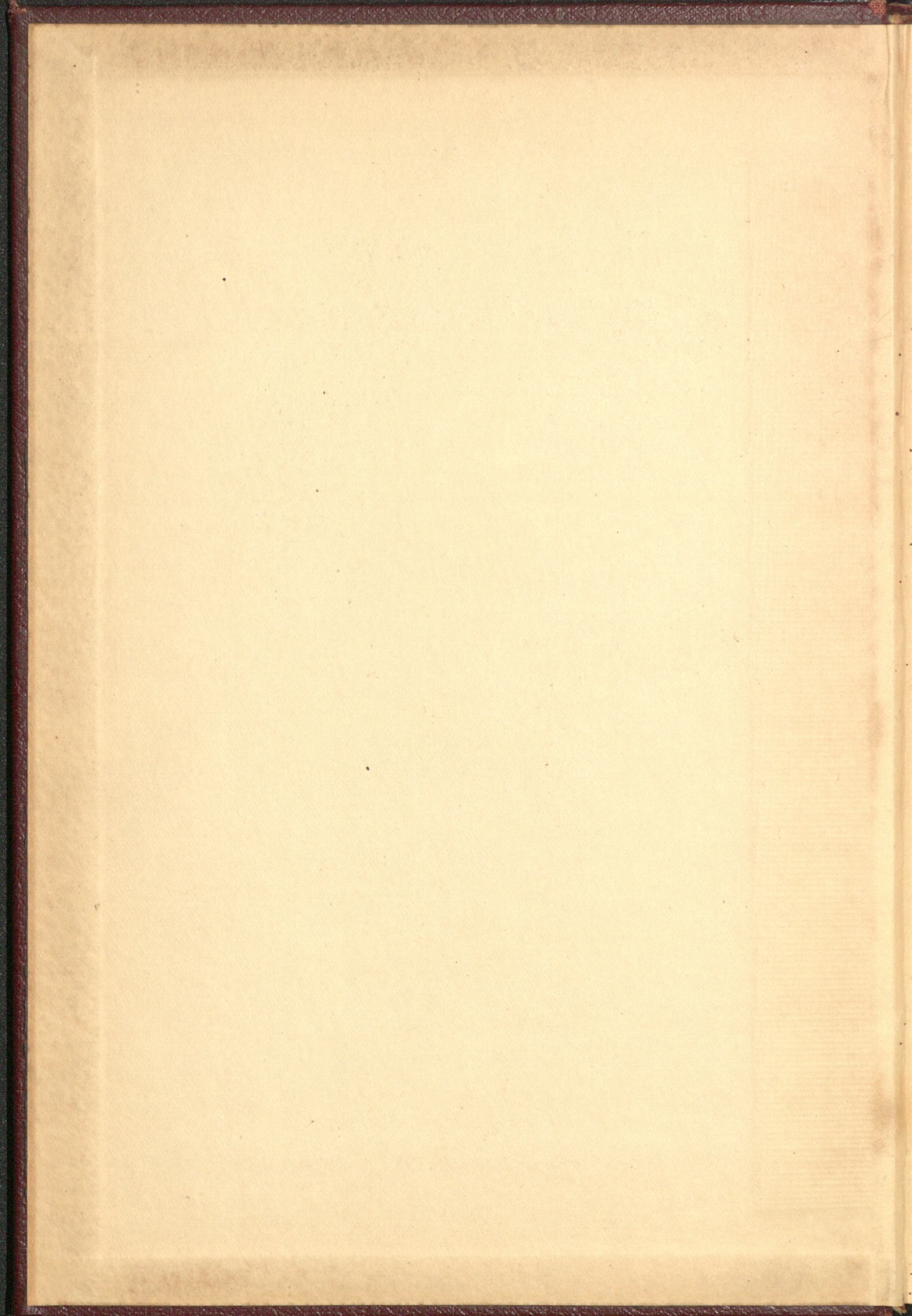


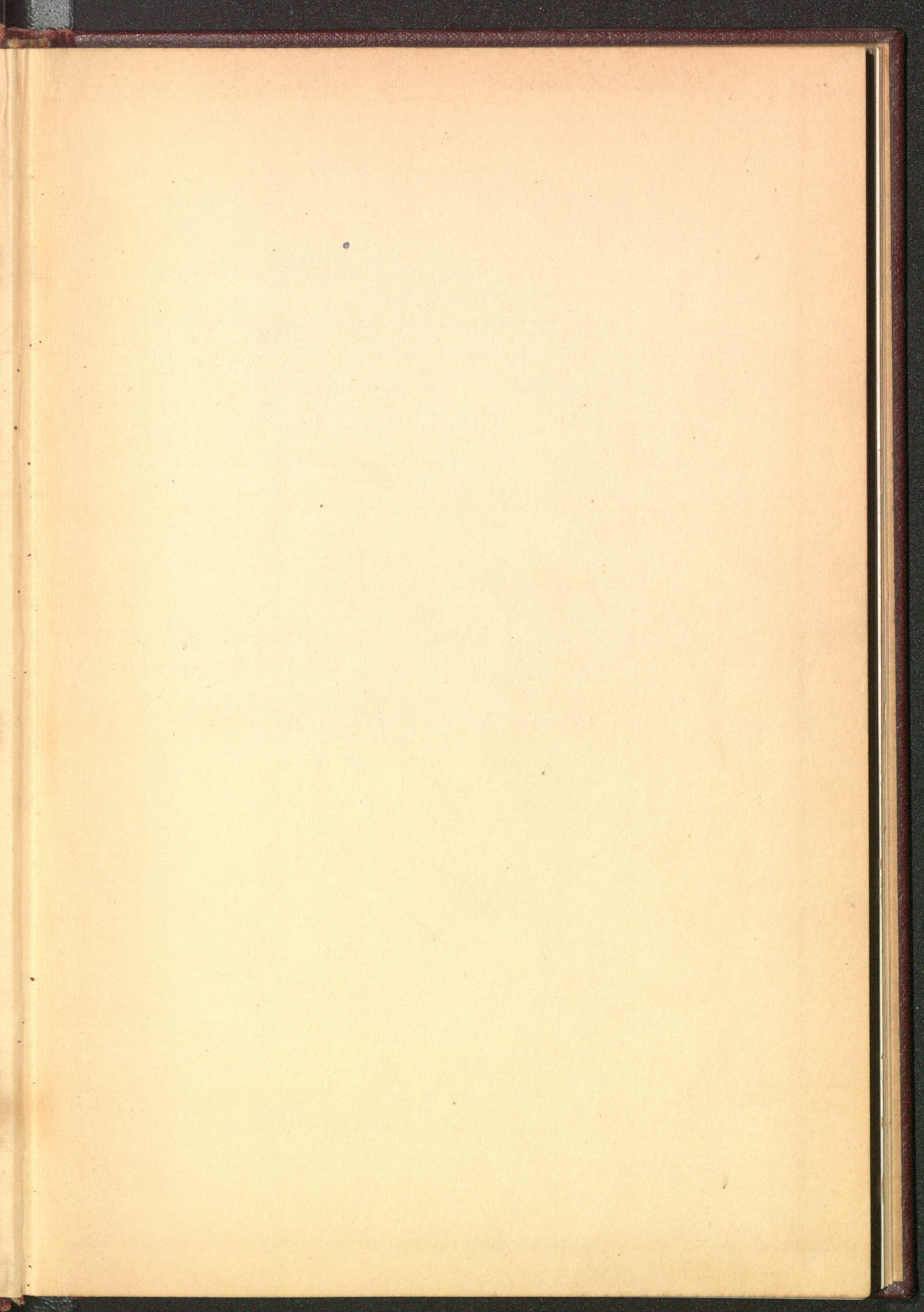
THE  
OUTDOOR HERITAGE  
OF NEW JERSEY



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NEW JERSEY FISH AND GAME COMMISSION







The  
*Outdoor Heritage of*  
New Jersey

*"God lent us the Earth for our lives. . . . It is a great entail, belonging as much to those who come after us as it does to us, and we have no right by anything we may do or neglect to do, to deprive them of any of the benefits which are within our power to bestow."*

RUSKIN



*The*  
Outdoor Heritage of  
*New Jersey,*

COMPILED BY

GEORGE C. WARREN, JR.

AND

H. J. BURLINGTON



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STATE OF NEW JERSEY

EXECUTIVE DEPARTMENT

FOREWORD

BY

HAROLD G. HOFFMAN

GOVERNOR OF

NEW JERSEY

"THE OUTDOOR HERITAGE OF NEW JERSEY," *which is a combination of human record and public document, commends itself to the close attention of everyone who is interested in the preservation of the American outdoors. The book speaks for itself in far warmer terms than any of my poor words might serve it. It is the record of a slow and careful and scientific (and, no doubt, tedious) program of hard work to overcome the consequences of allowing our natural resources to be depleted by generations of thoughtless men who could see no further into the future than their next meal.*

*The restoration of wild game to New Jersey woods and of game fish to New Jersey waters has been a difficult task. I know of no way of persuading wild birds and animals and fish to obey the provisions of legislation, even when that legislation is intended for their own good. It may be a good thing to have before us the example of entire independence which the supposedly low orders of life offer us in a very dependent world.*

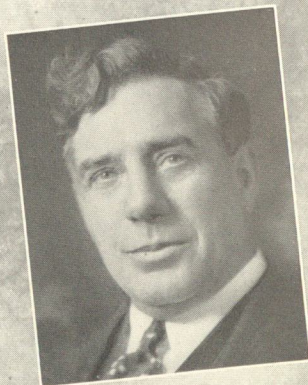
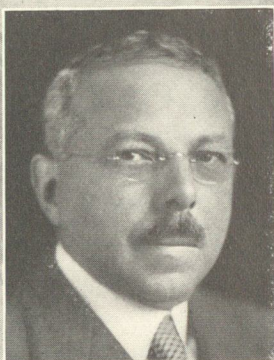
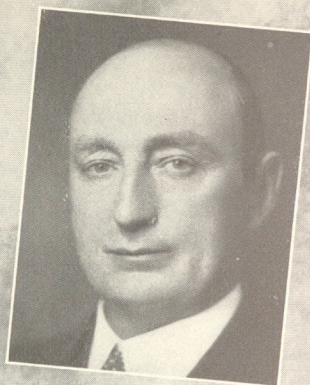
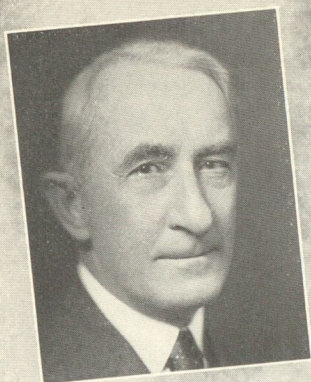
*The workings of the planners, scientists, sportsmen and engineers who have made the wilderness wild again, and who have opened it to the eyes and ears and lungs of those who live in crowded cities, has been and is one of those worthy and competent human jobs which receives but little recognition while things are being done, or remembrance after it is finished. The men who have done this work for New Jersey have had no thought of material reward or applause or glory. They saw before them a task which was after their own hearts and so they did it, making their tools as they went and forcing their own interest in their work to take the place of the money they had in such meagre measure.*

*Bringing the wild America of the eighteenth century back out of the past and setting it on the doorstep of our twentieth century civilization is an accomplishment that has done much for us and will do more for those who come after us.*

*I would like to here register my warm sense of personal as well as official pleasure and satisfaction in the splendid work done by George C. Warren, Jr., president of the New Jersey Fish and Game Commission, by the other members of the Commission, their staff, and by their predecessors.*

*Harold G. Hoggan -*

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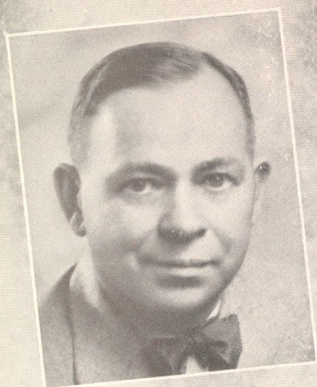
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retary

TRONG





## A STORY OF ACHIEVEMENT

THE STATE of New Jersey stands almost within the shadows of the great metropolitan centres of New York and Philadelphia, and is itself highly industrialized, with its own great cities and its own huge edifices, having a density of population second only to Rhode Island—and yet approximately 165,000 hunters and fishermen find surcease from their labors in its glorious woods and fields and on its enchanting lakes and streams; a remarkable condition indeed and constituting in itself a story of achievement in the restoration of wildlife unexampled perhaps in all the annals of conservation.

### NEW JERSEY'S NATURAL ADVANTAGES

New Jersey has been splendidly endowed by nature with the physical and climatic advantages necessary to wildlife conservation. Small in size from the geographical point of view, having an area of only 8,200 square miles, it has nevertheless a very considerable outdoor domain. Its great concentrations of population are confined to comparatively small areas, and the physical characteristics of at least three-quarters of the State are such as to make it practically immune from industrial invasion for many years to come.

#### PHYSICAL DESCRIPTION OF THE STATE

The topography of New Jersey is varied, embracing four distinct belts: Appalachian, Highlands, Piedmont, and Coastal Plain. It is bordered on the east by the Hudson River and the Atlantic Ocean, on the south and west by the Atlantic Ocean and the Delaware River and Bay, and on the north by the State of New York. In addition to its eight great rivers, the Hudson, Delaware, Hackensack, Passaic, Raritan, Mullica, Great Egg Harbor, and Maurice, it is watered by a myriad of streams, and by an infinite number of lakes, many of them created by man, and not infrequently these are even lovelier than if they had been the handiwork of Nature itself.

#### ITS EXTENSIVE FORESTS AND MAGNIFICENT BEACHES

The scenery of the State is diversified and inviting, ranging from its rugged mountains to its low tidal marsh. It is splendidly forested, its great southern pine belt containing 1,200,000 acres and its northern hardwoods more than 700,000 acres. Nor must we forget its magnificent beaches, stretching in illimitable sweep from Sandy Hook to Cape May, and affording to millions the diversions that come only from the sea.

#### APPALACHIAN REGION

The Appalachian Region is confined to the northern counties of Sussex and Warren. It is the most mountainous part of the State, its great Kittatinny range, called locally, the Blue Mountains, and many subordinate ridges rising to a height of from 1,500 to 1,800 feet. The Kittatinny range extends from Central New York to Eastern Pennsylvania, being cleft by the Delaware to form the great Delaware Water Gap, one of the natural

wonders of the Eastern United States. Its chief peak is High Point, which has an altitude of 1,877 feet, and is crowned by a 280-foot monument dedicated to the fallen soldiers and sailors of our country. The view from High Point, which is in High Point State Park, is one of the finest in the East, providing a glorious panorama of hill, valley, and river, in which the states of New Jersey, New York, and Pennsylvania blend in perfect harmony.

#### AN UNSPOILED PARADISE

This whole region is a succession of mountain and valley, and although cultivated intermittently is for the most part rugged and wild. In it are found some of the finest trout streams in the State, and many of its loveliest lakes, nearly a hundred of them all told, while for the hunter it is an unspoiled paradise.

#### THE HIGHLAND REGION

The Highland Region has much in common with the Appalachian, but its elevations are not so great, nor its terrain so rugged. It has its wild areas, but generally their austerity is softened by the seeming gentleness of the landscape. This region lies just south of the Appalachian, and extends from the New York State line to the Delaware River, embracing the northern portions of Bergen and Passaic Counties, all of Morris County, the extreme southern part of Warren, and the northern portion of Hunterdon. Its mountains attain an altitude of from 1,200 to 1,400 feet, its chief ranges being the Ramapo, Schooley, and Musconetcong. It, too, has a myriad of lakes and streams and a vast hunting territory. The footprints of dinosaurs and other

extinct animals are found here, especially in Morris County, showing that in the indefinite long ago the hoofs of much greater animals resounded in its forests.

#### PIEDMONT REGION

The Piedmont Region stretches from the Hudson to the Delaware, and includes Essex, Hudson, and Union Counties, most of Bergen, Hunterdon, Middlesex, Passaic, and Somerset, and small portions of Mercer and Morris. It embraces an approximate area of 1,500 square miles.

#### THE BEAUTIFUL PALISADES

This Region is generally referred to as the Piedmont Plateau, but is more strictly speaking a great sandstone plain, for its highest altitude is not more than 900 feet. Its surface is gently undulating for the most part, but is broken by a series of mountains and ridges, such as the Watchung, Sourland, and Cushtunk mountains, and the beautiful Palisades, those magnificent escarpments of the Hudson which rise in such precipitous symmetry and beauty.

#### GLORIOUS HILLS OF SOMERSET

A lovely region is this, endowed, like other sections of the State, with its own peculiar appeal. This is the great farming belt of New Jersey, marvellously fertile and one of the richest agricultural domains in the land. But it, too, has its outdoor domains. Here we find the glorious hills of Somerset, with their magnificent estates and unsurpassed fox hunting and in the higher altitudes areas of even more rugged terrain.

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#### ITS PICTURESQUE STREAMS

The Piedmont Region is drained from the northeast by the Hackensack and the Passaic, from the central and south by the Raritan, and from the southwest by a number of swift and turbulent tributaries of the Delaware. Because of its many great estates, and the large extent of its cultivated lands, there is a good deal of posting in this region, but it has nevertheless many areas of open hunting and innumerable streams, lakes, and reservoirs, affording sport to both hunter and angler.

#### COASTAL PLAIN REGION—CLIMATE LIKE CAROLINAS

The Coastal Plain Region covers almost half of the entire State, embracing all that great part of it lying south of a line drawn from Sandy Hook, on the Atlantic, to Salem, on Delaware Bay, a distance of about 100 miles north and south, and from 20 to 50 miles east and west. It is the northern extremity of the great Coastal Plain of the Atlantic Seaboard, which extends down the coast to Southern Florida, and that is why this part of New Jersey, both in climate and flora, has so much in common with the Carolinas.

The face of the Coastal Plain Region is most diversified, comprising a vast forest of pine, a large number of swamps, a huge area of marshlands, and a wide expanse of beaches.

#### ITS GREAT PINE FOREST

Its great pine forest, covering approximately 2,000 square miles, or half the total area of the Region, is triangular in shape and covers large portions of the counties of Ocean, Burlington, Atlantic, and Cape May.

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#### THE MYSTERIOUS PLAINS

In the heart of this great pine forest, in Ocean and Burlington Counties northwest of Tuckerton, lie the Plains, one of the most remarkable natural phenomena in the State. These Plains, which cover an area of approximately 20,000 acres, are not really plains in the true definition of the term, rising some 200 feet above the surrounding country, and having a rolling topography, with high ridges and deep ravines, but are called plains because they are so sparsely covered with trees and appear to the eye to have a generally level appearance. The verdure of the Plains consists of blackjack, or scrub oak, pine, laurel, barberry, and other small plants of the heath family. These trees never attain a stature of more than nine feet. They start their growth rapidly, but when they have grown to an average height of six feet they mysteriously commence to die at the top, the trunks living on and not infrequently sending up many young shoots.

The Plains constitute a mystery which has not yet been solved. Most scientists claim that their condition is attributable to forest fires, but they have never been able to prove it, and historical records show that this mysterious region has borne its present aspect from the day of the country's settlement.

In the heart of the Plains is "the waterhole," where, in season, congregate thousands of ducks.

#### THE PINE BARRENS

Circumscribing the Plains, and extending far to the southward, are the Pine Barrens, another but far more extensive stunted-forest area, which shows every evidence of having fallen victim to the ravages of fire, for wherever no fire has come rise stately pines and spreading oaks.

#### PINE BARRENS FORMERLY CULTIVATED

A great portion of the Pine Barrens was formerly under cultivation, but its sandy soils were poor, and the settlers were unable to live off them. At one time the region maintained a considerable population, with its own communities and its own schools, but today almost the last vestige of these old settlements has disappeared.

#### THEIR CONSUMMATE BEAUTY

The Pine Barrens of New Jersey have an extraordinary beauty, especially in the Spring, when they are alive with millions of flowers, and in the Autumn, when the leaves are tinted in crimson and gold, the berries of the bushes are red with ripeness, and millions of birds are on the wing.

