
CHICAGO O'HARE INTERNATIONAL AIRPORT WILDLIFE HAZARD MANAGEMENT PLAN

Federal and State Depredation Permits – Appendix J

- US Fish and Wildlife Service Airport Depredation Permit (50 CFR 21.41)
- US Fish and Wildlife Service Eagle Depredation Permit (50 CFR 22.23)
- Illinois Department of Natural Resources Nuisance Wildlife Control Permit
- Illinois Department of Natural Resources Harrassment of State Listed Bird Letter
- Illinois Department of Natural Resources Scientific Collection Permit
- Illinois Department of Natural Resources Possesion of Endangered or Threatened Species

Original Date: December 9, 2004
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FAA Approval: *Maria Halpin*
FAA Approval Date: 11 AUG 2017

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DEPREDATION AT AIRPORTS

Permit Number: MB811454-0
Effective: 04/01/2018 Expires: 03/31/2019

Issuing Office

Department of the Interior
U.S. FISH AND WILDLIFE SERVICE
Migratory Bird Permit Office
5600 American Blvd West, Suite 990
Bloomington, MN 55437-1458
Tel: 612-713-5436 Fax: 612-713-5393

[Signature]
CHIEF, MIGRATORY BIRD PERMIT OFFICE - REGION 3

Permittee:

USDA/APHIS/WS (O'HARE INTL AIRPORT)
SHARON E SCULLY
P.O. BOX 66142
AMC BLDG., ROOM 241
CHICAGO, IL 60666

Name and Title of Principal Officer:

SHARON E SCULLY - WILDLIFE BIOLOGIST

Authority: Statutes and Regulations: 16 USC 703-712; 50 CFR Part 13, 50 CFR 21.41.

Location where authorized activity may be conducted:

All properties leased, owned, or managed by Chicago Dept. of Aviation and properties where the airport has a right of entry agreement, with authorization from the landowner.

Reporting requirements:

ANNUAL REPORT DUE: 1/31

You must submit a report to your Regional Migratory Bird Permit Office even if you had no activity. Annual report must specify any raptors taken by pole trapping. Form: www.fws.gov/forms/3-202-9.pdf.

Authorizations and Conditions:

- A. GENERAL CONDITIONS SET OUT IN SUBPART D OF 50 CFR 13 AND SPECIFIC CONDITIONS CONTAINED IN FEDERAL REGULATIONS CITED ABOVE ARE HEREBY MADE A PART OF THIS PERMIT. ALL ACTIVITIES AUTHORIZED HEREIN MUST BE CARRIED OUT IN ACCORD WITH AND FOR THE PURPOSES DESCRIBED IN THE APPLICATION SUBMITTED. CONTINUED VALIDITY, OR RENEWAL, OF THIS PERMIT IS SUBJECT TO COMPLETE AND TIMELY COMPLIANCE WITH ALL APPLICABLE CONDITIONS, INCLUDING THE FILING OF ALL REQUIRED INFORMATION AND REPORTS.
- B. THE VALIDITY OF THIS PERMIT IS ALSO CONDITIONED UPON STRICT OBSERVANCE OF ALL APPLICABLE FOREIGN, STATE, LOCAL, TRIBAL OR OTHER FEDERAL LAW.
- C. VALID FOR USE BY PERMITTEE NAMED ABOVE.
- D. You are authorized to take, temporarily possess, and transport the migratory birds specified below to relieve or prevent injurious situations impacting public safety. All take must be done as part of an integrated wildlife damage management program that emphasizes nonlethal management techniques. You may not use this authority for situations in which migratory birds are merely causing a nuisance.

(1) The following may be lethally taken:

50 American coots, 25 blue-winged teal, 300 Canada geese, 60 double-crested cormorants, 70 herring gulls, 300 mallards, 1000 ring-billed gulls, 50 great-blue herons, 25 snow bunting, 25 great egrets, 50 killdeer, 75 barn swallows, 15 turkey vultures, 60 American kestrels, 5 Cooper's hawks, 125 red-tailed hawks, 450 mourning doves, 15 rough-legged hawks, 5 snowy owls

(2) An unlimited number of the following may be live-trapped and relocated:

American kestrels, red-tailed hawks, rough-legged hawks, peregrine falcons, Cooper's hawk, great horned owl, snowy owls, short-eared owls and sharp-shinned hawks

(3) The following active nests (including eggs) may be destroyed:

10 American kestrel, 50 Canada goose, 50 mallard, 10 red-tailed hawk, 10 killdeer

E. You are authorized in emergency situations only to take, trap, or relocate any migratory birds, nests and eggs, including species that are not listed in Condition D (except bald eagles, golden eagles, or endangered or threatened species) when the migratory birds, nests, or eggs are posing a direct threat to

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FAA Approval: *[Signature]*
FAA Approval Date: 07 NOV 2018

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human safety. A direct threat to human safety is one which involves a threat of serious bodily injury or a risk to human life.

You must report any emergency take activity to your migratory bird permit issuing office via e-mail: PermitsR3MB@fws.gov within 72 hours after the emergency take action. Your report must include the species and number of birds taken, method, and a complete description of the circumstances warranting the emergency action.

F. You are authorized to salvage and temporarily possess migratory birds found dead or taken under this permit for (1) disposal, (2) transfer to the U.S. Department of Agriculture, (3) diagnostic purposes, (4) purposes of training airport personnel, (5) donation to a public scientific or educational institution as defined in 50 CFR 10.12, (6) donation to persons authorized by permit or regulation to possess them, or (7) donation of migratory game birds only to a public charity (those suitable for human consumption). Any dead bald eagles or golden eagles salvaged must be reported within 48 hours to the National Eagle Repository at (303) 287-2110 and to the migratory bird permit issuing office via e-mail: PermitsR3MB@fws.gov. The Repository will provide directions for shipment of these specimens.

G. You may not salvage and must immediately report to U.S. Fish and Wildlife Service Office of Law Enforcement any dead or injured migratory birds that you encounter that appear to have been poisoned, shot, electrocuted, have collided with industrial power generation equipment, or were otherwise killed or injured as the result of potential criminal activity. See USFWS OLE contact information below.

H. You may use the following methods of take: (1) firearms; (2) nets; (3) registered animal drugs (excluding nicarbazin), pesticides and repellents; (4) falconry abatement; and (5) legal lethal and live traps. Birds caught live may be euthanized or transported and relocated to another site approved by the appropriate State wildlife agency, if required. When using firearms, you may use rifles or air rifles to shoot any bird when you determine that the use of a shotgun is inadequate to resolve the injurious situation. The use of any of the above techniques is at your discretion for each situation.

Pole traps may be used to capture raptors only when all other reasonable and appropriate methods of deterrence and management prove ineffective. Pole traps employed between sunrise and sunset must be checked at least every 2 hours. Pole traps employed between sunset and sunrise must be checked at least once during the night. Pole traps must be closed down during inclement weather (e.g., precipitation or extreme temperatures) unless they are monitored continuously. Birds captured using pole traps must be relocated a distance sufficient to minimize potential for return to the capture site (preferably at least 100 miles away), except as otherwise authorized by your migratory bird permit issuing office. If injured, the bird must be transferred immediately to a federally permitted migratory bird rehabilitator or licensed veterinarian for care at the permittee's expense.

Anyone who takes migratory birds under the authority of this permit must follow the American Veterinary Medical Association Guidelines on Euthanasia when euthanasia of a bird is necessary (http://www.avma.org/issues/animal_welfare/euthanasia.pdf.)

I. You may temporarily possess and stabilize sick and injured migratory birds and immediately transport them to a federally licensed rehabilitator for care.

J. The following subpermittees are authorized: Designated airport employees or of USDA/APHIS/Wildlife Services

In addition, any other person who is (1) employed by or under contract to you for the activities specified in this permit, or (2) otherwise designated a subpermittee by you in writing, may exercise the authority of this permit.

K. You and any subpermittee(s) must comply with the attached Standard Conditions for Migratory Bird Depredation Permits. These standard conditions are a continuation of your permit conditions and must remain with your permit.

For suspected illegal activity, immediately contact USFWS Law Enforcement at: 217-793-9554

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Standard Conditions
Migratory Bird Depredation Permits
50 CFR 21.41

All of the provisions and conditions of the governing regulations at 50 CFR part 13 and 50 CFR part 21.41 are conditions of your permit. Failure to comply with the conditions of your permit could be cause for suspension of the permit. The standard conditions below are a continuation of your permit conditions and must remain with your permit. If you have questions regarding these conditions, refer to the regulations or, if necessary, contact your migratory bird permit issuing office. For copies of the regulations and forms, or to obtain contact information for your issuing office, visit: <http://www.fws.gov/migratorybirds/mbpermits.html>.

1. To minimize the lethal take of migratory birds, you are required to continually apply non-lethal methods of harassment in conjunction with lethal control.
 [Note: Explosive Pest Control Devices (EPCDs) are regulated by the Bureau of Alcohol, Tobacco, Firearms, and Explosives (ATF). If you plan to use EPCDs, you require a Federal explosives permit, unless you are exempt under 27 CFR 555.141. Information and contacts may be found at <http://www.atf.gov/explosives/how-to-become-an-fel.htm>.]
2. Shotguns used to take migratory birds can be no larger than 10-gauge and must be fired from the shoulder. You must use nontoxic shot listed in 50 CFR 20.21(j).
3. You may not use blinds, pits, or other means of concealment, decoys, duck calls, or other devices to lure or entice migratory birds into gun range.
4. You are not authorized to take, capture, harass, or disturb bald eagles or golden eagles, or species listed as threatened or endangered under the Endangered Species Act found in 50 CFR 17, without additional authorization.
 For a list of threatened and endangered species in your state, visit the U.S. Fish and Wildlife Service's Threatened and Endangered Species System (TESS) at: <http://www.fws.gov/endangered>.
5. If you encounter a migratory bird with a Federal band issued by the U.S. Geological Survey Bird Banding Laboratory, Laurel, MD, report the band number to 1-800-327-BAND or <http://www.reportband.gov>.
6. This permit does not authorize take or release of any migratory birds, nests, or eggs on Federal lands without additional prior written authorization from the applicable Federal agency, or on State lands or other public or private property without prior written permission or permits from the landowner or custodian.
7. Unless otherwise specified on the face of the permit, migratory birds, nests, or eggs taken under this permit must be:
 - (a) turned over to the U.S. Department of Agriculture for official purposes, or
 - (b) donated to a public educational or scientific institution as defined by 50 CFR 10, or
 - (c) completely destroyed by burial or incineration, or
 - (d) with prior approval from the permit issuing office, donated to persons authorized by permit or regulation to possess them.

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8. A subpermittee is an individual to whom you have provided written authorization to conduct some or all of the permitted activities in your absence. Subpermittees must be at least 18 years of age. As the permittee, you are legally responsible for ensuring that your subpermittees are adequately trained and adhere to the terms of your permit. You are responsible for maintaining current records of who you have designated as a subpermittee, including copies of designation letters you have provided.
9. You and any subpermittees must carry a legible copy of this permit, *including these Standard Conditions*, and display it upon request whenever you are exercising its authority.
10. You must maintain records as required in 50 CFR 13.46 and 50 CFR 21.41. All records relating to the permitted activities must be kept at the location indicated in writing by you to the migratory bird permit issuing office.
11. Acceptance of this permit authorizes the U.S. Fish and Wildlife Service to inspect any wildlife held, and to audit or copy any permits, books, or records required to be kept by the permit and governing regulations.
12. You may not conduct the activities authorized by this permit if doing so would violate the laws of the applicable State, county, municipal or tribal government or any other applicable law.

(DPRD - 12/3/2011)

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5600 American Boulevard West, Suite 990
Bloomington, Minnesota 55437-1458



IN REPLY REFER TO:

Within the spirit and intent of the Council on Environmental Quality's regulations for implementing the National Environmental Policy Act and other statutes, orders, and policies that protect fish and wildlife resources, I have established the administrative record and have determined that this permit is categorically excluded as provided by **516 DM6**, Appendix 1.10. No further documentation will be made.

Categorical exclusions are classes of actions which do not individually or cumulatively have a significant effect on the human environment. No exceptions to categorical exclusions, listed in **516DM2**, Appendix 2, apply to this action.



Amy Kelly, Chief, Division of Migratory Birds
USFWS, Midwest Region

4/22/16

Date

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FAA Approval: Nicla Halpin
FAA Approval Date: 11 AUG 2017

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EAGLE DEPREDAATIONPermit Number: MB71968A-0
Effective: 04/01/2017 Expires: 04/01/2022

Issuing Office:

Department of the Interior
U.S. FISH AND WILDLIFE SERVICE
Migratory Bird Permit Office
5600 American Blvd West, Suite 990
Bloomington, MN 55437-1458
Tel: 612-713-5436 Fax: 612-713-5393
Email: permitsR3MB@fws.gov

CHIEF, MIGRATORY BIRD PERMIT OFFICE - REGION 3

Permittee:

USDA/APHIS/WILDLIFE SERVICES (O'HARE INTERNATIONAL AIRPORT)
AMC BLDG., ROOM 241
CHICAGO, IL 60666

Name and Title of Principal Officer:

CRAIG K PULLINS - DISTRICT SUPERVISOR

Authority: Statutes and Regulations: 16 USC 668a; 50 CFR Part 13, 50 CFR 22.23.

Location where authorized activity may be conducted:

O'Hare International Airport

Reporting requirements:

ANNUAL REPORT DUE: 01/31

You must submit a report to your Regional Migratory Bird Permit Office, even if
you had no activity. Report form is at: www.fws.gov/forms/3-202-11.pdf.

Conditions and Authorizations:

- A. GENERAL CONDITIONS SET OUT IN SUBPART D OF 50 CFR 13, AND SPECIFIC CONDITIONS CONTAINED IN FEDERAL REGULATIONS CITED ABOVE ARE HEREBY MADE A PART OF THIS PERMIT. ALL ACTIVITIES AUTHORIZED HEREIN MUST BE CARRIED OUT IN ACCORD WITH AND FOR THE PURPOSES DESCRIBED IN THE APPLICATION SUBMITTED. CONTINUED VALIDITY OR RENEWAL OF THIS PERMIT IS SUBJECT TO COMPLETE AND TIMELY COMPLIANCE WITH ALL APPLICABLE CONDITIONS, INCLUDING THE FILING OF ALL REQUIRED INFORMATION AND REPORTS.
- B. THE VALIDITY OF THIS PERMIT IS ALSO CONDITIONED UPON STRICT OBSERVANCE OF ALL APPLICABLE FOREIGN, STATE, LOCAL, TRIBAL OR OTHER FEDERAL LAW.
- C. VALID FOR USE BY PERMITTEE NAMED ABOVE.
- D. You are authorized to use non-lethal scare devices, scare tactics or frightening devices to move or disperse bald eagles endangering human safety due to a high risk of a serious bird strike to landing and departing aircraft. You are authorized to use airhorns, pyrotechnics, and drive vehicles with horns as necessary to scare eagles. Pyrotechnics must not be shot directly at the eagles.
- E. You must make a continuous effort to eliminate attractants and other physical properties that may draw eagles to airport property.
- F. This permit does not authorize the killing, injury or capture of any eagle or the destruction of any young or nests.
- G. This permit does not authorize the disturbance of eagles at active nest sites that contain eggs or young or nests.
- H. You must notify the permit issuing office at 5600 American Blvd. W, Bloomington, MN 55437-1458 (612-713-5436) within 48 hours of any injury or death of any eagle during project activities.
- I. The following subpermittees are authorized: Designated employees of USDA/APHIS/Wildlife Services
- In addition, any other person who is (1) employed by or under contract to you for the activities specified in this permit, or (2) otherwise designated a subpermittee by you in writing, may exercise the authority of this permit.
- J. You must submit an annual report of activities conducted under this permit to the USFWS, Migratory Bird Permit Office, 5600 American Blvd. W, Bloomington, MN 55437-1458, by the due date specified on the face of the permit. The report form, 3-202-11, is available at: <http://www.fws.gov/forms/3-202-11.pdf>.

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EAGLE DEPREDATION

Permit Number: MB71968A-0

Effective: 04/01/2017 Expires: 04/01/2022

K. You must comply with the attached Standard Conditions for Eagle Depredation Permits. These standard conditions are a continuation of your permit conditions *and must remain with your permit*.

For suspected illegal activity, immediately contact USFWS Law Enforcement at: 217-793-9554

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Standard Conditions Eagle Depredation Permits 50 CFR 22.23

All of the provisions and conditions of the governing regulations at 50 CFR part 13 and 50 CFR part 22.23 are conditions of your permit. Failure to comply with the conditions of your permit could be cause for suspension of the permit. The standard conditions below are a continuation of your permit conditions and must remain with your permit. If you have questions regarding these conditions, refer to the regulations or, if necessary, contact your migratory bird permit issuing office. For copies of the regulations and forms, or to obtain contact information for your issuing office, visit: <http://www.fws.gov/migratorybirds/mbpermits.html>.

1. Unless otherwise specified on the face of this permit, you may not lethally take any bald eagle or golden eagle under this permit. Eagles may be taken only by the method(s) specified on the face of your permit. [Note: Explosive Pest Control Devices (EPCDs) are regulated by the Bureau of Alcohol, Tobacco, Firearms, and Explosives (ATF). If you plan to use EPCDs, you require a Federal explosives permit, unless you are exempt under 27 CFR 555.141. Information and contacts may be found at www.atf.gov/explosives/how-to-become-an-fel.htm.]
2. If you encounter an eagle with a Federal band issued by the U.S. Geological Survey Bird Banding Laboratory, Laurel, MD, report the band number to 1-800-327-BAND (2263) or <http://www.reportband.gov>.
3. This permit does not authorize take or release of any bald eagle or golden eagle on Federal lands without additional prior written authorization from the applicable Federal agency, or on State lands or other public or private property without prior written permission or permits from the landowner or custodian.
4. Unless otherwise specified on the face of the permit, any bald eagle or golden eagle taken under this permit must be promptly turned over to a U.S. Fish and Wildlife Service (Service) agent or other wildlife law enforcement officer designated on the face of the permit.
5. Any person exercising the authorities of this permit must carry a legible copy of this permit, including these Standard Conditions, and display it upon request to any State or Federal officer when exercising its authority.
6. You must maintain records as required in 50 CFR 13.46. All records relating to the permitted activities must be kept at the location indicated in writing by you to the migratory bird permit issuing office.
7. Acceptance of this permit authorizes the Service to inspect any wildlife held, and to audit or copy any permits, books, or records required to be kept by the permit and governing regulations.
8. You may not conduct the activities authorized by this permit if doing so would violate the laws of the applicable State, county, municipal or tribal government or any other applicable law.

(EADP 12/3/2011)

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Illinois Department of
Natural ResourcesOne Natural Resources Way Springfield, Illinois 62702-1271
www.dnr.illinois.govBruce Rauner, Governor
Wayne A. Rosenthal, Director

2018 - 2019 Nuisance Wildlife Control Permit

Type: Class C

Expires January 31, 2019

Mamadou Diakhate
Chicago Animal Care/Control
2741 S. Western
Chicago, IL 60608
(312) 747-1384

Conditions:

- 1) Permittee may take, possess and transport species protected by the Wildlife Code in accordance with provisions set forth in 17 Ill. Adm. Code, Ch. I, Part 525.
- 2) Permittee may not take, possess, or transport white-tailed deer, migratory birds or endangered and threatened species without authorization from the Department and accompanying state/federal permits if required.
- 3) Permittee must check all traps at least once each calendar day. Permittees who rent, lend or otherwise transfer traps to clients under authority of this permit are responsible for client's compliance with trap check laws.
- 4) All species which are defined as game or fur-bearing mammals and are not endangered or threatened may be euthanized in accordance with 17 Ill. Ad. Code, Ch. I, Part 525, and disposed of in accordance with the Dead Animal Disposal Act. All striped skunks must be euthanized. Raccoons must be euthanized, released within 100 yards of the capture site, or surrendered to a licensed veterinarian who is also a licensed wildlife rehabilitator.
- 5) Only devices and methods allowed by 17 Ill. Adm. Code, Ch. I, Part 525, may be used under authority of this permit.

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Natural Resources**

One Natural Resources Way Springfield, Illinois 62702-1271
www.dnr.illinois.gov

Bruce Rauner, Governor

Wayne A. Rosenthal, Director

U.S. Department of Agriculture
Animal and Plant Health Inspection Service – Wildlife Services
O'Hare International Airport
Aaron Spencer
AMC Building
Chicago, IL 60666

May 2, 2017

To Whom It May Concern,

The Illinois Department of Natural Resources (IDNR) recognizes the immediate threat to human and aviation safety posed when State listed birds enter an Airport Operations Area (AOA) within the State of Illinois. This letter of authorization is entered into between USDA APHIS Wildlife Services and the IDNR to protect aircraft and human life and to establish a program for the conservation of threatened and endangered bird species near runways or active taxiways and/or on the airport side of a perimeter of a fence(s) by reducing the risk of collision with aircraft.

This letter authorizes USDA APHIS Wildlife Services personnel that are properly permitted by the USFWS and have a Nuisance Wildlife Control permit to mediate by non-lethal means only, all situations involving State listed bird species who enter the AOA and is hereby issued pursuant to the Department of Natural Resources Act (20 ILCS 801/ et seq.), and the Illinois Endangered Species Protection Act (520 ILCS 10/1 et seq.). Airport personnel are authorized to utilize non-lethal harassment techniques to frighten all State listed bird species from the AOA. All wildlife harassment and repellant techniques employed shall adhere to those described in your airport's Wildlife Habitat Management Plan (WHMP), AC 150/5200-33B and the joint Federal Aviation Administration (FAA)/Wildlife Services Wildlife Management at Airports manual; IDNR issued Class C Nuisance Wildlife Permit; and all other applicable US Department of Agriculture, US Fish and Wildlife Service, and/or FAA guidelines.

This letter of authorization does not repeal or replace the requirement for a Class C Nuisance Wildlife Control Permit [issued in accordance with the Wildlife Code (520 ILCS 5/1.1) and associated Illinois Administrative Rules] to harass all non-listed bird species in Illinois.

Annual reporting of the number of each threatened and endangered species harassed shall be reported via email to the IDNR Endangered Species Program (DNR.Endspec@illinois.gov) no later than January 31 of the following year. The IDNR Endangered Species Program can also be reached by telephone at: 217/785-8764.

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FAA Approval: Diana Halpin
FAA Approval Date: 11 AUG 2017

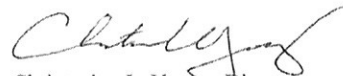
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Please note that any and all unintentional mortality occurring to State listed birds as a result of accepted wildlife harassment and repellent techniques employed at your airport shall also be reported via email to the IDNR Endangered Species Program within 48 hours of discovery.

This letter of authorization is effective upon receipt and will remain valid until rescinded in writing by the IDNR.

Sincerely,



Christopher L. Young, Director
Office of Resource Conservation

Cc: IDNR Office of Legal Counsel
IDNR Office of Resource Conservation – Divisions of Wildlife Resources and Natural Heritage
IDNR Office of Law Enforcement
USDA: APHIS-Wildlife Services

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ILLINOIS DEPARTMENT OF NATURAL RESOURCES

Authorization is hereby granted, under Section 5/3.22,
Chapter 520, Section 5/20-100, Chapter 515 and Section
68/40-5, Chapter 510 of the Illinois compiled Statutes to:

Last Name: **Beckerman** First Name: **Scott F.** Permit Number: **NH18.5003**
Issued: **2/2/2018** Expires: **12/31/2018**

Business Name: **USDA APHIS Wildlife Services**

Street Address: **3430 Constitution, Suite 121**

City: **Springfield** State: **IL** Zip Code: **62711**

for strictly scientific, educational or zoological purposes, to take the Illinois fauna identified below subject to the following provisions:

Applicant (APHIS) and all research associates may legally capture, handle, collect data and/or obtain biological samples, by scientifically accepted and approved methods, for projects and species listed below (as listed on the accompanying Illinois Department of Natural Resources (IDNR) scientific permit application/project proposal (on file in Springfield, IL) strictly for scientific, educational and/or zoological purposes). A federal permit is required for all projects involving federally regulated species, including migratory birds. If endangered and threatened species are incidentally captured and handled during the permitted activity, the occurrence needs to be documented (preferably with photographs of diagnostic characteristics and geographic location) and reported to the IDNR Division of Natural Heritage, Endangered Species Coordinator. The specimens cannot be removed and should be released on site immediately. Intentional capture, handling and/or collection of endangered or threatened species requires prior approval and possession of an Endangered or Threatened Species Permit. Any permitted activities conducted on State-owned properties require prior approval and possession of an IDNR Research / Site Permit.

Authorizes biological samples to be collected from all mammals and birds taken under authority of IDNR Nuisance Wildlife Control permits issued to USDA Wildlife Services.

Authorizes salvage and collection of biological samples from deceased birds and mammal species, protected by the Wildlife Code.

Authorizes collection of biological samples from hunter harvested waterfowl for avian health surveillance.

Authorizes the live capture, handling and the collection of biological samples from waterfowl (ducks, gulls and herons) and raptors for Avian Influenza surveillance.

Authorizes the affixing of USGS leg bands to raptors captured and relocated from airports to protect the birds, aircraft and human safety. Bands will allow the evaluation of the efficacy of raptor relocation.

Authorizes capture and marking of red-tailed hawks at/near O'Hare International Airport with global positioning systems/platform transmitter terminals (transmitters) and or patagial tags.

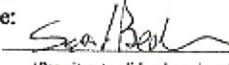
Authorizes capture of up to 100 snowy owls and marking using various techniques or combinations of techniques.

Authorizes live capture of 10 Double Crested Cormorants for permanent export to Mississippi.

Authorizes marking of 200 ring-billed gulls and 200 herring gulls with patagial tags, tarsal bands and USGS aluminum leg bands at nest colonies for monitoring. Individuals working under direction of applicant include: Travis Guernant, Craig Pullins, Aaron Spencer, Greg Martinelli, Anthony Hoffman, Craig Bloomquist, John Hartmann, Nick Kleinschmit, Michelle Bloomquist, Dan Fiorenza, Sam Nau, Mitch Oswald, Patricia Silva, Dan Skinner, Wes Smith, Anne Provost, Emma Trone, Brian Washburn, Kevin Wedemeyer, Brad Wilson, Joseph Zigler, Sharon Scully, Caleb Brown, Charles Cini, Paul Hames, Scott Beckerman

I agree to the following provisions and terms of this Scientific Permit.

Permittee's

Signature: 

(Permit not valid unless signed)

Approved By: 

Office of Resource Conservation

Date: **2/10/18**

TERMS FOR SCIENTIFIC PERMIT

- Under no circumstances shall a scientific permit be used in lieu of sport or commercial licenses.
- All taking shall be performed by or under the direct supervision of the permittee. Permittee must be present with persons involved in actual taking.
- All gear left unattended must be tagged bearing name and scientific permit number of permittee.
- Permittee must be at least eighteen (18) years of age.
- Permits are not transferable and PERMITTEE SHALL CARRY PERMIT AT ALL TIMES WHEN TAKING FAUNA.
- Agency, company or institution listed on the application is responsible for the taking activities and reports of the individual issued this permit.
- Scientific permits will not be valid for taking any species appearing on official State List of Endangered and Threatened Vertebrate Species of Illinois (see attached Administrative Rule, Part 1010) without specific written approval from the Department of Natural Resources.
- A federal Permit is required for the taking of species protected by the Federal Government in addition to the State Scientific Permit.
- The Division of Wildlife Resources may require special conditions or provisions on any Scientific Permit.
- Use of rotenone or any other toxic materials for taking must have special written approval from the Department of Natural Resources and may need a variance from the Illinois Environmental Protection Agency.

Original Date: December 9, 2004
Revision Date: November 8, 2018

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FAA Approval: 
FAA Approval Date: 07 NOV 2018

CHICAGO O'HARE INTERNATIONAL AIRPORT WILDLIFE HAZARD MANAGEMENT PLAN

Federal and State Depredation Permits – Appendix J**ILLINOIS DEPARTMENT OF NATURAL RESOURCES**

**Authorization is hereby granted, under Section 5/3.22,
Chapter 520, Section 5/20-100, Chapter 515 and Section
68/40-5, Chapter 510 of the Illinois compiled Statutes to:**

11. By January 31 of next year, an annual report of the permittee's activities must be submitted to the Division of Wildlife Resources. In addition, the permittee shall submit a copy of all written reports, etc. that result from the permitted activity. Permits will be renewed after these annual reports and appropriate publications have been received.
12. Any permit may be revoked or suspended at any time by the Department of Natural Resources.
13. Permits expire December 31 each calendar year unless otherwise specified.

The Department of Natural Resources is an equal opportunity employer.

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FAA Approval: Mica Halpin
FAA Approval Date: 07 NOV 2018

CHICAGO O'HARE INTERNATIONAL AIRPORT WILDLIFE HAZARD MANAGEMENT PLAN

Federal and State Depredation Permits – Appendix J



Illinois Department of Natural Resources
Endangered and Threatened Species Permit

Permit Number: 1163

Issued Date: 6/15/2018

Expiration Date: 12/31/2018

This permit is valid for Sangamon County:

Pursuant to 520 ILCS 10/5 and 17 Ill. Adm. Code 1070.10-1070.80, this permit is issued to:

Scott Beckerman
3430 Constitution Drive, Suite 121
Springfield, IL 62711

from:

USDA-APHIS-WS

for the purpose of possessing (for HOBBYIST purposes only) the following specimens and products:

<i>Species</i>	<i>Item</i>	<i># Specimens/ Products</i>
Birds - Barn Owl - <i>Tyto alba</i>	Live Individual	
Birds - American Bittern - <i>Botaurus lentiginosus</i>	Live Individual	
Birds - Black Rail - <i>Laterallus jamaicensis</i>	Live Individual	
Birds - Black Tern - <i>Chlidonias niger</i>	Live Individual	
Birds - Black-billed Cuckoo - <i>Coccyzus erythrophthalmus</i>	Live Individual	
Birds - Black-crowned Night-Heron - <i>Nycticorax nycticorax</i>	Live Individual	
Birds - Cerulean Warbler - <i>Dendroica cerulea</i>	Live Individual	
Birds - Common Gallinule - <i>Gallinula galeata</i>	Live Individual	
Birds - Common Tern - <i>Sterna hirundo</i>	Live Individual	
Birds - Forster's Tern - <i>Sterna forsteri</i>	Live Individual	
Birds - King Rail - <i>Rallus elegans</i>	Live Individual	
Birds - Least Bittern - <i>Ixobrychus exilis</i>	Live Individual	
Birds - Least Tern - <i>Sternula antillarum</i>	Live Individual	
Birds - Little Blue Heron - <i>Egretta caerulea</i>	Live Individual	
Birds - Loggerhead Shrike - <i>Lanius ludovicianus</i>	Live Individual	
Birds - Mississippi Kite - <i>Ictinia mississippiensis</i>	Live Individual	
Birds - Northern Harrier - <i>Circus cyaneus</i>	Live Individual	
Birds - Osprey - <i>Pandion haliaetus</i>	Live Individual	
Birds - Piping Plover - <i>Charadrius melodus</i>	Live Individual	
Birds - Rufa Red Knot - <i>Calidris canutus rufa</i>	Live Individual	
Birds - Short-eared Owl - <i>Asio flammeus</i>	Live Individual	
Birds - Snowy Egret - <i>Egretta thula</i>	Live Individual	
Birds - Swainson's Hawk - <i>Buteo swainsoni</i>	Live Individual	
Birds - Swainson's Warbler - <i>Limnothlypis swainsonii</i>	Live Individual	
Birds - Upland Sandpiper - <i>Bartramia longicauda</i>	Live Individual	
Birds - Wilson's Phalarope - <i>Phalaropus tricolor</i>	Live Individual	
Birds - Yellow-crowned Night-Heron - <i>Nyctanassa violacea</i>	Live Individual	

Questions about this permit should be directed to DNR.ETPermit@Illinois.gov

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FAA Approval: *Maria Halperin*
FAA Approval Date: 07 NOV 2018

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Birds - Yellow-headed Blackbird - <i>Xanthocephalus xanthocephalus</i>	Live Individual	
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Possession of federally listed species is covered by:

USDA Exhibitor Permit #:

U.S. Fish and Wildlife Service Permit #:

Location where the above specimens and/or products will be held:

State of Illinois Airports - see Special Conditions

() -

, NA


ITEMS LISTED ON THIS PERMIT MAY BE SOLD,

GIVEN AWAY, OR OTHERWISE DISPOSED OF ONLY

WITH PERMISSION OF THE ILLINOIS

DEPARTMENT OF NATURAL RESOURCES.

