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New Jersey

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Outdoors

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July, 1971

REFERENCE
DEPARTMENT



Present and Future

By Russell A. Cookingham, *Director*



Much is said about New Jersey's population explosion, its bursting suburbs, its 900 people per square mile, its traffic problems, its pollution and, at times, its loss of wildlife habitat.

Those most concerned with the above problems understandably believe that the state wildlife populations must be in poor shape.

Nothing is further from the truth. New Jersey's diversified ecological types have provided (on a unit basis) one of the most productive states in terms of wildlife populations. Consider its 60,000 deer; its hundreds of thousands of waterfowl; its abundant fishing waters, both fresh and salt; its high populations of pheasant, quail, rabbits, muskrats, songbirds, and shorebirds. And let's not forget its highs in raccoons, skunks, and squirrels in the populous suburbs of our cities and villages.

New Jersey still has over 2 million acres of private forest land, one million acres of farm land, 300,000 acres of coastal wetland, and 300,000 acres of state-owned game lands, forests, and parks, plus many more acres of open space owned by other state agencies, counties, towns, and private conservation groups.

Yes, wildlife in New Jersey is here to stay, but its future will depend on broad imaginative policies and programs to acquire, protect, and develop remaining high quality habitat. Such programs must be implemented now and in the immediate future because time is running out.

It is unfortunate in these critical times that so much energy is being expended by people with diverse wildlife interests over philosophical differences in wildlife conservation. It should become obvious to all that only one consideration really matters—that of saving and maintaining quality wildlife habitat. #

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New Jersey *Outdoors*

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Yvonne Di Santo's record dolphin proved to be 48 pounds and 15 ounces with a length of 3 feet and 9 inches. She was fishing on the "Sweet-Pea" captained by her father, Dr. William E. Di Santo.

**How I Caught My
New State Record**

Dolphin

By Yvonne Di Santo

The Prelude

It was the weekend after hurricane "Camille," and here we were out again for another fishing trip, taking with us explicit memories of the previous week before when we encountered the tail-end of the hurricane in the Baltimore Canyon (located approximately 75 miles Southeast of Cape May) forcing us to fight her all the way home. The waves were breaking clear over the top of the bridge ripping off the bimini top and landing copious amounts of water in the cockpit. Trying to quarter the waves was to no avail; so as another resource, dad tried going down wind but the bow of the boat would hit the crest of the next wave causing us to slow down and permitting even more waves to break in the cockpit. I climbed down from the bridge and freed the scupper holes to ease the cockpit of its burdensome water when a wave knocked me to the other side of the boat. Had it not been for the fishing rods, I would have been washed over. Dad warned me to lie flat

on the deck, but I was still tossed from side to side. Managing somehow to grab hold of the ladder, I fought my way up to the bridge where dad tied me to the pilot chair and instructed me to steer while he descended to investigate damages. On seeing water only an inch from the battery tops, he sent a May Day which was received by another boat who contacted the Coast Guard out of Cape May. The Coast Guard's assistance was rendered in minutes by a helicopter equipped with a pump. Without the pump, well . . ., we just couldn't have made it. We thank God for making it possible for us to get home, as it was a day we shall remember.

Day Before

Everyone is aboard today—August 22, 1969. The crew included Dad, Mommy, Ginny, Billy, Debby, Angela, my cousin Joe, Mary Tutterice, a friend of the family, and me.

We left the dock at 5 a.m. and the water was slightly choppy on

. . . Dolphin

the way out, but after we passed the 30 fathom curve, it was flat.

In a short time we were to rendezvous with two other boats: a dragger called the "Ida L," and a sport boat called the "Anna M." It was about 8:30 when we arrived at our destination, and dad had his usual set up of his baits and rods, but no one was catching anything. By 9:00 a.m. everything broke loose! We caught five marlin before noon. Then it was as though a requiem had set; we caught nothing at all until 4:30 p.m. At this time, a fish rose and began charging at the bait. We caught three more.

Carl on the "Anna M" said that he was fighting a blue marlin for 3½ hours, but was further East and in deeper water. That was all dad had to hear. As far as he was concerned their conversation was at an end; and needing no further encouragement, started to troll off. I reminded him that it was late and that we should be starting back, but his only comment was "we'll go back tomorrow." "What," I exclaimed, "do you mean we're going to stay out here all night?" "Yes," answered dad, and started talking on the radio advising other boats of his decision. Before fifteen minutes went by, there were six other boats staying overnight in the Baltimore Canyon. We harbored around each other and the dragger.

It was a nice peaceful night, and we were able to watch the stars and lights of large steamers going North and South. All that was to be heard was the gentle slapping of the waves against the hull. Everyone took a turn watching, and slept only a few hours.

The Big Day

At 4:45 a.m. dad said, "ok, up and at 'em! We want to be on the fish when the sun comes up." He had spent most of the night rigging different baits and catching fresh squid with a spotlight and a net for this day—August 23.

Wham! ! ! . . . went the engines and dad went to the bow to pull in the sea anchor. Well, we were off again, only this time we headed due East (that means straight off and in deeper water.) When we were almost at 45 fathoms, dad said "go until you hit 150 fathoms," and I thought to myself, "well heck, Hong Kong can't be much further!"

Dad was talking on the radio with the dragger and to Carl Galentino on the "Anna M." Carl went in and came out—that meant that he ran all night. Now I ask you, there we were yesterday, we caught five marlin before lunch and three before dinner, and here we are going this far off shore. I knew what dad wanted. He wanted a monster blue marlin.

We arrived at the 150 fathom curve and started fishing, trolling still further off. By now it was 7 a.m. and in 575 fathoms. As

usual we had a light rod on the bridge. Dad went below in the cockpit because of a knock down on the right outrigger, and suddenly I could see a long blue streak behind the baits. For some reason the fish took a fancy to the rod on the bridge that had a ballyoo with a feather in front. The rod bent and the reel spun, but then it became slack again. I raised the rod and started reeling in the line to change the bait when I saw dad coming back up to the bridge. "Drop it back to him when he is ready to hit," he yelled. I continued to reel and waited until the fish was about six inches away from the bait. Then I raised the rod high in the air free spooling it, but holding the reel with my finger. Just as he was about to make a pass at the bait, I dropped it to point it directly at the fish and free spooled at the same time. This method, dad said, gives them a little more time to swallow the bait effortlessly. Well, his theory was right here! I set the strike position and I thought the bottom of the ocean was on the end of my line. Dad was steering and coaching me. "Easy on the drag, you only have a light line." Then the reel was smoking and the line was getting short. I told dad we were running out of line. He then hit the left throttle and turned the wheel to the right yelling, "Reel! Reel! Reel!" Now the line was coming back. Dad watched me as I sat on the bridge in the fighting chair. When it appeared that I

was getting tired, dad would stretch out the line by steering the boat straight away from the fish, giving me a rest. All I had to do then was lean into the fish and hold on.

The Fish

We still didn't know what kind of a fish it was, but this was brought to light when he jumped. "Wow," dad said, "that sure is a big dolphin! Do you want to go and fight him in the cockpit and sit in the big chair?" I told dad that I wasn't moving. "Ok," he said, "but keep holding on." What a fight! He was going from side to side in the stern. I kept pulling and reeling, stealing a foot at a time. Dad kept saying, "easy, easy, remember you have a light line. Don't horse him."

