

**U.S. Senate Committee on Environment & Public Works, Fisheries, Water, and Wildlife
Subcommittee**
November 14, 2023, Hearing on Wildlife Corridors
Witness Testimony - Charlton H. Bonham
California Department of Fish and Wildlife, Director

Thank you, Subcommittee Chair, Senator Padilla and Ranking Member, Senator Lummis, other Subcommittee members, and staff for the opportunity to submit this testimony into the record for your hearing on November 14, 2023, which is examining challenges and opportunities to facilitate wildlife movement and improve migration corridors.

My name is Chuck Bonham and I have the privilege to serve as the Director of the California Department of Fish and Wildlife. Our department traces its origin back over 150 years to the Board of Fish Commissioners created in the California Constitution, making us one of the earliest state or federal wildlife agencies in the United States and today is one of the largest with over 3,000 employees and an approximately \$1 billion budget. I draw on my tenure over the last twelve years as the longest-serving Director of this department to conclude that the topic of your hearing is one of the most important in the country, the West, and in California for the health and future of wildlife.

California is like no other place. Unrivalled diversity exists in every way and every corner of the state, from its communities to its economy, across geography, and within its innovative people power.

Nature in California is no different. One reason California is so unique is its natural wealth. We are home to more types of animals and plants than any other state in the Union. California also has the most species that occur nowhere else but in the Golden State. These measurements help define the scientific term biodiversity – meaning the variety of life in a particular place. This term – biodiversity – can also be applied to different scales of life from regions to watersheds, genes, species, and ecosystems. Imagine areas of exceptional plant and animal life spread throughout California's varied iconic landscapes – the Mojave Desert, the Redwood Forests, the Sierra, to the California Current off our Pacific Coast – and it is easy to appreciate why California is one of the most biodiverse places in the world and one of only a few noted global biodiversity hotspots.

At the same time, California sadly has the highest number of imperiled animal and plant species. This reality was recently crystallized in a March 2022 New York Times' publication outlining where biodiversity is most at risk in America. There are many reasons, most notably the effects of climate disruption and habitat loss or fragmentation.

The central focus of today's hearing and my testimony is encapsulated in one word – connectivity. Connectivity is the underpinning of both biodiversity and nature, and the challenges wildlife face.

All of life needs connection. This fact is true for people where social connections are an antidote to a chaotic world. Science tells us people need connection and that there are many benefits from human, social connectivity. Science tells us the natural world

**U.S. Senate Committee on Environment & Public Works, Fisheries, Water, and Wildlife
Subcommittee**

November 14, 2023, Hearing on Wildlife Corridors

Witness Testimony - Charlton H. Bonham

California Department of Fish and Wildlife, Director

needs it too. Just like for humans, plants and animals reap vast benefits from connectivity.

Increasing connectivity is a critical strategy for addressing habitat loss and fragmentation, a top threat to biodiversity. Connectivity refers to the degree that organisms or natural processes can move unimpeded within and between habitats – both terrestrial and aquatic. Across the United States, wildlife is losing the ability to move and migrate as habitat conversion and built infrastructure disrupt or impede migration corridors.

In California, the challenges and solutions for wildlife migration and movement corridors have names and are grounded in examples, places, and communities that provoke passion. Our state's citizens care deeply about wildlife. Californians' views about wildlife are as diverse as every other aspect of the state.

For some, a mountain lion can gain international recognition as P-22 did once he made the cover of National Geographic in an iconic photo below the Hollywood sign wandering the Santa Monica Mountains trapped within a network of roads and highways, sparking a movement led by individuals like Beth Pratt at the National Wildlife Federation, state and federal agencies, Tribes, and philanthropic partners such as the Wallis Annenberg Foundation all leading to the construction of the world's largest wildlife crossing over 10 lanes of highway in Los Angeles. However, connectivity benefits more than just large mammals. It also supports small mammals, birds, amphibians, invertebrates, plants, and reptiles. The reality is all kinds of wildlife are affected by the lack of movement corridors, including in California more than 60 species of reptiles and amphibians such as the Mojave Desert tortoise, arroyo toad, blunt-nosed leopard lizard and more. Something similar plays out for our highly migratory fish like salmon and steelhead as they swim back up our rivers through culverts, over barriers, and running into dams. This upstream migration comes at the end of a journey as remarkable and captivating as any in nature, where salmon and steelhead are born in California's rivers, swim downstream to the sea, and after spending time growing in the Pacific Ocean magically return to the place they were born.

