Greetings colleagues! Summer has officially begun in the United States. Since summer falls between the main migratory seasons, some of us may be able to catch our breath – just a little bit.

I’d like to highlight a topic that is central to our committee — outreach! Providing quality information has been the focus of Bird Strike Committee USA since it was founded in 1991. The primary way we provide outreach and new information continues to be the annual conference, where we learn from presentations, panel discussions, FAA and military updates, vendors and engaging with other members to discuss wildlife challenges at airports. Our conferences have been successful, with hundreds of people from more than a dozen countries attending annually. The level of awareness and exchange of information are important to our success!

Once again, Bird Strike Committee USA is pleased to collaborate with its Canadian colleagues as they host the North American Bird Strike 2015 Conference in Montreal, Quebec. Discussion topics will include: increased strike reporting in 2014, technological applications and their impact on bird strike events, ecological factors and their effect on wildlife hazards at airports, new perspectives from Europe and India, program management, conflicts with space vehicles, raptor management and pollinators at airports. If you haven’t registered yet, please consider joining us from September 15 to 17 to learn more about a broad array of wildlife management topics! (For more information, go to: http://events.aaae.org/sites/150902/index.cfm).

I would also like to thank the members of Bird Strike Committee USA for their commitment to spreading our message about wildlife management and strike prevention. We have developed a new travelling information booth. In the span of just a few short weeks BSC volunteers have brought much-needed attention to the issues of wildlife strikes and wildlife management challenges. Thanks to our volunteers, hundreds of pilots, aviation professionals and the public have learned about wildlife hazards to aviation at the Sun n Fun International Fly-In & Expo, National Business Aviation Association Maintenance Managers Meeting and the Air National Guard Safety and Mishap Prevention Workshop. We will take the booth to the Experimental Aircraft Association’s AirVenture in Oshkosh later this summer.

To those who have volunteered and represented BSC USA during the past several months – thank you! It is going to be a banner year for outreach. Enjoy the summer months, and plan to visit with us in Montreal. And above all, keep up your own good efforts to manage wildlife hazards and prevent strikes.

Michael J. Begier
Chair, Bird Strike Committee USA
BSC Traveling Booth Strikes a Home Run!
Matthew W. Klope, Naval Facilities, BASH Program Manager

Bird Strike Committee USA’s traveling information booth is earning frequent flyer miles, traveling to four states in just three months.

The BSC traveling information booth made its debut at the Sun n Fun International Fly-In & Expo from April 21 to 26 in Lakeland, Florida. Mike Stephens and his team worked hard and coordinated with a professional company to create an outstanding outreach display. The booth’s overall message varied distinctly from others at the event and generated quite a bit of interest from passersby who stopped to find out what BSC is all about. Sarah Brammel, Amy Johnson, Steve Jangelis, Gary Cooke and I manned the booth and conveyed BSC’s mission to hundreds of private and commercial pilots.

David Eiker and I displayed the booth at the National Business Aviation Association’s Maintenance Managers meeting in Portland, Oregon, from May 5 to May 7. Since I live close to Portland, I brought some mounted friends to catch the eyes of conference attendees. A flying Turkey vulture, Canada goose and a Black-tail deer turned some heads in our direction and brought the curious to find out more. This presentation was directed to the maintenance side of aviation, and once again the strike stories came flying!

Thanks to Nick Atwell of Portland International, the booth traveled next to Albuquerque, New Mexico for the Air National Guard Aviation Safety Officers meeting from May 12 to May 14. Our professional eye-catching display caught the attention of many who stopped to inquire, learn and share their stories. We had a great time, and learned while we educated!

The booth also traveled to Oshkosh, Wisconsin for an appearance at AirVenture 2015 from July 20 to 25. During all these events we shared BSC’s mission and communicated to pilots, safety officers and maintenance personnel. We conveyed the importance of reporting all wildlife strike events and sending the remains to the Smithsonian Institution’s Feather Identification Lab. As we all know, it’s vital that biologists, airport managers, aircraft designers and engineers know what species are involved in strike events and the information surrounding each event.

Our 2015 Outreach events have reached hundreds of pilots, maintenance personnel and safety staff to communicate the importance of wildlife strike awareness. We look forward to continued interest and communication to these groups and others in the years to come!
HISTORY OF FAA WILDLIFE / AVIATION GUIDANCE

(Part one of a two-part series)

John Weller, Federal Aviation Administration

Regulatory progress is a lot like the Vin Fiz, the aircraft flown by Calbraith Rodgers during the first transcontinental flight from September 17 to November 5, 1911. Reports said that the plane had so many repairs during the seven-week flight that a person would be hard pressed to find an original part at the finish. Likewise, safety regulations today differ greatly from their beginnings, as they are constantly updated and improved in response to specific events, improved information and technology, or in response to public demand.