Eventually, the fish started to tire and the line was coming in easier. Now I was able to see the double line. Dad yelled down to mommy to come up to the bridge in order that he may go down and gaff the fish. Ginny had the large and small gaffs ready. The large one, not the flying one with a rope through the hole on the handle, was tied to the cleat in the stern. Mommy took over and Ginny helped dad with his gloves waiting only then for the leader. Up came the leader but dad couldn't get it for the fish made another run. After a couple more runs, dad was able to get the leader but the battle wasn't over yet, for now the fish was jumping all over the back of

. . . Dolphin

the boat. Dad said the fish was too green to gaff and let go of the leader yelling up to mommy to put it in a tight circle. Mommy did this, but it was still a job to hold on. When daddy yelled faster, I thought I would never make it, but much to my surprise, the strain became less and less. Now dad was able to grab the leader and the fish with all of its beautiful colors was swimming alongside of the boat. Dad, in his usual methodical way followed the fish with the gaff, and suddenly gave a stab. Wow! What action!!! The gaff flew out of daddy's hand, but he managed to hold on to the rope and started pulling. One could see white water and a beautiful colored fish jumping. What a sight! Dad yelled to me to loosen up on the drag. This I did just as the fish made a high jump and was off the gaff, making another run. Thank goodness, he didn't break the line! Dad watched him swim and then made another shot. This time the fish jumped again, only dad gave him a sudden jerk bringing him into the cockpit. What a mess! Thrashing, the fish knocked the fish box, buckets, and the ice chest all over the place. Dad took a swing, caught him in the eye, threw him in the box, and along with Ginny sat on the lid. It was comical to watch them being taken for a ride by the fish with the lower half of its body flapping wildly out of the box. Phew! Was I exhausted! I could just

about raise my arms to steer the boat while mommy went down to help daddy and Ginny put the baits out.

The Biggest

Daddy called Carl to tell him we caught the biggest dolphin he ever saw. Carl congratulated us and the radio stopped working. We caught six more, all ranging about 30 to 38 pounds. What a havoc it was! All of us had a whirl, . . . all except daddy that is. He still wanted a monster blue marlin. Well, he didn't get a blue marlin, but we caught two albacore. Debby caught the one 49 pounds, 16 ounces, and Ginny's was 54 pounds, 10 ounces. These fish gave a great deal of confusion on the dock as some of the experienced captains called them big eye tuna while others called them allison tuna. Three weeks later, Captain George Larson, a professional, presented two books; one on ichthyology and the other on facts about different species and descriptions of fish. Decidedly it was albacore caught on the West Coast or more commonly referred to as white tuna.

We started to troll home, and when we reached 65 fathoms we caught two white marlin. Poor daddy! He still didn't get a crack at them because they were Ginny's and mommy's.

Well, it was time to head for home, and the idea sounded good. Besides, the wind was coming out of the Southwest and that meant a nice ride home. #

A Vacation Extra

No matter where you spend your summer vacation, the chances are your travel route will take you near some scenic spots or historic sites. If your time schedule permits, you are probably planning side trips to visit at least some of these places. But like many people you may have overlooked what could be another rewarding part of your trip—wildlife.

Planning to see wild animals and birds is not always an easy task, however. Unlike a mountain or a museum, a wild creature can't be relied on to stay in one spot until you get there. If you have some prior knowledge about the habits of various species, the odds of success increase. You'll add some fun and educational value to your trip if you follow these tips:

1. The best time to spot most animals, and big game especially, is early in the morning or late in the day. This is particularly true in midsummer. It's as natural for wild creatures to want to stay out of the heat as it is for humans, so they tend to feed at dawn and dusk and bed down in the middle of the day. So plan your game-viewing side ventures after supper or at sunrise.
2. Country roads, fire lanes, and spots where open fields border wooded areas generally offer the best places to spot birds and mammals. Edges between different kinds of vegetation are also a good bet.
3. Water is always a drawing card. Wildlife have to drink and so rivers, streams, lakes, or just beaver ponds or wet meadows can be a good bet. Remember, wild creatures don't like to get too far from cover, though, so don't expect to see much if there are no protective trees, shrubs, or grasses around.
4. You won't need any special equipment but field glasses are a help. Pocket-size guides to various birds and mammals will also be helpful in identifying what you see. A number of good ones are available at modest prices.
5. In national and state parks or forests or federal refuges, descriptive leaflets are often available to help you in locating the best places for seeing wildlife and identifying what you spot. Rangers and naturalists are helpful, too, and often conducted tours are offered. Resort operators can also be helpful. They know the country around them and what it has to offer.

Whether you spot a deer in the woods or just a squirrel in a small town square, looking for wildlife and knowing how to identify what you see can add an extra dimension to your family's vacation. #

Earliest Artificial Reef

By Dick Stroud

So far as we had been able to determine, during several years of searching out information on the subject, the earliest artificial marine fishing reefs (outside Japanese waters) seemed to have been constructed in American coastal waters around 1950. It seems clear, however, that whoever first conceived of constructing such reefs to improve ocean fishing (whenver it was first undertaken) undoubtedly got the idea from the long known fact that fishing is especially productive near sunken shipwrecks, etc. In any event, it now appears that the earliest deliberate attempt in this country at marine sport fish management by means of such underwater structures occurred at least 15 years earlier.

According to a letter to the Sport Fishing Institute, from outdoors editor Charles H. Vaughan of *The Philadelphia Inquirer*, the real pioneer and those who helped him carry it through to a successful completion have never been given the credit they rightfully deserve. Vaughan assigns the credit to the late Captain Robert G. Pierpoint, for many years a party fishing boat skipper in the Cape May-Wildwood, New Jersey, area. He, his associates, many friends, and area anglers, constructed such a reef, apparently the first, in 1935 and 1936, enlarging it in 1937.

Interestingly, Vaughan provided documentation in support of his report in the form of Xerox copies of the pages of a booklet that was distributed by the Pennsylvania-Reading Seashore Lines in 1936. It promoted their "Fishermen's Specials"—well patronized 10 to 14-car trains they once ran from Philadelphia to the South Jersey Coast. A brief background concerning the reef is included, captioned "The Cape May-Wildwood Fishing Preserve," together with mention of a second reef or "fishing preserve" on which construction was begun in 1936 off Atlantic City. A stylized fishing map shows location of the two areas offshore and the route of the "Fishermen's Specials" across South Jersey.

Both areas were highly productive, according to Vaughan, with anglers catches trebled and quadrupled at the preserves, compared to earlier catches in the area. The train-borne angling excursions were halted by the advent of World War II, with little or no fishing in the area until after V-J day. By then, the many previously-deposited auto bodies, cement-filled drums, etc., had disintegrated; the barge and boat hulls sunken in the area had rotted away; and the broken concrete, rubble, etc., was covered over by bottom sands.

Professor James R. Westman of Rutgers University has also advis-

ed that John Suydam and other party boat skippers constructed an artificial fishing reef inside Fire Island Inlet "during the early thirties." They used butter tubs with short posts cemented in and, as Westman recalls, deposited about

1,400 of these. According to Westman's advice, even on a shifting sand bottom the ground persisted for many years and was highly productive. The same group is also said to have done some experimental work prior to that project. #

The following reprint is from the October 1959 issue of New Jersey Outdoors

(information concerning current reef construction is to be presented in future issues.)

ARTIFICIAL REEF OFF JERSEY COAST

CREATES NEW FISHING HOLE

An artificial reef off the New Jersey Coast will provide a new fishing ground for thousands of fishermen through the efforts of the Moran Towing Corporation, Rutgers, the State University, and the Division of Fish and Game.

About 5,600 cubic yards of rubble-rock from excavations, plus stone and concrete from demolished buildings, were placed on the ocean floor some 3¼ miles off Lavalette to form the reef.

Skin divers and biologists from the Division's Marine Fisheries Laboratory and members of the Conservation and Wildlife Management Department of Rutgers University will study the changes in plant and animal life in the area brought about by the construction of the reef.

Eugene F. Moran, Jr., of the Moran Towing Corporation, was enthusiastic about the proposal when contacted by Dr. James R. Westman, Rutgers wildlife professor, and Paul Hamer of the state Marine Fisheries Laboratory. Subsequently the Corporation agreed to donate the boat time necessary to haul the rubble from New York City to the selected site. This represents a substantial gift to the offshore sports fishermen and the commercial fisheries of the area.

The creation of artificial reefs is not new. So far as is known the first artificial reef in the country was constructed in Great South Bay, Long Island, in the mid-thirties. In recent years artificial reefs consisting of old car bodies were constructed off Louisiana and Texas, while off California old street cars proved effective. Former Fish and Game Commissioner Harry Armstrong sponsored a similar project off the New Jersey Coast many years ago.

The result in each case is generally the same. Any solid, stable object on the unstable sand of the ocean bottom provides a suitable substrata for the attachment of myriads of marine plants and animals which ultimately provide food for important game and food fish. Other animals find shelter among this growth and in the crevices of the rubble.

