

A BLACK BEAR SANCTUARY

by C. Nelson Hoy, Forester, Rancher & Conservationist

Editor's note: The following essay was the seventeenth in a five-year series on water resource stewardship in the Cowpasture River Watershed, sponsored by the Cowpasture River Preservation Association and published by The Recorder. The goal of the series was to create awareness among students, citizens and officials of the critical need to protect our surface and ground-water resources, and to stimulate interest in progressive stewardship. In keeping with this stewardship goal, Berriedale Farms is creating a black bear sanctuary to protect mama black bears and their cubs.

WILLIAMSVILLE – In the Cowpasture River Valley of Virginia, three mammals readily come to mind as being dependent upon cool, clear water – the northern river otter, the American beaver, and the common muskrat. Several birds are also dependent upon clear water – the belted kingfisher, the great blue heron and the osprey. Less well recognized by either wildlife biologists or the general public as making multiple uses of our valley's water resources is the black bear (*Ursus americanus*).



A Black Bear Swimming in a Cool, Clear Waters

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Wildlife Bridge & Corridor – Berriedale Farms is favoring American black bear (*Ursus americanus*) habitat along the Cowpasture River “breaks” and its tributaries. The breaks of the Cowpasture are a one-mile long riparian bottom land with downed tree trunks and tangled autumn olive, bull briar and

brambles where mama bears and cubs can find cover, concealment and avenues for escape while staying close to water. Lizzie and Nelson since the year 2002 have not allowed bear hunting with dogs on Berriedale Farms and we do not allow the harassment of bears with all terrain vehicles. The Nature Conservancy in 2010 accepted our farm into their portfolio of conservation easements in the Commonwealth of Virginia in part because the farm creates a private land bridge between the George Washington National Forest with 40,000 acres of mature Appalachian oak, hickory and pine forest to the east and the Highland Wildlife Management Area with 14,000 acres of Appalachian oak, hickory and pine forest plus many acres of clear-cut wildlife openings to the west. For these reasons, Lizzie and Nelson, our family, friends and visitors see black bears or the signs of black bears quite often.

Cover & Concealment – Black bears live in these rugged mountains with one natural predator – human beings or more precisely hunters with hound dogs. So the breaks of the Cowpasture River, a natural riparian bottom land of downed tree trunks and tangled autumn olive, bull briar and brambles, provide essential cover, concealment and escape for mama black bears and their cubs. Black walnut, American sycamore, eastern white pines and white oak trees with their rough barks are all found within the riparian buffer area or on immediately adjacent slopes and these trees provide important escapes for bear cubs. The Cowpasture River itself serves as a natural barrier against human activity in an east-to-west direction. Additionally the Cowpasture River through Berriedale Farms creates a 5,000 foot long north-to-south travel corridor for bears. Black bears usually stay within 250 feet of cover and concealment.

Water Sources – Black bears require fresh water several times each day in all seasons, but particularly when feeding on hard mast. Bears self-manage excess heat through a variety of animal behaviors such as panting, balancing their energy expenditures and caloric intake, resting in shaded day beds with their bellies touching cool ground, and lounging on a large horizontal tree limbs. Importantly, bears self-regulate their body temperature by immersing in water and so bears require rivers in which to swim or water holes in which to wallow in all seasons, but particularly in hot weather. In the Berriedale Farms, Forest Stands A and F, fresh water is available for black bears from the Cowpasture River, Hulit Draft and Cabin Draft and these riparian habitats are thus used for cooling, seasonal foods, and cover and concealment.

Winter Hibernation – The black bear is different than human beings, the northern river otter, American beaver or common muskrat because evolution has adapted the bear in several important ways for hibernation that as a consequence influence their demand for water. The bear's sweat glands, like other carnivores, are primarily located in their foot pads and poorly developed (at least in relationship to your sweat glands or mine or most other mammals for that matter) and this attribute aides in conserving water. In addition, the black bear has thick fur and in the fall a thick fat layer, which serve to conserve energy during cold winter hibernation. But these physiological attributes under adverse situations work against a bear in hot weather when the ambient temperature is high or at lower temperatures when a bear is being pursued by predators – i.e., a pack of baying bear hound dogs.