Signed:



Christopher Young
Office Director

IDNR Office of Resource Conservation

As designee of IDNR Director, Wayne A. Rosenthal

Special Conditions (IF APPLICABLE):

This permit acknowledges the relationship between USDA-APHIS and the Illinois DNR in regards to the immediate threat to human and aviation safety posed when State listed birds enter an Airport Operations Area (AOA) within the State of Illinois. USDA-APHIS and the IDNR to protect aircraft and human life and to establish a program for the conservation of threatened and endangered bird species near runways or active taxiways and/or on the airport side of a perimeter of a fence(s) by reducing the risk of collision with aircraft.

This permit acknowledges Airport personnel that are properly permitted by the USFWS and have a Nuisance Wildlife Control permit to mediate by non-lethal means only, all situations involving State listed bird species who enter the AOA. Such actions are allowed pursuant to the Department of Natural Resources Act (20 ILCS 801/ et seq.), and the Illinois Endangered Species Protection Act (520 ILCS 10/1 et seq.). Airport personnel are authorized to utilize non-lethal harassment techniques to frighten all State listed bird species from the AOA. All wildlife harassment and repellent techniques employed shall adhere to those described in each airport's Wildlife Habitat Management Plan (WHMP), AC 150/5200-33B and the Joint Federal Aviation Administration (FAA)/Wildlife Services Wildlife Management at Airports manual; IDNR issued Class C Nuisance Wildlife Permit; and all other applicable US Department of Agriculture, US Fish and Wildlife Service, and/or FAA guidelines.

This permit does not repeal or replace the requirement for a Class C Nuisance Wildlife Control Permit [issued in accordance with the Wildlife Code (520 ILCS 5/1.1) and associated Illinois Administrative Rules] to harass all non-listed bird species in Illinois.

Conditions:

- There shall be no propagation of or attempt to propagate any endangered or threatened species covered by this permit.
- Permit holder shall notify IDNR of any changes to personal information within 10 days of making such changes.
- Permit holder shall notify IDNR of any changes to inventory of specimens through escape, theft, death or other unanticipated events within five working days of the discovery of loss.
- An annual report must be submitted to IDNR by January 31st of each year.

Questions about this permit should be directed to DNR.ETPermit@Illinois.gov

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FAA Approval: Maia Halpern
FAA Approval Date: 07 Nov 2018

CHICAGO O'HARE INTERNATIONAL AIRPORT WILDLIFE HAZARD MANAGEMENT PLAN

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The holder of this permit may:

- Dispose of specimens or products covered by this permit through transfer or scrapping only after a permit/written permission has been applied for and received from the Department.
- Temporarily possess specimens (up to 90 days) or products (up to 180 days) covered by another limited permit holder with permission from the Illinois Department of Natural Resources.
- Allow temporary possession of the items covered by this permit by a licensed taxidermist for the purpose of providing taxidermic services.

This permit may be revoked if the Department finds that a permittee has falsified information on the application, failed to comply with facilities standard or animal welfare standards established in 17 Ill. Adm. Code 1070.60 and 1070.70, or violated state or federal laws

Questions about this permit should be directed to DNR.ETPermit@Illinois.gov

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FAA Approval: *Mich Halperin*
FAA Approval Date: 07 NOV 2018

CHICAGO O'HARE INTERNATIONAL AIRPORT WILDLIFE HAZARD MANAGEMENT PLAN**Methods of Control – Appendix K****Description of Methods**

A variety of nonlethal and lethal methods are used to accomplish the objectives of reducing wildlife interactions at O' Hare International Airport. Control strategies are based on applied Integrated Wildlife Damage Management principles, with nonlethal methods receiving first consideration. When nonlethal techniques are impractical or incapable of producing the desired damage abatement, lethal control may be applied. Lethal control includes both mechanical and chemical methods. All chemicals are used in compliance with federal and state pesticide regulations. No pesticide is used or recommended if it is likely to have significant adverse effects on non-target wildlife, the food chain, or other components of the natural environment.

Various federal, state and local statutes and regulations govern the management of certain wildlife species and the use of control tools and substances. Compliance with all such regulations and statutes is required, prior to implementation of any control project.

Methods**Habitat Modification**

- Physical barriers
- Habitat management

Aversive Tactics**I. Non-chemical**

- Electronic distress sounds
- Gas exploders
- Pyrotechnics
- Effigies/Scarecrows
- Lights
- Lasers

II. Chemical

- Chemical repellents
- Methyl anthranilate
- Polybutenes
- Avitrol®

Population Management**I. Non-lethal**

- Leghold traps
- Cage/Suitcase traps
- Snares (i.e., foot/leg or neck)
- Pole traps
- Bal-chatri traps
- Bow nets
- Swedish Goshawk traps
- Net traps

II. Lethal

Original Date: December 9, 2004
 Revision Date: June 15, 2014

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FAA Approval: Nicla Halpin
 FAA Approval Date: 02 JUL 4 2014

CHICAGO O'HARE INTERNATIONAL AIRPORT WILDLIFE HAZARD MANAGEMENT PLAN

Methods of Control – Appendix K

- A. Non-chemical
 - Leghold traps
 - Quick-kill traps (e.g., snap, gopher, and Conibear-type traps)
 - Cage traps
 - Snares (i.e., foot/leg or neck)
 - Shooting
 - Egg shaking/Addling/Nest destruction
- B. Chemical
 - DRC-1339
 - Gas cartridge
 - Zinc phosphide
 - Avitrol®

The following descriptions provide a brief explanation of the control methods recommended:

Habitat Modification

Habitat modifications can restrict the access of wildlife or render the habitat less hospitable to wildlife. Habitat modifications recommendations are described below.

Physical Barriers: Several mechanical methods, such as fences, netting, metal flashing, and spiked metal strips, are advocated for suppression of damage to aircraft, property and facilities by birds and mammals. Fences are widely used to prevent access to the airport by deer, coyotes, fox, rabbits, etc. Wire and plastic netting are also used to exclude a variety of birds and mammals from sensitive areas and buildings requiring exclusion of animals.

Two forms of physical barriers are available which may exclude animals from undesirable areas. These include: (1) complete enclosure with screens, fences and/or netting; and (2) partial enclosure using overhead wires, lines, nets, and/or screens. Complete enclosure may be expensive compared to other control methods, but is very effective in excluding problem wildlife. Hence, the cost of enclosure may be justified over time by reduced damage and a lessened need for active control measures. For example, the installation of a fence skirt, as documented in Section 3.2.2.1.1, will deter coyotes and other mammals from undermining the integrity of the perimeter fence and gaining access to the AOA. This methodology is recommended by FAA in Cert Alert 04-16 (Appendix H) with the specification found in AC 150/5370-10G (Figure 1). See picture below for details:

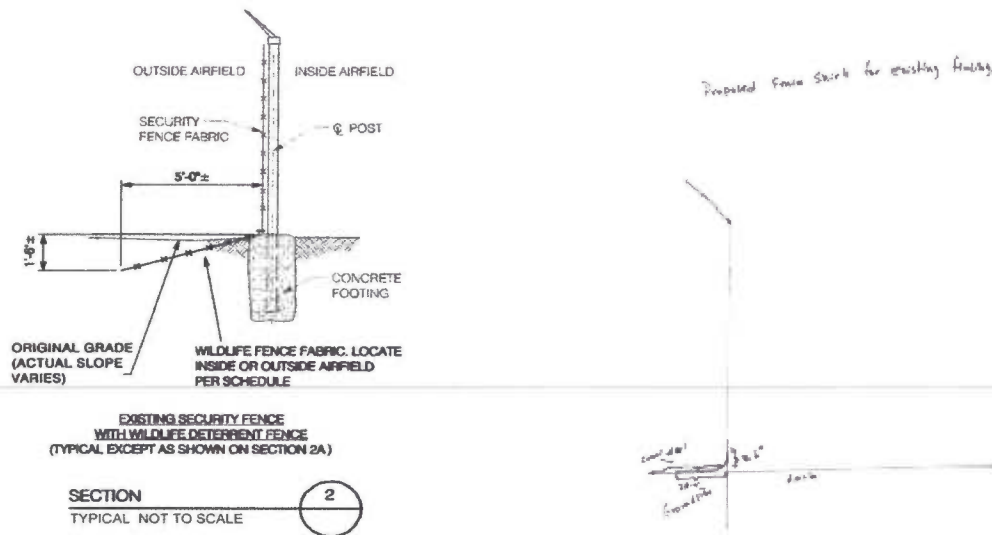
Original Date: December 9, 2004
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FAA Approval: *Maria Halpin*
 FAA Approval Date: 07 NOV 2018

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In addition, the increased availability of relatively inexpensive, lightweight plastic netting may reduce costs considerably. Partial enclosure (e.g., overhead lines) is less expensive but does not exclude all bird species. For example, wires or lines over detention basins can effectively deter gulls, ducks and geese but not smaller birds such as blackbirds.

The selection of a barrier system depends on the particular problem species, the expected duration of resource loss, size of the affected facility, compatibility of the barrier with other operations or uses of the area, possible damage from severe weather, FAA regulations impacting their use, and the barrier's effect on site aesthetics. Complete enclosure of basins to exclude all birds requires at a minimum 2-inch mesh netting secured to frames or supported by overhead wires.

Open waterways and basins can be protected with overhead wires or monofilament lines suspended horizontally in a parallel or diagonal pattern, with spacing between the wires or lines based on the habits and size of the particular birds or types of birds of concern. The sides and ends of the grid system can also be protected to prevent birds from landing next to the waterway or basin and entering from the ground.

Habitat Management: Just as habitat management is an integral part of other wildlife management programs; it plays an important role in wildlife damage control. The type, quality, and quantity of habitat will determine which wildlife species inhabit the area. Habitat can therefore be managed not to support or attract certain wildlife species.

The combination of birds and low-flying aircraft represent a concern to human safety. In airport environs, low altitude aircraft are common and the presence of birds, especially in high numbers, represents a safety hazard. Generally, bird problems on airport grounds can be reduced by the modification of vegetation and the elimination of standing water from runway areas. Runway infield areas at ORD should be mowed frequently, maintaining grass at a height of less than 6", to discourage use by birds feeding on seeds. As standing water is especially attractive to many species of birds, runway areas should be modified to prevent water accumulation. The overall objective of

CHICAGO O'HARE INTERNATIONAL AIRPORT WILDLIFE HAZARD MANAGEMENT PLAN

Methods of Control – Appendix K

bird habitat management around airports is the elimination of avian nesting, roosting, loafing, and feeding sites to reduce the attractiveness of the area to birds.

Dense small mammal populations, combined with short grass heights, create highly attractive hunting areas for predatory raptors and mammals. These factors, combined with numerous perching sites utilized for hunting prey, create the potential to attract and maintain high raptor numbers at ORD. Rodent populations can be controlled by methods listed in the Population Management section of this appendix.

Aversive Tactics

Behavioral modifications, which control damage caused by wildlife, may be achieved through a variety of aversive tactics. The objective in using aversive tactics is to alter the behavior of the target animal so the potential for damage is reduced or eliminated. Scaring and harassment are some of the oldest methods of combating animal damage, and they continue to be effective in many situations.

A number of harassment and frightening techniques have been developed to deter wildlife from utilizing protected areas. The use of noise making devices and visual stimuli are perhaps the most commonly used method of frightening wildlife. An important advantage of these techniques is the potential for only a short term, localized impact on the environment. As with other damage control efforts, these techniques tend to be more effective when used in conjunction with an integrated wildlife control program, rather than individually. Limited lethal reinforcement (i.e. shooting) is often required to ensure the continued success of visual and noise-making harassment programs.

I. Non-chemical

Electronic Distress Sounds. Distress and alarm calls of various animals have been used independently and in conjunction with other scare devices to successfully scare or harass animals. Many of these vocalizations are available on records or tapes and are broadcasted from either fixed or mobile equipment in the immediate or surrounding problem areas. Reactions to distress calls vary considerably by species and situation, but are most effective when integrated with other scare techniques (i.e. pyrotechnics). Most distress call players can be adjusted for the period of time the calls are played, and can vary the distress sounds played. Some artificially created sounds also repel birds in the same manner as recorded "natural" distress and alarm calls.



Gas Exploders. Gas exploders operate on acetylene or propane gas and are designed to produce loud explosions at controllable intervals. The exploders are placed around the problem site and are preferably elevated above vegetation or other obstacles. Exploders must be moved frequently and used in conjunction with other scare devices to avoid animals habituating to the sound. It is

CHICAGO O'HARE INTERNATIONAL AIRPORT WILDLIFE HAZARD MANAGEMENT PLAN**Methods of Control – Appendix K**

recommended that exploders be left active for a period of time in the problem site after dispersal is complete to discourage animals from returning.

Pyrotechnics. Double shotgun shells, known as shellcrackers or scare cartridges, are 12 gauge shotgun shells containing a firecracker. When fired, the firecracker is projected up to 100 yards before exploding. Shellcrackers are used to frighten wildlife to move them from sensitive areas or to discourage birds from undesirable roost locations. For best results, the shells are fired so they explode in front of or underneath the animals. The intent is to produce an explosion between the animal and their objective.



Noise bombs (bird bangers) and whistle bombs (screamers) are fired from hand-held launch guns. Bird bangers are similar to shellcrackers, but travel a shorter distance, 75 feet, before exploding. Screamers travel slightly further than noise bombs, and produce a whistling noise, along with a trail of smoke while in flight.

A variety of other pyrotechnic devices, including firecrackers, rockets, and Roman candles are used for dispersing animals. Birds can often be temporarily frightened from the airfield, but may soon return if harassment efforts are not reinforced with other control methods.

Effigies, Scarecrows, and Other Scaring Techniques. Owl decoys, reflective flash tape, and helium filled balloons are used as scaring devices. These devices are sometimes effective for dissuading birds from sensitive areas inside buildings. Their effectiveness is enhanced when used in conjunction with auditory scare devices. Other devices such as scarecrows, mylar ribbons and flagging, suspended pie pans, etc., are similarly used to control wildlife damage.

Lights. The proper use of a variety of lighting devices provides effective control in some circumstances. A variety of lights, including strobe, barricade, and revolving units have been used to frighten birds with varied results. Strobe lights, similar to those used on aircraft, are most effective in frightening night feeding birds. These extremely bright flashing lights have a blinding effect, causing confusion. Some birds avoid the bright glare by landing with their backs to the lights. This avoidance may be minimized by increasing the number of lights or dispersing the lights to cover the unprotected areas or by adding reflective tape.

Flashing amber barricade lights, revolving or moving lights may frighten birds. However, most birds rapidly become accustomed to such lights and long term effectiveness is questionable. In general, the type of light, the number of units, and their location are determined by the size of the area to be protected and by the power source available.

A portable strobe light, in combination with a siren, has been developed by the USDA National Wildlife Research Center. This unit, called the Electronic Guard, can be easily transported from one location to another. The device activates automatically at nightfall and is programmed to discharge periodically throughout the night.

CHICAGO O'HARE INTERNATIONAL AIRPORT WILDLIFE HAZARD MANAGEMENT PLAN**Methods of Control – Appendix K**

The emergency lights on the Airport Operations Vehicles may be used to harass wildlife from the AOA. Rotating, strobe, and spot lights are most effective in low ambient light conditions, but may be moderately effective at any time.

Lasers. Lasers range in size from pen sized pointers, to large handheld units that are visible for more than one mile. They are commonly used to disperse bird roosts, and to harass flocks of birds from protected areas. Lasers are most effective when used during low light conditions, or after dark, due to enhanced visibility of the laser beam. Birds can be successfully harassed with the laser alone, but their effectiveness is enhanced by integrating audio stimulation, such as pyrotechnics, whistles, or distress calls.

II. Chemical

Chemical Repellents. Repellents are compounds which prevent the use of an area or consumption of a food item. Repellents operate by producing an undesirable taste, odor, feel, or behavior pattern. Effective and practical repellents generally meet the following requirements:

- they are non-toxic to wildlife, plants, seeds, and man;
- they are resistant to weathering;
- they are easily applied; and
- they are reasonably priced.

A disadvantage of many repellents is the high cost of application and the frequency of reapplication, which often makes their use uneconomical. The reaction of different animals to a single chemical formulation varies, and for any species there may be variations in repellency.

Polybutenes. Several polybutene repellents are used to repel birds from around structures. These are glue like materials which are either sprayed or applied with a caulking gun to window sills, ledges, or similar perches where their tacky consistency discourages use by birds. A disadvantage of these products is that reapplication is required when dirt and debris build up on the treated surface. They are most frequently used to control pigeon and starling problems.

Avitrol®. The avian frightening agent Avitrol® (4 Aminopyridine) is limited for use in specific areas and for the protection around structures. Avitrol® is a toxic chemical but is used as an area repellent by limiting the treated bait particles through dilution. Use sites are monitored to assure bait is consumed by only targeted species.

Avitrol® is used mostly to control flocking blackbirds and starlings but may also be used to control pigeons, sparrows, and crows. Avitrol® is applied to grain baits as a mixture of treated and untreated grain according to label restrictions. After prebaiting with untreated grain to establish a satisfactory feeding pattern, the treated mixture is placed for the target flock of birds to consume. A few of the birds will eat treated grain, emit distress calls, and exhibit erratic behavior. Ideally, a large number of untreated birds in the flock will respond to the distress calls of the few affected individuals. Proper bait placement can reduce the hazard to nontarget species. If properly used, Avitrol® does not present a significant secondary poisoning hazard to either birds or mammals.

CHICAGO O'HARE INTERNATIONAL AIRPORT WILDLIFE HAZARD MANAGEMENT PLAN**Methods of Control – Appendix K**

Extreme caution must be exercised when Avitrol® is used at airports as affected birds will often fly erratically. These reactions can temporarily increase the threat of bird strikes.

Methyl Anthranilate. Methyl anthranilate (MA) is currently being used on some airports to reduce gull and waterfowl activity. MA is commonly found in beverages used for human consumption in the form of grape flavoring. It is a taste repellant to birds and, therefore, is used in areas where they are feeding. MA can be sprayed on the turf areas or as an airborne mist from a fogging device.

Population Management

Many capture methods are available that can be used as nonlethal or lethal methods depending on the management objective. When the objective is to relocate the animal or if the animal captured is a nontarget, it may be released. If the captured animal is a target species and the object is population reduction in the local area, the animal may be euthanized. Because of this flexibility, the objective of the user determines whether some of these methods are nonlethal or lethal. The following section describes the local population management methods.

I. Nonlethal

Leghold Traps. Leghold traps are frequently used to capture animals such as coyote, fox, raccoon, and opossum. These traps are very versatile and widely used for capturing many species. They are effectively used in both terrestrial and aquatic environments.

Leghold traps set in travel lanes of the targeted animal, without an attractant, are known as "blind sets." More frequently, traps are used in conjunction with lure or bait to attract the target animal. These lures or baits consist of the animal's preferred food or some other lure such as fetid meat, urine, or musk to attract the animal into the set.

Leghold traps have three primary advantages; first they can be set under a wide variety of conditions, second underpan tension devices can be used to prevent animals of smaller size than the target animal from springing the trap, thus allowing a degree of selectivity not available with many other methods. The third advantage is that when set appropriately, it holds animals unharmed, which generally permits the release of nontarget animals or translocation, when appropriate.

Disadvantages of using leghold traps include the difficulty of keeping them operational during rain, snow, or freezing weather. In addition, they lack selectivity where nontarget species with similar lure preferences and size to target species are abundant. The selectivity of leghold traps has been shown to be a function of how they are used, with the type of set and attractant used influencing both capture efficiency and the risk of catching nontarget animals.

The use of leghold traps is costly due to the amount of manpower and time involved. The leghold trap, however, is indispensable in resolving many animal damage situations.

Cage Traps. Cage traps can be used to catch many different species of animals, but are most commonly used to capture furbearing mammals. Many different styles of cage traps are available,

CHICAGO O'HARE INTERNATIONAL AIRPORT WILDLIFE HAZARD MANAGEMENT PLAN**Methods of Control – Appendix K**

with the most common style of trap being the box trap, which is usually rectangular in shape and made from heavy gauge mesh wire. Cage traps are often covered with burlap or a similar material to increase trapping efficiency, and to reduce stress to the captured animal.

Cage traps are often used where lethal or more controversial tools would be inappropriate due to a potential hazard to other wildlife or humans. These traps may be used to capture animals of all sizes, but are generally ineffective for capturing coyotes.

Large decoy traps, modified after the Australian crow trap, may be used to capture starlings, blackbirds, crows, and pigeons. Generally, these traps are large screen enclosures with the access modified to accommodate the target species. They are provided with sufficient bait and water to both attract birds and maintain live "decoy birds" in the trap.

The main advantage of cage traps is that wildlife is captured and held unharmed and therefore is less controversial in areas where people may witness the wildlife control activities.

Snares. Snares, made of wire or cable, are among the oldest existing animal capture tools. They are highly effective for catching most furbearing species, but are most frequently used to capture coyotes, fox, and raccoon. They offer the advantage of being much lighter than most other traps and are not as affected by inclement weather.

Snares can be effectively used wherever a target animal moves through a restricted lane of travel (i.e., "slides" under fences, trails through grass/weeds, den entrances, etc.). When an animal moves forward into the snare loop, the noose tightens and the animal is held.

Snares can be employed as either lethal or live capture devices depending on how and where they are set. Snares set to capture an animal by the neck can be lethal if a non-relaxing lock is used on the snare, or nonlethal when a relaxing lock and slide stop is used. Other nonlethal uses include setting the snare to capture the animal around the leg. Careful attention to detail in placement of snares is very important when using snares to live capture animals.

The foot or leg snare is a nonlethal device activated when an animal places its foot on the trigger. When triggered, the spring-operated snare tightens around the leg and holds the animal.

The catch pole is a hand held snare is used to capture or handle problem animals. Catch poles are primarily used to remove live animals from traps without injury to the animal or person handling the animal.

Pole Traps. Pole traps can be effectively used to capture raptors (i.e., hawks and owls) because of their behavioral tendency to perch on structures while hunting. Conduit or PVC poles, 5 to 10 feet high, are erected near areas where raptors have been observed hunting. A modified padded jaw, leghold trap (usually size 1-1/2 with weakened springs), are set on the top of each pole. The trap is attached to the pole with a large washer or attached to a cable that is affixed to the pole, which will allow the bird to slide smoothly down the pole and come to rest on the ground after being captured.

CHICAGO O'HARE INTERNATIONAL AIRPORT WILDLIFE HAZARD MANAGEMENT PLAN**Methods of Control – Appendix K**

The use of pole trapping as a damage control technique is dependent on the nature of the problem, target species and time of year. Pole trapping requires a permit from the USFWS.

**II. Lethal****A. Non-chemical**

Leghold Traps. (See the section on leghold traps in the nonlethal section.) When the target animal is captured, the animal is generally euthanized. The method of euthanasia varies, but the quickest, most humane method should be utilized.

Quick-kill Traps. A number of "quick kill" traps are used in animal damage control work. They include the Conibear-type, snap, gopher, and mole traps.

The Conibear-type trap consists of a pair of rectangular wire rod frames attached on both sides, that close in a scissor-like fashion when triggered, killing the captured animal with a quick body blow. The primary advantage to using the Conibear-type trap is that it quickly kills the trapped animal, minimizing the stress an animal might experience while in the trap. A principal disadvantage of Conibear-type traps is that they are non-selective, killing any animal that enters the trap, eliminating any opportunity of non-targets being released.

The Conibear trap is most often utilized for aquatic sets, but can be used in dry land sets for trapping raccoons, foxes, groundhogs and rats. Special use permits are often required for making Conibear sets on dry land. Conibear traps can be either set "blind" (in trails or travel corridors) or in a baited or lured set to attract the animal into the trap. Safety must always be considered when using Conibear-type traps as they can inflict serious injury to individuals setting the traps, and to passers by who may wander into a set because they are not aware of where traps are set.

Snap traps (i.e., rat and mouse traps) are used to collect and identify rodent species that are causing damage, and to survey small mammal populations on the airfield. In minor infestations these traps may be used as the primary means of control. Frequently, these traps are used within buildings, but seldom recommended for use outside of such structures. An alternative to snap traps is the glue board (i.e., a shallow flat container of an extremely sticky substance).

Mole traps are used to control surface tunneling moles (i.e., Nash mole trap and harpoon trap). Soil is pressed down in the active tunnel and the trap is placed with the trigger against the compressed area. When the mole re-opens the tunnel, the trap is triggered.

Cage Traps. (See the section on cage traps in the nonlethal section.) Cage traps may be set with the intention of euthanizing the target animal, and when a target animal is captured, it should be quickly

CHICAGO O'HARE INTERNATIONAL AIRPORT WILDLIFE HAZARD MANAGEMENT PLAN

Methods of Control – Appendix K

and humanely euthanized. The advantage of this form of trapping allows for the release of nontarget animals.

Snares. (See the section on snares in the nonlethal section.) Snares set with the intention of lethal control generally result in quick death of the captured animal. Animals not killed at capture by the snare are euthanized.

Shooting. Shooting is selective for the target species but is relatively expensive due to the staff hours required. Shooting is, nevertheless, a valuable control method. Quick removal of problem animals may be accomplished through shooting in some instances.

Lethal reinforcement is often necessary to assure the continued success in bird scaring and harassment efforts (see the discussion on shooting under Aversive Tactics). This is especially important where birds are drawn to locations where food is readily available. In situations where highly attractive feeding or loafing habitat is present, birds quickly habituate to scaring and harassment efforts unless the harassment is periodically supplemented with lethal reinforcement (i.e., shooting). A permit from the USFWS is required to lethally remove migratory birds.

Egg Shaking/Oiling/Nest Destruction. These control techniques involve the destruction of bird eggs and nests. A destruction permit is required from the USFWS before this control method can be implemented on migratory birds. Egg shaking, or addling, is useful in reducing populations of waterfowl and gulls at nesting sites. Eggs are located shortly after being laid then are shaken to render them infertile, and replaced in the nest. If the eggs are not replaced, the birds will often re-nest and produce another clutch. The eggs are allowed to be incubated for another 2-3 weeks, which allows sufficient time for the female to become infertile and unable to produce another clutch of eggs. Egg oiling uses the same principles. Eggs are coated with corn oil, usually by misting the eggs with a spray bottle. This oiling prohibits the exchange of gases (oxygen) through the pores of the eggshell, thus rendering the egg non-viable.

These techniques reduce the reproductive success of the birds being targeted. If allowed to hatch, the young birds would imprint on the area and return during subsequent nesting seasons to nest themselves. Egg destruction reduces the numbers of birds returning to the airport in successive years.

Nest destruction is helpful in eliminating nests of birds from sensitive areas and within structures. This is applicable for small birds, which nest in buildings or runway signs and fixtures.

B. Chemicals

Toxicants. Several toxic chemicals have been developed for wildlife damage control personnel to use. Because of their efficiency, such toxicants have been widely employed when other methods have proven unsuccessful or costly. Since toxicants are generally not species specific, special attention to proper placement and use is necessary to prevent non-target takes. The hazard of non-target take is reduced when trained and certified personnel apply the toxicants, with the proper

CHICAGO O'HARE INTERNATIONAL AIRPORT WILDLIFE HAZARD MANAGEMENT PLAN**Methods of Control – Appendix K**

placement, size, and type of bait, as well as time of year taken into account when a chemical control program is initiated.

The following section describes available chemicals to control targeted animals.

DRC-1339. DRC 1339 is a toxicant that can be used to control populations of pigeons, European starlings, and various species of blackbirds, crows, ravens, and gulls. DRC-1339 is relatively safe to larger predatory birds and mammals due to their larger body sizes and the amount of the chemical that would be required to cause a toxic reaction in them. DRC-1339 that is ingested by target species is metabolized within the bird before it dies; reducing the chance of secondary poisoning to animals that may eat the target animal after it dies. DRC-1339 causes most birds to die 24-36 hours after ingesting the toxicant, therefore the dead birds are usually found at the roosting site.

Untreated poultry pellets or other baits are placed at the baiting sites prior to toxicant being applied to establish a daily feeding routine. After this routine is established, treated bait is placed at the baiting site. After the toxic bait has been consumed by the target birds, the remaining bait is collected and disposed of according to the product label.

DRC-1339 concentrate is only available for use only by WS personnel.

Gas Cartridge. WS uses gas cartridges specifically formulated for rodent and predator control. After all entrances to the burrow are sealed except one, the cartridge is hand placed in the active burrow or den of the target animal and the entrance is tightly sealed with soil. The burning cartridge causes death from a combination of oxygen depletion and carbon monoxide poisoning. The taking of nontarget animals is avoided by confirming fresh sign around active burrows or dens of target animals prior to treatment.

Zinc Phosphide. Zinc phosphide is a metallic toxicant used as a rodenticide. It has no secondary hazard problems and poses little environmental hazard. Zinc phosphide is effective and may be used in rat and vole control programs. Zinc phosphide baits are prepared according to the pesticide label using pet food, fruit, vegetables, and various grains. The odor of zinc phosphide is not offensive to rodents but is repulsive to most other animals. Zinc phosphide can be coated on dry baits using vegetable oil or dusted onto moist baits, tumbling them to assure an even distribution. Tarter emetic is sometimes added to bait used to control rats as a safety precaution. The emetic causes most animal species to regurgitate any consumed zinc phosphide baits. Its effectiveness for rat control is not compromised because rats are unable to regurgitate. Application of zinc phosphide baits for vole control varies according to the situation and species involved. Baits are either broadcast on the surface or placed in underground runways. Trail building devices may be used to place bait in artificial runways. The trail builder is a mechanical device which, when pulled behind a tractor, will place measured doses of treated grains in a trail which it builds near the surface of the ground. Trail builders may be effectively used on airports in areas where electrical lines will not be jeopardized by its use.

CHICAGO O'HARE INTERNATIONAL AIRPORT WILDLIFE HAZARD MANAGEMENT PLAN

**Advisory Circular No. 150/5370-10G. Standards for Specifying
Construction of Airports. Item F-163 Wildlife Deterrent Fence.
Alternative Fence Skirt Installation for Already Existing Permanent
Perimeter Fences.
– Appendix L**

This Advisory Circular provides standards for the construction of airports. It provides general provisions, earthwork, flexible base courses, rigid base courses, flexible surface courses, rigid pavement, miscellaneous, fencing, drainage, turfing, and lighting installation. Item F-163 specifically describes the specifications and installation of a wildlife deterrent fence.

Note: Certalerts, Advisory Circulars, and regulations are frequently changed or updated; always verify that the version attached herein is the most current. Contact FAA or Wildlife Services (see directory in Chapter 9) or consult the FAA website for the latest version:

http://wildlife-mitigation.tc.faa.gov/public_html/index.html

For already existing permanent perimeter fencing, that is not part of upcoming OMP and/or capital improvement projects, an alternative wildlife deterrent/ fence skirt installation has been approved by USDA-APHIS-WS and the FAA. See FAA approval and sketch on next pages.

