

**APPENDIX A. BAAF BASH PLAN**

**Alaska Army National Guard Guidance**

**Safety – Aviation**

**Bryant Army  
Airfield Wildlife/  
Bird Aircraft  
Strike Hazard  
Plan (BASH)**

**Department of Military and Veterans Affairs  
Alaska Army National Guard  
Bryant Army Airfield  
Joint Base Elmendorf-Richardson (JBER)  
Alaska 99505  
1 October 2014**

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Joint Forces Headquarters  
Alaska Army National Guard  
JBER, Alaska 99505  
31 August 2014

Alaska Army National Guard Guidance

Effective 1 October 2014

**Safety – Aviation**

**Bryant Army Airfield Wildlife/Bird Aircraft Strike Hazard Plan (BASH)**

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**History.** This is a new publication written in order to compile Army Regulations and Air Force 3 WG Instructions to ensure coordinated efforts on JBER to manage wildlife hazards to aviation safety.

**Summary.** This Plan describes the procedures to be followed pertaining to the implementation of a plan to mitigate natural hazards to aviation safety on and around Bryant Army Airfield.

**Applicability.** This guidance applies to those stationed, and operating to and from Bryant Army Airfield.

**Proponent and exception authority.** The proponent of this guidance is the State Army Aviation Officer (SAAO). Exception authority to this guidance rests with the SAAO.

**Supplementation.**

Supplementation of this guidance is prohibited without prior approval of the SAAO.

**Suggested Improvements.**

Users are invited to send comments and suggested improvements on DA 2028 (Recommended Changes to Publications and Blank Forms) to NGAK-BAA-CO

**Distribution.** Distribution of this publication is intended for each organization of the AKARNG down to the unit level.

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## **SECTION 1. Background**

### **1-1. Historical**

Bird strikes have been occurring almost since the beginning of powered flight. Mr. Calbraith Rodgers, the first man to fly across the U.S., was also the first to die as a result of a bird-aircraft collision. On April 3, 1912, Rodgers' Wright Pusher struck a gull, causing the aircraft to crash into the surf at Long Beach, California. Rodgers was pinned under the wreckage and drowned. Data clearly shows birds are not the only group of wildlife that can pose a threat to aviation safety. Mammals and large reptiles can pose a serious threat. Also, invertebrate species (such as insects and worms) can pose an indirect threat by attracting other species of wildlife that pose a direct threat.

a. No airfield/heliport or aircraft type is immune from the hazards of wildlife-aircraft strikes. Both birds and mammals have been involved in damaging aircraft strikes; this document will concentrate on Bryant airfield wildlife hazards and their management. Wildlife pose a serious hazard to Army airfields/heliports and aviation. A flock of birds suddenly rising up from a runway or surrounding area may collide with aircraft, resulting in damage to the aircraft, or in extreme cases, causing the aircraft to crash and the death of the occupants.

b. The Federal Aviation Administration says there were about 119,862 bird strikes to civil aircraft in the United States from 1990 through December 2011 (10,044 strikes in 2011), or about one for every 10,000 flights. Since 1960, more than 25 large aircraft crashes were caused by bird strikes. In 23 of these incidents, the strike occurred below 400 feet. From 1990-2010, most bird strikes occurred between July and October during the daytime and most mammal strikes occurred between August and November during the nighttime.

c. The civil and military aviation communities widely recognize that the threat to human health and safety from aircraft collisions with wildlife strikes is increasing. Globally, aircraft wildlife strikes have killed more than 194 people and destroyed over 163 aircraft since 1988.

d. It is impossible to avoid all wildlife strikes, but actions can be taken to minimize the potential of a strike. First, by examining leading indicators that are correlated with mishap risk potential (e.g., wildlife populations, near-misses, engine damage and reported strikes) unsafe situations can be identified and avoided. Second, passive and active wildlife management techniques can be implemented to directly affect wildlife in and around the airfield.

e. The goal of any BASH Plan is to resolve the man/wildlife conflict, while maintaining the varied wildlife populations and habitats, within the limits of regulations and referenced advisory circulars, for the benefit and enjoyment of the people.

f. A tragic accident occurred on Elmendorf AFB in 1995 when an aircraft departing collided with a flock of geese (Yukla 27), resulting in a crash and the loss of all on board. A contributing factor was a lack of an aggressive BASH plan.

This plan is designed to be an aggressive effort to detect and deter wildlife hazards to aviation and to minimize the potential risks of bird/wildlife strikes to fixed wing and rotary winged aircraft, and to maximize efforts to reduce potential hazards to human health posed by populations of wildlife on

and around the airfield. There is no single solution that can accomplish this goal. Therefore, an integrated approach of techniques, tactics, and entities is needed in the overall BASH plan.