In 2022, the last year for which the California Department of Fish and Wildlife has data, approximately 1.9 million hunting and fishing licenses were sold, which is more than the total population of at least a dozen different states in the United States. The angler knows salmon and steelhead and trout face migration barriers that greatly shape their continued existence in California's rivers and streams. The hunter knows that majestic large animals like bighorn sheep need the ability to migrate across large landscapes to survive. All of California's 39 million citizens likely intuitively would understand what it means for wild animals to have freedom to roam regardless of their respective relationships to nature.

**U.S. Senate Committee on Environment & Public Works, Fisheries, Water, and Wildlife
Subcommittee**
November 14, 2023, Hearing on Wildlife Corridors
Witness Testimony - Charlton H. Bonham
California Department of Fish and Wildlife, Director

Connectivity provides freedom to roam and allows our species, that know no political or jurisdictional boundaries, to utilize landscapes with reduced impediments primarily caused by human made linear infrastructure such as roads, canals, and railroads. Species frequently will attempt to cross infrastructure leading to direct mortality. Additionally, lack of connectivity significantly affects natural processes. Processes like gene flow, seasonal migration, pollination, foraging, predator-prey dynamics, and even nutrient cycling.

This ability to move within and between habitats is also one of the most essential life strategies we as people can preserve for the animal kingdom's adaptation to climate disruption. Climate change has scrambled the world for many plants and animals resulting in some species shifting their range, altering the timing of key life strategies, or exhibiting differences in tolerance to heat. At the end of the day, animals and plants are left with three basic reactions – they can adapt, they die, or they can move. Ensuring that they have the freedom to move is our collective job.

Moreover, make no mistake about one fact. A huge cause of wildlife mortality is vehicle collision. This glaring fact is also a people problem.

The University of California, Davis runs one of the only centers focused on the nexus between wildlife and vehicle conflict. Its Road Ecology Center used observations of reported traffic incidents and animal carcasses in a special report in 2019 to estimate the total annual cost of reported (large) wildlife-vehicle collisions in California for 2018 to be at least \$232 million and the cost to society over the prior four years to be over \$1 billion. That is not good for people nor for businesses, for public safety, and certainly not for wildlife, big or small.

Yet, smart investments in infrastructure can solve this problem and shrink the risk to people and wildlife. This problem is fixable. The data speaks for itself. It tells a positive story.

For example, estimates indicate wildlife passage features reduced vehicle-wildlife collisions in several western states. By 85% in Oregon along U.S. 97. By 81% in Wyoming along Highway 30. By 90% in Colorado along Highway 9. By 98% in Utah along I-15. In this regard state, federal, Tribal, and private partnerships that modernize infrastructure ensuring wildlife corridors are good investments with a great return. California, and many areas across the United States, are at a pivotal point where we must continue to aggressively pursue mitigating the impact of development and climate disruption on our species. This includes doing the immediate and necessary mitigation to lessen impacts from humans, drought, extreme heat, and wildfire.

We must also increasingly take our effort and investments to a much more impactful scale. The California Department of Fish and Wildlife has listened and learned from

**U.S. Senate Committee on Environment & Public Works, Fisheries, Water, and Wildlife
Subcommittee**
November 14, 2023, Hearing on Wildlife Corridors
Witness Testimony - Charlton H. Bonham
California Department of Fish and Wildlife, Director

other western states on ideas and partnerships to advance wildlife migration and movement corridors. Our partnerships are essential with the United States Fish and Wildlife Service, federal and state transportation agencies, the Association of Fish and Wildlife Agencies, Tribes, and many others. The level of energy and enthusiasm for wildlife migration and movement corridors makes this work solution-based, and, frankly, as much a non-partisan natural resources issue as any that exists.