From: <Aaron.D.Spencer@aphis.usda.gov> **To:** <marcoavila@cityofchicago.org> **Date:** 7/7/2009 1:27 PM
Subject: Fw: Fence Skirting at ORD with Attachment **Attachments:** Fence Skirt Alternative.PDF

FYI.

Aaron Spencer Wildlife Biologist - Chicago O'Hare Airport USDA/APHIS/ Wildlife Services AMC Bldg. Rm.
241 Chicago, IL 60666
(773) 686-6742

----- Forwarded by Aaron D Spencer/IL/APHIS/USDA on 07/07/2009 01:26 PM

Tricia.Halpin@faa.gov 07/02/2009 12:51 PM

To Aaron.D.Spencer@aphis.usda.gov cc glyman@ohare.com Subject Re: Fence Skirting at ORD with Attachment

I spoke to John Weller our Wildlife Biologist in headquarters and he concurs with your proposal so I have no problem.

Tricia Halpin Airport Certification/Safety Inspector
Airports Division
847-294-7160
tricia.halpin@faa.gov

I will be on leave June 29 - July 3, but if you have questions please call.

Original Date: December 9, 2004
Revision Date: November 8, 2018

Appendix L
Page 1

FAA Approval: *Tricia Halpin*
FAA Approval Date: 07 NOV 2018

CHICAGO O'HARE INTERNATIONAL AIRPORT WILDLIFE HAZARD MANAGEMENT PLAN

**Advisory Circular No. 150/5370-10G. Standards for Specifying
Construction of Airports. Item F-163 Wildlife Deterrent Fence.
Alternative Fence Skirt Installation for Already Existing Permanent
Perimeter Fences.
– Appendix L**

Tricia,

We have been discussing the feasibility of upgrading some of our current perimeter fencing (that isn't going to be replaced) with some skirting to better prevent coyotes and other mammals from getting on the field. What we are currently considering is using some salvaged fence material attached to the base of the current fencing, laying over the existing ground level, and to be covered with a layer of soil. There is a rough schematic attached to this e-mail. The airport wanted us to check with you to see if there are any potential issues or conflicts.

Aaron Spencer Wildlife Biologist - Chicago O'Hare Airport USDA/APHIS/ Wildlife Services AMC Bldg. Rm. 241 Chicago, IL 60666

Aaron.D.Spencer@a phis.usda.gov To

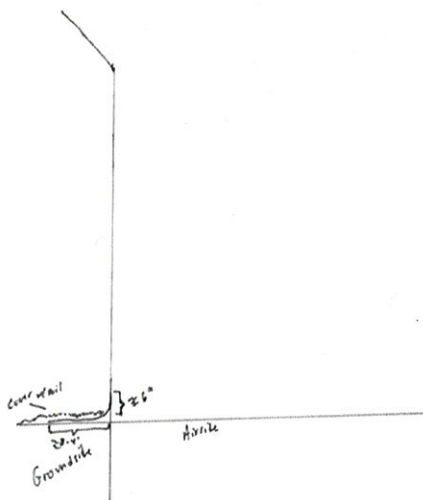
06/26/2009 11:01 Tricia Halpin/AGL/FAA@FAA AM cc

(773) 686-6742(See attached file: Fence Skirt Alternative.PDF)

Subject
Fence Skirting at ORD with

Attachment

Proposed Fence Skirt for existing fencing.



Original Date: December 9, 2004
Revision Date: November 8, 2018

Appendix L
Page 2

FAA Approval: Tricia Halpin
FAA Approval Date: 07 NOV 2018

CHICAGO O'HARE INTERNATIONAL AIRPORT WILDLIFE HAZARD MANAGEMENT PLAN**Advisory Circular No. 150/5200-33B. Hazardous Wildlife Attractants on
or near Airports – Appendix M**

This Advisory Circular provides guidance on certain land uses that have the potential to attract hazardous wildlife on or near public-use airports. It also discusses airport development projects affecting aircraft movement near hazardous wildlife attractants.

Note: Certalerts, Advisory Circulars, and regulations are frequently changed or updated; always verify that the version attached herein is the most current. Contact FAA or Wildlife Services (See directory in Chapter 9) or consult the FAA website for the latest version:

http://wildlife-mitigation.tc.faa.gov/public_html/index.html

Original Date: December 9, 2004
Revision Date: June 15, 2014

Appendix M
Page 1

FAA Approval: Tricia Halpin
FAA Approval Date: 02 JUL 2014

CHICAGO O'HARE INTERNATIONAL AIRPORT WILDLIFE HAZARD MANAGEMENT PLAN**Memorandum of Understanding between City of Chicago Department
of Aviation, Groot Industries, and USDA/ WS – Appendix N**

APHIS No.: 18-7217-4441 MU

MEMORANDUM OF UNDERSTANDING ("MOU")
Between the
CITY OF CHICAGO DEPARTMENT OF AVIATION ("CDA"),
GROOT INDUSTRIES ("GI")
And
UNITED STATES DEPARTMENT OF AGRICULTURE
ANIMAL AND PLANT HEALTH INSPECTION SERVICE ("APHIS")
WILDLIFE SERVICES ("WS")

To
CONDUCT WILDLIFE HAZARD MANAGEMENT ACTIVITIES IN THE VICINITY OF
CHICAGO O'HARE INTERNATIONAL AIRPORT ("ORD")
IN THE STATE OF ILLINOIS

ARTICLE 1 - PURPOSE

The purpose of this MOU is to:

- (1) establish a cooperative working relationship between the CDA, GI and APHIS WS for the planning, coordination, and implementation of wildlife damage/hazard management programs to prevent, minimize, or alleviate wildlife threats to aircraft utilizing ORD.
- (2) facilitate the exchange of information that is of mutual interest to MOU participants.

ARTICLE 2 - BACKGROUND

In the United States, wildlife is a publicly owned resource held in trust and managed by State and Federal agencies. Wildlife sometimes causes significant damage to private and public property, causes a nuisance, and threatens human safety. Since wildlife is a publicly owned resource, State and Federal agencies must be responsible for responding to requests for the resolution of damage and other problems caused by wildlife.

While conducting wildlife patrol at ORD in the spring of 2007, APHIS WS biologists observed Ring-Billed Gulls and European Starlings congregating just over the airport fence line north of Runway 14R approach. Further investigation revealed that the birds were attracted to an enclosed waste transfer/recycling site ("Transfer/Recycling Site") located at 1759 Elmhurst Road, Elk Grove Village, Illinois 60007, operated by GI. APHIS WS contacted the facility manager and entered into negotiations whereby APHIS WS would develop and assist in implementing a wildlife hazard management program at the Transfer/Recycling Site.

ARTICLE 3 – MUTUAL RESPONSIBILITIES

The CDA, GI and APHIS WS agree to that:

- (1) A common pest/hazard, in the form of birds, exists at ORD and at the Transfer/Recycling Site.
- (2) This MOU shall allow for an open exchange of information related to development and implementation of relevant Wildlife Hazard Management Plans (WHMPs).
- (3) Efforts to implement WHMPs in the vicinity of ORD will be coordinated to the fullest extent possible.

Original Date: December 9, 2004
Revision Date: November 8, 2018

Appendix N
Page 1

FAA Approval: Maria Halperin
FAA Approval Date: 07 NOV 2018

CHICAGO O'HARE INTERNATIONAL AIRPORT WILDLIFE HAZARD MANAGEMENT PLAN

Memorandum of Understanding between City of Chicago Department of Aviation, Groot Industries, and USDA/ WS – Appendix N

- (4) APHIS WS will conduct wildlife hazard management activities as defined under this MOU, in accordance with any relevant WHMPs, each independently developed in accordance with cooperative service agreements separately entered into between the CDA and APHIS WS, and between GI and APHIS WS.
- (5) Wildlife hazard management activities undertaken pursuant to this MOU will be implemented in accordance with the applicable Federal, State, and local laws and regulations.
- (6) If wildlife hazard management activities implemented by APHIS WS at GI merely move hazardous wildlife between the Transfer/Recycling Site and ORD, APHIS WS will immediately initiate efforts to move the animals away from both facilities.
- (7) Meet at least yearly to review this MOU, identify problems, and exchange information related to wildlife hazards to aviation in the vicinity of ORD and efforts each entity has implemented to minimize such hazards.
- (8) Any proposed amendments to the MOU must be presented in writing to the APHIS WS State Director at least 15 days prior to the annual meeting. The terms of this MOU and any proposed amendments may be reviewed at the annual meeting.

ARTICLE 4 – APHIS WS RESPONSIBILITIES

APHIS WS agrees to/that:

- (1) Assist CDA and GI in development of their respective WHMPs.
- (2) Assist CDA and GI in applying for and acquiring a migratory bird depredation permit from the U.S. Fish and Wildlife Service, as necessary.
- (3) Assist CDA and GI in applying for an Illinois Department of Natural Resources nuisance permit to manage birds posing a threat to safe aircraft operations.
- (4) Assist CDA and GI in submitting an annual report of activities authorized in migratory bird take permits to the U.S. Fish and Wildlife Service and the Illinois Department of Natural Resources, as necessary.
- (5) Provide CDA and GI with verbal or written reports of wildlife hazard management activities on a regular basis.

ARTICLE 5 – ORD AND GI RESPONSIBILITIES

CDA and GI agree to/that:

- (1) Each entity will be responsible for the development and implementation of a science-based WHMP at their facility, inclusive of any methodologies they deem appropriate.
- (2) If wildlife hazard management activities implemented by GI staff at the Transfer/Recycling Site merely move wildlife deemed hazardous to aircraft operations to ORD, GI will immediately notify ORD Operations at (773) 686-2255, so that a coordinated effort can be made to move birds away from both facilities.
- (3) In the event that birds deemed hazardous to aircraft operations are present at the Transfer/Recycling Site and APHIS WS is not available to conduct hazard management operations, GI will implement appropriate measures described in their WHMP or contact ORD Operations at (773) 686-2255 and request CDA assistance, when available, in dispersing birds from the Transfer/Recycling Site. CDA's assistance in this effort is acknowledged as a gesture of goodwill to reduce the risks wildlife (birds) pose to aircraft.
- (4) If wildlife hazard management activities implemented by APHIS WS and/or CDA staff at ORD merely move hazardous wildlife to the Transfer/Recycling Site, and APHIS WS is not available to conduct appropriate hazard management operations at GI, GI will be immediately notified at (773) 569-3010, so that its staff can participate in a coordinated effort to move the hazardous wildlife

CHICAGO O'HARE INTERNATIONAL AIRPORT WILDLIFE HAZARD MANAGEMENT PLAN**Memorandum of Understanding between City of Chicago Department
of Aviation, Groot Industries, and USDA/ WS – Appendix N**

way from both facilities.

ARTICLE 6 - STATEMENT OF NO FINANCIAL OBLIGATION

This MOU defines in general terms, the basis on which the parties will cooperate and does not constitute a financial obligation on the part of any party to serve as a basis for expenditures. Each signatory party is to use and manage its own funds in carrying out the purpose of this MOU. Transfers of funds or items of value are not authorized under this MOU. If fiscal resources are to transfer between signatories in support of requests for technical, operational or research assistance, separate cooperative service agreements must be developed by the respective parties.

ARTICLE 7 - LIMITATIONS OF COMMITMENT

This MOU and any continuation thereof shall be contingent upon the availability of funds appropriated by the Congress of the United States and the Chicago City Council. It is understood and agreed that any monies allocated for purposes covered by this MOU shall be expended in accordance with its terms and in the manner prescribed by the fiscal regulations and/or administrative policies of the party making the funds available.

ARTICLE 8 - CONGRESSIONAL RESTRICTION

Under 41 U.S.C. 22, no member of, or delegate to, Congress shall be admitted to any share or part of this MOU or to any benefit to arise therefrom.

ARTICLE 9 - AMENDMENTS

This MOU may be amended at any time by mutual agreement of the parties in writing.

ARTICLE 10 - TERMINATION

This MOU may be terminated by any of the parties upon sixty (60) days written notice to the other parties or, in the event of mutual consent, with no prior notice requirement.

ARTICLE 11 - EFFECTIVE DATE AND DURATION

This MOU will be in effect upon final signature and will continue in effect for five (5) years or until terminated by any party.

CHICAGO O'HARE INTERNATIONAL AIRPORT WILDLIFE HAZARD MANAGEMENT PLAN**Memorandum of Understanding between City of Chicago Department
of Aviation, Groot Industries, and USDA/ WS – Appendix N****SIGNATURES**

GROOT INDUSTRIES


Pete Lyons

V.P. of Midway Division Waste Connections

9/4/18

Date

CITY OF CHICAGO


Jamie Rhee

Commissioner, Chicago Department of Aviation

8/6/18

Date

UNITED STATES DEPARTMENT OF AGRICULTURE
ANIMAL AND PLANT HEALTH INSPECTION SERVICE
WILDLIFE SERVICES
Willie D. Harris

Director, Eastern Region

9-7-2018

Date

CHICAGO O'HARE INTERNATIONAL AIRPORT WILDLIFE HAZARD MANAGEMENT PLAN

Reserved

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ATTACHMENT I-2

WILDLIFE HAZARD ASSESSMENT
ANNUAL REPORT (2018)

Wildlife Hazard Management at O'Hare International Airport 2018 Annual Report



Snowy owl captured at ORD 1/10/2018

**Prepared by:
Sharon Scully
Wildlife Biologist
At
O'Hare International Airport**



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Introduction

The partnership between USDA-Wildlife Services (USDA-WS) and O'Hare International Airport (ORD) began in the early 1990's when USDA-WS entered into a cooperative service agreement with the City of Chicago Department of Aviation (now Chicago Department of Aviation (CDA)) to complete a Wildlife Hazard Assessment at ORD. The Wildlife Hazard Assessment was completed in 1992 and in 1993 a full-time Wildlife Biologist was hired to manage the threat of wildlife hazardous to aircraft and human safety at ORD. A second Wildlife Biologist was hired in 1996 to increase operational work on the airfield. In September 2004, a MD-80 ingested multiple double-crested cormorants resulting in complete engine failure. Following this event, USDA-WS hired a third Wildlife Biologist to increase surveillance on the airfield as requested by CDA. Following the 2006 FAA certification inspection, the FAA suggested airfield coverage by USDA-WS seven days-a-week to better implement the Wildlife Hazard Management Plan (WHMP) at ORD. It was later decided that USDA-WS would provide coverage seven days-a-week during spring and fall migrations beginning in the spring of 2007. To fulfill the increased coverage, USDA-WS hired a Wildlife Specialist devoted to direct control activities on the airfield. A second Wildlife Specialist was hired in 2008 with additional funding from the FAA to assist in ongoing avian radar research. Beginning in 2009, sufficient staffing allowed USDA-WS to stratify work schedules to provide airfield coverage from 6:00am until 6:00pm from April through October and 6:00am to 5:00pm from November through March associated with shorter daylight hours. Currently, CDA provides USDA-WS the funding for four full-time equivalent positions for wildlife hazard management at ORD and these services are provided by a combination of 3 wildlife biologists and 2 wildlife specialists throughout certain times of the year.

This report is a summary of USDA-WS' efforts to reduce threats to human safety and aircraft at ORD in 2018. The report will cover the following topics: wildlife strikes, on and off-site wildlife hazard management activities, airport staff training, research, wildlife mitigation recommendations, and accomplishments that occurred during 2018.

Strikes

In 2018, a total of 301 wildlife strikes were reported at ORD, 283 of which occurred at or below 1500ft AGL (Figure 1), which is higher than the number of strikes recorded at ORD in 2017 (Figure 2). The month with the most strikes was September, and the fewest number strikes was January (Figure 3). This strike pattern reflects seasonal migration and when populations are at their annual peak following the nesting season (Dolbeer et al. 2016). A total of 11 strikes resulted in damage or an adverse effect to aircraft in 2018, which is lower than number reported (12) in 2017. Of the 11 damaging strikes, 8 occurred at or below 1500ft AGL (Table 1), which is less than the number reported in 2017 (12) (Figure 4). The species guilds with the most damaging strikes at or below 1500ft AGL were raptors and unknown (Figure 5). Based on FAA Advisory Circular (AC) 150/5200-33B, 1500ft AGL is the established benchmark and indicates that strikes at or below 1500ft AGL are considered to be within the 5 mile separation distance described in the AC. The airport should be concerned with hazardous wildlife attractants in approach and departure airspace within this separation distance. This metric helps define the airport's sphere of influence in which they should evaluate and attempt to mitigate threats wildlife may pose to aircraft and the flying public.

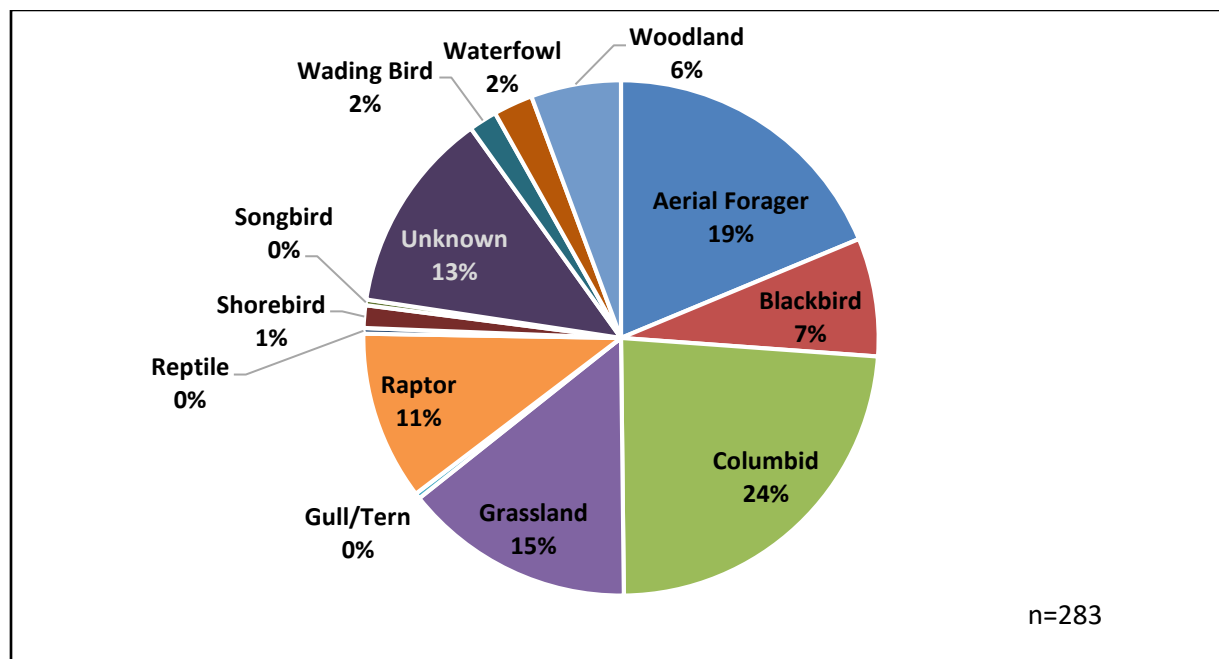


Figure 1. Summary of 2018 wildlife strikes at or below 1500ft AGL by species guild at ORD.

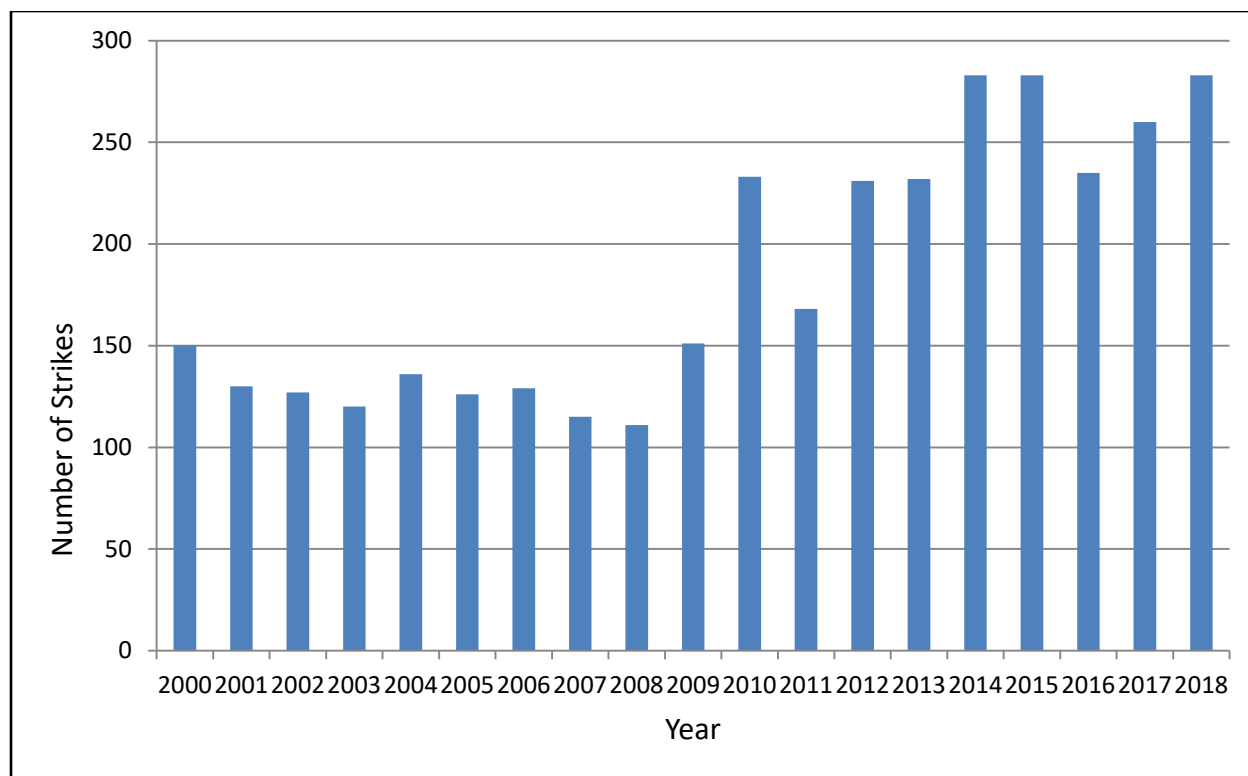


Figure 2. Total number of wildlife strikes at or below 1500ft AGL at ORD, 2000-2018.

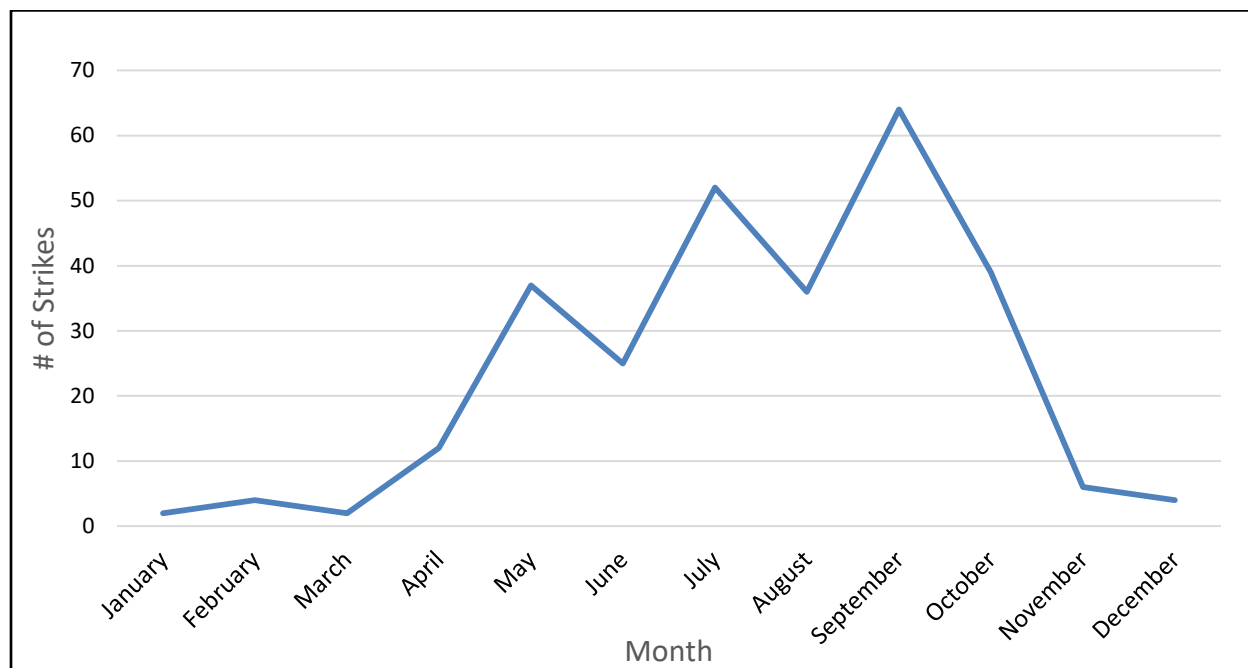


Figure 3. Summary of 2018 wildlife strikes at or below 1500ft AGL by month at ORD.

Overall, the total number of strikes in 2018 at or below 1500ft AGL was 4% above ORD's previous five year average of 271, while the number of damaging strikes occurring at or below 1500ft AGL was 12% above ORD's five year average of 7. Strikes that occurred above 1500ft AGL were not used in these calculations due to the fact they likely occurred outside the airports sphere of influence. In 2018, only 3% of bird strikes at or below 1500ft AGL at ORD resulted in damage. This year columbids were the most struck species guild at 29% (67) of all strikes occurring at or below 1500ft AGL. The number of columbid strikes almost doubled between 2017 (38) and 2018 (67). This increase is likely due to large patches of sunflowers in construction areas where the mowers could not reach. The number of raptors struck in 2018 was 32% (30) lower than the five year average (44) (Figure 6). Raptors accounted for 25 % of damaging strikes. Aerial foragers, blackbirds, grassland, reptile, unknown, wading, and woodland all had higher strike numbers in 2018 compared to 2017, while gulls/terns, mammals, shorebirds, and waterfowl showed a decrease in 2018. With raptors representing one quarter of damaging strikes in 2018, WS will continue to focus on this guild while conducting wildlife management on the airfield.

In 2018, the number of strike reports at or below 1500ft AGL that did not identify a species increased from 7% (18) in 2017 to 13% (36) and 25% of damaging strikes reported at or below 1500ft AGL did not have a species identified (Figure 5). In 2018, the number of damaging strikes without a species identified was 11% (2) above the five year average (1.0). Proper species identification on wildlife strike reports entered into the national database is of paramount importance as it helps wildlife managers fine tune management strategies to the species causing increased strike threats at the airport. USDA-WS will continue to focus on educating airport personnel, including operations and airlines employees, on the importance of strike reporting and the identification of wildlife involved.

Date	Species	Guild	RWY	Cost	Notes
4/2/2018	Red-tailed Hawk	Raptor	10L/28R	Unknown	Damage to #1 engine. Ingestion outer part of engine, damaged/bent a few fins.
7/14/2018	European Starling	Blackbird	4R/22L	Time	Plane came back but no damage
7/25/2018	Barn Swallow	Aerial Forager	10L/28R	500	
10/15/2018	Ovenbird	Woodland	9L/27R	Time	0.5 Hours out of service
10/17/2018	Red-tailed Hawk	Raptor	9R/27L	Unknown	Taken out of service
10/20/2018	Canada Goose	Waterfowl	9L/27R	Unknown	Wing and rotor damaged
9/19/2018	UNK	UNK	10R/28L	Time	0.5 Hours out of service
9/21/2018	UNK	UNK	9R/27L	Time	1 Hour

Table 1. Damaging strikes at or below 1500ft AGL at ORD in 2018.

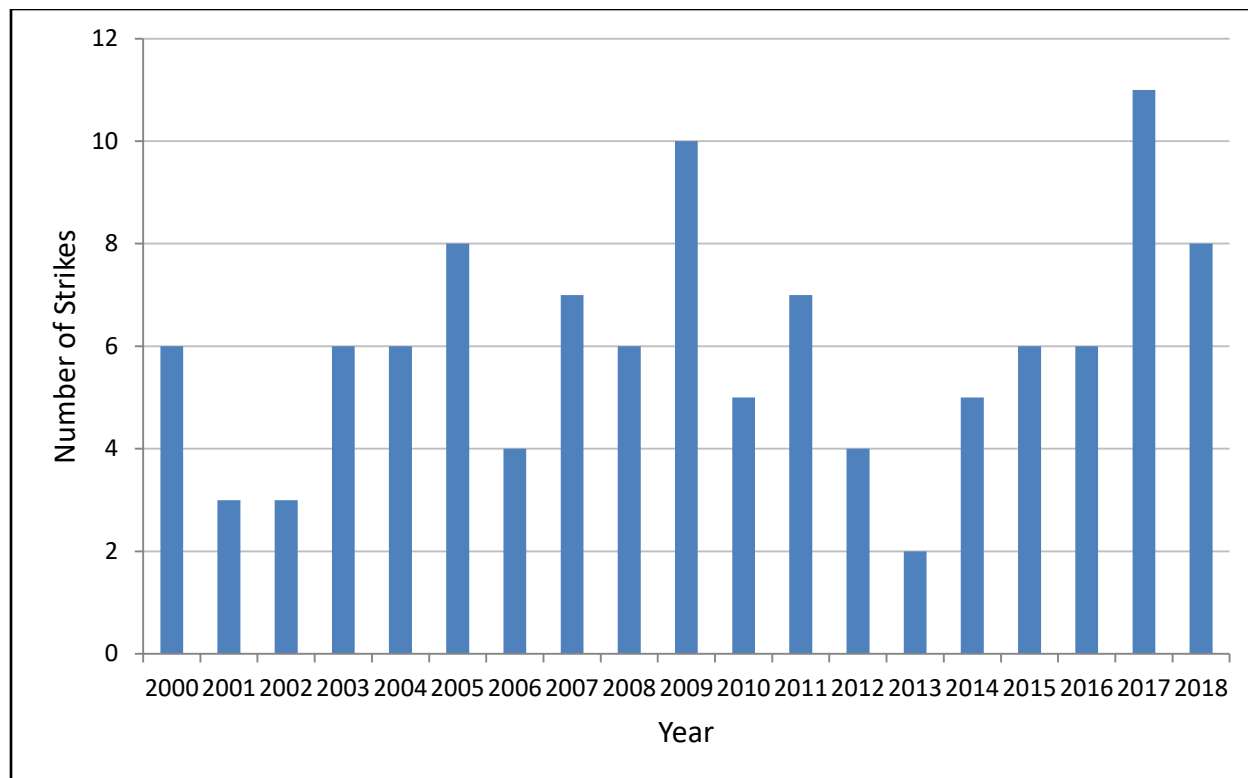


Figure 4. Damaging Strikes at or below 1500ft AGL at ORD, 2000-2018.

