CONSERVATION & RESEARCH UPDATES FROM THE NATIONAL AVIARY

flightpaths

FALL 2021

New Population of Critically Endangered Raptor Discovered in Haiti

by Steven C. Latta, Director of Conservation and Field Research

One of the rarest raptors in the world, the Ridgway's Hawk, is endemic to Hispaniola and its satellite islands in the Caribbean. Once locally common across the Dominican Republic and Haiti, human persecution and the clearing of forests for agriculture have reduced the global population to fewer than 500 individuals. Now considered to be Critically Endangered, Ridgway's Hawk was until recently restricted to Los Haitises National Park and surrounding areas in northern Dominican Republic. A successful translocation program, coordinated by The Peregrine Fund since 2009, has resulted in 18 pairs of wild birds living near the Ecological Center of the Puntacana Resort and Club in extreme eastern Dominican Republic. In 2019, another 25 individuals were released by The Peregrine Fund in Aniana Vargas National Park in central Dominican Republic.

Since the last recorded sighting in 1962, Ridgway's Hawk was unknown from Haiti and was presumed extirpated. But, in August 2019, colleagues from the Haitian conservation organization, JACSEH (*Jeunes en Action Pour la Sauvegarde de l'Ecologie en Haïti*), observed two Ridgway's Hawks on Petite Cayemite Island, Haiti, and in February 2020 a field expedition reconfirmed the presence of two individuals on Petite Cayemite and an additional one on neighboring Grande Cayemite Island.

In May 2021, the National Aviary partnered with JACSEH and The Peregrine Fund to send a new expedition to these islands to better estimate the population size, distribution, nesting sites, and main threats to this new, and critically important, population of Ridgway's Hawk. JACSEH personnel, Anderson Jean, Maxon Fildor, and Wilson Aubourg conducted two days of surveys on Petite Cayemite, and 4 days on Grande Cayemite. Walking 36 kilometers, they again detected two hawks on Petite Cayemite and 17 on Grande Cayemite! They also located one active nest with a healthy chick, as well as several older nests.

Although more habitat on Grande Cayemite remains to be surveyed, JACSEH estimates the population of Ridgway's Hawk as at least 10 breeding pairs. Most observations of the species occurred in secondary forest patches in dry karst limestone near the coast, where remnant trees offered nesting opportunities for the hawk.

While the discovery of this unknown population is tremendous news, severe conservation challenges remain. The birds and their nests all were found on private property where landowners harvest wood for making charcoal and construction timbers. JACSEH is working with farmers and landowners to help them understand this Critically Endangered bird and engage them in efforts to conserve the species.

The presence of the JACSEH team provided an opportunity to build relationships with farmers and the community, and to explain to farmers the importance of the Ridgway's Hawk.

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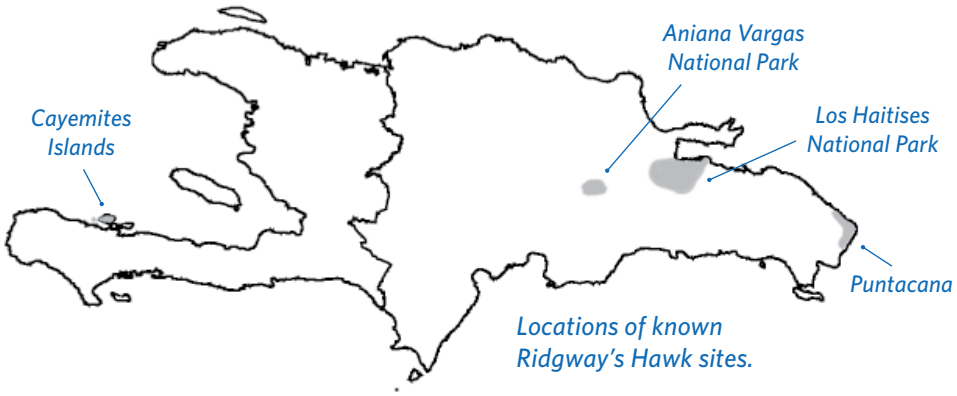

Locations of known Ridgway's Hawk sites.