The Plains and the Pine Barrens are the most favored haunt of the deer in all New Jersey.

#### ITS IMPENETRABLE CEDAR SWAMPS

Throughout the great pine forest flow many mystic streams, spring-fed and clear, yet dark with the tinge of the cedar, in whose impenetrable swamps they rise. The cedar swamps formerly were far more extensive than at present, but were ruthlessly destroyed for their valuable timber, but now, with the cedar shingle no longer in such great demand, they are gradually coming back, and may one day be restored to their pristine beauty.

#### ITS PENETRATION BY CANOE

An enchanting experience indeed is the penetration of the hidden fastnesses of this beautiful Region by canoe, and one too that is growing in favor with vacationists. Two especially

fine streams for the canoeist are the Rancocas, which developed nearly a century ago for the operation of flour mills, flows 40 miles from Mount Holly to Brown's Mills, and the Wading River, which penetrates the great pine wilderness from Harris Station and Woodmansie to the Mullica River near New Gretna.

#### ITS EXTENSIVE MARSHES

The marshes of the Coastal Plain Region cover an area of more than 200,000 acres, of which approximately 150,000 acres are tidal, many of them rising only just above highwater mark. These marshes in season are alive with waterfowl, and those bordering Delaware Bay, in Cumberland, Salem, Gloucester, and Camden Counties, are the foundation of a muskrat industry that returns hundreds of thousands of dollars annually to the State. On the coastal reaches of Salem County there are 46,000 acres of muskrat breeding grounds in a single area.

#### ITS GLORIOUS BEACHES

The beaches of New Jersey extend along the entire Atlantic Coast from Sandy Hook to Cape May in a panorama of ever-changing beauty. In the northern section, that of Monmouth County, the coast is elevated, rising in places such as Atlantic Highlands in great bluffs, with the beaches fronting directly upon them, but in the southern part they are islands or peninsulas, being separated from the mainland by bays and saltwater marshes, and from one another by inlets. These beaches, spits of glistening hard white sand, sparkling in the light of a New Jersey's summer sun, have a total length of 127 miles and an aggregate area of more than 30,000 acres. They are the foundation of summer playgrounds to be duplicated nowhere on the

continent. Fronting them have been erected the great resorts of Atlantic City, which attracts millions of visitors a year, Long Branch, Asbury Park, Ocean Grove, Belmar, Sea Girt (summer capitol of the State), Point Pleasant, Bay Head, Seaside, Barnegat City, Ocean City, Wildwood, and Cape May, and other smaller watering places, providing summer homes and vacation opportunities for people from everywhere, and some of the best saltwater fishing to be found in the world.

#### THE RIVERS OF THE COASTAL PLAINS

The southeastern slope of the Coastal Plain Region is drained by the Metedeconk, Manasquan, Tom's, Mullica, and Great Egg Harbor Rivers, with their tributaries, while the southwestern portion is drained almost wholly by the Maurice, flowing into Delaware Bay, a stream justly famed for its oysters and shad.

#### THE HOME OF THE LARGE-MOUTH BASS

Throughout the Coastal Plain Region are to be found a large number of rivers and lakes, many of the latter of considerable size. The rivers, as a rule, have not large volume, but their flow is even, and on this account were formerly utilized for the production of considerable power. A few of the more northerly streams are stocked with trout, but this is essentially a largemouth bass, pike, and pickerel country, and it is these fish which provide the chief source of recreation for the fresh-water angler. In its swampy terrain also are many cranberry bogs—the cultivation of this fruit being a major industry in the State.

#### NEW JERSEY WIDELY MISUNDERSTOOD

New Jersey is perhaps more generally misunderstood than any

of the states. To a majority of people, because they have seen it only from the highways of traffic between New York, Philadelphia, and Atlantic City it is flat and uninviting, but this is very far from a true perspective, for no state its size has a wider range of topography, a more diversified landscape, or a range of scenery more compellingly beautiful; nor has any state been more richly endowed with the natural advantages essential to the successful propagation of wildlife, as is shown by the fact that the heath hen, or pinnated grouse, made its last stand within its borders. More than 350 distinct species of migratory and non-migratory birds are found in the State, and all of the mammals indigenous to its habitat.

#### AT ONE TIME A SINGLE FOREST

Originally the State of New Jersey was to all intents and purposes a single forest, its only treeless regions being its extensive marshlands and meadows, which stretch from the delta of the Hackensack to Cape May and on up Delaware Bay and River to Trenton, a distance of over 200 miles, and provide New Jersey with a natural refuge for geese, ducks, and other waterfowl that has made it famous for this kind of hunting throughout the world. It has its barren terrain, of course, but this comprises only one per cent of its upland areas.

#### ITS EXTENSIVE MARSHLANDS

The original forests of New Jersey covered more than four million of its five million acres, and these forests were among the finest to be found anywhere on the continent, as is evidenced by the few remaining virgin trees that survive to this day the vandalism of the Nineteenth Century, such, for example, as the famous white oak of Salem, which has a height of 80 feet and a branch spread of 115 feet.

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#### FIRST SETTLERS THE TRAPPERS

The first settlers of New Jersey were hunters and trappers, for in its pioneer days, the wildlife of the region was extraordinarily prolific. Deer were found in such number, and killed so wantonly, that one of the first acts of the Colonial legislature was to place a restriction on the export of deer shot by the Indians. Muskrat, mink, beaver, otter, raccoon, fox, and other fur-bearing animals were also very plentiful, contributing immeasurably to the prosperity of the fur trade.

#### ITS AGRICULTURE HEWN FROM FOREST

Neither the hunter nor the trapper constituted a serious threat to the forests, but they were followed by the farmer with his axe and firebrand. The agricultural industry of New Jersey may be said with truth to have been literally hewn from the forests, for its two million acres of farmlands were at one time largely clothed with trees.

#### THE GREATNESS OF ITS LUMBER INDUSTRY

Following the settler a greater menace raised its head. It was industrialism, with its railroads to be built, its forges to be fed, its infinite needs to be satisfied. King coal had not yet ascended his throne, and wood had no substitute. In the middle of the last century, the iron industry was one of New Jersey's greatest activities, the State having more than 25 forges and furnaces, and to meet its charcoal requirements alone it was necessary to fell 6,500 acres of timber annually. In these days, too, was evolved that swift-winged messenger of commerce, the clipper, which showed its heels to everything with sails and made the American Merchant Marine famous on the seven seas. Much of the timber for both the hulls and masts of these far-sung clippers came

from the forests of New Jersey. At that time, too, no less than a hundred waterpowers were employed to operate the lumber mills of the State and numerous others to drive its flour mills and other industries. Then wood was used to heat the homes of the cities and towns, and in many other ways. So it is not surprising that during this period of tremendous activity practically every acre of virgin forest was cut down.

#### NEW JERSEY'S AWAKENING

Toward the close of the Nineteenth Century, the State of New Jersey commenced to experience a development of its own. Many people from the great centres of New York and Philadelphia found that they could live more economically and more comfortably there than in the cities in which they earned their livelihood, and thus was started the great migration which still continues unabated. In the wake of population, followed industry, and before very long New Jersey had become one of the most active manufacturing sections of the country, its silk and other textile plants being among the largest on earth.

#### WILDLIFE DISAPPEARING

Conservation was an unknown term in these strenuous days, and therefore it was not surprising that thirty years ago the wild-life of the State, making a last stand against the ever-increasing encroachments of an advancing civilization, appeared to be doomed. The deer had almost gone from its forests. The turkey had vanished entirely from its hillsides. The grouse, woodcock and quail, falling to the rapacious gun of the market hunter, were being rapidly exterminated. The fish were fast disappearing from its streams. The outlook for the tomorrow seemed dark indeed.

#### BOARD OF FISH AND GAME COMMISSIONERS CONSTITUTED

Such was the situation in 1907, when the Legislature broadened the scope of the New Jersey Board of Fish and Game Commissioners, giving to it the complete control of all the fish, game, and insectivorous birds of the State, and passing such legislation as to make that control operative.

#### THE MOVEMENT OPPORTUNE

At the outset, it was realized that the only effective organization would be one whose members would be willing to serve, without compensation, out of a love of the great outdoors and their interest as sportsmen in promoting better hunting and fishing in their State. The time for such a departure was extraordinarily opportune, for at this moment the national conscience was being awakened to a realization of the fundamental principle that natural resources are a people's only in trust for generations yet unborn.

#### A NON-POLITICAL ORGANIZATION

In the constitution of the Board of Fish and Game Commissioners, it had been tacitly understood that the organization was to be absolutely non-political, although as a department of the Government, reporting directly to the chief executive. This policy of non-interference has been consistently adhered to, and it is a tribute to the various governors who have held office during the many years of the Commission's life that not once has any attempt been made to control its policies by political pressure. It is fair to add also that its personnel have been selected from the beginning without regard to party affiliation, all the men who have served having been appointed with a single regard to their fitness for the peculiar character of service

they were called upon to render. They have without exception, been men of the great outdoors, sportsmen for the most part, and inspired with a deep love for their State and a consummate desire to contribute to its esthetic development.

#### ESTABLISHMENT OF THE UNIVERSAL FISHING LICENSE

The New Jersey Board of Fish and Game Commissioners was established in 1895, and reorganized along its present lines in 1907. For some years its activities were handicapped by inadequate funds, and its opportunity for effective achievement did not come until 1915, when these funds were made available by a state-wide resident fishing license.

#### ORGANIZATION OF NEW JERSEY FISH AND GAME COMMISSIONERS

As at present constituted, the New Jersey Board of Fish and Game Commissioners has nine members, representative of the entire State. These Commissioners formulate all policies, suggest legislation, exercise general control over administration, approve all financial expenditures, and act as the direct intermediary between the Government and the sportsman.

On all general questions they function as a body, holding a meeting in Trenton on the second Tuesday of every month, but in order that they may keep intimately in touch with conditions constantly arising in different parts of the State, each Commissioner assumes direct supervision over two or more counties.

#### COMMISSIONERS SERVE WITHOUT COMPENSATION

The Commissioners serve without compensation, but are assisted in their executive functions by a paid executive secretary, an assistant secretary, and a regular working organization.

#### NEW JERSEY'S EFFICIENT WARDEN BODY

In the field, the Commissioners are aided by a protector, four assistant protectors, and a corps of game wardens. There is at least one warden in each county, and in some two or three, depending upon the extent of the territory to be patrolled and the character of the work to be undertaken. The warden body of New Jersey, under civil service rules, has been so developed that today it constitutes in esprit-de-corps and efficiency one of the finest organizations of its kind in the world. Theirs is a most difficult and not infrequently a dangerous task, and its fulfillment requires courage, initiative, diplomacy, and judgment, for the warden is not concerned with law enforcement alone, but has manifold other duties, including the distribution of fish and game, the protection of streams against pollution, and the extermination of vermin, a constantly growing problem everywhere.

#### PRECARIOUS GAME CONDITIONS

In the first few years that the New Jersey Board of Fish and Game Commissioners commenced to function, wildlife conditions throughout the State were most precarious. Only 141 deer had been killed in the season of 1911. The grouse and quail were becoming so scarce that in most regions gunning for them had become indifferent. Even the lowly rabbit was threatened with extinction. Except on private estates, there was not a ringed-neck pheasant in all New Jersey. The once-prolific trout streams were practically depleted, and many of the lakes were in the same denuded condition.

#### THE GREAT PROBLEMS OF REHABILITATION

Thus the Commission was confronted with the problem of complete rehabilitation; of building from the ground up. The task

was a difficult one, and necessarily slow. How well it has been accomplished a single year's record stands as an eloquent monument. There came from the woods, fields, marshlands, streams, and lakes of the State in 1934, for example, an approximate aggregate of 2,340 deer, 105,922 pheasants, 58,000 quail, 75,000 ducks, geese, and other waterfowl, 22,000 grouse and woodcock, 115,000 gray squirrels, 553,500 rabbits, 440,500 rainbow, brown and brook trout, 170,000 bass, 200,000 pickerel, and white and yellow perch, rock bass, crappie, sunfish, catfish, and other denizens of fresh water beyond the ability of men to compute. And the figures for game do not include the mammals shot by the farmer on his own land—the farmer not requiring a license and therefore not reporting his kill to the Commissioners—nor the tremendous annual fish catch of that vast army of boys who will be the sportsmen of the tomorrow.

#### SPORTSMAN THE FIRST THOUGHT

In the development of the hunting and fishing potentialities of the State, the New Jersey Board of Fish and Game Commissioners have consistently made the sportsman their first consideration, realizing that every dollar of their revenues is derived from licenses taken out by him, the non-sportsman class contributing nothing. They have felt, therefore, that they have an imperative duty to provide an equitable distribution of game and fish in all sections of the State. Necessarily their methods of game and fish distribution have to be governed in measure by conditions. They have learned, for example, that it is generally unwise to put out pheasant in the southern part of the State, where the conditions are generally unfavorable to it, the more southerly counties being infinitely better adapted to quail, where

this bird is indigenous. They have found also that an indiscriminate distribution of trout in southern counties, except in special localities, is also unwise. Therefore, they have formulated a policy calculated to achieve in each section the largest measure of results. And so successful has this policy been that today there is hardly any portion of the State in which popular opinion is not in absolute agreement that hunting and fishing today are better than within the memory of the present generation.

#### METHODS WIDELY ADOPTED

The methods of game and fish propagation followed by the New Jersey Board of Fish and Game Commissioners are universally recognized, and have been widely adopted elsewhere.

#### ITS GREAT FISH HATCHERY

Its great fish hatchery at Hackettstown, on a small tributary creek of the beautiful Musconetcong River, in Warren County, for instance, has established a reputation surpassed by no similar institution on earth, and its game farms have also won universal recognition.

Prior to 1912, when both hatchery and game farms were established, the State of New Jersey had never raised a fish or a bird of its own, stocking with trout from Pennsylvania, pond fish from Lake Erie, and game birds from breeders in various states.

#### 100,000,000 FISH A YEAR

Started in a comparatively small way in 1912, the Hackettstown Hatchery has been gradually developed until today it produces over 100,000,000 fish a year, and as a fish culture plant has no duplicate in the world. This output compares with a total pro-

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duction of about 2,500,000 fingerlings in the first year of the hatchery's operation.

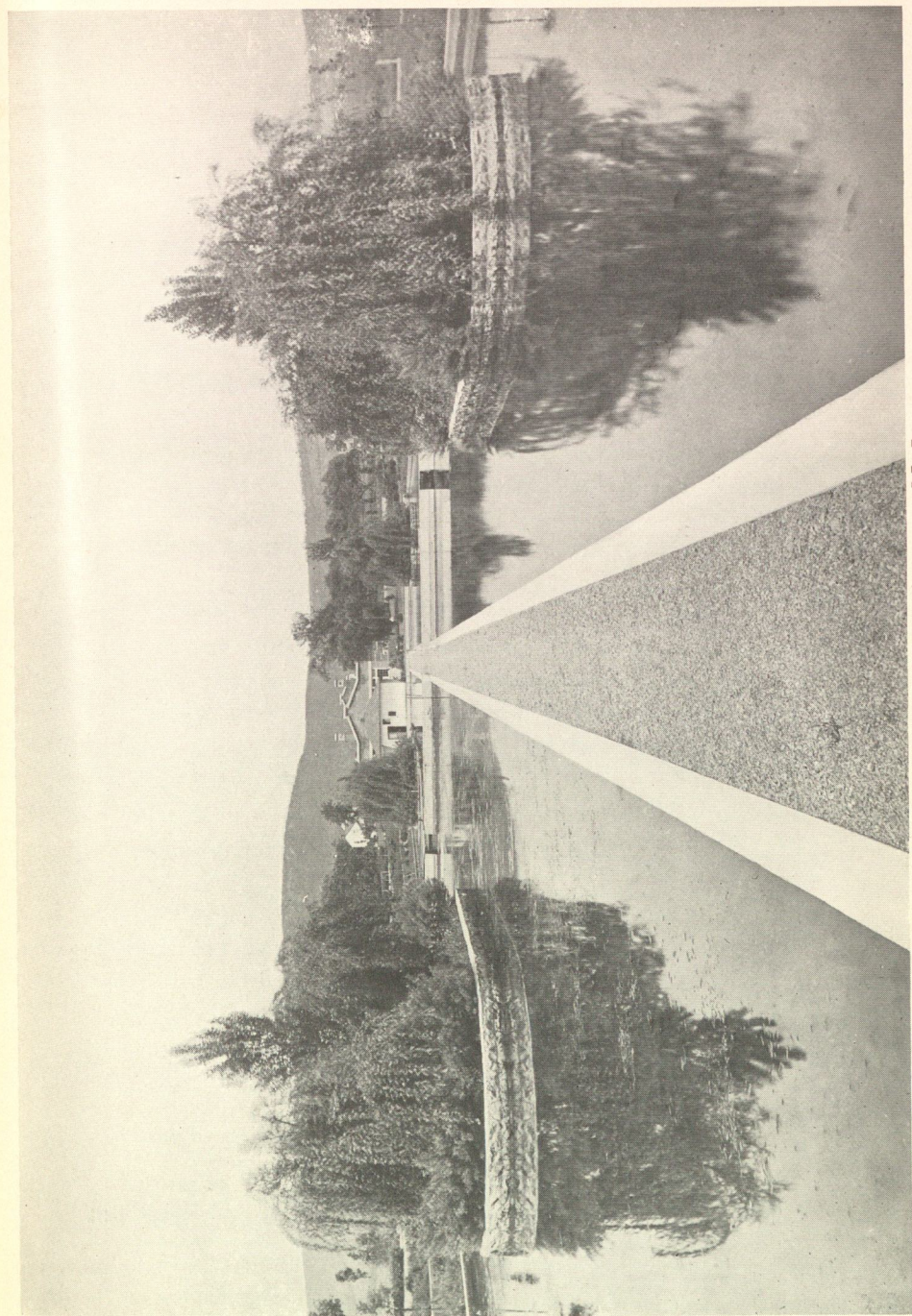
When the hatchery was started, brook trout were raised exclusively, but in 1914 the Commissioners commenced to propagate rainbow trout, and in 1915, brown trout also.

