FY 2024
Annual Report

July 1, 2023 – June 30, 2024

Eradicated more than a century ago, the fisher population is making an astounding comeback in New Jersey.

State of New Jersey
Department of Environmental Protection
Fish and Wildlife

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FY2024 Annual Report

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New Jersey Fish and Wildlife

New Jersey Department of Environmental Protection's Fish & Wildlife program (NJFW) is a professional, environmental, and scientific organization dedicated to the protection, management and wise use of the state's fish and wildlife resources. It is responsible for the oversight of more than 358,000 acres in the Wildlife Management Area System and is the lead agency managing all wildlife species in New Jersey. This includes game animals, freshwater and marine fish, shellfish, birds, amphibians, reptiles, and endangered and nongame species. Fish and Wildlife staff also educate the public about wildlife-related issues, and conservation police officers enforce the laws that protect wildlife.

This report contains the many accomplishments of an experienced and dedicated staff. These accomplishments are often made possible through cooperative efforts between our federal, state, and non-government agency partners, and are primarily funded by the license fees of hunters, anglers and commercial fin and shell fishermen as well as the federal grants derived from excise taxes on their equipment and marine fuel. NJFW also relies on a portion of the State General Appropriation to support marine fisheries and endangered species conservation as well as the many associated services provided to the public.

Our Mission

Protect and manage the state's fish and wildlife to maximize their long-term biological, recreational, and economic value for all New Jerseyans.

Our Goals

- To maintain New Jersey's rich variety of fish and wildlife species at stable, healthy levels, and to protect and enhance the many habitats on which they depend.

- To educate New Jerseyans on the values and needs of our fish and wildlife, and to foster a positive human/wildlife co-existence.

- To maximize the recreational use and economic potential of New Jersey's fish and wildlife for both present and future generations.

Table of Contents

Bureau of Freshwater Fisheries……	**5**
Bureau of Land Management……	**7**
Bureau of Law Enforcement……	**10**
Marine Resources Administration…….…	**12**
Bureau of Marine Fisheries……...	**14**
Bureau of Marine Habitat and Shellfisheries……..	**16**
Bureau of Wildlife Management……...	**19**
Endangered and Nongame Species Program……...	**21**
Office of Fish and Wildlife Health and Forensics…....	**24**
Bureau of Information and Education……	**26**
Office of Mosquito Control Coordination……	**29**
Office of Business Administration……	**31**
Office of Fish and Wildlife Information Systems……	**33**
Office of Environmental Review……....	**35**

Bureau of Freshwater Fisheries
Shawn Crouse, Chief

The Bureau of Freshwater Fisheries is responsible for the propagation, protection and management of the state's freshwater fisheries resources as well as promoting their recreational use. In addition to raising and distributing several million fish annually, the Bureau conducts research and management surveys, classifies the state's waterways, provides technical input on a variety of watershed and habitat-based issues, facilitates habitat restoration projects, serves as a liaison to a variety of conservation groups, and provides information to the public in a variety of forums concerning the management of New Jersey's freshwater fisheries. The Bureau also administers more than 600 permits annually to effectively manage and protect these important aquatic resources.

Highlights

Aquatic Invasive Species Management Plan

On May 9, New Jersey's Aquatic Nuisance Species Task Force approved an Aquatic Invasive Species (AIS) Management Plan for the Garden State. Comprised of representatives from state agencies, academic institutions, and non-governmental organizations, the task force authored the plan with guidance from the U.S. Fish and Wildlife Service (USF&WS). Principal Fisheries Biologist Chris Smith (*at right*) was the lead contributor for DEP's NJ Fish & Wildlife. With approval of the plan, the agency is now eligible for the USF&WS' State and Interstate Aquatic Nuisance Species Management Plan grant program and can apply for funding beginning in FY 2025. As part of the plan, DEP will acquire an AIS coordinator and statewide AIS database manager within DEP.

Hatchery Infrastructure Improvements

An assessment of the Pequest Trout Hatchery and Hackettstown State Fish Hatchery determined that both facilities have aging infrastructure which must be addressed. The Pequest Trout Hatchery was built 41 years ago, and the Hackettstown Hatchery has been in operation for 112 years. These issues, coupled with rising costs for fish food and oxygen, have made it difficult to properly address any major renovations with existing operational funds. Fortunately, additional funding from the state's Corporate Business Tax (CBT) has enabled many of the necessary improvements. In FY2024 using CBT monies, the New Jersey Department of Transportation completed a $1.3M paving project at the Pequest Trout Hatchery and Natural Resource Education Center to repair extensive cracks, erosion and potholes. CBT funding also paid for a major upgrade at the Hackettstown Hatchery, including the demolition and replacement of a five-bay garage.

The impressive new 5-bay garage at Hackettstown.

Bureau of Land Management

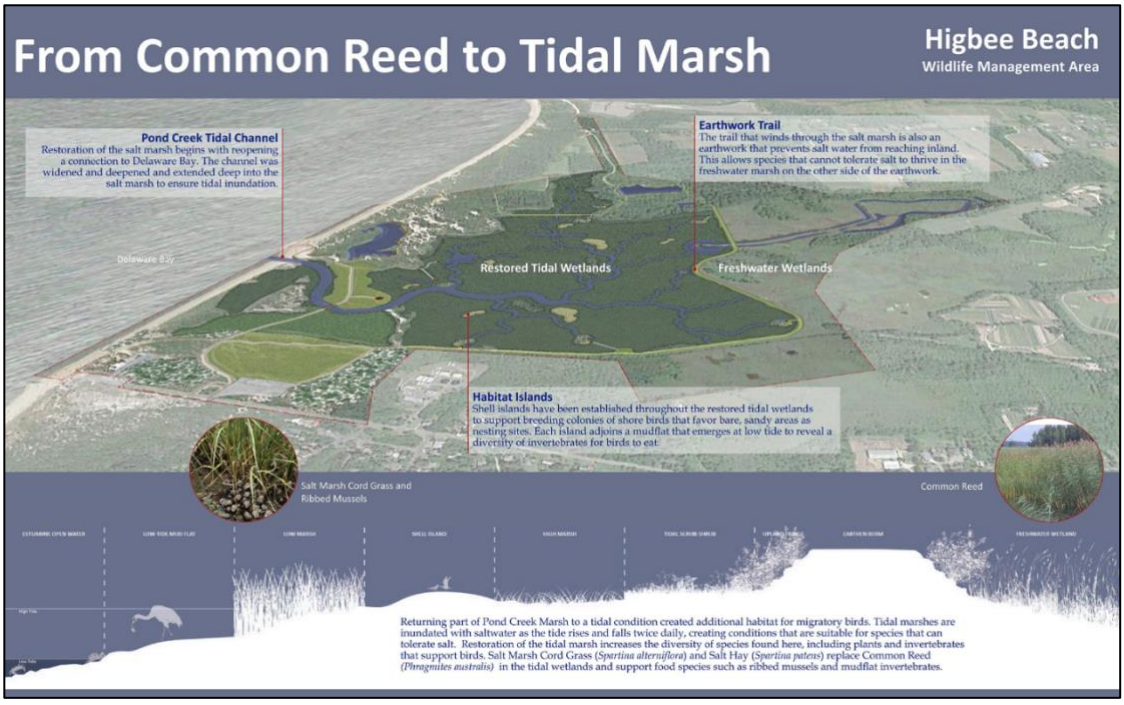
Jason Hearon, Chief

The Bureau of Land Management is responsible for administering NJFW's Wildlife Management Area (WMA) System that encompasses more than 358,000 acres on 122 separate areas. These areas are managed for a diversity of fish and wildlife species through a variety of habitat improvement projects. Public access for wildlife-associated recreation is encouraged through the development of visitor facilities, maintenance of roads and bridges, and the construction of parking areas and boat ramps. The Bureau is also responsible for the maintenance of NJFW office buildings, shooting ranges, dams, and water control structures, and offers technical assistance to DEP's Green Acres Program in the acquisition of open space and critical habitat.