The state biologists anticipate that bottom fishes, such as blackfish, sea bass, porgies, bergall, fluke, whiting, hake, cod, and pollack will be attracted to the reef at various seasons of the year. It is also quite possible that pelagic species such as bluefish, bonito, albacore, and even tuna might frequent the area.

It has been suggested that the new fishing ground be designated as "Moran Reef," in recognition of the Moran Towing Corporation's contribution to the sportsmen and commercial fisheries of the area. The project is being financed by federal-aid-to-fish funds, (Dingell-Johnson), obtained through the tax on fishing equipment. #

*The Director's
Testimony Pertaining to*

The Trapping Bills

Following are excerpts of the testimony presented by Director Russell A. Cookingham at the Assembly Hearing on proposed trapping legislation on March 30, 1971.

S.706 would establish a trapping license with a fee of \$5.15 in place of the existing joint hunting-trapping license. The department does not oppose the principle of a trapping license but feels that the additional administrative costs would more than offset any immediate monetary gain. If S.706 were adopted, special trapping license books would be printed and distributed to the many agents throughout the state to process the applications for the state's trappers. Furthermore, the bill would not necessarily result in the purchase of additional trapping licenses in that some trappers would not purchase hunting licenses.

Knowing the exact number of licensed trappers would have advantages from a research and management standpoint; however, this information is being currently obtained through a hunter and trapper postcard sampling inventory. This survey has proven to be effective in establishing the number of trappers in New Jersey and can be expanded in the future to sample harvest data.

S.707 would require the registration of traps. Regulations established by the Fish and Game Code under R.S. 23:4-39 now stipulate "No trap of any kind shall be set anywhere unless it bears a metal tag inscribed with the name and address of the owner of the trap." With this regulation now in effect, S.707 would appear to be redundant and unnecessary. If passed, it would result in a sizeable administrative cost with no advantages over the present system.

S.708 Section 1 of this bill would prohibit youth under 14 years old from trapping. Enactment of such a bill would be unfair to young people who have an interest in wildlife management and who should, under acceptable wildlife conservation principles, be entitled to harvest a renewable natural resource. Ten-to-fourteen is an important age in training young boys in outdoor skills. At this age boys often develop a life-long appreciation of wildlife life histories, especially the relationship of wildlife to habitat availability and quality.

New Jersey's 300,000 acres of salt marsh, plus thousands of acres of inland wetlands, provide abundant opportunities for boys to trap. With this vast high quality muskrat habitat, New Jersey should be concerned about the continued activity of its muskrat trappers. Rats have a high reproductive rate (over 500 percent replacement per year) and, if not harvested in sufficient quantities, they can quickly eat themselves out of house and home and cause extensive damage to dikes, dams, and other structures. Outbreaks of disease in muskrats have occurred in other parts of the country. Such outbreaks are often associated with population eruption of this species. There is always the possibility that similar disease problems could occur in New Jersey if the resource is not properly managed.

The responsibility for the welfare of wildlife populations and their influence on the public is vested in the New Jersey Division of Fish, Game, and Shell Fisheries. Accepting this responsibility, the Division has developed, through scientific research, management techniques designed to place a high priority on the welfare of each species and their possible effects on the general public.

Reports of irresponsible young trappers have been made. Only infrequently have these reports been backed-up with specific complaints. If violations of trapping laws do occur and complaints made, the Division's Conservation Officers

will thoroughly investigate these alleged acts and take steps to correct the situation. The Division is anxious to work with local officials and organizations on expanded youth educational programs when local problems are brought to the attention of this agency.

The Department of Environmental Protection, through its Division of Fish, Game, and Shell Fisheries, offers an alternative to the prohibition contained in this bill—the possibility of amending Title 23 to require youth between the ages of 10 and 14 the option of trapping under the supervision of a licensed adult or to trap independently following qualifying instruction and examination by representatives of the Division of Fish, Game, and Shell Fisheries.

Section 2 of S. 708 would restrict all trappers from trapping in first- or second-class counties by means of steel-jaw, leghold type traps. It, furthermore, restricts young men under 18 from using these traps. This in effect would eliminate the trapping of foxes, because this type trap is the only effective means to capture this species. Persons under 18, and all persons in the counties of Morris, Middlesex, Mercer, Burlington, Camden, and Ocean, as well as counties around the greater Jersey City area, would be so restricted.

The control of foxes is often necessary based on the high reproductive rate of this species and its ability to adapt to a semi-urban environment. Outbreaks of rabies

. . . Trapping Bills

and other diseases are usually the outcome of high fox populations. For example, New York State has expended millions of dollars on fox control over the years due to high densities of this species and a high incidence of rabies cases some occurring close to the New Jersey border.

Wildlife control representatives of the Division of Fish, Game, and Shell Fisheries are called upon frequently by landowners to protect property against foxes. The Division controlled 279 foxes in 1969-70 and 317 in 1968-69 in response to such complaints, many being in Class 1 and Class 2 counties.

It is an unsound wildlife management practice to require state control representatives to handle such control work when in many instances this could be done by trappers during the regular trapping season. If the above-listed counties were closed due to enactment of S.708, then the State would be faced with a complex and costly control problem. As for persons under 18, if local areas are experiencing problems from this age

group, the Division is willing to pursue all complaints vigorously and initiate positive enforcement and educational programs wherever possible.

Section 3 of this bill would require conibear traps to be completely submerged. This is a normal procedure in setting most conibear traps, however, in some instances it is virtually impossible to keep traps under water at all times. For example, in the Delaware Bay area of Salem County, tides may fluctuate 4 to 6 feet. A proper muskrat trapping set may be under water most of the time but would be above the water level at low tide. This section does not represent a desirable approach to trapping, especially in the state's tidal water area which constitute the best muskrat producing wetlands.

S.709 would make a person liable for any domestic animal caught in a trap set on the land of another person. The Department has no objection to this legislation; however, we believe that a person is responsible, under existing law, for damages done on the property of others. #

Waterfowl Flyways

Original administrative boundaries of the four waterfowl flyways—the Pacific, Central, Mississippi and Atlantic—were established in 1948. According to the U. S. Bureau of Sport Fisheries and Wildlife, each of the four management units was traced along State lines claiming a common source of waterfowl supply. Gunning pressure and vulnerability of the birds were also considered in boundary determinations. These early boundaries changed with new-found waterfowl data. #

Do's and Don'ts for Dog Care on Hot Summer Days

With summer weather there are often days that, as the saying goes, aren't fit for man or beast. You can help your dog get through those sweltering times by a little extra care, advises the Gaines Dog Research Center. Keep in mind, always, that dogs feel heat much more than people do and when you are feeling lazy, disinclined to exert yourself, perhaps "out of sorts" and, in general, trying to cool off, remember that your dog can feel the same way.

The Center offers the following tips on keeping your dog happy and at his best during the hot "dog days" of summer:

Do provide shade for your dog when he is confined to a yard. If there are no shade trees, stretch canvas over a section of his yard or, at least, provide a wood bench or platform high enough so he can stretch out beneath it.

Don't shave your dog's coat. Thin it if it is very heavy, but never clip close. His hair insulates against the heat to some extent and protects his skin from insect bites and sunburn.

Do brush and comb your dog's coat every day or so and check for ticks, fleas or lice. These external parasites are a major cause of skin disease, in addition to being a constant source of irritation.

Don't evercise your dog in the heat of the day. Keep active play and exercise or training periods to the coolest hours, morning and evening. Too much sun and activity on hot days can cause convulsions.

Do feed your dog a complete and nourishing diet. In hot weather he may not eat as much as he normally does, but the soft-moist dog foods that are so easy to feed and need no refrigeration to keep fresh will provide the complete nutrition a dog needs all year round.

Don't use poison weed or insect killers in areas your dog frequents. If you do use them, read the labels carefully and keep your dog away from the sprayed areas a sufficient length of time.

Do keep plenty of fresh drinking water available at all times.

Don't leave your dog in a parked car for any length of time. A closed car can soon become a hot box and many dogs suffocate every summer from this cause. If you must leave your dog in the car, make sure it is in the shade, open the windows at the top on both sides and return frequently to see that your dog is all right.