#### SEVENTY-FIVE TONS OF TROUT

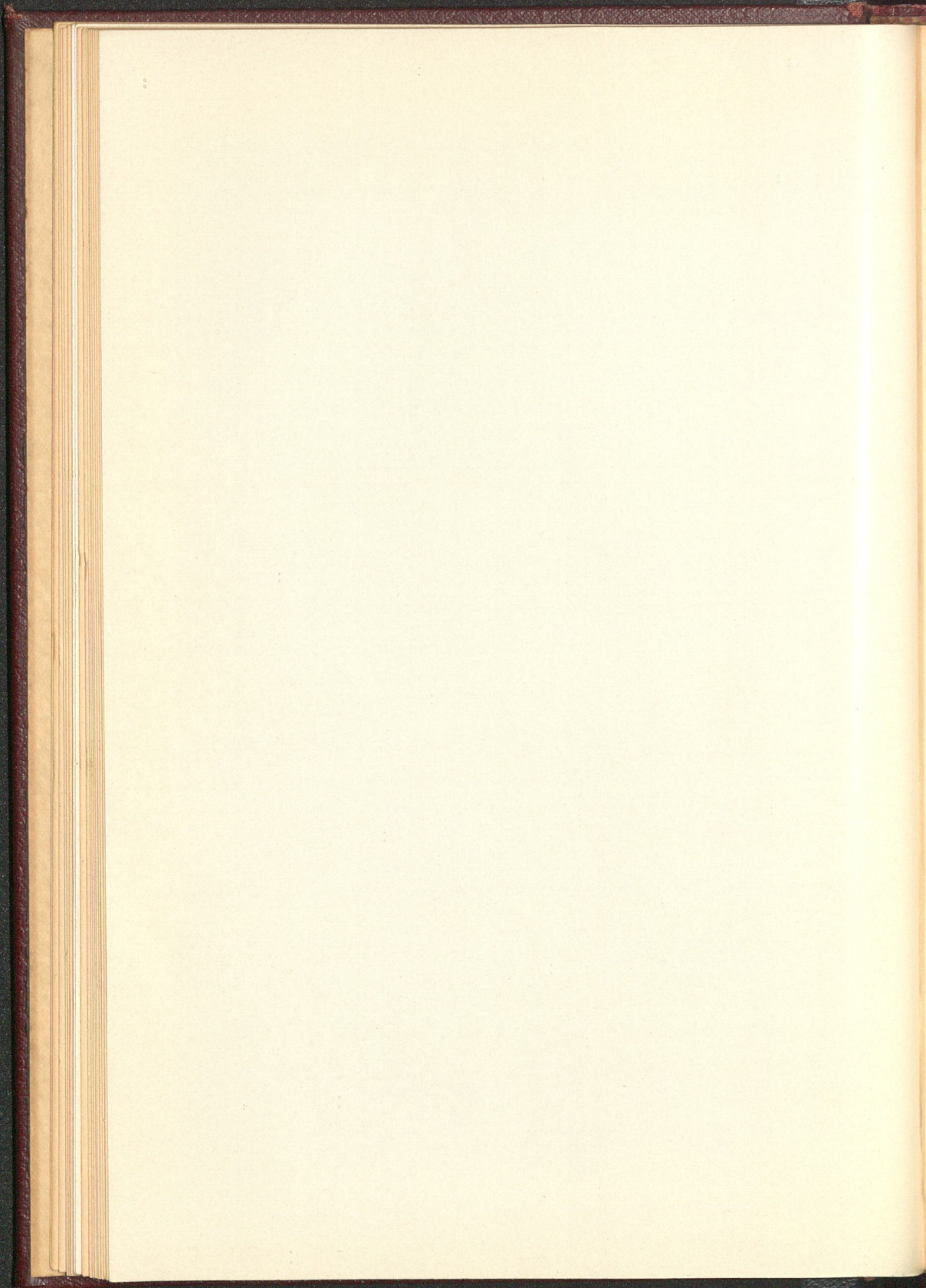
More than half a million adult trout weighing over 75 tons, are now raised in the Hackettstown Hatchery annually, and are distributed over 1,474 miles of Jersey streams and in certain lakes considered favorable to its growth.

#### ITS MODEST BEGINNINGS

Prior to 1921, when about 40,000 adult trout were being raised annually, no special attention was given the young fish, with the result that only about one-half of one per cent of those propagated reached maturity. Then was introduced a system of breeding in which only the best fish in conformation and coloration were used, the result being that of the second generation 30 per cent reached maturity, and of the following generation, 55 per cent. In 1925, 10,720 eggs were obtained from 12 pair of trout of an average length of 12½ inches at 34 months of age, or an average of 900 eggs a female fish. On the next breeding, more eggs were obtained from 5 selected fish than from the other 12, and these trout measured 14 inches when only 22 months old. In 1930, the best pair of second spawning trout produced an average of 2,760 eggs per female, an increase of 209 per cent over 1925. Through this policy of special breeding, the size of a 16-month trout had been increased from an average length of 5 to 8 inches to an average length of 9 to 11 inches, and its weight has been more than doubled.



STATE FISH HATCHERY, HACKETTSTOWN, N. J.



#### THE PROPAGATION OF BASS

In 1916 the hatchery commenced to raise bass, starting with a single pond and an output of approximately 6,000 fingerlings. The breeding of this fish has been constantly extended, until now the hatchery has 49 bass ponds, with an aggregate output of 170,000 fingerlings. Most of the bass are kept until they attain a size of three to four inches, when they are considered capable of protecting themselves against attack.

In addition to trout and bass, the hatchery propagates on a large scale yellow perch, crappie, bluegill sunfish, and catfish, the preponderant proportion of these pond fish being yellow perch, of which more than 90,000,000 are raised to a fry stage.

#### EQUIPMENT OF THE HATCHERY

The hatchery is equipped with 98 trout troughs, 210 trout pools, having an aggregate length of more than five miles, and there are 25 acres of breeding ponds. The hatchery uses over 5,000,000 gallons of water a day, and the fish consume 2,500 pounds of food a day, their diet consisting almost exclusively of fish brought from the Atlantic Coast, the fry being fed a preparation of beef liver, sour milk, and cod liver oil.

#### CONSTANT VIGILANCE

Constant vigilance is the secret of success in fish culture, and from the hour of birth until they leave the hatchery the young fish are kept under constant surveillance. Every day numerous microscopic tests are made for indications of disease, and should these appear the fish are treated immediately.

#### RESERVOIR NETTING

In addition to the millions of fish from the hatchery, the Commissioners obtain hundreds of thousands of bass, perch, and

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other pond fish from the great reservoirs of the State, which in large part are closed to public fishing. These are netted during the summer months, the resultant fish being distributed in the public waters of the State.

#### GAME DISTRIBUTION

As broad as is the Commissioners' method of fish propagation and distribution, equally comprehensive has been their system of game control. This year the Commissioners distributed 30,307 pheasants, 14,089 quail, and 26,706 rabbits. Of the pheasants, 21,663 were bred at the State Game Farms, 454 raised by sportsmen from eggs provided by the Commissioners, and the balance, 7,920, purchased from private dealers within the State.

#### STATE A PIONEER IN REARING QUAIL

The State Game Farm, by the way, was a pioneer in raising quail in captivity, and in recognition of its work was awarded, in 1916, a certificate of merit by the American Game Association for its work in this field. For some years the raising of this bird was temporarily suspended owing to the problems involved, but for the past three years intensive work has been carried on at our new Quail Farm with the result that we have been successful in raising more than 15,000 birds in one season.

#### STATE GAME FARMS A SUCCESS

In the first years of the operation of the State Game Farm, the Commissioners propagated the Hungarian Partridge and purchased large quantities from Europe, but finding that this bird does not do well in the State, no longer raises it, concentrating its attention very largely on the quail and pheasant, which are so admirably adapted to Jersey soil and climate.

The State Game Farms have been an unqualified success, not only in the raising of birds in captivity on a large scale, but also in controlling the market price of these birds, for it is incontestable that without these Farms the sportsman would be at the mercy of private breeders.

#### NEW JERSEY IDEAL FOR GAME PROPAGATION

In no state are the conditions for breeding game birds better than in New Jersey, and each year witnesses an expansion of this industry within her borders.

#### THE DEER NEW JERSEY'S NOBLEST MAMMAL

The lord of the Jersey forest is the deer, and for the people of the State, especially for many of its farmers, the annual deer hunt is an event of the very first consequence, to be prepared for weeks ahead and to be talked of during the long winter months.

#### EFFECT OF UNRESTRICTED HUNTING

In New Jersey's early days, the range of the deer was unconfined, the ruminant being found in every section of the State, but with the gradual growth of the country and a logical increase in the number of hunters, whose freedom of action was practically unrestrained, it gradually disappeared, until by 1900, except for a few animals that would cross the Delaware from the Pennsylvania side of the river, it had gone entirely.

#### THE QUESTION OF DEER RESTORATION

At that time, many were of the opinion that the animal could never be restored, and that the deer, except for those reared on private estates, would become a curiosity. The New Jersey

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Board of Fish and Game Commissioners, however, did not share this opinion, and determined to make an intelligent attempt to bring about its restoration. With this end in view, it obtained, in 1904, from the Worthington Preserve, in Warren County, a hundred Virginia white tails, which it distributed in the sections best adapted to deer propagation, at the same time inaugurating a closed season on deer hunting of five years' duration. The deer thrived splendidly; so well, in fact, that in 1909 their hunting was again permitted, and that season 86 bucks were accounted for. In 1911, 47 additional white tails were brought into the State from the West, and two years later 50 more. Shortly afterward the owner of the Worthington Estate removed his fences, and permitted his deer to wander where they would. And it is from these small beginnings that have been built up New Jersey's present magnificent deer herds.

#### THE ANNUAL DEER KILL

The salutary effect of the New Jersey Board of Fish and Game Commissioners' policy of stringent deer protection is reflected eloquently in the statistical record of the annual deer bag. In 1912, 109 deer were legally killed; in 1915, 481; in 1920, 838; in 1925, 1,209; in 1930, 1,484; in 1931, 1,702; in 1932, 1,575; in 1933, 1,761; in 1934, 2,340; in 1935, 2,206; and in 1936, 2,034. Since 1909 an aggregate of 28,088 bucks have been legally killed in the State, to which number must be added the deer shot illegally, including many does, and those killed by train and automobile, the latter alone numbering over 600 in 1936.

#### RESTORATION A RESULT OF POLICY

It can be stated with conservatism that New Jersey has better deer hunting than any state twice its size, and it is a fact beyond

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contravention also that this happy condition is attributable almost wholly to the Commissioners' policy of deer conservation, which has included rigid and impartial enforcement of the law; the abolition of the market hunter; the prohibition of the sale of venison; the protection of does; the elimination of dogs in deer hunting, and, above all, the establishment of the open season after the mating period is over.

#### HOW DEER HAVE COME BACK

Some idea of the way the deer has increased throughout the State of New Jersey during the past twenty years can be gained from the fact that last year at least one or more of these animals was killed in all but two counties. Up to a few years ago, the residents of many now prolific deer counties would travel miles to see a deer track, whereas today the footprints of this animal have become so common as to excite no curiosity at all. Fifteen years ago, for instance, not a deer was killed in Hunterdon County, which last year yielded 16, while 23 years ago only 4 deer were legally shot in Bergen County, which in a later year accounted for 72. This is practically a situation that exists throughout the State, for each year witnesses a slow but constant increase in the various State herds.

#### BURLINGTON'S GREAT RECORD

The chief deer counties of New Jersey, in all of which more than 20 bucks were legally killed last year, are, in order, Burlington, Ocean, Sussex, Atlantic, Morris, Warren, Passaic, Monmouth, Cumberland, and Somerset. The hunters in Burlington County shot 689 deer in 1936, nearly one-third of the total kill, those in Ocean County, 558, in Sussex, 157, Atlantic, 140, and Morris, 112.

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#### CHIEF DEER SECTIONS

The chief deer sections of the State are the pine woods of Burlington, Ocean, and Atlantic Counties, especially the Plains and Pine Barren regions. There are said to be a hundred deer clubs in Burlington County alone, and in season at least 500 camps are in operation there. Many clubs operate also in both Ocean and Atlantic Counties, which, with Burlington, have hundreds of square miles of accessible territory, and which before the development of the State's splendid road system could be reached only by horse and wagon over roads of the most indifferent character.

#### PROLIFIC DEER CONCENTRATION AREAS

Some of the chief concentration points for deer are Chatsworth, Woodmansee, Pasadena, Brown's Mills Station, Webb Mills, Turkey Swamp, Harmony Mills, Mount Misery, Red Lion, Friendship Bogs, Tabernacle, Yellow Meeting Place, Double Trouble, Devil's Half Acre, Quaker Bridge, Jenkin's Neck, Estelville, Cedar Bridge, and Warren's Grove, near which place as many as 50 deer have been killed within a range of less than a mile. These hunting areas are reached from Brown's Mills, Chatsworth, Batsto, Estelville, Tom's River, Barnegat, Tuckerton, and New Gretna.

#### DEER IN CUMBERLAND

Cumberland's deer hunting is confined largely to the eastern portion of the County, which, like Atlantic and Burlington, is largely in forest, the timber here being a mixture of pine and hardwoods. Approximately 35 deer were killed in Cumberland County in 1936, the best sections being around Buckshootem, north of Haleyville, on what is known as the deer run; the

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woods east of Dorchester, Hand's Mills, at the headwaters of West Creek, and Hunter's Mill, near the source of the Tuckahoe River, and directly on the border of Atlantic County.

Monmouth County's deer are found only in the southern part of the County, which borders on the great pine belt of Ocean and Atlantic, and the deer shot within its borders work up from the deeper forests to its south.

The best deer section of Somerset County is the Mount Horeb region of the Watchung Mountains, although there are a good many deer also in the Sorel Mountains, in the western part of the County.

#### DEER IN SUSSEX COUNTY

Deer hunting is generally good throughout the mountainous portions of Sussex County, particularly in the Stokes' State Forest and other rugged parts of the Kittatinny Range, and to a lesser degree in the Wawayanda Mountains, which stretch from Newfoundland to the New York State line, through the heart of the great Newark Watershed, which, closed to hunting at present, has an approximate area of 50,000 acres.

#### DEER IN MORRIS

Good deer sections of Morris County are Long and Middle Valleys, lying between Dover, and Wood Glen, in Hunterdon County; the Great Swamp, near Myersville; the rugged Split Rock section, and the Berkshire and Rockaway Valleys, the latter adjoining the Kinneylon Preserve.

Bergen County also has some good territory, particularly in the Ramapo Mountains and in the upper Saddle River region, which borders on the New York State line, the best hunting sections being reached from Mahwah, Ramsey, Camp Gaw, and Oakland.

#### DEER TERRITORY PRACTICALLY ALL OPEN

One of the advantages of deer hunting in New Jersey is that practically all the territory is open. The deer being found almost exclusively in the rugged and inaccessible parts of the State, there is comparatively little posting where it wanders.

#### THE DEER SEASON

The open season for deer at present is from December 17 to December 21, inclusive, or five days, except when Sunday intervenes, when the season is four days, Sunday hunting being illegal in New Jersey. Does are rigidly protected, and only bucks with horns at least three inches in length may be shot.

#### THE SUPREMACY OF THE RABBIT

It is a far cry from the Lord of the Forest, the deer, to the lowly rabbit, and yet it is this little fur-bearer who really should occupy the throne in New Jersey's realm of the wild, for it is he who furnishes diversion for more than three-quarters of the hunters of the State.

#### THE RABBIT MULTIPLYING RAPIDLY

The rabbit in New Jersey is ubiquitous, being found in every county of the State, and, although naturally more favorable to some areas, despises no locality at all. It is multiplying rapidly, due not a little to an intensive stocking program, notwithstanding the veritable army of hunters who are on the warpath for it, the ever-increasing number of automobiles which take their enormous toll, and its hereditary enemies, particularly the fox, weasel, and great horned owl, who lie constantly in wait.

Adequately protected, the rabbit is a prolific breeder, normal annual reproduction averaging approximately twenty rabbits per pair.



OTTER



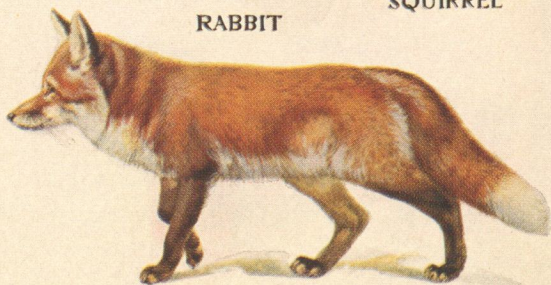
RABBIT



SQUIRREL



WEASEL



RED FOX



RACCOON



GRAY FOX



SKUNK



MUSKRAT



BEAVER



MINK



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#### THE SPORTSMAN'S DIVERSION

Rabbit hunting, requiring neither trained hound nor dog, with their necessary expense and upkeep, is the diversion of the majority of the sportsmen of the State; the sport of man and boy, and also of the more elderly who, no longer able to engage in very strenuous exercise, are content to wander through the woods with gun and dog in pursuit of this humble game animal. It provides also a distinct contribution to the table.

#### SEASON FOR RABBIT AND SQUIRREL

The rabbit season extends from November 10 to December 15, both days inclusive, at present, and the daily bag limit is six, which regulations also cover the shooting of the gray squirrel, which is found in most sections of the State.

#### FOLLOWING HOUNDS IN NEW JERSEY

Fox hunting is a highly developed sport in New Jersey, particularly in the County of Somerset, where great estates have been developed with this character of sport as a major consideration. The hunting here is as practiced in England, the hunters following the dogs on horseback.

#### FOX HUNTING IN SOUTH JERSEY

In Southern New Jersey, however, the hunting is done on foot, with specially trained hounds and when the fox has been taken it is killed, both for the value of its pelt and because of the destruction it causes to game.

In Burlington, Cumberland and Camden Counties, which have some very fine packs of hounds, this sport has become extremely popular, last year 136 foxes having been killed in Ocean County alone, and a total of 1,164 in the State.

#### THE OPEN SEASON FOR FOX HUNTING

The open season for fox hunting is from November 10 to April 30, both days inclusive, except during the open season for deer.

#### TWO THOUSAND RACCOON HUNTERS

The hunting of the raccoon is also a very popular diversion in many parts of New Jersey, it being estimated that there are at least 2,000 "coon hunters" in the State, of which approximately 200 are in Middlesex County.

The raccoon is found in almost all parts of the State. The "coon" is hunted with hounds trained for this purpose alone, and in recent years some of the finest packs in the country have been developed.

The open season for raccoon is from November 1 to December 31, both days inclusive, except during the deer season, and the seasonal bag limit per hunter is fifteen.

#### UPLAND GAME BIRDS

The chief upland game birds of New Jersey are the pheasant, the quail, the ruffed grouse, and the woodcock.

#### THE RING-NECK PHEASANT

As has been mentioned, except for a few birds on private preserves, there were not many pheasant in the State prior to 1912, but through the New Jersey Board of Fish and Game Commissioners' policy of propagation and distribution the bird has become increasingly plentiful in all sections adapted to it and is slowly but surely being acclimated.

The pheasant of New Jersey is a cross between the English ring-neck and the Mongolian, and the Jersey bird has been

built up through the introduction of improved stock from England.

#### 50,000 PHEASANTS PROPAGATED

In its natural habitat, the English ring-neck is the most widely distributed and prolific species of the pheasant family, and in New Jersey it has run true to form. It is estimated that at least 50,000 pheasants are now propagated annually in New Jersey, and that at least twice this number attain maturity in a wild state.

#### RIGID PROTECTION AND RESTOCKING

Pheasants are increasing in New Jersey not only because the greater part of the State is an ideal habitat for this immigrant, but because of the Commissioners' policies of rigidly protecting the hen bird, of restocking the shot-over territory with cocks in the following Spring, and of feeding grain to this game bird and to quail in periods of heavy snowfall.

#### THE PHEASANT'S HABITAT

The pheasant thrives best in the more northerly and central portions of the State, particularly in the Counties of Hunterdon, Mercer, Somerset, Bergen, Passaic, Morris, and Essex, although it has done almost equally well in Sussex, Camden, Warren, and Union. The bird has thrived also, in some sections of South Jersey, but that part of the State is natural quail country.

Great attention is now being paid to the raising of pheasants in the semi-wild, and this movement has resulted in both an increase in the quantity of this bird and an extension of its range.

#### PHEASANT HUNTING AT THE GATE OF THE CITIES

The pheasant hunter does not have to go far afield in New Jersey, for some of the best areas for this bird are to be found on the outskirts of the great metropolitan areas of the State, such, for example, as the Hackensack Meadows, which stretch from Oradell, above Hackensack to Newark Bay, and the Newark-Elizabeth Meadows, which extend along this body of water between these two great New Jersey cities a total distance of more than thirty miles.

#### THE HACKENSACK MEADOWS

The cattails and other grasses of the Hackensack Meadows afford ideal winter cover for birds, and sportsmen should unite in protecting them from fire, frowning especially on the custom of burning them to drive out the game, a practice unworthy of any real sportsman.

#### OPEN SEASON FOR THE PHEASANT

The open season for the ring-neck pheasant is from November 10 to December 15, both days inclusive, and the bag limit two male birds daily, or 30 in a season.

#### THE QUAIL THE FARMER'S FRIEND

The quail is found practically all over New Jersey, but is essentially the game bird of the central and southern portions of the State, its greatest prolificacy being in the agricultural regions, which guarantee it a constant supply of food. This bird, known as the farmer's friend, because of the great number of insects it destroys, is also a grain feeder, and is generally never found in sections where no cereals are grown, which is the reason that

it is no longer plentiful in the more northerly parts of the State, where agricultural activity is now largely confined to dairying. However, the old native quail of untainted breed is still found in number in the pine and scrub oak uplands of the great southeastern wilderness of the State.

