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# New Jersey Outdoors





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- Front:** It's better in winter at the Jersey Shore, where Tony Giordano thrives in the adversity as he bottom turns on a frigid double-overhead wave. Photograph by Michael Baytoff.
- Inside Front:** Wildlife biologists are cautiously optimistic about their success in restoring the critically endangered bald eagle to New Jersey. Photograph by Don Poggensee.
- Inside Back:** Mink. Original acrylic painting by Carol Decker.
- Back:** Iceboarding is hot, as exposure to New Jersey's newest winter sport warms the hearts of these two Barnegat Bay ice hounds. Photograph by Dick Meseroll/Shore Shot.

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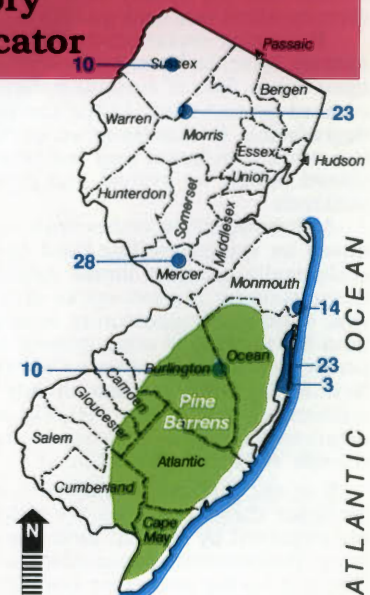
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## Story Locator





The wave crests and angrily throws its massive lip out over the surfer's head as he crouches ever so slightly to avoid being swept from his board. He remains poised within the swirling vortex, disappearing from view while the wave continues its barrel-like roll over a shallow sand bar. Seconds later, 25 yards from the beach the surfer emerges unscathed from the hollow tube, moments before it collapses in a fury of seething foam. The man at the window, pondering the intensity of the feat, neither hears the pounding surf nor smells and tastes its fresh salt spray. Though he feels not the piercing cold of the 37 degree water, he stands in silent admiration.

Surfing in the 1980s is for many a puzzling notion. Still the memory of a fad which passed briefly in the 1950s and '60s, surfing was a wistful time when groups like The Beach Boys sang of long, carefree summers, cute girls and cutting school to go surfing. Surprisingly, though, there is little connection between myths which surrounded the sport then and the real surfing of today.

Closer to home a strange dichotomy exists in the minds of many who frequent the Jersey Shore from Memorial Day to Labor Day to swim, raft or bodysurf in the cool Atlantic waters. While many residents and visitors enjoy a wide array of recreational activities offered by the waves of summer, few consider surfing among the possibilities. Stopped periodically along the beach or boardwalk—complete with surfboard and dripping wetsuit—by curious natives or tourists, I am inevitably asked, "You can't really surf in New Jersey, can you?"

These encounters bring to mind the scene in the now-classic surfing adventure, "The Endless Summer," in which two young American surfers are approached by a local man as they leave the water after a refreshing session on perfect Tahitian waves. The man, who has been watching them surf for hours, remarks, "Hey, there's no waves in Tahiti!" Looking somewhat dismayed but wanting to seem polite, one of them replies, "Well sir, they're sure fun things whatever you call them."

New Jersey's 127 miles of Atlantic coastline actually provide some of the best waves on the entire East Coast, affording both competitive and recreational surfers a fairly consistent medium on which to hone their skills. The state's coastline can be divided into three distinctive regions: northern, from Sandy Hook to Manasquan Inlet; central, from northern Point Pleasant Beach to the southern tip of Long Beach Island; and southern, from the northern end of Brigantine Island to Cape May Point. The coast itself curves obliquely in a lazy crescent from northern beaches which


face virtually due east to the beaches of south Jersey in their more south-southeasterly direction.

The extensive barrier islands which characterize the central and southern regions are noticeably absent in the north where the coastal plain extends directly to the sea. Offshore, the presence or absence of sand bars, the average water depth, and the bottom configuration of individual beaches factor into the shape and intensity of the surf that breaks there. The submerged coastal plain, which forms a relatively shallow continental shelf extending about 90 miles offshore, effectively minimizes the intensity of swells created by storms which sweep by, much to the chagrin of New Jersey's surfers, farther out to sea.


While virtually all the shore municipalities have beaches with surfable waves, some are known for having exceptionally consistent breaks. Spots along the coast such as Sandy Hook, Long Branch, Manasquan, Seaside Heights, Long Beach Island, Cape May, and Atlantic and Ocean cities come to mind. Surfers have developed their own variety of colloquial names to describe the local breaks they frequent. Some of the more provocative monikers given to New Jersey's breaks include "Gas Chambers," "Coffee Shop," "Crystals," "Deadman's," "Metro," and "The Rocks"; and many towns have a break known locally as "The Pier" or "The Jetty."

Even more striking, particularly to those who consider the shore and its beaches as mere summer fare, surfing in New Jersey transcends the once insurmountable barrier presented by the seasons and their changing weather patterns. With the advent and vast improvement in modern wetsuit design, year-round surfing has become commonplace among the most dedicated enthusiasts. In fact, due to the vast seasonal variations to which New Jersey is accustomed, the state's surfers encounter and must adapt to some of the most diverse conditions in the world.

Because average air and water temperatures fluctuate so drastically between summer and winter, the really "hardcore" surfers maintain a complete quiver of wetsuits in varying lengths and thicknesses. In addition, thick-soled boots, gloves and hoods become necessary during winter months when water temperature dips below 45°F. Once below this, surfing assumes an entirely different character. The length of the average surf session is usually limited to about two hours (depending on the wind velocity and other conditions), and surfers must withstand the infamous "ice cream headache" when they go beneath the water. An "ice cream," as they're more commonly known, is difficult to describe but simi-



*A professional surfer from Florida gets a taste of some "Jersey Juice" as he slashes hard off the top in last summer's Garden State Pro contest in Seaside Heights.*



*Floating in the impact zone, Mike Baytoff peers into the tube at Crystals as the silver curtain descends. Sometimes the most perfect waves are those that go untrdden.*



The following events have been tentatively scheduled for this spring.

**April 1**

NSSA Ocean City Open  
Seventh Street beach  
Ocean City

**May 20**

Long Beach Island Open  
Hudson Avenue beach  
Harvey Cedars

**June ?**

New Jersey High School  
Championships  
specific location, as yet  
undetermined  
Long Beach Island

**June 20-23**

Garden State Pro  
Associated Surfing  
Professionals  
Casino Pier  
Seaside Heights



Michael Baytoff






Dick Meseroll/Shore Shot



*Mike Sweeney, locked into a Bay Head barrel, drives for an opening 20 yards down the line.*

*Seaside Heights' Boys of Winter—only the truly dedicated need apply.*



A graduate of the Eagleton Institute of Politics, **Steve Doughty** is performing state service as a Governor's Fellow. The former south Jersey surfing champ and three-time NJ men's finalist is a first-time contributor. He has written previously for *Surfer* magazine.

Two continuously updated hotline surf reports are available to all hardcore surfers and spectators. For information on north and central New Jersey conditions, call 201/793-8849; for south Jersey waves and weather, 609/399-8399.

For information on the associations serving New Jersey surfers, write:

Central/NJ District  
Eastern Surfing  
Association  
PO Box 783  
Toms River, NJ 08753  
(north and central  
Jersey)

Southern/NJ District  
Eastern Surfing  
Association  
RD #1, 2 Sunny Lane  
Cape May Court House,  
NJ 08210  
(south Jersey)

National Scholastic  
Surfing Association  
New Jersey District  
PO Box 1077  
Ocean City, NJ 08226

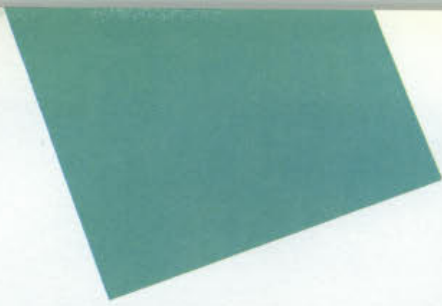
lar to that terrible pain that overtakes the nose, throat and sinuses when you eat ice cream too quickly. If you multiply that by a degree of five or ten and expand the area of pain to include the forehead and temples, you can begin to imagine how it feels.

Although surfing in such adverse conditions requires a great deal of commitment, dedication and, at times, even bravado, winter surfing in New Jersey is only a small part of the sport in the larger scheme of things. With the passing of the seasons come various types of storms, predominant wind patterns, and frequency of swells. Cold fronts and low pressure systems sweeping across the eastern seaboard produce two to three-day swells much of the year, but the biggest and most consistent waves come in the fall as hurricanes and other cyclonic storms track up the coast, generating powerful swells in their midst. The infamous nor'easters—whose intensity and potential for destruction are well documented—become prevalent in the late winter and early spring, bringing blustery winds that whip the sea into large, choppy swells and creating treacherous ocean conditions. Gradually, storm patterns subside and summer appears with mostly sunny, placid conditions that are not entirely conducive to good waves. One of the true ironies of surfing here is that the nicest weather usually coincides with the worst surf.

Without doubt surfing is one of the most rigorous and cardiovascular sports. It is also an extremely difficult one to learn. From the beach, a competent surfer makes the whole enterprise appear effortless; yet the mere paddle out in average-sized surf would leave an otherwise active person quite winded and drained. And although it requires all the athleticism of other sports, surfing also necessitates a delicate balance of strength, agility, and grace that is fundamental to success in ballet and other forms of dance.

As in most surfing locales, there are generally two types of surfers. The recreational surfers only when the waves are exceptionally good and when time permits, while the competitive might surf nearly every day for sheer enjoyment and in order to prepare for upcoming surfing contests. Competitive types are far more likely to scan updated weather reports repeatedly, devise work or college schedules that allow split-second surfing jaunts, and carry surfboards and wetsuits wherever they go.

The state of surfing in New Jersey, as well as the caliber of its surfers, has improved immensely in recent years as the Jersey shore has gained some long-awaited notoriety in worldwide surfing circles. Traditionally not



Dick Meseroll/Shore Shot





known for having consistently large or spectacular surf like South Africa, Australia or the north shore of Oahu in Hawaii, New Jersey is now recognized by many as one of the better stops along the world professional surfing tour. In fact, during a conversation a few years back, Shaun Tomson, a former world surfing champion from South Africa, commented, "Outside Hawaii, New Jersey has had some of the best waves on the entire tour.... In fact, the conditions here [in New Jersey] this year surpassed those in which many of the contests were held in Australia, South Africa, and Brazil."

State beaches are today producing and continue nurturing a strong contingent of talented, young athletes who compete in regional, national and international surfing events throughout the continental United States, Hawaii and abroad. For several years now, the Eastern Surfing Association (ESA) and the National Scholastic Surfing Association (NSSA) have sponsored local and regional contests here, ultimately selecting and supporting a national surf team which represents the U.S. at the world amateur surfing championships. Other organizations like the Ocean City Surfing Association, one of the oldest in

*Barnacle crusted pilings leave Scotty Duerr, slotted perfectly within a hollow, frozen cavern, little room for error.*

America, hold an entire schedule of events in this south Jersey locale throughout the year.

When one considers the number of amateur competitors in the state, it becomes increasingly evident that there is more to surfing than the perception of it as a passing fad. The ESA, which is separated into three districts in New Jersey—north, central and south—has about 700 active members who compete on a regular basis throughout the year. Added to that is the state's NSSA membership—including four college and seven high school teams—which totals some 300 young men and women who compete in interscholastic and intercollegiate surfing events. At some schools along the shore, surfing has in fact come to be recognized as a legitimate school sport, achieving full varsity letter status along with football, basketball or track. And in a fashion which underlies the growing dedication and commitment that participants place in the sport, many of the established organizations now offer academic scholarships to deserving young athletes who demonstrate superior performance in the classroom, as well as on the water.

