

**HEADQUARTERS  
1<sup>ST</sup> FIGHTER WING  
JOINT BASE LANGLEY-EUSTIS**



**JOINT BASE LANGLEY-EUSTIS  
BIRD/WILDLIFE AIRCRAFT STRIKE  
HAZARD (BASH) PLAN**

**27 FEB 2017**

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DEPARTMENT OF THE AIR FORCE  
HEADQUARTERS 1ST FIGHTER WING  
JOINT BASE LANGLEY-EUSTIS VA



MEMORANDUM FOR See Distribution (Annex Z)

27 Feb 2017

From: 1FW/SE

SUBJECT: Joint Base Langley-Eustis (JBLE) Bird/Wildlife Aircraft Strike Hazard Plan

1. Attached is the JBLE Bird/Wildlife Aircraft Strike Hazard (BASH) Plan dated 27 FEB 2017. This plan supersedes the JBLE BASH Plan dated 10 Sep 2015.
2. This plan is in operational support of Air Force Instruction 91-202 and is effective for planning purposes on receipt and for implementation when directed by the appropriate authority.
3. Review of this plan shall be conducted 90 days prior to 31 JUL 2019. Should any changes to the plan be required, the document will be staffed accordingly.
4. The 1 FW/SE is the Office of Primary Responsibility for this plan.

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Attachment:  
Joint Base Langley-Eustis BASH Plan

**JBLE BASH PLAN**

**SECURITY INSTRUCTIONS/RECORD OF CHANGES/RECORD OF REVIEW**

1. The title of this plan is JBLE BASH Plan.
2. This document is unclassified. IAW AFI 31-401, *Information Security Program Management* this document is designated "For Official Use Only" and requires no special handling.
3. Reproduction of this document for official use is permitted.
4. The provisions of AFI 10-701, *Operations Security (OPSEC)* have been considered in the development and implementation of this plan.
5. This document was updated to include organization changes and supporting data for the 2017 review process.

**RECORD OF CHANGES**

<i>Change Number</i>	<i>Date</i>	<i>Date Posted</i>	<i>Posted By</i>

**RECORD OF REVIEW**

<i>Reviewed By</i>	<i>Date Reviewed</i>	<i>Remarks</i>

**JBLE BASH PLAN**  
**LIST OF ACRONYMS**

ABW	Air Base Wing
AC	Advisory Circular
AF	Air Force
AFI	Air Force Instruction
AFJPAM	Air Force Joint Pamphlet
AFPAM	Air Force Pamphlet
AFSM	Felker Army Airfield Aviation Safety Manager
AGL	Above Ground Level
AHAS	Avian Hazard Advisory System
AICUZ	Air Installation Compatible Use Zone
AM	Airfield Management
AMOPS	Airfield Management Operations
AMXS	Aircraft Maintenance Squadron
AOR	Area of Responsibility
APHIS	Animal and Plant Health Inspection Service
AR	Army Regulation
ATIS	Airport Terminal Information System
ATC	Air Traffic Control
BAM	Bird Avoidance Model
BASH	Bird/Wildlife Aircraft Strike Hazard
BDT	Bird/Wildlife Dispersal Team
BGEPA	Bald and Golden Eagle Protection Act
BHWG	Bird/Wildlife Hazard Working Group
BRT	BASH Response Team
BWC	Bird Watch Condition
BWG	BASH Working Group
CC	Commander
CED	Civil Engineer Division
CEIE	Civil Engineer Environmental Element
CEO	Civil Engineer Operations
CEOIE	Civil Engineer Entomology

CEPT	Civil Engineer Geospatial
CES	Civil Engineer Squadron
CFR	Code of Federal Regulations
COV	Code of Virginia
CV	Vice Commander
CWA	Clean Water Act
DC	Deputy Commander
DoD	Department of Defense
DODI	Department of Defense Instruction
EOR	End of Runway
EPA	Environmental Protection Agency
ESA	Endangered Species Act
FAA	Federal Aviation Administration
FAAF	Felker Army Airfield
FE	Fort Eustis
FIFRA	Federal Insecticide, Fungicide, and Rodenticide Act
FO	Foreign Object
FOD	Foreign Object Damage
Ft	Feet
FTA	Federal Transit Administration
FW	Fighter Wing
IAW	In Accordance With
ILS	Integrated Landing System
INRMP	Integrated Natural Resource Management Plan
IPMC	Installation Pest Management Coordinator
IPMP	Integrated Pest Management Plan
IPMQAE	Installation Pest Management Plan Quality Assurance Evaluator
JA	Judge Advocate
JBLE	Joint Base Langley-Eustis
JBLEI	Joint Base Langley-Eustis Instruction
KIAS	Knots Indicated Airspeed
LAFB	Langley Air Force Base
MBTA	Migratory Bird Treaty Act

MGR	Felker Army Airfield Manager
MOA	Memorandum of Agreement
MOC	Maintenance Operations Control
MOU	Memorandum of Understanding
MSG	Mission Support Group
MSL	Mean Sea Level
MXG	Maintenance Group
MXQ	Maintenance Quality Assurance
NASA	National Aeronautics and Space Administration
NEPA	National Environmental Policy Act
NOTAM	Notice to Airmen
OG	Operations Group
OGV	Operations Group Standardization/Evaluation
OPR	Office of Primary Responsibility
OPS	Felker Army Airfield Operations
OPSEC	Operations Security
OSAA	Airfield Management
OSAT	Air Traffic Control
OSF/FOD	Operational Support Felker Army Airfield/Foreign Objects and Debris
OSF/MGR	Operational Support Felker Army Airfield/Airfield Manager
OSF/OPS	Operational Support Felker Army Airfield/Operations
OSOS	Scheduling
OSS	Operations Support Squadron
PA	Public Affairs
SAA	Senior Airfield Authority
SAFSO	Squadron Assigned Flying Safety Officers
SAS	Safety Automated System
SE	Safety Office
SEF	Flight Safety
SFS	Security Forces Squadron
SOF	Supervisor of Flying
STAT	Statute
TA	Training Area
U.S.	United States
USA	United States Army

USACE	United States Army Corps of Engineers
USAF	United States Air Force
USC	United States Code
USDA	United States Department of Agriculture
USDA/WS	United States Department of Agriculture Wildlife Services
USFWS	United States Fish and Wildlife Service
VAC	Virginia Administrative Code
VDACS	Virginia Department of Agriculture and Consumer Services
VDGIF	Virginia Department of Game and Inland Fisheries
WHA	Wildlife Hazard Assessment
WHM	Wildlife Hazard Manual
WHMR	Wildlife Hazard Monitoring Report
WMA	Wildlife Management Area
WS	Wildlife Services

## **JBLE BASH PLAN** **SUMMARY**

1. **PURPOSE.** This plan defines responsibilities and prescribes procedures for developing and implementing a BASH prevention program at JBLE. The BASH plan is designed to minimize aircraft exposure to potentially hazardous wildlife strikes during airfield and flying operations at JBLE. The plan specific to each installation are grouped into separate corresponding Annexes. Execution of each plan is dictated by the mission, instruction, and BASH conditions governing each respective airfield.

2. **CONDITION FOR EXECUTION.**

2.1 CCs are responsible for ensuring their units and designated representatives are familiar with their responsibilities in all 633 ABW, 1 FW and 192 FW Plans.

2.2 This plan is based on hazards from indigenous and migratory birds and mammal species. Execution of specific portions of this plan is continuous, while other portions are dictated by hazardous wildlife activity, environmental changes, base development, and land

3. **RESPONSIBILITIES:** The 1 FW/CC has SAA for the JBLE airfields at Langley AFB and Felker AAF as depicted in Figures 1 and 2. The 633 ABW/CC is the JBLE Installation Commander and is responsible for providing installation support to the 1 FW. Management of the JBLE airfields, air traffic patterns, and associated lands and facilities is a shared responsibility between the 1 FW/CC and 633 ABW/CC.

3.1 **SAA.** The 1 FW/CC is responsible for the control, operations, and maintenance of the JBLE airfields to include the runways, helicopter pads, taxiways, parking-ramps, navigational aids, as well as the land and facilities whose proximity affects airfield operations. The SAA controls flight line access and is responsible for the safety of all operations on the JBLE airfields and the airspace above the SAA boundary within the confines of the associated Class-D Airspace as defined per FAA regulations. The 1 FW/CC will develop and coordinate airfield and airspace improvement plans with the 633 ABW/CC for inclusion into JBLE's overall improvement plan.

3.2 The 1/192 FW/SEF will manage the flight safety programs at LAFB. The 1 OSS/FSA will manage the flight safety programs at Felker Army Airfield.

3.3 The USDA manages the 1 FW's BASH programs both at LAFB and Felker AAF. USDA will advise the 633 CES and 733 CES when BASH activities will occur outside the SAA area of responsibility (AOR), time permitting.

3.4 The 633 CES and 733 CES manage the Installation's natural resources.



**Figure 1**  
**SAA Boundary Line, Langley AFB**



**Figure 2**  
**SAA Boundary Line, Felker AAF**

#### 4. OPERATIONS TO BE CONDUCTED.

##### 4.1. Specific operations include:

4.1.1. The establishment of a BASH working group.

4.1.2. Procedures for reporting wildlife-aircraft strike incidents and hazardous wildlife activity.

4.1.3. Provisions to provide information to all assigned aircrews and transient aircrews on hazardous wildlife activity and procedures for avoidance.

4.1.4. Taking active measures to monitor and control hazardous wildlife within the local airspace and airfield environments.

4.1.5. Actions to identify, eliminate, mitigate, and prevent habitats that may attract hazardous wildlife to the airfield and within the local airspace.

5. KEY ASSUMPTIONS. Sufficient time and resources will be available for specific organization tasks and responsibilities outlined in this plan.

#### 6. OPERATIONAL CONSTRAINTS.

6.1. Wildlife strikes can never be eliminated; but an aggressive, well-planned program developed on the basis of hazardous wildlife behavior, habitat, and the base mission may limit the potential for strikes to occur. Successful implementation of this plan requires participation of well informed and trained individuals assigned to specific tasks and responsibilities from multiple units. This plan is based on the principles of best practice for integrated wildlife damage management, in which a variety of management techniques including wildlife hazard monitoring, wildlife strike avoidance, habitat modification and prevention, harassment, alteration of human activities, and legal take are applied simultaneously.

6.2. Access to the runway environment may be limited due to time-critical recovery of aircraft.

6.3. Prior to implementing control actions involving wildlife and their habitats, the legal status must be determined and required permits must be obtained for the target species or habitat.

6.4. BASH must be included as a general section and the plan itself as an attachment to the INRMP to comply with the provisions set forth by the NEPA. Alterations of wetlands, soils, or forested areas to support BASH plan requirements may require separate NEPA documentation and related permits.

6.5. Required time and effort necessary to maintain a safe airdrome will depend upon the severity of the wildlife strike hazard and how well base personnel are prepared to reduce these hazards.

6.6. Funding may limit specific organization tasks and responsibilities outlined in this plan.

7. **SUPPORTING PLANS.** This plan is supported by the JBLE General Base Plan, Mishap Response Plans (MRPs), Integrated Natural Resource Management Plan (INRMPs), Integrated Pest Management Plans, JBLE Stormwater Management Plans, Air Installation Compatibility Use Zone, and Hampton-Langley Joint Land Use Study. It is essential that these plans must be mutually supportive and not in conflict.

**JBLE BASH PLAN**  
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**JBLE BASH PLAN**  
**BASIC PLAN**

1. The JBLE BASH Plan covers the airfields at LAFB and FAAF. Despite their proximity, each airfield has its own unique concerns and is covered in a separate annex to this plan.

2. SPECIFIC ANNEXES.

2.1. Annex A contains the LAFB BASH Plan and related Appendices (1-9) for LAFB.

2.2. Annex B contains the FE BASH Plan and related Appendices (1-9) for FAAF.

**ANNEX A TO JBLE BASH PLAN**  
**LAFB BASH PLAN**

1. References.

- (a) The USAF Mishap Prevention Program (AFI 91-202)
- (b) The USAF Safety Investigations and Reports (AFI 91-204)
- (c) The USAF Bird/Wildlife Strike Management Techniques (AFPAM 91-212)
- (d) The USAF Integrated Natural Resources Management (AFI 32-7064)
- (e) The USAF Airfield and Heliport Design (AFJPAM 32-8013)
- (f) The FAA Wildlife Hazard Management Manual (FAA/WHM)
- (g) Hazardous Wildlife Attractants On or Near Airports (AC 150/5200-33B)

2. Situation.

2.1. A significant threat exists at LAFB and its vicinity due to indigenous and migratory wildlife species. Since 1985, 504 wildlife strikes have occurred to 1 FW aircraft which included 8 reportable mishap events totaling over \$3 million in aircraft parts and labor. The airfield is encompassed with and surrounded by natural communities and ecosystems that support various populations of wildlife including waterfowl, raptors, gulls, wading birds, seabirds, shorebirds, blackbirds, columbids, larks, and aerialist as well as various mammalian species including white-tailed deer, red fox, and coyotes. Daily and seasonal wildlife movements create a range of conditions that present a threat to flight safety. Throughout the year, an estimated 30,000 or more birds and mammals frequent the airfield and surrounding habitats. Wildlife hazards associated with airfield grassland and wetland habitats; combined with the base's geographic location and surrounding wildlife attractants, present a formidable BASH risk for safe flying operations.

2.2. Topography at LAFB is generally level with a maximum elevation of 11 feet above sea level. Current drainage schemes and the high water table allow water to collect in low-lying areas throughout the airfield. The base is encompassed with various wetland habitats that include 300 acres that are forested, 450 acres of salt marsh and 100 acres of other wetlands. North of the airfield, Eaglewood Golf Course contains seven freshwater ponds totaling 10 acres and 320 acres of fairways and greens. Forest woodlots and ornamental trees on and surrounding the airfield provide a wide range of food and cover for hazardous wildlife species.

2.3. Compounding the attraction is LAFB's geographic location. The airfield is surrounded by the Back River situated 2.5 miles from the mouth of the Chesapeake Bay and along the Atlantic Flyway where several million birds traverse during the spring/fall migration periods. Surrounding the airfield are several natural areas that include: Plum Tree Island National Wildlife Refuge in Poquoson and Grandview Natural Preserve, Blue Bird Gap Farm and

Sandy Bottom Nature Park in Hampton as well as several miles of undeveloped shoreline along the Chesapeake Bay. Bethel Landfill and The Hamptons Golf Course include more hazardous wildlife attractants located approximately 3.5 miles west of the airfield and 20 degrees north of the runway centerline.

