

New York State Department of Environmental Conservation  
Division of Fish and Wildlife

# Wildlife Health Program

## Strategic Plan 2021-2026



*This plan was developed with Federal Aid in Wildlife Restoration (Grant W-178-R).*

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*Keeping the wildlife community informed on threats to the health of species native to New York, such as Rabbit Hemorrhagic Disease Virus-2 to eastern and New England cottontails.*



## Introduction

The New York State Cooperative Wildlife Health Program (WHP) is a partnership started in 2010 between the New York State Department of Environmental Conservation (DEC) and Cornell University's College of Veterinary Medicine (CVM). The program's [core personnel](#) (Appendix A) are based in the Wildlife Resources Center in Delmar, NY and at the Cornell Wildlife Health Lab (CWHL) at the Animal Health Diagnostic Center (AHDC) in Ithaca, NY. The program provides routine surveillance, wildlife health research, disease prevention and response planning, teaching, training, and policy support. Our work supports DEC's mission to safeguard the long-term health of wildlife populations in New York and is funded by the Federal Aid in Wildlife and Sportfish Restoration Program (Wildlife Health Grant W-178-R). In accordance with One Health methodology, we partner with human and domestic animal health experts in situations of mutual concern.

In 2011, the WHP was developed through a 6-month-long strategic planning process with a team of DEC biologists, managers, and Cornell Wildlife Health faculty. This original plan, Wildlife Health Program Strategic Plan 2011-2015, outlined nine essential program components: Program Management, Policy Development, Preparedness and Response, Training and Development, Surveillance and Monitoring, Communication, Information Management, Research, and Veterinary Health Services.

Over the first few years, the program prioritized developing an integrated system between Cornell Wildlife Health Lab and DEC Wildlife Health Unit for case submissions, data collection and reporting, redesigning the agency's Chronic Wasting Disease program, improving intra- and interagency communications around wildlife health issues, and providing DEC staff with disease response and safety training.

The second strategic plan, Wildlife Health Strategic Plan 2016-2021, built on this foundation to provide improved services, communication, and fill information gaps. Along with the second iteration of the strategic plan, DEC created a [Wildlife Health Team](#) (see Appendix A) to advise the WHP. The Team was composed of WHP and CVM staff and a wildlife biologist or technician from each DEC region, who represented interests across the Bureau of Wildlife (BOW), as well as the Division of Law Enforcement and Central Office. The Team assisted in program implementation and development of annual work plans to prioritize agency needs. Additionally, WHP core staff were members on each of the other DEC Teams and regularly attended meetings to provide wildlife health updates and participate in team discussions insuring wildlife health concerns are considered. Specialty teams composed of both internal staff and external experts and partners were assembled as needed to develop policy recommendations.

This document includes a program review from 2011-2019 and outlines our program priorities for 2021-2026, which were areas identified by the DEC Wildlife Health Team as priorities for the Wildlife Health Program.

## Program Review 2011-2020

### Health and Surveillance

Improved disease surveillance helps us to establish disease patterns and more rapidly detect and respond to new and emerging threats that can impact wildlife, human, and domestic animal health. From 2011-2019, our team examined over 10,000 submitted wildlife cases to investigate causes of mortality and perform disease and contaminant/toxin surveillance. Under the One Health tenets, relevant case data are shared with state agricultural and human health agencies to alert them to disease issues of consequence. Significant disease events investigated included an outbreak of epizootic hemorrhagic disease (2011), red tailed hawk rodenticide intoxications (2012), songbird salmonella (2013), waterfowl winter mortality on the Great Lakes (2014 and 2015), saxitoxin deaths in diamondback terrapins (2015), crow reovirus infections, a significant shearwater die-off (2017), canine distemper outbreaks, and Duck Viral Enteritis in mallards near a zoo. We continue to monitor wild deer for Chronic Wasting Disease (CWD) using a risk-based sampling system to examine hunter-killed deer from areas across the state with higher priority placed on samples in close proximity to captive cervid facilities, taxidermists, game meat processors, the Pennsylvania border, as well as any clinical deer.

We use a database developed specifically for wildlife by the Canadian Wildlife Health Cooperative, which we share with the Northeast Wildlife Disease Cooperative. DEC staff submit cases through an online portal, which speeds data collection. This system allows for data standardization, facilitates active monitoring of disease trends across the Northeast, and allows us to send finalized case reports electronically to submitters. In 2017, we launched a website providing case data online so that all DEC wildlife and law enforcement staff can rapidly access case reports, work with analytic and mapping tools, order supplies, and find disease information to respond to public inquiries.

*One Health* is a collaborative, multisectoral, and transdisciplinary approach – working at the local, regional, national, and global levels – with the goal of achieving optimal health outcomes recognizing the interconnection between people, animals, plants, and their shared environment.

### Disease Prevention and Response

To ensure that DEC staff can perform their duties safely and efficiently in event of a disease outbreak, we recently updated a disease response plan that outlines all the major components of wildlife disease investigation. This plan includes guidance on responding to calls from the public, personal protective equipment (PPE), field activities, euthanasia, decontamination, disease control, and forensic sampling. Regional Wildlife staff can order Wildlife Health-related supplies (PPE, specimen bags, hand sanitizer, etc.) through the Wildlife Health Program website and usually receive the items the following day.

