Anacortes Airport
Wildlife Hazard Management Plan
Anacortes, WA

Prepared for:
Port of Anacortes
100 Commercial Ave
Anacortes, WA 98221

Developed by:
WHPacific Inc.
9755 SW Barnes Road, Ste. 300
Portland, OR 97225

March 13, 2015
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Executive Summary

The Anacortes Airport (74S) is a General Aviation (GA) airport operated by the Port of Anacortes (Port). It is located within the city of Anacortes on Fidalgo Island, in northwest Washington State. The airport has a single runway (18/36) that is 3015 feet long, a parallel taxiway, associated aprons and structures, and a fully fenced operations area.

Since the wildlife incident with US Airways Flight 1549 in 2009, the Federal Aviation Administration (FAA) has requested larger general aviation airports, including those receiving federal funds, to conduct a WHA and as necessary, develop a WHMP. The Port of Anacortes agreed to conduct a WHA and WHMP for Anacortes Airport as a recipient of federal funds, and in accordance with FAA guidance. The WHA was completed in 2013 by the University Of Illinois Center Of Excellence for Airport Technology, under the supervision of FAA qualified airport wildlife biologist Steve Osmek of Animal Solutions LLC.

Pursuant to 14 CFR (Code of Federal Regulations) Part 139, Certification of Airports (Part 139), and as a resulting recommendation of the WHA, the Port of Anacortes and the Anacortes Airport developed this Wildlife Hazard Management Plan (WHMP), in coordination with WHPacific, Inc. Although the Anacortes Airport is not Part 139 certified, it is voluntarily conforming to Part 139 requirements. The WHMP was prepared under the supervision of Dr. Daniel W. (Bill) Baber, with assistance from biologists Valerie Thompson and Casey Storey. Dr. Baber is a certified wildlife biologist as designated by The Wildlife Society who was vetted by Embry-Riddle Aeronautical University (ERAU) as a qualified airport wildlife biologist in December 2009.

This WHMP outlines wildlife management procedures for abatement of wildlife hazards within the immediate airfield and surrounding environments within 5 miles of the airport, as based upon recommendations made in the WHA, site investigations conducted by WHPacific, and coordination with Anacortes Airport. It outlines steps for monitoring, documenting, and reporting wildlife hazards and strikes on the airport. It also includes protocols for identification of and methods for responding to hazardous wildlife which are observed on or having access to the airport. The WHMP outlines techniques to reduce or eliminate the area’s attractiveness to hazardous wildlife, to preclude access to the airport by medium and large bodied mammals, and wildlife control techniques for birds and mammals. Priorities for management action include existing land uses, birds and mammals in the Air Operations Area (AOA), water resources (wetlands and ponds), vegetation, and structures. These management priorities are outlined in Section 3, including target dates for completion, and responsible personnel.

Monitoring and management of wildlife hazards on the airport requires coordination of personnel and access to the appropriate resources and supplies. The Anacortes Airport has developed a plan to detect and respond to wildlife hazards on the airport, and a list of the necessary materials for habitat and wildlife control efforts. These resources are listed in Section 5 and will be obtained and maintained by the Director of Operations. Additionally, personnel will be properly trained to identify hazardous wildlife and apply management techniques in a safe and efficient manner as outlined in this plan (Section 8).

Most wildlife are protected under state or federal regulations and may require special permits for management and control. The legal status of wildlife, as well as laws and regulations pertaining to management and permits for control actions, are outlined in Section 4. Permits needed to implement the WHMP will be obtained, as needed, and included in Appendix F.

This WHMP will be reviewed periodically by airport management and operations and will be updated as warranted by changing circumstances. All changes or modifications made to the WHMP will be communicated to airport personnel and sent to the Federal Aviation Administration (FAA) for approval. All changes will be documented in the Table of Revisions.
Signatories

The following Wildlife Hazard Management Plan for the Anacortes Airport has been reviewed and approved by the Director of Operations, the FAA, and other interested parties.

Josh Beaner
Director of Operations
Port of Anacortes

Janell Barrilleaux
Environmental Program Manager
FAA

04-06-15  Date

4-9-15  Date
Preface

This Wildlife Hazard Management Plan was written to be consistent with the requirements of 14 CFR Part 139, Certification of Airports, and is intended specifically for the Anacortes Airport’s use to monitor and reduce wildlife hazards. The Anacortes Airport is not Part 139 certified, but is voluntarily conforming to Part 139 requirements.

Distribution of Wildlife Hazard Management Plan

<table>
<thead>
<tr>
<th>Name / Position / Phone</th>
<th>Agency / Address</th>
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<tr>
<td>Josh Beaner Director of Operations (360) 661-6274</td>
<td>Port of Anacortes 100 Commercial Ave Anacortes, WA 98221</td>
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<tr>
<td>Karen Miles FAA Project Manager (425) 227-2661</td>
<td>Federal Aviation Administration Northwest Mountain Region Seattle Airports District Office 1601 Lind Avenue SW, Ste 250 Renton, WA 98057-3356</td>
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<td>Airport Personnel</td>
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<td>• Environmental Specialist</td>
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Table of Revisions

This Wildlife Hazard Management Plan is incorporated into the Anacortes Airport’s Airport Procedures and Maintenance Manual. The bottom of each page contains a date in the footer, which is the date that particular page was printed. The latest dated page will be the most current. The master document is maintained in the office of the Director of Operations. Revisions to this plan will be recorded in the table below.

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<td>ATC</td>
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1 - Introduction

1.1 Overview
The Anacortes Airport (74S) is a General Aviation (GA) airport operated by the Port of Anacortes (Port). It is located within the city of Anacortes on Fidalgo Island, in northwest Washington State. The airport has a single runway (18/36) that is 3015 feet long, a parallel taxiway, associated aprons and structures, and a fully fenced operations area.

As noted in Anacortes Airport Wildlife Hazard Assessment (WHA) (Bunch and Osmek 2013), due to increased awareness of wildlife activity at airports, the Federal Aviation Administration (FAA) has implemented procedures to mitigate wildlife damages to aircraft and aviation operations for both airports certified under 14 CFR Part 139, Certification of Airports (Part 139), and GA airports. This effort includes programs to track and report wildlife/aircraft strikes, guidance to prevent and mitigate wildlife at airports, and regulations requiring airport operators that serve certain air carrier operations to mitigate and prevent wildlife hazards.

Until recently, the FAA focused its efforts to mitigate wildlife hazards to aircraft at airports serving air carriers. Per Part 139, the FAA certifies airports serving certain scheduled air carrier operations (conducted in aircraft with more than 10 passenger seats), as well as certain unscheduled air carrier operations (conducted in aircraft with more than 30 seats). Under Part 139, airport operators are required to comply with certain safety and operational requirements, including requirements to prevent and mitigate wildlife hazards to aircraft.

Since the wildlife incident with US Airways Flight 1549 in 2009, the FAA also has requested larger GA airports that are recipients of Federal funds to conduct WHAs and, as necessary, develop a wildlife hazard management plan (WHMP). As a recipient of federal funds, Anacortes Airport and the Port have agreed to conduct a WHA and WHMP in accordance with FAA guidance. Anacortes Airport will take immediate measures to identify and mitigate wildlife hazards whenever they are detected or whenever airport management has been advised that hazardous conditions exist.

The Anacortes Airport WHA (Bunch and Osmek 2013) makes recommendations to reduce present and future wildlife hazards and to manage immediate wildlife hazards. These recommendations have been incorporated into this WHMP. Furthermore, the Port has chosen to develop its WHMP in compliance with Part 139 wildlife hazard requirements as the requirements are acceptable to FAA and are recognized as the industry standard for airport wildlife hazard management.

WHMPs address the responsibilities, policies, and procedures necessary to reduce hazards wildlife pose to aircraft operations at airports. As outlined in 14 CFR Part 139.337 (f) (Appendix A), the WHMP must address seven required components, each of which is presented as a separate section in this document. The required components are as follows:

1. The persons who have the authority and responsibility for implementing the plan;
2. Priorities for needed habitat modification and changes in land use identified in the ecological study, with target dates for completion;
3. Requirements for and, where applicable, copies of local, state, and federal wildlife control permits;
4. Identification of resources to be provided by the certificate holder for implementation of the plan;
5. Procedures to be followed during air carrier operations, including at least:
   a. Assignment of personnel responsible for implementing the procedures;
   b. Conduct of physical inspections of the movement area and other areas critical to successfully manage known wildlife hazards before air carrier operations begin;
   c. Wildlife control measures; and
   d. Communication between the wildlife control personnel and any air traffic control tower (ATC) in operation at the airport.
6. Procedures for periodic evaluation and review of the WHMP (Section 7, Evaluation), which include:
   a. Effectiveness in dealing with the wildlife hazard; and
   b. Aspects of the wildlife hazards described in the WHA that should be reevaluated.
7. A training program to provide airport personnel with the knowledge and skills needed to carry out the WHMP required by CFR Title 14 Part 139.337 (Section 8, Training).

In addition, 14 CFR Part 139.337 (f) outlines procedures and responsibilities for notification regarding new or immediate hazards, and describes rapid response procedures for addressing wildlife hazards. Section (f) allows the WHMP to be promptly modified and updated to address new or changing circumstances. The FAA has issued a CertAlert (No. 97-09, Appendix B) to provide guidance to airports in developing their WHMPs. The CertAlert contains a sample outline that was incorporated into the development of this WHMP.

1.2 Problem Species
Wildlife species generally considered to present the greatest risk to aviation at the Anacortes Airport are avian species of relatively large size or with flocking tendencies, and large mammals. Juveniles and migratory species may also pose a high risk to airport operations because of their unfamiliarity with aircraft and airport operations. As described in the Anacortes WHA (Bunch and Osmek 2013), hazardous avian species such as geese, waterfowl, herons, gulls, doves, blackbirds, bald eagles and turkey vultures were observed using the airport and surrounding areas. Additionally, coyote and deer have been observed on the airport multiple times and may pose an extreme hazard at the Anacortes Airport.

1.3 Purpose and Scope
The goal of this WHMP is to address potential wildlife hazards on the airport and surrounding areas and minimize the risk to aircraft operations and airport structures. Accomplishing this objective involves careful monitoring of potential wildlife hazards on and around the airport, as well as arriving and departing aircraft. As part of its safety efforts, the airport will implement and maintain this WHMP in accordance with 14 CFR Part 139.337 (e). In addition to addressing general wildlife hazards, this WHMP also provides specific protocols for monitoring and responding to unforeseen wildlife hazards that may arise.

14 CFR Part 139.337 (f) underscores the need for a flexible WHMP that can be quickly adapted to changing circumstances. In some cases immediate actions not addressed in the WHMP may be needed to ensure aviation safety. This WHMP provides the Anacortes Airport with the discretion and capability to respond to these unforeseen situations while providing guidance for compliance with applicable federal, state and municipal laws and regulations. The latitude afforded to the airport when administering this WHMP is discussed in 14 CFR Part 139.113 which states that:
“In emergency conditions requiring immediate action for the protection of life or property, the certificate holder may deviate from any requirement of Subpart D of this part, or the Airport Certification Manual, to the extent required to meet that emergency. Each certificate holder who deviates from a requirement under this section must, within 14 days after the emergency, notify the Regional Airports Division Manager of the nature, extent, and duration of the deviation.”

This WHMP will be valid until the Anacortes Airport or the FAA determines that it should be updated based on changing conditions or new information. The WHMP will be reviewed at least annually to ensure its relevance to conditions at the time of review. It may be revisited more often if situations arise or hazards are identified that merit re-evaluation.

2.0 – Authorities and Responsibilities

14 CFR Part 139.337 (f)(1)  A list of the individuals having authority and responsibility for implanting each aspect of the WHMP.

The Director of Operations has the authority and responsibility of designating an Airport Wildlife Manager (AWM) to implement this WHMP. Clear communication among airport personnel is essential for the WHMP to succeed. All appropriate departments and agencies have their responsibilities outlined in this WHMP and must incorporate such responsibilities into their programs. Personnel working at the Anacortes Airport will communicate their resource needs, recommendations and progress to the AWM. The AWM will obtain approval of this WHMP from the FAA and will ensure that the WHMP and any future amendments comply with federal, state, and local laws and regulations.

2.1  Wildlife Hazard Working Group (WHWG)

The WHWG is responsible for reviewing this WHMP at least annually as it relates to each member’s respective duties for implementation. The WHWG also monitors activities and makes recommendations to the AWM.

- As applicable, the WHWG will be represented by
  - Director of Operations
  - Airport Wildlife Manager
  - Airport Personnel
  - FAA Project Manager
  - Contract airport wildlife biologist and/or animal control specialist/trapper
Table 1: Name and contact information for each WHWG representative

<table>
<thead>
<tr>
<th>WHWG Position</th>
<th>Name</th>
<th>Contact information</th>
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<tr>
<td>Director of Operations and AWM</td>
<td>Josh Beaner</td>
<td>Port of Anacortes 100 Commercial Ave Anacortes, WA 98221 360-661-6274</td>
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<td>Airport Personnel</td>
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<td>FAA Project Manager</td>
<td>Karen Miles</td>
<td>Federal Aviation Administration Northwest Mountain Region Seattle Airports District Office 1601 Lind Avenue SW, Ste 250 Renton, WA 98057-3356 (425) 227-2661</td>
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<tr>
<td>Contract Wildlife Biologist</td>
<td>Not yet assigned</td>
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2.2 Persons Responsible for Plan Implementation

2.2.1 Director of Operations
- Designate an AWM and WHWG for the Anacortes Airport.
- Supervise, coordinate, and monitor wildlife control activities as outlined in this WHMP.
- Implement and monitor wildlife hazard management activities as described in this WHMP.
- Designate Airport personnel to assist with wildlife hazard management activities as described in the WHMP.
- Update and make amendments to the WHMP as necessary.
- Disseminate information and assignments through the WHWG.
- Provide public relations support for wildlife control activities as necessary.

2.2.2 Airport Wildlife Manager (AWM)
- Review the WHMP and amendments for compliance with Federal, State and local laws and regulations.
- Obtain approval from the FAA for the WHMP and any amendments.
- Coordinate wildlife control efforts and obtain Federal and State permits to authorize control of wildlife pursuant to this WHMP as necessary.
- Designate personnel who will be trained and equipped to respond to wildlife hazards on the airfield.
- Review (or assist in the review of) landscaping and structural plans, mitigation projects or changes in land use on or near the airport that may attract wildlife.
- Work with airport personnel to reduce and remove wildlife attractants through habitat modification on airport property, and consult with a wildlife damage biologist if necessary.
- Communicate to airport users the importance of reporting wildlife strikes and make wildlife strike report forms (FAA Form 5200-7 [Appendix D]) and instructions readily available.
• Communicate with the surrounding community regarding the importance of mitigating wildlife attractants.
• Establish a protocol for documenting and monitoring significant wildlife observed on the airport.
• Report animal carcasses found on the AOA to the FAA using form 5200-7 “Bird/Other Wildlife Strike Report”.
• Maintain daily inspections forms and monthly fence inspection forms in office for airport personnel.
• Monitor facilities and concerns of tenants.
• Coordinate issuance of Notices to Airmen (NOTAMs) and advise pilots of wildlife hazards on Automated Terminal Information Service (ATIS).
• Take appropriate measures (e.g., hold flights, close runways) until wildlife hazards can be alleviated.
• Ensure communication between wildlife control personnel.
• Communicate any known wildlife hazard emergencies, including location and nature of hazard, to the airport community as appropriate.
• Oversee coordination and communication with the airport and surrounding communities if wildlife hazards are identified.
• Retain the services of a contract animal control specialist/trapper and/or qualified airport wildlife biologist to work with the AWM on reducing and preventing wildlife hazards at and around the airport.
• Coordinate wildlife control activities with contract airport wildlife biologist or animal control specialist/trapper.
• Complete training courses regarding bird and wildlife identification, management techniques, reporting, etc. as outlined in Chapter 8.
• Ensure that wildlife control personnel who operate on the AOA are properly trained in accordance with FAA regulations.
• Assist in training of personnel in safe handling and proper usage of wildlife dispersal equipment and methods.

2.2.3 Airport Personnel
• Review the WHMP and amendments for compatibility with Port Facilities operations.
• Assist AWM with implementation of the plan, including wildlife control activities.
• Inspect runways and taxiways for wildlife activities.
• Remove and report animal carcasses found on the AOA to the AWM.
• Report all known wildlife strikes and significant wildlife hazards on and around the airfield to AWM.
• Conduct frequent inspections of the AOA and other areas that are critical to wildlife damage management.
• Keep a log of wildlife strikes and control actions (any avian remains found within 200 feet of a runway will be considered a strike and submitted to the FAA unless another cause of death is determined).
• Maintain records of wildlife hazard management actions on the Daily Inspection Report form and report to the AWM.
- Record wildlife activity on and around the airport property on a Daily Inspection Report form maintained in the AWM’s office.
- Inform the AWM of management activities, habitat modification needs and wildlife hazards that require issuance of a NOTAM or runway closure.
- Communicate any known wildlife-related emergencies or wildlife hazards to the AWM upon discovery, including location and nature of hazard.
- Inform the AWM of rodents and other wildlife in or around airport structures so that control/abatement measures may be taken.
- Coordinate with AWM to provide equipment necessary for completion of wildlife hazard management activities.
- Implement habitat modifications addressed in the WHA, such as brush and vegetation removal.
- Perform monthly inspections of airport operational fence and record on monthly fence inspection form. Maintain the integrity of the fence to exclude medium and large-bodied mammals, such as coyote and deer, from the AOA.
- Maintain ditches and wetland vegetation around the airfield so as to ensure proper drainage and minimize open standing water on the airport.
- Maintain grass height of 6-12 inches, while mowing only during dry season to avoid creating ruts.
- Assist with maintenance of the airport operational fence and habitat modifications such as pruning or removal of trees and brush.
- Maintain current pesticide applicator’s certification in compliance with EPA standards.
- Operations and maintenance activities such as monitoring and keeping dumpsters and garbage cans sealed, monitoring tenant buildings, and maintaining drainage on the airport.

2.2.4 Federal Aviation Administration
- Review the WHMP and any future changes or amendments to the WHMP.
- Provide guidance in applying for federal funds to mitigate wildlife hazards identified at the Anacortes Airport.
- Assist the Anacortes Airport in reviewing proposed land use changes, construction plans, and mitigations for potential wildlife hazards.
- Initiate consultation with Federal resource agencies (USFWS/NMFS) as applicable.

2.2.5 Contract Airport Wildlife Biologist and/or Animal Control Specialist/Trapper
- Provide advice, recommendations, and assistance in training airport staff on the identification and management of wildlife hazards, and on safe handling and proper use of wildlife dispersal methods and equipment.
- Coordinate with AWM to conduct hazard management activities as recommended by the WHA and this WHMP.
- Assist in reviewing documents, plans, and programs as requested by the AWM to identify potential wildlife attractants within the critical areas of the airport.
- Provide recommendations to include in updates to the WHMP.
- Coordinate wildlife control activities with AWM, Federal and State wildlife agencies and local law enforcement personnel.
• Inform and advise AWM of management activities, habitat modification needs and wildlife hazards which require issuance of a NOTAM or runway closure.
• Report to the AWM any take of wildlife as required by permit and/or regulations. Take means to pursue, hunt, shoot, wound, kill, trap, capture, or collect or to attempt these actions on any wild animal.

3.0 – Habitat Management

14 CFR Part 139.337 (e)(2) A list prioritizing the following actions identified in the wildlife hazard assessment and target dates for their initiation and completion.