## **1-2. Environment**

a. Bryant Airfield is located in south central Alaska. The airfield is at an altitude of 387 feet above sea level. Bryant constitutes a unique natural resource in terms of flora and fauna. The reservation consists primarily of boreal forest dotted by small lakes with a few streams. Base forest vegetation includes mature black spruce, white spruce, birch, aspen, cottonwood and alder, with majority being birch-white spruce forest type.

b. Bird hazards exist on the airfield year round with peaks in the spring and fall during migration. Several species of birds could be encountered in the base area; of particular concern are Canada geese and other waterfowl, plovers, sandhill cranes, gulls, raptors, corvids, and ravens. The bird hazard on the aerodrome will be significantly reduced through minimizing habitat attractive for feeding, drinking, nesting, roosting and loafing, active and passive dispersal techniques, and effective warning techniques. Proper insect and habitat (grass height, converting grass to shrubs, eliminating open water) management is the best method for controlling most birds. Abundance of, or access to, food sources should also be eliminated, including overflowing or broken dumpsters.

c. Terrestrial wildlife also poses a threat to flying operations. Of concern are moose, wolves, coyotes, foxes, bears and smaller mammals. However, with diligence, maintained fencing, habitat maintenance and proper gate management, wildlife can be kept from the airfield complex. Maintaining the existing airfield fence and its gates as a wildlife barrier is key to BASH success.

## **1-3. Wildlife Hazard Assessment**

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

a. Habitat management to deter wildlife involves two steps: (1) identifying attractive features and (2) imposing changes to either remove the attraction or to deny wildlife access to it.

b. 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 habitat characteristics on and around the airfield, 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.

c. Bryant's Wildlife Hazard Assessment (WHA) provided the foundation from which a more complete and site-specific understanding of potential wildlife hazards was developed. The WHA identifies the wildlife species observed, their numbers, locations, and movements, daily and seasonal occurrences. The WHA was performed by BASH Incorporated, Bird Hazard and Wildlife Management Consultants, 5010 Langagan Street, Colorado Springs, CO 80919, in FY 2010. This assessment was highly relevant because wildlife populations, especially migratory birds exhibit seasonal fluctuations in behavior and abundance. Upon completion of the study, recommendations



were developed designed to reduce wildlife hazards, provide comprehensive recommendations for JBER (joint) solutions, and provide specific guidance for wildlife management on the airfield. The WHA does not limit wildlife hazard assessments and wildlife management programs to the airfield property. It also identifies features near the airfield that attract wildlife.

## **SECTION 2. BASH Program Management**

### **2-1. Introduction**

The BAAF BASH plan is a part of the Airfield Safety and Accident Prevention Program. The plan is designed to:

- a. Establish procedures to minimize the hazard to US Army, Alaska Army National Guard, and all aircraft operating at the airfield and in adjacent operating areas.
- b. Establish procedures for reporting potentially hazardous wildlife activity and altering or discontinuing flying operations. Reporting should be a collective effort between all air and ground personnel operating in the airfield environment.
- c. Establish procedures to identify potentially hazardous situations and to aid supervisors and aircrews in disseminating information, issuing alerts, and altering or discontinuing flying operations when required.
- d. Establish active/passive techniques to disperse wildlife from the airfield and decrease airfield attractiveness to wildlife.
- e. Establish procedures to identify, provide information, and eliminate or reduce environmental conditions that attract wildlife to the airfield.
- f. Maintain an airfield Bird Hazard Working Group (BHWG) and designate responsibilities to its members. Designated representatives will also be part of the Joint Base Elmendorf/Richardson (JBER) Bird Hazard Working Group and attend the semi-annual meetings.

### **2-2. Overall Program**

The Alaska Army National Guard, State Army Aviation Officer (SAAO) will manage the overall program. The United States Department of Agriculture/Wildlife Services (USDA/WS) is Bryant Airfield's primary BASH detection and dispersal agency. They will be the primary dispersal team for all of the wildlife within the airfield boundary fence and birds within the exclusion zones following guidance in both the wildlife hazard management protocol and the Interagency Agreement. The 673d Civil Engineer Group (673 CEG) will be responsible for vegetation management and overall wildlife management outside the airfield security fence. The 673 CEG Natural Resources Office (673 CES/CEANC) wildlife biologist will serve as the Bryant Airfield BASH advisor and will secure the proper federal and state depredation permits required for the program. Because Elmendorf and Bryant airfields are collocated on Joint Base Elmendorf/Richardson a collective and coordinated effort in the detection and dispersal of wildlife hazards is essential to aviation safety in and around both airfields.

## **2-3. Phase I and Phase II**

Phase I and Phase II. This plan is based on hazards posed by both resident and seasonal wildlife populations. Portions of the plan must be implemented on a continuous basis while others will only require implementation in the event of increased wildlife activity. Increased wildlife activity is usually associated with the arrival of migratory species. Therefore, the plan contains two phases of operation: Phase I concentrates on wildlife control and habitat modification and is in effect year round. Phase II concentrates on bird avoidance using operating restrictions and increased dispersal efforts. Bryant AAF and many of its associated Special Use Airspace, ranges, and low level routes are located near or within primary migration routes. Historical bird migratory patterns are used to determine Phase II periods. Phase II periods are typically 15 April thru 31 May (spring migration) and 15 August thru 31 October (fall migration). These periods are subject to change based on climatological variations such as mild winters. Bryant Airfield Safety, the USDA, and the 673 CES/CEANC will coordinate to determine if Phase II operations will begin or end on different dates.

