

Section 2

American Black Duck Wildlife Habitat Assessment

EPCAMR's focus was on assessing the water quality and habitat areas of the Chesapeake Bay and its tributary rivers and streams in the Sugar Notch Run, Solomon Creek, Warrior Creek, Nanticoke Creek, Newport Creek, areas of the Wyoming Valley and Southern Wyoming Valley, along the Susquehanna River for the American black duck. Going into the project, EPCAMR did not have any previous knowledge as to whether American black duck nested, stopped over, reproduced, or passed through these watersheds due to the uncertainty of the available habitat and the seclusion that the waterfowl often need to thrive. However, the American Black Duck's present basic needs are for migratory populations. No known recent nesting Black Ducks could be found within the study area based on discussions with Molly Giles, Regional Waterfowl Biologist with the PA Game Commission and a review of the Bird Breeding Atlas of Pennsylvania, (year). Surveys conducted the habitat assessment of several wetland types, open water bodies, reclamation ponds, and water-filled stripping pits throughout the watersheds in the Wyoming Valley and Southern Wyoming Valley. The waterfowl habitat areas and populations have not been previously surveyed in a substantial portion of the watersheds identified and therefore could not be reviewed for past history.

Assessments within these watersheds with our Staff used the necessary field equipment and conducted reviews and monitoring of various streamside, waterbody, and habitat conditions. Our outreach within the surrounding communities allowed us to talk with many residents and conservation organizations. Organizations include the [Nanticoke Conservation Club](#), [Ducks Unlimited](#), [Earth Conservancy](#), [Newport Township Community Organization](#), municipal officials, and the [Pennsylvania Game Commission Northeast Regional Office](#) to inform them of our desire to develop a plan that would help motivate community members to support and adopt the goals to benefit American Black Duck habitat and behaviors that benefit water quality, waterfowl species, and habitat improvements based on our recommendations for future improvement projects. The recommendations referenced later in the plan will have a significant opportunity to improve wildlife habitat for the American black duck along the Atlantic Flyway that parallels the ridges and valleys within the project area along the Susquehanna River. EPCAMR has developed existing watershed and management plans that will be recommended to

municipal governments, private landowners, and non-profit organizations on how to manage properties and public spaces for improved conservation outcomes.

Black Duck

Length—24 in.
Weight—2¾ lbs.



Similar Sexes

Typical Flock Pattern

A bird of the eastern States, primarily the Atlantic Flyway and, to a lesser extent, the Mississippi.

Shy and wary, regarded as the wariest of all ducks.

Often seen in company of mallards, but along the Atlantic coast frequents the salt marshes and ocean much more than mallards.

Flight is swift, usually in small flocks.

White wing lining in contrast to very dark body plumage is a good identification clue.

The hen's *quack* and the drake's *kwek-kwek* are duplicates of the mallards.



Hen

Drake

Figure 1. American Black Duck identification from *Ducks at a Distance* by Bob Hines USFWS

In performing the American black duck habitat evaluations, the EPCAMR Staff underwent field training offered by John Levitsky, Luzerne Conservation District Watershed Specialist, who provided the Staff with some important steps to take when evaluating a lake, pond, open waterbody, stripping pit, or wetland habitat area. EPCAMR Staff had taken several photos with GPS locations for later plant species identification. EPCAMR Staff referenced the Lacustrine, Palustrine, and Riverine categories side of the [Classification of Wetlands and Deepwater Habitats of the United States](#) (Federal Geographic Data Committee, 2013) sheet. The Riverine category was only used along larger streams if applicable, and the Susquehanna River floodplain area. Since there is only freshwater in Northeastern Pennsylvania, no tidal influence or marine categories were used. In the field, the staff circled the corresponding systems, classes, and modifiers to build the Waterbody Class code which is written in the Field Sampling Data Sheet.

