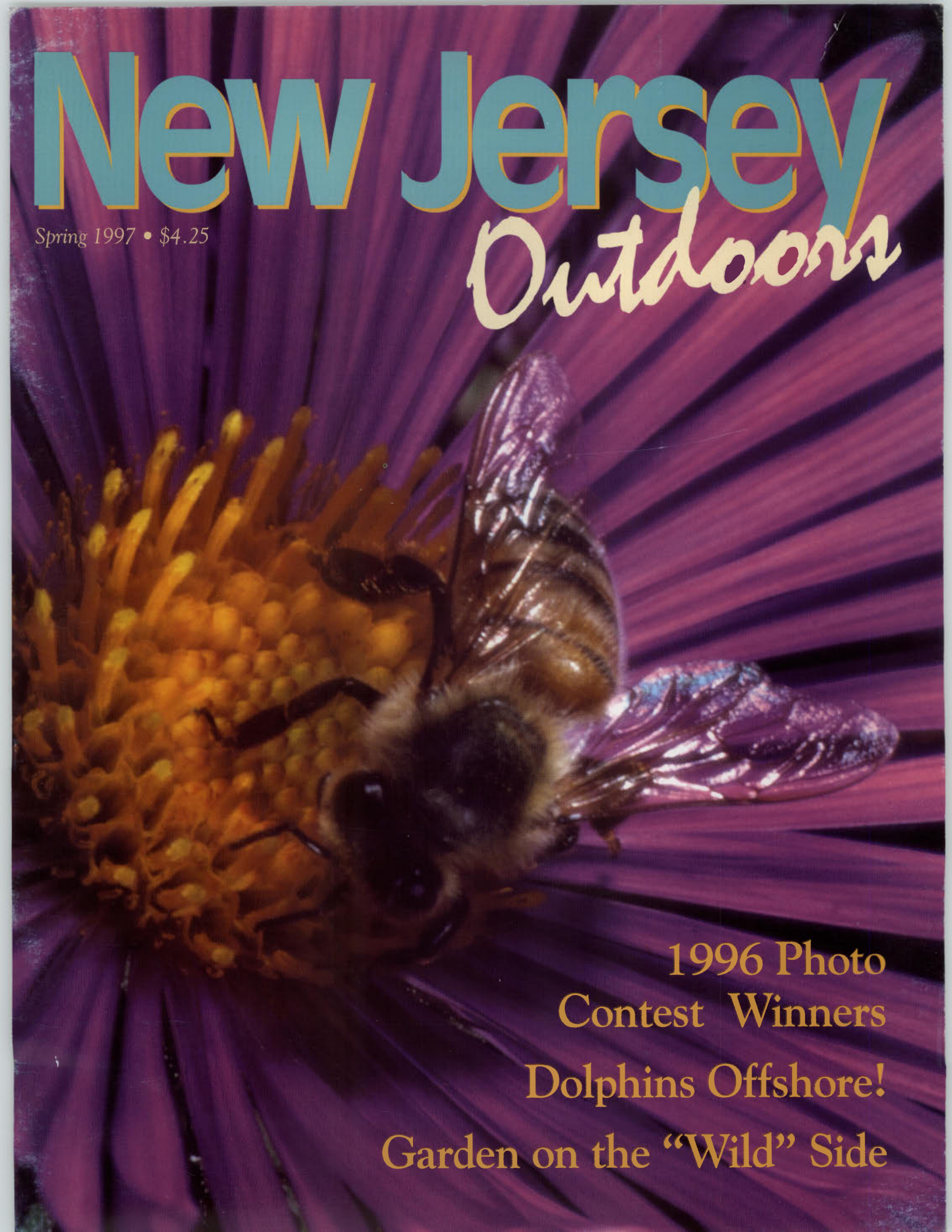


New Jersey

Spring 1997 • \$4.25

Outdoors



1996 Photo
Contest Winners
Dolphins Offshore!
Garden on the "Wild" Side



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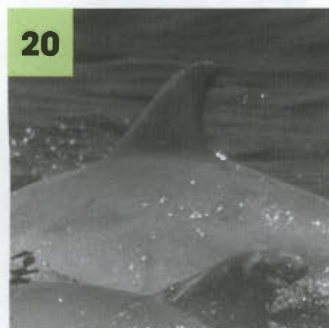
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Front Cover

A "bee on a posy" pays off for farmers, gardeners, and consumers. To find out more about honeybees, read "New Jersey's State Insect: The Honeybee," on page 64. © Fred Cantor

Inside Front Cover

Seven-year-old Jesse Lockowitz, of Toms River, displays his prize-winning striped bass, caught on a mullet just 20 minutes before the close of the Governor's Surf Fishing Tournament last fall. Pictured with Jesse is his neighbor, Michael Yearance. See "New Jersey Outdoors People," on page 3, for more information on tourney winners. © Marc J. Lanzim

Inside Back Cover

Acrylic on plexiglas © by Mark Schreiber, an architect and artist who lives in Plainsboro.

Back Cover

Pictured are the grand prize winning design and first place winners in the 1996 New Jersey Junior Duck Stamp Contest. The competition, open to students in kindergarten through high school, is sponsored annually by the Wetlands Institute under the auspices of the U.S. Fish and Wildlife Service's Federal Duck Stamp Program.

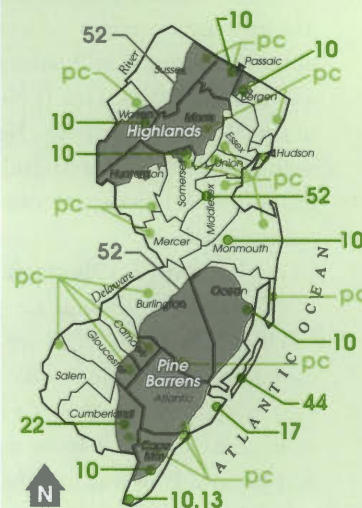
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Story Locator

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Missing in Action

Several readers wrote to let us know that Passaic County has not seceded from the state, even though — through an unfortunate oversight — a tribute to its notable historical and natural features was missing from “This Is New Jersey” in our Winter 1997 issue. Neither the author nor the editor intended to slight Passaic, which is dear to our hearts for many reasons.

Author John T. Cunningham explains: “Overlooking” Passaic County (in “This Is New Jersey,” Winter 1997) meant overlooking the Passaic Falls at Paterson, likely New Jersey’s best scenic view, as well as overlooking the nation’s first planned industrial city that began beside the falls in 1791. It meant omitting two counties, as originally planned before the State Legislature joined them in 1837 as one wasp-waisted county to balance creation of South Jersey’s Atlantic County. The section north of Paterson is still mostly sparsely-settled, magnificent woodland; the area south of Paterson typifies modern urbanization where vigor and inventiveness predominate.

Passaic County is very much alive. How I omitted it from my article is inconceivable. Mea culpa.

Owwww!

There are two other species of owls recorded in New Jersey, the northern hawk-owl and the boreal owl. I realize these two are extremely rare visitors, but a paragraph could have been devoted to them.

Clifford A. Miles
Mountain Lakes

Editor’s Note:

Pat Sutton, author of “On the Prowl for Owls,” which appeared in the Winter 1997 issue of *New Jersey Outdoors*, says that neither species has been recorded recently in New Jersey. There were three or four recorded sightings of the northern hawk-owl around the turn of the century and a single boreal owl was sighted in

1962. Both species are extremely rare in this portion of the country; they are very northern owls and seldom are seen — even in the winter — farther south than the New England states or upstate New York.

Also, a couple of sharp-eyed owl aficionados wrote in to provide the correct species identification for the owl pictured on the cover of the winter issue. It was a screech owl, not a great horned owl.

Speaking of image goofs, our apologies to both photographers and readers for inadvertently reversing several images in the winter issue — most notably the fall foliage photo on page 24, which photographer Herb Segars took from the State Line Lookout, a rest area on New Jersey’s Palisades Parkway south of the Tappan Zee Bridge.

Tapping Sap for Laughs

Your good story on maple sugaring (Winter 1997) took me back to the time when, as a young mother, I made syrup every year. When the right weather arrives, I still think, “Lots of sap today.”

I tapped all of four sugar maples, ranging from a one-bucket to a three-bucket tree, which yielded the typical 1 gallon syrup per 40 gallons sap.

Experience taught me several things. 1) I could boil it down in my large kitchen with the electric range fan on with no harm to the wallpaper, but had better be on hand when the temperature (per candy thermometer) began to rise, as it would go very fast from watery to the charcoal stage if not closely watched. 2) I had to value my syrup very highly as reflected in the electric bill. 3) Sending syrup as gifts in plastic bottles salvaged from detergent was a failure. My candid brother wrote, “Thanks for the great Joy®-flavored syrup.” Given all that, it was fun and anyone can do it.

I am sorry to be giving up New Jersey Outdoors as I am moving to the Chesapeake area. I have treasured this magazine.

Anne K. Stauffer
West Trenton

Editor’s Note:

There’s no reason to give up *New Jersey Outdoors* simply because you’re relocating — we mail all over the country and it’s a great way to keep in touch with what’s going on “back home.”

Spring Surfing

A recent net-surfin’ safari uncovered a gem of a site related to the Maurice River’s natural and historic attractions, as well as a number of other sites of interest to those who enjoy New Jersey’s resources, outdoor activities and events.

Appalachian Mountain Club

• New York/North Jersey Chapter

<http://www.gti.net/amcny/amcnynj.html>

• Delaware Valley Chapter

<http://www.lehigh.edu/ludas/public/www-data/amc.html>

Federal Duck Stamp Program

<http://www.fws.gov/~r9dso/homedk.html>

Flower Gardens In New Jersey

<http://www.injersey.com/Living/Travel/gardens.html>

Garden Sites to See

<http://www2.njgarden.com/NJGarden/Sites.html>

Howell Living History Farm

<http://yourtown.com/orgs/hlhf/index.html>

Nature Study in Cumberland County

http://www.hsrl.rutgers.edu/http_nature.cc.html

New Jersey MasterLink

<http://www.cybermasters.com/njlinks/>

Places of Interest in New Jersey

http://www.fieldtrip.com/nj/index_nj.htm

Western Jersey Wheelmen

<http://www.bike.princeton.edu/wjw/>

Wheaton Village

<http://www.wheatonvillage.org/>

Wild and Scenic Maurice River

<http://www.igc.apc.org/mauriceriver/>

World of Interest’s ENJOY

<http://www.woi.com/enjoy/>

If, in your cyber-travels, you find a great New Jersey outdoors-related page, send us the address for future mention.

State of New Jersey
Christine Todd Whitman
Governor



Department of Environmental Protection

Robert C. Shinn, Jr.
Commissioner

Jane Kelly Brickner
Assistant Commissioner
Legislative and Program Coordination

Paul Wolcott
Director of Communications

Hope Gruzlovic
Chief, Office of Publications

New Jersey Outdoors
Spring 1997, Vol. 24, No. 2

This publication is dedicated to promoting and encouraging the wise management and conservation of our natural, cultural and recreational resources by fostering a greater appreciation of those resources, and providing our residents with the information necessary to help the Department protect, preserve and enhance them.

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New Jersey Outdoors **People**

Hopatcong Man Snares Record Muskies

Bob Neals shattered the state muskellunge record on January 26, when he pulled a 42-pound, 8-ounce muskie through the ice from the Monksville Reservoir in Passaic County. Neals, who lives in Hopatcong, had set out that day to make an attempt at hard water muskie fishing on the north side of the lake, and had cut several holes in an area over approximately 18 feet of water. He baited his tip-ups with medium-size shiners and used a #10 treble hook attached to an 8-pound test braided wire leader to protect against the species' sharp teeth.

Before long, the flag on one of his tip-ups tripped. He set the hook and the battle ensued. Once the muskie's head-shaking runoffs diminished, Bob led the fish up to the surface near the hole and tried to lift it out using a small hand gaff. That gaff, like the second one he tried, was too small and straightened out. But his third attempt, using a heavier gaff loaned to him by one of the anglers his battle had attracted, was successful.

Bob planned to release the fish back into the lake, but several of the anglers persuaded him that it could be a record catch and that he should have it weighed on a certified scale at the nearby Monksville Sport Shop. The new record fish, which probably was no more than 12 years old, measured 48 inches in length and had a girth of 26-1/2 inches.

Remarkably, Monksville Reservoir was not stocked with muskellunge. The species was originally stocked, by Chapter 22 of Muskies Inc., in Greenwood Lake. The heavy rains that followed the stocking prompted a migration down into the reservoir through the connecting river.

Congratulations, Bob!

Land Gift Not Just for the Birds

The **Trust for Public Land** (TPL), a national, nonprofit land conservation group, recently donated four properties, totaling 120 acres, to the New Jersey Natural Lands Trust, an independent state agency. The four parcels, known collectively as Sands Point Harbor, form the southern portion of the mouth of Oyster Creek in Ocean Township (Ocean County), and will provide needed public waterfront access. TPL was able to purchase the land through the use of **Green Acres** funding, a match of TPL capital funds and support from the **William Penn Foundation**. The bayfront lands also will provide a habitat for many Atlantic Flyway birds, including American bitterns, little and great blue herons, ospreys and northern harriers.

Over the Hill? Not!

Celebrating 30 years of outdoor experiences is the **Outdoor Club of South Jersey**, a nonprofit organization devoted to providing low cost opportunities for expanding knowledge, appreciation and enjoyment of the environment through experiences in outdoor activities. Membership is open to anyone, regardless of age or place of residence, and the club offers a 12-month

program of activities designed for all ages and levels of ability and interest.

This active group has far too many upcoming events — including backpacking, hiking, bicycling, canoeing and more — to list them all in *New Jersey Outdoors'* Calendar of Events, but you may receive a schedule of events by sending a check for \$3 to: Outdoor Club of South Jersey, Inc., P.O. Box 455, Cherry Hill, NJ 08003-0455. A membership application can be found in the booklet.



© MARC J. LANZIM

Jesse Lockowitz

Tourney Nets 1,200 Anglers

Kudos to participants in the fifth annual Governor's Surf Fishing Tournament, held in October at Island Beach State Park. The 1996 Governor's Trophy was awarded to **David Stinton**, of Trenton, who landed a 35-inch bluefish and claimed first place in the adult men's category for bluefish. Stinton — whose name will be engraved on the Governor's

Cup, which will be prominently displayed at the park — also received a rod and reel combination for his outstanding catch. Second and third places went to **Robert Sevenningsen**, Brick, and Flanders' **Joe DesMarais**, who was the 1994 tourney's first place winner in this category. Sevenningsen and DesMarais reeled in blues measuring 30 inches and 27-1/4 inches, respectively.

Michael Henry Jr., a 10-year-old from Fairless Hills, PA, captured first place in the bluefish/children's category with his 19-1/2-incher, while 9-year-old **Mitch Viglianti**, Elizabeth, landed a 19-1/8-incher to take second place. In the teen category, a 20-5/8-inch blue assured **Ronald Butkiewitz** (who also caught a 17-3/4-inch blue) of top honors; **Carl Beams**, a 16-year-old from Howell, reeled in a 15-3/4-inch bluefish to secure second place.

Justin Smith, an 8-year-old from Belvidere, captured first place in the fluke/children's category with a 16-incher, while **Anthony Souza**, 11, of Levittown, PA, took second place with

a 15-inch fluke. **Deborah Chesna** from Whiting took the only prize in the fluke/adult women's subcategory with her 16-3/4-inch catch. Leading the adult men in the fluke category was **Michael Cameron**, of Churchville, PA. His 17-1/2-inch fluke edged out 16-3/4- and 16-1/2-inchers caught by **James Barron**, Bensalem, PA, and **Dennis Traynor**, Bricktown, respectively.

Adult men were the only winners in the tautog category, with **Lajos (Louie) Kocsa** capturing first place by an eighth of an inch! Bayville's Kocsa repeated his 1995 win in the tautog category by landing a 15-5/8-incher, while **Claus Fuller's** tog measured in at 15-1/2 inches. Fuller also is a previous winner; he placed first in the 1993 tourney and second in 1994.

Seven-year-old **Jesse Lockowitz**, of Toms River, pulled in a 28-1/2-inch striped bass to take first place in the children's category for the species. **Ken Hollins**, Seaside Park, **Bob Leitner Jr.**, Hamburg, and **Joe Boughey**, Browns Mills, won top honors in the adult category with stripers measuring 32, 31-5/8 and 28-1/2-inches, respectively.

Winners received a variety of donated fishing tackle and gear, and all participants' names (more than 1,200!) were entered into a drawing for additional prizes. But whether or not a prize was claimed, all were winners — as were those who will benefit from the funds raised by the event. In its first five years, the event has raised nearly \$40,000 for the construction of a beach access ramp and specialized wheelchairs for the disabled and elderly. The annual tournament is sponsored by the Department of Environmental Protection's divisions of Fish, Game and Wildlife and Parks and Forestry, the New Jersey Federation of Sportsmen's Clubs, Jersey Coast Anglers Association and the New Jersey Beach Buggy Association.

Remember Wildlife at Tax Time

New Jersey's endangered and non-game species need you! Please don't forget to "Check-Off for Wildlife" on line 54 when filing your New Jersey state income tax return. This is the main source of funding for the **Endangered and Nongame Species Program** (ENSP) in the Department of Environmental Protection's Division of Fish, Game and Wildlife.

Since 1982, check-off revenue has, among other things, helped to pay for the acquisition and release of more than 60 bald eagles in the state. A record-setting 176 bald eagles and 11 golden eagles were counted during the Annual Mid-Winter Eagle Survey held statewide on January 11 and 12, shattering the 1996 record total of 113 birds. The survey was sponsored by New Jersey's Endangered Wildlife Tax Check-Off Program and coordinated by the ENSP.

Despite the program's successes with bald eagles and many other rare species, check-off revenues have fallen sharply in recent years, curtailing funding for endangered and threatened species protection and management. The Endangered and Nongame Species program is unlike other state programs in that it relies on the support of people like you, who appreciate and value New Jersey's rich wildlife diversity and want to ensure that this treasure is bequeathed to future generations. So, please, remember to "Check-Off for Wildlife."

Winners Think Contest is Just Ducky!

Kudos to all of the young New Jersey artists who entered drawings of waterfowl in the 1996 Junior Duck Stamp competition sponsored by **The Wetlands Institute**. The statewide contest accepts entries in four categories: Group I (kindergarten through grade 3); Group II (grades 4 through 6); Group III (grades 7 through 9); and Group IV (grades 10 through 12). There are three first, second and third place winners in each group, and all entrants receive a certificate. **Michael Braun's** poster, judged as Best of Show, represented New Jersey in the national competition sponsored by the U.S. Fish and Wildlife Service's Federal Duck Stamp Office.

The first place posters in New Jersey's 1996 contest, reproduced on the back cover of this issue, were created by: **Bernard Quisumbing**, of Bishop George Ahr High School in Edison; **Michael Braun**, a Collingswood High School student; **Seth Hiler**, of Morris Knolls High School in Rockaway; **Elizabeth Green**, of Ramapo High School in Franklin Lakes; **Erin Ritson**, of Arthur Rann Middle School in Absecon; **Filomena Brogna**, of Red Bank Re-

gional High School in Little Silver; **Kristin Mitchell**, an Ocean City Intermediate School student; **Brendan MacCaig**, of St. Dominic School in Brick; **Kei Tawara**, of Charles DeWolf School in Old Tappan; **Cole Barry**, of Dennis Township Elementary School in Dennisville; **Chrissy Dickinson**, of Middle Township Elementary School in Cape May Court House; and **Andy Zipparo**, of Dennis Township Elementary School in Dennisville.

The annual competition, which began in 1990 as a pilot program in Florida, now draws entries from all 50 states and the District of Columbia. It encourages young people to learn about the importance of wetlands in providing habitat for many species and to appreciate the beauty and diversity of waterfowl in their natural environments.

State Best of Show posters are exhibited at national art shows and the Smithsonian's National Postal Museum. The poster selected as the national winner is used on the federal Junior Duck Stamp, which is available for \$5 from the Federal Duck Stamp Office.

Digging Turns Up Dinosaur Bones

Paleontologist **William Gallagher**, registrar of natural history in the **New Jersey State Museum's Natural History Bureau**, makes no bones about his fascination with dinosaurs and the circumstances surrounding their extinction. So he was very excited when **Frank Wilson**, a mining company foreman, unearthed several bones near the bottom of the Inversand Pit in Gloucester County. Operations at the pit were suspended while Wilson and co-worker **Thomas Clifford** carefully removed exposed pieces.

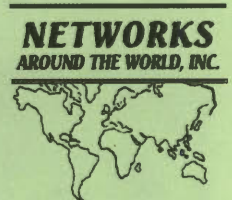
Dr. Gallagher, who also teaches at Rutgers University, recognized the bones

as a portion of the jaw of a mosasaur, a sea lizard that grew up to 40 feet long and inhabited the ocean waters covering southern New Jersey in the Late Cretaceous Period. The mosasaur specimens are now on display as part of the museum's *The Great Russian Dinosaurs* exhibit (see Calendar of Events for details).

