# California Wildlife Center

## Patient of the Week

### April 26, 2024

# Dimorphism

Have you ever wondered why a male and female of the same species have physically distinctive characteristics? Perhaps you have visited a duck pond and noticed that some of the ducks had vibrant green heads while others did not. This is evidence of a biological condition known as Dimorphism and is common among many species of birds, across various butterfly species, and even in elephant seals, just to name a few! Dimorphism within species can be present through plumage, size, weight and even in their mating and social behaviors. Plumage Dimorphism in birds is quite common and is most often evident in a male's bright and vibrant feather accents compared to the duller and more muted expressions often seen in females. Our spotlighted species of the month, the California Quail, is another fascinating example of plumage dimorphism in the wild.

Male California Quail in care at CWC.

Both the female and male California Quail have a similar scaling pattern on their chests, but the male exhibits deeper coloring overall. The male quail has defined black and white facial markings, a patch of deep rust-colored feathers on top of his head and a dramatic topknot, a name given to the upward thrust of feathers sprouting from the crown of the quail's head. Meanwhile, the quail hen is quite drab by comparison; she is mostly grey and light brown, has a short topknot and no dramatic facial or head markings. The female quail can however camouflage more easily, thus making her more successful at creating her ground nests and supporting her young.

Dimorphism is an evolutionary response to a species' mating patterns. Male quails developed a unique plumage to stand out from the crowd and demonstrate their fitness for reproduction. Over generations their repeated selection by females further reinforced those dramatic traits in their offspring, a process Charles Darwin referred to as Sexual Selection. During mating season, male quail do not solely rely on their beauty to secure a mate however and can be quite aggressive in their search for a hen. Male quail are often very vocal and quick to pick fights with the other competing males.

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It is worth noting that some birds do not display plumage dimorphism at all. There are many theories as to why this might be. For one, species that have less color variation among sexes tend to be monogamous, with the males showing greater involvement in the child rearing responsibilities. It is also thought that larger birds have less color differentiation because their predation risk is lower. Many raptors, like the Red-tailed Hawk, look almost identical between the sexes but often the female raptor is larger than its male counterpart. This is believed to be because males often do the hunting while females oversee the protecting of their nests. Her size presents an advantage when protecting and incubating her young, while the slightness of the male allows him to be swift and fast in his hunting duties.

Dimorphism in animals matters because it helps them find and compete for mates thus ensuring species survival. Dimorphism can manifest through a range of characteristics, including physical differences such as weight, height, facial structure, varied feather or fur patterns and color shades. Differences among the sexes in a species can also be seen in the social and behavioral dispositions they present in the wild. The California Quail along with other avian species highlight these gendered differences so well and do it through dramatic plumes, size variations, colors, patterns and in their mating behaviors. Studying this phenomenon teaches us how species evolve and survive in different environments, showing us how amazing and diverse nature can be.

Juvenile Mountain Quail in care at CWC.