

ORNITHOLOGY

Why are birds in California dying?

An exploration into the correlation between bird population decline and the rise of skyscrapers in California cities

Across American cities we can see an increase in high rises with entirely glass facades. Why is this the stylistic norm when, concurrently, we can observe the top threat to birds in the United States, as of 2017, is collision with building glass. Along with environmental threats to habitats, how does our human love of all-glass buildings affect bird populations?

In the early 1980s, glass became a dominant material in architecture, particularly for high-rise buildings. Cities across California, including Los Angeles, San Francisco, and San Diego, began to embrace sleek, reflective glass facades, offering energy efficiency and a modern aesthetic. At the time, the full implications for local wildlife, especially birds, were not yet understood. By the late 1990s, the first studies began to draw attention to the growing number of bird fatalities caused by collisions with glass buildings. Birds, especially migratory species, often fail to perceive clear glass windows or see reflections of trees or sky in them, leading to fatal crashes. As urban landscapes became more glass-dominated, incidents of bird strikes became more frequent.

By 2000, California was home to several of the tallest buildings in the United States, many with glass exteriors. These structures reached ever greater heights, contributing to the growing number of bird collisions. Some of the tallest buildings, such as the Salesforce Tower in San Francisco (completed in 2018) and the Wilshire Grand Center in Los Angeles (completed in 2017), are over 1,000 feet tall, increasing the risk for both resident and migratory bird species. From the early 2000s onwards, California saw increasing pressures on bird populations, not only due to glass buildings but also due to the destruction of natural habitats. Urban sprawl, deforestation, and climate change all combined to further threaten local species, including iconic birds like the California Condor, which faced near extinction, and migratory species such as swallows and sparrows.

By 2010, studies by organizations like the American Bird Conservancy and The Fatal Light Awareness Program revealed that building collisions had become one of the leading causes of bird deaths in urban environments. In fact, as of 2017, it was estimated that up to 1 billion birds die every year in the U.S. due to collisions with glass structures. In California, this threat was exacerbated by the state's dense population of migratory birds. Around 2015, the California Bird Species Assessment Program began tracking significant declines in bird populations. For example, the Western Meadowlark, a species once abundant

across the state, saw its population decrease by over 50% in the preceding decades. Similarly, the California Quail, the state bird, has faced serious population challenges due to habitat fragmentation, pesticide use, and collisions with glass buildings. In 2017, the American Bird Conservancy published a report highlighting that collisions with glass buildings were responsible for killing an estimated one billion birds annually in the U.S. The report also noted that California, with its large urban centers and growing number of high-rise buildings, was one of the most affected states. Researchers called for a widespread adoption of bird-friendly building designs, such as frosted glass, screens, or special coatings to make windows more visible to birds. As awareness of the problem grew, some cities in California began to take action. San Francisco, in particular, enacted new guidelines for bird-safe buildings in 2020, requiring developers to integrate bird-friendly features into the design of new and existing structures. These measures included using patterned glass, installing screens or netting, and reducing the amount of reflective glass used in building facades. Other cities, including Los Angeles and Sacramento, followed suit with their own building regulations aimed at mitigating bird collisions. Despite some progress, California's bird populations continued to face challenges from both environmental factors and urban development. Between 1982 and 2022, the state saw significant declines in several bird species, with climate change and habitat loss compounding the impact of glass buildings. However, the adoption of bird-friendly building standards in certain urban areas and an increasing awareness of the issue among architects and city planners gave hope for a future where birds and buildings could coexist more safely.