Both Dr. Gallagher and the **Inversand Company**, which has a longstanding agreement to notify the museum of such finds, are to be congratulated for their roles in preserving this important aspect of our natural heritage.

Thank You!

Our gratitude is extended to the following, who donated prizes for *New Jersey Outdoors'* 1996 Photo Contest.



Grand prize winner **Patricia Harrod** will receive a Ricoh LX-33W camera and complimentary film processing from The Camera Shop, Inc.® in addition to a Division of Parks and Forestry T-shirt and other prizes. **Bob Malone**, whose work captured first place in three counties, will be awarded a \$50 Cape May Lighthouse phone card, compliments of Networks Around the World, Inc. Two-county winners, **Alma Parseghian** and **Ricky Valdez**, will each receive a copy of the Division of Fish, Game and Wildlife's book, *Wildlife Profiles*. All county winners will receive *New Jersey Outdoors* subscriptions (or renewals), wildlife posters and other gifts.

Share Your Story

Have you had a really interesting outdoor experience recently? Did you bag a trophy buck or catch a whopper of a fish? If so, let us know! Send the pertinent information — along with photos, if available — to *New Jersey Outdoors*.

Wildlife Problems? Call Wildlife Control



BRAD HOLLOWAY, N.J. DIVISION OF FISH, GAME AND WILDLIFE

by Bob Eriksen

Wildlife control representative George Garbaravage releases a beaver in suitable habitat.

The wildlife control representative listened patiently as the caller described the evidence: holes in the wallboard, disappearing dog food and a host of other signs that perfectly described an infestation of Norway rats in her garage.

When he confidently advised the caller that the perpetrators were rats, however, she reacted with disbelief. "Oh, no, that couldn't be," she protested. "This is a nice neighborhood."

Thousands of New Jerseyans each year encounter similar problems with wildlife

— animals that either are a nuisance or cause damage — right in their own back yards. When they do and they're not sure how to handle the situation, many of them call the Division of Fish, Game and Wildlife's Wildlife Control Unit.

At times, the volume of requests for assistance is staggering. Between July 1, 1995, and June 30, 1996, for instance, the Wildlife Control Unit answered 2,976 calls involving wildlife nuisance and damage situations. The rabies epizootic that swept through New Jersey in

1989 through 1995 affected the number of calls the unit receives annually. Last fiscal year it handled 229 raccoon complaints; in 1990, there were 1,011 complaints. The drastic reduction in the number of raccoon calls may be attributed both to a decrease in the population of these animals and an increase in the number of private businesses handling small animal complaints. When the public realizes that the only service provided by the state is advisory in nature, alternatives are sought.

Have You Heard the One About . . . ?

Some notable complaint calls received in the past several years include one about a raccoon removing goldfish from a small pond in a rock garden. Raccoons taking advantage of fish ponds are not unusual but the source of the call was. When asked his address, the caller responded that he was from California! No, he was not visiting New Jersey when he made the call — he had heard from a relative that New Jersey's wildlife control representatives were very helpful.

Small animals can cause real headaches for the homeowner and gardener, but larger animals can cause significant damage and financial loss to both residents and the agricultural community. The four major species with which the unit deals are white-tailed deer, beaver, coyote and black bear. Each of these species can create problems that are difficult to solve. State law limits the options available to the farmer or homeowner when these species are involved, and unit personnel become actively involved in complaints regarding any of these four types of wildlife.

Deer Not Always Dear

Deer are found throughout the state, including some of the more urban areas. The most common problem homeowners have with these animals is damage caused by deer feeding on shrubs, trees and garden crops. Deer damage in resi-

dential areas is a problem too complex for this article, but unit representatives advise homeowners of the options available to them, including repellents, fencing and less palatable plants. When it comes to agricultural damage, wildlife control representatives spend considerable time with individual farmers. Con-



Bears can turn up in unexpected places.

trolling deer populations is an essential ingredient in solving agricultural damage. Control Unit biologists often advise farmers of the type of deer harvest they should maintain during the hunting seasons to reduce potential for damage.

Harvest management is ultimately the best strategy for reducing deer damage. Under certain conditions, orchards, nurseries, vineyards and high value produce are best protected by repellents and fencing. The unit operates a limited program to supply (free, on a "while supplies last" basis) deer-proof fencing and repellent to farmers. From July 1995 to June 1996, unit personnel issued 582 gallons of deer repellent and 439 rolls of fencing materials to farmers.

When losses are extreme, permits to shoot deer that are damaging crops are issued when immediate relief from

COURTESY OF WILLIAM KRONYAK

damage cannot be achieved through other measures. The wildlife control representative for the area inspects the crop damage and issues a permit valid for up to a month at a time. Under the permit, deer may be shot in the fields where damage is occurring at any time of day. Usually, the farmer shoots very few deer, but the activity and removal of some animals

vers are wonderful animals until they move in next door. Flooding of basements, cultivated fields, valuable timber and roadways frequently lead to complaints about beavers. These problems sometimes can be handled with a water-level control device called a flume. Constructed of wood, PVC or flexible pipe, the flume is installed in the dam to control the water level. If the device fools

beavers annually. Were it not for the annual trapping season, the number of beaver problems would be much higher.

The eastern coyote is a relative newcomer to New Jersey. Expanding populations in adjacent states resulted in immigration of coyotes into New Jersey in the 1950s. The past two decades have seen growth in both numbers of coyotes and the area in which they are found; specimens have been obtained from 18 New Jersey counties. With this expansion came an increase in the number of complaints about the species. Some problems arise from the perception of some people that coyotes are dangerous. While coyotes certainly can be dangerous, their usual behavior is to avoid human contact. This can be difficult in suburban areas. When people see coyotes, especially pups in the summer months when the animals are less wary, they become concerned and call to have the animals removed. The Wildlife Control Unit does not remove coyotes unless an animal is sick or involved in killing of livestock. Under those circumstances, unit personnel will attempt to capture the offending animal. Forty-six coyote complaints were received last year.

They're No. 2

The black bear has become the source of the second highest number of complaints received annually. As black bear numbers increased over the last 20 years, bear encounters with people became more numerous. Five years ago, when bears numbered only 200 in the northern counties, complaint calls averaged fewer than 100 annually. Last year, unit employees handled 441 black bear complaints. The severity of the complaints has changed with time as well. With a population of 450-500 bears, and increasing development in bear habitats, the potential for trouble has grown. Calls about bears raiding trash cans and destroying bird feeders — yes, bears like bird seed — have reached impressive numbers, but serious problems also have increased. It stands to reason that a larger bear popu-

COURTESY OF DERWOT SCALES



changes the behavior of the herd and helps to alleviate damage. The unit issued 378 of these permits in 1995, and 2,270 deer were killed.

Surprising Pests

Beavers and coyotes also can cause problems for both the homeowner and the agricultural community. Beavers are surprisingly widespread in New Jersey and, wherever they are found, they live close to people. Most people believe bea-

the beaver, everyone is happy. If a flume cannot control beaver damage, Control Unit personnel trap and remove the beaver. The unit uses both live-trapping and lethal trapping techniques. From July 1995 to June 1996, 120 beaver complaints were received. Control representatives captured 52 beavers at complaint sites. Some of these animals were moved to habitats with long term potential for supporting beavers. Licensed trappers harvest more than 100

lation would result in more interactions between bears and people and that the number of problem animals would grow.

The number of chronic problem bears is small; however, a few problem animals can cause many an Excedrin® headache. Complaints range from habitual campground raiders, to breaking and entering, to livestock killers. Many nuisance and damage situations are caused by people feeding bears. Bears are intelligent animals with good memories. They quickly realize where good sources of food may be found. They cannot differentiate, though, between the house of a bear feeder and one in which the occupants are fearful of bears.

The unit operates under a black bear policy that defines how and when the unit responds to bear problems. Generally, the unit becomes involved when bears wander into urban areas or when a situation escalates from nuisance to real damage. The response usually involves trapping the animal and attempting to modify its behavior by relocation and conditioning. Chemical sprays, noisemakers and rubber buckshot are used to adversely condition bears. Conditioning is designed to make the animal avoid people and behavior that causes damage. These techniques usually work quite well, but when relocation and conditioning are not effective, there is no choice but to ship the bear to another state or euthanize it.

Goal: Peaceful Coexistence

Many of us have a great respect for wild animals. That respect can make us somewhat myopic so that we fail to realize the potential many wild animals have for causing trouble. Trouble comes in all shapes and sizes. Some of our wildlife related problems are small and easily resolved. Others require a great deal of time and expertise. But the fact that we have problems is not all bad; it's an indicator that we're doing something right — maintaining an environment that supports a healthy wildlife population. While conflicts caused by increasing urbanization will continue, and will de-

mand solutions as long as viable wildlife habitat exists in New Jersey, public awareness of the proper way to deal with wildlife should enable all species — human and animal — to share the state's natural resources.

Bob Eriksen is a principal biologist with the Bureau of Wildlife Management in the DEP's Division of Fish, Game and Wildlife.



Deer often cause extensive residential and agricultural damage (opposite page). Harvest management is the best strategy for reducing widespread deer damage.

Fencing of individual fruit trees (above) is effective for homeowners but not commercial orchards.

New Jersey State Library



COURTESY OF NJAS

Beecher Bowdish, first secretary of the New Jersey Audubon Society.

The New Jersey Audubon Society:

The First 100 Years

by Denise Damiano Mikics

In the waning years of the 19th century, a walker in lower Manhattan might have sighted robins, warblers, bluebirds, owls, scarlet tanagers, quails, herons, doves, bobolinks, woodpeckers, terns and dozens of other subspecies of the class *Aves*. A birder's delight? No. These birds were identified by their plumage as it bobbed and waved atop the heads of New York's fashionable ladies.

According to Joel Allen, who served at the time as curator of birds at the American Museum of Natural History, one Long Island village alone supplied 70,000 skins for the hat trade in just four months. This threat to birds helped provide the impetus for the formation and growth of wildlife conservation groups.

One of these was established in New York in 1886 by George Bird Grinnell. He named the fledgling organization after his boyhood hero, John James Audubon, a pioneer ornithologist famous for his engravings, which were published in four volumes as *Birds of America*.

Grinnell's Audubon Society flourished initially, but failed due to its reliance on centralized leadership and a lack of financial support. Within a few years, other state Audubon groups came into being and, by 1901, there were 35 such societies. In 1905, William Dutcher, a New Jersey native and member of the American Ornithological Union, united the state groups as the National Association of Audubon Societies for the Protection of Wild Birds and Animals. He is credited as having almost singlehandedly pulled the Audubon movement together.

The Audubon Society of New Jersey was established on

May 8, 1897, to work toward conservation of wildlife and natural resources, assist in providing nature education, increase public awareness of New Jersey's natural history and wildlife, and encourage sound conservation legislation. Less than two years later, it had 124 members and was actively involved in educating the public about its mission and the state's bird laws, efforts that continue to this day.

"Education is the cornerstone of our work," says Tom Gilmore, executive director of the New Jersey Audubon Society. "All of our environmental victories — bond issues, the Great Swamp, wetlands and more — come from educated citizens."

Strengthening the State Society

By the end of 1905, membership had grown to 739 and the group had successfully brought some of its interests to the attention of state legislators. Not all of the society's legislative efforts were successful, however, and its efforts to get public school students to construct bird houses met with disappointment.

Most state Audubon societies lacked, in their formative years, strong leadership and financial backing. New Jersey's group was no exception.

William Dutcher, as president of the National Association of Audubon Societies, decided there was a need to reorganize the Audubon Society of New Jersey to function as effectively as the more successful state societies, such as the one in Massachusetts. He asked Beecher Bowdish, chief clerk of the national association, to do so and, on December 15, 1910, the New Jersey Audubon Society (NJAS) was incorporated. George Batten, a noted conservationist from Montclair, was elected its first president. Bowdish was named as secretary, a position he held for 36 years.

Legislative victory came swiftly. Despite the fact that a similar bill had been soundly defeated only four years earlier, the NJAS secured the passage of an amendment to the plumage clause of New Jersey's non-game bird law. The amendment prohibited the possession or sale, within the state, of wild birds or any of their parts and resulted in New Jersey having one of the strongest laws for the protection of non-game birds ever enacted.

In 1911, the group's Board of Trustees authorized the publication of *Guide to the Birds of New Jersey*, a pocket-size book written by Beecher Bowdish and Chester Reed to promote bird protection through better understanding. Within the next several years, the NJAS organized 8,326 students into 372 Junior Audubon classes, established (in Atlantic City) a permanent exhibit explaining the economic value of birds, and began conducting multimedia bird lectures around the state.

By 1914, the state association's board of directors decided to offer Beecher Bowdish — who devoted his free time to New Jersey Audubon Society duties while continuing to work full-time in his national association office — a salary equal to what he was receiving from the national association. He accepted

the offer and resigned his national position.

Ultimately successful, the society struggled in the late teens and early twenties to secure passage of bobolink protection legislation and to overcome financial difficulties. In 1930, NJAS's Miller Memorial Bird Sanctuary Fund provided warden service and protection for a large colony of common terns, some roseate terns and a colony of black skimmers on Bird Island (off Brant Beach). Also in 1930, Beecher Bowdish accepted radio station WOR's invitation to broadcast a weekly program, which brought increased interest and membership.

Overcoming Adversities

The Depression, however, took its toll. Members were unable to pay their dues. Income diminished rapidly and a suspension of the society's affairs was seriously considered. Educational activities were few and the quarterly bulletin was discontinued. Nonetheless, the organization worked successfully to have the goldfinch designated as the state bird, to defeat bills for a shooting season on mourning doves and for repeal of the closed season on quail in 10 northern counties, and led the fight against a proposal to flood Troy Meadows to create a lake — a move that would have destroyed its natural sanctuary value.

As the New Jersey Audubon grew stronger and more effective under Bowdish's leadership, relationships between local and state groups and the national association floundered. In 1940, based on recommendations of consultants — who argued that since there were no representatives of state societies or other local organizations on its board and it represented no one but itself, it was no longer an "association" — the board of directors voted to change the name to the National Audubon Society.

For several years, the national organization stood alone while state and local groups went their separate ways. Leaders of the National Audubon Society, however, decided the movement would benefit from a reassociation of the organizations at different levels. In 1943, over the protests of many of its members, who wanted to share neither a name nor their dues, the St. Louis Bird Club was persuaded to change its name and become a "branch" of the National Audubon Society. Other groups followed, but the New Jersey Audubon Society continued to maintain its independence.

By 1945, the New Jersey group's economic situation had improved; membership rebounded and member services, including the newsletter, were resumed. New activities, including bird walks and nature weekends, were launched.

Preserving the Future

Over the next few decades, the state organization began accepting gifts of land to be held in perpetuity as sanctuaries. Several were developed into staffed nature centers.

"Land is a resource, not a commodity," says Richard Kane, director of conservation for the New Jersey Audubon Society.

"There is a race going on right now, between the resource folks and the commodity people, for open space. For the sake of future generations, the resource folks better prevail."

Frank McLaughlin, who became the society's executive director in 1952, believed intensely in preserving land to provide habitats for plants and animals. Having grown up on a poor farm in Camden County, he immersed himself in the study of the state's flora and fauna and became a self-made naturalist. His advocacy of land preservation often derailed rural development plans.

McLaughlin was an excellent photographer and gave popular

Sanctuaries and Staffed Nature Centers

Staffed Nature Centers

- **Lorrimer Sanctuary**
790 Ewing Ave., PO Box 125, Franklin Lakes, NJ 07417
201/891-2185
- **Weis Ecology Center**
150 Snake Den Rd., Ringwood, NJ 08456
201/835-2160
- **Scherman-Hoffman Sanctuaries**
11 Hardscrabble Rd., Bernardsville, NJ 07924
908/766-5787
- **Owl Haven Nature Center**
Englishtown-Freehold Rd., PO Box 26, Tennent, NJ 07763
908/780-7007
- **Rancocas Nature Center**
794 Rancocas Rd., Mount Holly, NJ 08060
609/261-2495
- **Nature Center of Cape May**
1600 Delaware Ave., Cape May, NJ 08204
609/884-9590
- **Cape May Bird Observatory: Northwood Center**
707 East Lake Dr., PO Box 3, Cape May Point, NJ 08212
609/884-2736
- **Cape May Bird Observatory: Center for Research and Education**
600 Route 47 North, Cape May Court House, NJ 08210
609/861-0700

Sanctuaries Open to the Public

- **Bennett Bogs** (24 acres in Lower Twp., Cape May County)
- **Hovnanian** (455 acres in Berkeley Twp., Ocean County)
- **Montclair Hawk Watch** (1 acre in Essex County)
- **Old Farm Preserve, Remley and Stramaglia sections** (145 acres in Independence Twp., Warren County)



lectures using his own camera work. Among his better known slide talks were: *In the Realm of Wildlife*, on New Jersey's coastal wilderness; *Bog-Trotting in the Pine Barrens*; and a Delaware Valley nature expedition entitled *High Point Park to Cape May Point*.

The New Jersey Audubon Society prospered during McLaughlin's tenure, which lasted for 18 years. At the same time, national concern about the environment — heightened by Rachel Carson's 1951 best seller, *The Sea Around Us*, and her classic *Silent Spring*, published in 1962 — was growing.

Landmark federal legislation was passed to clean up and protect air, water and wilderness. The Audubon Society, Sierra Club and other environmental conservation organizations were joined by newly chartered groups such as The Nature Conservancy and the Environmental Defense Fund. The first Earth Day was celebrated on April 22, 1970. Natural resource management programs at various levels of government began working with their pollution control counterparts, merging organizationally in some instances, as in New Jersey.

NJAS Today — and Tomorrow

The New Jersey Audubon Society's current executive director, Tom Gilmore, came on board in 1983. Unlike his predecessors, he was not an avid birder. He was, however, exactly the type of leader the group needed — one who could effectively manage the society's financial, physical and personnel resources and lead it into a promising future.

Sanctuary acreage has increased, new nature centers have opened throughout the state and the World Series of Birding (see article on following page), initiated by Pete Dunne (director of the Cape May Bird Observatory), has attracted worldwide attention — and raised a significant amount of money for research and the protection of birding areas in the process. The society also published *New Jersey at the Crossroads of Migration*, which Dunne coauthored and edited, and, under the aegis of Paul Kerlinger, the society's first director of research, undertook critical studies of birding economics.

"New Jersey Audubon took the lead — in the nation and the world — on eco-tourism economics research," says Kerlinger, who now is an independent environmental and eco-tourism consult-

One of the events coinciding with the society's 100th anniversary will be the dedication of the new Cape May Bird Observatory: Center for Research and Development.

ant. "It's one of the most important roles for the society and provides an important tool — the information is used to forge relationships between businesses and the environmental community."

Environmental research and education complement each other, and the New Jersey Audubon Society is dedicated to both.

"All living things have a story to tell, a lesson to be learned about life and living. Environmental education teaches us to live in harmony with the natural systems of the earth," says Patricia Kane, director of education for the society.

She, along with Dale Rosselet, who serves as the organization's environmental education coordinator, and Karl Anderson, sanctuary director at the Rancocas Nature Center, developed *Bridges to the Natural World*, the organization's major environmental education outreach project. Used by educators in 30 states (besides New Jersey) and 13 foreign countries, the guide — which uses a habitat-based approach — is now in its fourth printing. Also in its fourth printing is Cape May Bird Observatory naturalist Pat Sutton's *Backyard Habitat*, a guide to landscaping with native plants to provide habitat for wildlife.

Under Joan Walsh's direction, the society's most ambitious research project is under way. This effort, which will document New Jersey's breeding, wintering and migratory bird populations, will culminate in the publication of a reference book to be titled *The Birds of New Jersey*.

The society's facilities are being groomed for the future also. In fact, the organization plans to have an education center within 15 miles of every New Jersey resident — a goal that's already 80 percent achieved.

The Cape May Bird Observatory, established in 1975 as NJAS's southernmost center and primary research facility, has long since outgrown its small home at Cape May Point. A new observatory has been constructed on a 26-acre site on the Delaware Bayshore's Sluice Creek; to be known as The Center for Research and Education, it will be dedicated on May 17. The original facility has been renovated and will serve as an information center for those birding and butterflying in the area.

Conscious of its role in serving the public, the New Jersey Audubon Society planned 100 programs to celebrate its 100th birthday. The programs began at 6 a.m. on January 1, and will take place all over the state, in every month, throughout 1997.

For more information on the New Jersey Audubon Society, its facilities, research and programs, visit its web site (<http://www.nj.com/life/audubon>), call 201/891-1211 or write to NJAS Headquarters, 790 Ewing Ave., PO Box 125, Franklin Lakes, NJ 07417.

Denise Damiano Mikics, who lives in Hamilton (Mercer County) and serves as the editor of New Jersey Outdoors, authored this article with assistance from Libbie H. Johnson, a member of the New Jersey Audubon Society's Board of Directors, who has been compiling the organization's history.

The World Series of Birding 1996

Story and photos by
Joe Cavaluzzi

As the sun rises in the Tuckahoe-Corbin City Fish and Wildlife Management Area, the Lyrebirds wait to hear the dawn chorus.



