the eggs. Numbers of successful breeding raptor pairs plummeted in the 1950's and 60's, calling attention to the problem and eventually leading to the ban of DDT in 1972. Once the ban was enacted, reduced bird populations began to recover quickly, including the Cooper's Hawk. Today they are still under threat, although this time it's because of habitat loss and degradation.

A Cooper's Hawk was sighted perched in a tree during one Facebook roof survey. Raptors may be attracted to Facebook by the potential to hunt for other birds utilizing the roof.



Ruby-crowned Kinglet, *Regulus calendula*



These small songbirds spend their summers nesting in Canada's tall, dense coniferous forests and their winters in the woodlands of the Pacific Coast, Southern United States and Mexico. The Latin name for Ruby-crowned Kinglet translates to "petty king", referring to the bright ruby crown that distinguished males from females. Although usually hidden out of sight, the crown is erected during courting displays and when the male feels threatened by a rival or predator.

Kinglets are usually identified because of their hyperactive motion; they nervously flick their wings and tails while foraging for small insects. Their small size allows them to perch on thin twigs or hang upside down to glean caterpillars, spiders, and other small insects off of trees. Ruby-crowned Kinglets have been seen on the roof during a number of winter surveys.

Northern Flicker (red-shafted), *Colaptes cafer*

The Northern Flicker is one of the most common woodpeckers in the United States, inhabiting open woodlands and fields across North America year round. They are also one of the few woodpeckers that are known to migrate; those that live in the Northern United States journey to the cooler climates of Canada and Alaska for the summer to breed. The two subspecies of the Northern Flicker (yellow-shafted and red-shafted) were once thought to be separate. However, both subspecies are now known to interbreed in certain parts of their range, creating a hybrid species that displays traits from both variations.

Unlike most woodpeckers, Northern Flickers are often found on the ground, foraging for their preferred diet of ants. As is the case with most woodpeckers, flickers make their presence known by hammering trees, metal and other objects with their beaks. Northern Flickers use this loud sound to communicate with other birds and to defend territories.



Only two Northern Flickers (red-shafted) have been seen during the Facebook roof surveys. Considering the abundance of insects observed in the roof vegetation, there is the possibility that more of these birds may be sighted in the future.

Yellow Warbler *Setophaga petechial*



Yellow Warblers have been documented during the roof survey's in September 2016 and May 2017. Bright yellow plumage and musical vocalizations make these warblers easy to identify. The summer breeding range of Yellow Warblers encompasses nearly the entire North America continent. On the west coast these birds concentrate in riparian habitats, gleaning insects off of streamside trees and shrubs. Shorter days and cooler weather signal them to migrate south to their winter range between Central America and Northern South America. The Yellow Warblers seen on the roof may have been stopping by on their way south for the winter then again on their way north to breed.

Because Yellow Warblers design their nests in the shape of a cup, their nests often attract cowbirds. These brood parasites lay their eggs in the nests of unsuspecting breeding pairs, putting a burden on the other species



to raise their large chicks. Fortunately for the Yellow Warbler, they have the unique ability to detect the presence of cowbird eggs in their nest and will smother all of the eggs in the nest with nesting material then produce a replacement clutch.

Orange-crowned Warbler *Oreothlypis celata*

Unlike other warblers in their family, Orange-crowned warblers are usually identified by their lack of bold markings. While males have a small tuft of orange feathers on their crown, they usually keep it hidden out of sight.

As summer approaches, Orange-crowned Warblers leave their wintering range in Mexico to breed in the US and Canada. Because of the mild climate along the Pacific Coast, populations of these songbirds remain in parts of California year round, including the Bay Area. The distinctive song of an Orange-crowned Warbler notified us of its presence on the roof during several surveys.





[Cedar Waxwing](#) *Bombycilla cedrorum*

During the first year of surveys, flocks of Cedar Waxwings were seen flying over Facebook building without ever actually landing on the roof. However, in January 2017 one of these birds was spotted near the western edge of the roof, possibly stopping by to forage for insects and berries.

Named for the bright red wax droplets produced by the tips of their wings and a preference for cedar cones, Cedar Waxwings descend on berry-laden trees and shrubs across North America. These birds have a specialized digestive tract that allows them to survive on an entire diet of berries and fruit for months, although some occasionally become intoxicated from consuming overripe berries.

Flocks of Cedar Waxwings are a common sight throughout the Bay Area during winter months before they migrate north to Canada for the summer. As berry-producing trees and shrubs on the roof continue to mature, it is likely we will continue to see more of these birds utilizing the roof in the future.



[Hermit Thrush](#) *Catharus guttatus*



Hermit Thrushes are common throughout backyards and open woodlands in California, often found foraging for insects in understory bushes and leaf litter. They use a unique technique to find food, quivering their feet to shake insects free from blades of grass. These birds are known for their melancholy song, and are often identified by sound before sight.

Given how common these birds are, we were surprised that the first Hermit Thrush wasn't seen on the roof until November 2017.

[Hooded Oriole](#) *Icterus cucullatus*

A pair of Hooded Orioles stopped by the roof for the first time during the spring and summer of 2017. These birds are well-known for their affinity to palm trees, using palm grasses to weave and sew their nests to the fronds. Hooded Orioles spend much of the year in Mexico and Central America, and are typically only found in California during the breeding season. The introduction of palm trees into urban areas throughout parts of California contributed to the northward expansion of their range.



Vibrant yellow-orange males and pale yellow females follow each other closely as they navigate open woodlands and backyards, searching for ripe fruits and hummingbird feeders. Their unique, curved bill functions as a valuable tool, allowing them to open flowers and fruits, and excavate holes in tree bark.

[Fox Sparrow](#) *Passerella iliaca*

Named for their rich, foxlike colors, Fox Sparrows spend their winters in California and parts of the Southeast before migrating to their breeding grounds in Canada. It is believed that these birds have been around for thousands of years, as evidenced by fossils from the Pleistocene found in Pennsylvania, Virginia and California.

Fox Sparrows feed mainly on insects, flicking up dirt and leaves with their feet in search of a meal. To supplement their diet during colder months, they will also feed on seeds and plant material. Two Fox Sparrow's were spotted on the roof in January 2018 for the first time.



[Western Meadowlark](#) *Sturnella neglecta*

The [unmistakable, flutelike song](#) of the Western Meadowlark can be heard year-round ringing out across open grasslands, pastures, and fields from the Midwest to the western coast. Their prevalence in the western plains earned them the title of state bird for Kansas, Montana, Nebraska, North Dakota, Oregon, and Wyoming. A melodious flock of sixteen meadowlarks was spotted on the roof during the March 2018 survey. Considering the rooftop garden does not support substantial grassland habitat, we hypothesize this flock was using the roof as a rest stop before continuing on their journey north for the summer.