Examples of this leadership exist in different corners of the country, such as Wyoming where in 2017 the Wyoming Game and Fish Department and Wyoming Department of Transportation came together with many interested stakeholders to develop a long-term planning initiative to identify and prioritize projects that reduce wildlife-vehicle collisions. In Arizona, where the Game and Fish Commission just recently adopted a resolution recognizing the importance of wildlife connectivity and the need to avoid, minimize, and offset impacts to wildlife and wildlife habitats. North Dakota is continuing investments to monitor the success of installed undercrossings along Highway 85, which has shown that many animals have successfully navigated the underground passages hundreds of times.

The same is true on the federal front. The Department of the Interior has collaborated with the Association of Fish and Wildlife Agencies, the Wyoming Wildlife and Natural Resource Trust, Native American Fish and Wildlife Society, and the National Fish and Wildlife Foundation to host convenings about restoration of wildlife corridors and habitat connectivity in a way that supports Tribes, local communities, state wildlife agencies, and honors private landowner rights. Just this spring of 2023, the Department of the Interior announced another round of grants across nine states to secure key corridors.

Other federal funding programs for connectivity and wildlife crossings exist at agencies such as the Department of Transportation and the Federal Highway Administration (FHWA). The Wildlife Crossings Pilot Program (WCPP) is a crucial program because it focuses on establishing safe passages for wildlife across roadways, seeks to mitigate the impact of transportation infrastructure on natural environments, and decreases wildlife vehicle collisions across America. WCPP's plan to protect both people and wildlife is supported by the Bipartisan Infrastructure Law (BIL), which provided \$350 million annually in funding through FY 2026. We just need more of that program, more programs like it, and all associated processes to move faster.

Time and money to build infrastructure and modernize it is a key challenge. Moving faster and smarter to strategically leverage federal support through FHWA programs means increasing collaboration with state wildlife agencies, because much of the research, planning, and coordination that has already been done related to identifying animal migration patterns and crossings is at this state level.

**U.S. Senate Committee on Environment & Public Works, Fisheries, Water, and Wildlife
Subcommittee**
November 14, 2023, Hearing on Wildlife Corridors
Witness Testimony - Charlton H. Bonham
California Department of Fish and Wildlife, Director

There is synergy between federal and state wildlife agency efforts in this arena. All state wildlife agencies work on state wildlife action plans. Wildlife corridors play prominent roles in those state authorities to conserve and manage species. Moreover, Secretarial Orders at the Interior Department instruct federal agencies to work in close partnership with Arizona, California, Colorado, Idaho, Montana, Nevada, New Mexico, Oregon, Utah, Washington, and Wyoming to enhance and improve the quality of big-game winter range and migration corridor habitat on Federal lands in partnership with those states. This synergy has real-world practical benefits when state and federal and Tribal wildlife agencies collaborate to complete analysis detailing corridor maps, stop-overs, winter ranges, and other wildlife characteristics so that migration can be considered by state and federal transportation officials when working to maintain wildlife migrations in the Western States.

Similar efforts have been taken in California with several groups led by the California Department of Fish and Wildlife and the California Department of Transportation (Caltrans) who have begun identifying and reporting on priority fish passage and wildlife movement barriers. Moreover, over the last several years the California Legislature has appropriated additional funds and focused on improving collaboration between state agencies to assist in understanding and mitigating impacts to fish and wildlife, modernize infrastructure, increase permitting streamlining, and increase wildlife connectivity.

As examples, in 2005, Senate Bill 857 mandated that Caltrans locate, assess, and remediate fish passage barriers on the state highway system for any project using state or federal transportation funds. More recently, in 2021, Senate Bill 790 created new permitting options to improve the mitigation incentives for developers and transportation agencies to receive credits for connectivity projects. In 2022, Assembly Bill 2344 required Caltrans, in consultation with the California Department of Fish and Wildlife and other appropriate agencies, to establish an inventory of connectivity needs on the state highway system where the implementation of wildlife passage features could reduce wildlife-vehicle collisions or enhance wildlife connectivity.

Additional examples of this bold leadership at the project level exist in different corners of California. In Los Angeles, completing the 210-foot-long and 175-foot-wide Wallis Annenberg Wildlife Crossing on Highway 101 at Liberty Canyon will modernize heavily used transportation infrastructure, better protect the public safety by reducing animal vehicle collisions, and serve as an essential action to protect local mountain lion populations from extinction. This is the legacy of the famous P-22 lion's life.

