

(usually 2-3) are not born until January when the female is denning. Cubs remain with the female throughout that year and into the next winter denning period. They will disperse the following spring. At that time, young males leave, or are forced out of, the mother's home range, whereas young females often occupy an area close to or overlapping with that of the mother. Very often, these dispersing and inexperienced male youngsters represent the majority of individuals involved in bear-human interactions. Dispersal is also the time of highest mortality among for bears, especially young males.

As the bear population has continued to grow and expand farther east, the number of bear-human interactions has increased markedly. People who have never before had to deal with bears are now experiencing situations for which they have little understanding. Conflicts arise most often during periodic natural food shortages when bears are forced out of the woods to find sufficient alternative resources. However, in any year, bears (and especially young dispersing males) will take advantage of easy pickings made available by people who don't know that they may be contributing to a problem. Bears that learn the benefits of making close association with humans and human-provided resources typically are the ones that become problematic. Although black bears rarely attack humans and very few deaths have been attributed to them, they can become aggressive, particularly those that have become conditioned to rely on these alternative resources. Thus, the best way to avoid such confrontations is to not tempt bears with food or encourage them to remain around the home, farmstead, or campsite in the first place.

Management Measures

To reduce the potential for a confrontation or damage to personal property, precautions should be taken before a bear develops an interest in or gains access to potential food sources. As with most wildlife damage problems, no single technique exists that will provide absolute protection from bear depredations. However, measures taken in a timely fashion, facilities that are maintained properly, and responses that are applied with an understanding of the habits or behaviors of bears can reduce the likelihood of negative outcomes.

To reduce the potential for damage by black bears, don't encourage their presence or attract them to your property. Methods to accomplish this include:

- exercise good husbandry practices around the home (i.e., be neat and clean) — don't place garbage/waste receptacles on the curb until the day of pick-up, and then only in sturdy, well secured containers. Habituation in bears often begins with access to garbage containers placed outside overnight;
- remove all potential supplemental food resources, such as readily accessible pet foods, bird feeders [especially suet feeders after mid-March], or compost facilities;
- regularly clean and secure/protect barbeque grills — residual odors associated with the grilling of meats and the grease accumulated in the collection tray of most grills will be enough to draw bears up onto backyard decks/patios;
- never feed bears; all foods in or near picnic or camp sites should be stored or hung properly outside the reach of bears — remember, black bears are excellent tree climbers.

Use non-lethal controls to prevent or deter a bear from gaining access to property or a commodity. Examples of non-lethal measures include use of:

- loud noises (e.g., horns, clapping, shouting, pyrotechnic salutes), bright lights, or other harassment measures;
- temporary or permanent electric or heavy woven-wire fencing; the effectiveness of electric fencing often can be enhanced by baiting it with peanut butter, bacon grease, or sardine oil;
- bear hounds or guard dogs to ward off depredating bears;
- habitat manipulation (e.g., removal of protective cover) to make a site unsuitable for or unattractive to bears;
- repellents — currently, only Capsaicin (concentrated hot pepper spray) is registered for use on bears as a personal protection repellent. Recognize that these devices typically have a maximum range of less than 30 feet, so effective use of this material demands that the user is close to the bear — thus, this should be viewed primarily as an emergency self-defense tool.



Exercising good husbandry practices around your home can prevent black bears from becoming nuisances. Place garbage in sturdy well-secured containers to keep bears out. Photo by: Alfred Viola, Northeastern University.

If all attempts to deter bear depredation with preventive or non-lethal measures fail, removal of an offending animal may be necessary. Where damage to fruit trees, crops, livestock, or personal property has occurred, the owner or lessee of the property may receive authorization to destroy an offending bear, but only after such damage has been reported to and verified by the local conservation police officer (CPO, formerly game warden). It is illegal for homeowners or private individuals to capture or kill a bear without special authorization, except during the regulated open season. An affected landowner may be issued a kill permit that imposes limitations on taking a bear (e.g., length of time permit is valid, authorized methods of kill, disposition of carcass) and establishes how such take must be reported. To report suspected damage by a bear, to receive help in removing a troublesome bear, or to request a permit to take a bear, contact your local CPO using the contact information below.