The milestones of wildlife threats to aviation begin with the first reported strike on September 7, 1905, when Orville Wright struck a blackbird over a cornfield near Dayton, Ohio. The strike occurred less than two years after he and his brother, Wilbur, first flew at Kitty Hawk on December 17, 1903. We also know that the first fatal bird strike occurred on April 3, 1912, when Cal Rodgers’ Wright Pusher aircraft struck a gull above the beaches of Long Beach, California, causing the aircraft to crash into the surf. Rodgers was pinned under the wreckage and drowned.

Wildlife strikes have increased with the proliferation in aircraft movements, but early strike data was documented only intermittently. Yet even the limited information indicates that about one strike per day occurred in the U.S. commercial fleet throughout the 1940s and 1950s.

The Flight that Changed Everything

Everything changed on October 4, 1960, when Eastern Air Lines Flight 375 flew through a flock of starlings on takeoff from Boston’s Logan Airport and suffered multiple engine thrust loss. The Lockheed Electra struck starlings at a height of 200 feet AGL, rolled to the left and crashed into Winthrop Bay. The fuselage broke into two pieces. Eight passengers and two flight attendants in the rear section were thrown out of their seats and quickly picked up by boats already in the bay. The remaining 62 people on board perished.

The investigation following the crash identified multiple engine ingestions and penetration of the windscreen. The circumstances that led to this catastrophe included the presence of attractive habitat and food sources for starlings such as tall reeds (Phragmites), landfills and dump sites. Soon after, the FAA initiated a research program to improve the tolerance of turbine engines to bird ingestion. Next, the FAA contracted the U.S. Fish and Wildlife Service’s Bureau of Sport Fisheries and Wildlife to prepare a comprehensive summary of wildlife/aviation concerns, which resulted in the publication of Wildlife Leaflet No. 429, Bird Hazard to Aircraft (January 1961).

The Airport Division’s First Advisory Circular

The FAA Airports Division’s first Advisory Circular (AC), AC 150/5200-1 Bird Hazards to Aviation, was published in 1963 to explain the relationship between wildlife attractants and aviation safety, and the responsibilities of airports and municipalities concerning wildlife attractants. FAA published AC 150/5200-2, Bird Strike/Incident Report Form, in 1965 to further explain wildlife hazards and to provide a form for reporting strikes (FAA Form 3830). Five of the first ten ACs provided by the Airports Division pertained to wildlife.
Bird Strike Buzz – News from Bird Strike Committee USA

hazards. The other AC’s included AC 150/5200-3, Bird Hazards to Aviation (1966), AC 150/5200-8, Use of Chemical Controls to Repel Birds at Airports (1968), and AC 150/5200-9, Bird Reactions and Scaring Devices (1968).

Airworthiness Regulations
On November 23, 1962, United Air Lines Flight 297 struck at least two Whistling (Tundra) swans at 6,000 feet AGL and crashed into a wooded area near Ellicott City, Maryland, killing all 17 on board. The Vickers Viscount 745D sustained severe damage to the left horizontal stabilizer and elevator, which rendered the plane uncontrollable.

Prior to this incident, the only U.S. airworthiness regulations concerning bird strikes on transport category airplanes pre-dated the era of jet transport and required that the windshield sustain the impact of a 4 lb. bird without penetration (Civil Air Regulations 4b – 12/31/53). The requirement preceded the jet transport era, and was adopted after a number of crew injuries due to bird penetrations of windshields. Following the Vickers Viscount incident the FAA mandated in 1970 that the empennage structure must allow continued safe flight after impact with an 8 lb. bird, while the remainder of the aircraft must adequately function following impact with a 4 lb. bird (14 CFR § 25.631).