The National Aviary is working with locally-based collaborators to protect a newly discovered population of the Critically Endangered Ridgway's Hawk, a species endemic to Hispaniola. Illustration by Barry Kent MacKay.

New Population of Critically Endangered Raptor Discovered in Haiti

Continued

JACSEH also helps farmers understand how they can contribute to the conservation of the species. JACSEH is offering education and incentives to farmers to show them an active nest or an old nest, and who would commit to protecting it throughout the season. Based on their success with this approach, JACSEH recommended that continued conservation actions focus on environmental education and the valuable ecosystem services (e.g., control of rodent pests) that the hawks provide.

We are optimistic for the fate of this Critically Endangered species. Given the presence of Ridgway's Hawks in a variety of human-altered habitats, including plantations, degraded forest fragments, and pasturelands, the apparent ability of the hawk to adapt and survive in different types of environments is welcome news. By expanding environmental education programs and ensuring that enough trees remain to provide nesting sites, we believe Ridgway's Hawk has a good chance of surviving even in areas dramatically altered by farming or other activities. ■

National Aviary Rushes Aid to Haitian Earthquake Victims

by Steven C. Latta, Director of Conservation and Field Research

The epicenter of the devastating earthquake that hit Haiti on August 14, 2021 lay a mere 30 kilometers from Grande Cayemite and the recently discovered population of the Critically Endangered Ridgway's Hawk. Here at the National Aviary, our thoughts immediately embraced the Haitian people and the communities where our Haitian colleagues had so recently engaged in Ridgway's Hawk conservation efforts.

Within days, our hawk conservation coalition of The Peregrine Fund, JACSEH (*Jeunes en Action Pour la Sauvegarde de l'Ecologie en Haïti*), and the National Aviary launched relief efforts. A trusted boat captain was sent to the capital of Port-au-Prince to locate sources of scarce supplies, while we continued to identify funds that could be committed to the effort. Days later, on a boat stocked with tarps for emergency shelters, clean bottled water, and staples of beans and rice, essentials were delivered to the main community on the near-shore island of Grande Cayemite.

As with our efforts to aid the Ridgway's Hawk, the presence of our colleagues from JACSEH provided an opportunity to build relationships with the community and the local farmers in a time of great need. Based on our success with this approach, and the on-the-ground advice we receive from JACSEH regarding continuing needs to recover from the devastation of the earthquake, the National Aviary, The Peregrine Fund, and JACSEH encourage continued efforts to deliver aid to the people of Haiti, and to help preserve a Critically Endangered species. ■

*Click here to **donate** to the relief fund.*

Relief supplies are delivered to Haiti. The National Aviary, in partnership with other organizations working to conserve the Ridgway's Hawk, helped to deliver aid to communities where our conservation work takes place. Photo courtesy of The Peregrine Fund.

NATIONAL AVIARY
PITTSBURGH, PA

The National Aviary inspires respect for nature through an appreciation of birds.

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Your donation supports the National Aviary's work to save birds and protect their habitats.

Educating, Engaging, & Inspiring for Conservation

Efforts to educate and inspire the next generation of ornithologists, conservation biologists, and supporters of environmental protection must be a key component of any successful conservation program.

In this issue of FlightPaths, we highlight several examples of how our research staff involves students and volunteers in difficult-to-find internships, and how our conservation outreach just may inspire countless thousands to act to save countless millions of birds!

Led by Dr. Steven Latta, Director of Conservation and Field Research–joined by seasonal interns Nancy Ransom, Shaina Kenny and Emily Paciotta (recent graduates of the University of Pittsburgh), and Emily Wojtyna (a Master's student from the Ludwig Maximilian University of Munich, Germany)–we initiated the first year of a multi-year study to better understand how an innovative forest management approach may benefit avian diversity. By partnering with the Foundation for Sustainable Forests (FSF), we seek to document whether small forest gaps may benefit two suites of bird species that are widely considered to be declining in numbers. Ornithologists often think these species have habitat needs in conflict: species requiring early successional habitat, and species requiring large tracts of mature forest. Read below in FlightPaths to see how we might accomplish this radical feat!