As we head southwest along Route 63 in the early morning darkness of the southern Atlantic County swamps, the quarter moon doesn't throw enough light to set off the tops of the pines against a clear night sky. At 4 a.m., it seems the only life around is the blinker of the small white convertible ahead as it takes the Route 50 North turnoff.

After a few miles it turns onto Gibson Creek Road, a one-lane dirt road that sticks out like a wrinkled finger into the Tuckahoe-Corbin City Fish and Wildlife Management Area. As the car creeps along with the top down beneath the canopy of tree branches, there still is not enough light to see the swamp past the thin stands of trees flanking the road. But there is no longer any doubt of life in the swamp. The silence is broken every few minutes by the three-syllable whistled call of the whippoorwill — out there somewhere in the darkness — and the grating notes of a polygamous male marsh wren as he visits the adjacent territories of his mates.

The four occupants of the white convertible now are out of the car, cupping their hands to their ears, straining to hear the king rail's *chuck, chuck, chuck*, like a rapid succession of clicks.

The convertible's occupants listen, motionless. Their strange posture belies the serious mood projected by their silence.

For these four — Joan Walsh, research coordinator for the New Jersey Audubon Society; her husband, David Sibley, who currently is writing and illustrating the Audubon Society's *Master Guide to Birds of North America*; hawk biologist Jerry Liguori, and marine biologist Bill Seng — birding is serious business.

Especially on this trip. Because this is World Series birding.

Competition with a Cause

To be precise, it is the 13th Annual World Series of Birding, run by New Jersey Audubon last May. Fifty-three teams from throughout the United States and as far away as Great Britain have fanned out across New Jersey in a 24-hour race to see which team can identify the most birds.

At 8:25 a.m.,
the *Lyrebirds*
check off
the 100th
identification,
a field sparrow

Lyrebirds (left to right) Joan Walsh, Bill Seng, David Sibley and Jerry Liguori look — and listen — for birds along Route 49 in Atlantic County.



Each team has a corporate sponsor, which makes a contribution of \$1,500; many pledge an additional amount for each species its team identifies. This year the World Series of Birding raised more than \$400,000 for the preservation of bird habitats in New Jersey.

"We try again," Sibley says as they get back into the car to move a little farther up the dirt road. Even Sibley's barred-owl call, a series of monotone hoots in a cadence that often awakens other birds' curiosity, fails to flush out a king rail.

The rules allow identification by sight or sound, but only birds identified by all members of the team count. To the inexperienced observer, identifying birds by call is a little like watching a movie without a picture. ("What bird was that?" the observer asks. "That was a frog," Walsh says.)

Dawn is breaking and its pink light reveals an expanse of wetlands beyond the trees as far as the eye can see. The birds are waking up.

Liguori is the first of this team, which goes by the name of the *Lyrebirds*, to hear the rail, but he defers to Sibley, the most experienced of the group, as to whether it is a king rail.

"I think it was a little fast for a king rail. But I think, based on the series (of calls) and their speed, it probably is a king rail. I've heard them faster in Texas," Sibley says.

The Dawn Chorus

Dawn comes on quickly now and the birders leave the preserve to find another dirt road that leads to an open field for the *dawn chorus*, a cacophony of chirps and whistles that happens each morning as the birds awaken. Walsh and Sibley checked out the field several days before, on a scouting mission to determine the sites they wanted to visit during the World Series. It is a welcome break for Sibley, who must produce four pages of text and watercolor paintings of birds each week to meet his deadline for the Audubon field guide, which will be published by Alfred

A. Knopp & Co. in 1999. And, as any serious birder will tell you, having a plan for which birds you expect to find at a predetermined list of sites is a necessity.

The birders stand at the edge of the field, knee-deep in damp grass, and listen. The dawn chorus will last only 10 to 20 minutes, but offers one of the best opportunities of the day for identifying a lot of birds in a short time.

"I think that's an Arcadian flycatcher," Sibley says.

"There's a hummingbird," says Seng, as they pick out calls from the confusion, like musicians identifying decedent notes in a concerto.

The rules of the World Series allow teams to travel the entire state or confine their search to a county or specific area, such as the fish and wildlife management area at Brigantine. The *Lyrebirds* chose Atlantic County. One team in the 1996 World Series confined its birding to the Cape May National Golf Course, walking 12 miles and identifying 80 species of birds. Several years ago, Sibley was on the first team to identify more than 200 species in a World Series. He traveled more than 450 miles in 24 hours while covering the entire state.

Team Spirit

Humor is an important part of birding. You can see it in the names teams choose. There were *Oyster Catchers in the Rye*, sponsored by the Nature Company/The Academy of Natural Sciences in Philadelphia, and Phillips Petroleum's *Transatlantic Vagrants*, who traveled from England for the Series. There were PSE&G's team, the *Power Birders*, and the *Monmouth One &*

Onlies, who boasted that the youngest of their six team members was 68.

It is 6:15 a.m. when the *Lyrebird* team spots the bald eagle in a tall stand of trees on a small island in the middle of a river tributary in lower Atlantic County. From the distance they maintain to keep from disturbing the eagle, the raptor looks like a large brown spot in the trees. But through the telescope's oval the bird is a majestic sight, turning its distinctive white head and sharp, turned-down yellow beak as it looks up and down the river. The national bird, the bald eagle is known to nest in about 15 places throughout New Jersey. After a few minutes, it flaps its huge wings and takes a leisurely turn up the river.

By 7:15 a.m., the team is winding its way down a few roads off Route 50, often stopping by the edge of the woods or a field to listen and look for birds perched in the trees nearest the road. The four birders have identified 80 species.

"We're experimenting now," Joan Walsh says, during a stop along the side of the road. They identify an orchard oriole, a rust-colored bird with a voice like a robin and a distinctive black head, and a Louisiana water thrush, with its two-part song that starts with three or four long, clear notes, then breaks into a hurried jumble of short, high-pitched tones that get lower as its song ends.

At 7:30 a.m., while pulled over on the side of Route 49 on the way to the Peaslee Wildlife Management Area, Liguori hears a red-bellied woodpecker. The noisy bird's soft, scolding tones vary and the birders search the trees near the edge of the road to confirm their find visually. The birders favor the trees at the edge of the woods because there is more light, but even these trees are dimly lit and the lack of contrasts makes spotting difficult. It takes a few minutes of concentrated searching before Seng spots the bird's distinctive zebra-striped back and scarlet head as it flies to another branch. Birding is a game of patience, although sometimes you can get lucky. Fifteen minutes later, while looking for a nuthatch at the Peaslee preserve, a hairy woodpecker scoots across their path on a power line right-of-way for an easy identification.

The birders stop again near a field and spot a Blackburnian warbler, whose tone is so high-pitched its call is barely audible, before a passing truck scares it off. Species Identification Number 99. At 8:25 a.m., the *Lyrebirds* check off the 100th identification, a field sparrow.

"There are 183 species of birds in Atlantic County and more than 270 species throughout the state this time of year," Walsh says. "All of them probably will be spotted by the end of the contest."

In fact, all of the teams combined did spot 270 species, a record for the World Series of Birding. That's one-third of all the species of birds found in North America.

New Jersey, especially the Cape May Peninsula, is one of the best places in the world to observe migrating birds because of its location along their East Coast path from Canada to South America. The World Series is timed to catch the peak overlap period between nesting birds, wintering birds and birds that migrate north to New England and Canada in the spring. If you were to think of the migration route between North and South America as an hourglass, Cape May would be the narrow neck through which migrating birds must pass. At times in the spring and the fall, the migration literally darkens the sky over Cape May Point.

Birding is Big Business

The abundance of bird life at Cape May led Rich Kane, director of the Scherman-Hoffman Sanctuary in Bernardsville, to quote Yogi Berra during the breakfast following the World Series, at Cape May's Grand Hotel: "It's amazing what you can observe when you're watching."

And people are watching in astonishing numbers.

The U.S. Fish & Wildlife Service estimates that 28.8 million Americans over the age of 16 travel more than a mile to watch birds or other wildlife at least once a year. The service estimates Americans spend \$5 billion a year, about as much as they spend on movie tickets, pursuing the hobby of bird-watching. They spend \$2 billion on bird seed alone.

This fact seems to have been lost, at first, on the National Guardsman who pulled up to ask the *Lyrebirds* what they were doing on the edge of the open field across the street from the 17th Wing of the Air National Guard at Atlantic City International Airport. The tall stand of trees at

Learn from the Experts

This year, 1997, is a good one for people who want to try their hand at bird-watching. It is the 100th anniversary of the New Jersey Audubon Society, which plans to host numerous additional birding activities throughout the year.

In conjunction with the 1997 World Series of Birding, to be held on May 10, you can take part in one of the Audubon's Century Runs. These events will allow beginners to go out in groups with expert birders as their guides. Following is a list of Audubon bird sanctuaries to contact for additional information about participating in a Century Run.

- **Scherman-Hoffman Sanctuaries,**
Bernardsville
(908/766-5787)
- **Lorrimer Sanctuary,**
Franklin Lakes
(201/891-2185)
- **Owl Haven Nature Center,**
Tennant
(908/780-7007)
- **Weis Ecology Center,**
Ringwood
(201/835-2160)
- **Rancocas Nature Center**
Mount Holly
(609/261-2495)
- **Cape May Bird Observatory**
(Northwood Center),
Cape May Point
(609/884-2736)



Birders check the tally before the 1996 World Series of Birding awards breakfast in Cape May's Grand Hotel.

the far end of the field is a popular hunting perch for raptors. When the guardsman pulls away, the team quickly spots a red-tailed hawk and an American kestrel, a small falcon with a mustached black-and-white face that hovers over its prey with rapidly beating wings.

But the real find comes as the birders stand at the wire fence along the runway of the airport's main terminal. After 20 minutes of scouring the grass fields that line the runway, Seng spots the upland sandpiper — an endangered species in New Jersey — several hundred yards away, walking along the edge of the runway.

With 120 species identified, the birders head back to the wildlife preserve at Brigantine, where they started this day around 1 a.m. As they leave their car, another team pulls up. Its four occupants, all older men, jump out. One of them is armed with a telescope mounted on a homemade rifle stock. They run past the *Lyrebirds* and head down the beach toward the north jetty of the Absecon Inlet at Atlantic City. For a moment, the contest takes on an air of "It's a Mad Mad Mad Mad World Meets Nature."

An osprey glides over the inlet against the backdrop of Atlantic City's casinos. The *Lyrebirds* spot a piping plover, another of the 15 birds on New Jersey's endangered species list. Like a number of other beach-nesters, its habitat has been depleted by coastal development and it no longer breeds in the state. The birders identify several loons and a purple sandpiper before beginning a long walk north on the beach. It is their last stop.

The competition last year is cut short by a few hours for many of the birding teams. They finally give in to a series of

thunderstorms that start rolling across the Cape May Peninsula around 7 p.m. and continue to light the sky well into the night. By 7:30 p.m., four-and-one-half hours before the official end of the competition, the birders start showing up at Cape May Point State Park to tally up the day's sightings.

But the top teams arrive as close to midnight as possible.

"The real competitors, the top five or six teams, really go down to the wire. One of them came in at one minute to midnight," says Sheila Lego, event coordinator for the World Series of Birding.

They arrive, hair matted and rain slickers dripping from the downpours that punctuated the evening, trying to keep their tally sheets dry. Awake now for at least 24 hours, their general state of exhaustion is apparent. They slug with heavy feet through the deep puddles in the parking lot and into the park's education center, cheered on by family and friends waiting in the parking lot.

The atmosphere inside the packed education center is jovial. The crowd, bolstered by hot sandwiches and soup and the ever-present urns of coffee, has been building for hours — even most of those who check in early stay until midnight to see the final results. Within minutes after midnight, the committee that double checks each team's tally sheet has the final numbers on the board.

The *Lyrebirds* finish in 23rd place with 160 species identified. The team from *Birder's World Magazine* — Dave Wormer, Chris Aquila and David Dendler — wins the competition, identifying 229 birds.

Drenched and exhausted, the birders' sense of humor remains intact.

"This year we set a new record. We spotted a dozen WaWa's," says *Transatlantic Vagrant* team captain Mark Constantine. "I personally reached a new low when I identified a yellow heron by lightning."

The competition has a serious purpose. In addition to raising money for research and preservation, the birders are helping keep track of species and providing information that helps determine the impact of environmental changes on the bird population in New Jersey.

"If you want us to help preserve open space, we need the ammunition to do that," Joan Wais's tells the crowd at the awards breakfast.

Joe Cavaluzzi is a freelance writer living in Belmar.

Man's Best (Marine Mammal) Friends:

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Dolphins

The dolphin's friendly, expressive face — and its fabled benevolence — have endeared it to humans over the centuries.

by Christine M. Graef

The sea was a silken deep blue under a sky ablaze with sunlight as *Cruise I* sailed along off the coast of Wildwood.

Then came the shout: "Dolphins off starboard!" Suddenly the mood on board became festive as everyone clambered to the side of the ship for a sighting of a pod of at least 35 Atlantic bottlenose dolphins churning the sea, their dorsal fins plainly visible above the surface. One of them leapt from the water, the graceful arch of its body flashing in the sunlight, only to be followed by another.

Captain Richard George took the engine out of gear, stopped the propellers and let the boat rock on the water.

"This is their space and we're visiting them," the captain explained to his passengers. "Cruises like this allow us to see

how dolphins really are in their natural habitat."

George is a professor of marketing at St. Joseph's University in Philadelphia and a dedicated naturalist. He has been hosting summer dolphin watches for the past 10 years.

New Jersey's Dolphins

Cruise I progresses about six miles down the coast from its dock in Sea Isle and averages a 90 percent rate of dolphin sightings beginning on Father's Day weekend and lasting three weekends after Labor Day, with a free ticket given if no dolphins are spotted.

Spotted each year off the New Jersey coast are about 500 of the 2,500 dolphins that swim between the waters of New Jersey and Georgia.

New Jersey State Library



A bottlenose dolphin (*Tursiops truncatus*) waves a flipper on the surface of the sparkling sea (left).

Bob Schoelkopf (in dark shirt and sunglasses) and members of his Marine Mammal Stranding Center (opposite page) retrieve the body of a bottlenose dolphin.

©HERB SECARS

"We've seen individuals but usually they travel as a tight family," said Bob Schoelkopf, founder of the Marine Mammal Stranding Center in Brigantine. "We've actually witnessed them giving birth offshore."

Baby dolphins are born fully formed and able to swim after a 10-month gestation period. During labor, the females protectively encircle the mother as the males drift but linger close enough to come to the defense of their families.

The babies frolicking in the waves of the Atlantic could easily be spotted as they dove in and out of the waves with the adults.

"Babies hold their faces up when they dive," said George, pointing to a juvenile in the water. "And they are extremely playful."

Three youngsters rolled over and over each other, nipping

playfully as they twisted and turned in the sun-glittered water. An occasional spank of a tail hit the water as an adult reprimanded behavior.

The sense of humor, perpetual smile and affection displayed by these marine mammals seem to make people feel especially drawn to them. As the ocean rolled *Cruisn I* back and forth on gentle waves, it seemed a privileged spot in the infinite sea where humans and animals met.

Every 20 seconds or so a pair of dolphins rose to the surface in perfect synchronization to breathe, then slip softly back under the waves. In their eyes sparkled an unexpected gleam of intelligence as though they were about to cross the chasm that separates man from animals.

The moment was broken with an intake of breath as the onlookers spotted a speed boat obviously barreling its way straight toward the pod. George gave a long blast of the horn to warn the oncoming boat and it slowed to a stop. Everyone sighed in relief.

"There are a lot more boats and jet skis on the ocean these days and they are a threat to the dolphins," said Schoelkopf. "Especially to the juveniles who are not as agile as the adults. It's considered federal harassment to chase them or impede them."

An Ounce of Protection

It also is illegal in the United States to swim with dolphins. Federal legislation enacted in 1972 protects marine mammals by forbidding their pursuit or capture even without the intent to harm.

In spite of the legislation, the stranding center has treated some dozen dolphins a year, some of which have been injured by boats. Schoelkopf said most dolphins struck by propellers or entangled in fishing lines will wash ashore dead from drowning, too late for the rescue team to help them.

"There are some 180,000 registered boats in New Jersey and Pennsylvania that come down to the shore in the summer and speed through with no idea what's in the water," said Schoelkopf. "Because dolphins have their young this time of year, their interest is in teaching and feeding their young. Although they can swim at 35 miles an hour, they are not paying attention to the boats. And the noise of the engine deafens them to any clicking or warning other dolphins may be sending."

Perhaps those statistics served as a catalyst. For the past six years, Captain George has donated proceeds from one trip to the Marine Mammal Stranding Center and split the proceeds from four other trips.

The center is a private, non-profit organization that was formed in 1978 with a handful of volunteers. It has responded to over 15,000 calls for stranded whales, dolphins, seals and sea turtles that have washed ashore on New Jersey beaches. Whenever possible, the animals are brought back to the center for rehabilitation and eventual release. Rehabilitation can last up to several months and cost thousands of dollars for a single animal.

"I think the center is doing great work," the captain said. "I am blessed that I can give something back to them."

A Pound of Cure

Schoelkopf had worked as a dolphin trainer for seven years in a marine land until, in his words, "I became disillusioned. The dolphins are stuck in those concrete tanks their whole life. I'd leave work and go out into the sunshine, but those dolphins never see sunlight their entire lives. They never know the liberty of the sea they were meant for."

Disenchanted with how little respect the lives of trained dolphins were given, in 1976, Schoelkopf felt the time was right to sever ties. "In 1977, I created my own job as a marine mammal rehabilitator," said Schoelkopf.



In 1978, he obtained federal and state permits and founded the stranding center along with his wife Sheila. It is the only organization in the state authorized to rescue and rehabilitate stranded marine mammals and sea turtles and collect research information on them.

"We started out answering to 19 strandings and, so far this year (1996), we've responded to 216," said Schoelkopf.

Injuries from boats are just one threat the dolphins face in the ocean. Fortunately for the dolphins passing through Atlantic waters, fishing nets for shad and herring are stretched along the coastal waters in early spring and dolphins don't arrive this far north until later in the season. Entanglements are infrequent.

Disease . . . Another Threat

"In 1987, we lost almost half the dolphin population on the East Coast," Schoelkopf said. "Initially it was thought to be the red tide (algae forming from the runoff of fertilizers) caus-

Rehabilitation can last up to
several months and cost
thousands of dollars for
a single animal.



ing the disease, but research at the Armed Forces Institute of Pathology in Washington found it to be a virus, similar to distemper or chicken pox, which the animals had no antibodies to fight."

In the wake of the virus, known as morbillivirus, 749 dolphins washed in dead along the U.S. Atlantic coast, with an estimated 7,000 more dying offshore. Dolphin health since has recuperated but, because wild dolphins cannot be inoculated, the threat of a recurrence is still out there. The stranding center asks the public to help monitor the dolphins, and to call in information within 48 hours of the sighting.

Bottlenose, striped and spotted dolphins are seen in the New Jersey area from May through September, at which time they leave to winter in Southern waters.

"Certain groups take up residence in certain cities," said Schoelkopf. "In Brigantine, we have a group that comes in to feed every morning. Wildwood and Cape May have their own families. We get so we can recognize them by their individual dorsal notches and scars."

Schoelkopf said he can sit on the beach and watch dolphins on the other side of the surf feed at high tide. Watching dolphins frolic in the ocean has fascinated people since the earliest recorded history.

One of the most celebrated of legends is that of Arion, a Greek musician, who was saved by a dolphin after he had been thrown overboard by the crew of a ship.

Another legend is of Korianos, a native of Asia Minor, who

pleaded with a group of fishermen to spare the life of a dolphin caught in their net. Shortly after, Korianos himself was shipwrecked and his life was saved by a dolphin.

What were once considered myths of the benevolent dolphin have today been documented in many stories. We now know that some dolphins, living at freedom in the sea, seek out human companionship and even act as lifesavers.

Schoelkopf stressed the fact that these dolphins lived in liberty in the sea and freely chose to encounter people.

Give Them Liberty

The opportunity for such an encounter is offered once a year when the stranding center hosts a 10-day cruise in the Bahamas where people are allowed to swim with the wild spotted dolphins.

"They are very friendly but it's their choice," said Schoelkopf. "Sometimes they don't want to be bothered with us."

Schoelkopf said that after swimming with dolphins in the wild, he could never enjoy seeing them in an aquarium again.

"They have the entire ocean to roam," Schoelkopf said. "In captivity, even their color goes drab."

Schoelkopf said no dolphin that inhabits a tank can be described as having the same spirit of a dolphin in nature and no conclusions drawn by observing them in a tank can reveal all their true secrets.

The very intelligence and sentiment witnessed in dolphins has made them vulnerable. All species in America are federally protected, but Schoelkopf said their numbers are declining and laws may become more stringent. The enemy appears to be mankind.

"If man wasn't involved in their demise or in changing their ecosystem, there would not be a problem," said Schoelkopf.

While the dolphin is a very old friend in the sea, man has renewed his friendship with this marine mammal with new appreciation in the 20th century.