## **2-4. Wildlife Strikes**

All wildlife strikes to aircraft will be reported to unit aviation safety office using, *DA Form 2397–AB, Abbreviated Aviation Accident Report (AAAR)*. Additionally, all bird remains found on Bryant AAF will be collected and given to the airfield safety office.

## **2-5. Training**

BASH training is essential to the success of the program. Initial training must express the importance of the program and recurrent training should be designed for awareness and to emphasize threat differences due to seasonal changes. BASH awareness is an integral part of the safety program and needs to be considered, both on and off the airfield during all mission risk assessments.

a. All assigned crewmembers will be briefed during an initial orientation. During initial orientation/briefing personnel working on Bryant Army Airfield will be oriented to the detection and dispersal measures on-going and instructed as to their personal responsibilities to prevent wildlife attractants, i.e. trash in their personal vehicle. This briefing will emphasize the responsibility each individual has in reporting bird or wildlife hazards. They will also be briefed on the bird exclusion zones for Bryant Airfield.

b. All personnel working on Bryant airfield and tenant units will receive an annual refresher brief just prior to the spring migration. The Airfield Safety Officer will attempt to brief the groups in conjunction with a safety meeting. If this cannot be accomplished prior to the beginning of the spring migration (April 15), unit commanders and unit safety representatives have the responsibility to ensure their members receive the required annual refresher training. The airfield safety office will have the training available on a Power Point presentation provided to the unit safety officers. Civilian personnel are highly encouraged to be part of the training or attend a BASH briefing during the onset of Phase II conditions.

## **SECTION 3. Exclusion Zones**

Bird exclusion zone boundaries have been established to aid all agencies in defining when a bird hazard exists, dispersal priorities and vegetation management goals.

### **3-1. Bird Exclusion Zone**

The Bird Exclusion Zone (BEZ) includes the runway and all taxiways and the clear zone areas (see Appendix D). The BEZ is generally defined using the airfield perimeter fence as a guide. The USDA/WS/ dispersal team will position signs in appropriate locations at the start of the migratory season. The signs will have a graphic representation of "no birds" with the (907) 312-3128 phone number on them. The BEZ identifies an area where no bird presence will be tolerated. Priority dispersals will be large birds, followed by smaller species.

### **3-2. Waterfowl Exclusion Zone**

The Bryant Airfield Waterfowl Exclusion Zone (WEZ) consists of (see Appendix D) The WEZ identifies an area where waterfowl, such as geese and ducks, will not be tolerated. Other large birds, such as raptors and gulls, will be dispersed as well. Habitat modification, to include minimizing open water and managing large open areas to be unattractive to geese, will be used in conjunction with aggressive hazing. All waterfowl activity in the WEZ should be reported. Dispersal of Bald Eagles requires specific approval from the US Fish and Wildlife Service, and unauthorized harassment of Bald Eagles could result in federal prosecution. If conditions warrant the dispersal of Bald Eagles, requests must be submitted to the USDA-WS personnel for appropriate processing.

## **SECTION 4. Habitat Modification**

By incorporating specific practices into the base land management, Bryant Airfield can maintain an airfield habitat less attractive to birds and other wildlife. The Combined Facilities Management Office (CFMO) is primarily responsible for habitat modification. Vegetation management will vary by BASH vegetation zones as delineated by the following zones (see Appendix D):

**4-1. Airfield Zone.** The Airfield Zone is that area inside the airfield perimeter fence. Within this zone the primary vegetation will be grasses within 300 meters of the edge of runways, taxiways or ramps. The objective is to create an area of dense, erect grass. The species of grass will include Canadian blue-joint redgrass (*Calamagrostis canadensis*) and beach wildrye (*Elymus mollis*) but may include as much as 60% erect domestic species such as red fescue (*Festuca rubra*). In those portions of the airfield greater than 300 meters from runways, taxiways and ramps, a similar grass stand is desired, but scattered non-berry producing shrubs or small trees may be evenly distributed at a density of 6-10 plants per acre to help discourage geese. Lawns within the airfield zone may extend no more than 1 meter from sidewalks and streets and no more than 20 meters from buildings.

**4-2. Cantonment Zone.** The Cantonment Zone is the industrialized/housing/recreational area surrounding the airfield within the BEZ/WEZ outside of the airfield perimeter fence. The primary vegetation type is grassland with scattered shrubs/trees, as identified in the Airfield Zone. Groomed lawns are generally permitted within 2 meters of sidewalks, 5 meters of streets and parking lots. Lawns are allowed in association with buildings, housing, playgrounds, and displays. When possible, large lawns should have trees and shrubs dispersed at 6-10 plants per acres to discourage geese. All new trees and shrubs will be non-berry producing species. As funds allow, berry/fruit

producing trees and shrubs will be replaced with non-berry/fruit producing species. Coordination with FMO and 673 CEG is essential.