Do see your veterinarian for a physical check-up on your dog and for vaccination against the common canine virus diseases. #

*Water, water, everywhere,
Nor any drop to drink.*

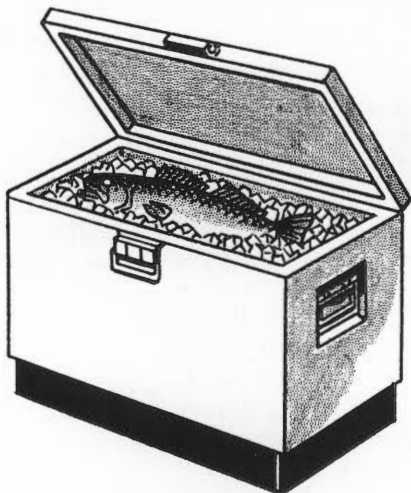
—S. T. Coleridge

Fur, Fin *and* Campfire

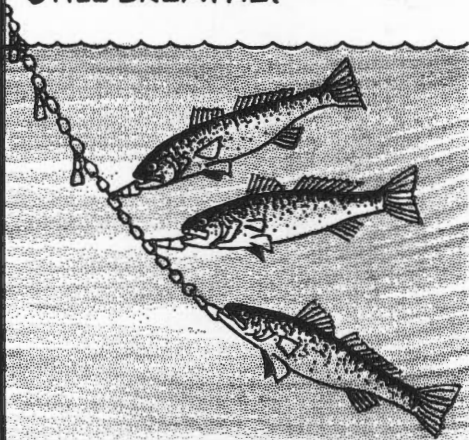
By BILL BERO

KEEPING THAT FISH fresh after catching...

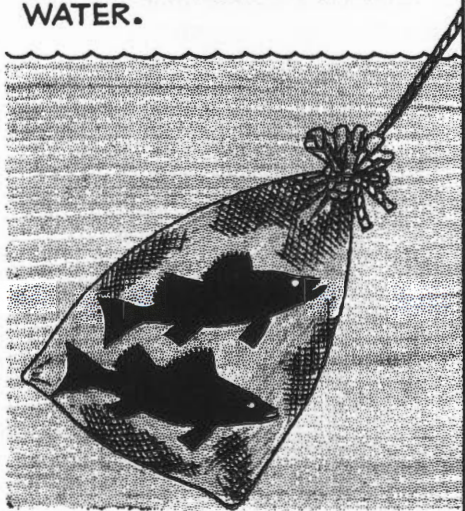
A PORTABLE ICE CHEST.



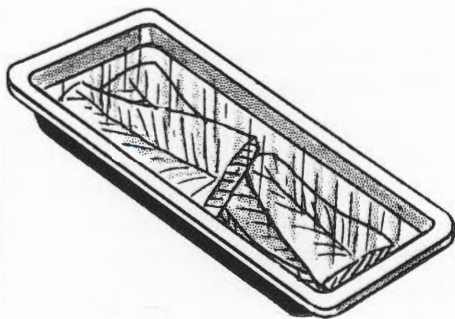
IF NO ICE IS AVAILABLE, STRING THEM AND PLACE IN WATER BUT SO FISH CAN STILL BREATHE.



BAG THE FISH IN BURLAP, LEAVING IT ADRIFT IN THE WATER.



KEEPING FISH IN ELECTRIC REFRIGERATORS IS A PROBLEM, TOO. WRAP IN ALUMINUM FOIL IF FREEZING. SMALL FISH FILLETS CAN BE FROZEN IN A TRAY OF WATER.



The water shrew is able to walk across the surface of a pool of water by holding air bubbles in its feet.

Wawayanda Lake

Sussex County

Wawayanda Lake, acquired by the State of New Jersey in the spring of 1964 through the Green Acres Program, is an outstanding example of aesthetic beauty and recreational potential.

Originally known as Double Pond, the two lakes were artificially united by damming during the mid 1800's, the raised water level created the present 255-acre lake.

Located in the Pochuck Creek Drainage, Wawayanda Lake is primarily fed by Sucker Brook which flows from Highland Lakes; lesser streams from relatively small watersheds also make contributions. Wawayanda's two outlet streams, one of which feeds Laurel Pond to the east, merge to the north of the lake with Wawayanda Brook in New York State. The stream then flows south back into New Jersey and meets Pochuck Creek.

The shoreline is almost entirely forested with maple, oak, and hemlock. The littoral area of the lake consists of 90 percent rock and ledge, 5 percent gravel and 5 percent sand. Muck and silt occur in the two deep basins which once comprised the original separate lakes. About 5 feet of water now covers the rocky shoal which once completely separated the original double lakes.

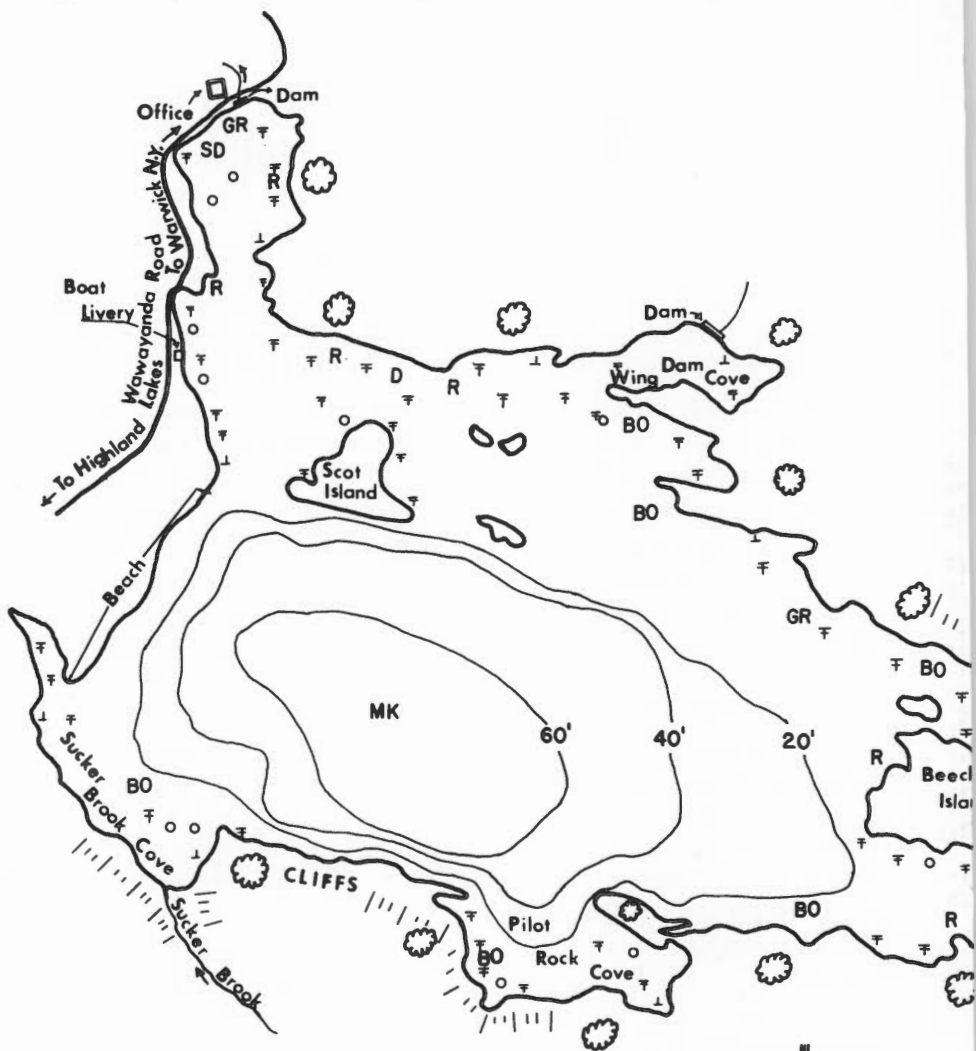
The shoreline contains six major cove areas, many minor coves, and outcroppings of rock and cliffs also interrupt the profile of the shoreline. Four major islands and many rock formations break the lake's surface and add to the picturesque scene.