For more information about the life history and behaviors of black bears in Virginia, or to obtain suggestions on how to deal with bear-human interactions, visit the web site of the VDGI (http://www.dgif.virginia.gov/wildlife/bear/). Also, to identify the CPO who serves your area, consult information on the web site relating to the location of VDGI's regional field offices (http://www.dgif.virginia.gov/about/offices/).

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VIRGINIA FOREST LANDOWNER UPDATE

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 Virginia Cooperative Extension
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Useful Resources

Now that the weather is cooling off, you may be looking for fun and educational outdoor activities for you and your family.

Here are some suggestions:

- **Nature Activities for Families:** This Project Learning Tree publication has outdoor activities to introduce kids 3 – 15 to nature. Available on-line (free) or in print (\$16.95): <https://www.forestfoundation.org/family-activities-in-nature>
- **Discover the Forest:** The USDA Forest Service has a number of free outdoor activities and videos for children, parents, and teachers. Find them here: <http://www.discovertheforest.org/what-to-do/>
- **Dovetail Partners' ForestInfo.org** website has a long list of both indoor and outdoor nature activities for kids.
- If you're planning a fall road trip, you may consider stopping to see some of these destination trees: <https://roadtrippers.com/trips/14617096?lat=40.80972&lng=-96.67528&z=5>

CONTACT OUR SPONSORS AND STATE NATURAL RESOURCE MANAGEMENT AGENCIES:

Virginia Department of Forestry	Virginia Tech Department of Forest Resources & Environmental Conservation & Virginia Cooperative Extension	USDA Forest Service Forest Stewardship Program	Virginia Forestry Association	Virginia Sustainable Forestry Initiative SIC/Virginia Tree Farm Committee
900 Natural Resources Drive Ste. 800 Charlottesville, VA 22903 434/977-6555 www.dof.virginia.gov	228 Cheatham Hall 0324 Blacksburg, VA 24061 540/231-6391 http://forestupdate.frec.vt.edu	1400 Independence Ave. SW Washington, D.C. 20078 202/205-8333 http://www.fs.fed.us/spf/coop/programs/loa/fsp.shtml	3808 Augusta Ave Richmond, VA 23230 804/278-8733 www.vaforestry.org	3808 Augusta Ave Richmond, VA 23230 804/278-8733 www.vaforestry.org/virginia_tree_farm.html

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What's Going on with Bears in Virginia? By: Jim Parkhurst, Virginia Tech

Black bears are one of the most charismatic animals among all resident fauna of Virginia and, as such, a unique relationship between the general public and bears seems to have emerged. Depending upon whom you ask, this interaction might best be described as a kind of love/hate relationship. Comments recently offered by a Roanoke County property owner provide an effective demonstration of this relationship — "Bears are great! I love seeing them and knowing that they exist here in Virginia, but only if they're not anywhere near my property." This sentiment clearly illustrates the management dilemma biologists charged with managing black bear populations in Virginia now face — how do we, as a society, assure the continued existence of the species without creating hardship for or conflict among stakeholders? There are no easy answers to this challenge. The burden for developing realistic, science-based, and publicly acceptable management strategies falls on all of us — everyone must play a part and assume responsibility if successful co-existence with bears is to be achieved. Before examining how to do that, let's first look at some things we know about bears today and review recent trends and human-bear interactions.

Black Bears in Virginia

Here in Virginia, the black bear is one of our largest mammals; adult females typically weigh 100-200 lbs., whereas adult males are larger, weighing 150-400 lbs. Like all wild animals, they can be unpredictable and, given their size and strength, must be treated with respect and caution. Bears are inquisitive, intelligent, and display good memories, especially in relation to where reliable food resources exist, and they can be long-lived. Bears in Virginia can live 20-25 years, but rarely reach that ripe old age. Virginia currently has a healthy, and expanding, resident black bear population, the majority of which exists in two core areas: one occupies the entire region west of and including the Blue Ridge Mountains, and another lies in the southeast corner of the state, centered near the Dismal Swamp. However, bears now occupy much of the Piedmont Region as well. And, despite what the



Department of Game and Inland Fisheries (VDGIF) map of occupied range for black bears in Virginia might show, residents anywhere in the state have a reasonable probability of seeing or encountering a bear today. An exact bear population in Virginia is not known, but current estimates are between 16,000 and 17,000 individuals, and growing.