Highlights

Southern Region: Pond Creek Restoration at Higbee Beach WMA

In March of 2024, the long-awaited Pond Creek Restoration project within the Higbee Beach Wildlife Management Area began. This project is designed to restore tidal hydrology (wave movement in response to the gravitational forces of the moon and sun) and function to Pond Creek and restore upland areas that had previously been degraded by manufacturing operations. The restoration will create and enhance habitat for migratory birds, fish and various threatened and endangered species. Ten observation platforms and a trail will also provide visitors with an opportunity to enjoy the beauty of nature in this scenic location. The project is slated for completion by the end of 2026. While under construction, a portion of the WMA will be closed.



The restoration project at Pond Creek is slated for completion in 2026.

Central Region: WMA Activity Tracking Dashboard

Working collaboratively with the Office of Fish and Wildlife Information Systems (OIS), the Bureau of Land Management successfully finalized its GIS-based habitat patch file network. Identifying critical habitat "patches" will allow biologists to examine their proximity to one another as well as determine existing connectivity patterns. If necessary, habitat planners can then modify their land management practices to enhance or establish important travel/breeding corridors for wildlife species in need.

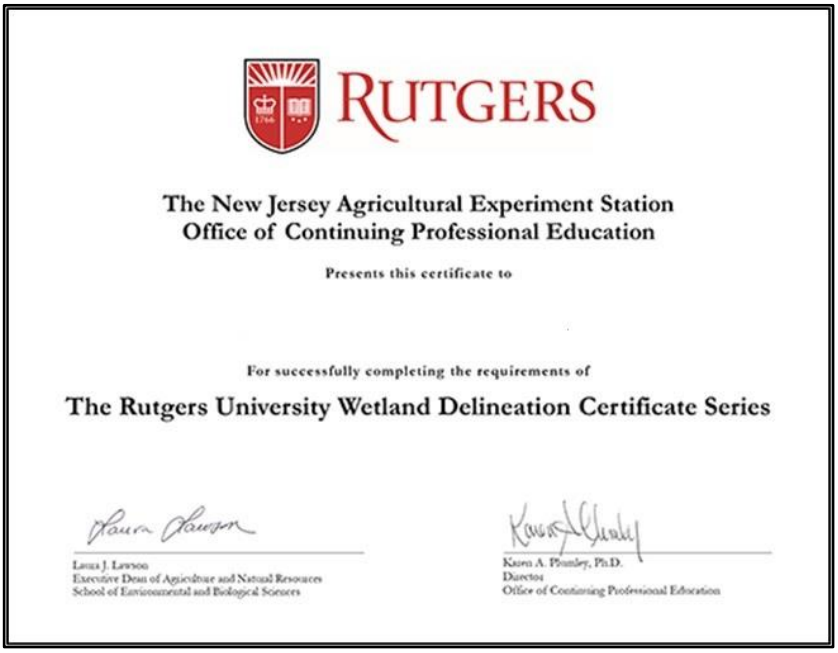
This network of patch files also enables staff to track habitat management activities across WMAs throughout the state. In addition, our professionals now have the ability to use smart phones to enter management activities while in the field (whereas in the past, employees would have to hand write their activities for data entry at a later date). With the *ArcGIS Survey123* program, that task can now be accomplished in just a few clicks.

Staff also created a WMA Activity Dashboard within the ArcGIS survey program. With the dashboard, habitat planners can query activities by WMA, region or even statewide to generate reports as needed. Eventually, staff hopes to incorporate historical habitat management efforts into the patch network to provide an even more comprehensive view. The modern ability to track and analyze parcels of habitat on New Jersey's wildlife management areas is vital to the long-term success of many wildlife species.

The new dashboard allows staff to view and track habitat management activities at a glance.

Northern Region: Staff Receives Wetlands Delineation Certification

Five Bureau of Land Management staff members successfully completed the Rutgers University Wetlands Delineation Course series, receiving their certifications. As a result, these employees are now professionally qualified to demarcate wetlands within the NJFW's Wildlife Management Area System. The three-course series involved a rigorous curriculum: Hydric Soils, Wetland Vegetation Identification, and Methodologies for Delineating Wetlands. An often difficult and exacting process, wetlands delineation can be extremely costly if relying upon a contractor. Now NJFW staff can conduct the work themselves and determine when permitting is necessary to complete improvement projects.



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Presents this certificate to

For successfully completing the requirements of

The Rutgers University Wetland Delineation Certificate Series

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Executive Dean of Agriculture and Natural Resources
School of Environmental and Biological Sciences

Karen A. Plumley, Ph.D.
Director
Office of Continuing Professional Education

Bureau of Law Enforcement
Frank T. Panico, Chief

The Bureau of Law Enforcement (BLE) is one of the oldest law enforcement agencies in New Jersey. Pre-dating the New Jersey State Police, BLE's roots can be traced back to 1871 when the State Legislature created nine "*fish wardens*." Later in 1884, a new law extended the wardens' authority to enforce both fish and game laws.

Today, BLE is comprised of 55 conservation police officers (CPOs) who are the most visible faces of NJFW and are responsible for enforcing regulations that protect all fish and wildlife species and their habitats. This includes the enforcement of hunting, fishing, and trapping regulations as well as commercial and recreational marine resource regulations. CPOs are active in every area of fish, wildlife, and natural resource protection, including pollution and dumping, non-game and exotic species enforcement and protection of NJFW's 350,000 acre of wildlife management areas. Officers have also taken an active role in hunter education, wildlife/human encounters, and public outreach.

In FY24, CPOs are the best trained and well-equipped officers in state history. In turn, the Bureau of Law Enforcement strives to provide the most professional service to the public and to the wildlife resources of New Jersey.

Highlights

CPO Recruit Title and Hiring Modification

A new class of CPO Recruits.

In FY24, the Bureau of Law Enforcement along with the Assistant Commissioner's Office and DEP Human Resources, modified the Conservation Police Officer Recruit title. New hires are now brought on under the title of CPO1 with a starting salary that is competitive with other wildlife agencies in the Northeast. The change has been applied retroactively to the graduating classes of 2023, 2024 and the future class of 2025. The revision also streamlines the working test period and allows successful new officers to advance accordingly.

Right Whale Speed Zone Enforcement

Marine CPOs on patrol with the Integrity.

Utilizing the Bureau of Law Enforcement's Patrol Vessel *Integrity*, conservation police officers assigned to the marine region partnered with the National Marine Fisheries Service (NMFS) on a 3-day operation to help enforce federal speed restrictions for the protection of critically endangered North Atlantic right whales whose estimated population is less than 400 individuals. One of the biggest threats to their existence is collisions with large vessels. To help reduce the risk of these negative encounters, the NMFS established a seasonal mandatory speed rule in 2008 for vessels over 65 feet in length. In addition to enforcing the speed rule through the use of several radar tracking technologies, officers took the opportunity to educate mariners on the importance of slowing down and captaining their vessels responsibly to protect right whales and other large marine mammals.