3.1 Overview
Habitat management is the most effective means for removing or reducing wildlife hazards on and around airports. The goal of habitat management is to reduce or remove the attractiveness of airport lands to wildlife that pose a hazard to aviation. Attractants provide for the basic needs of wildlife - food, water and/or shelter. Habitat management includes manipulation of areas, exclusionary measures, and removal of attractants such as food-producing vegetation, standing water, and other available resources, in order to create a uniform and unattractive space with low habitat suitability for hazardous species. Habitat management undertaken for this WHMP will be monitored and recorded in order to track its effects on wildlife hazards and to ensure that new problems are not created.

Table 2: Habitat and wildlife management projects to reduce wildlife hazards at the Anacortes Airport, along with target dates for completion or the date that each project was completed. Some projects may have already been implemented or completed, but because they require continued effort (e.g. mowing, brush removal) they are listed as “ongoing”.

<table>
<thead>
<tr>
<th>Anacortes Airport Wildlife Management Projects</th>
<th>Responsibility Assigned To:</th>
<th>Target Completion Date</th>
<th>Date Completed</th>
</tr>
</thead>
<tbody>
<tr>
<td>General</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Designate AWM</td>
<td>Director of Operations</td>
<td>Spring 2015</td>
<td></td>
</tr>
<tr>
<td>Designate WHWG</td>
<td>Director of Operations</td>
<td>Spring 2015</td>
<td></td>
</tr>
<tr>
<td>Develop and maintain a WHMP</td>
<td>Director of Operations</td>
<td>Spring 2015</td>
<td>Ongoing</td>
</tr>
<tr>
<td>Develop a computerized system for recording wildlife strikes, observations of hazardous wildlife on the airfield, and wildlife hazing/control efforts undertaken.</td>
<td>AWM</td>
<td>Summer 2015</td>
<td></td>
</tr>
<tr>
<td>Remove and report animal carcasses found on the AOA to the FAA using form 5200-7 “Bird/Other Wildlife Strike Report”.</td>
<td>AWM and Airport Personnel</td>
<td></td>
<td>Ongoing</td>
</tr>
<tr>
<td>Monitor general airport conditions and wildlife abundances, and address any identified wildlife attractants as necessary. (Section 3)</td>
<td>AWM and Airport Personnel</td>
<td></td>
<td>Ongoing</td>
</tr>
<tr>
<td>Task Description</td>
<td>Responsible Parties</td>
<td>Due Date</td>
<td></td>
</tr>
<tr>
<td>---------------------------------------------------------------------------------</td>
<td>---------------------</td>
<td>-----------------</td>
<td></td>
</tr>
<tr>
<td>Evaluate potential wildlife hazards associated with proposed local planning and development efforts within flight zones and on adjacent properties. (Section 3.2.2)</td>
<td>AWM</td>
<td>Ongoing</td>
<td></td>
</tr>
<tr>
<td>Provide educational outreach to adjacent residential areas explaining wildlife hazard risks associated with available food sources (e.g. bird feeders, trash,) and contact information to notify the AWM whenever high-risk wildlife hazards are observed on the AOA. (Section 3.6.5)</td>
<td>AWM</td>
<td>Summer 2015</td>
<td></td>
</tr>
<tr>
<td><strong>Water Management</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Monitor AOA for areas of ponding and open water. Improve drainage in areas that retain water for longer than 48 hours or have drainage problems. (Section 3.3)</td>
<td>AWM and Airport Personnel</td>
<td>Ongoing</td>
<td></td>
</tr>
<tr>
<td>Where drainage improvement is not an option, plant open-water areas with herbaceous or scrub-shrub vegetation to discourage waterfowl use.</td>
<td>AWM and Airport Personnel</td>
<td>Ongoing</td>
<td></td>
</tr>
<tr>
<td>Remove cattail from the stormwater detention pond on west side of airport, and plant remaining open water areas with slough sedge (<em>Carex obnupta</em>) and/or hardhack spirea (<em>Spirea tomentosa</em>). (Section 3.3 and 3.4.3)</td>
<td>AWM and Airport Personnel</td>
<td>Summer 2016</td>
<td></td>
</tr>
<tr>
<td>Survey ditches and drainage channels within the AOA quarterly for vegetation or other obstructions that impede water flow. Clear vegetation and remove any obstructions to keep water flowing.</td>
<td>AWM and Airport Personnel</td>
<td>Ongoing</td>
<td></td>
</tr>
<tr>
<td>Assess feasibility of filling wetlands within the airport operational fence not associated with the stormwater drainage system.</td>
<td>AWM</td>
<td>Summer 2016</td>
<td></td>
</tr>
<tr>
<td><strong>Vegetation Management</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Selectively cut bitter cherry and other fruit and mast-producing vegetation from wetlands and their upland buffers. Removing vegetation from wetlands or buffers requires coordination and permitting through local jurisdictions prior to any work being conducted. (Section 3.4.4)</td>
<td>Airport Personnel</td>
<td>Ongoing</td>
<td></td>
</tr>
<tr>
<td>Where permissible, manually prune tall wetland vegetation that poses a hazard to aviation. (Section 3.4.3)</td>
<td>Airport Personnel</td>
<td>Ongoing</td>
<td></td>
</tr>
<tr>
<td>Where practicable, remove remaining woody upland vegetation (trees and shrubs) from areas within the airport operational fence, and convert to grass cover.</td>
<td>AWM and Airport Personnel</td>
<td>Ongoing</td>
<td></td>
</tr>
<tr>
<td>Remove the stand of trees from southeastern corner of airport/AOA not encumbered by wetlands or their upland buffers.</td>
<td>AWM and Airport Personnel</td>
<td>Late Summer 2016</td>
<td></td>
</tr>
<tr>
<td>Remove scattered trees along southern end of airport/AOA.</td>
<td>AWM and Airport Personnel</td>
<td>Late Summer 2016</td>
<td></td>
</tr>
<tr>
<td>Remove vegetation encroaching into the airport operational fence. Clear woody vegetation from a 4’ wide</td>
<td>Airport Personnel</td>
<td>Summer 2016</td>
<td></td>
</tr>
</tbody>
</table>
zone on each side of the fence, where permissible, and maintain.

<table>
<thead>
<tr>
<th>Action</th>
<th>Responsibility</th>
<th>Start Date</th>
<th>End Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Continue prescriptive mowing of 6-12 inches to reduce cover and foraging opportunities for wildlife. (Section 3.4.1)</td>
<td>Airport Personnel</td>
<td></td>
<td>Ongoing</td>
</tr>
<tr>
<td>Manage areas on the airport which are planted with large seed producing vegetation to prevent plant maturation and seed production. (Section 3.4.1)</td>
<td>Airport Personnel</td>
<td></td>
<td>Ongoing</td>
</tr>
</tbody>
</table>

### Structure Management

<table>
<thead>
<tr>
<th>Action</th>
<th>Responsibility</th>
<th>Start Date</th>
<th>End Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Survey entire airport operational fence and all gates for gaps in the above ground and underground fencing that allow wildlife access.</td>
<td>AWM</td>
<td>Fall 2014</td>
<td>Fall 2014</td>
</tr>
<tr>
<td>Develop and implement a plan/strategy to close fence gaps and repair ineffective gates.</td>
<td>AWM</td>
<td>Summer 2016</td>
<td></td>
</tr>
<tr>
<td>Construct a gravel service road around inside perimeter of the airport operational fence to facilitate monitoring and maintenance (Section 3.5.2).</td>
<td>AWM and Airport Personnel</td>
<td>Summer 2016</td>
<td></td>
</tr>
<tr>
<td>Inspect entire airport operational fence and all gates monthly, and immediately address any new wildlife access points discovered. Increase frequency of fence inspections as necessary. (Section 3.5.2)</td>
<td>Airport Personnel</td>
<td></td>
<td>Ongoing</td>
</tr>
<tr>
<td>Install anti-perch devices on signs and lighting as necessary.</td>
<td>AWM and Airport Personnel</td>
<td></td>
<td>Ongoing</td>
</tr>
</tbody>
</table>

### Wildlife Management

<table>
<thead>
<tr>
<th>Action</th>
<th>Responsibility</th>
<th>Start Date</th>
<th>End Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Place NOTAM that deer and coyote may occasionally occur on airfield.</td>
<td>AWM</td>
<td>Winter 2015</td>
<td>Winter 2015</td>
</tr>
<tr>
<td>Stock and maintain wildlife control supplies. (Section 5.2).</td>
<td>AWM</td>
<td>Summer 2015</td>
<td>Ongoing</td>
</tr>
<tr>
<td>Retain the services of a contract animal control specialist/trapper and/or qualified airport wildlife biologist to remove problematic medium and large bodied mammals (deer and coyote) from the airport.</td>
<td>AWM</td>
<td></td>
<td>Ongoing</td>
</tr>
<tr>
<td>Obtain a starling live trap for use during periods when large flocks are present on the airfield.</td>
<td>AWM</td>
<td>Spring 2016</td>
<td></td>
</tr>
<tr>
<td>Obtain coyote effigies for use during seasons with high geese/gull presence on the airfield.</td>
<td>AWM</td>
<td>Summer 2015</td>
<td></td>
</tr>
</tbody>
</table>

### 3.2 Wildlife Attractants and the Airport Environment

This WHMP focuses on wildlife abatement and habitat management procedures within a 10,000 foot radius of the runway centerline. Aircraft typically fly at or below 500 ft. above ground level (AGL) in this zone, an altitude that corresponds with the majority of bird activity and occurrence of wildlife strikes.

An understanding of the significance of attractants and how they affect the presence of certain wildlife may prevent more serious wildlife problems from occurring. Management recommendations are
provided based on the potential for damage from wildlife observed at the airport during the WHA. Attractants on the airport include forested areas, wetlands and their upland buffers, food sources (e.g., masts/seeds/fruit, debris, handouts, prey species), and breaches in fencing that allow hazardous wildlife onto the airfield.

To the extent possible, hazardous wildlife attractants within five miles of the airport will be monitored and addressed, as necessary, to reduce presence of hazardous wildlife within aircraft approach/departure zones. The Anacortes Airport will work cooperatively with adjacent property owners and local governments to discourage actions that might increase wildlife hazards. Potential off-site attractants include lakes, saltwater environments, wetlands, forested areas, residential neighborhoods, harbors/marinas, and a ferry terminal.

3.2.1 Airport Land Use Projects

There are currently no airport improvement/upgrades or proposed land management practices proposed on airport property that would be considered hazardous wildlife attractants. The AWM will monitor and review all land use planning and development efforts proposed on airport property. Potential wildlife attractants inherent in design or plans will be identified, and changes to discourage use by wildlife will be recommended whenever possible.

3.2.2 Airport Wildlife Hazards

3.2.2.1 Birds in the AOA

The Anacortes Airport WHA (Bunch and Osmek 2013) documented the regular presence of migratory and resident birds within the AOA. Highest in abundance were European starlings, passerines, gulls, crows, and large-bodied flocking birds. Large birds and flocking birds such as geese, swans, raptors and blackbirds represent the highest risk for aircraft operations (FAA AC 150/5200-33B). Raptors were attracted to the AOA by the large number of passerines in the area.

The Airport will manage habitat to reduce the presence and abundance of hazardous birds in the AOA using the measures presented below such as removing food sources (berries, fruits, seeds) and reducing cover diversity (i.e., shrubs, trees, wetlands). As recommended in the WHA, habitat suitability for passerines and ducks will be reduced on the airport to minimize raptors hunting on the airport. Airport personnel will remain vigilant in looking for ducks in the areas that collect water, and harass ducks away from areas where water is ponding. The airport will also acquire a starling live trap for use when starling populations are abundant on the airfield. Further, when birds that pose a significant hazard to wildlife, such as osprey, eagles and flocking birds, are observed on or near the airport, the airport operator will provide notification of their presence to departing and arriving aircraft.

The airport will also adopt a list of zero-tolerance species that, if observed, will be immediately harassed off the airport, including geese, gulls, crows, flocks of starlings, and killdeer. In accordance with the Migratory Bird Treaty Act (MBTA), migratory birds cannot be harassed if actively nesting (See Section 4.5.1).

3.2.2.2 Mammals in the AOA

The Anacortes Airport WHA documented a potential hazard from large and medium-sized mammals (i.e., black-tailed deer and coyote) within the AOA. Coyote use was routine, as evidenced by scat on taxiways and runways, and tunnels dug underneath the airport operational fence. Rodent populations were very
Anacortes Airport – Wildlife Hazard Management Plan – March 2015

low on the airfield – none were captured during three trapping sessions. However, management decisions should be made carefully to avoid potential expansion of rodent populations.

As recommended in the WHA, airport personnel will become familiar with the physical signs, tracks, and droppings to alert them of coyote using the airport. If fencing and other exclusion methods prove inadequate in restricting coyote from the AOA, these animals will be trapped with padded leg hold traps or leg snares. Airport personnel can be trained for this, or USDA Wildlife Services or WDFW can provide permitting and/or assistance. A NOTAM will be placed indicating that deer and coyote may occasionally occur on the airfield. USDA Wildlife Services can be contacted to remove deer that frequent the airfield.

3.2.3 Off-Airport Wildlife Hazards and Surrounding Land Use

A large diversity of avian species resides in and migrates through the Anacortes area. Geese and other large bodied birds migrate and move locally through the area, attracted to preferred winter feeding sites, protective loafing sites, and other habitat areas. Although the WHA did not show the airport to be a major attractant for these species, their movement through active airspace could pose a serious threat to aircraft and human safety. The Anacortes Airport is surrounded by marine areas, coniferous and deciduous trees, and residential areas. Three lakes and numerous wetlands lie within 2.5 miles of the airport. There are no municipal waste disposal operations within five miles of the airport. Forested areas around the airport can support populations of deer and coyote, but with a functional fence, these species can be excluded from the AOA. Residential and marine areas were the only two land uses determined to pose problematic attractants to hazardous wildlife. There are currently no known or recent or proposed land management practices within five miles of the airport that would be considered hazardous wildlife attractants.

It is unlikely that the Port will have broad authority to dictate wildlife habitat management within the five mile radius of the airport. Nonetheless, the Director of Operations and AWM will participate in planning activities proposed within the five mile zone to opine against incompatible land uses described in AC 150/5200-33B.

3.2.3.1 Residential Land Use

Residential areas provide resources for a variety of common avian species. During the WHA, gulls, crows, doves and pigeons were the most common guilds observed in this land use type. Waste disposal trucks in the adjacent neighborhood were also observed attracting wildlife over the airport during the WHA. In one instance, large numbers of gulls were attracted to a trash collection vehicle in the neighborhood to the southwest of the airport. The Anacortes Airport will monitor general conditions and wildlife abundances seasonally and provide input to local planners and residential communities when development or management activities could attract hazardous wildlife to the area. The intention is not for the airport to monitor trash collection in neighboring communities, but to monitor general conditions of hazardous wildlife that are attracted to the airport area. If trash collectors are repeatedly observed attracting hazardous wildlife, the airport will communicate with the waste disposal company to discuss ways to minimize the attraction of gulls and other potentially hazardous wildlife.

3.2.3.2 Marine-Areas and Other Waters

The airport is surrounded by salt water environments from approximately ¼ mile to 5 miles from the airport, including a ferry terminal, a large marina and a small harbor. Shoreline areas attract large numbers of hazardous birds including gulls, waterfowl, crows, cormorants and other large water birds. Tidal fluctuations and currents influence fish abundances which can attract birds and birds often cross over the
airport when moving between saltwater and shoreline habitats. Underwater structures and human refuse at marine areas also attract larger birds, such as gulls, crows and cormorants.

Five wetlands and three lakes lie within roughly two miles of the airport. The largest is Cranberry Lake, located less than a mile to the east of the airport. Cannery Lake is located less than a mile away, but to the northwest of the airport. And Heart Lake is approximately 2 miles southeast of the airport. Throughout the year these lakes attract diving ducks and mergansers, and in the late summer dabbling ducks are attracted to emergent vegetation. If existing or proposed marine uses are likely to contribute to the presence of hazardous wildlife within the airport flight path, Anacortes Airport will work with stakeholders and local planners to identify measures to reduce habitat attractiveness and shift avian flight patterns.

3.3 Water Management
As noted in the Wildlife Hazard Assessment (Bunch and Osmek 2013), water sources on airport property include 14 wetlands, and pooling of water along some areas of pavement during wet months. Eight of these wetlands lie within the more limited airport operational fence that provides airfield security, including 3 wetlands that were constructed in 1986/1987 as part of with the airport stormwater drainage system (Grette Associates 2004). The majority of the wetlands support shrub/scrub vegetation, but some periodically contain open water. Water also pools on the taxiway in winter months when water drainage channels become clogged with vegetation. Open water attracts waterfowl and provides breeding habitat for insects, which can attract swallows and other passerines. Water occasionally backs up within some drainage channels and attracts shorebirds.

Wetlands and areas of ponding on the airport will be monitored by the airport to ensure proper drainage and identification of problem areas. As recommended in the WHA (Bunch and Osmek 2013), all areas that hold water for more than 48 hours will be evaluated for drainage improvement, planting with exclusionary vegetation, or filling. Whenever wetlands pose as a hazardous wildlife attractant, they should be considered for fill. However, this process can be costly and require mitigation. Before contemplating any wetland filling activities, the Port will contact the Seattle Airports District Office (ADO) to discuss permitting and National Environmental Policy Act (NEPA) requirements, if any. In places where it is not feasible for the Port to fill wetlands, scrub-shrub and herbaceous vegetation, such as slough sedge or hardhack spirea, will be planted in open-water wetlands to exclude waterfowl. Ditches and drainage channels will be cleared, monitored and maintained regularly to limit standing water. Permitting constraints will apply in wetlands and buffers.

3.4 Vegetation Management
Areas on airport property that have been previously cleared and not regularly maintained often support shrubby vegetation that can provide escape, foraging and thermal cover for wildlife. The Anacortes Airport will monitor and maintain vegetation on the airport. Land management practices will include removal of trees, shrubs and weedy vegetation within the airport operational fence, to reduce wildlife attractants. The Airport will remove vegetation between August 15th and February 1st to avoid the bird nesting season, or otherwise comply with the MBTA when removing vegetation.

As recommended in the WHA (Bunch and Osmek 2013), plans should be developed to remove all trees, shrubs, and other escape cover from the airport, specifically targeting bitter cherry and all fruit-producing plants. Vegetation removal on the airport will be completed as feasible with regards to financial and permitting constraints. The wooded areas in the southeast corner of the airport and a small stand of trees
near the south end of the runway are two areas that should be removed if possible. Vegetation will also be cleared around the AOA fence to create space for fence monitoring and maintenance. Permitting constraints will apply in wetlands and buffers. The AWM will coordinate with the appropriate regulatory jurisdictions prior to any work in wetlands or buffers, including clearing of vegetation.

Landscaping vegetation will also be considered in wildlife hazard management. In landscaped areas irrigation will be kept to a minimum and landscape materials will be selected to reduce perching and roosting opportunities for birds.

3.4.1 Grass Management
Wherever possible, grass will be the primary ground cover on airport property in order to reduce wildlife attractants. Grass type should not produce seeds, or produce only small seeds. The Airport will continue prescriptive mowing of 6-12 inches to reduce cover and foraging opportunities for wildlife. Intermediate grass heights of 6-12 inches are recommended to deter use by flocking birds and to limit populations of small rodents (Cleary and Dickey 2010).