Additional Guidance
On February 26, 1973, a private Learjet 24 crashed shortly after take-off from DeKalb–Peachtree Airport in Chamblee, Georgia, and struck a nearby apartment building. All five passengers and both crew members were killed, and a person in the nearby apartment building suffered severe burns. The National Transportation Safety Board (NTSB) later confirmed that the aircraft had struck cowbirds and determined, “There is little doubt that the municipal dump located adjacent to the airport property attracts birds which are a serious hazard to aircraft.” Fifteen dead birds were found at the end of the runway, and the left engine, windshield and cockpit area had bird residue and feathers on them. The left engine showed evidence of fourteen separate bird strikes, and the right engine showed evidence of five strikes. Improved surveillance and timely sanctions against noncompliant federally-obligated operators were enforced following this accident as well as the revision and circulation of AC 150/5200-3A, Bird Hazards to Aircraft (1972).

A McDonnell Douglas DC-10-30CF was destroyed without loss of life following multiple bird strikes on November 12, 1975. Overseas National Airways flight 032 was attempting take-off from JFK with 139 airline employees on board when a flock of gulls rose from the runway and were ingested into the No. 3 engine, causing the engine and wing to erupt in flames. The aircraft was steered onto a taxiway where the main undercarriage collapsed and the aircraft burned completely. All passengers were evacuated, which may be partially attributed to the fact that nearly all were trained crew members. The bird strikes at Dekalb-Peachtree Airport and JFK were attributed, at least in part, to nearby landfills that attracted blackbirds and gulls. These crashes led to the development of additional guidance by both FAA and ICAO pertaining to land use restrictions near airports both and improved bird-ingestion standards in the U.S.

Stay tuned for Part 2!
LATEST FROM THE LAB … NUMBERS, NEW STUFF AND NAMES

Marcy Heacker, Feather Identification Lab

The Smithsonian Institution Feather Identification Lab is off to another good start for 2015! A look back at fiscal year 2014 (FY2014) suggests that the demand for wildlife strike species identification continues to grow. In FY2014, the Lab provided over 9,000 identifications, averaging 35 identifications a day. Overall, the number of identifications for USAF, Navy and FAA increased by 15 percent in FY2014 from the previous year.

Whole and microscopic feather morphology continue to be central to the identification process, and DNA has become an important tool. Approximately 80 percent of our casework is initially sent to the DNA lab, and 88 percent of those cases yield successful sequences for identification. Given the degraded samples we receive and the “one attempt” rule for most non-damaging samples, this is a good success rate and an 8 percent improvement from last year. The improvement is likely due to a new extraction protocol that the lab implemented in FY2014. Despite the significant use of DNA identification methods, over 30 percent of cases still utilize feather morphology in some way. It is also important to have feathers when DNA is not obtained from samples, so keep sending whole feather material—it is important for our work!

The Feather ID Lab would like to extend a big thank you to the Air National Guard (ANG). Earlier this year, the ANG provided support for the purchase of an Autogen® Gene Prep DNA extraction machine (see photo). The extraction phase of DNA analysis is early in the sequence of lab work, releasing DNA from the biological cells in a sample. The Autogen®, with its robot technology and organic chemicals, is a perfect tool for our high-volume lab to provide the best amount and quality of DNA possible for the molecular work to follow.

In general, the types of bird species we identify from strikes are consistent. Our identification program and bird strike industry data have been around long enough to show reliable patterns in bird strike species. The most damaging bird species identified by the Lab continues to be the waterfowl, gulls, hawks and vultures. The most common species include swallows, sparrows, larks and doves.

Despite these usual species, we always identify species identifications that are unusual and cause us to say “Wow!” Recently we identified North American bird strike species such as the Cackling goose (Branta hutchinsii), Golden eagle (Aquila chrysaetos) and Magnificent frigatebird (Fregata magnificens). Species identified from overseas bird strikes have included the Yellow Bittern (Ixobrychus sinensis) from Guam and Short-eared owl (Asio flammeus) from Japan and Spain. Mammal identifications that had us reaching for our field guides included Water deer (Hydropotes inermis) from Korea and the Naked-rumped tomb bat (Taphozous nudiventris). There is no such thing as a boring day in the Feather ID Lab!
MITIGATING BIRD/WILDLIFE STRIKE HAZARDS TO GENERAL AVIATION AIRCRAFT

Captain Gary Cooke, World Bird Strike Association, Bird Strike Committee USA

At first glance it seems that aviators can do little to prevent an unwanted encounter with wildlife, but a deeper understanding of the hazards, combined with an awareness of programs and available resources, may help to significantly reduce risk.