"We need to respect that friendship and their freedom," said Schoelkopf.

There is no feeling, he said, that matches seeing their agility and joy in the open water, especially after a rescue and rehabilitation is successful. Their joy seems to embody the spirit of freedom in the vast sea.

For further information about the Marine Mammal Stranding Center or to make a tax deductible donation, call 609/266-0538. The stranding center also has a web page on the Internet that can be accessed at www.mmsc.org. The web site lists all the species the center has handled, updates rescues and provides educational information on marine mammals.

For further information about *Cruisin I* dolphin watches, call 1-800-cruisn1.

Christine M. Graef is a freelance writer from Mendham whose work has appeared in previous issues of New Jersey Outdoors.

© WILLIAM C. ERICKSON



A pod of dolphins cavorts in the sunlit sea (opposite page).

The *Cruisin I*, operating out of Sea Isle City (above), takes tourists out for some dolphin watching.

We now know that some dolphins, living at freedom in the sea, seek out human companionship and even act as lifesavers.



The South Jersey
Sportsmen's
JAMBOREE:
A Family Experience



Bob Von Suskill (opposite page), a dog trainer from Cumberland County, gives some tips to young hunting dog enthusiasts.

Millville's Walt Robinson, one of the many volunteers at the South Jersey Sportsmen's Jamboree (left), gives BB gun instructions to Shannon Simpkins, 7.

and other industries were established throughout the area, food became available from other sources — via trading and from merchants. It was during this era of industrialization that the evolution of fishing and hunting began. Soon, both became enjoyable pastimes, rather than simply a means of survival. Today, the harvest of fish and game continues to provide both recreation and food for many families throughout South Jersey.

Conserving our natural resources is more important to present-day outdoor sports enthusiasts than it was to our forefathers. This heightened awareness was, and remains, the guiding force behind the South Jersey Sportsmen's Jamboree.

Building on a Dream

More than 20 years ago, a group of sportsmen from Cumberland County had a vision of how to share their love and knowledge of the outdoors with others. Today, the South Jersey Sportsmen's Jamboree, a nonprofit corporation whose motto is "Conservation Through Education," is the result of that dream.

Originally held on the sidewalks of Vineland's Landis Avenue, the event simply was a one-day celebration of National Hunting and Fishing Day, geared to expose the public to the joys of the outdoors. As displays steadily grew in size and number, the Jamboree soon became a multi-day event and moved inside the Cumberland Mall.

The mall housed the exhibits on Friday and Saturday. On Sunday, the displays were moved outdoors to the grounds of the Good Sports, Meadowwood

Story and photos © by
Lee and Sharon De Bevoise

How tall is Smokey Bear? How was chain mail armor made? How are teepees constructed? How do black powder rifles work? If you don't know the answers to these questions, you probably have never attended the South Jersey Sportsmen's Jamboree.

Billed as the largest free-admission outdoor education exposition on the East Coast, it is located in the pristine environment of the New Jersey Pinelands and the Manumuskin Watershed in Maurice River Township, Cumberland County. The event attracts close to 10,000 men, women and children from the Mid-Atlantic states and from as far

away as New England each fall to learn more about hunting and fishing.

To understand the popularity of the South Jersey Sportsmen's Jamboree, one has only to reflect on the history of the region. In southern New Jersey, a love of hunting and fishing has been passed down from generation to generation. As our forefathers originally inhabited the region, the value of plentiful resources of fish and game was obvious. Through the land's original inhabitants, the Lenni-Lenape Indians, our European ancestors learned to respect and more deeply appreciate these assets.

The region's early settlers depended on the land for their food. This meant that they hunted and fished, as well as planted crops. As the bog iron furnaces



Millville resident Doug Racz became a Civil War-era Union Army corporal at the Living History Encampment. He was part of the 6th Wisconsin Volunteer Infantry Iron Brigade of South Jersey.

"Increased community involvement and doing something for area youth are our primary goals."

— Jim Groome

and Menantico gun clubs. The entire event permanently moved to the grounds of these sportsmen's clubs in 1979.

"Increased community involvement and doing something for area youth are our primary goals," explained Jim Groome, president of the 1996 Jamboree. "The event provides an environment (in which) to show young people our history, culture and heritage. All we ask is that people take the time to understand and respect the ethics and sportsmanship of hunters and anglers and then make a decision."

Something for Everyone

Visitors can enjoy the many exhibits, free seminars, contests and more. Over 50 free exhibits are featured annually at

the Jamboree. The Cumberland County Health Department has a display that offers information on rabies and Lyme disease. Both the N.J. Marine Police and the local flotilla of the U.S. Coast Guard Auxiliary have exhibits. Additionally, many local and regional hunting, fishing, trapping and conservation organizations have booths.

There also are numerous businesses offering for sale all the necessary items for the outdoor sportsman and sports-woman. Their exhibits provide excellent opportunities for outdoor enthusiasts to see, hold and ask questions about items before purchasing them. Also, by being outside, it allows potential buyers to see how the different camouflage patterns look in the sunlight.

Living History encampments populated by Mountain Men and Civil War reenactment groups proudly celebrate the history of the area. Outfitted in costumes of the period they represent, these men and women provide those attending with a chance to see how their ancestors lived and dressed.

A Renaissance reenactment group, the Society for Creative Anachronism, also has an encampment. Featured are demonstrations on how to make chain mail and armor, as well as archery shoots at period fantasy targets. An assortment of Renaissance merchants also is at the group's site in the Living History area.

Additionally, all of the winning entries of the annual Nikon Outdoor Photography Contest are on display at the Meadowwood Environmental Sanctuary.

Competitions Abound

A free fishing contest, sponsored by the Cumberland County Recreation Commission, is held on the waters of Cumberland Pond. This pond is next to the Meadowwood Environmental Sanctuary. Always popular with area children, for many it is their first fishing tournament. Free instructions and advice also are given.

"It's a great feeling to see the faces of children who have just caught their first fish," said Al Purdy, president of the Newfield Bass Club. His group conducts the annual fishing contest.

The N.J. Turkey Calling Championship is held at the Jamboree, as it has been every year since 1986. Other competitions include the BASSMASTER CastingKids® local qualifying event, a muzzleloaders versus bows contest that pits a team of corrections officers against members of the Wa-No-Kee Bowmen, and a black powder rifle match.

A supervised BB gun range, one of the most popular features of the Jamboree, is set up at the Good Sports Gun Club. Started as a means to teach basic gun safety and handling to children, a second generation of children is enjoying the same thrills that their parents did. This BB gun range also is laying a foundation on which a love for hunting or target shooting can be built.

Learn from the Experts

Numerous free seminars are offered. Topics covering every conceivable aspect of hunting and fishing are pre-

sented by well-known regional speakers. A partial list of topics includes: boating safety, hunting dogs, trap shooting, bass fishing, retrievers, archery hunter education, fly fishing, archery and black powder muzzleloaders.

Mullica Hill's Barbara Wetzel, a professional bass angler, was at the Jamboree for her first time this year. "There's been a good turnout. The seminars were well attended," she commented. "I would come back next year."

Another recent addition to the event is the seminars presented by Dick Quiet Thunder. During each seminar, Quiet Thunder takes his audience on a tour through history. He explains how and where the Lenni-Lenapes lived, their tools, the tribe's history and laws, and how they taught their children. His goal is to have people gain more respect for nature and act that way whether hiking, hunting or fishing.

The Brian Parent Center is the newest site to host a portion of the Jamboree. Artists and a special selection of mounted heads from the state's annual Deer Classic are featured at the center.

If bargains are what you are looking

The New Jersey Pinelands: Site of the South Jersey Sportsmen's Jamboree

The South Jersey Sportsmen's Jamboree is annually held on the sites of the historic Manumuskin Manor and Cumberland Furnace. Both areas make up a portion of the pristine Manumuskin Watershed, located in the New Jersey Pinelands.

Almost two decades ago the U.S. Congress recognized the New Jersey Pinelands for their value as a national treasure. The Pinelands National Reserve is approximately 1.1 million acres in size. It includes portions of seven of the southeastern counties of New Jersey.

This area is internationally recognized for its pygmy pine forest that contains 54 threatened plant species and 39 threatened wildlife species. The Pinelands also sit atop a 17 trillion gallon unpolluted aquifer, which is enough to cover the entire state of New Jersey with 10 feet of water.

In view of its extreme ecological value, the New Jersey Pinelands was designated as an International Biosphere Reserve by the United Nations Educational, Scientific and Cultural Organization in 1983.

The Newfield Bass Club conducted the Cumberland County Recreation Commission's Free Fishing Contest. Club President Al Purdy (left) balances the official weigh-in scale with the help of Frank Cash.





Various dealers in outdoor gear, such as Visions by the Jersey Shore from Absecon (above), display their wares at this event.

Dick Quiet Thunder (right) explains the life of the Lenni-Lenapes, one of South Jersey's Native American cultures.

Eldora's Ken VanFleet, a member of the N.J. Muzzle Loading Association, takes part in the Living History Encampment (opposite page).

for, then be at the Menantico Gun Club Sunday afternoon of the Jamboree. That's when every imaginable item that a hunter, angler or shooter could want is up for bid at the Sportsmen's Auction. It's the perfect place to take advantage of excellent bargains in everything from original artwork and carvings to fishing tackle and hunting accessories. All proceeds are used to keep the South Jersey Sportsmen's Jamboree admission-free.

The Quest Continues

The Cumberland County Federation of Sportsmen's Clubs has been a sponsor of the South Jersey Sportsmen's Jamboree since its inception. The goals of the Jamboree are promoting, encouraging and fostering the conserva-



tion of fish, wildlife and natural resources of all descriptions; cultivating the arts of sportsmen and sportswomen with rod, gun, bow and traps; improving the social climate of hunters and anglers; and acquainting the public with areas of interest and activities involving all sportsmen.

"We plan to see a steady evolution toward more education, especially of children," stated Groome. "The Jamboree sponsors teachers so that they can attend seminars conducted by the Division of Fish, Game and Wildlife."

"And, one day, we hope to sponsor a camp for boys and girls ages 12 to 16, where they can be introduced to conservation and outdoor sports such as archery and fishing. That way, they can see us

(hunters and anglers) as we truly are."

The South Jersey Sportsmen's Jamboree is rich in history and remains one of the prime attractions of the outdoor season. Whether you are a seasoned outdoor sports enthusiast, a novice or someone who has never tried hunting or fishing, the Jamboree has something of interest for you. For information about the 1997 Jamboree, call 609/692-3041.

Lee and Sharon De Bevoise are freelance writers who live in Millville.

Volunteers, Gun Clubs and Environmental Sanctuary Make Event Possible

The South Jersey Sportsmen's Jamboree, the largest free-admission outdoor exposition on the East Coast, does not happen by itself. The Good Sports and Menantico gun clubs and the Meadowwood Environmental Sanctuary are the hosts — they have donated the use of their grounds each year that the Jamboree has been a two-day outdoor event. And the event is the culmination of thousands of hours of volunteer work.

The Good Sports Gun Club was founded shortly after World War II. Its modern clubhouse is now built on the site of an old cabin, believed to date back to last century when it was part of Manumuskin Manor, a small bog iron refinery village.

Having been started in the early 1940s, the Menantico Gun Club is the oldest of the three sites. Originally, the club's home was built on land northeast of its present site, near where power lines are currently located. The present structure was built in 1947 after a fire de-

stroyed the original clubhouse.

The Meadowwood Environmental Sanctuary originally was a special project of the Meadowwood Rod and Gun Club. The club's cabin, built in 1976, is now a residential dwelling. Although the club is no longer an "active" organization, the Sanctuary remains open to the public all year, thanks to the labors of Bob and Sheila McCorristin.

A core of 20 to 25 regular committee members work almost year-round to make each Sportsmen's Jamboree a reality. They plan the publicity campaign, arrange for seminar speakers, get commitments of support from sponsors and contact potential exhibitors and food concessions.

This planning phase continues through May or June when phase two begins. Additional volunteers then inspect, and overhaul as necessary, the sound system, berm and backstop at the firing range, tables and BB gun range bench rests.

As the event date nears, volunteers clean the grounds of the two gun clubs

and the sanctuary. The Cumberland County Road Department begins its annual job of cutting the grass on the Jamboree's grounds and grading the shoulders of the road. This work continues up to the day the event starts.

Security, provided by the Cumberland County Sheriff's Department, arrives early Saturday morning — opening day of the Jamboree. The chairman of the Exhibit Committee can be seen posting signs marking the spots of the exhibitors as the early morning light becomes brighter.

Each volunteer has a single mission, that being to share their love of the outdoors and their desire to see everyone practice conservation of our natural resources. It would be impossible to hold the South Jersey Sportsmen's Jamboree without the generosity of these two gun clubs and the Sanctuary. And without volunteers — many of them members of these organizations — it would be impossible for the South Jersey Sportsmen's Jamboree to remain admission-free.



Each volunteer has a single mission, that being to share their love of the outdoors and their desire to see everyone practice conservation of our natural resources.

New Jersey: Ahead of Its Time in Fire Management

Story by Joseph R. Hughes • Photos © by Clay Meyers



Broom sedge blazes at Higbee Beach (below) as part of New Jersey's prescribed burning program.

Digging a firebreak trench (right) helps ensure better control and reduces the risk of escaped fires.



After decades of trying to snuff out forest fires, agency heads, policy makers and even some of the more diehard wildland firefighters have come to the realization that a new approach is needed to halt a growing trend of increasingly large, more expensive and devastating wildfires that have ravaged our western forests for the last 10 years.

This series of conflagrations has burned millions of acres. Thousands of homes have been destroyed and many more have been threatened. Increasingly severe and possibly irreversible environmental damage has been caused to our western wildlands. And more firefighters have died or been injured during fire suppression operations.

In December 1995, the U.S. departments of Agriculture and Interior issued a report on federal wildland fire management. One of the document's key points is that wildland fire, as a critical natural process, must be reintroduced into the ecosystem on a controlled basis. A number of other points also were made, including a reaffirmation of the need for the protection of life, property and cultural resources from fire. However, the document represented a major change in the national fire policy and the way that federal agencies will look at and use fire in the future management of our natural parks and forests.

Leading the Way

New Jersey, which has had a highly successful prescribed burning program since the 1930s, is well in the forefront of these types of efforts.

The actual history of using fire to manage the state's ecology goes back to the Lenni-Lenape Indians. They burned the woods and grassland in the spring and fall and accidentally at other times. Fire was used to drive game, improve visibility and hunting success, facilitate travel, drive away insects and reptiles and increase the supply of grass seeds and berries. Native Americans were the first known people to use fire to shape and change their environment. The predominant pines and fire ecology of the New Jersey Pinelands have been attributed to this early burning.

The use of fire as a management tool was lost for a time, but resurfaced in the 1920s and 1930s when cranberry and blueberry farmers used it to protect their lands. A pioneer in the use of managed fire was Alfred LeDuc. LeDuc was a landowner and firewarden with the State Forest Fire Service. He used fire to protect his land holdings and introduced the practice of annual wood burning to others.

The preeminent individual in the early use of fire was Dr. Silas Little. Dr. Little was employed by the U.S. Forest Service and was chief research scientist at the Northeastern Experiment Station, located at New Lisbon in Lebanon State Forest. The station now bears his name in commemoration of his early work.

Dr. Little recognized the link between fire and pinelands ecology. He set up a series of experimental plots in 1936 at the station. A variety of fire "prescriptions" were applied at different annual



Cause and Effect

A major contributing factor to the ever-growing threat of wildfires has been a change of forest ecosystems. Ponderosa pine stands covered major portions of the West at the turn of the century. Years of aggressive fire suppression and fire exclusion have allowed the more open and fire resistant ponderosa pine to be replaced by

the thicker, brushy, more fire-prone spruce fir type. This has resulted in an increasing buildup of fuel that is more flammable and less resistant to fire.

Scientists have known for years that fire is vital to the health and welfare of numerous grasslands, forests and ecological systems. When you eliminate fire, species change. The Forest Service and National Park Service adopted a policy of prescribed natural fire in 1972,

in recognition of the natural role of fire. Known as the infamous "Let It Burn" policy, it allowed "natural" or lightning caused fires to burn, under certain criteria, in an attempt to imitate nature. This was a limited program that was restricted to high altitude areas in selected national parks and forests. Unfortunately, nature is not always discriminating. The Yellowstone conflagrations of 1988, and subsequent media coverage, created a pub-

lic relations nightmare for the agencies.

Bad fire years continued to assault the western states. The 1995 policy document was a response to the continuing fire problems and the need to return to fire as a major ecological factor in the management of our western forests. This major shift in national fire policy greatly expands the use of fire as an acceptable and proven land management tool.

intervals. Burning at a three-to five-year cycle was found to be the optimum level to reduce fuel accumulations, improve fire protection, control understory hardwoods and favor the predominant pine, which was more commercially valuable at the time.

The practice of prescribed burning was introduced to the public in 1948 and the state has conducted an ongoing program ever since. The program currently is under the administration of the State Forest Fire Service, Forestry Services, Division of Parks and Forestry.

Prescribed fire is: "Fire applied in a skillful manner, under exacting weather conditions, in a definite place, for a specific purpose, to achieve results." The specific purposes for prescribed burning are:

- to reduce hazardous fuel accumulations;
- to prepare sites for seeding and planting;
- to improve wildlife habitat;
- to manage understory hardwoods;
- to control disease;
- to improve forage for grazing;
- to enhance appearance; and
- to improve access.

The state's air pollution code only permits prescribed burning to reduce hazardous fuel accumulations. The other objectives can be identified only as secondary benefits.

The soils of the Pinelands are acidic and have too little organic material to support earthworms and other species that normally would break down fallen leaves and pine needles. As a consequence, the plant materials accumulate to as much as a foot thick in some locales. This causes wildfires to start more easily, burn harder and be more difficult to control. Prescribed burning reduces fuel accumulations, making fires less likely to start and easier to control.

Five steps are necessary to carry out a successful prescribed burn: planning, preparation, prescription, execution and evaluation.

Burning by the Book

The planning phase in New Jersey begins during the summer. Burning maps are distributed to section forest firewardens. The wardens designate the areas or blocks to be burned. Selection is based on knowledge of the area, fuel buildup, years since the last burn, how the area fits into the overall forest protection plan and special considerations or land uses.

Burning plans are submitted for review to a technical management team made up of representatives from various natural resource disciplines. The review process has reduced conflicts and provided for better coordination of overall land management objectives.

The preparation of approved burning blocks is the second phase in the process. This consists of making sure the area is completely surrounded by roads or fire breaks. This ensures better control and reduces the risks of escaped fires.

Prescribed
burning was
introduced
to the public
in 1948.

A crew member uses water to ensure the fire is contained.



Large blocks are further broken up into manageable size by laying out and plowing a series of north/south lines. The lines are spaced at 330' to 660' apart and aid in control and ignition. The latter distance is the average that fire can back against the wind in an 8- to 10-hour burning period. The blocks are plowed following the fall leaf drop and prior to the ground freezing.

Burning can commence as soon as the site is prepared, but normally is delayed until the completion of the firearm deer season (the first full week of December). Prescribed burning usually is conducted until March 15, the beginning of the spring forest fire season.

Late fall and winter are the times of the year when weather is the most suitable for carrying out successful prescribed burns. Weather is a critical factor, and specific weather criteria are followed to ensure success, reduce the chance of escaped fires and minimize air pollution and smoke emissions. There are very few days — only 10 to 15 days on average during most burning seasons — when all the weather conditions are suitable.

Weather forecasts are monitored daily. When a good day is forecast, plans are initiated. Manpower and logistical support are lined up by section firewardens in charge of burning specific areas within state forests.

On the day of the burn, crews are assembled and briefed and maps are distributed. Forecasts and weather conditions are checked and reviewed.

A small test fire is set to check burning conditions and smoke drift. The fuels must be dry enough to burn; wet fuels create poor burning conditions. A heavy frost may delay a burn until later in the day. Smoke drift must be adequate and away from highways and built-up areas.

A decision to proceed with a prescribed burn is based on successful test fire results. Authorities and residents are notified prior to a burn; this reduces complaints and false alarms.

The next phase in the process is to select a proper prescription, or method, for burning. The backfire method is used on all new burns, second burns and areas with heavy fuel accumulations. (Backing fire is setting fire *against* the wind.) Backing fires are 35 percent more efficient than head fires (setting fire *with* the wind) and produce less particulate matter and smoke.

After a prescription is selected, the burn is executed. The proper method of conducting a backing fire is to ignite a baseline (anchor point) such as a road, plow line, stream or other barrier on the down-side of the area to be burned. The fire is allowed to back into the wind a distance of 10 to 15 feet or more. Once the baseline is secure, the interior lines are ignited, starting on the downwind side of the first line and progressing from the easternmost line to the west across the block until all lines are lit.

A properly executed backing fire generally will have flames no higher than two to three feet. Smoke and heat will disperse downwind with little or no damage to the overhead tree canopy.

