



Bird Strike Committee USA

Autumn 2021

Bird Strike Buzz

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FROM THE CHAIR

Dear Bird Strike Committee USA (BSC-USA) Members,

2021 was a challenging year for all of us—since March 2020 we have all adapted and grown in ways that were previously unimaginable. We’ve learned to work and build teams remotely, use technology in new ways, and somehow forge ahead to keep aviation safe as we continue to move air cargo and travelers. While I won’t deny the challenges, I’d like to celebrate our BSC successes.

Annual Bird Strike Committee Conference

BSC USA held its first virtual meeting from August 16th to 19th, 2021, and by all accounts the conference was a resounding success. Although we could not meet in person, we were able to accomplish several important goals.

- **Certification requirements.** We were able to provide training to help Qualified Airport Wildlife Biologists maintain their certification, which was mission-critical item following the unexpected cancellation of the 2020 conference. (If you have not received your certificate, please contact Amy Anderson, Membership Chair amy.anderson@faa.gov.)
- **Information Sharing and Education.** More than 370 attendees gathered on our virtual platform to learn about the use of UAS technology and its application to wildlife hazard management, learn about forthcoming technologies such as Advanced Air Mobility (AAM), gain an insider’s view of Smithsonian Feather ID Lab, and so much more.

Our conference would not have happened without the hard work of many volunteers! Hats off to **Jim Laughlin**, our first-time **Conference Chair** who was thrown into the deep end of the pool as we faced our first online conference, and to **John Ostrom**, **Past Conference Chair**, who provided ongoing support through it all. Our AAIE partners provided unparalleled expertise. I cannot thank **Natalie Fleet**, **Christine Montgomery**, and the many other **AAIE team members** enough for helping us navigate through challenges posed by new technology and putting together our first virtual conference. Their collaboration was unsurpassed.

Steering Committee Update

Our organization is fortunate to have dedicated leadership and volunteers to keep things moving. I’d like to congratulate and welcome new Steering Committee members **Amy Reed (FAA)**, **Jay Tischendorf (General)**, **Joe Barnes (Private Sector)**, **Allison Doran (Private Sector)**, **Antoine Pilon (Industry Liaison)**, and **Matthew Powers (Chair, Outreach and Education Subcommittee)**. Contact information for the Executive and Standing Committee chairpersons is available on page 2.

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BSC USA Executive Committee

The BSC USA Executive Committee welcomes your input and insights regarding the organization, in operations and matters of interest to our members. Please feel free to contact the members below with ideas or suggestions.

Nick Atwell, Chair
Portland International Airport
nick.atwell@portofportland.com

Craig Quick, Vice Chair
General Electric
craig.quick@GE.com

John Weller, Immediate Past Chair
Federal Aviation Administration
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Standing Committees
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Annual Conference, Jim Laughlin
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Dane County Regional Airport
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Newsletter Team
Lisa Harmon, Mead & Hunt, Inc.
Tamara Sortman, Mead & Hunt, Inc.

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There's room for you—and we need you! We still have current openings, and additional openings will happen in August 2022.

- **Current Openings:** USDA (two openings), Airlines (two openings), and Aerospace (one opening). We will accept nominations until December 1, 2021, and new members will be invited to attend the mid-winter meeting in Washington, DC during February 2022 (Covid pending!).
- **Scheduled Positions Openings (August 2022):** Vice Chair, Communications Committee, representatives from the General, Private Sector, and FAA.

Please reach out to current members of the executive or steering committees to find out what they do and consider self-nomination.

Ongoing Outreach and Collaboration

The following newsletter pages highlight the good work that BSC USA members are doing for our industry. We're working together more closely than ever to provide education and outreach to industry sectors and the public. Many thanks to the Outreach and Education Committee, our booth continues to gain frequent flyer miles despite the pandemic.

We're also strengthening ties with USDA researchers to alert our membership about the insightful work they do to make aviation safer. The USDA Research Report (p.6) summarizes the breadth and scope of USDA's current and forthcoming research that is related to aviation and wildlife hazard management. Links to two recent publications are provided.