Two business aviation mishaps highlight the plight of general aviation (GA) and wildlife:

- In 2008 a Cessna CE-500 Citation jet struck a flock of white pelicans after departing Wiley Post Airport (PWA) near Oklahoma City. According to the NTSB, the PWA accident resulted from wing structure damage sustained during the in-flight collision with the pelicans, which far exceeded the airframe’s design certification limit.¹
- In 2012, a CE-550 Citation jet struck a deer on landing near Greenwood, SC (GRD). The deer was struck by the left wing’s leading edge above the left main landing gear, which ruptured the adjacent fuel cell and caused a fire (Raynor, 2012).

In both cases aircraft were destroyed, and in one case lives were lost. An analysis of these accidents provides a wealth of information that can help GA pilots avoid or mitigate the risk of such mishaps. By understanding our machines, our environment, and wildlife, we can make informed decisions to reduce risks during aircraft operations.

Understanding How Our Machines are Designed

Kinetic energy and physics tell us that an object struck at twice its speed will cause an impact at quadruple the force. Therefore, it is advantageous to operate aircraft at slower airspeeds and reduced power settings to reduce the potential effect should a bird or wildlife strike occur. Most pilots are keenly aware of the dangers associated with operating at very slow airspeeds, but what are the hazards associated with operating at higher speeds?

FAA design criteria associated with most business aviation aircraft are set forth at Title 14 of the Code of Federal Regulations (CFR) Part 25, “Airworthiness Standards: Transport Category Airports,” and these criteria can help pilots formulate a risk management strategy (http://www.ecfr.gov/cgi-bin/text-idx?rgn=div5;node=14%3A1.0.1.3.11).

- Paragraph 25.571(e)(1) states that the airframe general structure must be able to withstand an impact from a 4 lb. bird at the airplane’s design cruising speed (Vc).
- Paragraph 25.631 states that the tail structure must be able to withstand an impact from an 8 lb. bird at sea-level Vc without precluding the airplane from continued safe flight and landing.
- Paragraph 25.775(b) states that the windshield must be able to withstand impact from a 4 lb. bird at sea-level Vc without allowing the bird to penetrate. The Vc for most aircraft is usually associated with maximum operating speed (Vmo). Pilots should be familiar with Vc for their aircraft and plan to operate well below Vc when bird/wildlife hazards are identified or anticipated.
- Paragraph 33.76(b) specifies that turbine aircraft engines must be able to ingest a 4 lb. bird while operating at 100 percent power at a speed of 200 knots without releasing hazardous fragments, catching fire, separating from the airframe, or losing the ability to be shut down.

In reviewing the PWA and GRD mishaps, the average deer weighs more than 100 lbs, and the average American white pelican weighs more than 12 lbs. It is easy to understand how both these aircraft experienced structural failure and were destroyed following a wildlife strike.

Understanding Damage from Wildlife Strikes

According to Airbus, one out of five strikes results in damage, and 40 percent of those strikes cause damage to an engine or its components.

According to Airports Council International (ACI), approximately 97 percent of the reported strikes were associated with birds, and only 13 percent resulted in an adverse impact on aircraft flight, most of which were minor. The vast majority of bird/wildlife strikes occurred at altitudes of less than 3,000 feet above ground level (AGL). Moreover, approximately 84 percent of bird/wildlife strikes that resulted in an accident occurred during the takeoff, or approach and landing phase. Nearly 60 percent of the strikes that occurred at altitudes below 3,000 feet AGL occurred at altitudes below 500 feet AGL.

Based on the strike data, it seems that pilots can reduce the risk of birds/wildlife strikes by minimizing the time their aircraft operate at altitudes of less than 3,000 feet AGL. This is not always easy, however, as most visual flight rule (VFR) patterns are below 3,000 feet AGL. Engines are exposed to the highest risk during takeoff and departure when they are operating at high power setting at lower altitudes. If continued operations below 3,000 feet AGL are required, slower (safe) airspeeds and lower power settings may minimize the impact associated with a strike. If departing the airport environment, pilots should consider climbing expeditiously to an altitude of 3,000 feet AGL before accelerating to climb/cruise speed.

GA aircraft are usually much smaller, operate at slower airspeeds, and climb to higher altitudes more quickly than large transport category aircraft. GA aircraft engines include relatively small intakes and are much more maneuverable. Most birds tuck and dive when they feel threatened, and tuck their wings in to let gravity take over. To avoid birds in the flight path, pilots can consider altering flight trajectory by ascending as soon and as safely possible while respecting the operating limitations of their aircraft.