#### 2.4. Phase I and Phase II BASH Periods:

2.4.1. BASH Phase I is the time period during the year when little to no bird migration activity occurs. BASH Phase I is in effect from 01 December – 31 January and 01 April – 30 September. During BASH Phase I, BASH mitigation actions and activities will be per this plan and applicable BASH guidance which will be commensurate with the observed wildlife activity and inputs from 1 FW/SEF and USDA/WS. Normal flight operations are expected during this Phase I. OSAA will ensure Phase I and II periods and any associated hazards are published in the IFR Supplement.

2.4.2. BASH Phase II is the time period during the year when peak bird migration activity occurs. BASH Phase II is in effect from 01 February- 31 March and 01 October-30 November. During BASH Phase II, BASH mitigation actions and activities will include Phase I actions and activities plus adhere to the following additional restrictions. Schedulers should not plan flights during the period of peak bird activity (one hour before to one hour after sunrise/sunset) due to the higher inherent BASH risk, regardless of BWC. 1 FW/SEF & USDA/WS will be responsible for notifying Airfield Operations and the Supervisor of Flying (SOF) during this time period to increase their level of awareness. In addition, 1 FW/SEF and USDA/WS will make every effort to increase the mitigation techniques to help reduce observed threats during Phase II. This may include but not be limited to an increased presence on the airfield during active fly windows, use of seasonal methods and tools such as nest box traps for starlings, Canada goose nest management, raptor trapping, and increased mammal trapping, etc., as needed.

2.4.3. During Phase II, the highest levels of daily wildlife activity normally occur +/- one hour of sunrise/sunset as birds move to and from their roosts. This applies to airfield wildlife activity as well as wildlife activity at altitude to/from the airspace. Again, flight operations should be avoided during these periods unless mission essential.- A risk analysis shall be completed by the 1 or 192 OG/CC to determine potential risks and develop mitigation measures if operations are conducted during these peak periods. These measures will also maintain zero tolerance towards large free-roaming animals on or adjacent to the aircraft movement area (free roaming animals are, but not limited to, deer, canines, geese, vultures, eagles, etc...).

2.4.4. The BASH Phase I and II designation may be affected and adjusted slightly from year to year depending on seasonal weather changes and how they affect actual migratory bird movement. 1 OSS/OSAA will ensure Phase I and II periods, and any associated hazards, are published in the IFR Supplement. Adjustments may be made based on assessments from wildlife surveys and by monitoring wildlife activity, weather, and habitat conditions during routine airfield operations. USDA/WS will make recommendations and mitigate threats based on these assessments with the appropriate methods as needed.

2.5. While this plan establishes procedures to minimize BASH, no single solution will eliminate the risk. This plan is based on an integrated-multidiscipline wildlife damage management approach that involves four primary components: monitoring and research, habitat modification and prevention, aircraft avoidance, and wildlife hazard response. Each component requires the cooperative and proactive efforts of multiple organizations.

### 3. Execution.

3.1. The 1 FW/CC, or 192 FW/CC during 192 FW flying operations, directs execution of this plan.

3.2. The 1FW/SEF is the OPR for the management of this plan.

3.3. The BWG is responsible for implementing this plan, as it relates to each organization's tasks and responsibilities. The BWG will monitor activities, status, and provide recommendations to the 1 FW/CV for approval.

3.4. The chairperson of the BWG will be the 1 FW/CV. At a minimum, the group will consist of representatives from flight safety, airfield management, base operations, air traffic control, civil engineering, and aircraft maintenance. Consultation from a wildlife damage biologist or natural resources manager is recommended. Section 7.3.1.5.4 of AFI 91-202 strongly recommends that a dedicated wildlife hazard management specialist be retained on staff. Each organization and associated agencies have responsibilities outlined in this plan and must incorporate them into their programs.

3.5. BWG meetings will be held quarterly as conditions necessitate or at the discretion of the BWG chairman.

### 4. Concept of Operations.

4.1. This plan and its annexes address the responsibilities, policies, and procedures to reduce BASH on and near JBLE. This plan includes 9 components, each of which is a separate appendix in this document. The appendix categories include:

4.1.1. **(Appendix 1, Tasked Organizations)** The organizations that provide administrative, technical, and operational support to this plan.

4.1.2. **(Appendix 2, Tasks and Responsibilities)** The organizations that have the authority and responsibility for implementing specific portions of this plan.

4.1.3. **(Appendix 3, Bird Hazard Warning System)** Explanation of the BASH warning system and establishing procedures for its operations.

4.1.4. **(Appendix 4, Reporting Procedures)** Explanation of and providing guidance for documenting wildlife strike mishaps, wildlife hazard response, and a self-inspection checklist.

4.1.5. (**Appendix 5, Habitat Management**) Recommendations to mitigate habitat attractive to hazardous wildlife species.

4.1.6. (**Appendix 6, Hazardous Wildlife**) Identifying and providing recommendations to mitigate hazardous wildlife species common to JBLE.

4.1.7. (**Appendix 7, Regulatory Requirements**) Requirements for and, where applicable, copies of local, state, and federal wildlife control permits.

4.1.8. (**Appendix 8, Interagency Agreement with Wildlife Services**) Outlining the interagency agreement between LAFB and USDA/WS for assistance in executing this plan.

4.1.9. (**Appendix 9, Maps and Charts**) Providing maps and charts related to this plan.

**APPENDIX 1 TO ANNEX A TO JBLE BASH PLAN**  
**TASKED ORGANIZATIONS**

Organizations

633 CES/CC  
633 CES/CEIE  
633 CES/CEO  
633 CES/CEOIE  
633 CES/CEPT  
633 ABW/PA  
1 FW/CC  
1 FW/CV  
1 FW/SEF  
1 OG/CC  
1 OG/OGV  
1 OSS/CC  
1 OSS/OSAA  
1 OSS/OSAT  
1 MXG/CC  
1 MXG/MXQ  
1 AMXS  
192 FW/CC  
192 OG/CC  
192 MXG/CC  
192 MXG/MXQ  
USDA/WS

Local off-base assistance

USFWS  
Migratory Bird Permit Office  
P.O. Box 779  
Hadley, MA 01035-0779  
(413) 253-8673

USFWS  
Virginia Field Office  
6669 Short Lane  
Gloucester, VA 23061  
(804) 693-6694

USDA/WS  
Virginia State Office  
P.O. Box 130  
Moseley, VA 21312  
(804) 739-7739

VDGIF  
Region 1 Office  
3801 John Tyler Memorial Highway  
Charles City, VA 23030  
(804) 289-6580

**APPENDIX 2 TO ANNEX A TO JBLE BASH PLAN**  
**TASKS AND RESPONSIBILITIES**

1. The 1 FW/CC: Directs and funds execution of this plan.
2. The 1 FW/CV:
  - 2.1. Chairs BWG meetings.
  - 2.2. Approves BASH mitigation recommendations provided by the BWG.
3. 1 FW/SEF: Works with USDA/WS to provide direct support in the following areas:
  - 3.1. Is the OPR for the management and updating of this plan.
  - 3.2. Monitors base-wide compliance with AFPAM 91-212.
  - 3.3. Maintains an appointment letter designating organization representatives to the BWG.
  - 3.4. Reviews proposed land use changes, construction plans, and mitigation projects for environmental conditions that may increase BASH potential (see Appendix 5 of this Annex).
  - 3.5. Reports on BASH to include recommendations and actions in the agenda and minutes of the BWG meetings.
  - 3.6. Disseminates BASH data to the BWG and flying units.
  - 3.7. Provides the BWG with current BASH guidance from higher headquarters, safety center, and other agencies, as necessary.
  - 3.8. Ensures procedures are established for wildlife-aircraft strike reporting, remains collection, and species identification. During 192 FW flying window, USDA/WS and 192D SEF are the primary responders for collecting wildlife remains from aircraft. Even the smallest fragment of feather, hair, or blood can provide enough information for a positive identification (see Appendix 4 of this Annex).
  - 3.9. Establishes and maintains a continuity folder that contains pertinent BASH information and guidance to assure continuity of knowledge with personnel turnover.
  - 3.10. Establishes a BASH awareness program in conjunction with squadron flying safety officers, to include films, posters, maps and information on local wildlife hazards and reporting procedures.
  - 3.11. Ensures each wildlife strike is analyzed, along with previous data, for unacceptable trends and possible corrective action(s). Includes trend analysis of all wildlife strikes in flight safety meetings, and BWG meetings.
  - 3.12. In conjunction with AM Operations, ensures an airfield BASH inspection and response team is developed and adequately equipped and trained.

- 3.13. Ensures BASH training programs and opportunities are made available to BWG representatives and organizations.
- 3.14. Ensures state and federal wildlife permits required for the removal of protected wildlife species are acquired and current (See Appendix 7 of this Annex).
- 3.15. Appoints the 1 FW/SEF representative(s) to the BWG.
- 3.16. Attends quarterly BWG meetings.
- 3.17. Retains operational control of FAAF's USDA/WS personnel.
4. The USDA/WS Senior Representative
  - 4.1. Provide support IAW the Interagency Agreement between the 1FW and USDA-APHIS Wildlife Services
  - 4.2. Retains administrative control of USDA/WS assigned to FAAF.
5. The 633 ABW/PA:
  - 5.1. As required, provides a public information program to inform base personnel, dependents, and the general public on BASH activities and the hazards of uncontrolled wildlife on flight safety.
  - 5.2. Provides photographic services to document wildlife strikes and related activities, as required.
6. The 1 OG/CC and/or the 192 OG/CC:
  - 6.1. Issues specific guidance to the SOF concerning actions required for implementing this plan.
  - 6.2. Mission permitting, makes operational changes to avoid areas and times of known hazardous bird concentrations. Considers the following during periods of increased bird activity:
    - 6.2.1. Raises the traffic pattern altitude.
    - 6.2.2. Changes the traffic pattern direction to avoid bird concentrations.
    - 6.2.3. Avoids takeoffs/landings one hour before and after sunrise and sunset during BASH Phase II, or when there is a known increase in hazardous bird activity.
    - 6.2.4. Limits or prohibits formation takeoffs and landings.

- 6.2.5. Directs full-stop landings.
- 6.3. Ensures personnel report all discovered wildlife strikes on aircraft to the 1/192 MXG/MXQ, MOC, and the 1 FW/SEF.
- 6.4. Ensures personnel report all hazardous wildlife activity on the airfield directly to the SOF, AM Operations, or USDA/WS.
- 6.5. Appoints the 1 OG and/or the 192 OG representative(s) to the BWG.
- 6.6. Attends quarterly BWG meetings.
- 6.7. Ensures organization compliance of this plan.
- 7. The 1/192 OG/OGV:
  - 7.1. Reviews the BAM (<http://www.usahas.com/bam/>) for BASH potential with the 1 OG/CC on all proposed new training areas or changes to existing areas. Real-time access to evaluate bird strike risk for published routes, ranges, operating areas and airfields can be reviewed on the AHAS located at <http://www.usahas.com>. NOTE: USDA/WS is available for technical assistance in this area.
  - 7.2. Issues BASH Alerts at the start of each Phase II BASH period to emphasize the beginning of the bird migration period. NOTE: USDA/WS is available for technical assistance in this area.
  - 7.3. Issues specific guidance for aircrews and the SOF on procedures to be followed under BWCs (see Appendix 3 of this Annex).
  - 7.4. Ensures all the 1 OG/OGV and the 192 OG/OGV personnel receive AHAS and BAM training as part of their upgrade.
  - 7.5. Attends quarterly BWG meetings.
  - 7.6. Ensures all SOF personnel receive BASH training as part of their upgrade.
- 8. The 1 OSS/CC:
  - 8.1. Appoints the 1 OSS representative(s) to the BWG.
  - 8.2. Attends quarterly BWG meetings.
  - 8.3. Ensures organization compliance of this plan.

9. The SOF:

9.1. Operates as overall coordinating agent for the delay or diversion of controlled aircraft based on hazardous wildlife activity.

9.2. Declares, disseminates, and terminates BWC at LAFB, except as outlined in Appendix 3 of this Annex.

9.3. Coordinates with Tower Watch Supervisor to broadcast current MODERATE or SEVERE BWC to all aircraft on ATIS. See Appendix 3 for description of BWC and associated flight restrictions.

9.4. Establishes direct communications with AM Operations or USDA/WS anytime BWC is increased to MODERATE or SEVERE, so information on hazardous wildlife movement can be instantaneously disseminated.

9.5. Disapproves requests for other aircraft to train in the local flying area when BWC is MODERATE or SEVERE.

9.6. Ensures 1 FW/SEF is notified any time a wildlife strike incident is reported.

10. The 1 OSS/OSAA:

10.1. Per Appendix 3 of this Annex, the authority to declare BWC is vested with the 1 OG/CC through the SOF during normal flight operations. During all other periods, the 1 OSS/OSAA, or his or her designated representative, is the declaring authority.

10.2. Bases the declaration of a BWC on:

10.2.1. Information relayed by airborne aircraft.

10.2.2. Observations made by and relayed to AM Operations or USDA/WS control tower and/or transient alert personnel.

10.2.3. Observations made by AM Operations, the 1 FW/SEF, or USDA/WS personnel.

NOTE: The authority that declared the BWC (SOF or the 1 OSS/OSAA) will also downgrade or cancel BWC, commensurate with updated information.

10.3. Maintains airfield habitat consistent with runway lateral and approach zone management criteria per AFMAN 32-1123(I). Habitat modification or prevention to reduce BASH beyond the 1000' distance criterion is desired as per Appendix 5 of this Annex.

10.4. Reviews proposed land use changes, construction plans, and mitigation projects for environmental conditions that may increase BASH potential (see Appendix 5 of this Annex).

NOTE: USDA/WS is available for technical assistance in this area.

10.5. Reviews proposals involving land-use changes within the 10,000 ft and 5-mile critical zones of the airfield to mitigate wildlife attractants (see Appendix 5 of this Annex). NOTE: USDA/WS is available for technical assistance in this area.