A main program priority is preventing the reintroduction of CWD into the New York State wild deer herd. We use a field-based risk assessment and designed a weighted risk-based surveillance system that prioritizes samples in geographic areas and sex/age classes that have the highest likelihood of CWD detection. This system reduces work for field staff by focusing their efforts and by leveraging partnerships with deer processors and taxidermists to increase high value sample collection. Since 2002, over 54,000 wild deer have been tested with only two positive cases identified in 2005 and no reoccurrence of the disease in subsequent years.

An interagency team drawn from the NYS Dept. of Agriculture & Markets (NYSDAM), DEC, and CWHL produced a response plan for both wild and captive cervids that defines roles and responsibilities for a coordinated management strategy in the event of CWD detection and a CWD risk minimization (prevention) plan. The risk minimization plan resulted in new regulations requiring that hunter-harvested cervid carcasses taken from outside of New York State must be processed so no high-risk materials are present. This plan also calls for actions to prevent the reintroduction of CWD, stop disease transmission events, and provide education and outreach to all stakeholders.

## Research

Our research is collaborative, applied, and driven by real world wildlife health and management. We have projects combining field and laboratory work with colleagues from multiple institutions. Some of our completed work includes:

### *Lymphoproliferative disease virus (LPDV) distribution*

Lymphoproliferative disease virus (LPDV) was identified in the US for the first time in wild turkeys in 2009. We partnered with the Southeast Wildlife Disease Study Group and SUNY-Environmental Science and Forestry to determine that up to 80% of adult turkeys in NY are infected, but signs of disease are rare. Our genetic and spatial analyses indicated that the virus was likely distributed around the state through historic wild turkey reintroduction programs.

### *Moose population health*

Moose populations have been declining across North America. We collaborated on a multi-institution effort to determine abundance and factors that may be suppressing population growth. Our examination of reproductive status, infectious disease exposure, parasite load, and cause of mortality indicated New York moose are affected by parasites commonly carried by white-tailed deer (brainworm and giant liver fluke), but are not suffering from winter tick infestations, as are other Northeast moose populations.

### *Bald eagles and lead poisoning*

Bald eagles are considered a recovery success after rebounding from near extirpation. While ingestion of lead ammunition continues to kill eagles, its impact on population dynamics is unclear. We assessed the population-scale impact of lead toxicosis in Northeast eagles from



1990 to 2018. We first derived a detailed representation of eagle life cycle using a three-stage, seasonal population matrix model, and then integrated three decades of demographic and veterinary data. We did not find vital rate estimates in the traditional field-based manner; we wrote a software algorithm that mined vital rates out of time series data using a symbolic mathematical representation of bald eagle demographics. We compared recovery under lead-contaminated and lead-reduced or lead-free scenarios. Lead contamination depressed the long-term growth rate of eagles by 4.2-6.3% over the past three decades. Eagle abundances recovered in the presence of lead by distorting the way that individuals moved through their life cycle. Lead depleted up to 95% of mortality buffer between population viability and extinction. Recovery of eagles in the presence of lead comes at a cost in the species' ability to combat simultaneous threats from human populations, infectious diseases, and habitat loss.

### *Anticoagulant rodenticides in fishers*

Anticoagulant rodenticides are commonly used to control rodent populations. However, other wildlife can be exposed either by consuming the bait or by eating the poisoned rodents (secondary toxicity). Anticoagulant rodenticides act by interfering with liver synthesis of vitamin K-dependent blood-clotting factors and damaging the small blood vessels. Rodenticide exposure in fishers appears to be widespread in fisher populations in the Northwest U.S. A small sample of fisher livers from the CWHL wildlife tissue bank were tested for the presence of anticoagulant rodenticides. These samples were collected from animals submitted for either cause of death determination or training purposes. A significant proportion of samples were positive for rodenticides and now the WHP and DEC Furbearer and Small Game Team are working on a larger scale project that will increase sample collection and include spatial analyses to determine potential high-risk areas for exposure.

## Training and Teaching

To ensure that DEC staff are proficient in wildlife health monitoring and sample collection, we host biennial regional workshops with lectures and interactive exercises. Past topics included training in zoonotic (animal-to-human) disease risks, humane handling, euthanasia, field necropsy, disease response, sampling techniques, and PPE. Wildlife Health Team members provide suggestions for workshop topics, feedback on program activities, and input for future planning. Personnel from DEC Bureau of Wildlife, Division of Law Enforcement, and New York State Parks, Recreation and Historic Preservation typically attend. Our program also hosts an annual Safe Capture International 2-day workshop on chemical immobilization best practices. Over 160 DEC personnel have completed the certificate training since 2011.

Teaching undergraduate, graduate, and veterinary students from various institutions has been an opportunity to provide real-world experience working alongside our biologists and veterinarians. Since 2011, WHP staff have engaged over 80 students, providing a better understanding of the unique challenges associated with wildlife species as they pursue professional careers in veterinary medicine, wildlife, or public health.

We have also given invited presentations on wildlife health topics to a variety of audiences across the state, some of which include: NYS Parks, NY City One Health Committee, NYS Conservation Council, NY Farm Bureau, NYS DAM, NY Bowhunters, and NYS Fish and Wildlife Management Advisory Board.

## Policy and Support

We review research permit requests to ensure wildlife will be safely and humanely handled and to reduce the risk of disease transmission. We have provided input on community deer management permits, captive breeding and release programs, rehabilitator permit examinations and treatment protocols, and Nuisance Wildlife Control Operator (NWCO) handling guidelines. The WHP also routinely provides support for policy and regulatory issues including species management plans, animal handling protocols, and biosafety protocols. We review regulatory language and provide language for press releases and other management decisions. Guidance documents on Euthanasia and Chemical Immobilization are available to DEC staff online.

