LADD ARMY AIRFIELD

Wildlife Aircraft Strike Hazard (WASH) Program

Current Change:

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Ladd Army Airfield
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Appendix List

Chapter 1 Wildlife Aircraft Strike Hazard (WASH) Program

1-1 Purpose

The LAAF Wildlife Aircraft Strike Hazard (WASH) Program is designed to help minimize the risk of a strike to fixed- and rotary-winged aircraft or human health and safety posed by populations of hazardous wildlife on and around LAAF. There is no single solution that can accomplish this goal. Therefore, an integrated approach of techniques, tactics and entities is needed in the overall WASH Program.

The LAAF WASH Program is a joint cooperative relationship. Aircrews and tenant units are the focal point in the development of the WASH plan. The cooperation of these parties in the success of the WASH program is paramount.

1-2 General

a. LAAF has a year round potential for wildlife strikes with aircraft. LAAF is not immune from the hazards of wildlife-aircraft strikes. The months of April thru September present a bird strike and mammal strike potential with October thru March a potential for mammal strike being more of a hazard.

b. It is impossible to avoid all wildlife strikes, but actions can be taken to minimize the potential of a strike. By employing passive and active wildlife management techniques, the probability of wildlife strikes in and around the airfield can be reduced.

c. The goal of the LAAF WASH plan is to resolve a human/wildlife conflict, while maintaining the varied wildlife populations and habitats for the benefit and enjoyment of the people.

Chapter 2 Responsibilities

2-1 General

The LAAF Wildlife Aircraft Strike Hazard (WASH) Program is a program that relies on all users of LAAF to observe and report wildlife activities on and around LAAF.

2-2 Garrison Commander

a. The Fort Wainwright Garrison Commander should establish a Wildlife Hazard Working Group (WHWG) made up of the various agencies on Fort Wainwright that had direct or indirect wildlife strike potential.

b. Should chair or appoint a designated representative to chair the wildlife hazard working group (WHWG) meetings.

c. Should approve recommendations of the WHWG.

2-3 Director Public Works Operations and Maintenance Division

a. Advises LAAF Manager or WHWG of physical modifications.

b. Corrects physical conditions that increase WASH potential.

c. Maintains physical conditions based on the recommendations of the WHWG.

2-4 Director Public Works Environmental Division

a. Advises LAAF airfield manager or WHWG on wildlife biology and behavior, habitat requirements or modifications or management schemes to make informed decisions and minimize aircraft-wildlife strikes.

b. Advises or assists LAAF personnel on all lethal taking of wildlife pursuant to WASH activities.

c. Helps to acquire all necessary state/federal permits for harassment/depredation of nuisance wildlife and provides permits to the airfield manager.

d. Should identify remains of all dead wildlife and ensure proper disposal of remains pursuant to permits.

2-5 Public Affairs Office

Fort Wainwright Public affairs should participate as required and upon request should provide a public information program designed to inform post personnel, family members and the general public on the hazards and costs of uncontrolled bird activity and the measures being taken to minimize them.

2-6 Directorate of Plans Training, Mobilization and Security (DPTMS)

The DPTMS should support and promote the implementation of the airfield WASH plan.

a. Airfield Division Manager

The airfield division manager oversees the operation and execution of the WASH plan on the airfield. The airfield division manager or designated representative is also an integral part of the WHWG to ensure effectiveness of the WASH plan. The Airfield Manager should conduct the following:

(1) Establishes procedures to declare a wildlife watch condition (WWC) based on WWC criteria IAW this plan and recommendations from base operations/flight dispatch or air traffic control (ATC).

Note: If the airfield division chief/manager is absent, the operations manager or representative should declare an appropriate WWC.

(2) Should establish procedures to disseminate wildlife hazard warnings on the airfield IAW this plan.

(3) Should provide guidance to airfield/heliport personnel on the reporting of WWC and wildlife strikes to aircraft.

(4) Should issue specific guidance to base operations/flight dispatch personnel on procedures to be followed under each WWC.

(5) Should make operational changes to avoid areas and times of known hazardous wildlife concentrations, mission permitting.

(6) Coordinates with DPW environmental on actions to modify habitat and remove wildlife.

b. Airfield Operations Manager

The airfield operations manager is responsible for the daily operation of the LAAF WASH plan.

(1) Should acquire, maintain and coordinate with DPW environmental all dispersal and depredation equipment.

(2) Can check the training of all members of LAAF on all dispersal and depredation equipment.

c. Airfield Safety Manager

The airfield safety manager can be responsible for the management of the WASH plan and whatever is delegated by the airfield manager. The airfield safety manager will also be an integral part of the WHWG as the recorder for the WHWG meetings.

(1) Monitors compliance with the WASH plan.

(2) Assembles and disseminates wildlife data to WHWG and aviation units to include information on how each unit may obtain predictive wildlife hazard information using the USAF Bird Avoidance Model, see Appendix F.

(3) Monitors wildlife activity and strike statistics and advise the WHWG chairperson when additional meetings are deemed necessary.

(4) Establishes a WASH hazard education program.

(5) Coordinates with aviation safety officers and maintenance personnel for collecting remains after strikes.

(6) Establishes and maintains a continuity folder with trend data and other pertinent wildlife data.

(7) Incorporates WASH information on the safety bulletin board in base operation. Develops an airfield wildlife activity map with identifying local wildlife hazards to LAAF. The airfield wildlife activity map will be reviewed annually and updated as required.

(8) If required by flying organizations/activity, posts a current prediction of wildlife activity hazards (based on the USAF BAM) on the WASH bulletin board in the base operations flight planning room.

d. Air Traffic Control

(1) Reports observed wildlife activity to LAAF base operations personnel and pilots.

(2) Should issue wildlife watch condition advisories to aircrews.

(3) Should identify radar targets as possible bird activity when appropriate to provide warnings to pilots.

(4) Recommends missed approaches or delayed takeoffs when possible wildlife hazards appear on ATC radar.

(5) Under WWC SEVERE, ATC should ensure that pilots understand the condition and are provided the option to delay, divert or continue the proposed operation into the hazardous area.

(6) Should recommend appropriate operational changes or options to pilots/aviation units to avoid areas of known hazardous wildlife concentrations, mission permitting.

(7) Upon request from the pilot in command, considers the following during periods of increased wildlife activity:

(a) Raise pattern altitude.

(b) Change pattern direction to avoid bird concentrations.

(c) Avoid takeoffs/landings at dawn/dusk $\pm$ 1 hour.

(d) Limit or prohibit formation takeoffs and landings.