10.6. Responsible for the operational use, maintenance, and repair of the Scare Wars Remote Bird Deterrent System.

10.7. Appoints a BRT in absence of and/or to supplement control operations conducted by USDA/WS as per Appendix 7 of this Annex. The BRT will consist primarily of personnel from AM Operations and USDA/WS with assistance from 1 FW/SEF when necessary. A BRT will be activated on request by tower or anytime wildlife activity creates conditions hazardous to flying operations. Personnel will communicate directly with the SOF during BWC MODERATE or SEVERE to assess and reduce hazardous bird activity on the airfield.

10.8. Ensures the BRT:

10.8.1. Notifies tower of BWCs for broadcast on ATIS. Posts local BWCs at AM Operations.

10.8.2. Conducts airfield inspections daily to document and take action to disperse hazardous wildlife activity. Hazardous wildlife (see Appendix 6 of this Annex) and/or responded to must be documented, filed, and a copy delivered to USDA/WS at the end of each month.

10.8.3. Maintain wildlife hazard management supplies and resources in vehicles including binoculars, pyrotechnics, distress calls, remote for Scare Wars Bird Deterrent System, and other wildlife control equipment.

10.8.4. Personnel are properly trained in the safe use and handling of pyrotechnics, propane cannons, and identification of hazardous wildlife.

10.8.5. Animal carcasses/FOs found within 100 ft of aircraft operating pavements must be removed promptly from the airfield and reported as an aircraft strike. Forward all wildlife remains to 1 FW/SEF for investigation.

10.8.6. Notifies Security Forces and ATC when pyrotechnics and/or firearms will be used on the airfield.

10.9. Attends quarterly BWG meetings.

11. The 1 OSS/OSAT:

11.1. Langley tower personnel will support the SOF in determining the BWC, to include radar data, and notifying all necessary personnel of the current BWC.

11.2. Notifies AM Operations or USDA/WS when hazardous wildlife is observed on or near the airfield.

11.3. Provides AM Operations and USDA/WS access to the runway under BWC MODERATE, SEVERE, or as required.

11.4. Attends quarterly BWG meetings.

12. The 1 OSS/OSOS:

12.1. When not mission critical, avoids scheduling sorties during periods of peak bird activity (one hour before to one hour after sunrise/sunset) while in the BASH Phase II period.

12.2. Attends quarterly BWG meetings.

13. The SAFSO:

13.1. Ensures aircrew and maintenance personnel report all discovered wildlife aircraft strikes to the 1/192 MXG/MXQ, MOC, and the 1 FW/SEF.

13.2. Ensures wildlife remains are collected, preserved, and sent to the 1 FW/SEF for species identification. Even the smallest fragment of feather, hair, or blood can provide enough information for a positive identification (see Appendix 4 of this Annex).

13.3. Ensures personnel report all hazardous wildlife activity on the airfield directly to the SOF, MOC, and AM Operations.

13.4. Obtains and posts current wildlife activity data and ensures it is readily available for briefing aircrews. NOTE: USDA/WS is available for technical assistance in this area.

13.5. Ensures that adequate supplies of wildlife strike report forms (AF Form 853) are readily available for aircrews. NOTE: AF Form 853 is available and filed at the 1 FW/SEF.

13.6. Briefs aircrews on seasonal wildlife hazards. Movies, news articles, and other information will be used, as appropriate, to maintain awareness. NOTE: USDA/WS is available for technical assistance in this area.

13.7. Attends quarterly BWG meetings.

14. The 1 MXG/CC and/or the 192 MXG/CC:

14.1. Appoints the 1/192 MXG representative(s) to the BWG.

14.2. Attends quarterly BWG meetings.

14.3. Ensures organization compliance of this plan.

15. The 1/192 MXG/MXQ:

15.1. Ensures the 1/192 MXG personnel report all discovered wildlife strikes on aircraft to the 1 MXQ/MXQ, MOC, and the 1 FW/SEF.

15.2. Ensures wildlife-strike incident reports are provided to the 1 FW/SEF.

15.3. Attends quarterly BWG meetings.

16. The 1/192 AMXS:

16.1. In absence of the 1 FW/SEF, the Production Superintendent ensures wildlife remains are collected, preserved, and provided to the 1 FW/SEF for species identification. Even the smallest fragment of feather, hair, or blood can provide enough information for a positive identification (see Appendix 4 of this Annex).

16.2. Ensures wildlife strike NOTAMs, BASH awareness posters, and selected publications are posted or disseminated throughout the squadron.

17. The 633 CES/CC:

17.1. Appoints the 633 CES representative(s) to the BWG.

17.2. Attends quarterly BWG meetings.

17.3. Ensures organization compliance of this plan.

18. The 633 CES/CEIE:

18.1. Ensures the LAFB INRMP and other environmental plans are mutually supportive and not in conflict with this plan and the requirements of AFPAM 91-212. NOTE: Updates or changes to the LAFB INRMP must be reviewed by the BWG and 1 FW/SE.

18.2. Ensures this plan and other BASH management actions are implemented IAW Federal and State regulations for protected wildlife and habitats (see Appendix 7 of this Annex). NOTE: USDA/WS is available for technical assistance in this area.

18.3. Incorporates specific BASH mitigation projects into the management goals and objectives section of the LAFB INRMP. NOTE: USDA/WS is available for technical assistance in this area.

18.4. Reviews proposed on-and off-base land-use changes, construction plans, and mitigation projects for environmental conditions that may increase BASH potential (see Appendix 5 to this Annex). NOTE: USDA/WS is available for technical assistance in this area.

18.5. Provides information on migratory, local, and seasonal wildlife hazard activities to the BWG through contact with local, state, and/or federal wildlife agencies (see Appendix 6 of this Annex). NOTE: USDA/WS is available for technical assistance in this area.

18.6. Advocates and develops cooperative agreements with neighboring entities whose development projects could potentially attract hazardous wildlife within 5-miles of the approach departure corridors. NOTE: USDA/WS is available for technical assistance in this area and to reference the Hampton-Langley Joint Land Use Study.

18.7. Attends quarterly BWG meetings.

19. The 633 CES/CEO:

19.1. Ensures airfield habitat is maintained consistent with runway lateral and approach zone management criteria per AFMAN 32-1123(I). Habitat modification or prevention to reduce BASH beyond the 1000' distance criterion is desired as per Appendix 5 of this Annex.

19.2. Per Appendix 5 of this Annex, incorporates habitat management practices that will mitigate the attraction to hazardous wildlife. Habitat management efforts will be monitored carefully to ensure that they reduce wildlife hazards and do not create new attractions for different wildlife. NOTE: Completion of specific habitat modification and prevention projects is dependent on available funding and manpower resources.

20. The 633 CES/CEOIE:

20.1. Provides recommendations and develops work plans to control pest (invertebrates and rodents) populations on the airfield (see Appendix 6 to this Annex). NOTE: USDA/WS is available for technical assistance in this area.

20.2. As part of the LAFB IPMP, periodically surveys and reduces pest species when required. Pesticides and traps can reduce invertebrate and rodent populations. Only EPA approved pesticides are authorized, and they must be used strictly according to label instructions. NOTE: USDA/WS is available for assistance in this area.

20.3. Attends quarterly BASH meetings.

21. The 633 CES/CEPT:

21.1. Provides geographic information support to the BWG.

21.2. Generates and maintains BASH map products, as required (Appendix 9, Tab A)

**APPENDIX 3 TO ANNEX A TO JBLE BASH PLAN**  
**BIRD HAZARD WARNING SYSTEM**

1. Reference:

(a) AFI 91-202

2. General. This appendix outlines procedures to use for the immediate exchange of information between ground agencies and aircrews concerning the existence and location of hazardous wildlife activity.

3. Terminology. Bird Watch Condition (BWC) codes will be used for rapid communications to disseminate hazardous wildlife activity information, implement unit operational procedures, and give bird and mammal locations with the condition code. BWC codes are based on observations of local airfield wildlife activity and are independent of Bird Avoidance Model (BAM) or (Avian Hazard Advisory System) risk hazard levels. BWC is determined using a variety of factors including but not limited to: physical size of individual birds, size of bird flocks, behavior of birds in relation to the runway area, and the ability to mitigate the risks associated with birds.

3.1. BWC SEVERE:

3.1.1. Wildlife activity on or immediately above the active runway or other specific location representing high potential for strikes. For example, wildlife are unresponsive to harassment techniques and will not leave the runway area which could be a few large birds towering near the runway or a large number of small birds loafing/foraging on the airfield during flight operations which would have a high probability for a strike. Supervision and aircrews must thoroughly evaluate mission need before conducting operations in areas under condition SEVERE.

3.1.2. 1/192 FW aircraft will not normally conduct flight operations (takeoffs, landings, and approaches) in an area declared severe.

3.1.3. Airborne aircraft will delay departure/arrival or divert to an alternate until the condition is downgraded.

3.1.4. Deviations will require the 1 OG/CC (or higher) approval.

3.1.5. If landings are directed, fly single-ship, straight-ins to a full-stop landing.

3.1.6. AM Ops and USDA/WS will provide rapid response to the airfield and implement control procedures to engage hazardous wildlife to reduce BWC to MODERATE or LOW.

3.2. BWC MODERATE:

3.2.1. Wildlife activity near the active runway or other specific location representing increased potential for strikes. For example, one or many groups of small birds flying across the runway, or one large bird loafing/towering in the runway resulting in a

3.2.2. potential for a strike. BWC Moderate requires increased vigilance by all agencies and supervisors and caution by aircrews.

3.2.3. Initial takeoff or final landing is allowed if departure or arrival routes avoid identified bird activity.

3.2.4. The necessity to conduct multiple approaches should be seriously considered before conducting such operations.

3.2.5. Formation takeoffs, approaches (except chase formations) and landings are not authorized.

3.2.6. AM Ops and USDA/WS will provide rapid response to the airfield and implement control procedures to engage hazardous wildlife to reduce BWC to MODERATE or LOW.

3.3. BWC LOW: Wildlife activity on and around the airfield representing low probability for a wildlife strike incident during normal flight operations.

#### 4. Authority.

4.1. The 1 OG/CC, through the SOF, is the authority to declare a BWC during normal flight operations.

4.2. The 1 OSS/OSAA, or his or her designated representative, is the declaring authority during all other periods. This person will declare conditions based on ground observations, pilot reports, tower observations, etc.

#### 5. Communications. Disseminate BWC by the following means:

5.1. During periods of flight operations, BWC other than LOW at LAFB will be included in the hourly ATIS information message. When the SOF declares BWC MODERATE or SEVERE they will notify the 1 OSS/OSAT, AM Operations, and the 1FW/SEF. AM Operations personnel will post the BWC for aircrew personnel, and notify all stations of the change in conditions.

5.2. During periods of non-flying operations, the 1 OSS/OSAA, or his or her designee, will declare the BWC. Upon declaration of a BWC other than LOW, AM Operations personnel will notify the Command Post and the 1 OSS/OSAT. They will also ensure bird watch information is posted, as required.

5.3. The primary means of transmitting BWC will be via ATIS. However, under BWC MODERATE or SEVERE, LAFB tower will verify that all inbound aircrews are aware of the BWC and will comply with the provisions of paragraph 2 above.

5.4. SOF will notify the 1 OG/CC of bird conditions as needed.

#### 6. Aircrew Responsibilities and Procedures.

6.1. Aircrews should review the AHAS and BAM during BASH Phase II period and prior to conducting low-level training missions to determine the relative BASH potential. NOTE: The AHAS and BAM avoidance tools are available at <http://www.usahas.com/>.

6.2. Aircrews experiencing a wildlife strike should abort the mission when possible. While engine ingestion or a windscreen strike may readily be apparent from the cockpit, the damage from many fuselage, wing, tail, or random strikes cannot be adequately assessed. Continuing a mission may cause greater structural damage and a serious in-flight emergency situation later.

6.3. If an aircrew observes or encounters any wildlife activity while in flight which could constitute a hazard, the aircrew will contact the control tower, so that the observed bird activity can be passed on to the SOF. The following information is necessary:

6.3.1. Call sign.

6.3.2. Location.

6.3.3. Altitude.

6.3.4. Time of sighting.

6.3.5. Type of wildlife (if known).

6.3.6. Approximate number of wildlife hazards.

6.3.7. Behavior of wildlife.

6.4. This information should be forwarded to the 1 FW/SEF or USDA/WS for trend analysis. Additional direction to all pilots is provided below based upon the coded BWCs and the location.

## 7. BWC Changes.

7.1. Once the SOF or the 1 OSS/OSAA has declared a BWC, it is their responsibility to cancel, downgrade, or upgrade the condition commensurate with updated information.

7.2. In the absence of the SOF, ATC personnel may recommend to the 1 OSS/OSAA, or his or her designated representative, a change to the BWC when the observed conditions change.

## **APPENDIX 4 TO ANNEX A TO JBLE BASH PLAN** **REPORTING PROCEDURES**

### 1. Reference:

- (a) AFI 91-204.
- (b) AFPAM 91-212.
- (c) AFMAN 91-223.

2. General. This chapter outlines the procedures and forms required to report wildlife-strike mishaps, hazardous wildlife activity, and program checklists.

### 3. Bird/Wildlife Aircraft Strike Reporting

3.1. IAW AFMAN 91-223, paragraphs 1.3, 2.8, and 1.5, all bird/wildlife strikes (damaging and non-damaging) are reported by using the AFSAS located at <https://afsas.safety.af.mil>. AFSAS replaces all other methods of reporting wildlife aircraft collisions.

3.2. All bird/wildlife aircraft strikes (damaging and non-damaging) and related wildlife FOD incidents (animal remains found within 100 ft from aircraft operating pavement) must be documented using AF Form 853, AF Bird Strike Report, and submitted to the 1 FW/SEF. NOTE: AF Form 853 is available and filed at the 1 FW/SEF.

3.3. The 1 FW/SEF will compile all reported wildlife strike data and submit electronically into the AFSAS program IAW AFI 91-202.

3.4. IAW paragraph 4, 1 FW/SEF must report all strikes to 1 FW owned aircraft regardless of the geographic location of the strikes. For strikes occurring at airfields other than home base, the incident will be reported IAW AFI 91-202 and a copy of the report sent to the flight safety office of the installation at which the strike occurred.