Once all lines are ignited, it is simply a matter of letting the fire eat back against the wind, devouring fuel as it goes. An initial attack engine is left to patrol the block and crews go on to ignite other blocks, repeating the process. A crew of five or six people can burn 1,000 acres on a good day.

An average of 10,000 to 15,000 acres are treated on state lands each year and an additional 3,000 to 5,000 are burned (at the owner's expense) on private lands.

Once all lines
are ignited, it is
simply a matter
of letting the
fire eat back
against the
wind, devouring
fuel as it goes.

Joseph R. Hughes, a resident of Mercerville and periodic contributor to *New Jersey Outdoors*, retired from the State Forest Fire Service in 1996.

And the Winners Are . . .



PATRICIA HARROD



RICKY VALDES



Selecting the winning images in *New Jersey Outdoors'* 1996 Photo Contest was an incredibly difficult task. We received hundreds of beautiful photos and slides of flora and fauna, landmarks and landscapes, and people enjoying the Garden State. Entries came from all over New Jersey, as well as from neighboring states.

In fact, we received so many great pictures that we'll be publishing some of the runners-up

in future issues of *New Jersey Outdoors*.

Once our panel of experts chose an image for each county, a grand prize winner had to be selected. Again, it was difficult, but the appealing shot of inquisitive little Justin Belcher won top honors for Patricia Harrod.

We congratulate all the winners and thank everyone who participated for sharing your treasured images with us.

Warren County — *Got Any More Room in There?* • Patricia Harrod, who lives on Blue Moon Farm in Johnsonburg, watched as godson Justin Belcher approached her barn. "Justin was a bit shy then . . . afraid to go in the barn. I framed it in my eye and thought it was a great photo opportunity," she says. We agreed and selected her picture, taken with a Nikon, as the grand prize winner.

Sussex County — *Sun Screen* • Hackensack's Ricky Valdes enjoys backpacking, hiking, camping and birding. He visits Wawayanda State Park frequently and takes many pictures there. In this one, the sun is partially obscured by phragmites growing along the shore of Wawayanda Lake.

Keep Your Shutters Open

Details on the 1998 Photo Contest will be announced in the Summer 1997 issue of New Jersey Outdoors.

New Jersey State Library



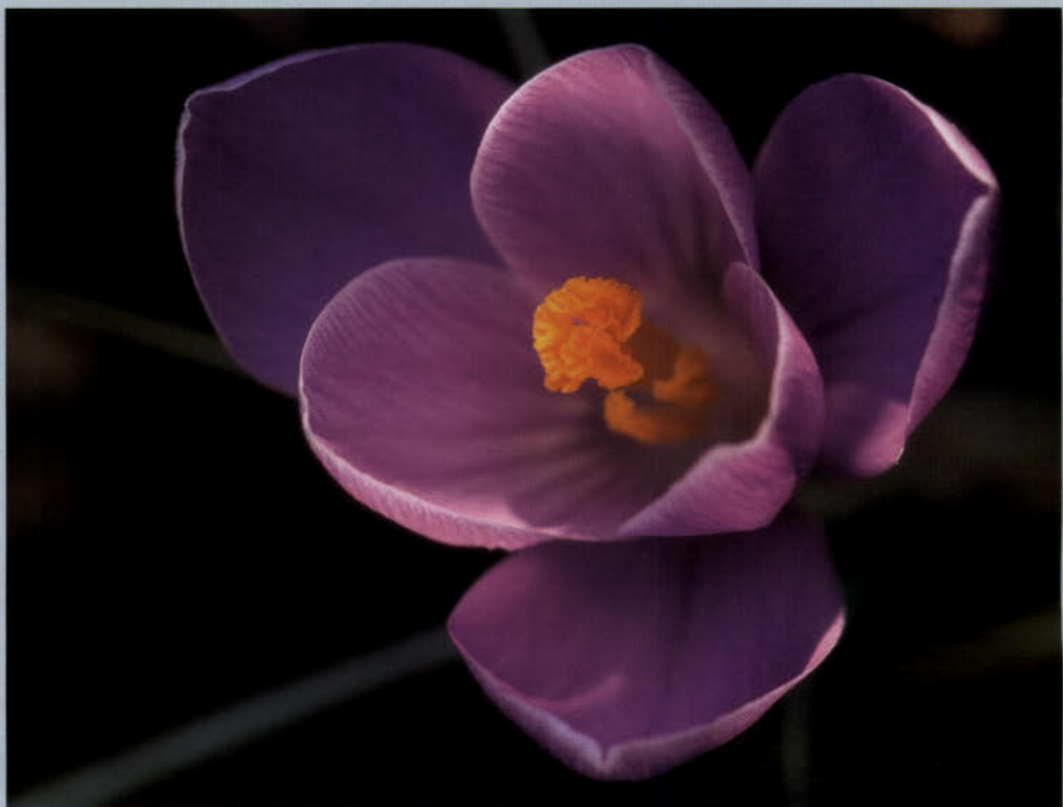
Camden County — King Snake

• **Bob Malone**, of Wilmington, Delaware, says he found this snake under a log in Wharton State Forest. "He caught my attention because he was trying to look ferocious — even though king snakes don't have fangs, only teeth."

Hudson County — Crocus

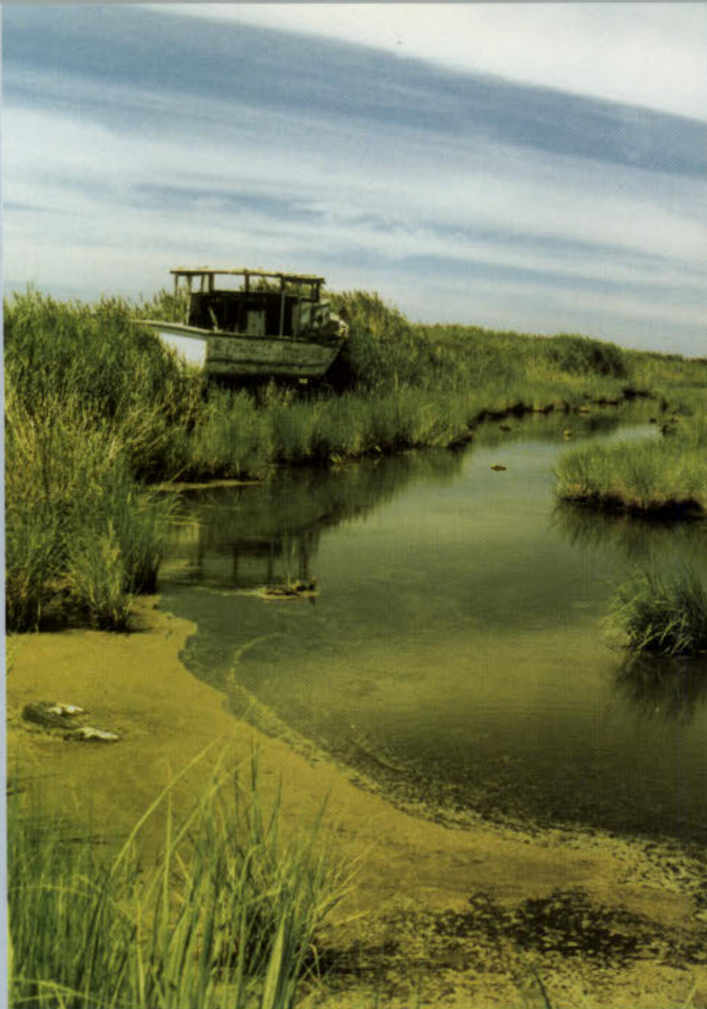
• **Emanuel Lekkas**, of Jersey City, has "always" taken pictures, but started out seriously in 1990, taking courses and going to New Jersey Audubon Society sanctuaries, where he "discovered" the New Jersey beyond Jersey City. This photo, however, was taken right in his own backyard.

Ocean County — Labor Day after the Hurricane • The surf really was up when **Mary Feehan Nesnay**, of Totowa, captured her husband Randy, son Andrew (whose face is partially visible) and brother-in-law Mike Kochka enjoying the post-hurricane breakers at Seaside Park's Island Avenue beach.





Cumberland County — *Low Tide for Bozo* • Patricia Costello, of Mt. Laurel, loves lighthouses, so one day a friend took her to see the East Point lighthouse. They drove down to the jetty to view the structure from a different angle, and came upon the scene that captured first place in Cumberland County.



PATRICIA COSTELLO



COLETTE ESHLEMAN



Burlington County — *Outside the Mill* • This photo was taken at Historic Batsto Village, in Wharton State Forest, by Colette Eshleman, a former New Jersey resident who recently moved to Surfside Beach, South Carolina.



Somerset County — The Flood of '96 • While the walkway in her winning photo appears to be floating on the clouds, **Betty Cunliffe**, of Short Hills, says, "A fall flood caused the water in the Great Swamp to invade and surround the back of the Environmental Education Center. It was quite a sight."



JIM BISCHOFF



ALYCE PARSECHIAN



BOB MALONE



Gloucester County — *Great Blue Heron* • **Bob Malone**, of Wilmington, Delaware, snapped this shot near the Pinelands' Woodbury Creek. "Although I live in Delaware, I spend most of my leisure time in New Jersey and always have my camera with me," says this long-time *New Jersey Outdoors* subscriber.

Essex County — *Cathedral of Trees* South Orange's • **Jim Bischoff**, who enjoys gardening and photography, is an artist and art teacher. He uses photos such as this one, taken at the South Mountain Reservation, as a springboard for expressionistic paintings.

Passaic County — *Memory Garden* • **Alyce Parseghian**, of Franklin Lakes, loves Skylands in Ringwood State Park, site of the state botanical garden, and goes there often. "Although I don't usually work in black and white, I knew the park bench presented a great opportunity. Infrared film gives greenery a white, dreamy look and darkens the sky," she says.

Salem County — *Blizzard Buddies* • **Bernie Lodge** lives on a farm in Pedricktown and — since she enjoys birds — has many feeders on her property. Stuck in the house during last year's blizzard, she noticed the bushes in her yard were filled with cardinals. Almost a mirror image, the cardinals in this winning photograph are waiting to feed.

Middlesex County — *Family and Friends* • In his winning photo, Hope Lawn's **Piotr Maciejewicz** preserves a poignant moment — three generations of his family feeding their feathered friends at Metuchen's Roosevelt Park. Pictured (from left to right) are his wife Martina, 2-year-old son Arthur, and his wife's grandmother, Melitina Henriquez.

PIOTR MACIEJEWICZ





ALYCE PARSEGHIAN



RICKY VALDES

Bergen County — Labor Day Tribute • Franklin Lakes' **Alyce Parseghian** took this winning image one day when she and her granddaughter were out looking for Monarch caterpillars. (They found one, took it home and put it in an aquarium so they could watch it as it went through its metamorphosis.) The flag, flying on the George Washington Bridge in observance of Labor Day, caught her eye and she captured the patriotic display.

Mercer County — Camouflaged for Winter? • While walking through Washington Crossing State Park, Hackensack's **Ricky Valdes** saw something white running across the ground and up a tree. He gave chase and captured on film this albino squirrel, the first he'd ever seen.



BOB MALONE

Atlantic County — Great Egret Fishing • **Bob Malone**, of Wilmington, Delaware, found this great egret at the Tuckahoe Wildlife Management Area. "I camp near Atco in the summer and I use that as a jumping off spot for exploring and photographing the Pine Barrens. I do all my freshwater fishing in your state and combine both hobbies," says Bob.

Morris County — Life Springs Up • The backyard of **Linda Gangloff's** Denville home, adjacent to an area recently identified as wetlands, presents many photo opportunities, such as this mushroom, which looks like a lit lamp.



Hunterdon County — *Snow Shadows* • Carol Gerity, of North Brunswick, was driving along Old York Road in East Amwell when she was captivated by the play of fence shadows on the snow.



CAROL GERITY

Cape May — *Lure of the Ocean* • Sandra Reilly, of Cherry Hill, always has a camera with her and takes a lot of pictures. This winning shot is of her grandson, Dallas Massey, trying his luck in the waters of Ocean City at 55th Street. He was four years old at the time.

SANDRA REILLY





Monmouth County — *Foliage Framed* • "As a fairly new resident of New Jersey, I am surprised and delighted at how many beautiful places there are here," says **Alma Nygren**, of Middletown. "The pergola in Deep Cut Park is close to my backyard, and it has become a focal point for seasonal beauty."


ALMA R. NYGREN



Union County — *Frozen Food* • Avid bird watcher **Catherine Billington**, of Mountainside, thought the icicles hanging from her feeder made an interesting picture.

CATHERINE BILLINGTON






Rugosa rose (left), a favorite with seashore gardeners, is impervious to wind, sand and salt. Flowers of rose and white abound in the summer; the hips, attractive in their own right, can be made into jam in the fall.

Lilies do well if protected from the wind (inset).



Wind, Sand and Salt: Quirks of a Seashore Garden



Story and photos © by Gretchen F. Coyle

"How can you grow all these beautiful things at the shore?" people ask us, as they admire our garden full of perennials, annuals, vegetables, fruits and herbs. Seashore gardeners used to be sort of an oddity, people who were just stubborn enough to try to grow things in sand. Today seashore gardening is a multi-million dollar business, ranging from mail order hearty salt-tolerant plants to books to knowledgeable garden centers located along the coasts.

The U.S. Census Bureau tells us more

and more people are living along the coast. What it doesn't tell us is that, increasingly, these people are into gardening for relaxation, the beauty of living plants and the homegrown food they produce. And what could be more spectacular than gardening as you look out over the ocean or watch a boat go by in the bay?

At our Long Beach Island bayfront home, *Little Beach Farm*, we occasionally fear a fall hurricane or a March nor'easter, but our main persistent problems are wind, sand and too much salt.

Raised beds are the best way to garden at the shore as shown here as shown below in the author's herb garden.

Wind Factor

In designing a seashore garden, one must first consider the wind. From which directions do the prevailing and harmful winds come? Our prevailing winds on the Jersey shore are from the south, ideally gentle and cool during the summer months.

Our vegetable garden is located on

the southeast side of our house; it enjoys full sun about three quarters of the day. Raised beds in rectangular and triangular forms are surrounded by bricks, a patio and an open picket fence. Pots of annuals are everywhere. Clematis and grapes drape along the fence, acting as natural wind barriers for the weaker vegetables. Nothing could be more discouraging





Naturalized daffodils grow in abundance in the spring, both in perennial beds and in almost pure sand (left).

The author's husband, John Coyle (below), harvests "bay mixture" in early April. It is full of nutrients, such as seaweed, eel grass, salt hay and dead crabs, and can be used as a mulch to keep down weeds and enrich the soil.



than waking up to find young tomato plants broken down by a hard wind.

By having all our vegetables in one spot, we can water easily. Our summer winds can be dry and hot, taking the moisture out of the foliage in short order. So my husband, John, has rigged up an overhead watering system which we use on an alternate basis as needed and on our allotted days as allowed by our Borough of Beach Haven. Like most other communities, we are trying to conserve water.

Our destructive winds come from the

northeast during major storms. These winds can knock down weak trees and flatten young vegetables. Northeast winds cause beach erosion as waves wash away at the sand dunes. Our vegetable garden is protected as much as can be but still takes a beating on occasion. On the outside of our fence, on the northeast side, are blueberry bushes; across the drive are Japanese pines, which block the strong northeast wind as much as possible.

Wind barriers can come from all different sources. Well-established shrubs

and trees form excellent barriers. These are usually native specimens, known to be hearty. In our area, bayberry, beach plum, rugosa rose, junipers and Russian olives are examples of powerful wind barriers. Then there are walls, trellises, decking and other manmade forms. Wind barriers help keep your foliage from breaking and from losing moisture faster than it can be replaced.

Growing Medium

Does sand equal soil? Definitely not! Long Beach Island has no native soil,

only what is trucked in or made, but other areas of the coast have good soil. It all depends on the location. For our perennial, herb and vegetable gardens, we had soil brought in originally. Over the years we have added leaves, compost, horse manure, grass clippings, turkey droppings and food waste — consisting of fruits, vegetables, coffee

soil as moisture retentive as possible; the natural ingredients listed earlier help.

There are many wonderful plants and shrubs that grow right in the sand. Rose mallows, yarrow, Queen Anne's lace, sweet peas and beach peas are but a few. Many perennials also can be grown in a seashore garden. In the spring, our yard is full of daffodils, tulips and irises. Some

accumulate on leaves, burning them, or get directly into the soil. Right next to the ocean or bay, it is best to use salt tolerant plants such as beach pea, sweet pea, American dune grass and sedum. Cotonaster, honeysuckle, heathers and plain old prickly pear cactus, with its gorgeous yellow flowers, also do well right next to the water. After a major blow, get rid of salt on vegetables and less salt tolerant plants by rinsing them with a hose or a sprinkler.

Salt that covers the ground thanks to flooding is another matter. In that case, you must put your sprinkler or soaker hoses on for hours on end to leach the salt through the soil. This technique seems to save many plants after saltwater intrusion. You will be able to tell what has lived or died in a week or two.

However, don't let salt be a deterrent to seashore gardening. It can be easily controlled. When we use our "beach mixture" mulch, we put it on straight from the beach and let a hard rain or hoses leach out the salt. A little bit of salt can actually be beneficial to plants such as roses. The salt controls fungus problems during humid summers on hollies and other trees. Maybe it's the salt or maybe it's luck, but at *Little Beach Farm* we do not have any fungus problems.

Gardening along the coast is special. The presence of water nearby gives one a feeling of peace and contentment. The bright blue sky tends to make bright colors brighter and cool colors cooler. Summers along the coast are associated with vacations or times of relaxation. In spite of the wind, sand and salt, a seashore garden can be a masterpiece from the first crocuses in March to the last October daisy in the fall.

Gretchen Coyle got her love of gardening as a child helping her parents with their Bryn Mawr (PA) wild garden. She is a "trial and error method" authority on seashore gardening. Each year she and her husband, John, cultivate about 40 types of vegetables, annual and perennial herbs, old time and native seashore flowers and shrubs, and a potpourri of summer annuals. Gretchen is an avid organic farmer who also writes articles for gardening magazines and environmental journals.

Resources for Beginning Seashore Gardeners

■ *Gardening on the Eastern Seashore* discusses gardening in a coastal area and has a thorough list of plants, vines, shrubs and trees that do well. Pen and ink illustrations accompany each description, along with planting information. Authored by Marilyn Schmidt, it is available by writing to Barnegat Light Press, P.O. Box 305, Barnegat Light, NJ 08006.

■ *Seashore Gardening*, by veteran gardener Theodore James, Jr., has color pictures of the most unique coastal gardens you have ever seen, from Maine to Long Island. This book also has an extensive plant list, but its strength lies in the ideas presented for landscaping areas such as woods, ocean front dunes, bay front and wetland areas.

grounds and egg shells — to our soil so that it is now a rich, dark color, full of worms. Our main soil improving ingredient is the natural "beach mixture" found on every ocean and bay beach. It consists of everything from eel grass, seaweed and reeds to dead fish and crabs. Truly a soil enhancement! Best of all it is free — all you need is a trash can or some large leaf bags.

Sandy soil lacks nutrients; in addition, water percolates through it quickly, so plants tend to dry up sooner. In dry, windy climates, try to get your

are planted in beds; others are planted directly into the ground. Astilbe, coreopsis, peonies, pinks, hostas, lilies, daisies of all types — almost any perennial can be grown in a seashore garden if it is in good soil and put in a place protected from both wind and salt spray. Blowing sand does not have a bad effect on plants unless it is 4 inches deep or more.

Pass (on) the Salt

Salt can be a major problem along the coast. During a storm, salt can be blown for almost half a mile. It can ac-



The author's sun room provides an ideal spot for viewing the wildlife his backyard habitat attracts.

Yes, In My Backyard!

Story and photos by Murdo Morrison

"We cannot in fairness rail against those who destroy the rain forest or threaten the spotted owl when we have made our own yards uninhabitable. Yet how quickly we could grow this land, spangle it with blazing stars, stripe it with red winterberries and white summer sweet, let it wave again with grass!"

Sara Stein

Noah's Garden: Restoring the Ecology of Our Own Backyards

Nature is all around us. Many of us take our children to zoos or watch nature specials on public television but miss real opportunities to see wildlife in our own backyards. This past summer in our garden we experienced the joy of seeing monarchs, swallowtails and other butterflies on a daily basis. Birds reared their young in hanging baskets, trees and nest boxes. The aphids on the apple tree were devoured by lady bugs that came by themselves and were not bought from a mail order supplier.

Each trip into the garden brought new encounters. We experienced the thrill of watching a swallowtail lay eggs on the lovage, finding a praying mantis sheltering under a ledge and taking a close look at a hawk swooping past after the birds at the feeder.

We often lament the loss of wild places and overlook what is outside our back door. All of the things I have described were viewed in a suburban garden in South Jersey. It can all be yours if you send out the right invitation.

In New Jersey and elsewhere throughout the United States, formerly rural communities are facing increased pressure from

development. As open space turns into suburban developments, often the land is cleared of natural vegetation and even stripped of its topsoil. While in some cases an attempt is made to preserve existing trees, the development that results often makes little attempt to preserve or reconstruct the diverse assembly of native plants essential to the local wildlife.

