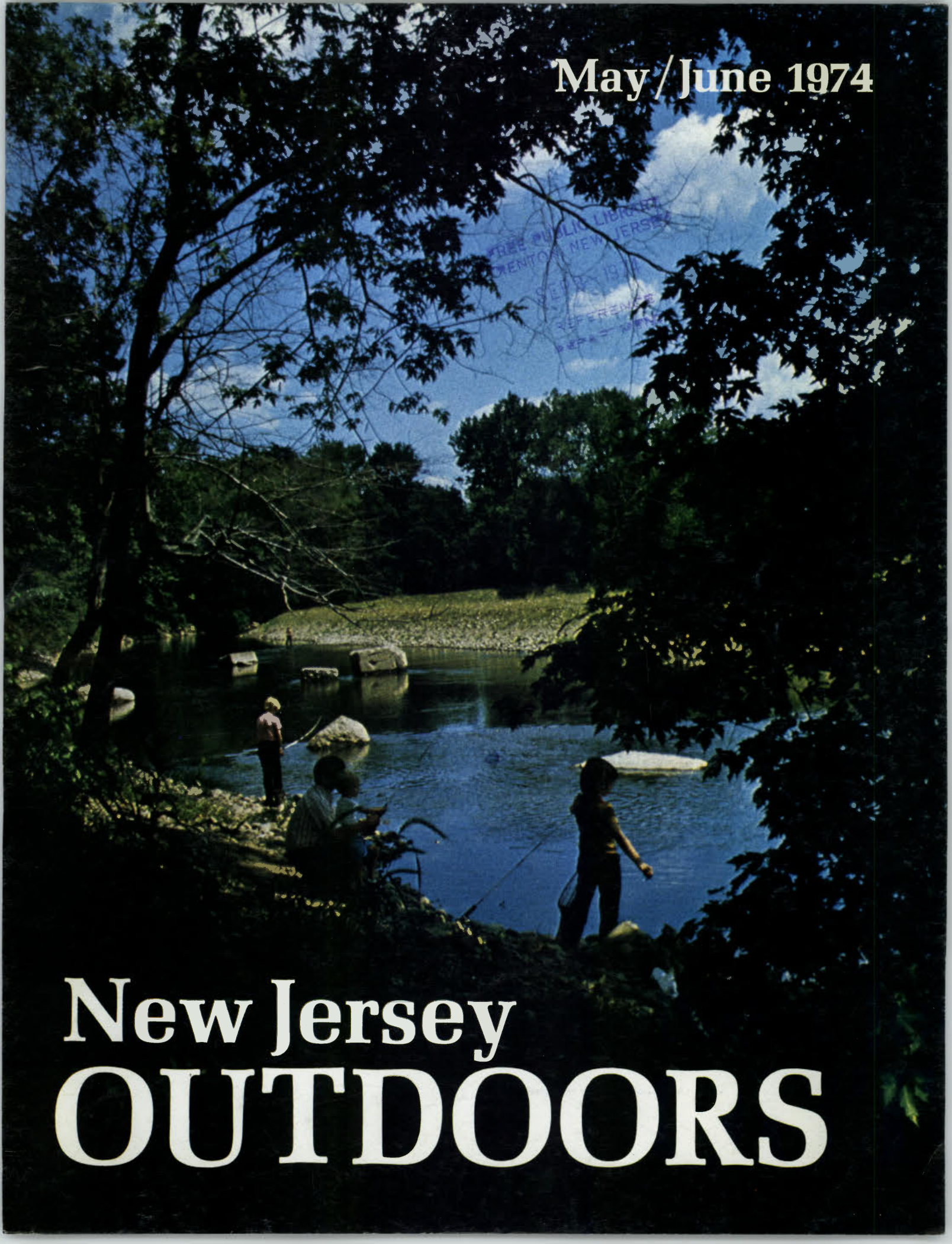
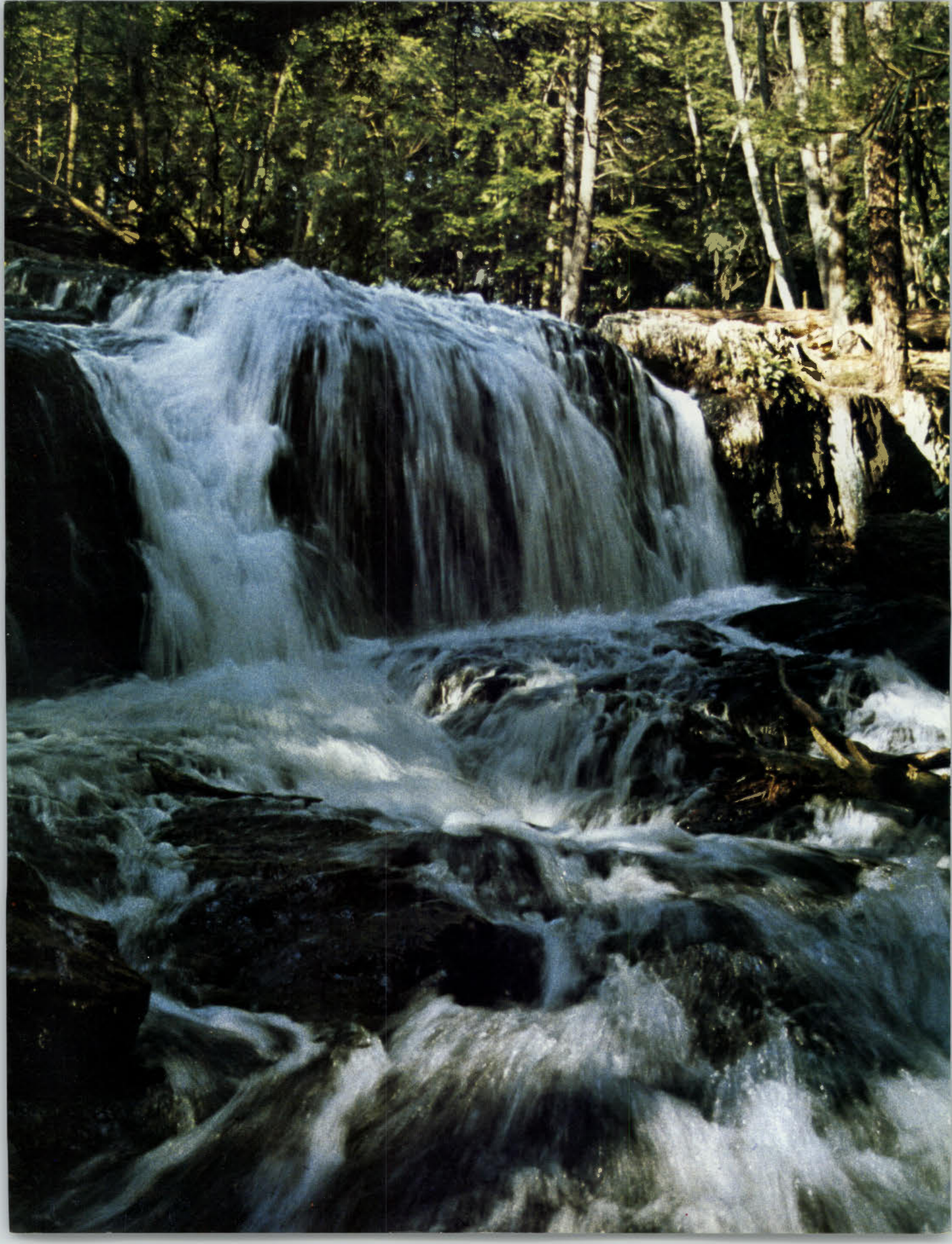


May/June 1974

New Jersey OUTDOORS



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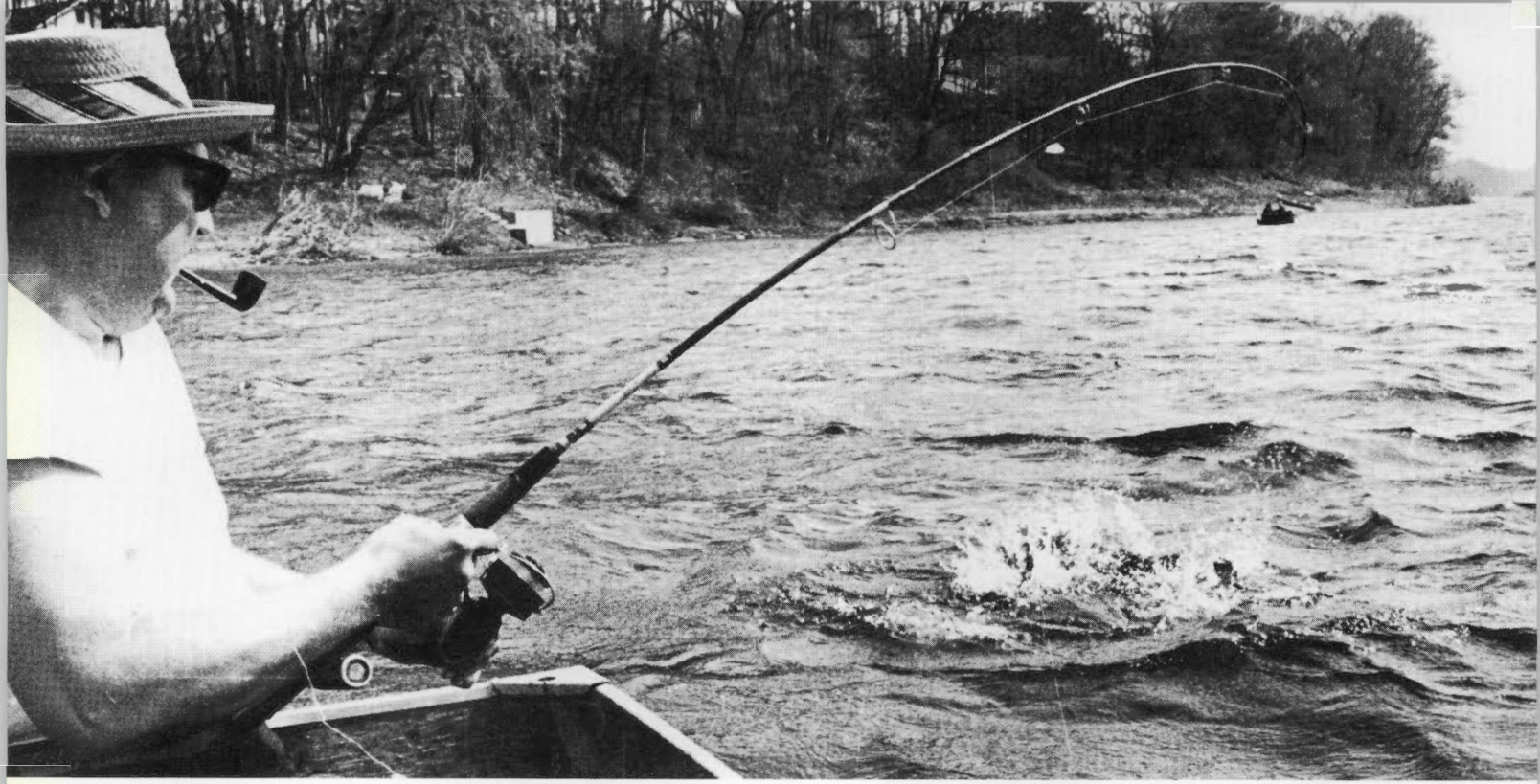
FEATURES



photographs supplied by author

Shad Fishing Time On The Delaware

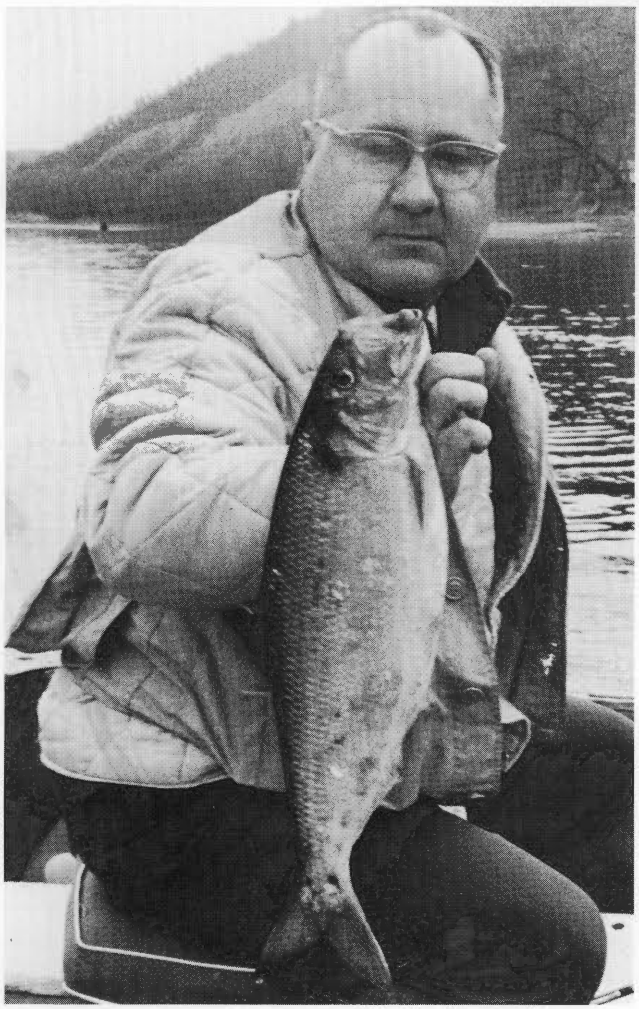
By Howard Brant

Among the innermost sanctum sanctorum of the sport fishing fraternity the mighty Atlantic salmon is considered the King of Game fish. We won't dispute this claim either, for in bygone years we have accounted for our share of this anadromous gamester in many far-distant corners of the globe and can justly vouch for its fighting attributes and its aesthetic value to the angling world.