The Airport will avoid seeding any mix containing millet or large-seed producing grass— as these can be food source attractants for hazardous wildlife. If areas on the airport are already planted with large seed producing vegetation, FAA CertAlert No. 98-05 (Appendix B) recommends that the field be managed by disking, plowing or other practice to prevent plant maturation and seed production. Problematic vegetation will be removed. The Washington State University Extension Service or the local USDA Wildlife Services office may be able to provide specific recommendations for grass management and seed selection compatible with local area conditions. Grass will be mowed by airport personnel during the dry season to avoid creating ruts in the soil which can catch and hold water.

3.4.2 Ornamental Landscaping
The Anacortes Airport will evaluate the initial and early phases of airport building and landscaping projects to ensure selected landscaping does not serve as an attractant for hazardous wildlife. Proposed planting plans will be reviewed and new installed landscaping will be monitored. If vegetation creates roosting habitat for starlings, blackbirds or other hazardous species, it will be managed, eliminated, or replaced with alternative landscaping. Plant species that produce masts (fruit, nuts, berries) will be avoided. FAA Form 7460-1 (Appendix D) will be submitted for the FAA’s Airports District Office to review proposed construction activities for potential wildlife attractants.

3.4.3 Wetland Vegetation
Wetland vegetation may grow in areas where water pools, along drainage ditches and in retention basins, and has the potential to provide habitat for many hazardous species of wildlife. Where wetland fill is not a viable option, scrub-shrub vegetation will be planted in areas of open water to discourage waterfowl. Tall wetland vegetation will be manually cut, and cattail will be removed from wetland areas to avoid attracting species such as redwing blackbirds. Wetlands will be planted with waterfowl-excluding vegetation (e.g. slough sedge and/or hardhack spirea) where cattail has been removed or open water remains. The U.S. Army Corps of Engineers (ACOE) and Washington State Department of Ecology (DOE), Skagit County and City of Anacortes take jurisdiction over wetland management, and will be consulted if wetlands or ditches need to be cleared of debris or soil buildup.

Vegetation in wetlands and wetland buffers was cleared in 2005 for the installation of the airport operational fence; however, those buffers have since become overgrown. Vegetation may be removed
from jurisdictional wetlands and their buffers with proper approval of local, state and federal regulators (see Section 4.8.5). Management of wetlands may require a Section 404 permit from the ACOE, and compliance with local code (City of Anacortes, Skagit County) and DOE regulations. Section 7 consultation with the U.S. Fish and Wildlife Service (USFWS), and a Migratory Bird Treaty Act (MBTA) permit may be required if vegetation is removed during the avian breeding season. The Anacortes Airport will consult with local, state and federal agencies to ensure consistency with permit requirements.

3.4.4 Weed and Shrub Control
Weedy and shrubby areas within the Anacortes Airport property will be managed to prevent the attraction of bird and rodent species that seek food and cover. Although small birds and rodents are not a great threat to aviation, they have the potential to attract larger and more hazardous species such as coyotes and raptors. Shrubby and weedy species will be mowed or cut regularly, and any fruit or mast-producing vegetation, such as bitter cherry, will be selectively removed where practicable. Airport personnel will use appropriate methods to remove shrubby and weedy vegetation within the airport operational fence. The Airport will comply with the MBTA when removing vegetation within the nesting season, and wetland regulations prior to any modifications to wetlands or buffers.

3.5 Structure Management
Airport structures, such as fencing, hangars, buildings, lighting and signage may allow access and provide habitat for wildlife (e.g., nesting, denning, hiding, perching, roosting sites) without exclusionary precautions. Future structural projects on airport property will be designed to reduce their attractiveness to hazardous wildlife, and will include exclusionary and/or anti-perching devices when appropriate. The AWM will be involved from the initial phases of planning to avoid designs that will increase attractiveness to hazardous wildlife.

3.5.1 Airfield Structures
Airfield structures and buildings will be monitored for wildlife use, and exclusionary or abatement measures will be taken as needed. Without anti-perching devices, signs and lights around the airfield provide perches for a variety of birds. As recommended in the WHA (Bunch and Osmek 2013), anti-perching devices will be placed on all signs and lighting as necessary to discourage perching. Aluminum anti-perching spikes are preferred, as they will be longer lasting and not deteriorate as quickly. Tall perches attractive to hawks will also be reduced or eliminated to the extent possible.

3.5.2 Airport Fence
When maintained in good condition, most of the airport operational fence (8 ft high chain link, except for a 6-ft high portion along much of the west side, with a 2-ft deep buried fence “skirt”) should be adequate to prevent most large and medium bodied mammals from entering the airfield and creating a hazard to airport operations. However, the 6-ft high chain link portion of the western fence is undersized compared to FAA recommendations to exclude large animals (8-12 ft, FAA CertAlert 04-16, Cleary and Dickey 2010, Cleary and Dolbeer 2005). At this height, black-tailed deer may be able to jump this fence. A small portion of the land to the west is also elevated, which may allow easier access to deer by jumping the fence. However, dense residential development likely deters regular deer passage here.

There was extensive discussion between the Port and adjacent property owners in 2005, which resulted in the current 6 foot fence height along much of the west side of the airfield. There is a 6-ft high fence segment adjacent to a park and tennis courts that does not border private residences. This area supports...
open space and natural habitats that provide suitable habitat for deer. The Port will evaluate the feasibility of increasing the fence height to 8 ft along the park area, pending communication with the City of Anacortes.

Coyotes have been able to access the AOA through fence gaps and holes dug underneath the airport operational fence and gates. Potential access points were surveyed during the WHA (Bunch and Osmek 2013) and mapped using GPS. The operation fence was again examined for wildlife access points to support the WHMP, and a plan was developed to closing gaps and holes. Plan elements are as follows:

- Most problem areas underneath gates will be corrected by installing a paved apron to ensure that a minimal space is maintained between the bottom of gate and ground surface, and to avoid future washouts and erosion.
- Several gates are located over culverts or drainage ditches, creating larger spaces underneath the fence. These gates will be relocated where possible. Where relocation is not an option, vulnerable spots (gaps and holes) will be grated or closed off to prevent coyote and other large mammal access. Some of these gates are located in wetlands. If any work is planned in wetlands, the Port will adhere to all applicable federal, state and local regulations.
- The fencing skirt around the airport operational fence is incomplete or ineffective in several places. All areas where the fencing skirt is incomplete or ineffective will be assessed and either replaced or repaired. The airport will repair, at a minimum, the following fence skirt issues:
  - The fence section beginning at the FBO and heading north lacks a buried skirt. A buried skirt will be added to this section. The fence skirt near the private hangars installed in 2008/2009 was inadvertently removed during hangar construction. This skirt will be added back to this area.
  - The buried skirt in the northwest portion of the airport operational fence has a number of gaps where the ground may have settled, and an additional section in the northwest corner that may require replacement (approximately 400 LF). The Airport will replace the fencing skirt in these sections, as necessary. In sections where the fence skirt will be replaced within wetlands or buffers, the AWM will coordinate with the City, DOE, and ACOE for appropriate permitting requirements prior to any ground disturbance.
  - The airport operational fence near the north end of Kingsway Street also lacks a buried skirt. This was not installed in 2005 because of potential for damage to the roots of trees preserved as a visual buffer between the airport and adjacent residences. This section of the fence will be supplemented with a chain link skirt staked to the ground surface along the outside of the fence.
  - The wire tying the buried skirt to the above ground fence has failed in places, creating access gaps for coyotes and other species. The airport will add wire ties to re-connect the skirt to the fence, and will repair the skirt where needed.
- Going forward, regular inspections of the airport operational fence will be conducted monthly and any new wildlife access points identified (e.g., gaps, holes, washouts) will be repaired immediately. Special attention will be paid to areas where the fence skirt cannot be buried, or where culverts or drainages flow underneath the fence to ensure drainage is not compromised.
If fencing and other exclusion methods prove inadequate in restricting coyote and deer from the AOA, the Port will work with the adjacent neighborhood to evaluate the feasibility of increasing the fence height along the west side of the airport, or work with WDFW to trap and/or remove problem animals.

Vegetation along the airport operational fence was cleared in 2005 when the fence was installed, but sections have since become overgrown and difficult to monitor or maintain. Some sections of the fence pass through wetlands and buffers subject to regulatory burdens. Where permissible, vegetation will be cleared from the airport operational fence to aid in monitoring and maintenance. A 4 ft wide zone cleared along the outside of the airport operational fence, and a 12 ft wide gravel path, or service road, constructed inside of the fence to allow for vehicle access, are preferred by the Port for maintenance and monitoring. It would be expensive to construct a permanent path through wetlands that lie along the fence line, therefore the path may be sited to avoid wetlands and buffers. In areas where the 12 ft wide gravel service road is shifted to avoid wetlands and buffers, a 4 ft wide zone cleared of vegetation will be maintained on the inside of the fence, where permissible. The Airport will comply with all applicable regulations prior to clearing any vegetation within wetlands or buffers.

3.5.3 Abandoned Structures
Structures which are no longer in use, or pertinent to air operations will be monitored and evaluated. If they are found to provide habitat for wildlife they will be removed whenever possible, including abandoned buildings, machinery, and light poles. These structures may be attractive to rodents, small birds and other prey species which can attract larger predators like raptors and coyotes.

3.6 Food/Prey-Base Management
Targeted management and modification of the food/prey-base at the Anacortes Airport will reduce use of the airfield by hazardous wildlife. Rodents, rabbits, small birds, insects, earthworms and other invertebrates can be a food source for multiple avian and mammalian species. Trash, food handouts and debris on and around the airfield can also serve as a wildlife attractant. These food resources will be controlled to the extent feasible to limit the attraction of hazardous wildlife to the airport environment.

3.6.1 Birds
On the AOA, potential avian prey species with the highest abundance during the WHA were passerines (particularly starlings, robins and blackbirds), gulls, and doves. These species can serve as a food source for predatory birds and mammals. Habitat for these species, and perches for raptors, will be limited as practicable by the means discussed above.

3.6.2 Rodents
Populations of rodents and other small mammals were found to be low on the airport during the WHA. Nonetheless, mice may occur in any of the herbaceous-dominated habitats on the airfield. Rodent populations will be monitored and control will be undertaken if rodent populations increase and attract predators that pose a hazard to aviation.

3.6.3 Insects and Other Invertebrates
Insects and invertebrates can also provide a food source and attract wildlife, such as game birds, passerines and rodents to the airport. As recommended in the WHA (Bunch and Osmek 2013), drainage systems will be maintained to reduce standing water where insects can breed. Should insect populations greatly increase on the AOA and attract hazardous wildlife, the Anacortes Airport will work with a pest
control specialist to implement appropriate insect control procedures. See WAC 16-228 for restrictions on pesticide use.

3.6.4 Grains and Seeds
Grains and seeds may be available on the AOA and surrounding areas from weeds, shrubby and forested areas, and landscaping vegetation. Habitat within the airport operational fence will be managed to limit the abundance of seed producing vegetation, as practicable.

3.6.5 Trash, Debris, and Food Handouts
Trash, food handouts and debris on the airport and surrounding land can also be an attractant to wildlife and will be monitored and addressed whenever issues are discovered. Trash cans and dumpsters will be fitted with secure lids that remain closed at all times, and emptied on a regular schedule.

Wherever a risk exists at adjacent facilities (parks, neighborhoods), signage will be installed, and outreach conducted, indicating the potential hazard to local air traffic of food scraps as a wildlife attractant. As recommended in the WHA (Bunch and Osmek 2013), the AWM will alert residents in neighborhoods to the west of the potential for bird feeders and garbage to attract doves and pigeons, which could pose a hazard to aviation. If, through periodic inspections, hazardous food-based wildlife attractants are discovered in adjacent neighborhoods (e.g., bird feeders, garbage), the AWM will provide outreach to notify individual households of hazards and discourage the feeding of wildlife.

3.6.6 Animal Carcasses
Carcasses of animals found on the AOA during routine inspections, or taken pursuant to permits, will be immediately collected and disposed of by the Anacortes Airport. If animal carcasses are believed to be the result of an aircraft strike, species identification and necessary information will be reported on FAA form 5200-7 “Bird/Other Wildlife Strike Report.” Immediate removal of animal carcasses also limits FOD on the AOA, and the attraction of scavengers that could pose a hazard to aviation (e.g., corvids, gulls, vultures).

4.0 – Permits and Regulations

14 CFR Part 139.337(f)(3) Requirements for and, where applicable, copies of local, State and Federal wildlife control permits.

4.1 Overview
Governments have protections in place to manage wildlife and their habitat. Most wildlife species and their habitat are protected by one or more laws or regulations. These laws can affect wildlife hazard control and abatement programs at airports. Prior to implementing wildlife control actions, the Anacortes Airport will determine the legal status, licensing and permitting requirements for any species that could be affected. Wildlife hazard control personnel must adhere to all applicable Federal, State, and local regulations and obtain required permits as needed. Anacortes Airport is responsible for obtaining and updating permits.

4.2 Washington Wildlife Regulations
Several Washington State government agencies have regulations that affect wildlife management at airports. Pertinent regulations can be found in the Washington Administrative Code (WAC) and the Revised Code of Washington (RCW). Skagit County and municipal regulations can also affect wildlife management efforts at the Anacortes Airport. Washington Department of Fish and Wildlife (WDFW)
typically administers state wildlife laws involving resident birds, mammals, reptiles, and amphibians, as well as state-listed sensitive species.

4.3 Federal Regulations

Part 139 does not apply to the Anacortes Airport, but the Port has voluntarily agreed to conform to Part 139 requirements for this WHMP. Federal laws that may regulate various aspects of wildlife management activities at the Anacortes Airport include: the Migratory Bird Treaty Act, Lacey Act, Endangered Species Act, Bald and Golden Eagle Protection Act, National Environmental Policy Act, Clean Water Act, and the Federal Insecticide, Fungicide, and Rodenticide Act. Additional regulations that may affect wildlife control activities are found in 50 CFR. Several different federal agencies are responsible for the implementation of these acts. Federal wildlife laws are typically administered by the USFWS and involve primarily migratory birds and Threatened and Endangered species.

4.3.1 FAA Regulations, Advisory Circulars, and CertAlerts

The FAA is the federal agency responsible for developing and enforcing air transportation safety regulations. Many of the regulations are codified in the Federal Aviation Regulations (FARs). The FAA also publishes a series of guidelines for airport operators to follow called Advisory Circulars (ACs). Advisory Circulars in the 150 series deal with airport safety, including wildlife hazards and management. In addition to FARs and ACs, the FAA periodically issues CertAlerts for internal distribution to provide recommendations on specific issues for inspectors and airport personnel. All of the above-mentioned regulations are frequently updated and their current status will be verified on a regular basis. This can be done by visiting their website at http://wildlife-mitigation.tc.faa.gov/wildlife.

4.3.2 National Environmental Policy Act

The National Environmental Policy Act of 1969 requires Federal agencies to consider impacts of proposed project actions on the environment. Some wildlife hazard mitigation activities may trigger the need for FAA to perform an analysis under NEPA. The airport will coordinate with the ADO regarding the need for NEPA, level of NEPA, and the need for consultation and/or coordination with other resource agencies for compliance with Special Purpose laws.

4.4 Wildlife Categories

CFR Title 50, RCW Chapter 77, and WAC Chapter 232-12 define categories of wildlife and management related regulations. Wildlife categories include resident and migratory birds, birds exempt from Federal/State protection, game and non-game species, and threatened and endangered species. Because of the hazard they may pose to aircraft, feral and free roaming dogs, cats, and other domestic animals are considered “wildlife” under this WHMP, but are mostly regulated under other municipal laws. Wildlife control personnel should know the category for the species they intend to control so that relevant laws and necessary permits can be applied.

Table 3 shows which wildlife categories require state and/or federal permits and which categories the Anacortes Airport has current federal or state permits for. It should be noted that RCW 77.36.030 (trapping or killing of wildlife causing damage – emergency situations) provides for the trapping or killing of wildlife, with the exception of threatened, endangered and protected species, by property owners without state permits, if the wildlife are damaging property or posing a threat to human life.
### Table 3: Wildlife categories in Washington state, and permits required by Federal and state wildlife agencies for lethal control.

<table>
<thead>
<tr>
<th>Category</th>
<th>Species</th>
<th>State Permit Required&lt;sup&gt;1&lt;/sup&gt;</th>
<th>State Permit Obtained</th>
<th>Federal Permit Required</th>
<th>Federal Permit Obtained</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Migratory Birds:</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Game</td>
<td>Ducks, geese, mourning doves</td>
<td>Yes</td>
<td>No</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>Non-game</td>
<td>All species except game birds, resident nongame birds, and domestic and exotic birds</td>
<td>No</td>
<td>N/A</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>Depredation Order&lt;sup&gt;2&lt;/sup&gt;</td>
<td>Blackbirds, cowbirds, grackles, crows, magpies</td>
<td>No</td>
<td>N/A</td>
<td>No</td>
<td>N/A</td>
</tr>
<tr>
<td><strong>Non-Migratory Birds:</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Game</td>
<td>Quail, Ring-necked pheasant, grouse, partridge and turkey</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
<td>N/A</td>
</tr>
<tr>
<td>Invasive/Exotic</td>
<td>Species listed under Executive Order #13112 including starlings, house sparrows, and feral pigeons</td>
<td>No</td>
<td>N/A</td>
<td>No</td>
<td>N/A</td>
</tr>
<tr>
<td>Domestic Birds:</td>
<td>Rock pigeons and domestic poultry</td>
<td>No</td>
<td>N/A</td>
<td>No</td>
<td>N/A</td>
</tr>
<tr>
<td><strong>Mammals:</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Game mammals</td>
<td>Deer species, rabbits</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
<td>N/A</td>
</tr>
<tr>
<td>Furbearers</td>
<td>Fox, raccoon</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
<td>N/A</td>
</tr>
<tr>
<td>Non-game</td>
<td>All species of mammals, including coyotes, except game, furbearers, domestic mammals and fully protected wildlife</td>
<td>No</td>
<td>N/A</td>
<td>No</td>
<td>N/A</td>
</tr>
<tr>
<td>Domestic</td>
<td>Dogs, cats, livestock</td>
<td>No – Call Animal Control</td>
<td>N/A</td>
<td>No</td>
<td>N/A</td>
</tr>
<tr>
<td><strong>Reptiles and Amphibians:</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>All reptiles and amphibians except those listed as threatened or endangered</td>
<td>Yes</td>
<td>No</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td><strong>Fully Protected Wildlife:</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Threatened and endangered species</td>
<td>Yes</td>
<td>No</td>
<td>Yes</td>
<td>No</td>
</tr>
</tbody>
</table>

<sup>1</sup> Wildlife control actions requiring a state permit other than a hunting license will be coordinated through the WDFW Regional Biologist.

<sup>2</sup> May be taken without permits “when concentrated in such numbers and manner as to constitute a health hazard or other nuisance” (50 CFR Part 21.43).

