

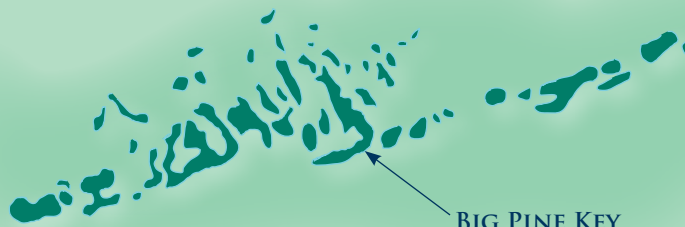
LESSONS OF WHITETAIL CONSERVATION

THE KEY DEER



JASON SCHMIDT

Only about 25 of Florida's Key deer were left in the late 1940s. The story of their comeback – and of the ongoing work in securing their future – is one with lessons for the future of all whitetails.



BY LARRY WILLIAMS

Often our best insights into how things work come from watching them fail. In this way the football coach replaying a video to see exactly how the other team scored is no different from the engineer inspecting a collapsed levee. Both are after the silver lining of failure, that is, the opportunity to see weaknesses in plain view. Two of our nation's National Wildlife Refuges were created when a subspecies of white-tailed deer came close to extinction, in other words, when their populations failed. Their stories yield important insights for modern deer managers and those concerned about the future of hunting.

Speckled with palms and surrounded by turquoise waters, the Florida Keys seem an odd place for a lesson in whitetail conservation. But on this string of islands, less than 1° of latitude from the Tropic of Cancer, lives North America's smallest whitetail, the Key deer. A mature doe weighs only about 60 pounds, and a mature buck might reach 75. Besides having small bodies, Key deer are special in other ways, like the dark mask many wear across their

eyes, and the diminutive antlers the bucks grow. Even the healthiest bucks sport no more than simple spikes until their second year, and 8-point antlers rarely arrive before year four.

Key deer are tough animals, having adapted to hurricanes, droughts and other extremes in Keys' weather. They can drink brackish water, and they're notorious for swimming long distances when moving from island to island. But these durable deer barely survived the human population growth and land development the Keys witnessed this past century. For eons the deer existed in equilibrium with the native Matecumbe Indians. They even persisted in the early days of Keys development, when agriculture took hold and boatloads of pineapples and other tropical crops flowed from the islands. But in 1912 the Florida East Coast Railway was completed between Homestead and Key West, nullifying the watery barriers that previously forced all commerce and visits to occur by boat, and forever changing the landscape of the Keys.

The railway brought more residents and visitors, many of whom enjoyed hunting Key deer with great liberty. At that time, not quite a hundred years ago, wildlife management was a loose affair, and wildlife laws, if they existed at all, were rarely enforced. Without scientific herd monitoring and no real regulation of harvest, Key deer numbers steadily declined. By the 1930s, with only a few hundred deer left, many conservationists could see that on its current path the Key deer might disappear forever.

But an event that occurred in 1934 would be a germ for change. J.N. "Ding" Darling, a Pulitzer Prize winning political cartoonist, conservationist and sportsman, had recently become Chief of the Bureau of Biological Survey, forerunner to today's U.S. Fish and Wildlife Service. In 1934, while boating through the Keys on a survey for wetlands that might be secured as waterfowl habitat, Darling noticed a column of smoke rising from a small island. Arriving at the island, he found it completely charred by fire. Curious about how fire would start on an uninhabited island, he later discussed the event with officials on the mainland. They explained how Cuban fishermen, visiting the Keys for fresh meat, commonly burned the islands to drive deer to water to be shot or clubbed. As a sportsman and conservationist, Darling was outraged. He already knew about the Key deer's predicament, including the great liberties American visitors took in harvesting them, but as a federal official, his responsibilities were confined to migratory birds. Still the event so compelled Darling that he wielded his cartooning skills to create an illustration of the Key deer's plight. That cartoon prompted a cascade of public interest which eventually drove the state legislature to ban Key deer hunting in 1939. Unfortunately, the ban would be poorly enforced, and Key deer would continue to decline. By the late 1940s the population had dipped to an all-time low, somewhere between 50 and 25 animals.

By that time, years had passed since Darling's cartoon originally appeared in newspapers across the country, and all the while public interest in Key deer had been growing, within and beyond the state of Florida. Another watershed event occurred in 1947 when Glenn Allen, an 11-year old boy from Miami, wrote a letter to President Truman expressing his concern for the Key deer. He fol-

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KATIE LYONS

A distinct subspecies of white-tailed deer, the Key deer likely became land-locked 10,000 to 15,000 years ago when sea levels rose and made islands of the Florida Keys. They are much smaller than most whitetails, with a mature doe like this one weighing up to 65 pounds and bucks weighing up to 75 pounds.