#### QUAIL GREATLY ON INCREASE

The quail is increasing in number very rapidly in many parts of the State, and today its whistle is heard in regions where it has not been known for years. As an example of this plenitude may be cited the experience of one hunter who last season raised 16 coveys of quail in a single day within five miles of Asbury Park, a condition that can be duplicated in many other sections, particularly in the agricultural parts of Burlington, Monmouth, Salem, and Cumberland Counties. Apparently the New Jersey quail is learning to protect itself, especially in its ability to seek cover in the woods.

#### PROBLEMS OF QUAIL PROPAGATION

The problem of quail propagation has become a serious one. Practically every State has prohibited the export of the bird, which means that it can no longer be bought in quantity outside of the State, and supplies for stocking must be obtained within the State's borders. Until recently it has been found most difficult to raise quail in captivity, but now many of the major problems have been solved and great measure of success is being attained.

#### OPEN SEASON FOR QUAIL

The season for quail extends from November 10 to December 15, both days inclusive, and the bag limit is ten quail a day for each hunter.

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#### RUFFED GROUSE

A true native bird is the ruffed grouse, and while not as plentiful as of yore is slowly but surely regaining prestige. In the State's early days this valiant game bird was extraordinarily prolific.

Grouse hunting is now confined very largely to the mountainous Counties of Sussex, Warren, Morris, Passaic, and Bergen, and to the pine regions of Burlington and Ocean.

This bird loves the wooded hills, and for this reason is most plentiful in the County of Sussex, where all conditions are extremely favorable to its growth. It is found in number also in Morris County, especially in the Dover-Lake Hopatcong section, and in various parts of Warren, Passaic, and Bergen, the Ramapo section of the last-named County being especially adapted to it. In South Jersey the ruffed grouse is known as the wood pheasant.

#### THE WOODCOCK

New Jersey has splendid woodcock hunting, particularly in its northern tier of counties, although the best shooting in the State is in Cape May, scene of the great Autumn migrations of this game bird.

Another very good region for this bird is the Delaware watershed in Warren and Sussex Counties, and it is plentiful also in parts of Salem and Cumberland.

#### WOODCOCK BREEDS IN STATE

The woodcock haunts the woodlands and streams, and occasionally frequents the open marshlands. It is a migratory bird, arriving in New Jersey in the Spring and leaving in late Au-

turn, breeding in its wilds. It loves the haunts of man, and is mostly found on the outskirts of civilization. It feeds chiefly at night, in the day concealing itself in the thickets.

#### THE GREAT FLIGHTS AT CAPE MAY

The great flights of woodcock across Delaware Bay occur between October 25 and November 20, at which date the season is closed, the chief point of their passage being a ten-mile stretch on the Delaware Bay from Cape May to Green Creek. If the weather is bad, the birds remain in the vicinage until it clears, and in periods of great storm huge flights settle on Cape May Point for days at a time. The temptation offered to hunters by such great flights of birds is very great, both in exceeding the bag limit and shooting after the season is closed, and in order to protect the birds the Commissioners have found it necessary to place strange wardens in the County, and in this way violations have been held to a minimum.

#### THE WOODCOCK SEASON

The woodcock, being a migratory bird, is under Federal control. Its shooting in New Jersey requires a special license, and its hunting has developed a distinct and high type of sportsman. The season is from October 15 to November 14, both days inclusive, the bag limit being four.

#### HUNGARIAN PARTRIDGE

There are some Hungarian partridges in the State. Formerly the Commissioners were quite optimistic as to the breeding potentialities of this bird, and propagated it quite extensively. However, it does not appear to thrive very well in New Jersey, and all attempts to increase its number, except through protec-

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tion, have been abandoned. Hungarian partridges have been noted in various parts of the State, near Medford Lakes, in Burlington County, and in Hunterdon, Somerset, Warren and Sussex Counties.

#### NEW JERSEY FOR THE DUCK HUNTER

Few States in the Union have better duck hunting than New Jersey, whose vast areas of tidal marshlands cover more than one-eighth of the State's area.

#### DUCKS THAT BREED IN NEW JERSEY

Broad marshes, which with adequate protection can be permanently conserved, attract millions upon millions of winged visitants annually. All told, 35 species of waterfowl are found in them. Many of them, it is true, linger only as transients in their Spring and Autumn migrations, but some, notably the black duck, the mallard, and the wood duck, nest in its enchanting reaches.

The wood duck is protected by Federal law, and justly so, for a magnificent bird is the wood duck and one that no hunter should think of slaying, for its contribution to the beauty of the landscape far outweighs its value as game.

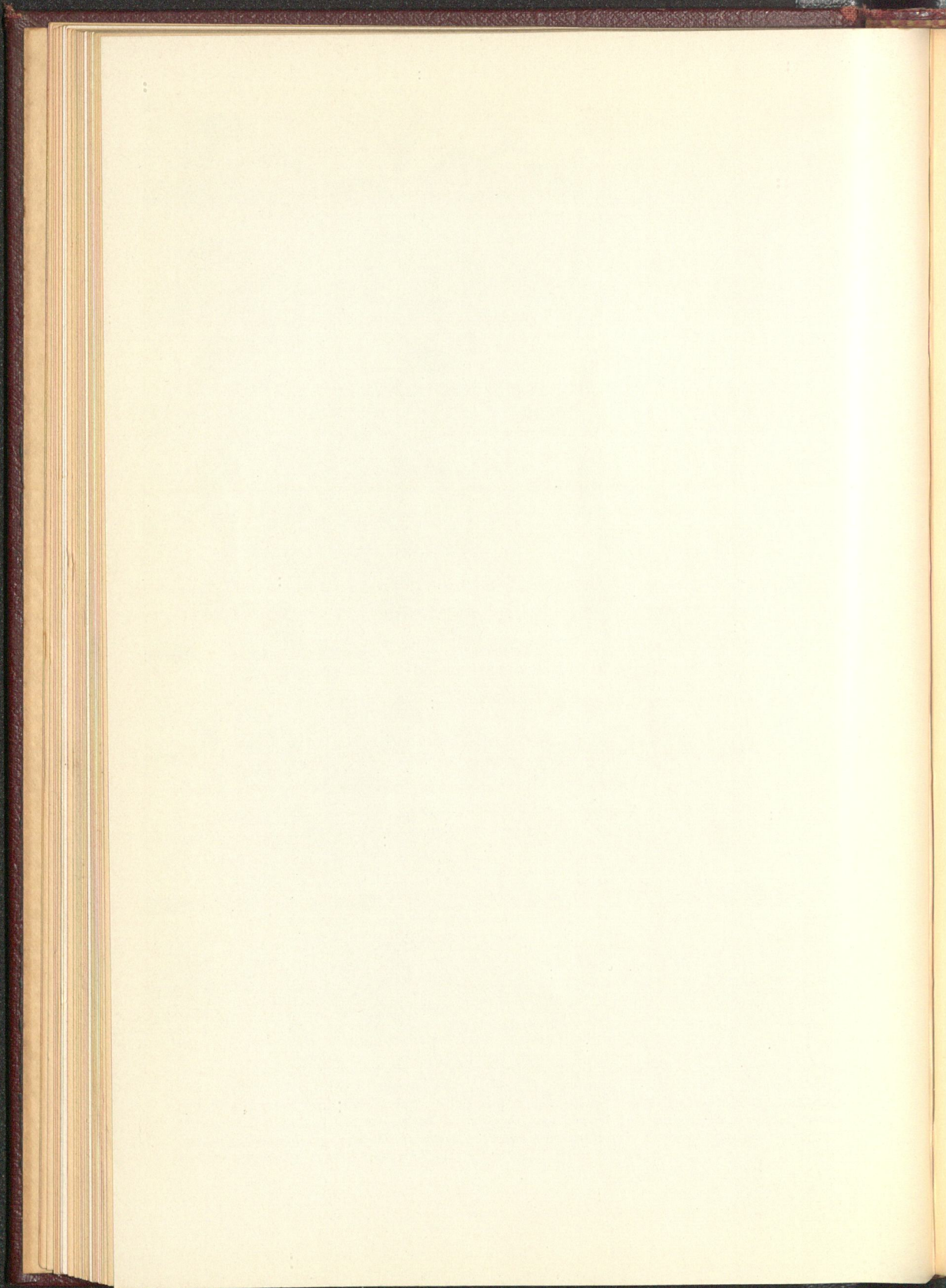
#### MANY SPECIES OF WATERFOWL IN STATE

Most of the more important migratory waterfowl indigenous to the eastern half of North America are found in New Jersey, including the various species of ducks, geese, and brant. The more popular ducks, including the black, pintail, mallard, broad-bill, shelldrake, coot, brant, and Canada goose are found in profusion here, and, to a lesser extent, the redhead, canvasback,



### PROFILES OF DUCKS FAMILIAR TO NEW JERSEY

1. American Merganser; 2. Red-breasted Merganser; 3. Hooded Merganser; 4. Mallard; 5. Black Duck; 6. Gadwall; 7. Baldpate; 8. Green-winged Teal; 9. Blue-winged Teal; 10. Cinnamon Teal; 11. Shoveler; 12. Pintail; 13. Wood Duck; 14. Redhead; 15. Canvasback; 16. American Scaup; 17. Lesser Scaup; 18. Ring-necked Duck; 19. American Golden-eye; 20. Barrow's Golden-eye; 21. Bufflehead; 22. Old Squaw; 23. Harlequin Duck; 24. Steller's Eider; 25. Spectacled Eider; 26. Greenland Eider; 27. American Eider; 28. King Eider; 29. American Scoter; 30. White-winged Scoter; 31. Surf Scoter; 32. Ruddy Duck.



and blue-and-green-winged teal, which, however, have largely gone from the State before the hunting season for waterfowl has opened under present Federal regulations.

#### THE FERTILE DUCK GROUNDS OF BARNEGAT

The best hunting region for waterfowl in the State of New Jersey is unquestionably the vast Barnegat Bay area, which, with its extensions, Little Egg Harbor and Great Bay, stretches down the Atlantic Coast from Bayhead to Atlantic City. These bays, which are from three to six miles in width, are formed by a succession of long narrow beaches guarding the ocean, notably Island, Long, and Brigantine. They are practically circumscribed by vast areas of marshland, and are literally dotted with islands, which afford splendid shelter for the birds.

#### THE SHEEPSHEAD MEADOWS

Perhaps the most prolific area of this splendid waterfowl territory is the stretch from Tuckerton to Atlantic City, embracing Little Egg Harbor and Great Bay. Here are found the Sheepshead Meadows, privately owned, but open to gunning and fishing, although the exclusive shooting rights on many of their islands is controlled by clubs or individuals. The Sheepshead Meadows are interspersed with a myriad of ponds, upon which in the Autumn alight millions of birds.

#### THE MEADOW SHOOTING THOROUGHFARE

The meadow shooting thoroughfare extends from Little Egg Harbor, near Tuckerton, through Grass Channel, to Great and Little Bays, and includes Little Beach, a noted rendezvous of the duck hunter. The hunting is also very good on the main-

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land, especially in the stretch extending from New Gretna, through Barnegat, to Waretown.

#### BARNEGAT CITY SPORTSMEN'S RENDEZVOUS

Long Beach affords good hunting throughout its entire length, geese and brant being particularly plentiful in the neighborhood of Harvey Cedars, which lies between Surf City and High Point, and there are said to be more geese and brant there today than in the memory of the oldest resident. Barnegat City, at the extreme northern end of the island, fronting Barnegat Inlet, which separates Long Beach from Island Beach, also has an extensive gunning area, and has been a popular rendezvous of sportsmen for more than a century.

Many other good duck hunting regions are found on the Atlantic Coast, including the Hackensack Meadows and the marshes bordering other of the principal streams, such as the Raritan, Mullica, and Wading.

#### WATERFOWL HUNTING ON DELAWARE BAY AND RIVER

The extensive marshlands of Delaware Bay, in Cape May, Cumberland and Salem Counties, and Gloucester, Burlington, and Mercer Counties on the Delaware River, are also havens for millions of waterfowl, while the whole course of the Delaware River north of Trenton abounds in them.

Another important duck region is great Pine Brook swamp, in Morris County, while good hunting can be generally obtained also on many of the larger lakes of the State, notably Big Swartswood Lake, in Sussex County; Hopatcong, in Sussex and Morris; Union Lake, in Cumberland; Brown's Mills Lakes, in Burlington, and Lenape, in Atlantic.

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#### THE RAILS AND GALLINULES

Whenever the marshlands are found, there in season one will find the rails and gallinules, a family of marsh birds, that, unlike the ducks, swim little, spending most of their lives forcing their way through the heavy undergrowth of grasses and reeds and wading in the thick mud.

#### THE MARSH BIRDS OF NEW JERSEY

Gunning for marsh birds requires an entirely different method than that followed in the pursuit of duck, where the hunter conceals himself in a blind and adroitly persuades the birds in flight to land among his innocent-looking decoys. For this bird has to be sought in the fastnesses of the marsh itself, the usual method being for the hunter to stand in the prow of the boat, dexterously poled, and fire at the birds as they rise from their concealment.

#### THE SORA

There are six species of rails in New Jersey, the most plentiful and popular being the sora. This bird, while reasonably plentiful, is not nearly so numerous as it was in the middle of the last century, when they were slaughtered by the thousands, it being no uncommon occurrence for hunters to shoot upwards of a hundred a day for a month at a time. Thousands upon thousands of these birds were then sold on the markets of New York and Philadelphia.

#### THE OPEN SEASON

The open season for marsh birds (with the exception of coot, for which the season is the same as for ducks), is from September 1 to November 30, both days inclusive.

## THE SHOREBIRDS

New Jersey has many shorebirds including, in addition to her famous woodcock, Wilson snipe, or jacksnipe, curlew, upland plover, black-bellied plover, golden plover, greater and lesser yellowleg, willett, or pied-wing curlew, many species of sandpiper, dowitcher, familiarly known as robin snipe, brown back, ruddy turnstone, calico back, marbled godwit, or marlin, and killdeer.

Of these shorebirds, the woodcock and the Wilson, or jacksnipe, are the only birds that may be legally shot.

## THE ENGLISH WILSON OR JACKSNIPE

The jacksnipes, like the woodcock, are still very plentiful in many parts of the State, but not nearly so numerous as formerly when they were so extraordinarily prolific that Frank Forester, New Jersey's naturalist-poet, stated that it was quite common for "sportsmen" to kill a bushel of them a day.

The Second American Field Trials were run on jacksnipe in the Big Piece of the Passaic River, in Essex County, and they are still there.

## SONG BIRDS

One of the chief concerns of the Commissioners has been the protection of the songbirds, which formerly were ruthlessly slaughtered. For this reason, the so-called insectivorous birds of the State are increasing everywhere, the Oriole and the Gold Finch, called locally in New Jersey the wild canary, being now seen in flocks, where only a few years ago they were comparatively rare.



ORIOLE

BOBOLINK

BLUE JAY

BLUEBIRD

RED-WINGED BLACKBIRD

REDSTART

HOUSE WREN

ROBIN

MEADOWLARK

RED-HEADED WOODPECKER

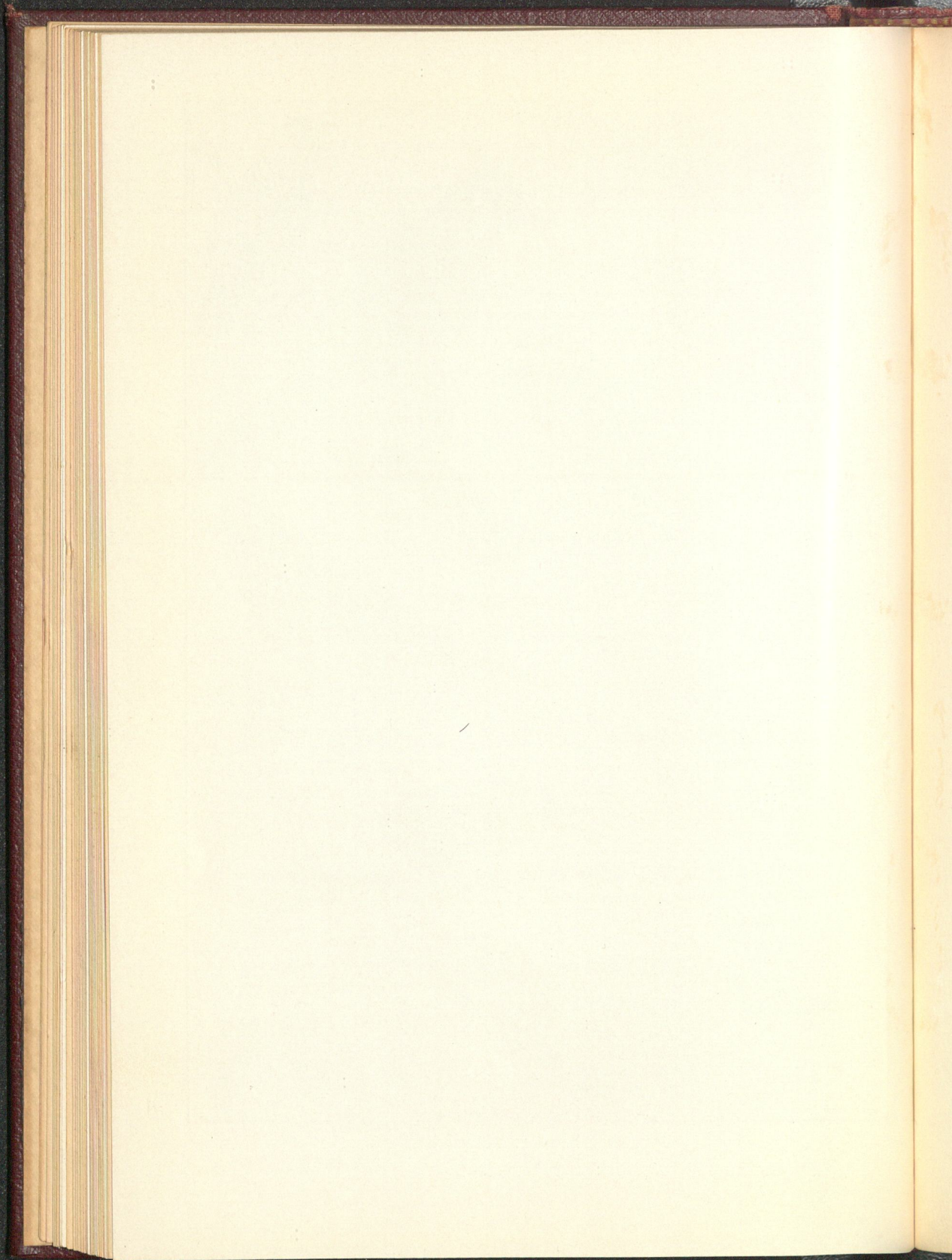
FLICKER

GOLDFINCH

All the birds on this page are 1/3 natural size

FAMILIAR BIRDS OF NEW JERSEY

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## STATE BIRD PROTECTION—INCREASE OF INSECT LIFE

The importance of bird protection cannot be exaggerated, and this is where the farmer of New Jersey is under a lasting obligation to the sportsman that cannot be measured in dollars and cents. By far the largest measure of bird protection and vermin control in the State is the prerogative of the New Jersey Board of Fish and Game Commissioners, and it is an undoubted fact that but for the functioning of this organization insect life would increase so immeasurably that in a few years it would be almost impossible for the farmers of New Jersey to raise profitable crops.

## FRESH-WATER FISHING

New Jersey has some of the best fresh-water fishing in the Northeastern States, and every year, through wise methods of fish propagation and control the numbers of its fish are increasing, in spite of its ever-growing army of anglers.

### NEW JERSEY'S FINE TROUT FISHING

Its trout fishing is particularly good, it being generally admitted that New Jersey's streams are more prolific than those of most any other State, a condition attributable to the Commissioners' policy of stocking them with mature fish.