Addition of Three UTVs for Patrol

One of three recently purchased UTVs.

In FY24, the Bureau of Law Enforcement purchased three new Utility Task Vehicles (UTVs), one for each region along with accompanying trailers. The UTVs replace the existing All-Terrain Vehicles that were more than 20 years old. The new models offer enhanced safety features and have the ability to access more remote areas than a traditional patrol vehicle (i.e., pickup truck).

The new vehicles are already making a difference. In the northern region, CPOs used one to evacuate an individual who had become lost within a wildlife management area. The victim, who was suffering from diabetic shock, was in near critical condition and use of the UTV was instrumental in this individual's survival.

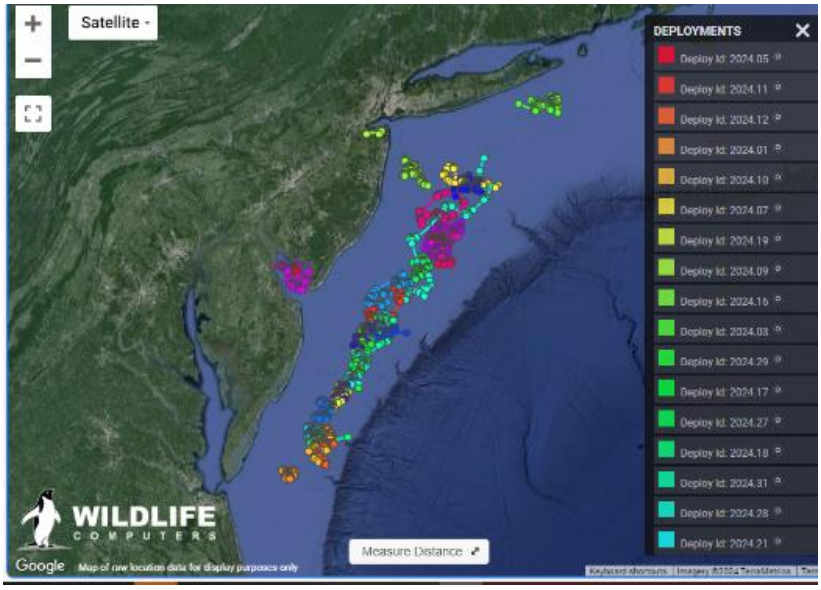
Marine Resources Administration
Joseph Cimino, Administrator

The Marine Resources Administration includes the Bureaus of Marine Fisheries and Shellfisheries. Staff supervise and coordinate the planning, organization, operation and management of the marine and estuarine finfish and shellfish resources of New Jersey, worth an estimated $3.2 billion. The Marine Resources Administration also coordinates New Jersey's fishery management activities on a coastwide basis with the Atlantic States Marine Fisheries Commission and the Mid-Atlantic Fishery Management Council.

Highlights

Research and Monitoring Initiative for Offshore Wind

Staff continues to support the New Jersey Research and Monitoring Initiative (RMI) for Offshore Wind. This research, co-managed by New Jersey's Board of Public Utilities and Department of Environmental Protection, funds and develops critically needed studies to ensure that vulnerable marine resources are not impacted by offshore wind development and remain sustainable for future generations.



Tracks of individual sea turtles monitored with satellite tags funded through the RMI.

Current projects include oceanographic monitoring and modeling; whale, seal, and sea turtle tagging (at left); recreational fishery socioeconomic analysis; and surf clam fishery enhancement. By developing and managing these projects directly, RMI staff can easily modify plans and facilitate collaboration between researchers.

Staff attended the *2024 State of the Science* workshop to engage with leading offshore wind experts and representatives from several non-governmental organizations to foster a regional network of support and cooperation. During the workshop, New Jersey RMI administrators announced a $4.5M Request for Project Proposals. Focus areas include habitats and ecosystems, technological innovations, and mitigation research and development as well as marine mammal, bird, bat, and fisheries research.

Managing For Uncertainty

Managing for uncertainty is one of the guiding principles of fisheries conservation. Because uncertainties can originate from biological, economic and/or political factors that can influence the status of fish populations and interfere with the ability to develop effective management plans, factoring in provisions for ambiguities is a critical part of any sound conservation strategy.

For many years the Mid Atlantic Fisheries Management Council's bluefish monitoring committee struggled to quantify the elusive concept of management uncertainty to estimate harvest and foresee catch constraints if and when necessary. In FY24 however, staff worked with state and agency partners to develop a spreadsheet tool that can account for uncertainty regarding bluefish management in New Jersey. Still in the early operational stage, staff hopes to officially implement the tool later this year.

BUREAU OF MARINE FISHERIES

Jeffrey Brust, Chief

The Bureau of Marine Fisheries is responsible for developing and implementing management programs to protect, conserve, and enhance New Jersey's marine fisheries resources. To formulate sound state management plans, the Bureau conducts studies to gather information about New Jersey's marine species as well as the user groups that rely upon them. This research is then combined with information from other Atlantic states and federal management agencies to support coastwide management plans.

Since many marine fisheries species are migratory in nature, they are managed on a coastwide basis by the Atlantic States Marine Fisheries Commission and/or the Mid-Atlantic Fishery Management Council. The Bureau of Marine Fisheries plays a vital role in representing New Jersey's fisheries and fishermen, both commercial and recreational, through these organizations.

Federal legislation mandates that states implement every fishery management plan approved by the Atlantic States Marine Fisheries Commission. Each plan requires that states employ the required management measures, enforce those rules, and monitor the status of the fishery population. States failing to comply with the requirements of the plan risk a federally imposed moratorium in their state for those species covered.

Highlights

Artificial Reefs

The New Jersey Artificial Reef Program made several deployments in FY24, including four steel vessels and 23 reef balls. The vessels deployed include the 120-foot tugboat "*New England Coast,"* two 90-foot scallop boats, the "*Cape Cat*" and "*Storm,*" and the 90-foot trawler "*Carabassett.*" With the above additions, over 4,450 deployments have been made during the program's 42-year history.

The tug "New England Coast" is ready to be deployed.

A reef ball is deployed on the Cape May Artificial Reef.

The assortment of materials used in the Artificial Reef Program (vessels, reef balls, dredge rock, and concrete) provide habitat for over 150 species of marine organisms. These species in turn, support both commercial and recreational fisheries off the New Jersey coast.

NJ Saltwater Recreational Registry

Staff from the Bureau of Marine Fisheries and Office of Business Administration have successfully migrated the New Jersey Saltwater Recreational Registry Program into NJFW's Electronic Licensing System. Registration is still free, and the move allows "*one stop shopping*" for hunters and anglers who would like to acquire their licenses, permits and registrations from one source. Activated on December 15, 2023, saltwater anglers and for-hire vessels had the ability to register for the 2024 calendar year.

Marine Mammal Funding

In FY24, the Bureau of Marine Fisheries acquired funding through the U.S. Fish and Wildlife Service to develop a permanent marine mammal research and coordination program. The five-year grant award of $500,000 will allow New Jersey to:

- Join state, federal, and regional partners engaged in marine mammal research and management;
- Represent the state's interests on important technical committees;
- Support an acoustic monitoring project for marine mammals off our coast with assistance from DEP's Offshore Wind Research and Monitoring Initiative; and
- Review state and federal permit applications to evaluate potential impacts to marine mammal populations.