Perhaps the most indicative characteristic and, arguably, most endearing quality of surf-

Dick Meseroll/Shore Shot



Ranked among the world's best competitors, Ellie Keck gets vert in full abandon at Carlson's Corner.

ers and their ilk is the almost innate affinity with the medium in and on which they abound. Because of their close association with the ocean, the beaches and the wildlife that exist there, they more than most are incredibly perceptive of and sensitive to changes in the shore environment. And since they spend an inordinate amount of time in and around the coastal waters, they may be more susceptible to the threats presented by these changes. Overdevelopment or the shore pollution problems which have plagued the state during past years are a perfect example.

Many New Jersey surfers have held benefit surfing competitions, subsequently donating funds to grassroot environmental groups and other non-profit organizations. A single contest in Ocean City this past August raised some \$1,500 for the Environmental Response Network, a Cape May County outfit whose primary objective has centered around efforts to influence state legislators and other public officials to bring an immediate halt to ocean dumping. Other groups that have been organized by surfers retain attorneys who work on other important environmental issues, one of which has been to promote and improve


public access to the state's beaches and coastal waters.

Surfing seems to attract a wealth of spectators as well. Many people are simply amazed at the prospect of a person being able to maneuver a surfboard willfully along the face of an otherwise useless wall of water. Moreover, parents and siblings, journalists, photographers, and captivated passersby attend the contests usually reserved for Saturdays and Sundays. It is a safe bet that there is at least one contest scheduled somewhere in the state every weekend from March to December, waves and weather permitting. In addition, some organizations hold contests in January and February when the water temperature averages about 35 degrees. One of these is the annual "Polar Bear" contest, sponsored by the Ocean City Surfing Association in early January, which normally attracts 50 to 60 competitors. Another, The Turkey Trot, is held as late as the Saturday after Thanksgiving.

Inevitably, some questions about surfing remain unanswered. One, I imagine, is, "But why do you surf when it's so cold?" Words such as "crazy," "daring," and "senseless" are posited as explanations, yet the true answer rarely seems to suffice. Surfers *live* to surf because they *love* to surf. I competed in many sports in school and college, sports which I found to be fun and exciting; yet none of them offered the total exhilaration experienced while surfing! Most likely the next question then would be, "Why don't you just do something else until it warms up?" Surfing hasn't any substitutes. Surfers do not welcome adverse conditions; yet when faced with the alternative of not surfing at all, they are left with little choice.

In the final analysis, I suppose New Jersey and surfing really aren't ... perfect together. While we have our share of days when all the conditions come together, the mystical surf session with four to six foot waves blown into perfect cylindrical form by light, offshore breezes is more rare than common. But on a coast which is not particularly known for its tremendous surf, New Jersey is at least as good as, and often better than, its counterparts to the north and south.

It is not uncommon for surfers who grow up here to travel or migrate to other areas noted for having large, quality waves. Inevitably, though, nearly all of them return to New Jersey and the place they call home.

Indeed, there is a rivalry among surfers as to which state has the best waves, but one old adage seems to lay that debate to rest. "Florida may have the oranges, but New Jersey has the juice." 

# New Jersey Mushers

## On Sand and Snow

By Claire and Ken Oravsky

In 1985, the attention of the sporting world was drawn to Libby Riddles of Alaska when she became the first woman to win Alaska's 1,052-mile Iditarod Trail Sled Dog Race. Since then dogsledding has received increased media attention.

You needn't travel to Alaska to watch a dog team in action, though. Dogsledding is firmly established in the eastern United States, and New Jersey is no exception. There are currently over thirty sled dog racing kennels in New Jersey. Each year, New Jersey mushers compete in races as far away as Minnesota, Ontario and Maine, as well as in several races right here at home.

Dogsled racing came to New Jersey in 1969, with several south Jersey teams competing by running sleds over a hundred-yard long trail covered with straw! A couple of years later, the development in eastern Pennsylvania of a lightweight, three-wheeled training rig provided a practical means of running a team without snow. The hundreds of miles of sand roads in Wharton and Lebanon State Forests became a boon for dogsledders, and the number of teams multiplied rapidly.

Several years later dogsledding began to expand in north Jersey, as teams began to utilize recently abandoned railroad rights-of-way and newly established snowmobile trails. It was not long before any lightly traveled dirt road became fair game as a training trail.



*Sled dogs other than the traditional Northern breeds enjoy "working" in the snow.*





Claire and Ken Oravsky

*Wheeled rigs allow three-dog teams and their musher to log training miles on sand roads long before the first snowfall.*

Though dog teams often train year-round on some parts of the continent, New Jersey's warm summers usually limit training. As fall approaches and mornings become cool, dogsledders begin training for the season. Teams usually start out by working shorter distances with a wheeled "gig." Depending on the size of the team, gigs range from a 50 pound aluminum gig used for two to four dogs on up to a 400-pound all-steel gig complete with automotive tires and hydraulic brakes. The latter gig is usually necessary to control "unlimited" class teams of nine dogs or more. It is not uncommon to hear of someone using an old compact car minus the engine as a gig, since anything lighter would not be able to stop a large, fast team!

The best trails for early training are dirt or sand roads with a lot of intersections. This gives the driver the opportunity to train new leaders and to refresh experienced ones at turns. Unlike driving a team of horses, the driver must rely completely on verbal commands to his leaders. By January, it is not unusual for a good sprint team to have logged over 200 training miles. A mid-distance team may, at that time, have gone over 500 miles.

Sled dogs are chosen predominantly from one of the "Northern Breeds," namely Siberian huskies, Alaskan malamutes, Samoyeds or Alaskan huskies, a cross-breed between northern breeds and various hound breeds. While just about any breed of dog can be harnessed, northern breeds are most suitable because of their tolerance of cold weather and their instinctive desire to pull. Of the more commonly

used northern breeds, the Alaskan huskies are the fastest, both in sprint races and in the longer distance races.

Alaskans generally weigh 40 to 55 pounds and are easily recognized by their short coats and variable color patterns. Alaskans are the predominant dogs seen in long distance races such as the Iditarod in Alaska.

Siberian huskies, weighing 45 to 60 pounds, have "double coats" made up of long guard hairs and shorter, wooly undercoat. Siberians can be any shade of black, red, or completely white above and white below with striking symmetrical facial markings. Though not quite as fast as Alaskans, Siberians are a fast, strong dog with good endurance. Many people prefer Siberians because they are easier to train to pull and they learn to follow a trail more quickly.

Alaskan malamutes are the largest of the northern breeds, with males often topping 100 pounds. Malamutes tend to have the same color patterns as Siberians but are distinguished by their larger size and stockier build. Although malamutes are still used in sprint racing, they are at their best in freight classes or in heavy snow, where sheer strength is needed.

Though some people have a hard time believing that pulling a sled is not cruel to a dog, they need only once to watch a team up close. Pulling is as natural for northern breeds as retrieving is for the Labrador retriever. Their enthusiasm for running is so incredible that often the rookie driver who underestimates this enthusiasm finds himself thrown off the back of the sled when the team bolts off the starting line.

Puppies are usually introduced to harnesses and pulling during their first fall or winter, but serious training and racing have to wait until after they are one-year old. This prevents possible injury to underdeveloped bones and muscles and the risk of permanently frightening a young dog that is hitched to a team that runs much too fast for him.

Sled dogs usually reach their prime between three and six years of age and can usually compete in sprint races until they're about 10. Mid-distance dogs often still compete beyond 10 years of age.

The typical sled dog driver, or musher, is anything but typical. In New Jersey there are about 100 active drivers, and they are as diverse as can be imagined. Dogsledding has never had separate "men's" or "women's" classes. Women have found that dogsledding is one of the ideal sports to compete in on a truly "equal" basis. Many of the most successful mushers today are women.

The photography of **Claire and Ken Oravsky** has appeared previously, as has Ken's writing. He is president of the NJ Sled Dog Club, and the couple's three household dogs double as their sled team. The other family member, 6-month-old son Eric, will take his first dogsled ride this winter.

Mushers are often referred to as the "fourth dog" or the "seventh dog" on the team because of the amount of work the driver does during a run. Drivers can help their team by "pedaling" or kicking with one foot when on level ground and, even more importantly, by running alongside the sled when going up hill. Though the team is capable of pulling the driver without any help, precious energy is preserved when the driver becomes an active member.

Dogsledding is also recognized as a great family sport since all family members can participate. It is not unusual to see one parent compete in the three-dog class, the other parent compete in the six- or eight-dog class, and then both help junior harness up a retired lead dog to compete in the 50-yard pee-wee race.

Getting started in dogsledding is a little different than getting started in other sports. Instead of simply buying some equipment, taking a few lessons, and throwing the equipment in the closet during the off-season, the prospective dogsledder must first acquire the dogs. Most dogsledders get started when they begin to get interested in the working potential of their pet Siberian husky or Alaskan malamute.

A workable, used sled can usually be purchased for less than a good set of downhill skis. Harnesses are relatively inexpensive. Ganglines can be made from items available at hardware stores or be purchased.


Some people who own northern breeds are already involved in skiing, so ski-joring often becomes the logical next step. Ski-joring is a cross between skiing and dogsledding. This sport originated in Scandinavia where horses were used instead of dogs. Eventually, the ski-jorer often moves on to a sled because he finds he can spend more time upright and less time being dragged. Sleds also offer such amenities as a brake.

Other people get involved by joining a club. There are several clubs that can offer guidance and experience to the newcomer in this sport. These include the New Jersey Sled Dog Club, the Garden State Siberian Husky Club, the Jersey Sands Sled Dog Racing Association and the Eastern Shore Siberian Husky Club. These clubs offer guest lectures and training clinics, as well as promote races in New Jersey.

New Jersey dogsledding over the last few years has been experiencing a decline in numbers of participants and in the size of teams. The problem is the same problem that threatens many other outdoor sports in the state: loss of open space. As more dirt roads get paved and traffic on other dirt roads in-

creases, valuable training areas are lost. Many mushers are forced to go to smaller teams because they just can't find the trail miles needed to train larger teams. Many kennels also are experiencing conflict with neighbors as houses are built closer and closer together, even in rural areas.

The race course for the most popular sled dog races in New Jersey, the races at the Sussex County Winter Carnival, was lost to development. Though the search for a suitable snow race site continues in north Jersey, the future of dogsledding in New Jersey hangs precariously on the issue of open space.

Although racing has been central to this article, recreational dogsledding should not be overlooked. There are many dogs and owners in New Jersey who never compete, but they still spend many enjoyable miles together on the trail. Whether training or just out for the fun of it, dogsledding is great fun for driver and dogs. I can think of few, more enjoyable experiences than running down a snow covered trail, on a moonlit night, with three of my best friends ahead of me, leading the way. There just isn't any better way to "walk" the dogs! 

## Glossary of a New Jersey Musher

**Ganglines**—The lines which connect the harness to the sled or gig.

**Haw**—Command for a left turn.

**Husky**—A generic term referring to Northern breeds and/or sled dogs.

**Leader or Lead Dog**—The front row dog or dogs.

**Long Distance**—Races of 300 to 1,000 miles, usually run with teams of "unlimited" size.

**Mid-Distance**—Races of 30 to 70 miles, which are usually run with six-dog teams and are completed in one day.

**Mush**—A term never used in dogsledding. It is not known exactly how the misconception about this term came into being.

**Musher**—The driver of a dog team.

**Point Dogs**—The dogs in the second row, directly behind the leaders.

**Sprint Races**—Short, fast races, varying from three miles for three dogs up to 10 to 13 miles for "unlimited" size teams.

**Swing Dogs**—All dogs in the middle of the team.

**Wheel Dogs**—The dogs right in front of the gig or sled, usually the largest and most powerful dogs on the team.

### 1989 Racing Schedule:

All races are currently run at Lebanon State Forest, either at the Whitesbog Preservation Area or the Mount Misery section. Races are generally run two consecutive days with a driver's combined times determining the winner of each class. All races are weather permitting.

