

INTRODUCTION TO THE WHITETAILS OF NORTH AMERICA

by Dr. James C. Kroll

White-tailed deer (*Odocoileus virginianus*) have undergone two evolutions during their two or more million years of existence; the first began about 20 million years ago, the second only in the last few thousand years as they adapted to humans. The latter is what this book is really all about.

Understanding the origin of whitetails is critical both to management and hunting. It tells how and why our favorite game animal came to be, what it is and how it behaves. The story begins in an unlikely place, the tropical forests of Asia. About 50 million years ago, small omnivorous mammals developed specialized digestive systems consisting of four chambers. Ruminants, as they are called, were the “new kids on the block,” with the ability to digest a wider array of plants. By the Pleistocene (2.5 million years ago), this group of mammals had exploded into a vast array of species, including the ancestors of deer (*Cervidae*). You would barely recognize these Asian cousins. They had no antlers and sported prominent fangs for protection and fighting. There are a few remnants still alive today, including the muntjac (*Muntiacus reevesi*), Chinese water deer (*Hydropotes inermis*), tufted deer (*Elaphodus cephalophus*) and musk deer (*Moschus moschiferus*).

Some time later, fangs gave way to hair-covered protrusions from the forehead. Current scientific thought is that these structures (ossicones) were developed to provide a surface for scent dispersal. Indeed, the muntjac has both fangs and antlers protruding from an elongated, hair-covered pedicle; perhaps a holdover from

the ossicone condition.

Why was scent dispersal so important? Tropical forests are notoriously diverse in species, thus reducing the number of individuals in any one species. Because of this, early deer probably existed in low densities, creating difficulties in communication which therefore resulted in several adaptations caused by forest life. The well-known “grunt” of bucks uses low-pitched tones because they travel farther in a dense, wooded environment. The best way to communicate under such conditions is to have the ability to disperse scent and leave chemical messages. Again, this is important to the whitetail hunter, since bucks still leave such messages on signposts within staging areas where does congregate.

By the time deer reached North America, there were two types of antlers: those that arose from hair-covered structures that later stripped velvet to produce a permanent boney antler (*Merycodonts*); and those that lost the boney antler annually (*Cervidae*). Both of these animals appeared first in western North America, then over the next few million years, they spread southward and eastward throughout the continent, even reaching South America. No one knows what was the ancestor



Modern farming practices continue to create habitat that proliferates white-tailed deer numbers.

(if there was one) of whitetails. I personally feel the black-tailed deer (*Odocoileus hemionus columbianus*) either is the oldest species in the genus or the actual ancestor to whitetails. DNA studies at Purdue University indicate blacktails and mule deer became separated by glaciers, leading to these two separate species. It probably occurred also with whitetails and the blacktail/mule deer group. I have no idea how long all of this took, but I do have a jawbone from a whitetail found in southern Florida that is 1.2 million years old. By the way, it was aged at over 6½ years of age – which makes you wonder just what kind of predators that deer had

to avoid throughout its life...

By the time Lewis and Clark began their epic journey across North America, the Virginia deer (as they called them) had spread throughout the continent, into Mexico and Central America, and even reached Argentina as the South American Whitetail (*Odocoileus virginianus cariacou*). However, we now concede this group of whitetails has remained separated from other subspecies long enough to be considered a new species (*Odocoileus margaritae*, *O. lasiotis* and *O. cariacou*). It's fascinating to imagine the vast array of habitats and conditions whitetails adapted to over the



Landowners today look at whitetails as a cash crop and grow them with the same passion as cattle, pigs and crops.

course of a few million years! Yet, the average whitetail hunter of today tends to think of this amazingly diverse species as a single animal, probably the only one he or she hunts annually. That is why I have urged hunters and trophy records organizations such as the Boone & Crockett and Pope and Young clubs to give broader consideration; and that is why I was so thrilled when Tom Miranda approached me about promoting the Whitetail Slam.

THE RACES (SUBSPECIES) OF WHITETAILS

I am amazed that the one animal that should have the most museum material for study is the white-tailed deer. Perhaps it is because the species is considered so common, it did not merit detailed taxonomic study. There have been many attempts to identify the subspecies, including anatomical, behavioral and genetics (DNA and mtDNA) studies. The most commonly used range map for subspecies was published in the Stackpole Book, *White-tailed Deer: Ecology and Management*, edited by my long-time friend Lowell K. Halls (now deceased). Almost 900 pages, this book presented everything we knew about deer at the time of its publication in 1984, but offered no explanation as to how the subspecies lines were produced. It also is not

clear how many subspecies there actually are in North America – not to mention Central and South America – but we think there once were between 30 and 38 subspecies.