Photo: gettyimages

A humpback whale surfaces for air.

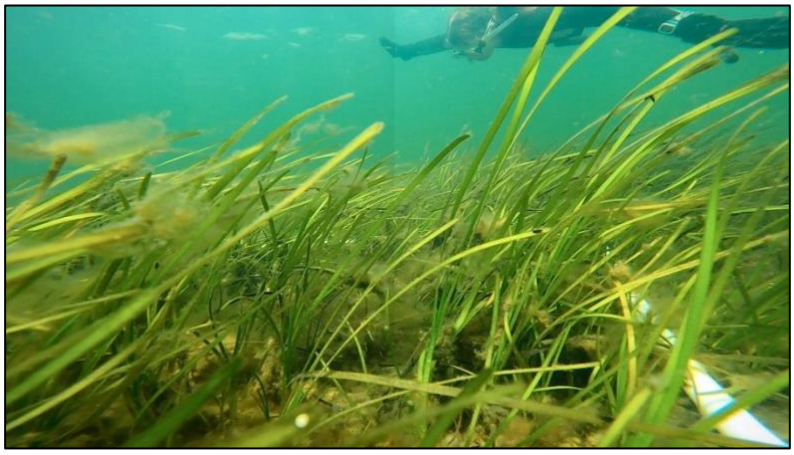
BUREAU OF MARINE HABITAT AND SHELLFISHERIES
Russ Babb, Chief

The Bureau of Marine Habitat and Shellfisheries (BSF) directs shellfish harvest and propagation programs along the Atlantic Coast and in Delaware Bay. Biologists work with other NJFW bureaus as well as various state and federal agencies on marine habitat conservation and shellfisheries management activities. Staff members also work closely with the New Jersey Shellfisheries councils (Atlantic Coast and Delaware Bay) on these issues. In addition, the Bureau is committed to fostering aquaculture development and reviewing coastal development activities to protect critical habitat. Staff members manage surf clams in the Atlantic Ocean and oysters in Delaware Bay as well as examine the impacts of offshore sand mining. In addition, they are responsible for administering a licensing program for recreational and commercial shellfishermen as well as the state's Shellfish Aquaculture Program.

Highlights

Submerged Aquatic Vegetation Survey

Submerged aquatic vegetation (SAV) refers to rooted plants that grow completely underwater, except for periods of brief exposure at low tides. In New Jersey, the two dominant species of SAV are eelgrass (*Zostera marina*) and widgeon grass (*Ruppia maritima*), and both species can be found in estuaries throughout Barnegat Bay to Little Egg Harbor. SAV is vital to maintaining a healthy ecosystem by recycling nutrients, stabilizing sediment and providing food and shelter for numerous species of marine life.



Divers gather data from the study area.

In the summer of 2023, the Bureau of Marine Habitat and Shellfisheries (MHS) partnered with the Rutgers Center for Remote Sensing and Spatial Analysis and Stockton University on a project to map SAV habitat. Aerial mapping of the survey was funded through DEP and led by Dr. Richard Lathrop. Boat-based research was funded by the Barnegat Bay Partnership (BBP) and led by Dr. Elizabeth Lacey. MHS staff trained alongside Dr. Lacey and her team for several days surveying the area prior to sampling the remaining stations on their own.

Aircraft was used to collect the aerial imagery, and those images were then interpreted by data collected in the water by divers throughout the study area. This project was last conducted in

2009, and the results of this new assessment will allow biologists to identify where SAV is present throughout the estuary and determine the health of these habitats. Regular mapping and monitoring are vital to conserving these important areas by adjusting the policy and regulations currently in place, and by educating the public on how important these areas are to maintaining healthy estuaries.

Delaware Bay Oyster Management Program

An oyster dredge vessel harvesting oysters as part of the Direct Market Oyster Harvest Program.

The Bureau of Marine Habitat and Shellfisheries' staff coordinated the 2023 Direct Market Oyster Harvest Program in Delaware Bay. In February 2023, staff participated in a workshop at Rutgers University to assess the health of the oyster population. Stock status was determined good with the fishery considered sustainable by the Stock Assessment Review Committee (SARC), which consists of scientists, DEP biologists, and managers from around the region. As a result of this meeting, the SARC recommended that oysters be transplanted, and that bureau staff continue their population enhancement efforts. After a 37,750-bushel seed transplant, the final harvest quota for 2023 was set at 95,799 bushels. As the season progressed, staff coordinated a 137,000-bushel shell planting across three natural oyster reefs. By the end of the year, 95,661 bushels were harvested with extremely high daily catch rates. This overall healthy oyster population led to a quality harvest season for the direct market industry.

Shell Recycling Program Grows

Staff use barge and water cannons to plant recycled shells onto New Jersey oyster reefs.

Staff continued to develop the Shell Recycling Program (SRP) in FY24. During this time, shell collection expanded to serve 11 venues in the greater Atlantic City area and discussions with additional venues is ongoing. This resulted in 3,808 bushels of shell (approximately 105 tons) being kept out of area landfills while benefitting local oyster reefs. Additionally, staff developed positive relationships with the Cape May County Municipal Utility Authority, the Professional Chef Association of South Jersey, and the Atlantic City Boys & Girls Club to assist in expansion of the project. The program also worked with a local contractor and had a 40' x 20' barge built, which is used for all shell deployments.

Staff also applied for and received a three-year grant award ($1.27M) through NOAA's Coastal Zone Management Habitat Protection and Restoration Bipartisan Infrastructure Law Competition (BIL). The project period will begin in August of 2024 and funding will be used to expand shell collection into southern Atlantic and Cape May counties, adding a minimum of 15 new restaurant partners and three public drop off locations. The project will plant over 700 tons of shell annually on the Mullica River oyster reefs as well as create a marine science education program in Atlantic City schools. The SRP continues to provide NJDEP Fish & Wildlife with an excellent platform to engage and educate the public on the importance of marine environmental stewardship. The program received highlights from multiple media outlets during its annual shell planting this past summer. Since its inception, the program has recycled more than 350 tons of shell and planted an estimated 590 tons of recycled/purchased shell on area oyster reefs.

Bureau of Wildlife Management

Jim Oxley, Chief

The Bureau of Wildlife Management provides the scientific information and recommendations necessary to develop conservation plans for New Jersey's game species. It also assists with NJFW's pheasant and quail stocking operations and advises the public on ways to reduce damage caused by wildlife. Biologists work with other agencies and local governments to develop cooperative management programs throughout the state. These professionals also monitor wildlife population numbers and health conditions. The information collected is of critical importance to the Fish and Game Council which relies on it to determine New Jersey's annual hunting and trapping regulations.

Highlights

Game Code Restructured

After extensive data analyses vetted through the Fish and Game Council, the Bureau has compiled the most comprehensive overhaul of the Game Code in decades. The goal is simplification and brevity – rewriting often confusing and contradictory language that resulted from years of modifications and additions. Once approved by the Council, these updates become law and will be incorporated into the 2025 Game Code.

Turkey Telemetry Study

BWM has joined a Mid-Atlantic, multi-state wild turkey research project to examine hen survival and productivity. Staff identified two study areas (in the northern and southern regions of the state) where crews trapped 25 hens per area using rocket nets during the winter of 2024. The captured hens were aged, marked with uniquely numbered leg bands, and equipped with GPS backpack transmitters. Blood and other tissue samples were taken to test for pathogens such as avian pox, certain bacteria, and several other diseases causing tumors and lesions.

