

OFFICE OF FISH AND WILDLIFE HEALTH AND FORENSICS

MONTHLY REPORT

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FISH AND WILDLIFE HEALTH PROJECT (FW-69-R21)

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

Fish Health Inspection of the Pequest Trout Hatchery

Five bacterial isolates obtained in pure culture from eight rainbow trout during the annual Pequest Hatchery Inspection in November that were initially identified as *Vibrio anguillarum* using MALDI-TOF mass spectrometry were subsequently sequenced and determined to be *Photobacterium toruni* using 16s rRNA molecular diagnostics. Additional molecular characterizations are in progress. However, the bacterium, although within the Vibrionaceae taxon, is a species that has only been recently described as a pathogenic bacterium from moribund seabream in Spain in 2017 and subsequently isolated from moribund croaker in China and flounder from Korea - of course, all marine hosts.

Fish kill in Pemberton, NJ

A fish kill near Pemberton was reported to the Freshwater Fisheries Program on February 9. Four black crappies were collected and frozen prior to a pathological examination on February 16. Gross lesions were not apparent and bacterial cultures were negative. Histopathology is pending.

Private Hatchery Health Inspection Reviews

The Health Inspection Reports submitted by several private freshwater hatcheries interested in providing fish to public and private enterprises in New Jersey have been reviewed and approved where appropriate.

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

Non-Project Activities

Shellfish Pathogen Surveillance Program

A multiplex PCR assay for detection of three oyster pathogens, including *Perkinsus marinus* - the etiological agents for Dermo, *Haplosporidium nelsoni* - the etiological agent of MSX, and *Haplosporidium costale* - the etiological agent of SSO, was completed from three groups of 60 oysters from three commercial facilities obtained in August & September 2023. The final report is pending.

Eel Survey

The OFWHF has been discussion with Marine Fisheries and several non-profit organizations for sampling glass eels this winter/spring and yellow eels this spring for the detection of various anguillid pathogens; sampling by the OFWHF is expected to commence shortly.

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

UPDATE: Gray squirrel - Bergen County

Toxicology was not recommended at this time by OFWHF; and subsequently declined by NJDEP Bureau of Pesticide Control and submitting member of the public. Tissues were frozen for further analysis should suspect wildlife mortalities continue in this area.

OFWHF was contacted on January 4 by NJDEP Bureau of Pesticide Control to request assistance with a Bergen County resident who is concerned that a neighbor is purposely poisoning wildlife. On January 11, OFWHF collected a deceased gray squirrel from BPC for necropsy and sample collection. Necropsy was performed on January 26. No abnormalities were found. Tissues were saved for ancillary testing if requested by BPC.

UPDATE: Cooper's hawk - Little Falls, Passaic County

Anticoagulant rodenticide analysis revealed the hawk had detectable, sub-lethal levels of three rodenticides: Brodifacoum: 8.5ng/g; Bromadiolone: 4.8 ng/g; Difethialone: 32 ng/g. Lead analysis and histopathology is pending.

A female Cooper's hawk suspected of dying due to rodenticide exposure was collected by CO Nicholas DellaVella on January 6 and necropsied by OFWHF on January 8. The hawk was in poor body condition and had mild pulmonary hemorrhage. Anticoagulant rodenticide screening and lead analysis by NJDEP Pesticide Evaluation & Monitoring is pending.

UPDATE: White-tailed deer with facial abscesses and bacterial pneumonia - Newton, Sussex County

Culture was negative for *Corynebacterium pseudotuberculosis*; bacterial isolation demonstrated a polymicrobial bacterial pneumonia involving numerous opportunistic pathogens. Histopathology is pending.

On January 25th, OFWHF advised USDA-WS biologist Jessica Hinton to euthanize a buck on a residential property which was poorly mobile, had hoarse and efforted breathing, and had a bulging right eye. Dr. Connelly collected the carcass on January 25th and performed a necropsy on January 26th. The buck was in fair body condition, with multiple large abscesses present over the face, including two which were crusted, ulcerative, and draining pus. The right eye was found to be bulging due to an infraorbital abscess. On internal examination, severe bacterial pneumonia was evident throughout all lung lobes. Bacterial isolation and testing is pending.