The first important step toward saving Key deer from extinction was taken by the Boone & Crockett Club, which in 1951 donated \$5,000 to hire a warden to protect the few remaining deer. That man, Jack Watson, was an imposing figure who knew how to handle poachers. With only 25 animals left, every individual counted, and Watson even patched up and rehabilitated deer hit by cars (below, left).



PHOTOS COURTESY OF U.S. FISH & WILDLIFE SERVICE

lowed it with a letter to President Eisenhower, and along the way he enlisted his classmates and local Boy Scout troops in a full-on letter writing campaign to Congress. The efforts and gumption of these young people caught the national media's attention, further escalating interest in Key deer conservation. By 1950 many conservation organizations were engaged on the issue and stood ready to deliver financing and political clout on the deer's behalf.

A two-pronged effort began to unfold that involved first making Key deer protection a reality, and second, protecting a permanent habitat core. The Boone & Crockett Club stepped up early and offered \$5,000, a substantial sum at the time, to pay for a warden who would patrol the Keys and genuinely protect the deer. They hired a man named Jack Watson who was a former funeral home director and ambulance driver from Miami. While Boone & Crockett provided his pay, the Bureau of Biological Survey and the State of Florida provided Watson joint law enforcement commissions. Standing 6-foot-2, badge on his chest and six-shooter on his hip, Watson's physical presence demanded respect, and he became known for truncating the non-sense stories poachers offered up and quickly getting down to business. Watson soon became a permanent officer with the Bureau of Biological Survey, where he wore the title of U.S. Game Agent. His early years with the agency were devoted strictly to law enforcement, and in May of 1951, when Watson arrived for duty in the prospering town of Marathon, he could see lush acres of habitat disappearing under new resorts with names like Marathon Shores and Little Venice.

The railway to the Keys that was opened in 1912 was destroyed by a hurricane in 1935. It was quickly rebuilt, and three

years later it re-opened as the Overseas Highway. The Railway had been a boon, bringing visitors and new kinds of commerce to the Keys, but the Highway was a necessary prelude to a building surge almost unimaginable.

In coming years the resident and visitor populations of the Keys swelled by the tens of thousands. Neither hurricanes nor rampant mosquitoes could keep people from living or vacationing on the lovely islands, and as the building boom continued the challenges faced by the deer quickly became more complex. Hardwood hammocks and pine rocklands, both important deer habitats, were cleared for development. The islands' wetlands, full of mangrove, buttonwood, and other important deer foods, were drained and filled. Deep, narrow ditches were dug in networks to drain wetlands and control mosquitoes, and the ditches themselves became impediments to deer recovery. Fawns falling into the ditches would struggle and eventually drown. And the Overseas Highway, now a smooth ribbon of concrete and asphalt, officially part of U.S. Highway 1, would itself become a crux to Key deer recovery.

In many ways, conservation sat on the back burner during World War II, but soon after the War's end the Key deer found an ally in a fellow named James Silver. Silver was the southeast regional director for the U.S. Fish & Wildlife Service, the agency created when the Bureau of Biological Survey merged with the Bureau of Fisheries. Silver worked diligently on behalf of the Key deer, helping negotiate the Boone & Crockett agreement to hire Jack Watson. But the toughest nut Silver wanted to crack was finding the authority and funding to protect a habitat core as ref-

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KATIE LYONS

Key Facts about Key Deer



New knowledge about Key deer is coming from an ongoing study by Texas A&M University under the guidance of professors Dr. Roel Lopez and Dr. Nova Silvy. The research is relying on radio-telemetry collars to track individual deer and provide a better understanding of the effect of urban development on Key deer movements, habitat use, and behavior. In addition, the study will provide an updated estimate on the size of the deer herd. The following facts were provided by Texas A&M University. For more information, visit <http://apc.tamu.edu/keydeer/>

- The range of the Key deer includes Big Pine, Little Pine, Big Torch and No Name Keys, and other smaller islands near these, all in the western end of the Florida Keys. The total population is around 800 deer, with nearly 600 of these on Big Pine and No Name Keys.
- Shoulder height of Key deer is 24 to 28 inches. Mature does weigh 45 to 65 pounds while bucks weigh 55 to 75 pounds.
- Rutting activities begin in September, peaking in early October and decreasing gradually through November and December. Fawns are born April through June and weigh 2 to 4 pounds at birth.
- Key deer feed on native plants such as red, black and white mangroves, thatch palm berries and over 150 other species of plants. They can tolerate small amounts of salt in their water. The doe in the photo on the left is wading in a brackish-water mangrove swamp and browsing on mangrove plants.