In another new research project, the National Aviary teamed up with three student interns from Chatham University's Eden Hall campus to study birds dependent upon grasslands. With the university's focus on sustainability, we began a study aimed at determining if six large tracts of grassland and early successional habitat on campus could be managed to benefit regionally and nationally declining bird species dependent on such habitats. Eden Hall graduate student, Ryan Comella, and undergraduate students, Oliver Jankosky and Angelina Borasso-Tilford, were our daily field assistants. In addition, we valued the help from volunteers, Rachel Dudek, Liam Ellis, and Anthony Mulvihill, who contributed much to the success of our first field season on this project. Read not only about this interesting project in the National Aviary's "backyard," but also read Oliver Jankosky's personal reflection on the value of his internship to his future education and career plans.

Lastly, this fall, Pittsburgh officially joined a voluntary program that encourages building owners, tenants, and residents to turn off unnecessary lighting at night when migration is at its peak in spring and fall. Known as Lights Out, the National Aviary partnered with BNY Mellon, the Building Owners and Managers Association of Pittsburgh, BirdSafe Pittsburgh, Carnegie Museum of Natural History, and the Pittsburgh Downtown Partnership to join this national movement. BirdSafe Pittsburgh, which has maintained a long-running program of monitoring bird-window collisions in the downtown area, will be collecting data on the number of birds injured by window strikes in this inaugural season to measure the progress of Lights Out. The publicity and goodwill associated with a Lights Out campaign extends to private homes and small businesses, where we expect we will find new audiences and many new friends of birds.

Partnerships and research programs like these, which involve students, young professionals, and volunteers, not only amplify what we do, they also provide splendid opportunities for broader outreach and education, they increase the value of our work, and they enrich our experience as we strive to understand and conserve the birds around us.

Steven Latta, Ph.D.
Director, Conservation and Field Research

Cutting Trees to Benefit Forest Birds?!

by Steven C. Latta, Director of Conservation and Field Research

Can the cutting of trees actually benefit birds that favor the deep interior of Northern hardwood forests?

This summer, the National Aviary collaborated with the Foundation for Sustainable Forests (FSF) to try to better understand how FSF's innovative forest management approach may benefit avian diversity. FSF uses a *femelschlag* technique that relies on harvesting lower quality trees in very small patches of 1-3 acres. When possible these trees are carefully removed to help protect the forest understory. The opening of these gaps in the forest canopy allows sunlight to reach the forest floor, promoting regeneration of desirable tree species. Over time, this creates a multi-aged forest with many layers of vegetation that can benefit a variety of species of birds and other wildlife.

Led by Dr. Steven Latta, Director of Conservation and Field Research, and joined by seasonal interns Nancy Ransom, Shaina Kenny, Emily Paciotta, and Emily Wojtyna, this three-year study is funded by the S. Kent Rockwell Foundation. We seek to document whether the small gaps created through the *femelschlag* technique may benefit two suites of bird species that are widely considered to be declining in numbers: those that depend on early successional habitat, and those requiring large tracts of mature forest. Ornithologists often think these groups have opposing habitat needs. How might *femelschlag* accomplish this feat?

We know that large clear-cuts provide important habitat for species like the Golden-winged and Chestnut-sided warblers, Common Yellowthroat, Eastern Towhee, and Indigo Bunting; these species require young, shrubby habitat. Recent work has shown that very large clear-cuts may also benefit species like the Wood Thrush, Red-eyed Vireo, Ovenbird, Hooded Warbler, American Redstart, and Rose-breasted Grosbeak. These species normally require extensive, mature forests. But, adults and fledglings of these birds are now known to leave their nest to move into large clear-cuts. In these areas, they find plentiful food and safe cover for short but vitally important times in their life cycle: when young birds are beginning their independent phase, and when adults are undergoing their complete annual molt, both just prior to migration.

This situation might argue in favor of large clear-cuts to benefit more birds. But, large clear-cuts grow into even-aged forests, and while you can have many even-aged forests of different age across the landscape, you do not get the benefits of diverse forests with many layers of vegetation typical of forests managed using the femelschlag approach. Even-aged forests are not ideal habitat for many species of birds, so new approaches, like *femelschlag*, scaled up in the practice of forest management could prove very valuable to the conservation of high priority bird species.