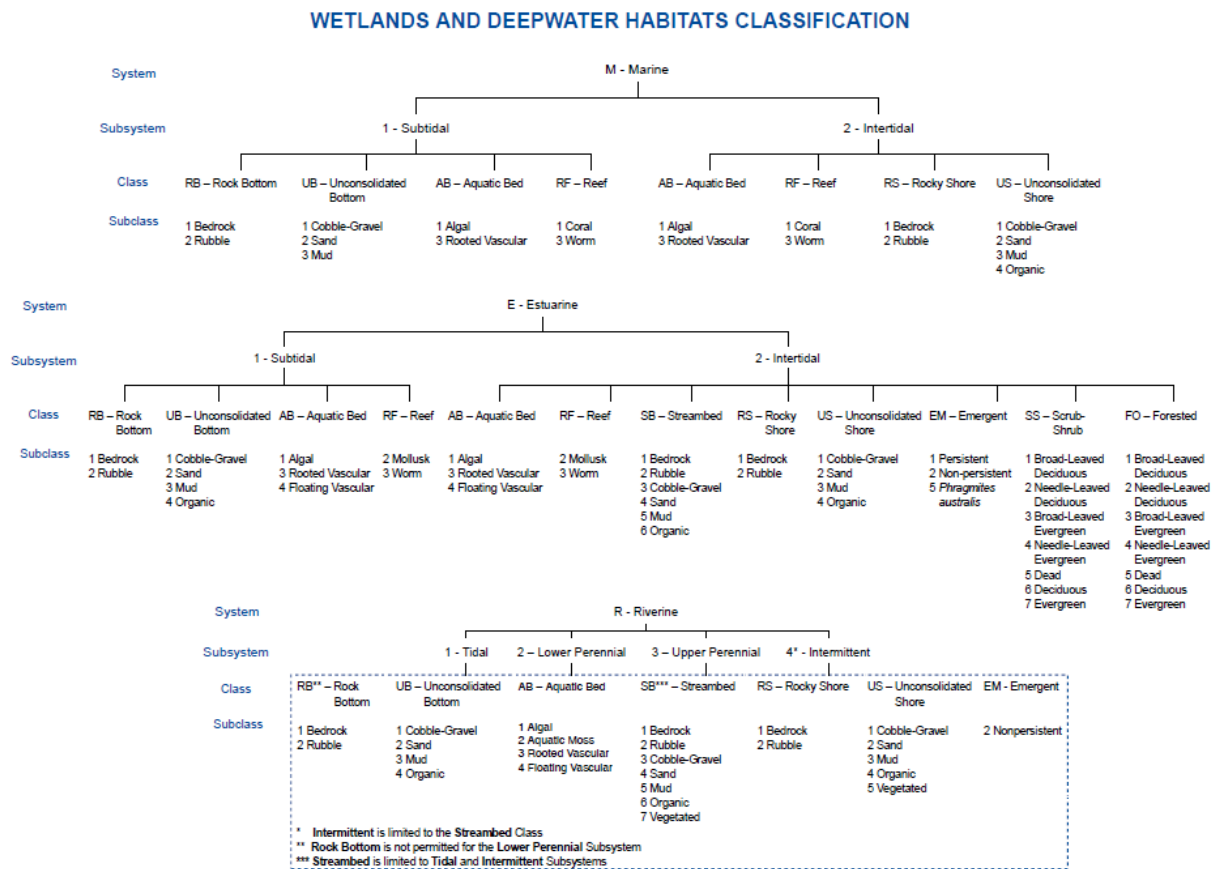


Figure 2. Federal Geographic Data Committee, 2013 Classification of Wetlands and Deepwater Habitats of the United States

