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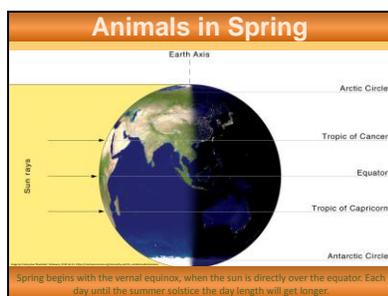
The Game Commission is the state wildlife management agency whose mission is to manage and protect wildlife and their habitats while promoting hunting and trapping. The Game Commission manages the states 480 birds and mammals. Can you name a Pennsylvania wild bird or mammal? During this presentation, you will learn about some of Pennsylvania's birds and mammals in the spring.

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What is your favorite season? Today we are going to focus on animals in spring. For many of us, the return of songbirds singing outside our windows in the morning is a sure sign of spring. Eastern bluebirds, American robins, and red-winged blackbirds are all considered harbingers of spring. More about this later, but first can you think of another sign of spring? What exactly is spring anyways?

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To answer that question, we need to look at how the Earth is tilted. Earth spins on its axis (imaginary line the earth rotates around), which is tilted by 23.5 degrees. This tilt causes places on Earth to receive different intensities of sunlight at different times of the year, which results in changes of temperature and leads to seasons. In the Northern Hemisphere, spring is a season that begins when the sun is directly over the equator. Each day until the summer solstice the day length will get longer and warmer.

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For most animals, longer days and warmer temperatures have major effects on their features and behavior. As temperatures increase, the snow melts and plants begin to grow. Animals that migrated during the winter return home and hibernating animals emerge. The animals that “toughed it out” through the winter, also undergo some changes. Let’s look at some of Pennsylvania’s birds and mammals in the spring.

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Black bears emerge from hibernation in March and April. During hibernation bears don’t eat, drink, or produce any waste and live on their fat reserves. When they come out of hibernation, they need to find food to replenish what they lost during hibernation. The first foods that are available are usually plants that grow in wetland areas such as skunk cabbage. Bears may find an easy meal at a bird feeder but this is not good for bears or humans. These bears become a nuisance and can create many problems. It’s best to remove bird feeders and secure other attractants.

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As spring progresses and more food becomes available, bears feed on emerging forest plants. Insects become an important protein food source; logs torn up is a common sign of bears looking for insects. Other sources of protein include various bird and mammal prey species. As spring transitions to summer, bears begin to feed heavily on a variety of fruits. In the late spring, mothers drive off yearling bears, right before the breeding season. Yearling males leave the area and females tend to stay in the same area as their mother. Breeding season begins in early June and lasts until mid-July. Usually females with cubs don't breed until the following year.

Groundhogs emerge from hibernation in the spring, too. Groundhogs are fossorial (burrowing) rodents. Groundhogs are herbivores and feed on a wide variety of plants. Males emerge from hibernation before females, and during February and March fight aggressively. They put on enough fat prior to hibernation to sustain them during mating season (late February-March), when succulent green foods are scarce. Females have three to four young that are born in April and early May in an underground nest. Newborns are born blind, furless, and helpless. Biologists use the term altricial to describe newborn wildlife that is born helpless and require significant parental care. The young stay in the underground nest for about a month. They are ready to be on their own and establish their own territories by mid-June or early July. As they travel to their new home, they become vulnerable to predators

and vehicle collisions. Groundhogs have an important role in the environment; they are a food source for several animals and their burrow digging aerates the soil and provides escape routes for many other animals. Some animals will also utilize abandoned woodchuck burrows for their own den.

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Other mammals that return to the Pennsylvania landscape in the spring after emerging from hibernation are chipmunks and bats. Bats are the only mammals that fly. Six of our native bats emerge from hibernation in the spring while three others migrate back from the south. All of Pennsylvania bats feed exclusively on insects (insectivores). Our small hibernating bats are estimated to consume nearly a million insects per bat per year. Bats locate their prey using echolocation. By eating insects, bats save U.S. agriculture billions of dollars per year in pest control.

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During the spring, antlers begin growing on male white-tailed deer and elk. Antler growth is a complex process driven by hormones and photoperiod (day length). Annually, antler growth begins when the days are lengthening – between the spring equinox and the summer solstice. Antlers begin growing out of two bony bumps on their head called pedicles. Antlers start out as layer upon layer of cartilage. Soft furry skin, called velvet, covers the growing antlers. The velvet contains blood vessels and veins that supply nutrients to the growing bones. As the summer progresses, decreasing daylight and increasing testosterone levels stops antler growth. By Mid-August, antlers are typically fully developed. They have mineralized into solid bone and the blood supply has stopped flowing to the velvet. The velvet dries up and then rubbed off, exposing the bone antlers.

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More daylight causes a fur color change in snowshoe hares. As their eyes receive more daylight, it stimulates the pituitary gland at the base of the brain to turn on pigment production in the fur. Their winter fur changes from white fur to brown fur. This process is known as phototropism and has nothing to do with cold temperatures or ground color. Their molt is gradual, white hairs are replaced with brown hairs, starting with the head and back and ending with the ears and feet. As the days get shorter in the fall, their eyes receive less daylight; this stimulates the

pituitary gland to shut off pigment production in the fur. The fur changes from brown fur to white fur. It usually starts on the feet and ears, works upwards, and to the rear until the entire pelt is white.