3.5. IAW paragraph 4, Damaging Wildlife Strike Report: Report bird strikes that cause reportable aircraft damage to appropriate agencies in message format per paragraph 4. Include the following information in paragraph 7 of the message:

- 3.5.1. Landing lights: on or off.
- 3.5.2. Strobe lights: on, off, or not applicable (if not installed).
- 3.5.3. Phase of flight: climb, touch-and-go, low level, etc.
- 3.5.4. Aircraft speed: (KIAS).
- 3.5.5. Altitude: (AGL and MSL).
- 3.5.6. Flight path in relation to clouds: above, below, between layers, etc.

- 3.5.7. Species and number of birds.
- 3.5.8. Impact point on aircraft.
- 3.5.9. Pilot warned of bird hazard: yes or no.
- 3.5.10. Low-level route number: (if applicable).
- 3.5.11. Wildlife strike resulted in fire: yes or no.
- 3.5.12. Geographic coordinates: (latitude and longitude).
- 3.5.13. Remarks.

#### 4. Bird/Wildlife Strike Remains Collection.

4.1. Do not discount the possibility of a positive identification due to the lack of a complete feather. Using high-powered electron microscopy, even the smallest fragment of a feather can provide positive identification. Forward any bird or animal remains (feathers, beaks, feet, etc.) taken from aircraft or airfield to the 1 FW/SEF.

4.2. Basic safety measures and good hygiene when collecting material is encouraged. Use latex gloves, face mask and eye protection; always thoroughly wash hands after handling remains.

4.3. The 1 FW/SEF will make available and maintain bird/wildlife aircraft strike collecting kits. Bird/wildlife aircraft strike collecting kits will include the following:

- 4.3.1. Re-sealable plastic bags.
- 4.3.2. Permanent black marker.
- 4.3.3. Alcohol wipes.
- 4.3.4. Sterile applicators.
- 4.3.5. FTA micro-card.
- 4.3.6. Tweezers.
- 4.3.7. Latex gloves.
- 4.3.8. Protective eyewear.
- 4.3.9. Face mask.
- 4.3.10. Hand sanitizer.

4.4. Pluck a variety of feather samples (i.e. breast, back, wing, and tail feather with a variety of color patterns) from whole carcass or partial bird remains. Do not cut feathers from the bird or use sticky substances when collecting samples. Dry strike remains and place samples in a re-sealable plastic bag for shipment.

4.5. Scrape blood and/or tissue samples using a sterile applicator, coffee filter, or tweezers. Apply fresh blood or tissue samples to an FTA card if available. Use alcohol pads to loosen remains that are dried to the aircraft surface. Consult aircraft manuals to make sure alcohol is an approved cleaning solution. Dry strike remains and place samples in a re-sealable plastic bag for shipment.

5. Bird/Wildlife Aircraft Strike Identification.

5.1. The 1 FW/SEF will mail bird/wildlife aircraft strike samples to the Smithsonian Institution Feather Identification Lab. Allow all remains to dry before shipment. The AF Form 853 and SAS shipping remains sheet must be included in the shipment.

5.2. Routine Class E BASH Mishap (non-damaging strike events) are mailed using the following address: Feather Identification Lab/Smithsonian Institution; NHB E600, MRC 116; P.O. Box 37012; Washington, DC 20013-7012.

5.3. Priority Class A, B, or C Mishap (reportable strike events) are priority mailed overnight using the following address: Feather Identification Lab/Smithsonian Institution; NHB, E600, MRC 116; 10th & Constitution Ave., NW; Washington, DC 20560-0116.

6. Airfield BASH Response Log.

6.1. AM Operations personnel and/or the designated BRT will use LAFB BASH Log to report all hazardous wildlife sightings and employed wildlife hazard response operations.

6.2. Copies must be kept on file and forwarded to the 1 FW/SEF each month for trends analysis purposes. NOTE: LAFB BASH Log documents are available and filed at the 1 FW/SEF.

7. BASH Checklist. MICT provides a useful tool as a BASH self-inspection checklist for identifying deficiencies in BASH reduction plans.

## **APPENDIX 5 TO ANNEX A TO JBLE BASH PLAN** **HABITAT MANAGEMENT**

### 1. References.

- (a) AFI 91-202
- (b) AFPAM 91-212
- (c) AFI 32-7064
- (d) The USAF Airfield and Heliport Design (AFI 32-1123)
- (e) FAA/WHM
- (f) Hazards Wildlife Attractants on or near Airports (AC 150/5200-33B)

2. General. This chapter provides guidance to recognize and control land-use practices and habitats that are attractive to hazardous wildlife on the airfield and within 5-miles of the approach-departure patterns. Implement habitat management procedures when funding and manpower resources are available. As per AFI 91-202, all base improvement projects (including, but not limited to, grounds maintenance, wastewater treatment, wetlands, golf courses, stormwater, etc...) must be coordinated through the BWG for BASH-related issues and/or mitigation requirements.

### 3. Concept of Operations.

3.1. The objective of this plan is to actively modify and prevent wildlife hazard attractants at LAFB, while also working cooperatively with adjacent property owners to discourage land-use practices that may increase hazardous wildlife conditions. Habitat management provides the most effective long term remedial measure for reducing wildlife hazards on and near airfields. Habitat management includes the physical removal, exclusion, or manipulation of areas that are attractive to wildlife. The ultimate goal is to make the environment fairly uniform and unattractive to the species that are considered the greatest hazard to aviation. Habitat modifications will be monitored carefully to ensure that they reduce wildlife hazards and do not create new attractions for different wildlife species. Although effective, budget restrictions may preclude incorporating all of these measures. Successful implementation relies on the combined efforts of the BWG.

3.2. Water Sources: On- or off-site.

3.2.1. Wetlands. The airfield is encompassed with and surrounded by several hundred acres of small man-made and/or natural wetlands areas. All wetland mitigation efforts resulting from base development or construction projects are required to consider payment in lieu of or banking mitigation alternatives. On- or off-site (base) wetland mitigation practices should not be tolerated, unless it can be demonstrated with reasonable certainty that the mitigation would not likely increase wildlife hazards. Existing wetland areas attracting hazardous wildlife should be modified to discourage wildlife by maintaining excessive vegetation growth and installing overhead grid systems.

3.2.2. Storm water. Several storm water basins exist on base and are in close proximity to the airfield. All storm water mitigation efforts impacting base development plans or construction projects are required to incorporate detention basins or underground drainage system mitigation alternatives. Development of wet retention basins should not be tolerated. Design or modify detention basins to remain dry between rainfalls. Where constant flow of water is anticipated through the basin, or where any portion of the basin bottom may remain wet, include a concrete or paved pad and/or ditch/swale in the bottom to prevent vegetation that may provide cover and food for wildlife. Detention basins holding water for more than 72 hours and attracting hazardous wildlife should be redesigned or modified to discourage wildlife installing physical barriers, such as bird balls, wire grids, pillows, rip-rap, or netting. When physical barriers are used, carefully evaluate their use and ensure they will not adversely affect water rescue.

3.2.3. Golf Courses. The large grassy areas and open water found on most golf courses are attractive to hazardous wildlife, particularly Canada geese, mallards, and cormorants. These species can pose a threat to flight safety. Ensure golf courses are monitored on a continuing basis for the presence of hazardous wildlife. If hazardous wildlife is detected, coordinate BASH prevention efforts immediately.

3.2.4. Temporary Standing Water. During the wetter months, small depressions and undrained low areas within the infield areas fill up with water for short periods of time and can be attractive to hazardous wildlife. As soon as funding allows, airfield areas holding water for periods greater than 72 hours are required to be filled and/or graded to ensure water consistently drains in a timely manner.

3.2.5. Drainage Ditches. The airfield contains tidal and non-tidal ditches. All drainage ditches must be maintained to control excessive vegetation growth and appropriately sloped to ensure water does not pool and discharges water within 72 hours, where applicable. Tidal ditches attracting hazardous wildlife should be designed or modified to discourage wildlife by installing physical barriers such as bird balls, wires grids, pillows, rip-rap, or netting. When physical barriers are used, carefully evaluate their use and ensure they will not adversely affect water rescue.

### 3.3. Vegetation:

3.3.1. Grass Height. Maintain a uniform grass height between 7 and 14 inches on the airfield, except around runway and taxiway marker lights where it will be cut to 3 inches for purposes of visibility. Coordinate mowing with periods of low flight activity. Cut grass before it goes to seed to discourage seed-eating birds from utilizing the airfield. Long grass discourages flocks of birds from entering the airfield because reduced visibility disrupts interflock communications, flock integrity, and prevents predator detection. Additionally, tall grass inhibits detection of birds. As a rule, do not permit grass to exceed 14 inches in height. High grass will attract some birds and rodents that, in turn, will attract raptors (birds of prey). Airfields with a variety of grasses may have a fast-growing strain, which reaches 14 inches sooner than the rest of the airfield. Mow when the tallest grass height reaches 14 inches. Herbicides may also be used to stunt grass growth, seed production, and encourage a monoculture stand. NOTE: A waiver may be obtained for a selected time period to modify grass height in an effort to manage specific wildlife hazard species.

3.3.2. Controlling Broad-Leafed Weeds. Eliminating weeds and cultivating a uniform monoculture of grasses can be more effective in discouraging seed-eating birds from feeding on the airfield than mowing grass seed stalks. Broad-leafed weeds attract a variety of wildlife because they produce seeds or berries and may limit grass growth. Keep broad-leafed weeds to a minimum on the airfield. Apply herbicides, as necessary, to achieve this.

3.3.3. Bare Ground Areas. Reduce bare areas as birds frequently use them to pick up grit and as resting sites on the airfield. Birds need grit, or very small rocks, to crush seeds, allowing digestion of the seeds. Eliminating bare areas on the airfield denies access to grit and forces birds to seek sources elsewhere. Plant grass adapted to the area, add fertilizer and lime as necessary, and irrigate only until new grass is established.

3.3.4. Seeding. The timing, application method, and grass species is important. Airfield seeding applications that restrict access to seeds from birds must be used. A drill-seeder is required for airfield seeding applications. Broadcast seeding is highly attractive to foraging birds and should not be used to re-seed bare ground or seed new construction areas. Seeding applications should be avoided from June through August. Select fertilizers to stimulate uniform grass growth and irrigate properly to enhance root production without increasing seed head production. Seeding applications for airfield bare ground and construction sites are required to contain 100% high fungal endophytes fescue species or a 40% Bermuda - 60% tall fescue mix. Some of these endophytes are unpalatable to grazing birds such as geese as well as rodents and deer. These endophytic grasses may also support fewer insects.

3.3.5. Ornamental Landscaping. Aesthetically pleasing landscaping should not compromise flight safety. Trees and bushes offering hunting perches, roosting and loafing sites, nesting cover, and food for birds and other wildlife will be removed. Ornamental trees and bushes used to enhance aesthetics will be kept to a minimum on and near the airfield. Varieties that are unattractive to wildlife must be selected. Species

which produce edible fruits, nuts, or berries will not be used on LAFB property if they might attract hazardous wildlife. If such species are found to exist on or near the airfield they will be replaced with more desirable species as soon as funding allows. All base landscaping projects will be reviewed to ensure ornamental landscaping will not be attractive to hazardous wildlife. NOTE: A list of plants attractive to wildlife should be kept on file at the 633 CES/CEIE.

3.3.6. Forested/Brushy Areas. There are three (Raptor Town, Poplar Road, and Golf Course Driving Range) forested/ brushy areas within the airfield perimeter that provide suitable food, shelter and/or perching habitat for white-tailed deer, fox, coyotes, small mammals, and various bird species. Each of these sites are comprised of forested hardwoods, pine, and various weed species. These should be thinned or cleared as soon as funding allows. New growth of woody vegetation must not be tolerated upon or in close proximity to the airfield.

#### 3.4. Structure Management:

3.4.1. Airfield structures such as runway lights, ramp and taxiway signs, ILS towers, and light poles are used as hunting and loafing perches for birds, such as raptors, doves, and starlings. Where applicable, existing airfield structures are required to be modified with anti-bird perch inhibitors (i.e., wire coils, porcupine wire, or catclaw). Lights attract insects at night, and in turn, insect eating wildlife. During night airfield operations, non-essential lights should be turned off to discourage insects and insect eating wildlife. Flightline hangars and buildings may require exclusion devices to prevent access to nesting or roosting birds. NOTE: All airfield development plans or construction projects are required to incorporate bird exclusion devices to applicable structures.

3.4.2. Abandoned Structures. Structures not pertinent to air operations and no longer in use, must be removed, including abandoned vehicles, sheds, machinery, and light poles. Such structures are attractive to rodents, small birds and rabbits and, in turn, attract hawks, owls, and other predators that can become a significant air hazard. Structures used for crash-fire training are considered to be pertinent to air operations and are generally compatible with safe air operations.

#### 3.5. Prey/Food Items:

3.5.1. Rodents. Mice, voles, and hares appear to be the primary attractants of raptors, wading birds, and canids. Airfield rodent populations may require monitoring. When habitat management efforts fail to control populations, use registered rodenticides approved by the Virginia Department of Agriculture. Airfield rodenticide (zinc phosphide) treatments should occur every three to five years. Treatment applications should be concentrated within and expand from the runway control area.

3.5.2. Insects and Other Invertebrates. Starlings, gulls, raptors, swallows, and wading birds feed on beetles, grasshoppers, worms, mollusks, and amphibians. Airfield insect populations may require monitoring. When habitat management efforts fail to control populations, use registered insecticides approved by the Virginia Department of Agriculture to control populations when necessary. Airfield insecticide (Sevin or Merit) treatments should occur biannually. Treatment applications should concentrate within and expand from the runway control area.

3.5.3. Animal Carcasses. Carcasses of animals, such as those that were involved in collisions with vehicles or aircraft or that were taken pursuant to permits, should be immediately collected and disposed of. This is important not only to properly record wildlife strikes and to remove FOD, but will also reduce the extent to which scavenging birds are attracted to the airport by the presence of carrion.

3.5.4. Garbage. Trash and debris can attract scavengers such as rodents, gulls, pigeons, starlings and blackbirds. All dumpsters and trash can lids must be secured, especially within the flightline. Feeding hazardous birds or mammals anywhere on base is prohibited. Signs may be posted throughout the base (i.e., outdoor break/smoking areas, taxi stands, loading docks, walkways, and in the marina) to educate personnel and the public on the association between feeding animals and creating wildlife hazards.