WETLANDS AND DEEPWATER HABITATS CLASSIFICATION

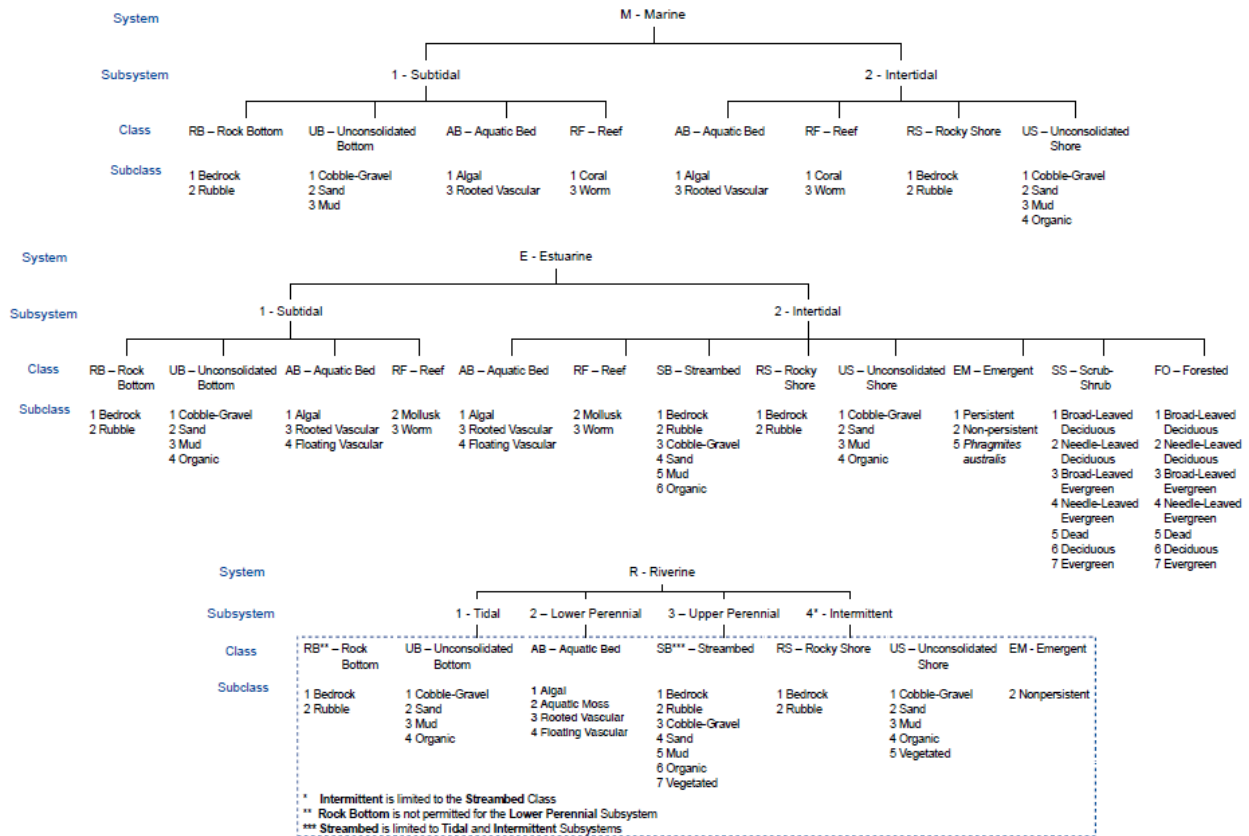


Figure 3. Federal Geographic Data Committee, 2013 Classification of Wetlands and Deepwater Habitats of the United States

EPCAMR declared systems, classes, and subclasses in our assessments and evaluations of the habitat areas. It was noted during the training that persistent vegetation is plants that remain over the winter like Cattails (*Typha latifolia*), and Giant Burreed (*Sparganium eurycarpum*) as opposed to non-persistent vegetation that goes dormant and reemerges like American Bur-reed (*S. americanum*). Rooted vascular plants emerging from the water were noted as those that attach themselves to the bottom of the water bodies, as opposed to floating vascular plants like Yellow Pond Lilly (*Nuphar lutea*). It was also differentiated that deciduous trees and conifers can have differing wetland habitat classifications. To adequately describe the wetland and deepwater habitats, one or more of the water regimes, water chemistry, soil, and special modifiers were applied to the class or lower level in the hierarchy.

Staff took notes of frogs and birds present making calls if they were known species. Staff included the notes at the bottom of the Field Sampling Datasheets. A boundary declaration was noted if the wetland was either forested or a field. Invasive species such as *Phragmites australis* or Purple loosestrife were also noted. Staff looked to see if human interference was low, medium, or high. This determination was made based on the proximity to buildings, offroad vehicle trailways, and signs of visitation, like trash or noise from off-road vehicles. If the site contains large flowing water Riverine classification was declared due to the movement of the water and hydrology through the wetland system. If it was a body of water that is isolated, not flowing through the wetland, basically a pond, or forested vernal pool, we would use the Palustrine classification and related sub-classes.



Figure 4. Photo of wetlands used for training purposes in Hanover Township, Luzerne Co., PA in the Warrior Creek Watershed

American Black Ducks (ABD) no longer breed in the study area although they were once common in Beaver dam complexes in the 1970s in the entire regional area. (John Levitsky, personal observations as former Migratory Bird Technician 1989-1992) The Pennsylvania Game

Commission Field Notes indicate that “Pennsylvania’s breeding black duck population declined steadily from the 1960s to present due to habitat loss/ degradation and competition and hybridization with mallards. Black ducks remain abundant in eastern Canada, and range wide populations appear to have stabilized, albeit at well below historic numbers, since harvest restrictions were implemented in 1982” (PA Game Commission Puddle Ducks Pamphlet) .

Most ABD observed in the study area are suspected to be migratory populations following the Susquehanna River and staging on the river until freezing conditions occur. During extreme cold conditions, ABD are found at spring fed ponds, power plant discharges and abandoned mine discharges due to the warmer waters in extremely cold conditions keep waters free of ice. ABD are adapted to cold conditions and generally only migrate south when open water and food are lacking to supply their daily needs. The main attraction for ABD during migration in the study area are corn fields with waste grain lost during harvest of fields along the Susquehanna River. Extensive emergent vegetation along the Riverine borders attracts ABD in migration on the Susquehanna River and autumn acorn crops reaching the river or high-water flooding will bring the birds to the flooded mast crop.

The study area includes extensive impacts from previous anthracite coal mining impacts, disrupting hydrology from waterways and wetlands. Contaminants in mine waste and abandoned mine drainage can impact macroinvertebrate presence and populations creating reduced animal foods attracting ABD during spring nesting attempts.

American Black Duck Habitat Associations

The American black duck (ABD) typically likes quiet, secluded areas away from human disturbance. The specific habitat requirements for the species include Estuarine wetlands near coastal regions. Freshwater areas include Palustrine shallow wetlands in forested regions, scrub/shrub, forested wetlands, emergent marshes, and beaver flowages for breeding. Migrating ABD use Lacustrine systems as nocturnal roost waters during spring and fall migration through the study area. Palustrine wetlands include foods for migrating, ABD. As winter conditions drop temperatures and small waters freeze regionally, ABD begin to use waste grain from agricultural fields, primarily corn (*Zea mase*) along the Susquehanna River bottom lands. The Lacustrine and Riverine habitats provide open water for wintering over. Two reservoirs to the north of the study area are known nocturnal roost waters as they are private water supplies with no public access to create disturbance. These observations collected over the past 40 years were verified by recent radio telemetry studies of ABD by the PA Game Commission. (John Levitsky LCD, personal observations 1970s to present time, Molly Giles, Personal communication regarding PGC waterfowl monitoring)

The EPCAMR Staff looked for trails or roads that were near or passed through any wetland areas. Staff sampled chemistry and flow close to outlets. The flow and chemistry were measured before disturbing the areas for macroinvertebrate sampling to avoid disturbance of ambient water quality. A GPS point location was taken for each sampling point. If abandoned mine drainage (AMD) was suspected, staff sampled the inlet source water as well.