(e) Flying unit: Reschedule local training or transition elsewhere.

(f) Raise altitude en route to low level or training areas

(g) Flying units: Limit time on low level routes to minimum for training requirements.

(h) Flying units: Select low level routes or training areas based on bird hazard data.

(8) Should ensure ATIS information contains current wildlife watch condition.

e. LAAF Base Operations

(1) During daily airfield inspections and checks, observe, report and disperse wildlife on LAAF as necessary.

(2) Based on observation or reports of wildlife activity, declares a WWC condition to the airfield operations manager or safety manager.

(3) Posts the current WWC on the WASH current condition board in the flight planning room.

(4) Advise LAAF ATC tower personnel of current WWC.

Note: A NOTAM (Notice to Airmen) can be posted if the WWC warrants one.

(4) Report wildlife strike incidents to airfield manager, airfield operations manager, and airfield safety manager and DPW environmental.

(5) Maintain wildlife dispersal equipment.

(6) Recover wildlife remains after a strike for pick-up and identification by DPW environmental personnel.

(7) Should receive a report of a wildlife aircraft strike mishap from the pilot or other personnel and submit to the ASPM to enter the data online at the US Combat Readiness Safety Center through (Report-It).

(8) Maintain daily record of wildlife activity, location, number and type, and hazing techniques employed. (See LAAF wildlife tracking log)

(9) Should create a map using airfield crash grid map or equivalent to indentify high risk areas.

f. Wildlife Detection and Dispersal Personnel

Wildlife detection and dispersal will be carried out by personnel assigned to LAAF base operations. Base Operations will react to all reported wildlife hazards associated with LAAF. Reporting sources are air traffic control, aircrews, MPs, etc, but may come from other sources as well.

(1) Non-Lethal dispersal of wildlife on LAAF.

LAAF base operations personnel are authorized to employ non-lethal control techniques/ measures (hazing) and will do so in accordance with federal and state permits. Fort Wainwright wildlife biologists at DPW will assist LAAF personnel in acquiring the proper permits.

(2) Lethal control measures on LAAF.

Lethal control measures will be used only as a last resort and in accordance with federal and state depredation permits. LAAF personnel will use lethal control measures only after research, consolation, and approval from Fort Wainwright wildlife biologists. Prior

to use of lethal control measures, the WHWG will be advised of the requirement for lethal control measures. This requirement does not pertain to insect infestations on LAAF. Lethal control measures require approval by the Fort Wainwright Garrison Commander.

Note: Garrison Commander approval is not required in the event that an injured animal on LAAF must be euthanized due to the injury or danger to personnel. Authority to euthanize will be delegated to Fort Wainwright wildlife biologists and/or Fort Wainwright Military Police in conjunction with the State of Alaska Wildlife Troopers. The Garrison Commander will be notified.

(3) Training

All LAAF personnel authorized to employ non-lethal control techniques will have documented training on the following initial and annual recurring training:

(a) Species identification

(b) Wildlife active control techniques

(c) Weapon and WASH equipment safety

(d) WWC identification and reporting

2-7. Tenant Units and Agencies

a. Alaska Aviation Task Force

(1) Should assign a WASH POC to represent the organization during the garrison WHWG.

(2) Conduct an annual brief to aircrews on seasonal wildlife hazards, WWC requirements, and report all wildlife strikes and hazardous conditions on LAAF.

b. Unit Operations

(1) Should post current wildlife activity data from airfield management and ensure it is readily available for briefing aircrews. Each unit should post the wildlife condition on a status board and inform all aircrews of any change in status.

(2) Should ensure current wildlife activity data is available and briefed for each planned phase of flight.

(3) Should ensure that an adequate supply of WASH report forms and wildlife activity maps are readily available for aircrews which can be combined with the Hazards map.

c. Aircrews

(1) Should consider and incorporate wildlife hazards into the mission planning and briefing process. This would include applicable bird advisories and hazard information.

(2) Aircrews are essential to detecting wildlife hazards on LAAF and in the local flying area. When aircrews sight birds/wildlife, they should notify other aircrews and the controlling agency.

e. Alaska Army National Guard

(1) Should assign a WASH POC to represent the organization during the garrison WHWG.

(2) Conduct an annual brief to aircrews on seasonal wildlife hazards, WWC requirements, and report all wildlife strikes and hazardous conditions on LAAF.

f. Bureau of Land Management

(1) Should assign a WASH POC to represent the organization during the garrison WHWG.

(2) Conduct an annual brief to aircrews on seasonal wildlife hazards, WWC requirements, and report all wildlife strikes and hazardous conditions on LAAF.

2-8. Wildlife Hazard Working Group (WHWG)

The Wildlife Hazard Working Group is organized to implement and monitor the LAAF WASH Program.

a. Authority.

The Garrison Commander or representative should be the WHWG chairman, responsible for the WASH program and is the approval authority for all WHWG recommendations. The WASH plan is a part of the airfield safety and accident prevention program, and as such, the airfield safety manager should act as the WHWG recorder and monitors the effectiveness of the plan. The WASH plan should also be included in the integrated natural resource management plan with Fort Wainwright DPW environmental involvement.

L.45. Wildlife Aircraft Strike Hazard (WASH) Program (1 April 2014)

(1) At minimum, the WHWG should consist of the following personnel:

- Garrison Commander or representative -- Chairman
- Directorate of Plans, Training, Mobilization and Security
- LAAF Airfield Manager
- LAAF Safety Manager (Recorder)
- LAAF Operations Manager
- Air Traffic Control Chief
- DPW representative
- DPW Wildlife Biologist
- USAF Weather
- USARAK Aviation Safety Officer
- AKATF Aviation Safety Officer
- Alaska Army National Guard
- Bureau of Land Management

(2) WHWG meetings should be scheduled semi-annually. Meeting minutes will be recorded, maintained and distributed by the LAAF Safety Manager to all members for the WHWG.

b. WHWG: Function**.**

(1) Execute and update the LAAF WASH program.

(2) Monitor compliance with the WASH plan.

(3) Collect, compile and review trend data on wildlife strikes, wildlife watch condition changes and wildlife dispersal activities on or near the LAAF.

(4) Identify and recommend actions to reduce the wildlife hazards.

(5) Recommended changes in operational procedures on the LAAF environment.

(6) Prepare informational programs and safety briefings for aircrews.

(7) Recommend modifications to the program to improve effectiveness.