**4-3. Clear Zones.** Clear Zones are those portions of the BEZ located at the end of the runway outside of the airfield perimeter fence. The preferred vegetation type is shrubland. The shrubland vegetation objective is to provide over 60% canopy coverage by shrubs and small trees to discourage raptors from hunting small mammals and to association with approach lights and other navigational aids and within 50 meters of the airfield perimeter fence. Berry or fruit producing species will be eliminated.

**4-4. WEZ Remainder Zone.** Within the remaining area of the WEZ, open, non-lawn areas greater than one acre in size will be managed as shrublands. Grass will be the preferred vegetation within 50 meters of the airfield perimeter fence. Berry or fruit producing species will be eliminated. Groomed lawns are generally permitted within 2 meters of sidewalks, 5 meters of streets and parking lots. Lawns are allowed in association with buildings, but will be limited to no more than ½ acre.

**4-5. Managing Grass Height.** The 673 CES/CEANC or 773 CES/CEORH will determine the timing of the mowing. The intent of grass management is to cut during the period when birds are least likely to be attracted to short grass, to remove the seed heads from the plants before they fully mature, late enough that alternate seed heads do not mature, and with adequate time for the grass to reach 11 inches by 10 August. Grasses will be encouraged to grow to at least 11 inches in height during periods of migration (April 15-May 31, September 1-October 15) and staging (August 10-31). Unless otherwise directed, grass should be mowed to a height no lower than 8 inches, during the period July 10 –Jul 25. When mowing the Airfield Zone mow infield beginning adjacent to the runway and finish in the outermost areas to drive rodents and insects away from the runway.

**4-6. Managing Shrublands.** Shrubs will be encourage/planted to fill gaps to reach a desired canopy coverage of at least 60%. Shrubs will include native, non-berry producing trees and shrubs that easily regenerate after aggressive cutting which include alder, willow, poplar, and birch. Shrubs will need to be cut to 6-8 inches above the ground on a 2-3-year rotational basis. Cutting should be conducted in early April prior to ground thaw and before leaf-out.

**4-7. Controlling Broad-Leafed Weeds.** Keep volunteer broad-leafed plants to a minimum in grasslands in the Airfield and Cantonment Zones as they attract a variety of birds, may produce seeds or berries and may limit grass growth. Non-invasive broad leaved plants may be allowed in shrubland habitats in the Clear Zones and outside the BASH vegetation zones.

**4-8. Woodlands.** Within the BEZ/WEZ managing woodland density and structure can effectively discourage large birds or large concentrations of birds. Woodlands within the Airfield Zone will be removed or greatly thinned to prevent moose, bears and canids from finding cover, to reduce raptor perches and to prevent birds roosting or nesting near the airfield. Within the remainder of the BEZ prune trees that attract roosting birds to reduce the number of perches.

**4-9. Berry/Fruit Producing Trees and Shrubs.** Mature berries can attract several species of birds during fall and winter. Minimizing their presence within the BEZ/WEZ is a BASH objective. Berry/fruit producing trees within the BEZ will be phased out by the year 2015. No new berry/fruit producing trees or shrubs will be planted within the WEZ.

**4-10. Bird-Proof Buildings and Hangars.** The FMO will ensure all new structures within the BEZ/WEZ are designed to avoid attracting nesting birds. These designs will minimize open vents, covered ledges, and graveled flat roofs. Bird proofing of existing buildings and hangars within the BEZ/WEZ is required to exclude birds, primarily pigeons and swallows. Excluding birds from a structure they currently use will often displace them to an adjacent structure. Existing bird nests should be destroyed prior to egg laying (in accordance with federal and state permits). All vents or other openings in buildings within the BEZ will be covered with ¼ or ½ inch hardware mesh to prevent nesting by tree and violet-green swallows. Facility managers are responsible to identify exclusion and nest removal needs to the Airfield Management Activity (AMA) if the actions are beyond their capabilities. Airfield management will pass the information to USDA-WS for appropriate action.

**4-11. Leveling of Airfield Zone.** Level or fill high or low spots to prevent standing water and reduce attractiveness to birds.

**4-12. Maintaining Drainage Ditches.** Regularly inspect ditches to keep them clear. Maintain ditch sides as steeply as possible (minimum slope ratio of 5 to1) to discourage wading birds and emergent vegetation. Improve drainage, as necessary, to inhibit even temporary ponds or puddles.

**4-13. Minimize Open Water.** All activities affecting wetlands must be coordinated with the FMO, 673 CES/CEANC and US Army Corps of Engineers. When properly permitted, eliminate snowmelt ponds or standing open water in the BEZ, especially on the airfield.

NOTE: These activities will be coordinated with Airfield Management.