A Black Bear Sow with Her Cub Up a Tree in the Berriedale Farms Forest and Within 250 Feet of the Tangled Riparian Buffer Area of the Cowpasture River
Photographic attribution hereby given to the Hillbilly Hunting Club

Appalachian Forest – The Berriedale Farms forest is best described as a 268 acre mature Appalachian oak, hickory and pine forest. Hard mast producing tree species favored by black bears include shagbark hickory, northern red oak and black walnut. Oak acorns, hickory nuts and walnuts, however, are all dry

with hard and difficult to digest outer shells. Black bears fortunately produce copious amounts of saliva which makes it easier for bears to masticate shells and tannins. But in addition, bears must increase their consumption of water during the hard mast season. Forest Stand A – Eastern White Pine Flats includes nineteen acres of an eastern white pine forest surrounded by a white oak, northern red oak and shagbark hickory forest. Forest Stand F – Riparian Buffer Areas includes forty-four acres of a black walnut, American sycamore and eastern white pine forest.

Shagbark hickory nuts make an important contribution to hard mast eaten by black bears. A shagbark hickory tree of 18” DBH may produce over 200 hickory nuts per year. The sweet nuts of the shagbark hickory were once a staple food source for the American Indian. The shaggy bark of the shagbark hickory may be used by the Federally endangered Indiana bat as a roosting refuge from summer heat and predators. Other forest animals that feed upon shagbark hickory nuts include racoons, fox squirrels, gray squirrels, southern flying squirrels, eastern chipmunks, white-footed mouse, wild turkeys, red-bellied woodpeckers. Hickory trees as a family are under represented in the Berriedale forest and they contribute about two percent of the saw timber value. However, the shagbark trees respond well to silvicultural release.



A Young Black Black Bear Feeding in the “Breaks” of the Cowpasture Riparian Buffer Area
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Northern red oak acorns make an important contribution to the pre-hibernation diet of the black bear because red oak acorns have an 18% – 25% fat content, although their acorns are also relatively high in bitter tannins. Older northern red oaks should have a reasonably well developed crown in a co-dominant canopy position for these trees to take advantage of a silvicultural release, however, epicormic branch stimulation will be a common response to day-lighting. American wild turkey feed extensively on northern red oak acorns.

Black walnuts contribute to the fall diet of the American black bear on Berriedale Farms. Black walnut trees are a common component of the Forest Stand F – Riparian Buffer Areas which includes forty-four acres of black walnut, American sycamore and eastern white pine forest. Black walnut meat is a nutritional powerhouse for black bears with the 24% protein by weight compared to 12% protein for hickory nuts, and the 59% fat content of black walnuts compares favorably with the 64% fat content of hickory nuts. Technically speaking, a black walnut is a fruit called a “drupe” and it is not a “nut”. Eastern black walnut is Berriedale Farms' most valuable timber species.



A Downed Eastern Hemlock Tree Trunk Torn Apart by Hungry Black Bears in Search of Insects, Larva and Grubs
Photographic attribution hereby given to C. Nelson Hoy

Soft Mast Sources – Black bears feed in the spring, summer and early fall on soft mast including flowering dogwood, downy serviceberry, autumn olive, pokeberry and blackberry. On Berriedale Farms these trees, shrubs and plants are naturally found in the transition area between the Highland Wildlife Management Area and the farm's pastures to the east; in the riparian buffer area along the Cowpasture River; and along the Berriedale Access Road leading to our Cabin on the Cowpasture.

Insects & Larva – Black bears feed in all seasons on insects, larva and grubs which bears harvest from downed and rotten tree trunks. Our forest management strategy of releasing shagbark hickory, black walnut, northern red oak and cucumber magnolia trees by girdling three to five large competitor trees around each “save” tree initially creates standing smorgasbords of insects, larva and grubs for woodpeckers, and later the downed and rotten tree trunks offer horizontal smorgasbords for black bears.