Body weights and habitats vary dramatically. White-tails range in size from as much as 400 pounds to less than 75 pounds. Habitats range from near arctic conditions to deserts and tropical forests. Subspecies such as the Coues (pronounced “cows”) deer reportedly can live without free water.

The taxonomy of whitetails is more than just the drawing of geographic lines and anatomical distinctions. It is about the habitats in which they live and the people who hunt them; which are far more important to me. Consider North, Central and South America comprise 8.3 percent of the world’s land mass, and the distance over which whitetails evolved covers a whopping 8,699 miles! Whitetails truly are one of the most adaptable species on earth, all predetermined by experiences in the tropical forests of Asia so many millennia ago. So, let’s have a look at the most common subspecies, which include those now recognized in the Slam. We start in the north and work to the southern U.S. and northern Mexico. Left out will be the rare and endangered subspecies, and most of the 13-14 subspecies in Mexico; some of which we are not even sure still exist.



50 million years ago, the first ruminants developed. Today, deer belong to the group and have adapted handily to the presence of agricultural food sources like soybeans and corn.

COLUMBIAN WHITETAIL

The Columbian Whitetail (*O. v. leucurus*) has made a remarkable comeback since it was designated an endangered species, and was delisted in 2003 from the Federal List of Endangered and Threatened Species. My friend, Gordon Whittington, has been fortunate to hunt and harvest these beautiful, large-bodied deer inhabiting parts of Oregon and Washington. I had the chance to hunt them once and came away without a trophy, but with a great deal of respect. In my opinion, they are one of the most beautiful whitetails, often with double and triple throat patches and rich brown coloration. They are named for the Columbia River and the adjacent drainages around which they live. They differ biologically by not being able to breed until 18 months of age, and are only able to have a single fawn. The rut occurs from the first part of November into December.

Columbian whitetails are hunted much differently than most subspecies. Located in a region where western-style hunting traditions prevail, most of these deer are taken by hunters walking over the steep terrain, similar to the techniques used for mule deer and blacktails. To harvest a Columbian whitetail truly is an experience of a lifetime.

NORTHWEST OR NORTHERN ROCKY MOUNTAIN OR IDAHO WHITETAIL

The Northwest Whitetail (*O. v. ochrourus*) also is a beautifully-colored subspecies and is a neighbor to the Columbian whitetails. Their range includes Idaho, western Montana, Oregon, Washington and Wyoming in the U.S.; Alberta and British Columbia in Canada. They are mountain inhabitants, more difficult to hunt than most of the subspecies. They live at elevations above 6,000 feet. I also have pursued these deer unsuccessfully, and can attest to the difficulty in hunting them. Also as evidence of their rarity, the SCI record book only has 484 typical and 106 nontypical entries. Hunting tactics primarily are the same as those used for mountain mule deer. They possess very large racks and have a strong tendency to have 6-by-6 frames. The rut is also from early November to mid-December.