Yet there's another anadromous fish—rarely touted in the same league as the salmon, but one which truly deserves equal honors—and that's that over-sized herring known as the American shad. Once hooked it is as tenacious of life and as spectacular in combat as any Atlantic salmon and, best of all, this silver-sided, forked-tail gamester can be found close to home—in the Delaware River.

The American shad is not touted in the same league as the mighty Atlantic salmon, but it truly deserves equal honors — Once hooked it is as tenacious of life and as spectacular as any salmon. (Bradley Fountain of Branchville tangles with shad in upper reaches of the Delaware).

Shad will strike a wide variety of lures including small spinners and spoons as well as a host of brightly-colored fly patterns. But by far the most effective lure is that little lead-head jig called a "shad dart." (Extreme Right)



The author displays a prime roe shad caught in the upper reaches of the River during the peak of the migration.

At the turn of the century the mighty Delaware harbored a fantastic shad fishery but the rapid influx of civilization soon brought an end to it. A "pollution barrier" or "oxygen block" near its confluence with Delaware Bay virtually barricaded its waters, preventing these fish from passing through and the famous shad migration quickly became ancient history.

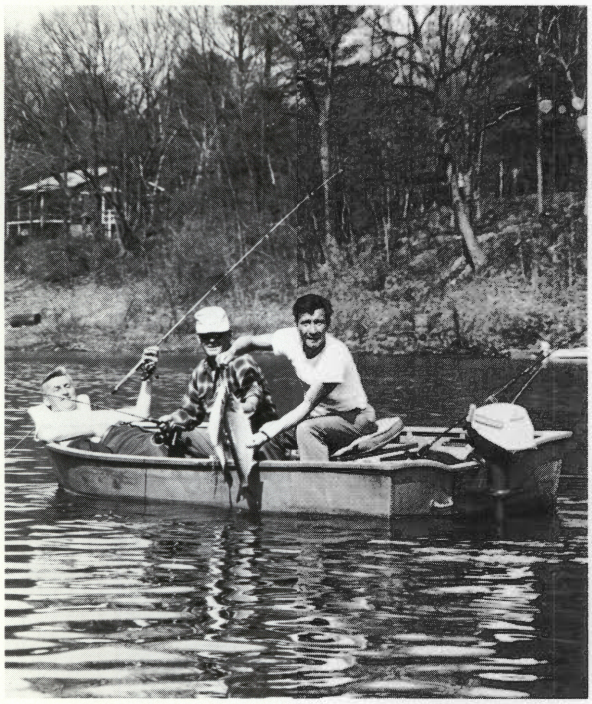
For decades the Delaware remained barren of shad until the spring of 1961, when, for reasons yet unexplained, American shad once again entered the River, managed to traverse the pollution barrier, and began making their way upriver to the ancient spawning grounds.

And as these spawning migrants, fresh from the sea, fought their way northward, enterprising fishermen soon learned that they could be readily caught on rod and reel and they thronged to the River's shores, enjoying some of the finest fishing the tri-state area had experienced in decades.

The American shad's fighting attributes has justly earned it a reputation as the "poor man's salmon." The American shad is a rough-and-tumble fighter when taken on light tackle. It boasts of the tail-walking agility of a marlin; the bull-dogging tactics of a striped bass and the sulking qualities of a horse-mackerel—and its tissue-thin mouth can create absolute frustration among even the most experienced anglers.

Long about mid-April shad begin their spawning migration upriver when water temperature reaches approximately 60 degrees. The American shad is bluish-green along its back, blending into silvery-white sides. Its tail is deeply forked and its mouth a paper-thin membrane.

Females or roe shad usually run larger in size than males or buck fish. The average roe weighs approximately four or five pounds, while bucks weigh in the neighborhood



Boat fishermen employ several techniques to catch shad. Some merely anchor in a likely spot, drop their lures into the water and let the current do the rest—this "technique" does pay off.

A combination of fly-rodding and wading is the most spectacular way to catch shad and closely resembles Atlantic salmon fishing in the far north country.

"Hefting aboard" a prime roe (female) shad fresh from the sea. (Fred Jones of Ogdensburg and family.)

of two or three pounds. Last year, however, some truly heavy-weight shad were taken by Delaware River shad anglers—buck fish in the five and six pound class and roe shad upward of seven pounds!

Their food consists of insects, larvae, crustacea, minnows and other small fish, plus minute plant and animal life. But when they begin their spawning run in the spring, biologists claim that they take no food. However, they can be enticed to strike an artificial lure.

When shad start to move upriver enthusiastic anglers can actually follow this upstream journey and encounter fine sport fishing along the entire route. Initial reports of shad catches on rod and reel usually occur somewhere near Lambertville about the second week in April. By late April prime fishing is encountered at Raven Rock, Frenchtown, Riegelsville, Belvidere, Deleware Water Gap, the Worthington Tract, Flatbrookville, Dingman's Bridge and at Montague, with peak action found from the Water Gap north to the Montague-Milford Bridge during the first two weeks in May.

Peak fishing in the River along the Jersey shore is the first two weeks in May. By the end of May fine fishing continues in the Narrowsburg area of New York State and good fishing can be encountered well into June northward to Hancock, New York. We've even enjoyed fine fly fishing for these gamesters in the East Branch of the Delaware in late June—but that's another story.

There are primarily two breeds of fishermen who stalk the River's migrating shad—those who prefer meeting them on their "own level" by wading, and those who choose to fish from boats. By far the most productive way to catch shad is by fishing from a boat, although wading and catching them when standing thigh deep in the River, is a far more spectacular way to catch shad and most closely resembles Atlantic salmon fishing.

Boat fishermen employ several techniques to successfully catch shad—trolling being the basic method—while others "jig" lures and some simply anchor over a likely shad spot, drop their lures into the water and let the current do the rest. Bear in mind, however, shad hug the river bottom. Consequently, regardless of lures used, they must be fished DEEP. Sure, you're going to lose plenty of lures, but such is the very nature of this sport.

The great majority of shad fishermen utilize lightweight spinning tackle. A six or 6½-foot, medium-action fiberglass rod is about standard, plus a good spinning reel capable of holding 200 yards of six pound test monofilament line. Fly rods too can be used with a degree of success but it's difficult to sink a heavy-weight fly line to the depth where shad are found.

When trolling with conventional spin tackle, trollers drop lures far astern, allowing them to bounce bottom.

Members of the Fountainblue North Shad Club, located just north of Dingman's Bridge in Sussex County, display a fine day's catch of shad.

Remember too, upriver trolling invariably produces the best results, but on occasion, downriver trolling can pay-off in surprising dividends. Troll at a slow, steady pace, at sufficient speed to keep lures moving SLOWLY.

Anglers who prefer to tackle the Delaware by wading require a stout pair of waders fitted with either felt soles or wading chains and they should further carry a sturdy wading staff. Lures are cast quartering up and across the current in conventional "wet fly" fashion and permitted to bounce bottom in a natural manner. The strike, when wading, usually occurs as the lure makes it final downstream turn before straightening out.

Now the big question—Since we're aware shad do not feed during the spawning migration, what kind of lure will entice them to strike? Small spinners and spoons, gold or silver-finished are good, but by far the most effective lure is that little lead-head jig called a "shad dart."

Conventional shad darts are available in various sizes, ranging in weight from 1/16 ounce, upward to 3/8 ounce specimens with the 1/4 ounce dart the best overall size. Shad darts are also finished in various color-combinations and every shad buff has his own favorite color. Some prefer "hot" orange; others, fluorescent green, yellow/red, etc. However, we've found the red/white dart produces excellent overall success, although when shad are finicky remember to try other colors.

In recent years some shad enthusiasts have been quite successful taking shad on "nymph-type" flies. A simple and excellent shad taker is nothing more than a size 6 gold-plated hook to which a wisp of white calf tail is added as a tail; a body of yellow floss, gold ribbed, and a thorax of scarlet chenille.

We've enjoyed excellent success when trolling a shad dart and fly combination. When fishing such a combination the fly is tied to the point or tip of the leader. Some 18 inches above the point fly a small dropper leader is added to which the dart is attached. Remember, however, when fishing all lures add sufficient split shot to drive them deep. We cannot over-emphasize this point.

During its upriver trek shad will always rest during the mid-day hours in deepwater pools—seek them there during this time of day. However, during the early morning and late twilight hours shad move from their resting stations and at such times look for them in fast-water runs and at the head or tail of large pools.

Shad barely strike a lure—they merely stop it—and when you raise the rod tip the fish will invariably explode into action. Keep a tight line as its mouth is so thin the slightest slack line will mean a lost fish.

Shad roe is truly a gourmet delicacy—but to eat the shad itself takes a bit of doing since they are literally filled with bones. But its flesh is delicious. Some claim they can be wholly filleted but this task is practically a lost art. However, there is one way to circumvent this problem—by smoking the fish.

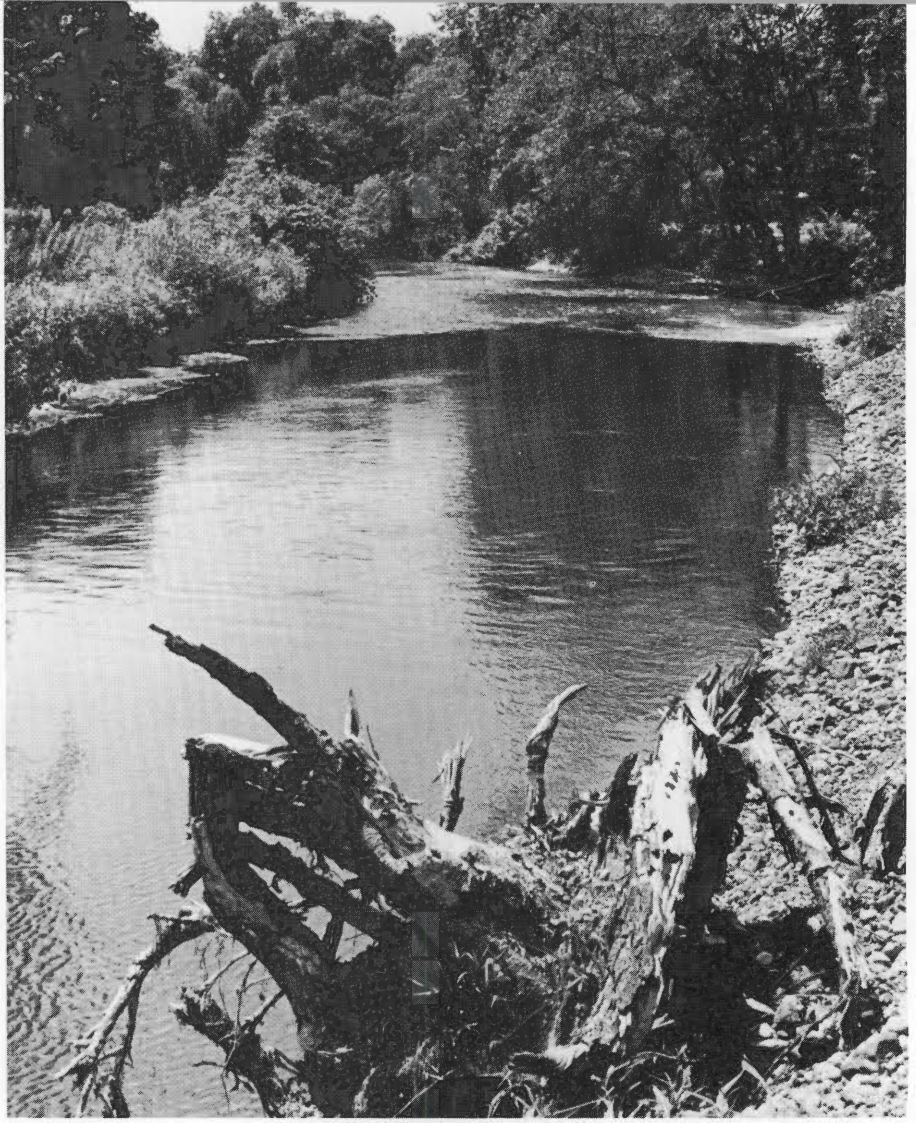
Since the rebirth of the shad fishery in the Delaware's upper reaches a multitude of fishing clubs have sprung up along the shores. Club headquarters for these enthusiasts include everything from tents and trailers to elaborate cabins. One such group that inhabits the River during the shad season calls itself "Fountainblue North." Comprised primarily of Sussex County residents, Fountainblue North headquarters is an ancient school bus parked high on the river bank overlooking a gigantic pool north of Dingman's Bridge. Of course the bus is painted blue.