Because bears are highly adaptable, they can be found in a variety of habitats, ranging from mature hardwood forests, brushy and weedy early successional patches, and riparian or wetland habitats. Riparian corridors are often used as preferred travel lanes. Although many people perceive black bears as carnivores, they should be viewed more as omnivores; that is, animals that feed on both plant and animal material. In fact, a large proportion of a bear's diet is composed of seasonally available non-meat foods, including items such as skunk cabbage, squawroot, and tender grasses in spring, berries, fruits, and sedges in summer, and hard mast, such as acorns, beechnuts, and hickory nuts, in fall. Insects, rodents, other small mammals, and deer fawns are also consumed when available. Conflict can arise when bears seek out and use alternative foods, such as agricultural crops, the contents of beehives, and, occasionally, livestock. The use of these alternative resources typically occurs when natural foods are scarce (e.g., during periods of drought or years of poor acorn production).

Having knowledge about a bear's diet is important, but that information alone is not sufficient to understand how, or why, bear-human interactions arise. Other knowledge may be needed to better interpret (or anticipate) a bear's actions. Behavior also is influenced by time of day activity patterns, the animal's age, and range factors. Although bears may be active throughout daylight hours, most are active around dawn and again after dusk; fully nocturnal activity tends to increase as direct contact with humans increases. In terms of anticipated range size, both males and females establish overlapping home ranges, but those used by females typically are smaller (about 10-15 sq. mi.) than those of males (about 20-30 sq. mi., but may be up to 120 sq. mi.). Breeding usually occurs during June or July, but cubs

Map of occupied range of black bears in Virginia. From Virginia Department of Game & Inland Fisheries: <http://www.dgif.virginia.gov/wildlife/bear/black-bear-facts/>.

EVENTS CALENDAR			For the most complete listing of natural resource education events, visit the on-line events calendar at http://forestupdate.frec.vt.edu		
Contact	Date	Location	Event	Time	Fee
DCR	Oct., Nov., & Dec.	Virginia's State Parks	A variety of events and activities For a complete list, visit: www.dcr.virginia.gov/state-parks	Varies	Varies
MP	Year-round	State-wide	Virginia Master Naturalist Volunteer basic training www.virginiamasternaturalist.org	Varies	Varies
AD	Oct. 5 & 12	Orange	Preparing for Generation NEXT Please join us for a hands-on workshop with free legal guidance from professionals experienced in intergenerational land transfer and landowner testimonials of legacy planning steps and strategies.	12:30 -7	\$70* for up to 2 family members; \$35 for each additional
NC	Oct. 7	Essex	40th Anniversary Fall Forestry & Wildlife Field Tours Essex County is bordered by the Rappahannock River to the north and the York River to the south. With almost 88,000 wooded acres, most of which is privately owned, sustainable forestry is alive and well in this county.	8 - 5	\$35*
BW	Oct. 11	Lee	40th Anniversary Fall Forestry & Wildlife Field Tours Rural Lee County, located in the far SW corner of Virginia, is over 65% wooded, with mostly oak-hickory forests. Join us for the first ever Tour in this county and learn how these forests are managed and used.	8:30 - 5	\$35*
AD	Oct. 14	Prince William	40th Anniversary Fall Forestry & Wildlife Field Tours Join us in Prince William County where the pressure is on and the natural resources are rich. The Tour will showcase a suite of practices meeting numerous landowner goals from income production to attracting and controlling wildlife.	8 - 5	\$35*
JF	Oct. 20	Dinwiddie/ Nottoway	40th Anniversary Fall Forestry & Wildlife Field Tours Together, Dinwiddie and Nottoway Counties have almost 400,000 wooded acres. This makes for a very active forest industry. Learn how sustainable management is practiced in these heavily forested counties.	8 - 5	\$35*
AD	Oct. 23	Montpelier Station	Working Woods Walk Explore beyond the Mansion and the lawn to the woods of Montpelier and consider society's dependence on this resource then and now. The walk through President Madison's beloved woodlands will be led by Virginia Master Naturalists on a state-of-the-art trail showcasing forest & habitat tending methods.	2 - 4	\$5
BEF	Oct. 27	Winchester	Hollows, Peepers & Highlanders Join us for a photographic exploration of the mysteries and histories of Appalachian plants and wildlife as interpreted by an ecologist and evolutionary biologist.	7 - 8:30	\$12
AD	Oct. 29	Madison	Natural Hardwood Charcoal Making Demonstration An open-house demonstration occurring at the Fall Harvest Festival at the Young Farmer's Grounds. Cooking with real charcoal and taste-testing samples with local meat!	8 -12	Free
If you are a real estate professional or Commissioner of the Revenue, please visit the Landowner Update website for a schedule of our continuing education classes, Real Forestry for Real Estate. (http://forestupdate.frec.vt.edu).					
*meal(s) included					