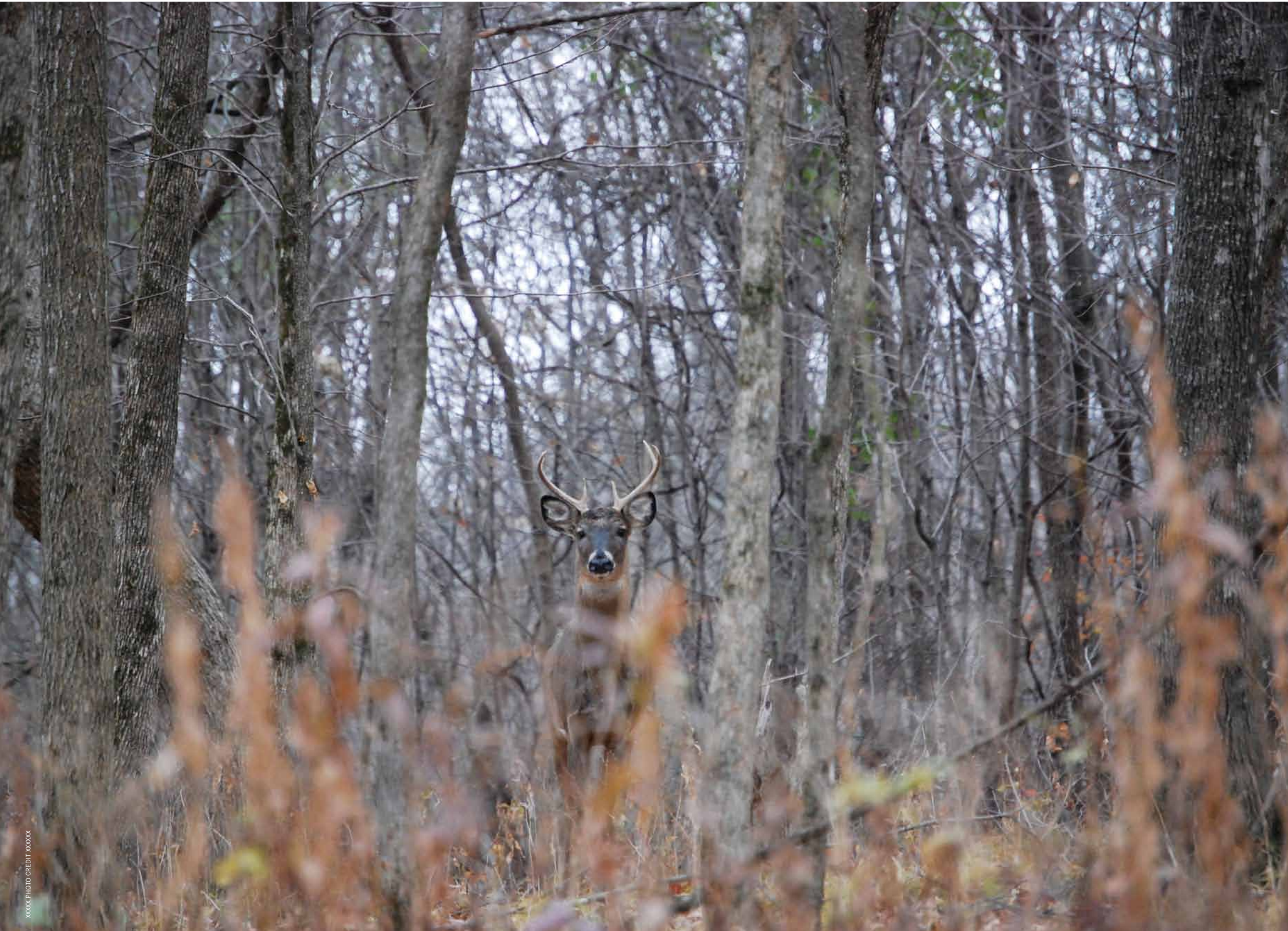
DAKOTA WHITETAIL

The Dakota Whitetail (*O. v. dacotensis*) is one of my real favorites, occupying mostly prairie habitat, but also northern boreal forest, tundra and scrublands of four Canadian provinces and five U.S. states. I spent 23

