

Title: Support Bird-Safe Material and Design Features for California Building Standards

Resolution: Sierra Club California supports the establishment and implementation of Bird-Safe standards for building materials and design features for each building that is constructed, acquired, or of which more than 50 percent of the facade is substantially altered, and that are in accordance with existing effective best practices to reduce bird collision mortality, to the maximum extent practicable, as determined by the Administrator, exempting sites listed, or eligible for listing, on the National State Register of Historic Places.

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Background Information:

Bird-Friendly Building Design¹ (second edition) was published in 2015 by the American Bird Conservancy's Collisions Program. This publication gained nationwide attention because of its thorough research into why and how glass collisions cause the deaths of an estimated one billion North American birds annually, as well as its detailed description for preventive measures.

Bird-Safe Building Design standards are promoted as necessary prevention measures and guidelines by the California Department of Fish and Wildlife, U.S. Fish and Wildlife Service², American Bird Conservancy, the Audubon Society, and multiple well-respected ornithologists such as David A. Sibley. Nationwide, many cities and counties have integrated BSD standards into their planning departments' building permit process.

Economic and Energy Impact of Bird-Safe Building Design standards

The benefits of applying the Bird-Safe Building Design standards are

- creating a specialized architectural field, thus adding new jobs.
- avoiding legal ramifications for not applying the Bird-Safe Building Design standards.
- reducing energy costs such as lighting, heating and air conditioner expenses with using 30-40% glass façades according to ASHRAE and ICC(ABC-Bird-Friendly Design, page 34), thus addressing the construction trend to apply more than 50% glass façades to home and office buildings.

¹ [Bird-Friendly-Building-Design_Updated-April-2019.pdf](http://abcbirds.org/wp-content/uploads/2019/04/Bird-Friendly-Building-Design_Updated-April-2019.pdf)

http://abcbirds.org/wp-content/uploads/2019/04/Bird-Friendly-Building-Design_Updated-April-2019.pdf

² [reducing-bird-collisions-with-buildings-and-building-glass-best-practices.pdf](https://www.fws.gov/southeast/pdf/guidelines/reducing-bird-collisions-with-buildings-and-building-glass-best-practices.pdf)

<https://www.fws.gov/southeast/pdf/guidelines/reducing-bird-collisions-with-buildings-and-building-glass-best-practices.pdf>

- absorbing and reflecting less heat by applying 30-40% glass façades which benefit the health of the watersheds and affect climate change by reducing the Urban Heat Island effect (UHI) and meeting an appropriate window solar heat gain coefficient rating³ (SHGC).

Bird-Safe Building Design Standards Addressed by Congress and State Legislature

Although the California legislature has not addressed state-wide Bird-Safe Building Design standards requirements for county and city planning departments' building permits, the following are similar issues that the legislature has addressed:

- H.R. 919 Bill- Bird-Safe Buildings Act of 2019 is on the Congress floor.
- The 4/2016 Congressional Records (P100) show that the General Services Administration incorporated 'Building Material and Design Standards into Public Building' in section 3.5.6: Bird Safe Design Standards.
- In 2019 two California Legislature Bills aimed to protect birds:
 - Senate Bill SB1-California Environmental, Public Health, and Workers Defense Act of 2019- included bird protection in Section 1. SB1 was supported by the California Sierra Club and vetoed by Governor Newsom.
 - Assembly Bill AB-2627-Migratory nongame birds: Migratory Bird Treaty Act: authorized take- was signed into law by Governor Newsom.

California's Bird Population

- California lies within a critical section of the **Pacific Migratory Flyway**⁴, a major north-south flyway for migratory birds in the Americas, extending from Alaska to Patagonia. Twice a year, both in spring and in fall, millions of migratory birds travel to or through California following food sources, heading to breeding grounds, or traveling to overwintering sites.
- California shorelines, wetlands, woodlands, grasslands, deserts, forests and urban-suburban landscapes are all important to birds. Indeed, more than 600 bird species have been reported in California, which account for about two-thirds of all bird species in North America. 450 species are commonly seen in California, making our state one of the country's most diverse.
- 175 areas and sites have been identified as highly important to birds, and many of these neighbor cities and man-made infrastructure. In addition, due to climate change 204 bird species are experiencing high, moderate, or low population decline in California including endangered, threatened, or "species of special concern" according to the findings of the latest Audubon study Survival by Degrees: 389