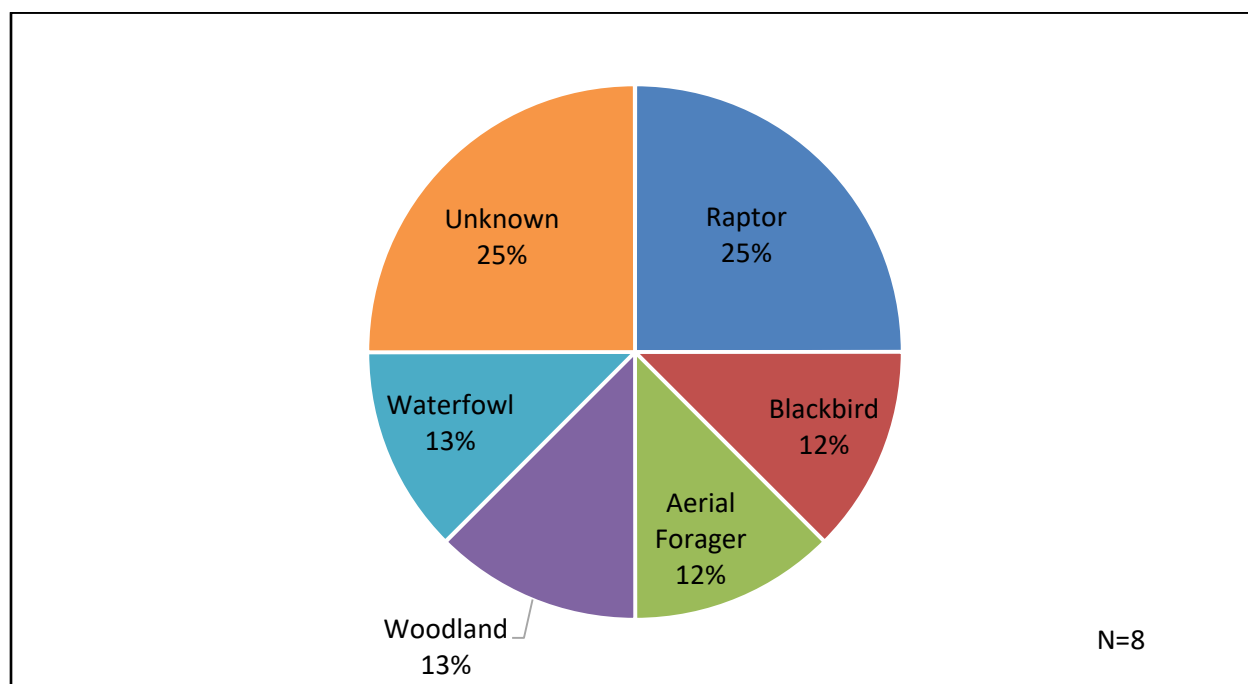


Figure 5. Species guilds involved in damaging strikes at or below 1500ft AGL at ORD in 2018.

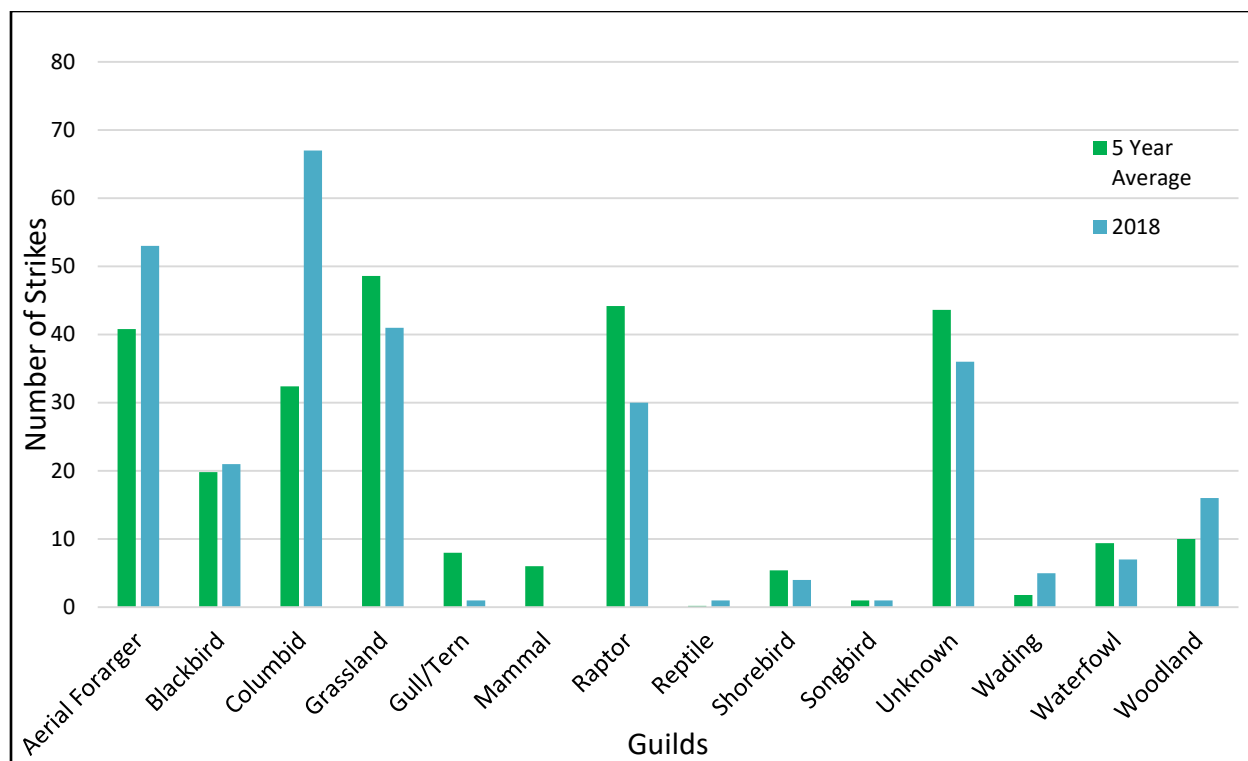


Figure 6. The 2018 ORD Wildlife strikes by guild compared to the five year average.

To better understand which runways have the highest rates of wildlife strikes, USDA-WS calculated the wildlife strike rate at or below 1500ft AGL per 10,000 movements by runway (Figure 7). In 2018, runway 4L/22R had the highest strike rate at 32.9 strikes per 10,000 movements followed by 10R/28L with 7.5 strikes per 10,000 movements (Figure 7). Runway 4L/22R was 12.6 strikes above the five-year average (Figure 7). Runway 4L/22R only had 6 strikes reported all year, but it also had very few movements compared with other runways, resulting in a high strike rate. The most frequently used runway 10L/28R had the lowest strike rate at 1.3, which was lower than 2017's rate of 1.4 (Figure 7). Runway 10L/28R's strike rate was equal to the five year average of 1.3 (Figure 7). All other runways had strike rates ranging from 2.1-6.4 (Figure 7). Of the runways open all year, 10C/28C showed the biggest decrease in strike rate, from 4 in 2017 to 2.1 strikes per 10,000 movements in 2018. Runway 4L/22R showed the largest increase in strike rate from 7.5 in 2017 to 32.9 in 2018 (Figure 7). This information will help USDA-WS determine where to focus future management efforts.

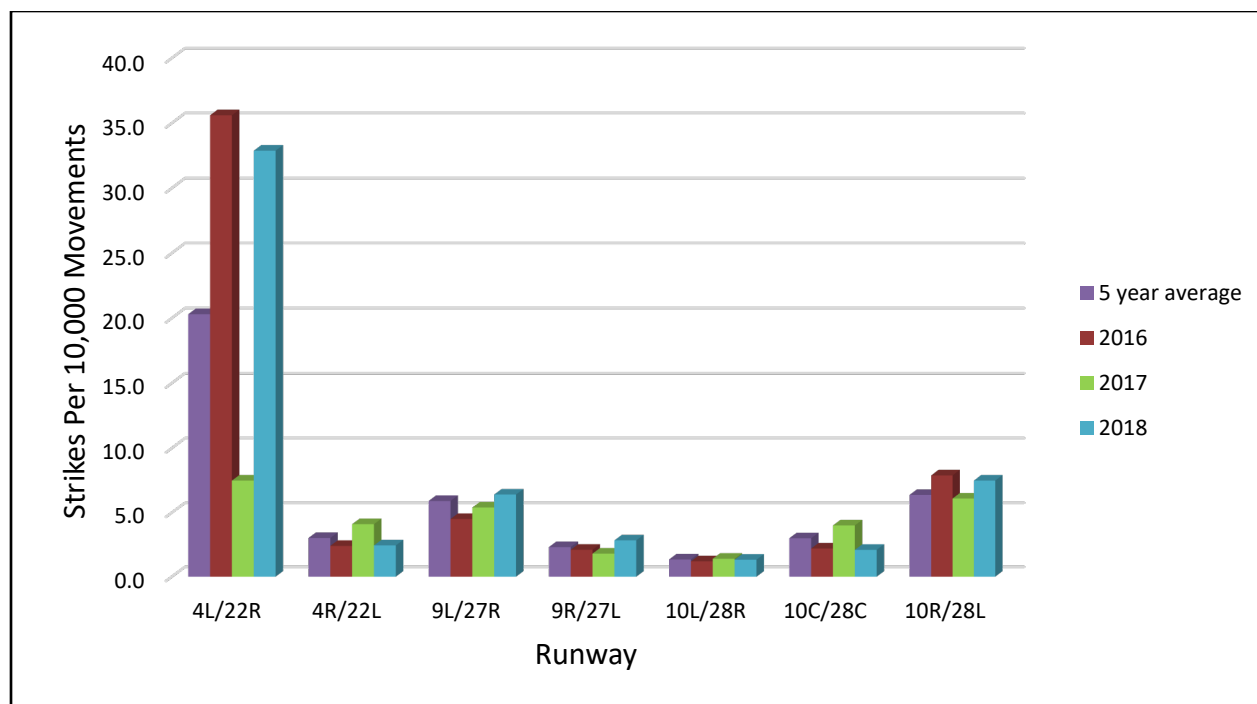


Figure 7. Runway wildlife strike rate per 10,000 movements for strikes at or below 1500ft AGL at ORD five year average and 2016-2018.

Wildlife Hazard Management

During 2018, various wildlife species, considered a threat to human and aircraft safety, were dispersed or removed from ORD by USDA-WS personnel (Appendix A). Habitat modification, wildlife exclusion, repellents, harassment techniques, and wildlife removal are all wildlife hazard management techniques used by USDA-WS personnel at ORD. USDA-WS routinely monitors the AOA, city owned property, and other properties surrounding ORD for wildlife activity. When hazardous wildlife are found, wildlife mitigation actions are taken quickly to address the hazard. In most situations, the first line of action for hazardous wildlife is harassment, typically through the use of pyrotechnics. Utilizing integrated wildlife damage management techniques, USDA-WS uses lethal removal of wildlife to reinforce hazing and harassment efforts, and reduce overall populations of hazardous species on the airfield. Wildlife removal programs at ORD are only implemented by highly trained and skilled USDA-WS personnel.

With raptors continuing to be one of the most commonly struck and damaging bird guilds, USDA-WS continued its extensive trapping efforts. In 2018, 93 raptors were trapped and translocated from the airfield (Appendix A). Of the 93 raptors that were translocated, 33 were Snowy Owls. USDA-WS is continuing to research the effects of translocation distance on return

rates of red-tailed hawks to the airport, as well as examining movement patterns of red-tailed hawks on and around ORD, both onsite and after relocation, using telemetry transmitters. Knowledge gained from this research will be used to enhance the current raptor management program with the ultimate goal of reducing the number of aircraft strikes involving raptors. To address the concern of raptor strikes in 2019, USDA-WS will continue its trapping efforts and research on raptor behavior, and investigate new ideas to make ORD less attractive to raptors, including the continued use of zinc-phosphide to reduce small mammals.

USDA-WS works proactively with CDA and O'Hare Modernization Program (OMP) personnel to address planning issues to prevent conflicts with wildlife. USDA-WS has worked with OMP to review design changes to mitigate potential conflicts of engineering and landscape designs created for the airport modernization program, OMP has consulted with USDA-WS to create a list of approved and unacceptable plants for landscaping and green roofs. USDA-WS has reviewed plant species proposed by contractors and interested parties which are then added to the list, if approved. The additional plant species create more comprehensive list that provides increased flexibility to contractors, while still proactively preventing wildlife attractants.

Wildlife Hazard Surveys

Wildlife monitoring is a major component of management USDA-WS uses to evaluate the effectiveness of habitat management and wildlife control activities conducted at ORD. In 2008, USDA-WS started a bi-monthly point count survey of 15 locations around the airport. In 2016, USDA-WS expanded the bimonthly surveys to weekly point count surveys. The 15 survey locations were selected due to their potential to attract wildlife as well as areas where future management may be required. Data gathered from the point count survey help USDA-WS monitor species-specific population trends and can potentially quantify the efficacy of prescribed habitat management activities. In 2007, USDA-WS began a bi-annual small mammal monitoring program to observe fluctuations in prey species across the AOA. These data allow USDA-WS to track fluctuations in rodent populations and identify when management action may be most beneficial. This information provides a scientific basis for management practices and a basis for review of ORD's WHMP.

Avian Survey

The avian point count survey, which started in 2008, was suspended in 2014 due to the amount of construction on the AOA and the effect it had on multiple survey locations. USDA-WS resumed the survey in 2016 once there was a slowdown in construction. In 2018, USDA-WS performed a total of 48 daytime wildlife surveys observing a total of 8,538 birds in 1051 observations (Figure 8).

Frequency of observations is a count or number of times that a species or guild is observed on the airfield over the course of the year. Abundance is the total number of individuals within a particular guild or species observed. Analyzing frequency of observations allow managers to understand what species are most often present on the airfield over the course of the year, while abundance indicates which species are present in the highest numbers. Generally, the most frequently observed species are those that are present on the airport year-round (e.g. red-tailed hawks observed during each survey collected over the course of a year), while the most abundant often occur as large flocks during the migration periods in the spring and fall (e.g. flock of 300 geese passing through the area during a migration pulse). The two most frequently observed bird guilds were blackbirds (180 observations/1,051 total observations) and grassland (169 observations/1,051 total observations). The primary species of concern in each of these two guilds were as follows; Blackbirds: European starlings with 85 observations/180 total blackbirds observations (47%) and Grassland: killdeer with 144 observations/169 total grassland observations (85%). The most abundant guild of birds observed on the airfield throughout the year were as follows; blackbirds: 6,282 of the total 8,538 birds, waterfowl: 687 of the total 8,538 birds, and columbids: 425 of the total 8,538 birds. The primary species of concern in each of these guilds were as follows; Blackbirds: European starlings 4,090 of the 6,282 total blackbirds observed (65%), waterfowl: Canada geese, 378 of the 687 total waterfowl observed (55%), and columbids: mourning doves, 347 of the 425 total columbids observed (81%). Analyzing both of these metrics allows the airport wildlife manager to better tailor the airports Wildlife Hazard Management Plan to address species of concern present year-round as well as species that generally occur in migration pulses. A summary table of all wildlife observations by guild/species can be found in Appendix B.

The most birds were observed at survey station 9, with a majority of the observations at that station consisting of blackbirds (92%). Wildlife were observed and recorded across 10

behaviors and 14 habitat types. Flying local (26.7%) was the behavior most frequently observed, while short grass (30%) was the most frequently used habitat type. A summary table of all the observed behaviors and habitat types can be found in Appendix B. Maps illustrating survey observations for all birds and for blackbirds and grassland birds only can be found in Appendix C.

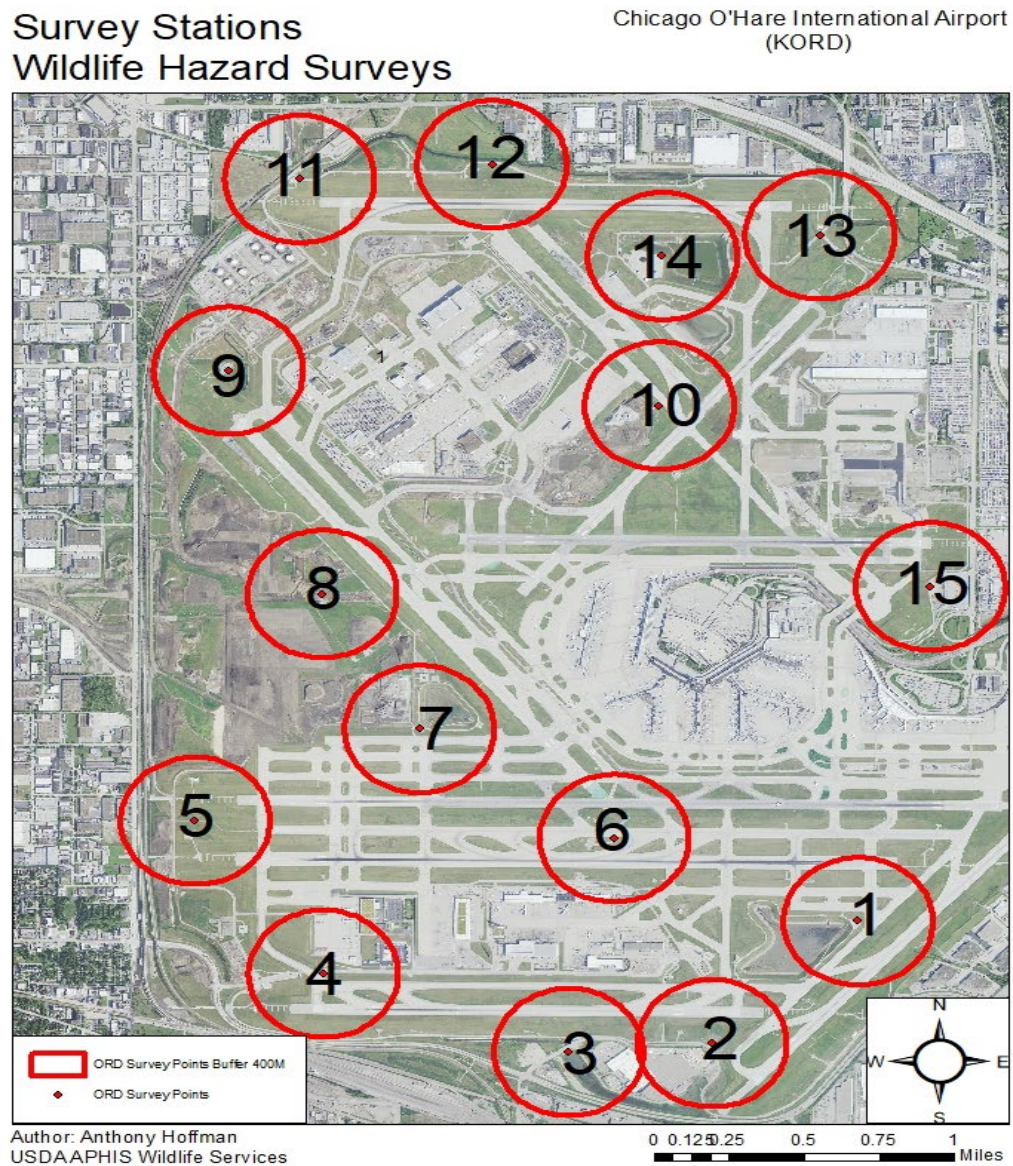


Figure 8. Survey stations used for wildlife hazard surveys March 2016-December 2018.

Night Surveys

Nocturnal mammal surveys were used to observe mammal activity on the airfield by using a thermal camera. These surveys began no earlier than an hour after sunset, and lasted for about two hours. Eight nocturnal mammal surveys were conducted throughout the year. A total of 59 mammals were spotted on the airfield. The most common species observed was cottontail rabbits with 33 observations. Other species observed were opossum, raccoon, and striped skunk. A summary table of all wildlife observations by species can be found in Appendix B.

Mammal Surveys

Small mammal transect surveys are aimed at monitoring the prey base available to predators (i.e. raptors and carnivores). Transects with small rodent snap traps were placed in four different locations throughout the AOA. Each transect was placed on a different portion of the airfield and contained 50 traps. Traps were placed at 10 meter intervals in a straight line or two sets of parallel transects placed 10 meters apart and consisting of 25 traps in each transect. Traps were set during daylight hours and checked once every 24 hours for two consecutive days. Relative abundance for all species of small mammals is provided by calculating number of animals caught per 100 adjusted trap nights (ATN). Adjusted trap nights are calculated by taking the total trap nights and subtracting 0.5 times the number of traps sprung. The small mammal surveys are conducted in the spring and fall of each year. In the fall of 2013, WS began treating parts of the AOA with a rodenticide treatment (Zinc phosphate) to reduce the small mammal populations. Since the fall of 2013, approximately one third of the AOA is treated with rodenticide yearly. Since beginning the rodenticide treatments, we have seen a reduction in the overall small mammal presence on the AOA (Figure 9).

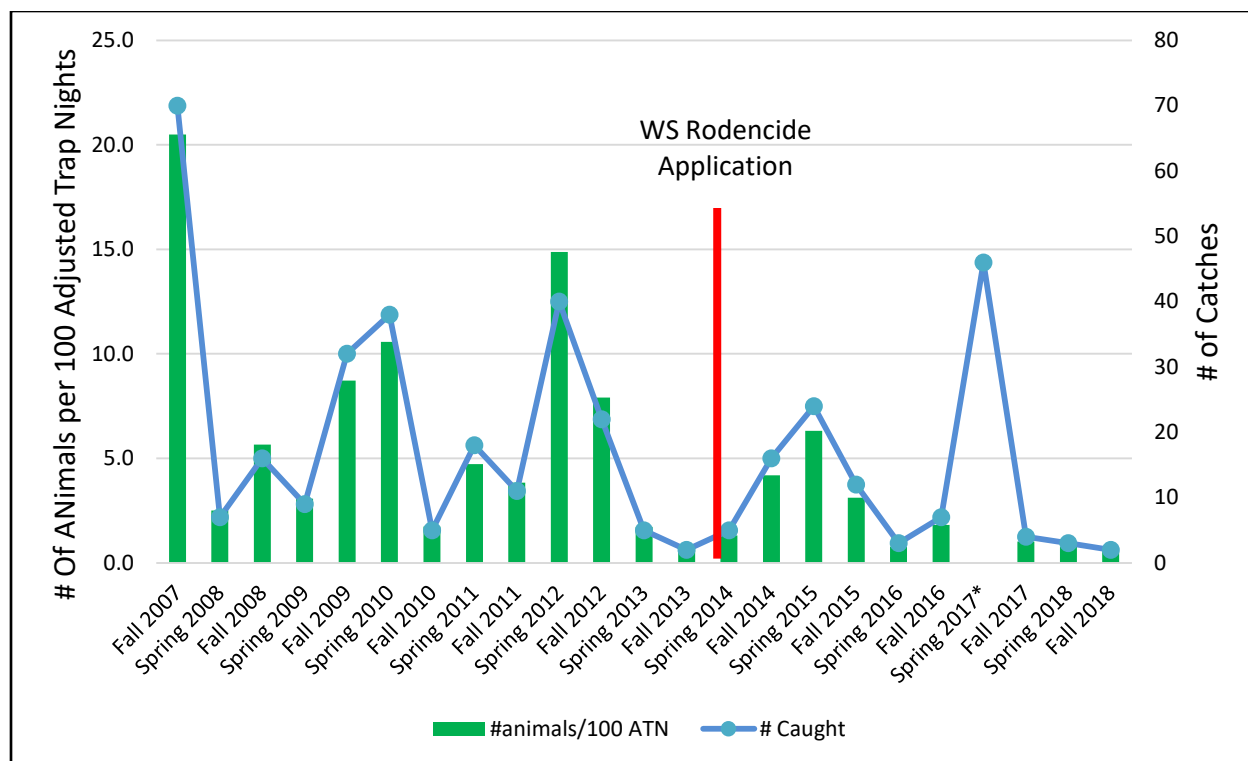


Figure 9. Number of animals capture per 100 adjusted trap nights and number of catches for small mammal transect surveys conducted at ORD during 2007 through 2018.

*No ATN data available for spring 2017

Off-Site Wildlife Hazard Management

Wildlife use of areas surrounding ORD can pose a hazard to aviation. Consequently, FAA AC 150/5200-33B recommends considering land-use practices within a distance of 5 statute miles between the farthest edges of the airport's AOA and wildlife attractants if the attractants could cause hazardous wildlife movement through approach or departure airspace. During 2018, as part of wildlife hazard management at ORD, USDA-WS personnel continued to conduct wildlife hazard management activities (Appendix D) at locations adjacent to the AOA identified as potential wildlife attractants.

In 2007, a waste transfer station adjacent to ORD signed an agreement with USDA-WS to monitor and mitigate wildlife at their location. In 2018, USDA-WS continued work to reduce the number of European starlings, house sparrows and gulls at the waste transfer station. Techniques used by USDA-WS to address wildlife hazards to ORD include the use of decoy traps for starlings and sparrows, harassment through the use of pyrotechnics and propane cannons and lethal reinforcement of harassment techniques through the use of pneumatic pellet rifles.

In early 2013, USDA-WS was contacted by the FAA to review plans for the Elgin O'Hare Tollway expansion project to be completed on the west side of ORD. With substantial construction planned within 5 miles of ORD's boundaries, USDA-WS is involved in reviewing all construction plans and provide recommendation to help mitigate wildlife attractants within the scope of the project. USDA-WS' reviews have focused on landscaping, seeding specifications and water detention structures. As a result of these efforts, USDA-WS is now reviewing Illinois Department of Transportation constructions plans that are in close proximity to ORD.

In May 2017, to address growing concerns about nearby roosts, USDA-WS obtained permission to trap feral pigeons at a warehouse south of the AOA and at store west of the AOA. USDA-WS removed 97 pigeons from these sites in 2018 (Appendix D) and continue to trap and monitor local flocks in an effort to reduce potential strike hazards.

Starting in 2015, in collaboration with the Chicago Park District, USDA-WS has conducted annual aerial surveys of the areas surrounding ORD searching for gull nesting colonies on building rooftops. One building, located 3 miles southeast of ORD, was discovered to have a large ring-billed gull nesting colony on its roof. USDA-WS gained permission to access the building and personnel oiled and removed eggs and nests (Appendix D) from the rooftop in hopes of deterring future nesting. USDA-WS personnel conducted spot checks by vehicle in areas where nests have been found in previous years or where gulls are consistently observed in significant numbers. In 2017, USDA-WS personnel banded 23 ring-billed gulls at two off-site locations to determine if the birds nesting at nearby gull colonies were using ORD as a foraging area. Within days, several of the banded gulls arrived at the airport, confirming that nearby colonies actively use the AOA. In 2018, the previous sites with large gull colonies that were treated by WS have dramatically decreased in size. In addition to gull nests, Canada goose nests at a nearby office park pond were also oiled to prevent the eggs from hatching as part of a long term population management strategy (Appendix D).

Training

Wildlife Hazard Management Training is mandated by FAA AC 150/5200-36A for all airport personnel involved in implementing a FAA approved WHMP. The training included a history of wildlife hazards to aviation, review of significant wildlife strikes, along with annual and seasonal trends of wildlife use at ORD. The training reviewed ORD's wildlife hazard

assessment and management plan, habitat modification projects, wildlife identification and hazard response protocols, the proper and safe use of pyrotechnics, and proper wildlife strike collection and reporting. An overview of the research WS conducts at ORD was included.

USDA-WS staff provided Wildlife Hazard Management Training for 43 airport operations staff from May 15 – May 17 and May 23. An additional Wildlife Hazard Management Training was conducted on June 8, June 26, and September 13 for three new airport operations staff, for a total of 46 airport operations staff that received training in 2018.

Research

USDA-WS is continually looking to improve the effectiveness and efficiency of techniques used in our integrated wildlife management program. One way USDA-WS strives to achieve this goal is to conduct and participate in research projects with USDA-WS' National Wildlife Research Center (NWRC). The mission of NWRC is to apply scientific expertise to resolve human-wildlife conflicts, while maintaining the quality of the environment shared with wildlife. Participation in these research projects serves to not only strengthen the USDA-WS program at ORD, but can promote ORD's progressive and comprehensive wildlife management program to the aviation community as a whole.

Avian Radar

USDA-WS worked in conjunction with the University of Illinois' Center of Excellence for Airport Technology (CEAT) and NWRC to conduct an avian radar research project at ORD. Due to collisions between birds and aircraft, the FAA had granted funding to Illinois USDA-WS to participate in the research. In 2009, two radar units were deployed at 21 locations on the airfield to identify the most suitable sites for radar deployment. One site was selected for permanent installation and a FAA 7460 permit was approved. Radar systems were deployed and continuous data collection was collected until they were removed in 2016. Current efforts to assess and validate radar performance include analyzing data from opportunistic observations of various guilds around the airfield made by WS personnel, and red-tailed hawks fitted with satellite transmitters. The intent of this research was to evaluate the ability of avian radars to detect an array of bird species and ultimately evaluate the efficacy of this tool to assist wildlife operations personnel in reducing bird-aircraft collisions. The results of this study were published in the Wildlife Society Bulletin on September 2018. The research found that the avian radar on

the airfield detected birds at a lower rate than compared to other studies (Phillips et al. 2018). The research concluded that many factors influence the efficiency of the radar sensors and further research, to fully understand these factors, is recommended. In addition, the results from this objective may be presented at professional conferences in the future.

Red-tailed Hawk Movement

In 2018, USDA-WS completed the ninth year of a multi-faceted research program studying red-tailed hawks at ORD. Objective one of the study was to investigate habitat use of adult red-tailed hawks on ORD's AOA by attaching a total of 21 satellite transmitters on hawks captured at ORD (6 in 2010, 12 in 2011, and 3 in 2012) (Figure 10). USDA-WS and NWRC are currently compiling and analyzing the location data from these hawks and plan to have a final report completed in FY 2019.

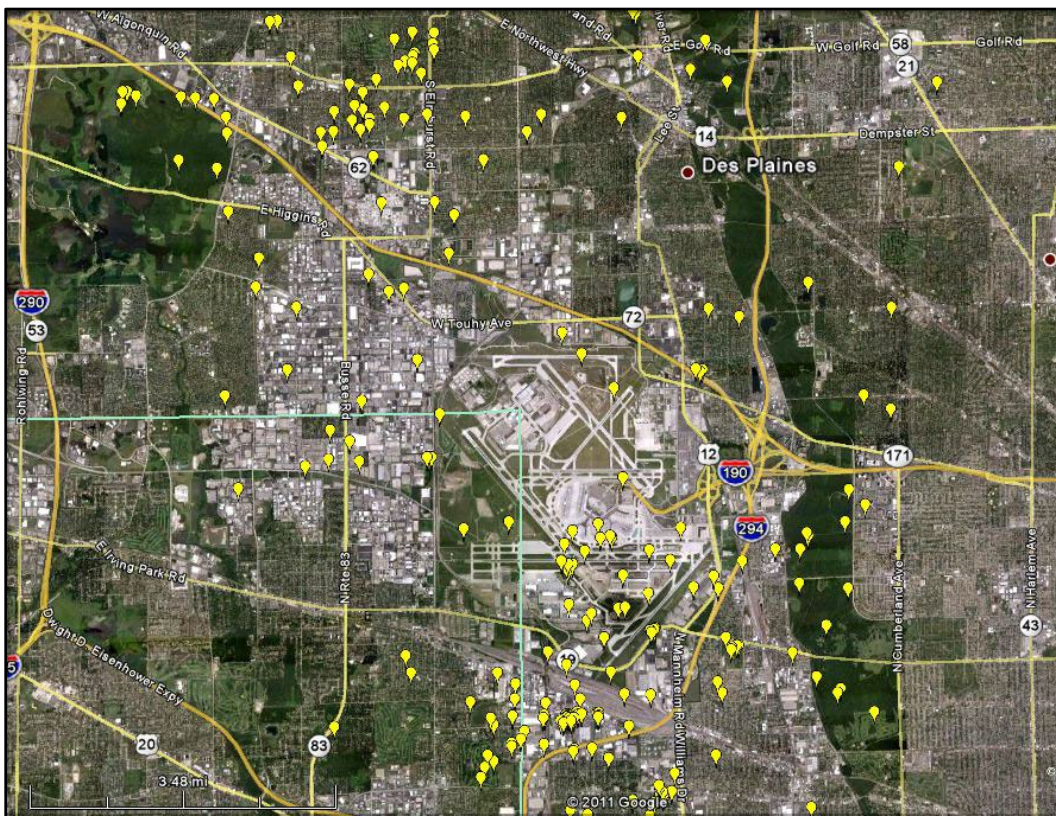


Figure 10. Red-tailed hawk locations around ORD August-December 2010.