Understanding the Airport Environment

Airport Wildlife Biologists know that airport operators need to identify what attracts hazardous wildlife to airports and then modify or eliminate those attractants. GA pilots should also be aware of such attractants. For example, trees provide resting places and roosting opportunities for raptors and other large birds. Grass heights also present challenges: short grass enables birds/wildlife to graze, while higher grass conceals wildlife and offers protection for smaller species. In addition, many GA airports are located in rural areas near parks and/or landfills, which can also increase bird/wildlife hazards to aviation.

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2 Airbus Flight Operations Briefing Notes; Operating Environment: Bird Strike Threat Awareness.
4 ACI-NA Media Briefing Airport Wildlife Hazard Management February 3, 2009
6 Airbus Flight Operations Briefing Notes; Operating Environment: Birdstrike Threat Awareness. Figure 3 French DGAC.
Understanding Wildlife Behavior
Understanding local migratory routes, seasons, and local bird behavior can help pilots identify and reduce strike risks. Shorelines and open water can provide food and rest areas for birds during migration, and these areas may also attract predators. Just like humans, most birds are social, take the path of least resistance, are more active during daylight, and “commute” between feeding and rest areas at dawn and dusk. Many strikes occur within one hour of sunrise or sunset.

Report Strikes!
Strike reports are the most effective tool for helping to prevent strikes and make flying safer. FAA Advisory Circular (AC) 150/5200-32A, “Reporting Wildlife Aircraft Strikes,” encourages pilots, airport operators, aircraft maintenance personnel, or anyone else who has knowledge of a strike to voluntarily report the event to the FAA (http://www.faa.gov/documentLibrary/media/Advisory_Circular/150_5200_32b.pdf). The AC outlines the criteria for defining a strike, the procedure for submitting animal remains to the Smithsonian Institution for species identification, and information on accessing the FAA National Wildlife Strike Database. According to the FAA, these data are “critical for biologists developing and implementing wildlife risk management programs at airports, because a problem that cannot be measured or defined cannot be solved.”

A Path Forward
Communication will continue to be important as we move forward to reduce bird strikes. Airports must continually evaluate their bird/wildlife hazards and communicate their findings to help aviators assess risk. For example, Notices to Airmen (NOTAM) that include specific data should be used to communicate hazards associated with local birds/wildlife.

Most strikes go unreported. Nationwide initiatives to increase reporting rates would provide additional data to advance aviation safety. Reporting must involve pilots and aircraft operators primarily, plus airport ground operations staff, ATC and other aviation stakeholders. Pilots and air traffic controllers must work with airport operators to better communicate and identify where, when, and what bird/wildlife hazards are present at airports.

Captain Gary Cooke has over 20 years’ experience in aviation safety and is a pilot and safety officer of a large US corporation. He has over 15,000 hours of flying in numerous aircraft.

EUROPEAN STARLING MANAGEMENT
Shawn Ferdinand, Loomacres Wildlife Management © Copyright 2011.
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The European starling (Sturnus vulgaris) is native to Europe and was introduced to North America in the 1890s by William Shakespeare enthusiasts. Since the introduction of 100 individuals in Central Park, New York, starlings have colonized the majority of North America ranging from Alaska to Mexico, with an estimated population of over 200 million.

European starlings are small bodied flocking song birds, weighing 2.1 to 3.4 ounces as a full-grown adult. Starlings are also vocal mimics, with individuals learning up to 20 different species songs.

Starlings are typically associated with human activities, often found in urban settings that provide an ample supply of forage, roosting, and nesting habitats. They are cavity nesters, utilizing a broad array of habitats such as trees, bird houses, and buildings. Starlings can be aggressive when selecting nesting locations and can out-compete native species.

European starlings are omnivores, feeding on invertebrates, berries and seeds. However, they often forage on garbage, livestock feed, and agricultural wastes. They are often seen roosting on high wires, buildings, and trees.

European starlings are identified by their iridescent purple-black glossy color in the summer and additional white spots during winter months. They have a long narrow beak used for foraging in grass and soil. Their beak is bright yellow during summer months and turns more drab black during winter.

Starlings are commonly identified by their flocking behavior. Throughout the year, they congregate in large flocks, which can reach hundreds of thousands in number. This flocking tendency is thought to be a defensive behavior, in attempt to distract predators from focusing on a single individual.

European starlings are exempt from the Migratory Bird Treaty Act (MBTA) and are not federally protected. Any number of nests, eggs, young and/or adults may be removed or destroyed throughout the year without a permit. Their protection status at the state level should be consulted.