Jan. 14/15	Mt. Misery
Jan. 21/22	Mt. Misery
Jan. 28/29	Mt. Misery
Feb. 4/5	Mt. Misery
Feb. 11/12	Whitesbog
Feb. 25/26	Mt. Misery

Anyone wishing more information about sled dogs may contact the Mid-Atlantic Sled Dog Racing Association, New Jersey Affiliates:

Garden State Siberian Husky Club  
PO Box 252  
507 Clark Landing Rd. West  
Port Republic, NJ 08241

Jersey Sands Sled Dog Racing Association  
141 N. Whitesbog Rd.  
Browns Mills, NJ 08015

New Jersey Sled Dog Club  
153 Holland Mountain Rd.  
Oak Ridge, NJ 07438

# Coldfishing

**Prior to overharvesting by foreign fleets, winter codfishing was a way of life for many Garden State saltwater anglers. Following enactment of the 200-mile limit and with codfish stocks on the road to recovery, interest in the fishery has gained a new following.**

By Russ Wilson

Hanging onto a fishing rod with one hand and the heated handrail with the other, I had to wonder what it was that caused a sane person to leave a warm bed in near zero weather, board a party boat in the dead of night and spend the next three hours rocking and rolling across a white-capped ocean.

Interestingly, I wasn't alone. At least twenty anglers lined the gunnel, each wearing enough clothing to outfit a small army and holding onto a fishing rod as though it might be torn from their grasp at any moment.

A surge at the business end of the line brought me back to the present. Lifting the rod tip sharply to set the hook and then feeling the power of a very large fish fighting for its freedom made the loss of sleep and bone-chilling cold seem a small price to pay.

The fish had tremendous power, pulling line from the drag at will and yanking the rod tip to the water with each pump of its powerful tail. Naturally, I did not want it to escape! After ten minutes of give and take, with the fish taking more than giving, I had forgotten the numbing cold and non-stop rocking of the boat and had but one thought in mind: to get the fish in the boat as soon as possible.

One of Captain Bogan's mates stood at my side with a long-handled gaff, shouting instructions and offering advice that went unheeded. For a time it was questionable as to which one of us would give up first. Finally we spotted a flash of color deep beneath the surface and then the outline of a fish that looked immense.

Grudgingly the monster cod came to the surface, and with one quick motion the mate hit it behind the gills with the gaff and hoisted it onto the deck. The catch safely aboard, I admired the fish, a forty-five pound cod that was destined to provide many fine meals for the Wilson family.

The battle at an end, I had time to move about the boat, checking other anglers' catches and sipping a much needed cup of hot coffee. Although I wanted to catch a few more fish, it was time for photo taking and information gathering.

Stopping to chat with Captain Bogan, I learned that more than a dozen cod and pollock were taken in the first hour of fishing and at least as many others had been hooked and lost due to line breaks or lines tangling in the sunken wreck.

We fished the wreck an additional half hour, but when the action failed to materialize Captain Bogan tooted the horn, signaling he was about to move to another of his "secret" cod-



Russ Wilson



Russ Wilson

fish wrecks. By day's end we had fished several different wrecks, catching a few cod and pollock at each stop.

Although most of us caught at least one or two fish and felt the trip was a success, according to Captain Bogan it was nothing more than a typical day on the codfish grounds.

I suspect winter codfishing at the Jersey Shore is the ultimate saltwater challenge. It is a demanding sport, one requiring the determination of a David preparing for his go-round with Goliath. But, for those who are willing to endure the rigors of fishing offshore waters under the worst possible weather conditions, Garden State codfishing is very rewarding.

Keep in mind winter fishing is a cold sport. The clothing you wear can make or break a day at sea. Although you may luck into a bright sunny day with calm seas and moderate air temperature, more often than not skies will be overcast with westerly winds creating mountainous seas and a wind chill factor that will make your teeth chatter.

Garden State sportsmen who are experienced at this game dress for the worst possible weather, applying several layers of clothing to retain body warmth. Most prefer insulated undergarments, woolen pants and jacket, silk and wool socks, and knee-high waterproof boots.

Insulated gloves such as those worn by skin divers and foul weather gear to ward off flying spray that will quickly freeze or soak through ordinary clothing are considered "must have" items among the regulars aboard shore area party boats. It is advisable also to have a spare pair of boots, extra socks and gloves.

I normally carry a small duffel bag loaded with plenty of food, a quart thermos of hot coffee and another filled with soup or broth, spare boots, wool socks, gloves and a hooded wool jacket. Whenever water soaks through and the cold becomes unbearable, I will change.

Cabins of today's party boats are heated, a blessing for fishermen seeking refuge from the

icy winds and freezing spray created as waves slam against the boat. The warmth of a heated cabin is a good place to kibitz with other anglers, dry wet clothing, rest between bouts with strong-willed cod or just relax when traveling from one wreck to another.

Tackle for deep water codfishing is rather specialized. The codfish is not a strong fighter. Because you will be fishing deep water and 30- to 50-pound cod or pollock are a definite possibility, it is advisable to have rods, reels and line that are up to the task.

Experienced anglers prefer stiff conventional rods and revolving spool reels for the control they afford. The rod used most often by the experts measures 6½ to 7½ feet in length and is rated to handle 30- to 50-pound test line.

Reels having a capacity of at least three hundred yards of 40-pound test line will do just fine for muscling bragging-size cod and pollock from the offshore wrecks. The Penn 3/0 or 4/0, Daiwa 300H and 400H and Shimano TLD 25 are typical of those used by many experienced fishermen.

All bait is included in the cost of a trip aboard any of the boats sailing from Jersey coast basins. Clam is a favored food of the codfish, and the captain will have plenty of these choice offerings available. Cod and pollock often show a preference for squid. Since this choice offering is not supplied, I suggest stopping at a local bait shop or supermarket to purchase a box or two of frozen Monterey squid before boarding.

Codfish are not in the least hook or line shy and will grab baits that would choke the average fish. Experienced anglers fishing aboard shore area party boats often attach two or three whole clams to the hook, feeling a larger offering will result in more strikes and, perhaps, larger fish.

Although no one knows for sure whether or not the "big bait for big fish" theory holds true when seeking winter cod, most anglers do use more than one clam or a combination offering such as a whole clam and whole squid.

*Winter codfishing is cold sport. Dress for the worst and carry extra clothing plus foul weather gear to enjoy a pleasurable day at sea.*

*This 48-pound codfish was caught last winter aboard the Blg Jamatca.*

**Russ Wilson**, a frequent NJO contributor and former editor of *The Fisherman* magazine, is a fishing boat captain and sportsman who has fished and hunted our state for the past 40 years.

Terminal rigs, designed specifically for codfish, are reasonably priced and can be purchased at most shore area bait and tackle shops, from the captain or mate prior to boarding the boat, or on the trip to the fishing grounds. Sportsmen who know how to snell a hook and tie a clinch knot or perfection loop can assemble custom rigs quickly and in the process save a few pennies.

When planning a trip to the offshore wrecks, I normally pre-tie a supply of codfish rigs using a three-way swivel and attaching an 18-inch leader or 50-pound test monofilament and size 8/0 short shank beak-style hook to one eye of the three-way. The second eye of the three-way is used to attach a connecting link and sinker, and the third eye is tied directly to the end of the fishing line. It is an inexpensive but very effective rig, one that will usually get results when fishing deep-water wrecks and open bottom grounds located 20 to 50 miles offshore of New Jersey ports.

Many experienced codfish enthusiasts feel two hooks are better than one and will attach a second hook five feet above the sinker. There is no doubt the second hook will produce more strikes; however, there is always the danger of having the top hook snag the wreck which could cost you not only the rig but possibly a pool winning cod or pollock.

It's also a good idea to carry a few heavy weight diamond jigs when planning an offshore wreck fishing trip. Pollock normally inhabit the wrecks along with the cod. Although both fish prey upon similar baitfish, the pollock is a more aggressive species, often ignoring natural bait to attack with savage fury a 16- to 32-ounce chrome plated or stainless steel diamond jig.

The codfish and pollock fill a void, normally moving onto the wrecks at a time when other saltwater species have migrated south or have moved offshore to winter in the ultra-deep waters of the Continental Shelf. Most years the New Jersey codfish and pollock season gets underway early in December and, depending on the severity of the winter, will continue through February or March and may last into April or May.

Last season, for example, the weather was mild. Codfish provided non-stop action for sportsmen fishing the wrecks and open bottom grounds from December until late in April when party and charter boat captains switched to mackerel and other bottom species.

The majority of shore area captains do not sail during the winter months, and those who do generally limit trips to inshore waters. During the 1987 winter season only three party boats scheduled offshore trips for codfish and

pollock on a regular schedule and space on each was at a premium.

Joe Bogan, captain and owner of the *Jamaica II*, is one of New Jersey's foremost codfish specialists and will usually find fish when other, less knowledgeable captains come up empty. Starting early in December and continuing through January, February and March, Captain Bogan sails a three times weekly schedule, departing Bogan's Brielle Basin under cover of darkness in order to be anchored over a sunken wreck at daybreak.

Another famous Jersey Coast skipper offering winter codfishing on a regular basis is Captain Howard Bogan, owner of the *Big Jamaica*, also sailing from Bogan's Brielle Basin.

Captain Howard has had more record-setting cod and pollock (and previously white hake as well) caught by anglers fishing aboard the *Big Jamaica* than any other captain operating along the North Atlantic coast. His expertise at locating sunken wrecks is unsurpassed as evidenced by the many 40- and 50-pound cod and pollock taken by his customers each season.

Captain John DeRose, another well-known Jersey Coast codfish expert, docks his *Spray* at Belmar Basin. DeRose also offers regular wreck fishing trips on a three times weekly basis throughout the winter season.

Additional information regarding sailing schedules may be obtained by contacting the captains. The number to call when requesting information regarding sailing schedules for the *Jamaica* is 201/528-5720. This is the number at Brielle Bait and Tackle Shop, located at Bogan's Basin on Ashley Avenue where both the *Jamaica* and *Jamaica II* are berthed in Brielle.

Captain Joe Bogan may be reached at 201/458-3188 in the evening. His winter codfish schedule, one he has followed for the past 14 years, includes a Wednesday trip departing at 5 a.m. and Saturday and Sunday trips departing from Bogan's Brielle Basin at 3 a.m.

Captain John DeRose can be reached during evening hours at 201/938-4930 or 201/681-3587. DeRose also offers three-times-a-week codfishing with trips on Wednesday, Saturday and Sunday.

A complete list of all Garden State charter and party boat captains and their respective ports titled "New Jersey's Party, Charter and Rental Boat Guide" is available from the New Jersey Marine Fisheries Administration.

To obtain a free copy of the guide, send a self-addressed, double-stamped (50 cents) #10 envelope to: Publications, Nacote Creek Marine Research Center, Star Route, Absecon, NJ 08201. NJ



Blue heron.

By James C. Sciascia

With the predictability of a swallow returning to Capistrano, recent mail deliveries have brought personal copies of the New Jersey Gross Income Tax Resident Return to your door. While visions of complicated forms, deductions and new tax rates may be dancing in your head, a cadre of biologists in the Division of Fish, Game and Wildlife hope that Line 39B on the form and the more than 400 wildlife species whose veritable survival may be on the line are tantamount in your thoughts as well.

Line 39B allows New Jersey taxpayers to contribute toward the protection and management of the state's endangered, threatened and nongame wildlife species. The Wildlife Tax Check-Off, instituted in 1981, is the only major source of funding for the division's Endangered and Nongame Species Program (ENSP) and accounts for more than 90 percent of the program's total budget.

In its seven-year history, the Wildlife Tax Check-Off Conservation Fund has provided over \$3 million for endangered and nongame species work. The \$450,000 collected annually, a seemingly substantial sum, falls far short of the estimated annual need of \$3 million to address endangered and nongame wildlife protection and management in New Jersey adequately. Despite surveys which show that as many as 70 percent of the public enjoy opportunities to see or hear wildlife in the course of their daily activities, only three percent of New Jersey's taxpayers currently support the Wildlife Tax Check-Off through contributions on Line 39B.

