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Notes of a Naturalist

A newsletter bringing you the species, landscape, history, and happenings of the Taft-Nicholson Center

Photo Credit: Shane Mills

A Convergence of Carnivores

What happens when bears, wolves, and mountain lions converge? The Greater Yellowstone Ecosystem is one of the few places in the United States where these large predators overlap. This wasn't always the case. All three species historically had much larger ranges in North America. Grizzly bears once roamed the Great Plains west to the coast of California, from Alaska into Northern Mexico, but current populations in the lower 48 are limited to pockets of Wyoming, Montana, Idaho, and Washington. Gray wolves were once found across most of North America, Europe, and Asia. Today, the only places in the continental U.S. where wolves can be found are the Northern Rockies, the Great Lakes region, and a small pocket of the Southwest. While cougars are considerably more widespread than wolves or grizzlies, their story is much the same. These large cats were once the most widely distributed terrestrial mammal in the Western Hemisphere, with a distribution that included all of South America and most of North America.



Photo Credit: NPS/Neal Herbert

Various studies of the reintroduced Yellowstone wolves have highlighted the vital role this keystone species plays in the ecosystem. Wolves help keep elk and other ungulate populations in check, allowing willows, aspens, and cottonwoods to thrive. These trees are vital resources for beavers, and the return of wolves has spurred a rebounding beaver population in Yellowstone. Most studies of predators focus on these top-down effects on the food chain. But predators also provide ecosystem services in less obvious ways.

A wolf- or cougar-kill often becomes a meal for many other scavenging carnivores. A recent study in the Greater Yellowstone documented 39 vertebrate species directly feeding on cougar kills. Scavenging visitors included foxes, coyotes, magpies, golden eagles, and even chickadees, who feed on carrion for extra fat and fuel in the winter. From this study, it was estimated that at least 28% of mammal species and 11% of bird species in the Greater Yellowstone may make meals out of a cougar's leftovers. That number is even higher when invertebrate scavengers are included. Researchers in another study based in the Greater Yellowstone Ecosystem collected over 200 different beetle species from 18 cougar-killed carcasses. Many of these were beetles that require carrion for some portion of their life cycle. This study suggests that predators play a large role in beetle communities, which in turn have important roles throughout the ecosystem.

Each of these large predators plays an important role in a healthy ecosystem. Their niches may overlap, and competition between predator isn't uncommon. Still, bears, wolves, and mountain lions each have a unique strategy for hunting and survival: large size and brute force, strength in numbers, and stealth.



Photo Credit: NPS/ Jim Peaco

Grizzly bears (*Ursus arctos horribilis*) are the largest carnivores in the Greater Yellowstone, weighing anywhere between 200-700 pounds. Black bears are smaller, generally between 130-300 pounds. While their range has drastically been reduced, this smaller species is still the most common bear in North America. Grizzly and black bears once overlapped across much of the continent, but today the Greater Yellowstone Ecosystem is one of the few places in the continental U.S. where both bear species can be found. Bears spend the winter in a dormant state, and are the largest animals known to do so, but the other large predators of the Greater Yellowstone continue to roam throughout the winter.

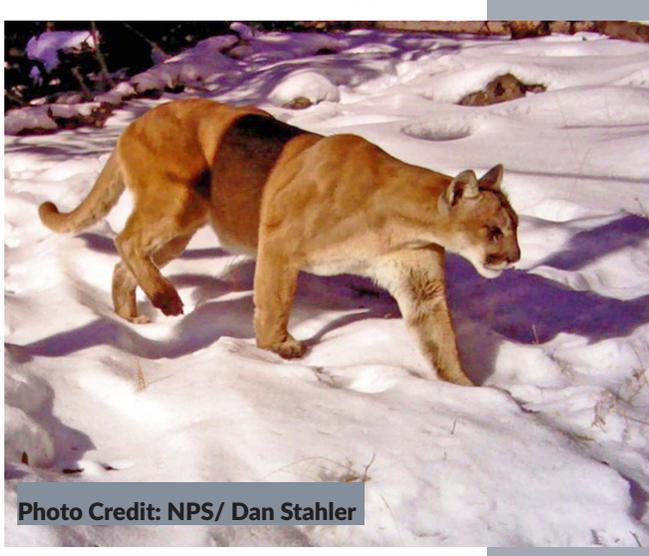


Photo Credit: NPS/ Dan Stahler

Wolves (*Canis lupus*) are the largest wild dog in the world. Size and weight vary, especially by latitude – those living farther north are generally larger. In the Yellowstone region, they can weigh between 80-130 pounds. A wolf's paws are disproportionately large, which helps them walk across snow. Their legs are also relatively long compared to their body size, allowing them to move through deep snow a bit easier. A double coat of fur keeps them warm in the winter. While wolves have been known to howl any time of day, and any time of year, it's more common to hear howling at night and in the winter, particularly leading up to their breeding season in February. For this reason, January's full moon is sometimes called the "wolf moon". Wolves were reintroduced into Yellowstone National Park in 1995 using individuals from the Rocky Mountains in Canada. They have since spread outwards to other portions of the Greater Yellowstone Ecosystem. A very small population resides in the Northern reaches of Centennial Valley.

Bears exhibit some of the same top-down effects as other predator species, though they will steal meals from cougars and wolves. They are also technically omnivores, relying much more on plants than their more strictly carnivorous counterparts. This means they have a more direct impact on plant populations as well. Thanks to the copious amounts of berries they eat in summer and fall, bears are excellent seed dispersers.

Cougars, the stealthiest of these large predators, have the most common names of any animal, with over 40 names in the English language alone. These include mountain lion, puma, panther, catamount, and ghost cat. Their relatively large paws, with a high surface area, allows them to travel through snow to stalk prey throughout the winter. They are also well-adapted for low-light hunting, with eyes that are six times more light-sensitive than ours, and highly sensitive whiskers (or vibrissae). They remain active in the winter, often following prey species to lower elevations. Because they are more elusive than wolves or grizzlies and tend to occupy much more rugged territory, it's been hard to track their return to the Greater Yellowstone Ecosystem.



Happy New Year from the Taft-Nicholson Center!

Best wishes for 2023 and the winter season!

Photo Credit: Shane Mills