(8) Provide interaction with local agencies to promote wildlife hazards to aviation protection. Local organization should include but are not limited to:

(1) Fairbanks International Airport Operations

(2) Alaska Wildlife

(3) The University of Alaska Fairbanks wildlife

Chapter 3 LAAF WASH Operations

3-1. General

The LAAF WASH program management is an ongoing process, which includes planning, assessment, information dissemination, and active and passive wildlife control techniques and tactics.

The habitat management of the program to deter wildlife involves three steps:

a. Identifying the attractive features on and around LAAF.

b. Imposing changes to either remove the attraction or to deny wildlife access to it.

c. Identifying methods to mitigate and manage wildlife hazards.

There are many actions that can be taken to decrease wildlife hazards. These are determined by the time of year, the species involved and their attraction to the airfield, habitat characteristics on and around LAAF and a host of other variables. It is necessary to have a comprehensive understanding of a particular animal's biology and its relationship to specific environmental characteristics before initiating a wildlife control program.

3-2. WASH Planning

Controlling LAAF's attractiveness to wildlife is fundamental to good wildlife control. It is more important than wildlife population management for controlling the overall risk. If LAAF provides easily accessible resources to wildlife — food, water, shelter or breeding sites — the wildlife will continue trying to return despite any strategies used to discourage them. The control program will fail unless LAAF is made as unattractive to wildlife as possible.

a. LAAF Description

(1) General Location: LAAF is located on Fort Wainwright, Alaska and borders Fairbanks, Alaska on the west. The Chena River is within one half mile of LAAF west, north and east. On the west and east ends of LAAF, the Chena River is less than 1000' of the main runway. LAAF is on a flat plane with Birch Hill one mile to the north with an elevation of 1200 MSL.

(2) SOD (turf) areas on LAAF:

(a) Airfield usable zone. LAAF contains 173 acres of SOD (turf) located in the airfield usable zone.

(b) Runway Clear Zone. LAAF contains 161 acres of SOD (turf) located in the runway clear zone.

(c) Other Usable Acres. There is an additional 114 acres of SOD (turf) located in close proximity to LAAF. The SOD areas in the

(d) Airfield Movement Area. There are 12 SOD areas totaling 263 acres located inside the airfield movement area that are part of the airfield usable zone and runway clear zone SOD areas. These areas are maintained by DPW and are mowed once during the summer months. These 12 SOD areas are mowed in mid July only in an effort to control migratory birds that frequent Fort Wainwright from April to September. It has been determined through observation and discussion with the Fort Wainwright DPW wildlife biologists that this mowing schedule is a valid method to reduce the number of migratory birds on LAAF.

The geese that come to LAAF are attracted by shorter grassy areas and discouraged to occupy the taller and rougher vegetation that is allowed to grow during the summer. The effect of this action results in the geese staying to the outside of the movement areas and away from the approach and departure ends of the runways on LAAF.

The Sand Hill Crane is attracted to the taller vegetation when left to grow throughout the summer, but frequent LAAF less and in much lesser numbers than the geese. Normally 2-4 Cranes will land on LAAF and are easily hazed away when encountered.

The gulls that come to LAAF in the summer months are attracted to insects (grass hoppers) that develop in the spring to midsummer in the SOD areas of LAAF. The height of the grass has no influence on the gulls. Gulls land and roost on the warm paved areas of the taxiways and do not tend to enter the SOD. The grass hoppers crawl onto the pavement for warmth and attract the gulls that feed on them.

(e) SOD areas outside of the airfield movement area on LAAF are mowed on a more regular basis and kept shorter than the 12 SOD areas inside the airfield movement area.

(3) Bare Areas and Old Surfaces on LAAF. There are areas on LAAF that are bare of standard grass sod vegetation. These areas are located inside the airfield movement areas on LAAF. They are purposely maintained as indicated in 4-2, a, 2 (d) above. Maintaining these areas in the natural vegetation has proven to reduce the number of geese that frequent these areas. There has been no increase in mammal activities with allowing the grass to grow taller.

The approach end of runway 25R in the area of the approach lighting system has several dirt roads that parallel the approach lighting system. These roads are used for maintenance and also vehicular traffic. These roads do not appear to attract wildlife. During construction activities on LAAF bare areas are caused by the construction work being conducted. At the completion of the project, the area is covered and seeded.

LAAF operations manager and safety manager will monitor the sod areas of LAAF to ensure bare areas area mitigated.

(4) Drainage.

LAAF is bordered on three sides by the Chena River. It is within one half mile of LAAF on the north. On the west and east ends of LAAF, the Chena River is less than 1000' from the main runway. There are no wetland areas located on LAAF.

During the spring melt, the area north of runway 25R/7L on delta taxiway has in the past had considerable ponding. The ponding attracts birds, normally geese and ducks. During this period, LAAF personnel will monitor that area for bird activity. When observed, LAAF operations will attempt to haze the birds from the area.

During late spring melts, when the temperature warms rapidly, the ponding takes place in other locations on LAAF. The sod areas pond and attract birds. The ponding takes several days to drain and the areas require constant monitoring.

There are no ditches located inside the airfield movement area on LAAF. The ditches are located on the exterior of LAAF in close proximity of Gaffeny and Ketchan Roads. One deep ditch is located to the southwest of runway 25L.

(5) Security Fencing.

Currently the airfield fencing does not enclose the east and west ends of the airfield. The open ends of the fence bisect the airfield clear zones. LAAF personnel conduct airfield checks at the start and end of each work day. LAAF ATC personnel observe airfield during their shift. Gates are closed and monitored by the unit/agencies. Areas that did not have fencing due to construction are being secured as construction is completed. This condition will be corrected in the future when the security fence is completed.

(6) Trees and Landscaping.

Wherever possible, all trees and brush should be eliminated inside security fences. Brush and small trees should be removed from these transition areas and anywhere they occur on the airfield. In this section describe in detail the trees and landscaping for the airfield.

(7) Perch and Nest Sites.

Fort Wainwright has two Osprey perch/nests located in the vicinity of LAAF on the Chena River. Ospreys have been observed in pairs and usually on pair per perch/nest. The Osprey hunts near and over LAAF with the Chena River being a primary fishing site. Ospreys also attract Ravens if eggs or young Osprey are in the nest. (An Osprey

was found dead on runway 25R during the summer of 2011 from a suspected aircraft bird strike).

(8) Waste Management.

All waste should be stored in enclosed containers until collected and removed. Waste containers (dumpsters) located at each unit hangar should be monitored by unit safety officers and LAAF safety manager to ensure the container doors are kept closed. Ravens are attracted to any form of waste and have been observed scattering waste around waste containers when the doors are left open. This is not just a wildlife attractant, but a foreign object damage hazard.