A number of reasons might possibly explain such a low rate of voluntary

# For Endangered Species Life Begins at 40

39B

contribution. People do not know that the ENSP or the Wildlife Tax Check-Off exist. Some residents may not realize that the Check-Off is the only major source of funding for the ENSP. When completing their returns, a mentally taxing exercise, taxpayers do not make the connection between Line 39B and the ENSP. In spite of annual reports and audits, skepticism might exist about how their contributions will be spent. If you find yourself in any of these categories, I hope our 15-year story will encourage you to join the enlightened three percent who support endangered and nongame species conservation in New Jersey.

The Endangered and Nongame Species Program came into being on December 14, 1973, under its first Project Leader Pete McLain, to manage wildlife to ensure its continued participation in the ecosystem and to accord special protection of endangered species. During these 15 years, the program, one of the oldest in the nation, has carried out scores of projects involving nearly a hundred nongame wildlife species. These projects generally fell into the four categories of distribution and population trend surveys, research to determine causes for a species' decline, management to remedy causes for the decline, and restoration. Perhaps the best known and most highly publicized ENSP projects have involved the restoration of three large native raptors: the bald eagle, the peregrine falcon and the osprey.

Since 1981 the ENSP has been involved in an ambitious project to restore the bald eagle population in the Garden State. Today all that remains of an historic Delaware Bay nesting population once numbering 22 pairs is a single nesting pair in Cumberland County's Bear Swamp Natural Area, the most important eagle habitat in the state. However, because of the active management by the ENSP and the restoration project, New Jersey may have several more successful eagle nests in the near future.

The ENSP's efforts to restore the bald eagle to New Jersey include the direct fostering of the state's only active eagle nest to improve reproductive success, raising and releasing Canadian eaglets in suitable south Jersey eagle habitat,

and managing New Jersey's remaining eagle habitat to attract nesting eagles. Since 1981, the ENSP has been responsible for the introduction of over 60 eagles into the wilds of south Jersey.

State biologists are increasingly optimistic about the eventual recovery of New Jersey's eagle population for several reasons. Monitoring of the Bear Swamp nest has shown that the nesting pair may soon be able to nest successfully without removing eggs after they are laid, substituting those eggs with plaster ones, and then placing the chicks after hatching into the nest. The major factor in the decline of the eagle population was widespread pesticide use. Compounds such as DDT had caused the birds of prey to lay thin-shelled eggs. Analyses over the past few years have shown a steady increase in shell thickness, and fertile eggs have been laid since 1983.

State and federal protection of our national symbol have helped to limit human disturbance (a second factor) and acquisition of areas such as Bear Swamp by the state to prevent the loss or degradation of suitable habitat (the third factor in the decline) now offer more than fragile hope for reaching our goal of establishing between eight and 10 successful nesting pairs. Over the past several years, numerous eagles have returned to the release site on Delaware Bay during the late summer. In addition to these promising developments, several nesting attempts by sub-adult birds have occurred in this area within the last two years. State-wide winter counts have revealed record numbers of both adult and immature eagles, with 26 bald eagles tallied in both 1986 and 1987 surveys.

Check-Off revenues have also been responsible for the successful restoration of the peregrine falcon, absent from New Jersey for more than 20 years. In 1975 the program, in cooperation with Cornell University's Peregrine Fund, Inc., began a recovery project which today is considered one of the most successful in America.

From 1975 to 1981, more than 50 captive bred peregrine chicks were raised and released from specially designed hacking towers along the New Jersey coast. By 1981 released falcons triumphantly announced their return



Eastern woodrat.

Alan Hicks



Least tern.

William D. Griffin



Northern pine snake.

Breck P. Kent



Bald eagle.

William D. Griffin

to New Jersey's wildlife community by successfully nesting at one of the original release towers. A total of 10 towers had been erected by 1985 for the returning birds. Today, up to 15 pairs of these magnificent falcons grace New Jersey skies. Fifteen chicks fledged in 1986 from eight nests and 16 in 1987 at nine sites. Our restoration has been so successful that eggs from New Jersey nests are now providing falcon chicks for other state reintroduction programs, such as one underway in the Adirondack Mountains of New York. With natural reproduction now restored, management activities by the program's staff of 10, small in size by bureaucratic standards, can now be directed toward other species.

The ambitious management of New Jersey's osprey population by the ENSP was responsible for the osprey becoming the first species to be removed from our endangered species list when its status was changed to "threatened" in May of 1985. Once an historic population of 500 pairs, our osprey were estimated to number approximately 50 breeding pairs in 1975. In the intervening 13 years, ENSP management has included egg importations and nestling transfers to 65 nests and installation of man-made platforms to offset the loss of existing nesting structures along the coast. This resulted in an increase in New Jersey's osprey population to a record 162 chicks being produced from 137 nests in seven counties.

In addition to the successful restoration of the coastal osprey population, the ENSP has completed its fourth year of a project to return the osprey to its historic breeding place in the freshwater habitats of north Jersey. Thirty osprey chicks from coastal nests have been released from artificial nesting towers in Passaic County, on large undeveloped reservoirs containing high quality aquatic habitats. Within the next few years you can expect to see the osprey reclaim its historic niche as a breeding resident in north Jersey.

Survey, research and management efforts by ENSP have encompassed a wide array and great number of other nongame bird species. Distribution and population trend surveys have already been conducted for major groups, including shorebirds, beachnesters, colonial waterbirds, grassland birds, woodland raptors, migratory raptor populations and cavity nesters. There are 17 endangered and threatened species within these groups, such as the Cooper's hawk, upland sandpiper, vesper sparrow and yellow-crowned night heron.

Work on the grassland birds survey was performed in 14 counties. Information on the species range, their abundance and available habitats, in general, showed a dependence upon appropriate agricultural habitat (hay fields, lightly-grazed pastures, fallow fields). With the state's decrease in agricultural acreage, the birds' breeding habitat has declined due both to the

loss of habitat and increased disturbance from activities like mowing and plowing.

Eight years of colonial waterbird data, including aerial surveys of coastal and marsh breeding species like the glossy ibis, great and snowy egrets and the night herons, have been used to develop accurate estimates on population trends, the status of some species and as an indirect barometer of the health of coastal marsh environments.

The barred owl, listed as threatened in 1974, was once common to the forest and swamps of northwest New Jersey and the coastal plains of central and south Jersey. The surveys performed from 1984 to 1987 found concentrations of this woodland raptor along the Kittatinny Ridge, in a portion of the Highlands province, and in the coastal plain forests of south Jersey. Because of lost forested habitat and fragmentation of remaining forests due to rapid urbanization and development, there has been a substantial decline in the owl population. Protection of large, contiguous stands of forest is critical to the species survival.

From 1980 to 1983 the number of active locations for the piping plover declined by 35 percent and the number of pairs declined 37 percent. In 1984 it was listed as endangered. The least tern and black skimmer population declines are attributable to development of coastal areas and the disturbance of colonies by humans, predators and flooding.

Management projects aimed at preserving the populations of these endangered and threatened birds are carried out by ENSP biologists with the assistance and support of conservation groups and volunteers. New Jersey's endangered beachnesters—the piping plover, least tern and black skimmer—have benefited from active management which involves fencing and posting beaches where these birds nest and limiting access to critical nesting beaches. Large colonies in areas of heavy human activity are afforded additional protection through the presence of individuals who patrol the area and provide educational information to beachgoers about the birds.

Tax Check-Off revenues also funded surveys, research and management for



Bog turtle

Robert T. Zappalorti/Herpetological Associates

the state's amphibians and reptiles. Years of survey work have provided baseline information on the distribution of these endangered herptiles and crucial data on the habitat locations of bog turtles, southern gray treefrogs, wood turtles and long-tailed salamanders.

For the blue-spotted salamander, intensive development and loss of habitat resulted in a serious decline in its population. Its range was restricted to the Passaic River Basin of Morris, Passaic and Somerset counties. Adults live below ground, under rocks or logs and in the forest floor debris. During spring rains the adults emerge to court and breed in shallow, temporary spring ponds. Eggs are deposited in the ponds, and the adults return to their subterranean habitat. The entire process takes place within only a few nights.

Research done by the program included the identification of critical aquatic breeding habitats and terrestrial habitats in order to afford protection of these areas. Some of the 18 sites surveyed included Great Piece Meadows, Troy Meadows, Great Swamp National Wildlife Refuge and Lord Stirling Park.

The Eastern tiger salamander was once common in and around clean gravel ponds from Ocean to Cape May counties. This large yellow and black amphibian suffered a decline due to the destruction and degradation of its habitat. Early in spring the adult salamander leaves its subterranean home and heads for breeding ponds where courtship and egg laying occur. The eggs hatch in April, and the metamorphosis from larvae to young adults is completed by July, at which point the salamander leaves the pond for its terrestrial habitat.

In an experimental management project, a breeding pond was dug in 1981 at the Higbee Beach Wildlife Management Area and stocked with eggs from "endangered" ponds. The field work has successfully established a breeding population of tiger salamanders and developed a technique that could be used to establish new populations where they no longer exist.

More recent innovative research has determined the habitat needs of the Pine Barrens treefrog and the timber



Timber rattlesnake

Breck P. Kent

rattlesnake, both endangered species. Symbol of the "CHECK-OFF N.J. Income Tax Conservation Fund," the Pine Barrens treefrog lives in parts of six counties. The one-and-a-half inch long treefrog dwells in one of the most acidic and nutrient poor ecosystems in the state. Suitable habitats include shrub bogs and sphagnum ponds, home also to rare orchids, sundews and pitcher plants.

Tagging studies were done in 1984 to determine the frog's daily movements and post-breeding home range. Data from the studies have been used to determine the habitat requirements, establish suitable buffer zones to protect this sensitive species, and suggest that any increase in pH or change in water chemistry or quality due to human activity or disturbances will likely result in negative consequences for the treefrog. Physical parameters of the breeding pond were also studied.

The timber rattlesnake, one of the state's most maligned species, is one of only two venomous snakes in New Jersey. Rare throughout its range, the reptile is found in remote areas of the Pinelands in Atlantic, Burlington, Cumberland and Ocean counties, as well as in the northwest and north-central mountains.

A four-year radiotelemetry study monitored daily and seasonal activities of more than 35 snakes to determine the range of males, gravid (pregnant) and non-gravid females, habitat preferences, climate variables and hibernation sites. This endangered reptile was found to have home ranges averaging approximately 40 acres, larger than once believed. More than 20 of the tracked snakes wintered in four hibernacula along a 2,000 foot stretch of stream in a white cedar swamp. Other preferred habitats are the pine-oak forest and the pitch pine lowlands.

Habitat improvement and captive breeding and release projects have benefited the threatened pine snake and the endangered bog turtle and corn snake. Also known as the red rat snake, the corn snake occurs only in the pineland counties of Atlantic, Burlington, Cumberland and Ocean. Because of its mild disposition and beauty, a pet market demand and resultant illegal collection have caused this handsome reptile's population to decline. It also has suffered from habitat destruction, changing land use and human persecution.

The corn snake was listed as endangered in 1983. Since then, ENSP has funded a captive breeding and release project that has resulted in more than 230 captive bred young being released at two Burlington and Ocean county sites, both on protected state lands.

Since the ENSP's mandate is to manage all forms of nongame wildlife, program efforts have not been restricted to highly visible or popular species. Certainly the timber rattlesnake or blue-spotted salamander are not the most popular or household familiar wildlife species. But perhaps the least known and most poorly understood nongame animals are the small mammals.

One of the state's rarest small mammals is the Eastern woodrat, known to occur historically only in Morris, Passaic and Sussex counties. This secretive woodrat is one of our native North American rat species and is not at all like its destructive and aggressive relative, the Norway rat. Suitable habitat for this elusive woodland rodent includes caves, abandoned mines, talus slopes and boulder fields. The small mammals make nests composed of woven sticks, leaves or bark. Sometimes bright shiny objects such as foil or bottle caps are added. This collection



Blue-spotted salamander.

Robert T. Zappalorti/Herpetological Associates



Osprey.

Bill Robischaud



Osprey nest

William S. Lea

of "trash" used in nest building has earned them the nickname of "pack rat."