A man-made beach, boat livery concession, and a variety of small cabins nestled along the shoreline do not appreciably detract from the natural beauty of the lake and setting. A cartop boat launching site is available adjacent to the boat livery concession, but outboard engines are not allowed on the lake. Group camping, picnicking, hiking, hunting, and nature areas are adjacent or in the vicinity of the lake on State Park or Fish and Game lands.

Location:

Approximately 11 miles north of Stockholm and Route #23.

Approximately 4.5 miles south of Vernon, and Route #94.



KEY:

VEGETATION

- - Lily Type
- ⊥ - Emergents
- ≡ - Submerged and/or Floating
- ☉ - Trees

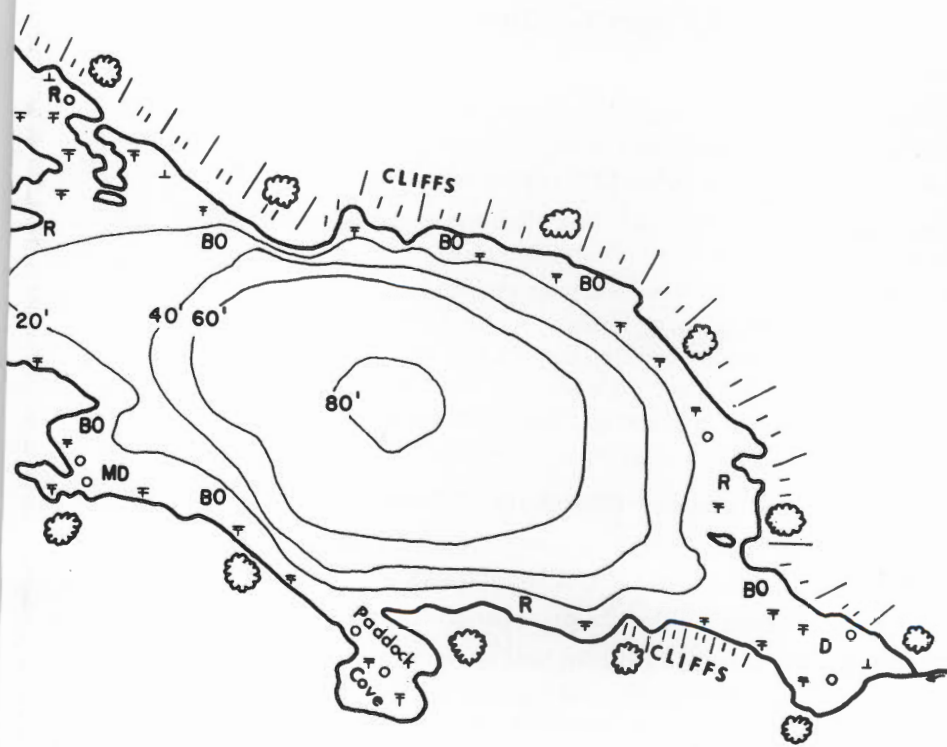
AQUATIC SUBSTRATE

- SD - Sand
- MK - Muck
- GR - Gravel
- MD - Mud
- BO - Boulders
- R - Rock
- D - Detritus

**WAWAYANDA LAKE
POCHUCK CREEK DRAINAGE
SUSSEX COUNTY**

255 ACRES CONTOUR INT. 20'

AV DEPTH 30' ELEVATION 1152'



. . . Wawayanda Lake

Physical Features:

Area: 255 acres

Elevation: 1152 feet

Maximum Depth: 82 feet

Mean depth: 30 feet

Chemical Features:

pH: varies from slightly alkaline to slightly acidic—top to bottom.

Oxygen: sufficient to a depth of 20 feet at all times of year.

During summer thermal stratification a layer of oxygenated water below 30 feet is generally exhibited in both basins and thus makes them capable of supporting trout.

Biological Features:

Vegetation: filamentous algae, milfoil, elodea, bassweed, naiad, and water lily prevalent in cove areas.

Water clear, visibility range 6 to 10 ft.

Fish and Fishing:

Largemouth bass: Probably the most important warmwater species in the lake. Good numbers of adult bass (2-5 pounds) are reported taken. Both growth rates and reproduction are good.

Chain pickerel: Reported fair fishing during early spring and through the ice.

Northern pike: This species was stocked in the lake in 1964 and 1965 on an experimental basis. A number of these fish have been taken since including a state record for this species (21 pounds in 1971 through the ice). However, reports of reproduction that would indicate the species has been established have not been confirmed by the Bureau of Fisheries Management.

Yellow perch: Reported good fishing for this species.

Sunfish: Although abundant, pumpkinseed, bluegill, and redbreast sunfish are not actively sought by anglers.

Bullheads: Brown bullheads are readily taken by bottom-anglers.

Trout: Brook, brown, rainbow, and golden rainbow trout have been stocked in the lake since 1964 and trophy brown trout up to 5 pounds are not uncommon catches. Evidence indicates that a substantial cold water fishery is maintained in the lake year 'round.

The fish species found or reported are as follows:

Largemouth bass
Smallmouth bass
Chain pickerel
Grass pickerel
Northern pike
Brown trout
Rainbow trout
Brook trout
Yellow perch
Black crappie

Pumpkinseed sunfish
Bluegill sunfish
Redbreast sunfish
Bluespotted sunfish
Alewife (herring)
Golden shiner
White sucker
Brown bullhead
Johnny darter
Tadpole madtom

Hil Zich,

Assistant Fisheries Biologist

Making Artificial "Real"

How do you fool those finicky bottom-dwelling fish that frequently reach lunker proportions because of selective feeding habits?

Sinking a hook home in the jaw of a five-pound bass carries about the same odds for the average angler as hitting a daily double at the track, yet there are those who score with uncanny success.

For the guy who wants to better his chances in the lunker department, there are a couple tricks on this season's scene that may be of interest.

The first is the "chewable" lure. While this soft offering has been standard fare for bait users and devotees of pork rinds and plastic worms, the "pliable approach" is also available to plug casters. With the tendency of big fish to mouth and chew a while before swallowing, it certainly has merits.

Recently marketed soft lures that emulate many old, proven favorites have the deceptive characteristics of natural bait. This quality becomes highly important when dealing with lunkers that seize a bait and gingerly move off for some distance while contemplating the authenticity of the morsel and turning it around before swallowing.

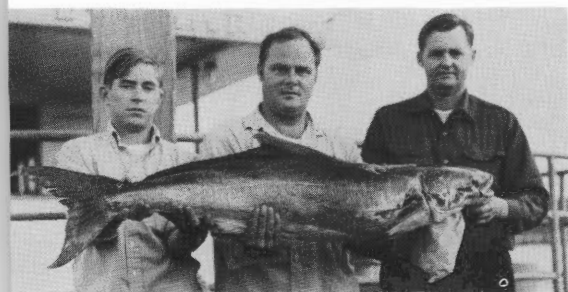
Weight is necessary to get the lure down on bottom. But it also presents an unnatural resistance that may warn of danger when engulfed by a fish. The big boys have a way of releasing a suspect dinner without ever brushing a barb.

To overcome this warning signal, use a hollowed-out sinker through which the line has been threaded. It provides the needed weight yet permits the lure to be grabbed and carried with the line running free through the sinker.

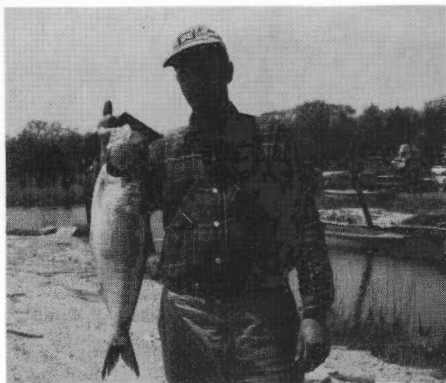
Try a free-running chewable plug for choosy bottom feeders. It's about the nearest thing to a natural bait you'll find. #

State Record Fish

Since the last published listing of state record salt water record fish, three new records, striped bass, wahoo, and dolphin, have displaced former records. In addition, five new categories, for cobia, scup, yellow-fin tuna, Atlantic mackerel, and American shad, have been added. The story about the new record dolphin starts on page 3 of this issue. An account of the catching of the new record wahoo is to appear in a future issue.