We worked with DEC Special License Unit (SLU) to develop an on-line reporting system for licensed wildlife rehabilitators allowing them to complete reports required by their license and allows the WHP near real-time access to wildlife rehabilitation submissions statewide to detect anomalies and significant disease outbreaks.

*Interagency collaboration is a key to keeping CWD out of New York State.*



## Strategic Plan 2021-2026

With the global COVID-19 pandemic occurring in 2019-2020, it is more important than ever to remain vigilant for wildlife diseases. We are acutely aware of the ecological, economic, and social consequences of disease spillover from wildlife to humans and the serious potential of disease spill-back from humans to wildlife. Over the next five years, we will continue to improve disease surveillance, provide targeted staff training and support, and develop research-based solutions. A program review was conducted in 2020 as part of the contract renewal process, and consultation with the Wildlife Health Team and DEC management have identified key areas for the next phase of WHP.

### Program Components:

Components of the WHP will include the following: Program Management, Policy Development, Preparedness and Response, Training and Development, Surveillance and Monitoring, Communication, Information Management, Research, and Veterinary Health Services. The Goals under each of these components represents a long-term vision that guides the program. The Strategic Initiatives are the specific actions that the WHP will undertake to meet those goals during this timeframe.

### Program Management

Coordination of the program is the responsibility of the WHP Leader. The WHP Leader manages communication internally within BOW, across division lines within DEC, and externally to agencies, institutions, and private sector partners and collaborators. Final policy decisions are made by the BOW Chief in collaboration with the Bureau of Wildlife Management Team (BMT) or by the Division Leadership Team (DLT) or DEC Executive Office. Regular meetings with DLT and annual program evaluation ensure that the WHP is accountable, effective, and timely in delivery of desired results and benefits.

#### *Goals*

#### **Strategic Initiatives**

*Increase the integration of wildlife health principles into DEC field and administrative activities for Bureau of Wildlife and Division of Law Enforcement*

- WHP core staff will attend BOW Team meetings as full members on an annual basis to improve communication and integration of wildlife health into DEC activities.
- In addition to the WHP leader, core staff will attend Bureau Management Team and bureau-wide meetings as needed to report on activities or receive guidance on projects.
- The Wildlife Health Team will meet in person annually to perform work planning and provide guidance on BOW and DLE needs and ensure program consistency statewide.

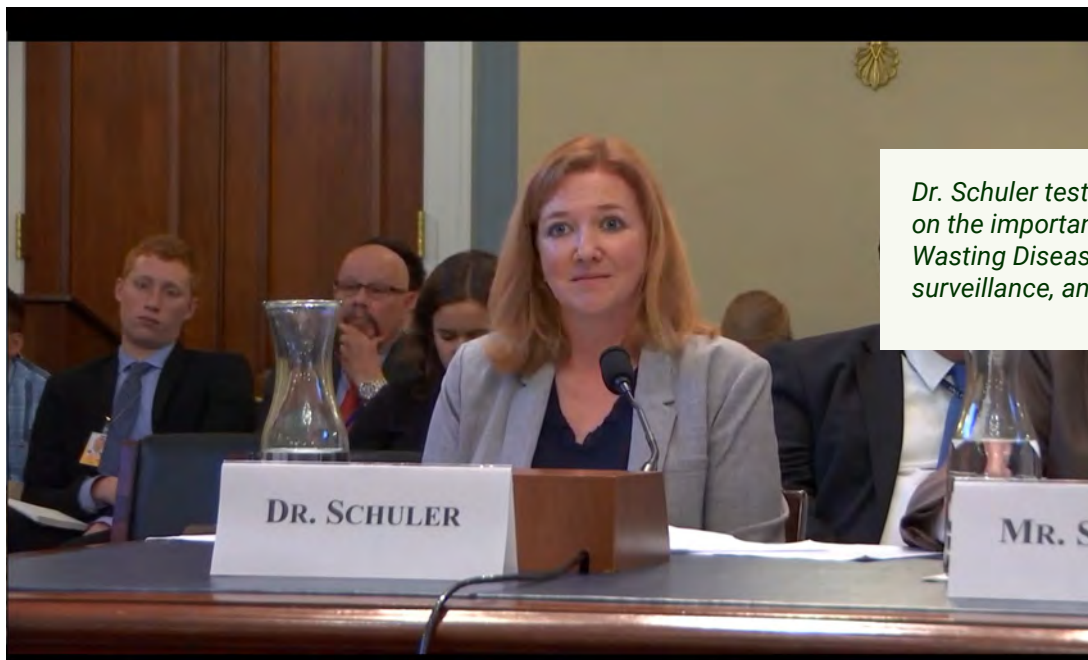


*Demonstrate leadership in the field of wildlife health*

- Utilize veterinary and wildlife biology students where research and experiential opportunities exist to support the mission of the New York State Wildlife Health Program
- Support the development of state and/or regional wildlife health programs (e.g., Northeast Wildlife Disease Cooperative, Pennsylvania Wildlife Futures) through partnerships, case data sharing, specimen archiving, staff training, outreach, and collaborative research.
- Publish articles in peer-reviewed journals, the popular press, and social media outlets annually.
- Represent the NYS WHP at state, national, and international scientific conferences, specialized meetings, and public engagements.