Almost exclusively vegetarian and an integral part of our woodland ecosystems, the woodrat prefers wild plant matter to the table scrap and garbage diet of the pestiferous Norway rat and house mouse. Verified occurrences have been made in the rugged boulder strewn habitats of the Palisades area of Bergen County and the Green Pond ridge in Morris County. Since the woodrat is very rare in New Jersey and has declined dramatically in the Northeast, threatened species status was recently proposed. The bog lemming and long-tailed shrew are other small mammals studied by the ENSP.

Check-Off funds are also used for habitat protection through the maintenance of a database on endangered and threatened species habitat locations, the review of large development projects and the review of areas

proposed for acquisition with state and federal funds. An increased interest in protecting endangered and threatened species habitats has resulted in a number of land use regulatory programs that make provisions for their protection. Development that requires state and federal permits is reviewed by ENSP and commentary provided on the potential impacts to endangered and threatened species, thus enabling state agencies to determine if the project is approvable, requires modification or should be denied a permit.

The program has also encouraged public participation in wildlife conservation by awarding grants for 28 projects which benefit nongame wildlife. Up to \$1,000 of matching money is provided to non-profit organizations for projects such as wildlife observation blinds, interpretive trails, wildlife habitat enhancements, and the creation of informational materials. Some of the 25 organizations to receive Wildlife Check-Off Grants were the Avian Rehabilitation Center, Bergen County Parks Department, Bridgeton 4-H Club, Essex County Department of Parks, Recreation and Cultural Affairs, Flat Rock Brook Nature Center, Hackensack Meadowlands Development Commission's Environment Center, Hightstown Environmental Resource Area, Metuchen Cub Scouts, Passaic River Coalition, Poricy Park Citizens Committee, Tenafly Nature Center, Upper Raritan Watershed Association and the Wetlands Institute.

Public information and education play a major role in the conservation of wildlife, especially in a state as densely populated as New Jersey. ENSP has produced numerous brochures, booklets, films and slide shows to share the wealth of wildlife information with New Jersey's citizens and organizations. All of these are funded by your Check-Off contributions.

You may be asking yourself how they have been able to do so much in 15 years with so little and no stable funding base. Truthfully, each year it becomes more difficult, and although much has been accomplished, much more needs to be done.


To protect and manage the state's nongame wildlife resources adequately, ENSP estimates that nearly \$3 million

Principal Nongame Zoologist **Jim Sciascia** has written for NJO previously. Jim serves as project leader for the Interior Nesting Osprey Program and supervises ENSP's exotic animal regulation and environmental review.

per year is needed. Current funding levels allow the ENSP to concentrate research and management efforts only on New Jersey's most critically endangered species. Inventories of threatened wildlife, such as the red-headed woodpecker or American bittern, are needed but cannot be performed because of limited resources. Active management programs are needed for a number of species already listed as endangered or threatened. Because of funding limitations and a staff of only 10, they cannot be created or implemented. To prevent declining species from becoming tomorrow's endangered and threatened species, inventory surveying and research are essential but will likely not occur without additional funds.

The most densely populated state in the nation desperately needs an expansive Urban Wildlife Program. Additional funding would allow the ENSP to develop programs which would provide assistance in creating and enhancing wildlife habitat in urban areas. Wildlife viewing areas and educational programs would be aimed at increasing the appreciation and enjoyment of our wildlife resource in those habitats where the majority of our human population resides, the urban environment.

Increased funding would also allow the program to expand its education and information efforts. Wildlife related informational publications and audiovisual materials are in great demand throughout the state's educational system and by the public at large.

Across the country, nongame programs depend primarily on income tax check-offs as a funding source. Stable and permanent funding sources are being investigated but do not appear to be imminent, making it more important each year for all New Jerseyans to share in the support of our wildlife resources. The citizens of New Jersey can be very proud of the success of the ENSP program, a national leader in the conservation of endangered and threatened species. Since the only major source of funding this work is the Wildlife Tax Check-Off, let's make a very wise contribution and investment in the future of Garden State wildlife resources. Go wild! Check off! 

*JoAnn Frter-Murza, ENSP chief, accepts a \$5,000 donation for bald eagle restoration efforts from Edward B. Jobe, President and Chief Executive Officer of the American Re-Insurance Co., Princeton.*



Jorgi Rosky

## Adding to the Treasury of Wildlife Resources

By Michael Valent

New Jersey's Endangered and Nongame Species Program (ENSP) is celebrating its fifteenth anniversary this year. On December 14, 1973, a two-member ENSP staff began the business of protecting and managing the state's endangered, threatened and nongame wildlife. This is a sizable task when one considers we share the state with more than 400 nongame wildlife species, 57 of which are presently listed as endangered or threatened.


Since its inception, the program has captured the imagination and support of citizens, environmental organizations and the busi-

ness community around the state. Although the income tax Check-Off for Wildlife is the major source of funding for ENSP's work, support for the program by no means ends there.

During these fifteen years, ENSP projects have been the beneficiaries of support from an extensive and varied community. Some members of this prestigious group include the students of a middle school who raised \$6,400 to "Adopt an Eagle"; five public utility companies who contributed their specialized equipment, materials and manpower to help erect poles and supports for an eagle "hacking" tower and north Jersey osprey "hacking" platforms; corporations that have contributed money to have endangered wildlife films made; donations of helicopter time so that aerial surveys could be conducted; a business' sponsorship of an annual polo match to publicize and benefit bald eagle restoration; and banking and accounting firms volunteering their own unique company resources to promote the Wildlife Tax Check-Off. As diverse as the wildlife they are protecting, each of these has made material, service, and monetary contributions toward the many successes of New Jersey's ENSP that we take pride in.

With contributions from the corporate community and three percent of the state's taxpayers, the present 10-member ENSP staff has made great strides in restoring declining populations, reintroducing extirpated species, helping protect critical wildlife habitats, conducting statewide wildlife surveys, and providing informational and educational materials to the public who inhabit the Garden State with these endangered and nongame wildlife.

The program has, however, only scratched the surface, and much work remains to be done. Management and protection of endangered and nongame species is everyone's responsibility. It can only be effectively accomplished through the continued support of all New Jerseyans. Together we have and can make a difference for our treasured wildlife resource.

The Endangered and Nongame Species Program acknowledges the following for being instrumental in helping to protect and manage New Jersey's nongame wildlife. 

For information on how your business or organization can help endangered wildlife, contact:

**Endangered and Nongame Species Program**  
NJDEP, Division of Fish, Game and Wildlife  
501 East State Street  
Trenton, NJ 08625-0400  
201/735-8975

## Services and Materials

Air National Guard  
Atlantic Electric  
AT&T Long Lines  
Avian Rehabilitation Center  
Cape May County Mosquito Commission  
Delaware River Joint Toll Bridge Commission  
Durling Farms  
First National Bank of Toms River  
H&R Block  
Jersey Central Power and Light  
Johanna Farms  
Marine National Bank  
National Audubon Society (local chapters)  
Newark Watershed Conservation and  
Development Commission  
New Jersey Beach Buggy Association  
New Jersey Bell  
New Jersey Colonial Waterbird Conservation  
Coalition  
New Jersey National Bank  
New Jersey Public Accountant Association  
New Jersey Society of Certified Public  
Accountants  
New Jersey State Police  
North Plainfield National Bank  
Ocean County Mosquito Commission  
Project USE  
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R.C. Maxwell Company  
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United States Coast Guard  
University of Pennsylvania School of  
Veterinary Medicine  
Welsh Farms  
Zoological Society of Philadelphia

## Monetary Contributions

American Re-Insurance Company  
Atlantic Electric  
Citizens United to Protect the Maurice River  
Cumberland Conservation League  
First Jersey National Bank  
Haddonfield Middle School  
Harrah's Casino  
Horace Mann School (Cherry Hill)  
Miller Brewing Company  
Montclair State College Conservation Club  
New Jersey Alliance For Action  
The Louis P. Pipi Agency  
South Brunswick High School  
Tricorne Limousines  
Visceglia-Summit Associates Foundation

**Mike Valent** is editor of the former "Nongame News" and coordinates field research on interior forest raptors. This wildlife biologist writes press releases and is editor of ENSP's annual reports.

"Chairman of the board" Paul Minditch glides on the deck and skate he developed.



# Iceboarding It's Hot!

By Meg Griggs

Wrapped in wool and bundled in down, young Darwin Reid of Edison pours from a thermos a steaming mug of hot chocolate. Cradling his hands around the warm ceramic, he blows on the liquid to cool it some, then takes a few tentative sips. Looking toward the horizon from beneath the ski mask pullover covering most of his head and face, he surveys the iced-over Barnegat Bay scene with obvious delight.



*Pushed by winds in excess of 15 knots, a sailskater whisks by stationary ice hounds.*

*Safe iceboarding calls for protection from injury and the elements.*

Pushed along by a gusty, chilling wind called the Siberian Express are a dozen or more similarly clad adults clutching neon bright sails attached to what look like oversized skateboards. These curious craft, however, have metal blades more akin to iceskates than to urethane wheels.

The riders have been out for hours, racing back and forth across the frozen environs off Lavallette, enjoying winter's hottest new sport called iceboarding. Gulping down the last of the hot chocolate the red-nosed, rosy-cheeked youngster declares with unabridged enthusiasm, "This is the most fun I've ever had."

Picking up his rig, he deftly hops aboard the fiberglass deck, adjusts his sail and glides back out to meet his comrades at mid-ice while an observer shivers in her thermals, mildly envious of his warmhearted glee.

As a sport iceboarding is not new. It began a decade ago in Europe, a spin-off of iceboating, and gained popularity fast with the continent's sailboarding community. Last winter international iceboarding regattas held in France, Switzerland and Austria drew hundreds of top-notch racers and thousands of spectators eager to cheer on their favorites in course and speed racing and freestyle events.

Given Americans' fondness for things European and our own vast legions of skiers, skaters and sailboarders, iceboarding would seem a natural here as well. And it is. From Lake Hopatcong to the wide expanses of Barnegat Bay, New Jersey residents young and old are discovering a new thrill riding upon the tailwinds of winter. It seems the state has all the elements to rank it the iceboarding national headquarters.

Meet the chairman of the board, Paul Mindnich of Long Branch, who almost single-handedly has brought the sport to its present lofty status. He designs and manufactures the Free-skate, the patented deck used almost exclusively in iceboarding. He organizes all weekend regattas and just-for-fun events, writes and publishes the *Freeskate Class Newsletter*, and is responsible for the daily "Iceboard Hotline" reports.

Mindnich is one of New Jersey's fast-growing crew of "ice hounds" who iceboard every chance they get. Since the best conditions often come on days with temperatures in the teens and northwest frontal systems creating wind chills of minus 10 degrees, they are a hardy lot of outdoors enthusiasts dedicated to their cause and its camaraderie.

From December to March they faithfully track local conditions throughout the state, calling in their observations to Mindnich. He then compiles the information onto a taped phone message. The Iceboard Hotline helps the hounds find the best places to gather for sailskating. "Time on the road is time not on the iceboard," says Mindnich. He is also emphatic about safety. Iceboarding in numbers and avoiding unsafe ice are his two top concerns.

Wide, open-air ice flats like those found near the ocean on Barnegat Bay or farther inland at Budd Lake and the Shrewsbury River are the best places to iceboard. Other good locales are Lake Parsippany and Lake Hopatcong. Because New Jersey sits astride what is known in weather-speak as the "Melt Belt," winter precipitation is usually in the form of rain rather than snow. Waterways throughout the state most often freeze to a slick, blemish-free





Dick Meseroll/Shore Shot



*Cindy Keifer of Brick goes one-on-one with a more traditional ice rig.*

*Father-and-son team Bruce and Darwin Reid attests to the family fun aspect of this sport.*

Upcoming Races (ice/wind permitting) locations to be announced

Freeskate Nationals  
Jan. 28/29

North American Iceboard Open Championship  
Feb. 18/19

**Iceboard Hotline**  
201/223-5859

finish with no snow cover. Known as "clear ice" this smooth, glazed surface is optimum for iceboarding.