These skillful anglers literally eat and sleep shad during the peak of the spring migration. Smoke can usually be seen belching forth from their converted refrigerator-smoker around the clock, for this group specializes in shad smokery. The shad are gutted and scaled, split in half and placed in a heavy salt brine solution for 24 hours. The halved fish are then removed from the brine and washed in clear, cold water and placed in the smoker for a period of 8-10 hours. A mixture of hickory, apple and birch wood is used for smoking—the hickory for its hot fire, birch for dense smoke and apple for flavor. The shad's myriad of small bones curl from the flesh when smoked in this fashion and are then readily picked out.

A side of smoked shad, devoured under the stars on the shores of the Delaware after a day spent seeking these migrants from the sea, is an outdoor experience difficult to beat and one to be long remembered ■

fishing the hidden waters

By George Kirschbaum, Jr.
Captain, U.S. Army



Photographs by Harry Grosch

It was nine A.M. on the opening day of trout season, and I stood alone on the banks of a small but beautiful trout stream. On my first cast I drifted a nightwalker under an old stone bridge where I knew from previous experiences that there had to be at least one or two good fish. Two minutes later I had a chunky twelve inch brown trout in my landing net. Within three more hours, I had caught one more brown trout and four nice rainbows ranging from eight to thirteen inches. During the entire time I saw only two other fishermen—they didn't see me. I heard their car stop on the old country road and watched them get out and look at the stream. "This dinky place can't be stocked," one of them exclaimed, and they got back into the car and drove off. I couldn't help but chuckle to myself and breathe a sigh of relief that I still had the stream to myself.

This incident didn't happen in some remote area of Pennsylvania, New York or New England. It happened in Sussex County, New Jersey. On the way home that day, I glanced out of the car window to watch anglers fighting for space on Lake Hopatcong, the Musconetcong and the Rockaway. I expect that many of them enjoy the company but, as for me, fishing and solitude are almost synonymous.

Unfortunately, very few New Jersey anglers realize that there are many small, relatively hidden waters open to the public which are almost unfished or lightly fished, and which are often more productive than the larger and more well known streams, ponds and lakes. Not only have I caught stocked trout from these little waters (and you might be surprised at some of the tiny brooks and ponds which are stocked), but I have also taken many nice native brook trout which many New Jersey anglers claim to be extinct. In addition, I have caught my fair share of bass, pickerel and panfish from these places. For example, the largest pickerel I ever caught in a stream was twenty-one inches long and beautifully colored. The section of the stream in which I caught him was only twenty-four inches wide and four inches deep.

As I mentioned, many of these hidden waters are open to the public. One of my favorite spots is a little beaver pond fed by a small brook in a well known New Jersey state forest. I once had an eighteen inch rainbow take my bait in this hidden pond, and my fishing buddy got so excited he fell into the water attempting to land it, which he finally managed to do. In spite of his cold dousing, he also landed a fine twelve-inch rainbow and a six-inch native brook trout which he carefully liberated back into the beaver pond.

I know of at least six other small streams which have beaver ponds, that are lightly or virtually unfished, and I am sure that there are many more throughout the state. Sadly, many anglers don't even realize New Jersey has beaver, not to mention beaver ponds.

Another favorite spot I fish is where waters spill out of a private lake down into a culvert under a railroad for about one hundred yards, creating a stream about twenty feet wide which is open to the public. It stays cool in the culvert on even the hottest August afternoon. Because of the cool water and a substantial amount of oxygen in the water from passing over the falls, trout, bass, pickerel and panfish make this a summer haven—sort of a fish resort; moreover, they are always hungry. It is one of the best places I know of to catch large fish and a variety of fish. I have fished this culvert many times over the last fifteen years, and have only seen one other fisherman wade into it. He said he would never return because of a large snapping turtle and snakes which he saw. Personally, it takes more than a few turtles and harmless water snakes to keep me away from a good fishing hole. If it keeps other fishermen away, that's fine.

Still another favorite place I know of is a small stream which is almost impossible to fish from its banks because of the mud and in some places quicksand. By using a small homemade kayak, I have been able to fish several miles of essentially virgin waters. In many places on this stream, especially the part where a road crosses it, the water is only several inches deep; however, a kayak or a small canoe only takes on a few inches of water and is an ideal way to fish this and similar streams. My father, brother and I have had innumerable enjoyable fishing hours on this little piece of water. Find a stream like this, make or buy a shallow draft craft, and you will have your own private fishing (and possibly hunting) preserve.

Let me mention just one more favorite spot. It only produces good fishing in the spring and fall. It's a swimming beach. Early in the trout season most of the anglers who fish the lake do so from boats, docks and other obvious fishing places. For some reason they think that the trout believe that a swimming beach is only for people. How mistaken they are! The sandy clear water off the banks of the beach provide an early and late season trout sanctuary. Last spring I took many beautiful *golden* rainbow, rainbow and brook trout while fishing from the banks of this beach. Occasionally some children would come by and try their luck, but adult fishermen were rarely seen.

There are many more hidden waters which I know of in New Jersey, but I won't bother to describe them here. I think I've gotten my point across: you don't have to follow the crowds to find good fishing. Instead, think in reverse. Fish where the crowds don't go. Don't look for obvious places; seek out the inconspicuous and overlooked waters, and you will catch more and larger fish.

Admittedly, it is not always easy to find these hidden waters. Many of the places I have simply stumbled upon. Others were discovered as the result of planned searching. You have to spend some time in locating them, but when you do find one of these small, hidden hotspots, you will receive a tremendous feeling of satisfaction and enjoy some darn good fishing. I will not tell you where my favorite fishing nooks are located because that might make things a bit too crowded for me. Also, it would deprive you of the fun and satisfaction of finding your own hidden waters. However, let me make a few suggestions as to how you might get started in locating such areas.

If you are fishing a stream, try exploring it above and below its more popular stretches. If the going

gets hard because of the briars or swamp land, all the better; don't let it discourage you. One of the main rules to remember is that fishing pressure decreases as the terrain becomes harder to fish. Less fishing pressure doesn't always mean more fish per square foot of water (though it often does), but if there are fish present they will almost always be more willing to bite than in the heavily fished areas. In short, fish not subjected to heavy fishing pressure are less educated and easier to get into the creel.

If you run into a small tributary stream, explore it; you may be surprised by the fish which a small stream or brook can support. This is especially true if you stumble upon a small beaver pond or other forms of deep pools created by man or nature.

Try diving along the back roads, keeping an eye open for small streams which may pass under the road. If you see a small path going off into the woods, get out of the car and follow it. The exercise will do you good. It may lead to a dead end, but on the other hand, it could lead to a fine pond or stream loaded with hungry fish. It has happened many times. Railroads which pass through areas where there are few or no roads are also worth exploring. Streams which pass through culverts under railroads are often the hottest of fishing nooks. Be ready for many disappointments, but sooner or later your efforts will produce positive results.

The whole idea is to go where few other fishermen venture, be persistent and enjoy the exploring as well as the fishing. One other suggestion: use maps. Even a regular road map of New Jersey which you can get at any service station can give you hints as to where you can find hidden waters. It will show back roads, railroads and even some of the smaller streams and ponds. Better yet, obtain some topographic maps of the areas you plan to fish. Topographic maps are particularly helpful because they show elevation and other land surface features. This is important because you are more likely to find a stream in a valley than on a flat stretch of land. Also, many other land surface features such as foot trails and power lines are revealed on these maps.

The best way to obtain topographic maps is by writing to the Map Office, U.S. Geological Survey, Washington, D.C. 20244. They will send you information explaining how to read topographic maps and instructions on how to order maps for particular areas in New Jersey and other states. The maps cost about seventy-five cents each.

Also remember to ask permission when going on private property. And remember that fishing or locating hidden fishing waters imposes some safety hazards. You could get lost or perhaps injure yourself where there is no help available. It is always a good idea to fish with a buddy. If you like to fish alone, at least let someone in the family know the general area you will be fishing in, and what time you plan to return home. Another good idea is to leave a note on your car stating that you are fishing and what time (including the date) you plan to depart. Carry a map of the area and a first aid kit. Be sure to test the ground in front of you with a long stick when traversing muddy areas. Most important, use good common sense.

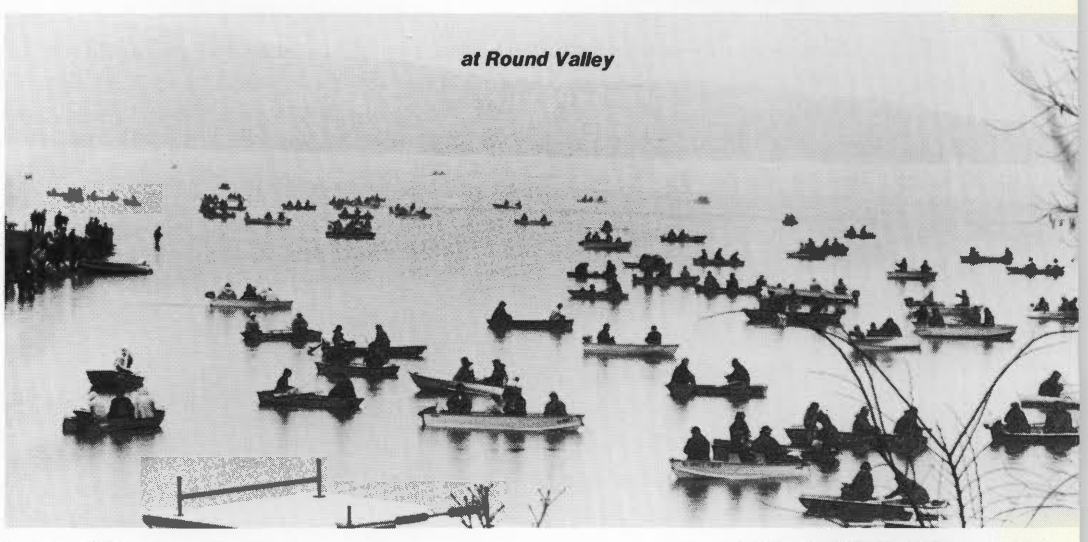
If you start looking for your own hidden waters, you may find yourself having as much fun exploring —with fishing as an additional dividend. Have fun, and if you bump into me on some back-in-the-woods beaver pond, be sure to say hello. ■

a young lady at Ken Lockwood Gorge

a good catch at Hopatcong

Opening Day
TROUT
on a cold, wet Saturday morning

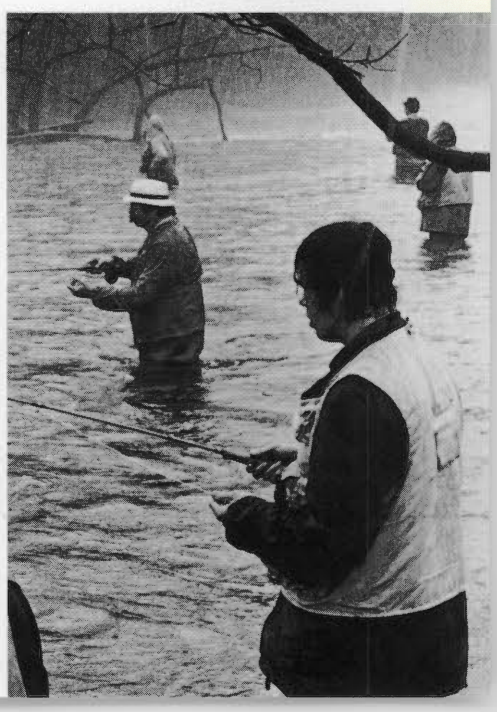
Photographs by Harry Grosch



at Round Valley

the circle at Saxton Falls

in the No-Kill stretch



Editorial Comment: Recently, Jacques Cousteau, oceanographer and distinguished inventor of undersea devices, in a statement to United Press International said: "In ten years there will not be any fish remaining to take out of the ocean."

When asked if he was overstating the case, he replied, "Not at all—I could not be more realistic. I am not an alarmist. But I know that the rate with which the oceans are being depleted and befouled by man that we can no longer harvest the sea as we have. We keep taking out and putting nothing back . . ."

World fisheries experts expect that only small annual increments in world fish harvests are possible above the present level, about 70 million tons. Further increases will be largely dependent on utilization of presently unappealing marine forms, discovery of new stocks of desired species, and expanding cultivation at the edge of the sea.

Scientist Paul Hamer, principal salt water biologist with the New Jersey Division of Fish, Game, and Shellfisheries, says man is certainly capable of destroying all life in the sea as Cousteau predicts. We need only to look at the depletion of the Atlantic Salmon and the West Coast Sardine, both caused by man's reckless use of the resource.

Biologist Hamer went on to say that he hopes and believes that man will learn to control his insatiable greed and begin to consider the needs of the underdeveloped nations and our own future generations.

living marine resources and

To underscore the importance of this problem, we are publishing an edited version of a presentation titled, "Living Marine Resources and Law of the Sea" by a distinguished fisheries scientist, Richard S. Stroud, Executive Vice President, Sport Fishing Institute. This paper was originally presented at the Northeast Fish and Wildlife Conference this past February. SP.