Construction containers should be covered to limit access by birds and other wildlife.

Waste containers (dumpsters) are maintained at or near each hangar on LAAF. The individual units are responsible to maintain these containers. The LAAF safety manager monitors the waste containers during airfield inspections. Containers are closed by the LAAF safety manager when observed open as an immediate action. Unit safety personnel are advised of any open containers.
The Fort Wainwright waste disposal land fill facility is located one mile northwest of LAAF. The landfill has not been a deemed a hazard to flight. The landfill is monitored by DPW wildlife biologists.

(9) Wildlife Attractants.

All personnel on LAAF are prohibited from building structures, erecting nesting platforms or boxes, feeding birds, improperly disposing of wastes, or otherwise encouraging birds or other hazardous wildlife in areas of the installation that may threaten flight operations without approval of the Fort Wainwright, DPW wildlife biology section approval.

3-3. Known Attractants to Wildlife on LAAF

a. Known attractants to birds on LAAF.

(1) Food: Birds are attracted to several food sources on LAAF.

(a) Grasshoppers:

Grasshoppers attract gulls during the hatching period in spring or early summer. The grasshoppers hatch in the sod and seek the warmth of the paved areas on LAAF. The gulls frequent the paved areas to eat the grasshoppers.

Mitigation actions:

1. Spray the sod areas in early spring before the hatch. Fort Wainwright, DPW wildlife biologists and LAAF monitor the grasshoppers.

2. LAAF personnel will monitor and report grasshoppers and the areas where located.

3. LAAF personnel will haze gulls to remove the bird hazard.

b) Seeds:

Geese are attracted by shorter grassy areas where seeds are available during summer months.

Mitigation actions:

1. The area inside the airfield movement area is mowed in mid July in an effort to control migratory geese that frequent Fort Wainwright from April to September. It has been determined through observation and discussion with the Fort Wainwright DPW wildlife biologists that this mowing schedule is a valid method to reduce the number of migratory birds on LAAF. Geese are discouraged to occupy the taller and rougher vegetation that is allowed to grow during the summer. The effect of this action results in the geese staying to the outside of the movement areas and away from the approach and departure ends of the runways on LAAF.

2. LAAF personnel will haze geese to remove the bird hazard.

(c) Waste containers:

Ravens are attracted to any form of waste and have been observed scattering waste around waste containers when the doors are left open. This is not just a wildlife attractant, but a foreign object damage hazard.

Mitigation actions:

The LAAF safety manager monitors the waste containers during airfield inspections. Containers are closed by the LAAF safety manager when observed open as an immediate action. Unit safety personnel are advised of any open containers.

(2) Water:

Ponding:

LAAF is bordered on three sides by the Chena River. It is within one half mile of LAAF on the north. On the west and east ends of LAAF, the Chena River is less than 1000' from the main runway. There are no wetland areas located on LAAF.

During the spring melt, the area north of runway 25R/7L on delta taxiway has in the past had considerable ponding. The ponding attracts birds, normally geese and ducks. During this period, LAAF personnel will monitor that area for bird activity. When observed, LAAF operations will attempt to haze the birds from the area.

During late spring melts, when the temperature warms rapidly, the ponding takes place in other locations on LAAF. The sod areas pond and attract birds. The ponding takes several days to drain and the areas require constant monitoring.

Mitigation actions:

1. Correct any know ponding areas on LAAF through construction and fill methods if possible.

2. LAAF personnel will monitor ponding areas and haze birds to remove the bird hazard as needed.

3-4. Wildlife Watch Warning System on LAAF

The wildlife watch warning system is one of the most critical WASH procedures as it is an immediate exchange of information between ground agencies and aircrews concerning the existence and location of wildlife that pose a hazard to flight safety. The LAAF airfield manager, operations manager and safety manager can declare a wildlife watch condition during normal flight operations based on ground observations, pilot reports, radar observations, etc.

a. Wildlife watch conditions (WWC): The following WWCs should be used to warn aircrew and support personnel of the current wildlife threat to operations. These codes are identical to those used by the USAF. Wildlife locations should be given with the condition code. The airfield manager or designated representative(s) should make the final determination for declaring WWCs and increasing/decreasing WWC's.

(1) **WWC SEVERE.** Generally defined as a heavy concentration of birds and wildlife on or immediately adjacent to the active runway or other specific locations that present an immediate hazard to flying operations. Aircrews should thoroughly evaluate mission need before operating in areas under condition SEVERE.

WARNING: Landing or departing in condition SEVERE may result in aircraft damage from a bird/wildlife strike.

SEVERE may also be declared when birds/wildlife of any size or quantity present an immediate hazard.

(2) **WWC MODERATE.** Wildlife activity near the active runway or other specific locations representing increased potential for strikes. WWC moderate requires increased vigilance by all agencies and supervisors, and caution by aircrews.

(3) **WWC LOW**. Wildlife activity on and around the airfield representing low potential for strikes.

Note: The tower or the airfield manager, operations manager or safety manager may lower the WWC for the primary runway while keeping the higher WWC for the other area.

b. WWC reporting**.**

Declaration of a WWC should be made by the airfield manager or designated representative(s) based on the following:

(1) Visual observation of wildlife activity on or near the LAAF airfield by any personnel.

(2) Information relayed by ATC, airborne and taxiing aircraft or LAAF personnel.

c. WWC notifications by others.

If a wildlife hazard exists, other personnel may notify base LAAF operations personnel. This notification can be made on a radio or by telephone. All reports should be verified either by tower or base operations personnel and, if needed, the appropriate WWC should be declared. Reports should include:

(1) Identity of caller (agency for ground personnel, call sign for aircrews).

(2) Location.

(3) Altitude.

(4) Time of sighting.

(5) Approximate number of wildlife.

(6) Type of wildlife (if known).

(7) Behavior of wildlife (soaring, flying to or from a location, etc).

d. Wildlife hazard communication**.**

Disseminating WWC is critical to WASH effectiveness. The LAAF air traffic control tower should disseminate WWC by the following means:

(1) Include WWC on ATIS broadcasts.

(2) Notify inbound/departing aircraft of WWC if aircraft has received ATIS and WWC has changed.

(3) Provide additional wildlife advisories.

(4) LAAF airfield operations personnel will respond to the location where the wildlife is posing a problem.

(5) For rapidly changing WWC place a statement on ATIS advising aircrew to contact base operations/flight dispatch, air traffic control tower or approach control for the latest WWC.

