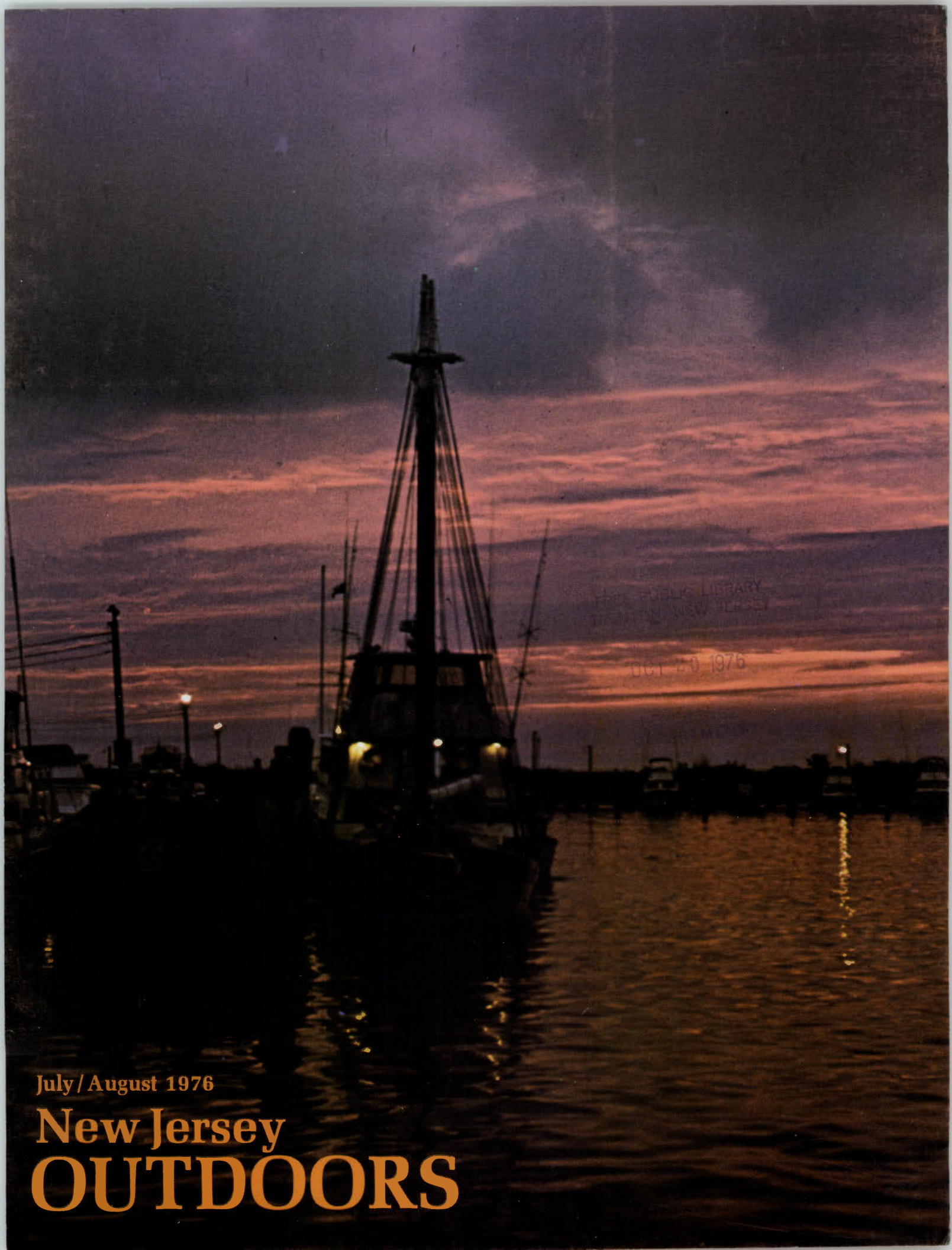



July/August 1976

# New Jersey OUTDOORS

*NEW JERSEY OUTDOORS is the bi-monthly magazine of the Department of Environmental Protection of New Jersey. This publication is dedicated to the wise management and conservation of our natural resources and to foster a greater appreciation of the outdoors.*

*(Note: Costs of publishing the magazine not covered by subscriptions are met primarily from the Fish and Game License Fund, administered in the Department of Environmental Protection by the Division of Fish, Game, and Shellfisheries, and from general revenues available to the Department of Environmental Protection.)*

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**July/August 1976**
VOL. 3 NO. 4

# New Jersey OUTDOORS



## *FEATURES*

# from the editor

## Advertising in New Jersey Outdoors?

We asked our readers this question via a postage paid card enclosed in the March/April *New Jersey Outdoors*. And we received 1,351 card responses of which 975 checked off the "Go Ahead" and advertise block. Readers against accepting advertising totaled 229, and the "Undecided" totaled 147. Based on the average circulation during the period the 1,351 cards were received, we estimate that approximately nine percent of our readers responded.

This is a very high survey response which indicates that *New Jersey Outdoors* has an actively interested and concerned readership.

To obtain a student response from students familiar with *New Jersey Outdoors,* I asked Dr. Leonard Wolgast, Assistant Professor of Wildlife Biology at Rutgers and Dr. James Fitzsimmons, Associate Professor of Geography and Environmental Studies at William Paterson College to survey their respective classes using the same Reader Survey form.

Dr. Wolgast's students were 58 for advertising and 12 against; Dr. Fitzsimmon's students were 205 for advertising and 82 against. As you can see, our total reader response favored advertising by over 4 to 1.

The 64-dollar question now is—When do we start taking advertisements? We have had meetings and discussions at several levels on this matter but no final decision has been made as yet. For instance, many of the "Go Ahead" and advertise responses also added footnotes which said, in effect, advertise but don't change the magazine in any way. That's impossible—although our advertising standards would be very high, advertising will change the appearance of the publication in some way. For example, the inside and outside back covers of *New Jersey Outdoors* are prime advertising space and would bring the highest revenue. But I've always used these covers to illustrate New Jersey scenes and wildlife.

That's a decision I'll have to face, but I'll keep you informed.

### in this issue

Randall Reeves, author of "A Whale in Newark Bay", *New Jersey Outdoors*, September/October 1975, is back with "New Jersey Dolphins and Porpoises." Randy is a wildlife research consultant for New Jersey Audubon Society.

Fisheries biologist Pat Festa and wildlife biologist Steve Toth, fish and wildlife consultants on the Liberty Park project, give us some insights on "Marshes, Mudflats, and Industry."

Sometimes the requirements of wildlife and the interests of people collide, and Steve Toth tells us how these problems are resolved—if they are resolvable.

A bicycle trip down the historic "Old Mine Road" by William Hullfish. An adventurous and entertaining trip for all ages and both sexes in Spring, Summer or Fall.

Bill Meyer tells us about Bill Weiler and others who spend a great deal of time "Clearing the Toms River" for canoeists.

Ted Pettit, Conservation Director, Boy Scouts of America, writes about "Backyard Wildlife Watching." Read the article and find out how your backyard can become a wildlife haven.

"Developing and Maintaining Habitat for Wildlife" is an important program in the Wildlife Management Bureau of DEP's Division of Fish, Game, and Shellfisheries. Author Rodgers Todd tells us why.

A delightful and enlightening salt water fishing story by Henry Schaefer. And after reading the tale, you'll want to go out and buy an "Idiot Stock." "Fishin'—Ala Carp" by fisheries biologist Don Jacangelo and then "Try Eating Carp" by William Paterson College professor Jim Fitzsimmons. How to catch carp and how to cook them.

Youth Conservation Corp in New Jersey—"Teenage Hardhats" by Duane Pierson. Summer resource conservation work programs for New Jersey youth 15 to 18.

Steve Toth

Courtesy J. G. Mead, Smithsonian

*Common Dolphin off Ocean City, Maryland in April 1974*

# New Jersey Dolphins and Porpoises

**BY RANDALL R. REEVES**
Wildlife Research Staff, N.J. Audubon Society

On a balmy June evening last year I walked into the Barnegat, N.J., sheriff's office to inquire about the location of a dead dolphin's carcass. The officer on duty grinned and said, "You know, the fellow who spotted the animal didn't know whether to grab a rifle and shoot it or to dive in and try to revive it. He had just seen the movie 'Jaws,' and sharks were on his mind."

The bad press lately given to sharks has inadvertently damaged the reputation of certain other sea creatures, most notably dolphins, porpoises, and small whales (cetaceans) that in some ways bear a superficial resemblance to those fearsome fish. This article is written in the name of "equal time" in the hope that New Jerseyans will appreciate the enormous differences between sharks and cetaceans.

First, cetaceans are not fish. They breathe air like we do; bear their young alive; nurse from their mothers when young; and on most of them, if you look closely enough, you'll even find some telltale mammalian hair, or at least hair follicles, around the lips. And just to make their relationship with land mammals a bit more convincing, a tiny pair of pelvic bones can usually be found embedded in the ventral muscle layer. These structures are the last remaining evidence of hind limbs; the remote ancestors of dolphins and porpoises walked about on four legs.

Sharks have *two* dorsal fins—one tall and one short. All dolphins and porpoises seen in the New York Bight have a *single* dorsal fin. The dorsal fins of a shark cruising along near the surface may be visible, but their movement will be ominously one-dimensional. There is no need for a shark to bob its head out of the water, for like other fishes it gets oxygen straight from the water passing over its gills. Dolphins and porpoises, on the other hand, must regularly expose their blowholes, situated on the top of their heads, in order to exhale and inhale life-giving air. They do this by arching their backs, or "porpoising," a movement that almost simultaneously reveals both the blowhole and the dorsal fin. Finally, sharks have vertical tails which they flex from side-to-side for propulsion. Cetaceans have horizontal tails, which propel them by an up-and-down motion.

Dolphins and porpoises of several different species were once common along the New Jersey shore. Occasionally they could even be seen cavorting in protected embayments and river estuaries. No one has ever systematically censused the cetacean fauna off our

coast, so we have no way of knowing precisely what effect human activity—whaling, pleasure boating, shipping, fishing, garbage dumping, and so forth—has had on marine mammal populations over the years. But recent sighting and stranding activity assures us that at least some species are still present in New Jersey coastal waters.

The Bottlenose Dolphin *(Tursiops truncatus)*, for instance, can probably still be described as seasonally common in this area, particularly near the southern tip of the state. The popular TV star, Flipper, was a Bottlenose Dolphin, and most aquarium shows feature members of this large dolphin species.

Two defunct net fisheries for *Tursiops* in the New York Bight give us some idea of its former presence here. A modest fishery out of Cape May captured more than 200 dolphins from 1884 through 1885. About a century earlier, a more substantial "porpoise" fishery conducted off the eastern end of Long Island was presumably based on the Bottlenose. According to one cetologist, "If this fishery were in fact based on *Tursiops truncatus*, it may have contributed significantly to the lack of that species along those shores today."

Although the Bottlenose Dolphin is occasionally observed north of here, New Jersey is generally regarded as the northern limit of its normal distribution in the northwest Atlantic. It probably follows a north-south migratory pattern, occurring in our area primarily between March and October. However, overwintering by this dolphin in the Navesink River, west of Sandy Hook, has been reported, and it is probably present in small numbers in the New York Bight year-round.

In late May 1974 a 9-foot, 200-pound female Bottlenose followed a fishing boat into the badly polluted waters of Matawan Creek near Keyport. It chose to stay in the shallow, heavily trafficked estuary, attracting hordes of spectators daily throughout the month of June. On June 30 it was found dead; newspaper reports claimed that it had died of "multiple gunshot wounds and multiple stab wounds." But an autopsy performed by James Mead, Curator of Marine Mammals at the Smithsonian Institution, revealed no evidence of "physical trauma which might have led to the animals death."

Many people wonder about the difference between dolphins and porpoises. Cetologists have not generally been helpful in clarifying the distinction, since many of them use the two terms interchangeably. Members of the family Delphinidae can be considered "true dolphins", even though several "whales" are usually placed in the family and even though not all members have the characteristic dolphin beak. "True porpoises" comprise a much smaller taxonomic unit, Phocoenidae. The six recognized species of "true porpoises" are all small (8 feet or less), with spade-shaped rather than conical teeth and with blunt, unbeaked snouts. Use of the word "porpoise" when referring to any small cetacean is often justified on the grounds that it eliminates confusion with the colorful dolphin-fish *(Coryphaena* sp.), which occasionally ends up on gourmet tables as *mahi-mahi, dorado*. Unfortunately, though, the practice of calling dolphins "porpoises" sometimes *causes* more confusion than it eliminates.

The case of the Harbor Porpoise *(Phocoena phocoena)* is an example. The Harbor Porpoise, the only "true porpoise" found in the northwest Atlantic, frequents sheltered bays on the New England coast, and for a long time New Jersey was considered the southern limit of its range. It is now known to stray occasionally as far south as Virginia and maybe the Carolinas.

Early observers, like Samuel Rhoads, reported that the "herring hog," as jealous fishermen are wont to call it, was at one time plentiful in New Jersey. In his book *Mammals of Pennsylvania and New Jersey* (1904), Rhoads had the following to say about *Phocoena:*

> ***Abundant on the seaboard, and in the bays and inlets of N.J., coming within the limits of Penna. in Delaware Bay and River as far up as Trenton Falls. Sometimes ascends the Raritan and Passaic Rivers and is a frequent visitor in New York Bay and the Hudson River beyond the Northern border of N.J.***

G. S. Miller, Jr., of the New York State Museum, declared in 1899 that *Phocoena* was the most common cetacean in New York tidal waters.

Accepting these old accounts from the turn of the century, Paul Connor of the New York State Museum concludes that "for a long time now the porpoise has been gradually declining in numbers in our area." However, he also admits that some of the verbal reports of "porpoise" sightings that he has received "may refer to dolphins (also called 'porpoises') rather than *Phocoena*." It may well be that earlier authors, like Rhoads and Miller, were not so skeptical and that they tended to overestimate Harbor Porpoise numbers on the basis of unconfirmed and unreliable "porpoise" sightings. Even experienced observers have great difficulty distinguishing cetacean species at sea, and cetologists are reluctant to accept records that cannot

***Female harbor porpoise (bottom) with larger Atlantic bottlenose dolphin at Mystic Marinelife Aquarium, Mystic, Connecticut. Harbor porpoise was found stranded and taken to the Aquarium.***

Mystic Marinelife Aquarium

Courtesy of J. G. Mead, Smithsonian

***Cape May Fishery about 1883—Copied from original belonging to Witmer Stone, 1907***

be verified with photographs or skeletal material. It is at least conceivable that the Harbor Porpoise was never very numerous in the New York Bight and Delaware Bay, and that the apparent decrease in its numbers is due more to improved identification procedures than to actual depletion. However, it is a shy and temperamental inshore animal, so industrial and recreational activity along our coast may have had a sizable negative impact on the Harbor Porpoise population.

Unlike most dolphins and some whales, the Harbor Porpoise does not normally leap out of the water; it simply "rolls" as it breathes, seldom showing more than a triangular dorsal fin and a little bit of back. While this porpoise sometimes swims in herds of as many as 100 individuals, groups of two or three are more common, particularly in our area. Partial remains of a Harbor Porpoise were collected near Bayonne in Hudson County by the American Museum of Natural History in June 1960; a four-foot specimen stranded alive near Beach Haven in May 1974. During the last couple of years there have been several sightings and strandings of *Phocoena* along the south shore of Long Island.