These suburban areas, while appealing to people and deceptively "green" in appearance, are much less attractive to wildlife. In fact, the well-kept lawns and manicured flower beds are often quite inhospitable to the native species of plants and animals that formerly lived there. With some adjustments in their approach to gardening, most homeowners could have gardens which both enhance their property's value and provide shelter and food for birds, butterflies and other wildlife. As more people become interested in the backyard habitat concept, a property which enhances wildlife conservation may even come to have more appeal for the prospective buyer.

Essential Elements

It probably is unrealistic to think that the average property owner can replace the total diversity of the habitat of undeveloped land even if they wished to do so. However, anyone interested in being more wildlife friendly can make an important contribution by providing the basic components that make up a backyard habitat — water, food and cover.

Providing a supply of water, particularly in winter, is very important. Many homeowners like to incorporate ponds into

Trees and shrubs are important components in a wildlife friendly backyard; they provide cover and nest sites.

their gardens. If that isn't feasible, birdbaths are an inexpensive and decorative solution. Many different types are now available. Birds prefer to drink from areas of shallow water so select one that provides good perching and wading opportunities. When temperatures dip below freezing, many bird lovers use birdbath heaters to make water available.

Bird feeders and bird food are familiar sights in many backyards. There are many sources of information available about feeder types and preferred food. Also, many native plants can be introduced into gardens to provide sustenance for birds. These plants are well adapted to the local environment and often are very attractive in their own right. Including such perennial plants can make your garden much more appealing for birds, since they provide both food and cover.

Trees and shrubs are important components in a wildlife friendly backyard; they provide cover and nest sites. If your property has no large trees, consider planting some saplings. In the meantime, shrubs and hedges, even those usually associated with foundation plantings, can provide important cover. Nest boxes also can be added to provide additional nest sites.

In our garden, we recently added an American ash tree, firethorn bushes and a crab apple tree to our coneflowers, hibiscus, sunflowers and other plants. These all provide a natural buffet for our winged friends.

A good starting point for those interested in backyard habitats is Sara Stein's influential recent book, *Noah's Garden: Restoring the Ecology of Our Own Backyards*. Stein chronicles her own transition from traditional gardener, attempting to subdue her then newly purchased tract of land, to her present role as habitat conservationist. As she cleared and reworked her property, she began to notice that the wildlife was disappearing. This prompted her to reevaluate her whole way of thinking and to start questioning many of the gardening practices she had taken for granted.

Habitat Links

While Stein's rural New York situation is different from that of many suburban gardeners, the basic ideas presented are very relevant. One of her major concepts is the idea that, while individual gardens are isolated, "islands" and "bridges" of habitat that will greatly increase the total amount of habitat

available for wildlife will be created if enough homeowners include native plantings around the peripheries of their properties. More importantly, these islands will restore the links between areas that will allow wildlife to move more easily in response to local conditions. The key is that many small actions can add up to a very important whole.

To reach that point will require a great deal of reevaluation, communication, education and organization. However, as the growth of recycling after initial slow progress has shown, it is possible to encourage positive social change in the environment. There are many sources of information now available to anyone interested in creating gardens that are wildlife-friendly. However, much needs to be done to make the concept more widely accepted. This article is an appeal to take the initiative to play a key role in encouraging the growth of the backyard habitat movement and to make it as accepted a concept as recycling now is.

Back to Nature

One major adjustment that will be required is to rethink the need for heavy chemical use in gardens, parks and public spaces. This will be hard to overcome since many gardeners have become conditioned over the years to use herbicides and pesticides. Some of this stems from treating gardens as "decorative" adjuncts to houses and buildings rather than as ecosystems or habitats in their own right. Ironically, many gardeners will purchase "beneficial" insects from suppliers, apparently not realizing that these beneficial species will arrive naturally in a garden where chemicals are not used. Pesticide use often will have the

Birdhouses offer a place for birds to rear their young, while native plants can provide sustenance for the winged inhabitants.





Planting flowers known to attract butterflies rewards the gardener twofold.

unintentional result of reducing beneficial insects while leaving resistant strains of the pests behind. Chemicals also can be damaging to the wildlife they are trying to attract, so the gardener who is serious about creating a backyard habitat should do everything possible to reduce or eliminate the use of harmful chemicals and to use organic solutions wherever possible.

The growing popularity of composting is another positive step. Many gardeners grumble about bagging leaves before heading off to add more store bought mulch to their flower beds for the winter and fertilizing their lawn. However, many have learned to rake the leaves into flower beds and then compost the excess. In spring, whatever leaves have not broken down can be removed from the flower beds and composted to provide a rich, organic top dressing for plants. Leaving leaves in the beds mimics what occurs in natural habitats; it provides places for insects to complete life processes during the winter and food sources for birds, in addition to protecting the root stocks of plants.

Community Effort

However, to make the backyard habitat concept a really effective agent of change will take more than the efforts of individual homeowners. Municipalities and agencies that oversee large areas of open space can make significant contributions. One example of such a public space is the local school yard, where the school building often is surrounded by large areas of grass and conventional plantings. Some interesting programs have sprung up that combine environmental education with the creation of school yard habitats.

A New Jersey example is Project WILD, which provides workshops for teachers, administrators, parents and interested

community members. The knowledge gained is invested in WILD school projects where teachers, students and parents come together to create wildlife friendly areas on school property. Schools can apply for funding to assist in setting up their WILD school site. Information about the program can be obtained from the Department of Environmental Protection by contacting Miriam Dunne, Pequest Trout Hatchery and Natural Resource Education Center, RR #1, Box 389, Oxford, NJ 07863.

The National Wildlife Federation, which has sponsored a backyard certification program for homeowners since 1973, also conducts a schoolyard habitat certification program. For an information kit, which includes a planning guide and certification application, write to Schoolyard Habitats, National Wildlife Federation, 8925 Leesburg Pike, Vienna, Virginia 22184.

Homeowners who would like a similar information kit about the National Wildlife Federation's backyard wildlife habitat program can request one from the same address. At time of writing, the cost for the kit, which includes the book *The Backyard Naturalist* by Craig Tufts, is \$4.95 plus \$3.50 for postage and handling.

With the resources mentioned in this article, you can begin the process of making your garden or public space more wildlife friendly. And the nice thing is, it is something real that you can accomplish in your own backyard.

Murdo Morrison is a case manager in the NJDEP Site Remediation Program. Born in Glasgow, Scotland, he has lived in the United States for more than 20 years. He, his wife Susan and family established and maintain NWF Backyard Wildlife Habitat #18606 in Marlton, New Jersey. He can be reached by e-mail at mmorriso@voicenet.com.

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A Different Angle On Fishing

Polarized sunglasses and skillfull stalking paid off for Matthew Helle, of Shamong, who harvested this carp in Toms River using a recurve bow and homemade reel.

by Oliver Shapiro



COURTESY OF JIM HELLE

When someone mentions carp fishing, people usually get a certain image in their minds. An angler sitting quietly on a riverbank, perhaps in a lawn chair, languidly holding a rod and reel. Perhaps there are one or two additional poles set up nearby, propped up on forked sticks. There's a bucket at the ready, filled with worms or corn, or perhaps a loaf of bread at hand for both bait and snacking.

Some others, however, get an entirely different image. They picture a tall figure in waders carefully stalking the river's shallows, eyes peering this way and that at the water. He is carrying a bow with a reel attached to the front, arrow nocked. The stalker suddenly spies something and locks his eyes

onto it. He slowly approaches his quarry, stops and brings up his bow. The bowstring is brought to full draw and released. The shaft suddenly shoots into the water, followed by a ghostly white trail, and the water explodes.

A hefty member of the species *Cyprinus carpio*, or common carp, is thrashing in the water, and the man, smiling triumphantly, starts to bring in the fish on the line attached to the arrow.

Bowfishing is a sport that does not seem to have enjoyed the surges and ebbs in popularity that some of the other fishing sports have. It is enjoyed by a fairly constant group of devoted adherents and certainly puts a different twist on fishing.

Although bowfishers sometimes target other species besides carp, such as suckers and catfish, carp are the main quarry in New Jersey. It is not a sport for those whose greatest thrill is in deceiving fish. Rather, it requires proficiency in stalking, a keen eye and steady hand. It is, on the other hand, a sport that is not difficult to break into.

What You'll Need

The sport clearly demands different equipment than conventional angling does. The obvious starting place is the bow. Pretty much any bow — compound or recurve — can be used, although some people prefer recurves. Rob Desimoni, a veteran bowfisher and former employee at the Monksville Bait and Tackle Store in northern Passaic County, suggests that this is because most shots taken in bowfishing are at very close range — 10 yards or less; often under 5 yards. Moreover, recurves can sometimes allow for quicker shots, he believes.

Compound bows do have their adherents, however. Just ask George Vash, who arrowed a white amur (a kind of carp) last June in the canal near New Brunswick. The fish weighed in excess of 49 pounds. Vash used a Browning compound with a draw weight of 55 pounds.

It is not necessary to purchase a bow designed exclusively for fishing, although some manufacturers do offer specialized models. Oneida Labs, Inc. of Phoenix, New York, goes as far as to make a bow with a "rippled water" camouflage effect, called Aquaflage. But any bow with the capacity for adding a front stabilizer can be used, as this attachment site will accept bowfishing reels.

Reels come in two versions, closed- and open-faced. The closed-faced reel is very similar to a standard, albeit oversized, spincast reel; one available model is the Zebco 808 Bowfisher. The open version is similar to a conventional spinning reel's spool, and most of these models must be spooled by hand.

And, of course, you'll need arrows. Materials vary, but fiberglass is preferred due to its resistance to bending or breaking. Some arrows designed for bowfishing have a hollowed center through which the fishing line is fed. The line is attached to the tip, which differs from field tips or broadheads. Field tips are used primarily for target shooting and are simply pointed metal caps over the end of the arrow shaft. Broadheads, with razor-sharp edges fanning out and back from the point, are familiar to hunters.

Fishing arrow tips, on the other hand, are designed for puncturing and holding their target. They occur in two basic versions: one with fixed barbs and one with prongs that expand on impact. The latter is considered superior, but — of course — is more costly.

Strong line is preferred, as the target fish are often sizable, with plenty of fight. Desimoni uses one of the new braided lines testing at 200 pounds. In the past he tried 70-pound line but found that larger fish often broke off. The importance of this can't be overstated; as bowfisherman David Wisenteiner says, "when you hit them, you'll think there's a marlin on the line."

Some practitioners wear full camouflage in their quest, but Desimoni suggests simply wearing drab-colored clothes. He also encourages beginners to keep their outline from standing out too much; one method he mentions is to keep trees at your back.

Practice Makes Perfect

Novices should begin to hone their skills at a range to become familiar with basic shooting skills and their equipment. When they have reached a level of reasonable consistency at close ranges (10-20 yards), they are well-advised to continue their practice sessions under simulated fishing conditions. Just as serious deer hunters will practice their archery skills from their tree stand to get the feel of shooting in the woods and at

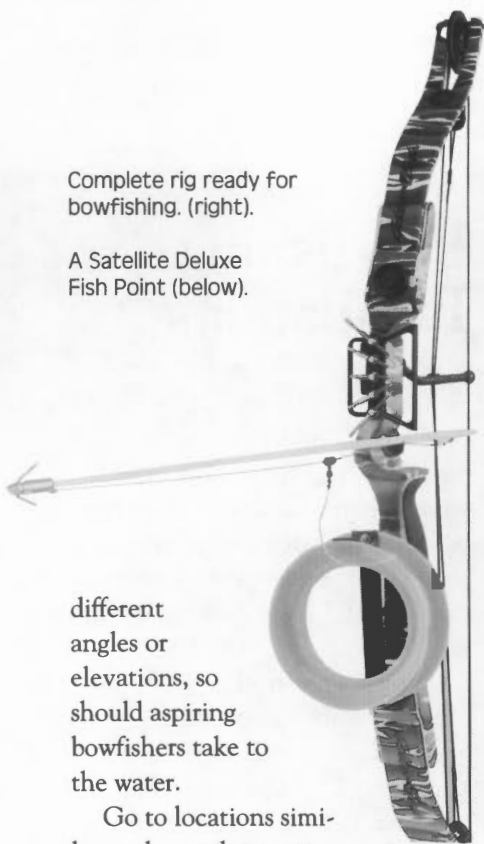
Bowfishing Regulations

Like many other activities involving New Jersey's wildlife resources, there are various regulations that must be observed when bowfishing. There has been some controversy regarding the observance of the so-called "safety zone" that bow-and-arrow hunters, not fishermen, must observe. This law states that no arrow may be nocked while the possessor is within 450 feet of any building or school playground. Personnel at the Division of Fish, Game and Wildlife's Northern Region Law Enforcement Office, however, have informed us that this rule does not apply to bowfishers, as the arrow is attached to the bow via the fishing line and the direction of the shooting is into the water.

Here are most of the major rules:

- Bowfishers are prohibited from shooting the following species: trout, salmon, largemouth or smallmouth bass, striped bass or any of its hybrids, pickerel, northern pike, walleye, and muskellunge or any of its hybrids.
- A current fishing license must be worn. (A bowhunting license is not required.)
- Bowfishing is permitted whereby the practitioner is limited to the following: use of a longbow (which can be a compound or recurve) and arrow with line attached. No cross-bows are allowed.
- All angling seasons and daily creel limits must be observed.

For more information, call the Law Enforcement Office of the Division of Fish, Game and Wildlife at 609/292-9430.



Complete rig ready for bowfishing. (right).

A Satellite Deluxe Fish Point (below).

PHOTOS ON THIS PAGE COURTESY OF GOLDEN EAGLE ARCHERY

different angles or elevations, so should aspiring bowfishers take to the water.

Go to locations similar to those where you intend to try for fish, and sharpen those skills. Standing either in the water or on the shore, take shots at underwater objects — clumps of weeds, or one of the pieces of trash all-too-commonly encountered in our waterways. And, as you begin to practice shooting into the water, you will quickly discover a hurdle confronting all who delve into the sport: namely, refraction.

Refraction, simply defined, is the bending of electromagnetic radiation as it passes from one medium to another of differing density. In this case, the radiation (visible light) is passing from the water to the air above it. As the light rays make the transition from the denser water to the thinner air, they bend or change direction slightly.

You can easily demonstrate this effect to yourself. Fill a tall clear glass with water and slowly insert a knife — not straight in, but at an angle. You will observe that it appears to bend away from its line of entry as it goes deeper. To compensate for this effect while shooting, it's necessary to shoot at where your target is, rather than where it appears to be. As the knife demonstration illustrates, the true location of an underwater object is some-

where below its image. Therefore, you must aim below the image.

The deeper the object, the greater the difference between the object's image and its actual location. Desimoni offers the "one foot, one inch" rule of thumb. For every foot that the fish is deep, you must aim one inch under the fish's belly. This is affected, however, by how close you are to the fish, which in turn influences the angle of the shot. Vash tries to simplify this by seeking fish that are no more than three or four feet deep, and just shooting at the bottom of the fish — or where its bottom appears to be. He agrees, however, that when the fish are deeper you must lower your aim accordingly. Vash also stresses the importance of aiming for the middle of the fish, or slightly closer to its head.

While moving about in your search, it's important to move as gently and quietly as possible. Carp, especially the lunker specimens, are often easily spooked from too much disturbance in the water or vibrations in the ground. This can be true even in swift water.

Spring's the Best Time, But You Pick the Place

The best time to go bowfishing for carp is in the spring. The fish tend to move into the shallower parts of their domain to spawn, and this makes them easier targets. Look in particular for places where "forage" trees (mulberry, chestnut, etc.) are hanging over the water, waiting to drop their fruits into the fishes' homes. They also may be sought in the summer and autumn, but must be lured into shallower water by means of baiting or chumming. Typical carp baits can be effective for this: bread, corn, or any of your favorite sweetened dough recipes.

Some of Vash's best bowfishing stories have less to do with fish than they do with people. It's not uncommon for passers-by to become concerned with the



Carp, especially the lunker specimens, are often easily spooked from too much disturbance in the water or vibrations in the ground

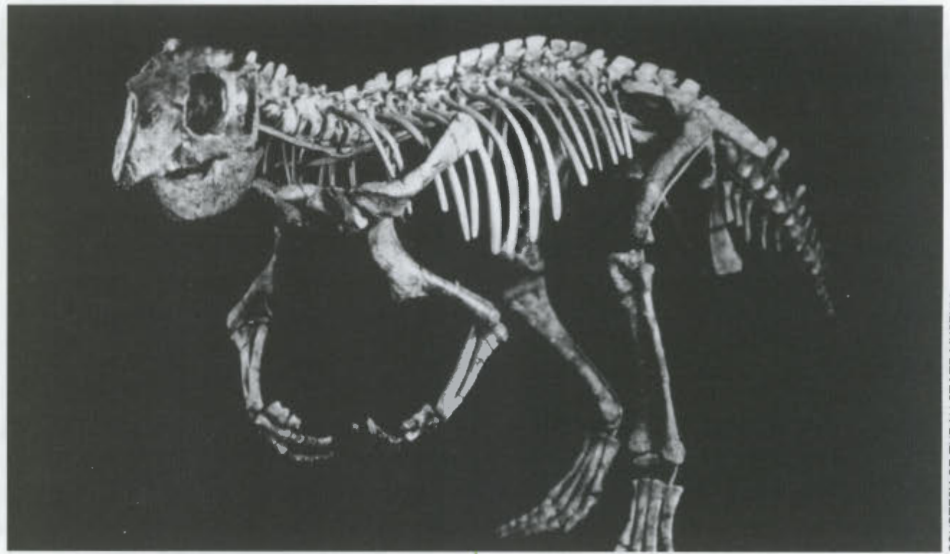
appearance of a man walking about with a bow and arrow, and more than once he's had to confront local police officers. By staying calm and non-confrontational, however, and being willing to explain what he's up to, he's been able to defuse every situation and continue his quest for fish. It is, of course, important to be aware of applicable regulations (see sidebar on previous page).

Bowfishers typically concentrate on river-dwelling populations of carp — best bets in the Garden State include the Passaic and Delaware rivers. The state record carp (by bowfishing) was taken from the Delaware River in 1987 and weighed 42 pounds, and Paterson resident and bowfisher Ron Brush reports carp up to 32 pounds from the Passaic River right in his home city. The "Big D" also has an excellent channel catfish population. For those interested in pursuing suckers, the Pequest and Musconetcong rivers have good numbers.

Part of the fun is in scouting out those hot spots for yourself — which you may be forced to do. When pressed for his favorite specific spots, Desimoni simply replied, "Oh, I know a few places."

Oliver Shapiro is a freelance writer, living in Passaic, whose work has appeared in previous issues of New Jersey Outdoors.

Events



COURTESY OF THE NJ STATE MUSEUM

Visit the State Museum before June 22 to see the remains of Russian dinosaurs such as this *Psittacosaurus*.