(6) Under wildlife watch condition SEVERE, ATC tower should ensure that the pilot understands the condition and is provided the option to delay, divert, or continue the proposed operation into the hazardous area.

d. Downgrading WWC.

Once a WWC has been declared MODERATE or SEVERE, and the hazard no longer exists or has been lowered, the WWC should be downgraded commensurate with updated information. The airfield manager, operations manager or safety manager can make the final determination on WWCs.

Chapter 4 Wildlife Dispersal on LAAF

4-1. General dispersal guidelines

a. Hazing control measures on LAAF.

Hazing of the wildlife (birds) is the preferred method of removing species the tall grass doesn't deter. Hazing is accomplished by using the follow-me truck to aggravate the birds into departing the area.

(1) Vehicle horns can be used to initially harass wildlife off the airfield. Normally, once the birds are airborne or wildlife is running from the sound of the horn, the use of pyrotechnics can move the wildlife a further/safer distance from the airfield. Horns should be used before pyrotechnics are used.

(2) If this method fails, bird screamers or banger shells will be fired from bird hazing pistols to disturb the birds and cause them to depart the area. Prior to initiation of dispersal actions, LAAF operations personnel should notify the LAAF control tower. Pyrotechnics can be used in conjunction with vehicle harassment.

(3) Propane cannons can be utilized as necessary to deter birds from landing. Moving cannons frequently will minimize the bird's conditioning to the noise of the cannons.

(4) LAAF base operations personnel will enter appropriate data on the LAAF WASH Tracking Log anytime wildlife is observed on LAAF, see Appendix G. Tracking will provide a data base for Fort Wainwright wildlife biologists to determine wildlife trends for future control measure requirements.

b. Lethal control measures on LAAF.

(1) Lethal control measures will be used only as a last resort and in accordance with federal and state depredation permits. Lethal control measures require approval by the Fort Wainwright Garrison Commander.

(2) LAAF personnel will use lethal control measures only after research, consolation, and approval from Fort Wainwright wildlife biologists. Prior to use of lethal control measures, the WHWG will be advised of the requirement for lethal control measures. This requirement does not pertain to insect infestations on LAAF.

(3) Garrison Commander approval is not required in the event that an injured animal on LAAF must be euthanized due to the injury or danger to personnel. Authority to euthanize will be delegated to Fort Wainwright wildlife biologists and/or Fort Wainwright Military Police in conjunction with the State of Alaska Wildlife Troopers. The Garrison Commander will be notified.

4-2. Use of Lethal Weapons to Control Wildlife on LAAF

The garrison commander is the approval authority for the use of lethal weapons by LAAF personnel to remove wildlife from LAAF.

a. The 12-gauge shotgun will be used when lethal control measures are authorized.

b. Each individual will only use this weapon if they have been trained and are authorized to do so by the garrison commander or designated representative.

c. This weapon will only be used for the intended purpose of using authorized lethal control methods as part of the WASH program. The weapon will not be used for any other purpose or at any other location without the approval of the garrison commander or designated representative.

d. Personnel authorized to use this weapon will be designated in writing.

e. The weapon and all ammunition will be stored in the gun safe located in LAAF base operations.

4-3. Procedures for the use of pyrotechnics on LAAF

a. Contact LAAF ATC tower prior to discharging pyrotechnics. If aircraft operations are imminent, ensure the WWC is raised prior to initiating dispersal operations.

b. Inform LAAF safety manager when pyrotechnics have been discharged on the flightline.

c. Use ear, eye and hand protection as necessary.

d. **Do not load the gun in the vehicle or fire gun while in vehicle.** Step outside the vehicle, for proper loading sequence and refer to the weapons manual for use.

Chapter 5 Wildlife Strike Reporting

5-1. Reporting of Wildlife Aircraft Strikes

a. The aircrew should inform the control tower of any wildlife strike and, if airborne, land to assess the damage. If the strike occurs on the ground, the pilot should stop the aircraft to assess the damage.

Note: Report known or suspected strikes even if no wildlife remains are found on the aircraft. LAAF base operations personnel may be able to retrieve the wildlife on LAAF.

b. Preserve the wildlife remains (if possible) and notify Ft. Wainwright wildlife biologists. Personnel collecting wildlife remains should receive instruction on procedures to safely collect remains.

c. Report the strike by filling out FAA Form 5200-7, Bird/Wildlife Strike Report, see Appendix H, which is available at LAAF base operations. The FAA Form 5200-7 will be given to the LAAF safety manager to be entered online at the following site (Report-It).

d. If an aircraft is damaged, the unit aviation safety officer should be informed and an accident investigation will be performed IAW DA Pam 385-40.

Chapter 6 Record Keeping

a. Depredation of any birds or animals will be recorded.

b. LAAF base operations will maintain the LAAF WASH Tracking Log. the LAAF WASH Tracking Log will be used to document all wildlife dispersal operations to include species, location, methods and number of birds dispersed.

c. Airfield safety program manager should summarize semi-annually the data collected by the WHWG, FOD and safety council meetings.

Appendix A Acronyms and Abbreviations

AAF	Army Airfield
AFM	Air Force Manual
AFPAM	Air Force Pamphlet
ASPM	Airfield Safety Program Manager
ASO	Aviation Safety Officer
AGL	Above Ground Level
AHAS	Avian Hazard Advisory System
AHP	Army Heliport
AOB	Airfield Operations Board
ATC	Air Traffic Control
ATIS	Automatic Terminal Information Service
AWOS	Automated Weather Observing System
BAM	Bird Avoidance Model
CCTV	Closed Circuit Television
DOD	Department of Defense
DPTMS	Directorate of Plans, Training, Mobilization and Security
DPW	Directorate of Public Works
DSN	Defense Switch Network
FAA	Federal Aviation Administration
FAAO	Federal Aviation Administration Order
FOD	Foreign Object Damage
ICAO	International Civil Aviation Organization
ILS	Instrument Landing System
IMCOM	Installation Management Command
INRPM	Integrated Natural Resources Management Plan
IPM	Integrated Pest Management
NEPA	National Environmental Policy Act
NOTAM	Notice to Airmen
MOA	Military Operations Area
MSL	Mean Sea Level
OPR	Office of Primary Responsibility
PA	Public Affairs
USACE	United States Army Corps of Engineers
USDA	United States Department of Agriculture
USFWS	United States Fish and Wildlife Service
WASH	Wildlife Aircraft Strike Hazard
WDDT	Wildlife Detection and Dispersal Team
WHA	Wildlife Hazard Assessment
WHWG	Wildlife Hazard Working Group
WHMP	Wildlife Hazard Management Plans
WWC	Wildlife Watch Condition