Several other dolphin species, in addition to the familiar Bottlenose, visit the New York Bight from time to time. The Common Dolphin *(Delphinus delphis)* is unquestionably the most colorful cetacean found in our area. It has a yellow or grayish-green hourglass pattern, sometimes referred to as a "saddle," on its flanks. Its prominent beak is set off by a black stripe that connects the black circles around each eye. While primarily regarded as a deepwater, offshore species, this dolphin sometimes finds its way into enclosed bays and rivers. In January 1915 one was found in the Delaware River near Riverton, N.J.; and in October 1936 two of them stranded on the banks of the Hudson River, 73 and 145 miles upstream from New York City!

Recent records of the Common Dolphin's occurrence include a specimen stranded two miles south of Stone Harbor, N.J., on June 28, 1958; a 7½-foot male on the eastern shore of Staten Island, December 6, 1960; a young male from a Long Island beach July 23, 1974; and two females in 1975, one found under New York's Whitestone Bridge on February 27, the other on a Suffolk County beach on May 27. A *Delphinus* carcass, mummified and completely skeletonized on one side, was found on Long Beach Island in December 1975; from its condition, the animal apparently had stranded during warm weather. An interesting account exists of two Common Dolphins feeding on fish escaping from a trawl net above the Hudson Canyon in February 1959. This dolphin may be present in the New York Bight throughout the year.

The Striped Dolphin *(Stenella coeruleoalba)* is very hard to distinguish from the Common Dolphin, particularly at sea. It is similar in size, shape, and coloration, but it has no "saddle." Two black stripes mark each side of the animal, one running from the eye to the anus and the other from the eye to the origin of the flipper. The first confirmed record of this animal's presence off New Jersey was a juvenile male found on the beach at Sandy Hook in June 1975. A 6-foot female came ashore alive just north of Beach Haven on November 23, 1975. The Striped Dolphin's squeals and clicks have been recorded by Woods Hole scientists in August 140 miles off New York. Strandings along the coast of southern Long Island have been noted in the month of May during 1929, 1973, and 1975.

The Spotted Dolphin *(Stenella plagiodon)* may be a rare visitor to our area from the south. It has not been known to strand in New Jersey or New York, but its sounds have been recorded in August 60 miles off Cape May.

Risso's Dolphin *(Grampus griseus)* is a seldom-seen and little-known cetacean. Its body is often covered with white scratches, apparently made by the teeth of its companions and by the beaks of cephalopods upon which it feeds. Only a handful of records exist of its occurrence in local waters. A young, 5½-foot Risso's Dolphin is said to have been caught in the surf at Beach Haven in November 1938 by a fisherman using squid for bait. A pod of more than 60 *Grampus* was observed in August 1952, 75 miles southeast of Southampton, L.I.; and sounds of this dolphin were recorded in July about 90 miles east of Delaware.

Richard Rowlett of Laurel, Md. reports the sighting of three to five *Grampus* in the Hudson Canyon, about 75 miles east of Barnegat, on May 29, 1976. He adds that boat captains off Maryland and Virginia claim to see these "white dolphins" regularly in the summer.

Back in 1904 Rhoads correctly anticipated the discovery of the White-sided Dolphin *(Lagenorhynchus acutus)* in the New York Bight, noting that "it is, without reasonable doubt, at least a straggler to the waters of northern N.J." But it was not until late December 1973 that definite evidence turned up for its presence in this area. A dolphin was shot off Fire Island; its head and tail were removed, and the carcass was used for dog food. Somehow the head and tail found their way to Bellport, L.I., High School, where they were identified as parts of a White-sided Dolphin. A few months later, on May 1, 1974, another *Lagenorhynchus*, a 7½ foot 300-pound male, was found in the surf near Westhampton Beach, L.I.

Interest in marine animals seems to be fashionable these days, and movies like "Jaws" both reflect and nourish that interest. Our knowledge about cetaceans in the New York Bight is surprisingly scanty, and cetologists welcome the cooperation of fishermen and boaters in trying to identify species that are seen in this area. Photographs, even blurred ones, are often helpful in establishing a marine mammal's identity. Dead animals that have washed ashore are of course extremely useful. But wielding a rifle against them is self-defeating. Cetaceans are completely harmless; in fact, stories abound concerning their friendliness toward people.

So next time you see a fin cutting through the water's surface, grab a camera instead of a gun. And if it proves to be a dolphin or porpoise, enjoy what has become a rare privilege: watching one of these exotic mammals in its wild, undisturbed state. Herman Melville, author of *Moby Dick* and a whaler himself, harbored a noteworthy reverence for dolphins and porpoises. As he put it, "If you yourself can withstand three cheers at beholding these vivacious fish (sic), then heaven help ye; the spirit of godly gamesomeness is not in ye." With that, I rest my case. □

*Looking from Liberty Park toward Statue of Liberty.*

HARRY GROSCH

# Marshes, Mudflats and Industry

## *Conservation Activities in the Estuaries of Metropolitan New Jersey*

**PATRICK FESTA,**
Senior Fisheries Biologist
**S. J. TOTH,**
Assistant Widlife Biologist

The area from Perth Amboy to the George Washington Bridge comprises one of the most urbanized and industrialized regions of the world. Within the area are included the estuaries of the lower Passaic River, the Hackensack River, Newark Bay, the Arthur Kill, the Kill Van Kull, the lower Hudson River and Upper New York Bay.

This urban industrial complex is based on the harbor and transport facilities provided by the estuarine waters. It is fed with raw materials shipped in through lower New York Bay and digested in the refineries, chemical plants, mills and processing lines of metropolitan New York and New Jersey. As the needs of this complex expand, its capabilities are increased with dredging, bulkheading, tide gates and land fill. Wastes produced by the region are either added to the waters or stored in massive landfills.

The use of the estuaries by industry and by fish and wildlife are often in conflict. Biologists stress the importance of these areas for fish and shellfish production and for the nesting and feeding of waterfowl. The questions that arise are, can these northeast estuaries support both an urban-industrial complex and a productive aquatic ecosystem and can this region harbor both ships and fish and produce ducks and clams as well as gasoline and sewage?

The Department of Environmental Protection's Division of Fish, Game and Shellfisheries has adopted an optimistic approach to this question in recent years. This approach is based on an awareness of the regenerative capacities of estuarine systems. With modern capabilities of pollution control technology and with the protection of habitat areas which have thus far escaped the bulldozer and dredge, these estuaries can support both an urban industrial complex and a valuable fish and waterfowl resource. To realize such a balance, two goals must be achieved: (1) Water quality must be improved to a point where all or most of the organisms involved in the estuarine food web can survive and increase in number; and (2) habitat areas, especially shallow bars, "natural shorelines," intertidal marshes and mudflats, which are important in the life cycles of estuarine organisms, must be protected.

Many state and federal agencies have been and are involved in the rejuvenation of these estuaries. The Hackensack Meadowlands Development Commission is responsible for zoning and regulatory efforts in the Meadowlands District. The New Jersey Department of Environmental Protection including the Division of Water Resources and Bureau of Solid Waste Management are at-


G. BADE

*Steve Toth interviews crabber at future site of Liberty Park.*

*Juvenile striped bass with killifish, silversides, and anchovies taken at Caven Cove, Upper New York Bay.*

tempting to improve water quality and land use practices. The Interstate Sanitation Commission, a joint effort sponsored by New Jersey, New York and Connecticut, monitors and regulates water quality.

On the Federal level, the Environmental Protection Agency, the National Marine Fisheries Service and the U.S. Fish and Wildlife Service are all involved in establishing the balance needed for valuable aquatic populations to exist in these areas.

This article is intended to describe the activities of DEP's Division of Fish, Game and Shellfisheries in tide water areas. Many of these efforts are not as well known to the general public as our fish stocking and deer management programs. Nevertheless, these activities are of great importance and their impact may affect an even greater segment of our population.

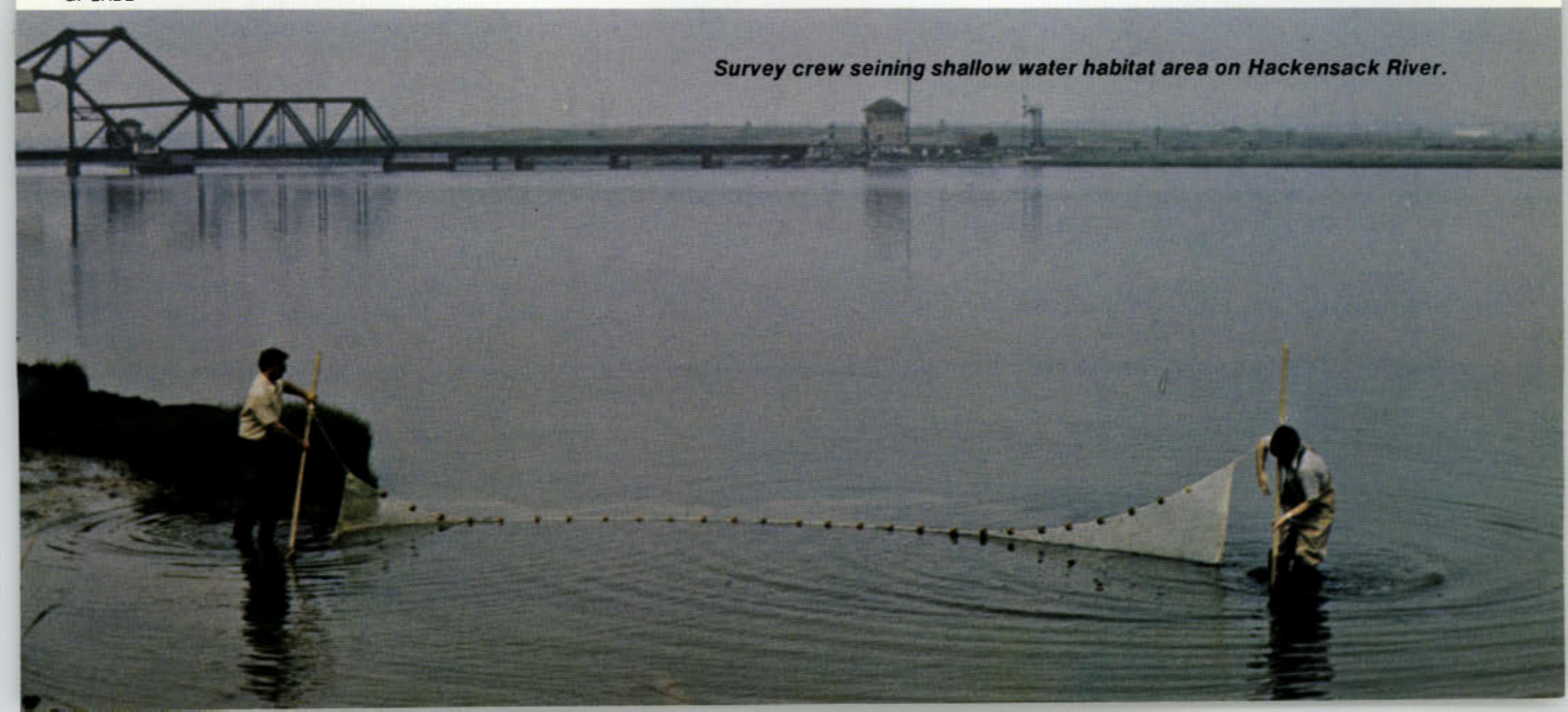
**Existing Fish and Wildlife Resources of the area**

Many people of our state believe that waters of urban areas are polluted and lifeless. That this is not the situation in all cases can be shown by a few examples.

Blue claw crabs returned in numbers to these waters in 1970 and by 1974 and in 1975 some of the best crabbing available in the State was found in the Hackensack River, Newark Bay and some portions of the Hudson River.

Fisheries studies by Ichthyological Associates Inc. in 1973 identified 24 species of fish in the lower Passaic River, 26 in the lower Hackensack River, and 24 in the Arthur Kill as well as some 40 different benthic invertebrate forms. Preliminary Division surveys in Caven Point Pt. Cove of Upper New York Bay have collected 15 species of fish and some 27 invertebrate forms. Continuing large scale studies by Texas Instruments Incorporated in this area have significantly increased this species list. Although few species are presently found in large enough numbers to provide a recreational fishery, their presence indicates that given suitable water quality, a number of species will utilize

G. BADE



*Survey crew seining shallow water habitat area on Hackensack River.*

these areas and many should become available to the angler. For many fish species, these waters provide a nursery area where the young fish spend their first months or years prior to moving into the ocean. Among those species utilizing these urban waters as nursery grounds are: striped bass, bluefish, weakfish, winter flounder, kingfish and tomcod. Anadromous fish species including shad, alewife, blueback herring and striped bass still pass through these waters on their spawning runs to areas above the salt water line. Two facts concerning the aquatic biota of the Northeast region are apparent. One is that a varied and locally dense population of fish and invertebrates presently exist in these waters; and two, with the possible exception of blue crabs, killifish and grass shrimp, these populations should increase significantly as water quality improves. But the degree of increase is limited by the amount of habitat which remains. The fisheries potential has been reduced by past filling, dredging and bulkheading activities to a point where the resources can never recover to their pre-colonial levels; however, enough habitat remains at present to provide for a recreational and commercially meaningful resource.

Wildlife surveys and wildlife utilization studies have been conducted in the area for several years. It was found that the area contains viable populations of both mammals and waterfowl which are under-utilized. In addition, the area is important as a nesting, feeding and resting area for both game and non-game bird species.

Waterfowl hunting in the area appears to be as good, as far as returns are concerned, as the southern part of New Jersey.

Because of the Division's efforts, 750 acres of the Hackensack Meadows were assigned to the Division of Fish, Game and Shellfisheries by the Hackensack Meadowlands Commission and have been preserved in the Saw Mill Creek Fish and Wildlife Management Area established in 1974. This area is the only one remaining where sportsmen can hunt in the metropolitan region. The area is also heavily utilized by bird watchers. Saw Mill Creek will be maintained in its natural state.

DEP's Division of Fish, Game and Shellfisheries has also been instrumental in having a wildlife area established in the new Liberty State Park on the Jersey City shoreline. Approximately 50 acres of marshland and mud flats will be maintained and managed for the recreational and educational benefit of visitors to the area.

One of the goals of the Division is to ascertain the importance of areas in this region for wintering waterfowl. Observations in the Cavens Cove area indicate that a large portion of New Jersey's wintering population of Canvasback ducks utilize this location. Food habit studies have shown that the Canvasback feeds upon small clams in the area. This information will be used to locate and preserve additional sites that contain this food source.

**Habitat Protection Activities**

The joint efforts of the Fisheries and Wildlife Management Bureaus of the Division have been concentrated on the protection of fish and wildlife habitat. This has been possible through DEP's permit authority for work on riparian lands (areas waterward of the mean high water line). Division biologists have had an opportunity to review and comment on over 200 applications for construction activities in these urban estuaries during the last three years. In addition, we have reviewed some 15 sanitary landfill applications, a score of Environmental Impact Statements and a number of U.S. Army Corps of Engineers projects as well as taking an active role in providing the Department of Environmental Protection with fish and wildlife information relative to major projects such as development of Liberty State Park and the New Jersey Sports and Exposition Center. In each case, comments are addressed to the effect that a given project will have on fish and wildlife resources. Where opportunities exist for achieving a project purpose while avoiding unacceptable habitat loss, recommendations for revised plans are made to the Departmental Agency having permit authority. When a project is felt to necessitate the loss of substantial and valuable fish or wildlife habitat, a recommendation of disapproval is made to the authority. The permit agency, or in the case of riparian permits, the State Natural Resources Council is then responsible for determining whether or not the economic and/or social benefits of a project outweigh the losses that are expected to result from the environmental impacts.