Ongoing

Great Russian Dinosaurs (through June 22) This popular exhibit, originally slated to close on December 22, 1996, has been held over for an additional six months; 9 a.m. to 4:45 p.m. Tuesdays through Saturdays and noon to 5 p.m. on Sundays; New Jersey State Museum, 205 West State Street, Trenton; 609/292-6464

Family Nature Programs Every Sunday at 2 p.m.; Trailside Nature & Science Center, 425 New Providence Rd., Mountainside; 908/789-3670

Planetarium Shows Every Sunday except Easter (March 30) at 2 and 3:30 p.m.; Trailside Nature & Science Center, 425 New Providence Rd., Mountainside; ages 6 and up; \$3/person, \$2.55/seniors; 908/789-3670

Demonstrations of Cooking on Wood-burning Stove 2nd and 4th Sundays of each month, April through October; demonstrations take place in the kitchen of Willows mansion; 1 to 4 p.m.; Fosterfields Living History Farm, 73 Kahdena Rd., Morristown; \$5/adults, \$4/seniors (65 & older), \$3/children (6-16), free/under 6, fees include a guided tour of Willows mansion; 201/326-7645

Nature Classes Every Wednesday through Sunday, year round; various exciting, fun-filled learning activities centered on farm life and wildlife rehabilitation; 10 a.m. to 4 p.m.; PAWS Farm Nature Center, 1105 Hainesport-Mt. Laurel Rd., Mt. Laurel; reservations requested for large groups; admission: \$3/adults, \$2/children; classes: \$3.50; 609/778-8795

Trail Maintenance First Saturday of every month, beginning in April, from 9:30 a.m. to 12:30 p.m.; volunteers bring lunch and help maintain and repair hiking trails; Trailside Nature & Science Center, 425 New Providence Rd., Mountainside; preregistration by phone required; 908/789-3670

April

2-5

Federal Duck Stamp Artist Training Workshop A spectacular workshop — one of only two currently planned for 1997, with the other being held in Montana — that will prepare participants for the 1997 Federal Duck Stamp Art Competition; \$600 fee includes daytime workshop activities, deluxe accommodations at the Golden Inn, meals and transportation; \$100 registration fee due by March 15; Wetlands Institute, 1075 Stone Harbor Boulevard, Stone Harbor; 609/368-1211



Events • April/May

4-6

Batona Trail Hike Guided backpacking expedition of entire Batona Trail — hike all or part, or join group at campfire each night for music and story-telling; 8 a.m.; no set fee, but a generous donation is requested; Woodford Cedar Run Wildlife Refuge, 6 Sawmill Rd., Medford; 609/654-6179

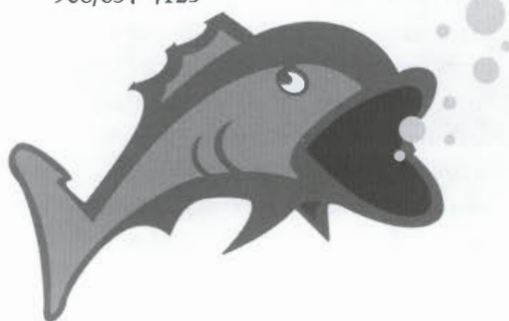
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Seventh Annual "Friends" Symposium Held by the Friends of the N.J. Railroad and Transportation Museum and the U.S. Historical Society of N.J., this public event features 20 fast moving, illustrated presentations and an auction of artifacts and memorabilia related to transport in the state; 9 a.m. to 5 p.m.; Hall of Science University, Drew University, Madison; \$20/members, \$35/non-members (includes one-year membership); lunch and refreshments will be provided; call for registration form and to advise of special assistance needs; 908/464-9335

Gardeners' Break Video (also Apr. 19, May 3 & 24, June 7 & 21 and July 5 & 19) A specially selected gardening/horticulture video; 2 p.m.; James A. McFaul Environmental Center, Crescent Ave., Wyckoff; free; 201/891-5571

5-6

Pequest Trout Hatchery Open House Displays, exhibits, demonstrations, living history encampment, wildlife artists, Smokey Bear and more; 10 a.m. to 4 p.m.; Pequest Trout Hatchery and Natural Resource Education Center, off Route 46, 9 miles west of Hackettstown; free; 908/637-4125



6

Turkey: Crossroads of Civilizations A slide program; 2 p.m.; James A. McFaul Environmental Center, Crescent Ave., Wyckoff; free; 201/891-5571

10

Simple Living Can you have a meaningful, fulfilling life without harming the planet? Learn practical ideas for voluntary simplicity, a value-oriented lifestyle about having enough — not too much or too little; 7:15 to 9:30 p.m.; Kateri Environmental Center, Conover Rd., Wickatunk (Marlboro Twp.); for adults; preregistration required; \$2/members, \$3/non-members; 908/946-9694

12

Trout Season Opens Public waters open to trout fishing statewide; license and trout stamp required for anglers aged 14 to 69; 608/637-4125

Basic Wilderness Survival A full-day, hands-on course; \$35/person; Woodford Cedar Run Wildlife Refuge, 6 Sawmill Rd., Medford; 609/654-6179

12-13

Doll Show Indoor show (in two locations) featuring antique, collectible and contemporary dolls, with special demonstrations each day; 2 p.m.; Museum of American Glass and Heritage House Banquet Facility, Wheaton Village, exit 26 off Route 55, Millville; \$6.50/adults, \$5.50/senior citizens, \$3.50/students, free/children 5 and under; 1-800-998-4552, ext. 2735

13

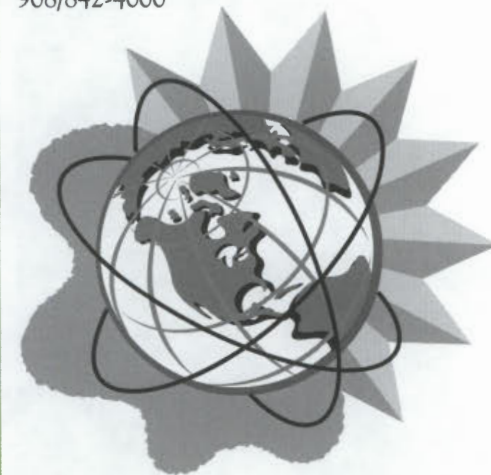
Wonderful Weeds for Our Needs: The Backyard A lively discussion about some of the amazing health benefits found right outside your back door; 2 p.m.; James A. McFaul Environmental Center, Crescent Ave., Wyckoff; free; 201/891-5571

Caroline Foster Birthday Celebration 1 to 4 p.m.; Fosterfields Living History Farm, 73 Kahdena Rd., Morristown; \$5/adults, \$4/seniors (65 & older), \$3/children (6-16), free/under 6, fees include a guided tour of Willows Mansion; 201/326-7645

19

Bergen County Audubon Society Beginner's Birdwalk Field trip consisting of a morning walk for beginning bird-watchers; 9:30 a.m.; meet in Overpeck Creek County Park's riding stables (located off of I95 in Leonia); free; bring binoculars or spotting scope (if you have one) and wear comfortable walking shoes; 201/461-0298

March for the Parks Take a morning walk along the Henry Hudson Trail, from Aberdeen to Atlantic Highlands, to raise funds for trail improvements; free; 908/842-4000



Earth Day Cleanup Join the Outdoor Club of South Jersey's Earth Day Team and give something back to the outdoors for all the pleasure you get; 609/273-0589

Gardeners' Break Video See April 5

20

Earth Day at Wharton State Forest "Hands on" nature crafts, guided walks and other activities; 11 a.m. to 4 p.m.; Annie M. Carter Nature Center, Batsto Village, Route 542 (9 miles east of Hammonton), Wharton State Forest; free; 609/567-4559

The 8th Annual March for Parks The march will benefit the center's newly created Reintroduction of New Jersey's Endangered Native Plant Species Program; 9 a.m. to noon; preregistration is required — call for details; James A. McFaul Environmental Center, Crescent Ave., Wyckoff; participants must solicit and raise funds in order to walk in this event; 201/891-5571

Earth Day Celebration Learn ways to protect the environment while joining in nature walks, games, snake shows and other nature activities sponsored by the Monmouth County Park System; 1 to 5 p.m.; Huber Woods, Browns Dock Rd., Locust (Middletown Twp.); free; 908/872-2670

Canoe Trip Canoe the Paulinskill River; 10 a.m.; meet at Blairstown Elementary School, Route 94, Blairstown; bring your own canoe, life jackets, food, etc.; free; 201/770-1625

Earth Day Celebration Participate in a 5K race or a 1-mile Fun Run, enjoy environmental exhibits, guided nature walks, "eco" hayrides, plus arts and crafts, games, music, food and much more during this event sponsored by the Atlantic County Utilities Authority; 10 a.m. to 4 p.m.; Haneman Environmental Park, 6700 Delilah Road, Egg Harbor Township; free; 609/646-5500

26

Wilderness Survival Overnight Two days of brief refresher classes, practical application and new, advanced classes; \$55/person; completion of Basic Wilderness Survival is a prerequisite; Woodford Cedar Run Wildlife Refuge, 6 Sawmill Rd., Medford; 609/654-6179

26-27

Wool Days Step back into the 1890s and experience Victorian era farm life, learning about the work of an old-fashioned sheep shearer and border collies; noon to 5 p.m.; Longstreet Farm, Longstreet Rd., Holmdel Twp.; free; 908/842-4000

27

Outdoor Adventure Expo See the latest in outdoor recreational equipment, speak with experts who are proficient in a variety of outdoor pursuits and take advantage of lectures, demonstrations and mini-clinics; 10 a.m. to 4 p.m.; Turkey Swamp Park, Freehold; food and camping available; free parking and admission; 908/842-4000, ext. 296 (TDD: 908/219-9484)

EARTHWATCH: Saving the Leatherback Turtle and The Orangutan Project Learn about EARTHWATCH and view a slide show on research expeditions to help save leatherback turtles and to better understand orangutans; 2 p.m.; James A. McFaul Environmental Center, Crescent Ave., Wyckoff; free; 201/891-5571

Outdoor Adventure Expo Learn more about outdoor experiences in this show featuring lectures, demonstrations and a variety of equipment for camping, canoeing, rock-climbing, mountain biking, kayaking, caving, etc.; 10 a.m. to 5 p.m.; Turkey Swamp Park, Georgia Rd., Freehold Twp.; free; 908/842-4000

Fourth Annual Auburn Community Day 9 a.m. to 3:30 p.m.; Main St., Auburn; 609/299-5358

May

3

May Fair Treat your senses to outdoor fun — games, crafts, hikes, dancing and music — from the days of knights and damsels; 6:30 to 8 p.m.; Kateri Environmental Center, Conover Rd., Wickatunk (Marlboro Twp.); \$4; 908/946-9694

Moms, Pops & Tots "Go to the Birds" Stories, crafts and other activities relating to birds; 10 a.m.; James A. McFaul Environmental Center, Crescent Ave., Wyckoff; for children ages 3 to 5 and their parents; \$3/parent and first child, \$3/each additional sibling of workshop age; preregistration is required (registration begins Saturday, April 19, at 1 p.m.); 201/891-5571



Wild for a Day! This special 1-day event for children ages 7 to 12 includes a nature tour, an animal compound tour, picnic, canoeing and survival instruction; limited class size; \$35; Woodford Cedar Run Wildlife Refuge, 6 Sawmill Rd., Medford; 609/654-6179

Gardeners' Break Video See April 5

4

1830s Militia Muster and 1830s Games & Amusements Lifestyle activities are recreated at this ironworks company town; 1 to 4 p.m.; Historic Allaire Village, Allaire State Park, Route 524, Wall Twp.; free; 908/938-2253

Skylands Through the Seasons: New Jersey's Best Kept Secret Slide presentation covering the rich horticultural scene of New Jersey's official state botanical garden; 2 p.m.; James A. McFaul Environmental Center, Crescent Ave., Wyckoff; free; 201/891-5571

Pet Fair Demos, displays, information and stray pet contest; 1 to 5 p.m.; Trailside Nature & Science Center, 425 New Providence Rd., Mountainside; \$1 donation; 908/789-3670

Gardener's Day Those who want to get a jump on spring can buy perennials, herbs and small trees, watch demonstrations and obtain composting information and horticultural advice at this event featuring aquatic gardens; 10 a.m. to 5 p.m.; Deep Cut Gardens, Red Hill Rd., Middletown Twp.; free; 908/842-4000

Events • May

1997 Sunrise Run-Bike-Run Enjoy the beauty of the New Jersey shore while competing in this transition race consisting of a 4-mile run, 16-mile bike ride and 4-mile run along the scenic northern Monmouth County seacoast; 8 a.m.; Seven Presidents Oceanfront Park, Ocean Blvd., Long Branch.; fee for participation, but none for spectators; 908/842-4000

10

14th Annual World Series of Birding

Most spirited conservation event in the country, this 24-hour bird-a-thon attracts more than 50 teams from all over the world; sponsored by the NJ Audubon Society's Cape May Bird Observatory, the event, which begins at midnight on May 10 and ends at midnight on May 11, takes place in Cape May and all over the state of New Jersey; 609/884-2736

Owls Meet Giselle Smisko and a few of her feathered friends as she presents a slide show and discussion about the owls that live in New Jersey; 2 p.m.; Great Swamp Outdoor Education Center, 247 Southern Blvd., Chatham; \$3/adults, \$1/children; 201/635-6629

Annual Spring Crafters' Market From fine art to bric-a-brac; 10 a.m. to 4 p.m.; Historic Allaire Village, Allaire State Park, Route 524, Wall Twp.; \$2/adults, free/children under 12; 908/938-2253

Sheep Shearing The farm's ram and ewes will have their fleece removed by a shearer who will use hand (non-electric) shears; explanations will be provided; wool crafts (spinning, weaving, knitting) demonstrations; 10 a.m. to 3 p.m.; Fosterfields Living History Farm, 73 Kahdena Rd., Morristown; \$4/adults, \$3/seniors (65 & older), \$2/children (6-16), free/under 6; 201/326-7645

28th Annual Manasquan River Canoe Race

Paddle this 8-mile section of the Manasquan River with other competitors of all ages and abilities in categories including kayak, solo canoe, men's tandem, women's tandem and family tandem; 8 a.m.; Howell Park Golf Course, Prevention Rd., Howell Twp.; fee for participation, but none for spectators; 908/842-4000

Bird in Hand Learn about the secret lives of birds, see our feathered friends up close and find out how to catch and band song birds; 8 to 9:30 a.m.; Kateri Environmental Center, Conover Rd., Wickatunk (Marlboro Twp.); for ages 5 and up; pre-registration required; \$4/members, \$5/non-members; 908/946-9694

Spring Flower Walk Enjoy a variety of wildflowers on this walk sponsored by the Paulinskill Valley Trail Committee; 10 a.m.; take Route 80 W to Route 521 N, then take exit 12 and go left on Route 94 to the second left into Footbridge Park; wear comfortable shoes and bring water and food; free; 908/852-0597

Canoe Class (also June 7 & 21, July 19 and Aug. 2, 16 & 30) Learn safety and paddling techniques on beautiful Cedar Run Lake; \$25; 9 a.m. to noon or 1 to 4 p.m.; limited class size; Woodford Cedar Run Wildlife Refuge, 6 Sawmill Rd., Medford; 609/654-6179

Village Fair Riverview Beach Park, Pennsville; 609/299-7351

10-11

17th Annual Carving & Wildlife Art Show & Sale

More than 50 artists will display and sell decorative wood carvings, sculpture, paintings, drawings and etchings of North American wild flora and fauna; also enjoy food, a silent auction, artists' demonstrations and the national award winning exhibition, *Secrets of the Great Swamp*; 10 a.m. to 5:30 p.m.; Environmental Education Center, 190 Lord Stirling Rd., Basking Ridge; free; 908/766-2489 (TDD 908/766-2575 for individuals with hearing impairments)

11

Hamilton Azalea Festival Azaleas of all types and colors are the stars of this annual Mother's Day event which includes garden and Sayen House tours, crafts, vendors, music, unusual plants and trees and more; 9 a.m. to 4 p.m.; Hamilton Sayen Gardens, Hughes Dr. and Mercer St., Hamilton (Mercer County); free; 609/890-3502

This picturesque segment of Hamilton Township's Sayen Gardens is just one of the many delights to be enjoyed by azalea festival attendees.



COURTESY OF DORIS RAFFERTY

Mother's Day Giveaway A free bag of cornmeal or flour will be given to each family while supplies last; 10 a.m.; Cooper Gristmill, State Route 24 (County Route 513), Chester; donation requested at door; 908/879-5463

14

Bird Walk at Palmyra The Delaware riverfront site is fabulous for spotting migrants; sponsored by the Rancocas Nature Center; free; 609/261-2495

Glass: the Odd and the Curious A lecture by Miriam Mucha; 7 p.m.; Kuser Farm Mansion, 390 Newkirk Ave., Hamilton (Mercer County); free, but advance reservations required; 609/890-3630

14-15

Froggin' Learn about frogs, then head down to the pond to meet our amphibious friends (dress to mess); 4 to 5:30 p.m.; Kateri Environmental Center, Conover Rd., Wickatunk (Marlboro Twp.); ages 6-12; preregistration required; \$4/members, \$5/non-members; 908/946-9694

16-18

Cape May Spring Weekend Bird, butterfly and botany walks, workshops and evening programs held during the peak of spring migration; outdoor programs will be held throughout Cape May County; sponsored by the New Jersey Audubon Society; 609/884-2736

Native American Indian Pow Wow and Festival Native dancers, food and crafts sale; New Jersey American Indian Center, Route 9, Old Bridge; \$6/adults, \$3/seniors and children 6-12, free/under age 6; 908/525-0066

17

Canoe Expedition (also May 31, June 14 & 28, July 12 & 26 and Aug. 9 & 23) Explore the Pinelands' rivers in classic fashion: via canoe, with a knowledgeable guide; 8 a.m. to 4 p.m.; \$38; limited class size; Woodford Cedar Run Wildlife Refuge, 6 Sawmill Rd., Medford; 609/654-6179

Spring Flea Market Fund Raiser To benefit Historic Allaire Village; 8 a.m. to 4 p.m.; Allaire Village Show Field, Allaire State Park, Route 524, Wall Twp.; \$1/adults, free/children under 12; 908/938-2253

17-18

Rhododendron Show View the plants on display at the North Jersey Rhododendron Society Tappan Zee Chapter's annual show; noon to 4:45 p.m.; James A. McFaul Environmental Center, Crescent Ave., Wyckoff; free; 201/891-5571

Pirate's Weekend with Captain Kidd Treasure hunt on the beach with prizes for children; 17th Ave. and the beach, Wildwood; Captain Kidd's Parade on the boardwalk (to be held on May 18) will begin at Schellenger Ave. and proceed north to North Wildwood; free; 1-800-882-7787

18

Garden Fair Plant sales and workshops; noon to 5 p.m.; Trailside Nature & Science Center, 425 New Providence Rd., Mountainside; 908/789-3670

Hiking with Children in New Jersey Slide presentation and discussion by Arline Zatz, author and explorer; 2 p.m.; Great Swamp Outdoor Education Center, 247 Southern Blvd., Chatham; \$3/adults, \$1/children; 201/635-6629

Bergen County Audubon Society Beginner's Birdwalk Field trip consisting of a morning walk for beginning birdwatchers; 8:30 a.m.; meet in Ramapo Valley Reservation's parking lot on Ramapo Valley Rd. (Route 202), Mahwah; bring binoculars or spotting scope (if you have one) and wear comfortable walking shoes; 201/226-7825

Rhododendrons: A General Program Slide show and lecture on rhododendrons in various parts of the world; 2 p.m.; James A. McFaul Environmental Center, Crescent Ave., Wyckoff; free; 201/891-5571

Thompson Park Day Discover the treasure of Thompson Park's 600 acres of pastoral beauty and enjoy free entertainment, kids' rides, an arts and crafts sale, food festival, pony and wagon rides, climbing wall demonstrations and other activities; 11 a.m. to 5 p.m.; Thompson Park, Newman Springs Rd., Lincroft (Middletown Twp.); free; 908/842-4000

21

Louisa May Alcott A living history presentation by Bonnie Bachman; 7 p.m.; Kuser Farm Mansion, 390 Newkirk Ave., Hamilton (Mercer County); free, but advance reservations required; 609/890-3630



22-26

12th Annual Wildwood International Kite Festival World's largest sport kite competition featuring three events: East Coast Kite Buggy Blast, East Coast Stunt Kite Championships and the International Indoor Kite Championships; Cresse to Burk avenues on the beach, Wildwood; free; 215/736-3715

24

Museum of American Glass Annual Exhibition: Contemporary Flameworked Glass (through October 26) With guest curator, Paul J. Stankard; 10 a.m. to 5 p.m.; Wheaton Village, exit 26 off Route 55, Millville; \$6.50/adults, \$5.50/senior citizens, \$3.50/students, free/children 5 and under; preregistration required; 1-800-998-4552, ext. 2746 or 2747

Events • May/June

Gardeners' Break Video See April 5

24-26

Annual Spring Juried American Indian Arts Festival Features more than 150 American Indian artists and entertainers; native foods available; 11 a.m. to 6 p.m.; Rankokas Indian Reservation, Rancocas Rd., Westampton Twp.; handicapped accessible; \$7/adults, \$3/seniors and children 6-12, free/under age 6; 609/261-4747

New Farm Animals Weekend Visitors can see and learn about newborn and newly acquired farm animals; 10 a.m. to 3 p.m.; Fosterfields Living History Farm, 73 Kahdena Rd., Morristown; \$4/adults, \$3/seniors (65 & older), \$2/children (6-16), free/under 6; 201/326-7645

26

The History of Hudson County (through Sept. 1) Exhibits concentrating on transportation and immigration history; CRRNJ Terminal, Liberty State Park, Jersey City; free; ADA accessible; 201/915-3411

1-16

4th Annual Education Extravaganza This student program features workshops on ecology, physics, drug/alcohol awareness and first aid/water safety; fee for participation; Schellenger Ave. & the boardwalk and 26th St. & the boardwalk, Wildwood; 609/729-3700, ext. 134

30

Beach Golf Tournament (Also June 1) The North Wildwood beach will be crawling with golfers of all ages and skill levels when the city transforms its entire beachfront into the largest sand trap in the world; fee for participation; 22nd St. & the beach, North Wildwood; 1-800-882-7787



Time Quest Meet the wacky professor Mortley as you travel through time (via a guided drama) along Kateri's marsh trail, and search for clues along the way so you can get back to your own time; call to reserve hike time (evening); Kateri Environmental Center, Conover Rd., Wickatunk (Marlboro Twp.); ages 6-10 with adult; preregistration required; \$5; 908/946-9694

31

Appel Farm Arts & Music Festival Noon to 8 p.m.; Appel Farm Arts & Music Center, 457 Shirley Rd., Elmer; 1-800-394-1211

Canoe Expedition See May 17

June

1

Tenaflly Nature Center Day Children's crafts & games, goodies-in-the-haystack, lunch, baked goods, storytelling, boat rides, music, nature walks, face painting, plant & flower sale, raffle, special speakers, live critters and more; 11 a.m. to 5 p.m.; Tenaflly Nature Center, 313 Hudson Ave., Tenaflly; admission: \$2/non-members, \$1/members and seniors, free/children under 5; most events free, but special events have nominal charge; parking lot will be in use, so park on Hudson Ave. and use shuttle; 201/568-6093