Onward and Upward!

Despite the challenges, BSC USA remains strong. We continue to offer training and education to our members and industry at large, and our organization includes enthusiastic members who remain dedicated and embody our goal "providing leadership in managing wildlife hazards to aviation."

Next year's conference will be held in Salt Lake City, Utah, the home of a previously successful conference. I look forward to seeing you all in person!

Stay well,

Nick Atwell
Chair, BSC USA Chairperson



BSC OUTREACH AND EDUCATION: On the Move!

Sarah Brammell and Matthew Powers

BSC USA outreach and education efforts continued throughout 2021, as representatives attended well attended aviation conferences. Many thanks to all the volunteers and BSC USA members who continue to promote education and outreach about safety and wildlife hazard awareness throughout the industry.



OEEE AirVenture

The annual Experimental Aircraft Association (EAA) AirVenture in Oshkosh, Wisconsin is a perfect opportunity for Bird Strike Committee to conduct outreach and engage with the public. More than 600,000 people attended EAA AirVenture in July 2021, many of whom visited the BSC USA booth to learn about wildlife hazards and management. BSC USA is eager to continue its mission of outreach and education at next year's conference!



BSC representative Shaun Nadolny speaks with Oshkosh visitors under the steady gaze of a four-legged friend.



Sun n Fun

Bird Strike Committee USA attended the Sun n Fun Aerospace Expo at Lakeland Linder International Airport in April 2021. BSC USA members and volunteers staffed the traveling BSC USA booth and interacted with pilots, airport staff, aviation enthusiasts, and other interested stakeholders. While still operating with Covid-19 protection measures in place, Sun n Fun boasted 385 exhibitors an estimated 200,000 attendees.



BSC USA Past Chairperson, Sarah Brammell, distributed posters to attendees of the annual Sun 'n Fun Conference in Lakeland, Florida.



LATEST FROM THE LAB

Marcy Heacker
Smithsonian Institution Feather ID Lab

Fall migration is here again! Hawks and shorebirds are well into their journey with passerines and hummers are not far behind. As usual, this is a busy time in the Smithsonian Feather ID Lab – more birds in the air means more strikes to ID. Fortunately, the COVID precautions of the past year are starting to relax a little. It is good to see visitors back in the museum, mail delivery service is slowly getting back to normal, and we are now allowed to have two people in the Lab at the same time. Like many, there is a “new normal” to the work environment.



The Lab would like to thank all its clients for their cooperation during the past year. Despite the challenges we have faced during the COVID era, our case work is steady and close to “normal” numbers, which is indicative of the support of everyone in the bird strike community and their dedication to identifying, assessing, and managing the complex issue of bird strikes.

So, let's all head into this fall with the same determination as those migrating birds. Let's all work together to improve flight safety for civil and military aviation.

Speaking of migration...

Migration of Birds was published by the U.S. Fish and Wildlife Service in 1979 and includes beautiful illustrations of bird species and their associated migration routes. Though long out of print, the book remains available to the public free of charge, and its contents can be used, copied, or distributed free of copyright infringement. A downloadable version is available from the Gutenberg Project at: <https://www.gutenberg.org/files/65222/65222-h/65222-h.htm>

SAVE THE DATE! STRIKE ZONE WEBINAR SERIES

Phyllis Miller and Mahala Schank will close out the 2021 Strike Zone webinar series with a presentation and discussion of the National Wildlife Strike Database. Stay tuned for more details!

Date: Wednesday, December 8, 2021 at 2:00 PM ET
Join using Microsoft Teams on your computer or mobile app
[Click here to join the meeting](#)
Or call in (audio only)
+1 612-405-6798, 608018169# United States, Minneapolis
Phone Conference ID: 608 018 169#





CARLA DOVE EARNS BSC USA LIFETIME ACHIEVEMENT AWARD

Nick Atwell

Carla Dove, Program Manager of the Smithsonian Institution Feather Identification Lab, was awarded BSC-USA's Lifetime Achievement Award during the 2021 Annual Meeting. The award acknowledges colleagues who have been active in the bird strike community and deserve special recognition for their dedication and ongoing service.