**APPENDIX 6 TO ANNEX A TO JBLE BASH PLAN**  
**HAZARDOUS WILDLIFE**

1. References.

- (a) AFI 91-202
- (b) AFPAM 91-212
- (c) 1 FW BASH Report Fiscal Year 2017
- (d) FAAF BASH Report Fiscal Year 2017

2. General. This chapter provides information on specific wildlife strike hazards and recommendations for countering each hazard.

3. Concept of Operations.

3.1. The following is a brief description of wildlife hazards common to LAFB and effective management techniques that may be used. Management efforts (i.e., habitat modification, wildlife dispersal, and population control) will require actions by one or more tasked organizations as described in the basic plan. It is very important to know which species is present before control techniques can be effectively applied. Section 7.3.1.5.9 of AFI 91-202 advocates maintaining a zero tolerance toward large free roaming animals on or adjacent to the aircraft movement area (free-roaming animals are, but not limited to, deer, canines, geese, vultures, etc). Federal depredation and state scientific collection or kill permits are required for the take (e.g., capture, kill, relocation, etc.) of the wildlife species listed below. An appropriate field guide should be used to aid in wildlife identification. Federal law allows people to protect themselves and their property from damage caused by migratory birds. Provided no effort is made to kill or capture the birds, a depredation permit is not required to merely scare or herd depredating migratory birds other than endangered or threatened species or bald or golden eagles (50 CFR 21.41). The 1FW contracts USDA to mitigate wildlife during 1/192 FW flight ops. AMOPS is responsible for wildlife mitigation outside of 1/192FW flight ops

3.2. Birds and Mammals:

3.2.1. Bird Mitigation Techniques

3.2.1.1. BASH Mitigation. Airfield grass should contain a strong percentage of fungal endophyte tall fescue and be maintained at 7 to 14 inches. The growth of seed-producing plants on the airfield should be prevented. All bare ground spots and construction areas should be drill seeded, fertilized, and irrigated to ensure germination and grass establishment. Ponds, ditches, and wetlands should be excluded using an over-head grid wire system or polyurethane barrier balls. Steepening ditch and pond banks and removing vegetation may inhibit attractiveness to waterfowl. Airfield areas collecting water over a 72-hour period should be filled and/or graded so that water consistently drains in a timely manner. Treat selected

airfield areas with insecticides to control and/or eliminate wildlife from feeding on Japanese beetles, grasshoppers, and earthworms. Remove or modify known staging or roosting areas near the airfield. Hangars and buildings should be modified or designed to exclude birds from nesting. Pyrotechnics, bioacoustics, propane cannons, vehicular dispersal, can all be effective temporary mitigation tool dependant upon species. However, depredation is often necessary to reinforce dispersal efforts and help control local populations. Shooting when there is an immediate threat to flight safety and trapping or nest destruction when population numbers create hazardous flying conditions may be used. Avoid or adjust flying operations during periods of increased bird activity. No feeding policies should also be enforced on and near the airfield. Construction activities and development projects should be coordinated to avoid creating habitats attractive to birds. Existing and new airfield structures should be modified with bird perch inhibitors. Pilots are encouraged to review the online BAM and AHAS for bird avoidance information associated with waterfowl migration and low-level routes. NOTE: Resident Canada Geese populations located within three miles of the airfield should be managed as per control order at military airfields (CFR 50.21.49). Coordinate spring nesting egg addle-oil treatments and summer molt round-up programs with neighboring properties (i.e., Hamptons Golf Course, Bluebird Gap Farm, Sandy Bottom Nature Park, and Plum Tree Island Wildlife Refuge) as necessary.

### 3.2.2. Mammal Mitigation Techniques:

3.2.2.1. BASH Mitigation. Properly installed fencing will limit the number of mammals occupying the airfield. It is recommend that fences should be at least 8 ft high with 3 ft of barb-wire and anchored to the ground. Excluding airfield drainage culverts will also prevent access to the airfield. Broad-leaf weeds, shrubs, and mast producing trees should be eliminated from the airfield. Airfield woodlots should be thinned and maintained to control excessive understory vegetation growth. Rodent and small animal control will reduce the attractiveness to mammalian predators. Pyrotechnics may be used to frighten and disperse these animals from the airfield. Depredation is often necessary to reinforce dispersal efforts and help control the local population. Shooting when there is an immediate threat to flight safety and trapping or den removal when population numbers create hazardous flying conditions may be required. On-base hunting programs will also discourage airfield presence and help maintain a tolerable population. Avoid or adjust flying operations when hazardous mammals are observed on the airfield. Construction activities and development projects should be coordinated to avoid creating habitats attractive to these species. NOTE: Airfield white-tailed deer sharp-shooting operations are coordinated and executed by USDA/WS.

## **APPENDIX 7 TO ANNEX A TO JBLE BASH PLAN** **REGULATORY REQUIREMENTS**

### 1. References.

- (a) 42 USC
- (b) 50 CFR
- (c) VAC
- (d) COV Title 29 Fish and Wildlife Laws
- (e) The USAF Environmental Impact Analysis Process (AFI 32-7061)
- (f) FAA/WHM

2. General. This chapter provides information on pertinent laws, regulations, and permits governing the implementation of this plan.

### 3. Laws and Regulations.

3.1. Most forms of wildlife and their habitat are protected by one or more federal, state and/or municipal laws. Prior to implementing control actions involving wildlife and their habitats, the legal status and permit requirements of the target species must be determined. LAFB is responsible for adhering to the current regulations regarding wildlife management and for obtaining the appropriate permits to take wildlife. The 1 FW/SEF with the assistance of USDA/WS is responsible for obtaining and maintaining appropriate wildlife permits, and may assign this process to the 633 CES/CEIE. Permits to take wildlife in Virginia are issued by the USFWS and the VDGIF.

3.2. Federal Regulations. Several federal regulations, including the MBTA, the Lacey Act, the ESA, BGEPA, the CWA, and the FIFRA, and NEPA regulate various aspects of this plan. Additional regulations that may affect wildlife hazard response operations at LAFB are found in CFR Title 50, Part 1-99 and several Federal agencies may be responsible for their implementation. Federal wildlife laws are typically administered by the USFWS and involve primarily migratory birds and threatened and endangered wildlife species. Permits from the USFWS must be updated annually, unless otherwise stated on the permit.

3.3. State Regulations. In addition to federal protection, all states protect migratory birds as well as game birds, such as pheasant, turkey, grouse, and partridge. States might or might not protect exotic or feral species. With the exception of federally listed or proposed threatened or endangered species, federal law does not protect terrestrial mammals, reptiles, or other wildlife (i.e. deer, coyotes, raccoons, groundhogs, snakes, turtles, and freshwater fish). Protection of these wildlife groups is left to the individual states. Pertinent regulations can be found in the COV Title 29, Chapter 5 and VAC Title 15, Chapter 20 wildlife laws involving birds, mammals, reptiles, and amphibians, as well as state threatened and endangered species are administered by the VDGIF. Hampton City firearms regulations may

also affect BASH operations. BWG personnel should check with city officials prior to conducting operations control measures. The use of pesticides in Virginia is conducted pursuant to COV Title 3, Chapter 14 within the administration of the VDACS.

#### 4. Permits.

4.1. Federal and state permits must be obtained for the take of any protected bird or animal that is identified as a flight safety hazard. The term “take” is defined as “pursuit, hunt, shoot, wound, kill, trap, capture, or collect, or attempt to pursue, hunt, shoot, wound, kill, trap, capture or collect” a federal or state protected bird or animal. Additional permits may also be required to modify existing habitats (i.e., wetlands) and to band or mark wildlife (i.e., raptors). Some state wildlife management agencies may require that a state permit be obtained also. Persons wishing to take state-protected species must first secure a permit from their respective state wildlife management agency. Excluding Bald Eagles, a federal or state permit is not required to harass migratory birds or other wildlife species.

4.1.1. Migratory Bird Depredation and Salvage Permit (50 CFR 21.23 and 41): Migratory birds are protected by the MBTA. A federal permit issued by the USFWS is required to take hazardous migratory birds, nests, or eggs. Possession and transport of migratory birds, their parts, nests, or eggs for scientific research or educational purposes may also be included. Applications are available for download at <http://www.fws.gov/permits>. Permits are awarded under specific conditions and criteria for a one year period.

4.1.2. Depredation Order for Resident Canada Geese at Military Airfields (50 CFR 21.49): A depredation order is a federal regulation which authorizes the take of certain bird species involved in damage situations, without a federal permit. Under this control order, managers of commercial, public and private airports (or their employees or agents) and military air operation facilities (and their employees or agents) may take resident Canada Geese (including nests and eggs) with landowner(s) permission from on or within 3 miles of the airport or airfield boundaries, without a federal permit. Nests and eggs may be taken only between March 1 and June 30, and live birds may be taken only between April 1 and September 15. Any take of geese or nests outside of these dates (except for take IAW hunting regulations) by airport managers requires a federal permit. Airport managers acting under authority of this depredation order must submit a report of activities (including the dates, numbers and county of birds, nests and eggs taken) to USFWS by December 31 annually. To be designated as an airport authorized to participate in this program, an airport must be part of the National Plan of Integrated Airport Systems and have received federal grant-in-aid assistance, or be a military airfield, meaning an airfield or air station that is under the jurisdiction, custody, or control of the Secretary of a military department. NOTE: Additional information is located at <http://www.fws.gov/pdm>.

4.1.3. Depredation Order for Blackbirds, Cowbirds, Grackles, Crows, and Magpies (50 CFR 21.43): A depredation order is a federal regulation which authorizes the take of certain bird species involved in damage situations, without a federal permit. Under this order, blackbirds, cowbirds, grackles, crows, and magpies may be taken without a federal

permit when they are concentrated in such numbers and manner as to constitute a health hazard or other nuisance. Proper licenses and permits for firearms and toxicants must be acquired and maintained. NOTE: additional information is located at <http://www.fws.gov/pdm>.

4.1.4. Bald Eagle Permits (50 CFR 22.23): Bald Eagles are protected under the BGEPA. A federal permit issued by the USFWS is required to harass or take eagles, nests, and/or eggs that are hazard to flight safety. Applications are available for download at <http://www.fws.gov/permits>. Permits are awarded under specific conditions and criteria for a 90 day period.

4.1.5. Bird Banding or Marking Permits (50 CFR 21.22): The banding or marking of birds is controlled under the MBTA. A Federal permit issued by the U.S. Geological Service Bird Banding Laboratory is required to legally place bands or other identification markers on birds and release into the wild within the US. Applications are available for download at <http://www.pwrc.usgs.gov/bbl>. Permits are awarded under specific conditions and criteria for a one year period.

4.1.6. Wetland Mitigation Permits: Wetlands are protected under Section 404 of the Clean Water Act. Wetland modifications require permits from various agencies, including the USFWS, USACE, or county governments. Permits to dredge or fill of wetland habitats require compensatory mitigation efforts that include: on-site, off-site, banking, and in-lieu fee. To support this plan, LAFB must advocate in-lieu fee or banking mitigation practices for all base development or airfield construction projects. Mitigation banking and in-lieu fee mitigation are forms of "third party" compensation, where the liability for project success is transferred to the mitigation bank or in-lieu fee sponsor.

4.1.7. Animal Population Control Permit: Game and fur-bearing animals are protected under the COV wildlife and fish law. A state permit issued by VDGIF may be required to take hazardous game and fur-bearing animals in excess of the general hunting season bag limits. Applications are available for download at <http://www.dgif.virginia.gov/permits/>. Permits are awarded under specific conditions and criteria for a one year period.

4.1.8. Official Kill Permit: White-tailed deer and black bear are protected by the COV wildlife and fish law. A state permit issued by VDGIF is required to kill deer or bear that cause damage to fruit trees, crops, livestock or personal property or create a hazard to aircraft. Permits are awarded under specific conditions and criteria for a one year period. Applications are available upon request and investigation by the District Conservation Police Officer at 804-829-6580.

4.1.9. Scientific Collection Permit: A state permit issued by VDGIF may be required for the collection, or capture and release, of non-listed wildlife for scientific or educational purposes. Applications are available for download at <http://www.dgif.virginia.gov/permits/>. Permits are awarded under specific conditions and criteria for a two year period.

4.1.10. Salvage Permit: A state permit issued by VDGIF may be required for the collection of animals found dead for scientific or educational purposes. Applications are available for download at <http://www.dgif.virginia.gov/permits/>. Permits are awarded under specific conditions and criteria for a three year period.

4.1.11. Pesticide Applicators License: The use of restricted-use pesticides is regulated by the FIFRA. A state permit issued by VDACS is required for the removal of hazardous wildlife (e.g., blackbirds, starlings) or prey species (e.g., rodents, rabbits, insects, earthworms, and weeds) using restricted use pesticides. Only certified pesticide applicators or persons under their direct supervision are authorized to apply pesticides. To obtain the necessary license to apply restricted-use pesticides, a person must pass an exam administered by VDACS or successfully complete a DoD pesticide applicator certification course. All BWG personnel that use restricted-use chemicals must first obtain a pesticide applicator's license or be under the direct supervision of an applicator. Use of all pesticides will adhere to the product label and will follow EPA and other guidelines.

#### 4.2. Permit Exceptions:

4.2.1. Exotic and Nuisance Wildlife: Exotic and nuisance wildlife species are not afforded federal or state protection. Therefore, these animals or their nests, eggs, or young may be taken without a permit. These species include starlings, pigeons, house sparrows, house mice, norway rats, black rats, coyotes, feral hogs, nutrias, and woodchucks.

4.2.2. Feral/Domestic Wildlife: The take of feral mammals such as dogs and cats does not require a federal or state permit, although the method of take is regulated by state law. For example, use of firearms must comply with Virginia firearms laws and traps must comply with state trapping regulations.