But what gives a venue a high rating goes beyond the surface. The location must also be exposed to the wind, which is why a smaller sized mountain lake surrounded by a dense stand of tall pines might not serve an advanced iceboarder well, though certainly it would qualify for beginners. Consistent 15 knot or better winds are preferred by more experienced sailskaters, but less velocity is compensated by a bigger sail. Easy access and a place to park and rig are important requirements, too. A location near a convenience store for hot coffee is also a prime consideration, although most true ice hounds bring their own and are fond of tailgating or huddling in a heated auto.

To get started you'll need a deck (or board), a sail with the attendant riggings and a wind-surfer universal joint which attaches the sail to the deck. Although some people build their own boards, Mindnich's Freeskates are used by most. Available through Mindnich at his Long Branch factory or at sporting goods stores, it retails for about \$325. The cost includes a set of four cold-rolled steel blades, or runners. Interchangeable wheels, so you can use the deck on pavement once the thaw settles in, are extra. Sails, rigs and universals are the same used in sailboarding and are available at windsurf shops with prices beginning at \$200. Beginners might want to inquire about purchasing used equipment and then buying new gear as they master the technique.

You'll also need a safety helmet and elbow and knee pads. Of the sport's eight major safety regulations, mandatory protective gear is

#1. Practicing the buddy system is #2. Everyone agrees safe iceboarding is fun iceboarding.

"If you don't have the proper safety equipment you should not be out there on the ice," says Gerda Reid. "You also should not be out there alone," echoes her husband Bruce. Conscientious parents, the Reids only allow their children, Darwin and Cara, to iceboard when there's an adult present.

Because iceboarding is done on a one-dimensional surface, meaning the plane on which you sailskate remains stationary, it's fairly easy to do. If you have patience, chances are very good you'll have little problem learning to iceboard. "Mostly you need good balance," says Cara Reid, who at 9 is probably the state's youngest iceboarder. "You may fall once or twice at first, but after that you'll get going pretty good. It's easy, really, and learning how was just as much fun for me as knowing how."

To start, you simply stand on the deck, feet shoulder width apart, knees slightly bent, body leaning backwards a bit. Grasp the boom with both hands and adjust the boom, either by pulling it toward you or pushing it away from you, until the sail fills with wind. Steady yourself and let the sail and those four oversized iceskate blades do the rest.

Sounds easy because it is. But most people find the real key to doing well and having fun while doing it is to dress for the cold weather. That means layers of thermal underwear, cotton turtlenecks, chamois or flannel shirts, sweaters, down jackets, corduroy slacks or ski pants. Feet stay warmest in wool or polypropylene socks and water-resistant outdoor-use boots. Gloves, scarf, hat and a ski mask pullover should also be worn.





Dick Meseroll/Shore Shot

*Colorful sails mark the starting line for another race.*

*Outdoors enthusiast Paul Mindnich powders a patch of snow on Barnegat Bay ice flat.*

Making her second NJO appearance, **Meg Griggs** is a professional journalist who has written for *Surfer* and *Wind Surf* magazines. Although her "work" takes this former reporter and editor to some of the world's most beautiful beaches, Meg calls the Jersey Shore home.

Cindy Keifer of Brick is one of a growing number of women who iceboard. Two years ago she was watching her boyfriend David Clapp and his fellow ice hounds sailskate while she sat in the front seat of his truck with the heater on maximum. Last year the 29 year-old decided to give it a go and she has since become an accomplished iceboarder.

"This is such a great sport. To think I used to sit and watch or hibernate all winter. Not only does iceboarding get you outside and give you a workout, but I think you begin to appreciate the winter season more," she says. "They're right about the clothes and dressing in layers. If you don't layer up you won't last half an hour out on the ice. Dressed right, I'm out there for hours. I love this sport."

Although most New Jersey iceboarders sailskate because they love it, there is also a serious side to the sport. Typically they are "crossover" athletes, avid sailboarders when the weather permits; they iceboard in winter months to keep those sailing skills honed and arm and leg muscles strong and toned. "It's the perfect crossover sport because we use the same muscles, so there's no better way for us to stay in shape for warmer weather sailing," says Mindnich.

This past January the New Jersey group hosted the National Iceboarding Regatta on Barnegat Bay in Lavallette. Honda Civics, Ford Bronco 4x4s and Plymouth vans brought competitors from Massachusetts, Vermont, Connecticut and New York to race with iceboarders from New Jersey. It was seasonally cold, temperatures reaching only a high of 28 degrees, but sunny enough for racers to don

Ray-Bans and for the ice to melt enough to leave a thin film of water on the surface. "You can't see it but you can feel it," says Clapp. "It allows for real fast sailing." As the northwesterly winds blew sharply at 15 to 20 mph, it was a perfect day for an iceboarding event.

Iceboarders warmed up for the two events, slalom racing and speed course, with can-you-top-this freestyle maneuvers. The colorful sails caught the eye of many a passerby and by noon the iceboarders had attracted a good-sized crowd. The wind picked up a little, the course was marked off and the pre-race coffee raised in a toast of good luck to all. It was time to race!

As in 1987, John Brown of Marblehead, Mass., won both events. Clapp, of Brick Township and a close second, says, "It doesn't so much matter if you win or lose because iceboarding is such a blast, such a thrill."

The entire day was a thrill. As ice hounds began packing up boards and sails, winter's orangey sun began its decline across the frozen bay. Peeling off a few layers of clothing, Clapp jumped in his truck and turned the heater on high. Others were doing likewise throughout the parking lot. Mindnich, the consummate organizer, was already discussing Sunday's plans, outlining the agenda to anyone within earshot. David and Cindy, knowing the weekend routine well, got in the warmed up truck and started out the lot. Paul, cupping gloved hands around his mouth, shouts to them, "I'll see you at 10," his message barely audible above the din of the howling wind. "And don't forget, it's your turn to bring the coffee." **NJ**

# Suburbia

## Too Many Deer or Too Many People?

By Dona Schneider and John Kuser



Cathy Blumig

White-tailed deer have made a remarkable comeback in New Jersey, from near extinction at the turn of the century due to market hunting and changing habitat as forests were cleared for farming. Population levels estimated at more than 160,000 are now more than twice as high as they were when the first European settlers arrived. Three factors have combined to make this increase possible: creation of ideal deer habitat, predator removal and state regulatory controls.

Deer thrive in "edge" habitat: brushy hedgerows, overgrown lots, and the typical suburban mixture of trees, shrubs, lawns and gardens. Abandoned farmland, awaiting sale to the developer, offers the perfect mix of old orchards, woodlots and open graze. Eventually the bulldozers move in and temporarily displace deer, but they soon return and adapt easily to the new environment. These suburban areas offer more food and cover than either tall, mature forests or large unbroken expanses of field. As suburban gardeners naively offer gourmet browse and well-meaning wildlife watchers put out salt licks and feeding stations, suburbia has become Eden for today's white-tails.



*Leaves and flower buds were totally devoured on these rhododendrons next to the porch.*

Predator removal began in the colonies in the 1600s and was complete when the last mountain lion and wolf were gone from the state, about 1840 and 1855 respectively. Wolves, which are pursuit predators, may not have been efficient here because they catch deer better when deep, crusted snow allows them to run on top of the crust while the deer break through. Mountain lions, however, were deer specialists. Present-day lion populations have been studied in western states, yielding information that each full-grown puma kills one sheep, deer or calf about every five days. Even with this sort of efficiency, no one would argue that the reintroduction of these natural predators to suburban areas is a desirable goal.

The last factor contributing to today's large herd numbers concerns regulatory controls. These legal restrictions come from three sources: state game laws, municipal ordinances, and property owners who forbid hunting on their lands. When deer were reintroduced to the state from 1904 to 1913, they were first protected by a six-year closed season and then by bucks-only state hunting laws. Short hunting seasons scheduled late in the fall after does were already bred enabled herds to increase rapidly almost as though hunting had been entirely forbidden.

With New Jersey's deer population now at an all-time high, the New Jersey Division of Fish, Game and Wildlife now allows hunters more than a dozen deer per season by combining bow, shotgun and muzzleloader quotas. Additional deer including does may be taken provided hunters obtain special permits. In some deer management zones, bow season may last nearly four months. Even so, state hunting regulations still forbid shotgun hunting during all but about 72 hours of each 8,760-hour year. This allows today's shotgun hunter less than one percent of the open season available to his Indian predecessor. In 1988-89 bow, firearm, shotgun and muzzleloader seasons total only 98 hunting days.

While the state is increasing bag limits and length of hunting seasons, municipal ordinances are being passed forbidding the discharge of firearms, effectively prohibiting shotgun or muzzleloader hunting. The number of private lands posted with "No Hunting" signs is increasing, further limiting hunter access. Subdivision of large tracts of land continues as housing pressure mounts, and the amount of huntable land is continually being reduced. The combined restrictions on times and places where deer may be legally taken have enabled the deer population to keep growing rapidly.

### **The Problems of Deer in Suburbia**

Deer are beautiful animals. They are among nature's most graceful creatures, whether slowly walking or grazing, running at up to 35 mph or bounding in 20-foot leaps to escape real or imagined danger. White-tails can jump effortlessly over a four-foot garden fence to steal a tasty meal and, if pursued, can sail over a seven-foot fence. Unfortunately, these beautiful animals have become so numerous in suburban areas that they conflict with humans in four ways: as a peril on roads, as carriers of disease, as agricultural and garden pests and as destroyers of forest cover.

The first effect of skyrocketing suburban deer populations is well documented by the experience of Princeton Township. Hunting by firearm was ended in 1972 when the township passed a no-discharge-of-firearms ordinance. Deer-car collisions increased from 33 in that year to 200 in 1986, a sixfold increase in just 14 years. During the same period, two adjacent townships (West Windsor and Lawrence) did not restrict firearm hunting and recorded only an average 25 percent increase in road-kills, probably reflecting the countywide increase in automobile traffic.

Highway collisions with deer, or mishaps caused by swerving to avoid them, can be in-

jurious or fatal to vehicle occupants. In the summer of 1987, three young people were killed in Roosevelt (Monmouth) when their car swerved to avoid a deer. Even bicyclists are not safe. In 1983, a cyclist spent two weeks in The Medical Center at Princeton after colliding with a deer.

In addition to potential human injury, there is often a considerable amount of damage to vehicles involved in deer-related accidents. Not much outrage is shown by vehicle owners because they are usually covered by insurance. What they fail to realize is that insurance companies adjust their rates to the level of accidents in order to be able to pay their insureds' claims and still make a profit. The end result of more deer-car collisions is higher rates for all drivers. Deer-auto collisions represent about three percent of all accidents.

The second effect of too many deer concerns human health and a complex deer/arthropod/spirochete relationship. Deer are one of several hosts of the deer tick, *Ixodes dammini*, the carrier of Lyme disease. About half as long as the common wood tick, the deer tick takes its first blood meal after hatching from a white-footed mouse. In many areas, these mice are reservoirs of a spirochete, *Borrelia burgdorferi*, the organism which causes Lyme disease. The tick digests its first, infected blood meal from the mouse, then molts and climbs a higher stalk of vegetation in search of a second blood meal from a larger host such as a deer, dog or man. If a human is bitten by a spirochete-infected deer tick, the result is likely to be Lyme disease. Rash, fever and nausea occur during the acute stage, followed by arthritis-like symptoms, possible cardiac complications or meningitis.

While the connection between deer, deer ticks and Lyme disease has not yet been defined quantitatively, many wildlife biologists believe that high deer populations enable more deer ticks to survive winter, increasing the probability that spirochete-infected ticks may bite humans. Allan O'Connell of the U.S. Department of the Interior, studying the deer/tick/Lyme disease relationship at Fire Island National Seashore, found in the summer of 1986 that 40 percent of the deer in the park carried Lyme disease antibodies, and 25 percent of the ticks carried spirochetes. In Mercer County where deer populations have grown dramatically in some districts, reported cases of Lyme disease rose from 2 in 1982 to 21 in 1986. Princeton had three cases of Lyme disease reported in one six-week period of 1987, and in neighboring Hopewell a veterinarian reports that Lyme disease is becoming an increasing problem for dogs and horses.