Our fieldwork included standardized counts of birds occurring in forest gaps and the surrounding forest matrix at six sites in western Pennsylvania. In addition, we used mist nets to capture birds safely and briefly to assess body condition and health, and to mark the birds with colored bands so that we can monitor their seasonal persistence and annual survival.

Over time, we expect to count, mark, and follow enough birds so that we can understand how this relatively new *femelschlag* approach to forest management may benefit diverse bird species of conservation concern. ■

During this season's fieldwork, forest-loving birds like this Ovenbird were found in large numbers in small forest gaps. Here you can see the secondary coverts erupting as new pinfeathers in this hatch year bird undergoing its preformative molt.

Assessing Grassland and Early Successional Bird Populations at Eden Hall Farm

by Robert Mulvihill, Ornithologist

Beginning in mid-May, and for two days a week through early August, the National Aviary and up to three student interns from Chatham University's Eden Hall Farm campus embarked on a new field research study. With the university's focus on sustainability, we wondered if six large tracts of grassland and early successional habitat on campus could possibly be managed to benefit regionally and nationally declining bird species dependent on such habitats. Our first step was to inventory the birds already present, and to uniquely color-band as many individuals of those species as possible. Color-banding makes it possible to follow individual birds, map their territorial boundaries, document their nesting success, and estimate their survival.

Documenting our target species required a lot of effort. We had to locate birds, put up mist nets, place an audio caller under the mist net, and wait for the territorial birds to gently land in the net. Mist nets enable us to capture birds safely and briefly to assess body condition and health, and to band the bird. Once a bird was in the mist net, we quickly took it to a nearby banding table where we had all of our tools and data sheets ready. One person placed bands on the bird while another recorded measurements and other data. After releasing the bird back on its territory, we packed everything up and hiked farther in search of another target bird.

Throughout the season, we banded 94 birds from 16 species, and that total included 82 individuals of 11 candidate target species (our initial six primary target species are in **bold**):

Target Birds Banded			
Common Yellowthroat	**26**	**Brown Thrasher**	**1**
Field Sparrow	**22**	Eastern Towhee	1
Indigo Bunting	**9**	Northern Mockingbird	1
Song Sparrow	9	Orchard Oriole	1
Gray Catbird	7	**White-eyed Vireo**	**1**
Yellow Warbler	**4**		

Throughout the field season, 26 Common Yellowthroat, one of 11 target species for the study, were banded.

In addition to banding birds, we also searched for active nests and monitored those that we did find. Together, breeding density, survival rates, and productivity are the measures we will need in order to assess the suitability of habitat for the birds we are studying.

This study, of course, will take several successive seasons of effort to amass enough data for doing this analysis, but we hope that the answers we get will be able to be used by Chatham University to selectively manage their grasslands and shrublands in a manner that is highly beneficial to the birds that rely upon them. Success in this regard will be measured by the stability of populations of these birds at the study sites: how many of those 82 color-banded birds will we find on territory again next spring? The documentation of additional rarer bird species dependent on those same habitats, such as American Woodcock, Willow Flycatcher, which was observed but not banded during our pilot season, Yellow-breasted Chat, Blue-winged Warbler, and Prairie Warbler, will also help us to measure the success of management practices.

Our work was facilitated by faculty and staff at Chatham's Eden Hall campus. We thank Eden Hall graduate student, Ryan Comella, and undergraduate students, Oliver Jankosky and Angelina Borasso-Tilford, who were our daily field assistants. Our work was supported by volunteers Rachel Dudek, Liam Ellis, and Anthony Mulvihill, who helped to make our first field season of this project successful. All of the banding and color-banding of birds for this study was done under the authority of federal and state bird banding permits held by Dr. Steven Latta and Robert Mulvihill, and following all of the bird safety guidelines recommended by the North American Banding Council. ■

A Field Internship Experience Offers a New Perspective on Bird Conservation

by Oliver Jankosky, Chatham University

Under the supervision of Robert Mulvihill, Oliver Jankosky holds a Black-throated Blue Warbler that was banded during his summer field internship experience.