Sampling of macroinvertebrates was close to the outlets to maintain consistency in each wetland assessed. A meter square sample outline and D-frame net for the collection of macroinvertebrates created a consistent sampling procedure. Our methods were followed based on Section 5 of the [EPCAMR Field Sampling Binder](#) Manual. We did not score the wetland habitat areas with the stream metrics as the habitat types are completely different. John Levitsky, Luzerne Conservation District had noted that species diversity in the wetlands areas will lean toward damselfly, dragonfly, leech, midges, water boatmen, and lower grade caddisfly species, due to the lower oxygen levels, warmer water, and higher nutrients. Samplers noted adult forms of macroinvertebrate species during field investigations. The [Macroinvertebrates](#) website is an

excellent key to identifying numerous common freshwater species of Eastern North America and was often referred to. Staff reference materials included, the Pocket Naturalist Guides for [Bugs & Slugs](#) (Kavanagh & Raymond, 2019), [Pond Life](#) (Kavanagh & Raymond, 2016), [PA Trees and Wildflowers](#) (Kavanagh & Raymond, 2008), and [Flash Cards of Common Freshwater Invertebrates of North America](#) (Voshell, Jr. & Wright, 2010) and [Stroud Water Research Center's](#) laminated Macroinvertebrate Identification cards that are a part of their online [photo gallery](#) and come with their [Leaf Pack Stream Ecology Kit](#).

Conservation Profile

EPCAMR reviewed and researched the American Black Duck (*Anas rubripes*) species Conservation Profile that is included in [Appendix 1.4A. Birds](#) Section of the [Pennsylvania Wildlife Action Pla](#) (PGC-PFBC , 2015) [n](#) published in September 2015, revised in 2017, and is currently undergoing an update where EPCAMR was an active contributor to the project discussed later in the report.

Chuck Fergus, Pennsylvania Game Commission, authored a [Puddle Ducks Wildlife Note 36 LDR0603](#) (Fergus, 2021) through the Bureau of Information and Education, that covers seven species commonly found in Pennsylvania (American black duck, gadwall, northern pintail, green- and blue-winged teal, wigeon, and northern shoveler). In the document, he describes the length, weight, and features, plumage (which is nearly identical in both sexes), bill color, and calls of the American black duck in detail. He describes the variety of vegetable foods the species eat and animal foods. He describes the habitat they breed in on the ground, where they nest and a typical hatch. It used to be the most popular duck in waterfowl hunter's bags and has dropped behind the mallard and wood duck due to the steady decline in the 1960s and 70s. In 1982, harvest restrictions were implemented that appeared to have stabilized the population, however, it is still well below its historic numbers.

EPCAMR often referred to the [Delta Waterfowl North American Waterfowl Identification Guide](#) (Bosco and Grosz, 2014) to try and identify any spotted waterfowl, particularly American black duck and other species in the field. The full-color guide with detailed photos of males and females, tops and bottoms of wings, as well as images of bills and feet, is the product of a joint effort between the [US Fish & Wildlife Service](#) and Delta Waterfowl to provide a systematic process to successfully identify the 47 species of ducks, geese, and swans commonly found in North America.

Excerpts from the Pennsylvania Game Commission Wildlife Action Plan

The [Pennsylvania Wildlife Action Plan](#) is a non-regulatory, proactive conservation blueprint to prevent [Species of Greatest Conservation Need](#) (SGCN) from requiring federal protection under the Endangered Species Act. Updated from the first version published in 2005 and approved by the [U.S. Fish and Wildlife Service](#), the Wildlife Action Plan maintains Pennsylvania's eligibility for federal State & Tribal Wildlife Grants Program funding. These funds are administered by the [Pennsylvania Fish & Boat Commission](#) and the [Pennsylvania Game Commission](#), who work with hundreds of statewide partners and volunteers to conserve the species and habitats noted in the Plan (PGC-PFBC , 2015).

An overview of the conservation goal for the ABD species and habitat associations and requirements is found on page 15 of the Plan. It is a legally protected species of waterfowl in Pennsylvania. It is both a breeding and non-breeding species in Luzerne County, Pennsylvania in our Project Area. Federally, there is no status listed for the species. In the Northeast Region, it is a species with Very High Concern and Low Responsibility. The Conservation Goal for this species due to the lack of identified state-level goals from the management community and the differential seasonal feasibility of maintaining populations should be to maintain current wetland quality and acreage to support American Black Ducks and other wetland-dependent [Species of Greatest Conservation Need](#).