### 4.5 General Regulations for Wildlife Control

Regulations and permits will apply to wildlife management activities undertaken at the Anacortes Airport, and are outlined below. The USFWS and WDFW regulate wildlife control and issues control permits. Due to the proximity of the airport to residential and urban areas, the Airport will work with a USDA Wildlife Services biologist and the local or regional branch of each agency to follow applicable regulations and obtain proper permits prior to control activities.
4.5.1 Birds

4.5.1.1 Migratory Birds
All migratory birds, including their eggs and nests, are protected under the Migratory Bird Treaty Act (MBTA) of 1918 and regulated under federal law by the USFWS (50 CFR Sec. 10.12 and 16 USC 703). This encompasses almost all native bird species in the United States, except for non-migratory game birds such as wild turkey, various grouse, and quail, and some introduced game birds, such as ring-necked pheasants and chukars. Exotic and feral species are also excluded from federal protection, such as European starlings, house (English) sparrows, rock pigeons, domestic ducks and geese (e.g., Muscovy ducks, graylag geese). A federal depredation permit, issued by the USFWS, must be obtained to take non-game migratory birds, or take migratory game birds outside of established hunting seasons or in numbers that exceed set bag limits. Take as defined under 50 CFR 10,12 is to pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to pursue, hunt, shoot, wound, kill, trap, capture, or collect any wild animal. These regulations allow haz ing of migratory birds that are damaging property, except for threatened and endangered species and eagles, provided no effort is made to kill or capture birds. Separate permits are required for harassment and/or take of eagles and threatened and endangered species.

4.5.1.2 Migratory Bird Depredation Permit (50 CFR, Part 13 and 21)
A federal depredation permit is required to take protected migratory non-game birds, or migratory game birds outside of the established hunting season or in numbers that exceed set bag limits. Contact the local USDA Wildlife Services office for assistance in obtaining a permit. As a general rule, the USFWS will not issue a depredation permit without the concurrence of the local USDA Wildlife Services office. Anacortes Airport is responsible for renewing the depredation permit annually. A report is to be submitted to the USFWS within 10 days of the Depredation Permit expiration date with detailed information on species and numbers of birds taken under the permit.

4.5.1.3 Resident Birds
European starlings, rock pigeons, and house sparrows are non-migratory and non-game birds. No permits are required to take these species. All other non-game birds in Skagit County are classified as migratory and require a permit to take.

Resident game birds such as ring-necked pheasant are also non-migratory. They are not regulated by the MBTA and require no federal permit for take. However, these species are protected by state law. A state depredation permit may be obtained through WDFW to take resident game birds at the Anacortes Airport. A state permit is required prior to take unless immediate danger exists. The local USDA Wildlife Services office can provide assistance in obtaining this permit.

4.5.1.4 Depredation Order for Blackbirds, Cowbirds, Grackles, Crows, Magpies, Canada Geese and Cormorants
A Depredation Order is a Federal regulation that authorizes the take, without a Federal permit, of certain migratory bird species involved in damage situations. 50 CFR Part 21.43, “Depredation Order for Blackbirds, Cowbirds, Grackles, Crows and Magpies” allows these species to be taken without a federal permit when they are concentrated in such numbers and manner as to constitute a health hazard or other nuisance. Aviation safety on airports constitutes such a hazard. Additionally, depredation orders are in place to allow the take of Canada geese and double-crested cormorants without a permit under certain circumstances. The Anacortes Airport will consult with the appropriate federal authorities before using a depredation order. The State of Washington recognizes depredation orders and does not require a state...
permit under these conditions. More information can be found in 50 CFR 21.41 Depredation Permits, and 50 CFR 21.43 Depredation Order for Blackbirds, Cowbirds, Grackles, Crows and Magpies.

4.5.1.5 Birds That Are Exempt from Federal/State Protection
Invasive/Exotic (non-native) species are defined as an alien species whose introduction causes or is likely to cause economic or environmental harm or harm to human health. These species are not federally protected and the birds, nests, eggs and young of these species may be taken without a permit. European starlings, rock pigeons, house sparrows and various pet birds such as monk parakeets are included in this designation. Some domestic waterfowl may breed with wild migratory waterfowl, resulting in hybrids that can be difficult to distinguish from wild birds. Birds cannot be taken without permit if wildlife management personnel cannot differentiate between domestic/hybrids and migratory birds with confidence.

4.6 Mammals

4.6.1 Game Mammals
Game mammals are defined primarily as those hunted for sport, recreation or consumption, and are regulated by WDFW. Deer are a common big-game mammal in the area surrounding the Anacortes Airport. Deer were observed on the airfield during the WHA (Bunch and Osmek 2013). If control activities are required for deer on the airport, a WDFW state permit will be obtained by the Anacortes Airport or USDA Wildlife Services biologist prior to any action.

4.6.2 Furbearers, Predatory, and Non-game Mammals
Furbearers known from the immediate airport vicinity may include foxes and rabbits. Foxes and rabbits have not been documented as problematic on the airport. However, if removal of these species becomes necessary, a state permit will be obtained by the AWM from WDFW prior to management activities.

Coyotes represent the only predatory mammal documented at the Anacortes Airport during the WHA, although raccoons and opossums are likely present in the area as well. Of these species, coyotes present the greatest risk to aviation. Coyotes are not classified as a game animal by WDFW, but a state license is required to hunt or trap them (RCW 77.32.010). In cases where a coyote is threatening human safety or causing property damage, in accordance with RCW 77.36.030, a coyote may be trapped without license.

4.6.3 Feral Domestic Mammals
For the purposes of this WHMP, feral and free-roaming dogs, cats and other domestic animals are considered “wildlife” because of the danger they pose to airport operations. Control of these species is regulated under municipal laws. In the case of nuisance animals, local and state police may be involved as well as local animal control entities. The Anacortes Airport will contact the local animal control agency and/or local police for consultation and potential assistance in their removal from the airfield.

4.7 Reptiles and Amphibians
At their current abundance, reptiles and amphibians do not pose a threat to aviation safety at the Anacortes Airport. Should populations grow to a level that poses a hazard to aircraft (e.g., by attracting larger predators), non-protected reptiles and amphibians in the state of Washington can be taken with a permit or appropriate license.
4.8 Wildlife/Habitat Issues of Special Concern

4.8.1 Federal Threatened and Endangered Species

The Federal Endangered Species Act (Sec. 2 [16 U.S.C. 1531]) and Washington State Endangered Species Act protect plants and animals that may be threatened with extinction. These acts classify species as endangered or threatened, and also protect their habitat. An endangered species is defined as “any species or subspecies that is in danger of extinction throughout all or a significant portion of its range.” A threatened species is defined as “any species or subspecies that is in danger of becoming an endangered species within the foreseeable future throughout or over a significant portion of its range.” Once a species is listed under these Acts, it cannot be taken or harassed without a special permit. Eagles are protected under the Bald and Golden Eagle Protection Act. If a listed species is causing significant hazard to airport operations, the USFWS and/or WDFW should be contacted for assistance depending on the listing status of the species involved.

4.8.2 Avoiding Impacts to Threatened and Endangered Species

The USFWS, National Marine Fisheries Service (NMFS) and WDFW maintain lists of threatened and endangered species by state and county. Federally listed species identified for Skagit County are not expected to regularly occur on the Anacortes Airport due to the absence of suitable habitat. Nevertheless, wildlife management projects proposed on and around the airport should consider the potential effects on federal and state listed species before actions are undertaken. Complete lists of these species may be found by using a data query search on the USFWS website for endangered species by county (http://www.fws.gov/endangered/), in the City of Anacortes Code of Ordinances 17.70, WAC 232-12-014, WAC 232-12-011, and on the WDFW website (http://wdfw.wa.gov/conservation/endangered/).

Critical habitat for listed species is also regulated by the USFWS and NMFS, and will be reviewed to determine the potential effect on plans to reduce wildlife hazards. The Anacortes Airport and surrounding landscape is identified as critical habitat for the Puget Sound Evolutionary Significant Unit of Chinook salmon. Critical habitat for three other federally listed species (bull trout, Taylor’s checkerspot, and killer whale - Southern Resident Distinct Population Segment) is designated within five miles of the airport. Potential downstream effects of wildlife hazard management projects on critical habitat and listed species will be considered before actions are undertaken.

Section 7 of the Endangered Species Act requires federal agencies to consult with the USFWS and NMFS to determine whether proposed activities would impact protected species or designated critical habitat. Reasonable and prudent measures and conservation measures may be imposed to minimize or compensate for adverse project effects on these resources. The AWM and airport personnel will be trained to identify listed bird and mammal species in Skagit County, and be familiar with their potential occurrence on the airport. The Anacortes Airport will periodically review threatened and endangered species lists relevant to the airport environment. Habitat management, followed by wildlife harassment, will be used to avoid or minimize aviation conflicts with threatened and endangered species. Take permits are required for harassment of threatened and endangered species. Though highly unlikely, lethal control of a federally listed species would only be taken as a last resort if approval was granted by the USFWS or NMFS.
4.8.3 Eagle Permits

Eagles are federally protected under the Bald and Golden Eagle Protection Act. When the bald eagle was delisted under the Endangered Species Act, the USFWS developed regulations to create a permit program to authorize limited take of bald and golden eagles where take is associated with otherwise lawful activities. Bald eagles are common in Anacortes. If eagles should pose a wildlife hazard to aviation at the airport, a federal permit, not included under the Migratory Bird Depredation Permit, would be required for harassment or take (50 CFR Part 22.23, and 16 USC Sec 668(a)).

4.8.4 Habitat Conservation

USFWS and WDFG are responsible for species conservation and recovery plans for threatened and endangered species. These plans require the identification of critical habitat when habitat is associated with the decline of a species. Projects in areas where critical habitat has been designated may be prohibited. The USFWS and WDFW would be consulted if airport projects have the potential to affect critical habitat, including downstream effects, for a listed species.

4.8.5 Wetlands and Wetland Buffers

Wetlands provide a variety of beneficial ecosystem functions, but can also be attractive to many avian species that pose a hazard to aviation. Dense scrub-shrub and/or herbaceous plantings (e.g., hardhack spirea, slough sedge) should be installed in open water areas of on-airport wetlands to exclude waterfowl if other corrective actions to limit open water are not viable. Drainage systems will be kept clear of debris and vegetation, and maintained to prevent areas of standing water that could lead to the development of wetlands. Ditches on and around the airport will be monitored by the AWM to ensure proper function. Areas which hold water for more than 48 hours will be evaluated for corrective action such as recontouring, fill placement, vegetation planting or drainage improvement.

Management of wetlands and their buffers on the Anacortes Airport are subject to a variety of local, state, and federal regulations. Proposed wildlife hazard management or development projects that could affect these wetlands and their buffers, including vegetation removal, may require permits from various agencies before action is undertaken. Depending on a wetland’s size and functional assessment, management activities may require permitting and agency coordination. Activities within wetlands and their buffers, including vegetation management, are regulated by Federal, state and local jurisdictions. Regarding wildlife hazard mitigation projects at the Anacortes Airport, the Washington DOE, Skagit County and the City of Anacortes regulate the removal of vegetation from within buffers and wetlands, and the ACOE regulates the filling or grading or mechanized land clearing of wetlands. Some small wetlands may be exempted from City and County regulations.

Permits are not required for removing noxious weeds in wetland and buffers if the control is done by hand or with light equipment and does not use hazardous substances. Local governments will be contacted if more substantial control methods are proposed to ensure resources are adequately protected. Current noxious weed lists can be found in WAC 16-750 or at the Washington State Noxious Weed Control Board webpage: [http://www.nwcb.wa.gov/nwcb_nox.htm](http://www.nwcb.wa.gov/nwcb_nox.htm). Removal of woody vegetation from wetlands and their buffers may need to meet local approval and the Anacortes Critical Areas Ordinance (code) and may also require a Joint Aquatic Resource Permits Application (JARPA). Mitigation may be required for removal of vegetation within wetland buffers – contact City, County and DOE.
The FAA has outlined a series of procedures for mitigating wetland impacts resulting from development projects on airports. For more information refer to the publication on wetland mitigation banking in the FAA’s Wildlife section homepage (data query at [http://www.faa.gov/](http://www.faa.gov/)). Pre-development mitigation might be required prior to issuance of a permit.

A wetland delineation was conducted on portions of the airport in 2001 and amended in 2004 for the 2005 fencing project. An updated wetland investigation may be necessary to ensure agency concurrence prior to any wetland filling activities, or clearing of vegetation within wetland buffers. All wetland classifications are subject to verification by the City, and wetland boundaries by the City and the ACOE. An updated wetland delineation may help ensure compliance with current regulations, determine which wetlands on the airport may be filled or have vegetation removed from the wetlands or buffers, and ensure compliance with federal, state and local regulations.

4.8.6 Upland Vegetation Management
The removal of upland vegetation outside of wetland buffers may also require permitting through local jurisdictions such as the City and County. When removing trees and shrubs from airport property, the AWM will ensure that upland vegetation is not being removed from wetland buffers without proper permits or agency approval. Special considerations are made by the City and County for trees which extend into the Part 77 Surface—City Code 17.74.050. Section 7 consultation with USFWS, and a Migratory Bird Treaty Act permit may be required if vegetation is removed during the avian breeding season.

4.9 Pesticide Applicator License
The application of restricted-use pesticides for the removal of hazardous wildlife (e.g. blackbirds, starlings) or prey-based attractants (e.g. rodents, rabbits, insects, earthworms and weeds) can only be conducted by Certified Pesticide Operators or persons under their direct supervision. If the use of restricted-pesticides is deemed necessary for wildlife hazard management, the Anacortes Airport will obtain the necessary license through the Washington State Department of Agriculture, or a contractor licensed in the application of such pesticides will be retained. Pesticides will be used in accordance with the manufacturer recommended uses and applications, and in such a manner as to prevent primary or secondary poisoning of fish and wildlife. Any use will comply with Washington State Department of Agriculture’s rules for licensing, posting, and documentation.

USDA, OSHA, and state and local jurisdictions have regulations covering application and use of pesticides and herbicides. Many require applicator licensing and Washington regulates allowable pesticide and herbicide types and application rates. WAC 16-232 provides guidance on herbicide use in Skagit County.

5 - Resources

14 CFR 139 (f) (4). “Identification of resources that the certificate holder will provide to implement the plan.”

5.1 Overview
Habitat management and wildlife control supplies and equipment are available for purchase from several commercial sources. The Anacortes Airport will maintain an adequate supply of equipment on hand for use by trained personnel.
5.2 Airport Supplies

The use of firearms and pyrotechnics are prohibited within the City of Anacortes (municipal code 9.36.010), therefore these will not be included as tools for wildlife control at the Anacortes Airport.

Supplies normally available at the airport include, but are not limited to:

- Copies of the recent WHMP
- Latex gloves for handling animal carcasses
- Garbage bags and gallon-size re-sealable bags
- Daily runway safety inspection forms
- Daily wildlife report forms
- Field guide for local bird identification
- Refrigerator to preserve bird carcasses for identification by a wildlife biologist
- Binoculars
- Fire extinguisher
- Hearing and eye protection
- Camera
- Air horn
- Paintball gun, paintballs and compressed air canisters
- Vegetation maintenance equipment (e.g., mower, chainsaw, hand clippers)

Additional supplies obtained by airport staff on an as-needed basis include:

- Exclusion materials such as anti-perching spikes and bird netting
- Mylar tape
- Rat/mouse traps snap traps
- Cage traps for small to medium-size mammals (e.g., Tomahawk)
- Snare/catch pole

The following resource documents are available in the Airport Wildlife Manager’s office and/or are accessible on the internet:

- Field guides to wildlife identification
- University of Nebraska “Prevention and Control of Wildlife Damage” reference manual, available at http://digitalcommons.unl.edu/icwdmhandbook/

5.3 Airport Vehicle(s)

The airport vehicles designated for wildlife management will contain radio equipment suitable for communication with airport operations and air traffic, as well as the supplies necessary to facilitate an
immediate response to wildlife hazards. The AWM and airport personnel are responsible for responding to calls to disperse animals from the runways and AOA. At a minimum, supplies maintained in these vehicles include:

- Binoculars
- Latex gloves
- Garbage bags
- Daily safety inspection sheets
- Bird identification field guide
- Paintball gun with paintballs and compressed air canisters
- Air horn

5.4 City Animal Control Assistance
Contact the City of Anacortes Animal Control to respond to domestic animals that pose a wildlife hazard at the airport. Animal Control may be contacted at (360)293-4684.

6 – Wildlife Hazard Management Procedures

14 CFR Part 139.337(f)(5)  
Procedures to be followed during air carrier operations that at a minimum includes:

(i) **Designation of personnel responsible for implementing the procedures**;

(ii) **Provisions to conduct physical inspections of the aircraft movement areas and other areas critical to successfully manage known wildlife hazards before air carrier operations begin**;

(iii) **Wildlife hazard control measures**; and

(iv) **Ways to communicate effectively between personnel conducting wildlife control or observing wildlife hazards and the air traffic control tower**.

6.1 Overview
Hazardous wildlife on the airport is managed using an innovative, flexible and adaptive approach which concentrates on monitoring and habitat management, followed by direct control (hazing, and if necessary, lethal control). The AWM and airport personnel will conduct frequent inspections of the AOA and other critical areas for wildlife hazard management and judiciously document monitoring and control efforts.

6.2 Wildlife Patrol
The Anacortes Airport’s wildlife patrol team consists of airport personnel and contract airport wildlife biologists. The patrol team is responsible for conducting at least one patrol of the AOA for hazardous wildlife during each shift and responding to identified wildlife hazards on the airfield. Patrol team activities are coordinated through the AWM. Daily patrols and inspections are recorded on the Daily Inspection Report form and submitted to the AWM. Inspections of the entire airport operational fence around the
airfield are conducted monthly, at a minimum. More frequent inspections will be conducted if a spike in the presence of large and medium-bodied mammals is noted on the airfield.

All dead animals recovered from suspected or known aircraft strikes are recorded on FAA Form 5200-7. Any avian remains found within 200 feet of a runway will be considered a strike and submitted to the FAA unless another cause of death is determined. All wildlife-related activities (e.g., notable wildlife observations, animals killed, animals dispersed) are also documented on the Daily Inspection Report form.

Whenever wildlife remains cannot be identified by airport personnel or a contract airport wildlife biologist, assistance with identification of remains or bird feather samples will be obtained by submitting a sample to the Smithsonian Institution Feather Identification Lab at the address listed below. For more information on strike reporting and sample collection, see the FAA Wildlife Strike Database website:

http://wildlife-mitigation.tc.faa.gov/wildlife/

Smithsonian Institution
Feather Identification Lab
E600, MRC 116
10th & Constitution Ave., NW
Washington, DC 20560
Phone (202) 633-0801

6.3 General Wildlife Hazard Control Measures
Wildlife hazards identified at the airport will be assessed by the AWM and/or airport personnel to determine practical solutions. Habitat management is the most effective means for reducing wildlife hazards on airports. This is accomplished by reducing habitat suitability or eliminating suitable habitat for hazardous species. Following habitat management, multiple control measures will be utilized to obtain the maximum effectiveness. The initial response to most wildlife hazards will be to haze or scare wildlife from the AOA, followed by removal of persistently hazardous animals when necessary. Most control techniques retain their effectiveness when used judiciously and in conjunction with other methods. The key to successful wildlife hazard abatement programs is innovation and persistence. Techniques will be applied based on safety, effectiveness, practicality and environmental and social considerations, and will be chosen to meet the situation and species involved. Personnel involved in direct control of wildlife species will be aware of the potential diseases that wildlife may carry and will take appropriate precautions to minimize potential health risks.