Similarly in Riverside County, the Clinton Keith Wildlife Crossing Project was completed in 2017 that provides a safer, natural passage for butterflies, birds, insects, deer, coyotes, mountain lions, foxes, roadrunners, and rodents, including the Quino checkerspot butterfly, a federally listed endangered species. Elsewhere in the state, Caltrans is

**U.S. Senate Committee on Environment & Public Works, Fisheries, Water, and Wildlife
Subcommittee**
November 14, 2023, Hearing on Wildlife Corridors
Witness Testimony - Charlton H. Bonham
California Department of Fish and Wildlife, Director

leading collaborative efforts to address hundreds of barriers to fish migration, like culverts. Tribes and others are leading efforts to remove antiquated dams, such as on the Klamath River where the removal of four dams along the California and Oregon border will improve river health for salmon by restoring access to over 420 miles of habitat for the first time in a century.

California is moving to protect bighorn sheep and other wildlife along the Interstate 15 corridor where research done by Oregon State University, the California Department of Fish and Wildlife, and the National Park Service has demonstrated the impacts that hardened infrastructure can have on fragmenting habitat and disrupting the migration of sheep along the Mojave Desert mountaintops. This scientific research also identified the crucial spots within this transportation corridor needing connectivity. Now a partnership between many including transportation agencies, the private electric rail development connecting Las Vegas, Nevada, and Los Angeles (Brightline West), and wildlife agencies is using this information and collaboration to create solutions and is poised to construct three overcrossings for the highway and high-speed train line in 2024.

These projects are united in their ability to future-proof California, rethink our relationships with people and nature, and take dramatic, world-leading actions to implement nature-based solutions that connect our fragmented habitats and prepare us for a changing climate. The common characteristic of each type of habitat connectivity project is allowing species to persist and utilize landscapes during their life histories so that California remains a biodiversity hotspot. Wildlife habitat connectivity is a primary action to create species resiliency in the face of climate change impacts.

California is committed to, and has shown, its commitment to connectivity. In the last two years alone, California has committed \$90 million toward connectivity planning and implementation for wildlife crossings and millions more in support of projects addressing fish passage just through the California Department of Fish and Wildlife. This number is considerably higher when factoring in Caltrans and California Wildlife Conservation Board funding.

California has also invested in the needed science and data to support connectivity efforts and inform future development planning. The California Department of Fish and Wildlife maintains several critical databases that gather spatial data on fish, wildlife, vegetation, and habitats from across the state, and then synthesizes this information into thematic maps to help inform discussions on the conservation of biodiversity, habitat connectivity, and climate change resiliency. The department released “Restoring California’s Wildlife Connectivity 2022” prioritizing the roadways, railways, and other infrastructure in the state with the greatest need to create wildlife movement.

**U.S. Senate Committee on Environment & Public Works, Fisheries, Water, and Wildlife
Subcommittee**

November 14, 2023, Hearing on Wildlife Corridors

Witness Testimony - Charlton H. Bonham

California Department of Fish and Wildlife, Director

Connectivity projects take time and require persistent collaboration. They take bold investments in planning, implementation, and monitoring, including the necessary resources to support the leadership and engagement needed to move these projects forward. This hard work can and must be done. We just have to do it on a much bigger scale and at a faster pace through more partnerships. And, here, "we" means all of us. The California Department of Fish and Wildlife takes pride in our state's rich biodiversity while being steadfastly and soberly aware of the serious job ahead when California has more rare and imperiled species than any state with more than 30% threatened with extinction.

I thank the Subcommittee Chair and Ranking Member for hosting this important hearing and the opportunity to provide my testimony. With your leadership solutions can be advanced to improve habitat connectivity facilitating wildlife migration and movement corridors across public, tribal, and private lands. I am absolutely convinced that the future of the fish and wildlife we love depends on it.

Through continued bipartisan collaboration amongst the states, their departments, the federal government, Tribes, and the many communities passionate about connecting our habitats, we can safeguard our ecosystems, ensure that all living things can move freely, and preserve the amazing biodiversity of the United States.