The second objective of the study is to examine variables influencing return rates of translocated red-tailed hawks. Variables considered included age, season (breeding and non-breeding), translocation distance, and trip number (individuals relocated multiple times). To

achieve this, USDA-WS attached uniquely numbered patagial tags to the birds from August 2010 through July 2013. Hawks were released at sites 50, 75, 100 and 125 miles west of ORD. In 2010, 125 patagial tags were put on translocated hawks, 185 in 2011 and 240 in 2012. USDA-WS recorded all observations of tagged hawks that returned to ORD. Data analysis showed that adult birds, individuals translocated multiple times, or individuals translocated during the breeding season, all had a greater likelihood of returning to ORD; translocated distance had no impact on return rates. Data analysis is complete for this objective of the research project and USDA-WS and NWRC had a research article accepted in *The Journal of Wildlife Management* was published in 2017 (Pullins et al. 2017). In addition, the results from the objective have been presented at professional conferences.

Based on these findings, changes to the management of red-tailed hawks at ORD were implemented in June 2013. Changes include, translocating only hatch year birds, and all birds are only being translocated 75 miles west of the airfield. The idea of this objective is to compare the overall return rate to ORD of red-tailed hawks after translocation with the first stage of the study to see if the change in management strategy changes the number of birds that return. Given the change in management, 148 hawks were translocated in 2013, 82 in 2014, and 105 in 2015. A total of 897 red-tailed hawks have now been translocated since the inception of the study. Data analysis is ongoing for this objective of the research project and USDA-WS and NWRC hope to have a report on this objective finished in 2018. In addition, the results from this objective have been presented at professional conferences.

Given the results from the patagial tag study, USDA-WS initiated a third objective to monitor movement patterns of red-tailed hawks after being translocated from ORD. USDA-WS and NWRC were able to obtain the majority of the funding needed for this project from the FAA's Tech Center. This objective entails attaching satellite transmitters on three age classes of hawks throughout the year, relocating them 75 miles west of the airfield, and monitoring their movement patterns after being translocated. USDA-WS was able to obtain 24 satellite transmitters that were deployed in 2014 and 2015, with 6 transmitters on after-second-year birds, 9 on second-year birds, and 9 on hatch-year birds. Of the 24 transmitters, 4 were recovered by USDA-WS from birds that returned to ORD and were subsequently redeployed on after-second-year birds in 2015. The potential information gained from this study is to learn the birds' response to being translocated from ORD and to further justify USDA – WS' change in

management strategy of red-tailed hawks. The data are still being collected for this objective with analysis planning to begin in 2019.

Red-tailed Hawk Morphology

Since the inception of our red-tailed hawk translocation studies, USDA-WS has continued to explore other variables involved with the return rates of red-tailed hawks. Determining the sex of individuals in a wild population is valuable information for making management decisions and for studying a variety of topics including, population dynamics, habitat use, and mating systems. One variable which USDA-WS was unable to include in the red-tailed hawk movement study was the sex of translocated or individuals fitted with transmitters. It is possible that sex may influence habitat use on airports and translocated return rates. Currently it is difficult to determine the sex red-tailed hawks through in-hand methods; males and females do not differ in plumage and often overlap in size. Researchers have been successful in creating functions and flowcharts to accurately sex certain raptor species through morphological characteristics but information for accurately sexing red-tailed hawks is lacking. In addition, these studies lack large sample sizes, and highlight the importance of creating region-specific models (Donahue and Duffy 2006, Pitzer et al. 2008).

Beginning in 2014, USDA-WS at ORD began a sex determination study of red-tailed hawks collected from bird strikes, and our ongoing wildlife management at ORD. The goal of the study is to collect gender and morphological data from a total of 600 birds, spread across three different age classes, in order to build accurate models for in-hand sex determination of red-tailed hawks. Necropsies are performed on collected birds to accurately determine sex, and several morphological measurements are recorded, including: body mass, wing chord length, tail length, tarsus length, tarsus depth, hallux length, and head length. Currently, USDA-WS has collected data for nearly 600 birds. This study will provide valuable methodology for future raptor studies in the Upper Midwest and improve USDA-WS' research here at ORD.

Grazing Study

Vegetation management at ORD is a top priority for USDA-WS. Poorly managed vegetation can become an attractant by providing food and cover to various wildlife species. Maintaining ORD's 7,000+ acres through mowing and tree removal represents a significant cost

through personnel, equipment, and carbon emissions. In 2013, as part of CDA's Going Green Initiative, a herd of goats, sheep, and burros were brought in to graze in areas difficult to manage with traditional methods. Prior to the grazers arriving, CDA requested USDA-WS to help identify problem areas where grazing could be utilized to help control vegetation. An area just north of the AOA was selected due to its close proximity to an active runway, 9L-27R, and the difficulty managing vegetation along the banks of Willow Higgins Creek. To quantify the impacts of the herd, 4 grazing plots were established. In each plot, USDA-WS used fenced enclosures to compare vegetation height and species composition within enclosures to vegetation height and species composition in areas outside of the enclosures, which were open to grazing. Weekly avian point count surveys were conducted in each plot to look at the impacts of grazing animals on the attractiveness of birds to the area. USDA-WS was on hold with data collection due to the lapse in grazing coverage during 2016. In 2017, a new herdsman returned with sheep and goats and appeared to have great success with the grazing schedule they put in place. In 2018 USDA-WS chose to cancel data collection due to inconsistent variables with the grazing schedules. USDA-WS will determine if a final report is practical with the amount of data collected. If completed, USDA-WS and NWRC will determine the most appropriate venue to present the information, whether through a published manuscript, professional presentation or a combination of both.

American Kestrel Translocation Study

After the initiation of the red-tailed hawk translocation study, there was a nationwide effort to gather information on other raptors such as American kestrels. Since live capture and translocation are methods commonly used to reduce hazards posed to aircraft, it is essential to understand the efficacy of this management method. The objectives of the study are to: (1) determine if or when translocated American kestrels return to the airfield environment from which they were removed and (2) to determine if the return rate of translocated American kestrels is influenced by translocation distance, sex, age, or biological period of translocation (e.g., wintering, migration, breeding). To achieve this, USDA-WS began attaching a metal USGS band and a second plastic colored band to the bird's legs. The colored band has a unique identifier specific to Illinois airports. Kestrels are released at sites 15, 30, 45, and 60 miles west of ORD. In 2018, 40 banded kestrels were released at all four sites. USDA-WS recorded all

observations of tagged kestrels that returned to ORD. After the study is completed, data will be analyzed to determine the optimal location to reduce return rates of kestrels to airfields.

Red-tailed Hawk Trapping Injury Study

With live capture and translocation methods being the standard practice to support the reduction of hazards posed to aircraft by wildlife, it is essential to understand the efficacy of this management method. This can be accomplished by evaluating how humane trap types can be to the wildlife being captured. USDA-WS will collect legs from birds used in our hawk morphology study that were captured using bal-chatri, pole, and Swedish gosh-hawk traps. Data similar to that from the RTHA morphology study will be collected including date, bird age, who captured, and how captured. It will also be recorded if any injuries were sustained. During dissections, USDA-WS is collecting legs to send to a veterinarian for analysis using x-ray.

Snowy Owl Auxiliary Marking Techniques Study

Due to the increased presence of snowy owls around airports in 2017, USDA-WS, in coordination with NWRC, launched a study to explore auxiliary marking techniques and observe movements and return rates of the owls captured and translocated from ORD. The initial purpose of the study is to discover effective and humane auxiliary marking techniques for snowy owls. Birds in the study will be marked in one of three ways: just a federal leg band; a leg band and marking with nontoxic paint; or a leg band and two patagial wing tags (white with a black letter and number). Over three years, any returning owls that are recaptured will undergo a physical examination to determine any impact of the markings. Another perk of marking these birds is the ability to study movements and patterns of the marked snowy owls. This study will provide valuable information to assist biologists here at ORD as well as across the northern states who work with snowy owls. In 2018, 33 snowy owls were marked and relocated as part of this study.

2018 Wildlife Hazard Accomplishments

Throughout 2018, USDA-WS identified various areas attractive to hazardous wildlife requiring assistance from airport personnel to help reduce the presence of wildlife. USDA-WS gave recommendations to ORD personnel for mitigating these problem areas, and in turn, the following projects were accomplished through the assistance of airport personnel or contracted labor.

1. **Install wildlife deterrent fence and concrete pads** – Wildlife deterrent fence skirt was installed along the new west perimeter fence and along the old 15 approach. Concrete pads were installed under the new gates and gates along the old 15 approach preventing mammals from digging under the fence to access the AOA.
2. **Old west woods** – This area is north of the runway 10L approach, between the western haul road and FAA road. In years past, this area was neglected throughout the majority of the growing season and vegetation was allowed to grow up to 6 feet in height in some areas. Now this area is the deicing pad and has very little vegetation. The berms located in Old west woods are now fenced off and outside the AOA. The fence along the berms has a wildlife deterrent skirting and concrete pads along the gates to prevent mammals from digging under them and accessing the AOA.
3. **Application of Zinc Phosphide on the airfield** – As part of USDA-WS' continuing effort to incorporate new management practices on the airfield, USDA-WS, with CDA's assistance, treated portions of the AOA with Zinc Phosphide. Zinc Phosphide is a rodenticide that reduces the population of mice and voles, which are a primary food source for many of the raptors and coyotes found at ORD. In 2018, USDA-WS treated next to two primary runways 10C-28C and 10R-28L, south basin area, and several associated taxiways. Within weeks, USDA-WS observed fewer raptors using the treated areas.
4. **Built a service road around the 9L approach** – In order to effectively and efficiently patrol the AOA, accessibility is a key factor. After the completion of runway 9L-27R, USDA-WS was granted permission by CDA to drive along the perimeter fence between the 9L approach and ARFF #4, similar to airport police and operations personnel. Given the amount of traffic in the area, certain areas were starting to develop ruts, that hold water and the compaction of the ground was preventing grass from growing. The new service road will help to prevent the development of ruts and compacted areas that prevent vegetation growth. The road will enable USDA-WS to monitor the area for potentially hazardous wildlife.

Wildlife Attractant Observations and Recommended Mitigation

Throughout the year, USDA-WS observed areas and attractants which increased the presence of some potentially hazardous wildlife species. The following recommendations are intended to reduce and prevent airfield attractiveness to those hazardous species. It should be understood these areas may continue to attract those same species or other species following implementation of recommended management. USDA-WS will continue to monitor the airfield for wildlife attractants and make recommendations based on sound scientific practices to reduce hazards. In addition, USDA-WS will continue to implement an Integrated Wildlife Hazard Management approach to reduce wildlife on and around ORD.

1. **Keeping basins dry (High Priority)** – The presence of water on the AOA is attractive to wildlife, specifically waterfowl and gull species. USDA-WS has worked closely with CDA to ensure water is pumped out of the basins as quickly as possible; however, there have been occasions when water has remained in the basins for extended periods of time between rain events. Therefore, USDA-WS recommends that it is understood by all parties involved that the water needs to be pumped out of the basins in as timely a manner as possible.



2. **Mowing (High Priority)** – Habitat management is a critical element in the Wildlife Hazard Management Program (WHMP) at ORD, and studies have suggested grass be mowed regularly and maintained at a height between 5 – 8 inches. In previous years, grassland birds and aerial foragers were the two most frequently struck species at ORD, showing the importance of maintaining the grass at the recommended height. The year there was a large increase in mourning dove strikes. The mourning doves are attracted to tall grass and sunflowers, again showing the importance of maintaining the vegetation at the recommended height. While weather and airfield conditions may limit mowing opportunities, it is important that all grass be maintained in accordance with the WHMP, which states that grass should be maintained at approximately 8 inches or less in height. In general, CDA is able to maintain the grass areas at the recommended height. However in 2018, numerous areas on the AOA went un-mowed until the middle of the growing season, leaving those areas with tall vegetation which was out of compliance with the WHMP. Therefore, USDA-WS recommends all areas continue to be maintained as specified in the WHMP and recommends including these specific areas to be maintained as per the WHMP:



- a. Berms** – CDA was able to mow all of the berms at least once in 2018 and USDA-WS continues to recommend berms be mowed multiple times in 2019. Similar to the old west woods area described above, if not mowed, these areas are attractive to large flocks of birds and provide cover for coyotes. Over time, trees will begin to grow on the sides of the berms, providing perch sites for raptors and nesting potential for many bird species. Increased wildlife attractiveness was observed in 2009 around the 15 berm and the north slope of 10L Berm, with large flocks of blackbirds and numerous coyotes using these areas. Following mowing of the berms in 2010, USDA-WS observed a decrease in wildlife use of these areas. Vegetation near the edges can make it hard for both USDA-WS and CDA Operations to notice wildlife hiding on and around the berms.
 - b. Basins** – CDA was able to mow all basins multiple times in 2018, and it is a continuing recommendation of USDA-WS that basins continue to be mowed in 2019. The concern is that if these basins are not mowed, the tall grass will attract large flocks of blackbirds and provide cover for coyotes. Over time, trees will begin to grow in the basins, increasing the attractiveness to wildlife by providing perch sites for raptors and nesting potential for many bird species. Vegetation near the edges can make it hard for both USDA-WS and CDA Operations to notice wildlife hiding in and around the basins.
- 3. Install wildlife deterrent fence (High Priority)** – The O'Hare expansion project has put into their plans that a buried fence skirt will be installed on any new permanent perimeter fence associated with the expansion to prevent digging wildlife, mainly coyotes, from entering the AOA. Unfortunately, there are certain areas of the airfield, primarily the perimeter fence along 4R-22L, where a new fence will not be installed, and therefore will not have a buried skirt. In 2009, USDA-WS and CDA had plans reviewed and approved by FAA's wildlife biologist for an alternative method of installing a buried fence skirt that differs from what is recommended by FAA in Cert Alert 04-16. (See Appendix K in the WHMP). Therefore, USDA-WS recommends a buried fence skirt be installed on all existing perimeter fence where no skirt is to be installed by OMP. A caveat to this

recommendation is that CDA has introduced a plan to install a new wildlife deterrent fence on multiple portions of the airfield perimeter fence not impacted by OMP. USDA-WS' requests to be involved in the planning of the fence to be able to incorporate comments. USDA-WS recommends that APD inspects perimeter gates on a weekly basis for large gaps that can allow wildlife access to the AOA. USDA-WS recommends CDA maintain fences so holes may be easily identified and trees and vegetation will not provide food and cover to wildlife.



4. **Install concrete pads under gates (High Priority)** – As more of the perimeter fence is upgraded to include a buried fence skirt, digging mammals, especially coyotes, will look for alternative ways to access the AOA. USDA-WS has noticed locations where coyotes dug under gates in the perimeter fence that did not have concrete pads and only gravel or crushed asphalt as a base. USDA-WS recommends that any perimeter fence gates that do not have a concrete pad, have one installed.



5. **Eliminate vegetation in post office wetland and ditch (High Priority)** – In the fall of 2009 and 2010, a very large flock of European starlings (estimated 8,000 -10,000 birds) roosted in the large patch of phragmites located in the wetland northeast of the Post Office. The area has been mostly converted to grass due the construction of 10R-28L, but birds have now begun to roost in the area of the creek closer to the 4R approach. To temporarily mitigate the problem, USDA-WS employed a harassment regime to prevent the birds from roosting in the phragmites. Unfortunately, the birds returned despite harassment efforts because this area is an ideal roost site. USDA-WS recommends that the OMP plans to redesign this areas, which have been reviewed by USDA-WS, be implemented as soon as possible. Until the area can be redesigned, USDA-WS recommends that CDA removes all vegetation or sprays the area with herbicide to prevent the plants from becoming a roost site for birds.



6. **Continue and improve maintenance of cab-lot (High Priority)** – History has shown that the cab-lot is very attractive to birds, mainly European starlings and gull species. In the past, actions have been put in place to reduce garbage around the cab-lot, including removal of an open top trash dumpster, and ensuring the cab-lot gets cleaned with a sweeper at least once per shift. Bird spikes were installed on lights in the cab-lot to prevent birds from perching on these structures; however, USDA-WS has observed that some bird spikes have fallen off some of the lights. Ultimately, due to the continual presence of hazardous wildlife at the cab-lot, USDA-WS recommends this area be relocated out of the approach of any runway. In the meantime, it is important to continue cleaning the cab-lot at least once per shift, use only covered trash dumpsters at the site, and replace missing bird spikes on the lights.
7. **Continue to include WS in design and planning of ORD Expansion (High Priority)** – To help ensure wildlife attractants are not created or overlooked, USDA-WS requests continued inclusion on design/development of expansion or improvement projects at ORD. This includes plans from all airport expansion and improvement projects including, but not limited to, OMP, CARE, CIP, Tollway and AIP projects. USDA-WS involvement and input into design can potentially avoid problems in the future with wildlife and ensure the airport's compliance with AC 150/3200-33B. It is recommended that USDA-WS is involved in checking the end results before projects are released to ensure projects comply with the WHMP.

8. **Re-grade or improve flow of areas that hold water (High Priority)** – There are locations on the airfield where ponding occurs during periods of rain. These areas are potentially attractive to birds, mostly waterfowl and gull species. CDA and OMP have addressed many of these problem areas but many areas still need to be addressed. Areas where increased presence of wildlife are encountered due to temporary standing water include, but are not limited to: the southeast side of 4R-22L near Post 3 between the runway and service road, the grassy area between the ASR-9 and the RTR southwest of 15, along the service road on the northwest side of central basin, and numerous other areas that come up due to various construction projects. Each year, ducks, geese, and gulls are discovered using these areas when temporary standing water is available. Therefore, USDA-WS recommends filling and re-grading the areas described above, along with any other areas unintentionally holding water, to prevent water from pooling.





9. Remove and maintain vegetation in and around creeks and ditches (Medium Priority) –

Similar to tall grass on berms, vegetation can be attractive to wildlife if allowed to grow tall along creeks and in ditches. Tall grass on creek edges and in ditches provides cover and nesting locations for waterfowl and large wading birds, in addition to making the birds more difficult to see, limiting management options. Many of the ditches on the western portion of the airfield were cleared of vegetation in 2014 and 2015, but many other ditches still need to be cleared and maintained. Vegetation can grow and spread quickly throughout the year. As a result, USDA-WS recommends that the vegetation along creek edges and inside ditches be maintained as per the WHMP.

10. Spray a broad-leaf herbicide on all grass areas with weed problems (Medium Priority) –

CDA and OMP have incorporated a grass seed mix that contain endophyte infected grasses that are less attractive to wildlife. These grass species are not as aggressive as some historically used turf grasses when first planted and may be overtaken by weeds if not maintained or mowed on a frequent basis. In addition, top soil used in these newly seeded areas may still contain seeds from undesired weedy species that will begin to grow along with the planted grass seed unless sprayed with herbicide before seeding. Since these areas were not sprayed with herbicide before seeding, the weeds have started to overtake the grass species. USDA-WS recommends that CDA acquires commercially available herbicide to spray on grass that only kills broadleaf plants (i.e. weeds). In 2016,

USDA-WS sprayed test plots on sections of the AOA and provided CDA with a list of recommended herbicides. If needed, USDA-WS can provide CDA with best management practices to deliver desirable results to effectively control weeds, providing an optimal environment for newly planted grass.



- 11. Maintain or re-design sweeper dump (Low Priority)** – In the spring of 2017, the sweeper dump was relocated about 1/3rd of a mile northwest of its previous location and just south of the RWY 9L approach. This facility attracts wildlife by providing a food source for various species of birds and mammals. USDA-WS has routinely observed European starlings, gulls, rats, raccoons, skunks, mice, and squirrels using the area. Animals have access to an easily obtainable food source by way of garbage piled on the ground and in an open top garbage container. USDA-WS recommends the sweeper dump be re-designed to limit wildlife access by making it fully enclosed or by building a roof over it. USDA-WS recommends that all garbage containers are fully enclosed and that garbage should not be piled for any length of time as to attract wildlife.

Conclusion

USDA-WS looks forward to its continuing partnership with the CDA to help execute the WHMP. By working together to mitigate potential threats posed by wildlife, we can continue to increase aviation safety at ORD. If you have any questions regarding this report please contact our office at (773) 686-6742.

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APPENDIX A- WS 2018 TAKE SUMMARY

Wildlife Guild or Species	# Euthanized	# Dispersed	# Relocated	# Transfer Custody
Aerial Foragers	0	63	0	0
Swallows, Barn	-	62	-	-
Swallows, Tree	-	1	-	-
Blackbirds	12,271	50,077	0	0
Blackbirds, Mixed	-	9,498	-	-
Blackbirds, Red-winged	95	6,180	-	-
Cowbirds, Brown-headed	88	5,200	-	-
Grackles, Common	3	6	-	-
Starlings, European	12,085	29,193	-	-
Carnivores	18	3	0	0
Coyote	18	2	-	-
Foxes, Red	-	1	-	-
Columbids	282	1,406	0	0
Dove, Mourning	281	1,294	-	-
Pigeon, Feral (Rock)	1	112	-	-
Grassland Birds	17	2	0	0
Killdeer	17	2	-	-
Gulls/Terns	75	812	0	0
Gulls, Bonaparte's	-	3	-	-
Gulls, Herring	7	106	-	-
Gulls, Ring-Billed	68	645	-	-
Terns, Caspian	-	42	-	-
Terns, Common	-	16	-	-
Lagomorph	8	3	0	0
Rabbits, Cottontails, Eastern	8	3	-	-
Mesopredators	37	0	0	0
Opossums, Virginia	1	-	-	-
Raccoons	7	-	-	-
Skunks, Striped	29	-	-	-
Raptors	34	310	93	2
Eagles, Bald	-	1	-	-
Falcons, American, Kestrels	14	8	40	-
Falcons, Peregrine	-	-	3	1
Hawks, Cooper	-	3	3	-
Hawks, Red-Tailed	20	23	12	-
Hawks, Rough-Legged		1		

Wildlife Guild or Species	# Euthanized	# Dispersed	# Relocated	# Transfer Custody
Owls, Great Horned	-	-	2	-
Owls, Snowy	-	274	33	1
Rodents	5	0	0	0
Mice, Deer	3	-	-	-
Woodchucks	2	-	-	-
Wading Birds	5	198	0	0
Cranes, Sandhill	-	130	-	-
Egrets, Great	3	47	-	-
Hérons, Great Blue	2	21	-	-
Waterfowl	158	7,112	0	0
Cormorants, Double-Crested	9	30	-	-
Ducks, Bufflehead	-	267	-	-
Ducks, Goldeneyes, Common	-	7	-	-
Ducks, Mallards	61	2,410	-	-
Ducks, Merganser Common	-	97	-	-
Ducks, Merganser Hooded	-	20	-	-
Ducks, Ruddy	-	72	-	-
Ducks, Scaup, Lesser	-	755	-	-
Ducks, Shovelers, Northern	-	49	-	-
Ducks, Teal, Blue-Winged	1	15	-	-
Geese, Canada	87	3,390	-	-
Woodland	5	0	0	0
Sparrows, House	5	-	-	-
Totals	12,915	59,986	93	2

APPENDIX B- WILDLIFE OBSERVATIONS DURING WILDLIFE HAZARD SURVEYS

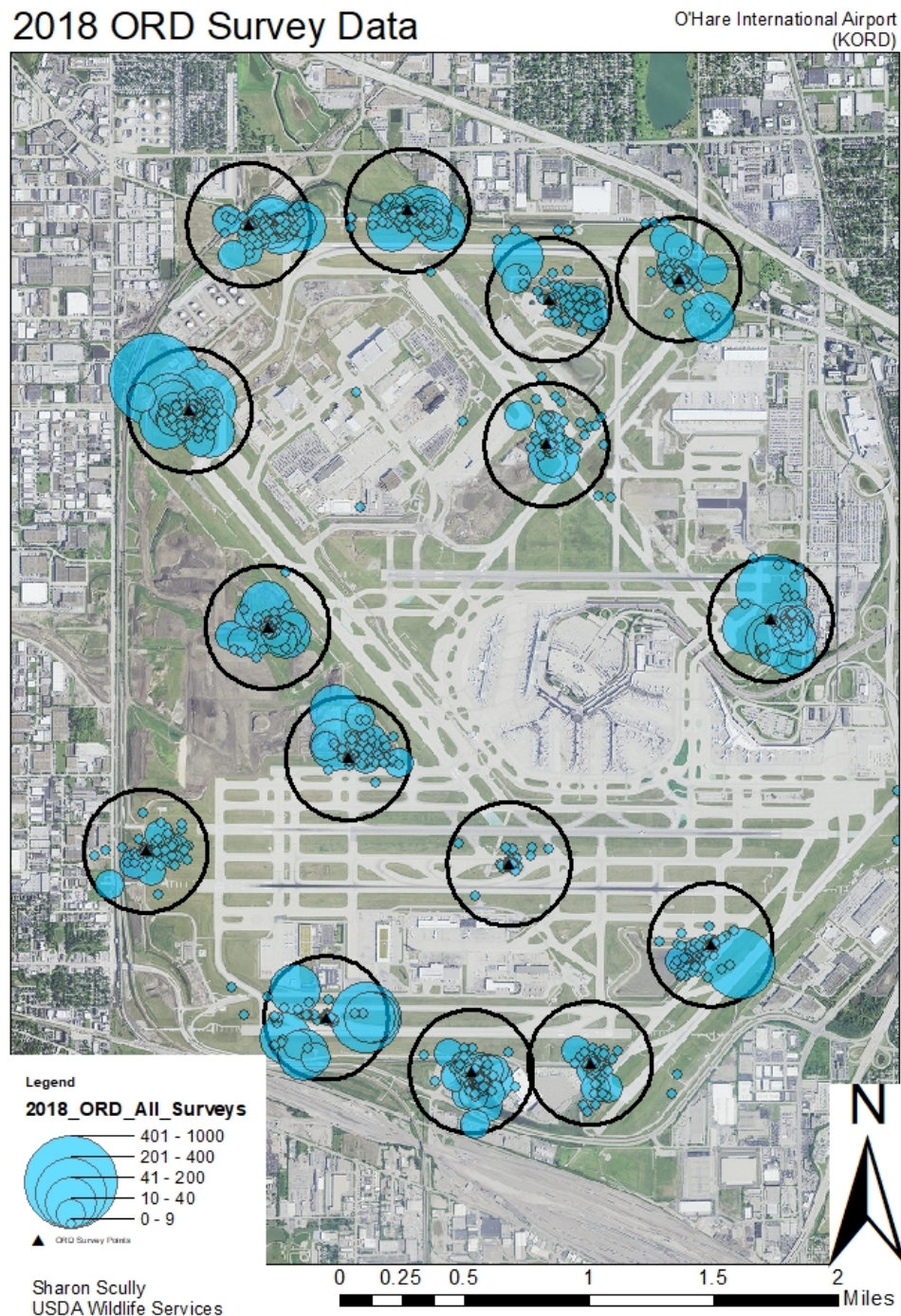
Avian Daily Surveys					
Wildlife Guild or Species	Total # Observed	# Observed Per Survey	Frequency of Observations	# Observations Per Survey	# Observed Per Observation
Aerial Forager	250	5.2	67	1.4	3.7
Barn Swallow	229	4.8	61	1.3	3.8
Tree Swallow	21	0.4	6	0.1	3.5
Blackbird	6282	130.9	180	3.8	34.9
Blackbirds Mixed	1790	37.3	19	0.4	94.2
Red-winged Blackbirds	368	7.7	72	1.5	5.1
Brown-headed Cowbird	30	0.6	1	0.0	30.0
Common Grackle	4	0.1	3	0.1	1.3
European Starling	4090	85.2	85	1.8	48.1
Columbid	425	8.9	66	1.4	6.4
Mourning Dove	347	7.2	54	1.1	6.4
Pigeon	78	1.6	12	0.3	6.5
Grassland	373	7.8	169	3.5	2.2
Snow Bunting	4	0.1	1	0.0	4.0
Killdeer	333	6.9	144	3.0	2.3
Horned Lark	1	0.0	1	0.0	1.0
Eastern Meadowlark	8	0.2	8	0.2	1.0
Field Sparrow	9	0.2	5	0.1	1.8
Chipping Sparrow	3	0.1	1	0.0	3.0
Savannah Sparrow	9	0.2	5	0.1	1.8
Song Sparrow	6	0.1	4	0.1	1.5
Gull/Tern	76	1.6	35	0.7	2.2
Herring Gull	18	0.4	6	0.1	3.0
Ring-billed Gull	43	0.9	23	0.5	1.9
Caspian Tern	14	0.3	5	0.1	2.8
Common Tern	1	0.0	1	0.0	1.0
Raptor	98	2.0	84	1.8	1.2
American Kestrel	47	1.0	35	0.7	1.3
Peregrine Falcon	2	0.0	2	0.0	1.0
Northern Harrier	1	0.0	1	0.0	1.0
Red-tailed Hawk	29	0.6	27	0.6	1.1

Snowy Owl	19	0.4	19	0.4	1.0
Wildlife Guild or Species	Total # Observed	# Observed Per Survey	Frequency of Observations	# Observations Per Survey	# Observed Per Observation
Shorebird	2	0.0	1	0.0	2.0
Sanderling	2	0.0	1	0.0	2.0
No Species Seen	0	0.0	302	6.3	0.0
Nothing Seen	0	0.0	302	6.3	0.0
Wading	39	0.8	34	0.7	1.1
Great Egret	23	0.5	18	0.4	1.3
Great Blue Heron	16	0.3	16	0.3	1.0
Waterfowl	687	14.3	75	1.6	9.2
Bufflehead	46	1.0	3	0.1	15.3
American Coot	3	0.1	2	0.0	1.5
Double-crested Cormorant	33	0.7	11	0.2	3.0
Mallard	159	3.3	44	0.9	3.6
Canada Goose	378	7.9	11	0.2	34.4
Common Merganser	2	0.0	1	0.0	2.0
Lesser Scaup	60	1.3	2	0.0	30.0
Northern Shoveler	6	0.1	1	0.0	6.0
Woodland	306	6.4	38	0.8	8.1
Dark-eyed Junco	6	0.1	1	0.0	6.0
American Robin	11	0.2	8	0.2	1.4
House Sparrow	289	6.0	29	0.6	10.0
Grand Total	8538	177.9	1051	21.9	8.1

Nocturnal Mammal Surveys					
Wildlife Guild or Species	Total # Observed	# Observed Per Survey	Frequency of Observations	# Observations Per Survey	# Observed Per Observation
Cottontail Rabbit	33	4.1	26	3.3	1.3
No Species	0	0.0	1	0.1	0.0
Opossum	1	0.1	1	0.1	1.0
Raccoon	1	0.1	1	0.1	1.0
Striped Skunk	24	3.0	23	2.9	1.0
Grand Total	59	7.4	52	6.5	1.1