Our efforts for habitat protection in the urban area are for the most part defensive actions and require the assistance of the general public. What has been lost is, for all practical purposes, gone. When compromises must be made it is usually a matter of giving up some habitat rather than losing it all. The work of the Department and the other Agencies involved has only been able to slow the pace of habitat loss, not stop it. Thus, each passing year still sees a reduction in the potential wildlife value of the region. In most cases, this habitat loss is avoidable through alternative design or siting possibilities. These alternatives, however, almost always cost more and the costs will ultimately be borne by the consumer. Water quality controls have, to some degree, been instituted on a national level; habitat protection, however, is primarily in the hands of the public and state and municipal governments.

In many cases, the protection of estuarine areas necessitates a reduction in the potential tax base of a community or the loss of potential job opportunities. These realities have made efforts toward maintaining the wildlife potential of the urban area difficult and complex. Our argument is that the benefits to be derived from such protection will in the long run far outweigh any immediate economic gains. The benefits include the establishment of an inexpensive, readily available, recreational opportunity for the dense urban populations. The possibility of maintaining commercially harvestable stocks of certain fish and shellfish species within the region is very real.

In addition, since these estuaries function as fish nursery grounds and waterfowl wintering and nesting areas, protection of critical habitat areas benefits sportsmen along a wide stretch of the eastern seaboard, as well as the general public.

The most potent poll in the effort to establish a balanced use of these northern estuaries is public opinion. The citizens of the area and the state in general must be not only willing to make the short term sacrifices involved but must be certain that their town, county and state representatives are aware of this willingness. DEP's Division of Fish, Game & Shellfisheries is obligated to protect the fish and wildlife resources of the State; thus, our efforts toward improved water quality and habitat protection will continue. But the success of these efforts depends largely on the decision of the citizens of New Jersey. □


# WILDLIFE CONTROL TODAY

**BY STEVE TOTH**

Since man pioneered the United States and cleared its forests he has been plagued by damage to crops by many forms of wildlife. One of the first control methods instituted in colonial New Jersey involved the use of the "bounty system" to control depredations by animals and birds. This type of control procedure, although biologically unsound, remained in effect until fairly recently in modified forms.

At its inception in the early 1930's, the New Jersey Fish and Game Commission assumed the responsibility for wildlife control. Until recently, such control was implemented by state trappers, state hunters, and conservation officers. During the early 1970's a special unit was formed within the Bureau of Wildlife Management to cope with problems associated with damage to crops, real estate, public health, and animal welfare.

Approximately 500 complaints of wildlife damage were investigated from January 1975 to March 1976.

**Present Policies of Wildlife Control**

The most effective way to control damage to crops or real estate is through harvesting surplus animals in the area by the use of regulated hunting and trapping seasons. However, because of restrictive state and

*Continued on page 29*

# THE OLD MINE ROAD

## A Bicentennial Bicycle Trip Down the Oldest Wheeled-Vehicle Road in the United States

By William R. Hullfish, Jr.
Photos by Author



**Starting the New Jersey section of The Old Mine Road**

*As I thumbed through a brochure describing Bicentennial trips within the State of New Jersey I was amazed to see no mention of the Old Mine Road. Surprisingly, most New Jerseyans do not know that the oldest road in the nation runs through their state. Not only is this road of great historical importance, its route is one of the most beautiful anywhere in New Jersey.*

Old Mine Road was probably built about 1659 by Dutch settlers. It was used to bring ore from mines near the Delaware Water Gap to Esopus on the Hudson River.

Early last August I started from Esopus (now Kingston, New York) and journeyed by bicycle to the Pahaquarry Mines. Cycling the 100-mile route with me were my sons Steve and Jeff, ages 12 and 9, and a nephew, David Gregg, age 11. We hoped to arrive at the Delaware Water Gap in three days, planning to take our time and visit all the old towns, cemeteries, and historical sites along the road. We also looked forward to a hike up into the mountains near the Delaware in search of the old mines.

Our starting point, Kingston, has a long history itself, having been founded in 1658. The road that led us out of Kingston is now called Route 209 but to us it remained the Old Mine Road.


*Resting at the general store, Walpack Center, N.J.*

*Cooling off in Flat Brook*

*Hiking up to the Pahaquarry Mines*

*Walking up a long hill near Flatbrookville*

*"It is quite out of the question for the ordinary pen to adequately depict or praise the beauties of such a region as it traversed by our Old Mine Road. A region of mountains and valleys, brooks and waterfalls, country that yields a rich return to the farmer or that is still wild with heaped rock masses, all embroidered with exquisite patterns of mountain and stream and meadowland. All this aside from the richness of its history, its legend and romance."*

Bound for the mine holes of Pahaquarry, the four of us pedaled out of Kingston to explore the region that Hine described.

Our first stop, about three miles down the road, was in the town of Hurley. The Hurley Hotel, erected in 1716, is no longer there—it burned only a year after Hine's trek. Some of the historic houses he saw, such as the Senate House, are still with us. George Washington passed through Hurley in 1782 on his march to Kingston.

In Marbletown and Stone Ridge we read plaques commemorating the movement of colonial troops up and down the Old Mine Road during the Revolution and the battle of Kingston. The Tack House in Stone Ridge was the meeting place after the British had burned Kingston. One of the road's original mile markers still stands near this historic building.

We stopped near Accord to have a cool drink in a tavern built in 1680 and used as a fort during the Revolutionary War. Here we leafed through Hine's book and read about an old cemetery in Accord which "offered a remarkable curiosity in the tombstone more than half buried in a trunk of a monarch of the forest." I asked at the local general store about this cemetery and was directed to it. We searched in vain for the tree and the tombstone, but we did find, buried in weeds, stones dating from 1711.

After pedaling through Kerhonkson, Wawarsing, Napanock, and Ellenville, we camped for the night in a valley near Spring Glen. We had traveled only 30 miles but in that stretch we read every historical marker; stopped at old homes, taverns, and forts; visited a museum; and became totally immersed in

*Continued on page 28*

# Clearing the Toms River

**BY BILL MEYER**

photos by author

***Bill Weiler clipping a tangle of poison ivy from an overhanging tree.***

To look at Bill Weiler, you'd think him to be about ten years younger than he really is. But perhaps it's hard work that keeps him young—for more than any other person, this resident of Bound Brook is singularly responsible for keeping the upper part of the Toms River clear and open for canoeists.

We had arranged to meet Bill at Bowman's Road, Jackson Township on a Sunday morning, last summer. It was to be Weiler's fourth clearing trip of the year (the first had been during January) and accompanying him this time was Dave Gard, Bridgewater Township, another member of the Murray Hill Canoe Club, of which Weiler is the Toms River clearing chairman.

As part of its membership in the New York-New Jersey River Conference, the Murray Hill club, an employee group from Bell Laboratories, has been assigned the responsibility of keeping the Toms River cleared of the debris caused by nature's storms each winter as well as by the thoughtless acts of persons little interested in the value of this water resource.

"We started this project in 1966," said Weiler, "and during the sixties our turnouts for the clearing trips were good." But lately, interest has dwindled, and most of the work in recent years has been done by Weiler and Fred Keimel, Berkeley Heights, another Murray Hill club member.

We shuttled our cars to the planned ending point for the trip on Route 547, Whitesville, then launched the canoes near the bridge at which we had met. At that point, the river didn't look bad. It was about fifteen feet wide, deep running, and relatively clear of obstructions.

But after only about five minutes of paddling, we came to the first blockage—part of the old wooden bridge on Bowman's Road that some unthinking workers had apparently dumped into the stream. We stopped paddling, Weiler broke out his chain saw, and he and Gard went into the water to cut out the obstruction.

When we continued our cruise, the stream became increasingly choked with fallen trees and brush growth. Through this section, the Toms River meanders more than any other New Jersey stream, and in spots it narrows to a width of only three feet.

"If you looked at this stretch from the bank," we noted, "you'd swear it wasn't passable". But each time things got more difficult, Weiler seemed more determined to win his battle. Saws, clippers, and axes were put to work continually during the cruise until finally, eight hours after we had started and just as it was getting dark, we rounded a bend to see the familiar bridge at Whitesville where our cars were parked.

Though Weiler is quick to mention others who have been involved in the Toms River clearing work, the fact remains that he himself has been the driving force behind the project.

"Explorer Post 68, from Berkeley Heights, worked for many years to clear the lower part of the river," he maintains, "and the Mohawk Canoe Club (Trenton), the Monoco Canoe Club (Monmouth and Ocean Counties), the Union County Hiking Club, and many other individuals have helped, too."

But the fact remains that most of the work has been assumed by this one man—and it's a never ending project with little reward except for his satisfaction in a job well done.

So if you decide to take a canoe trip on the Toms River, remember to pack a bow saw and cut out some of the obstructions. A hard working, nice guy can use the help. □

*Gard tosses a log from the stream cut from a tree felled by the previous winter's storm.*

*Bill Weiler is shown cutting out debris with his saw.*

*Near the end of their trip, the pair took time to enjoy paddling through this Ocean County wilderness.*

# Backyard Wildlife Watching in Suburbia

**BY TED S. PETTIT**

After many years of backyard wildlife watching in four homes in two states we have learned a lesson. Many times what you do not do in the back or the front can make the yard as attractive to wildlife as what you do. For instance, don't be too fast with the mower, chain saw, pruning snips or hand saw. Letting nature take its course can pay off in more animals and less energy—both human and in fossil fuels.

We will agree that our acre does not resemble a well manicured golf course as do our neighbors'. Our one acre has a dozen or so nesting species each spring and perhaps a hundred species in a year. In winter we frequently have 20 species at once. And we live in suburbia, what the U.S. Census Bureau classes as urban.

We learned our lesson from a male song sparrow. The bird used a recently planted weeping willow as a singing perch for two years in a row. By the middle of the second year there was a nice assortment of what he ate growing under the willow: things like poison ivy, rose, wild grape, silky dogwood and choke cherry. So we let them grow. That was ten years ago and now the fruit on that variety of wild plants attracts an abundance of birds.

We applied that same principle to a little more than a third of our yard. We stopped mowing and stopped pruning for the most part. Plant succession took over, such things as red cedar, autumn olive, multiflora rose, blackberries, smooth sumac, wild strawberries and gray dogwood have replaced the broome sedge that came in at first. We eat the strawberries and leave the rest for wildlife. We enjoy two or three strawberry shortcakes each June, a couple of glasses of jam and we have made jelly from the rose hips.

Probably the main reason we bought this one acre in Bridgewater Township, Somerset County, was an old fence row on our north boundary. The row is dominated by two large red oaks, one white oak, three shagbark hickories, one half-dead red maple and what our Township engineer called "miserable brush." He called it that

*What was formerly a neatly mowed one-third acre now is a stand of autumn olive, blackberry and other food and cover shrubs.*

PHOTOS BY AUTHOR

*Titmice nest in the bird box in the unmowed area.*

when he wanted to put a sewer line down the property line which was the fence line. We fought back and won. The so-called miserable brush was a beautiful variety of gray dogwood, poison ivy, wild grape, silky dogwood, rose, sumac, red cedar, wild apple and all those other wild goodies that birds like. That same variety of "brush" also is the nesting site for an occasional quail, cardinals, brown thrashers, mockers, towhees, song sparrows, catbirds and twice a yellow breasted chat.

The half dead maple houses flying squirrels anf flickers and, for a couple of years, downy woodpeckers. In the top of the hickory we have northern orioles and part way up rose-breasted grosbeaks. Once we had orchard orioles in the red oak and hopefully they will be back. The red cedars that we let grow wild now are the nesting sites of mourning doves, house finches and chipping sparrows. The common grackles that start to nest in the same places are discouraged early by our dropping a chunk of cotton soaked in camphorated oil in the nest. The birds do not like it so they move elsewhere and usually stay gone.

We have our other animals too. Rabbits are a pest when our garden is in bloom and deer have been seen eating our tomatoes. An occasional raccoon knocks over the garbage cans and opossums feed on bird food at night. We have seen fox tracks in the snow and if we store bird food in the house we share the house with white-footed mice. But these are problems we can put up with. Skunks we have on occasion, but not often, and our bird feeders are squirrel and chipmunk proof.

One vine and two trees we were sorely tempted to remove, but both attract many species of birds and they may soon take over the yard. Two mulberries came up wild and as birds fly from mulberry over the car to another perch the mess they leave behind is not pretty. But five minutes with the hose and the car is reasonably clean. But how else can you see catbirds and brown thrashers, wood thrushes and mockingbirds three feet from our window? At first we were fast with the snips on nightshade. Then we saw half a dozen species eating the red fruit in the fall. Then too we enjoyed the purple and yellow flowers in the spring and summer. Now we let nightshade grow unless it takes over the roses or dogwoods. Birds love it and if it gets too objectionable we haul it out by its shallow roots.

All of this is not to say that we have not planted anything. On three naked property lines we have planted a few thousand autumn olive, silky dogwood, tartarian honeysuckle and patches of pine and spruce. We have been careful not to shade out the native bayberry and gray birch. We moved some of the birch to form clumps and the only redpolls we have seen in the yard were feeding on birch catkins.

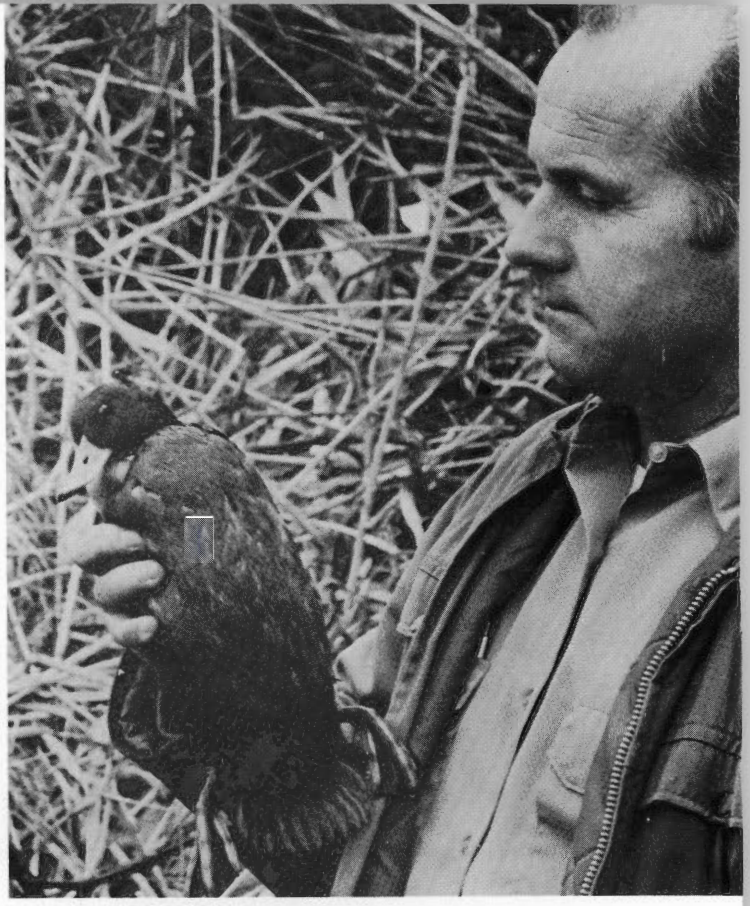
Basically our conclusion is this. A carefully planned combination of wild yard and planted yard is what you need for a maximum of wildlife. We rather favor the wild since it saves energy, human and otherwise, and we like what comes naturally. □

***The half dead red maple is not esthetically pleasing perhaps but it has been a den site for flying squirrels and the nest site for flickers and downy woodpeckers. Northern orioles have nested high in live branches.***

***The tangle of multiflora rose and red cedar provides nesting habitat for catbirds, mockingbirds, robins, and cardinals. Wild apples supply food for wintering mockingbirds, brown thrashers, robins and other birds. Mourning doves nest in the cedars.***

# CO'S CORNER

by Conservation Officer Walter Mabey



*Author with oil-covered duck*

# another oil spill

On Sunday, March 14th, I was working in my office at home when I received a call from the Southern District Office informing me of another oil spill on the Delaware River. Fearing the worst because of the recent major oil spills, I dropped everything and drove to the river, which is only two miles from my home.