EVENT CONTACTS			
Contact	Name/Affiliation	Phone	e-mail/website
DCR	Virginia Department of Conservation & Recreation	804/786-1712	www.dcr.virginia.gov
MP	Michelle Prysby	434/872-4580	www.virginiamasternaturalist.org
AD	Adam Downing	540/948-6881	adowning@vt.edu
NC	Neil Clark	757/653-2572	neclark@vt.edu
BW	Bill Worrell	276/889-8056	bworrell@vt.edu
JF	Jason Fisher	434/476-2147	jasonf@vt.edu
BEF	Blandy Experimental Farm	540/837-1758 x 224	www.blandy.virginia.edu

The Fragmented Forest

By: Adam Downing, Virginia Cooperative Extension

Those words carry negative undertones. Perhaps I should've chosen a different title like "Forest Bits & Pieces" or "Checkerboard Forestry" which sound more like an environmentally friendly candy or a board game. Aside from the undertones of the phrase, the fact is that forest fragmentation has both positive and negative consequences. Forest fragmentation is the conversion of forests to non-forest use, leading to a diversity of land uses on former forestland. Parcelization, the division of large, continuous forest tracts into smaller properties and ownerships, creates the conditions necessary for forest fragmentation.

Are Parcelization and Fragmentation New?

The one-word answer to this question is "No." Before Europeans arrived in this country, the Southeastern United States was actively and extensively managed. According to latest estimates, pre-European population, of what is now the geographical United States, was as high as 50 million. To put that in context, that's about what the population of this country was not long after the Civil War. The point is that this was not the wild, untamed land many of us learned about in history class. Collectively, native populations maintained hundreds of thousands of cultivated fields. In addition, intentional management activities and severe weather events kept the forest in somewhat of a patchy mosaic.

This patchy mosaic was accentuated by European settlement patterns. The desire to own land and to pass it on to one's heirs was and still is a dream many Americans share. This often leads to parcelization where a block of land is subdivided into multiple ownerships. Over time, multiple ownerships naturally lead to different land use decisions resulting in fragmentation. To illustrate, here's a fictional short story based on many true stories.

The Hundred-Acre Wood

I grew up in a 100-acre wood. My brother and I are excited to inherit this piece of property that we hunted, built forts on, and played in. We figure the easiest thing to do, since we both want the property, is to split it in two.

(20 years pass...)

Hunting on 50 acres isn't like hunting on 100 but it's better than nothing, since my brother changed his mind a few years back about letting me hunt on his piece. Since I don't live on the property, I only make it back once a year anyway.

Town is moving out, and the neighbor's farm has metamorphosed into a subdivision. My uncle's place, next to ours, is now in three different pieces for his three daughters and I can't hunt there either. I think how great it must have been for my great-grandfather when he owned all 500 acres before he sold some to a golf course and the children inherited the rest.

Today I opened my mail to find a letter offering more money than I've ever seen for my property. I had always figured I'd leave it to my children but they don't seem very interested in it anyway. Besides that, I'm still in debt from the loan I had to take out to pay the inheritance taxes and I could really use the money to pay for their college educations...SOLD!

I guess a large retail store wants to capitalize on the recent growth in the area. The land will be cleared, paved, and built on. I'm sad as I think about the place I knew but I hear the residents are eager to have a store so close.

The End.

Parcels and Fragments: The Rest of the Story

Virginia's forests play a critical role in the economic and ecological health of the state. They provide over \$17 billion in economic value to the commonwealth and another \$16 billion in ecosystem services such as wildlife habitat, clean air and water, recreation, and carbon storage. How do parcelization and subsequent fragmentation affect these values?

Parcelization and fragmentation can be beneficial. An economic/social benefit is that fragmentation allows more of us to live in or near wooded areas while remaining in close proximity to amenities such as shopping, work and school. A biological benefit is that fragmentation may create a diversity of habitats suitable for many different types of wildlife.