Red-tailed hawk – Jersey City, Hudson County

On January 30th OFWHF was contacted by Liberty Park staff to state they had found a deceased red-tailed hawk on a public walking path. The animal was transported to the Clinton Pathology Lab the following morning for necropsy. The adult female hawk was in excellent body condition with abundant intracoelomic fat stores. Approximately 1ml of hemorrhage was present in the oral cavity. Air sacs were clear, but lung lobes were diffusely dark red. Pale-tan streaking occurred across liver surface. Histopathology, anticoagulant rodenticide analysis, and lead analysis are pending.

Southern flying squirrel – Monroe, Middlesex County

On February 1st, OFWHF was contacted by USDA-WS staff who stated that they had found 2 deceased flying squirrels at Thompson Park within the past two weeks. Dr. Connelly collected 1 individual from USDA staff the following day – the second individual could not be located. On external examination, the female southern flying squirrel was found to be in poor body condition with abundant “flea dirt” and adult fleas present throughout the coat. On necropsy the animal was in poor post-mortem state. Internal organs showed signs of autolysis and no abnormalities were appreciated. Histopathology is pending. Tissues were frozen for ancillary testing should deceased individuals continue to be found.

Fisher Study

Dr. Connelly performed a necropsy on a roadkill fisher (Sandyston, Sussex Co.) on February 8th. The animal was an adult male and in excellent body condition. No abnormalities were observed, besides those consistent with acute traumatic injury. Tissues were frozen for future studies. On February 17th, whole blood was collected from an incidentally trapped fisher (Hope, Warren Co.). Samples were submitted from both fishers for anticoagulant rodenticide exposure analysis.

Chronic Wasting Disease Surveillance

Annual CWD surveillance has been finished, and all samples submitted to the UPenn Vet Wildlife Futures Program for testing on February 12th.

Deer Health Questions

The OFWHF was contacted for opinions/advice on deer health issues as follows:

- A deceased senior deer at Popcorn Park on February 4th.
- USDA-WS contacted OFWHF regarding a deer diffusely covered in what appeared to be fibromas on February 7th. Because the animal was in excellent body condition and eating, euthanasia was not recommended. The resident was advised that fibromas generally will resolve on their own, but to contact USDA-WS if the animal’s condition begins to deteriorate.
- Several cases of capture myopathy and anesthesia-related mortalities in deer being moved from Thompson Park to Six Flags. RPLNs were collected from two individuals for CWD testing.
- A resident concerned that a neurological deer that should have been CWD tested was dispatched by local PD and the carcass was disposed of without testing for rabies or CWD. Resident was informed of the deer disease reporting form and to call NJ Fish and Wildlife with future disease issues so that we can coordinate an appropriate response.

Miscellaneous Activities

- Dr. Connelly attended a SWHIS feature service meeting with the UPenn Vet Wildlife Futures Program and other participating state agencies on February 4th.
- Drs. Connelly and Groff visited the Dr. Jane Huffman Wildlife Genetics Institute, East Stroudsburg University to discuss upcoming bear population genetics work on February 9th.

- Dr. Connelly virtually presented on ongoing surveillance and research efforts for hemorrhagic disease in the northeastern U.S. on February 27th at the New York State Wildlife Health Program Wildlife Health Meeting.

- Dr. Connelly responded to a bobcat incidentally captured by a trapper on February 27th in Sussex County for sedation and transport to a wildlife rehabilitation clinic. The adult male was deceased upon arrival ~45 minutes later, and the carcass was transported to the Clinton Pathology Lab for necropsy.

Non-Project Activities

The OFWHF has consulted with the Endangered and Nongame Species Program concerning non-lethal sampling of salamanders in February and March for various pathogens.

Dr. Connelly performed den checks of artificial pine snake dens in Bass River State Forest, Ocean County on February 26th with staff from Rutgers University, Pinelands Commission and Herpetological Associates, Inc. as part of a long-term population monitoring study and for disease surveillance efforts (snake fungal disease and snake adenoviruses).