*Develop relationships with Indigenous Nations in NY to assist with wildlife health issues and initiate CWD education and sampling programs*

- Identify Tribal leaders and Tribal wildlife staff and offer wildlife disease training with emphasis on CWD. Add them to distribution lists for wildlife health news.
- Set up CWD surveillance system for Tribal lands including clinical deer necropsy.
- Discuss risks associated with captive cervid import with Tribal leaders.



*Dr. Schuler testifying to Congress on the importance of Chronic Wasting Disease research, surveillance, and prevention.*

## Policy, Protocol and SOP Development

The WHP provides guidance and recommendations for policy development within the BOW, the DEC, and other agencies and programs that may address wildlife health issues. Policy support includes: providing comments and recommendations on state and federal laws and regulations related to wildlife health; giving input on management plans and other formal agency guidance; and providing sampling, animal handling, and bio-safety protocols. Program staff provide recommendations and guidance in the form of technical documents, white papers, position papers, study and research design, animal handling protocols, and informal communication. Policy development recommendations are based on sound scientific data and principles and follow the tenets of [One Health](#).

### Goals

*Increase the integration of wildlife health principles in agency activities through policy analysis, review, and development*

### Strategic Initiatives

- Develop policy/protocol regarding live animal seizures by DLE, including: when to seize, temporary/permanent placement options, chain-of-custody record maintenance, budgeting for care and housing, photographs/euthanasia/release and the need to include special licenses and DLE in discussions. In addition to native wildlife species, this will include exotic animals.
- Continue to develop or provide input to “best practices” guidance for common field activities performed by staff (examples include live capture, handling/processing, and chemical immobilization of wildlife, biosecurity, relocation and release procedures).
- Work with NYS Dept. of Health and DEC Employee Health Services to provide standardized guidance on appropriate PPE, respirator fit-testing, regular rabies titer checks and reports, including special circumstances for immunocompromised or pregnant employees.
- WHP will work with SLU and other BOW staff to develop a digital permit reporting systems that will streamline data collection and analysis for relevant permits and enhance disease surveillance.
- Evaluate potential issues related to wildlife rehabilitation (e.g., minimum standards for caging, facilities, website listings, release dates, tagging related to human consumption/drug retention times, revocation of licenses, habituation, non-releasable animals, notification of endangered/threatened species in custody, and mortality reporting).
- Work with the rehabilitation community to assess distribution of rabies vector species (RVS) rehabilitators and explore developing a training module for these individuals, in collaboration with SLU.

## Preparedness and Response

Routine surveillance and monitoring are the foundations of preparedness because they establish a structure for early detection and response in the event of a significant threat emergence. The WHP identifies these threats to wildlife and provides DEC with plans, training, and tools to mitigate the impact of disease or toxins on wildlife populations. Response plans include disease data, expert input, risk assessment and recommendations for PPE, containment strategies, and regulatory changes. Plans define agency roles and responsibilities, as well as communication and outreach strategies. DEC staff receive training in emergency disease response, including wildlife disease outbreak scenarios.

### *Goals*

*DEC will respond to wildlife health incidents in a timely and effective manner.*

### **Strategic Initiatives**

- Regularly update DEC Field Investigation and Disease Response Plans to include easy-to-follow flow charts and synopses of generic wildlife disease response plan so managers and DEC Administrative staff can find information in multiple forms.
- Develop disease response plans for specific pathogens, such as *Batrachochytrium salamandrivorans* (Bsal) and bovine tuberculosis (bTb). Disease priorities will be identified by WHP and the Wildlife Health Team.
- Develop guidance/SOP for sick/diseased animal response including when to respond, who responds (Wildlife, DLE, NWCO), and their respective roles and responsibilities. Convene group including DLE to work on this SOP.
- Continue to work with DEC Office of Communications Services staff to provide outreach and education on CWD
- Add euthanasia to staff firearms training with a discussion of what is situationally appropriate given public safety
- Add workshops on disease response plans into bi-annual WHP training. This will help with consistency across regions (how/why a response is necessary)
- Maintain situational awareness of climate change impacts and provide guidance as needed on how the health of native New York wildlife species may be affected.
- Develop solutions for deer carcass and carcass parts disposal to minimize risk of CWD from activities of hunters, meat processors, or taxidermists.

## Goals

*Ensure BOW) has appropriate supplies, equipment, and facilities to conduct wildlife health activities safely and effectively*

## Strategic Initiatives

- Continue to ensure that staff have the necessary facilities, equipment, and supplies; work with DLT to correct deficiencies identified in regional needs assessment
- By 2021, laboratories and incinerator at the Wildlife Resources Center must meet appropriate standards for biocontainment and safety of staff and public.

*DEC will work cooperatively, as needed, with other agencies and collaborators*

- WHP core personnel will participate in the Association of Fish and Wildlife Agencies Fish and Wildlife Health Committee by attending meetings and assisting with guidance documents.
- As requested, WHP core personnel will provide products and expertise to other state wildlife agencies and wildlife health entities (e.g., Northeast Wildlife Disease Cooperative, Pennsylvania Wildlife Futures).



*Protecting the state endangered salamanders like the Eastern Tiger salamander (*Ambystoma tigrinum*) with Bsal molecular test development and a pathogen-specific disease response plan.*

## Training and Development

Regional BOW staff are frequently the first to be contacted about a wildlife health incident, and they must be prepared to recognize clinical signs of disease in various wildlife species, respond to public inquiries, effectively conduct field investigations, collect and deliver specimens for analysis, and handle and transport live and dead wildlife safely, effectively, and legally. All training and field operations will incorporate One Health concepts as unifying principles of performing these wildlife health responsibilities. The WHP conducts biennial training workshops to cover safe practices for handling potentially diseased wildlife and works regularly with staff to provide updated information on emerging disease threats. Training modules and documents are available on the CWHL website to improve information access and availability of training materials.