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Appendix B References

AR 95-2	Airspace, Airfields/Heliports, Flight Activities, Air Traffic Control, and Navigational Aids
AR 385-10	The Army Safety Program
AR 200-1	Environmental Protection and Enhancement
DA Pam 385-40	Army Accident Investigations and Reporting
DA Pam 385-90	Army Aviation Accident Prevention Program
UFC 3-260-01	Airfield and Heliport Planning and Design
AC 150/5200-36	Qualifications for Wildlife Biologist Conducting Wildlife Hazard Assessments and Training Curriculums for Airport Personnel Involved in Controlling Wildlife Hazard on Airports.
AC 150/5200 33B	FAA Advisory Circulars Hazard Wildlife Attractants on or near Airports
AFP 91-212	WASH Management Techniques
DoDI 4715.03	Natural Resources Conservation Program
DoDI 4150.07	DoD Pest Management Program
Exec Order 13514	Federal Leadership in Environmental, Energy, and Economic Performance
FM 5-19	Composite Risk Management

Appendix C Terms in WASH Plan

a. Active Bird Dispersal -- Harassment techniques employed to disperse birds or mammals from airfield/heliport and surrounding areas. Methods may include chase, pyrotechnics, bioacoustics and depredation.

b. WASH -- Wildlife aircraft strike hazard. General term to describe wildlife hazards and wildlife hazard prevention programs.

c. Wildlife Hazard Working Group (WHWG) -- Local committee concerned with the control of wildlife hazards to aviation. Executes and makes recommendations to the WASH program.

d. Wildlife Watch Condition (WWC) -- A bird hazard alert condition used to warn aircrew of bird activity.

e. WWC LOW -- A bird watch condition that indicates sparse bird activity on the airfield/heliport and a low probability of hazard.

f. WWC MODERATE -- A WWC that indicates moderate concentrations of birds are in a location that represent a probable hazard to flight operations.

g. WWC SEVERE -- A WWC indicating heavy concentrations of birds on or immediately adjacent to the runway, which presents an immediate hazard to flight operations; or any concentration of birds that presents a danger to aircraft.

h. Bioacoustics -- Recorded tapes of bird distress and predator call used by WDDT to disperse birds off runways and airfield/heliport areas.

i. Wildlife Strike -- Any contact between wildlife and an aircraft, whether or not damage occurred.

J. Depredation -- Technique used to remove problem wildlife permanently from the airfield/heliport and hangars when other scare tactics are ineffective. Depredation permits are required for most species.

k. Falconry -- Active dispersal of problem birds using trained falcons.

l. Models/decoys -- Various static devices used to disperse birds from airfield/heliport areas. Many include scarecrows, decoys, Mylar® tape and eye spots.

m. Propane cannons -- Stationary non-projectile sound producing device used to disperse birds from airfield/heliport areas.

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n. Pyrotechnics -- Noise-producing devices fired from pistol or shotgun. Used by the WDDT to scare wildlife away from runways and airfield/heliport areas. Pyrotechnics are Class 1.4 explosives.

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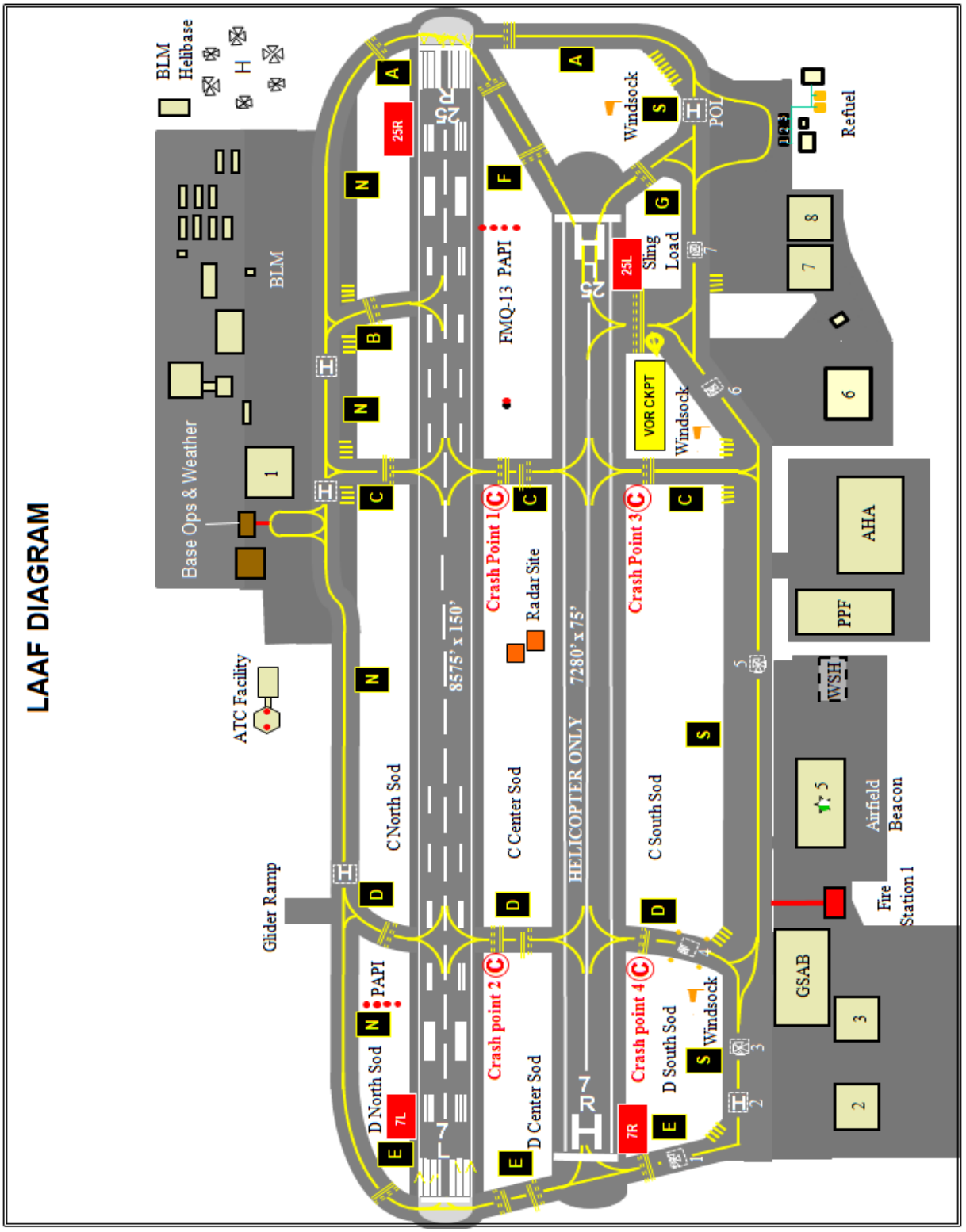
Appendix D Ladd Army Airfield Diagram



Appendix E Local Wildlife Species

GENERAL. The following is a summary of wildlife commonly found within the LAAF airfield environment.