The study will attempt to assess nesting rates and success, average incubation period, poult (young) survival, and the effects of weather on each of these parameters. This is the first year of a three-year study.

A BWM staff member secures a GPS unit to a captured wild turkey hen.

Each year, an additional 25 hens per study area will be added to increase the sample size.

Fisher Project

From January to April 2024, staff and volunteers installed 150 trail cameras in randomly selected sections of a study area in northwestern New Jersey to map fisher population distribution and occupancy. Each camera was programmed to record five-second videos, and camera stations were baited with sardines and scented lures that were monitored every 15 days. Over 180,000 videos were recorded, capturing footage of a wide variety of mammals and birds. Preliminary analysis has identified fishers throughout the study area, including areas of Morris, Passaic, Sussex, and Warren counties. In fact, the species was detected in several new locations where they were not previously documented: Passaic County (Wanaque Borough) and eastern Morris County (Pequannock Township). The review and classification of footage is ongoing.

A fisher photographed in Wanaque Borough, Passaic County (the easternmost location ever documented).

Live-trapping efforts were also conducted from late January through late March. Each fisher was captured, anesthetized, tagged, and had numerous biological samples taken. Select individuals were also outfitted with GPS telemetry units to determine home range size, movement patterns and habitat preferences. Of the two adult males outfitted with collars, one stayed in a roughly six square mile area. The other travelled more than 186 square miles and is currently over 30 miles away from the original capture location. Staff continue to monitor both individuals and collect data.

Endangered and Nongame Species Program

Kathleen Clark, Acting Chief

The Endangered and Nongame Species Program (ENSP) was created in response to the New Jersey Endangered Species Conservation Act of 1973, which is celebrating its 50th anniversary! More than 80 endangered and threatened species inhabit the Garden State and the ENSP is committed to conserving this biological diversity by working to maintain and foster endangered and threatened populations as well as protect the unique habitats on which they depend. The program is also responsible for administering the State Income Tax *Check-Off for Wildlife*, which benefits this important work.

Highlights

Revising New Jersey's Wildlife Action Plan

The Endangered & Nongame Species Program (ENSP) is leading NJFW's 10-year revision of the *State Wildlife Action Plan* (SWAP) for 2025. Required by the U.S. Fish & Wildlife Service, the SWAP identifies New Jersey's Species of Greatest Conservation Need (SGCN), critical habitats, significant threats, and pre-emptive actions to address those threats. With the action plan as a guiding framework, biologists can focus their research on improving conditions for rare species while preventing declines in others.

Along with updates on species and habitats, biologists are also working on improvements to the 2025 plan. These include easier database access allowing users to search by geographic region, prioritizing threats and associated actions, and for the first time, the adding information on significant plant species. At every step of this revision process, NJFW is working with a technical advisory group, a broader stakeholder group, and soliciting public input on our website.

New Habitat For Beach-nesting Birds

Horseshoe Island is an offshore island just southeast of the Little Egg Inlet off Ocean County. First observed on aerial imagery in 2017, by 2021, thousands of migratory, roosting, and nesting coastal birds were seen using the island.

Aerial photograph of Horseshoe Island. Photo credit: Sam Galick

Since one of the biggest threats to coastal birds is human disturbance, NJFW successfully petitioned the Tidelands Resource Council (the authority which has jurisdiction over tidal areas) for the right to manage Horseshoe Island. The council granted the request in March 2022 for a period of five years with a seasonal closure to human use from March 1 to September 30 of each year. The island is jointly monitored and managed by NJFW and The Conserve Wildlife Foundation of New Jersey.

In 2024, the island entered its third season under the management rights agreement, which has allowed wildlife at the site to flourish. Over 35 avian species have been documented using the island (including three federally listed and seven state listed species) for migratory, breeding, or roosting purposes. Six species have been documented breeding, including Piping Plover (which nested for the first time in 2024), Black Skimmer, Least Tern, American Oystercatcher, Royal Tern (the northernmost colony in the Western Hemisphere), and Common Tern. During spring and fall migrations, hundreds of Red Knots (a federally and state listed species) use the island for feeding and resting, adding an important migratory site along New Jersey's Atlantic coast for this highly imperiled species.

Bat Research and Conservation

ENSP's bat projects explored both familiar and new territories over the past year. Staff continued long-term monitoring efforts, including maternity colony surveys, winter hibernaculum counts, and acoustic surveillance. With the Northern Long-eared Bat now considered endangered under the federal Endangered Species Act, and a Tricolored Bat listing expected soon, research has expanded to survey previously undocumented habitats for these species to help fill in some essential knowledge gaps.

One new project, in collaboration with the U.S. Geological Service and Virginia Polytechnic Institute, is using acoustic detection and active *catch-and-track* methods to identify and

characterize the Northern Long-eared Bat's habitat use across the southern half of New Jersey. The results of this two-year study will help our agency develop an informed Habitat Conservation Plan (HCP). In addition, NJFW and the New Jersey Forest Service were awarded a grant in 2024 to create a Bat HCP for specific forest management activities.

An Eastern red bat captured during a mist-netting survey.

Through ENSP's successful "*Bats in Bridges*" program, a joint partnership with the New Jersey Department of Transportation and U.S. Fish and Wildlife Service, more than 500 transportation structures have been inspected for roosting bats, with 37 of them (more than 7%) being utilized. In FY24, both Eastern Small-footed Bats and Tricolored Bats were discovered roosting in bridges and culverts. In addition, a two-year study with Rutgers University to sample these structures using environmental DNA to detect bat presence at bridges is showing promising results.

During the winter of FY24, two exciting winter hibernaculum discoveries were made – one at a former iron mine in Warren County, and one at a military battery in Monmouth County. Both sites were occupied by rare or endangered bat species. In fact, the Monmouth County site represents a new geographic record for Tricolored Bats identified in our state as well as the southernmost bat hibernaculum found here.

As New Jersey's offshore wind energy areas grow closer to fruition, ENSP biologists are working with the state's Research and Monitoring Initiative (RMI) on strategies to better document bat and bird migration pathways, and exposure to risk from proposed offshore wind farms. The first bird and bat RMI project involved the installation of an east-west line of telemetry receiver stations on land and on ocean buoys (extending up to 60 km offshore) to track migrations via a tiny transmitter affixed to each individual.

Office of Fish and Wildlife Health and Forensics

Dr. Joseph Groff, Research Scientist

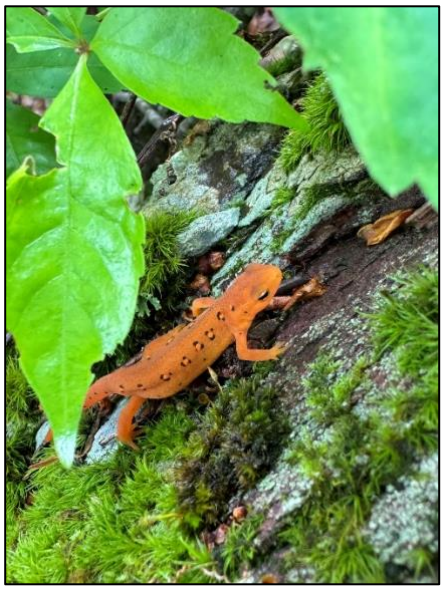
The Office of Fish and Wildlife Health and Forensics conducts surveillance and research on diseases and chemical contaminants that affect New Jersey's fish and wildlife. Scientists in this office also recommend measures to prevent diseases in NJFW's fish hatcheries and in free-ranging aquatic animal and wildlife populations. These individuals are the only available experts in New Jersey state government to specialize in aquatic animal and wildlife pathology, and toxicology. In January of 2024, the agency welcomed Dr. Patrick Connelly as the new wildlife research scientist.