SUBSPECIES

1. *O. v. virginianus* – Virginia Whitetailed deer or Southern white-tailed deer
2. *O. v. acapulcensis* – Acapulco white-tailed deer (southern Mexico)
3. *O. v. borealis* – Northern (woodland) white-tailed deer (the largest and darkest white-tailed deer)
4. *O. v. cariacou* – (French Guiana and north Brazil)
5. *O. v. carminis* – Carmen Mountains Jorge deer
6. *O. v. chiriquensis* – Chiriqui white-tailed deer (Panama)
7. *O. v. clavium* – Key Deer or Florida Keys white-tailed deer found (Florida Keys)
8. *O. v. couesi* – Coues white-tailed deer, Arizona white-tailed deer, or fantail deer
9. *O. v. curassavicus* – (Curaçao)
10. *O. v. dacotensis* – Dakota white-tailed deer or Northern plains white-tailed deer (most northerly distribution, rivals the Northern white-tailed deer in size)
11. *O. v. goudotii* – (Colombia (Andes) and west Venezuela)
12. *O. v. gymnotis* – South American white-tailed deer (northern half of Venezuela, including Venezuela's Llanos Region)
13. *O. v. hiltonensis* – Hilton Head Island white-tailed deer
14. *O. v. leucurus* – Columbian white-tailed deer (Oregon and western coastal area)
15. *O. v. macrourus* – Kansas white-tailed deer
16. *O. v. margaritae* – (Margarita Island)
17. *O. v. mcilhennyi* – Avery Island white-tailed deer
18. *O. v. mexicanus* – Mexican white-tailed deer (central Mexico)
19. *O. v. miquihuanensis* – Miquihuan white-tailed deer (central Mexico)
20. *O. v. nelsoni* – Chiapas white-tailed deer (southern Mexico and Guatemala)
21. *O. v. nemoralis* – (Central America, round the Gulf of Mexico to Surinam further restricted to from Honduras to Panama)
22. *O. v. nigribarbis* – Blackbeard Island white-tailed deer
23. *O. v. oaxacensis* – Oaxaca white-tailed deer (southern Mexico)
24. *O. v. ochrourus* – (Tawny) Northwest white-tailed deer or Northern Rocky Mountains white-tailed deer
25. *O. v. osceola* – Florida coastal white-tailed deer
26. *O. v. peruvianus* – South American white-tailed deer or Andean white-tailed deer (most southerly distribution in Peru and possibly, Bolivia)
27. *O. v. rothschildi* – Coiba Island white-tailed deer
28. *O. v. seminolus* – Florida white-tailed deer
29. *O. v. sinaloae* – Sinaloa white-tailed deer (mid-western Mexico)
30. *O. v. taurinsulae* – Bulls Island white-tailed deer
31. *O. v. texanus* – Texas white-tailed deer
32. *O. v. truei* – Central American white-tailed deer (Costa Rica, Nicaragua and adjacent states)
33. *O. v. thomasi* – Mexican Lowland white-tailed deer
34. *O. v. toltecus* – Rain Forest white-tailed deer (southern Mexico)
35. *O. v. tropicalis* – Peru and Ecuador (possibly Colombia)
36. *O. v. ustus* – Ecuador (possibly southern of Colombia and northern of Peru)
37. *O. v. venatorius* – Hunting Island white-tailed deer
38. *O. v. veraecrucis* – Northern Vera Cruz white-tailed deer
39. *O. v. yucatanensis* – Yucatán white-tailed deer





years of my career pursuing these deer, and some of my greatest hunts have involved these monster bucks. In fact, I once harvested a Dakota whitetail just about as far north as you possibly can on the edge of the tundra of Alberta. I am pretty confident in saying they probably are the largest-bodied subspecies.

Dakota whitetails could be the toughest deer when it comes to survival. They annually endure some of the worst winter conditions of any deer, from deep snow packs to temperatures often considerably below -50°F . It has been rewarding to watch hunting tactics change since I first ventured to Alberta in the early 1980s. In those days, hunters generally drove around in pickups or did “pushes” through the bush to harvest a buck. Later, my friend Dave Bzway (Alberta Wilderness Guide Service) would set the standard for hunting these deer by employing advanced scouting and patterning techniques for ambush-style hunting.

If you are going to hunt Dakota whitetails, you might want to consider investing in quality cold weather gear. I personally have endured all-day hunts at -30°F on open tripod stands. These deer are well adapted to the cold, weighing in at more than 300 pounds. Dakotas seem to have benefited from grain farming and are most abundant in the fringe habitat where the northern forest and farmlands meet. The rut occurs in mid-November.

BOREAL (NORTHERN WOODLAND) WHITETAIL

To the east of the Dakota Whitetail lives yet another beautiful subspecies, the Boreal Whitetail (*O. v. borealis*). Boreal means “of the north,” referring to the climatic zone south of the Arctic. Yet another large subspecies, with a record reported weight of 354 pounds, their distribution is restricted to states and provinces around the Great Lakes and of the north Atlantic Ocean. The southern limit occurs at the banks of the Mississippi and Ohio rivers, although I don’t understand how rivers can be limiting. To be honest, I feel this subspecies actually occurs farther south of Cairo, Ill. into the Mississippi River Delta. These are true forest animals occupying both conifer and deciduous habitat types. The rut occurs around the first two weeks of November.

The Boreal whitetail probably has as much hunt-

The difference in antler growth between young bucks in varying regions is staggering. Bucks in the South Central Plains and Woodlands regions may sport six- or eight-point racks, while others in the Gulf Coast or Seminole regions may remain spikes or forkhorns much later in life due to poor soil quality and food nutrition.

The ability of a whitetail doe to disappear right in front of your eyes is one of the reasons they, as a species, have proliferated so well throughout the United States, Canada and Mexico.



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ing tradition associated with it as any deer subspecies. These are the deer of the northern hunting camp traditions, typical of states such as Wisconsin and Michigan. It also is the subspecies that has produced the most Boone and Crockett Club record book bucks.