Photos: Joint national marine fisheries service—U.S. coast guard

Soviet Factory Base Ship (Pionersk Class).
Designed to operate with flotillas of catcher boats (medium side trawlers on the Atlantic grounds). These new and advanced floating factory base ships are equipped with the latest processing facilities. They provide catcher boats with fuel and water, fishing gear, provisions and technical assistance. They also provide social and medical aid (complete dental and hospital facilities). These ships are 550 feet long overall and are estimated at 14,000 gross tons. Fresh fish is delivered in net bags through a stern slip and while catcher boats are alongside.

Moderate catch of mackerel on board foreign vessel fishing off Long Island-New Jersey coastal area

LAW OF THE SEA

By: Richard H. Stroud
Executive Vice President,
Sport Fishing Institute

Since the recent mid-sixties, there has been rapid escalation in the fishing effort being exerted on U.S. coastal fisheries by the distant-water fishing fleets of some 19 foreign nations (including the U.S.S.R., Poland, Japan, Korea, East Germany, Norway, Canada, Cuba, etc.). This fishing pressure has reached the point, for example, where last year some 800 to 900 foreign fish trawlers, seiners, and long-liners plied the waters of the Continental Shelf adjacent to the Eastern United States, largely north of Cape Hatteras. The effect has been noticeable dwindling in those waters of the supplies of many common marine species that are important to recreational fishing as well as to the domestic commerical fisheries.

The rapidly developing encroachment by foreign-flag fishing vessels upon the traditional U.S. domestic fishing grounds of the adjacent Continental Shelf has generated widespread concern. Looking to the forthcoming Law-of-the-Sea Conference (LOSC) scheduled for June 20 to August 29 in Caracas, Venezuela, the Ocean Affairs Staff of the U.S. State Department has developed a complicated proposal for national and international jurisdiction over the various marine fisheries resources.

SPECIES APPROACH

As developed, the official U.S. government fisheries policy looking to the LOSC—the so-called "species approach"—advocates (1) that preferential rights be granted to coastal nations to harvest as much as they can of fish stocks found along and off their coastlines (with other nations free to take what's left), and (2) that coastal nations should have regulatory control over coastal fish stocks for as far offshore as the latter may swim, to the limits of their oceanic range, however near or far from shore that may prove to be in each instance.

SPECIES APPROACH IMPRACTICAL

Implications of the U.S. "species approach" to a fisheries regime are broad reaching, and enforcement would be difficult in the extreme, perhaps impossible from a practical point of view. It is difficult to envision how the proposed system could effectively protect the coastal fisheries, given varying and intermingling species ranges and general inability to fish selectively for individual species.

Additionally, the proposed U.S. fisheries package would recognize exclusive ownership rights to anadromous fish (salmon, steelhead trout, striped bass, etc.) by the coastal nation in whose fresh or estuarine waters the anadromous fish spawn, wherever they might range throughout the high seas. It would also assign to some suitable international body the authority to regulate fishing for the highly migratory and truly pelagic oceanic species of fishes (tunas, billfishes, etc.).

200-MILE LIMIT URGED

Contrary to the government's LOSC posture, many elements of the American domestic commercial fishing industry strongly favor a 200-mile seaward extension of U.S. national marine fisheries jurisdiction. This concept is also much favored in principle by the recreational fisheries interest. In fact, both these large interest groups are urging interim unilateral enactment of national legislation to bring it about now. The principal American interests opposed are the wealthy tuna fishing interests, the Department of Defense, and the Department of State. The tuna fishing interests are a small fraction of overall American marine fisheries interests. The Department of Defense seems unable or unwilling to separate the fisheries issue from the passage-through-straits issue. The Department of State seems quite willing to sacrifice both the recreational and domestic commercial fisheries in order to protect the politically-powerful California-based tuna fishing interests. Department of State seems equally willing to forego a remarkable opportunity to recoup a significant fraction of the billion-dollar-plus fisheries trade deficit through control of coastal fishing.

A TUNAGATE FOR THIS ADMINISTRATION?

The disproportionately-influential tuna industry (about 12% of total U.S. commercial fish value) has already agreed to the idea of international regulation of tuna resources as a part of the "species approach" fisheries package. Yet, it obstinately objects to an extended fisheries zone package that would include the very same feature. If the California-based tuna industry continues to call the tune to which the Administration dances, so that the U.S. clings blindly to the "species approach," the many times more valuable domestic recreational and commercial fisheries may be expected to lose heavily, perhaps fatally, at Caracas. If so, they will have been the sacrificial goats in a deadly and reprehensible game of power politics. "Tunagate" may then replace "watergate" in the American vocabulary, at least along the blighted waterfront.

SPECIES APPROACH IN DEEP TROUBLE

It is patently evident that much of the world fails to understand the U.S. fisheries proposal for regulation by individual species. Or, understanding it, the world either fails to support it or is strongly opposed to it. Meanwhile, the evidence is that the U.S. is refusing

Soviet Factory Stern Trawler (Atlantik Class).
Length overall 270 feet, 2,700 gross tons. Newest and most modern soviet stern trawler to date. Has improved gear handling and processing facilities. Is geared to replace tropik class trawler. Soviet reported to have 150 on order from East Germany.

to recognize the signs. Worse, it is failing to think out its "fallback" strategy in sufficient detail and depth to preclude an otherwise predictable eleventh-hour crisis of decision-making at Caracas, when its own proposal fails. In contrast, proposals for an alternative U.S. position, based on some form of greatly extended fisheries jurisdiction outside the Territorial Sea, are proliferating. They find growing support in sport fisheries circles, domestic commercial fisheries circles, conservation circles, scientific circles, and in the general public.

INTERNATIONAL TREATY FOR RESOURCES OF THE SEAS

The LOSC is destined to be one of the most far-reaching and complex actions ever undertaken by the UN. It will seek to draft an international treaty for the development and equitable sharing of the oceans' resources among all nations. Critical decisions will be made affecting the breadth of the Territorial Sea, the extent of national jurisdiction over coastal fisheries, pollution control, navigation, seabed mining, and many other issues. Evidently, there is general agreement within the world community of nations, in principle, that the ocean waters and the deep seabeds beyond national jurisdictional limits ought to be dedicated to the common benefit of all mankind. However, the related fundamental question—where national control should end and international control should begin—poses great difficulties in its resolution.

It is an interesting historic fact that it was the United States, herself, who set forth the basis in principle for broad extension (for conservation purposes) of national fisheries jurisdiction into the high seas beyond the Territorial Sea limits. It was President Harry S. Truman who set the stage for this development, in his "Presidential Proclamation with Respect to Coastal Fisheries in Certain Areas of the High Seas" of September 28, 1945, as follows (in part):

In view of the pressing need for conservation and protection of fisheries resources, the Government of the United States of America regards it as proper to establish conservation zones in those areas of the high seas contiguous to the coasts of the United States wherein fishing activities have been or in the future may be developed and maintained on a substantial scale . . . . . and all fishing activities in such zones shall be subject to regulation and control . . . The right of any state to establish conservation zones off its shores . . . . is conceded . . . The character as high seas of the areas in which such conservation zones are established and the right to their free and unimpeded navigation are in no way thus affected . . . . .

Chile's courageous pioneering action of June 25, 1947, in declaring its jurisdiction over the seas adjacent to its coast to a distance of 200 miles offshore, was specifically predicated upon the foregoing Truman doctrine! It seems to many informed fisheries observers that the time is long overdue for similar implementation of that doctrine on the part of the United States.

Extended fisheries jurisdiction, to the outer edge of the Continental Shelf (depth of 200 meters) or to 200 miles offshore, has much to recommend it as a constructive alternative to the "species approach." This is especially so for protection of the immensely valuable domestic fisheries (both recreational and commercial). Leading zonal advocates envision that other nations would be permitted to harvest any true surpluses of desired species that might remain after first satisfying the needs of the domestic fisheries.

As with the "species approach" package, the highly migratory pelagic species would be subject to regulation by an appropriate international body.

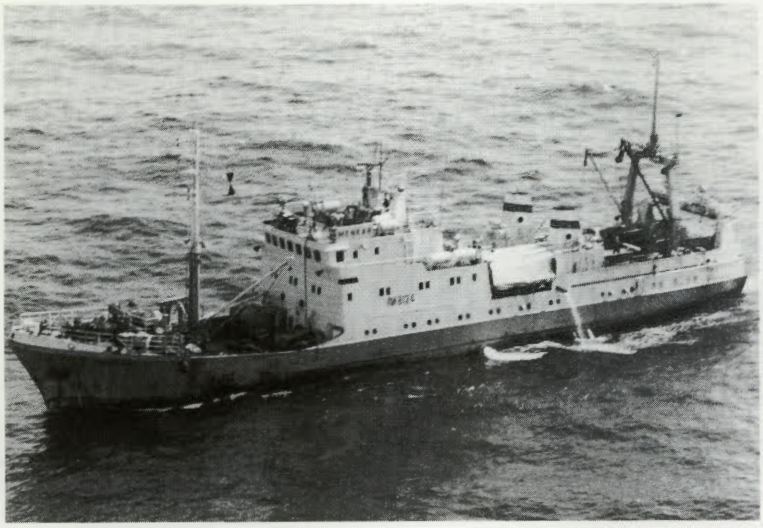
EXTENDED JURISDICTION FOR ANADROMOUS FISH

As with the "species approach" package, again, anadromous fishes would belong to the nations-of-origin in whose estuaries and rivers they spawned, and no harvest of anadromous species by any nation would normally be permitted in ocean waters outside the zone of national fisheries jurisdiction. An extended jurisdictional fisheries regime, moreover, would seem to offer the strongest means to assure abstention from high-seas harvest of anadromous species by foreign-flag fishing fleets. This follows because compliance failures could be severely penalized by withdrawal of access to historic or underutilized fisheries within the zone.

UNITED NATIONS ACTION

On December 18, 1972, the United Nations General Assembly took a significant action that may well foreshadow the outcome of the 1974 Law-of-the-Sea Conference. That august body overwhelmingly adopted a resolution proclaiming, as a general principle, the sovereignty of coastal nations over the marine resources occurring in their Continental Shelf waters. The vote was 102 nations in favor of the resolution, none against, and 22 abstaining. The text of the key provisions is that THE GENERAL ASSEMBLY . . . . .

Reaffirms the right of States to permanent sovereignty over all their natural resources, on land within their international boundaries, as well as those found in the seabed and the subsoil thereof within their national jurisdiction and in the superjacent waters.



Soviet Medium Freezer Stern Trawler (SRTK).
Most recent design stern trawler type in 800 gross tonnage class. Estimated 25-30 units presently fishing off U.S. East Coast. Continued construction is expected.

Most nations apparently interpret the action as implied recognition by the international community of extended national fisheries jurisdiction over Continental Shelf waters. Obviously the precise impact of this United Nations action on the Law-of-the-Sea Conference remains problematic. Nevertheless, it would seem logical to assume that the likelihood of an extended fisheries jurisdictional outcome has been increased.

As early as May, 1970, the Sport Fishing Institute (SFI), by means of a formal Directors Resolution, publicly advocated unilateral extension of United States fisheries jurisdiction offshore to the outer edge of the adjacent Continental Shelf (at a depth of 200 meters) or 100 nautical miles offshore, whichever is farther. This position was revised in November, 1971, to advocate extension to the edge of the Continental Shelf (200-meter depth) or 200 nautical miles offshore, whichever is farther.

The 1970 SFI fisheries zone resolution represented the first public advocacy of unilateral broad extension of U.S. fisheries jurisdiction by a national organization. It has been followed by similar resolutions adopted by nearly a score of prestigious regional and national organizations. The legislatures of all the New England States have also expressed corresponding views by means of symbolic Extension Acts (all being universally regarding as unconstitutional).

ADMINISTRATION NOT IN STEP

But there is little apparent evidence that the Federal Administration is heeding the evident strong majority public view that the U.S. government should seek an extended national jurisdictional fisheries regime at the forthcoming Law of the Sea Conference for control over coastal fisheries. But on the other hand, the U.S. Congress is obviously much more sensitive and responsive to the wishes of the American public in this matter. Witness the early introduction of a number of bills calling for unilateral broad extension of national jurisdiction over our valuable coastal fish stocks.

By early 1974, at least a dozen extended fisheries jurisdiction bills had been introduced in the Congress. The most important of these is commonly referred to as the Magnuson-Studds Bill (S.1988 in the Senate, sponsored by Senator Warren G. Magnuson of Washington; H. R8665 in the House of Representatives, sponsored by Congressman Gerry E. Studds of Massachusetts). This particular measure, in contrast to the many earlier extended jurisdiction bills, has the very important provision that such extension shall apply as an interim measure. If and when general agreement on fisheries is reached in international Law-of-the-Sea negotiations, and upon entrance into force of an effective international fisheries regulatory regime, the interim Act would terminate.

CONGRESS IS MORE RESPONSIVE

In our view, passage by the Congress of the Magnuson-Studds measure for interim unilateral extension of U.S. coastal fisheries jurisdiction to 200 nautical miles offshore would be very much in the public interest. It would set the stage for solving many urgent coastal fish conservation problems, and it would move aggressively toward accommodation of the special needs of the valuable anadromous fisheries. Any debatable apprehensions by the distant-water tuna fishing interests should not be allowed to override the vital interests of the combined domestic commercial and recreational fisheries. Collectively, these latter fisheries are on the order of 15 or more times more valuable to the American economy than the tuna fisheries.