**4-14. Erosion Control Vegetation.** Outside of the Airfield Zone use vegetation that does not attract birds. Woody vegetation species such as willow, birch, poplar, or alder are desired species. Non-invasive annual grasses may be planted for initial soil stabilization.

**4-15. Pest Controls.** Invertebrates and rodents are key food sources for many birds. Of special concern in the BEZ are grasshoppers that, when abundant, attract several species of gulls, ravens, magpies, and passerines. July and August are primary months of grasshopper abundance. Another attractant to avian predators, coyotes, and foxes are small mammals, primarily microtines. A reduction of mammalian predators will likely promote small mammal population outbreaks of greater frequency and higher numbers that will attract increased numbers of avian predator.

**4-16. Insects.** Any persistent gull concentrations on the airfield should be considered an indication of a potential insect population outbreak. The USDA-WS personnel will conduct grasshopper population surveys on the airfield during July and early August, and will request pest reduction when required. The FMO will coordinate with the appropriate organization for pest control. Appropriate pesticides will be used to respond to insect outbreaks within a 24-hour period, and preventive treatments attacking larval stages will be applied within the Airfield Zone.

**4-17. Small Mammals.** The FMO will coordinate with appropriate organizations to ensure small mammal surveys and control will begin early in the spring and prior to fall as similarly outlined in the Integrated Natural Resources Management Plan for JBER. The 773 CES/CEIUB may be tasked to conduct small mammal reduction activities that avoid producing visibly dying animals, which may attract aerial predators.

**4-18. Controlling Waste Disposal.** All dumpsters used within the BEZ/WEZ will be designed to remain closed and inaccessible to wildlife. They will be equipped with securable lids that are windproof and bear-proof. Ravens, magpies, gulls and bears are frequently attracted to dumpsters that are not closed and secured. Facility managers within the BEZ/WEZ will have primary responsibility to monitor dumpster repair and removing waste stacked outside the dumpsters.

**4-19. Discourage Wildlife Feeding.** Signs should be placed appropriately to educate the public to the legality and hazard posed by feeding any wildlife. Bird feeders will not be allowed within the BEZ but may be allowed seasonally (November 1 – March 31 only) in the WEZ for small birds only.

## **SECTION 5. Bird Hazard Warning System**

These procedures establish methods to use for the immediate exchange of information between ground agencies and aircrews concerning the existence and location of birds that pose a hazard to flight safety. If a bird hazard exists, notify the AMA Safety Officer, or the Tower Supervisor. Radio net or telephone can be used to make this notification. Telephone reports can be passed to the dispersal team at (907) 312-3128.

Bird Watch Condition (BWC) Codes. The following terminology has been established for rapid communication of bird activity. Bird locations will be given with the condition code.

**5-1. Declaring a BWC.** The Tower Watch Supervisor will coordinate with the AMA to establish/change a bird watch condition. Conditions are declared based on ground observations, pilot reports, reports received from USDA personnel, and so forth. AMA and USDA personnel will provide recommendations of BWCs to the Tower Watch Supervisor when there is a visual observation of bird activity on or near the airfield. The AMA Safety Officer or Tower Supervisor may determine if bird activity near the runway constitutes a threat to flying operations. If it does not, the BWC may be lowered for the runway while keeping the higher BWC for other airfield areas being utilized by aircraft.

**5-2. Condition “SEVERE”.** Bird activity on or immediately above the active runway or other specific location representing high potential for strikes. Supervisors and aircrews must thoroughly evaluate mission need before conducting operations in areas under condition SEVERE. To allow maximum flexibility for the tower controllers and the Safety Officer, a BWC may be declared for an approach or departure end of the runway, that is, —“*Bird Watch Condition SEVERE, departure end, Runway 35; eagle soaring at 100 feet above ground level.*”

**5-3. Condition “MODERATE”.** Represents bird activity near the active runway or other specific location representing increased potential for strikes. BWC moderate requires increased vigilance by all agencies and supervisors and caution by aircrews.

**5-4. Condition “LOW”.** Represents bird activity on or around the airfield representing low potential for strikes.

**5-5. Specific Cardinal Direction.** Additionally, controllers may declare a BWC for a specific cardinal direction, that is, — “*Bird Watch Condition MODERATE north; a flock of seagulls at 1,000 above ground level over taxiway Golf heading east.*” Once the dispersal teams have moved the birds and the airfield is clear, the BWC will be lowered.