Research Needs

Research needs were identified in the Plan on page 23 of the Plan.

Monitoring Programs

Monitoring Programs were listed and identified on pages 24-25 of the Plan.

Survey Needs

Survey needs were identified in the Plan on page 24 of the Plan.

Threats and Actions

Pages 16 through 23 of the Conservation Profile list the threats and actions of the Plan proposed by the [Pennsylvania Game Commission](#).

Excerpts from the Development of a Decision Support Tool to Inform Black Duck Habitat Delivery Goals Considering Current and Future Landscape Conditions Final Performance Report (2016)

The overall goal of the [*Development of a Decision Support Tool to Inform Black Duck Habitat Delivery Goals Considering Current and Future Landscape Conditions Final Performance Report*](#) (Jones, Luke, Coluccy, & Devers, 2016) project was to develop a decision support tool to estimate black duck habitat needs under current and future landscape conditions to guide strategic habitat conservation by the [Atlantic Coast Joint Venture](#) (ACJV) and other partners in the Chesapeake Bay watershed, which is a critical wintering area in the Atlantic Flyway. Approximately 90% of the non-breeding black duck population occurs within the boundaries of the ACJV ([Mid-Winter Survey data](#) 1955-2014) with the highest densities occurring in the mid-Atlantic region. The loss and degradation of wintering habitat has been hypothesized as a primary cause of the decline, >50%, of the black duck between 1955 and the 1990s (Conroy et al., 2002).

The primary causes of habitat loss and degradation during the period of rapid decline included agriculture (e.g., salt hay farming), timber operations, environmental contaminants (e.g., acid rain, DDE, and DDT; phosphorus and nitrogen;) (Longcore, 2002), introduced predators (Costanzo, 2002), and urban growth (Longcore et al., 2000). Between 1953 and 1972 approximately 25,200 ha (21%) of the tidal wetlands in the northeastern states were lost to filling and diking (Longcore, 2002). Conroy estimated that 8% (21,900 ha) of estuarine emergent wetlands were lost between 1961 and 1996, peaking in 1960 and declining after federal and state wetland protection laws were passed (Conroy et al., 2002). The erosion of shorelines and nesting islands contributed to the decline of breeding black ducks in the Chesapeake Bay (Costanzo and Hindman, 2007). Between 1970 and the early 2000s, the Maryland counties surrounding the Chesapeake Bay experienced a 38% increase in the human population (Longcore, 2002). Increased human population may cause increased disturbance to wintering black ducks, which can reduce food intake and increase energy expenditure (Morton, 2002).

Looking to the future, urbanization (Kelly, 2001) and sea-level rise due to global climate change probably pose the greatest risk to black duck habitat in the ACJV region. Between 2004 and 2009, the U.S. lost >44,600 acres of estuarine emergent wetlands, which constituted a faster rate of loss than observed between 1998 and 2004 (Dahl, 2011). The nests of breeding black ducks on the Chesapeake Bay Islands are susceptible to loss due to flooding from extreme tides and storm events (Costanzo and Hindman, 2007), both of which are expected to increase with sea-level and global temperatures. By 2100, sea-level rise along the Atlantic Coast is estimated to average 4mm/year, but the accretion rate is estimated at 2 mm/year, which will result in a large-scale alteration of the amount, distribution, and structure of coastal marsh systems including the high marsh, low marsh, and mud flats. These areas are critically important to non-breeding black ducks because they provide important food resources (Cramer et al., 2012) and refugia from human disturbance.

Urbanization is the leading cause of habitat loss in the eastern U.S., particularly the northeastern states. Between 1973 and 2002, the eastern U.S. experienced a 9.4% net increase in urban areas (Loveland and Acevedo, 2014) and a 2.3% net loss of forested lands, including forested wetlands (Drummond and Loveland, 2010). Between 2004 and 2009 urban and rural development accounted for the conversion of 341,460 ha of forested wetlands to uplands (Dahl, 2011). In addition to direct loss, urbanization can result in a decrease in habitat quality.

Since the early 2000s, the [Black Duck Joint Venture](#) (BDJV) has partnered with the ACJV to implement the SHC process for black ducks. Together the BDJV, ACJV, and their partners at state wildlife management agencies, Ducks Unlimited, and several universities have conducted a series of replicated field studies, laboratory studies, and modeling efforts to estimate habitat carrying capacity for non-breeding black ducks using a bio-energetics approach (Cramer 2009, Lewis et al. 2010, Plattner et al. 2010, Jones, III, 2012, Coluccy et al. 2014, Ringelman et al., 2015). Work to develop a Decision Support Tool (DST), funded through a grant from the [Chesapeake Bay Trust](#), has been built on previous research to help habitat planners quantify how much habitat is needed and where.