*NO FISHERIES SCIENTIST ON U.S. CONFERENCE TEAM

The American public should not be content to let Law-of-the-Sea matters take their politically-oriented course unattended. It came to public light early in February, 1974, during discussions in the Marine Fisheries Advisory Committee (advisory to the Secretary of Commerce), that no fisheries scientist will be included as a member of the U.S. government team participating in the LOS Conference at Caracas. This is no inadvertent change over earlier plans; only political, legal, and economics experts are included in latest plans. So, once again, it would seem that biology and conservation are being purposefully excluded from a sensitive decision-making process that may profoundly affect major natural resources policies for decades, even centuries, to come.

The new makeup of the LOSC government team, deliberately restructured to achieve undiluted commercial orientation, carries ominous implications for the broad public interest in ocean resource conservation. I submit that it is high time for you, the public, to become actively involved. You should advise your public servants in the Executive Department in no uncertain terms about your views on these vital matters. It bears nothing in this connection, just as in all other aspects of Democracy, that the citizens may expect to get just about what they actually deserve . . . in the end . . . . .

**Editors Note: At a public briefing on LOS matters, March 21, 1974, Washington, D.C., the Deputy Administrator for the National Oceanic and Atmospheric Administration (Howard Pollock) responded to inquiry that a marine fisheries biologist (Dr. Lee Alverson, National Marine Fisheries Service) has now been selected to stand by on a "bags-packed" basis for call to the LOSC at Caracas when fisheries matters come under discussion and his counsel is needed.* ■

The public fad of "adopting" and keeping wildlife as pets in the home may be severely curtailed within the near future by both federal and state legislation. During the past dozen years or so, the public, mostly in the urban and metropolitan areas, has developed a mania for keeping exotic wildlife, such as lions, cheetahs, monkeys, chimps, bears, pythons, cobras, etc. as household pets. There is little question that television and movies have popularized wildlife pets, and the animal dealers and importers have been ready and willing to acquire almost any creature to accommodate the demand. Unfortunately, exotic, and most native wildlife species simply do not make suitable house pets, and some serious problems have resulted both for the owners and the wildlife.

A NEW LOOK AT EXOTIC

By Pete McLain
Federal Aid Coordinator

First the removal of wildlife from its native habitat to be kept in captivity as pets has resulted in a drain on many native populations, which in some cases are already endangered or threatened with extinction. Secondly, the introduction and possible escape of exotic animals can well threaten the existence of our native wildlife species either by competition for habitat or the introduction of diseases. The English sparrow, the starling, and more recently the monk parrot are good examples of how an exotic species can take over an ecological niche at the expense of our native wildlife.

There is always the real problem of exotic wildlife pets, especially the larger animals and the poisonous ones constituting a threat to their owners and other people. A young raccoon, while not an exotic, is a cute and affectionate pet, but as they mature, can become nasty and dangerous. Nine times out of ten, pet raccoons are released into the wild where they are not capable of fending for themselves, and they die of starvation or predation.

There are presently people in New Jersey keeping lions, cheetahs, chimps, poisonous snakes and spiders as pets. These exotic species are unpredictable in temperament, and the care and attention required to maintain this wildlife is usually beyond the ability of the average person. Wild animals have rather specfic dietary and physical requirements which are difficult or impossible to provide under homeownership conditions.

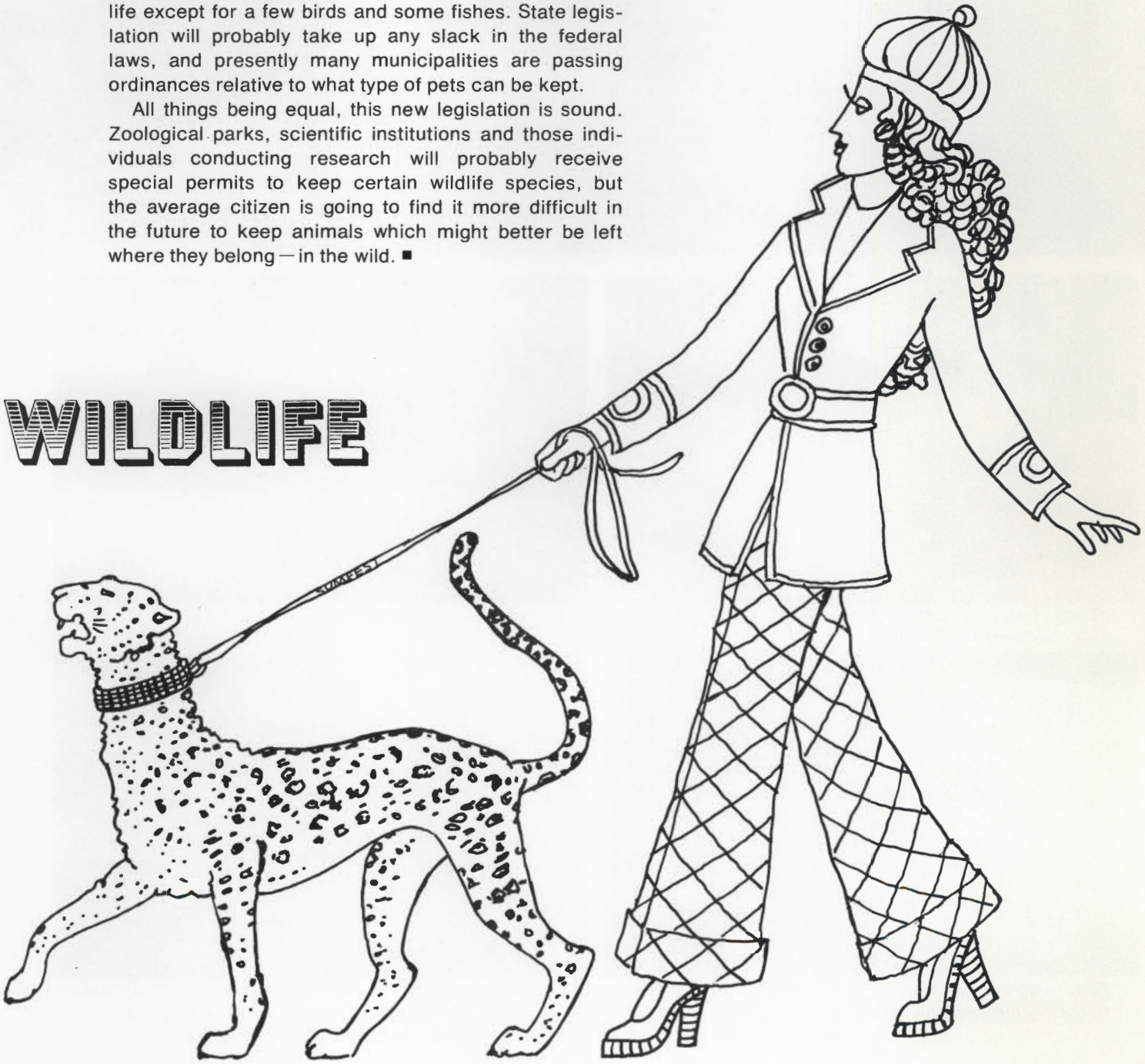
As an example, many snakes, lizards, turtles, small mammals, and birds will not eat or cannot receive the proper nutrition as home pets, and they will starve from an improper diet which will bring on a fatal disease.

Local zoos and animal parks are besieged with people who are desperate to find a home for an unwanted wildlife pet. Most of these zoos do not want, and many will not accept, these animals.

The Federal and state governments are presently taking a new look at the introduction of exotic wildlife and also the keeping of native wildlife and potentially dangerous species. The Federal Endangered Species Act of December 1973 is a start, and there are presently several bills in the legislature which propose to almost exclude the importation of any exotic or foreign wildlife except for a few birds and some fishes. State legislation will probably take up any slack in the federal laws, and presently many municipalities are passing ordinances relative to what type of pets can be kept.

All things being equal, this new legislation is sound. Zoological parks, scientific institutions and those individuals conducting research will probably receive special permits to keep certain wildlife species, but the average citizen is going to find it more difficult in the future to keep animals which might better be left where they belong — in the wild. ■

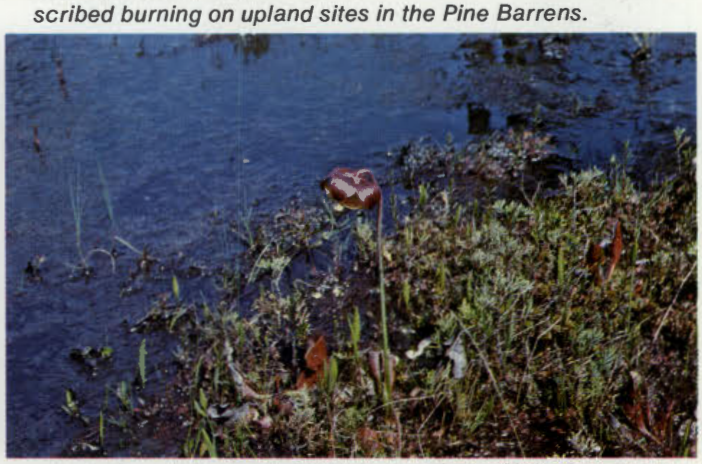
WILDLIFE



Blazing-stars in bloom on the edge of area frequently prescribe-burned in the winter.

Butterfly-weed, one of the showy herbs favored by prescribed burning on upland sites in the Pine Barrens.

False foxgloves in bloom under a stand that has been frequently prescribe-burned in the winter.



A portion of the area shown in top photo. Note the pitcher-plants, one of which is in bloom, and the sundews (as on the edge of the water to the right of the pitcher-plant flower).

In open areas of white-cedar swamps, such as this one, occur curly-grass fern, orchids such as rose pogonia, pitcher-plant, sundews, and other interesting herbaceous plants. This open area was probably created by removing "turf" for stabilizing slopes of dams, road cuts or fills.

Wildflowers
of the pine barrens
and their niche requirements

photographs by the author

A portion of the area shown in the top photo. Note the orchid in bloom, and the thread-leaf sundews in the foreground.

By Silas Little
Principal Silviculturist
Northeastern Forest Experiment Station

The Pine Barrens of southern New Jersey have long aroused the interest of professional botanists and others interested in relatively rare plants. In the Barrens occur such plants as Conrad's crowberry or broom-crowberry, found also in New York's Shawangunk Mountains, on Cape Cod, and northward along the coast; curly-grass fern, which also grows in Nova Scotia and Newfoundland and has recently been found in rare spots on the eastern end of Long Island; sand-myrtle, the typical species of which is found only in the Jersey Barrens; about 20 species of the orchid family; three species of sundew; and one of pitcher-plant. Stone reported in 1911 that 565 species of ferns and flowering plants, exclusive of introduced weeds, occurred in the Barrens. McCormick recently estimated that the present-day vascular flora comprises 800 species, varieties, and forms, but his increased number over Stone's is largely due to subdivisions of species into varieties and forms.

My observations have drawn my attention to the niches some of these plants require, and the various land practices or disturbances that have provided these niches.

The Disturbances

The forests of the Barrens have been shaped not only by the soils, but also by extensive wildfires and heavy cutting. Ever since colonial times, large and devastating wildfires have been common. The area has long been subject to heavy cutting because it was settled early, was situated between New York and Philadelphia, and was handy to water transportation. In the heyday of wood fuel, upland stands near water transportation were clearcut about every 25 years; less accessible upland forests were clearcut about every 40 years. By 1900 most swamp forests of Atlantic white-cedar had been clearcut three or four times. Cutting pressures have declined in recent years; but still the markets for white-cedar and pine have been so good that few stands reach an age of 70 years.

Locally there have been even more severe disturbances than those wrought by cutting and ordinary wildfire. Occasionally a wildfire during extreme drought has burned deep into the organic soil of a swamp and created, when precipitation returned to normal, an open bog. Other such bogs were created long ago by mining of bog ore.

Relation of Barren Plants to Disturbances

One of the relatively rare plants, curly-grass fern, seems to be closely associated with past severe disturbances. I have found this plant in open swamps, some of them results of deep-burning wildfires that left old cedar stumps jutting above open water. Until spagnum moss builds up and creates hummocks around these stumps, the damp old wood just above standing water provides suitable niches for curly-grass fern.

Various species of orchids are eagerly sought by wildflower enthusiasts. Many of these species occur primarily in open bogs or other openings caused by past disturbances: wildfires, bog-ore mining, logging, removal of "turf", construction and subsequent abandonment of logging roads, and so on.

The climax vegetation on the swamp sites includes few herbs. The overstory is a mixture of hardwoods, mostly red maple, blackgum and sweetbay. Shrubs form a dense understory. In contrast, white-cedar stands—unless thinned several years earlier—had in our study a relatively sparse understory of shrubs, more light near the ground, and 14 species of herbs.

Minor disturbances may favor certain herbaceous plants over shrubs or tree reproduction in the understory of swamp stands. For example, application of herbicides in narrow strips along roads has increased the number of ferns, star-flowers, and other herbaceous plants.

Cutting of white-cedar stands has not usually created severe enough disturbances to favor such plants as curly-grass fern; but between piles of slash many other herbaceous plants have developed. These include sundews, pitcher-plant, meadow-beauty, milkworts, orchids and several species of sedge, spike-rush, beak-rush, and cotton-grass.