From May to August 2021, I found myself interning under the direction of Dr. Steven Latta and Robert Mulvihill of the National Aviary's Department of Conservation and Field Research. Along with two of my peers, I contributed to a pilot field study of local grassland and early successional migratory bird communities. Our fieldwork took place on Chatham University's Eden Hall campus, where we banded individual birds of our target species: Field Sparrows, Common Yellowthroats, and Indigo Buntings. We searched for nests to monitor reproductive success and evaluated the potential for campus habitat to be managed with early successional bird ecology in mind.

The study site of Eden Hall campus at the northern border of Allegheny County offered acres of hilled grassland, shrubland, and forest, and the chance to see the environmental systems I've been learning about functioning before me. It felt important for understanding the subject matter to gain this field experience–seeing first-hand the ecology and survival strategies of the brief summertime visitors. Bird handling and bird banding were completely new skills introduced to me, and they became an invaluable takeaway of the summer field internship experience. The delicate work is something I hope may be involved in my future trajectory, considering its usefulness and application to broad areas of ecology. I got to know the land and inhabitants of the campus I had lived and studied on; fundamentally I came away from the experience seeing and thinking about my surroundings in a new light.

The thrill of seeing a bird in the mist net and holding one in hand never got old, as well as re-spotting a familiar individual from its unique tricolored band combination out in the wild.

Hey there, I remember you—I hope food has been abundant; Oh, and I haven't forgotten how hard your beak can pinch!

The charismatic nature of the birds, and importance of understanding how they are impacted by their current conditions, made trekking out on early mornings through dew-soaked meadows entirely worth it. ■

Pittsburgh Helps to Protect Migratory Birds

by Molly Toth, Communications and Content Specialist

This fall, Pittsburgh officially joined a national movement known as Lights Out, a voluntary program that encourages building owners, tenants, and residents to turn off unnecessary lighting at night when migration is at its peak.

The National Aviary, in partnership with BNY Mellon, the Building Owners and Managers Association of Pittsburgh, BirdSafe Pittsburgh, Carnegie Museum of Natural History, and Pittsburgh Downtown Partnership, launched the area's first Lights Out initiative in early September. BirdSafe Pittsburgh, which has maintained a long-running monitoring program in the downtown area during migration seasons, will be collecting data on the number of birds injured by window strikes in this inaugural season to measure the progress of Lights Out.

Each year, about one hundred thousand birds pass over the Pittsburgh region during migration, moving largely at night. Migration is a rigorous journey for birds, one that requires significant energy, fitness, and reliance on innate navigational skills to travel hundreds, if not thousands, of miles annually. This strenuous process is made all the more difficult by elements of the built environment, like bright artificial lights and reflective windows.

The presence of bright lights can draw birds away from their long-established migratory routes and into cities and neighborhoods, where they may become disoriented and exhausted, find insufficient resources to fuel the next leg of their journey, or suffer a potentially fatal collision with a window.

Between 365 million and one billion birds die in window collisions annually in North America. The simple act of flipping a switch can have a profound effect on birds as they journey through the night skies, and provide value to people, too, by reducing energy costs and carbon emissions. ■

To learn more and to sign the pledge to go Lights Out, visit ***birdsafepgh.org.***

The National Aviary is proud to be in a city that takes the protection of wildlife seriously. We are a supporter of the City of Pittsburgh's Dark Skies ordinance, which would transition lighting used in existing and new City-owned properties to be compliant with Dark Sky Lighting principles. Dark Sky Lighting elements include the use of technology in lighting fixtures to lower color temperature, and the use of shields to restrict lighting to only those areas requiring it for comfort or safety. ***Read more here.***

A Snowy Egret, one of many species Aviary After School students may encounter in an exploration of the Tropical Rainforest habitat.

Raising the Next Generation of Conservation Heroes

by Jennifer Torpie, Curator of Education and Public Programs

Helping to raise the next generation of conservationists and nature lovers is core to the National Aviary's work, and we strive to develop programs that introduce young people to the world of birds and connect students to the people who care for them.

Returning for a second academic year, Aviary After School's semester-long weekly sessions bring the joy and wonder of birds and nature into the homes of students around the country, virtually. Each week, students age 6 to 12 explore the world of birds through educational activities, crafts, games, and immersive virtual experiences in the National Aviary's habitats that are brought to life by the Aviary's expert education staff and charismatic ambassador animals.