The DST objectives were to:

1. Extend prototype analysis of coastal energetic carrying capacity and demand to the entire Chesapeake Bay watershed and accounting for competition for food resources from other dabbling duck species
2. Incorporate estimates of urban growth and sea-level rise to predict energetic carrying capacity into the future
3. Develop a decision analysis routine to prioritize land acquisition based on current and future landscape conditions (i.e., energetic supply) out to 2100
4. Develop targeted metrics of how many hectares of black duck habitat partners need to protect, restore, or enhance annually to meet established population goals

EPCAMR reviewed the DST and learned that two types of applications might be informed by the bio-energetics model for the black duck populations, 1) habitat conservation planning and 2) allocation of financial resources to specific projects. The most common application of the model is anticipated to be related to conservation planning by State resource agencies, Federal resource agencies, and non-government organizations involved in habitat conservation and land planning like EPCAMR and our regional community partners in conservation. A review of this report has allowed us to identify priority areas to focus on the ground conservation and wildlife habitat improvement projects based on our recent assessment of the suitable habitats for the black duck and other waterfowl species.

Areas that currently have and are predicted to have sufficient food resources in the future should be targeted for conservation and protection. Since these areas have and are predicted to have sufficient food resources, limited resources (e.g., funds, equipment, or Staff time) should not be used for restoration. In contrast, areas that are currently deficient or are predicted to become deficient in food resources due to habitat degradation or loss should be secured and restored. This process should ensure limited funds are not used to restore areas that currently provide and are anticipated to provide high-quality habitat.

The information contained in the black duck bio-energetics model can also be used to support more formal decision analyses, particularly single objective, and multi-objective resource

allocation decisions. These decisions are characterized by the allocation of limited financial resources to a subset of potential securement (fee simple or conservation easement) and or restoration activities. Given insufficient funds to complete all possible activities, resource managers must decide how to allocate the funds to maximize the desired benefits.

In this case of a single objective decision, where the only objective of the funding program is to maximize black duck habitat, managers can use linear programming to identify the suite of projects that maximize habitat on the ground given specific budget and other constraints. In this situation, the black duck bio-energetics model to predict the energetic capacity of all proposed projects in 2016, 2030, and 2080 and calculates the net change in energy assuming no conservation action. The net change in energy over time for each project or combination of projects can then be estimated. Using this information, it is possible to identify a suite of projects that maximize energetic carrying capacity today and, in the future, given the available funds.

In other words, the bio-energetics model can be utilized, in conjunction with a variety of proposed actions, to estimate and identify the net effect of the potential actions(s) on habitat carrying capacity. In most situations, habitat conservation programs seek to secure and restore habitat to achieve multiple objectives such as protecting wildlife habitat and increasing water quality. These decisions are referred to as multi-criteria decisions and can be developed by extending the single-objective analysis to account for additional objectives.

The black duck bio-energetics model provides information, based on the best available science, to estimate the biological value of individual land parcels today and in the future for American black ducks. This information can be used to guide allocation decisions related to habitat conservation.

Excerpts from Ducks Unlimited 2022 Annual Report

Partnerships drive [Ducks Unlimited's](#) conservation mission across the North American continent. Financial contributions from events, major gifts, and other fundraising sources into larger impacts on the landscape. Without partners, volunteers, and supporters, Ducks Unlimited's impact on the landscape would not be as great. Two factors drive continental support for waterfowl breeding grounds—the [North American Waterfowl Management Plan](#) (NAWMP) (US FWS, 1986), adopted in 1986, with updates in [1994](#), [1998](#), and in [2018](#). The [North American Wetlands Conservation Act](#) (NAWCA), signed in 1989.

In support of NAWMP and recognizing the need for non-federal match funding with NAWCA, the [Association of Fish and Wildlife Agencies](#) established the [Fall Flights Program](#) for State wildlife agencies to support projects in Canada. In response, DU committed to matching every dollar contributed by the State agencies with one dollar from its fundraising efforts. In the past three decades, NAWCA has funded over 3,000 projects totaling \$1.8 billion in grants in all 50 States and areas of Canada and Mexico. More than 6,300 partners, including nongovernmental organizations, state agencies, private landowners, and industry, have contributed another \$3.8 billion to impact over 30 million acres of habitat. In FY22, 43 states contributed \$3.8 million to Canadian projects, matched by Ducks Unlimited and NAWCA for a total of more than \$15 million. When you factor in the exchange rate, that adds up to over \$19 million of conservation funding on the ground in Canada.

Pennsylvania contributed \$15,000 in matching funds in FY22 and has 545 volunteers, 15018 members, sponsors, and major donors, and contributed \$1,365,465 in events and major gift income to Ducks Unlimited. In FY23, Pennsylvania contributed \$826,552 in grassroots dollars raised, had 15,419 members, sponsors, and major donors that conserved 29,489 acres of habitat.