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As the seasons change from winter to spring, many animals lose their winter coats and put on much shorter, cooler summer coats. For elk and deer, this involves a complete molt - loss of all their hair and regrowth of new hair. During the spring, elk and white-tailed deer may have a scruffy appearance as they molt. Summer coats are reddish brown and composed of short, thin, guard hairs with no underfur. All the fur of the summer coat is the same length.

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Many young are born in the spring. The spring sunshine brings warmth, growth, and greenery to our Pennsylvania landscape. As a general rule, wildlife has their young at the time of year when there is the greatest abundance of resources available. What food sources are available to an herbivore (animal that only eats plants)? Carnivore (animal that only eats meat)? Omnivore (animal that eats both plants and meat)? Insectivore (animal that only eats insects)?

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Now back to songbirds singing outside our windows at dawn. Songs are different from calls. When songbirds sing it uses a lot of their energy and alerts predators. So why are they singing? Most songs are sung from late winter to early summer. This is the time when birds mate and therefore need to establish territories and create and maintain pair bonds. Birds that are returning from migration are returning to what is called their breeding grounds. Migration is periodic, large-scale movements of populations of animals. Birds migrate north to take advantage of insects, plants, and nesting locations. Many birds are migratory. Some examples are Baltimore orioles, scarlet tanagers, and broad-winged hawks.

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Eastern bluebirds are one of our earliest nesters. Those that have migrated return in February, March, or April. Females build a nest and lay eggs inside a cavity such as an abandon woodpecker hole or a manmade nest box. She builds her nest in 1 to 6 days. The nest is a neat cup-shaped nest made from fine grasses and sometimes pine needles. She lays 1 egg a day until she has a full clutch. She may lay up to 7 eggs, but 4 to 5 are most common. She begins to incubate after the last egg is laid. Incubation lasts about 2 weeks. All the chicks usually hatch within 24 hours. The female broods the nestlings until they develop feathers and can stay warm simply by eating enough. Both parents feed the young. They feed the nestlings several times an hour. Bluebirds feed on insects. After about a week, the nestlings have feathers, and their eyes are open. The young will remain in the nest for about 16 to 21 days.

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Turkeys are an example of a bird that doesn't migrate; they tough out the winter. They are classified as an upland game bird. A male turkey begins to change physically toward the end of March, which marks the beginning of the breeding season. During courtship displays, his snood may become long and swollen and extends to hang down over his beak and the color of his head and neck changes quickly from red to blue, purple and white. Male turkeys display

and gobble to attract hens. During their display, they fan their tails, erect their feathers, and tuck their heads back against their body and strut back and forth, hissing and dragging their wing tips on the ground. Once bred, the hen breaks away from the flock to lay her eggs. A turkey's nest is a simple depression on the ground lined with leaves by a tree or log. She lays an average of 12 eggs. Young turkeys are called poults. Poults have a fuzzy brownish coloration and a long neck and legs, giving them the classic turkey appearance. Poults are flightless. Their best defense against a predator is to hide.

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As spring arrives, so do the fawns. Most fawns are born in May or June with a reddish coat dappled in white spots, which helps them camouflage into their surroundings. The majority of adult does give birth to twins; some may have triplets (less than 5%). Like many species, the mother raises the fawns. She cannot be in two places at once. This means that the fawn must be left alone at times during the day, or even most of the time while the mother goes to find food for herself. A doe will hide her young from predators by leaving it alone in a secluded spot, such as a grassy meadow. A hidden fawn has virtually no scent, and when left alone, it is difficult for predators to find it. The mother typically only nurses its fawn in the mornings and evenings. Fawns

are capable of foraging on plants within the first week of life. Fawns are completely weaned from their mothers by 10 weeks of age but will continue to nurse longer if permitted.

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Each year female cottontails produce several litters, with the average of four litters. The first litter usually arrives in March. Litter size ranges from two to nine young, averaging five. Young are born in a 4 to 6 inch deep cup-shaped nest, lined with grasses and fur, which the female plucks from her chest and belly. Newborn cottontails are born blind, without fur, and helpless (altricial). Females typically nurse their young at dawn and dusk and keep them covered in the nest. The young develop rapidly and are fully furred, weaned, and on their own by 16 days old.

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Red fox pups are born in the spring, too. They are born in an underground den. A red fox den is usually an enlarged groundhog burrow or a hollow log. An average litter of pups is six. Newborn pups weigh about 8 ounces and are born with their eyes closed. Their eyes remain closed until they are 8 to 10 days old. The pups are nursed in the den for about a month. After they emerge from the den both the mother and father feed the pups solid food until they are completely weaned at about two to three months old. They leave the den area by August and may feed with their parents for another month before they disperse on their own. The other members of the canine family in Pennsylvania, gray fox and coyote, also have their young in the spring.

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Other mammals that are born in the spring include beavers, skunks, raccoons, and porcupines. Can you name any others?

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The seasons shape the most basic behaviors of many species. Spring affects the features and behaviors of many species by influencing the timing of emerging from hibernation, returning from migration, feeding, nesting, molting, and mating. To learn more about the birds and mammals of Pennsylvania, please visit pgc.pa.gov.