### 100,000 TROUT ANGLERS

The general betterment in trout fishing in New Jersey has been extraordinary. Twenty years ago, with only brook trout in the streams of the State, there were at most 20,000 trout fishermen, while today, with the native species augmented by rainbow and brown, there are at least 100,000. A generation ago, a few trout of an average length of 8 inches would have been considered a remarkable catch; today thousands of anglers get their limit, and many of the fish will run from 12 to 20 inches, and weigh up to seven pounds, the larger fish, of course, being rainbows and browns.

### TROUT ONCE HAD WIDE RANGE

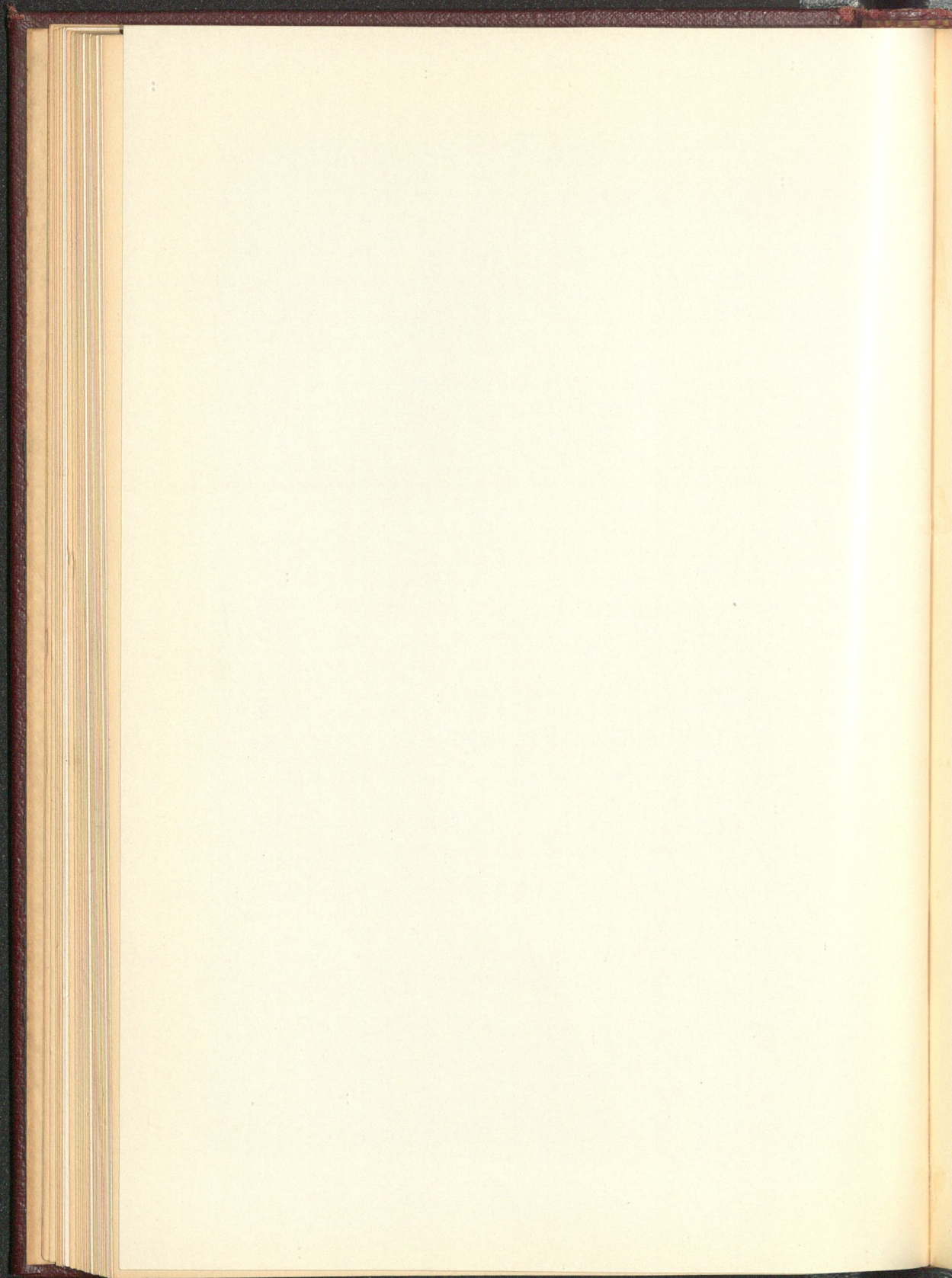
Trout fishing is confined very largely to the northern and central portions of the State, although a few good trout streams are to be found in the more southerly areas.

### ITS LOVELY TROUT STREAMS

In the early days of the State, the trout, no doubt, had a wider range, but the felling of the forest changed the character and



ONE OF NEW JERSEY'S TROUT STREAMS



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increased the temperature of many of the southerly streams, making them unsuitable to this denizen of the cool depths.

Many and beautiful are the trout streams of New Jersey, all of them possessing an individuality of their own.

#### THE LOVELY PEQUEST AND MUSCONETCONG

There is the lovely Pequest, with its no less enchanting tributaries, Beaver Brook and Bear Creek, rising in a series of crystal springs, in Sussex County, and flowing, sometimes peacefully, sometimes turbulently, but always swiftly, to the Delaware, thirty miles away. To fish this beautiful waterway from Belvidere to Tranquillity is to the fly fishermen the quintessence of angling.

Then there is the far-sung Musconetcong, once one of the greatest small-mouth bass streams in the East. This beautiful river rises at Saxon Falls, in Morris County, and flows to the Delaware through Warren and Hunterdon.

#### SUSSEX'S OWN STREAM

Where, too, can be found a more compellingly attractive stream than the Big Flat Brook, which, with its smaller sister, the Little Flat Brook, rises in High Point Park and flows to the Delaware through a valley of surpassing and contrasting beauty. The Flat Brook is Sussex County's own waterway, for it touches no alien shores.

#### TWO STREAMS THAT MEET NO MORE

Then there are the Paulinskill and the Wallkill, rising almost together in the great Sparta Meadows of Sussex, but separating immediately and forsaking each other forever, one flowing through Warren County to the Delaware, and the other through New York State to the Hudson.

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#### THE MAJESTIC HACKENSACK

Beautiful, too, are the streams of Bergen County, ranging from the lordly Hudson and majestic Hackensack, to the silently flowing Saddle River, the Ramapo, Musquapsink, Pascack, Sprout and Bear Brooks; and those of Passaic, the Pequannock and Wanaque, the High Mount and the Preakness.

And the streams of Morris, they, too, have their allure—how lovely the Passaic, the Rockaway, and the Mill Brook, the Stony and Indian, and the mystic Black, flowing through the depths of the Hacklebarney State Park.

#### THE GORGES OF THE SOUTH RARITAN

Where can one find a more enchanting stream than the South Branch of the Raritan, with its rock-strewn gorges and rapids and its magnificent hardwoods; or the lesser streams of Hunterdon, the Spruce Run, Frog Hollow, and Mulhockaway, where lovelier waterways than those of Middlesex, the Manalapan, Millstone, Matchaponix, and Wigwam; or those of Monmouth, diminutive, yes, but beautiful withal, the Shark, Manasquan, Hockhocksens, and the silent Topenemus.

#### THE MYSTIC BLACK

Somerset, too, has its trout streams, not great in size or in number, but insistently appealing; the North and South Raritan, and the Black are in portion its heritage, and the meandering Indian Graves, Somerset Inn, and Middle Brooks.

Mercer has its Delaware and Millstone, but its only trout stream is Stoney Brook.

#### SOUTH JERSEY'S TROUT STREAMS

And then there are the waters of Camden, Salem, Gloucester, once among the finest trout streams of the East, and still calling

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the anglers—Hazelhurst Stream, Canton Drain, Miles, Beaver, and Alloway Creeks, for Salem; the Big and Little Lebanon, Rattlesnake, Trout, and Back Runs, and Cooper's Brook, called generally Mountwell Stream, for Camden, and for Gloucester, the Big Lebanon and Kandle Creek.

#### THE BIG LEBANON

The Big Lebanon, which rises in a series of springs and flows through Grenloch and Blackwood Lakes and the Big Timber to the Delaware, a distance of fifteen miles, is said to be the best trout stream in Southern New Jersey. Formerly it was a native brook trout stream exclusively, but a few years ago the Commissioners commenced to stock it with rainbows and browns, and now it is famous for all three, and anglers throng to it from all parts of the State and from New York and Pennsylvania as well.

#### BASS FISHING

Bass fishing, too, is extremely good, in New Jersey, in both lake and stream, while its waters abound with pickerel, and pike, and white and yellow perch, crappie, sunfish and catfish.

In the Delaware River, New Jersey, with Pennsylvania and New York, possesses what is perhaps the best bass stream in the East. Formerly bass were found throughout the entire length of this magnificent stream, but as it became industrialized it became polluted, until angling for this most widely distributed and popular of all the American game fishes was practically confined to its upper reaches.

#### WALL-EYED PIKE IN DELAWARE

Bass fishing on the Upper Delaware is as good today as ever in history, as is the angling for the wall-eyed pike and other mem-

bers of the perch family, and because of the stocking of its tributary streams, the rainbow trout is beginning to be caught in it also.

#### BASS STREAMS OF NEW JERSEY

There are many other very fine bass streams in New Jersey, notably the Passaic, Ramapo, Pompton, Millstone, and Raritan in Northern and Central New Jersey, and Egg Harbor, Mullica, Rancocas, Wading, Big Timber, and Maurice in Southern New Jersey, throughout whose whole area can be found an infinite number of streams that are today alive with pike and pickerel, which through a system of intelligent propagation and control can be made splendid bass streams as well.

Unfortunately, carp and the snapping turtle have become extremely plentiful in South Jersey waters, but the Commissioners have inaugurated a policy of eradication that should ultimately bring these undesirable intruders under control, if not eliminate them entirely.

#### WONDERFUL BASS LAKES

The lakes of New Jersey are among the most beautiful to be found in America, and many of them abound with bass, pickerel, perch, and other pond fish. The bass grow to a very great size, not infrequently being caught up to ten pounds.

#### BEAUTIFUL LAKE HOPATCONG

Queen of all the lakes of New Jersey is Hopatcong, known and loved throughout the length and breadth of the land. A magnificent sheet of water, this lake resting in the hills more than nine hundred feet above the sea has an area of over 2,500 acres, a length of nine miles, and a width of approximately a third of

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a mile, its heavily wooded shore line having a total circumference of nearly fifty miles. It is not, as is generally assumed, a natural lake, as are Budd, Green Pond, and Wawayanda, and others, but was created as a reservoir for the Morris Canal, a once-important navigation highway, but long ago abandoned, although in what is now its center was a small body of water called Brooklyn Lake. Incidentally, Hopatcong is one of the best bass lakes in the northeast.

#### GREENWOOD LAKE

Another beautiful lake, its picturesque broken shore line and island-studded surface having a peculiar appeal is Greenwood, whose ownership New Jersey shares with New York State.

Throughout the northern and central sections of New Jersey, particularly in Sussex, Warren and Morris, there are many other lakes, large and small, most of them well stocked with bass, pickerel, perch, and other pond fish, and a majority open to public fishing, such as Wawayanda, Cranberry, Culver's, Owassa, Big and Little Swartswood, in Sussex; Silver and Mountain, in Warren; Budd, Indian, Musconetcong, Green Pond, Mountain, and Estling, in Morris; Greenwood, Pompton, in Passaic; Woodcliff, Willow, Cooper, and Electric, in Bergen; Manalapan, Weston Mills, Farrington, Plainsboro, Milltown, and Brainard, Helmetta, and Spotswood, in Middlesex; Cedar Brook, Park, Surprise, and Seeley's, in Union, all the fishing in these and other waters of the County, except the Middlesex Water Works Reservoir, being controlled by the Union Park System, but open to public fishing; Clinton, Cushtunk, and Solitude, in Hunterdon, Peddie, Hutchinson, Groveville, and Carnegie, in Mercer, the last-named having been constructed by the famous steel magnate for the purpose of providing regatta facilities for historic Princeton University;

and Como, Takanasee, Englishtown, Topenemus, and Lefferts, in Monmouth.

#### LAKES OF SOUTH JERSEY

Many of the artificial lakes, particularly in the southern part of the State, were created as power storage reservoirs, especially in the milling and lumbering industries, such as Union Lake, in Cumberland County; Brown's Mills Lakes, in Burlington County; Malaga Lake, in Gloucester County; Blackwood Lake, in Camden County, and Lake Lenape, in Atlantic County, but the once great flour mills have disappeared and the lumber mills have followed in their wake, and today their chief purpose is to satisfy the recreational needs of the hunter and fisherman.

#### LOVELY LAKE MOHAWK

In recent years, all of the new lakes have been created in the development of residential and bungalow communities, of which the number is increasing constantly, such as Lake Mohawk, near Sparta, in Sussex County, one of the most consummately beautiful spots in all New Jersey; Mountain Lakes, in Morris County, home of the literary and artistic, and Medford Lakes, in Burlington County.

Then, of course, there are the great reservoirs, such as the Wanaque, Clinton, and Oak Ridge, in Passaic County; the Canisteer, in Sussex, and the Boonton and Split Rock, in Morris.

The New Jersey Board of Fish and Game Commissioners have undertaken a survey of all the waters of the State, in which every stream and lake has been thoroughly studied as to physical characteristics, temperature, and biology, and therefore they are in a position to pre-determine the stocking and other requirements of every body of water in the State.

## NEW JERSEY FOR THE SALT-WATER ANGLER

### A MILLION ANGLERS ANNUALLY

New Jersey's coastal waters are now attracting more than a million anglers a year, fully half of them coming from beyond the borders of the State, for the character of sport they offer has resounded around the world.

### IDEAL CONDITIONS FOR FISH

Certainly, few regions can provide better salt-water fishing than this splendidly endowed State, whose great stretch of coast line, innumerable bays and coves, and countless spring-fed streams, create, with the purity and salinity of its waters, the natural conditions elemental to fish growth and reproduction.

Practically every species of salt-water fish that frequent the temperate waters of the North Atlantic are to be found in New Jersey, and not infrequently wanderers from more southerly climes.

### SPECIES INFINITE IN NUMBER

To these favored waters come the fighting bluefish; the blue-fin tuna, or horse mackerel, found more plentifully in New Jersey off-shore waters, perhaps, than anywhere else on the coast; the wandering bonito, ranging the open seas, a predatory wolf; the black drum, ranging in weight from 50 to 80 pounds, somewhat sluggish it is true, but gamey withal; the weakfish, most sought after of all New Jersey's sea-fish, and an infinite number of other denizens of the deep, including sea bass; channel bass, or red drum; striped bass, or rockfish; kingfish; mackerel; blackfish, or tautog; fluke; flounder, porgy, or scup; spot; pollack; whiting, and, of course, the ubiquitous codfish, who, with his smaller relative, the tomcod, provides diversion

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to so many anglers in the colder months when most of the other species have departed for more inviting waters.

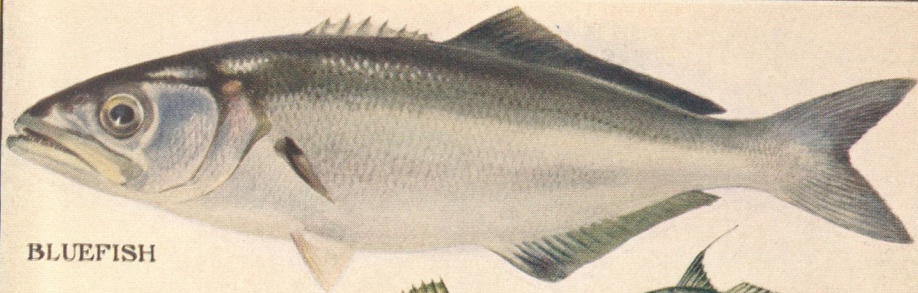
THE CODS, POLLACK, AND WHITING—THE CHIEF HAUNTS OF  
THE CODFISH

The cods, pollack, and whiting, which remain in New Jersey waters all winter, are the first fish to provide sport for the salt-water angler in New Jersey. The cod is one of the most prolific and valuable of the world's food fishes, and has a wide range. Relatively it is a large fish, frequently attaining a weight of 60 pounds and up in its favored areas, although those caught in New Jersey waters rarely exceed 25 pounds in weight, a good average being 10 to 15 pounds. The cod is essentially a denizen of the open sea, congregating in great schools over the banks, and must be sought as a general thing in the outer ocean, although when conditions are favorable it penetrates the protected bays. In recent years quite a catch has been made in Delaware Bay. It is a bottom feeder exclusively, and while not a game fish in the accepted sportsman's sense of the term is a voracious biter, and for that reason among others it has a large votary of followers.

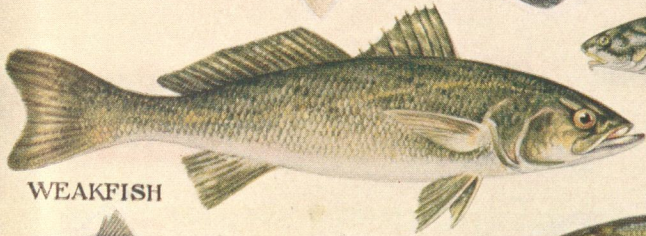
THE LOWLY TOMCOD

The tomcod, frequently thought to be a young codfish, although it is not, is extremely plentiful in New Jersey waters, particularly in the rivers and bays. It hugs the shores for the most part, preferring, however, the clear water that is reasonably deep. The pier is the best place to angle for it.

The best baits for the codfish are soft clams, herrings, and crabs, though the commercial fishermen employ conks on periwinkles. For the tommycod, sand and blood worms are used.