Ducks Unlimited, Luzerne Conservation District, PA Game Commission, and PA Fish & Boat Commission Outreach

In September of 2020, EPCAMR contacted Peter Marx, Contractor on Federal Affairs, with the [Choose Clean Water Coalition](#), who connected EPCAMR up with Gildo Tori, Nikki Gorphade, Dan Wrinn, and Kyle Rorah with the National Ducks Unlimited Policy Team to network with a Pennsylvania or Eastern Region contact for Ducks Unlimited. Nikki Gorphade, Ducks Unlimited Policy Specialist, put EPCAMR in touch with Jim Feaga, the Regional Biologist for Ducks Unlimited for Pennsylvania and New Jersey covering the Great Lakes and the Atlantic Region. Jim was able to provide [Kyle Argenziano](#), our Office of Surface Mining/AmeriCorps Volunteer In Service to America ([OSMRE VISTA](#)) supported by the [Stewards Individual Placement](#), a Program of [Conservation Legacy](#) for EPCAMR, with some resources and [State contacts](#) to include in our plan on the American black duck and a history of projects around Pennsylvania over the years. EPCAMR sought information on educational resources, habitat improvement projects, diets of the waterfowl species, migratory pathways, and other unique characteristics of the species.

The Great Lakes Region, Mid-Atlantic Coast, St. Lawrence Plain and Prairie Pothole Region are all important to waterfowl hunters and conservationists. Pennsylvania receives a good part of our diving duck migration from the Prairie Pothole and Great Lakes Region. A considerable portion of teal and other puddle ducks originate in the Prairie Pothole Region. All these regions are conservation focus areas of Ducks Unlimited. Ducks Unlimited provides critical conservation work and support to migration on the breeding grounds and within the State of Pennsylvania. Feaga had informed us that Northeastern PA was not within their priority area at the time the project was beginning in 2020. However, he was still interested in reviewing our project details, providing us with some information on the species, and getting us lined up with the right wetland conservation partners in our region, if we were not partnering already.

EPCAMR contacted Jeff Painter, P.G., with the [PA Game Commission](#), Bureau of Wildlife Habitat Management, in the Division of Environmental Planning & Habitat Protection, Oil , Gas & Mineral Development Section to see if they had any educational resources, fact sheets, or

circulars on the American black duck and other species. He referred us to Molly Giles, Wildlife Biologist, with the [NE Regional Office of the PA Game Commission](#), and Kevin Wenner, the PA Game Commission, NE Regional Wildlife Management Supervisor, for additional expertise on the species. Molly Giles engages. Molly referred EPCAMR to the PA Game Commission's latest State Wildlife Action Plan, which EPCAMR was familiar with, and she provided EPCAMR with several educational resources that were extremely useful and are documented in the report.

EPCAMR had contacted Catherine Haffner, with the PA Game Commission in Harrisburg, who provided a great deal of information on the ABD. The ABD was included in the PA Wildlife Action Plan under the Species Account that has general information regarding threats, actions, monitoring, and research and survey needs. EPCAMR was a beta tester in 2019 to evaluate the [PA Wildlife Action Plan Conservation Opportunity GIS Tool](#) (PGC-PFBC 2015). Anyone interested in conserving at-risk species, including private landowners seeking to improve habitat on their property, non-governmental organizations (e.g., land trusts, conservancies), municipalities, Conservation Districts, resource managers, users curious about Species of Greatest Conservation Need in their area, can utilize the tool. Although it was developed with wildlife and land management professionals in mind, users are encouraged to seek assistance from the PA Game Commission or Fish & Boat Commission with results interpretation. Catherine had presented on the Conservation Opportunity GIS Tool at the [PA Abandoned Mine Reclamation's Annual Virtual Conference](#) that was held in October 2020.

EPCAMR Staff held a meeting on July 15, 2021, with John Levitsky, Luzerne Conservation District Watershed Specialist, Molly Giles, PA Game Commission NE Regional Office Waterfowl Biologist, Aaron Frey, PA Fish & Boat Commission Fisheries Biologist, to review information and available resources from the two Commissions before going into the field with Levitsky to learn how to properly identify ABD habitats. Habitat location reviews included sampling of water quality, identification of flora and fauna food sources, identification of various wetland native and non-native vegetation species and a discussion on identification of ABD characteristics of males and female waterfowl.

Frey discussed the PA Fish & Boat Commission’s plans to conduct another fishery electroshocking in a number of areas in the Southern Wyoming Valley that were in our project study area and provided EPCAMR with a copy of the 2012 Fishery Report with some historic background data on fish surveys in the watershed patches that we will be covering in the project study area. Levitsky and Mike Hewitt, Program Manager for EPCAMR loaded up a Google GIS Keyhole Markup Language ([KMZ](#)) File layer to assist us with targeting a representative sampling of locations throughout each of the watershed areas and patches for us to investigate, survey, and sample.