³ 2019 Building Energy Efficiency Standards for Residential and Nonresidential Buildings, Title 24, part 6 <https://ww2.energy.ca.gov/2018publications/CEC-400-2018-020/CEC-400-2018-020-CMF.pdf>

⁴ [Pacific Flyway | Audubon](https://www.audubon.org/pacific-flyway)

<https://www.audubon.org/pacific-flyway>

Bird Species on the Brink⁵. The study also shows that the future of many more bird species is threatened by climate change.

- The survival of a vast majority of the 386 Western Hemisphere (neotropical) migratory bird species depend on the California habitats as they fly in the Pacific Flyway.
- Most California bird species are protected under the Migratory Bird Treaty Act, which has been weakened by the federal government. With the passage of AB-2627, California maintains wider protections than the Federal government, but the bill does not protect birds from collision with man-made structures.

The attrition of the bird population is caused by cumulative human interventions.

Those related to Bird-Safe Building Design standards include loss and fragmentation of local and migratory bird habitats due to building development; collisions with glass, buildings and other structures; and night lighting. Other human interventions that relate to the decline of bird populations include climate change⁶; pollution; the pervasive use of pesticides (associated with widespread declines in insects, an essential food source for birds); and free-roaming domestic cats.

Of human interventions, the U.S. Fish and Wildlife Service estimates that collision with building glass is currently the second greatest source of direct mortality of approximately one billion North American birds each year. Birds collide with glass because they cannot perceive glass as an obstacle in their flight path. The hazard that glass forms is greatest under the following conditions:

- Birds are unable to recognize glass when they see reflections of vegetation or landscape.
- Birds are unable to recognize transparent glass and try to fly through it
- Trees or vegetation inside buildings with see-through glass can lure birds to their deaths.
- Glass corners or narrow passages can allow birds to see through to habitat on the other side of a building, and they die trying to fly through.
- Exterior and interior night lighting disorients birds, contributing to their fatal collision with glass.

For the reasons stated above, it is essential to establish and implement Bird-Safe Building Design standards, because they reduce excessive glass façades, provide birds with visual clues on glass and result in the best exterior and interior lighting practices.

⁵ <https://www.audubon.org/climate/survivalbydegrees/state/us/ca>

⁶ [Climate change alters habitat for migratory birds in CA, Idaho | The Sacramento Bee](https://www.sacbee.com/news/local/environment/article227983859.html)
<https://www.sacbee.com/news/local/environment/article227983859.html>

California's Building Market

California is currently experiencing a construction market that has had more mega projects over the last two years than any time in its recent history:

- The State of California Department of Finance⁷ (CDF) shows that as of July 2019, the year-over-year change in building permits was up 61.6% for commercial and 28.6% for nonresidential construction.
- In the first five months of 2019, the CDF issued permits for an average of 111,000 residential building units per year. Permits for multi-family units such as apartments reached a seasonally adjusted average of 46,000 units per year.
- There is an upcoming building boom⁸ expected in areas where wildfires destroyed communities.

Presently, homes and office construction feature large glass surface designs, exceeding 50% of the buildings' glass façades, with the result that glass collision is the second greatest source of direct mortality of birds. This building trend will lead to an even higher rate of collisions for birds. Therefore, it is imperative that we require and implement Bird-Safe Building Design standards, which dovetails well with the Fenestration Products requirements of the California Building Standards Code⁹ and the California Energy Commission, Title 24¹⁰.

Birds and Their Environmental and Economic Significance

Globally, birds are crucial components of healthy natural systems, serving as pollinators, predators, scavengers, seed dispersers, and engineers in riparian, wetland, and coastal habitats and deliver effective, cost-free insect and rodent control.

California's \$47.1 billion agriculture economy benefits from birds because:

- A Barn Owl eats more than 11,000 mice in its lifetime.