When I arrived, I was relieved to see only a slight oil slick; however, as I proceeded north, the situation worsened and at National Park the beach was covered with thick crude oil as far as you could see in either direction.

I took several color Polaroid pictures, collected an oil sample, and picked up two dead ducks that resembled black "gobs" of oil and four oil covered ducks that were alive, but unable to fly. These could be used for a possible prosecution at a later date. I continued to make a survey of the area and observed approximately one hundred oil covered ducks. On one mud flat there were twelve oil covered ducks that were unable to fly, and the sea gulls were killing them and having a feast. I suddenly had a dislike for sea gulls, but I realized they were only taking advantage of the situation and the ducks were doomed anyway.

I then proceeded to the Coast Guard Station in Gloucester City and informed the officers in charge of my observations, and what tide water creeks and coves I wanted closed off with flotation booms.

I've always had good cooperation with the Coast Guard. They informed me that the clean-up crews had been alerted and were starting to clean up. The Coast Guard suspected a ship that was unloading crude oil across the river on the Pennsylvania side, which later proved out to be the offender. The way this is proven is that oil samples from the beach are compared to the oil on the suspected ship. The Coast Guard officer said it's like comparing finger prints—no two samples are alike and they can pinpoint the source of oil by its makeup. It was estimated that about 3,000 gallons of crude oil was spilled.

I then notified the Division of Fish, Game, and Shellfisheries' District office and on Monday I notified the Trenton office and the Division of Water Resources in Trenton, Oil and Hazardous Material Section.

I continued to check the river for the next three days and made a tour of the river with Game Biologist Hall. Compared to the last spills, this one was minor and didn't require the large recovery of oil covered ducks.

The waterfowl affected by these oil spills on the Delaware River are mostly Ruddy ducks, which concentrate in large numbers on the Delaware River. Because they would rather swim than fly from danger, they are prone to getting oil soaked after an oil spill. One oil spill caused by a tanker running aground resulted in over 4,000 dead Ruddy ducks.

The hunting pressure on these ducks during the season is very minor because of their small size and poor eating qualities. This is a prime example of a species being depleted, not by hunting, but by the continuous deterioration and loss of a particular species' natural habitat. □

# Environmental News

PHOTOS BY JOE KLEIM

## DEP UNVEILS PLANS FOR MONITORING CANCER-CAUSING POLLUTANTS IN N.J.

Plans for a comprehensive monitoring program for exotic pollutants and the development of a toxic substance inventory were outlined by DEP in a report to Governor Byrne on May 26. The report, "Cancer and the Environment," traces the causes and the extent of cancer in New Jersey and proposes a plan by which DEP could take steps to reduce the presence of cancer-causing agents and other highly toxic or hazardous pollutants in the environment, thereby reducing the health threat to residents.

Environmental Protection Commissioner David J. Bardin points out in the report that the cancer cases of today are the product of 30 years exposure to a wide variety of cancer-causing agents. "As we move to reduce the degree of human exposure to cancer-causing agents, we must recognize that we are practicing preventive medicine of the most sophisticated sort and it may well be years before there will be an improvement in the cancer situation in this state," Bardin said.

The report, authored by Dr. Glenn Paulson, DEP assistant commissioner for science, and Dr. Peter Preuss, special assistant to the commissioner, notes that while the exact cause of all cancers cannot be defined, it is estimated that 60 to 90 percent of all cancers are related to enviromental factors. These include cigarette smoking, exposure to industrial agents, exotic pollutants in the air, water and food, dietary habits and natural causes such as solar and cosmic radiation.

The proposed toxic substances inventory and monitoring program, it was noted, are extensions of current programs being carried on by DEP.

—The present DEP monitoring program would be expanded from the so-called "classical pollutants" to include toxic and carcinogenic materials. The monitoring would include air, surface and ground water, sediments, drinking water supplies, fish and wildlife.

—A separate part of the monitoring system would be used to identify toxic and carcinogenic materials in the environment not previously known to be present. The monitoring also would be useful, for example, in determining the extent of leachate production from landfills that have been accepting toxic chemical wastes and the extent to which ground waters may be contaminated by toxic substances.

This report, together with a report from the state Department of Health, were prepared at the direction of Governor Byrne. The programs presented in the reports were developed cooperatively between the two departments and present complementary facets of a single program. DEP's program would also be coordinated with other agencies that deal with other aspects of the problem, including the state departments of Labor and Industry, Agriculture and Higher Education, and with the appropriate federal agencies. □

## Cabinet Committee on Cancer Control

An executive order issued by Governor Byrne on May 26 created a Cabinet Committee on Cancer Control to coordinate the state's efforts in the prevention, study and control of cancer. Noting that the prevalence of certain types of cancer in areas of New Jersey exceeds that in other states of the nation, Byrne said the committe would begin "positive action in an area of public health which causes great concern among our citizens."

Members of the committee, to be chaired by the governor, are the Secretary of Agriculture, Philip Alampi; Commissioner of Environmental Protection, David J. Bardin; Commissioner of Health, Dr. Joanne Finley; Chancellor of Higher Education, Ralph Dungan; and Commissioner of Labor and Industry, Joseph Hoffman.

The executive order delegated separate responsibilities to each of the five departments; and directed the cabinet committee to coordinate state agency programs, review and develop new programs and procedures, review and analyze pending legislative and administrative actions, recommend sources of federal or other financial assistance, and inform county and local agencies of the nature and availability of federal and state programs and funding. □

## FACELIFT FOR HISTORIC TERMINAL

Construction work is underway on a $1.1 million project to stabilize and clean up the 19th century Jersey City Central Railroad and Maritime Terminal at Liberty State Park (Hudson County). Abandoned since 1967, the buildings now owned by the state, have deteriorated in recent years as a result of vandalism, disuse and weathering. The work is being funded from a $2.4 million federal Title X grant authorized by the Economic Development Administration for putting the unemployed back to work. The former railroad/maritime terminal—a major port of entry for many 19th and 20th century immigrants processed at Ellis Island (New York)—is located at the northern rim of Liberty Park, at the foot of Johnston Avenue near the south embankment of the Morris Canal. The terminal complex consists of a station house flanked by a ferry house on the east and train sheds to the west. Both the terminal and the canal basin are listed on the State and National Registers of Historic Places. In addition to providing protection against further deterioration, the work includes extensive restoration of the main roof at the brick station house. All roofing and cornices will be restored, skylights installed and the main cupola reconstructed. Completion of the construction is expected in December of this year. When further funds become available, the state, through DEP which administers the site, plans the complete restoration of the terminal complex, making it a focal point for visitor events. Development of Liberty State Park is the largest outdoor recreation project undertaken during the Bicentennial years and is the responsibility of DEP. □

**DEP engineer appointed:**

## DIRK HOFMAN NAMED WATER PLAN DIRECTOR

Dirk C. Hofman, 38, of Trenton, is directing the development of a comprehensive water supply master plan for New Jersey. Hofman, a registered professional engineer with extensive water resources management experience, including 16 years with the state, will supervise and coordinate the work of consultants as well as the DEP management team. Hofman is on leave of absence from his position as chief of the Bureau of Flood Plains Management, Division of Water Resources, while directing the water supply planning project. John H. O'Dowd is acting chief of the bureau in Hofman's absence. □

**New regulations in effect re:**

## STACK TESTING/SMOKE READING

New regulations detailing test procedures to be used by DEP's Bureau of Air Pollution Control, Division of Environmental Quality, in measuring the rates of particulate emissions from industrial boilers and manufacturing sources and in determining the visible emission of particles from stacks were adopted by DEP in mid May and became effective on June 20. The procedures are basically the same as those required by the federal Environmental Protection Agency (EPA).

The state's testing procedures are based on many years of experience in stack testing and smoke reading. New Jersey has been involved in stack testing since the late 1950's and many procedures employed elsewhere, including those adopted by EPA, are the result of pioneering New Jersey measuring techniques.

Copies of the new rules are available from Herbert Wortreich, chief of the Bureau of Air Pollution Control, DEP, Box 2809, Trenton 08625. □

# SEWER BANS EXPLAINED

When DEP serves notice to a sewage treatment plant that it is overloaded beyond its capacity to properly treat the waste and therefore must refuse any further sewer line extensions or hookups, it is imposing a sewerage connection ban (in common usage called a "sewer ban"). A sewer ban is modified (partially lifted) as upgrading of a plant progresses or a reduction in flow is achieved, and is fully rescinded when the improved facilities are operational and pass DEP inspection.

In the seven-month period ending in mid May, DEP modified or lifted 12 sewer bans, leaving 58 full bans still in force statewide. The examples given below include one facility under full sewerage connection ban, one plant under modified ban, and one from which the ban has been lifted.

**Full sewer ban.** DEP imposed a sewer ban on the Sea Isle City municipal sewage treatment plant (Cape May County) in early April because the plant was being operated beyond its maximum treatment capacity and in a way that failed to meet water quality standards. The action was taken to halt the continued degradation of the backbay waterways around Sea Isle City and the continued pollution of valuable shellfish beds which caused closures of shellfish harvesting areas in the region. The primary treatment plant, which serves a community of 3,000 in the winter and up to 40,000 people in the peak summer months, disposes of its sewage into Scraggy Creek, a tributary of Ludlum Thorofare. New sewer line extensions and sewer system hookups were halted by the ban. Construction for upgrading the plant must begin before the ban is modified.

**Modified sewer ban.** DEP issued an amended order in mid March to the Atlantic City Sewerage Company (Atlantic County) modifying a ban on sewer connections imposed in October 1973. Modification of the ban was based on reduced flows since imposition of a ban plus the fact that construction had begun on the Atlantic County Sewerage Authority's Regional Wastewater Treatment Plant. Additional sewage flow from new connections in the amount of 500,000 gallons per day was allocated for the interim period until the new facility is completed and passes DEP inspection.

**Sewer ban lifted.** DEP in December 1975 fully rescinded a ban on extensions and connections to the Barrington Borough (Camden County) sewer system. The sewer ban, which had been in effect for more than two years, was removed as a result of favorable water sampling following substantial improvements in the operation and maintenance of the plant. The plant, which had been treating about 1,076,000 gallons of wastewater per day was permitted to process an additional 24,000 gallons daily with the lifting of the ban. The facility is currently operating at design capacity, treating 1,100,000 gallons of wastewater daily. □

**Environmental Protection Commissioner David J. Bardin and other interested New Jerseyans at start of six-day shore walk at Sea Bright on Sunday, June 6. The purpose of the walk along the state's Atlantic coastline is to gather and share firsthand information about the condition of our beaches, land uses along the shoreline, and public access to the shore. The shore walk was completed on Friday, June 11, at Cape May Point.**

**IN MEMORIAM. Forty years ago, on May 25, 1936, while fighting a forest fire that burned 133 square miles of South Jersey pinelands, three members of the Civilian Conservation Corps (CCC) personnel—John T. LaSalle, Edward Sullivan and Stanley Carr—along with volunteer Kingsley White and State Firewarden Ira Morey, lost their lives. DEP's Division of Parks and Forestry, this past May 25, rededicated a plaque in memory of the CCC personnel and dedicated another honoring White and Morey, in ceremonies held in Bass River State Forest near New Gretna (Hunterdon County). In the photo above, DEP Assistant Betty Wilson and Colonel Asher Harman, Jr. (representing Maj. Gen. William A. Patch, Commanding Officer of Fort Dix), flanked by an honor guard from the military installation, stand before the just unveiled plaque honoring the CCC personnel. In the background, standing before the second plaque, are (from left) Parks and Forestry Director Alfred T. Guido, State Firewardens James Cumming, and Chief Ranger John Walters. The families and friends of the men who gave their lives in the effort to keep the forest fire from the nearby towns were honored guests at the ceremony. (Note: The CCC program was under the U.S. Army; Camp S-55, Company 225 based at Tuckerton, was under the direction of Fort Dix.)**

**Eleven projects:**

# HISTORIC PRESERVATION GRANTS APPROVED BY DEP

The department recently gave preliminary approval to 11 applications from municipal and private historical groups throughout the state for matching federal grants totaling $152,409 for the restoration and/or acquisition of historic sites. Final approval is given by the National Park Service, U.S. Department of the Interior, which provides the grants-in-aid under terms of the 1966 National Historic Preservation Act. The federal program is administered in New Jersey by DEP's Historic Sites Section. Environmental Protection Commissioner David J. Bardin is the State Historic Preservation Officer.

The National Park Service apportioned $183,209 to New Jersey as part of its 1976 fiscal year preservation program based on the state's Annual Historic Preservation Plan. All properties receiving grants are listed on the State and National Registers of Historic Places. Recipients will match the grants and provide any additional funds needed for completion of the projects.

The eleven projects, sponsors and grant requests are given below by county:

BURLINGTON: **School House,** Township of Willingboro, restoration of the interior of a 19th century one-room school, $10,000; **Quaker School,** City of Burlington, restoration of interior and exterior to facilitate use as Bicentennial Center, $8,000.

CAMDEN: **Joseph Cooper House,** City of Camden, stabilization of possibly the oldest house in Camden for use as a Senior Citizens Center, $25,000.

CAPE MAY: **Colonial House,** Cape May City, restoration of old farm house and grounds for use as a community park, $7,000; **Physick Estate,** Cape May City, restoration of the out buildings on the estate, $8,000.

HUDSON: **Hudson County Court House,** Jersey City, cleaning of the exterior stone and bronzework, $20,000.

MIDDLESEX: **Old Cranbury School,** Cranbury Landmarks, Inc., continued restoration of building to facilitate use for cultural activities, $10,000.

MONMOUTH: **Upper Freehold Baptist Meeting House-Baptist Church,** Friends of the Old Yellow Meeting House, restoration, $5,700.

SALEM: **St. John's Church,** St. John's Church, restoration, $15,000; **Historic Market Street District,** Department of Community Development, acquisition and restoration of deteriorating properties at end of Market Street, $34,709.

UNION: **Droescher's Mill,** Cranford Heritage Corridor, Inc., restoration of a horizontal turbine to power an industrial museum, $9,000. □

**At DEP—**

## *Every day is Earth Day Every week is Earth Week*

When the state Department of Environmental Protection was created by law in the spring of 1970, for the first time all the state's functions in behalf of environmental protection were united under one administrator. By bringing together conservation and pollution control programs, the public could receive the benefits of a more efficient operation.

In general terms, DEP's responsibilities include the protection, preservation, and conservation of the state's natural resources—air, land, water, flora and fauna. The ultimate goal: To improve the quality of the environment to assure a better quality of life for the citizens of New Jersey.

The following briefs will provide a general overview of DEP's accomplishments in the years between its establishment on the first national Earth Day, April 22, 1970 and its sixth anniversary this past April. (Note: This section will be very helpful to teachers and students for preparation of lessons and reports on environmental matters. Clip and save it—the new school year is "just around the corner.")