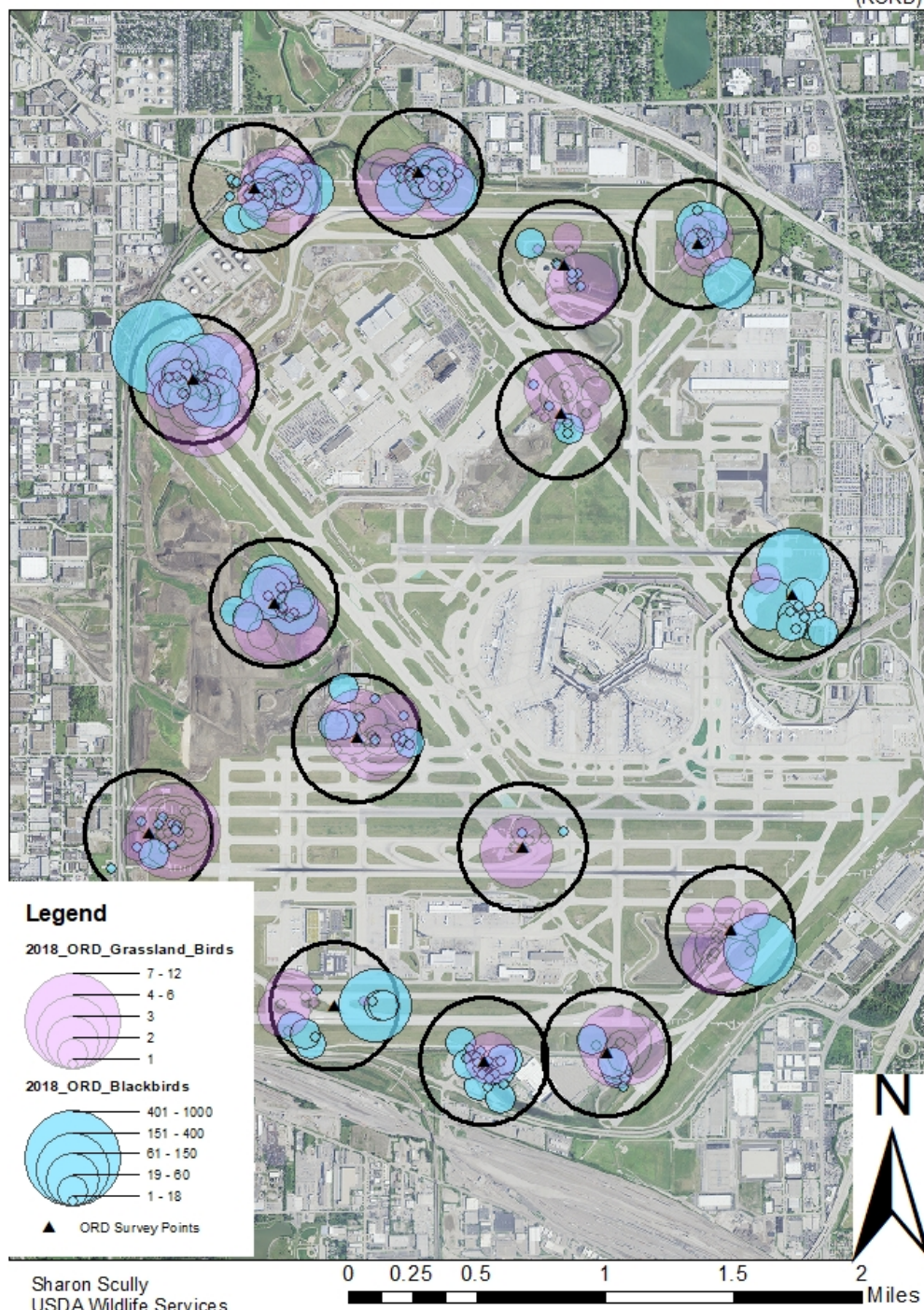
Behavior												
Habitat Type	Feeding	Flying Local	Flying Passing	Hawking	Hovering	Loafing	Perching	Running	Towering	Vocalizing	Grand Total	% Total
Asphalt / Concrete		44	7			4		10		1	66	6.0%
Creek	3	8	3			1	1				16	1.5%
Long Grass	3	26	2		1	1	5		1	2	41	3.7%
Wetland	18	11	1			7	6			2	45	4.1%
Pond	9	3	4			38					54	4.9%
Runway		4	2			3	1				10	0.9%
Short Grass	104	151	22	4		20		21	1	8	331	30.0%
Snow		1	1			4	1				7	0.6%
Structure						3	82			5	90	8.2%
Taxiway		5	2					11			18	1.6%
Temporary Standing Water	5	2	1			10					18	1.6%
Tree/Shrub			1				5				6	0.5%
Unknown		1	14								317	28.8%
Unpaved	8	38	13			7		14		3	83	7.5%
Grand Total	150	294	73	4	1	98	101	56	2	21	1102	100.0%
Percent Total	13.6%	26.7%	6.6%	0.4%	0.1%	8.9%	9.2%	5.1%	0.2%	1.9%	100.0%	

APPENDIX C- WILDLIFE HAZARD SURVEY DATA MAPS



Blackbird and Grassland Bird Observations 2018 Point Count Survey Data

O'Hare International Airport
(KORD)



APPENDIX D- WS 2018 OFFSITE TAKE SUMMARY

Wildlife Guild or Species	# Euthanized	Removed/Destroyed	Banded
Blackbirds			
Starlings, European	1,915	-	-
Columbids			
Pigeon, Feral (Rock)	97	-	-
Gulls/Terns			
Gulls, Herring EGG	-	9	-
Gulls, Herring NEST	-	3	-
Gulls, Ring-Billed	7	-	-
Gulls, Ring-Billed EGG	-	4	-
Gulls, Ring-Billed NEST	-	1	-
Waterfowl			
Geese, Canada EGG	-	4	-
Geese, Canada NEST	-	1	-
Woodland			
Sparrow, House	4	-	-
Totals	2,023	22	0

Appendix E (FAA AIRPORT BMP'S FOR ORD)

FAA AIRPORT BMP'S FOR ORD September 2016

Introduction

In June of 2007 the Steering Committee of Bird Strike Committee USA created a formal document of Best Management Practices for Airport Wildlife Hazard Management. This document was adapted from the Standards for Aerodrome Bird/Wildlife Control developed by the International Bird Strike Committee. The purpose of this document will be to detail the efforts of Chicago O'Hare International Airport (ORD) to reduce wildlife hazards to aviation, assess risks (Table A1), and detail specific Best Management Practices (BMPs) for ORD in relation to the document as developed by Bird Strike USA.

2.2 Airport Wildlife Hazard Management

2.2.1 Background

- Habitat modification, exclusion, repellents, harassment techniques, and wildlife removal are all used at ORD on a daily basis by USDA Wildlife Services (WS) personnel stationed at ORD. Flight schedule modification is not feasible at ORD due to the sheer volume of scheduled flight operations that occur on a daily basis at the airport.

2.2.2 Aircraft flight schedule modification

- As stated in 2.2.1, flight schedule modifications are not feasible at ORD due to the sheer volume of daily scheduled flight operations that take place at the airport.

2.2.3 Habitat management

- Habitat at ORD is constantly monitored and altered by WS to lower the overall attractiveness of the airport to wildlife. Recommendations are made to the airport regarding habitat alterations requiring the use of heavy machinery. WS is consulted to review new landscaping and airport designs to assess and mitigate the potential attractiveness of the designs to wildlife. The AOA perimeter fence is monitored by WS to identify and repair areas where terrestrial wildlife may gain access to the AOA. To help exclude terrestrial wildlife from the AOA, all new perimeter fence installed at ORD will be equipped with a fence skirt to prevent wildlife from digging under the fence. The airport manages grass on the airfield to maintain a uniform height throughout the growing season. A standard has been developed to plant and establish endophyte infected fescue on all new construction projects at ORD. Brush and trees are removed from the AOA by WS and airport personnel as needed. Grid wires are installed over drainage ditches and creeks in close proximity to runways to deter use by Canada geese.

2.2.4 Wildlife dispersal

- WS routinely monitors the AOA and city owned property surrounding ORD for wildlife activity. Wildlife found using these areas are quickly harassed from the area using a variety of techniques, most commonly with pyrotechnics. In addition to WS personnel, airport operations personnel are fully trained and are equipped to identify and disperse wildlife at ORD. WS is on-call 24 hours a day 7 days per week to respond to nocturnal wildlife that may

create an emergency at the airport. WS anticipates an increased ability to effectively detect and disperse avian threats with the addition of an avian radar system.

2.2.5 Wildlife removal

- Utilizing Integrated Wildlife Damage Management techniques, WS at ORD use lethal wildlife removal to reinforce hazing and harassment efforts and to reduce overall populations of problem species on the airfield. All wildlife removal efforts are implemented only by highly trained and skilled WS personnel. A year-round raptor banding and relocation program is ongoing at ORD. WS acquires and maintains all necessary permits to remove and relocate wildlife from the airfield.

2.3 Organization

2.3.1 Background

- ORD staffs 3 WS wildlife biologists and 2 WS wildlife specialists to conduct an Integrated Wildlife Damage Management program at the airport. In addition, airport operations personnel are trained annually in wildlife identification and the proper dispersal techniques for dealing with wildlife issues. All WS personnel can be reached by airport operations personnel 7 days per week 24 hours a day should a wildlife related emergency develop and WS staff are not present on the airfield. A Wildlife Hazard Management Plan (WHMP) has been developed and approved as a formal document to delineate the roles and responsibilities of parties in managing wildlife hazards at ORD.

2.3.2 Collaboration and coordination between organizations on the airport

- Communication addressing wildlife issues has been enhanced by naming a wildlife coordinator within airport operations. The wildlife coordinator facilitates the exchange of information relating to wildlife between all airport personnel, air carriers, contractors, and WS. ORD has implemented a wildlife working group that meets annually to discuss wildlife issues at the airport as well as review and update the WHMP to address these issues as needed. Meetings can be called by any member of the working group at any time a need arises. In addition, WS personnel can submit a work order request to airport personnel throughout the year to address any issues identified.

2.3.2a Air Traffic Control

- Air traffic control reports wildlife related issues to the airport operations control center who then contacts either WS or operations personnel present on the airfield.

2.3.2b Pilots

- Pilots can report wildlife related issues to air traffic control who then relay the information to the airport operations control center, who notifies the proper personnel to handle the wildlife issue. Pilots can also report wildlife strikes directly to the FAA strike database.

3.2c Airport tenants

- Airport operations personnel are constantly surveying the ramp areas at ORD for FOD and other materials that could attract wildlife. Operations personnel issue warnings and possibly

tickets to air carriers when their areas are not kept visibly clean. This in turn decreases the attractiveness of these areas to wildlife. Airport tenants can contact WS staff directly or via the airport operations control center to address wildlife concerns to aviation safety.

2.4 Equipment

2.4.1 Background

- WS is fully equipped to handle all wildlife issues that arise at ORD. When WS is not present at the airport, operations personnel are equipped to harass and haze wildlife from the airfield.

2.4.2 Portable equipment

- WS personnel are equipped with portable equipment to harass or remove wildlife on the airfield. These devices include: firearms, pyrotechnics, lasers, lights, and vehicles. The operations personnel at ORD are equipped with pyrotechnics and launchers to harass wildlife from the airfield. WS maintains all state and federal permits required for wildlife management activities.

2.4.3 Static devices

- Live-capture and quick-kill traps are the primary static device used by WS at ORD. WS uses static scare devices, such as propane cannons, to harass wildlife from specific problem areas on the airfield. Wildlife can quickly habituate to these devices if used continuously so they are used sparingly to most effectively address localized and ephemeral issues.

2.4.4 Trained predators (raptors and dogs)

- Trained predators (raptors and dogs) are not recommended for use at ORD due to the number of flight operations, high cost of training and handling the animals, and the lack of control that the handler has on the trained animal. In addition, if the animal ignores or abandons the handler, it too becomes a strike risk only exacerbating the problem.

2.5 Logging Wildlife Management Activities

2.5.1 Background

- All wildlife management activities at ORD are recorded in databases. CDA airport operations personnel report all of their activities pertaining to wildlife in an ELS wildlife database. This database can be accessed by WS as well as operations personnel. Daily control activities of WS at ORD are recorded in a Wildlife Hazard Management Information System. The database also allows for recording observations of wildlife that were out of range for control efforts or off of airfield property allowing for a more comprehensive view of the overall wildlife activity in and around ORD. In addition, WS records the number and species of wildlife harassed or removed, along with the number of man hours, in WS national Management Information System database.

2.6 Wildlife Strike Reporting

2.6.1 Background

- Bird strikes are reported to FAA's National Wildlife Strike Database by the airport, WS, pilots, ground personnel, or air carriers when wildlife remains are found within 250 feet of the centerline of the runway or when wildlife cause a negative effect on flight. Every effort is made to recover remains from reported strikes for accurate species identification, allowing for a more complete database to assist WS in management decisions for the airport and bird-aircraft strike reduction programs.

2.6.2 Definition of a wildlife strike

- WS at ORD use the FAA's definition of a wildlife strike (as posted in FAA AC 150/5200-32, *Reporting wildlife aircraft strikes*) as having occurred when one or more of the following occurs; A pilot reports striking one or more birds or other wildlife; Aircraft maintenance personnel identify aircraft damage caused by a wildlife strike; Personnel on the ground report seeing an aircraft strike one or more birds or other wildlife; Bird or other wildlife remains, whether in whole or in part, are found within 250 feet of a runway centerline, unless another reason for the animal's death is identified; An animal's presence on the airport had a significant negative affect on a flight (for example, aborted takeoff or landing, high-speed emergency stop, or an aircraft left the pavement area to avoid collision with an animal).
- The airport has in place a system that helps to ensure awareness of any strikes that occur on or near its property. WS routinely advocates the importance of reporting any and all wildlife strike incidents to all personnel with direct knowledge of material facts.

2.6.3 Analysis of wildlife strike data

- Strike data are routinely analyzed by WS to increase the effectiveness of the wildlife management program being implemented at ORD. The analysis includes species data, seasonal, annual, and monthly strike trends, and locality trends most importantly analyzing which runways incur the highest numbers of strikes.

2.6.4 Wildlife remains identification

- Recovery of wildlife remains from a strike incident is an utmost priority. When remains are found, they are labeled with all pertinent flight information and stored in a freezer for identification and analysis by a wildlife biologist. Morphologically unidentifiable remains from a strike incident are collected and sent to the Smithsonian Institute for forensic identification. Once identified this information is logged into the FAA's National Wildlife Strike Database.

2.6.5 Data required in a wildlife strike

- All known information about the aircraft, flight information, weather conditions, location, impact on flight, damage to aircraft, associated costs, and species involved is collected when a wildlife strike occurs. These data are entered into the FAA's National Wildlife Strike Database to create the most complete data set possible.

2.6.6 Submission to International Civil Aviation Organization

- WS at ORD submit all wildlife strikes to the FAA's National Wildlife Strike Database so that the FAA can send strike data to the ICAO.

2.7 Risk Assessment

2.7.1 Wildlife Strike Summary and Risk Analysis Report

- WS at ORD conducts an annual risk assessment using the National Wildlife Strike Database's wildlife strike summary and risk analysis report (Table A1). The report includes the number of wildlife strikes, the number of strikes that cause damage and a five year average for strikes causing damage. The risk assessment also includes the date of the strike, the location, the species involved, and the amount of damage caused by strikes in 2014. ORD strikes are also compared to 5-year averages of similar airports. With this information WS can evaluate the effectiveness of the wildlife management actions and redirect their efforts accordingly.

ATTACHMENT I-3.1

**WETLAND DELINEATION REPORT
(ABBREVIATED) FLORISTIC QUALITY
SUMMARY FOR WETLANDS – REVISED**

Wetland No	Mean Coefficient of Conservatism (mean C all species)	Floristic Quality Assessment Index (FQAI) (all species)	Mean Coefficient of Conservatism (mean C native)	Floristic Quality Assessment Index (FQAI) (native)	4 or more EPFO Target Species present?
NW19-01	0.75	1.50	3.00	3.00	
NW19-02	2.17	5.31	4.33	7.51	No
NW19-03	0.90	2.85	1.50	3.67	
NW19-04	1.57	4.16	2.75	5.50	
NW19-05	0.00	0.00	0.00	0.00	
NW19-06	1.83	4.49	2.20	4.92	
NW19-07	1.29	3.40	3.00	5.20	
NW19-08	1.00	1.73	1.00	1.73	
NW19-09	0.60	1.34	1.50	2.12	
NW19-10	1.50	3.67	3.00	5.20	
NW19-11	0.00	0.00	0.00	0.00	
NW19-12	2.33	5.72	2.80	6.26	
NE19-13	0.89	2.67	2.00	4.00	
NE19-14	1.10	3.48	2.75	5.50	
NE19-15	1.50	4.74	3.00	6.71	
NE19-16	0.75	1.50	1.50	2.12	
NE19-17	1.00	2.83	2.00	4.00	
NW19-18	2.33	5.72	3.50	7.00	No
NE19-19	1.09	3.62	2.00	4.90	
NE19-20	0.50	1.58	1.00	2.24	
NE19-21	1.50	3.00	2.00	3.46	
NE19-22	3.13	8.84	3.57	9.45	No
NE19-23	1.00	2.65	3.50	4.95	No
SE19-24	0.00	0.00	0.00	0.00	
SE19-25	1.25	2.50	1.25	2.50	
SE19-026	0.00	0.00	0.00	0.00	
SE19-027	1.20	2.68	2.00	3.46	
SW19-028	2.33	5.72	3.50	7.00	No
SW19-029	1.43	3.78	2.00	4.47	
SW19-030	2.20	4.92	2.75	5.50	
SW19-031	1.43	3.78	2.00	4.47	
SW19-032	0.67	1.15	1.00	1.41	
SW19-033	1.50	3.67	1.80	4.02	
SW19-034	2.00	3.46	3.00	4.24	
SW19-035	0.75	1.50	3.00	3.00	
SW19-036	3.25	6.50	3.25	6.50	
SW19-037	1.50	3.00	3.00	4.24	
SW19-038	1.67	4.08	2.50	5.00	
NW39 (See Remaining Wetlands)					
SW19-040	1.80	4.02	2.25	4.50	
SE19-041	0.90	2.85	1.29	3.40	
SW19-042	3.20	7.16	5.33	9.24	No
SE19-043	0.00	0.00	0.00	0.00	
SW19-044	0.00	0.00	0.00	0.00	
SW19-045	1.17	2.86	2.33	4.04	
SE19-046	1.57	4.16	1.83	4.49	
SE19-047	0.00	0.00	0.00	0.00	
SE19-048	1.00	3.16	2.00	4.47	
SE19-049	0.75	2.12	1.50	3.00	
SE19-050	1.25	3.54	2.00	4.47	
SE19-051	1.00	2.00	2.00	2.83	
SE19-052	1.11	3.33	2.00	4.47	
SE19-053	2.22	6.67	2.86	7.56	
SE19-054	1.17	2.86	1.75	3.50	
SW19-055/SW120	0.29	0.76	1.00	1.41	
SW19-056	0.60	1.34	0.75	1.50	

Wetland No	Mean Coefficient of Conservatism (mean C all species)	Floristic Quality Assessment Index (FQAI) (all species)	Mean Coefficient of Conservatism (mean C native)	Floristic Quality Assessment Index (FQAI) (native)	4 or more EPFO Target Species present?
SW19-057	0.00	0.00	0.00	0.00	
SE19-058	0.00	0.00	0.00	0.00	
SW19-059	0.43	1.13	0.75	1.50	
SE19-060	0.00	0.00	0.00	0.00	
NE19-061	0.00	0.00	0.00	0.00	
NE19-062	1.14	3.02	2.67	4.62	
SE19-063	0.80	1.79	1.00	2.00	
SE19-064	0.60	1.34	0.60	1.34	
SE19-065	1.75	3.50	1.75	3.50	
SE19-066	0.60	1.34	0.75	1.50	
SE19-067	0.50	1.41	1.00	2.00	
SE19-068	1.89	5.67	2.13	6.01	
NE19-069	0.00	0.00	0.00	0.00	
SW19-070	2.30	7.27	2.88	8.13	
SW19-071	1.38	3.89	2.75	5.50	
SW19-072	1.00	2.00	1.33	2.31	
SW19-073	0.00	0.00	0.00	0.00	
SW19-074	2.27	7.54	2.78	8.33	
NW19-075	1.70	5.38	2.13	6.01	
NW19-076	2.57	6.80	3.60	8.05	No
NW19-077	1.17	2.86	1.40	3.13	
NW19-078	1.17	2.86	3.50	4.95	No
NW19-079	1.20	2.68	1.50	3.00	
NE19-080	0.00	0.00	0.00	0.00	
NW19-081	2.67	6.53	3.20	7.16	
NW19-082	0.00	0.00	0.00	0.00	
NW19-083	2.20	4.92	2.20	4.92	
NW19-084	0.00	0.00	0.00	0.00	
SE19-085	0.00	0.00	0.00	0.00	
SE19-086	0.00	0.00	0.00	0.00	
NE19-087	0.00	0.00	0.00	0.00	
NE19-088	0.50	1.22	1.00	1.73	
NE19-089	0.00	0.00	0.00	0.00	
NW19-090	0.00	0.00	0.00	0.00	
NW19-091	0.00	0.00	0.00	0.00	
NW19-092	0.00	0.00	0.00	0.00	
SW19-093	2.14	5.67	3.00	6.71	
SW19-094	0.50	1.00	1.00	1.41	
SE19-095	0.00	0.00	0.00	0.00	
NW19-096	0.71	1.89	1.67	2.89	
SE19-097	0.00	0.00	0.00	0.00	
SE19-098	1.30	4.11	2.17	5.31	
SE19-099	0.75	1.50	1.50	2.12	
SE19-100	0.50	1.22	1.00	1.73	
SW19-101	0.00	0.00	0.00	0.00	
SW19-102	0.00	0.00	0.00	0.00	
NW19-103	0.00	0.00	0.00	0.00	
NE19-104	1.79	6.68	3.13	8.84	
NE19-105	0.73	2.41	1.33	3.27	
NE19-106	1.67	5.77	2.50	7.07	
NE19-107	0.00	0.00	0.00	0.00	
NE19-108	0.00	0.00	0.00	0.00	
NE19-109	1.50	4.24	2.00	4.90	
NE19-110	1.92	6.64	2.56	7.67	
NE19-111	2.63	7.42	3.00	7.94	
NE19-112	1.60	3.58	2.67	4.62	

Wetland No	Mean Coefficient of Conservatism (mean C all species)	Floristic Quality Assessment Index (FQAI) (all species)	Mean Coefficient of Conservatism (mean C native)	Floristic Quality Assessment Index (FQAI) (native)	4 or more EPFO Target Species present?
NE19-113	1.00	2.83	2.67	4.62	
SE19-114	0.43	1.13	1.00	1.73	
SE19-115	1.17	2.86	1.75	3.50	
NE19-116	0.00	0.00	0.00	0.00	
NE19-117	1.67	4.08	2.00	4.47	
NE19-118	2.00	5.29	2.80	6.26	
SE19-119	0.00	0.00	0.00	0.00	
SE19-120	0.00	0.00	0.00	0.00	
SE19-121	0.86	2.27	2.00	3.46	
SE19-122	0.75	1.50	1.50	2.12	
SE19-123	0.77	2.77	1.43	3.78	
SE19-124	0.43	1.13	1.00	1.73	
SE19-125	0.00	0.00	0.00	0.00	
NE19-126	0.57	1.51	1.33	2.31	
SE19-127	0.50	1.22	1.00	1.73	
NE19-128	0.60	1.34	3.00	3.00	
SE19-129	0.67	1.63	2.00	2.83	
SE19-130	1.22	3.67	1.83	4.49	
SE19-131	0.25	0.71	0.67	1.15	
SE19-132	0.50	1.22	0.75	1.50	
SE19-133	0.75	1.50	1.00	1.73	
SE19-134	0.75	1.50	1.00	1.73	
SE19-135	0.50	1.22	1.00	1.73	
SE19-136	0.50	1.22	1.50	2.12	
SE19-137	0.67	2.31	1.33	3.27	
SE19-138	0.13	0.35	0.33	0.58	
SE19-139	1.17	4.04	2.00	5.29	
NE19-140	0.88	2.47	2.33	4.04	
SW19-141	1.17	2.86	2.33	4.04	
SW19-142	0.00	0.00	0.00	0.00	
SE19-143	0.00	0.00	0.00	0.00	
SE19-144	0.80	1.79	2.00	2.83	
SE19-145	1.14	3.02	2.00	4.00	
SW19-146	1.00	2.24	1.67	2.89	

Remaining Wetland No	Mean Coefficient of Conservatism (mean C all species)	Floristic Quality Assessment Index (FQAI) (all species)	Mean Coefficient of Conservatism (mean C native)	Floristic Quality Assessment Index (FQAI) (native)	4 or more EPFO Target Species present?
SE01	0.50	1.00	2.00	2.00	
NW39/NW01	1.31	5.25	2.33	7.00	
NE41	3.00	9.00	3.86	10.21	No - 2 carex only
SE62	1.00	2.00	2.00	2.83	
SE64	0.44	1.33	1.33	2.31	
NE65	1.00	3.16	1.43	3.75	

ATTACHMENT I-3.2

U.S. ARMY CORPS OF ENGINEERS APPROVED JURISDICTIONAL DETERMINATION



REPLY TO
ATTENTION OF:

DEPARTMENT OF THE ARMY
CHICAGO DISTRICT, CORPS OF ENGINEERS
231 SOUTH LA SALLE STREET
CHICAGO, ILLINOIS 60604-1437

December 20, 2019

Technical Services Division
Regulatory Branch
LRC-2003-22401

SUBJECT: Updated Approved Jurisdictional Determination Supporting the Terminal Area Plan and Air Traffic Procedures Environmental Assessment, O'Hare International Airport, City of Chicago, Cook County, Illinois (Latitude 41.992762, Longitude -87.90237)

Aaron J. Frame
Chicago Department of Aviation
10510 West Zemke Road
Chicago, Illinois 60666

Dear Mr. Frame:

This is in response to your request that the U.S. Army Corps of Engineers complete a jurisdictional determination for the above-referenced site submitted on your behalf by Mead & Hunt, through the U.S. Federal Aviation Administration. The subject project remains assigned number LRC-2003-22401. Please reference this number in all future correspondence concerning this project.

Following a review of the information you submitted, this office has determined that the subject property contains "waters of the United States" as well as aquatic resources outside the Corps jurisdiction.

Bensenville Ditch - Section 1, Bensenville Ditch - Section 2, Bensenville Ditch - Section 3, Crystal Creek - Section 1, Crystal Creek - Section 2, Crystal Creek - Section 3, Crystal Creek - Section 4, Ditch 03, Ditch 08, Ditch 10, Ditch 13 - Section 2, Ditch 30, Higgins Creek - Section 2, Higgins Creek - Section 3, Middle Sister, North Sister, South Sister, Tributary 1: Willow Creek, Tributary 2: Willow Creek, Tributary 3: Willow Creek, Willow Creek - Section 1, Willow Creek - Section 2, Willow Creek - Section 3, Willow Creek - Section 4, Willow Creek - Section 5, Willow Creek - Section 6, Willow Creek - Section 7, Willow Creek - Section 8, Willow Creek - Section 9, NE 41, NW19-96, SE19-55, SE19-97, SW120, SW19-94, NE19-116, NW19-01, NW19-78, SE19-114, SE64, SW19-44, SE19-124, SE19-46, SE19-47, SE19-60, SW19-37, NE19-104, NE19-104A, NE19-104B, NE19-105, NE19-106, NE19-109, NE19-110, NE19-111, NE19-112, NE19-113, NE19-117, NE19-118, NE19-20, NE19-61, NE19-62, NE19-87, NE19-88, NE65, NW19-04, NW19-05, NW19-06, NW19-12, NW19-18, NW19-77, NW39, SE19-115, SE19-120, SE19-121, SE19-122, SE19-125, SE19-127, SE19-136, SE19-137, SE19-138, SE19-48, SE19-49, SE19-50, SE19-51, SE19-52, SE19-65, SE19-66, SE19-95, and SE62, have been determined to be under the jurisdiction of this office and therefore, subject to Federal regulation.

SE19-43, SE19-53, SE19-58, SE19-63, SE19-64, SW19-28, SW19-34, SW19-56, SW19-57, SW19-59, SW19-72, and SW19-73, have been determined to not have a significant nexus to the Des Plaines River, and are therefore not subject to Federal regulation. Please be informed that this office does not concur with the boundaries of waters not under the jurisdiction of this office.

Ditch 01, Ditch 22, Ditch 25, Ditch 28, NE19-126, NE19-128, NE19-16, NE19-17, NE19-19, NE19-21, NE19-89, NW19-07, NW19-08, NW19-09, NW19-75, NW19-76, NW19-84, SE19-98, SE19-119, SE19-129, SE19-140, SE19-141, SE19-143, SE19-144, SE19-146, SE19-67, SW19-142, SW19-35, SW19-38, SW19-39, SW19-71, SW19-93, Ditch 02, Ditch 04, Ditch 05, Ditch 06, Ditch 07, Ditch 09, Ditch 11, Ditch 13 - Section 1, Ditch 14, Ditch 15, Ditch 16, Ditch 17, Ditch 18, Ditch 19, Ditch 20, Ditch 21, Ditch 23, Ditch 24, Ditch 27, Ditch 29, Ditch 31, Ditch 32, Ditch 33, Ditch 34, Ditch 35, Ditch 36, Ditch 37, Ditch 38, Ditch 39, Ditch 40, Ditch 41, Ditch 42 (PO Drainage), Ditch 43, Ditch 44, Ditch 45, Ditch 46, Ditch 47, Ditch 48, NE19-22, NW19-02, NW19-03, SE19-123, SE19-130, SE19-139, Ditch 12, NW19-103, SE19-25, SE19-26, SE19-27, SE19-41, SE19-54, SE19-68, SW19-29, SW19-30, SW19-31, SW19-32, SW19-33, SW19-36, SW19-42, SW19-70, SW19-74, NE19-69, Erosional Feature 1, Erosional Feature 2, Erosional Feature 3, NE19-13, NE19-14, NE19-15, NE19-23, NW19-10, NW19-11, SE19-131, and SE19-24, are water features excluded from Federal regulation under the definitions found at 33 CFR 328.3(b). Please be reminded that this office does not concur with the boundaries of waters not subject to Federal regulation.

NE19-107, NE19-108, NE19-80, NW19-79, NW19-81, NW19-82, NW19-83, NW19-90, NW19-91, NW19-92, SE19-100, SE19-132, SE19-133, SE19-134, SE19-135, SE19-145, SE19-85, SE19-86, SE19-99, SW19-101, and SW19-102, do not meet any of the definitions found at 33 CFR 328.3(a), and therefore are water features not under the jurisdiction of this office. Please be reminded that this office does not concur with the boundaries of waters not under the jurisdiction of this office.

This office concurs with the submitted wetland delineation and wetland boundaries at the subject site. In the event an application is submitted for work within jurisdictional areas, a survey of the wetland boundary(s) stamped by a professional surveyor shall accompany the approved wetland delineation.

For a detailed description of our determination please refer to the enclosed decision document. This determination covers only your project as depicted in the Wetland Delineation Report titled "ORD WOUS Delineation USACE AJD Transmittal" by Mead & Hunt, dated 31 October 2019.

This determination is valid for a period of five (5) years from the date of the letter, unless new information warrants revision of the determination before the expiration date or a District Commander has identified, after public notice and comment, that specific geographic areas with rapidly changing environmental conditions merit re-verification on a more frequent basis.

This letter is considered an approved jurisdictional determination for your subject site. If

you object to this determination, you may appeal, according to 33 CFR Part 331. Enclosed you will find a Notification of Appeal Process (NAP) fact sheet and a Request for Appeal (RFA) form. If you request to appeal the above determination, you must submit a completed RFA form to the Great Lakes/Ohio River Division Office at the following address:

Jacob Siegrist
Regulatory Appeals Review Officer
US Army Corps of Engineers
Great Lakes and Ohio River Division
550 Main Street, Room 10524
Cincinnati, Ohio 45202-3222
Phone: (513) 684-2699 Fax: (513) 684-2460

In order to be accepted, your RFA must be complete, meet the criteria for appeal and be received by the Division Office within sixty (60) days of the date of the NAP. If you concur with the determination in this letter, submittal of the RFA form to the Division office is not necessary.