BLUEFISH



WEAKFISH



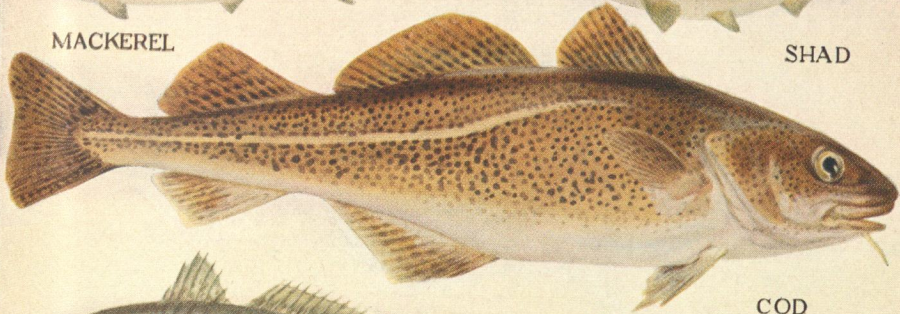
KINGFISH



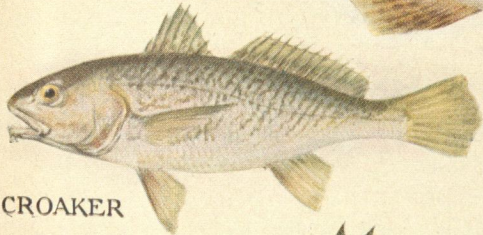
MACKEREL



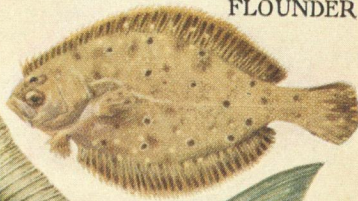
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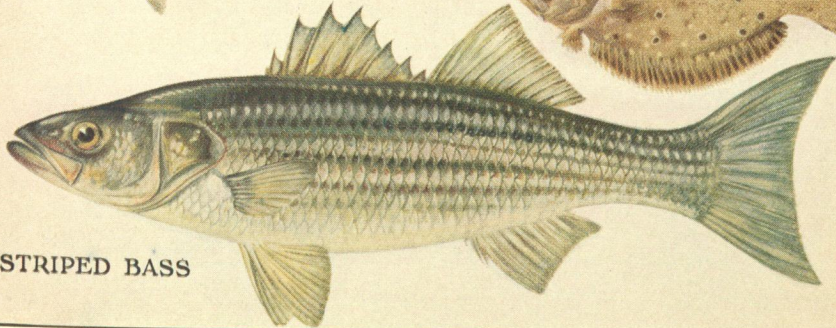
COD



CROAKER

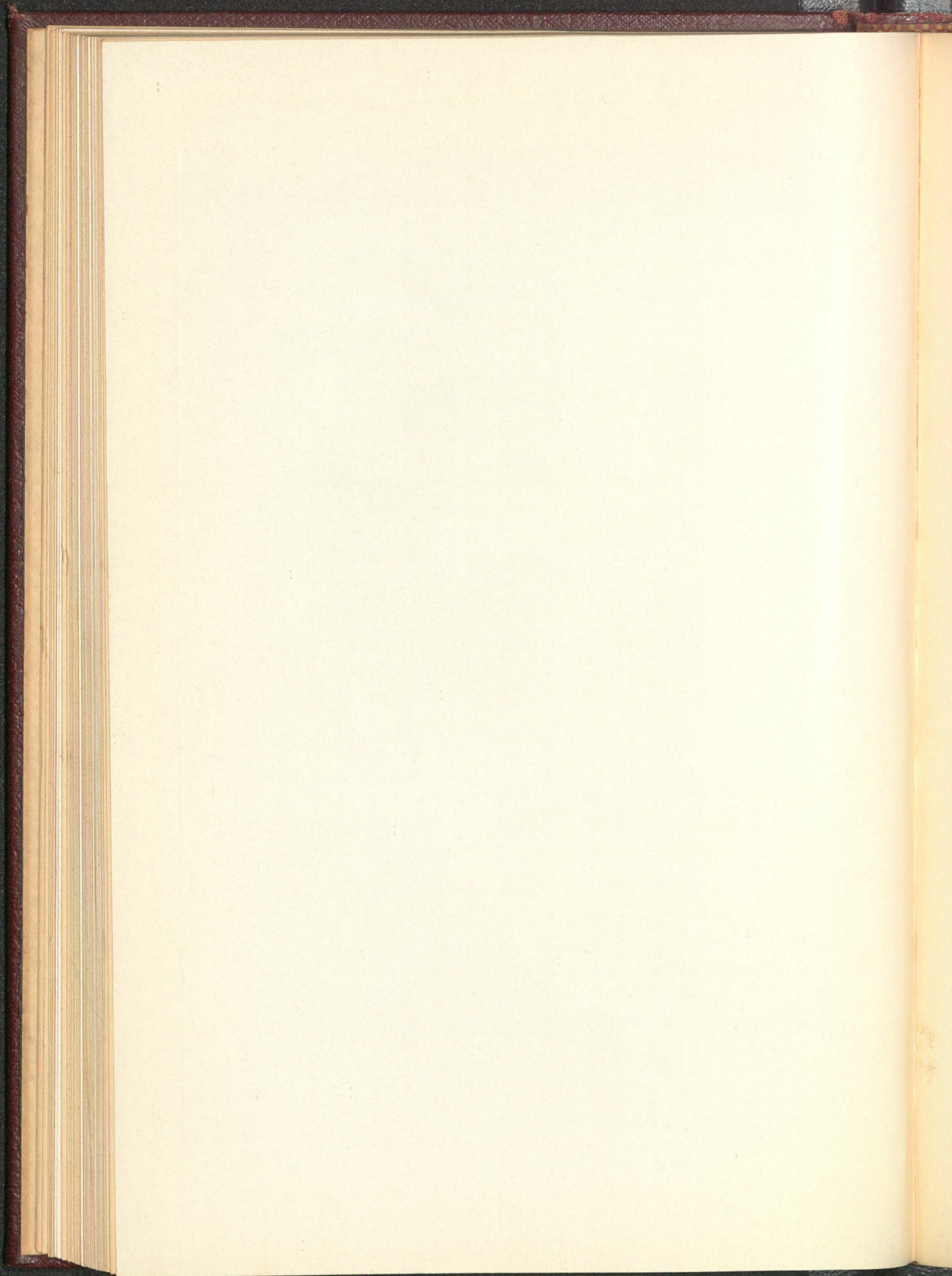


FLOUNDER



STRIPED BASS

FAMILIAR SALT WATER FISHES OF NEW JERSEY



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#### THE POLLACK A GAME FISH

The pollack is generally regarded as a game fish. It belongs to the cod family, and, like the codfish, prefers the colder waters, its ideal range being north and east of Cape Cod to Labrador and Newfoundland. In British waters it is known as the coal-fish, which was its name here in Colonial days, and there it is regarded highly by both the commercial fisherman and the angler. It is both a bottom and a surface feeder, at times seeking its prey in the surf, running in large schools.

#### TROLLING FOR POLLACK

In both Great Britain and in Canada it is angled for by casting or trolling artificial baits, especially spoons, but, although there are a few anglers in this country who go after this fish with spoon or squid, a large majority still stick to the old-fashioned bait, mossbunker, clam, sand eel, or launce and smelt all being employed. The fish runs to an extreme weight of 40 pounds, but a 7- to 12-pound specimen is a good average for New Jersey waters.

#### THE WHITING, FROST FISH, OR SILVER HAKE

The whiting, called also winter weakfish, frost fish, and silver hake, is generally caught in association with codfish, although in winter it runs down the coast in large schools of its own, charging through the surf in pursuit of the silver sand launt, its favorite prey. In shore, the whiting runs from 1½ to 2 pounds, but in deeper waters it frequently reaches a weight of 6 pounds. The chief baits used in its capture are sand worms and clams.

#### ANGLING FOR LING AND HAKE

In both spring and autumn, ling and hake are also plentiful,

and in the cool reaches of the deeper ocean may be caught throughout the year. Angling for ling at night from the fishing piers all down the coast is a favorite diversion for thousands, as they are essentially surf feeders then, although in the daytime preferring muddy bottoms. Both ling and hake are bottom feeders exclusively, and are caught chiefly with clams and crabs. The ling runs from 2 to 4 pounds, the hake from 4 to 7, although specimens of nearly 20 pounds have been hooked.

#### THE SMELT TRUE "FROST FISH"

The smelt, the true "frost" fish, for it remains in these waters only during the cold season, is found in varying number throughout the winter in all the bays, rivers, and creeks of the northern part of the State, loving particularly the clear, fast channels. It is a small fish, but extremely attractive to the palate, and is very popular because, when running, it travels in large schools and bites consistently, but it is an erratic fish as to appearance. The smelt takes almost anything it is offered in the way of natural bait, preferring blood worms, clams, and shrimp.

#### THE WINTER FLOUNDER

Toward the end of October or the beginning of November, depending on how well advanced the season, the winter flounder commences to bite. This popular fish, distinguished from the summer flounder, or fluke, in having a crooked mouth, and lying with its right side up, whereas the summer flounder has a straight mouth, and lies with its left side up, remains in New Jersey waters all winter, but does not take the hook between December and late March because it is spawning, this being one of the species that desists from food entirely during the season of propagation.

## SPECIMENS UP TO SEVEN POUNDS

The winter flounder travels in schools, frequenting the muddy flats, except at low tide when it seeks the deeper waters of the channels and pockets. It is not a large fish, the average caught weighing less than a pound, although specimens up to 7 pounds are caught intermittently. Nor is it in the true sense of the term a game fish, but on light tackle it provides good sport. It is one of the finest of all the species from the epicurean point of view, which is perhaps the reason it is designated commercially as the New York sole, the sole of Northern Europe having a world-wide reputation.

## THOUSANDS FISH AT SANDY HOOK

The summer flounder affords diversion to untold thousands of fishermen, particularly in the vicinage of Sandy Hook Point, where any day in the summer hundreds of boats can be seen riding at anchor, and hundreds of other anglers fishing from beach and jetty.

## THE SUMMER FLOUNDER, OR FLUKE

The fluke, or summer flounder, grows much larger and is firmer of flesh. It is a voracious feeder, provided with unusually strong teeth. It feeds chiefly on living bait, and is angled for mainly with spearing and killie.

## THE BLACK FISH OR TAUTOG

Sand worms and soft clams are the best baits for the flounder, which is exclusively a bottom feeder. Toward the beginning of May, as the inside waters become too warm for the comfort of this fish, the flounder works its way to the open sea.

#### THE SEA BASS ARRIVES

In late April and early May, the sea bass, caught mostly over barnacled-covered reefs and wrecks, enters the bays and inlets, but not in such infinite numbers as of yore, a condition attributable no doubt to the pollution that industrialization has brought in its wake. It is a fish that loves the deep, clear depths, and outside is rarely found at a depth of less than 12 feet, 25 to 50 feet being its favorite condition. It is another bottom feeder, and the best bait to employ for it is the sand worm, although at times it will take almost anything offered. The fish caught in shore do not run very large, averaging from  $\frac{1}{2}$  to  $1\frac{1}{2}$  pounds in weight. Those caught outside, however, are consistently larger, particularly the great hump-backed species, which is a savage fighter indeed.

#### MIDSUMMER BEST FOR SEA BASS

For these larger sea bass, averaging  $2\frac{1}{2}$  to 3 pounds, the months of midsummer are best, and their favorite foods are killies, clams, and shedder crabs. When the sea bass start up the coast, they generally run in large schools, and are accompanied invariably by the larger porgies, which average  $1\frac{1}{2}$  to 2 pounds. So plentiful in the open sea are the sea bass at times that it is possible to catch 200 to 300 of them daily to a boat.

#### BASS AND PORGIES LOVE CLEAR WATERS

The larger porgies never come inside, and their angling has to be done from open boats. The very young fish, known as sand porgies, however, come into the inlets and bays sometimes in infinite number, but they rarely average more than  $\frac{1}{2}$  a pound in weight, whereas the grown fish of the ocean attain a weight of three pounds and up. Their habits are those of the sea bass.

They love the clear, deep water, and are in their element around wrecks and rocky cinders, which is the term employed to designate a certain type of bottom where marine worms abound.

#### UNTOLD THOUSANDS SEEK THE WEAKFISH

Shortly after the sea bass, come the weakfish. Of all the game fish in the salt waters of New Jersey, the weakfish is perhaps the most popular, and each year untold thousands from within and without the boundaries of the State go in its pursuit. When biting on the surface, it is a fighter second only in these waters to the bluefish. It strikes viciously, and its initial fight is reminiscent of the speckled trout, but unfortunately it weakens quickly, and soon surrenders. In taking the bait at the bottom, it displays an entirely different technique, being slow and wary.

#### THIS FISH ONCE EXTRAORDINARILY PLENTIFUL

Formerly the weakfish, still caught in goodly number, was far more plentiful than now, and it was quite common for a party of five to catch upward of a thousand in a day's fishing. Weakfish swarmed into the bays in countless number in those days, and were brought ashore for display, and either thrown into the sea, allowed to rot upon the wharf, or used for fertilizer on the farm.

#### WEAKFISH RUN LARGE IN OPEN SEA

The weakfish season does not really commence until the end of May or the beginning of June, when most of the fish have spawned. The season is at its height in July and August, especially in the open sea, where the fish run in large schools, and frequently attain a weight of more than ten pounds. A three-pounder is considered a good fish in inside waters.

#### ARTIFICIAL LURES EMPLOYED

There is an increasing tendency among anglers to employ artificial lures in the capture of weakfish, the Japanese feather and various spoons being employed. Jigging is also practiced.

#### CHIEF NATURAL BAITS

Squid, shrimp, shedder crab, and sand and blood worms, and clams are the most popular natural baits, and it is the usual custom to "chum" for them; that is, throw shrimp or cut bait around the boat to attract and hold the passing fish.

#### THE FIGHTING BLUEFISH CALLS

The bluefish commences to run in June, and remains until early Autumn, the best angling for this mighty fighter being in July, August, and September. This game fish is essentially a denizen of the deep, for while some of the smaller fish enter the protected bays, and the young of the species, generally known as snapper blues, swarm in the bays, rivers, and creeks, the larger fish remain in the open sea entirely.

#### THE SNAPPER BLUES IN INSIDE WATERS

From early summer until October the snapper blues are very prolific in all of the inside waters, but they seldom attain great size, in the early part of the season averaging only six inches in length and in the season's wane seldom being more than a foot in length. The average weight of these young bluefish would be considerably under a pound.

#### ANGLING FOR BLUEFISH

The bluefish of the open sea, which runs from 5 to 20 pounds,

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every ounce a pound of fighting muscle, is caught chiefly by trolling, squid and domestic and Japanese feather baits being the usual lures employed. Angling for them is carried on also from anchored boats with rod and reel, the most usual bait being the mossbunker, which is also used for chum, for in the open sea the schools of bluefish travel at fast speed, and it is only by chumming that their flight can be even momentarily stayed.

#### TUNA

These mighty denizens of the deep inhabit our waters from about the beginning of July until the end of September. The first runs of these fish in July are generally fish ranging from 10 to 25 pounds. Later on in the season they will run from 50 to 150 pounds, and many of them are very large fish that will weigh up to 500 pounds.

Many of these monsters have been taken with rod and reel by our sportsmen this year. It is also known that these fish weighing a thousand pounds or more frequent the waters of New Jersey, as specimens of this size have been taken in the nets from time to time.

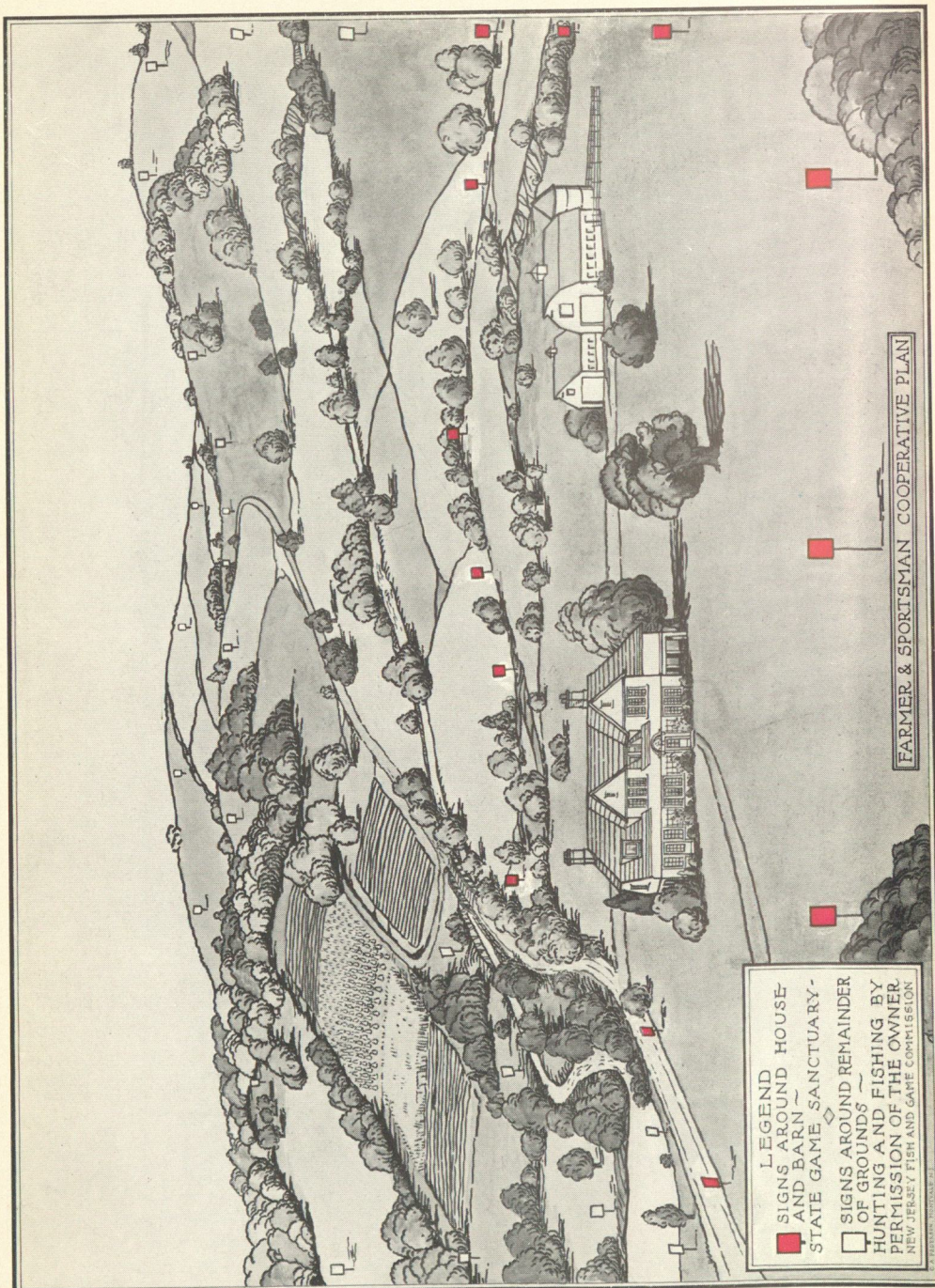
Tuna seldom if ever break water when hooked and it requires the heaviest tackle to land the larger ones. Hundreds of power boats, both private and commercial, may be seen during the whole summer either chumming or trolling for these fish. They will take the ordinary feather or squid used for blues at times, but those who go in for the larger fish use mackerel, menhaden, or other fish weighing up to two pounds for lures.

Within the past ten years angling for these blue demons has become very popular on the New Jersey coast and a real thrill awaits the angler who hooks into one of these fighting torpedos.

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**LEGEND**  
 ■ SIGNS AROUND HOUSE AND BARN  
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 ◆ SIGNS AROUND REMAINDER OF GROUNDS  
 ~ OF GROUNDS ~ HUNTING AND FISHING BY PERMISSION OF THE OWNER  
 NEW JERSEY FISH AND GAME COMMISSION

FARMER & SPORTSMAN COOPERATIVE PLAN

PHOTOGRAPH BY W. H. HARRIS

## FARMER-SPORTSMAN COOPERATIVE PLAN

In the spring of 1933, a farmer-sportsman cooperative plan was inaugurated in New Jersey by the State Fish and Game Commission, and already land equal to a mile wide and one hundred fifty miles long has been taken over under this plan.

Protecting and safeguarding the farmers' or landowners' property and domestic animals is the outstanding feature of this new plan, and we found that in contacting farmers and landowners this feature appealed to them more than if we offered payment for the privilege of hunting or fishing on their land.

It is a well-known fact that many landowners welcome the decent sportsman, who is pleased to board with the landowner and buy the product of the farm, and many lifelong friendships have been made in this manner.

The problem was to control the lawless hunter or angler who trespassed without permission, tore down fences, hunted close to the landowner's house, and jeopardized the family or flocks, and from this type of poacher there was little, if any, protection until this cooperative plan was put into effect.

In a densely populated State like New Jersey this illegal trespasser was bound to work hardship, not only on the landowner, but on the decent law-abiding sportsmen who are in a large majority and for which we are thankful.

An outline of this plan will be furnished on application.