On imperfectly to very poorly drained soils between the uplands and the swamps are stands of pitch pine that have a dense shrubby understory. We've frequently tallied 18 species of shrubs on these sites. Two shrubs that occur more frequently on these flats than elsewhere are dwarf huckleberry and sand-myrtle. The latter occurs mostly on the upland edges of the shrubby understories, but also frequently grows in the middle of sand roads that traverse these sites. It also grows in the Plains.

In spots of the pine flats where turf was removed many years ago, colonies of sundews may still be common. On abandoned haul roads once used to remove cedar, milkworts are common and flower profusely—in marked contrast to adjoining shrub thickets, where they are absent or rare. Pine-barren gentian and turkeybeard may occur in mixture with shrubs, but periodic fires seem to be necessary to retain them in the mixture.

Golden-heather or pine-barren hudsonia is a characteristic plant of open, sandy spots on upland sites—forming mats of yellow blooms in late spring. Numerous seedlings of this species start in burned, bare spots of the Plains. Golden-heather also invades sandy borrow pits and unstabilized edges of roads on sandy sites.

Somewhat associated with golden-heather in the Plains, but more characteristic of rather stabilized bare spots, are pyxie or flowering-moss and arbutus or mayflower. Pyxie also grows on bare, moist sands and on other bare upland sands in open spots, while mayflower occurs on upland sites in various parts of the Barrens.

On many upland sites the characteristic shrubs are low-bush blueberries and huckleberries. Herbs are relatively sparse and inconspicuous.

However, on sites that are frequently prescribe-burned in the winter, and especially in openings on the better soils, a wide variety of showy herbs become conspicuous in the summer flora. Because prescribed fires do not appreciably injure overstory trees, and hence do not reduce overstory shade, these herbs usually dominate only along road edges and under thinned or otherwise cut stands—sites where sufficient light is available to favor the development of herbs. There patches of any or several of these and other herbs may develop: hoary pea, false indigo, blazing-star, false foxglove, pink geradia, sensitive plant, bush-clovers, goldenrods, asters, lupine, and butterfly-weed. Mingled with the herbs will be sedges, beardgrass, and panic-grasses. In some places the fire sedge will dominate—especially after killing fires or other disturbances followed by clearcutting.

Conclusions

Many of the interesting flowering plants of the New Jersey Pine barrens have niches determined not only by soil and moisture, but also by the amount of overhead light and, in some cases, the type of forest floor. Certain kinds of disturbances, sometimes severe ones, are needed to provide the light and forest-floor conditions that these plants require. While further ecological studies are necessary to determine what the proper conditions are for each of these interesting plants, it is apparent that exclusion of fires (wild or prescribed), cessation of timber cutting, and prevention of other disturbances associated with moderate use of the Barrens would favor shade-tolerant shrubs and not the herbs and subshrubs (such as golden-heather) that have aroused so much interest in the Pine Barren flora. ■

The Black Doctor of the Pines

James Still, *Early Recollections and Life of Dr. James Still, 1812-1885.*
Rutgers University Press, 1973 (reprint).

He was called the Black Doctor of the Pines even though he had had only three months of formal schooling. The professional medical men of his day (1842) could seldom boast more. David L. Cowen in his history, *Medicine and Health in New Jersey,* tells of a Dr. Paul Micheau of Elizabethtown, who in 1790 started a one-man medical school that offered a diploma after two months of daily lectures. James Still, the Black Doctor, could at least draw upon a solid knowledge of natural medicines and remedies gleaned from a lifetime in his beloved Pine Barrens. At his death in 1885 he was a well-loved healer in those Burlington County towns on the fringes of the Barrens.

His parents were slaves who bought their freedom and migrated to southern New Jersey in the early 1800's. They built a log cabin in the woods near Medford and by tilling a small plot, cutting firewood and hiring out to local farmers they supported, just barely, a large family. James was born in 1812. He soon displayed a curious mind but, denied access to formal schooling, he turned to the lore of the woods for an education. The crushing poverty of his boyhood was relieved only by his childish dreams. He recalls being vaccinated by the local doctor. The sting of the lancet he remembered for all his life; it marked him, seemingly, with the desire to become a doctor. What an inconceivable aspiration for a poor, unschooled black boy thirty years before the Emancipation Proclamation, living in rural isolation in the woods.

James left the family household when he was sixteen to be indentured for a term of three years to a near-by farmer. His father received a hundred dollars immediately and James would get ten dollars and a new suit of clothes when his term expired. While indentured he cured his first patient, himself, of migraine headaches. He took snuff he made from dried, ground bayberry roots, but the more effective cure was to douse his head repeatedly in a cold stream.

His next job was in Philadelphia, in a glue factory. In Philadelphia he found the book stores which would supply him later with manuals of botany and physiology. He prospered in the city —he saved a hundred dollars in a year—but he missed the woods.

He returned to New Jersey, found a wife and settled in the woods. Soon his life was paralleling that of his father, unending toil with no gain, and his dream of becoming a doctor was more and more remote. When his wife died suddenly and soon afterward his daughter, he was plunged into a spell of depression from which he was delivered by a spiritual revelation. This was the turning point of his life.

He began to collect herbs and roots and prepare medicines for sale to pharmacists in Philadelphia. Inevitably his friends and neighbors began tapping his growing expertise and as his reputation for healing grew, James had less time to devote to his business. The time had come to fulfill his boyhood dreams. Legally he could charge only for his medicines, not for his diagnostic services. Nonetheless he soon had more patients than he could handle. He bought a wagon for his house calls and acquired the first of his many properties. Ultimately he owned, built to his order, the finest house in Cross-roads, with an office attached and a separate building for the manufacture of his medicines.

The secret to his success? His common-sense approach to sickness which followed fairly closely to the tenet of Hippocrates: sickness was merely a temporary malfunction of the human organism and all the doctor need do was to gently help the patient cure himself, to give comfort in reducing fevers, to sweat him when chilled and to purge him gently when necessary. This approach was a welcome change from the harsh measures used by the practitioners of Still's day, doctors who relied heavily on the dangerous, little understood chemicals which the brilliant technology of the 1800's was turning out. Frequently he was called to treat patients who had been half-killed by these conventional drugs. He relied mainly on the natural medicines he produced himself from the products of woods and fields. His formula for cough medicine has a homely appeal: Spikenard root, Comprey root, Horehound tops, Elecampane root, Blood root, and Skunk-cabbage root.

The bonafide doctors heaped scorn upon him, especially when he saved patients they had given up. Often he brought relief merely by discontinuing their heroic over-kill methods. In spite of these many slights, Still never lost his temper, although he spoke out strongly against slavery and prejudice. He commented more in sorrow than in anger when his son was refused admittance to the local school because he was black. He was the third largest owner of real estate in Medford Township. A fascinating memoir by one of nature's aristocrats, Dr. James Still.■

Charles Perrone
Burlington Community College

The professor demonstrates his technique. Michelle Wettstein observes.

Photographs by Harry Grosch

Bundled against the chilling over-water winds, the class waits for the flounder to take the bait.

On a chilly April afternoon four rowboats with neophyte fisherpersons* aboard left Chris's Landing in Seabright and made their way to a channel in the Shrewsbury River Estuary. At approximately the same time a similar expedition was taking place in the Shark River Estuary. Each boat contained three or four fisherpersons. The fisherpeople* were enrolled in a Rutgers University course entitled "Introduction to Wildlife Ecology and Management" and were taking part in an experiment which had been in progress since the spring of 1969.

**Fishpersons or fishpeople can be male or female.*

variability in the hook-and-line catch of WINTER FLOUNDER

(or what's more important, the person, the boat, or the estuary in deciding the day's catch)

Dr. Leonard J. Wolgast
Assistant Professor of Wildlife Ecology

Editorial Comment: Because the most important variable in this experiment is the technique and expertise of the person catching the fish, Professor Wolgast said the New Jersey Outdoors boat contained expert fishermen (Editor and Photographer) and therefore could not be included in the class experiment. So we took pictures, made some notes, gave advice, and fished . . . and fished, but not too expertly. Do you know how many fish the experts caught? Would you believe . . . zero? SP.

The primary objective of the experiment is to demonstrate to students the value of designed experiments in obtaining information about natural systems. In order to design experiments which will provide the most information with the least amount of work, a biologist must first determine how much variability is present in the system and what factors contribute to this variability. The topic being studied in this experiment was the variation in hook-and-line catch of winter flounder. The amount of variability contributed by each of three factors was being estimated by a statistical procedure known as the analysis of variance. The three factors being analyzed were (1) variability between estuaries, (2) variability among boats within each estuary and (3) variability among student-fisherpeople within each boat. The response which was measured was the numbers of winter flounder which were caught. Put another way, which is more important, the person, the boat, or the estuary in deciding the day's catch?

Without going into the details of the statistical analyses, the results of this study were as follows. The factor which caused the greatest amount of variability in the number of winter flounder caught by a student fisherperson was how well he or she could fish. This factor contributes much more of the variability in the system than either the estuary in which a student was fishing or the boat from which he or she was fishing. The most outstanding example of this occurred during the spring of 1969 when a student in a boat in the Great Bay Estuary caught forty-four flounders while two of the students who were fishing in the same boat with him did not catch any flounders and the fourth student in that boat caught only one. Boat to boat variability was generally the next most important factor. Those boats which kept moving until they found the pods of flounder generally did better than the boats which remained in the first place at which they dropped anchor and waited for the fish to find them. Generally, there was relatively little variation in flounder catch between estuaries although on a given day one estuary was sometimes more productive than another. One of the factors which appeared to be related to this variability was wind. On very windy days the students fishing in the most sheltered estuaries tended to catch more flounder than those fishing the relatively open estuaries.

Quantitative estimates of the above sources of variability in the hook-and-line catch of winter flounder have been calculated, and this information is vital

A proficient angler, Susan Wilson disentangles her fishing line from the anchor rope, baits her hook with a fat squiggly worm, then carefully removes the hook from her catch.

in determining the best way to distribute the available experimental resources in future studies of this system. After we fully understand the processes which are operating in our estuarine systems, effective management programs can be developed which will insure a continuous sustained yield of fish and other wildlife from our estuaries.

A secondary objective of this study was to allow students to gather firsthand information about the recreational and aesthetic values of our estuaries. Estuaries, which are transition areas between the land and sea, are one of our nation's most endangered natural habitats, and students who have been provided with an opportunity to enjoy the recreational benefits of sport fishing in our estuaries are better able to appreciate the value of these highly productive areas.

The final lesson the students learned from this study was how to prepare their catch for the frying pan. A wise man once said, "Give me a fish and I eat for a day; teach me to fish and I eat for a lifetime."■

The class and the catch.

← Fish food pellets to feed young trout.

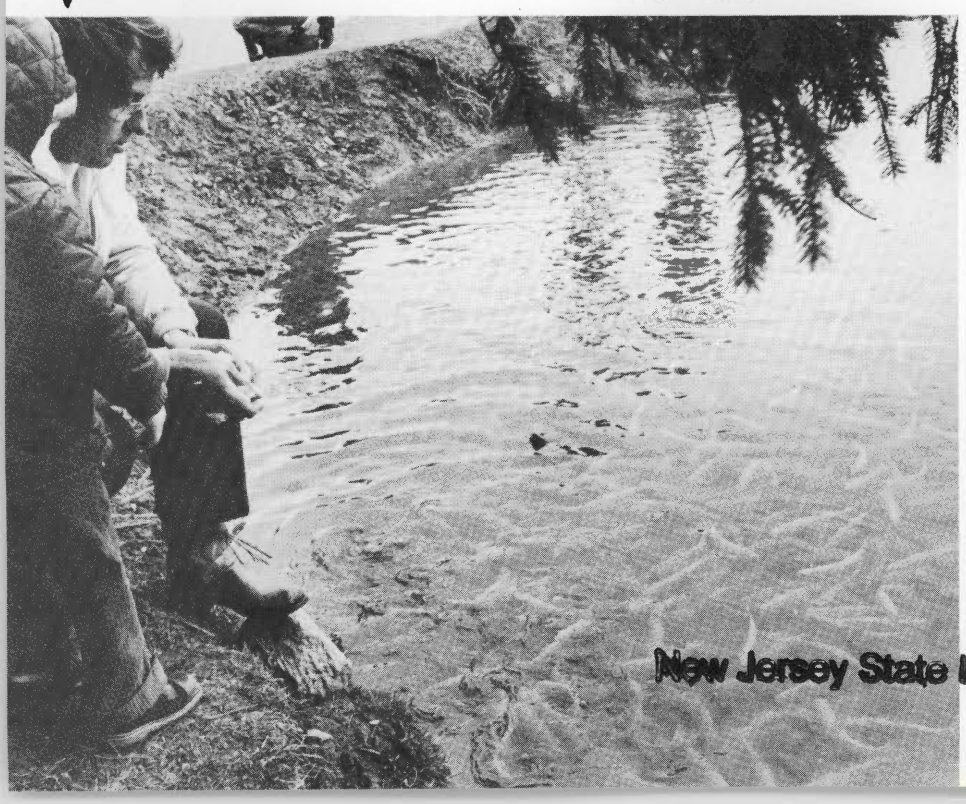
↑ Chuck Byrne begins tour with samples of TROUT EGGS.