NEW JERSEY ENVIRONMENTAL ACCOMPLISHMENTS:
April 22, 1970—April 22, 1976

### LAND

- **Added 30,000 acres to state-owned open space and outdoor recreation areas under the Green Acres program.**
- **Gave Green Acres matching grants to local governments for 133 park and recreation projects.**
- **Started construction of Liberty State Park.**
- **Applied land use controls on 880,640 acres of coast and shore through the Coastal Area Facilities Review Act (CAFRA).**
- **Mapped and started regulation of all 242,000 acres of wetlands; reduced wetland development to just 274 acres in 4 years from and average of 1,900 acres per year prior to regulation.**
- **Adopted the State's first land use regulations for floodways; delineated 618 miles of floodway; signed up 532 municipalities for federal flood insurance.**
- **Granted real property tax exemptions on 8,800 acres of non-government owned green acres.**

### AIR

- **Established what is recognized as one of the finest air monitoring systems in the country.**
- **Reduced carbon monoxide levels by 12 percent and saved motorists 20-30 million gallons of gasoline in 1975 alone through mandatory auto exhaust emissions testing.**
- **Enforced permit system that resulted in removal in 1975 of 256,300 tons of solid particles, 90,000 tons of solvents, acids and other chemicals and 1,500 tons of sulfur compounds each year from the air.**
- **Attained compliance with federal air quality standards for sulfur dioxide throughout the State and for particulates in most monitoring stations.**
- **Launched efforts to bring together 18**

*(Continued on page 16D)*

# Exxon Agrees To Oil Cleanup Program At Constable Hook Location (Bayonne)

The department recently approved a plan under which the Exxon Corporation will remedy an oil seepage/water pollution condition at Constable Hook in Bayonne, Hudson County. Exxon has agreed to install a ground water collection system on its Bayonne property to prevent petroleum products discharged into a drainage ditch on Constable Hook Road from seeping into the water table and migrating to the surrounding waterways and into Lower New York Bay. The collection system, to be in operation with 18 months, will retain the oil, and the remaining water will pass through the treatment system of the corporation's Bayonne facility before discharge into the waterways.

(In September 1974 DEP filed suit against Exxon Corporation and ICI America, Inc. in Bayonne, Hudson County, to halt the seepage of spilled oil into Lower New York Bay and requiring them to perform an expensive cleanup of oil-saturated lands on which the plants are located. The agreement between DEP and Exxon resolved the department's complaint against the corporation. The ICI, America portion of the case is still in litigation as we go to press.)

Deputy Attorney General Morton Goldfein handled the Exxon case for DEP. □

## URBAN AID CITIES ELIGIBLE FOR PARK DEVELOPMENT FUNDING OF 90 PERCENT

A new DEP policy which provides up to 90 percent funding for park development projects in the urban cities went into effect in the spring. Under the new formula, that state will provide 50 percent of the cost from the Green Acres park development money and the federal Bureau of Outdoor Recreation will provide up to 40 percent of the project cost, with the urban-aid county or city contributing the remaining 10 percent.

All of the 28 urban aid communities, as defined by the New Jersey statutory formula, as well as the 12 county governments in which these cities are located, have been alerted to the new funding policy.

The first grants under the new policy went to the Hudson County Park Commission to develop recreational facilities at four county parks—Lincoln Park East in Jersey City, North Hudson Park in North Bergen, County Park on Newark Bay in Bayonne, and Columbus Park in Hoboken. The total cost of $1.6 million as financed under the new formula works out to $800,000 (50 percent) from the Green Acres development program, $640,000 (40 percent) from the federal BOR program, and the remaining $160,000 (10 percent) from the county agency. □

## HEARING HELD ON WATER POLLUTION CONTROL PLAN

The state's strategy for preventing and controlling water pollution, which involves a multi-million dollar construction grant program to build wastewater treatment plants and the interceptor pipe systems that serve them, was the subject of a public hearing held by DEP on May 20. The hearing included examination of the priority system and project list for fiscal year 1977 as a key element of DEP's program to abate water pollution. (Projects considered eligible for federal construction grants may receive up to 75 percent in federal funding of project costs.)

The hearing, conducted by DEP's Division of Water Resources at Mercer County College in West Windsor, gave such interested parties as governmental representatives, sewerage authorities, conservationists, water purveyors, industry, business and union representatives the opportunity to testify on the plan before its submittal to the federal Environmental Protection Agency (EPA).

Major elements of the program include pollution control enforcement activity; basin planning; the monitoring system for rivers, lakes, estuaries, shore waters and all significant discharges including "non-point" sources such as urban and agricultural runoff, and toxic or carcinogenic substances. The plan also considers state involvement with municipal and regional wastewater treatment plants regarding continued surveillance relative to operations and maintenance. In addition, the water pollution control plan contains a statement of the current condition of water pollution problems in the various watersheds, inland surface waters, marine waters and ground waters, and an assessment of these problems. □

## U.S. GRANT TO N.J. WILL AID PESTICIDE APPLICATOR EDUCATION

Teachers and students following programs in agriculture, agribusiness and natural resources in several New Jersey vocational and comprehensive high schools will soon be given the opportunity to learn about pesticides and their application through a pilot program funded by the U.S. Office of Education and approved by the federal Environmental Protection Agency (EPA). A grant for $30,000 recently awarded to the state Department of Education, will make it possible for the state agency to hire a pesticide education specialist who will travel to each school to instruct and train teachers and students in pesticide uses and application. The program is aimed at supporting pesticide applicator education leading to employment for some students at the entry level in this specialty. (Under EPA regulations, set by terms of the Federal Insecticide, Fungicide and Rodenticide Act and its Amendments, pesticides must be classified for general or restricted use. Those pesticides classified as restricted can only be applied by trained applicators who have met state certification requirements. In New Jersey, the responsibility for carrying out pesticide programs lies with DEP's Division of Environmental Quality, Office of Pesticide Control.) □

(cont. from page 16C)

*Every day is Earth Day*

**northeastern states toward regionalizing air pollution controls of hydrocarbons.**

### WATER QUALITY

- **Put $676 million in federal sewer construction money to work in New Jersey; revised wastewater facilities construction priorities to focus on urban areas and existing problems.**
- **Improved water quality monitoring network.**

### WATER SUPPLY

- **Blocked construction of Tocks Island Dam and pressed ahead with alternatives.**
- **Started construction of Round Valley outlet pipeline to yield 80 million gallons of water daily.**
- **Initiated program for developing a State Water Supply Master Plan.**

### SOLID WASTE

- **Banned dumping of out-of-state garbage in New Jersey. (Pennsylvania is appealing.)**
- **Established the Solid Waste Administration in the Department of Environmental Protection as a first step to an improved solid waste management program.**
- **Prepared to establish 22 solid waste management districts and implement resource recovery systems in them under terms of P.L. 1975, c. 326.**

### OTHER

- **Certified for financing 24 industrial pollution control projects valued at $210 million.**
- **Expedited timely action on construction permit processing under the 90-day law.**
- **Adopted a pesticide control code; 9,500 persons have been registered as pesticide applicators and 6,600 have been examined for certification.**
- **Established the Delaware and Raritan Canal Commission to assure preservation of the Canal as a water source and as an historic and recreation area.**
- **Launched a program to protect endangered and nongame species.**
- **Inaugurated free park admission for senior citizens, the totally disabled and those who travel to parks by mass transit.**
- **Guaranteed the citizen's right to sue polluters.**
- **Adopted an industrial noise code.** □

### DEP 1975 ANNUAL REPORT AVAILABLE

The Annual Report of the New Jersey Department of Environmental Protection for fiscal year 1975 has been published.

To obtain a copy, please write to DEP Documents Distribution Center, Box 1390, Trenton 08625.

*Preparing soil at a Wildlife Management Area for food patch planting.*

HARRY GROSCH

# Developing and Maintaining Habitat for Wildlife

**BY RODGERS W. TODD**
Wildlife Biologist

One objective of the science of game management is to produce and maintain a yearly crop of wildlife for recreational purposes. The Bureau of Wildlife Management's habitat development crews pursue this goal by improving the quantity of habitat.

The Habitat Development Project is funded jointly by the Federal Bureau of Sports Fisheries and Wildlife and the New Jersey Division of Fish, Game and Shellfisheries. Although the majority of work is performed on the Division's 60 Wildlife Management Areas, other land administered by various State and Federal agencies (such as Wharton State Forest, Earle Naval Ammunition Depot, Lakehurst Naval Air Station) receive attention from the Habitat Development project. In addition, private land owners often benefit from the project by receiving technical advice.

**Habitat Improvement — Why?**

Wildlife must have food, cover and water to thrive. The mere presence of the above essentials is not enough. Food, water and cover must be properly distributed within the range of an animal's daily activities. By being able to recognize the limited or missing habitat requirements and taking proper steps to improve it, the carrying capacity may be improved. ("Carrying capacity"—What's that? Carrying capacity may best be described as the maximum number of wildlife that a particular habitat is capable of supporting.)

Clearing brush at backhoe

RODGERS W. TODD

### Trees and Shrubs

Each year, the Habitat Development Project receives approximately 40,000 trees from the State Nursery located at Washington's Crossing. The project plants these trees on the Wildlife Management areas. The species include white pine, Norway spruce, Japanese black pine, and hemlock. Trees are planted from 4 to 6 feet apart with the aid of a mechanical transplanter which is drawn behind a tractor. Hedgerows and small groves are established to provide escape cover, travel lanes and nesting sites for wildlife.

Autumn Olive and Tartarian Honeysuckle, two popular wildlife shrubs, are used extensively in establishing hedgerows in large fields. These shrubs supply food and cover. Both shrubs may be described as tall and spreading; and, adaptable to a wide variety of soil types. The red fruits of the Autumn Olive ripen in late summer and early fall; the Tartarian honeysuckles red or yellow fruits ripen from July through September. The shrubs are planted in double hedgerows and plants are spaced from 1-3 feet apart. 4-H clubs supply the project with 70,000 plants each year. This aspect of the project benefits youth interested in improving the environment as well as wildlife.

HARRY GROSCH

A seed food patch

### Crops for Wildlife

During the course of a year, over 1,000 acres of food and cover crops are planted to benefit wildlife. First, soil samples are taken to determine fertilizer and lime requirements. Next, a seed bed is prepared. After this preliminary work, the ground is planted. The fields may vary in size from a quarter-acre food patch to areas as large as ten acres. Both annual and perennial types of seed are planted. Corn, oats, switch grass, sorgum, lespedeza, buckwheat, soybeans, clover, timothy, millet, food patch and pasture mixtures are planted in Spring or Fall depending on species requirements.

### Fire: A Management Tool

Controlled burning of mature stands of understory for fire protection purposes produces additional food in the form of browse for forest game animals. When deciduous trees and woody shrubs are controlled burned to clear the above-ground growth, they respond by sending up a profusion of new shoots. This young succulent vegetation provides food for deer, rabbits, and grouse. The scrub oak, an important deer food, responds well to pruning by fire, producing both additional browse and an increased acorn crop.

### Hedgerow, Field Border and Woodland Management

Maturing stands of large trees produce little food and cover for wildlife. Beneficial native shrubs, grasses and herbs are shaded out and much of the existing food in the form of browse is out of reach of deer and rabbits. Many benefits occur when large trees are felled. The tops provide immediate food and cover. Future food sources in the form of tree sprouts, shrubs and grasses will become available as the successional stage is set back. Shading and root competition with adjacent fields will be greatly reduced. In many instances, an 'edge effect' is provided.

*Experimental planting at Manasquan*

RODGERS W. TODD

Hedgerows are managed by cutting and piling the brush. Trees bordering the fields are cut back a distance of 30 to 50 feet providing the similar benefits to wildlife. In large wooded areas, blocks one acre or less are cut. Approximately 100 acres of woods and hedgerows are cut in wildlife management areas each year.

### Road, Dike and Spillway Construction and Maintenance

Providing and maintaining vehicular access to management areas is a necessary, demanding and never ending job. Bureau management crews fill, grade, widen and install culverts on over 150 miles of roads and numerous parking areas each year!

On many of the Wildlife Management Areas, waterfowl and fishing impoundments have been created to provide additional aquatic habitat. Impoundments that were constructed primarily for waterfowl, furbearers and fish, also benefit a wide variety of non-game species ranging from turtles to songbirds and hawks.

Dike maintenance consists of establishing a vegetative cover where vehicular use is restricted or nonexistent. If the dike top is to be used as a road it has to be surfaced with gravel and maintained by filling and grading. Occasionally, a severe coastal storm causes unusually high tides that erode and breech the dikes. Conditioned by many years of experience the management crews quickly respond by rebuilding the washed out sections to prevent further damage by intrusion of salt water into fresh water environments.

Impoundment water control structures on many areas are used to regulate water levels for water fowl, fish and vegetation. Spillways occasionally become clogged with debris and have to be cleaned. Damaged boards must be replaced. In recent years, antiquated wooden spillways have been replaced with modern, metal structures. This is an expensive and time-consuming job which also benefits the wildlife resource.

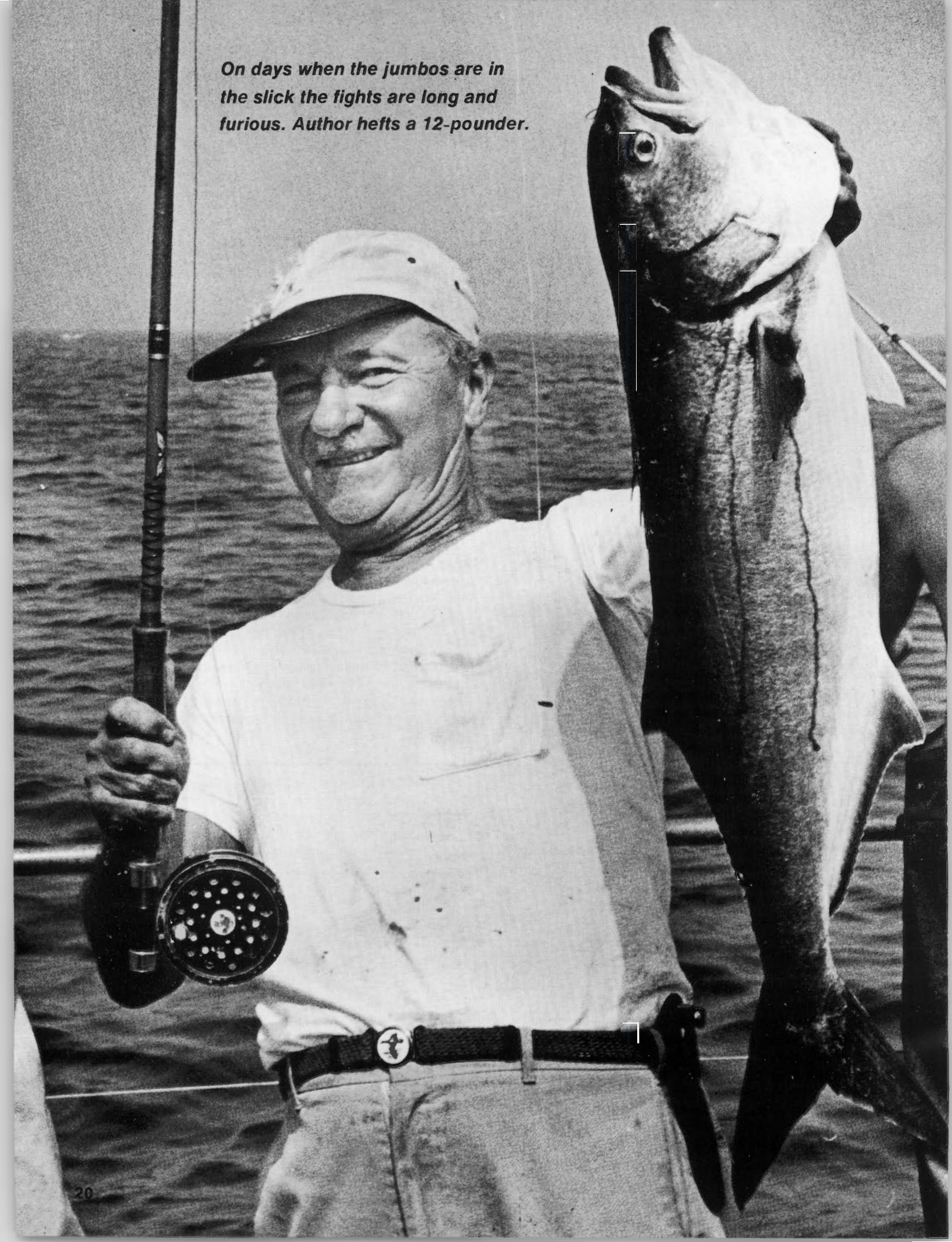
### Other Activities

In addition to habitat manipulation and road and dike maintenance, project personnel must post and clean up trash on wildlife management areas. Entrance, directional and informational signs are erected and maintained. Over 350 miles of boundaries are posted each year. During 1975 in excess of 500 man days were expended to pick up and dispose of trash that was discarded along Division maintained roads, fields, streams and parking lots. This time could have been better spent on projects that would benefit wildlife. □