### *Goals*

*Ensure BOW staff and partners are provided information and training so that they can conduct wildlife health activities safely and efficiently and in compliance with all state and federal regulations, animal welfare, and bio-safety standards*

### **Strategic Initiatives**

- Ensure that all incumbent staff and new hires attend workshops or complete training modules in the following subject areas within 1-2 months of being hired. Consider incorporation into onboarding processes, IDPs and Fish/Wildlife Seasonal Handbook, etc.
  - The One Health concept and how it relates to wildlife management
  - Common wildlife diseases (including zoonoses and foreign animal disease) signs and affected species
  - Selection and use of personal protective equipment
  - Proper specimen selection and packaging
  - Live animal handling best practices including biosafety protocols and humane euthanasia
  - Emergency response
  - Appropriate handling of cases with legal implications including those involving environmental pollutants
  - Disinfection techniques and appropriate carcass disposal
- Offer an annual Safe Capture or other appropriate workshop to ensure current staff receives training on a five-year basis to maintain fluency with current standards and proficiency with techniques outlined in the Chemical Immobilization Standard Operating Procedure.
- Adopt a chemical immobilization training using experienced Bureau staff (all annually in central location and Regional refresher courses). Make it NY-specific and targeted to specific species. Include DLE.



- Provide a “wildlife health refresher” during all staff BOW meetings.
- Via the CWHL website, provide disease fact sheets, glossary, and analytic tools to improve staff knowledge of wildlife disease and facilitate responses to public inquiries.
- Participate or plan advanced workshops or lectures on specific diseases, taxonomic groups, laboratory procedures, or other topics of interest
- Regularly update DEC email list to capture new seasonal employees each May. Obtain DEC master employee list including work locations for Cornell to distribute materials/services through website.
- Through the DEC liaison, reach out to establish contacts with Indigenous Nations in NY to provide wildlife health information and training and to understand better what is occurring on Tribal lands
- Improve integration with DLE to ensure they have similar training and access opportunities to wildlife health information, including proper submission protocols, shipping regulations, and access to personal protective equipment. DLE will be included at wildlife staff and chemical immobilization trainings, along with the Region BLOC meetings every three years.
- Identify appropriate training opportunities for WHP core staff, such as PPE selection and use, wildlife necropsy procedures, disease diagnosis, wildlife disease epidemiology, and Foreign Animal Disease familiarity, and facilitate DEC and CWHL staff participation

*Kevin Hynes demonstrating PPE selection and use at DEC Regional workshop*



## Surveillance and Monitoring

The WHP provides a coordinated, structured system of disease and contaminant surveillance to mitigate impacts on wildlife, humans, and domestic animal populations. Monitoring wildlife mortalities establishes baseline patterns of endemic disease and contaminants. These data can facilitate detection of new and unusual morbidity and mortality events that are potential emerging threats. The WHP uses risk-based surveillance systems for high priority diseases, supplemented by molecular techniques like landscape genetics and DNA fingerprinting, to identify areas of concern for disease transmission and spread.

### Goals

### Strategic Initiatives

*Ensure staff are aware of typical disease patterns and recognize emerging wildlife health issues*

- Ensure that diagnoses are provided in a timely manner and are clearly communicated to staff
- Provide relevant maps on request for specific species, locations, or hazards (examples include eagle electrocution sites, historic organochlorine pesticide poisoning locations)
- Provide regular case updates through a subscription email service with case status updates, disease outbreak information, and other emerging threats

*Ensure information for the prevention, management, and mitigation of disease or contaminant impacts are based on sound surveillance and monitoring data*

- Employ molecular methodologies for pathogen detection and profiling
- Develop new assays for wildlife species identification with an emphasis on diseases (examples include chronic wasting disease, Bsal) and some rare and cryptic species (examples include endangered reptiles and amphibians)
- Continue to maintain staff and management access to online case data, permit reporting data, and program research data to facilitate information use in decision making
- Identify emerging zoonotic threats (ex. SARS-CoV-2, *Echinococcus*) that may have potential to spillover to humans or diseases that may be shared with domestic animals (ex. tuberculosis)

*Support coordinated surveillance and monitoring activities within New York State and with national and international agencies*

- Develop diagnostic tests for wildlife and increase availability of testing for wildlife to improve detection of species and pathogens
- Engage in national efforts to document and share information on emerging disease threats including Bsal, white-nose syndrome, snake fungal disease, and chronic wasting disease

## Goals

*The Wildlife Health Program will develop new surveillance methodologies and testing capacity for emerging infectious disease of wildlife for New York and our state and federal partners*

## Strategic Initiatives

- Develop kits and mechanisms to facilitate eDNA testing for DEC and outside agencies
- Establish an online wildlife health diagnostic portal within the AHDC for specialty testing of wildlife samples
- Work with state and federal agencies to develop regional approaches for disease surveillance and understanding population impacts
- Develop new methodologies and share technological improvements with other wildlife agencies



## Communication

The WHP has routine communications and collaborations with other state and federal entities, educational and nonprofit organizations, and the public. The formation of a dedicated Wildlife Health Team with representatives from all DEC Regional Offices and BOW teams and the addition of a WHP staff member on each BOW Team facilitates intra-agency communication and coordination. We have prioritized engagement and distribution of information provided to the public. The program will work with communications staff at DEC and Cornell to increase public awareness of wildlife health issues and strengthen the profile and impact of the program in New York.