Night Sounds of the Pine Barrens Nocturnal tour in search of whippoorwills, frogs and owls; sponsored by the Rancocas Nature Center; \$6/members, \$8/non-members; 609/261-2495

Environmental Center Sunday Program (also June 8) Call for details; 2 p.m.; James A. McFaul Environmental Center, Crescent Ave., Wyckoff; free; 201/891-5571

2-18

Alaska Birding Trip Birdwatching in Alaska; sponsored by the Rancocas Nature Center; 609/261-2495



6

4th Annual Education Extravaganza

This student program features workshops on ecology, physics, drug/alcohol awareness and first aid/water safety; fee for participation; Schellenger Ave. & the boardwalk and 26th St. & the boardwalk, Wildwood; 609/729-3700, ext. 134

7

Sights and Sounds of the Great Swamp

Listen and experience the sights and sounds of the Great Swamp through Marvin Sliber's slides and audio recordings; 2 p.m.; Great Swamp Outdoor Education Center, 247 Southern Blvd., Chatham; free; 201/635-6629

Black Powder Day Representatives of a recruited military unit will explain the historic period they portray and the Colonial uses of black powder; 1 to 4 p.m.; Cooper Gristmill, State Route 24 (County Route 513), Chester; donation requested at door; 908/879-5463

National Trails Day Come out and help build and maintain trails; 11 a.m. to 5 p.m.; Clayton Park (Upper Freehold), Henry Hudson Trail (Aberdeen-Atlantic Highlands) and Shark River Park (Neptune); free; 908/842-4000

Canoe Class See May 10

National Trails Day Celebration Walk the Paulinskill Valley Trail; 10 a.m.; take Route 80 W to Route 521 N, then take exit 12 and go left on Route 94 to the second left into Footbridge Park; wear comfortable shoes and bring water and food; free; 908/852-0597

Gardeners' Break Video See April 5

7-8

Free Fishing Days No license or trout stamp required, but all other regulations apply; statewide waters; 908/637-4125

8

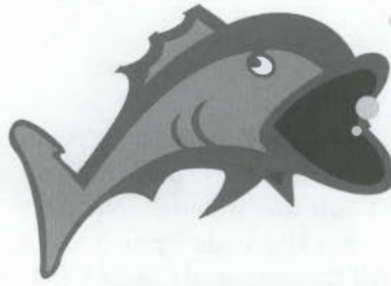
Environmental Center Sunday Program
See June 1

11-13

Graduation Celebration Volleyball Tournament Volleyball tournament for high school graduates from throughout the Delaware Valley; 15th Ave. and the beach, North Wildwood; free; 609/522-2955

13-15

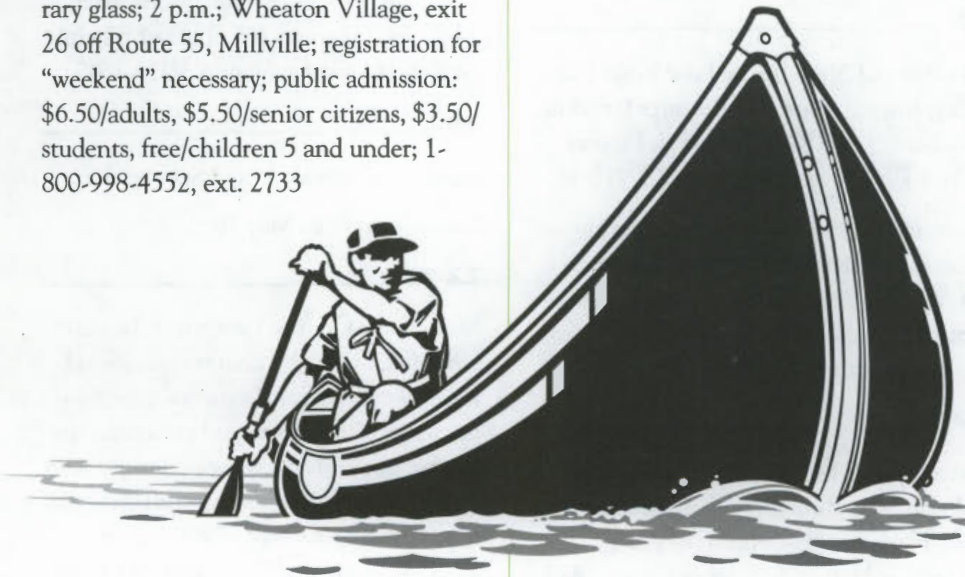
Glass Weekend '97 An international symposium and exhibition of contemporary glass; 2 p.m.; Wheaton Village, exit 26 off Route 55, Millville; registration for "weekend" necessary; public admission: \$6.50/adults, \$5.50/senior citizens, \$3.50/students, free/children 5 and under; 1-800-998-4552, ext. 2733



A Day at the Farm 11 a.m. to 4 p.m.; Church Landing Farm Museum, 86 Landing Rd., Pennsville; free; 609/299-6068 or 609/678-5994

People Powered Day Visitors will see a foot-powered saw in operation, one- and two-man saws, augers, hand drills and more — all powered by people, rather than by electricity or gasoline; 1 to 4 p.m.; Cooper Gristmill, State Route 24 (County Route 513), Chester; donation requested at door; 908/879-5463

Canoe Expedition See May 17



14

Monarchs Learn about the habits, habitats and status of the migratory monarch butterfly in this discussion by Jim Kupcho; 2 p.m.; Great Swamp Outdoor Education Center, 247 Southern Blvd., Chatham; free; 201/635-6629

Pine Barrens Botany Botany of Martha and Calico with Karl Anderson; sponsored by the Rancocas Nature Center; \$6/members, \$8/non-members; 609/261-2495

14-15

Civil War Encampment and Battle Re-enactment Featuring a "Battle for the Village" on Saturday and the "Great Locomotive Chase" on Sunday; 10 a.m. to 4 p.m.; Historic Allaire Village and the Pine Creek Railroad in Allaire State Park; Route 524, Wall Twp.; \$3/car (state park fee); 908/938-2253

Lenni Lenape Indian Pow-Wow Native American crafts, music and dance; Salem County Fairgrounds, Route 40, Sharptown; free; 609/455-6910

Antique Engine and Machinery Show

A variety of vintage gas engines, most of which work, will be on display; 10 a.m. to 4 p.m.; Fosterfields Living History Farm, 73 Kahdena Rd., Morristown; \$4/adults, \$3/seniors (65 & older), \$2/children (6-16), free/under 6; 201/326-7645

18

Video Evening Biltmore Estate at 7 p.m., The Newport Mansions at 7:30 p.m., Newport and the Rhode Island Coast at 8 p.m., Lyndhurst at 8:30 p.m. and America's Castles at 9 p.m.; Kuser Farm Mansion, 390 Newkirk Ave., Hamilton (Mercer County); free, but advance reservations required; 609/890-3630

21

Summer Flea Market Fund Raiser

To benefit Historic Allaire Village; 8 a.m. to 4 p.m.; Allaire Village Show Field, Allaire State Park, Route 524, Wall Twp.; \$3/car (state park fee); 908/938-2253

Gardeners' Break Video See April 5

Canoe Class See May 10

22

Hike the Paulinskill Valley Trail Hike five to seven miles along an abandoned railroad bed; 10 a.m.; meet in the parking lot near intersection of routes 519 and 526, Halsey (near Newton); wear comfortable shoes and bring water and food; free; 908/852-0597

1830s General Training Day An event combining military and African-American history with militia drills and market day; noon to 4 p.m.; Historic Allaire Village in Allaire State Park; Route 524, Wall Twp.; \$3/car (state park fee); 908/938-2253

Alaska Flora and Fauna Slide travelogue and lecture; 2 p.m.; James A. McFaul Environmental Center, Crescent Ave., Wyckoff; free; 201/891-5571

25

Beatrix Potter—Tales Behind the Tales

A living history presentation by Bonnie Bachman; 7 p.m.; Kuser Farm Mansion, 390 Newkirk Ave., Hamilton (Mercer County); free, but advance reservations required; 609/890-3630

28

Moms, Pops & Tots Go on a Treasure Hunt

Stories, crafts and other activities relating to a treasure hunt; 10 a.m.; James A. McFaul Environmental Center, Crescent Ave., Wyckoff; for children ages 3 to 5 and their parents; \$3/parent and first child, \$3/each additional sibling of workshop age; preregistration is required (registration begins Saturday, June 14, at 1 p.m.); 201/891-5571

Ladies of Acoustic Music Show The live stage concert showcases Albert Music Hall's ladies of country and bluegrass music; 8 to 11:30 p.m. (doors open at 7 p.m.); Albert Music Hall, 125 Wells Mill Rd. (Route 532), 1/4 mile west of Route 9, Waretown; \$4/adults, \$1 children under 12; 609/971-1593

Canoe Expedition See May 17

28-29

Mills Near and Far (Also July 1, 5-8 and 11) Listing of other mills open to the public and pinpointed on a map in time for vacation planning; 10 a.m. to 4 p.m.; Cooper Gristmill, State Route 24 (County Route 513), Chester; donation requested at door; 908/879-5463

29

Independence Day, 1835 An event recreating the holiday as it was celebrated at this ironworks company town; noon to 4 p.m.; Historic Allaire Village in Allaire State Park; Route 524, Wall Twp.; \$3/car (state park fee); 908/938-2253

Sterling Forest Slide presentation and discussion about the future of this 17,500-acre tract within the New York-New Jersey Highlands; 2 p.m.; James A. McFaul Environmental Center, Crescent Ave., Wyckoff; free; 201/891-5571

July

5

Planetarium Shows (also every Thursday through August 28) 1 p.m. every Thursday and 11 a.m. alternate Thursdays; Trailside Nature & Science Center, 425 New Providence Rd., Mountainside; \$3/person, \$2.55/seniors; 908/789-3670

5

Gardeners' Break Video See April 5

6

History of New Jersey (also every Sunday, through Aug. 31) Lectures for adult audiences; CRRNJ Terminal, Liberty State Park, Jersey City; free; 201/915-3411

Founder's Day An event celebrating James P. Allaire's 212th birthday; noon to 4 p.m.; Historic Allaire Village in Allaire State Park; Route 524, Wall Twp.; \$3/car (state park fee); 908/938-2253

9

Wednesday Matinees (also every Wednesday through August 20) Performers, plays, puppets, etc.; 1:30 p.m.; Trailside Nature & Science Center, 425 New Providence Rd., Mountainside; ages 4 and up; \$3/person; 908/789-3670

Weekday Wednesday Doll Video Day/Evening Doll-related educational videos; 9 a.m. to 5 p.m. and 6 p.m. (evening video schedule is a repeat of first half of daytime program); Kuser Farm Mansion, 390 Newkirk Ave., Hamilton (Mercer County); free, but advance reservations required; 609/890-3630

12

A Celebration of Trees Exhibits, games and crafts to help you learn about these valuable plants; 1 to 4 p.m.; Great Swamp Outdoor Education Center, 247 Southern Blvd., Chatham; free; 201/635-6629

Canoe Expedition See May 17

13

"Rolling Iron" Antique Auto Show To benefit Historic Allaire Village; 8 a.m. to 4 p.m.; Allaire Village Show Field, Allaire State Park, Route 524, Wall Twp.; \$3/car (state park fee); 908/938-2253

Pressed Flower Demonstration After watching demonstration, visitors can make their own pressed flower bookmark to take home; 1 to 4 p.m.; Fosterfields Living History Farm, 73 Kahdena Rd., Morristown; \$4/adults, \$3/seniors (65 & older), \$2/children (6-16), free/under 6; 201/326-7645

19

Gardeners' Break Video See April 5

Canoe Class See May 10

22-27

Monmouth County Fair Enjoy the old-fashioned fun of this country fair, including 4-H exhibits, amusements, entertainment, fireworks, home and garden competitions, hot-air balloon races, antique auto show, firemen's mud-flag football and other special attractions; 5 to 11 p.m. (Tues.-Thurs.), 11 a.m. to 11 p.m. (Fri.-Sat.) and 11 a.m. to 6 p.m. (Sun.); East Freehold Park Showgrounds, Kozloski Rd., Freehold Twp.; admission fee; 908/842-4000

26

Canoe Expedition See May 17



From the Governor



Christine Todd Whitman,
Governor

What a difference a state makes — and what wonderful scenes the entrants in *New Jersey Outdoors'* 1996 photo contest captured on film to spotlight the wonders of our beautiful state and ways to enjoy them.

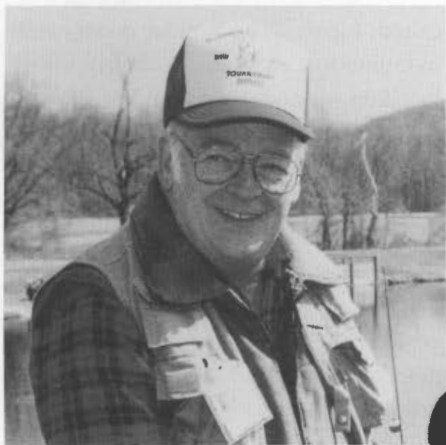
Selecting winners from the hundreds of entries received was a difficult task, because the photographs were taken as much with the heart as with the camera. New Jerseyans submitted images of children proudly exhibiting their first catch and of tranquil preserves of nature. They captured magnificent landmarks and stunning landscapes, newborn fauna and blossoming flora, antique structures, animal antics and history repeating itself through reenactments.

But regardless of the object of the camera's eye, the message that came through loud and clear was: New Jersey offers an almost infinite variety of places to go, things to do and wonders to appreciate.

New Jersey's natural and historic resources, from the mountains in the north to the Pine Barrens in the south, from the sandy shores of the Atlantic to the bountiful waters of the Delaware River, are great treasures. And it's important to preserve and protect these treasures so that the images we see in these photographs are not merely memories, but a historical and cultural legacy that future generations also can appreciate.

I congratulate the winners of the 1996 photo contest and thank all entrants for sharing their love of the state with us.

From the Commissioner



Robert C. Shinn, Jr.,
Commissioner

As Arbor Day — April 25 — approaches, New Jersey residents have much to celebrate. From stands of hemlocks in the Highlands to loblolly pines near the Delaware Bayshore, our forests are as diverse as any state can offer.

Aesthetically pleasing, trees not only produce food, but also can counteract many of the adverse side effects of healthy economic growth. They protect soil from erosion, preventing runoff that pollutes our waterways. They provide habitat for wildlife and fight air pollution by filtering contaminants from the air and producing vital oxygen.

Properly placed screens of trees can serve as windbreaks and decrease traffic noise along busy streets and highways. Shade trees can reduce the need for air conditioning, thereby saving energy and reducing the need for additional power plants.

Under Governor Whitman, the state Green Acres Program has helped to acquire more than 77,500 acres of public open space. That's more than 20 percent of all the land acquired under the program since its start in 1961. By preserving these lands, we are protecting much of it from deforestation. Also, idle fields that become public open space can be allowed to return to their original woodland status, either by natural processes or through reforestation.

In the future, we will need the benefits of trees more than ever before, but government alone can't tackle this enormous task. Every New Jerseyan can help by planting trees, either at home or as part of an organized tree-planting event. I encourage you to celebrate Arbor Day 1997 by planting a tree or by helping to raise awareness of one of New Jersey's most important natural resources — trees.

The Honeybee

by Mimi Dunne

No insect works harder for us than the honeybee. More than 90 major agricultural crops are pollinated by honeybees, and Americans consume more than 360 million pounds of honey per year.

Honeybees are not native; they are of European descent, having arrived with settlers at the end of the 17th century.

Insects pollinate as much as one-third of our food supply. In New Jersey, some crops are so dependent on honeybees that farmers pay beekeepers to move hives into their fields when the plants are in bloom. These include blueberries, cranberries, apples and strawberries. Cucumbers, watermelons, squash, pumpkins, peppers, tomatoes and eggplants also rely on bees to properly set fruit.

Clover, alfalfa and other forage plants need bees to set seed. Without proper pollination, the seeds don't release hormones that cause fruit to ripen and get sweet.

The honeybee has far-reaching effects on the ecosystem. Many berry-producing plants that feed wildlife need insect pollination. The dispersion of seed and growth of vegetation also help to hold soil in place.

Like other livestock, honeybees are susceptible to infections and diseases. Two especially serious threats come from mites, *Acarapis woodi* and *Varroa jacobsoni*. The reddish mites are the size of a pinhead and infect the tracheal tubes that bees breathe through. The mites are found nationwide and threaten whole colonies when infected. These mites have effectively extirpated wild honeybees, though beekeepers can treat their colonies with pesticides that kill the mites.

Winter can be a stressful time for the hive. During cold winters, bees may die of starvation if they cannot get to their food reserves. Pesticide use may be an important threat locally and is probably a factor in the loss of diversity of wild pollinators nationwide.

Weather and disease add up to produce shortages of bees that translate to poor pollination and higher prices for

fruits and vegetables.

Bears are another problem bees may face. Bear molestation is greatest during spring and fall, but decreases markedly when beekeepers install electric fencing around their hives.

Honeybees are ideal pollinators for crops because they intentionally gather pollen in baskets on their legs. As they travel from flower to flower, collecting nectar and pollen, they work the flower parts with their entire body, effectively transferring pollen from one flower to the next.

Some of the earliest flowers to bloom in New Jersey, such as skunk cabbage, are good pollen and nectar sources for bees. Other plants from which bees obtain nectar and pollen include oaks, birches, clover, bergamot and milkweed.

The New Jersey honey flow begins in earnest in late April when apples and dandelions flower. Trees like black locust, basswood and tulip poplar are important in May and June. Mustards are an important nectar and pollen source all summer long, as are other wildflowers. The honey flow slows down during the heat of the summer. A second, less intense flow commences with the cool weather of late August and the blooming of goldenrod, aster and other wildflowers.

Bees make honey from the nectar in flowers. They ingest the nectar in a honey stomach. It is mixed with enzymes, carried back to the hive and stored in the comb. By fanning the combs rapidly in hot weather, the bees evaporate most of the water from this uncured honey. When cured and capped by a thin layer of wax, honey contains no more than 18 percent water.

Beeswax is another important product of honeybees. Glands on the underside of the worker bee's abdomen metabolize the digested honey to produce wax. Beeswax holds the hive together, and is worth more than \$2 per pound to a beekeeper (twice the value of honey).

The society of honeybees is a model of

cooperation dominated by females. The number of bees in a hive ranges from 30,000 in winter to 60,000 in the peak of the spring honey flow. The most important bee is the queen. As the sole source of life in the hive, she can produce 1,500 to 1,800 eggs per day. Most of the eggs hatch into female worker bees. They specialize in comb building, gathering nectar and pollen, maintaining the temperature of the hive, guarding the hive, and taking care of the brood. Only a few hundred male (drone) eggs are laid; the drones' sole job is to mate with a queen. The queen may live a few years, while worker bees and drones live only a few weeks.

People often confuse honeybees (*Apis mellifera*) with other members of the Hymenoptera family, which includes stinging wasps, hornets and yellow jackets. Honeybees are apt to be less aggressive than wasps. And they make the ultimate sacrifice to protect the colony — when they sting, they die.

Modern hives include hive boxes for the swarm's brood production, with smaller honey storage boxes on top, called "supers." The bees lay down comb in frames spaced to enable the colony to be taken apart without destroying brood or worker bees in the process.

New Jersey beekeepers are rare; about 700 people keep bees, and probably fewer than 10 have commercial operations. Although the Garden State is only 40th overall in production of honey, there is an active beekeeper's association, and a mandatory registration and inspection process is administered by the state Department of Agriculture.

The honeybee was designated as the state insect by an act of the Legislature signed into law by then governor Brendan T. Byrne in 1974.

Mimi Dunne, who lives in White Township, is a senior biologist (education) with the Division of Fish, Game and Wildlife's Information and Education Unit.



1996 NEW JERSEY JUNIOR DUCK STAMP WINNERS



Bernard Quisumbing • Grades 10-12



Michael Braun • Grades 10-12



Seth Hiller • Grades 10-12



Elizabeth Green • Grades 7-9



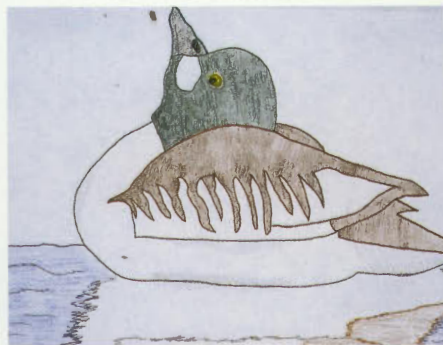
Erin Ritson • Grades 7-9



Filomena Brogna • Grades 7-9



Kristen Mitchell • Grades 4-6



Brendan MacCaig • Grades 4-6



Kei Tawara • Grades 4-6



Cole Barry • Grades K-3



Chrissy Dickinson • Grades K-3



Andy Zipparo • Grades K-3