6.4 Bird Hazard Management
Several avian species known to occur at the Anacortes Airport have a potential for causing significant wildlife strikes. Geese, waterfowl, blackbirds, gulls and raptors represent the highest risk to aircraft operations at the airport. Collision with these species could result in structural damage to aircraft or significant engine damage in the event of an engine ingestion. A summary of control measures, their effectiveness and cost is available in ACRP Report 32, Guidebook for Addressing Aircraft/Wildlife Hazards at General Aviation Airports (pp. 82-83, 2010). The Prevention and Control of Wildlife Damage manual and the FAA Wildlife Hazard Management at Airports manual both discuss methods that may be used to harass birds away from the airport. As stated above, multiple methods will be integrated for maximum effectiveness.
6.4.1 Blackbird and Crow Management
The blackbird group as defined in this WHMP consists of blackbirds, cowbirds, grackles and starlings. Although blackbirds and crows are not large birds, their flocking behavior outside of the breeding season can present a major hazard to air operations due to the associated risks from multiple strikes and engine ingestion. Airport personnel will monitor the airfield and surrounding area for blackbird and crow attractants and manage them accordingly. All records of blackbird and crow management will be recorded on the Daily Inspection Report form and kept in the AWM’s office.

These species will be managed aggressively with hazing and/or lethal population management via trapping, or toxicant as necessary. Roost trees will be thinned, netted, or removed from the landscape, as practicable. Any blackbird or crow nests discovered will be destroyed and appropriate habitat modifications will be taken to remove attractiveness of nesting sites. Additional procedures and techniques that may be used for blackbird and crow management are described in ACRP Report 32, and the Prevention and Control of Wildlife Damage manual.

6.4.2 Canada Goose Management
Canada geese were observed foraging or loafing on the airfield on two occasions during the WHA. Although Canada geese have not been involved in a strike incident at the Anacortes Airport, the species poses a significant wildlife hazard. Canada goose hazards at the airport will be addressed immediately using the following steps:

- Institute a zero-tolerance policy for Canada geese on the airfield.
- Haze birds as necessary and appropriate.
- Remove problem individuals through trapping as deemed necessary by the AWM. Collect carcasses immediately for appropriate disposal.
- Maintain records of these activities in the AWMs office in the Wildlife Hazards section of the Daily Inspection Form.
- All take of Canada geese must be reported annually to USFWS.

Because of limited staffing for constant monitoring, airport personnel will ask the adjacent neighborhood to the west, and pilots to notify airport personnel if geese are seen on the airport.

6.4.3 Management of Other Bird Species
Raptors were occasionally observed on the AOA, on other portions of the airport and on surrounding lands during the WHA. Raptor management at the Anacortes Airport will consist of monitoring, habitat management, harassment, and population control applied according to permits and authorizations. Raptors will be harassed away from the airport using pyrotechnics as deemed necessary by the AWM. Structures that are used as perch sites by raptors will be removed or have appropriate anti-perch devices installed.

Raptor nests may be removed without permit except when nest is being actively used (i.e., eggs or chicks present are present). A MBTA permit is required to remove active nests.

6.5 Mammal Hazard Management
WHA observations indicated that coyotes and deer present a wildlife hazard at the Anacortes Airport. The airport operational fence will be monitored and maintained, as described in 3.5.2 of this document, in order to limit presence of medium and large bodied mammals on the airfield. If coyotes or deer are
observed on the airfield, airport personnel or the AWM will haze them off of the airfield, and inspect the fence line for breaches. Coyotes may be trapped and removed if necessary, in accordance with WDFW permitting.

Rodent populations were not observed, and rabbit populations appeared to be relatively low during the WHA. Small mammal populations will be monitored periodically and if population increases are documented, on-airport vegetation management will be adjusted to reduce populations. Lethal control methods (e.g., poisons) will be used as needed, in accordance with manufacturer’s recommendations and Washington State Department of Agriculture’s rules.

6.6 Airfield Communications

Airport personnel operating on the airport are equipped with radios and are trained to use them in communication with airport operations and air traffic. If immediate wildlife hazards are observed on the airfield, airport personnel will inform air traffic as necessary.

If airport personnel discovers periods of heavy wildlife activity on or in the immediate vicinity of the airport (e.g., migration), or other wildlife hazards that cannot be immediately eliminated, the AWM will issue a NOTAM as appropriate.

7 – Evaluation

14 CFR Part 139.337(f)(6) Procedures to review and evaluate the wildlife hazard management plan every 12 consecutive months or following an event described in (b)(1), (b)(2), and (b)(3) of this section, including:

(i) The plan’s effectiveness in dealing with known wildlife hazards on and in the airport’s vicinity and

(ii) Aspects of the wildlife hazards described in the wildlife hazard assessment that should be reevaluated.

7.1 Overview

Anacortes Airport will complete annual reviews of the WHMP to determine the effectiveness of the WHMP and wildlife control projects, and track the status and completion dates of hazard reduction efforts. Following the annual reviews, the WHMP will be revised as needed.

This WHMP will be evaluated annually, at a minimum, and whenever the following events occur:

- A multiple wildlife strike by an aircraft,
- A wildlife strike that results in substantial damage to an aircraft, or
- An engine ingestion of wildlife by an aircraft.

Updates will be made to the WHMP whenever a review finds that an update is warranted.

7.2 Wildlife Strike Database

Airport personnel are required to perform daily inspections of the airfield, monitor wildlife populations, and identify potential wildlife hazards. Airport personnel will document all wildlife strikes by completing FAA Form 5200-7, and submitting the form to the AWM for species identification and electronic submittal.
Anacortes Airport: Wildlife Hazard Management Plan – March 2015

8 – Training

14 CFR Part 139.337(f)(7) A training program conducted by a qualified wildlife damage management biologist to provide airport personnel with the knowledge and skills needed to successfully carry out the wildlife hazard management plan required by paragraph (d) of this section.

FAA AC 5200-36A: Part 139.303(c) and (e) Requires the holder of an Airport Operating Certificate issued under Part 139 to provide initial and recurrent wildlife hazard management training, every 12 consecutive months, to airport personnel actively involved in implementing FAA approved WHMPs.

8.1 Overview
Training is essential for personnel involved in wildlife hazard abatement activities, and for a successful WHMP. The Anacortes Airport will ensure that all personnel involved in wildlife deterrence and control are familiar with airfield access and safety procedures, knowledgeable in identification of local wildlife, and properly trained in the selection and application of appropriate control methods. The AWM will maintain a record of all personnel trainings completed in support of the WHMP.

8.2 Airfield Access and Safety
The AWM will review airfield access and safety protocols with all individuals involved in the implementation of the WHMP. This will include airfield familiarization, procedures for movements within the AOA, and airport communications and radio protocols.

8.3 Wildlife Hazard Training
The AWM and airport personnel will be trained in identification and mitigation of wildlife hazards at airports including, relevant laws and regulations, dispersal methods, and techniques for prey-based reductions. AC 150/5200-36A Qualifications for Wildlife Biologists Conducting Wildlife Hazard
Assessments and Training Curriculums for Airport Personnel Involved in Controlling Wildlife Hazards on Airports recommends that personnel obtain necessary training in wildlife identification, legal issues associated with wildlife control, and appropriate control techniques by attending a Wildlife Control Workshop. If airport personnel are unable to attend a training workshop, the following materials will be required reading for airport personnel involved in controlling wildlife hazards at the airport, and a record of compliance will be maintained:

*Wildlife Hazard Management at Airports - A Manual for Airport Personnel:*

*ACRP Report 32 Guidebook for Addressing Aircraft/Wildlife Hazards at General Aviation Airport:*
http://www.faa.gov/airports/airport_safety/wildlife/resources/

*ACRP Synthesis 23 Bird Harassment, Repellent, and Deterrent Techniques for Use on Airports:*
http://www.faa.gov/airports/airport_safety/wildlife/resources/

*ACRP Synthesis 39 Airport Wildlife Population Management:*
http://www.faa.gov/airports/airport_safety/wildlife/resources/

*ACRP Synthesis 52 Habitat Management to Deter Wildlife at Airports:*
http://www.faa.gov/airports/airport_safety/wildlife/resources/

*FAA Advisory Circular 150/5200-33B Hazardous Wildlife Attractants On or Near Airports (Appendix C):*
http://www.faa.gov/regulations_policies/advisory_circulars/

USDS-Aphis-Wildlife Services and private consulting firms offer training courses for wildlife hazard management personnel in basic wildlife identification and control techniques. Information on some of these current training opportunities are found on the Embry Riddle Aeronautical University website: http://wildlifecenter.pr.erau.edu/Training.php. Once an airport employee has gone through the proper training, FAA AC 150/5200-36A and 14 CFR Part 139.337 (f) allow holders of an Airport Operating Certificate, who are trained by a qualified airport wildlife biologist, to provide recurrent training to their airport employees. All personnel who are responsible for implementing wildlife hazard abatement procedures in this WHMP will obtain training through one of these FAA accepted methods. As recommended in the WHA, ACRP Report 32 will be part of any training for personnel who routinely move about the airport.

Additional guidance on wildlife issues can be found on the FAA website: http://faa.gov/airports/airport_safety/wildlife/guidance/

### 9 – Monitoring Hazards at Anacortes Airport

#### 9.1 Purpose and Need for Monitoring

A WHMP should be based on a comprehensive evaluation of wildlife hazards at the airport, and species-specific responses to assess and limit the risk of wildlife-aircraft strikes. The airport will have a program in place to detect and immediately resolve wildlife hazards on the airport, and for ongoing data collection and analysis. As wildlife control methods are implemented, airport personnel will record information on
the observation, which control methods were applied, and how each species of hazardous wildlife responded. This data will help determine wildlife trends and correlations between hazardous species, activity, attractants and hazards on the airport. Accurate records provide a means to assess the airport’s wildlife management program and define management practices for hazardous species. With proper evaluation the airport will be better able to justify and defend certain management actions, such as wildlife removal, or during litigation following a damaging wildlife strike.

All wildlife hazard management instructions and materials will be kept in the AWMs office for ready reference. Chapter 6 of ACRP Report 32, Guidebook for Addressing Aircraft/Wildlife Hazards at General Aviation Airport, provides guidance and samples for record keeping that can be modified to suit the needs of the airport.

9.2 Monitoring Methods
As recommended by the WHA (Bunch and Osmek 2013), the Airport will ask residents along the western fence, air carrier, and private pilots to immediately notify airport personnel when significant wildlife hazards, such as deer, coyotes, geese, or large flocks of birds are seen inside the AOA.

As described in Section 2 of this WHMP, monitoring and recording of wildlife hazards and abatement actions undertaken at the Anacortes Airport will be performed by the AWM, airport personnel, and if needed, a Contract Airport Wildlife Biologist and/or Animal Control Specialist. Most monitoring responsibilities lie with the airport personnel, including daily inspections of runways and taxiways. The AWM will establish a protocol for documenting and monitoring significant wildlife observations on the airport including daily inspections of the AOA, monthly inspections of the airport operational fence, and any wildlife hazard management activities undertaken.

Daily Runway Inspections will incorporate records of the following:

- Date, time and location on the airport where hazardous wildlife is observed.
- Hazardous wildlife species observed, including numbers, and activities – including efforts resulting in no hazardous wildlife observations.
- Direction and altitude of hazardous wildlife movements, and flocking characteristics.
- Frequency of hazardous wildlife visits to an area, duration of visits, activity while on site (e.g. loafing, feeding, nesting and breeding activity, soaring, etc.).
- Wildlife strikes (these will also be recorded separately and reported to the FAA)
- Time spent on repairs and wildlife control.

Airport personnel will also keep record of monthly inspections of the airport operational fence, including, but not limited to:

- General conditions of fence, gates, and skirt.
- Any gaps or holes larger than 6 inches.
- Efforts made to repair holes, gaps or wash-outs.
- Additional notes on issues that may need consideration or monitoring.

Additional activities related to the preventative management of hazardous wildlife on the airport will also be recorded and results reported to the AWM. Such activities may include clearing of vegetation from
airport property, maintenance of culvert drainage, planting of vegetation, landscaping alterations, participation in planning decisions, etc.

Airport personnel will record these activities on standardized forms and report them to the AWM. The AWM will maintain the Daily Inspection Forms, Monthly Fence Inspection Forms, and records of wildlife hazard management in the AWM’s office.

If a Contract Airport Wildlife Biologist and/or Animal Control Specialist/Trapper performs wildlife hazard management duties at the Anacortes Airport, they will record activities and results, and any specific information as required by permit and/or regulations, and provide this information to the AWM.

9.3 Summary Reports
The AWM will periodically summarize information from inspection forms and wildlife hazard management activities to provide baseline data for evaluating the effectiveness of the WHMP. This will be a simple summary that includes number of runway sweeps, number of control techniques deployed (by type), birds and mammals observed (by species), and wildlife strikes (by species). The summary reports will be prepared on a quarterly basis, and include a short paragraph outlining any other significant activities, such as fence repair projects, vegetation management, outreach to residential areas, etc. An annual report will be prepared each year by combining data from quarterly reports. Summary reports will then be maintained on file in the AWM’s office.
Anacortes Police Department
1218 24th Street
Anacortes, WA 98221
(360) 293-4684

City of Anacortes Animal Control
(360)293-4684

City of Anacortes
904 6th Street
PO Box 547
Anacortes, WA 98221
(360)293-1900

Federal Aviation Administration (FAA)
Northwest Mountain Region
1601 Lind Avenue SW, Suite 315
Renton, WA 98057
(425)227-2813

FAA Seattle Airports District Office (OR, WA)
1601 Lind Avenue, S.W., Suite 250
Renton, WA 98057-3356
(425)227-2650

Skagit County Planning and Development Services: (CAO – Wetlands)
(360) 336-9410

US Army Corps of Engineers (ACOE)
(Wetland Management)
Seattle District
P.O. Box 3755
Seattle, WA 98124-3755
(206) 764-3742

USDA Wildlife Services
Washington Wildlife Services State Director
720 O’Leary Street NW
Olympia, WA 98520
(360) 753-9884

US Fish and Wildlife Service (USFWS)
(Law Enforcement, T & E Species, Permitting)
Pacific Region (1)
Office of Law Enforcement
911 NE 11th Avenue
Portland, OR 97232-4181
(503)231-6125

Washington Department of Fish and Wildlife (WDFW)
(Law Enforcement, T&E Species, Permitting)
North Puget Sound – Region 4
16018 Mill Creek Boulevard
Mill Creek, WA 98012-1541
(425)775-1311

WDFW
Wildlife Conflict Program
600 Capitol Way North
Olympia, WA 98501-1091
specialtrapping@dfw.wa.gov

WDFW
(Nuisance Wildlife – Bellingham)
(360) 223-3817

Washington State Department of Agriculture
(Pesticides management/compliance)
P.O. Box 42560
1111 Washington Street SE
Olympia, WA 98504-2560
(360) 902-2040

Washington State Department of Ecology
(Wetland Management)
Northwest Region
160th Avenue SE
Bellevue, WA 98008-5452
(425)649-7000

Washington Poison Control Center
1-800-732-6985
References


Internet sites of interest


Skagit County Code: http://www.codepublishing.com/wa/skagitcounty/


USFWS Listed Species by County: http://www.fws.gov/endangered/

Appendices

A. 14 CFR Part 139.337

B. FAA CertAlerts
   FAA CertAlert 98-05 – Grasses Attractive to Hazardous Wildlife
   FAA CertAlert 04-16 – Deer Hazard to Aircraft and Deer Fencing
   FAA CertAlert 97-09 – Wildlife Hazard Management Plan Outline
   FAA CertAlert 06-07 – Requests by State Wildlife Agencies to Facilitate and Encourage
   Habitat for State Listed Threatened and Endangered Species and Species of Special
   Concern for Airports

C. FAA Advisory Circulars
   FAA Draft AC 150/5300-13A – Airport Design
   FAA AC 150/5200-32B – Reporting Wildlife Aircraft Strikes
   FAA AC 150/5200-33B – Hazardous Wildlife Attractants On or Near Airports
   FAA AC 150/5200-036A – Qualifications for Wildlife Biologist Conducting Wildlife Hazard
   Assessments and Training Curriculums for Airport Personnel Involved in Controlling
   Wildlife Hazards on Airports

D. FAA Forms
   7460-1 – Notice of Proposed Construction or Alteration
   5200-7 – Reporting Wildlife Aircraft Strikes, FAA Bird/Other Strike Report

E. Anacortes Airport Wildlife Hazard Assessment

F. Wildlife Hazard Management Permits Held by the Port of Anacortes
Appendix A: 14 CFR Part 139.337

This can be found by searching the Federal Code of Regulations at:
http://www.ecfr.gov/cgi-bin/ECFR?page=browse
Appendix B: FAA CertAlerts

FAA CertAlert 98-05 – Grasses Attractive to Hazardous Wildlife

FAA CertAlert 04-16 – Deer Hazard to Aircraft and Deer Fencing

FAA CertAlert 97-09 – Wildlife Hazard Management Plan Outline

FAA CertAlert 06-07 – Requests by State Wildlife Agencies to Facilitate and Encourage Habitat for State Listed Threatened and Endangered Species and Species of Special Concern for Airports

These can be found on the FAA CertAlerts webpage:
http://www.faa.gov/airports/airport_safety/certalerts/
Appendix C: FAA Advisory Circulars

**FAA Draft AC 150/5300-13A – Airport Design:**

**FAA AC 150/5200-32B – Reporting Wildlife Aircraft Strikes**

**FAA AC 150/5200-33B – Hazardous Wildlife Attractants On or Near Airports**

**FAA AC 150/5200-036A – Qualifications for Wildlife Biologist Conducting Wildlife Hazard Assessments and Training Curriculums for Airport Personnel Involved in Controlling Wildlife Hazards on Airports**

These can be found on the FAA Advisory Circulars (ACs) webpage:
http://www.faa.gov/regulations_policies/advisory_circulars/
Appendix D: FAA Forms

7460-1 – Notice of Proposed Construction or Alteration

5200-7– Reporting Wildlife Aircraft Strikes, FAA Bird/Other Strike Report

These can be found on the FAA Forms webpage:
http://www.faa.gov/forms/
Appendix E: Anacortes Airport Wildlife Hazard Assessment
COE Report No. 34

WILDLIFE HAZARD ASSESSMENT FOR ANACORTES AIRPORT
August 2011-September 2012

By

Wendell Bunch
Project Advisor: Steve Osmek

March 2013
CONTACT INFORMATION

Wendell Bunch  
Center of Excellence for Airport Technology  
Department of Civil and Environmental Engineering  
University of Illinois at Urbana Champaign  
205 N. Mathews, MC-250  
Urbana, IL 61801  
ccanadensis@gmail.com  

Steve Osmek  
Animal Solutions LLC  
PO Box 15350  
Seattle WA 98115  
206-271-9117  
animalsolutionsllc@gmail.com
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<tr>
<td>AOA</td>
<td>Airport Operations Area</td>
</tr>
<tr>
<td>ATIS</td>
<td>Automatic Terminal Information System</td>
</tr>
<tr>
<td>CEAT</td>
<td>University of Illinois Center of Excellence for Airport Technology</td>
</tr>
<tr>
<td>CFR</td>
<td>Code of Federal Regulations</td>
</tr>
<tr>
<td>COTS</td>
<td>Commercial off the shelf</td>
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<tr>
<td>FAA</td>
<td>Federal Aviation Administration</td>
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<td>NOTAM</td>
<td>Notice to Airmen</td>
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<td>WHA</td>
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INTRODUCTION

General aviation airports accepting AIP funds are required to comply with all associated Grant Assurances, Grant Assurance 19, Operation and Maintenance; Grant Assurance 20, Hazard Removal and Mitigation; and Grant Assurance 21 Compatible Land Use and added Advisory Circulars to the Grant Assurances. FAA Advisory Circular 150/5200-33B, Hazardous Wildlife Attractants on or Near Airports. Section 3-4 provides guidance that a wildlife hazard assessment is to be conducted when any of the following events occurs on or near the airport:

1. An air carrier aircraft experiences multiple wildlife strikes;
2. An air carrier aircraft experiences substantial damage from striking wildlife. As used in this paragraph, substantial damage means damage or structural failure incurred by an aircraft that adversely affects the structural strength, performance, or flight characteristics of the aircraft and that would normally require major repair or replacement of the affected component;
3. An air carrier aircraft experiences an engine ingestion of wildlife; or
4. Wildlife of a size, or in numbers, capable of causing an event described in paragraphs (b)(1), (b)(2), or (b)(3) of this section is observed to have access to any airport flight pattern or aircraft movement area.