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uge for the deer.

Eventually Silver and others were persuasive enough that on March 2, 1950, Florida Congressman Charles Bennett introduced a bill calling for a federal Key deer refuge. The bill failed to pass Congress by a single vote. In 1952 another Florida Congressman, Bill Lantaff, introduced a second bill for a refuge, and it made its way through Congress at the same time the powerful National Wildlife Federation heralded "Save the Key Deer" as the theme for National Wildlife Week. But that bill too died in Congress because developers feared loss of their holdings from condemnation.

In 1954, the Fish & Wildlife Service was given authority to lease lands within the Key deer's range for refuge purposes. The leases could be cancelled with only a 90-day notice, and with that assurance many landowners enrolled. By now, the Key deer population had reached its frailest moment, a low of about 25 animals. But finally, with the hard-nosed patrolling of Jack Watson and the flexible but effective lease program, the population would start to rise. James Silver wrote his fifth and last Key deer progress report to the Friends of Vanishing Wildlife on January 28, 1954, just before his retirement. He reported that in the last three years the Key deer population had tripled, and landowners were now enrolling in leases for the nominal amount of \$1 per year. Most residents of the Keys now embraced the idea of a refuge, but a few more years would still tick by before they actually had one.

It's not uncommon that the first acres of a new National Wildlife Refuge are donated to the cause. In April of 1955 the Crane Foundation donated a 17.5-acre tract to the North American Wildlife Foundation for the express purpose that it be transferred to the U.S. Fish & Wildlife Service to become part of

a Key deer refuge. That action sent a strong message to Congress that conservationists were serious about creating a refuge for the deer, and soon afterwards Congressman Bennett introduced a third bill authorizing the acquisition of 1,000 acres to establish a refuge for the deer. The bill soon passed Congress and was signed into law by President Eisenhower in August 1957. Finally, Americans had something firm upon which they could build their hope for the Key deer's future. They officially had the National Key Deer Refuge.

As numerous agencies and conservation organizations worked to recover the deer, they faced what seemed an endless list of difficulties. Invasive plants compromised the remaining blocks of habitat. Septic discharge contaminated the few remaining freshwater ponds. Fence entanglements and free-ranging dogs added to an already high toll taken by vehicle collisions and ditch drownings. And in a strange irony, the surviving deer were becoming accustomed to humans, so accustomed they began taking food from well-meaning people, and they began feeding on discarded trash. Necropsies revealed deer dying from trash lodged in their digestive tracts, and herd monitoring revealed new social behaviors. Key deer were now living in larger groups and staying closer to houses and roads.

But for Key deer, all of these adversities would pale when held up against the challenge of co-existing with Highway 1. As land was purchased for the refuge, the refuge core shaped up to be several large tracts acquired on Big Pine Key, an area already bisected by Highway 1 before the refuge was established. Between 1970 and 1992 the section of Highway 1 on Big Pine Key alone would kill more than 500 Key deer. Hundreds more would die on

other sections of the highway.

Throughout most of the whitetail's range, deer/vehicle collisions are a problem usually considered in terms of insurance premiums and human health risk. But the balance sat differently in the Florida Keys, for here vehicle collisions were the limiting factor for the whitetail population, and a threat to the Key deer's very existence. As this fact became obvious, an evolution began in making Highway 1 compatible with the deer. First, there were modest signs imploring drivers to be cautious, followed by reductions in speed limits applying the force of law against those who might risk hitting a Key deer. Later evolutions have included careful management of the roadside vegetation to make it less attractive to deer, along with multi-million dollar construction projects that elevated the Highway and allowed deer to pass beneath. The signs are now more

emphatic too: enter Big Pine Key today on Highway 1 and you are advised by official bright yellow highway signs, 4 feet tall and 10 feet wide, "DRIVE WITH CAUTION YOU ARE ENTERING AN ENDANGERED SPECIES AREA" and "SPEED KILLS KEY

THOMAS WILMERS



Among Key deer bucks, 8-point antlers are rare before age 4½. This buck is not only mature, he has outstanding antler size. There is no hunting season for Key deer, and with development continuing in the Keys, it is doubtful there will ever be a large enough population to sustain harvest by hunters.

hunted again. The population and the habitat have been too compromised. They can exist somewhat precariously, propped up by strict laws against feeding, extra-conservative speed limits and a

DEER." Jack Watson probably would have appreciated the signs. During his 29 years of service toward protecting the Key deer, Watson often rehabilitated injured deer in a pen at his home, each one a victim of a vehicle collision or similar malady, and each one a hopeful reinforcement to the cause he labored for.