Highlights

Annual Chronic Wasting Disease Surveillance

Annual surveillance for Chronic Wasting Disease (CWD) in New Jersey's white-tailed deer population was completed with the testing of 865 deer, all of which were negative for CWD. CWD is a fatal neurological disease found in white-tailed deer and other members of the deer family. Extremely challenging to eradicate once established, it is important that CWD remains outside New Jersey's borders – and based on over two decades of surveillance, the Garden State continues to remain CWD-free.

Amphibian Pathogen Surveillance



Long-term surveillance includes testing for various pathogens in amphibians like this Eastern red-spotted newt.

Long-term surveillance of native amphibian populations (particularly salamanders and newts) was initiated in the spring of 2024 to detect the presence of the amphibian ranavirus and herpesviruses as well as chytrid fungi (*Batrachochytrium dendrobatidis* and *Batrachochytrium salamandrivorans)*. Surveillance involved non-invasive sampling of individuals via swabbing and then testing for these pathogens.

Fish Hatchery Health Inspections

Annual health inspections of the state's two fish hatcheries were completed with both facilities testing negative for all of the pathogens tested. The fish were screened for viral diseases, including Viral Hemorrhagic Septicemia Virus (VHSV), Infectious Hematopoietic Necrosis Virus (IHNV), Infectious Pancreatic Necrosis Virus (IPNV), Spring Viremia of Carp Virus (SVCV) and Largemouth Bass Virus (LMBV). Fish were also tested for several bacterial agents, including

Aeromonas salmonicida, *Yersinia ruckeri*, and *Renibacterium salmoninarum* (bacterial kidney disease in salmonids). Salmonids were also screened for the parasitic agent *Myxobolus cerebralis*, the cause of whirling disease.

American Eel Surveillance

Surveillance for various infectious diseases in both the *glass* and *yellow* life stages of the American eel was initiated in the spring of 2024 in collaboration with NJFW's Bureau of Marine Fisheries, Barnegat Bay Partnership and Rutgers University. The population of American eels is currently at a historic minimum, and the screening for infectious diseases was begun to determine if it may be contributing to the population decline. Specifically, histopathological findings (in tissue samples) will be used to determine additional comprehensive testing necessary to identify and characterize specific pathogens –viral, parasitic, fungal and/or bacterial. Preliminary examination of a limited sample of yellow eels did not reveal any diseases, however, examination of glass eels revealed hepatic (liver) lesions. A definitive determination is pending.

Bureau of Information and Education
Al Ivany, Chief

The Bureau of Information and Education educates New Jerseyans about the needs and value of fish and wildlife. To do this, staff interprets information on biology, ecology, and conservation to help the public better understand the unique needs of each species as well as their environmental, recreational, aesthetic, and economic values. Outreach efforts also promote the wise use of these resources and the need to safeguard them for future generations.

Highlights

Association for Conservation Information Awards

NJFW received four awards at the Association for Conservation Information's (ACI) annual conference held July 24 – 27, 2023 in Lake Tahoe. ACI is a national non-profit organization of natural resource communication professionals dedicated to furthering conservation and the mutually beneficial exchange of ideas and information.

Bureau of Information and Education staff attended the conference and accepted the following awards on behalf of the agency.

Communication Campaign – Educational
Black Bear Outreach Campaign
Third Place

Communication Campaign – Marketing
Wildlife Habitat Supporter Program (Fall 2022)
Third Place

Website
NJFW Website
Third Place

Graphics: Advertising / Display
Wildlife Habitat Supporter Program Signs
Third Place

Supporters can show their commitment by sporting the 2nd edition WHSP stamp.

Wildlife Habitat Supporter Program

The second edition of the Wildlife Habitat Supporter Program (WHSP) stamp, spotlighting the American Oystercatcher, was designed and produced. The program offers a way in which environmentally minded individuals can donate to help maintain New Jersey's incredible diversity of fish and wildlife species at stable, healthy levels while protecting and enhancing the many habitats on which they depend.

Hunter Education

A total of 5,273 certifications were issued in FY24 (3,072 firearm, 1,924 bow and 277 trapping), ensuring the safety of future hunters and trappers statewide. Staff also assisted with 2023 Township Deer Hunting Orientation sessions by conducting safety discussions for the hunters in Montgomery and Hillsborough township's deer management programs. More than 160 hunters took advantage of these two programs which rely upon recreational hunters to achieve the management goals of each respective township.

Trapper education instructors met the need to provide new trappers with more in-depth opportunities to expand their abilities by offering introductory fur handling workshops. The first workshop drew 30 students eager to learn this traditional lost art. Proving extremely popular, two additional workshops were offered, drawing an additional 50 participants. At these events, students were given the rare chance to work one on one with expert trappers and fur handlers to learn this time-honored craft.

R3 (Recruitment, Retention, Reactivation) Hunting and Shooting Program

The goal of the R3 Program is to place a priority on recruiting, retaining and reactivating sportsmen and women to become active hunting, angling, and shooting sport participants. This is achieved by providing students with innovative programs and workshops, improving the management of wildlife species and habitats, and developing a mindset of conservation stewardship.

Tuckahoe Managed Waterfowl Hunt

The Tuckahoe Managed Waterfowl Hunt Program completed its final year of the pilot period in FY24. Occurring during the South Zone Waterfowl Season at the Tuckahoe Wildlife Management Area, hunts take place on a weekly three-day rotation (every Monday, Wednesday

and Saturday) to avoid placing too much pressure on the birds. This past season, 312 hunters harvested 126 ducks utilizing six blinds within the impoundments.

National Archery in the Schools Program (NASP)

The National Archery in the Schools Program (NASP) brings the sport of archery to millions of students in schools across the United States. Designed to teach target archery to youth in grades 4-12, the core content covers archery history, safety, technique, equipment, mental concentration, and self-improvement. The two-week curriculum is aligned to National Physical Education Standards and can be run safely in a school gymnasium. No prior archery experience is necessary for teachers or students. In FY24, New Jersey's NASP program involved 99 schools, 207 instructors and 18,606 students.

Take a Kid Youth Pheasant Hunt

The Take a Kid Pheasant Hunting Program provides opportunities for young hunters to learn and experience pheasant hunting using trained bird dogs under the supervision and guidance of knowledgeable volunteer hunting mentors. Youth hunters can participate in a guided hunt on one of eight wildlife management areas throughout the state that are stocked with pheasants. In FY24, 234 youth hunters registered to experience the program.

Successful youth hunters during the Take a Kid Pheasant Hunt.

Angler R3

Aquatic education staff took the lead on writing an Angler R3 Plan for New Jersey with input, collaboration and feedback from several bureaus and the NJFW assistant commissioner's office. The final product is a three-year plan designed to increase fishing participation among licensed aged buyers, reduce the churn (drop out) rate of anglers and implement a coordinated marketing and communication campaign to reach Hispanic anglers. In FY24, aquatic education staff began to implement several strategies, including developing a Fishing Instructor Program and hosting a training session (retention) as well as offering fishing education workshops geared toward women and families (recruitment and reactivation).