### *Goals*

*Ensure that the WHP is informed and can provide support for DEC activities that have health implications, and DEC staff are adequately informed and supportive of wildlife health programs*

### **Strategic Initiatives**

- Improve access to wildlife health information for the agency, stakeholders, and public through the use of digital tools, scientific publications, and other media outlets
- Meet twice annually with the Wildlife Health Team. (this is already in Program Management) In-person meeting to be held between January-March.
- Have WHP staff attend BOW team and management meetings on a regular basis to provide WHP updates (also in Program Management)
- Increase use of digital tools for intra-agency communications and document sharing, including DLE
- Attend DLE BLOC meetings, assure that DLE staff (Environmental Conservation Officers and Forest Rangers) view on-line Wildlife Health training materials
- Provide Team pages on website, Wildlife Health Team Drive, and/or on InSite that include guidance documents, data, and presentations of interest to that team
- Provide DLE with website pages for information pertinent to their activities
- Provide a data portal for the public to access basic case and disease information

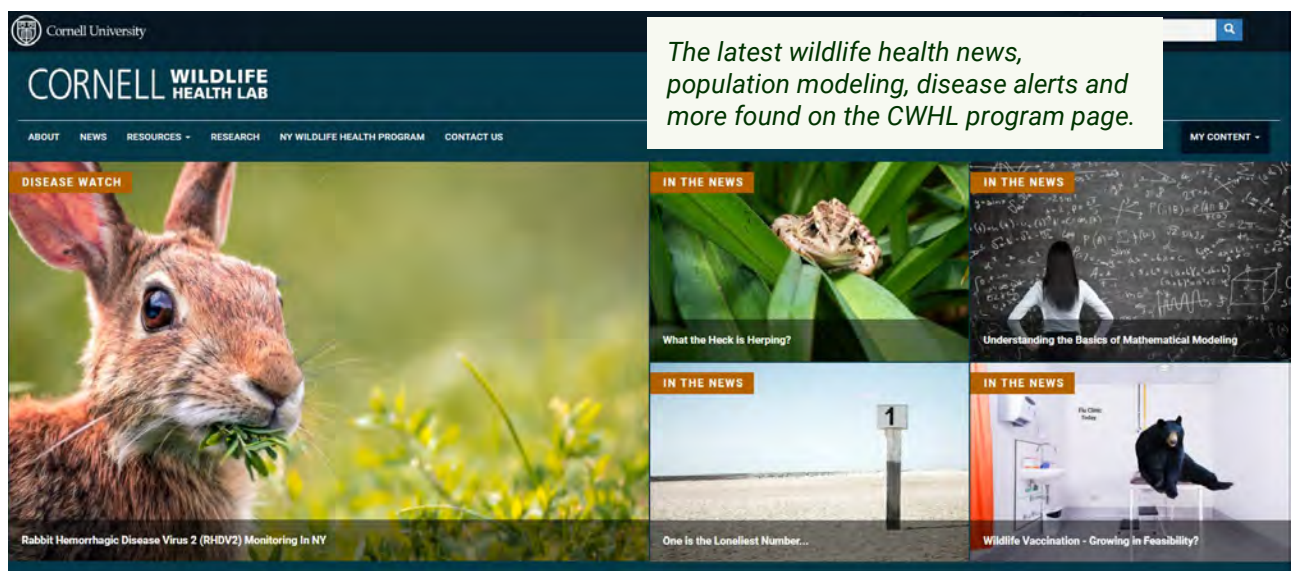
*Maintain cooperative relationships with external agencies and collaborators for coordinated response to wildlife health issues*

- Incorporate or improve the use of new methods for collecting and sharing data (e.g. digital permit reporting, CWHC database, CWD web-based surveillance tool)



*Increase public awareness of emerging wildlife health issues and the wildlife health program*

- Increase engagement with the general public through online resources, popular press, lectures, and social media
- Facilitate BOW staff responses to public inquiries by providing staff with improved information resources
- Engage with communications specialists to design and implement outreach programs (CWD, Bsal, lead toxicity)
- Be engaged in Cornell CVM/AHDC strategic planning processes to improve development, communications, and programming for wildlife-related activities at the College
- Develop a CWD epidemiology/current status video for sportsmen and public.
- Establish boilerplate language for staff to use to communicate to the public, such as “what does a positive test mean?”
- Develop deer field-dressing and boning out meat videos for DEC website
- Work with Hunter Education Program instructors to keep them current on information (i.e., CWD mitigation, lead ammunition, common wildlife diseases hunters may encounter) through the hunter education syllabus or other media sources.
- Develop CWD outreach materials to use when/if CWD is detected in NY.





## Information Management

High-quality information provides a foundation for sound science-based decisions, justification for policy recommendations, and supports program priorities. To effectively use the data and respond rapidly to emergency situations, data should be current and spatially depicted. We have taken steps to improve case data standardization and search functionality, as well as developed unique data management systems for tissue archiving, special licenses reporting, and research projects.