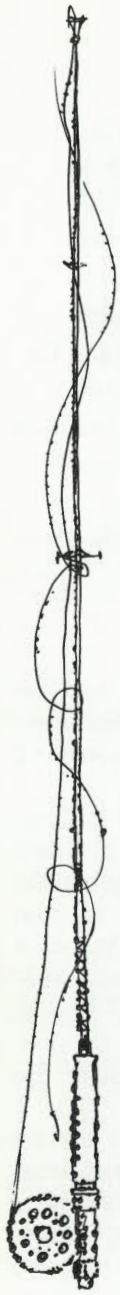
*Always* remember that wildlife is a product of the land, and that through proper land management practices, such as those conducted by the Bureau of Wildlife Management, the people of New Jersey are insured an abundance of wildlife to enjoy.

HARRY GROSCH

*Trash on a Wildlife Management Area*



*On days when the jumbos are in the slick the fights are long and furious. Author hefts a 12-pounder.*



# the idiot stick

**By Henry Schaefer**

*photos supplied by author*

***In the parlance of the hunter, an "Idiot Stick" is a .410 shotgun —light to carry and pleasant to shoot, but without sufficient power for the job. But to the New Jersey/New York party-boat fisherman, an Idiot Stick is a fly rod, and the man who uses one is some kind of a nut. At least, that is the usual consensus among the other fares at the beginning of the fishing day. Also, usually, their opinions have changed considerably by the end of the day!***

The salt-water fly rod has not yet been accepted along the mid-Atlantic coast as it has on the bonefish and tarpon waters to the south, and may never be. However, it *is* making progress. Each year the number of "idiots" is growing.

Why does a man elect to cast flies for tough bluefish, bonito, false albacore, and tuna when he can usually catch more with conventional salt-water tackle?

There are a number of reasons.

One is that it provides greater sport. Another is the satisfaction that comes from overcoming a much greater challenge. A third is that under certain conditions, which occur with surprising frequency, fly-fishing tackle can produce more fish than sturdier gear, and sometimes more than can be taken on a similarly light spinning outfit.

This was driven home to me on the very first day I had the temerity to carry a fly outfit aboard a bluefish chumming boat. This was years ago when split-bamboo rods were still in universal use. The outfit I carried was a nine-foot bass bugging and landlocked salmon rod mounted with a big Pflueger Medalist reel. To the end of the conventional double-taper fly line I had spliced enough light braided fabric line to completely fill the reel.

I wasn't quite sure what was going to happen.

We shipped out of Highlands with the late Captain Otto Reut, a charter-boat fisherman. At the port of Belford, where we picked up our bait, we also brought aboard two commercial fishermen who were going to try to make a day's pay with handlines. This was going to be a "fun trip," but Otto, who was friends with the two, didn't mind as long as at least two men aboard would take things seriously during the day. The professionals looked at the fly rod and then at me. They snickered softly but often.

We sailed down to the Shrewsbury Rocks, a favorite bluefish chumming grounds off Sea Bright and Monmouth Beach, and anchored. Otto commenced grinding up menhaden, ladling it overboard to attract the fish, and all hands baited up with cut chunks of menhaden. The commercial fishermen each used two sturdy tarred handlines with short wire leaders and big hooks with a good chunk of mossbunker on each hook. The other men used 30- to 40-pound-test lines and wire leaders, also with hefty chunks of bait.

The baits were drifted back with the outgoing gobs of ground fish. Soon bulges appeared on the surface, indicating that bluefish had arrived in the chum slick. However, nobody got a strike.

A bright sun blazed from a cloudless sky. The water was table flat and clear as gin.

I was still rigging my tackle. I tied a 10-foot-long, 10-pound-test leader to the end of my fly line, knotting a six-inch length of light plastic-coated wire cable and a short-shanked gold-plated 3/0 beak hook to the end. I stuck the hook into a thumb-joint chunk of mossbunker and flipped it out into the slick.

The bait drifted back and was lost to sight. Stripping line from the reel, I watched it glide out through the guides. The line was a floater. Most of it remained visible on the water, although the bait, leader, and end of the line sank well below the surface. Half of the 30 yards of fly line had drifted out when suddenly it started picking up speed but fast. Everybody aboard was watching the line, and everybody knew that a bluefish had taken my bait, the first strike of the day.

When all the slack was out of the line and it tightened, I set the little hook into solid weight. The rod tip was yanked down hard and the reel's ratchet screeched as yards of line went streaming out. The drag of the Medalist was fairly tight, but that bluefish took line like a bonefish. The end of the fly line rattled out through


**A wheelbarrow load of big bluefish and bonito (foreground) is far from impossible with fly tackle. This catch numbered nine fish, five of them in the sack.**

the guides, the backing following first. The commercial men were waiting for the rod to splinter, but that didn't happen.

What did happen was that the bluefish stopped after its first run of some 50 to 60 yards, and began to slug it out. The fight was savage, with much slugging and many short runs. It moved around to the other side of the boat. In typical bluefish fashion it stubbornly refused to give up, but after 15 minutes I had worked it close enough to the boat for Otto to gaff.

It weighed only five pounds but was my first flyrod bluefish!

I could say that the Idiot Stick caught more bluefish that day than the combined catch of the other four men on the boat. The reason I could say that is because it is true. The total production of the handlines was zero.

The reason, of course, was the clear water. The fish shied away from easily visible heavy lines, wire leaders, and big hooks, but were unafraid of the 10-pound monofillament leader and the glittering little hook. Over the long years since then the fly rod has often produced more fish for me than other tackle on the chumming grounds, always under conditions of clear, flat water on days of bright sunshine.

Bluefish are often a problem for conventional gear under such conditions, but much more so are tuna, false albacore, and common and oceanic bonito. The tuna-like fishes are all "gut-shy" but are relatively easy to fool with 10-pound-test mono. When tuna-like fishes only are in the slick it is wise to dispense with the short length of plastic-covered cable leader. This almost guarantees a strike every time the bait drifts back to where they are picking up the chum.

The largest offshore fish I ever caught on that old split-bamboo rod was a 17½-pound false albacore. It fought for an hour and a half. After running off some 300 yards of line, it commenced to circle the boat, around and around. I stood on the cabin roof throughout the long fight, while the men in the cockpit continued to fish for, and catch, bluefish and wondered when the idiot on the roof would fall overboard.

My split bamboo rod eventually was retired in favor of glass salt-water fly rods, which were hard to come by in the old days. Today every major manufacturer is offering fly rods for salt-water fishing, so that *aficionados* of the Idiot Stick (or the Magic Wand, if you like that appellation better) have a wide choice. The same goes for reels. In the old days the choice was either a big Medalist or an English salmon reel. There are more to choose from today, although the Medalist is still widely used.

It was one thing to flyfish on charter and private boats with small groups of men who were my friends, at least at the outset of the day; it took a little more courage to break out a fly rod on a party boat. Now, however, on days when a boat is not overcrowded and there is room to maneuver, I often use fly-fishing tackle. Sometimes I try it after I have caught all the fish I want to kill, or when I am tired. At other times I put my fly rod into action when the fish are suspicious and gut-shy.

Common practice on such days is to resort to light spinning tackle, casting small baits as far back into the slick as possible. However, a floating fly line does what it is supposed to do—it floats. It will drift your bait farther back than you can hope to cast, and when a fish picks it up you and everybody around you will be able to see the line take off.

I carry a dozen small clinch-on sinkers in my shirt pocket, changing the weight on the leader to suit the tide conditions and the taking level of the fish.

The biggest thrill of all, but the hardest work, is actually to use flies to entice the fish. On occasion a popping fly will work miracles, bringing smashing

strikes. A bluefish doesn't rise stealthily to suck in a dry fly like a brown trout, or like a largemouth bass inhaling a bug—a bluefish explodes!

However, in my experience, a chicken hackle or marabou streamer fly is usually more reliable. If you have the room, the fly can be cast in regulation fashion. If you don't, as on a crowded boat, it must be allowed to drift back into the chum slick. Keep stripping line off the reel and permit the fly to drift back and settle. I usually strip almost all the fly line and then start stripping back as fast as possible, allowing the coils to drop at my feet.

A wrist- and arm-wrenching strike may occur at any time during the retrieve, frequently after the fly is back in sight and close to the boat. The foamy explosion usually registers before I can focus on the onrushing fish. Hooked, the fish may take a moment or two to gather its senses, but it will be off on a blistering run. If you haven't been careful in dropping the retrieved line to avoid a tangle, the show can end abruptly.

If all goes well, as it should, the fish will soon have all the loose line off the deck and will be running off the reel, soon to be well into the backing. This brings up the point that, contrary to general expectations, the man with the Idiot Stick will not usually interfere with the other customers along the rail. Almost invariably the fish will move so far out on its initial run that it will be far beyond the lines and baited hooks of all the other fishermen.

After the fish is way out there, say 150 yards, it will usually stop and then move to either the left or the right. With long rod held high it is usually a simple matter to move along the deck with the fish, keeping your rod well above the heads of the other men, and work around to the other side of the boat where you will be in no one's way. The fight will always be long and tough, for none of these pelagic fish can be taken easily. Tuna over 25 pounds probably won't be taken at all, because you simply won't be able to stop the run on 10-pound-test line.

However, nobody wins all fights.

During the long season of 1974, bluefish arrived early off the Jersey shore and stayed late. Many were 12 pounds or larger and on most days were extremely voracious. Adding to the fireworks on the chumming grounds were a great many small bluefin tuna, mostly under 15 pounds plus a lot of common bonito and lesser numbers of false albacore and oceanic bonito or skipjacks.

Boats were crowded and fly-rod fishing was limited to the light days. Even so, the Idiot Stick accounted for plenty of bluefish up to 13 pounds, tuna and false albacore to 15 pounds, and bonito to 8 pounds.

Five-inch-long white chicken hackle streamer flies caught their share of fish but were soon chopped to pieces by the big bluefish. During most of the season I used a nine-foot Fenwick five-ounce rod with a WF10F Cortland line and a Medalist No. 1498 reel. The backing line was 20-pound-test braided dacron.

Earlier I had used a 1496 reel, but the backing line was nylon. It stretched so much under long runs with tuna and bonito that in several instances the flanges were sprung out, all but freezing the reels inoperable. This did not happen until nearly all the line was back on the reel. In each instance I managed to save the fish, finishing the fight by stripping the line in and permitting the coils to drop to the deck. With the larger reel and the dacron line this problem was eliminated.

To sum it all up, after two decades of fly-rod fishing on the open ocean I have concluded that the method is not only sporting but practical. Fly tackle can present a bait or artificial lure beyond spooking distance from a boat on next-to-invisible terminal tackle. Fewer strikes are missed with the fly rod because the line signals them, giving the angler time to get set. With other tackle the fisherman is apt to strike at the rap, before the fish has had time to grasp the bait and turn. Also, a bluefish hammering away against a heavy rod will often cause the hook to tear a long wound and drop out. Against a fly rod the fish wears itself out "punching the pillow."

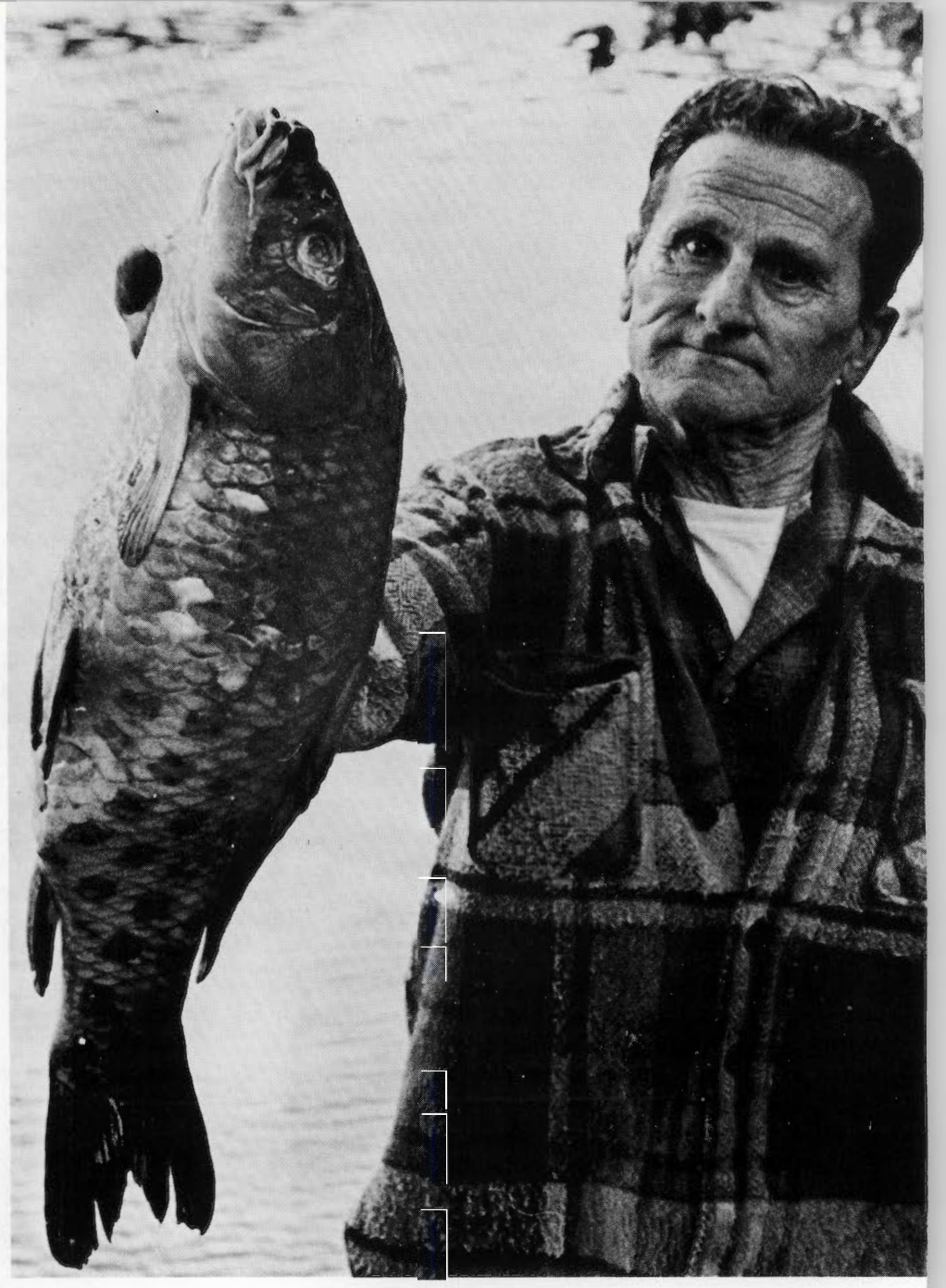
This is not to say that you will catch more fish on fly rods. You won't, because it takes a long time to wear down a big fish on such tackle. You will find, though, that for fun and sport the Idiot Stick is hard to beat. □

***Author with a 15-pound false albacore taken on fly tackle with a 10-pound test leader on the party boat Miss Regnilles II out of Point Plesant.***

# Fishin' —ala Carp

**DONALD J. JACANGELO**
Senior Fisheries Biologist
Bureau of Fisheries

HARRY GROSCH



*Asher Snook of Branchville with Delaware River Carp*

An invitation to catch some "tackle busters" close to home would raise the interest of any fisherman to near fever pitch. But say "carp" to these people and they'll probably grit their teeth and turn away.