There were no documented triggering events at Anacortes airport however wildlife meeting criteria (4) above have been observed in the aircraft movement area; black-tailed deer and coyotes.

PURPOSE OF WILDLIFE HAZARD ASSESSMENT

A wildlife hazard assessment (WHA) was performed at the Anacortes Airport, 74S, in Anacortes, Washington, by the University Of Illinois Center Of Excellence for Airport Technology (CEAT) to incorporate the use of a commercial off the shelf (COTS) marine radar into the wildlife hazard assessment process and assess its feasibility as an alternative to more costly avian radar systems.

Anacortes Airport was one of the local airports contacted by CEAT to conduct a WHA as part of a long-term program that assesses avian-radar performance at civil airports. Anacortes Airport had no prior WHA and had not implemented a wildlife hazard management plan. The WHA was performed under the supervision of a Federal Aviation Administration (FAA) qualified airport wildlife biologist, Steve Osmek of Animal Solutions LLC, and was funded by CEAT.

OBJECTIVES OF WHA

The objectives for the Anacortes WHA were to:

1. Review the existing airport wildlife monitoring and control program, including past wildlife monitoring, control actions, and strikes;
2. Interview the airport operator and others familiar with airport wildlife to determine what persistent hazards or attractants might exist or could be expected given past, existing, or proposed land-use changes within the FAA critical area;
3. Investigate, through a series of systematic monitoring studies using visual, radar, and infrared observation methods, the presence of hazardous wildlife use within at least two miles of the airport

4. Recommend improvements, as appropriate, to the airport's program, including implementing a wildlife hazard management plan.

ANACORTES AIRPORT

AIRPORT LOCATION AND DESCRIPTION

Anacortes Airport is located on Fidalgo Island, 48.4985 / -122.6625, within the Anacortes city limits, in the northwest interior of Washington state. The airport has a single runway and is operated by the Port of Anacortes. The airport's north fence line is 470 feet beyond the end of the runway, and the terrain drops away to the north. The southern fence line is 1132 feet beyond the end of the runway, with a low drop and then gradual rise in the terrain. The airfield is fenced on all sides with chain link fencing. The fencing is 8 feet high except in the area where 5 feet high fencing borders the adjacent residential area to the west. Two human- and three vehicle-access gates provide access through the fence. One human-access gate is on the southeast side of the airport and provides access to a wooded area inside the airport operations area (AOA); the other is adjacent to the San Juan Airlines hangar. Two of the vehicle access gates provide access to the northeast and northwest AOA; the third is a security gate used by airport personnel, airport businesses, and San Juan Airlines. An area in the northeast corner of the airfield is currently used for dumping construction debris.
AIRCRAFT OPERATIONS

AirNav.com (http://www.airnav.com/airport/74S) describes 74S as having a single runway, 18/36, is 3015 feet long and 60 feet wide. During the 14-month period ending on 30 September, 2012, aircraft flights averaged 58 per day based on data provided by 74S. The airport serves single and multi-engine aircraft. Use is general aviation with 41% transient general aviation, 21% air taxi, 38% local general aviation and is open 24 hours a day.

REVIEW OF AVIATION STRIKES OR TRIGGERING EVENTS

Anacortes Airport has recorded no wildlife strikes or documented triggering events.

REVIEW OF SPECIES STATUS

Wildlife species that are considered threatened or endangered are often protected by federal and state regulations. Species designated as migratory or as game may be subject to state-specified harvest regulations or seasons. Some species are not protected and can be taken at any time, but
methods of control may be subject to local regulations. Regulations as they pertain to wildlife species at Anacortes Airport are detailed below.

FEDERALLY ENDANGERED SPECIES

No federally endangered species were documented at Anacortes Airport.

MIGRATORY BIRD TREATY ACT

The federal Migratory Bird Treaty Act protects all migratory species observed at Anacortes Airport except for the House sparrow, European starling, Rock pigeon, California quail, and Eurasian collared doves. Species protected under this act require a depredation permit under the Code of Federal Regulations (CFR). Some species of blackbirds, cowbirds, grackles, crows and magpies maybe controlled without a permit if done to protect property or maintain a safe environment. The links below provide access to applicable CFRs.

- 50 CFR 21.41 Depredation permits: [http://www.ecfr.gov/cgi-bin/text-idx?c=ecfr&SID=a47b9ec05ef87c4217c4addcc15383d0&rgn=div8&view=text&node=50:9.0.1.1.4.4.1.1&idno=50](http://www.ecfr.gov/cgi-bin/text-idx?c=ecfr&SID=a47b9ec05ef87c4217c4addcc15383d0&rgn=div8&view=text&node=50:9.0.1.1.4.4.1.1&idno=50)
- 50 CFR 21.43 Depredation order for blackbirds, cowbirds, grackles, crows and magpies: [http://www.ecfr.gov/cgi-bin/text-idx?c=ecfr&SID=a47b9ec05ef87c4217c4addcc15383d0&rgn=div8&view=text&node=50:9.0.1.1.4.4.1.3&idno=50](http://www.ecfr.gov/cgi-bin/text-idx?c=ecfr&SID=a47b9ec05ef87c4217c4addcc15383d0&rgn=div8&view=text&node=50:9.0.1.1.4.4.1.3&idno=50)

BALD EAGLE AND GOLDEN EAGLE PROTECTION ACT

The Bald and Golden Eagle Protection Act (16 U.S.C. 668-668d) is legislation that protects two species of eagle. The Bald Eagle (*Haliaeetus leucocephalus*), formerly listed as a Federal endangered species, was given legal protection by the Bald Eagle Protection Act of 1940. This act was expanded to include the Golden Eagle in 1962. Since the original Act, the Bald and Golden Eagle Protection Act has been amended several times. It currently prohibits anyone, without a permit issued by the Secretary of the Interior, from "taking" bald eagles. Taking is described as including their parts, nests, or eggs, molesting or disturbing the birds. The Act provides criminal penalties for persons who "take, possess, sell, purchase, barter, offer to sell, purchase or barter, transport, export or import, at any time or any manner, any bald eagle ... [or any golden eagle], alive or dead, or any part, nest, or egg thereof." In addition to direct actions on the birds, the act also covers disturbance that may result from human-induced changes to the traditional nest sites, as such changes that may interfere or interrupt their normal behavior and cause them to abandon their nests. A copy of the Bald and Golden Eagle Protection Act is available at: [http://www.fws.gov/midwest/Eagle/guidelines/bgepa.html](http://www.fws.gov/midwest/Eagle/guidelines/bgepa.html)

STATE OF WASHINGTON
In the state of Washington, licensed Washington Wildlife Control Officers and USDA wildlife personnel may trap or lethally remove nuisance wildlife for a fee. Landowners, including airport operators, may remove most resident species of nuisance wildlife without permits using live traps. If a body compression trap is to be used, a 30-day permit to trap problem wildlife is required through the Washington Department of Fish and Wildlife. The three allowable body compression traps are the foot snare, underwater Conibear type, and padded leg hold. Rock pigeons, house sparrows, European starlings may be taken at any time. A current listing of Washington State’s threatened and endangered species can be found at: http://wdfw.wa.gov/publications/01385/

No state endangered or threatened species were observed at Anacortes Airport.

REVIEW OF EXISTING WILDLIFE MANAGEMENT PROGRAM

In May 2012, a formal interview was conducted by CEAT representatives and certified wildlife biologist, Steve Osmek, with Anacortes Airport personnel to obtain information on the airport’s wildlife management program. A list of questions was submitted to the airport by CEAT on 28 Jan 2013. During the initial meeting, Steve Osmek and CEAT also provided airport personnel with information on developing a wildlife hazard management plan.

Currently, the Anacortes Airport Operations Department, consisting of 6 personnel, is assigned the responsibility for managing wildlife hazards as part of their general airport maintenance duties. Approximately 1.5 hours total are expended each week on wildlife-related issues. There are no written procedures or documents referencing wildlife hazards at the airport and no list of zero-tolerance animal species. A quarterly fence inspection is conducted for evidence of coyotes accessing the airport. When birds are observed on the runway/ taxiway areas, they are harassed. If deer are sighted, they are chased off the airfield. No formal or recurring training has taken place. No records of hazardous wildlife or wildlife related situations are being recorded. The airport holds no wildlife related permits.

EVALUATION FOR PERSISTENT HAZARDS OR ATTRACTANTS

On Fidalgo Island, where the airport is located, the soil is classified as Alderwood gravelly loam, which is moderately well drained with high saturated hydraulic conductivity above the densic layer and low saturated hydraulic conductivity in the densic material. The natural vegetation is Douglas-fir, western hemlock, western red cedar, and red alder, with an understory of salal, Oregon-grape, western bracken fern, western sword fern, Pacific rhododendron, red huckleberry, evergreen huckleberry, and Orange honeysuckle.

The area inside the AOA fence is predominantly grasses. In the southeast corner is a 1.4 acre stand of trees dominated by Douglas fir, red alder, and typical northwest underbrush. Located near the southeast end of the runway is a small grove of Douglas fir and Red cedar trees. The southwest area contains bitter cherry and low brush up to the mitigation wetlands along the west side of the airfield. The wetlands are dominated by cattails and hardhack. Fifteen wetland/buffer areas exist inside the fence.
The area outside the airport fence is bordered by a mix of conifers and deciduous trees on the northwest to northeast; low brush on the northeast to east where the habitat changes to a mix of conifers and deciduous trees along the southwest side. A pond is located in the wooded area to the east of the runway at W48° 30' 00.26" N122° 39' 29.33". The airfield is surrounded on all sides by residential areas; the west side residences use the AOA fence as part of their yard fences.

Intertidal areas exist from the southeast clockwise to the northeast. The closest intertidal areas are in line with the runway's approach/departure corridor.

Mowing operations are subject to groundwater conditions. In summer, the runway/taxiway areas are mowed every two weeks. Areas outside the runway/taxiway will typically not support large mowing equipment until July or August, at which time they are mowed monthly until late October. Grass height in the runway/taxiway area is cut to ~2 inches and outside areas are cut to 3 inches.

There are no recent airport improvements/upgrades or proposed land management practices that would be considered hazardous wildlife attractants.

NATURAL FEATURES ATTRACTING WILDLIFE

Local habitats that provide attractants such as desirable food, water, cover, and breeding habitat can create temporary and permanent circumstances and conditions that attract wildlife hazardous to aircraft movements. CEAT's 14-month study was designed to identify such areas and document the extent to which hazardous wildlife are attracted to and made use of such areas.

Food

Sources of mast (fruits and nuts) are readily available on and around the airport. Domestic fruit trees are cultivated in the residential areas. Native trees providing seeds and fruit include Douglas fir (Pseudotsuga menziesii), Arbutus (Arbutus menziesii) and Bitter Cherry (Prunus emarginata). Himalayan blackberry (Rubus armeniacus), snow berry (Symphoricarpos albus), red huckleberry (Vaccinium parvifolium), salmon berry (Rubus spectabilis), salal (Gaultheria shallon), wild rose (Rosa nutkana), and thimble berry (Rubus parviflorus) provide sources of fruits and seeds. Seeds are available from grasses and forbs such as dock and thistle.
Figure 2. Fruiting Bitter Cherry in the southwest corner of the AOA.

Water

The airport is situated on an island-peninsula, so salt water environments surround the study area. There are three lakes and five wetland areas within 2.5 miles.

Shoreline Areas CEAT surveyed three saltwater shoreline areas. Two sites were near the approach/departure route. These areas attracted large numbers of gulls, waterfowl, crows and large water birds, predominantly cormorants. The airport is located along the travel route used to move between the two areas associated with the approach/departure route. The third shoreline site was located at a city park with camping and picnicking areas.

Lakes Three lakes are within two miles that attract a variety of birds on a seasonal basis. Due to their depth, they primarily attract diving ducks. During late summer, water vegetation attracts dabbling ducks.
Vegetative Cover

Cover type within the study area is typically classified as Coast Forest and is the most diverse forest type in the region. Douglas fir, red alder, red cedar, willows and birches are common and provide year round protective cover and foraging. Previously cleared and disturbed areas that are not used by humans have reached the shrub land stage. This is excellent habitat for plants and shrubs that can provide escape, foraging, food, and thermal cover for a variety of wildlife. Other habitats that provide escape, foraging, and thermal protection include wetlands, shoreline areas, and residential landscaping.
Fourteen of the designated wetlands inside the AOA have wooded or brushy buffer zones associated with them. The areas on the airport property, but outside the AOA fencing, support a population of black-tailed deer, large numbers of passerines, and coyotes. The wooded area in the southeast corner of the AOA is approximately 1.4 acre and provides cover and food for deer, coyotes, and birds. Fruiting plants in these areas attract birds and coyotes to feed on the fruits during late summer and fall. These areas are associated with designated wetland sites and may be protected by legal agreements between the City of Anacortes, local property owners, and the Port of Anacortes, which operates the airport.

Tides

Although not a physical natural feature, tides make changes in the physical environment, influencing bird movement in the area around Anacortes. Low tide periods expose intertidal areas that attract terrestrial foragers; high tides disperse them from those areas. Changing
currents concentrate forage fish. This attracts larger birds, such as cormorants and gulls, to different locations over the period of the tide movement.

ARTIFICIAL FEATURES ATTRACTING WILDLIFE

Wetlands on the airport property

Fifteen designated wetlands/buffer areas exist on airport property, fourteen of which are inside the AOA fence. The wetlands inside and along the west fence line are provided with drain systems that prevent long term holding of water; water was not observed in them in any two consecutive months. Most of the wetland surface area is covered with tall vegetation, reducing attractiveness to waterfowl. One year-round pond, Figure 3, is on the airport property; it attracts waterfowl. Water drainage channels have become clogged with vegetation along the taxiway, allowing water to pool in the winter months.

Waste disposal operations

No municipal waste disposal operations facilities are within five miles of the airport. Waste disposal collection trucks in the adjacent residential area do attract wildlife over the airport. Large numbers of gulls were observed following trash collection vehicles in the neighborhood to the southwest of the airport. Construction debris is being dumped at the north end of the AOA, but has not been observed to attract any hazardous wildlife.

Residential areas

The airport is surrounded on all sides by residential areas. On the west, the homes are within 85 yd of the runway centerline. A number of these homes have bird feeders visible in the yard, which were attracting birds across the runway. Gulls, crows, doves and pigeons were observed in residential areas on almost all occasions.

Figure 6. Residential area on the west side of the airport.
Grass areas on the airport

Short grass areas between the runway and taxiway occasionally attracted gulls, American robins, starlings, and crows, which appeared to be foraging for worms and insects. Killdeer were often seen using grass areas.

Figure 7. Crows using the grass area between taxiway and runway.

Marine-Area Attractants

A large marina, a major ferry terminal, and a small harbor for larger personal boats and small commercial vessels are within one mile of the airport, Figure 3. Underwater structures and human refuse attract and provide roosting/loafing sites and sources of food for the larger birds seen at the airport: crows, gulls, and cormorants.

WHA METHODS

OBSERVATION SITES

On the initial visit to 74S in July 2011, 9 visual observation sites were identified and the radar was operated to assess the operating environment. Three runway sites, evenly spaced along the length of the runway, and six off-airfield sites that are potential wildlife attractants near the airport were chosen. Observations periods of 20 minutes were conducted at each of the 3 runway sites. Observations at the six off airfield sites were performed for 5 minutes each.
Figure 8. WHA observations sites: runway sites (1-3) and off-airfield sites (4-9).

**Runway Sites**

**Site 1** North end of the runway, located directly in line with the taxiway. 48.50262,-122.65942. This site provides a view to the north over Guemes Channel, west over the residential areas and south down the runway and taxiway and east over shrub lands.

**Site 2** At the mid-point of the runway, on the parking ramp and adjacent to the taxiway. 48.49806,-122.66178 This site provides a view north and south along the runway, west over the residential area and east over the airport buildings.

**Site 3** Is located on a berm to the south of the hangars and adjacent to the southern end of the runway and taxiway. 48.4947,-122.66293. This site provides a view north for the entire length of the runway and taxiway, south over residential areas, and east/west over residential areas.

**Off-Airfield Sites**
Site 4 Ship Harbor is located 0.5 miles northwest of the airfield on the shoreline of Guemes Channel with a water view from the northwest to northeast and woodlands to the south. Intertidal areas are exposed during low tide conditions. Old pilings from previous wharf construction and a Washington State Ferry dock is located to the northwest of the site. N48.50392 W122.67036

Site 5 Thirty-second Street Marsh is located 1.19 miles east of the airfield with residential areas to the east and forest lands to the west. N48.49636 W122.63648

Site 6 Washington Park is located 1.38 miles west of the airfield on the shoreline of Rosario Strait with a water view to the north and west, residential area to the northeast and forest lands to the south. Intertidal areas are exposed during low tide conditions. A day use park and boat launch is located at this site. N48.50006 W122.692225

Site 7 Flounder Bay is located 1.1 miles southwest of the airfield on the shoreline of Flounder Bay with a water view to the south and west and residential areas to the north. A boat harbor is located adjacent to the site. Intertidal areas are exposed during low tide conditions. N48.49141 W122.68416

Site 8 Cranberry Lake is located 0.9 miles northeast of the airfield on the shore of Cranberry Lake with a limited water view to the south and forest lands surrounding the site. N48.50434 W122.64468

Site 9 Heart Lake is located 2.2 miles southeast of the airfield with a water view to the west and the remainder surrounded by forest lands. N48.47529 W122.62865

WILDLIFE SURVEYS

Each month, from August 2011 through September 2012, a minimum of three wildlife surveys were conducted at each of the runway sites. Times coincided with sunrise, solar noon and sunset. At the off-airfield sites, surveys were conducted at random times over the course of the WHA. A survey of the perimeter fence for possible wildlife access was also conducted during the initial visit and in May 2012. Potential and active access points were identified and reported to the airport staff. An infrared camera, FLIR, was used to survey the runway during periods of low light/darkness. Radar data was recorded during the observation periods and when observers were not present. Wildlife surveys were conducted on these dates:

1. August 29-31, 2011
2. September 27-29, 2011
3. October 24-26, 2011
5. December 6-8, 2011
7. February 28 – 1 March, 2012
8. March 27-29, 2012
10. May 16-18, 2012
Infra-Red Surveys (FLIR)

Low ambient light and darkness surveys were conducted utilizing a FLIR T300 infra-red camera equipped with a 15X telephoto lens. This camera is susceptible to moisture intrusion and was not utilized when it might experience rain or fog. Observations were conducted after sunset and before sunrise. Observations were typically conducted from Site 3, which provided a complete view of the runway and taxiway, 90% of the west side of the airfield from the southern fence line to within 450 feet of the NW corner, and the line and hangar area.