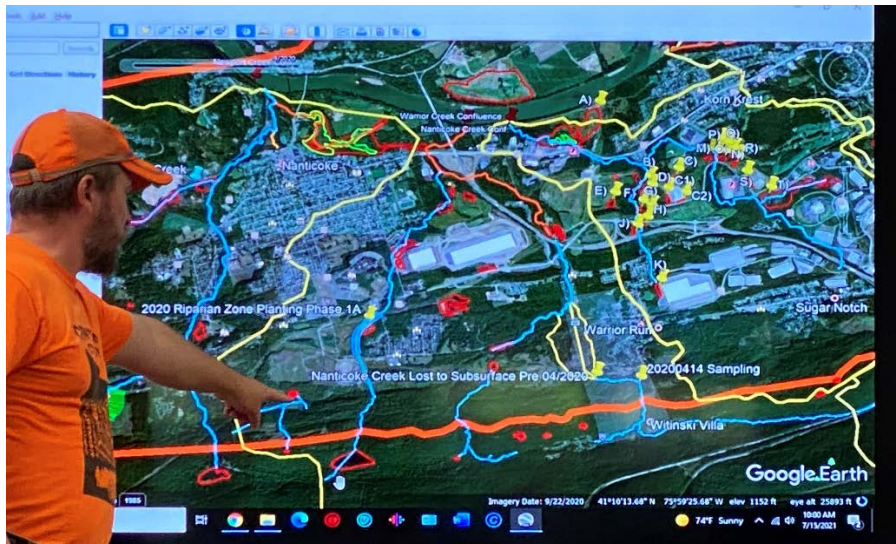


Figure 5. Photo Collage of EPCAMR Staff Field Training to identify American Black Duck Habitat Areas and overview map of potential sampling sites within the Southern Wyoming Valley Project Area

Following the field training, EPCAMR made contact with various landowners to obtain permission to access various areas to conduct the field work and survey investigations. Gathering the necessary field data for the report in each of the watersheds within the project study area began in the Summer of 2021.

Excerpts from the Chesapeake Bay Program Black Duck Outcome Management Strategy (2015-2025, v.2)

The American black duck has been referred to as the “gold standard” of eastern waterfowl. The black duck was the most abundant dabbling duck in eastern North America and comprised the largest portion of the region's waterfowl harvest. Despite its importance to hunters and outdoor enthusiasts, the continental black duck population declined by more than 50% between the 1950s and 1980s. Scientists believe this is due to loss of food and habitat, mostly tidal wetlands associated with changing land use. The Mid-Atlantic region, which includes the Chesapeake Bay watershed, supports the largest portion of eastern North America’s wintering black duck population, and preserving habitat in this region is critical to the long-term sustainability of the species. Black ducks experience a multitude of stressors during their annual life cycle, many of which are beyond the control of conservationists in the watershed. However, managers can support the Chesapeake’s portion of the continental population goal, as set by the [North American Waterfowl Management Plan](#) (NAWMP), by providing adequate food resources for ducks wintering in the Atlantic Flyway. As an important indicator species, restoration of habitat for black ducks will also benefit other waterfowl that winter in the Bay region (US FWS 1986).

EPCAMR reviewed the [Chesapeake Bay Program Black Duck Outcome Management Strategy \(2015-2025, v.2\)](#) (CBP, 2020) and included it in the plan because there are several strategies that Pennsylvania and the wildlife and hunting conservation community can take to help improve the situation of the American black duck and its habitat through 3 main objectives:

- Adequate wintering habitat for 100,000 black ducks
- Ample foraging habitat for black ducks and connectivity across the landscape
- Estimate breeding habitat management opportunities in areas where breeding has occurred historically and where it is known to occur currently

EPCAMR recently participated in a Diversity Forum in State College on March 7-8, 2024, with both State agencies and partners, to provide feedback and comments to update the PA Wildlife Action Plan. A Fact Sheet on the [Pennsylvania Wildlife Action Plan](#) (PGC-PFBC, 2015) summarizes the intent of the update. EPCAMR provided an update on the work that is currently being done to complete the NFWF Small Watershed Grant for the Southern Wyoming Valley Watersheds in Luzerne County which are a part of our Project Area that has focused on the American black duck and the Eastern brook trout to address some of the threats, actions, research needs, survey needs, and monitoring programs that were included in the Conservation Profile for the American black duck. This coordination effort is in line with some of the outcome management strategies for the American black duck.

During our field investigations, EPCAMR was able to locate several water-filled abandoned coal surface mine pits that were either surface manifestations of the underground mine pools or surface water loss points to the mine pools. Normally, wetlands with no discernable inlet or outlet are groundwater influenced. In underground mined areas, groundwater and surface water are trapped the mine pools and discharge as polluted water sometimes miles away from the source. When some of the ABD were found in the stripping pits that were flooded, it led us to believe that the waterfowl species could potentially overwinter in these locations because the temperature of the water in the water bodies is usually warmer due to the groundwater mixing before it reaches the area of the pits that have seen that do not freeze over during the winter. ABD use warm water discharges in the winter as a resting, preening, and aquatic food locations when other water bodies are frozen. EPCAMR provided water elevations and mine pool elevations for each of the ABD habitat assessment locations with the elevation datum as feet above mean sea level (AMSL) in the Data Section of the report.