Francis Eulner of Red Bank, center, with his 41-pound record cobia flanked by the boat's mate and Captain Alvin Shinn



Rodger G. West of Tuckerton with his top 7-pound shad



Donald Zboyan of Fords holding his prize 68-pound striped bass

New Jersey State All-tackle Records

Salt Water

Species	Angler	Year	Weight lbs. oz.	Where Caught, or out of
Albacore <i>Thunnus alalunga</i>	Walter Citimm	1961	69 1	Hudson Canyon
Red Drum <i>Sciaenops ocellata</i>	Dr. R. D. Alexander	1953	46 0	Sandy Hook
Black Sea Bass <i>Centropristis striata</i>	Nick Ferrante	1958	6 2	
Striped Bass <i>Morone saxatilis</i>	Donald Zboyan	1970	68 0	Off Sandy Hook
Tautog (Blackfish) <i>Tautoga onitis</i>	R. N. Sheafer	1954	21 6	Cape May
Bluefish <i>Pomatomus saltatrix</i>	Sigmund Gruszkowski	1968	22 11	17 Fathom
Atlantic Cod <i>Gadus morhua</i>	Joseph Chesla	1967	81 0	Brielle
Black Drum <i>Pogonias cromis</i>	Herschel Layton	1944	92 0	Delaware Bay
Summer Flounder (Fluke) <i>Paralichthys dentatus</i>	Walter B. Lubin	1953	19 12	Cape May
Pollack <i>Pollachius virens</i>	Philip Barlow	1964	43 0	Brielle
Shortfin Mako <i>Isurus oxyrinchus</i>	W. J. Mahan	1952	322 0	Elberon
Bluefin Tuna <i>Thunnus thynnus</i>	Ray Fromm	1950	787 0	Brielle
Wahoo* <i>Acanthocybium solanderi</i>	Dr. Wm. E. DiSanto	1969	93 10	Cape May
Weakfish <i>Cynoscion regalis</i>	A. Weisbecker, Jr.	1952	17 8	Mullica River
Blue Marlin <i>Makaira nigricans</i>	Joseph Teti, Jr.	1964	620 0	Atlantic City
White Marlin <i>Tetrapturus albidus</i>	Merrill P. Arden	1968	123 0	Ambrose Light
Dolphin <i>Coryphaena hippurus</i>	Yvonne DiSanto	1969	48 15	Cape May
Atlantic Bonito <i>Sarda sarda</i>	Frank G. Lykes, Jr.	1945	13 8	Sandy Hook
Broadbill Swordfish <i>Xiphias gladius</i>	Edmund Levitt	1964	530 0	Wilmington Canyon
Winter Flounder <i>Pseudopleuronectes Americanus</i>	Frank Coleman	1968	3 2	Great Egg Harbor
Cobia* <i>Rachycentron canadum</i>	Francis Eulner	1970	41 0	Shrewsbury Rocks
Scup (Porgy) <i>Stenotomus chrysops</i>	Ernest M. Ritchie	1967	4 6	Off Barnegat Light
Yellowfin Tuna* <i>Thunnus albacores</i>	Tony Keeley	1969	138 2	Hudson Canyon
Atlantic Mackerel <i>Scomber scombrus</i>	Rosemary Sarkawicz	1969	3 0	Atlantic City
American Shad <i>Alosa sapidissima</i>	Rodger G. West	1967	7 0	Great Bay

* LESS COMMON SPECIES

Regulations for Recognition of New Jersey State Record Fish

1. Fish must be caught on sporting tackle, hooked, and landed by entrant.
 2. All aspects of catch must conform to state law.
 3. Length of fish should be measured from tip of jaw (with mouth closed) to tip of tail; girth, around fish at thickest portion.
 4. An affidavit from the angler must be submitted on the above points and on the line test used.
 5. Fish must be weighed on certified scale of a recognized sporting goods store, meat or fish market, fishing tournament, or other scales acceptable to conservation officer. An affidavit attesting veracity of scales and weight must be furnished by store manager, tournament director, or conservation officer.
 6. A clear 8-inch x 10-inch black and white, glossy photograph of fish and angler *must be furnished*. In the case of freshwater fish, a yardstick must be held next to fish so as to clearly show length.
 7. If any doubt exists regarding species, a statement from a state fisheries biologist must be sent, or fish preserved so as to permit inspection.
 8. In the event fish is cleaned before weighing, only dressed weight will be counted.
 9. Cooperation of angler is asked in submitting a brief account of how fish was caught, including type of lure and method of fishing used. It is understood that this information and picture may be used in NEW JERSEY OUTDOORS and state publicity, but angler's right to furnish information to news media is not otherwise restricted.
 10. The above information, or other inquiries regarding record fish, should be sent to: Information and Education Section, Division of Fish, Game and Shell Fisheries, Box 1809, Trenton 08625. This Section will answer all inquiries and recognize clearcut Record Fish. In case of doubt, final decision will be made by the Fish and Game Council.
- Efforts will be made to establish records for species not currently recognized. Anglers are especially urged to submit noteworthy catches of these species.

To submit information concerning possible record fish you may either use the forms on the following two pages or obtain forms from the Trenton office.

Anglers are invited to submit applications for possible record fish not included in the current listings.

State of New Jersey Department of Environmental Protection

Division of Fish, Game, and Shell Fisheries

Application for Recognition of New Jersey State Record Fish

TO: Information and Education Section
N. J. Division of Fish, Game, and Shell Fisheries
P. O. Box 1809
Trenton, N. J. 08625

I submit the following described fish for consideration as a New Jersey State Record: (Must be clearly printed or typewritten.)

Species (Subject to verification by state biologist. Please attach information as to where fish may be inspected).

Date caught Time (approximate)

Place caught (name of water) (nearest town) (boat, captain, if any and port) (county)

Weight pounds, ounces

Length inches Girth inches (tip of jaw-mouth closed to tip of tail) (thickest portion)

Line test used Type of line

Type of rod Reel Lure

I certify that the fish was caught on sporting tackle, hooked and landed by me, and that all aspects of the catch conformed to state law.

Subscribed and Sworn before me Signature of Applicant

this day of Name printed or typewritten

Notary Public of N. J. My Commission expires Address

City & Zip Code

Enclosed herewith, find a certification of weight, clear 8-inch x 10-inch black and white glossy photo of myself and fish (with yardstick for freshwater species), and an account of how I caught the fish. It is understood that this picture and information may be used in state publicity (particularly NEW JERSEY OUTDOORS), but my rights to furnish this information to news media is not otherwise restricted.

Signature of applicant

State of New Jersey Department of Environmental Protection
Division of Fish, Game, and Shell Fisheries
Certification of Weight of Proposed New Jersey State Record Fish
Must be printed or typewritten

I hereby certify that on _____,
(date)

I weighed a _____ that was brought in for weighing
(fish species)
by _____ I found the weight to be
(name of angler)
_____ pounds _____ ounces.

I am a (check one)

- _____ Sporting goods store manager.
- _____ Meat, fish or grocery market manager.
- _____ Director or weighmaster of a recognized fishing tournament.
- _____ Other weighing agent approved by conservation officer.
(Officer must sign here)

I further certify that the scales on which the fish was weighed were tested and their accuracy certified within the 12 months prior to this weigh-in by the Superintendent of Weights and Measures of _____ County.

_____	Signature of person weighing fish
Subscribed and sworn	_____
before me this _____	Name printed or typewritten
day of _____	_____
	(Street)
	Address (preferably business)
_____	_____
Notary Public of N. J.	(Town and/or post office)
My Commission expires	_____
	(Zip Code)

Survival Food in the Wild

Experts estimate the earth's surface holds about 300,000 classified plants, of which about 120,000 varieties are edible. They say that for emergencies a knowledge of certain pilot plants enables individuals to evaluate the food possibilities of other plants, particularly if the juices of plants seem to be the same color and consistency. Generally speaking, the wild plant foods one sees being eaten by birds and animals are safe for human consumption.