Radar Surveys

A Japan Radar Corp. JPL600ER2-9, X-band frequency marine radar with a slotted array antenna was utilized in the WHA to collect data on possible avian targets in the vicinity of the airport. The radar utilizes a fan shaped beam with a horizontal width of 0.8° and a vertical height of 20°. The radar was placed on the north end of the airfield, in line with the taxiway and to the east of the runway. Site selection was based on the topography and operation of the radar to evaluate the radar coverage in relation to ground clutter and the airport environment. This basic configuration and frequency has been used by radar ornithologist for monitoring bird movements and assessing population numbers for decades. It is capable of tracking targets smaller than birds, such as insects, under the right conditions. The radar frequency is susceptible to rain clutter; even small amounts of precipitation can make the radar unusable. The radar was not used in January 2012 because of rain. Radar data was recorded using a frame-grabbing device to build standard computer video files that duplicated the radar display with the range limited to a 1 mile radius. Radar data was sampled at 15 minute intervals. Analysis was accomplished by observing the playback of the video files and noting a target’s relative position and direction of travel on a radar display data sheet.

Small Mammal Trapping Surveys

There have not been any visual indications of small mammals, such as mice and voles, on the airfield. Small mammal trapping was attempted on 25 Oct 2011, 26 Jun and Jul 24 2012 using 24 Sherman traps on two occasions and 24 Sherman and 7 pitfall traps during the October 2011 attempt. Three areas were sampled on the airfield: the south end near the stand of trees, the north end near the dumped debris, and along the west fence line near the residential area. No birds of prey, whose primary prey is small mammals, were observed hunting on the airfield.

Opportunistic Observations

Opportunistic observations were made at times and locations other than at the official observations stations. Such observations occurred in travel between observation sites and at times before or after the start and end times for the morning or evening observation periods.
WHA RESULTS

VISUAL SURVEYS

AOA Fence Survey

The initial survey of the AOA fence revealed large gaps below the bottom of the fence at low points where water collects and at drain sites. Vegetation is growing over and through the fence at many locations. At some point in the past, possibly associated with the original placement of the eight foot fencing, buffers were cut. However, those are becoming overgrown.

The survey found 15 areas where coyotes had dug under the fence, two of which were in active use. Airport personnel were contacted, and the two active coyote access points were fixed temporarily. A gap was found in the AOA fence adjacent to a building. Because of the nature of the substrate, it could not be determined by tracks if coyotes or deer were using the gap to gain access to the AOA. Upon notification, airport personnel immediately closed this gap.

A second inspection of the fence was made in May 2012. It revealed that coyotes had dug a new access point and the access point at the northwest side was again in active use. All access points were marked via GPS, and that information was provided to airport personnel.

Figure 9. Gap below the AOA fence on the east side of the airport.
Figure 10. Vegetation growing over and through the fence on the east side of the airport.

Large Mammals—Runway Sites 1 - 3

Tracks, droppings, and access holes dug by coyotes indicated that deer and coyotes were using the airport. FLIR confirmed the presence of at least one black-tailed deer and four coyotes.

One coyote was observed on three occasions at the south end of the airfield. The coyote appears to have exited the airfield in the southwest corner of the airfield on two of those occasions. On one occasion it fled into the stand of trees in the southeast corner of the airfield. There were no active access points in the southeast corner, so the coyote may have exited over the fence or remained inside the tree line. A group of three coyotes was observed moving from north to south on the runway and then exiting the airfield's southwest corner. These animals appeared to be using the airfield as a travel route into the middle of the surrounding residential area. They were observed again after sunrise the next morning exiting under the fence in the northwest corner of the airfield. A limitation to FLIR observations should be understood. All our FLIR mammal sightings occurred when our scent was not carried in the direction of the area surveyed. We only observed coyotes on the runway one night when the wind blew from them to us. The animals to the south not on the runway, 1 coyote and the deer, were sighted when the wind was from them to us but the area of sighting provided good cover.

The deer was observed with the FLIR at the south end of the airfield as it fed along the fence line. It was seen again the next morning after sunrise crossing the runway, back to the east side of the airfield. It was not seen again, and airport personnel could not find it later that day. Deer are very common near any wooded sites within Anacortes city limits.
Small Mammals—Runway Sites 1 - 3

Rabbits were seen on twice on the AOA near site 3. They exited through the fence on both occasions.

No small mammals were captured during the three trapping sessions. Grassy areas in western Washington typically harbor large populations of voles and mice, but observers did not see any indications that small mammals were using the airport. The reason for this is unknown, but may be related to the rat and raccoon populations in the surrounding residential area effectively isolating the airfield.
Point Counts of Birds—Runway Sites 1 - 3

Table 1 lists all the species observed during runway observations. Species were grouped into families and/or with other birds that have similar behaviors to form guilds of birds. Table 2 and Table 3 show runway bird numbers when the species are grouped into guilds. Table 3 is provided as a comparison of numbers in the waterfowl guild. Species in shaded cells of Table 1 are protected by the Migratory Bird Treaty Act.

Table 1. List of All Observed Species at Runway Sites 1 - 3

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<thead>
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<th>Common Name</th>
<th>Scientific Name</th>
<th>Observations</th>
<th>Total Number</th>
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<td>1062</td>
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<tr>
<td>White-crowned Sparrow</td>
<td><em>Zonotrichia leucophrys</em></td>
<td>13</td>
<td>21</td>
</tr>
<tr>
<td>Killdeer</td>
<td><em>Charadrius vociferus</em></td>
<td>12</td>
<td>21</td>
</tr>
<tr>
<td>Northern Flicker</td>
<td><em>Colaptes auratus</em></td>
<td>17</td>
<td>20</td>
</tr>
<tr>
<td>Mallard</td>
<td><em>Anas platyrhynchos</em></td>
<td>11</td>
<td>19</td>
</tr>
<tr>
<td>Duck spp.</td>
<td></td>
<td>10</td>
<td>19</td>
</tr>
<tr>
<td>Red-tailed Hawk</td>
<td><em>Buteo jamaicensis</em></td>
<td>15</td>
<td>17</td>
</tr>
<tr>
<td>Great Blue Heron</td>
<td><em>Ardea herodias</em></td>
<td>13</td>
<td>17</td>
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<tr>
<td>Western Meadow Lark</td>
<td><em>Sturnella neglecta</em></td>
<td>5</td>
<td>15</td>
</tr>
<tr>
<td>Raptor</td>
<td></td>
<td>12</td>
<td>13</td>
</tr>
<tr>
<td>Hooded Merganser</td>
<td><em>Lophodytes cucullatus</em></td>
<td>1</td>
<td>11</td>
</tr>
<tr>
<td>Hummingbird spp.</td>
<td></td>
<td>7</td>
<td>10</td>
</tr>
<tr>
<td>Rufous Hummingbird</td>
<td><em>Selasphorus rufus</em></td>
<td>8</td>
<td>8</td>
</tr>
<tr>
<td>Savannah Sparrow</td>
<td><em>Passerculus sandwichensis</em></td>
<td>8</td>
<td>8</td>
</tr>
<tr>
<td>Steller's Jay</td>
<td><em>Cyanocitta stelleri</em></td>
<td>8</td>
<td>8</td>
</tr>
<tr>
<td>Unknown</td>
<td>5</td>
<td>8</td>
<td></td>
</tr>
<tr>
<td>---------</td>
<td>---</td>
<td>---</td>
<td></td>
</tr>
<tr>
<td>Glaucous-winged Gull</td>
<td><em>Larus glaucescens</em></td>
<td>4</td>
<td>7</td>
</tr>
<tr>
<td>California Quail</td>
<td><em>Callipepla californica</em></td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>European Collared Dive</td>
<td><em>Streptopelia decaocto</em></td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>Turkey Vulture</td>
<td><em>Cathartes aura</em></td>
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<td>6</td>
</tr>
<tr>
<td>Common Loon</td>
<td><em>Gavia immer</em></td>
<td>3</td>
<td>6</td>
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<tr>
<td>Cooper's Hawk</td>
<td><em>Accipiter cooperii</em></td>
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<td>5</td>
</tr>
<tr>
<td>Peregrine Falcon</td>
<td><em>Falco peregrinus</em></td>
<td>5</td>
<td>5</td>
</tr>
<tr>
<td>Cedar Waxwing</td>
<td><em>Bombycilla cedrorum</em></td>
<td>3</td>
<td>5</td>
</tr>
<tr>
<td>Common Raven</td>
<td><em>Corvus corax</em></td>
<td>3</td>
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<td>2</td>
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<td></td>
</tr>
<tr>
<td>Song Sparrow</td>
<td><em>Melospiza melodia</em></td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>House Finch</td>
<td><em>Carpodacus mexicanus</em></td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>Tree Swallow</td>
<td><em>Tachycineta bicolor</em></td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td>Black-headed Grosbeak</td>
<td><em>Pheucticus melanocephalus</em></td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Dark-eyed Junco</td>
<td><em>Junco hyemalis</em></td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>American Kestrel</td>
<td><em>Falco sparverius</em></td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Dove spp.</td>
<td>1</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Hairy Woodpecker</td>
<td><em>Picoides villosus</em></td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Northern Harrier</td>
<td><em>Circus cyaneus</em></td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Spotted Towhee</td>
<td><em>Pipilo maculatus</em></td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Western Tanager</td>
<td><em>Piranga ludoviciana</em></td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Woodpecker spp.</td>
<td>1</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>6051</td>
<td>6051</td>
<td></td>
</tr>
</tbody>
</table>

Table 2. Guilds with Waterfowl Flocks

<table>
<thead>
<tr>
<th>Guild</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Blackbirds</td>
<td>2152</td>
</tr>
<tr>
<td>Cormorants</td>
<td>223</td>
</tr>
<tr>
<td>Corvid</td>
<td>545</td>
</tr>
<tr>
<td>Diver</td>
<td>6</td>
</tr>
<tr>
<td>Gull</td>
<td>768</td>
</tr>
<tr>
<td>Herons</td>
<td>17</td>
</tr>
<tr>
<td>Misc.</td>
<td>34</td>
</tr>
<tr>
<td>Passerines</td>
<td>1400</td>
</tr>
<tr>
<td>Pigeon/Dove</td>
<td>99</td>
</tr>
<tr>
<td>Raptor</td>
<td>64</td>
</tr>
</tbody>
</table>
The blackbird guild is comprised of Red-winged Blackbirds, Brewer’s blackbirds, and European Starlings. Blackbirds accounted for 35% of total birds observed. They were seen in large flocks and as individuals. Flocks grouped in the trees around the airport during the late afternoon and emerged as flocks just before sunset. During one observation period, a landing MedEvac flight encountered a large flock just prior to touch down. These birds avoided the aircraft. When interviewed by CEAT, the pilot said that he encounters flocks of this guild at all area airports and that he has never hit one. Members of this guild used all areas of Anacortes Airport, including loafing on the buildings and light poles. They were most numerous in June and July 2011.

Table 3. Guilds without Waterfowl Flocks

<table>
<thead>
<tr>
<th></th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Blackbirds</td>
<td>2152</td>
</tr>
<tr>
<td>Cormorants</td>
<td>223</td>
</tr>
<tr>
<td>Corvid</td>
<td>545</td>
</tr>
<tr>
<td>Diver</td>
<td>6</td>
</tr>
<tr>
<td>Gull</td>
<td>768</td>
</tr>
<tr>
<td>Herons</td>
<td>17</td>
</tr>
<tr>
<td>Misc.</td>
<td>34</td>
</tr>
<tr>
<td>Passerines</td>
<td>1400</td>
</tr>
<tr>
<td>Pigeon/Dove</td>
<td>99</td>
</tr>
<tr>
<td>Raptor</td>
<td>64</td>
</tr>
<tr>
<td>Swallow</td>
<td>112</td>
</tr>
<tr>
<td>unknown</td>
<td>8</td>
</tr>
<tr>
<td>Vulture</td>
<td>6</td>
</tr>
<tr>
<td>Waders</td>
<td>21</td>
</tr>
<tr>
<td>Waterfowl</td>
<td>60</td>
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<tr>
<td>Woodpecker</td>
<td>22</td>
</tr>
<tr>
<td></td>
<td>5537</td>
</tr>
</tbody>
</table>
Cormorants  Cormorants observed during the WHA included Double-crested and Pelagic Cormorants. Pelagic Cormorants were not observed at the airport, but were seen at several of the offsite observation sites. Cormorants accounted for ~4 % of the total observed birds. Table 2 and Table 3 only show numbers for the Double-crested cormorant, which were observed as individuals and in groups of up to thirty birds. Cormorants that crossed the airport were typically individuals; no cormorants were observed landing at the airport. In summer and early fall, groups were observed flying around the airport in a daily movement pattern of west in the morning to feeding areas and east in the evening to roosting areas. Lowest numbers were observed during winter, when these birds feed and roost at larger lakes in the area. No cormorants were seen at the airport in June, which corresponds to the nesting period when cormorants nest and roost in colonies on the small islands around the area. Cormorant movements are often tied to tide cycles, and large targets seen in the radar at night are likely cormorants moving to feeding areas.

Corvids  Corvids included American crows, Common Ravens, and Steller’s jay. Steller’s jays were not observed flying over the airport, but used the trees around the airport as roosts. Corvids accounted for ~9 % of the total birds observed, but were the second most numerous large birds seen on the airport. Eighteen percent flew over the airfield, transiting between the residential areas. Spikes in numbers were seen in August 2011 and January 2012, when crows arrived to forage between the taxiway and runway and, in January 2012, when crows were attracted to the residential area by residents setting out trash and a waste collection truck. Crows utilized the airport's mowed areas after rains and used the residential areas daily. Two near misses were observed, with bird and aircraft less than 50 meters (164 feet) apart. In both cases, the bird avoided the aircraft at the last minute.

Diver  This guild is made up of one member, the Common Loon. Common Loons are very common during the fall and winter in the area around 74S, but typically fly at low levels within 50 feet of the water surface. Loons were observed only in September 2011 and September 2012.

Gallinaceous  This guild has one member, the California quail. California quail were seen and heard in all months in the brushy areas outside the fence. They were seen perched on the fence and on one occasion spotted with the FLIR in the small stand of trees at the south end of the runway.

Gulls  Gulls includes all of the local species. Gulls were the most numerous large bird seen on the airport, comprising 17% of the total birds observed. Of the gulls observed, 23% crossed the airport. When gulls used the airport, they foraged in the short grass areas around the taxiway and runway after rain. Gulls typically transited the airport, in a generally north and south direction. This route allows for the shortest distance between off-airfield artificial attractants and inter-tidal areas to the north and south. When weather conditions allowed, gulls were observed soaring in the updraft created by southerly winds at the south end of the airport. In January 2012, gulls over the residential area to the southwest, which were attracted to trash cans and followed a waste collection truck, were so numerous that they were impossible to track. One near miss was observed; the bird avoided the aircraft.

Herons  This guild is made up of one member, the Great Blue Heron. Great Blue Herons were not seen on the airport, but were transiting the around and over the airport. Great Blue herons are
common in the local area and are often observed foraging in grassy areas for small mammals and amphibians. The fact they were not observed on the airport grounds supports the evidence that there are very few small mammals there. One near miss was possibly observed. However, the viewing angle and range prevented the observers from confirming the event; one heron did alter course to avoid the aircraft.

**Pigeon/Dove** This group consists of Mourning Dove, Rock Pigeon, and Eurasian Collared Dove. Pigeons were seen in groups of up to 15 individuals and were most often seen near the homes adjacent to the runway. Both species of doves used areas to the east and then flew over the runway to the residential areas. These birds are present year round.

**Raptor** This group consists of Cooper’s hawk, Red-tailed hawk, Bald eagle, Peregrine falcon, Northern harrier, American kestrel and unidentified raptors. Unidentified raptors were those that sky conditions, background or atmospheric conditions made it uncertain as to its identity. Only one Northern harrier was observed. Cooper’s hawks and Peregrine falcons were attracted by the large numbers of passerines in the area. Peregrines were observed hunting on the airport, chasing passerines and ducks. Red-tailed hawks and Bald eagles transited the airport or were observed soaring beyond the ends of the runway, placing them in approach and departure paths. There was no indication that birds of prey were hunting small mammals on the airfield.

**Shorebirds** This group consists of two species, the Killdeer and Wilson Snipe. The snipe was only sighted on one occasion foraging in a water drainage area that had backed up. Killdeer were common on the airport but not in large numbers; one nesting was confirmed. Killdeer did not appear afraid of aircraft or vehicles and were never observed flying away when either passed close to them.

**Sparrow-like** This guild includes all the perching songbirds (Passerines), excluding those members of the Blackbird guild and Thrushes. Member of this group typically do not form large flocks. This group is the largest group observed, typical of reporting in other WHAs. The brushy areas on both sides of the airport fence are especially attractive to this guild because they provide food, protective cover, and nesting habitat. Numbers were highest in November 2011 as migrants moved through the area.

**Swallows** Swallows were only observed in spring and summer, foraging for insects over the runway/taxiway areas and perching on hangars.

**Thrushes** American robins were the only species of thrush observed. Numbers were highest when wintering migrants arrived in early fall through early spring. They used all areas on and around the airport. The large numbers of fruiting trees/plants provide food and cover. Short grass on the airport and in the residential areas also attracts these birds to forage.

**Vulture** Turkey vultures are common in the area in the summer, but were only observed September 2011, July 2012, and August 2012 transiting the airport or soaring away from the airport.
**Waterfowl** This group consists of Mallard duck, Hooded Merganser, unidentified ducks, Canada geese, and Lesser Snow geese. Ducks observed were associated with the wetland areas on the airfield property especially the pond to the east and a low area at the south end of the runway that collects water during the rainy parts of the year. Hooded mergansers were only observed on one occasion transiting the airport but were known to use the airport pond and other water areas in the adjacent residential area.

![Figure 13. Low Areas to the South of the Runway.](image)

Comparison of Table 2 and Table 3 show that migrating and locally moving geese were periodically abundant. A flock of 100 Canada geese were observed during the spring migration. Canada geese did use the airport. A group of four was observed at the south end of the runway just before sunset and was observed to depart after sunset using the FLIR camera and one goose was sighted at the runway mid-point. The single was chased off the airfield by CEAT personnel due to its proximity to the runway. Other Canada geese were observed transiting the area. All Snow geese, 414, were sighted during one evening observation period in December 2011. None entered the area directly over the airport but were in airspace used by the aircraft using the airport. In a discussion with the Skagit Wildlife area manager, who is a private pilot, he noted that Snow geese are dispersing from their traditional winter feeding areas to feed further north in the areas to the east of the airport. This may increase their use of the airspace around the airport.

**Woodpecker** This guild consists of the Northern flicker and Hairy woodpecker. Northern flickers were the most numerous. They typically used areas outside the AOA fence, but were observed foraging in the short grass areas around the runway.

**Large and Small Mammals–Off-Airfield Sites 4 - 9**

No hazardous mammals were observed at any of the off-airfield observation sites.
Point Counts of Birds–Off-Airfield Sites 4 - 9

Comparing the list of all observed species at runway observation sites 1 - 3 (Table 1. List of All Observed Species at Runway Sites 1 - 3Table 1) with a list of all species observed at off-airfield sites 4 - 9 (Table 4) reveals differences between guild use of on- and off-airport sites.