**5-6. Dispersal Operations.** USDA-WS detection and dispersal team will operate on the airfield 8 hours a day, 7 days a week and will immediately respond to wildlife calls on (907) 312-3128 to implement appropriated actions. During the winter months, USDA personnel will be available 8 hours a day, 7 days a week and will respond to calls but will respond as weather conditions permit. They will manage all the wildlife following guidance in both the wildlife hazard management protocol and the Interagency Agreement between the USDA/WS and the AMA. The 673 CES/CEANC can also be called for further assistance, if required (552-0200/8609). Prior to initiation of dispersal actions in the BEZ, the dispersal team will coordinate the location and methods with the AMA and the Tower Supervisor and ensure the appropriate Bird Watch Condition has been declared prior to dispersal activities. In the event the tower is closed and the AMA personnel are not available, i.e. after normal duty hours or holidays, the dispersal team will: **Prior to any outside walking patrols carrying anything that resembles a weapon or the discharge of such devices, they must ensure Facility Operations Center, at 428-6333, has been properly notified.** Birds and mammals will be dispersed using physical harassment, the dispersal vehicle, harassment shooting, or with pyrotechnics. The method used will be at the discretion of the dispersal team based on the situation. When the target birds depart the area, the Tower Supervisor will be notified so the BWC can be lowered, if necessary.

## **SECTION 6. Specific Responsibilities**

The Alaska Army National Guard is responsible for ensuring that airfield vegetation, fencing, and drainage are managed to minimize wildlife attractants. An excellent cooperative relationship must exist between the State of Alaska, AKARNG, JBER and appropriate installation organizations to ensure a safe aviation environment in-and-around Bryant Army Airfield. Due to Bryant being collocated on Joint Base Elmendorf/Richardson, wildlife management must be a coordinated effort between both organizations. The AKARNG is responsible to maintain a wildlife management plan and is drawing from techniques modeled after United States Air Force (USAF), United States Navy (USN), and Federal Aviation Administration (FAA) standards. The following describes minimum responsibilities to ensure an effective BASH plan is conducted.

### **6-1. 3<sup>rd</sup> Wing Vice Commander or Designee:**

- a. Chairs BHWG meetings.
- b. Approves recommendations of the BHWG.
- c. Reviews notes form the BAAF BHWG meetings.
- d. Provides recommendations to tenants.

### **6-2. Bryant Airfield Commander/Manager or Designee will:**

- a. Declare, disseminate, and terminate BWC at Bryant AAF and (if available) for the local training areas through the Air Traffic Control Chief, Airfield Safety Officer, or their designated representatives.
- b. Ensure BWC information is issued to the Army Aviation Support Facility
- c. Issue specific information to Base Operations/Flight Dispatch personnel on procedures to be followed under each BWC.

d. Maintain regular communications with USDA-WS to coordinate wildlife management procedures.

**6-3. Airfield Operations Officer must:**

- a. Work closely with the detection and dispersal team (USDA-WS)
- b. Ensure aircrews complete a DA 2397-AB, AAAR if a bird strike occurs.

**6-4. Airfield Safety Officer (AFSO) (Office of Primary Responsibility for the BASH Plan) must:**

- a. Serve as the airfield BHWG chairperson and coordinate meetings with the 3<sup>rd</sup> WG BHWG. Meeting minutes will be maintained for at least 3 years in a BASH continuity folder.
- b. Monitor assigned and visiting unit compliance with the BASH Plan. Coordinate BASH issues with State Safety and tenant unit Safety officers.
- c. Assemble and disseminate wildlife data to BHWG and aviation units to include information on how each unit may obtain predictive wildlife hazard information using the USAF Bird Activity Model (BAM), (see Appendix C).
- d. Monitor wildlife activity and strike statistics and advises the airfield officer/manager when additional meetings are deemed necessary.
- e. Establish a BASH hazard education program to include films, posters and information on local wildlife hazards and reporting procedures.
- f. Coordinate with aircrews, Aviation Safety Officers, maintenance personnel and USDA-WS for collecting of non-fleshy remains after strikes as deemed necessary by USDA-WS.
- g. Establish and maintain a continuity folder with trend data and other pertinent wildlife data and information to assure continuity of knowledge with personnel turnover.
- h. Maintain a BASH Bulletin Board in the Base Operations Flight Planning Room and develop an airfield wildlife activity map tailored to local wildlife hazards. Post, disseminate and update map, as appropriate. At a minimum, the map will be reviewed semi-annually and include the date of publication/review.
- i. If required by flying organizations/activity, post a current prediction of wildlife activity hazards based on the USAF BAM on the BASH Bulletin Board in the Base Operations Flight Planning Room.

**6-5. Air Traffic Control must:**

- a. Report observed wildlife activity to Base Operations/Flight Dispatch and pilots, as required.