This determination has been conducted to identify the limits of the Corps Clean Water Act jurisdiction for the particular site identified in this request. This determination may not be valid for the wetland conservation provisions of the Food Security Act of 1985, as amended. If you or your tenant are USDA program participants, or anticipate participation in USDA programs, you should request a certified wetland determination from the local office of the Natural Resources Conservation Service prior to starting work. It is your responsibility to obtain any required state, county, or local approvals for impacts to wetland areas not under the Department of the Army jurisdiction.

Pursuant to Section 404 of the Clean Water Act, the U.S. Army Corps of Engineers regulates the discharge of dredged or fill material into waters of the United States, including wetlands. A Department of the Army permit is required for any proposed work involving the discharge of dredged or fill material within the jurisdiction of this office. To initiate the permit process, please submit a joint permit application form along with detailed plans of the proposed work. Information concerning our program, including the application form and an application checklist, can be found at and downloaded from our website:
<http://www.lrc.usace.army.mil/Missions/Regulatory.aspx>

If you have any questions, please contact Mr. Colin C. Smalley, PG of my staff by telephone at (312) 846-5538 or email at Colin.C.Smalley@usace.army.mil.

Sincerely,

Kathleen G. Chernich
Chief, East Section
Regulatory Branch

Enclosures

Copy Furnished w/ Enclosures:

U.S. Federal Aviation Administration (Amy Hanson)
Mead & Hunt (Brauna Hartzell, Conor Makepeace)

NOTIFICATION OF ADMINISTRATIVE APPEAL OPTIONS AND PROCESS AND REQUEST FOR APPEAL

Applicant: City of Chicago, Department of Aviation	File Number: LRC-2003-22401	Date: December 20, 2019
Attached is:		See Section below
	INITIAL PROFFERED PERMIT (Standard Permit or Letter of Permission)	A
	PROFFERED PERMIT (Standard Permit or Letter of Permission)	B
	PERMIT DENIAL	C
X	APPROVED JURISDICTIONAL DETERMINATION	D
	PRELIMINARY JURISDICTIONAL DETERMINATION	E

SECTION I - The following identifies your rights and options regarding an administrative appeal of the above decision. Additional information may be found at http://www.usace.army.mil/CECW/Pages/reg_materials.aspx or Corps regulations at 33 CFR Part 331.

A. INITIAL PROFFERED PERMIT: You may accept or object to the permit.

- **ACCEPT:** If you received a Standard Permit or a Letter of Permission (LOP), you may sign the permit document and return it to the district commander for final authorization. Your signature on the Standard Permit or acceptance of the LOP means that you accept the permit in its entirety, and waive all rights to appeal the permit, including its terms and conditions, and approved jurisdictional determinations associated with the permit.
- **OBJECT:** If you object to the permit (Standard or LOP) because of certain terms and conditions therein, you may request that the permit be modified accordingly. You must complete Section II of this form and return the form to the district commander. Your objections must be received by the district commander within 60 days of the date of this notice, or you will forfeit your right to appeal the permit in the future. Upon receipt of your letter, the district commander will evaluate your objections and may: (a) modify the permit to address all of your concerns, (b) modify the permit to address some of your objections, or (c) not modify the permit having determined that the permit should be issued as previously written. After evaluating your objections, the district commander will send you a proffered permit for your reconsideration, as indicated in Section B below.

B. PROFFERED PERMIT: You may accept or appeal the permit

- **ACCEPT:** If you received a Standard Permit or a Letter of Permission (LOP), you may sign the permit document and return it to the district commander for final authorization. Your signature on the Standard Permit or acceptance of the LOP means that you accept the permit in its entirety, and waive all rights to appeal the permit, including its terms and conditions, and approved jurisdictional determinations associated with the permit.
- **APPEAL:** If you choose to decline the proffered permit (Standard or LOP) because of certain terms and conditions therein, you may appeal the declined permit under the Corps of Engineers Administrative Appeal Process by completing Section II of this form and sending the form to the division commander. This form must be received by the division commander within 60 days of the date of this notice.

C. PERMIT DENIAL: You may appeal the denial of a permit under the Corps of Engineers Administrative Appeal Process by completing Section II of this form and sending the form to the division commander. This form must be received by the division commander within 60 days of the date of this notice.

D. APPROVED JURISDICTIONAL DETERMINATION: You may accept or appeal the approved JD or provide new information.

- **ACCEPT:** You do not need to notify the Corps to accept an approved JD. Failure to notify the Corps within 60 days of the date of this notice, means that you accept the approved JD in its entirety, and waive all rights to appeal the approved JD.
- **APPEAL:** If you disagree with the approved JD, you may appeal the approved JD under the Corps of Engineers Administrative Appeal Process by completing Section II of this form and sending the form to the division commander. This form must be received by the division commander within 60 days of the date of this notice.

E. PRELIMINARY JURISDICTIONAL DETERMINATION: You do not need to respond to the Corps regarding the preliminary JD. The Preliminary JD is not appealable. If you wish, you may request an approved JD (which may be appealed), by contacting the Corps district for further instruction. Also you may provide new information for further consideration by the Corps to reevaluate the JD.

SECTION II - REQUEST FOR APPEAL or OBJECTIONS TO AN INITIAL PROFFERED PERMIT

REASONS FOR APPEAL OR OBJECTIONS: (Describe your reasons for appealing the decision or your objections to an initial proffered permit in clear concise statements. You may attach additional information to this form to clarify where your reasons or objections are addressed in the administrative record.)

ADDITIONAL INFORMATION: The appeal is limited to a review of the administrative record, the Corps memorandum for the record of the appeal conference or meeting, and any supplemental information that the review officer has determined is needed to clarify the administrative record. Neither the appellant nor the Corps may add new information or analyses to the record. However, you may provide additional information to clarify the location of information that is already in the administrative record.

POINT OF CONTACT FOR QUESTIONS OR INFORMATION:

If you have questions regarding this decision and/or the appeal process you may contact:

Regulatory Branch
Chicago District Corps of Engineers
231 South LaSalle Street, Suite 1500
Chicago, IL 60604-1437
Phone: (312) 846-5530
Fax: (312) 353-4110

If you only have questions regarding the appeal process you may also contact:

Jacob Siegrist
Regulatory Appeals Review Officer
US Army Corps of Engineers
Great Lakes and Ohio River Division
550 Main Street, Room 10524
Cincinnati, Ohio 45202-3222
Phone: (513) 684-2699 Fax: (513) 684-2460

RIGHT OF ENTRY: Your signature below grants the right of entry to Corps of Commanders personnel, and any government consultants, to conduct investigations of the project site during the course of the appeal process. You will be provided a 15-day notice of any site investigation, and will have the opportunity to participate in all site investigations.

Signature of appellant or agent.

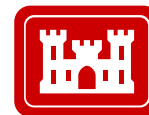
Date:

Telephone number:



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Regulatory Program



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INTERIM APPROVED JURISDICTIONAL DETERMINATION FORM

U.S. Army Corps of Engineers

This form should be completed by following the instructions provided
in the Interim Approved Jurisdictional Determination Form User Manual.

SECTION I: BACKGROUND INFORMATION

A. COMPLETION DATE FOR APPROVED JURISDICTIONAL DETERMINATION (AJD): 20 December 2019

B. ORM NUMBER IN APPROPRIATE FORMAT (e.g., HQ-2015-00001-SMJ): LRC-2003-22401 (200301000)

C. PROJECT LOCATION AND BACKGROUND INFORMATION:

State: Illinois

County/parish/borough: Cook

City: Chicago

Center coordinates of site (lat/long in degree decimal format): Lat. 41.992762, Long. -87.90237.

Map(s)/diagram(s) of review area (including map identifying single point of entry (SPOE) watershed and/or potential jurisdictional areas where applicable) is/are: ☐ attached ☒ in report/map titled (see delineation report, below).

☐ Other sites (e.g., offsite mitigation sites, disposal sites, etc.) are associated with this action and are recorded on a different jurisdictional determination (JD) form. List JD form ID numbers (e.g., HQ-2015-00001-SMJ-1): .

D. REVIEW PERFORMED FOR SITE EVALUATION:

☐ Office (Desk) Determination Only. Date: .

☒ Office (Desk) and Field Determination. Office/Desk Dates: 12-19 Dec 2019 Field Date(s): 4 October 2019.

SECTION II: DATA SOURCES

Check all that were used to aid in the determination and attach data/maps to this AJD form and/or references/citations in the administrative record, as appropriate.

☒ Maps, plans, plots or plat submitted by or on behalf of the applicant/consultant. Title/Date: Included in the delineation report, titled "ORD WOUS Delineation USACE AJD Transmittal" by Mead & Hunt, dated 31 October 2019.

☒ Data sheets prepared/submitted by or on behalf of the applicant/consultant.

☒ Data sheets/delineation report are sufficient for purposes of AJD form. Title/Date: Included in the delineation report cited above.

☐ Data sheets/delineation report are not sufficient for purposes of AJD form. Summarize rationale and include information on revised data sheets/delineation report that this AJD form has relied upon: .

Revised Title/Date: .

☐ Data sheets prepared by the Corps. Title/Date: .

☐ Corps navigable waters study. Title/Date: .

☐ CorpsMap ORM map layers. Title/Date: .

☐ USGS Hydrologic Atlas. Title/Date: .

☐ USGS, NHD, or WBD data/maps. Title/Date: .

☐ USGS 8, 10 and/or 12 digit HUC maps. HUC number: .

☒ USGS maps. Scale & quad name and date: 7.5 minute quadrangle, Elmhurst Ill, 1928 ed.; 7.5 minute topographic quadrangle, Arlington Heights Ill., 1927 ed.

☐ USDA NRCS Soil Survey. Citation: .

☐ USFWS National Wetlands Inventory maps. Citation: .

☐ State/Local wetland inventory maps. Citation: .

☒ FEMA/FIRM maps. Citation: As shown on the National Flood Hazard Layer GIS service, accessed 12-19 December 2019.

☒ Photographs: ☒ Aerial. Citation: 1939 and 2003 aerial photography in the USACE GIS files, and 18 June 2019, 5 August 2019, and 25 July 2018 DigitalGlobe aeriels. or ☒ Other. Citation: As included in above-cited delineation report.

- ☐ LiDAR data/maps. Citation:
- ☐ Previous JDs. File no. and date of JD letter:
- ☐ Applicable/supporting case law:
- ☐ Applicable/supporting scientific literature:
- ☐ Other information (please specify):

SECTION III: SUMMARY OF FINDINGS

Complete ORM "Aquatic Resource Upload Sheet" or Export and Print the Aquatic Resource Water Droplet Screen from ORM for All Waters and Features, Regardless of Jurisdictional Status – Required

A. RIVERS AND HARBORS ACT (RHA) SECTION 10 DETERMINATION OF JURISDICTION:

- ☐ "navigable waters of the U.S." within RHA jurisdiction (as defined by 33 CFR part 329) in the review area.

• Complete Table 1 - Required

NOTE: If the navigable water is not subject to the ebb and flow of the tide or included on the District's list of Section 10 navigable waters list, DO NOT USE THIS FORM TO MAKE THE DETERMINATION. The District must continue to follow the procedure outlined in 33 CFR part 329.14 to make a Section 10 RHA navigability determination.

B. CLEAN WATER ACT (CWA) SECTION 404 DETERMINATION OF JURISDICTION: "waters of the U.S." within CWA jurisdiction (as defined by 33 CFR part 328.3) in the review area. **Check all that apply.**

- ☐ (a)(1): All waters which are currently used, were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters which are subject to the ebb and flow of the tide. (Traditional Navigable Waters (TNWs))

• Complete Table 1 - Required

☐ This AJD includes a case-specific (a)(1) TNW (Section 404 navigable-in-fact) determination on a water that has not previously been designated as such. Documentation required for this case-specific (a)(1) TNW determination is attached.

- ☐ (a)(2): All interstate waters, including interstate wetlands.

• Complete Table 2 - Required

- ☐ (a)(3): The territorial seas.

• Complete Table 3 - Required

- ☐ (a)(4): All impoundments of waters otherwise identified as waters of the U.S. under 33 CFR part 328.3.

• Complete Table 4 - Required

- ☒ (a)(5): All tributaries, as defined in 33 CFR part 328.3, of waters identified in paragraphs (a)(1)-(a)(3) of 33 CFR part 328.3.

• Complete Table 5 - Required

- ☒ (a)(6): All waters adjacent to a water identified in paragraphs (a)(1)-(a)(5) of 33 CFR part 328.3, including wetlands, ponds, lakes, oxbows, impoundments, and similar waters.

• Complete Table 6 - Required

- ☒ Bordering/Contiguous.

Neighboring:

- ☒ (c)(2)(i): All waters located within 100 feet of the ordinary high water mark (OHWM) of a water identified in paragraphs (a)(1)-(a)(5) of 33 CFR part 328.3.

- ☒ (c)(2)(ii): All waters located within the 100-year floodplain of a water identified in paragraphs (a)(1)-(a)(5) of 33 CFR part 328.3 and not more than 1,500 feet of the OHWM of such water.

- ☐ (c)(2)(iii): All waters located within 1,500 feet of the high tide line of a water identified in paragraphs (a)(1) or (a)(3) of 33 CFR part 328.3, and all waters within 1,500 feet of the OHWM of the Great Lakes.

- ☐ (a)(7): All waters identified in 33 CFR 328.3(a)(7)(i)-(v) where they are determined, on a case-specific basis, to have a significant nexus to a water identified in paragraphs (a)(1)-(a)(3) of 33 CFR part 328.3.

• Complete Table 7 for the significant nexus determination. Attach a map delineating the SPOE watershed boundary with (a)(7) waters identified in the similarly situated analysis. - Required

☐ Includes water(s) that are geographically and physically adjacent per (a)(6), but are being used for established, normal farming, silviculture, and ranching activities (33 USC Section 1344(f)(1)) and therefore are not adjacent and require a case-specific significant nexus determination.

- ☒ (a)(8): All waters located within the 100-year floodplain of a water identified in paragraphs (a)(1)-(a)(3) of 33 CFR part 328.3 not covered by (c)(2)(ii) above and all waters located within 4,000 feet of the high tide line or OHWM of a water identified in paragraphs (a)(1)-(a)(5) of 33 CFR part 328.3 where they are determined on a case-specific basis to have a significant nexus to a water identified in paragraphs (a)(1)-(a)(3) of 33 CFR part 328.3.

- **Complete Table 8 for the significant nexus determination. Attach a map delineating the SPOE watershed boundary with (a)(8) waters identified in the similarly situated analysis. - Required**

☐ Includes water(s) that are geographically and physically adjacent per (a)(6), but are being used for established, normal farming, silviculture, and ranching activities (33 USC Section 1344(f)(1)) and therefore are not adjacent and require a case-specific significant nexus determination.

C. NON-WATERS OF THE U.S. FINDINGS:

Check all that apply.

- ☐ The review area is comprised entirely of dry land.
- ☐ Potential-(a)(7) Waters: Waters that DO NOT have a significant nexus to a water identified in paragraphs (a)(1)-(a)(3) of 33 CFR part 328.3.
- **Complete Table 9 and attach a map delineating the SPOE watershed boundary with potential (a)(7) waters identified in the similarly situated analysis. - Required**
- ☐ Includes water(s) that are geographically and physically adjacent per (a)(6), but are being used for established, normal farming, silviculture, and ranching activities (33 USC Section 1344(f)(1)) and therefore are not adjacent and require a case-specific significant nexus determination.
- ☒ Potential-(a)(8) Waters: Waters that DO NOT have a significant nexus to a water identified in paragraphs (a)(1)-(a)(3) of 33 CFR part 328.3.
- **Complete Table 9 and attach a map delineating the SPOE watershed boundary with potential (a)(8) waters identified in the similarly situated analysis. - Required**
- ☐ Includes water(s) that are geographically and physically adjacent per (a)(6), but are being used for established, normal farming, silviculture, and ranching activities (33 USC Section 1344(f)(1)) and therefore are not adjacent and require a case-specific significant nexus determination.
- ☒ Excluded Waters (Non-Waters of U.S.), even where they otherwise meet the terms of paragraphs (a)(4)-(a)(8):
- **Complete Table 10 - Required**
- ☐ (b)(1): Waste treatment systems, including treatment ponds or lagoons designed to meet the requirements of the CWA.
- ☐ (b)(2): Prior converted cropland.
- ☒ (b)(3)(i): Ditches with ephemeral flow that are not a relocated tributary or excavated in a tributary.
- ☒ (b)(3)(ii): Ditches with intermittent flow that are not a relocated tributary, excavated in a tributary, or drain wetlands.
- ☒ (b)(3)(iii): Ditches that do not flow, either directly or through another water, into a water identified in paragraphs (a)(1)-(a)(3).
- ☐ (b)(4)(i): Artificially irrigated areas that would revert to dry land should application of water to that area cease.
- ☐ (b)(4)(ii): Artificial, constructed lakes and ponds created in dry land such as farm and stock watering ponds, irrigation ponds, settling basins, fields flooded for rice growing, log cleaning ponds, or cooling ponds.
- ☐ (b)(4)(iii): Artificial reflecting pools or swimming pools created in dry land.¹
- ☐ (b)(4)(iv): Small ornamental waters created in dry land.¹
- ☒ (b)(4)(v): Water-filled depressions created in dry land incidental to mining or construction activity, including pits excavated for obtaining fill, sand, or gravel that fill with water.
- ☒ (b)(4)(vi): Erosional features, including gullies, rills, and other ephemeral features that do not meet the definition of tributary, non-wetland swales, and lawfully constructed grassed waterways.¹
- ☐ (b)(4)(vii): Puddles.¹
- ☐ (b)(5): Groundwater, including groundwater drained through subsurface drainage systems.¹
- ☒ (b)(6): Stormwater control features constructed to convey, treat, or store stormwater that are created in dry land.¹
- ☐ (b)(7): Wastewater recycling structures created in dry land; detention and retention basins built for wastewater recycling; groundwater recharge basins; percolation ponds built for wastewater recycling; and water distributary structures built for wastewater recycling.
- ☒ Other non-jurisdictional waters/features within review area that do not meet the definitions in 33 CFR 328.3 of (a)(1)-(a)(8) waters and are not excluded waters identified in (b)(1)-(b)(7).
- **Complete Table 11 - Required.**

D. ADDITIONAL COMMENTS TO SUPPORT AJD:

¹ In many cases these excluded features will not be specifically identified on the AJD form, unless specifically requested. Corps Districts may, in case-by-case instances, choose to identify some or all of these features within the review area.

Jurisdictional Waters of the U.S.**Table 1. (a)(1) Traditional Navigable Waters**

(a)(1) Waters Name	(a)(1) Criteria	Rationale to Support (a)(1) Designation Include High Tide Line or Ordinary High Water Mark indicators, when applicable.
N/A	Choose an item.	N/A

Table 2. (a)(2) Interstate Waters

(a)(2) Waters Name	Rationale to Support (a)(2) Designation
N/A	N/A

Table 3. (a)(3) Territorial Seas

(a)(3) Waters Name	Rationale to Support (a)(3) Designation
N/A	N/A

Table 4. (a)(4) Impoundments

(a)(4) Waters Name	Rationale to Support (a)(4) Designation
N/A	N/A
N/A	N/A

Table 5. (a)(5)Tributaries

(a)(5) Waters Name	Flow Regime	(a)(1)-(a)(3) Water Name to which this (a)(5) Tributary Flows	Tributary Breaks	Rationale for (a)(5) Designation and Additional Discussion. Identify flowpath to (a)(1)-(a)(3) water or attach map identifying the flowpath; explain any breaks or flow through excluded/non-jurisdictional features, etc.
Bensenville Ditch Sections 1, 2, 3	Perennial	Des Plaines River	Yes	Bensenville Ditch flows through a wetland (see the feature known as "SW120" in this JD), several culverts (with lengthy culverts at O'Hare Airport, the CP Rail Yard, and W North Ave and smaller road culverts in between) directly to the Des Plaines River, an a(1) traditionally navigable water.
Ditch 30	Intermittent	Des Plaines River	Yes	Ditch 30 is a former alignment of the Bensenville Ditch that flows through a long culvert system into the current alignment of the Bensenville Ditch, and from there follows the above-stated Bensenville Ditch flowpath to the Des Plaines River, an a(1) TNW.
Crystal Creek Sections 1, 2, 3, 4	Perennial	Des Plaines River	Yes	Crystal Creek flows through several culverts (with lengthy culverts at Interstate 290, a Canadian National Railroad Yard, a housing development and several smaller road culverts in-between) directly to the Des Plaines River, an a(1) traditionally-navigable water.
Willow Creek Sections 1, 2, 3, 4, 5, 6, 7, 8, 9, South Sister	Perennial	Des Plaines River	Yes	Willow Creek flows through several culverts (with lengthy culverts at O'Hare Airport, Interstates 294 & 90, and several smaller road culverts in between) directly to the Des Plaines River, an a(1) traditionally navigable water.
North Sister Middle Sister	Perennial	Des Plaines River	Yes	These features are tributaries that each flow through two culverts and then directly into Willow Creek, and from there follows the above-stated Willow Creek flowpath to the Des Plaines River, an a(1) TNW.
Ditch 08	Intermittent	Des Plaines River	No	The features flows directly into the features known as the North Sister, Middle Sister, and South Sister, and from there follows the above-stated Willow Creek flowpath to the Des Plaines River, an a(1) TNW.
Tributary 1: Willow Creek	Perennial	Des Plaines River	No	This feature is a tributary that flows directly into Willow Creek, and from there follows the above-stated Willow Creek flowpath to the Des Plaines River, an a(1) TNW.
Tributary 2: Willow Creek	Perennial	Des Plaines River	Yes	This features is a tributary that flows through a stormwater basin to Willow Creek and from there follows the above-stated Willow Creek flowpath to the Des Plaines River, an a(1) TNW.

Table 5. (a)(5) Tributaries

(a)(5) Waters Name	Flow Regime	(a)(1)-(a)(3) Water Name to which this (a)(5) Tributary Flows	Tributary Breaks	Rationale for (a)(5) Designation and Additional Discussion. Identify flowpath to (a)(1)-(a)(3) water or attach map identifying the flowpath; explain any breaks or flow through excluded/non-jurisdictional features, etc.
Tributary 3: Willow Creek	Perennial	Des Plaines River	No	This feature is a tributary that flows directly into Willow Creek, and from there follows the above-stated Willow Creek flowpath to the Des Plaines River, an a(1) TNW.
Higgins Creek Sections 2, 3	Perennial	Des Plaines River	Yes	This feature is a tributary that flows through two large road culverts, and then directly into Willow Creek, and from there follows the above-stated Willow Creek flowpath to the Des Plaines River, an a(1) TNW.
Ditch 03	Intermittent	Des Plaines River	Yes	This feature is a tributary visible on the 1939 aerial photography and 1920's USGS maps that flows through a large culvert under O'Hare Airport, where it flows directly into Willow Creek, and from there follows the above-stated Willow Creek flowpath to the Des Plaines River, an a(1) TNW.
Ditch 10	Intermittent	Des Plaines River	Yes	This feature is a tributary visible on the 1939 aerial photography and 1920's USGS maps that flows through a large culvert under West Higgins Road and a commercial development, then directly into Willow Creek, and from there follows the above-stated Willow Creek flowpath to the Des Plaines River, an a(1) TNW.
Ditch 13 - Section 2	Intermittent	Des Plaines River	No	This feature is a tributary that flows directly into Willow Creek, and from there follows the above-stated Willow Creek flowpath to the Des Plaines River, an a(1) TNW.

Table 6. (a)(6) Adjacent Waters

(a)(6) Waters Name	(a)(1)-(a)(5) Water Name to which this Water is Adjacent	Rationale for (a)(6) Designation and Additional Discussion. Identify the type of water and how the limits of jurisdiction were established (e.g., wetland, 87 Manual/Regional Supplement); explain how the 100-year floodplain and/or the distance threshold was determined; whether this water extends beyond a threshold; explain if the water is part of a mosaic, etc.
SW19-94 SW120 SE19-55	Bensenville Ditch	The OHWM of the Bensenville Ditch was determined in the field and the wetland boundaries were established using the 1987 Manual/Regional Supplement, and since the established boundaries are bordering the OHWM, the wetlands are a(6) waters.

<u>Table 6. (a)(6) Adjacent Waters</u>		
(a)(6) Waters Name	(a)(1)-(a)(5) Water Name to which this Water is Adjacent	Rationale for (a)(6) Designation and Additional Discussion. Identify the type of water and how the limits of jurisdiction were established (e.g., wetland, 87 Manual/Regional Supplement); explain how the 100-year floodplain and/or the distance threshold was determined; whether this water extends beyond a threshold; explain if the water is part of a mosaic, etc.
SW19-44	Bensenville Ditch	The OHWM of the Bensenville Ditch was determined in the field and the wetland boundaries were established using the 1987 Manual/Regional Supplement, and since the established boundary is within 100 feet of the OHWM, the wetland is an a(6) water under the first neighboring definition.
SE19-46 SE19-47 SE19-60 SW19-37	Bensenville Ditch	The OHWM of the Bensenville Ditch was determined in the field and the wetland boundaries were established using the 1987 Manual/Regional Supplement, and since the established boundaries are within 1,500 feet of the OHWM and within the effective 100-year (Zone A) floodplain as shown on the effective FIRM, the wetlands are a(6) waters under the second neighboring definition.
SE19-97	Crystal Creek	The OHWM of Crystal Creek was determined in the field and the wetland boundary was established using the 1987 Manual/Regional Supplement, and since the established boundary is bordering the OHWM, the wetland is an a(6) water.
SE19-114 SE64	Crystal Creek	The OHWM of Willow Creek was determined in the field and the wetland boundaries were established using the 1987 Manual/Regional Supplement, and since the established boundaries are within 100 feet of the OHWM, the wetlands are a(6) waters under the first neighboring definition.
SE19-124	Crystal Creek	The OHWM of Crystal Creek was determined in the field and the wetland boundaries were established using the 1987 Manual/Regional Supplement, and since the established boundaries are within 1,500 feet of the OHWM and within the effective 100-year (Zone A) floodplain as shown on the effective FIRM, the wetlands are a(6) waters under the second neighboring definition.
NW19-01 NE19-116	Willow Creek	The OHWM of Willow Creek was determined in the field and the wetland boundaries were established using the 1987 Manual/Regional Supplement, and since the established boundaries are within 100 feet of the OHWM, the wetlands are a(6) waters under the first neighboring definition.
NE 41	Willow Creek	The OHWM of Willow Creek was determined in the field and the wetland boundary was established using the 1987 Manual/Regional Supplement, and since the established boundary is bordering the OHWM, the wetland is an a(6) water.
NW19-96	Tributary 1: Willow Creek	The OHWM of the Tributary 1: Willow Creek was determined in the field and the wetland boundary was established using the 1987 Manual/Regional Supplement, and since the established boundary is bordering the OHWM, the wetland is an a(6) water.
NW19-78	Tributary 2: Willow Creek	The OHWM of the Tributary 2: Willow Creek was determined in the field and the wetland boundary was established using the 1987 Manual/Regional Supplement, and since the established boundary is within 100 feet of the OHWM, the wetland is an a(6) water under the first neighboring definition.

Table 7. (a)(7) Waters

SPOE Name	(a)(7) Waters Name	(a)(1)-(a)(3) Water Name to which this Water has a Significant Nexus	Significant Nexus Determination Identify SPOE watershed; discuss whether any similarly situated waters were present and aggregated for SND; discuss data, provide analysis, and summarize how the waters have more than speculative or insubstantial effect on the physical, chemical, or biological integrity of the (a)(1)-(a)(3) water, etc.
N/A	N/A	N/A	N/A

Table 8. (a)(8) Waters

SPOE Name	(a)(8) Waters Name	(a)(1)-(a)(3) Water Name to which this Water has a Significant Nexus	Significant Nexus Determination Identify SPOE watershed; explain how 100-yr floodplain and/or the distance threshold was determined; discuss whether waters were determined to be similarly situated to subject water and aggregated for SND; discuss data, provide analysis, and then summarize how the waters have more than speculative or insubstantial effect the on the physical, chemical, or biological integrity of the (a)(1)-(a)(3) water, etc.
Willow Creek	SE62, SE19-50, SE19-48, SE19-49, SE19-51, SE19-65, SE19-66, SE19-95, SE19-120, SE19-121, SE19-122, SE19-125	Des Plaines River	The Willow Creek SPOE is the watershed that flows into the Des Plaines River at the confluence with Willow Creek. It has an area of approximately 13,400 acres. The Ordinary High Water Mark of the (a)(1) through (a)(5) waters was determined in the field, as set out in the (a)(5) waters above, and the 4000-foot buffer was calculated in ArcGIS using the NAD83 Illinois State Plane East projection. These features are all within the SPOE, are all the same Cowardin type (PEM), share the same type of soils, vegetation, and landform classifications, and therefore are all sufficiently close together and have similar functions. Together, these features have a greater than speculative or insubstantial effect on the physical and chemical integrity of the Des Plaines River through sediment trapping, pollutant management, and runoff storage.
Bensenville Ditch - Crystal Creek	NE19-104, NE19-104A, NE19-104B, NE19-105, NE19-106, NE19-109, NE19-110, NE19-111, NE19-112, NE19-113, NE19-117, NE19-118, NE19-20, NE19-61, NE65, NW19-04, NW19-05, NW19-12, NW39, SE19-137, NW19-06, SE19-52, NE19-62, NE19-87, NE19-88, NW19-18, NW19-77, SE19-115, SE19-127, SE19-136, SE19-138	Des Plaines River	The Bensenville Ditch – Crystal Creek SPOE is a combined topographic watershed that is drained by both Bensenville Ditch in its south and west portions, and Crystal Creek in its eastern portion. Recent modifications to the project area, as well as the highly modified nature of Bensenville Ditch and Crystal Creek, have made it impracticable to distinguish between the two flowpaths to the Des Plaines River using the best available GIS data, and therefore they will be regarded as a SPOE watershed. The Ordinary High Water Mark of the (a)(1) through (a)(5) waters was determined in the field, as set out in the (a)(5) waters above, and the 4000-foot buffer was calculated in ArcGIS using the NAD83 Illinois State Plane East projection. These features are all within the SPOE, are all the same Cowardin system (PEM/PSS/PFO), share the same type of soils, vegetation, and landform classifications, and therefore are all sufficiently close together and have similar functions. Together, these features have a greater than speculative or insubstantial effect on the physical and chemical integrity of the Des Plaines River through sediment trapping, pollutant management, and runoff storage.

Non-Jurisdictional Waters**Table 9. Non-Waters/No Significant Nexus**

SPOE Name	Non-(a)(7)/(a)(8) Waters Name	(a)(1)-(a)(3) Water Name to which this Water DOES NOT have a Significant Nexus	Basis for Determination that the Functions DO NOT Contribute Significantly to the Chemical, Physical, or Biological Integrity of the (a)(1)-(a)(3) Water. Identify SPOE watershed; explain how 100-yr floodplain and/or the distance threshold was determined; discuss whether waters were determined to be similarly situated to the subject water; discuss data, provide analysis, and summarize how the waters did not have more than a speculative or insubstantial effect on the physical, chemical, or biological integrity of the (a)(1)-(a)(3) water.
Bensenville Ditch – Crystal Creek	SE19-53, SE19-43, SE19-58, SE19-63, SE19-64, SW19-28, SW19-56, SW19-57, SW19-59, SW19-72, SW19-73, SW19-34	Des Plaines River	These features met the wetland criteria according to the 1987 Wetland Delineation manual and appropriate Regional Supplement, but are contained within the south stormwater treatment system and drain through a culvert system to the South Drainage Basin at O'Hare Airport, which discharges to the MWRD Deep Tunnel system and is eventually treated at a MWRD treatment plant., and accordingly are not hydrologically connected to the Des Plaines River. Because they are not physically connected, the likelihood of these features having effects on the chemical or physical integrity of the Des Plaines River is insubstantial. Because these features are on the airside of the O'Hare International Airport, which is controlled according to FAA regulations for wildlife, biological effects from these features on the Des Plaines River are also insubstantial.