FISH HATCHERY OPEN HOUSE AT HACKETTSTOWN

Photographs by Harry Grosch

Little frys and fingerlings in indoor tanks. →

↓ What I wouldn't do for a fishing line?



Boat Casting In Cape May County's Back Waters For The Season's First Bluefish

SPRING

Author nets a bluefish that was feeding close to the sod bank.

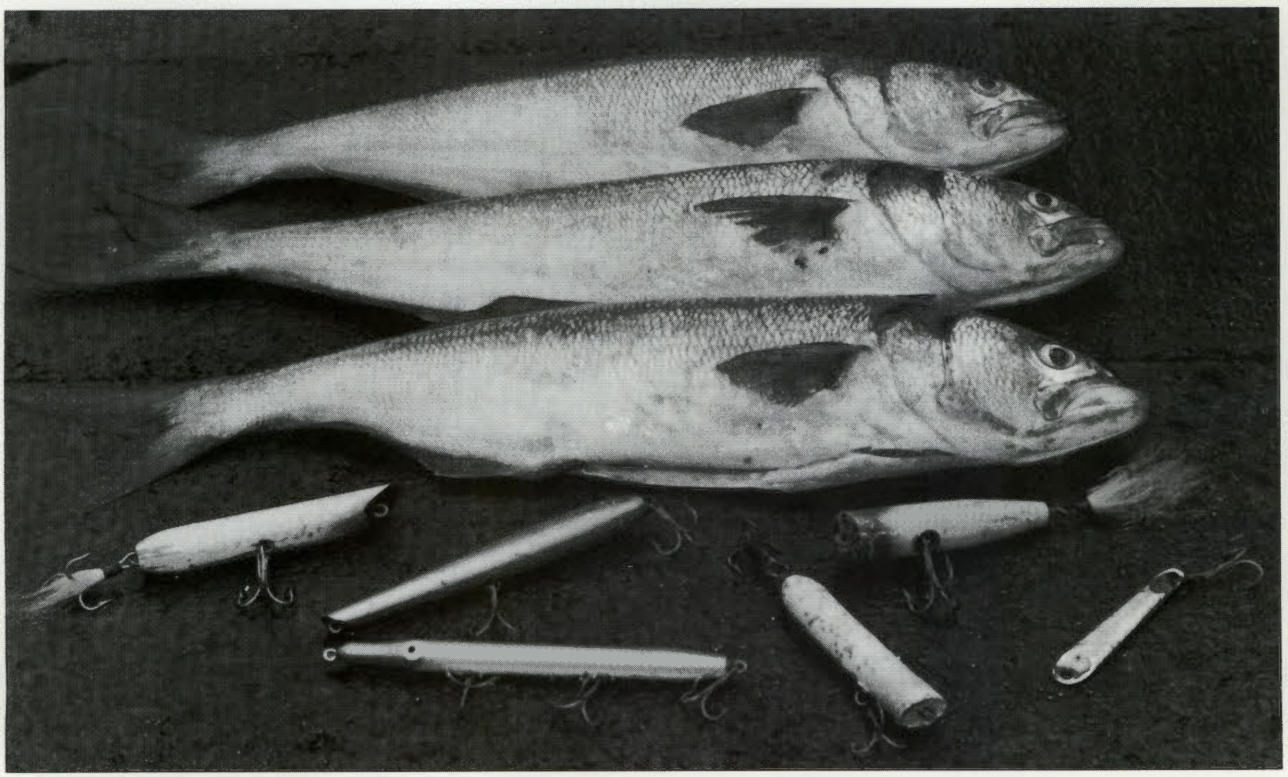
"Here! Take my rod, he's coming straight for the boat," I shouted to my wife Gloria.

"I can't, I've got a fish on too, and he's trying to walk across the bay," she answered.

Trying to keep slack out of the line with a fish running toward you and lifting the leg of a 75 horse outboard out of the water met with the usual result. As I struggled with the large engine, I could see the line

BLUES

By Stan DuBas
Photos Supplied by Author



Bluefish (gutted) and variety of surface lures used to take them. Metal lure on right is used for fish that have sounded or are feeding deep.

slicing its way through the water toward the stern of the boat. It was almost as if we were having a race to see if I could get the engine out of the water before the blue reached it. I lost.

In that old bluefish tradition, the fish swam between the boat and motor, carefully catching the line on the motor's foot, then turned away from the boat with a mean look in his eye and a Gibbs popper hanging from his jaw like a cigar.

Hair disheveled from the wind, Gloria boats a blue.

It's one thing to lose the first bluefish of the year, another thing to lose a battle-scarred popper, but when your wife offers to let you bring in a fish she's hooked, I get a strange feeling.

I cautiously lowered the net into the water as Gloria skillfully guided her exhausted fish over the net's rim. "Perfect size", she beamed. Referring of course to his destiny in the broiler.

The place was one of the many sounds and bays that dot the Intercoastal Waterway that passes through Cape May County in New Jersey.

Cape May is a fascinating place. To me, its biggest attraction is the vast amount of state and local land set aside for outdoor pursuits. While its road system and municipal services are up with the times, most of the County's development of marshes and cardboard seaside cities has been discouraged. The result is a near perfect blend of a vast, easily accessible coastal area, with completely equipped modern services, catering to the sportsman and all outdoor loving families with top-notch fishing, boating, and gunning.

Cape May's bay bluefishing is good two to three weeks before blues arrive in Northern Jersey where I usually fish, and I find it difficult not to head further south.

Some will say the bluefish pictured are snappers. Could be. But to me, once over the pound mark, it's a bluefish. Taken on light tackle with surface lures in about three to four feet of water, they are definitely bluefish.

Spring bluefish, I feel, have a flavor all their own. They're firm, lean fish. The "strong" flavor of a summer or chummed fish is not present in the spring fish. The cooler water no doubt adds to the "freshness".

"Hurry up and get rigged up, they're all around you", shouted George Cornish, from his boat about two good casts away.

"Stick close to me", he yelled over.

He then poured the coal to the eighty-horse engine clamped on the stern and we attempted to keep up with him. His haste we learned later was to allow him to travel over some shallow stretches of water.

On a rising tide, the blue would leave the safety of the inland waterway or other channels and pass over the adjoining bars to feed on minnows in the many sounds and pockets of deeper water. These baitfish lie protected from most natural enemies all along Cape May County's marshes and back waters.

The dim light and an occasional patch of fog strained our eyeballs, but we followed George's course and after a long zig-zag, twisting ride, saw him shut down. He cast and had a fish on just as we cut the engine some distance away. While I was losing my first fish, he landed his — cast again — and had another one on.

Played till exhausted—blue can be lifted out of the water, hooks removed, then released.

Alerted to his remark, I cast out blindly with a small yellow popper with a huge hollowed lip. It made one slurp as I retrieved slack line and a fish grabbed it.

I like fishing with poppers and surface lures for two reasons. First, I like to catch fish on the surface. Second, I like to see the plug working if I'm not catching fish. But this bluefish gave me neither pleasure as he quickly spit out the plug.

"Got another one on", my wife said in a matter-of-fact sort of way. Looking over to George, I could see his light rod bent over and the freshwater baitcasting reel faintly singing as line was peeling off.

Another blue splashed out of the water and down on my floating lure—missed it. I realized I was so anxious to get "number one" aboard, I was forgetting the small matter of hooking him first. The morning was still and the water smooth, the only sound was my popper as it made a few short "slurps". As I let it lay there motionless, it was immediately walloped.

The water was only three to four feet deep and the bluefish, not being able to sound, compensated by surface commotions and acrobatics that would put many of his older brothers to shame. Finally, I landed my first.

The overcast held until about mid-morning. When the sun broke through, the fish vanished. "Too spooky now", said George as he moved closer to us. "Besides, the tide has dropped quite a bit and we might have trouble reaching the channel again. I'll see you back at the dock", he said while putting the boat in gear. Then with a hearty Hi Ho Silver, he vanished with a roar of that "great big motor on that little boat" as my wife described his rig.

Rather than quit, we fished the channels and inland waterway for the blues that had vanished. Small metal jigs were used and we fished near the bottom as we drifted with the current. Sod banks were especially productive. We played the fish to near exhaustion and kept only those that were hooked deep.

The wind picked up quite a bit, and only the lee bank continued to produce, even this was at a declining rate.

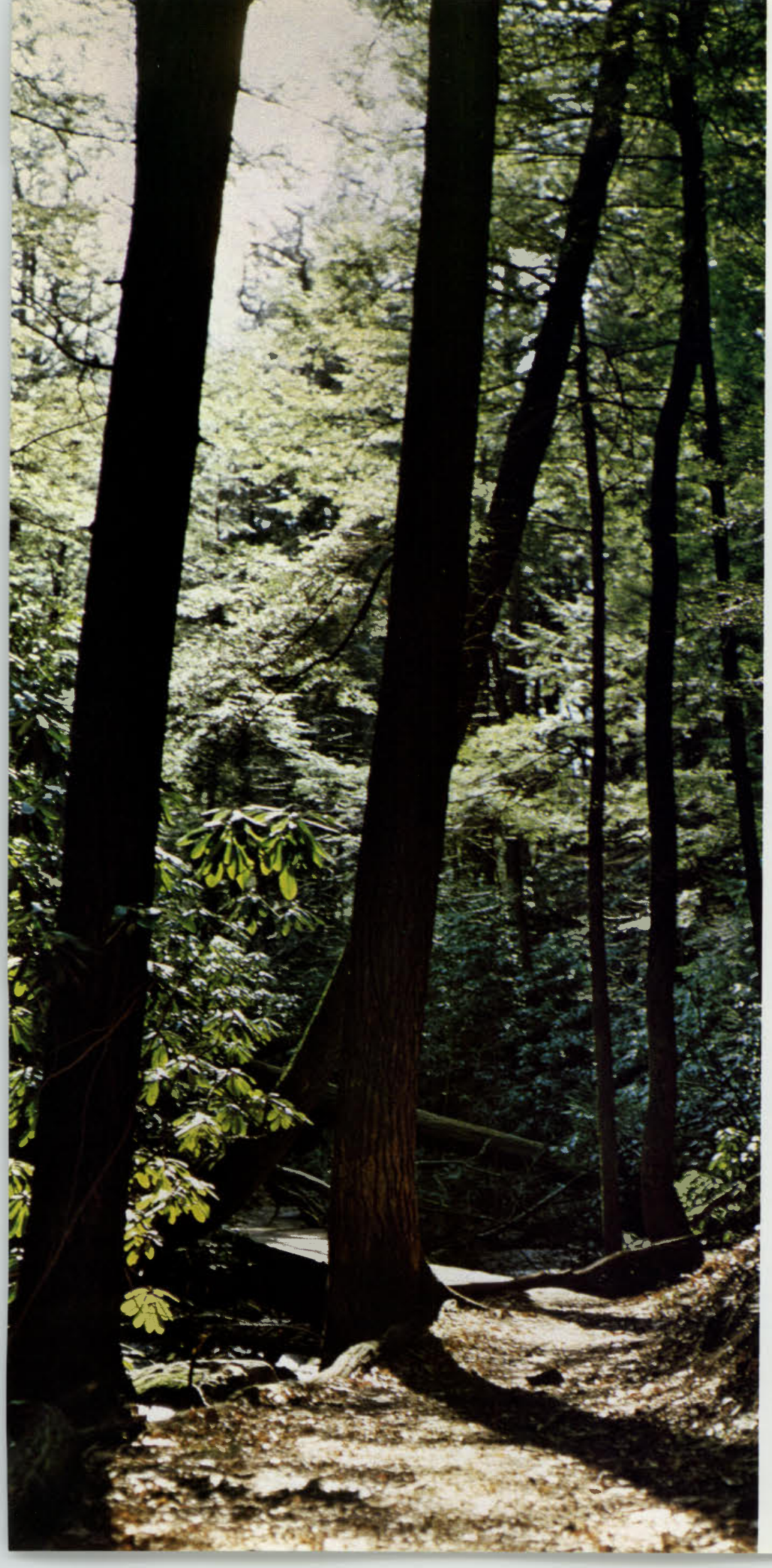
We had enough. We started for the dock, leaving behind quite a few fish to be caught again; and taking with us the makings for a few delicious bluefish dinners, and the memories of quite a bit of action.

We've fished Cape May County for blues since that first trip and have found the fish cooperative all along the inland waterway from early May to mid-June, at the latest, when the school blues move off to deeper and cooler water.

Keep your tackle light, your approach quiet, and you'll connect. A rising tide, in either the morning or evening helped by an absence of sun is a perfect set of conditions. ■

A WALK

Photos by Bob McDowell



IN THE WILD

By Janet McDowell

Tillman's Ravine, located on Brink Road in Stokes State Forest, is something to experience. Hailing from Missouri, as I do, my first trip through Tillman's was an unforgettable experience. The Red and Eastern White Pines located near the parking lot are dense and stately—something you don't see much of in Missouri. I learned later, they were planted in 1932 by the Civilian Conservation Corps.

You don't have to go too far down the trail to begin to notice a distinct change in temperature and humidity. It surrounds you and makes you more acutely aware of this special place. The massive Eastern Hemlocks of the ravine create an overstory that doesn't allow much light to reach the ground. This, and Tillman's Brook, are the reasons for the terrarium-like environment.