- b. Issue Bird Watch Condition (BWC) advisories to aircrews as required.
- c. Identify radar targets (if available) as possible bird activity when appropriate to provide warnings to pilots.
- d. Recommend missed approaches or delayed takeoffs when possible wildlife hazards appear on ATC radar.
- e. Under BWC SEVERE, ATC will ensure that pilots understand the condition and are provided the option to delay, divert, or continue the proposed operation into the hazardous area.
- f. Recommend appropriate operational changes or options to pilots/aviation units to avoid areas of known hazardous wildlife concentrations, mission permitting.
- g. Consider the following during periods of increased wildlife activity:
  - (1) Raise pattern altitude.
  - (2) Change pattern direction to avoid bird concentrations.
  - (3) Avoid takeoffs/landings at dawn/dusk  $\pm$  1 hour.
  - (4) Limit or prohibit formation takeoffs and landings.
  - (5) Depart pattern in trail; rejoin 3000' AGL.
  - (6) Reschedule local training or transition elsewhere.
  - (7) Raise altitude en route to low level or training areas
  - (8) Limit time on low level routes to minimum for training requirements.
  - (9) Select low level routes or training areas based on bird hazard data.
  - (10) Split formation during recovery.
  - (11) Discontinue formation instrument approaches.
  - (12) Make full stop landings.

## **SECTION 7. Wildlife Strike Reporting**

This section outlines the procedures and forms required to report wildlife/bird strikes on Bryant airfield. Procedures for strikes on aircraft stationed at Bryant airfield, but at locations other than on Bryant airfield will require action dictated by the unit Standing Operating Procedure. Any indication of a bird strike, no matter how small will be documented by an AAAR. DA PAM 385-40 will determine the appropriate action to be taken with regard to aircraft damage cost.

**7-1. Bird Strike.** All bird strikes on Bryant airfield will be reported and every effort will be made to collect samples or remains if determined necessary by USDA-WS. An AAAR will be completed by the pilot in command.

**7-2. Large Mammal Strike.** Large mammal strikes will normally require procedures consistent with an accident report and will dictate compliance with AR 385-10.

**7-3. Class B Accident or above.** If an aircraft is damaged and is determined to be a Class B or above, the Unit Aviation Safety Officer will be informed and an accident investigation will be performed as determined by the unit commander, IAW DA Pam 385-40.

## **SECTION 8. Bird Hazard Working Group (BHWG)**

There are two Bird hazard Working Groups due to BAAF being one of two airfields located on JBER. The Bryant Bird Hazard Working Group (BHWG) is organized by the AMA's safety officer and is responsible to, among other things, collect data for presentation to the 3WG BHWG semi-annually.

**8-1. Function.** The function of the BHWG is to collect, compile and review data on bird strikes, identify and recommend actions to reduce hazards, recommend changes in operational procedures, prepares informational programs for aircrews, and assist the commander by acting as a point of contact for off-base issues. The BAAF BHWG will submit all recommendations to the Airfield Commander/Manager. Recommendations submitted at the semi-annual (JBER) BHWG will be submitted to the 3rd Wing Commander for approval.

**8-2. BAAF BHWG.** Meetings will be held two times a year prior to the scheduled JBER BHWG. The USDA-WS will provide all weekly management data and any additional information to be presented at the JBER meeting. At minimum, the BHWG will consist of the following personnel: Chairman: SAAO, Airfield Commander/Manager, Airfield Safety Officer (Recorder), Airfield Operations Officer, Air Traffic Control Chief or representative, AASF Safety representative

**8-3. JBER BHWG.** Meetings will be held two times a year. Recommended schedule is an initial meeting in March to focus on the upcoming BASH season and spring migration, and an October meeting to summarize the BASH season and any outstanding issues prior to the next season. Any other meetings will be held as directed by the 3rd Wing Vice Commander if unusual bird or wildlife conditions warrant.

## ACRONYMS AND ABBREVIATIONS

AAF	Army Airfield
AASF	Army Aviation Support Facility
AFM	Air Force Manual
AFPAM	Air Force Pamphlet
AFSO	Airfield Safety Officer
AGL	Above Ground Level
AHAS	Avian Hazard Advisory System
AHP	Army Heliport
AKANG	Alaska Air National Guard
AMA	Airfield Management Activity
AMP	Airfield Mowing Plan
AOA	Airport Operating Area
AOB	Airfield Operations Board
ARTCC	Air Route Traffic Control Center
ASO	Aviation Safety Officer
ATC	Air Traffic Control
ATIS	Automatic Terminal Information Service
AWOS	Automated Weather Observing System
BAM	Bird Avoidance Model
BASH	Bird Aircraft Strike Hazard (also see WASH)
BEZ	Bird Exclusion Zone
BHWG	Bird/Wildlife Hazard Working Group
BSCC	Bird Strike Committee Canada
BSCUSA	Bird Strike Committee USA
BWC	Bird Watch Condition
CATEX	Categorical Exclusion
CEG	Civil Engineer Group
CCTV	Closed Circuit Television
COE	Corps of Engineers, US Army
CONUS	Continental United States
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
FBO	Fixed Base Operator
FCIF	Flight Crew Information File
FLIP	Flight Information Publications
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
ISSA	Inner Service Support Agreement