Tubers, roots, rootstalks, and bulbs are examples of food that provide starch. These can be eaten boiled or roasted. The long familiar roots and white stems of bulrush can be eaten raw or cooked. Water plantain, found around fresh water ponds, lakes, and streams have thick, bulb-like rootstalks which grow below the ground. These lose their usually acrid taste once dried.

Cattails provide excellent food material. These contain about 46 percent starch and 11 percent sugar. The outer covering of the rootstalks can be peeled off and the white inner portion can be ground to be eaten raw or boiled. The yellow pollen of the flower mixed with water and steamed is useful in making bread. Its young growing shoots can be boiled as with asparagus.

Wild tulip bulbs, fern shoots, and bamboo are edible. So are the leaves of wild chicory, and its ground-up roots make an excellent substitute for coffee. Fresh pond scum, though unpleasant by name, is edible, as are the green, brown, and red seaweeds and the commonly found fresh water algae. The inner bark of a tree, too, may be eaten raw or cooked. This is the layer next to the wood. And the inner bark of some trees makes very good flour. A few examples are cottonwood, aspen, birch, and willow. Another, pine, is said to be rich in Vitamin C. #

Cleaning Catfish

A very sharp knife is needed to clean a catfish or any other kind of fish. Thrust your thumb into its mouth and straddle the fin spines with your fingers. Ring the back of the head with a light cut through the skin. Use a pair of pliers to peel the skin in one rapid motion. Skin peels off completely in this one motion.

Now cut through the backbone just to the rear of the head. Grasp head in one hand, body in the other and break open.

Continue to grip the head in one hand while sliding the thumb into the body cavity and pull. Head and entrails will pull free intact and remaining will be a solid chunk of flesh with very little waste.

Cut off fins and tail and the catfish is ready for the pan. #

A Welcome Letter

Philadelphia, Pennsylvania 19109

April 5, 1971

Mr. Russell Cookingham, Director

Dear Mr. Cookingham:

I would like to call to your attention and commend the invaluable and most polite assistance and aid rendered by Conservation Officer Richard Whitaker in the Wharton State Forest this past Saturday, April 3, 1971.

Several of my friends and I, along with my 8-year old son, had commenced a two-canoe journey down the Mullica River at Atsion. Our wives were to meet us with the cars at Batsto. Not being familiar with the Mullica, we told them to meet us approximately an hour and one-half after we set out.

Our wives had stopped and asked Officer Whitaker where the Mullica went through Batsto, and he directed them to it. He later returned to them and asked why they were waiting so long. When he learned that we had begun our canoe trip at Atsion, he informed them that it was a 7-10 hour trip, and not a 1-2 hour trip. Needless to say, our wives became quite upset.

Officer Whitaker then volunteered to, and did in fact, drive on the fire roads along the Mullica with one of the wives until he spotted the canoe that my son, my friends, and I were in. We beached the canoe and drove back toward Batsto in Officer Whitaker's car. He then stopped a couple of miles down river, where we waited for the other canoe, which arrived shortly.

After being reunited with our wives, Officer Whitaker escorted us back into the forest to the spots where he had left the canoes, and then back out again.

All the members of our group are most appreciative of Officer Whitaker's kind assistance. He not only prevented four women from becoming panic-stricken, which they likely would have had their husbands (and child) not arrived for many hours after the appointed rendezvous, but rescued five exhausted canoeists. Moreover, despite my insistence, Officer Whitaker refused to accept any gratuity at all.

Officer Whitaker is an outstanding member of the Conservation Officer corps, and should be highly commended for his kind and invaluable assistance.

*Very truly yours,
Carl Hanzelik,
Philadelphia, Pennsylvania*

Jobs or Fish?

An interesting essay by R. G. Wingard and M. R. Heddleson in the Pennsylvania State University natural resource series is entitled *CONSERVATION—LIVING IN HARMONY WITH LAND* (available from the College of Agriculture Extension Service, University Park, Pa.). Part of what the learned authors say is pertinent as an answer to this oft-raised question when resource uses conflict, "which is more important, jobs or fish?" Wingard and Heddleson put it this way (emphasis added):

Water is a common denominator that ties together all of man's interests. On its journey from watershed to sea, it will affect fishing downstream, recreation on a man-made lake, irrigation on a valley farm, flood damage in a community, quality of water for industry, and safe supplies for human use.

Pollution from sewage and industrial wastes, acid mine drainage, pesticide chemicals, and other contaminants that enter the stream at any point may have far reaching effects throughout the watershed. At this point, one might ask: Which is most important? The water needs of man, or the water needs of fish? Actually, both must be provided. In many cases the fisherman may be most immediately affected by pollution; but *when water no longer supports fish, it has lost much of its value for other uses, too.*

Fish are good indicators of water quality. When an area no longer supports fish, it has lost much of its livability for people as well. Areas with extensive water pollution often are characterized by low levels of economic activity simply because the people fail to understand the relationships between their aspirations and nearby water. #

Now is a good time to subscribe to *New Jersey Outdoors*

New Jersey Outdoors, P. O. Box 1809, Trenton, N. J. 08625

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The Great Blue Heron

Species:

Great Blue Heron—*Ardea herodias*

General Characteristics:

One of the largest wading birds (42-52 inches) found in New Jersey. It has long legs, a long neck, a long, sharp bill, and rounded broad wings. It is usually seen in fairly shallow water, especially creeks and small streams, where it stands or slowly walks along, searching for small fish which it catches with a quick



The great blue heron is a large gray wading bird with long legs, a long neck, and a long, sharp bill

thrust of its long bill. The color of the body is a bluish gray, with lighter neck and a whitish head. In flight, the great blue heron, or "peter jim," folds its neck back, giving a very short-necked appearance, and trails its legs behind, giving the appearance of a long tail. The wing strokes are slow and deliberate. Its voice is a hoarse "warnnk."

Range:

Found throughout New Jersey, but especially along the salt marshes, large streams, and fresh marshes. Migrates southward in winter, but many overwinter here, with occasionally severe winter weather killing some. Breeds in colonies at several locations in the Garden State.

Life History:

Nests are usually found in trees or bushes, but occasionally may be located on the ground. The nest is a large, crude affair, com-



In flight the great blue heron folds its neck back and trails its legs behind

posed of sticks and twigs, rather flat on top, from 30 to 40 inches wide, but not deep. The nesting sites are used annually, until "progress" destroys the trees. Egg laying is begun in April, May, or June, with usually 4 eggs (3-7). The incubation period is about 28 days. After hatching, the young may remain on the nest until nearly full grown. They are apparently cared for by both parents, being fed soft regurgitated material at first, but as they grow stronger and more active, whole fish. The diet is mainly composed of fish, but the great blue heron will catch and eat any amphibian, reptile, or small bird, along with mammals (such as mice, rats, or shrews) and larger insects. Only man is a significant force against the bird, as an adult can defend itself and its eggs and young with its sharp, powerful bill and aggressive behavior. The eggs and young birds may be preyed upon in the absence of the adults, by crows, hawks, and perhaps gulls. However, man, with his indiscriminate use of pesticides such as DDT and others, has had serious effect on reproduction. Man also has destroyed traditional nesting sites under the impetus of "progress." In addition, there are some ignorant or inconsiderate persons who illegally shoot these interesting, shy birds. By law, they are protected, and mankind should actively preserve those great blue herons which have remained. #

If you own an outboard motor sufficiently portable to carry in the trunk of your car, it will pay to take along on vacation. You'll have to pay up to \$15 per day for the privilege of renting a fishing motor—when you can find one. Boats, on the other hand, are plentiful and normally rent for about \$5 per day. #

Fishing Navigation

Navigation as practiced on the "high seas" has little application on the average fishing waters, but navigation—of a sort—can be an important aspect of every fishing trip.

Seldom is a knowledge of marine navigation necessary to most anglers. However, a workable acquaintanceship with a few rudiments won't hurt, either.

For example, knowing how to determine the boat's approximate position on a large lake or bay not only helps keep one on course, but the same procedure enables a man to locate a hidden bar or dropoff where the fishing's good.

Necessary tools include compass, chart, ruler, and pencil.

Using the triangulation method, it becomes a simple chore to establish the boat's position in relation to compass readings from prominent landmarks.