It's true though! The common carp (or "ol' ironsides" as some lovingly refer to 'em) awaits, usually only a short distance from your favorite easy chair. And big-why the normal tackle used for most freshwater fishing in New Jersey will give ol' ironsides an edge you could regret. Carp repeatedly and obligingly demonstrate how they can mangle light tackle used to creel other fish; monofilament sent screaming off reels and poles bent around as if caught up on a passing motor boat reflect their brute strength. More than one unwary fisherman has had to chase after his pole when it jumped off its place of rest under tow by a carp! In fact, when other fish seem to refuse to bite, the low-ranked carp could offer a number one fishing experience for either novice or expert. Yet despite all the action and thrills that it offers, many avid fishermen still pass up hours of carp fishing pleasure close at hand.

The common or European carp *(Cyprinus carpio)* is not native to the Garden State—or to these United States. Our modern carp finds its ancestry in wild varieties that probably originated in Central Asia, later spreading east into China and west as far as the Danube River. Its residence in the United States dates back to a shipment brought here from Germany in the late 1800's; by the fall of 1879, the U.S. Bureau of Fisheries was propagating and distributing fingerling carp. However, this early enthusiasm for carp stocking was later to be equaled by disdain for fish as a result of the damage they caused to aquatic plants such as wild celery and pondweeds, which once attracted flights of canvasbacks and other waterfowl. Likewise, the carps hardiness and its ability to outcompete native game fish, when coupled with its wide scale distribution by man, resulted in the species becoming the predominant fish in many waters. This proliferation, plus the tendency of large carp populations to keep water in a state of roiliness because of their plant-uprooting, bottom-feeding habits, has given Mr. Carp a bad reputation. So acute is the resulting competition between carp and more desirable game fish that here in New Jersey,

as elsewhere, strict laws have been enacted which forbid the stocking of carp. In spite of such restrictions, though, all reasonable attempts to reduce the numbers of carp in public waters have failed. For better or worse, the carp is here to stay. Mr. Carp is an established naturalized resident, so let's accept him for his redeeming qualities of being easily accessible and capable of an exciting fight—an underrated sport fish species of considerable recreational value.

Unlike that used for most freshwater angling, the upfront tackle for successful carp fishing does not have to be sophisticated. So start by putting away all those hook-clad devices designed to warble, jingle, gyrate, or otherwise entice a fish to strike. The only way you'll catch carp with one of them is if he unwarily becomes foulhooked, and one thing about ol' ironsides—he's not gotten as far as he has by being unwary. When it comes to a hook, the only consistent way to get carp to bite is if you put food on it. Maybe this is why carp are such effective competitors.

In considering what hook to use, the best size will be partly determined by your line strength and the size of the fish you're after. Generally, though, a forged, short-shanked, number 6 bait hook is a good choice; however, a single hook sizes from 4 to 10 have been used effectively. As a bonus for using smaller hook sizes, you'll not only creel more carp, but you may also catch other fish such as bullheads and channel catfish. Treble hooks work too, and have the advantage of holding soft doughball baits more effectively than the single hooks; a number 12 bait-holder-type treble hook is a good choice. The disadvantage of using a treble hook is related to the bottom type commonly fished. Since good carp fishing and bottom snags seem to occur in the same place, the fewer problems experienced with snags when using a single hook could tend to outweigh the advantages of using treble hooks.

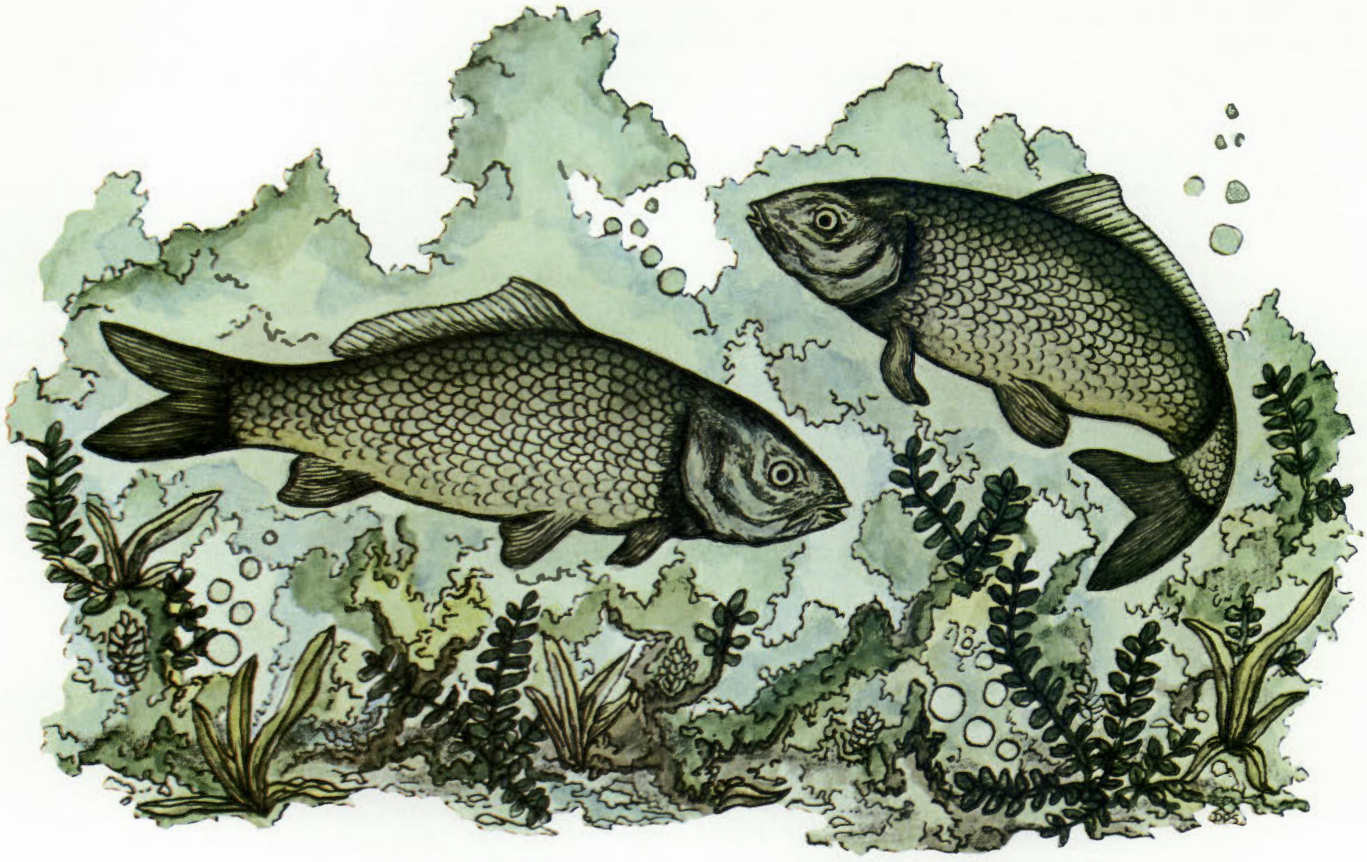
The backup to your up-front tackle has got to match your quarry. Trying to set a hook into the tough lips of a wary carp with ultralight tackle requires experience. It's akin to trying to drive spikes with a rubber mallet. The novice should leave that light tackle at home, for there is nothing sporting about testing a carp and having him leave the contest trailing several dozen yards of your best 2-pound-test monofilament. Give ol' ironsides his due for fighting ability and strength. Especially in his river haunts, where currents only tend to magnify the brutality of his assault on your tackle, anything less than equipment designed for taking bass is inadequate.

In general, a good back-up tackle combination would consist of 100-150 yards of 10-pound-test line and a medium-duty open-faced spin reel atop one of the longer so-called "lunker sticks". Bait-casting reels are good in experienced hands, but difficulty in casting light baits, plus inconvenience of line overruns and in applying drag, makes the modern spinning reel the first choice of most fishermen. The advantage of open bait fishing when not holding your rod, with little possibility of strike-caused line overrun, is another decided plus in favor of using a spinning reel. Your choice of pole should be guided largely by where you fish. That is, a six-foot-plus pole spined to hook and turn a snag-bound lunker, yet giving smooth tip-to-butt powerflow, is the ideal tool for the river carp fisherman. Admittedly though, some of this power will compromise your ability to cast light baits, a necessary consideration if you are limited to shoreline fishing.

As mentioned earlier, Mr. Carp loves food. He'll eat insect larvae, small crustaceans, snails, plants, worms, or whatever strikes his fancy. Although this suggests that carp can be caught on almost anything edible, in practice the choice of bait may be limited by established baits in local use. In New Jersey whole-kernel sweet corn or a cornmeal-based dough have been used effectively to catch carp. Bread balls and pieces of half-boiled potatoes have also been used. Most of numerous "secret" recipes for carp bait are flour—or cornmeal-based, but that's where the similarity ends and "exotica" begins. Some recipes employ strawberry gelatin, others vanilla—or both; some have fat drippings, sugar, or molasses added; and one (which might offer a side benefit to the fisherman on a slow day) incorporates bourbon. In any event, the real secret in employing carp baits successfully seems to rest with "teaching" the carp where you fish that *your* bait is food. This is accomplished by offering numerous small pieces of your bait recipe to the carp—without any strings attached, so to speak. Such "chumming" is effective in increasing angling success during the 24-hour period following its application; however, it is not recommended if you're fishing in clear, shallow water, say less than three feet deep, or where the current will transport your chum downstream away from your intended fishing spot.

Although bait fishing remains the standard method of angling for carp, a meager but growing body of evidence does suggest that large carp are not immune to taking an artifical lure. As you will recall, carp consider a wide range of things to be food, including worms. Certain artifical lures, some of which probably resemble worms or some other life form which Mr. Carp dines upon, have accounted for creeling large carp. While the use of artificial lures may not be a ranking method for catching carp, it does afford an area for exploration and experimentation to the fun-fishing enthusiast seeking a new or unique experience.

Speaking of unique experiences with carp, a steelworker acquaintance related an encounter with a large carp in the Delaware River between New Jersey and Pennsylvania. On this particular day, hot rivets were being driven into place in the steel superstructure of a bridge. Not infrequently, a hot rivet would drop into the river with a hiss and its red glow could be observed on its long descent into the river depths. On one occasion, a hot rivet had barely hit the water when a rather large carp intercepted its descent and sucked it in. It's difficult to imagine what food form the "river lure" represented to the carp, but as a result of this meeting, the carp performed every surface acrobatic one would expect—and then some. The finale came in a surface dash across the full width of the river, terminating well up on the opposite shore where the carp expired. Of course fishing with hot rivets is not recommended, however this instance does attest to the peculiar vulnerability of large carp to lures. Interestingly, experiences of those who have caught carp on lures indicates that the ferocity of the strike and ensuing battle is much more intense than when carp are taken while bottom fishing with bait. At any rate, testing a large carp with artificial



ILLUSTRATIONS BY DEBRA P. SMITH

lures does seem a challenge worthy of pursuit.

Research into the feeding habits of carp has shown that carp continue to feed throughout the year; however, in New Jersey their feeding activities are considerably reduced during December, January, and February, or when water temperatures drop below 45°F. Even at the lower winter temperatures though, successful carp fishing can still be expected in the deeper pools. Only when low oxygen conditions are induced by persistent ice cover will carp feeding be reduced so far as to make fishing success unlikely.

In practice, most people seem to do their carp fishing during the summer months, probably because conditions are more comfortable and because they have more free daylight hours for pursuit of their angling interests. For this reason, New Jersey carp fishing activity begins around April and extends through October. However, while fishing success will vary, it seems that as water temperatures approach 50°F carp become increasingly more active; angling success parallels this increased activity. Since carp do not spawn in water much below 60°F and prefer spawning in shallow water (up to three feet deep) over muck or vegetation bottoms, often in the upper one-third of an impoundment, the knowledgeable angler would do well to concentrate his early season efforts accordingly. Also, carp in river will tend to migrate upstream to spawn, so it's not unusual to find large carp collecting in pools below dams in early spring.

As already mentioned, for almost any fisherman, places to fish for carp in New Jersey are close at hand. A long-distance drive may be the order of business for pursuit of the more regal freshwater game species such as trout, but large populations of carp inhabit waters close to the metropolitan areas of New Jersey. You'll find particularly good carp fishing in the following waters:

Passaic River in Essex and Morris Counties
Pompton River and Pompton Lake
Ramapo River and Dead River
Cooper River
Big Timber Creek
Millstone River and Carnegie Lake
Columbia Lake and Paulinskill Lake
Harrisonville Lake and Union Lake
Hackensack River
Delaware River

The Delaware River is well known as a consistent producer of massive carp—including the current state record, which weighed in at slightly over 41 pounds.

As with any fresh-caught fish destined for the table, carp should be gutted and iced down as soon as possible after being caught to assure its wholesomeness. Especially during the hot summer months, since all the processes of spoilage are accelerated by high temperature, cleaning and cold storage of fish is a necessity. In general carp can be cleaned in the same way any other fish, such as a largemouth bass—namely, it can be scaled or skinned and with some practice even filleted. However, the dark red meat along each side of a carp should be removed. This meat, also the skin of carp, are said to impart a strong flavor if not removed before cooking.

Carp can be cooked in a variety of methods limited only by one's own taste preference: smoked, broiled, boiled, pickled, steamed, chowdered, or fried. However, the flavor of carp is said to be enhanced by allowing the cleaned, or so-called "dressed", fish flesh to soak for about an hour in the following mixture:

1 large onion, finely ground
1 cup salt
2 tablespoons vinegar
⅛ teaspoon mace
1 teaspoon black pepper

Make sure all surfaces of the dressed fish are covered. Remove the fish after an hour, rinse it thoroughly, and discard the mixture.