There are many interesting things to see as you walk along the trail. The deep "V" of the ravine shows that the stream is in its early stages of erosion. The ravine started to develop by water erosion about 10,000 years ago, as the glaciers melted.

You will notice an area of much wind damage. Because of the shallowness of the earth, the trees are subject to being uprooted by high winds. There is much new growth in this area due to the availability of sunlight.

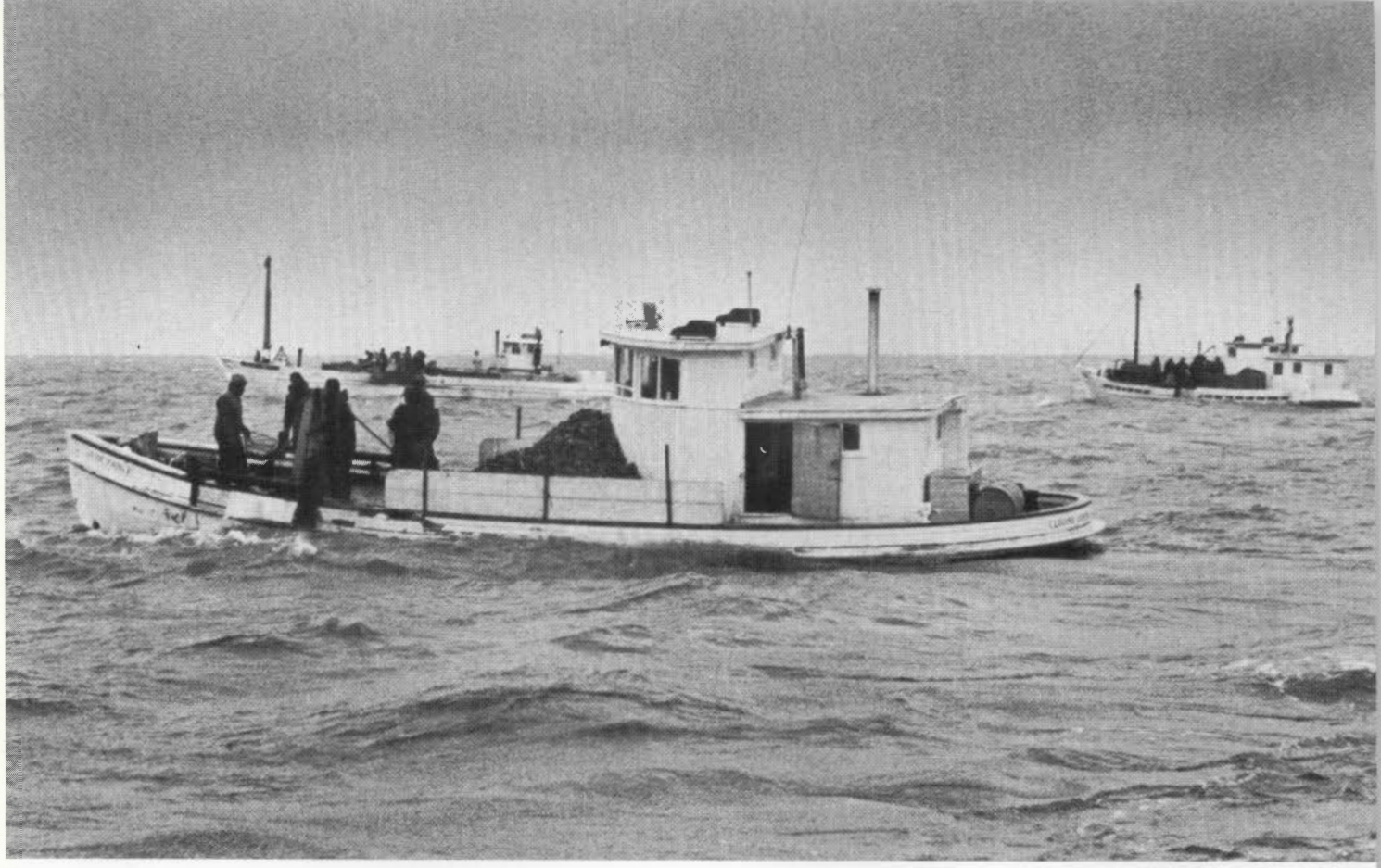
All along the trail there is an abundance of rhododendron. It, like the hemlock, needs an acid soil and a moist atmosphere to survive.

Then suddenly at the far end of the trail, at your turn-around place, are the falls. The water leaps, as in a ballet, and thunders down the ravine. An interesting rock formation in the falls is called the Teacup. It was formed, over the centuries, by the swirling motion of sand and rock carried by the rapidly moving water.

Tillman's is a unique and beautiful natural area to enjoy in an afternoon with your family. Take your time and really experience it. But please, also respect it. Since approximately 15,000 people visit Tillman's every year, care has to be taken that it is not destroyed for future generations. Please don't smoke in the area, stay on the marked trails to help prevent erosion of the steep banks, and don't pick or disturb any plants, animals, or geological deposits or structures.

Also, this is a foot path—no horses or motorcycles allowed—horses and vehicles can do a great deal of erosion damage to the precarious hillsides. For camping and picnicking, please stop at the Stokes State Forest Office for directions to the appropriate areas.

I hope your first visit to Tillman's Ravine will be as enjoyable as mine was.■



photographs by the author

Oystering has always been a way of life and the principal livelihood of the several small communities in Cumberland County surrounding the Maurice River Cove on New Jersey's Delaware Bay.

As early as 1719 the Colonial Legislature recognized the importance and the value of the oyster and passed laws regulating the harvest. With the advent of rail transportation to get the oysters to market and the improved processing plants (shucking houses), the oyster industry flourished into a $7-million-a-year business employing more than 250 persons.

At the present time five shucking houses service the ten demasted schooners, in addition to a number of small dredge boats, which harvest the annual oyster crop in the Maurice River Cove, sending the Jersey oyster on its way to Philadelphia and points west as far as California.

In 1973 about 200,000 bushels of oysters were processed and shipped to market from the oyster beds of the Maurice River Cove.

The present status of the oyster in Maurice River Cove can be attributed to the careful management, practical farming techniques, and a regulated harvest.

Without the proper management by the state Division of Fish, Game and Shellfisheries, the daily supervision by the Bureau of Fishery Management, the participation of the Maurice River Cove Shellfish Council, and the individual oystermen, the oyster production and harvest would have failed long ago.

Oyster farming in the cove is made possible by the state, through the Division of Fish, Game and Shellfisheries, by leasing approximately 30,000 acres of underwater oyster grounds to about 190 oystermen.

This ground is leased at $1 per acre per year, and the average lease is about 200 acres. These oyster leases or lots are mapped and then staked out with oak trees stabbed into the bay bottom.

The principle of this oyster farming is to maintain a constant supply of shells and oysters on the bottom of the bay within the leased plots.

During May and June, the seed beds may be opened for three or more weeks and the oystermen sail their boats up the Delaware River to the state-owned 20,000 acres of natural seed beds where they are permitted to dredge the small seed oysters which are growing attached to oyster shells on the bottom.

The seed oysters may be only thumbnail in size, but they are present by the millions. Due to competition and the lack of nutrients, they will not prosper unless transported to the fertile growing areas of the Maurice River Cove. These seed oysters, frequently amounting to more than 170,000 bushels a year, are dredged and transported back down the river and dumped on the leased grounds to grow to maturity. It takes four to six years to grow a marketable oyster.

During the oyster harvesting season, which runs from September to May, the diesel-powered schooners and dredge boats work from daylight to 2 P.M. five days a week, dragging their wire dredges (a metal frame about four feet long with a chain link basket) over the oyster beds. They work in water five to 35 feet deep, and in almost any weather.

Every five minutes, or whenever the captain believes he has a load, the dredge is lifted mechanically, and the oysters, shells, and other debris is dumped onto the deck of the boat.

As the dredge is returned to the water, a crew of eight to sixteen men working on their knees sort out the marketable oysters and then shovel the empty shells and immature oysters back overboard.

Depending on the condition and location of the beds, a harvest of 400 bushels of oysters is considered a good day's work.

The day's catch of oysters is transported on the deck of the boat back to one of the shucking houses in the Bivalve area, where they are carried by conveyor to a storage room and then to the shucking room where 50 persons

OYSTERING IS A WAY OF LIFE

By Pete McClain

standing around long belts quickly open the oysters using a sharp knife and a flick of the wrist.

The oysters are graded by size and checked in by the gallon for payment at the processing room.

The oysters are then washed, sorted and packed in containers and stored in crushed ice during shipment by truck to Philadelphia and other points. The empty oyster shells find their way outside by conveyor belt to a mountain of shells which will eventually be returned to the bay bottom to maintain and also create new oyster beds.

Life has not always been kind to the oystermen. In 1957, a virus called MSX wiped out more than 90 percent of the oysters in Delaware Bay, and only 10,000 bushels of the normal half a million bushels were harvested.

Hundreds of persons were unemployed and for the first time in many years the oyster schooners lay idle at the docks.

Even today the Delaware Bay is still recovering from the disastrous MSX infection, and as the oysters become immune to the virus, the annual production is increasing.

In addition to the virus and siltation of the oyster beds due to storms and shifting bottom sediment, the natural predators are constantly at work on the highly vulnerable oyster. Worst are the small but persistent oyster drills which are present by the millions.

These inch-long snails with rasp-like tongues, bore through the oyster shell and eat the meat. It's estimated that drills alone destroy a million oysters a year.

Drum fish, which may weigh up to 80 pounds, pick up the mature oysters and crack them with their grinder teeth. A large drum fish can easily consume a bushel of oysters a day.

The blue crab, mud crab, conch, and flatworm also seek out the oyster.

The greatest loss occurs when the free floating microscopic oyster larva, which is about the size of a grain of black pepper, fails to find a clean, hard surface on the bottom to attach itself to and either drifts off to sea, or is consumed by fish, jellyfish, and most of the other plankton eaters.

In spite of everything, when conditions are right, the larva find the oyster shells on the bay bottom, and a tremendous natural "set" or production occurs.

However, the oysterman cannot rely on nature alone, and every year they laboriously reshell their leased grounds and make the annual spring transplant of the seed oysters from the managed seed beds between Fortescue and Artificial Island in the Delaware River.

To the weathered watermen who sail the oyster dredges day in and day out harvesting the oyster crop from their underwater farms, life can be hard, cruel and frustrating.

However, there is still a respectable living to be earned doing exactly what their fathers and forefathers have done before them. Oystering is still a way of life on the Delaware Bay in the Maurice River Cove. ■

from the director

EXTENDED JURISDICTION

Depletion of fisheries resources on the United States continental shelf is reaching a disaster situation. The world demand for protein, coupled with vast stocks of heretofore lightly exploited offshore fisheries resources has resulted in an intensified fishing effort in recent years.

The international fishing effort off the northeast coast of the United States may total as many as 420 vessels at one time and comprise ships from 14 nations. Most foreign fishing fleets are nationalized and are composed of modern vessels with highly efficient fishing gear. Some nations, such as Russia and Poland, bring factory ships along with their other vessels to immediately process their catch. Most of these foreign vessels dwarf the privately owned vessels of United States fishermen and crowd them off the prime fishing grounds.

The United States has endeavored to regulate international fishing through bilateral and unilateral treaties with other nations. The 1974 Law of the Sea Conference in Caracas, Venezuela (June 20 to August 29) may offer some help for international treaties affecting fisheries; however, fisheries administrators are pessimistic about any real progress being effected, especially since the U.S. delegation does not include a fisheries scientist. In the meantime, while fisheries stocks continue to dwindle, many feel that a modified version of extended United States fisheries jurisdiction must be implemented now. This means that the United States Congress should extend its jurisdiction over our fisheries resource out to 200 miles and directly regulate the national and international quotas on all fish stocks until such time as international treaties are a reality. This direction has taken the form of S-1988 and HR-8665 now before the United States Congress. Responsible conservation and industrial organizations are pressing for action on these bills this year.

Problems associated with an extended jurisdiction are great, especially in testing our ability as a nation to enforce harvest quotas on a vast international fleet; however, most agree that action is in order now. Otherwise, we may be faced with an unnecessary tragic decline of a renewable resource which, if properly managed, could provide a long-termed, sustained yield of fisheries products for the United States as well as a hungry world.

Sincerely,

Division of Fish, Game and Shellfisheries

FRONT COVER
Fishing a bend of the Ramapo—Harry Grosch *Nikon F2, Ektachrome X*

INSIDE FRONT COVER
Waterfall in Tillman's Ravine—Bob McDowell—*Nikkormat FTN with 50 mm Lens, Ektachrome X*

INSIDE BACK COVER
The "SLOB" fishes like a sportsman, but then he dumps his garbage and takes off. Harry Grosch—*Nikon F2, Kodachrome II*

BACK COVER
Sunset over the Hackensack Meadows Donald J. Smith—*Nikkormat FTN—Kodachrome II*

. . . And man created the plastic bag and tin and aluminum can and the cellophane wrapper and the paper plate, and this was good because Man could then take his automobile and buy all his food in one place and He could save that which was good to eat in the refrigerator and throw away that which had no further use. And soon the earth was covered with plastic bags and aluminum cans and paper plates and disposable bottles and there was nowhere to sit down or walk, and Man shook his head and cried:

"Look at this Godawful mess." — Art Buchwald, 1970