However, in the context of healthy and productive forests, properly functioning ecosystems, and the forest industry, parcelization and fragmentation can also be detrimental.

Fragmentation tends to separate and isolate forested parcels. This leads to changes in wildlife habitat and the ability of a forest to produce products and amenities. Fragmented forests abound with wildlife habitats beneficial to generalist and edge species. Deer, squirrels and rabbits, for example, do well with a mixture of open, brushy and wooded areas. However, many other wildlife species,

[Fragmentation cont. on page 4](#)

[Fragmentation cont. from page 3](#)

such as certain migratory songbirds, need large interior forest areas. Fragmentation reduces this.

Fragmentation also impairs landowners' ability to actively manage their forests, which in turn decreases the production of timber and non-timber products. Studies show that owners of less than 25 acres are not as likely to actively manage their forestland for various income, aesthetic, or wildlife goals. And even when small woodlot owners want to manage their land, fewer options may be available. For example, timber harvesting is often a viable tool to improve wildlife habitat; however, timber harvesting efficiency decreases as tract size shrinks.

Despite the fact that Virginia has always had fragmented forests, fragmentation today is more widespread and more permanent than in the past. This is a result of development; once a previously forested parcel becomes a shopping center, the chance of it ever returning to natural forest is slim. And this development is occurring more rapidly than ever before.

As citizens, natural resource professionals, and landowners, we need to be aware of this. While it's true that we all need places to live and work and shop, we also need forests that are capable of providing us with clean air and water, homes for wildlife, timber to build homes and a myriad of other benefits.

Adam Downing is the Northern District Forestry & Natural Resources Agent; adowning@vt.edu; 540/948-6881.

The Fall Forestry & Wildlife Field Tours Celebrate Their 40th Anniversary!

Way back in 1976 I was far more concerned about reading the complete Nancy Drew Mystery Series than I was about teaching landowners about practicing sustainable forestry. Luckily though, there were natural resource professionals here in Virginia who were interested in teaching this topic to landowners. These folks included Professor Emeritus Harry Haney, John Gunter, retired USDA Forest Service, and Charlie Finley, former Executive Director of the Virginia Forestry Association. Together, with a host of partners from Federal, State, and private forest industry, they developed what we now call the Fall Forestry & Wildlife Field Tours. Virginia Cooperative Extension and the Virginia Forest Landowner Education Program have organized these Tours for the past 11 years.

The goal of the Tours was and remains: demonstrate to non-industrial private landowners active forest and wildlife management practices that help them meet a diverse array of goals. To meet this goal, each Tour visits 4-6 different properties. These include privately owned woodlots, industry lands, public lands, and wood manufacturing facilities. At each stop, natural resource professionals and landowners share strategies for keeping the woodlands and wildlife healthy and productive.

The Tours provide many opportunities for landowners to ask questions and share ideas with each other and with natural resource professionals. Additionally, they provide transportation, good food, and plenty of science-based management information. And if that's not enough to convince you to join us on a Tour, please remember that October is a great time to be out in the woods in Virginia.

Over the past 39 years, we've held 216 Tours for well over 11,500 participants and visited every Virginia county except Lee. Something we will remedy this fall. So set aside some time in your schedule and join us this October for the longest-running program of its type in Virginia.

The 2016 Tour schedule: • October 7 – Essex County • October 11 – Lee County • October 14 – Prince William County • October 20 – Nottoway/Dinwiddie Counties

On-line and mail in registration is available at <http://forestupdate.frec.vt.edu> or contact Jennifer Gagnon at 540-231-6391 or jgagnon@vt.edu.



This 750-acre forest is to be broken into multiple parcels. While much of it will remain wooded for a time, the shift of land use towards residential use changes the values and potential outputs. Residential woodlots are typically valued more for intangible benefits versus income or hunting. Image by: Virginia Department of Forestry and Mike Santucci, VDOF.

Editor's note: *Don't let what happened in the 100 Acre Wood happen on your property. Learn how to pass your land and your values on to the next generation, and prevent your woodlands from becoming parcelized and potentially fragmented. The upcoming workshop, Preparing for Generation Next, will give you the tools and resources you need. See the Events Calendar for details.*