VIRGINIA WHITETAIL

The Virginia Whitetail (*O. v. virginianus*) is the type species, first described in 1780 by a German naturalist named Eberhardt Zimmermann. Eastern American Indian tribes relied heavily on these deer for food and clothing, and even “managed” the forest using fire to produce more deer. They also were the first deer to be over-hunted to near extinction by 1900. They prefer a variety of habitats, but thrive in association with humans and agriculture. However, they are basically a southern forest dwelling subspecies. As their name implies, they are found from Virginia southward to northern Florida, and westward to the Ohio and Mississippi rivers.

Virginia whitetails are also part of a rich hunting tradition, and originally were pursued with hounds.



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Few hunters understand the evolutionary process that has resulted in modern whitetails. The 50-million-plus year journey is truly impressive and has created a group of animals that has endeared itself to the hearts of hunters.

HUNTER BIO JAMES KROLL



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- AGE/HOMETOWN:** 66/Nacogoches, Texas
- YEARS HUNTING:** 42 years
- FAVORITE HUNT LOCATION:** Alberta, Canada
- DEER HARVESTED:** Well over 1,000
- LARGEST BUCK:** 256 inches, 305 pounds
- FAVORITE METHOD:** Rattling and calling
- CONTACT INFO:** www.drdeer.com
www.northamericanwhitetail.com
- WHITETAIL SLAM:** Yes, but not registered



Hunters tend to have a myopic view of the whitetails they are most familiar with. But if they could trace the lineage of a single deer, like this bedded Iowa doe, they'd be shocked to see how far whitetails have traveled, and how much they evolved to become the subspecies we hunt today.

Hound hunting remains, but has been reduced due to hunting restrictions and increasing human populations. Today, hunting tactics focus on ambush hunting from trees or blinds. They are probably the most benefited by food plots of any subspecies. This subspecies also offers the earliest hunting dates, with South Carolina opening in August. The rut occurs from October to December, decreasing from north to south in timing.

KANSAS WHITETAIL

The Kansas Whitetail (*O. v. macrourus*) has been associated with the state bearing its name, but historically has occurred from eastern Texas, northern Louisiana, and northward through Arkansas, Missouri and Iowa. Technically they only occur in eastern Kansas, but most hunters think of them being in western Kansas, where the next subspecies (Texas Whitetails) occur. The range also includes eastern Oklahoma and Nebraska.

As their scientific name implies, they have larger tails than most whitetails, giving them the local name "flags." In my opinion, they rank among the most handsome of deer, with grizzled coats and faces. Their

antlers are disproportionately large for their body size. Preferred habitats include both forests and prairies, as well as brushlands.

I have spent a significant amount of time hunting these deer. In 1987, I was fortunate to kill one of the biggest whitetails that year from the last remaining population of Kansas whitetails in eastern Texas (Boggy Slough); he was lured to the grunt call and had enormous 9 inch bases, and four drop tines. The rut generally is complete by the middle of November; Kansas schedules its rifle season to occur after the rut. Hunting methods include stalking and ambush hunting, but I prefer rattling, calling and decoys. Kansas whitetails occupy one of the last "new places" for trophy whitetails – along with Iowa, eastern Oklahoma and Nebraska. If there ever is a new world record whitetail, it will come from this subspecies and one of these places, although Wisconsin cannot be taken for granted.

TEXAS WHITETAIL

This subspecies' range extends from northern Mexico, throughout Texas, and northward into western Oklahoma, eastern New Mexico, Colorado, western Kan-



It's impossible not to love whitetails once you've hunted them. Few game animals can so easily avoid hunters the way a mature buck can.

sas and Nebraska. Texas Whitetails (*O. v. texanus*) are known to have statistically wider antler spreads than any other subspecies. Although commonly associated with the South Texas brush country, this subspecies has a wide array of habitat preferences, but generally can be described as a brushland group of deer.

Texas whitetail hunting tactics gave us antler rattling, probably the most exciting way to harvest a buck. This also is the subspecies from which modern quality deer management arose, and many of the management practices such as culling, supplementation and restricted buck harvest can be associated with Texas whitetails. I grew up hunting this subspecies. This is a subspecies that unfortunately has been genetically altered in Texas by stockings of the next subspecies, the Avery Island Whitetail. As a consequence in much of Texas the rut is variable. Where there are pure Texas whitetails, however, the rut occurs during mid-November in the southeastern and northern portions of their range, to mid-December in the southwestern portion and north-eastern Mexico.