Fort Wainwright DPW Natural Resources Department -- (907) 361-9686

a. BIRDS

(1) The Sandhill Crane.

The Sandhill Crane can be found on any part of LAAF during the summer months, but are observed mostly in the SOD areas when grass is greater than one foot in height. Hazing with vehicle horn or pyrotechnics work well. The Cranes will normally depart the airfield and fly in direction of Creamer's Field. Cranes are normally found on LAAF in pairs, possibly nesting.

Length: M 39 in - 47 in
Weight: 7.4 lbs - 11 lbs
Wingspan: 5.3 ft - 7 ft

(2) Canadian Geese.

Canadian Geese can be found on short grass SOD areas during the summer months. They normally stay out of the taller grass and are mostly observed in the shorter grass on the outer limits of the movement areas. The grassy areas between Meridian Road and Basset Army Hospital attract many Canadian Geese during the summer. Hazing with vehicle horn or pyrotechnics work well. Multiple hazing may be required to scare the Geese from the airfield. Geese tend to be in flocks of approximately 6 or more.

Length: M 25-45 inches
Weight: M 3-13 lbs., F 3-11 lbs.
Wingspan: 7.3 ft

(3) Snow Geese.

Snow Geese do land on LAAF, but are rarely observed here. Snow Geese should exhibit the same actions as the Canadian Geese. (See Canadian Geese)

Greater Snow Goose
Length: 31 inches
Weight: 7.1 to 9.9 pounds
Wingspan: 53 to 65 inches

Lesser Snow Goose
Length: 25 to 31 inches
Weight: 4.5 to 6.0 pounds
Wingspan: 53 to 65 inches

(4) Ducks.

Ducks of various types are observed on LAAF. Normally, they are observed in small numbers. During the spring thaw period large numbers of ducks can be found on LAAF in areas where melting snow become ponds that attract ducks. Ducks will depart the airfield when the ponds have dried. During ponding, ducks are a hazard to flight operations and constant hazing by LAAF personnel is required.

(5) Osprey.

Fort Wainwright has two Osprey perch/nests located in the vicinity of LAAF on the Chena River. Ospreys have been observed in pairs and usually on per perch/nest. The Osprey hunts near and over LAAF with the Chena River being a primary fishing site. Ospreys also attract Ravens if eggs or young Osprey are in the nest. (An Osprey was found dead on runway 25R during the summer of 2011 from a suspected aircraft strike).

Length: M 2.0–4.6 lb
Weight: M 20–26 in
Wingspan: M 50–71 in

(6) Gulls.

(a) Herring Gull.

Gulls of both the Herring Gull and the Mew Gull (Common Gull) come to LAAF in the summer months. The gulls feed on the grass hoppers that live in the SOD areas on LAAF. The gulls will be in large flocks of 20 – 50 birds. The gulls roost on the hard asphalt areas of the airfield at night. Gulls are observed in large groups in the mornings and late afternoons. They tend to dissipate during midday. Gulls will appear prior to the grass hopper hatching and leave the airfield after the grass hoppers have gone. Gulls are very difficult to haze off the airfield. They will take wing and move to another location on the airfield and land. They require many attempts at hazing to move them from the airfield.

Length: M 24–26 in, F 21–24 in
Weight: M 2.3–3.6 lb, F 1.3–2.0 lb

Wingspan: M 47 to 61 in

(b). Mew Gull.

Mew Gulls are protected under the Migratory Bird Treaty Act (MBTA). Once a nest has been started and an egg laid, it is also protected and may not be removed or tampered with. Any questions should be referred to Fort Wainwright DPW Natural Resources Department -- (907) 361-9686.

Length: M and F 16.1–18.1 in
Weight: M and F 12.7–21.2 oz
Wingspan: M and F 42.1–44.9 in

(7) Ravens.

Ravens can be found on all areas of LAAF during the summer or winter months. During the summer, Ravens normally will be a single bird or two to three birds. Ravens are attracted to trash containers near aircraft hangars. Ravens are also attracted to any dead wildlife. (Any dead wildlife found on LAAF should be removed to prevent large numbers of Ravens). During winter months, Ravens have been observed in large groups on the southwest side of LAAF in the area and trees near Hangar 2. Ravens can be difficult to haze. They tend to move a short distance and later return to the original location.

Length: 22 to 30 in.
Weight: 4 lbs.
Wingspan:

(8) Raptors (Hawks, Owls, Eagles):

Eagles and Hawks are rarely observed over LAAF, but are possible. They tend to hunt for short periods of time and depart the airfield. Owls have not been reported on LAAF.

(9) Cliff Swallows.

Cliff Swallows frequent Fort Wainwright and have nested on LAAF. They have been observed nesting on the sides of building 1565. Cliff Swallows are protected under the Migratory Bird Treaty Act (MBTA). Once a nest has been started and an egg laid, it is also protected and may not be removed or tampered with. It is very difficult to see into a cliff swallow nest to know if an egg is laid. Cliff swallows have not posed a hazard to flight on LAAF. Any questions should be referred to Fort Wainwright DPW Natural Resources Department -- (907) 361-9686.

b. Mammals.

While concern is mostly centered on birds on LAAF, several mammalian species also pose a hazard to flight operations. With the current status of the security fence, LAAF personnel must maintain vigilance for mammals that enter the airfield.

(1) Moose.

Moose wonder onto LAAF during summer or winter, mostly in the summer. Hazing moose can be difficult and may require more than one vehicle. Military Police assistance maybe required. **DO NOT APPROACH A MOOSE ON FOOT.**

Height: An adult moose stands 4.6–6.9 ft high (at the shoulder)
Weight: Male 840–1,500 lb Female 440–790 lb
Length: 7.9–10 ft

Eielson Air Force Base

Ted Stevens International Airport

(2) Coyote

There has been one Coyote observed on LAAF in the past. Several observed near the housing areas along the Chena River. None have been reported as a hazard to aircraft. Northern coyotes are typically larger than southern subspecies, with the largest coyotes on record weighing 74.75 pounds and measuring 5.7 ft in total length

Height: stand about 23–26 in at the shoulder
Weight: from 15–46 lb
Length: 30–34 in in length not counting a tail of 12–16

(3) Fox.