Carla started working for the Smithsonian Institution Division of Birds as a museum technician in 1989 under the mentorship of the late Roxie Laybourne. At that time, Roxie was working in the Bird Division identifying bird strike material based on the methods she developed using feather characters and the resources available from the Smithsonian's Bird Division specimen collection. Carla became so interested in the work that Roxie was doing that she started volunteering after her work hours to learn more about identifying feathers from bird strike remains.

Carla has been in BSC-USA since the beginning! Both Carla and Roxie attended the first 'official' Bird Strike Committee meeting at JFK International Airport. By this time, Carla was hooked on feather identification and gaining increasing knowledge about this focused area of expertise. During her apprenticeship with Roxie, Carla continued her education and went on to get her master's and doctorate, specializing in feather microstructure with special emphasis on bird strike material.

Carla became Manager of the Smithsonian's Bird Strike Identification Program in 2000, and her ongoing studies and career path demonstrate her life-long dedication and enthusiasm for her work. She has contributed to the field of ornithology through the publication of more than 40 peer-reviewed works as well as countless professional documents and reports. She has served as a teacher and mentor to many, including as an advisor for several graduate and many undergraduate students, and she is dedicated to teaching young students and the public about ornithology, bird strikes, and feather identification. She is an elected Fellow in the American Ornithological Society and continues to be an integral member of the Bird Strike Committee USA.

Only seven individuals have received Lifetime Achievement Awards since BSC USA was founded in 1992. Congratulations to Carla for being among them and many thanks from BSC USA for her ongoing dedication and contributions to the bird strike community.



"For your incomparable commitment benefitting U.S. and international aviation safety. Your expertise and exceptional leadership of the Feather Identification Laboratory has provided the foundation of an unparalleled investigative science that will continue to benefit the world's civil / military aviation and wildlife alike."

Photo of Award by J. Ostrom

Photo of Carla Dove by J. DiLoreto, SI Photo Services

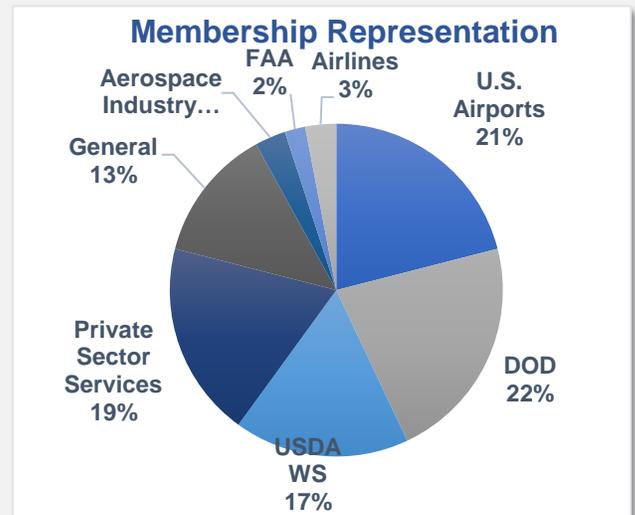


MEMBERSHIP UPDATE

Amy Anderson, Membership Chair

BSC Membership Breakdown	
Members	433
States represented	All 50 states, Washington DC, and Puerto Rico
Countries represented (in addition to U.S.)	28

Members are grouped into eight different categories: U.S. Airports (21%), Department of Defense (22%), USDA Wildlife Services (17%), Private Sector Services (19%), General (13%), Aerospace Industry (3%), FAA (2%) and Airlines (3%).