Aviary After School can be an important supplement to a child's normal STEM curriculum, and is bolstered with engaging activities that vary with each week's theme. As students explore topics covering identifying birds by field marks, understanding bird behavior, and how birds use backyard habitats, they are also learning practical skills they can apply when they venture outdoors. And, they are learning how to support the birds around them and care for habitats in their own backyards.

Beyond meeting a demand for extra-curricular education, Aviary After School is fulfilling another need: the social and emotional growth of children during a time when in-person social connections may be hard to make. With the supervision of Aviary After School's instructors, kids are forming bonds with other young nature lovers from across the country. As Aviary After School begins its second academic year, some of those familiar faces are returning for another semester.

The National Aviary's education programs are providing opportunities for students to engage with birds, gain a deeper appreciation for nature, and find ways to put their passion for animals to work for the conservation of birds and their habitats. ■

Aviary After School is sponsored by ***Pennsylvania Cyber Charter School.***

An African Penguin walks through eroded habitat in South Africa. Photo courtesy of Kevin Graham, Dallas Zoo.

As African Penguin Populations Decline, Conservation Efforts Scale Up

by Patty McGill, Ph.D., Independent Senior Conservation Scientist

African Penguins are beloved by National Aviary visitors, but many in our community may not know that these charismatic birds are in critical jeopardy of extinction. The most recent census of African Penguin populations showed only 10,400 pairs remaining in South Africa—a 23% decline since 2019. The population along the western coast of South Africa could be functionally extinct in 15 years, and this same population is now less than 3% of historic levels. Several problems, some chronic and some emergent, face African Penguins: dwindling near-shore fish supplies, warming oceans, oil spills, deterioration and disturbance of their nesting habitats, and disease outbreaks.

Rarely do we face such a critical situation with a bird species we all know and love. We at the National Aviary are helping to lead the efforts among all our colleagues in accredited Association of Zoos and Aquariums (AZA) institutions to save African Penguins. This collaborative conservation effort, AZA's SAFE (Saving Animals from Extinction), prioritizes projects in three categories to address this urgent conservation situation. Our efforts are focused on 1) stopping the decline, 2) understanding and managing critical challenges, and 3) leveraging the African Penguin population in zoos and aquariums to amplify knowledge about medical issues and successful treatments, and to enhance our community's understanding of penguins and how to help save them.

SAFE has made great progress working with South African colleagues in creating disaster response plans, providing equipment, and training personnel in order to successfully rescue and rehab the greatest possible number of penguins affected by any disaster. We are now collaborating with colleagues in Namibia to make similar preparations for their African Penguin population. We continue to build and deploy artificial nests where habitat is poor. By providing 1,400 artificial "burrows" with a 90% occupancy rate so far, penguins have shelter from storms, intense sun, and predators—improving their chick survival. A new program supported by SAFE hires, trains, and stations rangers at key penguin nesting colonies not only to monitor penguins and prevent disturbances to the colony, but also to be "first responders" in case of any emergency.

A key SAFE-sponsored project is investigating penguin movement ecology in order to design effective conservation actions. The same tracking technology used with our pet dogs, cats, and parrots is now being used with penguins! SAFE has helped to outfit thousands of penguins with these microchips, enabling scientists to identify which penguins come and go from each colony and detect how long each individual is gone while trying to find food. At a few sites, penguins must walk across a scale on the beach while a device reads the individual ID tag, enabling the scientists to determine how much weight the penguin gained while out fishing, an indicator of the quality of the fishing area that it used for foraging. Eventually, if we can solve food shortages facing our penguins, it will help more penguins of all ages to survive, and to survive in top condition.

The latest news about African Penguins' continued decline is devastating, and it should make us redouble our conservation efforts. SAFE projects are indeed making progress, and you can help to secure the future for African Penguins! Learn about and purchase seafood only from sustainable sources. Use water wisely. Save energy and use renewable energy. Even if you don't live near a beach, you can still do a beach clean-up by reducing your use of single-use plastics or by participating in a community clean-up of rivers and creeks. And, support the National Aviary and our African Penguins in Penguin Point. **Donating**, **visiting**, and **booking a Penguin Encounter** all help to support our mission to save African Penguins from extinction! ■