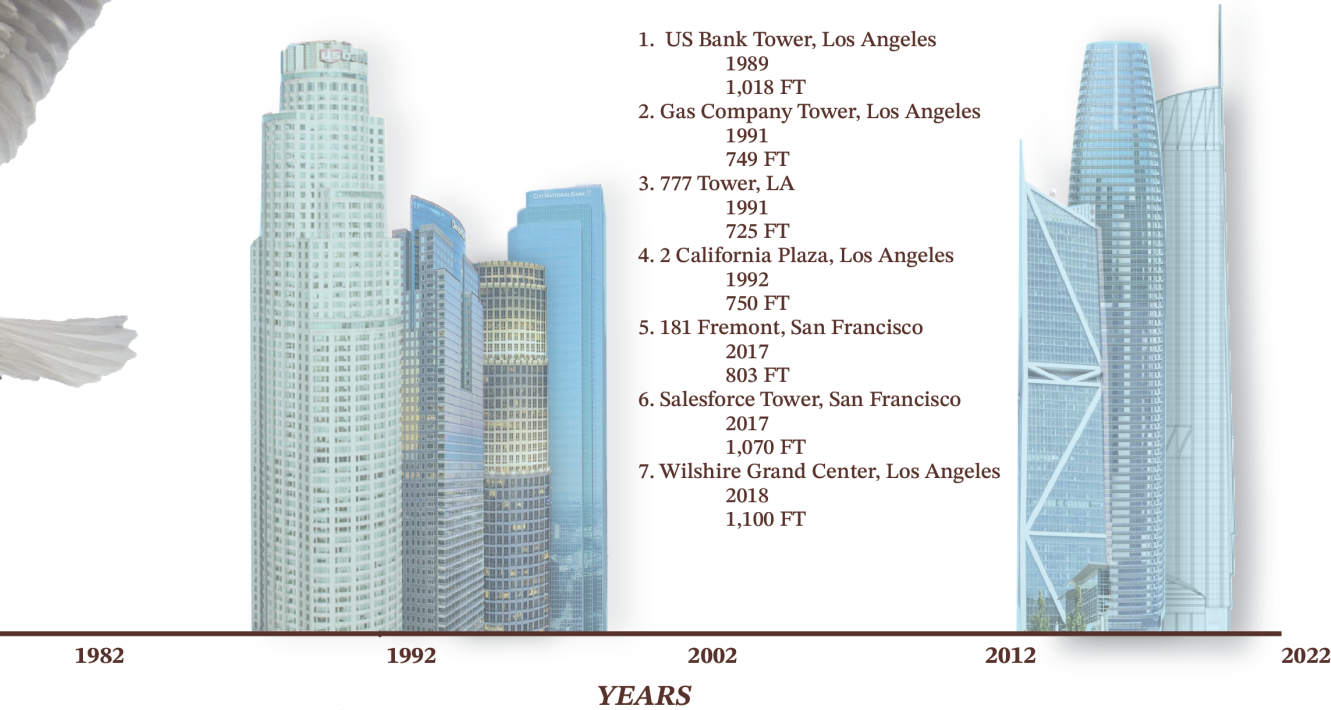
Web Sources

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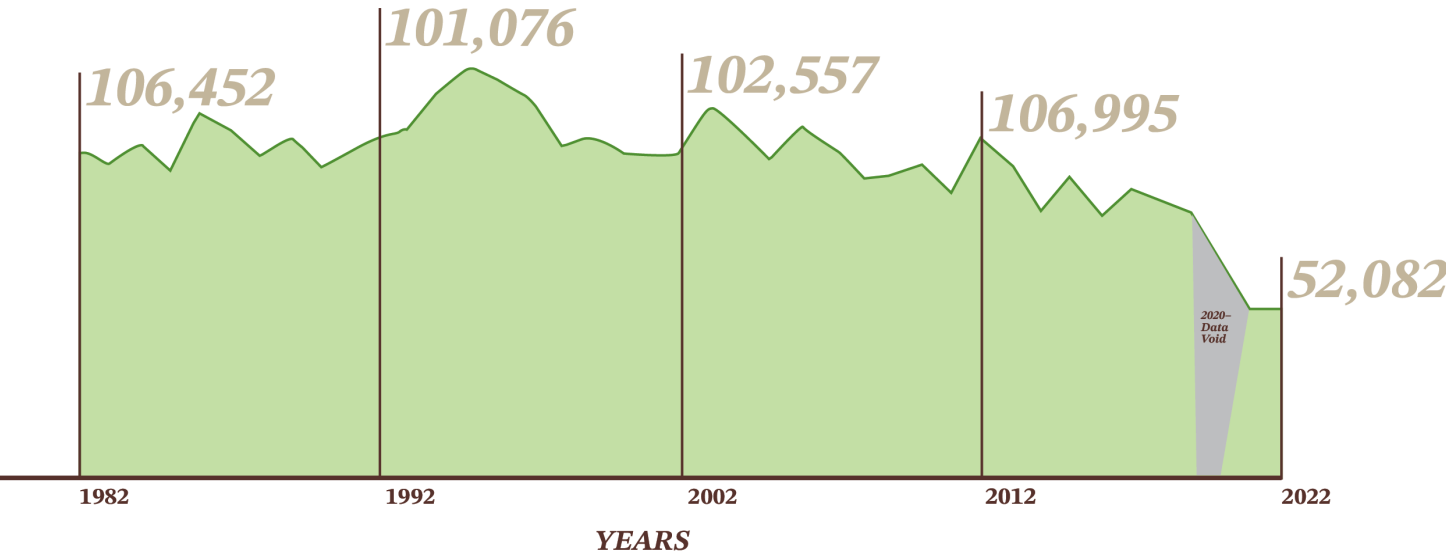
Threats to Birds in the US

	Estimated casualties per year
1. Collision - Building Glass	599,999,999
2. Collision - Vehicles	214,500,000
3. Collision - Electrical lines	25,500,000

Tallest Buildings in California completed since 1982 (left to right)



TOTAL BIRD POPULATION IN CA



Data Sources
Bird Population: [pwr.usgs.gov/](https://www.fws.gov/)
Bird Threats: <https://www.fws.gov/>
Buildings in CA: <https://www.skyscrapercenter.com/>