#### 5. Other Regulations of Interest.

5.1. NEPA (42 USC 426): This act provides direction to federal agencies for making informed decisions about federal actions that could impact the human environment. All federal actions must comply with NEPA. NEPA requires that a detailed statement accompany every recommendation or report on proposals for legislation and other major federal actions significantly affecting the quality of the human environment. The 633 CES/CEIE normally prepares environmental impact statements for feasibility reports for authorization and construction of major projects, for changes in projects which increase size substantially or incorporate additional purposes, and for major changes in the operation and/or maintenance of completed projects. Environmental assessments are normally prepared for other corps actions except for certain minor and/or routine actions, which are categorically excluded from NEPA documentation. A finding of no significant impact is prepared by the reporting officer to accompany an assessment when it is determined that an

environmental impact statement will not be prepared. NEPA documentation is accomplished prior to implementation of emergency work, if practicable.

#### 5.2. Municipal Solid Waste Landfill Location Restrictions for Airport Safety

(40 CFR 258.10): The EPA recognizes that birds can be attracted in large numbers to municipal solid waste landfills and recognizing the potential threat posed by birds to aircraft safety, requires owners or operators of new units, or lateral expansions of existing units, that are located within 10,000 feet of any airport runway used by turbojet aircraft or within 5,000 feet of any airport runway used only by piston-type aircraft demonstrate successfully that such units do not create hazardous conditions for aircraft. The EPA also requires any operator proposing a new or expanded waste disposal operation within 5 statute miles of a runway end to notify the appropriate FAA Regional Airports Division Office and the airport operator of the proposal.

5.3. Incidental Migratory Bird Take (50 CFR 21.15): A federal rule allows the incidental take (i.e., bird aircraft strikes or range firing exercises) of migratory birds during military readiness activities as directed by the 2003 National Defense Authorization Act. The measure directs the armed forces to assess the effects of military readiness activities on migratory birds, IAW the NEPA. It also requires the armed forces to develop and implement appropriate conservation measures if a proposed action may have a significant adverse effect on a migratory bird population. The rule also provides that when conservation measures require monitoring of migratory bird populations, the armed forces retain the data for five years.

5.4. Federal Threatened and Endangered Species Act (16 USC 15.31): This act protects plants and animals which may be threatened with extinction. This act also protects wildlife habitat. An endangered species is defined as any species or subspecies which is in danger of extinction throughout all or a significant portion of its range. A threatened species is a species or subspecies which is in danger of becoming an endangered species within the foreseeable future throughout or over a significant portion of its range. Once listed, a threatened or endangered species cannot be taken or harassed without a special permit. If a significant hazard exists with a listed species that jeopardizes air safety, the USFWS and/or the VDGIF should be contacted for assistance.

5.5. The Animal Damage Control Act (7 USC 426): This act authorizes and directs the Secretary of Agriculture to manage wildlife injurious to agricultural interests, other wildlife, or human health and safety, including wildlife hazards to aviation. The USDA/WS is the agency that carries out this mandate.

**APPENDIX 8 TO ANNEX A TO JBLE BASH PLAN**  
**INTERAGENCY AGREEMENT WITH WILDLIFE SERVICES**

1. References.

(a) AFI 91-202

(b) AFPAM 91-212

(c) MOA between the FAA, the USAF, the USA, the U.S. EPA, the U.S. Fish and Wildlife Service, and the U.S. Department of Agriculture to address aircraft-wildlife strikes (MOA)

(d) MOU between the USAF and the USDA, APHIS Health Inspection Service, Wildlife Services (MOU)

2. General. Due to the complexities of hazard abatement and potential for loss of aircraft and crew, section 7.3.1.5.4 of AFI 91-202 strongly encourages that a dedicated wildlife hazard management specialist be retained on staff. This chapter summarizes the interagency agreement between LAFB and USDA/WS for assistance in the management and implementation of this plan.

3. Interagency Agreement.

3.1. Purpose. LAFB requested assistance from USDA/WS in managing wildlife to alleviate threats and damage to human health and safety, aviation, property damage to aircraft, equipment, tools, supplies in warehouses and hangars; and human health and safety from wildlife strikes, fecal droppings or any other damage.

3.2. Background. USDA/WS conducted a WHA/BASH assessment from June 1999 through May 2000. The assessment documented results of a 12-month ecological study of birds and mammals inhabiting Langley airfield and surrounding environments, evaluated wildlife strike potential, and provided management recommendations to mitigate the presence of hazardous wildlife. In April of 2001, the JBLE BASH Plan was updated to reflect the information and recommendations in the initial WHA. Following the assessment, LAFB expanded the interagency agreement with USDA/WS to provide staff dedicated to the implementation and management of the JBLE BASH PLAN initiated October 2000 and renewed annually.

3.3. Description. USDA/WS will provide assistance to LAFB in the following basic areas: wildlife hazard monitoring, wildlife control operations, habitat management, data analysis and research, administrative support, and training. USDA/WS will provide qualified wildlife damage management professionals dedicated to BASH at LAFB as per Annex A of the JBLE BASH Plan. These individuals may be subject to USDA temporary duty assignments and 1/192 FW recall under emergency or exercise conditions. Upon request, USDA/WS may also provide BASH support to Felker Army Airfield at Fort Eustis as per Annex B of the JBLE BASH Plan. USDA/WS will conduct wildlife damage management activities in accordance with IAW applicable USDA/WS directives and AFI requirements.

3.4. BASH Support and Responsibilities.

3.4.1. Wildlife Hazard Monitoring. USDA/WS will develop and implement a monitoring program to assess wildlife species posing a threat to flight safety. Standardized wildlife surveys will be conducted monthly and seasonally to monitor seasonal patterns, habitat use, and species composition of birds and mammals. The surveys will identify trends and will not provide absolute estimate of population sizes.

3.4.1.1. Airfield Bird Surveys. USDA/WS will conduct standardized bi-monthly airfield point count surveys to collect data on species inhabiting the airfield and surrounding environment.

3.4.1.2. Mammal Surveys. USDA/WS will conduct standardized bi-monthly vehicle surveys at night to collect data on white-tailed deer inhabiting the airfield and surrounding environment. Additional vehicle surveys may be conducted on NASA Langley Research Center. As required, USDA/WS will conduct seasonal (spring and fall) catch per unit effort surveys to collect data on rodent species inhabiting the airfield.

3.4.1.3. Osprey Nest Surveys. USDA/WS will conduct seasonal osprey nest surveys to collect reproductive data from osprey nesting on and surrounding the airfield.

3.4.1.4. Strike Reporting. USDA/WS will provide aircraft strike reporting assistance to Flight Safety. As required, USDA/WS will respond to strike incidents and collect strike remains, perform investigation, and ensure remains are submitted to the Smithsonian Institute Bird Identification Laboratory.

3.4.1.5. Wildlife Control Operations. USDA/WS will develop and implement an integrated wildlife control program to reduce flight safety threats from hazardous wildlife species. Wildlife control operations will be conducted daily and seasonally to disperse or remove hazardous wildlife species posing an immediate risk to flight safety and to control the local population of hazardous wildlife. USDA/WS will document all wildlife control activities.

3.4.1.6. Airfield BASH Inspections. USDA/WS will conduct routine airfield BASH inspections throughout the 1/192 FW daily flying windows. In absence of and/or outside the 1/192 FW flying windows, Airfield Management will be the primary for airfield BASH response. When identified, USDA/WS will report hazardous wildlife activity to Control Tower for dispersal authorization and to disseminate hazardous wildlife information/BWC codes. Dispersal methods will include and are not limited to the following: pyrotechnics, distress calls, paintballs guns, vehicles, and shooting.

3.4.1.7. Population Control. As required, USDA/WS will coordinate and implement methods to control the abundance of hazardous wildlife on and surrounding the airfield. Population reduction methods will include and are not limited to the following: egg oiling, live trapping and relocation, live trapping and euthanization, chemical immobilization, general firearms, and sharpshooting.

3.4.1.8. Habitat Management. USDA/WS will provide technical assistance in developing habitat modification and prevention plans to reduce the attractiveness to hazardous wildlife species. USDA/WS will monitor existing airfield habitats, review land use projects, and base development projects to ensure conditions do not support or attract hazardous wildlife species. The goal is to make the airfield less attractive to wildlife, while sustaining environmental compliance requirements. Habitat management efforts will include and are not limited to the following: grass management, controlling drainage, landscaping, structure exclusion, wetland mitigation practices, and storm water management.

3.4.1.9. Data Analysis and Research. USDA/WS will conduct data analysis and interpretation to accurately assess wildlife hazards, provide management recommendations, and measure the effectiveness of management actions. USDA/WS will use descriptive statistics to describe wildlife abundance trends, behavior, habitat use, and population indices. USDA/WS will provide quarterly and/or annual WHA reports. USDA/WS may also participate in scientific based wildlife damage research projects with the National Wildlife Research Center and Berryman Institute.

3.4.1.10. Administrative Support. USDA/WS will work in concert with and provide administrative support to the Chief of Flight Safety. Administrative support will include, but not limited to the following: JBLE BASH PLAN management; BWG coordinator; monitors base wide compliance with applicable AFI; maintains appropriate wildlife damage management permits, maintains continuity folder, attends applicable meetings, liaison to on base and off base agency officials, and establishes BASH culture program.

3.4.1.11. Training. USDA/WS will provide BASH training to BWG representatives and/or organizations as necessary or upon request. BASH training is necessary to elevate BASH awareness and facilitate active participation within the BWG. The training may include and is not limited to the following: overview of laws associated with wildlife management, wildlife identification and control, habitat management, seasonal BASH threats, and strike reporting.

### 3.5. Legal Authority:

3.5.1. USDA is directed by law to protect American agriculture and other resources from damage associated with wildlife. APHIS has statutory authority under the Act of March 2, 1931 (46 Stat. 1468; 7 U.S.C.426-426b) as amended, and the act of December 22, 1987 (101 Stat. 1329-331, 7 U.S.C. 426c), to cooperate with states, local jurisdictions, individuals, public and private agencies, organizations, and institutions while conducting a program of wildlife service's involving mammal and bird species that are reservoirs for zoonotic diseases, or animal species that are injurious and/or a nuisance to, among other things, agriculture, horticulture, forestry, animal husbandry, wildlife, and human health and safety.

3.5.2. WS Directive 2.305, *Wildlife Hazards to Aviation*, provides guidance for USDA/WS wildlife biologists in providing technical assistance or direct control to airport managers, state aviation agencies, the aviation industry, the FAA, and the DoD regarding hazards caused by wildlife to airport safety. WS activities are conducted in cooperation with other federal, state and local agencies, and with private organizations and individuals.

3.5.3. The USDA/WS program is a non-regulatory, federal cooperative wildlife management program whose mission is to provide leadership in reducing conflicts between people and wildlife. WS has the primary responsibility for responding to threats caused by migratory birds. A growing focus of USDA/WS is to help promote the safe operation of aircraft by working with airport management to document, access and manage wildlife hazards at airports throughout the country.

3.5.4. A MOU established a cooperative relationship between the DoD and USDA to resolve hazards to aviation by wildlife and to define the respective roles of the agencies in resolving wildlife hazards on airbases. This MOU recognizes that WS has the professional and technical knowledge to reduce wildlife hazards on or near airports, and it acknowledges that most airbases do not possess this expertise. Even though the airbase may work with USDA/WS to develop this plan or use a WHA to support the plan, it is the responsibility of the safety office (not USDA/WS) for the development, approval and implementation of the plan. AFPAM 91-212 provides guidance on the content and implementation of a BASH plan for an airbase.

3.5.5. Interagency MOA (2003): The FAA, the USAF, the USACE, the USEPA, the USFWS, and the USDA/WS signed a MOA to acknowledge their respective missions in protecting aviation from wildlife hazards. Through the MOA, the agencies established procedures necessary to coordinate their missions to address more effectively existing and future environmental conditions contributing to collisions between wildlife and aircraft (wildlife strikes) throughout the U.S. These efforts are intended to minimize wildlife risks to aviation and human safety while protecting the nation's valuable environmental resources.

## **APPENDIX 9 TO ANNEX A JBLE BASH PLAN** **MAP AND CHARTS**

1. General. This chapter outlines the use and requirements for the maps and charts required to implement the BASH program.

2. A BASH awareness map is included with this plan (see Appendix 2 of this plan) and displayed in the AM Operations mission planning room and squadron flight safety boards. This information is available from the wing's GeoBase office which is maintained by the 633 CES/CEPT.

2.1. This map is used to identify specific airfield (i.e. wetlands, ditches, woodlots, etc.) and surrounding habitats (i.e. refuges, nature preserves, lakes, landfills, storm sewer etc...) that are attractive to hazardous wildlife. Additionally, the BASH map may be used to plot local bird/wildlife aircraft strikes, wildlife hazard observations, and monitoring efforts.

2.2. Use the BASH map as a guide for the long-range civil engineering program to reduce actual and potential hazardous environmental factors at LAFB.

2.3. Pilots and schedulers should reference the BASH map during mission planning events to support bird/wildlife aircraft strike avoidance procedures.

3. BASH Data Charts and Tables.

3.1. The LAFB WHA conducted and prepared by USDA/WS provides several BASH related charts supporting this plan. Annual and quarterly WHMRs are conducted by means of systematic data collection through on-site observations, surveys, and reported incidents. Data analysis charts include strike incidents, wildlife surveys, wildlife control actions, and other BASH related trends or accomplishments.

3.2. WHMR(s) are considered an attachment to this plan and are maintained and distributed by 1 FW/SEF.

3.3. BWG representatives are required to review and file WHMR.

3.4. Information provided in WHMR are used to chart seasonal BASH trends to determine Phase II periods and for display at AM operations mission planning room and squadron flight safety boards.

3.5. Pilots and schedulers should reference the charts during mission planning events to support bird/wildlife strike avoidance procedures.