New fishing workshops for families, women and reactivated (previously lapsed) anglers.

Office of Mosquito Control Coordination

Scott C. Crans, Administrator

Created in 1974, the New Jersey State Mosquito Control Commission's Office of Mosquito Control Coordination (OMCC) is based in NJFW's Trenton office. The OMCC coordinates state-funded programs that provide aid to county mosquito control agencies and serves as a public face on all state mosquito control matters. Actively collaborating with NJFW's various bureaus and across DEP is a priority, as is maintaining existing professional standards and developing new methods of mosquito control. These efforts ensure that county-based mosquito control agencies throughout the state are improving the public's quality of life by reducing mosquito populations in environmentally sensitive ways.

Highlights

Vital State Appropriation

A supplemental appropriation of $3 million dollars to the New Jersey State Mosquito Control Commission (SMCC) provided desperately needed resources for improvements to the Garden State's mosquito control capabilities. The critical funding allowed for investments in new equipment (addressing long deferred repairs) and the development of new programs. In addition, the appropriation offers the OMCC an opportunity to hire several full-time staff positions necessary to successfully implement these expanded efforts, including the ability to support state and county mosquito research and control needs through an apprenticeship program, vector surveillance response team, and applied research.

The newly purchased tilting trailer.

Equipment Lease Program

In FY24, after more than a year of development, a revised Equipment Lease Agreement was completed to allow county mosquito control agencies easier access to state-owned equipment.

During this report period, six pieces of equipment were purchased as a part of the Equipment Lease Program (two track loaders, one center console boat, outboard motor, boat trailer, and tilting trailer needed for an existing marsh transport vessel. Composite mats were also purchased for each of the program's

excavators to minimize impacts to wetlands where control efforts are being conducted. Thirteen counties, the Hackettstown State Fish Hatchery and Rutgers University currently participate in this program.

BioControl

In partnership with Hackettstown Hatchery, 577,176 Fathead Minnows, 10,000 Bluegill Sunfish, and 34,064 Gambusia were provided free to county mosquito control agencies as a part of OMCC's Responsible Integrated Mosquito Management program. These mosquito-eating larvae species eliminate the need for chemical insecticides in areas where traditional control methods are not viable. In FY24, four additional fish transport tanks were purchased to better assist counties in their bio control efforts.

Airspray Program

An airspray larvicide mission in Salem County.

Unfortunately, the State Airspray Program had temporary issues in early FY24 with seven mission cancellations due to wildfire smoke and short-term flight restrictions. Nevertheless, the OMCC was able to complete 21 missions, including 12 larvicides, two adulticides, three calibrations and four surveillance flights. During the larvicide missions, 4,257 acres were treated via helicopter with 8,665 acres treated by plane. The adulticide missions (all conducted by plane) treated 6,066.5 acres.

Vector Surveillance

In FY24, 11,583 mosquito pools were tested by Cape May Labs and the Public Health Environmental Lab. Of these, 18 pools tested positive for Eastern Equine Encephalitis, six for Jamestown Canyon Virus, one for LaCrosse Encephalitis, and 881 for West Nile Virus.

Office of Business Administration

Kim Springer, Chief

The Bureau of Business Administration is comprised of five units, all supporting the mission and daily operations of NJFW: Office of Accounting, Grants and Contracts Unit, Office of Fish and Wildlife Information Systems, Office of Environmental Review, and Licenses and Permits Unit.

The Office of Accounting and the Grants and Contracts Unit are responsible for all financial accounting of NJFW's revenue and expenditures. The agency relies primarily on funds derived from the sale of hunting and fishing licenses and related stamps and permits. It also receives substantial federal funding from the Wildlife and Sport Fish Restoration Program. These dedicated-use funds, distributed as grants by the U.S. Fish & Wildlife Service, are a combination of manufacturer excise taxes on firearms, ammunition, archery and fishing equipment, motorboat fuels and small boat motors. Through their purchases, shooters, anglers and boaters participate in a unique "user-pays/user-benefits" system.

The Office of Fish and Wildlife Information Systems develops and maintains geographic data, conducts geospatial analyses, creates web mapping applications, and provides GIS assistance to guide important habitat conservation strategies, and support fish and wildlife management throughout the state. All of these web applications are accessible on NJFW's website and much of the data published is available on DEP's Open Data site.

The Office of Environmental Review (OER) evaluates and coordinates the review of various projects, plans and policies to ensure that New Jersey's fish and wildlife resources are protected. These projects can include flood control and dredging, the construction/expansion of highways, sanitary landfills and water supplies, and residential/commercial development. OER routinely participates in DEP's permit coordination process and uses the Permit Readiness Checklist to help identify potential issues related to the protection of fish and wildlife resources. In addition, OER is responsible for reviewing and issuing letters of support for projects that align with NJFW's mission and goals.

The Licensing and Permits Unit is responsible for managing the New Jersey Electronic Licensing System (NJELS) and overseeing licensing agents. NJFW uses NJELS to issue hunting and fishing licenses and permits available for purchase online and at participating license agents.

The following chart illustrates revenue, appropriations, and expenses for FY24.

FY24 DFW ANNUAL REPORT

RESOURCES	
General State Fund Appropriation Hunters & Anglers	5,427,000
General State Fund Appropriation Shellfish and Marine Fisheries	4,358,000
General State Fund Appropriation Endangered Species	227,000
Subtotal GSF Appropriations	**10,012,000**
Hunters & Anglers Licenses/Permits	13,308,900
Lease Revenue	1,450,797
Endangered Species Revenue (License plates and Tax checkoff)	409,755
Waterfowl Stamp Revenue	127,485
Miscellaneous Dedicated Account Revenue (Exotics, Sedge Island, Hooked on Fishing, Pump Out)	243,889
Shellfish and Marine Licenses/Permits	667,750
Subtotal Revenues	**16,208,556**
Federal Salary & Fringe Reimbursements	13,509,608
Federal Operating Funds	8,883,347
Carryforward funds available from prior years- Recurring Non-Federal accounts	3,367,051
Funds reserved or reverted byTreasury	(593,740)
Non-Federal reimbursements and transfers	960,346
Subtotal Federal & Other funding	**26,126,612**
TOTAL RESOURCES	**52,347,168**
EXPENDITURES	
Hunters & Anglers Salaries (Includes seasonals, overtime, clothing allowances)	14,626,858
Shellfish and Marine Fisheries Salaries (Includes seasonals, overtime, clothing allowances)	5,457,028
Endangered Species Salaries (Includes seasonals, overtime, clothing allowances)	1,150,804
Hunters & Anglers Fringe Benefit costs assessed byTreasuryOffice of Management & Budget	12,779,932
Miscellaneous Dedicated Expenditures (Exotics, Sedge Island, Hooked on Fishing, Pump Out)	224,773
Waterfowl Stamp Expenditures	10,000
Hunters & Anglers Operating (equipment, repairs, fuel, utilities, licensing vendor…)	3,533,295
Shellfish and Marine Operating (equipment, repairs, fuel, utilities...)	1,184,270
ENSP Operating (equipment, repairs, fuel, utilities...)	108,015
Federal Operating Expenditures	8,837,335
DEP Assessments (Deputy Attorney Generals, DEP Division of Information Technology, Office of Administrative Law, Environmental Research Library, Office of Information Technology, Rent, Training Office)	801,070
TOTAL EXPENDITURES	**48,713,380**
***BALANCE**	**3,633,788**

*Reflected balance includes funds in recurring nonfederal accounts dedicated for specific purposes. Information as of 8/15/24.