### Goals

*Provide BOW staff and collaborators with accurate and reliable wildlife health data that is readily available to support all program goals*

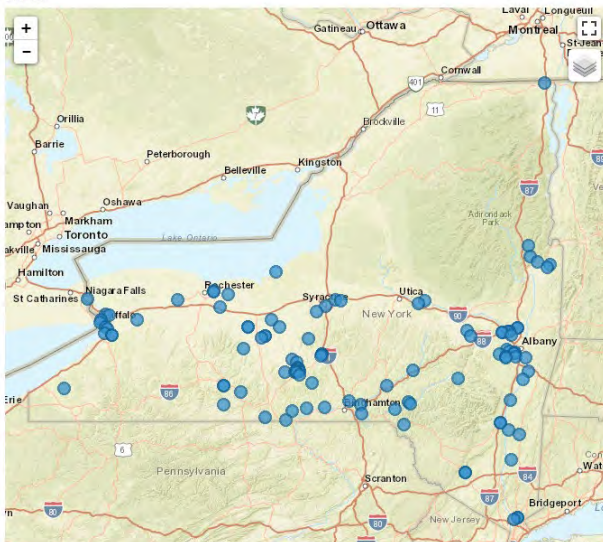
### Strategic Initiatives

- Provide variable levels of access for staff and the public for real-time case data and analytic tools through the CWHL website
- Provide online access to other databases (ex. rehabilitator, taxidermist, meat processor, captive cervid license data)
- Work with Special Licenses Unit and other groups to facilitate collection of relevant permit reports and analysis for agency use
- On request, provide data summaries and analysis for information requests and policy decisions
- Integrate DEC and NYSDAM databases for captive cervid facilities, disease testing and inspections

## WHP Case Map

Number of cases matching criteria: 120

Map results are limited to 1,000 cases per view. Use the pager below the map to see additional cases.



### Search Criteria

Species  
   
- Any -

County

Region

Diagnosis Category

Diagnosis

Date Received  
   
E.g., 06/04/2020  
   
E.g., 06/04/2020

*Case map representing positive West Nile Virus cases processed through the program from 6/1/19-6/1/20.*

## Research

Collaborative research on wildlife health can be a stand-alone project or a component of other planned work by DEC or external partners. It is essential to better understand disease introduction, transmission and potential impacts on wildlife populations in NYS. The WHP focuses on research questions that provide DEC with information to support management decisions.


The WHP provides technical and field support to BOW staff and guidance for the SLU research permit applications. The WHP leverages internal resources, external funding, and students in training, to facilitate research projects.

### *Goals*

*Conduct and support basic and applied research on wildlife health issues, and ensure that research is rigorous, goal oriented, and scientifically sound*

### **Strategic Initiatives**

- Advance our ability to understand and manage disease threats to wildlife with multidisciplinary research questions and analysis of case data information
- Prepare high-priority wildlife health project proposals that are applicable for Pittman-Robertson, State Wildlife Grant, and other funding sources
- Develop an e-DNA test for Bsal
- Examine methodology for snake fungal disease from environmental samples (sheds)
- Provide guidance for wildlife health best practices in agency research projects
- Participate in multi-state/interagency projects to increase understanding of disease ecology at the landscape scale
- Produce a white paper on deer and *P.tenuis* risk to domestic livestock.
- Curate a wildlife tissue biobank for use by researchers. Establish a protocol or sample sharing agreement for use of these tissues.



*The NYS Wildlife Health Program coordinates with partners to collect samples from various species to look for emerging disease issues. We worked with NYS Dept. of Transportation to obtain bobcat samples to develop a test for *Cytauxzoon felis*.*

## Veterinary Health Services

Handling wildlife species presents risk of possible disease transmission, public or staff safety concerns, and issues of animal welfare. The WHP facilitates access to a suite of veterinary medical services, including medical care for endangered and threatened species. We support BOW staff with training and equipment for handling live wildlife, and review of relevant special licenses involving the take and possession of live wildlife, euthanasia and animal welfare standards, biosafety protocols, and disease management. The WHP also provides recommendations and expert opinion on proposed statutes and regulations involving the take, possession, transport, release, and euthanasia of live wildlife.

### *Goals*

*Veterinary medical “best practices” will guide the handling of live wildlife by BOW staff and the regulated community*

### **Strategic Initiatives**

- As needed, develop recommendations for potential adoption by the BOW and the regulated community to respond to injured, ill, or orphaned endangered and threatened species
- Provide support and consultation to cooperating veterinary practitioners who can assist BOW staff and licensees with issues related to veterinary medical services for wildlife
- Review current BOW practices and procedures involving the handling of live wildlife and provide standards to ensure that such practices and procedures are guided by best veterinary medical principles
- Review current licenses issued by the DFW and provide recommendations to ensure that activities conducted under the authority of such licenses are guided by best veterinary medical principles and do not pose a threat to the wildlife resources of the state
- Establish a relationship with Tri-State Bird Rescue to be prepared in the event of an oil spill. In conjunction with the DEC Spills Unit, determine if a DEC BOW SOP is needed and if BMT wants regional staff to be oil spill responders
- Produce a “best practices” document related to head-starting threatened and endangered species including propagation, introduction, augmentation, and translocation

## Appendix A: Personnel

### Core Program

DEC Central Office  
*Albany*

Kevin Hynes, *Program Leader*

DEC Wildlife Health Unit  
*Delmar*

Kevin Hynes, *Program Leader*  
Ashley Ableman, *Research Scientist*  
John Shea, *Wildlife Technician*  
Lauren Miller, *Wildlife Technician*

Cornell Wildlife Health Lab  
Animal Health Diagnostic Center  
College of Veterinary Medicine  
Cornell University  
*Ithaca*