Table 4. Off-Site Observation Results

<table>
<thead>
<tr>
<th>Guild</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Blackbirds</td>
<td>63</td>
</tr>
<tr>
<td>Cormorants</td>
<td>118</td>
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<tr>
<td>Corvid</td>
<td>107</td>
</tr>
<tr>
<td>Diver</td>
<td>36</td>
</tr>
<tr>
<td>Gull</td>
<td>369</td>
</tr>
<tr>
<td>Herons</td>
<td>10</td>
</tr>
<tr>
<td>Misc</td>
<td>5</td>
</tr>
<tr>
<td>Passerine</td>
<td>239</td>
</tr>
<tr>
<td>Raptor</td>
<td>19</td>
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<tr>
<td>Swallow</td>
<td>42</td>
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<tr>
<td>Unknown</td>
<td>1</td>
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<td>Vulture</td>
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<tr>
<td>Wader</td>
<td>5</td>
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<td>Waterfowl</td>
<td>323</td>
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<tr>
<td>Woodpecker</td>
<td>7</td>
</tr>
<tr>
<td>Total</td>
<td>1345</td>
</tr>
</tbody>
</table>

Of the six off-airport sites, three (5, 8, 9) were associated with freshwater and three (4, 6, 7) with salt water habitats. Differences in habitat had a significant impact on guild use (Figure 14) and numbers of birds (Figure 15) at the off-airfield observation sites.
None of the species observed at saltwater habitats were observed to be flying at a height to bring them into the flight path of aircraft using the airport while observers were on site. However, all of the guilds in Figure 14 were observed at some time at the airport.

The waterfowl guild observed at the off-airport sites presents a more complicated picture of habitat use and transit/use than those observed at the runway sites.

The duck guild is grouped into diving ducks such as mergansers and the sea ducks and dabbling ducks such as Mallards. None of the species observed at the saltwater sites 4, 6, and 7, mostly

Figure 14. Comparison of more numerous guilds and habitat use.

Figure 15. Numbers of birds observed at the two general habitat types.
Diving ducks, were seen at airport sites. At the off-airport freshwater sites, diving ducks were observed at lake locations where water depth provided needed conditions for diving ducks. These same conditions reduced use by dabbling ducks. Dabbling ducks may use water areas that diving ducks use but due to their feeding techniques diving ducks will not use water that dabbling ducks prefer. The exception noted in this area is the Hooded Merganser which was observed in mud holes looking for food. The marsh, site 5, appeared to attract few ducks due to vegetation height.

Gulls, cormorants, and Corvids were common at all off-airport sites and were primarily attracted to the areas around sites 4, 6, and 7. Site 4, Ship Harbor to the northwest of the airport, has a large ferry terminal, large inter-tidal areas, residential areas, and pilings from abandoned wharves. Currents around the abandoned wharves concentrate small fish, providing feeding, nesting and roosting locations in a small area. Site 4 attracted the largest numbers of these three guilds due to the natural and human provided attractants. Birds common to saltwater habitats do transit/use the areas adjacent to or over the airfield.

Freshwater sites 5, 8, and 9 primarily attracted passerines, swallows, and diving ducks. Movement of these birds was very local, and none were observed to leave the areas around the observation sites. Flying and soaring bald eagles and gulls were at an altitude that would allow them to move easily into the airfield’s airspace.

**FLIR SURVEYS**

Infra-red FLIR surveys documented birds on the airport after dark. FLIR surveys were not conducted at off-runway sites. Canada geese, killdeer, owls, and passerines were seen on the airfield and in the trees around the airport. Canada geese and killdeer were observed feeding and loafing. Owls and passerines were observed perched in trees, but were not seen routinely. FLIR was most beneficial in finding and identifying large mammals.

**RADAR SURVEYS**

Radar surveys extended the range and time for surveying the area around the airport. Whenever possible, radar targets were verified by visual observation. When radar targets could not be verified because of range or darkness, CEAT’s extensive field experience using avian radar systems and the base sensors provided confidence on probable target identification (such as birds, insects, boats, aircraft) and observed daytime movement patterns of some species. This allowed for reasonable assumptions about the species of some targets. The radar system clearly showed the changes in bird numbers over daily/seasonal periods and the direction of migrants in the area of airport. Insects were also tracked by this system up to 1000 feet, resulting in reduced certainty that small targets were birds. Video images were captured and analyzed as detailed in Radar Surveys.

Figure 16 shows radar data sampled at ~15 minute intervals; target numbers come from a count of targets on the display screen. All targets are within one mile of the radar and observation Site 1. Monthly totals for a 24 hour period of data or those parts of the 24 hours when the radar was recording are shown. November 2011 radar data was lost due to unidentified system shut downs.
Precipitation prevented normal tracking of most avian targets in December 2011, February 2012, and March 2012, thus compromising data for those periods. The radar was not deployed in January 2012 because of precipitation. A software/hardware issue reduced recording time in June 2012. September 2011 and October 2011 are months with fall migration; April 2012 and May 2012 reflect spring migration. In December 2011, flocks of snow geese were observed at sunset; their continued movements overnight may have contributed to that winter month’s night-time target count.

![Radar Target Counts](image)

Figure 16. Radar target counts from a random sampling of the video images.

Figure 17 shows the general direction of travel for the sampled radar targets. Direction of travel within months clearly shows fall and spring migration. The large eastern movement in May 2012 is expected because loons and grebes are moving from coastal wintering areas to freshwater areas for breeding and waterfowl are moving into Canada.
A WHA is designed to identify the species of wildlife that are typically present on and around an airport. It also identifies the features that attract those species within the specified separation distances of the airfield as described in FAA AC 150/5200–33B Hazardous Wildlife Attractants On or Near Airports. Once wildlife species are identified, written recommendations can be made to assist the airport operator in reducing these attractants and, when necessary, to actively control the hazardous species. An understanding of the significance of these attractants and how they affect the presence of certain wildlife may prevent more serious wildlife problems from occurring. Some recommendations may not be legally or financially feasible. Because there is currently no strike data for 74S, recommendations are provided based on the potential for damage from hazardous wildlife observed at the airport as listed in ACRP Report 32 Guidebook for Addressing Aircraft/Wildlife Hazards at General Aviation Airport. A copy of this document was provided to Anacortes airport personnel, and it is highly recommended that this document be part of any training for personnel who routinely move about the airport.

LARGE MAMMALS

The two large mammals observed during the WHA were coyotes and deer. No deer or coyotes have been struck at Anacortes Airport, but the potential for a very serious aircraft strike is there. Legal and financial constraints may prevent increasing the fence height and removing the wooded area in the southeast corner. These areas should be cleared and the fence completed along the west side of the airport. Plans should be developed for removing all trees, shrubs, and other escape cover from the airport. This will increase the ability of airport operations personnel to see this significant wildlife hazard during airfield surveys. Additionally the airport might ask

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**Figure 17.** General direction of target movements from a random sampling of radar video images.

**RECOMMENDATIONS**
home owners along the western fence, the air carrier, and private pilots to immediately notify airport personnel when these animals are seen inside the AOA.

**Coyotes**

Evidence of coyotes was often obvious enough to be seen from the observer's vehicle. Droppings could be seen from over 100 yards on the taxiway and runway. Airport personnel should become familiar with the physical signs, tracks, and droppings, to alert them of coyotes using the airport.

The first visit by observers revealed coyotes had been digging under the fence; stopgap measures were utilized to prevent access. A permanent solution in the area around gates needs to be adopted.

In many places, old access points between the apron still exist and could be used again and gaps at the bottom of the fence exist at low water points that coyotes could crawl under. Gaps in the apron should be permanently repaired and fencing/apron should be installed at the low points.

Coyote use of the airport was routine and complete fence inspections should be increased to monthly. If coyotes continue to use the airport after attempts to exclude them have failed, they should be trapped with padded leg hold traps or leg snares. If airport personnel do the trapping, they can readily obtain permits. Alternatively, USDA Wildlife Services or the Washington Department of Fish and Wildlife can provide contact information for licensed nuisance wildlife control in the area.

**Deer**

Deer are extremely hazardous to aviation safety and are common in the area around the airport. A gap large enough to allow access by deer and coyotes was noted between the fence and the Northwest Marine technology building. Upon notification, the gap was closed by airport personnel. One night, a deer was observed with the FLIR on the airport; the next morning, it was seen moving westward towards the wooded area in the southeast corner of the runway. The airport was immediately contacted, but no deer was found during the follow-up.

Areas along the western AOA fence are low enough for black-tailed deer to jump and gaps exist at low water points that deer could crawl under. Gaps at the bottom of the fence need to be closed and aproned to exclude deer and coyotes.

NOTAM should document the fact that deer may be seen on the airfield. USDA Wildlife Services can also be contacted to remove deer that are seen frequently.

**SMALL MAMMALS**

No evidence of small mammals was seen at Anacortes Airport.

**HAZARDOUS BIRDS**
There are no records of bird strikes at Anacortes Airport, so recommendations will focus on the most hazardous species observed using the airport and the residential areas. Ospreys, eagles and flocking birds are significant hazards to aircraft. When these are observed on or near the airport, the airport operator should provide notification of their presence to departure and arrival aircraft.

Species transiting the airport do so to access habitats/attractants that may be beyond the control of airport personnel. Airport proximity to private residences may limit harassment techniques. The size of runway/taxiway allows personnel to closely approach birds in attempts to make them leave. During the WHA, birds commonly ignored vehicles until a human exited and moved towards them, at which time they left the area.

The list of hazardous birds below is ranked based on birds posing the greatest hazard to general aviation aircraft at Anacortes Airport. The list is based on ACRP Report 32 Guidebook for Addressing Aircraft/Wildlife Hazards at General Aviation Airport and may be used to prioritize wildlife management efforts.

1. Gulls

Gulls are ubiquitous to the Puget Sound area, and the most numerous large bird seen at the airport. 429 of the documented 432 gull observations involved birds transiting the airport and adjacent areas, the other three times the birds were foraging in the grass between the runway and taxiway. On one occasion airport personnel did not force a flock of gulls to leave the area between the runway and taxiway. Three transiting gulls were also observed to be involved in one near miss with a departing aircraft. Recommend airport personnel not tolerate any gulls on the airport.

2. Geese

Canada geese were observed in the grassy areas next to the runway on two occasions; they were harassed by CEAT personnel because no airport personnel were on site. Airport personnel should not tolerate any geese on the airport. Given the limited airport manpower available, airport personnel should ask home owners along the western fence, the air carrier, and private pilots to immediately notify airport personnel when geese are seen inside the AOA.

3. Ducks

Ducks were observed using the area to the south of the runway, which collects water in winter. They were also seen arriving and departing from the pond on the east side of the airport property. Mallards were the predominant species seen and may be a non-migrant pair. When arriving and departing from the pond, these birds move through the airspace occupied by aircraft on takeoff. Peregrine falcons were observed pursuing ducks over the runway and taxiway, making them an attractant to another hazardous bird. Recommend that airport personnel be vigilant in looking for ducks in the areas that collect water and that they harass ducks away from the pond area. Drainage should be improved in areas that retain water for periods longer than 48 hours. Whenever possible, wetland areas should be filled. Wetlands that cannot be filled should be
planted with dense vegetation (for example, Hardhack Spirea) to serve as exclusionary vegetation for waterfowl.

4. Raptors

Due to the large passerine prey base on and around the airport, little can be done manage Cooper’s Hawks and Peregrine Falcons. Peregrines associated with the areas along the AOA fence chase ducks over the runway. Reducing use of the airport by ducks may minimize this problem.

5. Doves

Mourning and Eurasian Collared doves crossed the airport and appeared to be using the areas near the homes along the fence. They are known to use bird feeders and may be attracted to feeders in those yards. Eurasian collared doves are an invasive species whose numbers are increasing across the U.S.; they were not seen or heard at the airport by observers until May 2012. Recommend making the homeowners aware of the potential for bird strikes when attracting these birds to feeders.

6. Rock Pigeons

Rock pigeons were primarily associated with the residential area to the west of the airport, where they may be attracted to bird feeders located in homeowner’s yards. They perch on street lamps and roof tops. Recommend making the homeowners aware of the potential for bird strikes when attracting these birds to feeders.

7. Blackbird/Starling

These two species often form large dense flocks in the afternoon and early evening prior to roosting and will disperse from those roosts in smaller flocks the next morning. This behavior is most common in winter.

European starlings were the most numerous bird observed at Anacortes Airport. No roosting was observed in the area, but dispersing groups were seen during the early morning, indicating a nearby roost. When perched at the airport, starlings were most often seen sitting on the lights around the airport. Starlings were also observed foraging in the short grass. Airport personnel should not tolerate any starlings at the airport. Recommend the use of starling decoy live traps.

Blackbirds were most often seen at sites 2 and 3. This corresponds to preferred habitats of wetlands for Red-winged blackbirds and residential areas/brushy areas for Brewer’s blackbirds. Anti-perching devices similar to those already in use on some taxiway signs should be used to discourage perching.

8. Owls
Two owls were observed on the airport; both were located with the FLIR. One was perched in the small stand of trees near the southern end of the runway the other was on the fence near site 1. Recommend removing all trees within the AOA with the exception of wetland areas that cannot be filled.

9. Crows

Crows were observed foraging in the areas around the runway and taxiway, often at the same time as gulls. Transiting crows also used the same areas off the airfield as gulls. One near miss was observed involving a transiting crow. As the second most numerous large bird observed, crow's position on the list may need to be moved up. Recommend airport personnel not tolerate any crows on the airport.

10. Gallinaceous

California quail was the only gallinaceous bird observed. Quail were most often seen on the AOA fence and heard in the shrub-brush outside the AOA. On one occasion, a group perched for the night in the small stand of trees near the south end of the runway. This is the same stand used by the owl. The small stand of trees should be removed.

11. Shorebirds

Killdeer were often present and were not afraid of vehicles, aircraft, or humans unless approached very closely. Killdeer numbers were highest in June 2012 at 17:00 hours. This corresponds with the hatching and observing of young birds. One Wilson Snipe was observed on the airport. It was using the water drain between the taxiway and the old hangar. Airport personnel should not tolerate killdeer on the airport. Water drainage areas should be cleaned to eliminate standing water.

12. Thrushes

American robins were the only species observed at the airport. The extensive usable habitat around the airport makes control measures nearly impossible. Recommend that airport personnel notifying pilots of the times of year these species are most common and not tolerate American robins on the airport. Bitter Cherry is common within the AOA along the AOA fence and is a primary attractant for birds, providing food and perching sites. Bitter Cherry and all fruit-producing plants should be targeted for removal.

13. Sparrow-like

Species documented as passerines were sparrow-sized birds and were the second most numerous birds at Anacortes Airport. They were observed to be most numerous in November 2012, corresponding with the fall migration. The large areas of habitat on and around the airport make management of these species difficult. Trees and shrubs within the AOA should be removed wherever possible. Bitter Cherry is common within the AOA, along the AOA fence, and is a
primary attractant for birds providing food and perching sites. Bitter Cherry and all fruit-producing plants should be targeted for removal.

14. Swallows

Swallows were most common in spring and summer when insect numbers increase. Swallows were observed foraging over the runway/taxiway and perching on the edges of the hangar nearest the runway/taxiway. Drain systems should be maintained to reduce standing water where insects can breed.

WETLANDS

Dense scrub-shrub plantings should be encouraged to serve as exclusionary vegetation to reduce waterfowl use of the area.

WATER DRAINAGE

Water collects when drains are not maintained. Drainage channels should be cleared and maintained to reduce areas of standing water.

AOA FENCE RECOMMENDATIONS

Vegetation is growing over and through the AOA fence, making it more difficult for airport personnel to observe animal access points onto the AOA. Where possible, this vegetation should be removed and a cleared buffer area along the AOA fence maintained.

EXISTING WILDLIFE PROGRAM

Training

Per AC 150/5200-36A Qualifications for Wildlife Biologist Conducting Wildlife Hazard Assessments and Training Curriculums for Airport Personnel Involved in Controlling Wildlife Hazards on Airports, it is recommended that personnel attend a Wildlife Control Workshop to obtain the necessary training in wildlife identification, legal issues associated with wildlife control, and appropriate control techniques. If funding limits workshop attendance, the following documents should be considered required reading as part of the wildlife program and a record of that compliance should be maintained:


3. FAA Advisory Circular 150/5200-33B Hazardous Wildlife Attractants On or Near Airports.

Additional guidance/information from the FAA on wildlife issues can be found on their website:
http://www.faa.gov/airports/airport_safety/wildlife/guidance/

WILDLIFE MONITORING, DATA COLLECTION, AND MAINTENANCE

An important component of a wildlife program is developing a system to record wildlife-related activities, including documenting observations of wildlife and time spent on repairs and wildlife control. Without accurate records, including instances when surveys were conducted and no hazardous wildlife was observed, it is difficult to justify management activities or to defend the airport from litigation following a damaging wildlife strike. Daily runway checks should incorporate records of wildlife species sighted, numbers, and their activities. This data can then be used to decide on management practices for hazardous species. Accurate records provide a means to properly assess the airport's wildlife management program. Chapter 6 of ACRP Report 32 provides samples and further guidance on recordkeeping that can be modified to suit the needs of Anacortes Airport.

WILDLIFE STRIKE HAZARDS AND REPORTING

San Juan Airlines and local pilots associations should be contacted regularly to ensure that pilots know the airport operator wants to be made immediately aware of all observed wildlife hazards and any FAR 139.337 triggering events that occur at the airport.

Any strikes should be reported to the FAA National Wildlife strike database via the website (http://wildlife-mitigation.tc.faa.gov/wildlife/strikenew.aspx) in accordance with FAA AC 150/5200-32A:

Snarge (strike remains) body parts and the whole remains of wildlife should be saved and sent to the Smithsonian Institution for proper identification per this aforementioned AC. This identification service is paid for by the FAA.

New reporting applications are also available for SmartPhones to aid the reporting process:

WILDLIFE CONTROL EQUIPMENT

The proximity of the airport to residential areas and its location within Anacortes City limits will likely limit harassment equipment options. However, a permit to discharge a firearm or pyrotechnic device within the Anacortes city limits should be sought if the USDA Wildlife
Services or the Anacortes City police cannot be made available to harass wildlife, especially deer, from the airfield when required. Audio harassment techniques may generate complaints from airport neighbors. Low powered lasers designed for bird harassment, in green and red, have proven effective in dispersing birds. Some dogs, if trained to return on command to the owner, can be an extremely effective tool in harassing wildlife from the airfield when required. Coyote effigies, if moved frequently, can also reinforce this negative association with a canine predator. Grays Harbor Airport, for example, has had great success with using an airport employee’s standard poodle to chase geese and other birds from the airfield, which is located adjacent to Bowerman Basin National Wildlife Refuge.

WILDLIFE HAZARD MANAGEMENT PLAN

A WHMP is recommended to address the repeated use of the airport by large mammals and the hazardous bird activity inside the AOA fence.
APPENDIX A—OBSERVATION OF BIRDS BY MONTH

Total Numbers Birds Observed by Month

Observed Blackbirds by Month
Observed Herons by Month

![Bar chart showing the number of observed Herons by month. The months with the highest number of Herons are May 12 and Aug 11.]

Observed Passerines by Month

![Bar chart showing the number of observed Passerines by month. The months with the highest number of Passerines are Nov 11 and Dec 11.]
APPENDIX B. RUNWAY OBSERVATION IMAGES

Site 1 North

Site 1 East
Site 2 West

Site 3 North

Site 3 East
Appendix F:  Wildlife Hazard Management Permits Held by the Port of Anacortes

(None currently held by the Port as of March 2015. Permits will be added to this appendix as acquired.)