"Challenge" is an insufficient word for what conservationists have faced in recovering the Key deer. Through a complex effort of new regulations and zoning, educational initiatives, and habitat restoration, Key deer numbers have continued to grow. When Jack Watson retired in 1975 the population had rebounded to 250 animals. Others built on that good work, and now the population hovers around 800 deer. The Key deer's future appears more secure now than it has for almost 100 years. However, most biologists familiar with the deer agree it is unlikely they will ever be

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ban on hunting. And unfortunately the threats may not be over. Research now suggests that development in the Key's uplands, which is now regulated but not altogether limited by zoning, threatens to fragment habitat to the point that fawn survival becomes too low. In another ironic turn, it seems that early practices of draining and filling wetlands to create more uplands for construction may now have a beneficial effect on the deer. Such complicated relationships can only be sorted out by additional research, and require local conservationists to stay up on the intricacies of the issues. Fortunately, there is now an army of local and national conservationists engaged in the fate of the Key deer.

In the opposite corner of our country from the Key deer is another whitetail subspecies that came close to extinction, but whose fate was turned around after exhaustive efforts that ultimately unfolded with similar patterns. Studying those patterns yields important insights for modern deer managers, and in turn, the insights point toward the powerful force that wildlife cooperatives bring to bear on the future of hunting and conservation. We'll look at the lessons we can learn from the Columbia white-tailed deer in the next issue of *Quality Whitetails*.



About the Author: Larry Williams grew up in Alabama and earned his bachelor's degree in wildlife science from Auburn University. He is a 19-year veteran employee of the National Wildlife Refuge System and is now Chief of Budget at the National Wildlife Refuge System's Headquarters in Arlington, Virginia. He is a lifelong hunter and a strong believer in *Quality Deer Management*.

About Whitetail Subspecies

Key deer (*Odocoileus virginianus clavium*) are one of 30 recognized subspecies of white-tailed deer in Central and North America. The subspecies were identified by scientists decades ago based primarily on physical characteristics, including coat color, body size, details of the skull, and antler dimensions.

Among the more familiar subspecies besides Key deer are *O. v. borealis*, the northern whitetail; *O. v. virginianus*, the southeastern whitetail; *O. v. texanus*, or Texas whitetail; and *O. v. couesi*, or the Coues whitetail of Arizona and New Mexico. With some subspecies like the Key deer, geographic separation is distinct. In other subspecies without geographic barriers, the dividing lines are blurry, and there continues to be debate about whether there are more or fewer subspecies than the 30 that are currently recognized.



Scientists divided whitetail subspecies based on physical variations, such as the variation in coat color displayed by these two bucks. The Minnesota buck (left) is likely of the *O. v. borealis* subspecies, and the Texas buck is likely *O. v. texana*.

"In systematics – the classification of animals – there are the splitters and the lumpers," said Dr. Steve Demarais, professor of wildlife biology at Mississippi State University. "Some people like to split the lines as fine as possible, others like to lump more generally. We ended up with a lot of subspecies of white-tailed deer based not on genetic comparisons but on physical comparisons. There is a huge amount of physical variation across North America, and much of it is probably a result of habitat quality rather than genetics."

A map of the original ranges of the 30 subspecies of white-tailed deer was created by the Wildlife Management Institute, but it was significantly rearranged by restocking efforts.

"Our southeastern population, the Virginia whitetail, was impacted in many local areas by restocking, which relied upon deer from Wisconsin, Texas, Mexico, Michigan and other places. Probably, the subspecies that were not impacted would certainly include the Key deer, because to my knowledge there was no restoration effort with them. They are genetically pure." (For more information, refer to "A History of White-tailed Deer Restocking in the United States: 1878 to 2004," available at www.QDMA.com.)

Currently, Mississippi State has a research project underway to look at three populations of deer from low, medium and high-quality habitats in Mississippi. Researchers want to see if they can take deer from the low-quality Lower Coastal Plain, where they are typically smaller than deer in other regions, and grow them to be as large as Delta region whitetails by placing them on a high-quality diet. The results may help determine whether genetics or habitat quality is more important to the dividing lines between subspecies.