Table 10. Non-Waters/Excluded Waters and Features

Paragraph (b) Excluded Feature/Water Name	Rationale for Paragraph (b) Excluded Feature/Water and Additional Discussion.
Ditches 01, 22, 25, 28; NW19-07, NW19-08, NW19-09, NE19-16, NE19-17, NE19-19, NE19-21, SW19-35, SW19-38, SW19-39, SE19-67, SW19-71, NW19-75, NW19-76, NW19-84, SW19-93, SE19-98, NE19-89, SE19-119, NE19-126, NE19-128, SE19-129, SE19-140, SE19-141, SW19-142, SE19-143, SE19-144, SE19-146	These ditches have one or more indicators of an OHWM, but have ephemeral flow, were not constructed in or relocating a tributary (as compared to 1939 aerial photography and 1928 USGS topographic maps). Accordingly, these are b(3)(i) excluded ditches.

Table 10. Non-Waters/Excluded Waters and Features

Paragraph (b) Excluded Feature/Water Name	Rationale for Paragraph (b) Excluded Feature/Water and Additional Discussion.
Ditches 02, 04, 05, 06, 07, 09, 11, 13 (Section 1), 14, 15, 16, 17, 18, 19, 20, 21, 23, 24, 27, 29, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42 (PO Drainage), 43, 44, 45, 46, 47, 48; NE19-22, NW19-02, NW19-03, SE19-123, SE19-130, SE19-139	These ditches have one or more indicators of an OHWM, but have intermittent flow, were not constructed in or relocating a tributary (as compared to 1939 aerial photography and 1928 USGS topographic maps), and do not drain wetlands. Accordingly, these are b(3)(ii) excluded ditches.
Ditch 12	This Ditch does drain a wetland and has intermittent flow, but drains through a culvert system to the South Drainage Basin at O'Hare Airport, which discharges to the MWRD Deep Tunnel system and is eventually treated at a MWRD treatment plant. Accordingly, it does not drain to an (a)(1) through (a)(3) water and is a (b)(3)(iii) excluded ditch.
SE19-25, SE19-26, SE19-27, SE19-41, SE19-54, SE19-68, SW19-29, SW19-30, SW19-31, SW19-32, SW19-33, SW19-36, SW19-42, SW19-70, SW19-74	These ditches met the wetland criteria according to the 1987 Wetland Delineation manual and appropriate Regional Supplement, but drain through a culvert system to the South Drainage Basin at O'Hare Airport, which discharges to the MWRD Deep Tunnel system and is eventually treated at a MWRD treatment plant. Accordingly, it does not drain to an (a)(1) through (a)(3) water and is a (b)(3)(iii) excluded ditch.
NW19-103	This feature had one or more indicators of an OHWM and within that OHWM met the wetland criteria according to the 1987 Wetland Delineation manual and appropriate Regional Supplement, but is a ditch constructed in dry land. This ditch is not connected to a stream network and appears to connect and store local runoff. As such, it does not drain to an (a)(1) through (a)(3) water and is therefore an excluded (b)(3)(iii) water.
Erosional Features 1, 2, 3	These features are erosional features without an OHWM or Bed & Banks, and as such are excluded (b)(4)(vi) waters.
NE19-69	This feature met the wetland criteria according to the 1987 Wetland Delineation manual and appropriate Regional Supplement, but is a construction pit which has not been abandoned, and has no use in interstate or foreign commerce. Accordingly, this is an excluded (b)(4)(v) water.
NE19-13, NE19-14, NE19-15, NE19-23, NW19-10, NW19-11, SE19-131, SE19-24	These features met the wetland criteria according to the 1987 Wetland Delineation manual and appropriate Regional Supplement, but are part of stormwater control features constructed in dry land (as verified against 1939 and 2003 aerial photography). Accordingly, these are excluded (b)(6) waters.

<u>Table 11. Non-Waters/Other</u>	
Other Non-Waters of U.S. Feature/Water Name	Rationale for Non-Waters of U.S. Feature/Water and Additional Discussion.
NE19-107, NE19-108, NE19-80, NW19-79, NW19-81, NW19-82, NW19-83, NW19-90, NW19-91, NW19-92, SE19-100, SE19-132, SE19-133, SE19-134, SE19-135, SE19-145, SE19-85, SE19-86, SE19-99, SW19-101, SW19-102	These features met the wetland criteria according to the 1987 Wetland Delineation manual and appropriate Regional Supplement, but did not meet the criteria for adjacent (a)(6) waters. Furthermore, they are more than 4,000 feet from the OHWM of any (a)(1) through (a)(5) waters, and therefore cannot meet the definition of (a)(8) waters.

ATTACHMENT I-4

CONSULTATION – U.S. FISH & WILDLIFE SERVICE AND ILLINOIS DEPARTMENT OF NATURAL RESOURCES



United States Department of the Interior

FISH AND WILDLIFE SERVICE

Chicago Ecological Service Field Office

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May 26, 2021

Consultation Code: 03E13000-2021-SLI-0597

Event Code: 03E13000-2021-E-01415

Project Name: Chicago-O'Hare Airport Terminal Area Plan

Subject: List of threatened and endangered species that may occur in your proposed project location or may be affected by your proposed project

To Whom It May Concern:

The attached species list identifies any federally threatened, endangered, proposed and candidate species that may occur within the boundary of your proposed project or may be affected by your proposed project. The list also includes designated critical habitat if present within your proposed project area or affected by your project. This list is provided to you as the initial step of the consultation process required under section 7(c) of the Endangered Species Act, also referred to as Section 7 Consultation.

Please note! For all **wind energy projects** and **projects that include installing towers that use guy wires or are over 200 feet in height**, please contact this field office directly for assistance, even if no federally listed plants, animals or critical habitat are present within your proposed project or may be affected by your proposed project.

For all other projects, continue the Section 7 Consultation process by going to our Section 7 Technical Assistance website at <http://www.fws.gov/midwest/endangered/section7/s7process/index.html>. If you are familiar with this website, you may want to go to Step 2 of the Section 7 Consultation process at <http://www.fws.gov/midwest/endangered/section7/s7process/step2.html>.

Under 50 CFR 402.12(e) (the regulations that implement Section 7 of the Endangered Species Act) the accuracy of this species list should be verified after 90 days. This verification can be completed formally or informally. You may verify the list by visiting the ECOS-IPaC website <http://ecos.fws.gov/ipac/> at regular intervals during project planning and implementation and completing the same process you used to receive the attached list. As an alternative, you may contact this Ecological Services Field Office for updates.

Although no longer protected under the Endangered Species Act, be aware that bald eagles are protected under the Bald and Golden Eagle Protection Act (16 U.S.C. 668 *et seq.*), as are golden eagles. Projects affecting these species may require measures to avoid harming eagles or may require a permit. If your project is near an eagle nest or winter roost area, see our Eagle Permits website at <http://www.fws.gov/midwest/midwestbird/EaglePermits/index.html> to help you determine if you can avoid impacting eagles or if a permit may be necessary.

We appreciate your concern for threatened and endangered species. Please include the Consultation Tracking Number in the header of this letter with any request for consultation or correspondence about your project that you submit to our office.

Attachment(s):

- Official Species List

Official Species List

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

Chicago Ecological Service Field Office

U.s. Fish And Wildlife Service Chicago Ecological Services Office
230 South Dearborn St., Suite 2938
Chicago, IL 60604-1507
(312) 485-9337

Project Description: An EA is being conducted to evaluate the City of Chicago Department of Aviation's ("CDA") proposed Terminal Area Plan (Phase I or the 10-Year Plan), FAA operational procedures for the O'Hare airfield and airspace, Capital Improvement Projects, and hotel developments. Multiple projects are proposed for Airport involving demolition of existing pavement and concourses prior to terminal expansions, parking and roadway improvements, a tunnel, taxiway improvements, and building construction.

Approximate location of the project can be viewed in Google Maps: <https://www.google.com/maps/@41.97686205,-87.9113253541461,14z>



NOVEMBER 2022

Endangered Species Act Species

There is a total of 8 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species. Note that 1 of these species should be considered only under certain conditions.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries¹, as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

-
1. [NOAA Fisheries](#), also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

Mammals

NAME	STATUS
Northern Long-eared Bat <i>Myotis septentrionalis</i> No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/9045	Threatened

Birds

NAME	STATUS
Piping Plover <i>Charadrius melodus</i> Population: [Great Lakes watershed DPS] - Great Lakes, watershed in States of IL, IN, MI, MN, NY, OH, PA, and WI and Canada (Ont.) There is final critical habitat for this species. The location of the critical habitat is not available. Species profile: https://ecos.fws.gov/ecp/species/6039	Endangered
Red Knot <i>Calidris canutus rufa</i> No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/1864	Threatened

Reptiles

NAME	STATUS
Eastern Massasauga (=rattlesnake) <i>Sistrurus catenatus</i> No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/2202	Threatened

Insects

NAME	STATUS
Hine's Emerald Dragonfly <i>Somatochlora hineana</i> There is final critical habitat for this species. The location of the critical habitat is not available. Species profile: https://ecos.fws.gov/ecp/species/7877	Endangered

Flowering Plants

NAME	STATUS
Eastern Prairie Fringed Orchid <i>Platanthera leucophaea</i> No critical habitat has been designated for this species. This species only needs to be considered under the following conditions: <ul style="list-style-type: none"> Follow the guidance provided at https://www.fws.gov/midwest/endangered/section7/s7process/plants/epfos7guide.html Species profile: https://ecos.fws.gov/ecp/species/601	Threatened
Leafy Prairie-clover <i>Dalea foliosa</i> No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/5498	Endangered
Prairie Bush-clover <i>Lespedeza leptostachya</i> No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/4458	Threatened

Critical habitats

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.



Applicant: Federal Aviation Administration - Chicago Airports
District Office

IDNR Project Number: 2114104

Contact: Brauna Hartzell

Date: 05/26/2021

Address: 300 East Devon Avenue
Des Plaines, IL 60018

Project: Chicago O'Hare Terminal Area Plan

Address: 10510 W. Zemke Road, Chicago

Description: An EA is being conducted to evaluate the City of Chicago Department of Aviation's ("CDA") proposed Terminal Area Plan (Phase I or the 10-Year Plan), FAA operational procedures for the O'Hare airfield and airspace, Capital Improvement Projects, and hotel developments. Multiple projects are proposed for Airport involving demolition of existing pavement and concourses prior to terminal expansions, parking and roadway improvements, a tunnel, taxiway improvements, and building construction.

Natural Resource Review Results

This project was submitted for information only. It is not a consultation under Part 1075.

The Illinois Natural Heritage Database contains no record of State-listed threatened or endangered species, Illinois Natural Area Inventory sites, dedicated Illinois Nature Preserves, or registered Land and Water Reserves in the vicinity of the project location.

Location

The applicant is responsible for the accuracy of the location submitted for the project.

County: Cook

County: DuPage

Township, Range, Section:

Township, Range, Section:

40N, 12E, 4

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40N, 12E, 5

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40N, 12E, 6

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40N, 12E, 7

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40N, 12E, 8

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40N, 12E, 9

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40N, 12E, 18

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41N, 11E, 36

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41N, 12E, 31

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41N, 12E, 32

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41N, 12E, 33

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40N, 11E, 1

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40N, 11E, 12

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40N, 11E, 13



IL Department of Natural Resources

Contact

Impact Assessment Section

217-785-5500

Division of Ecosystems & Environment

IDNR Project Number: 2114104

IDNR Project Number: 2114104

Disclaimer

The Illinois Natural Heritage Database cannot provide a conclusive statement on the presence, absence, or condition of natural resources in Illinois. This review reflects the information existing in the Database at the time of this inquiry, and should not be regarded as a final statement on the site being considered, nor should it be a substitute for detailed site surveys or field surveys required for environmental assessments. If additional protected resources are encountered during the project's implementation, compliance with applicable statutes and regulations is required.

Terms of Use

By using this website, you acknowledge that you have read and agree to these terms. These terms may be revised by IDNR as necessary. If you continue to use the EcoCAT application after we post changes to these terms, it will mean that you accept such changes. If at any time you do not accept the Terms of Use, you may not continue to use the website.

1. The IDNR EcoCAT website was developed so that units of local government, state agencies and the public could request information or begin natural resource consultations on-line for the Illinois Endangered Species Protection Act, Illinois Natural Areas Preservation Act, and Illinois Interagency Wetland Policy Act. EcoCAT uses databases, Geographic Information System mapping, and a set of programmed decision rules to determine if proposed actions are in the vicinity of protected natural resources. By indicating your agreement to the Terms of Use for this application, you warrant that you will not use this web site for any other purpose.

2. Unauthorized attempts to upload, download, or change information on this website are strictly prohibited and may be punishable under the Computer Fraud and Abuse Act of 1986 and/or the National Information Infrastructure Protection Act.

3. IDNR reserves the right to enhance, modify, alter, or suspend the website at any time without notice, or to terminate or restrict access.

Security

EcoCAT operates on a state of Illinois computer system. We may use software to monitor traffic and to identify unauthorized attempts to upload, download, or change information, to cause harm or otherwise to damage this site. Unauthorized attempts to upload, download, or change information on this server is strictly prohibited by law.

Unauthorized use, tampering with or modification of this system, including supporting hardware or software, may subject the violator to criminal and civil penalties. In the event of unauthorized intrusion, all relevant information regarding possible violation of law may be provided to law enforcement officials.

Privacy

EcoCAT generates a public record subject to disclosure under the Freedom of Information Act. Otherwise, IDNR uses the information submitted to EcoCAT solely for internal tracking purposes.

**EcoCAT Receipt****Project Code** 2114104**APPLICANT****DATE**

Federal Aviation Administration - Chicago
Airports District Office
Brauna Hartzell
300 East Devon Avenue
Des Plaines, IL 60018

5/26/2021

DESCRIPTION**FEE****CONVENIENCE FEE****TOTAL PAID**

EcoCAT Consultation

\$ 25.00

\$ 1.00

\$ 26.00

TOTAL PAID**\$ 26.00**

Illinois Department of Natural Resources
One Natural Resources Way
Springfield, IL 62702
217-785-5500
dnr.ecocat@illinois.gov



United States Department of the Interior

FISH AND WILDLIFE SERVICE

Chicago Ecological Service Field Office
U.s. Fish And Wildlife Service Chicago Ecological Services Office
230 South Dearborn St., Suite 2938
Chicago, IL 60604-1507
Phone: (312) 485-9337



In Reply Refer To:

October 07, 2022

Project Code: 2022-0043786

Project Name: Chicago-O'Hare Airport Terminal Area Plan

Subject: List of threatened and endangered species that may occur in your proposed project location or may be affected by your proposed project

To Whom It May Concern:

The enclosed species list identifies threatened, endangered, proposed and candidate species, as well as proposed and final designated critical habitat, that may occur within the boundary of your proposed project and/or may be affected by your proposed project. The species list fulfills the requirements of the U.S. Fish and Wildlife Service (Service) under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 *et seq.*).

New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. Please feel free to contact us if you need more current information or assistance regarding the potential impacts to federally proposed, listed, and candidate species and federally designated and proposed critical habitat. Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days. This verification can be completed formally or informally as desired. The Service recommends that verification be completed by visiting the ECOS-IPaC website at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the ECOS-IPaC system by completing the same process used to receive the enclosed list.

The purpose of the Act is to provide a means whereby threatened and endangered species and the ecosystems upon which they depend may be conserved. Under sections 7(a)(1) and 7(a)(2) of the Act and its implementing regulations (50 CFR 402 *et seq.*), Federal agencies are required to utilize their authorities to carry out programs for the conservation of threatened and endangered species and to determine whether projects may affect threatened and endangered species and/or designated critical habitat.

Additionally, please note that on March 23, 2022, the Service published a proposal to reclassify the northern long-eared bat (NLEB) as endangered under the Endangered Species Act. The U.S. District Court for the District of Columbia has ordered the Service to complete a new final listing

determination for the NLEB by November 2022 (Case 1:15-cv-00477, March 1, 2021). The bat, currently listed as threatened, faces extinction due to the range-wide impacts of white-nose syndrome (WNS), a deadly fungal disease affecting cave-dwelling bats across the continent. The proposed reclassification, if finalized, would remove the current 4(d) rule for the NLEB, as these rules may be applied only to threatened species. Depending on the type of effects a project has on NLEB, the change in the species' status may trigger the need to re-initiate consultation for any actions that are not completed and for which the Federal action agency retains discretion once the new listing determination becomes effective (anticipated to occur by December 30, 2022). If your project may result in incidental take of NLEB after the new listing goes into effect this will first need to be addressed in an updated consultation that includes an Incidental Take Statement. If your project may require re-initiation of consultation, please contact our office for additional guidance.

A Biological Assessment is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2)(c)). For projects other than major construction activities, the Service suggests that a biological evaluation similar to a Biological Assessment be prepared to determine whether the project may affect listed or proposed species and/or designated or proposed critical habitat. Recommended contents of a Biological Assessment are described at 50 CFR 402.12.

If a Federal agency determines, based on the Biological Assessment or biological evaluation, that listed species and/or designated critical habitat may be affected by the proposed project, the agency is required to consult with the Service pursuant to 50 CFR 402. In addition, the Service recommends that candidate species, proposed species and proposed critical habitat be addressed within the consultation. More information on the regulations and procedures for section 7 consultation, including the role of permit or license applicants, can be found in the "Endangered Species Consultation Handbook" at:

<http://www.fws.gov/endangered/esa-library/pdf/TOC-GLOS.PDF>

Migratory Birds: In addition to responsibilities to protect threatened and endangered species under the Endangered Species Act (ESA), there are additional responsibilities under the Migratory Bird Treaty Act (MBTA) and the Bald and Golden Eagle Protection Act (BGEPA) to protect native birds from project-related impacts. Any activity, intentional or unintentional, resulting in take of migratory birds, including eagles, is prohibited unless otherwise permitted by the U.S. Fish and Wildlife Service (50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)). For more information regarding these Acts see <https://www.fws.gov/birds/policies-and-regulations.php>.

The MBTA has no provision for allowing take of migratory birds that may be unintentionally killed or injured by otherwise lawful activities. It is the responsibility of the project proponent to comply with these Acts by identifying potential impacts to migratory birds and eagles within applicable NEPA documents (when there is a federal nexus) or a Bird/Eagle Conservation Plan (when there is no federal nexus). Proponents should implement conservation measures to avoid or minimize the production of project-related stressors or minimize the exposure of birds and their resources to the project-related stressors. For more information on avian stressors and

recommended conservation measures see <https://www.fws.gov/birds/bird-enthusiasts/threats-to-birds.php>.

In addition to MBTA and BGEPA, Executive Order 13186: *Responsibilities of Federal Agencies to Protect Migratory Birds*, obligates all Federal agencies that engage in or authorize activities that might affect migratory birds, to minimize those effects and encourage conservation measures that will improve bird populations. Executive Order 13186 provides for the protection of both migratory birds and migratory bird habitat. For information regarding the implementation of Executive Order 13186, please visit <https://www.fws.gov/birds/policies-and-regulations/executive-orders/eo-13186.php>.

We appreciate your concern for threatened and endangered species. The Service encourages Federal agencies to include conservation of threatened and endangered species into their project planning to further the purposes of the Act. Please include the Consultation Code in the header of this letter with any request for consultation or correspondence about your project that you submit to our office.

Attachment(s):

- Official Species List

Official Species List

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

Chicago Ecological Service Field Office

U.s. Fish And Wildlife Service Chicago Ecological Services Office
230 South Dearborn St., Suite 2938
Chicago, IL 60604-1507
(312) 485-9337

Project Summary

Project Code: 2022-0043786

Project Name: Chicago-O'Hare Airport Terminal Area Plan

Project Type: Airport - New Construction

Project Description: An EA is being conducted to evaluate the City of Chicago Department of Aviation's ("CDA") proposed Terminal Area Plan (Phase I or the 10-Year Plan), FAA operational procedures for the O'Hare airfield and airspace, Capital Improvement Projects, and hotel developments. Multiple projects are proposed for Airport involving demolition of existing pavement and concourses prior to terminal expansions, parking and roadway improvements, a tunnel, taxiway improvements, and building construction.

Project Location:

Approximate location of the project can be viewed in Google Maps: <https://www.google.com/maps/@41.97686205,-87.9113253541461,14z>



Counties: Cook and DuPage counties, Illinois

Endangered Species Act Species

There is a total of 8 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species. Note that 1 of these species should be considered only under certain conditions.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries¹, as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

-
1. [NOAA Fisheries](#), also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

Mammals

NAME	STATUS
Northern Long-eared Bat <i>Myotis septentrionalis</i> No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/9045	Threatened

Birds

NAME	STATUS
Piping Plover <i>Charadrius melodus</i> Population: [Great Lakes watershed DPS] - Great Lakes, watershed in States of IL, IN, MI, MN, NY, OH, PA, and WI and Canada (Ont.) There is final critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/6039	Endangered
Red Knot <i>Calidris canutus rufa</i> There is proposed critical habitat for this species. Species profile: https://ecos.fws.gov/ecp/species/1864	Threatened

Reptiles

NAME	STATUS
Eastern Massasauga (=rattlesnake) <i>Sistrurus catenatus</i> No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/2202	Threatened

Insects

NAME	STATUS
Hine's Emerald Dragonfly <i>Somatochlora hineana</i> There is final critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/7877	Endangered
Monarch Butterfly <i>Danaus plexippus</i> No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/9743	Candidate

Flowering Plants

NAME	STATUS
Eastern Prairie Fringed Orchid <i>Platanthera leucophaea</i> No critical habitat has been designated for this species. This species only needs to be considered under the following conditions: <ul style="list-style-type: none"> Follow the guidance provided at https://www.fws.gov/midwest/endangered/section7/s7process/plants/epfos7guide.html Species profile: https://ecos.fws.gov/ecp/species/601	Threatened
Leafy Prairie-clover <i>Dalea foliosa</i> Population: No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/5498	Endangered

Critical habitats

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

IPaC User Contact Information

Agency: Mead & Hunt, Inc.

Name: Brauna Hartzell

Address: 2440 Deming Way

City: Middleton

State: WI

Zip: 53562

Email: brauna.hartzell@meadhunt.com

Phone: 6082736380

Lead Agency Contact Information

Lead Agency: Federal Aviation Administration

ATTACHMENT I-5

CORRESPONDENCE



United States Department of the Interior

FISH AND WILDLIFE SERVICE

Chicago Ecological Service Field Office

U.S. Fish And Wildlife Service Chicago Ecological Services Office

230 South Dearborn St., Suite 2938

Chicago, IL 60604-1507

Phone: (312) 485-9337 Fax:

<http://www.fws.gov/midwest/endangered/section7/s7process/7a2process.html>



In Reply Refer To:

July 12, 2021

Consultation code: 03E13000-2021-TA-0597

Event Code: 03E13000-2021-E-01639

Project Name: Chicago-O'Hare Airport Terminal Area Plan

Subject: Verification letter for the 'Chicago-O'Hare Airport Terminal Area Plan' project under the January 5, 2016, Programmatic Biological Opinion on Final 4(d) Rule for the Northern Long-eared Bat and Activities Excepted from Take Prohibitions.

Dear Brauna Hartzell:

The U.S. Fish and Wildlife Service (Service) received on July 12, 2021 your effects determination for the 'Chicago-O'Hare Airport Terminal Area Plan' (the Action) using the northern long-eared bat (*Myotis septentrionalis*) key within the Information for Planning and Consultation (IPaC) system. This IPaC key assists users in determining whether a Federal action is consistent with the activities analyzed in the Service's January 5, 2016, Programmatic Biological Opinion (PBO). The PBO addresses activities excepted from "take"^[1] prohibitions applicable to the northern long-eared bat under the Endangered Species Act of 1973 (ESA) (87 Stat.884, as amended; 16 U.S.C. 1531 et seq.).

Based upon your IPaC submission, the Action is consistent with activities analyzed in the PBO. The Action may affect the northern long-eared bat; however, any take that may occur as a result of the Action is not prohibited under the ESA Section 4(d) rule adopted for this species at 50 CFR §17.40(o). Unless the Service advises you within 30 days of the date of this letter that your IPaC-assisted determination was incorrect, this letter verifies that the PBO satisfies and concludes your responsibilities for this Action under ESA Section 7(a)(2) with respect to the northern long-eared bat.

Please report to our office any changes to the information about the Action that you submitted in IPaC, the results of any bat surveys conducted in the Action area, and any dead, injured, or sick northern long-eared bats that are found during Action implementation. If the Action is not completed within one year of the date of this letter, you must update and resubmit the information required in the IPaC key.

This IPaC-assisted determination allows you to rely on the PBO for compliance with ESA Section 7(a)(2) only for the northern long-eared bat. It **does not** apply to the following ESA-protected species that also may occur in the Action area:

- Eastern Massasauga (=rattlesnake) *Sistrurus catenatus* Threatened
- Eastern Prairie Fringed Orchid *Platanthera leucophaea* Threatened
- Hine's Emerald Dragonfly *Somatochlora hineana* Endangered
- Leafy Prairie-clover *Dalea foliosa* Endangered
- Piping Plover *Charadrius melodus* Endangered
- Prairie Bush-clover *Lespedeza leptostachya* Threatened
- Red Knot *Calidris canutus rufa* Threatened

If the Action may affect other federally listed species besides the northern long-eared bat, a proposed species, and/or designated critical habitat, additional consultation between you and this Service office is required. If the Action may disturb bald or golden eagles, additional coordination with the Service under the Bald and Golden Eagle Protection Act is recommended.

[1]Take means to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct [ESA Section 3(19)].

Action Description

You provided to IPaC the following name and description for the subject Action.

1. Name

Chicago-O'Hare Airport Terminal Area Plan

2. Description

The following description was provided for the project 'Chicago-O'Hare Airport Terminal Area Plan':

An EA is being conducted to evaluate the City of Chicago Department of Aviation's ("CDA") proposed Terminal Area Plan (Phase I or the 10-Year Plan), FAA operational procedures for the O'Hare airfield and airspace, Capital Improvement Projects, and hotel developments. Multiple projects are proposed for Airport involving demolition of existing pavement and concourses prior to terminal expansions, parking and roadway improvements, a tunnel, taxiway improvements, and building construction.

Approximate location of the project can be viewed in Google Maps: <https://www.google.com/maps/@41.97686205,-87.9113253541461,14z>



Determination Key Result

This Federal Action may affect the northern long-eared bat in a manner consistent with the description of activities addressed by the Service's PBO dated January 5, 2016. Any taking that may occur incidental to this Action is not prohibited under the final 4(d) rule at 50 CFR §17.40(o). Therefore, the PBO satisfies your responsibilities for this Action under ESA Section 7(a)(2) relative to the northern long-eared bat.

Determination Key Description: Northern Long-eared Bat 4(d) Rule

This key was last updated in IPaC on May 15, 2017. Keys are subject to periodic revision.

This key is intended for actions that may affect the threatened northern long-eared bat.

The purpose of the key for Federal actions is to assist determinations as to whether proposed actions are consistent with those analyzed in the Service's PBO dated January 5, 2016.

Federal actions that may cause prohibited take of northern long-eared bats, affect ESA-listed species other than the northern long-eared bat, or affect any designated critical habitat, require ESA Section 7(a)(2) consultation in addition to the use of this key. Federal actions that may affect species proposed for listing or critical habitat proposed for designation may require a conference under ESA Section 7(a)(4).

Determination Key Result

This project may affect the threatened Northern long-eared bat; therefore, consultation with the Service pursuant to Section 7(a)(2) of the Endangered Species Act of 1973 (87 Stat.884, as amended; 16 U.S.C. 1531 et seq.) is required. However, based on the information you provided, this project may rely on the Service's January 5, 2016, *Programmatic Biological Opinion on Final 4(d) Rule for the Northern Long-Eared Bat and Activities Excepted from Take Prohibitions* to fulfill its Section 7(a)(2) consultation obligation.

Qualification Interview

1. Is the action authorized, funded, or being carried out by a Federal agency?
Yes
2. Have you determined that the proposed action will have "no effect" on the northern long-eared bat? (If you are unsure select "No")
No
3. Will your activity purposefully **Take** northern long-eared bats?
No
4. [Semantic] Is the project action area located wholly outside the White-nose Syndrome Zone?
Automatically answered
No
5. Have you contacted the appropriate agency to determine if your project is near a known hibernaculum or maternity roost tree?

Location information for northern long-eared bat hibernacula is generally kept in state Natural Heritage Inventory databases – the availability of this data varies state-by-state. Many states provide online access to their data, either directly by providing maps or by providing the opportunity to make a data request. In some cases, to protect those resources, access to the information may be limited. A web page with links to state Natural Heritage Inventory databases and other sources of information on the locations of northern long-eared bat roost trees and hibernacula is available at www.fws.gov/midwest/endangered/mammals/nleb/nhisites.html.

Yes

6. Will the action affect a cave or mine where northern long-eared bats are known to hibernate (i.e., hibernaculum) or could it alter the entrance or the environment (physical or other alteration) of a hibernaculum?
No
7. Will the action involve Tree Removal?
No

Project Questionnaire

If the project includes forest conversion, report the appropriate acreages below.

Otherwise, type '0' in questions 1-3.

1. Estimated total acres of forest conversion:

0

2. If known, estimated acres of forest conversion from April 1 to October 31

0

3. If known, estimated acres of forest conversion from June 1 to July 31

0

If the project includes timber harvest, report the appropriate acreages below.

Otherwise, type '0' in questions 4-6.

4. Estimated total acres of timber harvest

0

5. If known, estimated acres of timber harvest from April 1 to October 31

0

6. If known, estimated acres of timber harvest from June 1 to July 31

0

If the project includes prescribed fire, report the appropriate acreages below.

Otherwise, type '0' in questions 7-9.

7. Estimated total acres of prescribed fire

0

8. If known, estimated acres of prescribed fire from April 1 to October 31

0

9. If known, estimated acres of prescribed fire from June 1 to July 31

0

If the project includes new wind turbines, report the megawatts of wind capacity below. Otherwise, type '0' in question 10.

10. What is the estimated wind capacity (in megawatts) of the new turbine(s)?

0



Illinois Department of Natural Resources

One Natural Resources Way Springfield, Illinois 62702-1271
www.dnr.illinois.gov

JB Pritzker, Governor
Colleen Callahan, Director

6 July 2021

Ms. Brauna Hartzell
GIS Analyst
300 East Devon Avenue
Des Plaines, IL 60018

**RE: Chicago O'Hare Terminal Area Plan
Consultation Program
EcoCAT Review #2200068
DuPage & Cook Counties**

Dear Ms. Hartzell:

The Illinois Department of Natural Resources has reviewed the above-mentioned project as part of the NEPA scoping process and has no objections to this project described. Impacts to State-listed species and natural areas are unlikely.

Please note that this review does include permit decisions made by the IDNR Office of Water Resources under the Illinois Rivers, Lakes, and Streams Act.

Please contact me if you have any questions regarding this review.

Sincerely,

Adam Rawe

Adam Rawe
Resource Planner
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