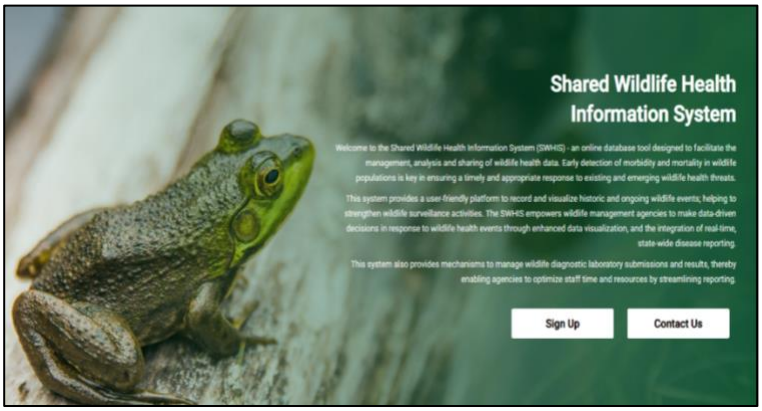
Office of Fish and Wildlife Information Systems

Patrick Woerner, GIS Specialist

The Office of Fish and Wildlife Information Systems (OIS) develops and maintains Geographic Information Systems (GIS) data, provides geospatial analyses, designs web mapping applications, and provides vital assistance to help guide strategic habitat conservation decisions and support fish and wildlife management throughout New Jersey.

Highlights

Shared Wildlife Health Information System (SWHIS)

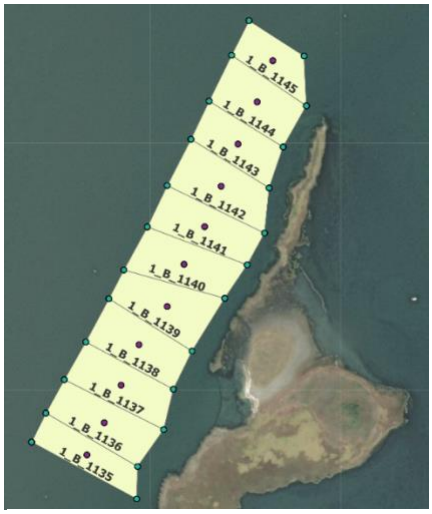


The new Shared Wildlife Health Information System web application.

To map and analyze research sampling techniques, disease occurrence, and mortality events in fish and wildlife populations, OIS partnered with the Office of Fish & Wildlife Health and Forensics and the University of Pennsylvania's Wildlife Futures Program (WFP). Through this important work, OIS will record and analyze both past events (in cases where historical data is available) and current incidents to develop effective response protocols as well as other wildlife health initiatives. Also, as part of the partnership with the University of Pennsylvania, OIS developed an innovative approach using data from the Shared Wildlife Health Information System (SWHIS) to create real-time maps and dashboards that allow users to retrieve and visualize the information as conservation measures dictate.

OIS has also created an electronic form to track potential deer diseases by allowing the public to report their sightings. The information gathered can then be easily integrated into the SWHIS and used to monitor wildlife health conditions across New Jersey.

Shellfish Aquaculture Leasing & Estuarine Inventory



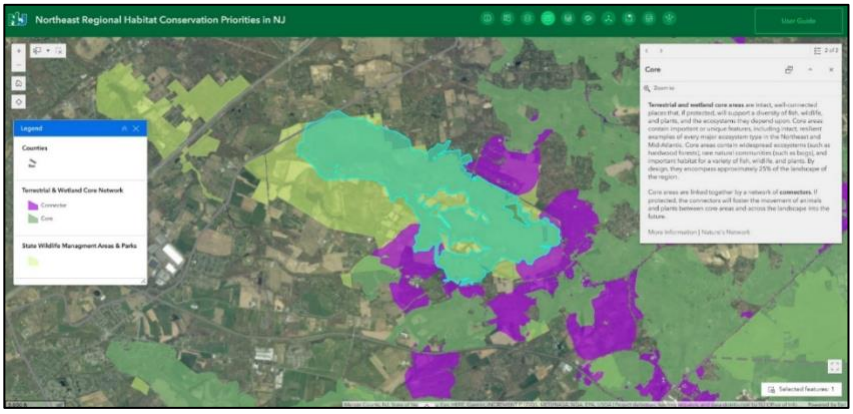
A mapped area of leased shellfish lots.

OIS mapped all shellfish lease lots along the Atlantic Coast and Delaware Bay. In addition to mapping, a standardized system for viewing, editing, and adding new leases and lease holders was created. Shellfisheries staff now have the ability to make changes in the system directly and share those edits with OIS. Biologists can access leased lot points, lessees' tables and topology.

Additionally, OIS completed GIS data development inventory of shellfish resources in the major Atlantic coastal estuaries of New Jersey and mapping their distribution. The inventory also includes maps of other commercially important bivalves and seagrasses. OIS collaborated with Rutgers University to incorporate these data into the New Jersey Aquaculture Siting Information Tool, an interactive map to assist industry and resource managers in identifying aquaculture lease locations.

Northeast Regional Habitat Conservation Priorities in New Jersey

In FY24, OIS released the *Northeast Regional Habitat Conservation Priorities (NRHCP)* web application to simplify the identification process of habitat conservation priorities in New Jersey and the Northeast (i.e., states from Virginia to Maine). Information was derived from several existing regional GIS datasets, including Nature's Network, The Nature Conservancy and the University of Massachusetts' Designing Sustainable Landscapes. The application includes layers on terrestrial, wetland and aquatic networks, biodiversity, habitat condition for imperiled species, resilient sites, marsh migration and ecological integrity. Having the New Jersey-specific portions of these GIS layers accessible in one centralized web application allows regional datasets to be easily integrated into state-level conservation planning initiatives.



A mapped section of the NRHCP in New Jersey depicting several layers.

Office of Environmental Review
Kelly Davis, Principal Biologist

The Office of Environmental Review (OER) evaluates and coordinates the review of various projects, plans and policies to ensure that New Jersey's fish and wildlife resources are protected. In FY24, OER staff attended **88** formal meetings and conducted a total of **318** environmental reviews of Environmental Impact Statements, Environmental Assessments, and Compliance Statements as well as evaluations on permit-dependent conceptual projects proposed statewide and off the coastline. During formal meetings, OER provides guidance and recommendations on how to avoid, minimize, and if necessary, mitigate for any impacts to New Jersey's fish and wildlife.

Highlights

The OER continues to participate in the New Jersey Bay Islands Initiative (NJBII) along with a variety of state agencies engaged in restoring natural habitats and protecting vulnerable bay island communities. NJBII is committed to collectively managing New Jersey's bay islands for stability and sustainability in the future. OER's partnership in this initiative provides NJFW with valuable experience in the design and implementation of bay island-specific habitat restoration projects that can be useful when reviewing similar endeavors in the future.

A solar farm established on a former Landfill in Edison, Middlesex County.

OER Staff continues to refine the *Guidance Manual for Processing Land Use Regulation Permits & Protection of Fish and Wildlife Resources*. Staff also completed review and revision of the *Guidance for Permitting Solar Energy Systems on Landfills in New Jersey* document for DEP's Division of Sustainable Waste Management.