There have been Fox on LAAF in the past. The red fox have been observed in most areas of the airfield to include the approach lights on the west end of the main runway. None have been reported as a hazard to aircraft.

Height: Adults measure 14–20 in (at the shoulder)
Length: 18 to 35 in
Weight: 4.9 to 31 lb

(4) Marmot.

There are several Marmots on LAAF. They appear to have borrows in the dos area outside of the aircraft movement areas or outside the security fence. None have been reported as a hazard to aircraft.

Length: 12–24 in (excluding tail)
Weight: 6.6–16.5lb

Appendix F USAF Low-Level Bird Avoidance Model (BAM)

a. The BAM is a predictive model using geographic information system (GIS) technology as a key tool for analysis and correlation of bird habitat, migration, and breeding characteristics, combined with key environmental and man-made geospatial data. The value for each cell (or pixel) of the model is equivalent to the sum of the mean bird mass (in ounces), for all bird species present during a particular daily time period, for one of 26 two-week periods in a year. The BAM is internet accessible at the following web site http://www.usahas.com/bam/

b. The bird species data set was derived from discrete geographic information for observations of 60 key WASH bird species, over a 30-year period. The species data was acquired from several key datasets, including the Audubon Societies' Christmas Bird Count, the US Biologic Survey's Breeding Bird Survey, bird refuge arrival and departure data for the conterminous U.S., and many additional data specific to a particular bird species.

c. The risk levels describe three predicted risk classes — Low, Moderate and Severe, which are based upon the bird mass in ounces per square kilometer. In other words, the risk levels represent the amount of birds (bird mass) in a kilometer squared spatial area. The "Moderate Zone" indicates a risk ratio that is 57-708 times the risk of the "Low Zone", while the "Severe Zone" indicates a risk ratio that is 2,503-38,647 times the risk of the "Low Zone".

d. The model uses the best available data for historical modeling of bird migratory patterns to provide the user with an effective decision making tool. Because birds are dynamic creatures whose migratory behavior is initiated by weather events in any given year, the model cannot be said to predict the exact movement of bird species through space and time beyond the biweekly timeframe. Spatial zones indicating a severe risk according to the model should not be ignored and should be avoided. It is not suggested that pilots fly within the "Severe Zone" unless it is absolutely mission essential.

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Appendix G WASH Tracking Log

LAAF Wildlife Tracking Log				
Date	Time	Location	Number and Type of Wildlife	Remarks

Appendix H FAA Form 5200-7, Bird/Other Wildlife Strike Report

Form Approved OMB NO. 2120-0018

U.S. Department of Transportation
Federal Aviation Administration

BIRD/OTHER WILDLIFE STRIKE REPORT

1. Name of Operator	2. Aircraft Make/Model	3. Engine Make/Model
4. Aircraft Registration	5. Date of Incident ____/____/____ Month Day Year	6. Local Time of Incident ☐ Dawn ☐ Dusk ☐ Day ☐ Night ___ HR ___ MIN ☐ AM ☐ PM
7. Airport Name	8. Runway Used	9. Location If En Route *(Nearest Town/Refrence & State)*
10. Height *(AGL)*	11. Speed *(IAS)*	

12. Phase of Flight

- ☐ A. Parked
- ☐ B. Taxi
- ☐ C. Take-off Run
- ☐ D. Climb
- ☐ E. En Route
- ☐ F. Descent
- ☐ G. Approach
- ☐ H. Landing Roll

13. Part(s) of Aircraft Struck or Damaged

	Struck	Damaged		Struck	Damaged
A. Radome	☐	☐	H. Propeller	☐	☐
B. Windshield	☐	☐	I. Wing/Rotor	☐	☐
C. Nose	☐	☐	J. Fuselage	☐	☐
D. Engine No. 1	☐	☐	K. Landing Gear	☐	☐
E. Engine No. 2	☐	☐	L. Tail	☐	☐
F. Engine No. 3	☐	☐	M. Lights	☐	☐
G. Engine No. 4	☐	☐	N. Other:	☐	☐

(Specify, if "N. Other" is checked)

14. Effect on Flight

- ☐ None
- ☐ Aborted Take-Off
- ☐ Precautionary Landing
- ☐ Engines Shut Down
- ☐ Other: *(Specify)*

15. Sky Condition

- ☐ No Cloud
- ☐ Some Cloud
- ☐ Overcast

16. Precipitation

- ☐ Fog
- ☐ Rain
- ☐ Snow
- ☐ None

17. Bird/Other Wildlife Species

18. Number or birds seen and/or struck

Number of Birds	Seen	Struck
1	☐	☐
2-10	☐	☐
11-100	☐	☐
more than 100	☐	☐

19. Size of Bird(s)

- ☐ Small
- ☐ Medium
- ☐ Large

20. Pilot Warned of Birds ☐ Yes ☐ No

21. Remarks *(Describe damage, injuries and other pertinent information)*

DAMAGE / COST INFORMATION

22. Aircraft time out of service:	23. Estimated cost of repairs or replacement *(U.S. $)*:	24. Estimated other cost *(U.S. $) (e.g. loss of revenue, fuel, hotels)*:
_____ hours	$	$

Reported by *(Optional)*	Title	Date

Paperwork Reduction Act Statement: The information collected on this form is necessary to allow the Federal Aviation Administration to assess the magnitude and severity of the wildlife-aircraft strike problem in the U.S. The information is used in determining the best management practices for reducing the hazard to aviation safety caused by wildlife-aircraft strikes. We estimate that it will take approximately **5 minutes** to complete the form. If you wish to make any comments concerning the accuracy of this burden estimate and any suggestions for reducing this burden, send those comments to the Federal Aviation Administration, Management Staff, ARP-10, 800 Independence Avenue, SW, Washington, DC 20591. The information collected is voluntary. Please note that an agency may not conduct or sponsor, and a person is not required to respond to, a collection of information unless it displays a currently valid OMB control number. The OMB control number associated with this collection is 2120-0045.

FAA Form 5200-7 (3-97) Supersedes Previous Edition ☆ U.S. GPO: 1997-418-088/64203 NSN:0052-00-651-9005