Bear Den Trees – Berriedale Farms features two known bear den trees that are both huge American Sycamore trees located in the Cowpasture River riparian buffer area. Bear Den Trees No. 1 is 65 inches in diameter. Bear Den Tree No. 2 is 15 feet three inches in circumference and 58 inches in diameter. Lizzie and Nelson will “post” a one acre buffer area around each bear den tree to create a do not disturb or harass zone.

Black Bear Sanctuary – Berriedale Farms, Nelson and Lizzie beginning in 2019 will up the ante for black bears by creating a 368 acre black bear sanctuary or refuge. The primary rationale for establishing a Berriedale Black Bear Sanctuary is to create a refuge for sow black bears and their cubs that are being chased by bear hound dogs through the George Washington National Forest and/or the Highland Wildlife Management Area. Think about what is going on when a bear is chased by a pack of dogs. The bear is being chased up mountain sides and down, across rivers and roads and through farm fences for miles upon miles striking fear and terror into a wild animal. A black bear sow in her wild flight to escape these dogs is burning up the fat reserves she and her unborn cubs will depend upon during the coming winter months of hibernation. She may very well, therefore, successfully birth fewer cubs. And the black bear male or female may very well become physiologically over-heated and stressed even during the colder months of October, November or December. A secondary rationale for creating a Black Bear Sanctuary is that The Nature Conservancy's values made Berriedale Farms an attractive addition to the Conservancy's Virginia portfolio of the last best places because the farm creates a private land bridge and wildlife corridor between the George Washington National Forest with 40,000 acres of mature Appalachian oak, hickory and pine forest to the east and the Highland Wildlife Management Area with 14,000 acres of Appalachian oak, hickory and pine forest plus many acres of clear-cut wildlife openings to the west. But perhaps the most important rationale of all is because Nelson Hoy and Lizzie Biggs have taken a fancy to American black bears, so why not just do it. Berriedale Farms, therefore, forbids hunting black bears with hound dogs on its lands. Berriedale Farms forbids bear dog training on the farm or in our forests. In the Berriedale Farms forest, we forbid the use of all terrain vehicles (ATVs). And Berriedale forests and grasslands will be actively managed as black bear habitat.

Bear Habitat Management:

Lizzie and Nelson for these reasons are implementing the following seven action items to improve American black bear habitat.

- Release shagbark hickory trees found in Forest Stands A and F and within 250 feet of cover and concealment that have the potential of becoming dominant in the forest canopy over the next 25 years – objective 100 or more trees.
- Release most northern red oak trees found in Forest Stands A and F and within 250 feet of cover and concealment that have the potential of becoming dominant in the forest canopy over the next 25 years.
- Release selected black walnut trees found in Forest Stands A and F and within 250 feet of cover and concealment that have the potential of becoming dominant in the forest canopy over the next 25 years.
- Release all known bear den and escape trees and protect these trees with a 150 foot radius buffer area that is dedicated to escape, cover and concealment – objective five bear den trees.
- Locate and release potential bear den trees of 36” DBH or larger – objective 10 trees.



Black Bear Refuge “Posted” Signage Around Bear Den and Escape Trees in the Berriedale Farms Forest

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- Favor and release wherever possible soft mast trees and shrubs including flowering dogwood, downy serviceberry, autumn olive, pokeberry and blackberry.
- Post one acre around each known black bear den and escape trees – no bear hunting, no hound dog training and no trespassing.

Rescue Centers – In the Cowpasture River Valley of Virginia, the nearest black bear cub rescue center is at The Wildlife Center of Virginia. In the Appalachian Mountains, Appalachian Bear Rescue (ABR) is a one-of-a-kind black bear rehabilitation facility located just outside of the Great Smokey Mountains National Park in Townsend, Tennessee. See the URLs below.

- The Wildlife Center of Virginia – See: <https://www.wildlifecenter.org/>
- Appalachian Bear Rescue. – See: <http://appalachianbearrescue.org/>

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