

**OFFICE OF FISH AND WILDLIFE HEALTH AND FORENSICS**  
**MONTHLY REPORT**  
**June 2021**

**Jan Lovy, Ph.D., Research Scientist II**  
**Nicole Lewis, M.S., D.V.M, Research Scientist II**  
**Nilanjana Das, B.S., Animal Health Technician (900h seasonal)**  
**Sarah Friend (*on leave*), M.S., Environmental Specialist**

**FISH AND WILDLIFE HEALTH PROJECT (FW-69-R20)**

Orientation and training for Nilanjana Das, a new 900h seasonal in the lab:

Nilanjana Das has been hired as an Animal Health Technician to assist with projects in the aquatic animal health and wildlife health laboratories. We have been conducting orientation and training for Nilanjana in the two laboratories. She is currently being trained on histology processing in the laboratory. Nilanjana is a recent graduate from Stockton University, where she majored in Biology and Marine Science.

Teaching in the Aquavet Program:

Dr. Lovy provided 3 days of lectures about fish health for the Aquavet Program. Aquavet is a program sponsored by Cornell University focusing on aquatic veterinary medicine. The course is intended for veterinarians and other professionals seeking careers in aquatic animal health. Dr. Lovy's lectures discussed viral, bacterial, and parasitic diseases of coldwater fish, and the management considerations for these diseases in farmed and wild fish.

**Diagnosis of Diseases in Freshwater Fish (Job F-1)**

Fish Health inspection of Northern Pike from the Hackettstown Fish Hatchery (25-May):

A total of 60 Northern Pike were sampled from the Hackettstown Fish Hatchery for the annual health inspection. On necropsy fish appeared to be in good condition with no external or internal signs of disease. Kidney/spleen were collected from all fish for viral screening. These were screened on the EPC cell line incubated at 15 and 25°C, CHSE-214 cell line incubated at 15°C, and the BF-2 cell line incubated at 25°C at the Animal Health Diagnostic Lab (AHDL), NJ Dep of Agriculture. To date, no cytopathic effects were noted. Final results are pending. Bacteriological cultures were taken from all 60 fish onto tryptic soy agar (TSA) and incubated for up to 72h at 20°C. Two samples had positive bacterial growth and these were identified as *Hafnia alvei* by MALDI-TOF by the Animal Health Diagnostic Lab (AHDL). *Hafnia alvei* is not a known fish pathogen of concern, and in this case was isolated from apparently healthy fish.

**Diagnosis and research of Diseases in Marine Fish (Job F-2)**

Participation as a Panel member for a virtual meeting about Menhaden mortalities, held by Clean Ocean Action (COA) (27-May):

A meeting was held by Clean Ocean Action (COA) to update the public on the Atlantic Menhaden mortalities that occurred in the region. These mortalities persisted from the end of March until the beginning of June and were most concentrated in the Raritan Bay region. Dr. Lovy shared updates on work that has been done to better understand these mortality issues and future research to be conducted.

### **Wildlife Disease Surveillance and Investigations (Job W-1) and Wildlife Toxicology (Job W-2)**

#### **New Cases:**

##### Squirrel, Ocean Township, NJ:

Resident contacted their local health department on multiple occasions as they had been finding dead squirrels on their property over a week's period. One recently deceased squirrel was collected and transported to the Clinton Pathology Lab for necropsy. Externally there was significant hair loss and severe crusting of the skin over the entire body. Skin scraping revealed *Notoedres centrifera*, known as the squirrel mite. This mite is specific to squirrels and is highly infectious between squirrels. The severe mange would have led to a breach in the skin barrier causing the animal to become immunocompromised and then death.

##### Bald Eagle, West Milford, NJ:

An adult bald eagle was found at the Charlottesville Reservoir below a set of power lines. It was collected by a volunteer and transported to the Clinton Pathology Lab. On necropsy there was evidence of electrocution and trauma. The eagle was a female. A liver sample was saved for future rodenticide testing.

##### Bald Eagle, West Field, NJ:

An adult bald eagle was brought to Raptor Trust for evaluation as it had several fractures. The fractures were determined non-treatable, and the animal was euthanized and transported to the Clinton Pathology Lab. A brief necropsy was performed to determine the sex of the animal (male), any outstanding pathological findings and to collect a liver sample for future rodenticide testing.

##### Canadian Geese, Monroe Twp, NJ:

Staff from Monroe Twp Public Works reported 15 dead geese next to a pond that had been recently treated with an algicide. Three geese were collected and transported to the Clinton Pathology Lab for necropsy. Two of the geese were determined to be too decomposed for examination. The one goose was found to have a puncture in the heart with a large blood clot in the coelomic cavity as well as liver rupture. There was grass and mulberries seen in the crop and intestinal cavity. Ingesta was collected as well as tissues for additional testing. Results are pending.

### Meetings:

- Dr. Lewis attended a virtual conference hosted by the University of Florida's Wildlife and Aquatic Veterinary Disease Laboratory
- Dr. Lewis attended a virtual CIDRAP CWD webinar
- Dr. Lewis attended the virtual monthly animal health meeting hosted by the NJ Department of Agriculture

### **NON-PROJECT ACTIVITIES:**

#### **Shellfish Health Project:**

A project has been initiated with the Bureau of Shellfisheries, which is also being funded by the USDA-APHIS. The goals of this project are to conduct pathogen surveillance to better understand the range/levels of shellfish pathogens along the coast of New Jersey. An effort is being made to coordinate with the Rutgers Haskin Shellfish Research Lab to ensure that similar methods are being used between laboratories. A full day training was done with the Haskin lab to coordinate on methods for diagnosing the main pathogens from hard clams and oysters.

Sample collection has been completed in hard clams *Mercenaria mercenaria* for a disease known as hemocytic neoplasia. Hemocytic neoplasia is caused by neoplastic proliferation of hemocytes, which can lead to a lethal condition associated with blocked of sinuses. This is a disease that has been problematic in New England, and the goal of this study is to understand if it is present in the state. A total of 210 clams, half from Dry Bay and half from Great Sound, were sampled at the Pequest Aquatic Animal Health Lab and fixed in Davidson's solution for histology. Histology processing and histopathologic evaluation will occur over the next month. Histology will be used to screen the animals for evidence of hemocytic neoplasia to determine if it is present and the prevalence.

Work has continued in collaboration with the NJ Department of Agriculture to adapt a protocol for a molecular diagnostic assay that tests for three oyster pathogens (dermo disease, MSX, and SSO). This assay, in addition to traditional diagnostic methods, will be utilized for testing oysters this year.

#### **Other Meetings:**

- Dr. Lewis continues to attend biweekly COVID19 One Health calls with state, federal and tribal partners hosted by CDC.