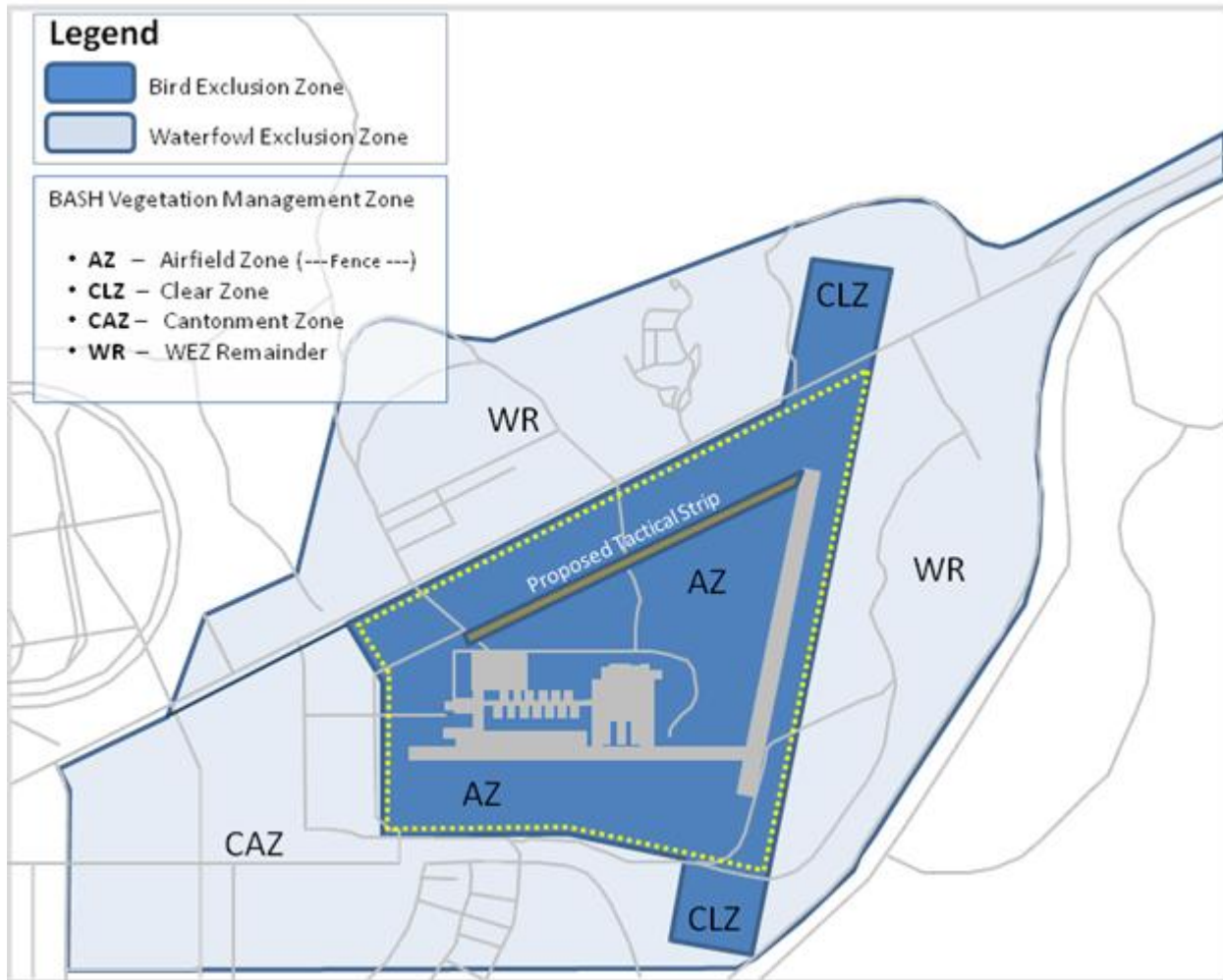
JBER	Joint Base Elmendorf-Richardson
KIAS	Knots Indicated Airspeed
MACOM	Major Command
MOA	Military Operations Area
MSL	Mean Sea Level
NEPA	National Environmental Policy Act
NGB	National Guard Bureau
NOE	Nap-of-the-Earth
NOTAM	Notice to Airmen
OPR	Office of Primary Responsibility
PA	Public Affairs
PIREP	Pilot Report
SAAO	State Army Aviation Officer (also seen as SAO)
SAV	Staff Assistance Visit
SOF	Supervisor of Flying
TRACON	Terminal Radar Approach Control
USDA	United States Department of Agriculture
USDA-WS	United States Department of Agriculture-Wildlife Services
USFWS	United States Fish and Wildlife Service
WASH	Wildlife Aircraft Strike Hazard (also see BASH)
WDDT	Wildlife Detection and Dispersal Team
WEZ	Waterfowl Exclusion Zone
WHA	Wildlife Hazard Assessment
WHWG	Wildlife Hazard Working Group
WHMP	Wildlife Hazard Management Plans

## 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
3 WGI 91-212	Bird and Wildlife Aircraft Strike Hazard (Bash) Program
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 A

### Bird/Waterfowl Exclusion Zones and Vegetation Management Zones



## Appendix B

### 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 1 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 (CBC), the US Biologic Survey's Breeding Bird Survey (BBS), 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.