SANDY WRIGHT/RICHARD DOLBEER EXCELLENCE IN STRIKE REPORTING AWARD WINNERS FOR 2020

John Weller, Immediate Past Chair

The Sandy Wright/Richard Dolbeer Excellence in Strike Reporting Award recognizes one Part 139 certificated airport and one General Aviation airport that have exhibited a noteworthy strike reporting program. The criteria for determining which airports will qualify for the award are objective and consider both the quantity and quality of strike data submitted, including:

- Number, completeness, and consistency of reports filed
- Percentage of reports identified to species level
- Percentage of reports filed online
- Timeliness of reports submitted
- Remains collected when available or necessary

For their commitment to the identification and documentation of wildlife/aircraft strike information, the FAA proudly recognizes the strike reporting programs at **Chicago O’Hare International Airport (ORD)** and **DeKalb/Peachtree Airport (PDF)** as the winners of the 2020 Sandy Wright/Richard Dolbeer Excellence in Strike Reporting Award.

Chicago O’Hare International Airport (ORD)



DeKalb/Peachtree Airport (PDF)



Congratulations to our winners!



USDA Research Report

*Data provided by: Brad Blackwell, Ph.D. and Gail Keirn,
USDA -APHIS-WS National Wildlife Research Center*

USDA remains busy with several new and ongoing research projects nationwide. The agency is involved in numerous collaborations with colleagues from multiple agencies and universities including the FAA, Mississippi State University (MSU), the Savannah River Ecology Laboratory at the University of Georgia, North Dakota State University (NDSU), and Purdue University.

Unmanned Aircraft Systems (UAS): Applications and Opportunities

During the next year, USDA will continue to work with the FAA to explore the application of Unmanned Aircraft Systems (UAS) to wildlife hazard management. The colleagues will work together to complete a systematic map for a repeatable, method-driven review of UAS and associated technology relative to wildlife survey applications, and work will continue to develop computer vision (artificial intelligence) algorithms for detecting and counting wildlife from UAS-based imagery.

USDA is in the midst of developing proposals to examine the behavioral response of birds to UAS approaching in a survey mode, so as to quantify behavioral bias in counts. Additional proposals are underway to work with Wildlife Services colleagues in North Dakota and at NDSU on two projects: one pertaining to gull management at an airport site and another to apply new AI algorithms to UAS imagery that will enable UASs to sweep runways and taxiways to identify the carcasses of struck birds.

Current and Forthcoming Research

USDA continues to work with the Savannah River Ecology Laboratory at the University of Georgia to develop a proposal coupling airport wildlife management, survey data, and radio telemetry data into a broad and species-specific contribution to strike risk within an airport context. Other diverse research projects that are underway or proposed for the near future include:



- Ongoing research to identify factors that might provide deterrence to European starling nesting in hangars, other airport structures, and moored aircraft;
- New research to develop new methods for lighting aircraft and, eventually, UAS. USDA will work with the FAA and Purdue University to determine the detection distance of candidate lighting by Canada geese.
- In the coming months, USDA will collaborate with FAA and Wildlife Services staff in Ohio and Colorado to investigate livestock behavioral responses to UAS surveys over herds that are depredated by eagles. The goal of the research is to use UAS as a visual deterrent against eagle depredation and, if successful, apply that research at airports where eagles pose strike issues.

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Recent Publications

Recent articles that are available to the public include:

- ❖ **Is it a bird? A cow? A deer? Artificial Intelligence Algorithms Show Potential for Complementing UAS-based Monitoring of Animals at Airports.** Small, unmanned aircraft systems (sUAS) have recently emerged as a potential solution for safely conducting accurate animal surveys. USDA and Mississippi State University researchers recently evaluated the accuracy of computer-automated classification techniques. Two automated classification techniques—convolutional neural networks (CNN) and deep residual neural networks (e.g., ResNet)—both resulted in accurate identification of images even with a small number of training samples. For more information see: [Improving Animal Monitoring Using Small Unmanned Aircraft Systems \(sUAS\) and Deep Learning Networks.](#)
- ❖ **Reducing Red-tailed Hawk Collisions with Aircraft.** Raptors, such as hawks and owls, are some of the most frequently struck birds within North America. Although raptors are commonly managed at most airports and military bases, there is no scientific information comparing the efficacy of different raptor management methods. Experts from USDA-Wildlife Services operations and research (NWRC) compared two different raptor hazard management programs at Chicago’s O’Hare International Airport: Phase 1 included live-trapping and translocation of red-tailed hawks. Phase 2 included live-trapping and translocation with the addition of increased lethal removal of problematic individual red-tailed hawks. Phase 2 had 47% fewer red-tailed hawk strikes with aircraft and 67% fewer damaging red-tailed hawk strikes compared to Phase 1. Furthermore, researchers found that compared with the Phase I raptor hazard management program, the Phase II program cost approximately half as much and resulted in reduced economic costs due to hawk strikes by two-thirds. For more information see: [Comparing Management Programs to Reduce Red-tailed Hawk Collisions with Aircraft.](#)
- ❖ **Considering UAS-animal Related Studies.** Small, unmanned aircraft systems (sUAS) are replacing or supplementing manned aircraft and ground-based surveys in many animal monitoring situations, and various UAS models and sensors are available. However, justification for selection of sUAS and sensors are not typically offered in published literature and existing reviews do not adequately cover past and current sUAS applications for animal monitoring nor their associated sUAS model and sensor technologies, taxonomic and geographic scope, flight conditions and considerations, spatial distributions of sUAS applications, and reported technical difficulties. We outline a systematic map protocol to collect and consolidate evidence pertaining to sUAS monitoring of animals. For more information, go to: [Evidence on the effectiveness of small unmanned aircraft systems \(sUAS\) as a survey tool for North American terrestrial, vertebrate animals: a systematic map protocol.](#)
- ❖ **Reconsidering the Cost of Wildlife Strikes.** Researchers recalculated the annual cost of wildlife strikes to U.S. civil aviation to account for differences in strike characteristics. Current lower bound estimates of the economic burden of wildlife strikes make use of mean cost assignment to impute missing values in the National Wildlife Strike Database (NWSD). The accuracy of these estimates, however, are undermined by the skewed nature of reported cost data and fail to account for differences in observed strike characteristics—e.g., type of aircraft, size of aircraft, type of damage, size of animal struck, etc.—using modern machine learning techniques to provide a more accurate measure of the strike-related costs that accrue to the US civil aviation industry. We estimate that wildlife strikes cost the US civil aviation industry a minimum average of \$54.3 million in total losses annually over the 1990–2018 period. For more information see: [Estimating wildlife strike costs at US airports: A machine learning approach.](#)





Al Fenedick (right) with fellow FAA colleague John Weller after a long day of wildlife training at the Great Lakes Regional Office.

In Memoriam

Albert “Al” Fenedick (December 1960 – September 2021)

- John Weller

Friends and colleagues alike were saddened to hear that Al Fenedick passed away September 10, 2021, following a long and courageous battle with a brain tumor. Al was a FAA Regional Environmental Protection Specialist for over 13 years in the Great Lakes Regional Office in Des Plaines, Illinois. Prior to joining the FAA, Al worked as an Aquatic Biologist at the U.S. Environmental Protection Agency (EPA) for 20 years in the Greater Chicago Area.

Many of us knew Al from his years of work on Airport Cooperative Research Program (ACRP) projects, his dedicated efforts for the Bird Strike Committee USA (BSC USA), and his presence at our conferences. He loved to help manage BSC USA outreach booths at different venues, but none more than EAA AirVenture Oshkosh. His engaging nature was a perfect fit for discussing wildlife / aviation conflicts with pilots and public alike. As an avid hunter, angler, and pilot (Al owned a Cessna 172), Al was a true subject matter expert who enjoyed tackling environmental issues and wildlife hazards on and near the nation’s airports.

It is said that the difference between an argument and a discussion is the difference between finding out who is right as to what is right. Problem-solving with Al on any single subject often lasted for hours and even days – yet no matter how much it might have felt like arguing, his goal never wavered from seeking what was right. He was famous for banter, and his well never ran dry of good stories and levity. Al was a good man and a better friend. He was a dedicated colleague whose humble, professional passion for the job set the bar high for everyone. Al lived deliberately. He worked deliberately and he relaxed with similar purpose. Because of Al, aviation was made safer. Because of him, our lives were sincerely enriched. Rest in peace old friend.