Under the farmer-sportsman plan, the Commission provides a game sanctuary on about one-fifth of the land taken over. Included in this sanctuary are the home, all outbuildings, and cultivated fields, which area is posted with red and white sanctuary signs and provides a penalty for trespass within this

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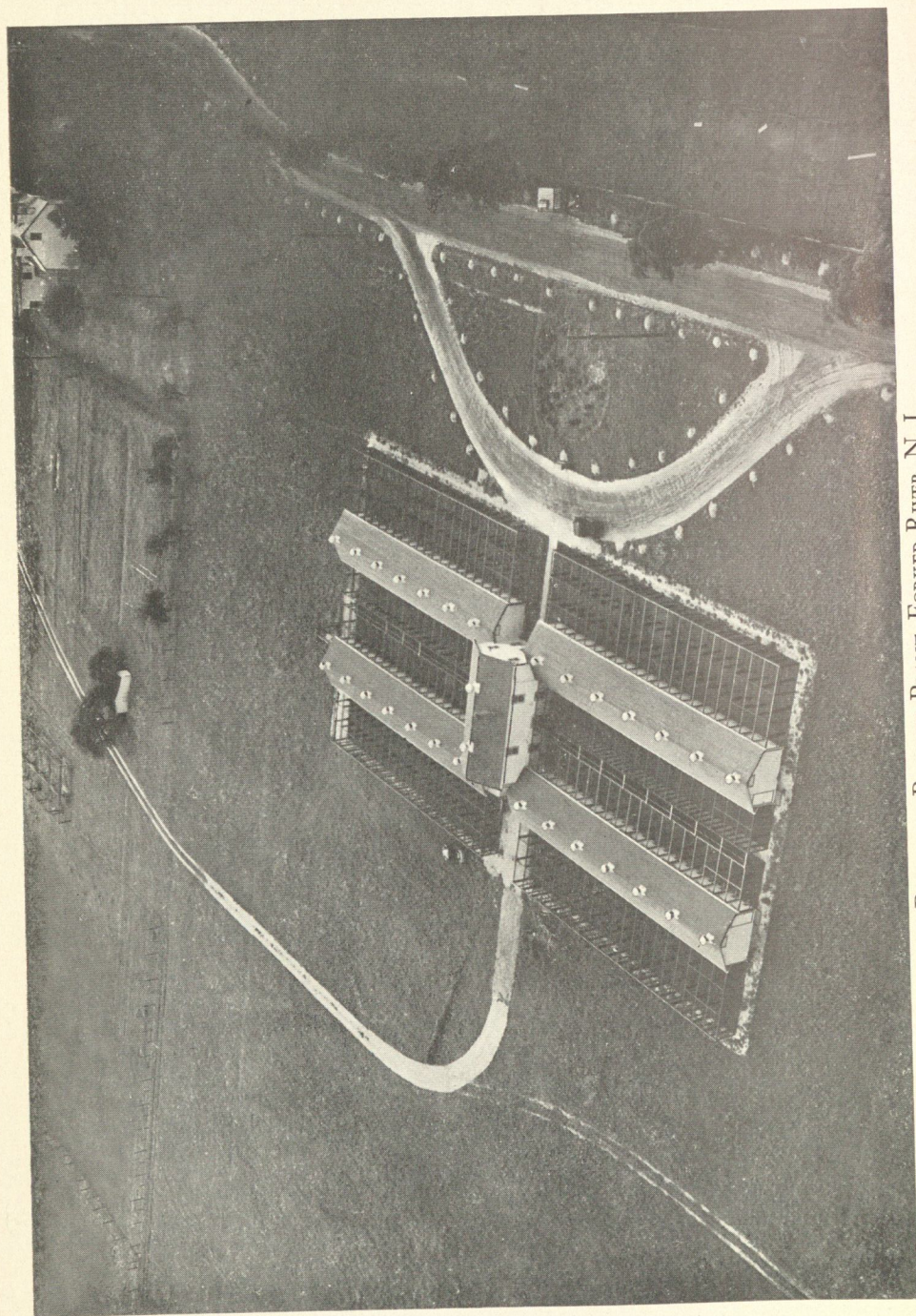
sanctuary. The remainder of the land is posted with black and white warning signs, with the landowner's name thereon, stating that hunting or fishing is allowed by permission of the owner, and providing a penalty for wilful destruction of property, lighting fires, or committing other nuisances. The land is stocked with pheasants, quail, and rabbits, and the water with fish, depending on the terrain and cover, game management and feed.

#### PUBLIC SHOOTING GROUNDS

The Commissioners gave a very great deal of thought to this question, and decided that the practical solution would be the creation of public hunting and fishing grounds, and through legislative enactment have provided that a portion of the annual license fee should be set aside for the purpose.

The first Public Shooting Ground to be acquired was situated at Wallpack Center, Sussex County, along the course of the Big Flat Brook, one of the most beautiful and prolific trout streams of the State. The property consisted of 135 acres. Since that time the Commission has acquired additional acreages as follows: Tuckahoe Tract, Cape May County, 2,800 acres; Haleyville Tract, Cumberland County, 1,442 acres; Glassboro Tract, Gloucester County, 1,915 acres; Currier Tract, at Clinton, Hunterdon County, which is considered to be one of the finest field trial courses in the east, 893 acres; Manahawkin Tract, Ocean County, 964 acres; Haney Mills Tract, Sussex County, 191 acres; Hainesville Tract, Sussex County, 194 acres; Roy Tract, near Bevans, Sussex County, 287 acres; and the Medford Tract, Burlington County, 214 acres.





PHEASANT BROODER PLANT, FORKED RIVER, N. J.

## GAME FARMS

The Forked River Game Farm was established in April, 1912. This was among one of the first State game farms to be established, and after suitable pens and buildings were erected, the production of game was started, but very little if any game was liberated that year. From that time until 1923 we only had this one game farm and the average annual production was about 5,000 pheasants.

The Forked River Game Farm comprises 537 acres which are equally divided into woodland, tillable land and salt meadows.

In the Fall of 1923 an additional farm was purchased in north Jersey, at Rockport, which comprises approximately 323 acres composed of fifty acres of woodland and the balance in tillable land. On this farm suitable pens and buildings were erected and the production of game was started there in 1924.

The cost of production has been materially reduced on both farms and our output of pheasants has gradually increased for the last ten years. Our average annual production on these two farms is now over 20,000 pheasants.

There have been great strides made in pheasant breeding since 1912 and while we formerly employed the method of the domestic hen for incubating and brooding, at the Forked River farm we have established a large brooder house and all production there, is done with incubators and brooders run by electricity. This plant has a potential capacity of 20,000 pheasants and while it is only in its second year, it has proven very satisfactory and we will no doubt employ this method on both of our farms in the near future.

The farm at Forked River, in addition to raising pheasants, in the last year has had considerable assistance with W. P. A.

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labor and has constructed a large duck pond for a refuge on the meadows that were formerly unavailable for any other use.

Experimentation in the raising of cottontail rabbits is also being carried on.

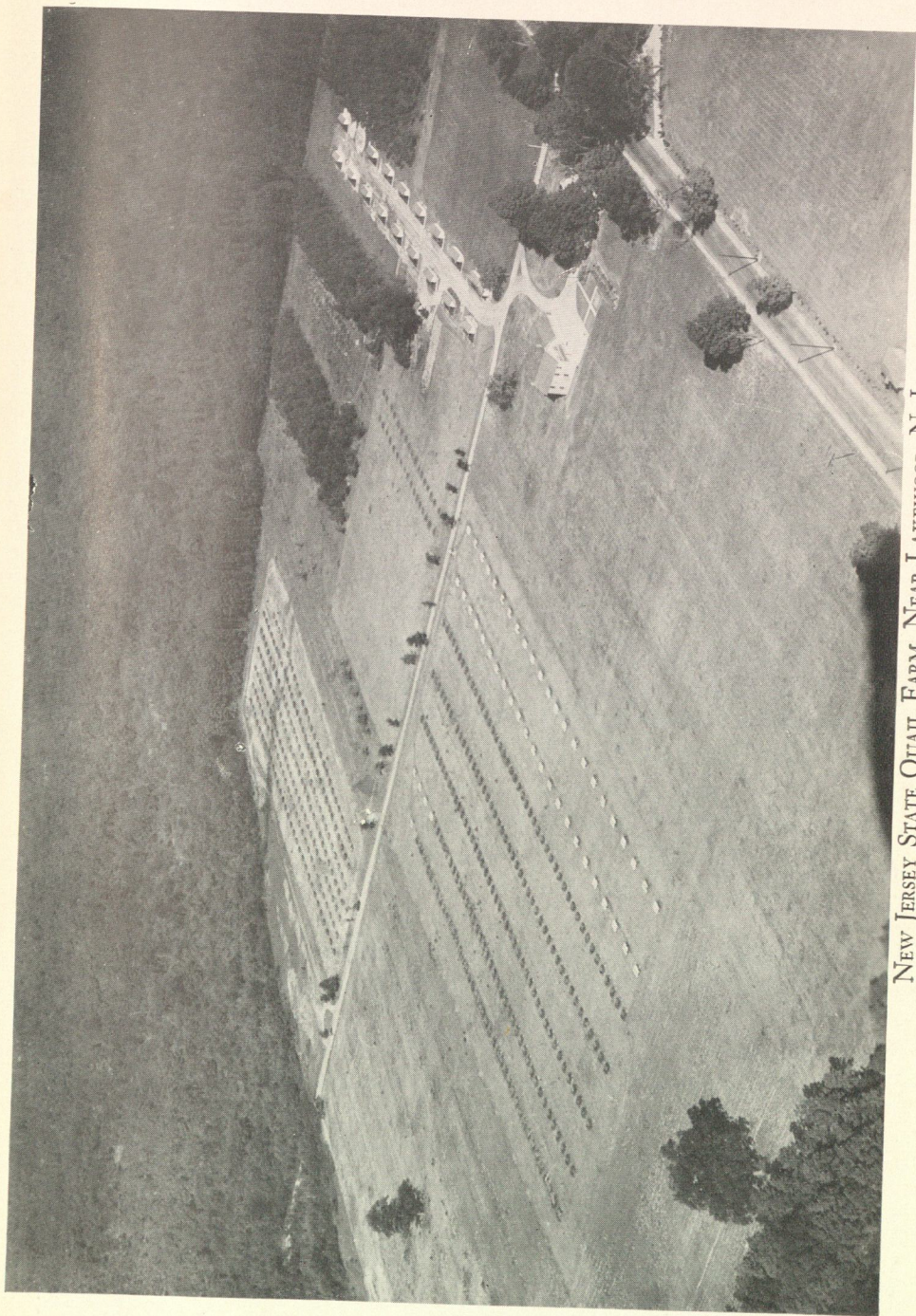
#### QUAIL IN NEW JERSEY

The earliest quail survey on record in New Jersey dates back to 1899, at which time the Fish and Game Commission depended entirely upon appropriations from the State to carry on their work. Quail had become very scarce and efforts were made to bring about their increase through the introduction of 30,000 birds that were trapped in Oklahoma and distributed throughout the State. This early introduction of new blood served to strengthen our native stock, and quail steadily increased in numbers.

With the increased efficiency of the firearms and ammunitions, the use of the automobile, the almost total abandonment of grain farming in certain sections of our State, the disappearance of the rail fence with its bushy entanglements, the intensive grazing of the nesting areas, periodic disease cycles, etc., we realized about 1930, that our only solution to the problem confronting us was large-scale artificial propagation, and proper management from the standpoint of feeding and nesting areas.

Prior to 1930, numerous experiments in propagation of quail had been carried on by private individuals and Fish and Game departments. Artificially-reared birds were in great demand throughout the country and were bringing such exorbitant prices as from \$6 to \$8 per pair. It was very apparent that the cost of propagation had to be considerably reduced if we were to bring back our quail in this manner.

Early experiments were started at Wallpack Center, Sussex



NEW JERSEY STATE QUAIL FARM, NEAR LAKEWOOD, N. J.



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County, in 1932. Working with 39 pairs of breeders, and using artificial incubators and a hot-water colony brooding unit, nearly 1,000 birds were successfully reared the first year. The results were so gratifying that we decided to enlarge our operations and a site was located at Holmansville, Ocean County, in the central section of the State, and a new artificial breeding plant established.

The first season in this new location, we reared 3,600 birds, and 7,600 the second year. We have now established what we believe to be a record for any one farm. Our total output exceeded 14,000. We have reduced production costs to a practical basis, and intend to extend our operations annually.

#### GAME MANAGEMENT

The New Jersey State Fish and Game Commission has developed an active Game Management program for all Public Shooting and Fishing Grounds. This activity is mainly designed to create better environmental conditions for game life on these grounds and to serve as a pattern for game management activities on Farmer-Sportsman lands.

This phase of conservation is the restoring, maintaining, and improving of those conditions necessary to the maintenance and natural increase of game. It necessitates the planting of shrubs, vines, trees, grass, and food patches in locations needing such improvements as indicated by previous study of the area. In addition, parts of woodland are sometimes altered to allow greater admission of light and underplanted in order that better cover will be present. Likewise rail fences, fence rows, stump rows, and brush piles are created and planted with desirable shrubs and vines. Ponds are constructed in the marshland, and subsequently planted to plants adaptable to conditions present.

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Although the application of game management principles is comparatively new on these areas, a very noticeable increase of game has resulted. It is expected that as food and cover conditions improve, due to planting new vegetation, and improving that plant life already present there will be a constant and noticeable increase in game life on these areas. The results from the activities on the Public Shooting Grounds are closely observed by the sportsmen of this State and constitute a working model from which they are patterning their own activities.

The public interest in conservation is growing swiftly and young America is preparing itself to assume a heritage which in the past has been grossly misused. Game management is founded on the fundamentals of conservation, mainly production, protection, and education. The development of the Public Shooting Grounds indicates to the youthful sportsman, the prime importance of plant life in relation to animal life. The lesson that in order to maintain game in the wild we must have a game habitat will mean that in the future there will be a minimum of improper and excessive burning, drainage, flooding, cutting, and grazing on those areas in which it is desirable to maintain a game population.

The Public Shooting Ground offers an area where sportsman, student, and nature lover alike can pursue their respective pleasures. They abound with animal and plant life and insure the continuance of good, clean sport, as well as the increase of wildlife.

#### LAW ENFORCEMENT

New Jersey, no less than other States of the Union, was slow to recognize the imperativeness of the creation of a supervisory



ARTIFICIAL FOOD PATCH



body to save the remnants of our heritage in wildlife resources.

Many species of game were on the verge of extinction. Our lakes and streams were fast becoming denuded of game fish and the outlook for the future of hunting and fishing was a very cheerless one indeed.

It was several years after the enactment of up-to-date statutes for the protection of game birds, animals and fish that a small group of wardens was appointed to enforce the law, and, within a short time, the resentment of the lawless element was evidenced by the shooting to death of two of our wardens while patrolling the woods.

The abatement of an unjustified resentment was a major problem for the Fish and Game Commission, and no less so for the field agencies who sought to preserve the game by intelligent law enforcement. Men of less fortitude would have yielded to the many discouragements that daily confronted them but it only strengthened their resolve to persevere in a good cause.

Today we feel that the tide of accomplishment has overcome our greatest handicaps. The ranks of the great army of hunters and anglers in New Jersey have been almost entirely purged of the element that employ unfair practices, and a fine spirit of mutual friendship has displaced the former resentfulness.

The victory is not ours alone, nor is it totally decisive and complete. All of the organized sportsmen of the State have contributed in some measure to improve the chances for future sport afield and our only anxiety now is to maintain your continued support and cooperation to the end that we can share with you the pride of achievement and pass on the fruits of our efforts to succeeding generations.

## WATERFOWL AREAS

The coastal salt marshes of New Jersey have always been an important feeding ground for migratory waterfowl. Wild fowl and shore birds find this huge area to their liking during their migrations and many use its breeding facilities. Muskrats have bred prolifically in the ideal environment offered by this huge marsh and are of a great economic value to the people in the salt marsh region. The followers of the fascinating and exciting game of wild fowling found these marshes to be an ideal region in which to pursue their arduous sport.

We fully realize the value of these salt marshes can in many cases be reckoned by the number of salt ponds present. The presence of widgeon grass in many of the salt ponds creates a very desirable feeding place for certain waterfowl species.

Realizing that the duck situation is of national importance and that present mosquito drainage projects might have a great detrimental effect upon the ecology of the salt marshes the New Jersey State Fish and Game Commission has innovated a restoration program. On the lands constituting Public Shooting Grounds in this salt marsh area a great deal of thought and labor is being given to the creation of salt ponds.

In cooperation with the U. S. Biological Survey, Civilian Conservation Corps, and N. J. Mosquito Extermination Commission, a series of eight ponds has recently been constructed on the Manahawkin Public Shooting Grounds. The ponds are in two series of four each, one series being ditched with the ordinary ten-inch mosquito control drainage ditch and the remaining series being unditched. In each series there are ponds of depths from one to four feet respectively. The dimensions of each pond is 100 feet by 150 feet and they have been constructed

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in the same type marsh and are so situated that conditions will affect each pond in a manner as identical as possible, so that scientific observations can be carried on.

A similar program is in force on the Tuckahoe Public Shooting Grounds. It is expected that slowly but surely the New Jersey Fish and Game Commission will restore and improve those areas adaptable to this type of management in order that the wild fowler and nature lover will be assured of improved waterfowl conditions.

#### RUFFED GROUSE—*BONASA UMBELLUS*

The Ruffed Grouse, or Partridge of the North and Pheasant of the South, is properly a true Grouse, and can not be correctly called either Partridge or Pheasant. He is a more northern bird than the Bob-white, being found south of Virginia only in the Alleghenies. Requiring large tracts of woodland for his haunts, he is less generally distributed and not so common as his plump relative.

We always associate the Grouse with the astounding roar of wings made by the bird as he springs from the ground at our feet and sails away through the forest. We watch him at first with dazed surprise, then with a keen sense of pleasure in the meeting. One need not be a sportsman to appreciate the gaminess of the Grouse.

However, the sportsman will tell you that the Grouse is the King of all game birds in America and is not to be taken by the novice or even the average hunter in any quantity, which probably accounts for this old native bird being plentiful in its natural habitat in northern New Jersey. At the peak of the cycle, it is known that due to disease or predators this bird

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increases in number from a low point about every ten years. For instance, in 1934-35, there were lots of these birds, but the down cycle started in again in 1936.

The Ruffed Grouse makes its leaf-lined nest usually at the base of a tree or stump, and the eight to fourteen buff eggs are laid early in May.

#### WOODCOCK—RUBICOLA MINOR

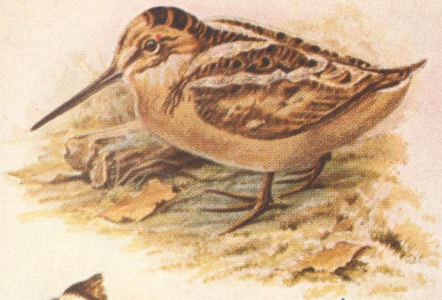
Woodcock, one of the outstanding game birds in New Jersey on which more good bird dogs are trained than possibly any other game bird, provides excellent sport during the season, which in New Jersey is from October 15 to November 14 inclusive.

According to the accepted definition of a game bird, our Woodcock is supreme. It lies close, rises to a convenient height, offers a quick shot on the wing and when brought to the table it is a most luscious and delectable morsel for the epicure.

Besides being a game bird of high excellence, the Woodcock is a most interesting bird. It has been studied by ornithologists for more than a century and still its periodical mysterious appearances and disappearances and its lines of migration are not fully understood. We know that the Woodcock is an early bird. Occasional individuals appear in February in New Jersey.

Some of the Woodcock's common habits are well known and have been described often. We have read that its young are rather weak and dependent, and, unlike the young of the Ruffed Grouse, easily taken; that they quickly learn to fly but in the meantime are frequently carried from place to place by the mother who clasps them between her thighs, or between her legs and her body, or with her feet.

We know that the Woodcock probes the soil with its long



AMERICAN  
WOODCOCK



RING-NECKED  
PHEASANT



BOBWHITE  
OR QUAIL



RUFFED  
GROUSE

MOST POPULAR GAME BIRDS OF NEW JERSEY



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bill in search of earthworms and grubs, but beyond this we know little of its habits, for the bird is active during the twilight and in the night, and in daylight it may be as sleepy and stupid as an owl. Wherefore it lies to a dog until forced to rise, and then flutters up and over the tops of small trees or undergrowth, to drop again almost immediately into another hiding place. The Woodcock, however, is not always asleep or inert in the daytime.

RING-NECKED PHEASANT—PHASIANI TORQUATUS

The Chinese ring-necked pheasant, now introduced into the United States, has been called the Mongolian pheasant but is specifically distinct from that bird. The so-called English pheasant, *Phasianus Colshicus*, also introduced, has a dark neck and no white ring. It was imported from Colshis on the Black Sea, from which it derives its specific name, and was brought to England by the Roman Emperors. The ringneck also has been introduced into England. Both species interbreed freely with the English pheasant and with each other producing fertile hybrids. The female ringneck is a good mother and therefore superior as a wild game bird.