## **ANNEX B JBLE BASH PLAN** **FE BASH PLAN**

### 1. References:

- (a) Fort Eustis (FE) Integrated Natural Resources Management Plan
- (b) JBLE I-32-101, Environmental Management
- (c) Fort Eustis INRMP
- (d) Bald Eagle Management Plan, US Army Transportation Center, Fort Eustis, Virginia, August 2008
- (e) FE IPMP
- (f) AFI 32-7064
- (g) Title 32 CFR Part 989
- (h) Annual BASH Prevention Report

### 2. Situation.

2.1. A significant bird/wildlife aircraft strike hazard exists at FAAF, FE, and its vicinity from resident and migratory bird species and resident deer population. FE possesses approximately 100 miles of developed and undeveloped shoreline. Topography at FAAF is generally level with a maximum elevation of 11 feet above sea level. Fort Eustis constitutes approximately 7,800 acres. It contains approximately 2,700 acres of commercial forest land and approximately 3,600 acres of wetlands. Wetland communities and ecosystems, used as habitat and navigational routes for waterfowl, exist on three sides of the airfield: the James and Warwick Rivers to the west and east of the airfield respectively, and Morrison's Creek to the south. These habitats support migratory bird and wildlife populations directly on and adjacent to the airfield. Current drainage schemes and the high water table exacerbate the situation by allowing water to collect in low-lying areas in the vicinity NE of the airfield. Compounding this problem is FAAF's geographic location, near the mouth of the Chesapeake Bay and in the middle of the Atlantic flyway with several million birds traversing this region during the spring/fall migration periods. Surrounding land uses and management practices also contribute to the occurrence of migratory birds and wildlife populations at FAAF. The FE Pines Golf Course, adjacent to FAAF, contains seven freshwater ponds totaling 5 acres and 200 acres of fairways and greens that attract resident and migratory Canada geese. The neighboring Hog Island WMA is managed to provide suitable habitat for resident and migratory birds/waterfowl to include Canada Goose (*Branta canadensis*). Geese from these areas frequent FAAF throughout the year. Managed recreational and wildlife use areas located within 5 miles of the installation include Newport News Park and Hog Island WMA, which pose significant BASH concerns because they attract thousands of waterfowl and other bird species to the local area. The wildlife hazards associated with FE's wetland areas combined with the installation's geographic location and surrounding wildlife attractants present a formidable BASH risk for FAAF's flight operations. The FE BHWG charter focuses on identifying wildlife hazards and implementing subsequent solutions towards mitigating or removing risks associated with these hazards. The following ongoing or completed projects identify and mitigate the BASH threat and reduce the potential for future damaging bird/wildlife aircraft strikes at FAAF:

## 2.2. Phase I and Phase II BASH Periods:

2.2.1. BASH Phase I is the time period during the year when little to no bird migration activity occurs. BASH Phase I is in effect from 01 December – 31 January and 01 April – 30 September. During BASH Phase I, BASH mitigation actions and activities will be per this plan and applicable BASH guidance which will be commensurate with the observed wildlife activity and inputs from 1 FW/SEF and USDA/WS. Normal flight operations are expected during this Phase I.

2.2.2. BASH Phase II is the time period during the year when peak bird migration activity occurs. BASH Phase II is in effect from 01 February- 31 March and 01 October-30 November. During BASH Phase II, BASH mitigation actions and activities will include Phase I actions and activities plus adhere to the following additional restrictions. Schedulers should not plan flights during the period of peak bird activity (one hour before to one hour after sunrise/sunset) due to the higher inherent BASH risk, regardless of BWC. 1 FW/SEF & USDA/WS will be responsible for notifying Airfield Operations and the Supervisor of Flying (SOF) during this time period to increase their level of awareness. In addition, 1 FW/SEF and USDA/WS will make every effort to increase the mitigation techniques to help reduce observed threats during Phase II. This may include but not be limited to an increased presence on the airfield during active fly windows, use of seasonal methods and tools such as nest box traps for starlings, Canada goose nest management, raptor trapping, and increased mammal trapping, etc., as needed.

2.2.3. During Phase II, the highest levels of daily wildlife activity normally occur +/- one hour of sunrise/sunset as birds move to and from their roosts. This applies to airfield wildlife activity as well as wildlife activity at altitude to/from the airspace. Again, flight operations should be avoided during these periods unless mission essential.- A risk analysis shall be completed by the 1 or 192 OG/CC to determine potential risks and develop mitigation measures if operations are conducted during these peak periods. These measures will also maintain zero tolerance towards large free-roaming animals on or adjacent to the aircraft movement area (free roaming animals are, but not limited to, deer, canines, geese, vultures, eagles, etc...). The BASH Phase I and II designation may be affected and adjusted slightly from year to year depending on seasonal weather changes and how they affect actual migratory bird movement. 1 OSS/OSAA will ensure Phase I and II periods, and any associated hazards, are published in the IFR Supplement. Adjustments may be made based on assessments from wildlife surveys and by monitoring wildlife activity, weather, and habitat conditions during routine airfield operations. USDA/WS will make recommendations and mitigate threats based on these assessments with the appropriate methods as needed

## 2.3 Wildlife Hazard Monitoring

2.3.1. A wildlife hazard monitoring program is designed to detect changes in wildlife populations or habitat use that pose a threat to safety by comparing data to baseline information collected during the WHA. Monitoring is also necessary to measure the effectiveness of wildlife control measures and management recommendations. Quarterly wildlife hazard management reports and an annual update report to the WHA are provided to airfield and installation leadership and the BHWG for review.

2.3.2. 733 CED/CEIE will provide technical assistance and guidance with regard to INRMP and Environmental Regulations for the BASH Program.

2.3.3. Deer Depredation Plan: USDA/WS recommends a policy of “zero tolerance” of deer on the runway because of the risk of catastrophic damage resulting from a deer strike. This plan calls for semi-annual survey of the base deer population. Additionally, the USDA/WS, AS, and the control tower will document and report all deer observations to USDA/WS. Deer observed within the fenced airfield should be harassed from the airfield, or removed if harassment techniques are unsuccessful. Depredation can be conducted by USDA/WS or 733CED. Any deer removed from the airfield will be donated to military personnel or local charities whenever possible. Biological samples will be provided to 733 CED in accordance with any written protocols for sample collection.

2.3.4. Establish and support the BHWG and designate responsibilities of its members.

2.3.5. Establish procedures to identify high hazard situations and to aid supervisors and aircrews in altering and/or discontinuing flying operations when required.

2.3.6. Establish aircraft and airfield operations procedures to avoid high-hazard situations.

2.3.7. Provide for the dissemination of information to all assigned and transient aircrews on bird hazards and procedures for bird avoidance.

2.3.8. Establish guidelines to decrease airfield attractiveness to birds.

2.3.9. Provide guidelines for dispersing birds when they congregate on the airfield.

2.4. Airfield and local area maps: A basic airfield habitat map is included in this plan. Additionally, a large detailed area map is on display in the flight planning room at FAAF Base Operations, Bldg 2408. The map contains nearby BASH, which includes surface water and wetlands for Newport News and parts of James City County, and highlights BASH areas on the airfield. Additionally, one installation restoration site exists in the proximity of FAAF (Felker Airfield Tank Farm, Site FTEUST-32). A detailed description and map of FE and its surroundings are available through the 733 CED/CEIE.

### 3. Execution.

3.1. Reducing the bird/wildlife aircraft strike hazard at FAAF requires a cooperative effort between the 633 ABW (BOS-I) and the 1 FW (SAA). The OPR for coordinating ANNEX B to this BASH plan is the 1 OSS/FSA.

#### 3.2. BHWG:

3.2.1. Function. Collects, compiles and reviews data on bird strikes. Identifies and recommends actions to reduce hazards. Recommends changes in operational procedures. Prepares informational programs for aircrews. Assists the OSF/MGR by acting as a point of contact for external BASH issues (i.e., issues from agencies outside the installation).

3.2.2. Authority. The BHWG submits all recommendations to the 1 OSS/CC for approval. Implementation is through normal chain of command.

3.2.3. Composition. At a minimum, the group consists of a representative from FAAF Safety Office, FAAF FOD Program Management, FAAF Operations, AMOPS, 733 CED (comprising Pest Management, Natural Resources, Grounds Maintenance, etc.), ATC, 733 SFS (Game Warden), USDA/WS, tenant units and representatives from other tasked organizations.

3.2.4. Meeting Schedule. Meetings are held quarterly in conjunction with the LAFB BHWG, or at the call of the OSF/AFSM.

3.2.5. Tasks. Appendix 2 outlines the general and continuing tasks and responsibilities for each organization. Appendix 3 explains the bird hazard warning system and establishes procedures for its operation.

**APPENDIX 1 TO ANNEX B TO JBLE BASH PLAN**  
**TASKED ORGANIZATIONS**

Organizations

633 ABW/PA  
733 CED  
733 CED/CEIE  
1 FW/CC  
1 FW/CV  
1 FW/SEF  
1 OG/CC  
1 OG/OGV  
1 OSS/CC  
FAAF MGR  
1 OSS/FSA  
USDA/WS

Local off-base assistance

USFWS  
Migratory Bird Permit Office  
P.O. Box 779  
Hadley, MA 01035-0779  
(413) 253-8673

USFWS  
Virginia Field Office  
6669 Short Lane  
Gloucester, VA 23061  
(804) 693-6694      (804) 289-6580

USDA/WS  
Virginia State Office  
P.O. Box 130  
Moseley, VA 21312  
(804) 739-7739

VDGIF  
Region 1 Office  
3801 John Tyler Memorial Highway  
Charles City, VA 23030

## **APPENDIX 2 TO ANNEX B TO JBLE BASH PLAN** **RESPONSIBILITIES**

### 1. Responsibilities.

1.1. The 1 FW/CC: Directs and funds execution of this plan.

1.2. The 1 OSS/CC:

1.2.1. Approves recommendations of BHWG.

1.2.2. Attends quarterly BHWG meetings.

1.3. 1 OSS/FSA:

1.3.1. Is the OPR for the management and updating the FAAF appendix of the BASH plan.

1.3.2. Attends quarterly BHWG meetings at LAFB and hosts safety council meetings at FAAF.

1.3.3. Reports and tracks all aircraft bird/wildlife aircraft strikes and hazards.

1.3.4. Reports on BASH and provides input for BHWG recommendations and actions in the agenda and minutes of the BHWG meetings.

1.3.5. Disseminates BASH data to the BHWG and flying units.

1.3.6. Provides the BHWG with current BASH guidance from higher headquarters, the USDA office, and other agencies, as necessary.

1.3.7. Provides any additional information on migratory, local, and seasonal bird activities through contact with the USDA, local ornithologists, and other agencies.

1.3.8. Monitors bird/wildlife activity and strike statistics at [www.usahas.com/BAM](http://www.usahas.com/BAM).

1.3.9. Coordinates preservation of bird remains for identification with USDA/WS after a strike occurs.

1.3.10. Establishes and maintains a continuity folder in the safety office that contains any pertinent BASH data and information to assure continuity of knowledge with personnel turnover.

1.3.11. Establishes a bird/wildlife hazard awareness program in conjunction with unit flight safety officers, to include films, posters, and information on local bird hazards and reporting procedures.

1.3.12. Ensures each bird/wildlife aircraft strike is analyzed, along with previous data, for unacceptable trends and possible corrective action. Includes trend analysis of all

bird/wildlife aircraft strikes in flight safety meetings, flight safety council, and BHWG meetings.

1.3.13. Provides recurring BASH training to flight personnel when requested.

#### 1.4. FAAF MGR:

1.4.1. Issues specific guidance concerning actions required implementing this plan

1.4.2. Mission permitting, makes operational changes to avoid areas and times of known hazardous bird concentrations. Considers the following during periods of increased bird activity.

1.4.2.1. Raises traffic pattern altitude.

1.4.2.2. Avoids takeoffs/landings one hour before and after dawn or dusk during BASH Phase II or when there is a known increase in hazardous bird activity.

1.4.2.3. Limits or prohibits formation takeoffs and landings.

1.4.2.4. Mandates traffic pattern departures in trail.

1.4.2.5. Directs full-stop landings if necessary.

1.4.3. Coordinate day-to-day activities of FAAF assigned USDA/WS, and ensure USDA/WS fulfills duties IAW the Interagency Agreement between IFW and USDA APHIS Wildlife Services.

1.4.4. Ensures personnel report all discovered bird/wildlife strikes on aircraft to OSF/AFSM, who will in turn notify USDA/WS.

1.4.5. Ensures all bird remains are preserved for identification by the USDA/WS. Even the smallest fragment of feather (down) can provide enough information for a positive identification.

1.4.6. Ensures personnel report all hazardous bird/wildlife activity on the airfield directly to the OSF/AFSM and USDA/WS.

1.4.7. Requests funding for bird scare devices from appropriate sources.

1.4.8. Appoints a BDT to supplement bird/wildlife control activities. The BDT will consist primarily of personnel from USDA/WS, AFSM, and AMOPS. BDT communicates directly with OSF/OPS during BWC Moderate or Severe to assess and reduce hazardous bird activity on the airfield. The bird/wildlife dispersal team will:

1.4.8.1. Have immediate access to bioacoustics and pyrotechnic equipment for bird/wildlife dispersal. (Ensure required permit on person when conducting these activities.)

1.4.8.2. Ensure personnel are properly trained and equipment is stored so it is readily available.

1.4.8.3. Document all bird/wildlife sightings and dispersal measures taken on BASH response log. BWC changes should also be annotated. Forward a copy of the log to OSF/AFSM and USDA/WS each month.

1.4.8.4. Notify OSF/AFSM whenever bird/wildlife remains are found on the runway so a sample can be obtained for trend analysis and identification purposes.

1.4.8.5. Establish direct communications with OSF/OPS anytime the BWC is increased to Moderate or Severe during flying operations so a bird scare team can be dispatched as necessary and information on hazardous bird movement can be instantaneously disseminated.

1.4.8.6. Notify OSF/OPS and the tower when significant bird/wildlife scare activities will be necessary on the airfield.

1.4.8.7. Employ bird/wildlife dispersal measures. USDA/WS will be the overall coordinating agency for on-airfield bird/wildlife control. When necessary, they will use pyrotechnics, bioacoustics, and other bird scare efforts to disperse bird/wildlife on and around the airfield that pose a hazard to aircraft operations (ensure 733 SFS is notified prior to the use of pyrotechnics off of the airfield).

## 1.5. FAAF AMOPS:

1.5.1. Reviews BASH potential with 1 OSS/FSA and USDA/WS on all proposed new training areas or changes to existing areas.

1.5.2. Issues Bird Hazard Alerts at the start of each Phase II BASH period to emphasize the beginning of the bird migration period.

1.5.3. Issues specific guidance for aircrews on procedures to be followed under birdwatch conditions (Appendix 3).

1.5.4. Operates as overall coordinating agent for the delay or diversion of controlled aircraft based on bird activity.

1.5.5. Upon coordination with ATC and AMOPS, advises aircraft of anticipated delays, if known, for bird/wildlife dispersal or a return to a LOW BWC. Airborne aircraft will divert, hold, or full stop. Aircraft CCs/Pilot-in-Command should assess the risk by considering fuel status, weather, bird location, etc., when making this decision.