The easiest way is to align the chart's "north" arrow with the compass needle. Hold a ruler over the chart and take a sighting at a feature on shore that also shows up on the chart. Draw a line on the chart along the straight edge.

Then repeat the procedure on another landmark—on the opposite shore, if possible. Where the second line intersects the first you have your approximate position.

By reversing the steps, it is possible to run a boat up to a certain compass bearing and then jockey along it to reach the cross reference point where you want to fish.

This system is only as good as the operator, but with practice it can become reasonably accurate.

Complicated? Not really. And it sure saves a lot of time finding those "lost" holes. #

Planning a long run in your outboard boat? Here's a navigation tip. Using a large navigation chart can be awkward and keeps your eyes off the water too much. Before starting, go over your intended course on the chart and make a checklist of buoys you will pass by type and number, hazards to be avoided and landmarks. A list of this kind is easier to manage and read than a big chart. By glancing at it the steersman can see quickly what he must look for as his boat speeds along. Of course, you should also have the chart aboard in case you need complete information . . . but you'll like the checklist method once you try it. #

Dante's Trio

Saint and sinner alike both suffer through a sort of "fisherman's Hades" during July and August. For this is when many lakes become an inferno of hot temperatures, hot water, and hot, gusty winds. This Dante's Trio is sure to make daytime fishing unpleasant . . . and unproductive.

Therefore, it's the wise angler who pursues his favorite sport during cooler nighttime hours. And fish—like people—also enjoy night temperatures better than daytime heat. This is when they'll move into shallower water and become more accessible to anglers. Following are some tips which will help insure pleasant and productive summer night fishing.

First, safety afloat—as always—is extremely important but more so at night. Check out your boat's navigation lights to see that they work correctly. And be sure the battery is fully charged. Also, slow down. Vision isn't as good as during daylight. You could run onto an object in the water before realizing it is there.

Take along a good flashlight. Use it occasionally to find landmarks when underway. If you don't need it, don't use it. As your eyes become accustomed to darkness, they'll compensate to a large degree for the lack of light. Never, of course, look into a light. This immediately blinds you for some time to come.

A good fish landing net is important. Trying to boat a fish at night by grabbing the jaw may result in a handful of hooks instead.

Have bait and tackle supplies arranged in the boat so they can be easily reached. This will save turning on the flashlight unnecessarily. And don't flash your light on the water. Some species of fish—bass and catfish for instance—will be spooked away. #

ELEMENTS

By Henry Gibson

In Kentucky Happy Hunting Ground

I used to like fresh air
When it was there.
And water — I enjoyed it
Til we destroyed it.
Each day the land's diminished.
I think I'm finished.

Flatbrook-Roy Tract

The Flatbrook-Roy Fish and Wildlife Management Area, located in western Sussex County, is approximately 6 miles west of Branchville at the town of Bevans. This area is one of the most heavily utilized of all the Fish and Wildlife Management Areas.

The tract contains 2300 acres of field and upland. There are several small impoundments on the area. Camping is permitted during the spring and summer months.

This area is being managed for upland game, deer, waterfowl, and fishing.

Office

The office or headquarters is located on the Bevans—Flatbrook Road (Rt. 521) between Layton and Flatbrookville.

Parking

Licensed hunters and fishermen are welcome to use the area during open season. They are requested to use the designated parking areas.

Upland Game

Rabbit, grouse, squirrel, and woodcock are the principal native species. Because of the management employed, there are excellent hunting opportunities for these species. The Division's stocking program also provides pre-season and in-season pheasant releases for additional recreation.

Deer

This area is natural deer range, and a large herd is found on the tract. Bow hunters and shotgun hunters find it to be an excellent area.

Waterfowl

The marshy area and ponds provide good duck hunting for wood ducks, mallards, and black ducks early in the fall migration period.

Fishing

The Big Flat Brook and the Little Flat Brook, two of New Jersey's most famous trout streams, flow through the tract. Trout are stocked at regular intervals throughout the season.

Camping

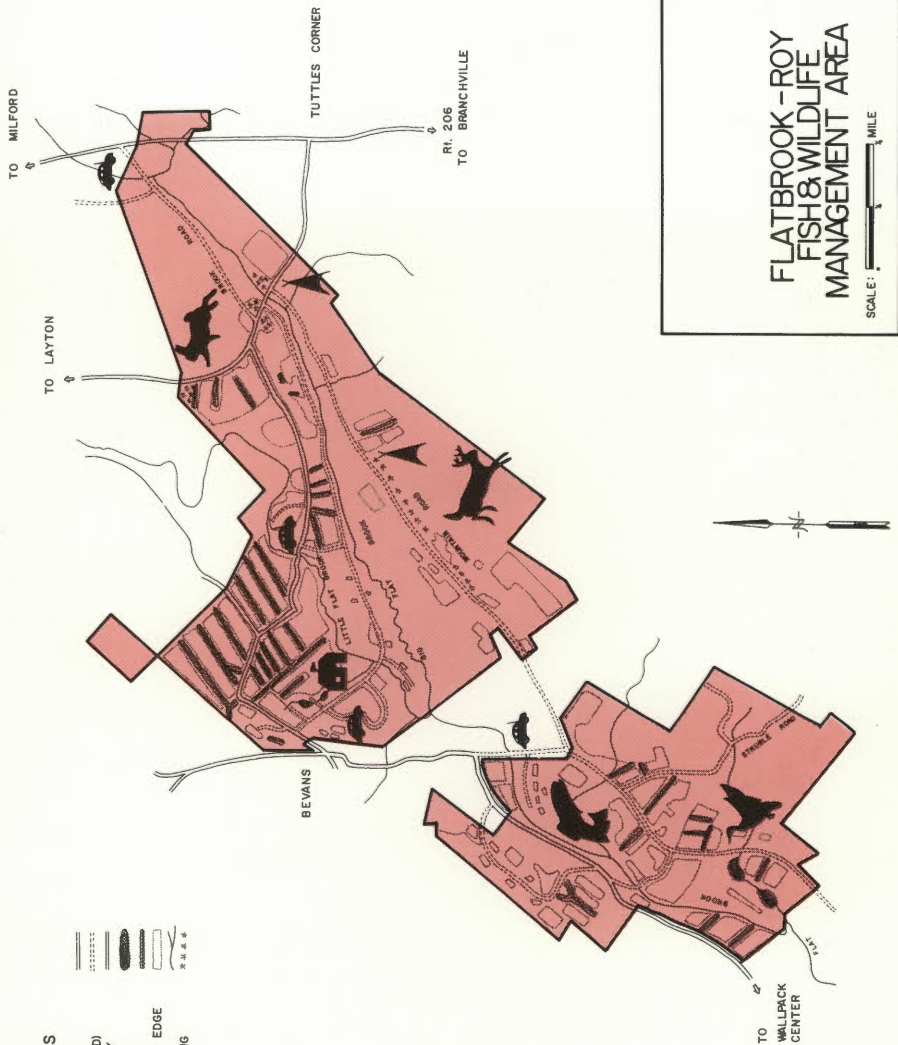
Limited camping in designated areas is permitted during the spring and summer months.

This area is being maintained by the Division for the licensed sportsmen of the state, although many citizens make use of it for other forms of outdoor recreation. Its program is financed by hunting and fishing license money of the sportsmen.


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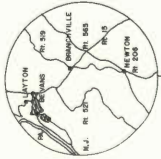
SYMBOLS

- ROAD (IMPROVED)
- ROAD (UNIMPROVED)
- TRACT BOUNDARY
- LAKE OR POND
- FIELD
- FIELD WOOD
- FIELD WOODLAND EDGE
- STREAM
- CONIFER PLANTING



**FLATBROOK-ROY
FISH & WILDLIFE
MANAGEMENT AREA**

SCALE:  MILE



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TAKE NOTHING BUT PHOTOS, LEAVE NOT BUT
YOUR TRACK, RANGERS AND CAMPERS WILL
WELCOME YOU BACK. NO TRASH TO BE SEEN,
NOT A BIT ON THE GROUND, WILL HELP TO
KEEP YOUR COST DOWN.