⁷ [New Construction Permits](http://www.dof.ca.gov/Forecasting/Economics/Indicators/Construction_Permits/)

http://www.dof.ca.gov/Forecasting/Economics/Indicators/Construction_Permits/

⁸ [After fires, Bay Area city gears up for a building boom](https://www.mercurynews.com/2019/04/09/from-disaster-to-building-boom-why-developers-are-eyeing-santa-rosa/)

<https://www.mercurynews.com/2019/04/09/from-disaster-to-building-boom-why-developers-are-eyeing-santa-rosa/>

⁹Page 45: Section 110.6 Mandatory Requirements for Fenestration Products & Exterior doors
<https://codes.iccsafe.org/content/CAEC2019/subchapter-2-all-occupancies-mandatory-requirements-for-the-manufacture-construction-and-installation-of-systems-equipment-and-building-components>

¹⁰ <https://ww2.energy.ca.gov/2018publications/CEC-400-2018-020/CEC-400-2018-020-CMF.pdf>

- Birds are estimated to consume 98 percent of certain insect pests, including codling moths, enhancing agricultural production.
- Birds pollinate crops.

Birds species are an integral component of California's rich mosaic of natural communities, which ranks first out of the 50 states in diversity and endemism of native plant and animal species¹¹. This natural, biodiverse environment attracts many birders, who added \$140 billion to the state economy and accounted for one million jobs. A diverse bird species population attracts local and visiting birders (the second fastest-growing outdoor hobby in the U.S.) and bird-festivals, adding \$107 billion in total industry output, 666,000 jobs, and \$13 billion in local, state, and federal tax revenue in 2011.

National Policy:

Wildlife and Native Plants Policy

<https://www.sierraclub.org/policy/wildlife/wildlife-and-native-plants>

The key to wildlife and native plant conservation is the continued existence of diverse natural ecosystems and the preservation of native biodiversity...

2. Wildlife and Native Plant Management -- Within natural ecosystems, natural diversity and abundance of wildlife and plants should be ensured by means that involve a minimum of overt human interference. Ecosystems modified by human activities should be managed to ensure optimum native diversity and numbers of wildlife and plants to natural historic levels where feasible, with emphasis on restoration and rehabilitation of degraded ecosystems to a more natural condition.

4. Threatened and Endangered Species -- Because of species' value to ecosystems and to humans and for their intrinsic values, every effort should be made to prevent the extinction of species due to human activities. The Sierra Club vigorously supports strong and vibrant federal and state endangered species acts and related laws as well as recovery programs that protect wildlife, plants, and natural ecosystems.

6. Full Protection -- Some species or populations of wildlife and native plants may be so valuable for research, education, recreation, or aesthetic purposes that they should receive full protection. Similarly, some species or populations should be protected where regulations are ineffective or absent.

7. Wildlife and Native Plant Damage Control -- Improved wildlife and plant management, agricultural and other human practices should be aimed at discouraging human/ wildlife/plant conflicts, with emphasis on nonlethal control of wildlife when feasible.

¹¹ Stein BA. States of the Union: Ranking America's Biodiversity. 2002. Arlington, VA: NatureServe. 27p.
<http://calag.ucanr.edu/Archive/?article=ca.v069n04p210#R23>

Guidelines for implementing this policy:

...Urban Wildlife and Native Plants -- In order to encourage and foster native wildlife, both plants and animals and their habitats, in the urban environment, decision-makers and other individuals are encouraged to maintain, restore/rehabilitate, or approximate all possible portions of the natural ecosystems surrounding and within urban areas. Special attention should be paid to habitat linkages or wildlife corridors. The Sierra Club favors the use of native species in landscaping and other artificial situations. Urban planning should be based on the communities' natural features and values, as much as possible.

Adopted by the Board of Directors, December 10-11, 1994 [superseded policies adopted May 4-5, 1974, and September 28, 1957]

Argument for:

Sierra Club conservation policy does not address bird-safe material and design building standards, but it does have a long history of emphasizing the protection of wildlife and its habitats as well as promoting energy efficiency measures and materials that counter climate change as stated in the Buy Clean Campaign.