Elizabeth Bunting, *Wildlife Veterinarian*  
Krysten Schuler, *Wildlife Disease Ecologist*  
Melissa Fadden, *Research Aide*  
Jennifer Peaslee, *Communication Aide*  
Nicholas Hollingshead, *Data Analyst*  
Brenda Hanley, *Post-Doctoral Researcher*  
Alyssa Wetterau Kaganer, *Post-Doctoral Researcher*  
Elizabeth Buckles, *Pathologist*  
Rachel Abbott, *Wildlife Veterinarian*

### Wildlife Health Team - DEC Bureau of Wildlife

DEC Wildlife Health Unit  
*Delmar*

Kevin Hynes, *Program Leader & Team Leader*

Cornell Wildlife Health Lab  
Animal Health Diagnostic Center  
College of Veterinary Medicine  
Cornell University  
*Ithaca*

Elizabeth Bunting  
Krysten Schuler

Region 1  
Region 2  
Region 3  
Region 4  
Region 5  
Region 6  
Region 7  
Region 8  
Region 9

Leslie Lupo, *Stony Brook*  
Sandy Chan, *New York*  
Giovanni Pambianchi, *New Paltz*  
Karl Parker, *Schenectady*  
Tim Watson, *Warrensburg*  
Joe Lydon, *Potsdam*  
Thomas Bell, *Cortland*  
Jenny Landry, *Avon*  
Ryan Rockefeller, *Allegany*

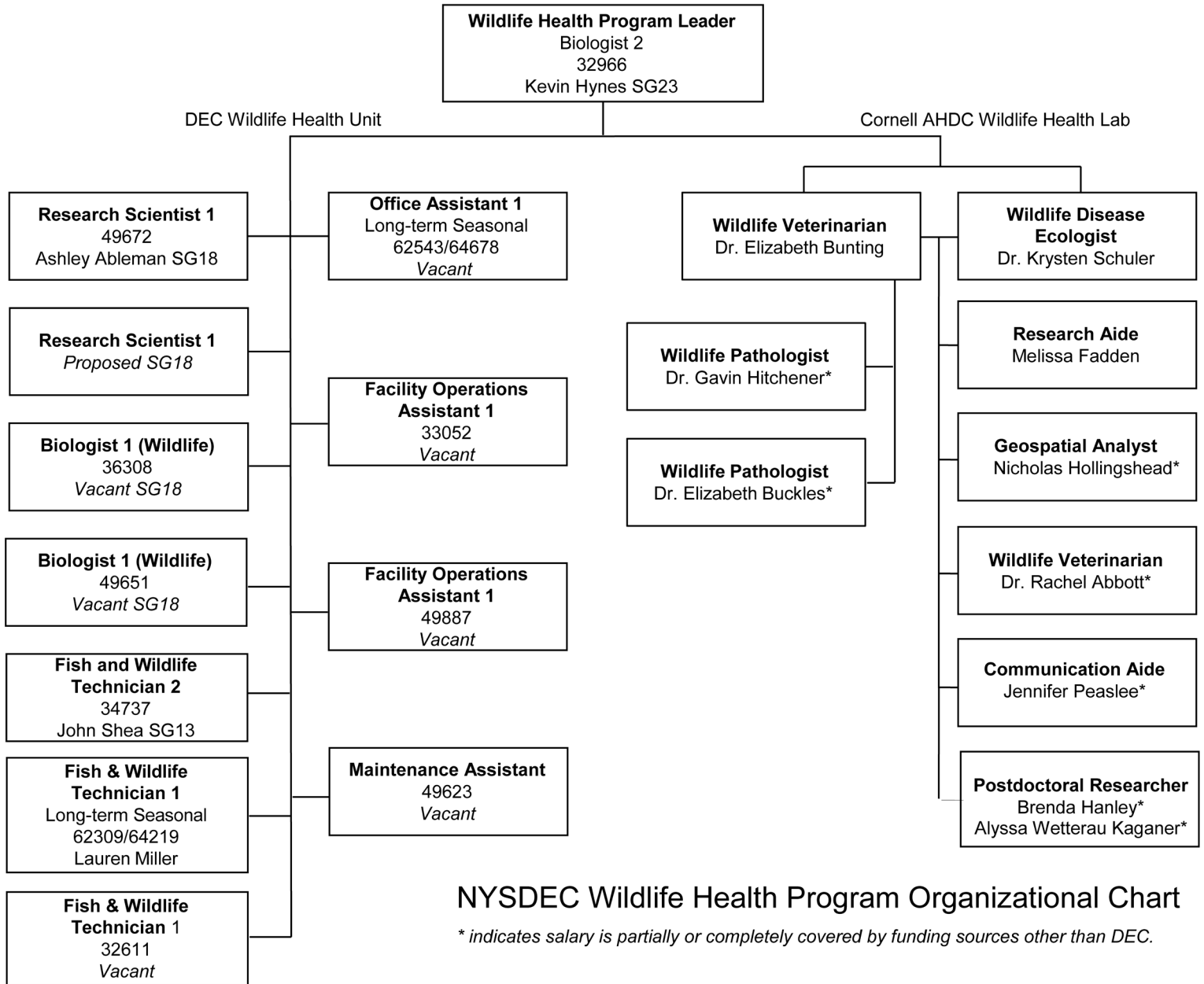
Bureau Management Team

Sandy Chan, *New York*

Law Enforcement

Major Matthew Revenaugh, *Syracuse*

## Appendix B: Organizational Chart



**NYSDEC Wildlife Health Program Organizational Chart**

\* indicates salary is partially or completely covered by funding sources other than DEC.





Department of  
Environmental  
Conservation



**Cornell University**  
College of Veterinary Medicine  
Animal Health Diagnostic Center