Managing European Starlings at Airports
Due to their large flocking behavior, European starlings are a potentially significant hazard to aviation. European starlings are responsible for the most deaths resulting from wildlife and airplane collisions nationwide. They are listed at the 20th most hazardous species to aviation (FAA 2007)

Many management strategies are available to reduce the damage or danger caused by the presence of European starlings. These strategies fall into two categories: lethal and non-lethal control. It is important to note that there is no easy or quick method to remove European starlings. Utilizing both non-lethal and lethal control is often needed for long-term management strategies.
European Starling Management - Continued

Non-Lethal Control
Non-lethal methods aim to make habitats unappealing or inaccessible. Non-lethal control through the use of exclusion and frightening techniques can be an effective way to exclude European starlings from a location. Habitat modification can also be used.

Frightening devices, including pyrotechnics, effigies, propane cannons and avian distress calls, can be used to reduce starling presence in a location. However, when not used in conjunction with lethal control techniques, starlings can become accustomed to these devices and render them ineffective.

Altering the preferred habitat of European starlings can be an effective and long-lasting means of mitigation. An effective way to prevent starlings from roosting on trees and damaging crops is to cover areas with netting. Starlings that are gaining access inside buildings can be deterred by closing up entrance holes, or installing netting. Leaving no doors open for long periods of time will also help. Anti-perching devices can prevent starlings from perching on buildings, ledges and wires.

Lethal Control
Lethal control techniques that can be utilized to control and deter starlings include shooting, trapping and egg/nest removal. Shooting starlings is not an effective way to control starling populations; however, it can be used to reinforce non-lethal harassment techniques.

There are many styles of starling traps on the market. Trapping starlings can be an effective method to reduce population sizes in a given area, but if not used in conjunction with habitat management and exclusion techniques, additional starlings may migrate into the area due to the open niche.

European starling nest and egg removal is a direct way to control populations of starlings. This method is best used in conjunction with habitat modification. For example after installing exclusion devices to a building a final step would be to removal all nests that have been built inside the building.

Exclusion and removal of European starlings from agricultural, suburban and airport settings can be a challenging task. A combination of non-lethal and lethal techniques should be applied to achieve optimal results.

References

Bird Strike Conference 2015
September 15 to 17, 2015
Montreal, Quebec

On behalf of Bird Strike Canada and Bird Strike Committee USA, it is my pleasure to invite you to attend the 15th Annual North American Bird Strike Conference to be held September 15 to 17, 2015 at the Fairmont The Queen Elizabeth in Montreal, Quebec. As a joint meeting between Canada and the U.S., this is a great opportunity to exchange information and viewpoints not only across our common border, but also with all of the delegates who come from abroad. With SWIFT held concurrently, we are expecting many international and airport delegates. The American Association of Airport Executives (AAAE) will manage the conference logistics.

Montreal is a great multi-cultural city with a beautiful and exciting downtown. Home to ICAO and IATA, it is an international aviation center. The North American Bird Strike Conference has a solid history of informative talks, great networking opportunities and key vendor exhibits I know the only way you will be disappointed is if you do not attend. So mark the dates on your calendar. Registration and conference details located via the link below. I look forward to seeing you at the conference.

Gary F. Searing, Executive Director, Bird Strike Association of Canada

Registration and Conference Details are available through AAAE at: http://events.aaae.org/sites/150902/index.cfm

Call for Posters and Photos: Airport Wildlife Management

The 2015 conference will once again include a poster contest and a photo contest depicting the theme of Airport Wildlife Management. Monetary prizes of up to $300 will be award for the best poster and photo.

Poster Contest
All interested persons over the age of 18 are invited to submit entries for the poster contest. Any poster suitable for framing and appropriate for educational and awareness purposes is eligible. Only original artwork will be accepted, only the creator of the artwork may submit the poster. A limit of two posters per entrant will be accepted.

For Poster Contest entry details: http://events.aaae.org/sites/150902/assets/files/CallEntries_Poster.pdf

Photo Contest
Any photograph suitable for framing and appropriate for educational and awareness purposes is eligible. Only original artwork will be accepted. Untouched, computer enhanced, retouched or manipulated photographs of the entrant’s original work are acceptable. A limit of two photographs per entrant will be accepted.

For Photo Contest entry details: http://events.aaae.org/sites/150902/assets/files/CallEntries_Photo.pdf

Deadline:
Entries must be received by 11:59 p.m. U.S. Central Standard Time on September 1, 2015.

Last year’s award winning photo. Photo by: Nikos Fokas