If you seek a contemplative fishing experience, the summertime pursuit of the wily carp can be rewarding. Generally, in contrast to the strength and action displayed by a carp fighting on the end of a hook and line, their normal activity is about as uneventful as cattle grazing contently in a meadow. It is not unusual for the casual observer to catch sight of a carp gliding lazily at the surface of the water. This extraordinarily large member of the minnow family is a seemingly timid creature which abhors commotion. When happened upon, Mr. Carp will retreat from observers with a powerful but casual flick of its tail. Understanding the timidness of the wily carp suggests that the angler should also retreat from commotion in his pursuit of this species. The quiet bank of a slow-moving river, or the cover where no motorboats roar by is the order of business in carp fishing. Now lay out your line with just enough weight to hold the bait in place on the bottom, set your pole at an angle resting in a Y of a branch, open the bail on your spin reel, and settle yourself down in a comfortable position. Relax and wait. But don't lose sight of your line, for carp "hit" in two distinct ways. One is gentle, causing an all-but-undetectable movement in the line; the other is violent, causing a mighty lurch of your pole. If you fish for carp *too* contemplatively you might not gather your faculties in time to catch your pole. Usually it seems that the wily carp has been looking the angler over, because mighty often the fisherman is off guard when ol' ironsides makes his move. And if you still don't think a twenty-pound-plus carp can move—just wait! □

***Cyprinus* (*believe it or not it's good eating*) *carpio***

# Try Eating Carp

**BY JIM FITZSIMMONS**

Well here you are, carp fans. The recipes you've all been waiting for are finally here. Get to your fishing—then begin your feasting. Allow the mighty carp some room at your dinner table. After all, this much-maligned creature has been revered as table fare throughout the world for many centuries. Allow the sages of old, the monks of Europe, and the peasants of China to lead you to a truly delightful fish, the carp. All you need do is use some hooks, line, bobbers, doughballs, nets, or whatever else you prefer—and catch a carp. Then:

**Try frying it:**

1. Skin the carp by boiling first to loosen the skin.
2. Bone the fat, juicy meat.
3. Wash the skinned, boned pieces with much cool water.
4. Coat the pieces with Shake & Bake. (or your own home brew of flour and cooking oil).
5. Salt, pepper, garlic, onion to your own delight.
6. Carefully drop pieces into sizzling oil.
7. Fry 'till crunchy—and you've got your own brand of Arthur Treacher.

**Or—try boiling it:**

—Follow steps 1, 2, 3, and 5 for frying.
—Now, put the pieces into a french-fry basket and immerse in boiling water.
—Boil away 'til done enough to eat.
—Pour over it the finest butter you can melt, and you are ready to enjoy.

**Or—why not "dip it"?**

—Follow the steps for boiled carp but omit the butter.
—Fork the cooked pieces and "dlop" in enough mayonnaise to make it all spreadable.
—You'll find this scrumptious on your favorite cracker.

**You can even "foil it":**

Wrap up several pounds of carp fillets with a few pieces of sliced onion and sliced peppers. Before closing the foil tightly on the fish and vegetables, pour a mixture of 2 Tbsp. lemon juice, several shakes of salt and pepper, and a dash of paprika over the whole delightful mess. Cook the foiled fish in a moderately hot oven for an hour—or until the fish is flakey. You've really got something here.

**By all means—cover it with an extraordinary sauce:**

This sure beats everything when poured over fried or boiled carp. Mix and heat this delightful combination:

1 10-oz. can brown gravy
¼ cup crushed ginger snaps
¼ cup raisins
¼ cup slivered almonds (roasted & skinned)
½ tsp. sugar
½ cup red wine (why not)

What a way to smother carp! □

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# THE OLD MINE ROAD

the fascinating region that Hine described to us. We fell asleep listening to Henry Hudson and his men bowling up in the Catskills. Fortunately, the storm passed quickly and we awoke to find the sun shining.

Next day we passed the Leuren Kill, Basha's Kill, and the Neversink—all streams along the road. We cycled through Wurtsboro, Cudderbackville, and Hugenot. At one time we would have passed into New Jersey at this point, seven miles above the present line. A dispute over the northern border of New Jersey led to a 60-year border war in this area, which today belongs to New York. Another seven miles of pedaling brought us into Port Jervis, ready for the part of our journey that lay in New Jersey.

In Port Jervis we took a short detour to find the Tri-State Monument, which marks the corner where New York, New Jersey, and Pennsylvania meet. It was here that we joined the Delaware River and found traces of the old Delaware-Hudson Canal which may still be seen along the Old Mine Road. Our journey was half over.

As we made a right turn out of Port Jervis, we were pleased to see that the road sign read "Old Mine Road"—although a very unromantic gas station attendant told us that it was Route 516.

Up to this point we had encountered quite a bit of traffic along the straightened and widened road.

Even in 1908 Hine had complained of "automobiles, those pests that, like an insistent fly, will not leave us alone."

In pleasant contrast, the New Jersey section of the road is much narrower, with very few towns and little traffic, and seems to follow the original route a little more closely. We rode for hours without meeting a car or seeing another human being, through what I consider to be the most beautiful countryside in New Jersey.

Much of the area through which the Old Mine Road passes is now part of the Delaware Water Gap National Recreation Area, and is managed by the U.S. Department of the Interior. Camping spots are numerous and access to the Delaware River is easy. After locating a nice place overlooking the Delaware, we made camp. We had cycled 40 miles for the day and had passed through three states.

The next day, when we were not following the Delaware River the FlatBrook rippled on our left. Since the day was hot we swam often in one or the other. We passed a youth hostel—conveniently located near Dingman's Ferry about halfway down the New Jersey section of the road.

After leaving Flatbrook and walking our bikes up a tremendous hill, we came to Walpack Center, a village consisting of a few homes and a delightful general store. Sitting on the front porch of the Walpack Central General Store, we enjoyed a cola while the proprietor showed us a marvelous collection of photographs he had taken. We passed an enjoyable hour in his company and resumed our journey thoroughly refreshed.

Soon after Walpack Center (after a couple of thrilling downhill runs), we approached the mountains where the mines lay hidden. I had visited these mines as a boy, but much had changed since then. The Department of Interior had torn down many of the buildings that I used as landmarks. Searching for the side of the road for some sign to help me, I finally seemed to recognize a small creek and some old stone walls. We dismounted and left our bikes to climb the mountain.

The trail up proved very easy walking. At our side a beautiful mountain stream cascaded over rocks in its course through the rhododendron covering the hillside. I was as surprised as the boys when we actually found the entrance to one of the mines. We walked in about 20 feet and enjoyed the cool darkness of the shaft. We had reached the mine holes of Pahaquarry—our journey was now complete. □

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*Continued from page 9*


# WILDLIFE CONTROL TODAY

municipal regulations this procedure cannot always be followed. In such cases, state law allows other control methods to be used; it is the responsibility of the Wildlife Control Unit to implement these methods.

The Wildlife Control Unit consists of a supervisor and five wildlife control representatives, operating statewide; other Bureaus within the Division may provide additional assistance. Complaints dealing with nonmigratory species of wildlife fall within the responsibility of the Control Unit, whereas migratory species are presently the responsibility of the U.S. Fish and Wildlife Service. Examples of complaints handled by the Wildlife Control Unit range from squirrels in the attic, raccoons in garbage cans, and snakes in the sofa to damage by deer to farmers' crops. Frantic phone calls are the order of the day, ranging from a mother wondering what to do with a baby skunk that "adopted" her son's black-and-white sneakers, to a farmer wanting to know if sprinkling cement on field corn will prevent deer damage.

It seems that the baby skunk followed the boy home because it had mistaken his black and white basketball (stinky) sneakers for its mother. The farmer had heard that deer would eat corn sprinkled with cement thus causing blockage of their digestive system.

A retired Army officer asked for permission to use a mortar to fire air bursts over a deer herd that was eating his crops.

Emphasis by the Control Unit is upon the removal of *only* individual animals responsible for the incidents; it is not the policy of the unit to completely remove the total population of a species in an area of depredation.

Complaints received at the unit's headquarters, located at Clinton Wildlife Management Area (201-735-8793), are served in the following manner:

1. Reports are checked as to the validity of the complaint.
2. If a definite problem exists, the complainant is informed as to his responsibility under state law.
3. In specific problems, technical assistance is provided to alleviate the complaint.
4. When required the unit provides live traps on a deposit loan basis for the removal of offending wildlife.
5. In special circumstances, on-site inspections are carried out by the unit and recommendations are made.
6. If a complaint is not in the field of responsibility of the Control Unit it will be referred to the proper agency for action.

**Present Problems of Wildlife Control**

Problems associated with wildlife control can be classified into several categories. These include restrictive legislation which prevents the use of biologically sound control techniques, reduction in wildlife habitat as a result of increased urbanization, lack of public understanding of our wildlife and their habits, and increasing costs of control methods. It should be emphasized that the Wildlife Control Unit is funded entirely from license fees paid by the sportsmen of New Jersey.

**Future Directions in Wildlife Control**

More efficient and more economical methods must be developed for wildlife control. To accomplish these goals the Unit is developing research programs to determine the extent of problems, new techniques for control, and methods for increasing public awareness of wildlife control problems. □


*Stokes State Forest YCC camp is located at Stepping Stone Environmental Center.*

# teenage hardhats
## a new forest species!

**BY DUANE R. PIERSON**

PHOTOS BY AUTHOR

***Shattering the summer stillness of Stokes State Forest, the shrill of saws and the rapping of hammers mimic the cicada and the pileated woodpecker. The forest visitor seeking the source of these intruding sounds will discover a rather surprising spectacle.***

Breaking into a forest clearing, he is first greeted by a profusion of bright-colored hardhats. Incredulous, he finds that under the red and the yellow are teenage girls wielding hammers and sawing lumber. Working side by side with the girls are boys of the same age; together they are finishing a project most professional in appearance. Our visitor is watching the Youth Conservation Corps at work.

This summer marks the YCC's third season in New Jersey. During these three years it has achieved a standard of excellence unsurpassed by the more than 400 similar federal and state camps throughout the country. Patterned upon the principles of the Civilian Conservation Corps that worked the same area in the 1930's, the YCC strives to maintain the same standard of excellence as its progenitor.

One hundred and ten young men and women between the ages of 15 and 18 representing every level of income, every type of community, and all ethnic groups make up the corps. They are chosen through a

***Beautiful new sanitary facility at Sunrise Mountain nears completion.***

***Workleader Dan La Poma, River Edge, leads his work group in constructing new stone pillars at the entrance to Stoney Lake.***

random selection process that gives equal representation to all areas and people.

Leadership for the groups is provided by a staff carefully selected for several specific qualities. Among the criteria are environmental science background and awareness, construction skills, and leadership ability. Workleaders fulfill dual roles as counselors and work project supervisors. As with the corpspeople, sexes are equally represented. Staff members come from colleges as diverse as Cook College, Ramapo, William Paterson, Cornell, Syracuse, University of Michigan, and University of Massachusetts.

Much of the success of New Jersey's Stokes State Forest program can be attributed to Lou Cherapy, Stokes State Forest Superintendent; as project director he takes a year around interest in the program. Experience around the country has proven that camps succeed through the leadership, inspiration, and cooperation provided by the host government agency. The YCC in Stokes has been made to feel most welcome, has been given excellent support, and has consequently proven itself in the highest manner.

YCC projects in Stokes State Forest have been diverse and often sophisticated; many involve quite elaborate masonry and carpentry techniques. Standards of quality are very high, as the YCC seeks to emulate the work turned out 40 years earlier by the CCC. In rare instances jobs have had to be redone until the lesson is learned.

The law that established the YCC stipulates that most of the work shall be in the nature of conserving natural resources. In accordance with this directive, many projects involve providing wildlife habitat, improving stream habitats, and forest management done in cooperation with the appropriate state agency.

All is not work. YCC rules state that all corpspeople will put in, and be paid the minimum wage for a 40-hour week; one-fourth of this time is to be devoted to

***Birty Gillis, Camden, takes a minute's rest atop the Sunrise Mountain roofing job.***

***YCC'ers put the finishing touches on new boat dock at Stoney Lake.***

environmental education. New Jersey's program is one of the most thorough and efficient in the nation. Corpspeople work four days of the week and spend the fifth in structured environmental education. On-the-job education and an evening alternative education program are also available. The entire program covers topics ranging from water and soil management to more esoteric areas such as solar energy usage.

The 40-hour work and education week is not the entire program. YCC provides a total full-time group living experience. Camp is run in paramilitary fashion. Initially there are no privileges, but a camp council establishes and elaborates rules as the summer progresses. Some evenings feature planned programs, while others are filled with recreation or with chores such as a trip to the laundromat.

Weekends offer opportunities to go backpacking, canoe tripping, on the Delaware River, overnight bicycle tripping, or several alternatives. Each corpsperson has the opportunity to participate at least once during the summer in each weekend activity.

Perhaps most demanding, but also remembered by the participants as worthwhile, is the morning exercise program. Arising at 5:30 a.m., the entire camp joins in calisthenics, followed by a two-mile run and a plunge in the ice-cold swimming hole.

During the first two years of the YCC program there have been virtually no discipline problems and only two enrollees have had to leave the program for personal reasons. Perhaps the biggest problem faced by all involved is that the summer ends. After eight weeks of working with good people, in a program in which you believe, and in a place as beautiful as Stokes State Forest, it's most difficult to emerge into the outside world.

Each summer YCC does a lot of good for New Jersey's natural environment and for the people working in the Program. Cost to the state is negligible, as most of the funding is provided by the federal government. YCC is one program that returns at least one dollar for every one spent not counting the intangible benefits.

If in your visits to New Jersey's parks and forests this summer, you should find a group of hardhatted teenagers working away, ask them about their work. They'll be glad to tell you, for they believe in it.

In addition to the 40 in camp at Stokes, a seven-day week coed residential camp for 20 is planned for Belleplain State Forest in Cape May County. Two five-day week coed non-residential camps are also planned. One camp for 30 youths will be located at Ringwood State Park in Passaic County. The other non-residential camp for 20 youths will be held at Liberty State Park, now partly under construction in Hudson County.

There are three Corps camps in New Jersey operated by the Federal Government. The Federal YCC program will consist of three five-day week coed non-residential camps, 20 each. The camps are located at Brigantine National Wildlife Refuge in Atlantic County, Great Swamp National Wildlife Refuge and Morristown National Historic Park, both in Morris County.

All YCC camps are open to both boys and girls, age 15 through 18, who live in New Jersey. The camps, which opened in early July, will operate for eight weeks. The weekly schedule will consist of thirty hours of conservation work combined with ten hours of environmental education. The pay is based on a thirty hour week at $2.20 per hour. Enrollees will receive a salary of $528 for the summer, less $14 per week for room and board at residential camps.

Enrollees for the residential camps (Stokes and Belleplain State Forests) will be recruited state-wide. Enrollees for the non-residential camps (Ringwood and Liberty State Parks; Brigantine and Great Swamp National Wildlife Refuges, Morristown National Historic Park) will be recruited from communities adjacent to the camps. The enrollees attending the non-residential camps will be responsible to provide their own lunches and transportation to and from camp.

Also an additional seven prospective State camps with five non-residential enrollees in each will be operated at Allaire, Washington Crossing, Parvin, Wharton, Cape May, Island Beach and Lebanon. □

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FRONT COVER

*Marina Sunrise at Atlantic Highlands — photographed by Al Nunes-Vais*

INSIDE BACK COVER

*Lower Bank on the Mullica River — photographed by Louis E. DeSiena*

BACK COVER

*Waterlilies at Chatsworth — photographed by David M. Campione*