A young spike buck sneaks through the northwoods of Minnesota. Whitetails are found in many different subgroups throughout their current range and they inhabit some amazingly different types of habitat.



It's hard to believe but deer used to have fangs. To become what we know as modern whitetails, deer have gone through some amazing changes and migrated huge distances over the last 50 million years or so.

AVERY ISLAND WHITETAILS

A smaller subspecies, these deer derive both their common and scientific names (*O. v. mcilhennyi*) from the land of Tabasco – Avery Island, La. and the McIlhenny family. These light-colored deer occupy primarily swamp and marshlands from just north of Corpus Christi, Texas to the swamps around New Orleans, La. They are difficult to hunt due to the habitat they prefer, but offer a great challenge. They seldom achieve antlers scoring more than 130 inches, B&C. But, I consider them to be one of the most fascinating deer I have successfully hunted. One of the most interesting things about them is that their rut occurs in late September to early October, making them a great early season choice for your hunting season.

CARMEN MOUNTAIN WHITETAIL

Wild and woolly would be the best description of my hunts for Carmen Mountain Whitetails (*O. v. carmin-*

is). These diminutive mountain and deep-brush dwellers are the least known of huntable deer on our list. They live in some of what can be considered the last wilderness in North America, just north and south of the Rio Grande River of Texas and Mexico. I have been fortunate enough to harvest one of these deer, and it was not easy! I am still not convinced they are simply an eastern version of the Coues Deer, as there are some significant differences. For example, they seem to depend on free water more than Coues; hence, the best strategy is to ambush them at water. Their rut is late December to mid-January, giving you an excellent subspecies to hunt late in the year.

COUES DEER

You already have endured my obsession with the pronunciation of Coues Deer (“cows”) (*O. c. couesi*). These are small, mountainous desert and high forest deer, which are very difficult to kill at close range. Their range extends from central Mexico into Arizona and New Mexico. Hunting strategies include glassing mountainsides and long shots with a rifle. Bow kills are possible on the rare occasions they come to water. Their rut is usually in late December to early January. A really good Coues Deer will score in the low 100s, but who really cares? This is one of the “must haves” of the Slam!

FLORIDA SUBSPECIES

I include the Florida subspecies as a group, because they are so different from all the others. These are subtropical to tropical subspecies, often behaving more like tropical deer species in their breeding habits. They also have spawned some of the most unique hunting techniques and traditions of all the North American subspecies.

The Florida Coastal Whitetail (*O. v. Osceola*) inhabits the swamps and pine forests of the eastern Gulf Coast of Florida, southward to the central part of the state. If you really like eastern diamondback rattlers and cottonmouths, you will love hunting Florida Coastal Whitetails! There are many unique things about this subspecies, but one is the low nutritional quality of the natural deer foods due to climatic and soil conditions. As a consequence, bucks may have spikes well into their life before reaching peak antler size. Hound hunting is a tradition in this region, but ambush hunting has grown in popularity. The unique habitat and hunting traditions make this subspecies a good one to consider. The rut in northwestern Florida for this subspecies probably includes February and March.



Dr. James Kroll probably understands more about the evolution of white-tailed deer than anyone. His research is aided by a love of whitetails and the burning desire to hunt them any chance he can.

I have been blessed to manage deer throughout their range, and have considerable experience with our last subspecies, the Seminole Whitetail (*O. v. Seminolus*). These are southern Florida deer that might as well have webbed feet because they live in stark, swamp-dominated tropical habitats that in parts of the year are desert-dry and at other times flooded. They are the prime prey of the Florida panther and black bear, along with a host of predators including coyotes and bobcats; not to mention alligators. As if they are not unique enough, their rut occurs sporadically – including June and July. It is common to see spotted fawns as early as February. Since the season runs from the first of August to early January, the rut never is included in the season. Hunting traditions are varied, ranging from hounds to swamp buggies.

SUMMARY

As you begin this book, I hope this chapter has given you a much greater appreciation for our favorite game species. The natural history of whitetails began in the steamy tropics of Asia and spread eastward into North, Central and South America. Along the way, whitetails adapted to a staggering array of habitats and climates, changing to fit the needs for survival. Over the last few thousand years of their existence, we have seen a concomitant evolution in hunting tactics and traditions by humans. It was my goal in writing this introduction to give you a far greater appreciation for whitetails than just the size of their antlers. I sincerely hope the next stage in hunting evolution will be focused more on gaining new experiences and appreciation of different deer subspecies and their habitats. Good hunting! 🍷