The first successful introduction into the United States was made by the U. S. Consul at Shanghai, China in 1880. The birds were liberated in Oregon and an open season was allowed in 1892. Fifty thousand birds were reported as killed the first day. This encouraged other States to experiment. They are now raised and stocked successfully in New Jersey, New York and a few other States. Mr. Charles E. Brewster asserts that Illinois, Missouri, Indiana and Oklahoma have expended over a million dollars in unsuccessful attempts to introduce pheasants. Over

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100,000 of these birds are taken by the Sportsmen of New Jersey annually.

The ring-necked pheasant is normally a bird of open or bushy country, river valleys, meadows and marshes. It is a good bird for the game preserve, where it can be propagated, protected from its enemies and fed in winter.

Those who enjoy chasing elusive, running birds may have good sport with the pheasants as they are hard to kill. Their length of tail and quick steady rise deceives the novice so that he shoots under and behind on cross shots. Both young and old will sometimes lie very close but as a rule they run like hares.

#### BOB WHITE, QUAIL—*CALINUS VIRGINIANUS*

The call of the Bob White is a sound of gladness. There is something cheering and heartening in the sound of his interrogative whistle, as he seems to say "Ah there, fellows?" Bob White is an optimist and everyone loves him. He is the principal game bird of the eastern States and inhabits more of our territory than does any other. From the standpoint of the greatest good to the greatest number he leads the list. In the South, they call him partridge; in the North—quail, and the ornithologists have settled the matter by conceding that he is the prior authority.

His normal range covers the eastern United States from Maine to Texas, the Gulf Coast and Florida. He is no bird of desert or mountain peak that one must go far to find. He comes and visits with the folks, frequents the garden, orchard, field and barnyard. His life is an open book—his habits known to all who care to see. Doubtless, the Lord might have made a finer game bird than this, but surely He never did. It seems to have been made to exercise the bird dog, and the one is a fit

complement of the other. A staunch setter or pointer, well broken and with a good nose, will give his owner splendid sport with this bird. It is best not to start too early in the morning, but to wait until the dew or frost has dried off a little.

He who hunts the Bob White should know that in autumn, this bird feeds mainly on waste grain, and the seeds of grasses and weeds. Hence, in farm country, where it is most at home, it will be found around gardens, cultivated fields, stubble and old grass fields, where there are weed thickets or standing corn for cover. When the birds are not found here, they may have flown to brush thickets, woods or swamps nearby for protection from their many enemies. The birds lie close as a rule, and the young are easily scattered and picked up.

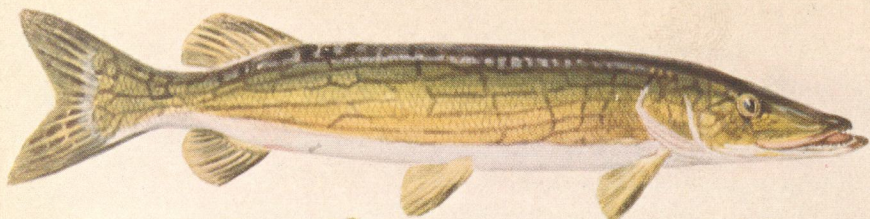
A good sportsman will be satisfied with two or three birds from a covey, and will then leave them and look for another. The man who shoots over the same ground daily and exterminates the birds is Bob White's worst enemy. Severe winters are equally destructive.

## BROOK TROUT—SALVELINIUS FONTINALIS

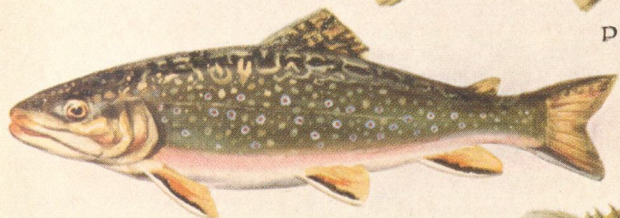
The brook trout or charr is the only stream trout native to New Jersey. The color varies greatly with environment. Generally in densely shaded streams it is considerably darker than in open waters, and the markings are also affected by the type of food and bottom. The small brilliant red spots and microscopic scales, scarcely visible, are distinguishing characteristics. It apparently cannot withstand the encroachments of civilization as well as the brown or rainbow, and is rapidly disappearing from many of its former haunts, being confined mainly to the smaller and colder mountain and spring runs. Likewise, the average size is smaller than either the brown or rainbow. Spawning season, October and November; period of incubation, 50 to 100 days, depending on condition and temperature of water. The principal food of all but very large specimens is aquatic insects, which is true also of the brown and rainbow. A persistent feeder, taking both dry and wet flies, but he does not break water after being hooked. Other names: "Eastern," "native," "speckled," "square tail," and "coaster."

## LARGE-MOUTHED BLACK BASS—MICROPTERUS SALMOIDES

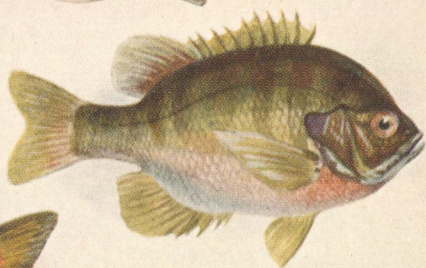
The color of the large-mouth is more greenish shading into white or pale yellow on the belly, while the overmarkings assume the form of a lacy black longitudinal line along the sides from head to tail—usually sufficient to distinguish this species. The spawning period is the same for both basses, but the large-mouthed bass is not as particular as the small-mouthed black bass in building its nest, often making it at the foot of a submerged log or stump on aquatic vegetation over a mud bottom. It is not uncommon for a nest to produce 15,000



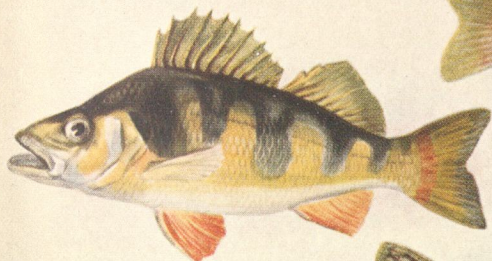
PICKEREL



TROUT



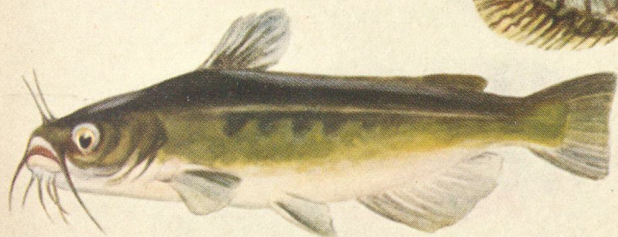
BLUEGILL



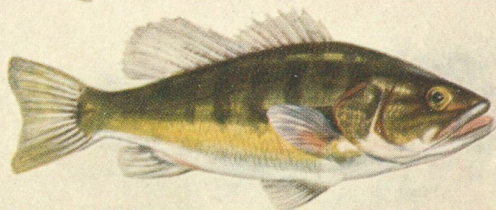
PERCH



CRAPPIE



CATFISH



BASS

FAMILIAR FRESH WATER FISHES OF NEW JERSEY

M. BRILL ENGRAVER



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young, but the tendency of this species to destroy its brothers and sisters and its uneven rate of growth soon diminishes these numbers and restricts reproduction. While the small-mouth shows a distinct preference for rocky rivers, and lakes where the shore lines are rocky and drop off rather abruptly to comparatively deep water, the large-mouth is at home in slow moving streams and in mud bottom shallows of lakes and ponds, where there is rich aquatic vegetation. Lily pads are his especial favorite. His food is much the same as that of the small-mouth, with perhaps a first preference for frogs. A voracious feeder taking surface flies and lures more consistently than the small-mouth, but less prone to jump after being hooked and not quite as hard a fighter. Averages somewhat larger than the small-mouth, but attains about the same maximum weight in New Jersey. Other names: "green," "grass," "yellow," and "Oswego" bass. A very adaptable fish that can survive many adverse conditions precluding the small-mouth's existence.

#### CALICO BASS AND CRAPPIE—POMOXIS SPAROIDES

The calico bass and the crappie resemble each other closely, but are perfectly distinct and well-marked species. The easiest way to distinguish them is by means of the dorsal spines, the crappie having five or six, while the calico bass always has seven or eight. The different coloration, particularly of the anal fin, and the difference in the anterior profile are also constant and important differential characters. Its range is very limited to a few lakes and ponds throughout the State. Native originally only to the Great Lakes region. In these sections, it is a favorite among the young anglers.

## YELLOW PERCH—PERCA FLAVESCENS

Years ago the yellow perch inhabited most of our warm water streams, but now is rarely found except in our unpolluted lakes, dams and ponds. The yellow perch is a very prolific spawner and furnishes a great quantity of food for other game fish. He is much sought after by the younger element of the anglers. Is an excellent panfish of high quality.

## BLUEGILL SUNFISH—LEPOMIS PALLIDUS

The bluegill is the aristocrat and the largest of the sunfishes. He strikes readily at artificial flies. Gamey scrapper and prime favorite among youthful anglers. Under favorable conditions attains a weight of a pound or more. Has a wide range in the streams, lakes and ponds of New Jersey.

## PICKEREL—ESOX RETICULATUS

Originally found only east of the Alleghenies, and now distributed chiefly in the lakes and ponds of the northeast, where it is highly prized as a game fish, the chain pickerel, like all members of the pike family, is long and slim, comparatively round in body and with a duck-like bill or snout. The color is generally greenish with dark chain-like overmarkings on the sides. The cheeks and gill covers are entirely scaly. He is savage and carnivorous, subsisting almost entirely on other fish. He feeds usually along the shallow edges of ponds and streams, preferring weed beds, lily pads, or sections filled with stumps and logs, and strikes readily at flies and artificial lures. The usual size is from one to three or four pounds, but specimens of from eight to ten pounds are occasionally taken. Spawns in early spring. The banded or American pickerel (*Esox ameri-*

canus) is found in some small warm water streams in New Jersey. Its form and base color is much the same as the pickerel, but the overmarkings consist of dark vertical bars, slightly curved. It is sometimes locally called "grass pike." It is of little interest to anglers as it seldom exceeds a foot in length.

#### BULLHEAD CATFISH—*AMEIURUS NEBULOSUS*

A number of different kinds of catfish are found in New Jersey. The common bullhead, that grows to an average length of fourteen inches, is the one most sought after by the angler. It is at home in most of the lakes and ponds and slow moving streams of the State. It is outstanding among other fish of the State, because of its sharp spines on its fins. Another outstanding characteristic is its long whiskers or feelers, similar to the whiskers on a cat, from which it has derived its name. It is covered with a tough skin and is entirely without scales. One of the most popular of our food fishes, it is sought after by a great army of our anglers, who enjoy still fishing.

## TO THE SPORTSMAN

We can safely say that despite the fact that people are living at a fast pace in an age of wonders, our natural heritages, such as hunting and fishing in our forests, fields, and streams, and the tremendous recreational facilities which are so essential to the physical and moral good of our people, have not been forgotten.

The average annual distribution of pheasants, rabbits, and quail combined amounts to approximately 70,000 head of game, which, with the natural reproduction, make fish and game far more plentiful in New Jersey today than it was thirty years ago. Whether or not the same condition will maintain ten, twenty, or thirty years from now, depends on each individual sportsman of New Jersey.

The sportsman has a heritage to safeguard, and to do it effectively, he must be like a soldier on guard, never relaxing his vigilance, else he be caught napping, to his everlasting sorrow.

The foundation on which we stand and upon which all our future happy days afield depend is the Fish and Game Fund, the fund to which only those who hunt and fish contribute. Repeated attempts to divert this money have been made by selfish interests, not sportsmen. Even though these destructive measures have been killed time after time, we cannot disregard them as a menace to the wildlife interests of New Jersey.

It is unfortunate that those who foster such legislation do not know more about hunting and fishing, not merely from the standpoint of the game bag or the recreation it affords, but from the revenue that enters the coffers of almost every conceivable business and trade in the State, amounting to millions of dollars annually.

This great business, were it taken out of the hands of the

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sportsmen, would be a catastrophe to the people of New Jersey. So it behooves the sportsmen and their organizations to brook no political interference and to cooperate with the Board of Fish and Game Commissioners to safeguard the woods, fields and streams and all the wildlife that dwell therein, for all time to come.

DO YOU KNOW THAT—

Frank Forester, the celebrated sportsman and author, writing eighty years ago, made the statement that at the dawn of the twentieth century inland fish and game would be extinct east of the Rocky Mountains?

YET

Today there are twenty times more hunters and anglers in New Jersey than there were in Frank Forester's time.

Our native quail and partridge, or ruffed grouse, are on the increase for the past ten years in their particular habitats.

More cottontail rabbits and pheasants are planted and more are taken per square mile of territory than in any other State.

More warden service is given to the square mile than in any other State.

More protection to insectivorous birds is given than in any other State.

More trout are planted in our streams and more taken per square mile than in any other State.

We have more hunters and anglers per square mile of territory than in any other State.

The farmer or actual occupant of the farm is not required to have a license to hunt or fish on his land.

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There has been an annual increase in the number of fish, game birds, and game animals distributed for the past ten years.

Our fish hatchery at Hackettstown is the largest in the nation.

The food value of fish and game taken annually runs close to one and a half million dollars.

For the past five years for every dollar in license fees taken in, about 90 cents in fish and game value was returned to the fields and streams.

This has been accomplished with a lower hunting, fishing and trapping license fee than in most other States.

90% of our streams are open to the public and well over 50% of our hunting grounds.

The farmer-sportsman plan inaugurated in 1933 has been the means of opening up to the hunters and fishermen of the State an area approximating two hundred square miles of land and water that were formerly posted against hunting and fishing.

We are gradually purchasing some of the best hunting and fishing grounds in New Jersey that will go down into future generations as the sole property of the sportsmen of New Jersey without any strings attached, and we have obtained up to the present approximately 10,000 acres.

Tabulations are made annually of the kill of all kinds of fish and game. These tabulations show a gradual increase every year since this plan was inaugurated in 1924.

This increase is phenomenal in that the kill of pheasants increased more than 100%, the kill of rabbits more than 50%, and of quail 20%.

All this in the face of better guns and ammunition, more hunters to the square mile, more and better roads to every covert, and the number of hunters increasing annually by leaps and bounds.

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Some of the reasons for this satisfactory condition follow:

Because our fish and game activities are managed by a group of experienced, non-partisan sportsmen, without salary, whose sole interest is in making better hunting and fishing in New Jersey.

Because New Jersey puts back into the field and stream for every dollar received from the sportsmen more fish and game than any other State.

Because the Commission has the cooperation of the outstanding sportsmen and sportsmen's associations of the State, many of which out of their own funds purchase and liberate rabbits and pheasants, do winter feeding, make shelters, and keep down the vermin. Without this fine cooperation of the sportsmen in general, the Commission, with its limited resources, would not be able to keep up with the inroads made on game by the great number of hunters in our little State.

Because of enforcement. The efficiency of our present game wardens and the laws under which they operate are second to none in the country.

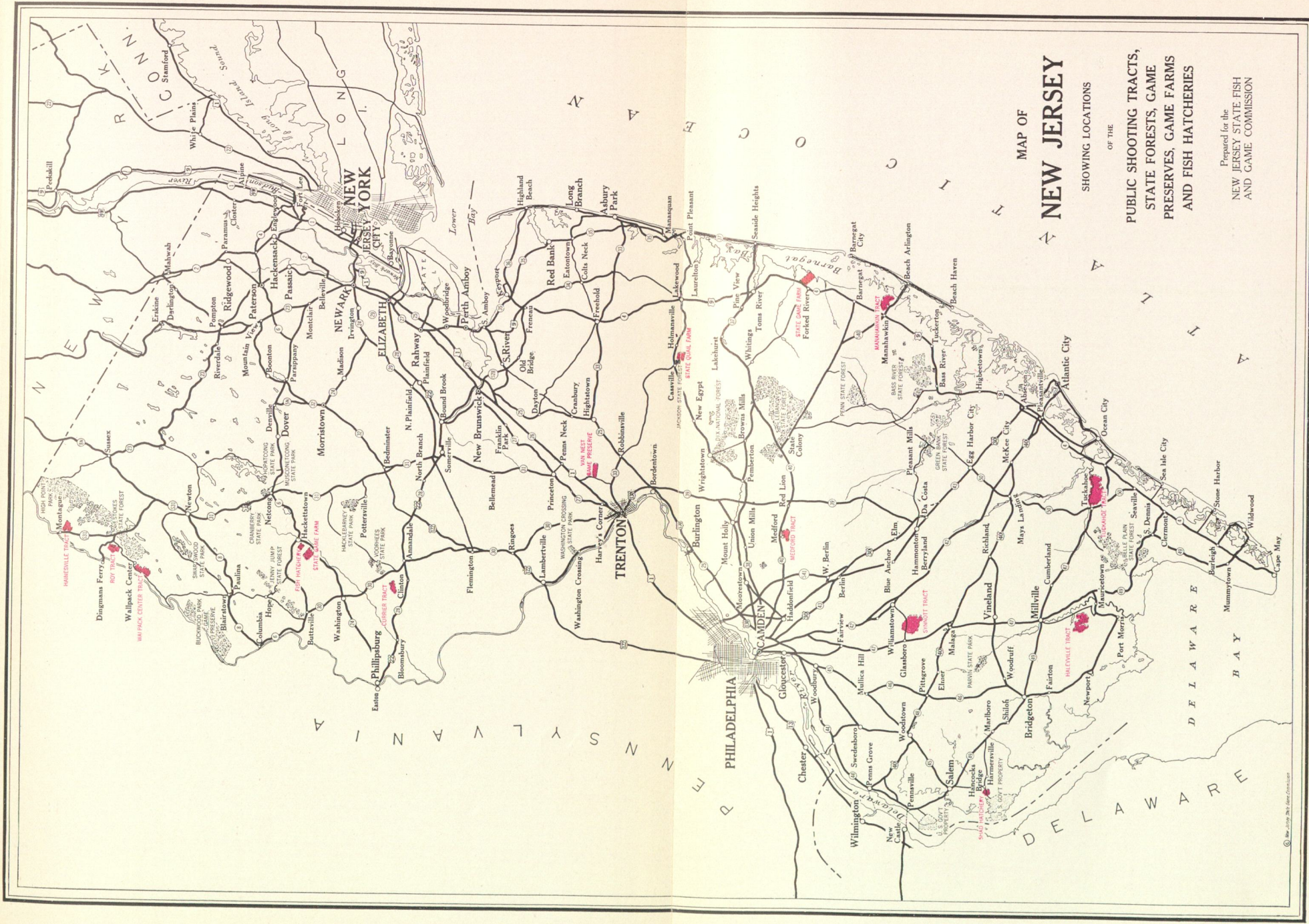
Because our new farmer-sportsman plan has opened up thousands of acres that were formerly closed to all public hunting, and also our public shooting ground plan, both of which, although in their infancy, have pointed the way to supply hunting in New Jersey for all time.

Because we have inaugurated and put into effect under an efficient supervisor a game management system, which includes scientific research, the planting of food, shrubs, and cover, and also vermin control, on all lands controlled by the State.

Because, through the efficient system of game raising at our farms, we have implanted the pheasant in New Jersey for all time, and we have recently started a farm for the sole purpose

of raising quail. We are experimenting in the raising of cottontail rabbits, but until this proves a complete success, we are liberating twenty to thirty thousand imported rabbits annually.

It must not be taken for granted that the present conditions will always maintain, unless the sportsmen continue to cooperate as they are doing at present, and are willing to have the license fees increased as the number of hunters and fishermen increase so that at least the amount of fish and game now liberated annually may be continued. If funds were available, the present liberation could be doubled, thereby making New Jersey even more of a hunter's and fisherman's paradise than it is at present.



**MAP OF  
NEW JERSEY**

SHOWING LOCATIONS  
OF THE  
**PUBLIC SHOOTING TRACTS,  
STATE FORESTS, GAME  
PRESERVES, GAME FARMS  
AND FISH HATCHERIES**

Prepared for the  
NEW JERSEY STATE FISH  
AND GAME COMMISSION



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