Conflict between the rising deer population and humans has also been demonstrated by the testimonials of agriculturalists and gardeners. The Mercer County Farm Bureau's press conference on deer damage in November 1987 drew widespread interest. One farmer reported that within three days after his deer control permit expired, deer had destroyed 92 percent of his pumpkin crop by kicking the pumpkins open to eat them. Another farmer reported that deer had eaten the silk off all his corn, making pollination and consequently the production of a corn crop impossible. One nurseryman reported that deer had caused \$50,000 damage to his field stock. Total deer damage for New Jersey in 1987 was reported to be nearly \$6 million.

Farmers complain that while we pay lip service to keeping farming viable in the Garden State, we allow our few remaining farmers little redress for the infringement of deer on the farmer's right to harvest crops. They also complain that neighboring communities and landowners continue to take actions, such as no-discharge ordinances and restricting hunting, which increase both deer populations and the problems associated with too many deer.

Suburban gardeners' activities are also thwarted by high deer populations. In Princeton, backyard gardeners could grow tomatoes in unfenced yards until about 1975. What began as small nips in green tomatoes progressed to the destruction of entire tomato plants. By 1985, four-foot garden fences had been replaced with six-foot fences; yet the devastation continued. Deer are fond of tomatoes (green preferred over red), beets, carrots, peas, beans, melons, and almost anything else you can grow. Their vegetable garden tastes are supplemented with ornamentals such as day-lily buds and chrysanthemum flowers. In winter, the suburban deer diet shifts to shrubbery, with yew, dogwood and azalea buds, red cedar, rhododendron, hemlock and pine usually eaten in that order.

High deer populations are also having an effect on forest composition in some areas. Preferred browse species, such as white cedar and black cherry, may be unable to reproduce successfully enough to offset the deer's insatiable appetite. This produces a delayed effect, summarized by Beryl Collins, author of *The Vegetation of New Jersey*, who said "tomorrow's forest composition is being determined by the browse preference of today's deer."

If we allow deer populations to increase further, or even to remain at today's high levels, we must accept the fact that the charac-



New Jersey Farm Bureau

*Balled and burlapped nursery stock damaged by hungry deer.*

ter of our woods will certainly change as preferred browse species disappear. Diversity of species, a desired goal for ecologically sound environments, may be unavoidably reduced. Habitat for many species of ground-nesting birds will be destroyed. In our zeal to protect one species and by allowing it to increase unchecked, we may drive out many other species which formerly enriched our environment.

### How Many Are Too Many?

For any given range, there is a biological carrying capacity which deer will reach unless they are controlled by predation. In nature, this carrying capacity is reached when deer have eaten all edible vegetation within about five feet of the ground. Weakened and diseased herds may then succumb to mass starvation. This process was witnessed in Arizona's Kaibab National Forest. There were about 4,000 mule deer in the Kaibab in 1906 when President Theodore Roosevelt declared it a federal game refuge. All predators were removed and hunting was forbidden. The deer increased to about 100,000 by 1924, stripping the range of vegetation so thoroughly that it took years to recover. A massive die-off followed, teaching conservationists that single-species protection can go too far.

More recently at Angel Island State Park in San Francisco Bay, deer population reached starvation levels in 1966, 1976 and 1980. In an effort to reduce the herd during the first population peak, rangers shot about 50 deer until a public outcry halted their efforts. During the second population peak, conflicts over shooting erupted again. The San Francisco Society for the Prevention of Cruelty to Animals won permission to feed the deer to prevent starvation. More than 100 of the 225 deer starved despite the feeding program. When the third population peak hit in 1980, the Society won permission to trap and relocate the majority of the deer. Of a herd of 275, 203 were trapped and relocated. Unfortunately, a follow-up study showed that 85 percent of the relocated deer had not survived by the end of one year. The society attempted a trapping and birth control program on Angel Island with the remaining deer but had little success. Park personnel, without media attention or further intervention from the Society, reinstated their original program of limiting the herd by shooting.

The examples of Kaibab and Angel Island are often repeated with captive deer herds in places such as fenced parks, estates or government compounds. Deer may not actually die of starvation but, under the stress of near starvation, become vulnerable to disease or



New Jersey Farm Bureau

*A clearly chewed browse line is evident on this ivy-covered chimney.*

parasites which healthy deer would overcome. Attempts to maintain animal numbers in excess of the biological capacity of a range by feeding or other humane efforts have created expensive programs that failed.

There is another type of carrying capacity besides the biological carrying capacity. This "human tolerance" capacity is the number of deer that can coexist with humans in a given area without reaching the level of agricultural, health or highway nuisance. Human tolerance capacity has already been recognized as farmers, by special permit, are allowed to take deer if they destroy certain crops during growing seasons. State regulations, however, have not fully addressed the problem of increasing deer herds in suburban neighborhoods.

One reason that suburban deer are a problem lies in the 450-foot safety-zone law which forbids, for obvious reasons, the possession for the purpose of hunting a loaded shotgun or bow within 450 feet of any occupied dwelling or playground. Because houses are often within 450 feet of each other in deer-rich areas, it is impossible to take deer legally. There is one exception. Groups of like-minded neighbors can band together and give written permission to one or more hunters to hunt in areas within 450 feet of the occupied dwellings on their property. This method has been used successfully in some suburban areas but requires much cooperation. A property owner who denies the problem when deer have become a nuisance to his neighbors can halt efforts at herd control by denying access to his property.

Where do we go from here? Should we continue current regulations which allow growth of suburban deer herds until they reach the biological carrying capacity of their range? Or should we relax the laws and seek to stabilize deer populations at a lower level? Reducing the number of deer in suburbia is a positive and attainable goal. To achieve this goal an integrated program of deer management is necessary.

### Integrated Deer Management

Deer are beautiful and graceful animals, highly prolific and ecologically well adapted to suburban environments. They are a source of high-quality, organically grown venison. They can also be destructive pests, a reservoir for health hazards and a serious danger on our roads. These problems make it necessary for suburban areas with large herds to take a multifaceted approach to the problem.

Measures to control deer can be divided into palliative measures to minimize accident and vegetation damage and direct measures to re-

**John E. Kuser** of Princeton Township is Associate Professor of Forestry at Cook College. His writing has appeared in NJO before. Graduate student **Dona Schneider** also resides in Princeton and has borne witness with Dr. Kuser to the deer problem there.

duce the size of the herd. Palliative actions include site modifications such as high fences around gardens, netting placed over shrubbery during winter, deer repellents, and electric fences around orchards, Christmas tree farms and nurseries. Other palliative measures include warning devices such as deer reflectors along highways, deer-crossing signs and high pitched whistles on vehicles. Although these devices may prevent deer-vehicle collisions, by reducing deer mortality they actually increase herd size. Palliative measures have their own rewards but cannot, in and of themselves, solve the problem of suburban deer. This problem can be solved only by herd reduction.

Direct measures to reduce herd size require modification of existing statutes. The state can help by increasing the length of seasons or daily hours during which it is safe and legal to take deer. The New Jersey Farm Bureau has, in fact, called for Sundays to be added to legal hunting seasons.

The opening of restricted lands, both public and private, to hunting is a major means of addressing herd numbers. Where deer become a public nuisance or a danger to highway safety, public education about the necessity for herd reduction is appropriate. Municipalities might provide public meetings on deer control, take out newspaper advertisements and provide speaking programs in schools. Estate owners reluctant to open their land to hunting might be induced to do so by the prospect of lawsuits against them by persons injured by excessive estate-produced deer, whether it be from vehicle accident, crop or garden loss.

Are there remedies short of legal confrontation between those whose stance on hunting increases deer population and those who are injured by high herd numbers? Suggestions by those against herd reduction usually focus on deer relocation and birth control.

The remedy of trapping and transferring deer to districts where they are less numerous has four problems. First, deer are nearly impossible to trap. Second, the cost of trapping is high, estimated at several hundred dollars per deer. Third, high mortality is often incurred, as at Angel Island. Fourth, deer have become so numerous throughout New Jersey that no municipality wants more of them.


The other suggested remedy, birth control, surfaces at many public meetings. One suggestion is to lace saltlicks with birth control hormones and to put the blocks where does can lick them. Problems with this include obtaining U.S. Food and Drug Administration and the U.S. Environmental Protection Agency approval of such saltlicks and finding a means of preventing other species (including our

own) from licking them. Consequently, the birth control saltblock has never been developed.

Birth control measures of another type are feasible with captive deer herds, where does can be given a progesterone implant in the foreleg which prevents ovulation for two years. With free-roaming wild deer the effectiveness of this approach depends on catching enough does to render the treatment meaningful. Our limited ability to trap non-starving deer makes this prospect unlikely. Since deer do not respect municipal boundaries, the possibility of a hormone-treated deer being shot and consumed makes the practice of deer birth control a human health hazard.

Aldo Leopold, the renowned conservationist who founded the Wilderness Society, wrote in *Sand County Almanac* in 1949, "I now suspect that just as a deer herd lives in mortal fear of its wolves, so does a mountain live in mortal fear of its deer. And perhaps with better cause, for while a buck pulled down by wolves can be replaced in two or three years, a range pulled down by too many deer may fail of replacement in as many decades. The cowman who cleans his range of wolves does not realize that he is taking over the wolf's job of trimming the herd to fit the range. He has not learned to think like a mountain."

In 1960 Lorus and Margery Milne wrote in *The Balance of Nature*, "The country's deer have to be controlled and, without enough native predatory mammals to accomplish this, man must assume the job in a responsible way." Man, then, must become the predator, the hunter. This works well in agricultural areas with light human populations. In suburban areas, where real or perceived danger from shotgun pellets is greater, it does not. Bow hunting can replace the shotgun in suburban areas and exerts some, but not enough, effect to stop runaway herd growth.

Where do we go from here? To the best of our knowledge, no perfect solution to the problem of suburban deer population explosions is yet at hand. The reason is that the deer problem is actually a people problem. It is a conflict between people who suffer injury from high herd numbers and demand controls and those who want to leave the deer untouched on the grounds that hunting them is dangerous or inhumane. Those on one side talk of individual and class-action lawsuits against municipalities and individuals who instigate or enact deer-increasing laws. Those on the other side have traditional property rights on their side. This places many suburban communities on the horns of a deer dilemma. As of now there appears to be no easy solution and certainly none which will please everyone. 

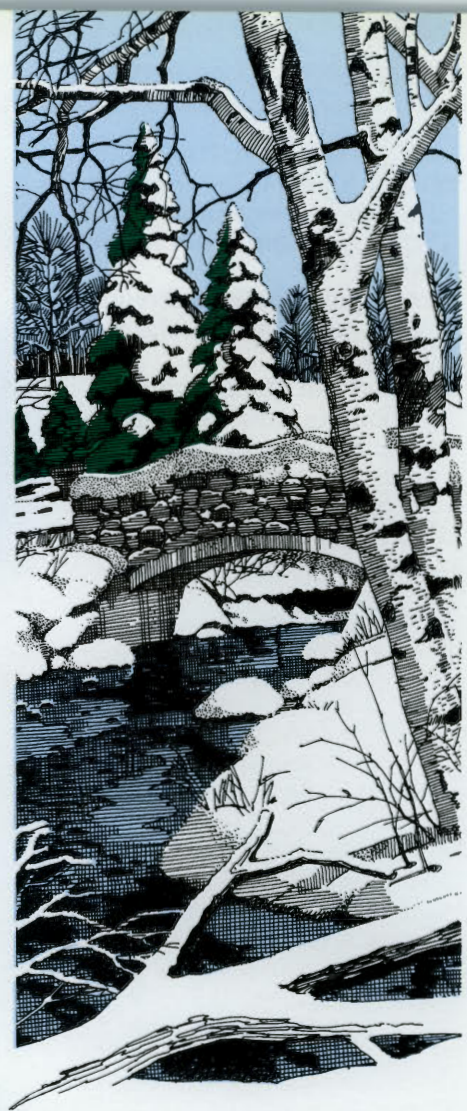


New Jersey Farm Bureau

*Once eaten, ornamental arborvitae no longer provide a roadside privacy fence.*

# Explorer

January / February 1989 Issue Number Three



## The Ups and dOWNs of Wildlife Habitat

Animals including people need four things to live—space to roam and breed, food, water and shelter. Together these things make a habitat, or the place where animals live. When there are changes in the habitat animal populations (groups of animals) are affected. For example, an animal population may increase if there is an increase in food. This same population may decrease if the food source decreases.