1. Nation-wide, Bird-Safe Building Design standards are used as a vital bird protection measure for building permits by various federal, state, county, and city agencies and promoted by environmental groups and ornithological experts.
2. Supporting Bird-Safe Material¹² and Design Features for California Building Standards (BSDC) is crucial for the prevention of fatal glass collisions of the declining local and migratory North American bird population in California.
3. The BSDC will put essential state-wide effective, preventive measures in place, which are based on the expertise of the American Bird Conservancy's Collisions Program and the Audubon Society.
4. As studies show, it is vital to address the cumulative threats that cause bird declines of which glass collision ranks in second place. The BSDC will help prevent or lessen this threat for local and migratory bird populations in California, which is of outmost importance, because
 - a. The California 600 bird species and 450 common species account for two-thirds of the North America bird population, thus ranking the state as one of the most diverse in the country.

¹² [How Better Glass Can Save Hundreds of Millions of Birds a Year](https://www.nationalgeographic.com/news/2014/11/141113-bird-safe-glass-window-collision-animals-science/)

<https://www.nationalgeographic.com/news/2014/11/141113-bird-safe-glass-window-collision-animals-science/>

- b. 386 neotropical migratory bird species depend for their survival on the California habitats as they fly in the significant Pacific Migratory Flyway.
 - c. Birds are unable to recognize glass. The U.S. Fish and Wildlife Service estimates that collision with building glass is currently the second greatest source of direct mortality for approximately one billion North American birds each year, which contributes heavily to North America bird population decline.
 - d. Local and migratory bird habitats are being compromised and encroached on by increasing human building developments, which escalate the danger of glass collisions.
5. Implementing the BSDC will put preventive measures in place to
- a. assist protection of California's nationally high-ranking status for local and migratory North American birds.
 - b. sustain birds' crucial role in the natural ecosystems, serving as pollinators, predators, scavengers, seed dispersers, and engineers in riparian, wetland, and coastal habitats and deliver effective, cost-free insect and rodent control.
 - c. reduce the increased glass collision threat of the California booming building market.
 - d. lower energy production and thus have a positive, cumulative impact on climate change.
 - e. decrease the energy expenses for the lower income population because the previously implemented Bird-Safe Building Design standards has resulted in diminished cost for lighting, heating and air conditioning.
 - f. absorb and reflect less heat, which benefits the health of the watershed and the impact on climate change by reducing the "Urban Heat Island" effect and meeting an appropriate window solar heat gain coefficient (SHGC).
 - g. support California's climate change laws and programs, and California Sierra Club Energy Resolution- 2015-05-31, and all plans consistent with climate-stabilizing targets.
 - h. reinforce a thriving and growing birder industry, which added \$13 billion in 2011 local, state, and federal tax revenue.

Arguments Against:

1. The building industry is concerned that the resolution could increase the construction cost.
2. The resolution isn't valid for all areas or locations in California.

Who has approved this resolution?

What was the vote at the chapter ex-com, the committee meeting?

Strategies and Action Plans:

Passing the resolution would enable Sierra Club California chapter staff, activists and Club members to make statements and take actions that directly and clearly support measures to prevent glass collisions of local and migratory North America birds.

The Sierra Club, Santa Cruz County Group developed this resolution in coordination with Dr. Shani Kleinhaus of the Santa Clara Audubon Chapter , Executive Committee member of Sierra Club Loma Prieta Chapter and Dr. Christine Sheppard, Director of the of the American Bird Conservancy (ABC) Glass Collision Program. The resolution was suggested and encouraged by Sierra Club California Conservation Organizer Molly Culton.

The presentation of the City of Santa Cruz Bird-Safe Building Design standards was well received by Assemblymember Mark Stone's Office, and they encouraged us to submit the standards to be explored as a potential 2020 Assembly Bill.

We will keep reaching out for the expertise of Dr. Shani Kleinhaus and Dr. Christine Sheppard as we integrate input from review by other Sierra Club chapters and groups. We will ask other environmental organizations to sign on in support of the resolution.

We will develop community education around the ideas:

- Bird-Safe Building Design standards are hot because they are cool for birds
- Why Bird-Safe Building Design standards matter

Urgency: No urgency. Resolution submitted before deadline.