To understand this better, play this game. All you need is a pencil and your thinking cap.

Imagine you are a wildlife biologist. Your job is to study wildlife and their habitats. You are currently studying two species of wildlife: the white-tailed deer and the red-headed woodpecker. You have to find an answer as to why the deer population is increasing and the woodpecker population is decreasing. You suspect that the answer lies in the habitats of these animals.

To confirm your suspicion, you visit three sites for each species and you rate each site. You give points for each part of the habitat. The greatest value each part can have is 25.

Food	≤	25
Water	≤	25
Shelter	≤	25
Space	≤	25

The greatest value a habitat can have is 100 (Food + Water + Shelter + Space = Habitat). If the value of a habitat is 80 or above, the population will remain the same or increase. If the number is below 80 the population will decrease.

Now it's time to rate the habitats. Just look at the animal's habitat requirements on page two and compare that to what you find at each site.

## Explorer in Action

Explorers, step into action and do something to improve wildlife habitat in New Jersey. Here are some ideas:

- build wildlife brush piles and nesting boxes
- do a wildlife planting
- spread the word about New Jersey's wildlife—tell your parents and teachers

Also, if you are a member of a group that would like to help endangered or threatened wildlife, your group can receive up to \$1,000 to help with your projects. For more information write:

**Endangered and Nongame  
Species Program**  
NJDEP, Division of Fish,  
Game and Wildlife  
501 East State Street  
Trenton, NJ 08625-0400



## White-tailed Deer

### Habitat Requirements

**Food:** crops, landscaping plants, fruits and vegetables, and nearly all parts of native plants

**Water:** ponds, lakes, streams, dew, and water in the plants they eat

**Shelter:** tall grass, bramble, small woodlots, rows of hedges

**Space:** roam up to 640 acres

## Red-headed Woodpecker

### Habitat Requirements

**Food:** insects

**Water:** streams, ponds, lakes and in the insects they eat

**Shelter:** forests of large, old hardwoods (trees that lose their leaves in autumn) where there are few plants growing under the trees

**Space:** approximately 50 acres



## White-tailed Deer

### Sites

**Site #1** A 20-acre abandoned apple orchard that is bordered by a pine forest, a stream and a cornfield.

Food  
Water  
Shelter  
+ Space

Habitat Value =

**Site #2** A development of homes that surrounds a small woodlot.

Food  
Water  
Shelter  
+ Space

Habitat Value =

**Site #3** A golf course that is bordered by homes and a highway.

Food  
Water  
Shelter  
+ Space

Habitat Value =

## Red-headed Woodpecker

### Sites

**Site #1** A large area of forest that was recently burned by a forest fire.

Food  
Water  
Shelter  
+ Space

Habitat Value =

**Site #2** A 60-acre woodlot of dead hardwood trees with a thick shrub layer.

Food  
Water  
Shelter  
+ Space

Habitat Value =

**Site #3** A 60-acre strip of old hardwood trees.

Food  
Water  
Shelter  
+ Space

Habitat Value =



## Your Conclusions

- \* 1. What site or sites would support a stable population of deer?
- \* 2. What site or sites would support a stable woodpecker population?
- \* 3. At which site or sites could the deer and the woodpecker share the habitat?
- \* 4. Which animal can better adapt, or adjust, to people and the changes we make in their habitats?
- \* 5. What can be said about animals that can adapt to people and the changes we make in the habitat?

**Answers:**  
White-tailed Deer Sites: #1- 80 or greater, #2- 80 or greater, #3- 80 or greater  
Red-headed Woodpecker: Sites: #1- less than 80, #2- less than 80, #3- 80 or greater  
Your Conclusions: 1- all three deer sites, 2- woodpecker site #3, 3- woodpecker site #3, 4- white-tailed deer, 5- Animals that can adapt to changes in their environment have a greater chance of surviving.

## January

## February

- NATURE IN WINTER HIKES, every Sat. in Jan. 1 pm at Pequest Trout Hatchery and Natural Resources Education Center, Oxford. Call 201/637-4125.
- 13-14 4th ANNUAL ENVIRONMENTAL EDUCATION CONFERENCE. Sponsored by the Alliance for New Jersey Environmental Education. Exhibits, speakers, workshops from 9 am to 5 pm. HMDC's Environment Center, DeKorte Park Plaza, Lyndhurst. Fee. Call 201/232-5930.
- 15 FLY YOUR CHRISTMAS TRAINS with the Delaware Valley Kite Society. Savich Field, Main St., Marlton. Call 609/583-7656.
- 18 BOWHUNTING IN AFRICA. NJO writer Jan McDowell slide talk on recent trip to Africa by invitation of Zimbabwe government. Pequest, 7:30 pm. Call 201/637-4125.
- 21 MOONLIGHT NATURE SKI. 7:30 pm cross-country adventure on Pequest nature trails in search of wildlife. Registration and equipment required. Call 201/637-4125.
- 26 CLASS PROJECT and PROJECT LEARNING TREE, DEP-sponsored environmental education facilitator workshops. Cattus Island Park, Toms River. Call Office of Communication and Public Education, 609/984-7478.

- 4 MAP AND COMPASS basic skills course, 1 pm every Sat. in Feb. Pequest. Call 201/637-4125.
- 9 PROJECT LEARNING TREE workshops in Jersey City, Englishtown and Stone Harbor. Call 609/984-7478.
- 12 BLUEBIRDS OF PEQUEST. 1 pm presentation and opportunity to construct a bluebird box. Registration required. Call 201/637-4125.
- SHOREBIRDS, DECOYS AND SONGBIRDS, 2 pm demonstration of the woodcarver's craft. Harold Wilson, woodcarver, featured at NJ State Museum, Trenton. Call 609/292-6330.
- 15 RETURN OF THE OSPREY. ENSP biologist/NJO author Jim Sciascia updates status of this raptor program. 7:30 pm. Pequest. Call 201/637-4125.
- 18 BIRDS OF PREY IN NJ. Indoor live exhibit/outdoor bird walk. 2 pm at HMDC's Environment Center. Call 201/460-8300.
- MOONLIGHT NATURE SKI (see Jan. 21). 7:30 pm.
- 25-26 5th ANNUAL TOMS RIVER WILDFOWL ART & DECOY SHOW AND COMPETITION. 125 artists, carvers and dealers. Toms River Intermediate School East, Hooper Ave. 10 am to 4 pm. Carving competition starts at noon Sat. Call 201/341-9622.
- 28 FLY TYING FOR TROUT, 11 classes and 1 fishing trip. \$100 fee includes materials. Fisher Junior High School, Lower Ferry Rd., Ewing. Call 609/883-2779 (Ewing Adult School) or 609/882-9087 (instructor Bob Atticks).

**New Jersey Wildlife Profiles**, announced in the November/ December 1988 issue, will not be available this month due to printing contract delays. The Division of Fish, Game and Wildlife sincerely regrets the delay, necessitated to ensure the wildlife art and information publication be of the highest quality.

The cloth-bound volume, featuring 50 wildlife paintings by New Jersey artist Carol Decker, species descriptions and distribution maps, will be ready for sale in the spring. For pricing information and reservation forms, write:

**New Jersey Wildlife Profiles**  
NJDEP, Division of Fish,  
Game and Wildlife  
501 East State Street  
Trenton, NJ 08625-0400

Several inquiries have reached us about "A Field Guide To New Jersey Nature Centers." The 172-page volume, written by Pat Contreras Held of the *Asbury Park Press*, gives detailed information on nearly 30 nature centers with hiking, wildlife observation, indoor exhibits and programs. It's available for \$12.95 (paperback) from Rutgers University Press, 109 Church St., New Brunswick, NJ 08901 or call 201/932-7764.

The Office of Continuing Professional Education at Cook College is offering a number of natural resource/environmental education short courses beginning in January. The schedule includes recycling workshops for teachers and administrators, parks management, stream encroachment, urban tree management and forestry. Call 201/932-9271.



# Mink

By David Chanda

Mink are among the most widely distributed of the North American carnivores. These ferocious little predators are members of the weasel family and have a reputation of being blood-thirsty and vicious. Perhaps they earned this reputation because of their ability to kill prey much larger than themselves or because they often kill more prey than they could possibly consume. Whatever the reason, there is no question that mink are one of the most aggressive predators in New Jersey.

The mink's body shape is typical of the weasel family, a long, thin body with short, sturdy legs. Males are larger than females and weigh two to three pounds. They are about 30 inches long, including the thickly furred tail. Their dark brown fur, soft and lustrous, is often patterned with white patches on their chin, chest and abdomen.

Mink are nocturnal and occupy a variety of wetland habitats, including streams, rivers, lakes, freshwater and saltwater marshes and coastlines. Mink are generalists, preying on whatever food source is readily available. Because they are excellent swimmers, they are able to take advantage of both aquatic and terrestrial habitats to feed on a wide variety of prey, but heavily on fish, mice, muskrats, frogs, turtles, young birds, rabbits, waterfowl and invertebrates such as crayfish and aquatic beetles.

The importance of fish, birds and invertebrates in the mink's diet shifts seasonally. Birds and invertebrates are important food items during the summer, while fish, such as brook trout, are consumed more during the winter. This shift may be related to a change in abundance caused by migration or overwintering in a form not available to the mink. Also, during the winter fish may move slower due to lower water temperatures, thereby becoming more vulnerable to predation.

Mink produce their first litter at one year of age and will reproduce once a year thereafter. Breeding occurs during February and March. During mating, the male is very aggressive and often violent. He will grab and hold the female by the neck with his sharp needle-like teeth. Females are receptive at 7 to 10-day intervals throughout the 3-week breeding season. Rematings after a 6-day interval may result in additional ovulations and fertilizations. This means that more than one male

may father a litter. After breeding, both go their separate ways.

Mink give birth to 4 to 5 young, called kits, between mid-April and mid-May. The kits, about as long as a human thumb and covered with a fine layer of hair, are blind until about 5 weeks old and give a cat-like mew. Once their eyes open, they are entirely carnivorous. If it becomes necessary for the parents to move the young, they will carry them by the scruff of the neck. As soon as the young can travel, they accompany their parents on hunting trips, where they learn how to catch prey on their own.

The kits quickly adapt to the hard life of a predator. They become graceful, agile swimmers and learn to catch fish and other prey. By the end of the summer, they are quite capable of killing any of their usual prey. The kits are then on their own, as the family breaks up and each goes its own separate way. Mink are solitary animals. The males will wander over a territory of about one square mile, while females stay within an area of 20 to 30 acres. Each will avoid the other.

Mink have no real enemies, as few predators care to tackle these fierce bundles of energy. Occasionally a great horned owl, fox or bobcat will kill a mink. However, mink are a formidable adversary and can dodge in a flash, escaping into the nearest available cover. If cornered, mink will fight fiercely, hiss, spit, and bare their needle-like fangs and sharp curved claws on their forefeet.

Mink also have another defense. They have scent glands, but unlike skunks mink do not spray. When angry or frightened, they will secrete some of this obnoxious smelling fluid, which often deters a would-be predator.

Mink are trapped by humans. In New Jersey, approximately 500 are harvested each year. Their fur is prized because of the soft and silky pelt. In addition to making fashion and status statements, they keep the owner warm even on the coldest of nights.

Habitat degradation as a result of land-use practices and chemical pollutants probably pose the greatest threat to mink populations. However, the future for mink throughout New Jersey is only as bright as the future of our wetlands. As long as we can insure that wetland habitats are protected, then the mink as well as countless other wildlife species will continue to flourish in the Garden State.

**David Chanda** is Chief of Information and Education for the Division of Fish, Game and Wildlife and a frequent contributor to our pages.



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