1.5.6. Ensures OSF/AFSM is notified any time a bird/wildlife aircraft strike occurs, who will in turn notify USDA/WS.

1.5.7. Maintains a current bird/wildlife activity map for FAAF to be used for tracking bird/wildlife aircraft strikes.

## 1.6. Unit Schedulers:

1.6.1. When not mission critical, avoid scheduling flights during periods of peak bird activity (one hour before to one hour after sunrise/sunset) while in the BASH Phase II period.

1.6.2. During BASH Phase II period, schedulers should review the BAM to identify potential BASH zones and avoid scheduling flights in areas where bird hazards may exist.

## 1.7. Unit Assigned Aviation Safety Officers:

1.7.1. Ensure all personnel receive BASH training as part of their standardization training. Brief aircrews on seasonal bird/wildlife hazards. Movies, news articles, and other information will be used, as appropriate, to maintain awareness.

1.7.2. Ensure aircrew and maintenance personnel report all discovered bird/wildlife strikes on aircraft to OSF/AFSM.

1.7.3. Ensure all bird remains, are preserved for identification by USDA/WS. Even the smallest fragment of feather (down) can provide enough information for a positive identification.

1.7.4. Ensure personnel report all hazardous bird/wildlife activity on the airfield directly to the OSF/OPS, ATC, USDA/WS or OSF/AFSM.

1.7.5. Obtain and post current bird/wildlife activity data and ensure it is readily available for briefing aircrews.

1.7.6. Ensure that current bird/wildlife activity data is available and briefed for each planned phase of flight.

1.7.7. Ensure that adequate supplies of BASH report forms are readily available for aircrews.

## 1.8. USDA/WS

1.8.1. USDA/WS fulfills duties IAW the Interagency Agreement between 1FW and USDA APHIS Wildlife Services.

1.8.2. USDA/WS will be operationally controlled by 1FW Chief of Safety, administratively controlled by the USDA/WS senior representative assigned at JBLE. USDA/WS daily activities will be IAW this plan and its associated SOPs. The 1FW Chief of Safety will be the final authority should any dispute arise between the Parties in

relation to BASH procedures. At no time will coordination between the Parties take precedence over safety of flight.

1.8.3. Act as the primary airfield BDT.

1.8.4. Provides representative to the BHWG and generates quarterly wildlife harassment, take, and survey data for BHWG.

1.8.5. Conducts depredation as necessary. USDA/WS will notify the 733 CED of any pre-planned BASH activities outside the SAA AOR. USDA/WS will coordinate with AMOPS and the ATCT for BASH activities within the SAA AOR. Parties interested in BASH activities within the SAA AOR shall contact AMOPS for information.

1.8.6. Conducts BASH surveys.

1.8.7. In conjunction with AS and Airfield Safety, inspects the airfield at least weekly for any conditions, which may attract birds/wildlife. The inspections should be completed on the first Tuesday of the month.

1.8.8. Reviews environmental conditions that increase BASH potential.

1.8.9. Recommends best land management practices that reduce BASH potential.

1.8.10. Maintains pyrotechnics for use in BASH operations. See Pyrotechic Usage in Tab A to Appendix 2 to ANNEX B below.

1.8.11. When necessary, USDA/WS will be authorized to use firearms for the lethal take of hazardous wildlife species on Ft. Eustis in accordance with the FAAF Firearms SOP signed AUG 2015. The USDA/WS will notify the 733 CED/CEIE for any pre-planned wildlife control activities outside the SAA AOR. Note: The SAA AOR extends beyond the FAAF airfield fence. See Firearm SOP in Tab B to Appendix 2 to ANNEX B below.

1.8.12. Prevents animal hazards to aircraft, by using appropriate trapping methods, harassment techniques, and lethal take as a last resort.

1.8.13. Excludes birds from buildings and hangars to reduce bird hazards in the flying environment and reducing the health hazard in and around hangars. Permits from the USFWS and the state wildlife agency are required to control most birds (permits are not required for rock doves or blackbird species). When necessary, consider the following measures.

1.8.13.1. Deny access by screening windows, closing doors, and blocking entry holes is most effective.

1.8.13.2. Pellet Guns. Pellet guns can be an effective means of removing wildlife. Pellet guns may be used in accordance with the JBLE firearms SOP.

1.8.13.3. Netting. Netting can be installed under superstructures to prevent pest birds from roosting. Ensure no gaps or holes are present for birds to get through.

1.8.13.4. Trapping/Removing. Various kinds of traps baited with food water or decoy birds can be used to capture birds. If necessary, birds can be humanely euthanized using approved in accordance with American Veterinary Medical Association approved methods.

1.8.13.5. Design Features. Consider structures with the support features located on the outside of the building to greatly reduce bird numbers. Consider this design when planning new buildings.

1.8.14. Door Coverings. Use netting or plastic strips suspended over the doors to exclude birds. Ensure no tears or holes are present which allow birds access to the hangar.

1.8.15. Perch inhibitors. Bird spikes should be used wherever feasible near the airfield to prevent unnecessary loafing of birds.

1.8.16. Night Harassment. Use high-pressure air or water to make hangars an undesirable roosting site. Persistence is the key.

## 1.9. AMOPS:

1.9.1. Supports USDA/WS as the airfield BDT.

1.9.2. In conjunction with OSF/AFSM, USDA/WS inspects the airfield at least weekly for any conditions, which may attract birds/wildlife.

1.9.3. Maintains, stores and utilizes bird scare devices to include: propane cannons and pyrotechnics with launcher.

1.9.4. Because of the dynamic nature of bird/wildlife populations, environmental conditions and weather, predicting specific problems can be difficult. The following recommendations are potential tools that can be used to mitigate specific problems. Careful monitoring will be necessary in prioritizing projects and managing BASH related workloads.

1.9.4.1. Maintains airfield habitat consistent with runway lateral and approach zone management criteria. Habitat reduction to reduce BASH beyond a 1000' buffer around the runway is desired and will further reduce BASH potential.

1.9.4.2. Incorporates the following practices when conducting airfield grounds maintenance through coordination with the appropriate agencies.

1.9.4.2.1. Managing Grass Height. Maintain a uniform grass height between 6 and 12 inches to prevent grass from seeding out and attracting birds to the airfield. Coordinate mowing with periods of low flight activity.

1.9.4.2.2. Controlling Broad-Leafed Weeds. Keep broad-leafed weeds to a minimum on the airfield. Request weed control from 733 CED by requesting service order request or by consulting with the Fort Eustis IPMC. Broad-leafed weeds attract a variety of wildlife, may produce seeds or berries, and may limit grass growth.

1.9.4.2.3. Planting Bare Areas. Birds frequently use bare areas as resting sites. Eliminate them on the airfield. Plant grass as necessary for uniform coverage.

1.9.4.2.4. Fertilizing. Selectively stimulate grasses to promote a uniform cover. Irrigation may be required to support turf growth. Control watering to enhance root production and decrease seed head production. Coordination will be made with the IPMC prior to applying fertilizers to confirm whether the given fertilizer contains pesticides. If fertilizers contain pesticides, application must be made with the IPMP, AFI 32-1053, and DODI 4150.07.

1.9.4.2.5. Reducing Edge Effect. Edge refers to the highly attractive transition zone between two distinct habitat types (e.g., brush to grassland). In these transition zones, there is a sharp increase in diversity and abundance of wildlife. Maintain the airfield as uniformly as possible to reduce this effect. Maintenance or modification will be within the guidelines of regulations and EPA guidelines. USAF environmental impact assessment process must be followed in accordance with Joint Base Langley-Eustis Instruction (JBLEI) 32-101 and environmental management procedure 4.6.9 prior to initiation of work.

1.9.4.2.6. Leveling of Airfield. Level or fill high and low spots on the field to reduce attractiveness to birds and prevent standing water. USAF environmental impact assessment process must be followed in accordance with JBLEI 32-101 and environmental management procedure 4.6.9 prior to initiation of work.

1.9.4.2.7. Removing Dead Vegetation. Remove dead vegetation such as brush piles, grass clippings, hay bales, etc. Removal of standing timber must be requested through 733 CED. Disposal will occur through the installation solid waste facility. No vegetation will be placed or discharged into wetlands, streams, or other surface water habitats. USAF environmental impact assessment process must be followed in accordance with JBLEI 32-101 and environmental management procedure 4.6.9 prior to initiation of work.

1.9.4.2.8. Removing Dead Birds/Animals. When requested, provide assistance in removing dead birds or other animals from the base to avoid attracting scavengers and other birds (this action must be coordinated through USDA/WS and/or 733 CED/CEIE).

1.9.4.2.9. Controlling Pests. Invertebrates and rodents provide important food sources for many birds. IPMC should perform periodic surveys of the site and submit survey results to the Avian Division safety office for action (submitting

work order for action to 733 CED/CEIE). Control insects, rodents, etc., by using pesticides if feasible IAW the IPMP. USAF environmental impact assessment process must be followed in accordance with JBLEI 32-101 and environmental management procedure 4.6.9 prior to initiation of work.

1.9.4.2.10. Maintaining Drainage Ditches. Regularly inspect ditches and keep them clear and obstacle-free. Line ditch edges with rip rap and boulders and/or maintain ditch sides as steeply as possible--minimum slope ratio of 4:1 to discourage wading birds and emerging vegetation. Remove vegetation as often as necessary to maintain water flow and to discourage use by birds. Consult with 733 CED for best management practices. All activities involving alterations of or encroachment into drainage ditches may require additional environmental impact assessment documentation, regulatory permits or other documentation. Such activities include but are not necessarily limited to: vegetation clearing, re-grading, soil excavation or removal, and filling. USAF environmental impact assessment process must be followed in accordance with JBLEI 32-101 and environmental management procedure 4.6.9 prior to initiation of work.

1.9.4.2.11. Eliminating Standing Water. Eliminate puddles or other low areas containing standing water. Certain other water sources such as small ponds and wetlands may exist; however, elimination of such sources will require additional environmental impact assessment documentation and regulatory permits. Coordination with 733 CED/CEIE is necessary before taking action to eliminate such sources. NOTE: Coordination with 733 CED/CEIE, the USACE and the appropriate state officials is required prior to altering tidal ditches and wetlands. USAF environmental impact assessment process must be followed in accordance with JBLEI 32-101 and environmental management procedure 4.6.9 prior to initiation of work.

1.9.4.2.12. Employing Vegetation for Erosion Control. Use vegetation that is appropriate to the region and supports BASH reduction philosophy--i.e., do not control erosion using plants which produce seeds at heights above 14 to 18 inches.

#### 1.10. ATC:

1.10.1. FAAF ATC personnel continually observe the airfield environment for bird/wildlife hazards while on duty. If a hazardous bird/wildlife condition is spotted, ATC personnel will elevate the BWC, using their professional judgment, based on guidance in Appendix 3.

1.10.2. Sets the BWC per Appendix 3 of this Annex, both upgrading and downgrading as necessary.

1.10.3. Immediately notifies AMOPS, AFSM, and USDA/WS of the new BWC.

1.10.4. For BWC SEVERE, immediately contacts the airfield manager for guidance on airfield status.

1.10.5. Provides warnings to all aircrews on the ground and in the traffic pattern of the new BWC and on initial contact advises aircrews of BWC MODERATE or SEVERE.

1.10.6. Provides BDT access to the runway under bird watch conditions MODERATE or SEVERE as required.

1.10.7. Logs bird/wildlife activity in the BASH Log located in the ATC netdrive.

1.10.8. Logs the appropriate BWC and any changes thereafter. Indicates whether a responsible authority was notified or not available.

#### 1.11. 733CED/CEIE

1.11.1. Ensures the Fort Eustis INRMP and other environmental plans are mutually supportive and not in conflict with this plan and the requirements of AFPAM 91-212. NOTE: Updates or changes to the Fort Eustis INRMP must be reviewed by the BWG and 1 FW/SE.

1.11.2. Ensures this plan and other BASH management actions are implemented IAW Federal and State regulations for protected wildlife and habitats. Informs 1FW/USDA of federally and state threatened wildlife occurring on the installation.

1.11.3. Incorporates specific BASH mitigation projects into the management goals and objectives section of the Fort Eustis INRMP.

1.11.4. Is responsible for wildlife, habitat, and overall natural resources and integrated pest management for Fort Eustis. Conducts wildlife surveys outside the SAA areas and disseminates data to the BWG.

1.11.5. Approves pest control tasks/projects prior to implementation.

1.11.6. Reviews proposed on-and off-base land-use changes, construction plans, and mitigation projects for environmental conditions that may increase BASH potential.

1.11.7. Provides information on migratory, local, and seasonal wildlife hazard activities to the BWG through contact with local, state, and/or federal wildlife agencies.

1.11.8. Advocates and develops cooperative agreements with neighboring entities whose development projects could potentially attract hazardous wildlife within 5-miles of the approach departure corridors.

1.11.9. Attends quarterly BWG meetings.

1.12. The 633 ABW/PA:

1.12.1. Participates as required and upon request will provide a public information program to inform post personnel, dependents, and the general public on the hazards and costs of uncontrolled bird/wildlife activity and the measures being taken to minimize them.

1.12.2. Provides photographic services to document bird strikes and related activities, as requested..

**TAB A TO APPENDIX 2 TO ANNEX B TO JBLE BASH PLAN**  
**PYROTECHNIC USAGE**

1. United States Department of Agriculture (USDA), Wildlife Services (WS) has been contracted by 1FW to conduct Bird Aircraft Strike Hazard (BASH) mitigation at Felker Army Airfield (FAAF). In accordance with USFWS permit MB237450-0, purposeful eagle take for safety and eagle nest take, monitoring and harassment is a condition of the programmatic permit to remove inactive eagle nests within 1 mile of FAAF and prevent future nesting attempts within 1 mile. This memo is a protocol pyrotechnics and paintballs use within 1 mile of FAAF and to provide contact information for USDA.
2. USDA will use 15mm pyrotechnic Bird Bangers and Screamer Sirens; launched from a starter pistol using 6mm blanks. USDA will also use paintballs launched from paintball marker using compressed air or CO<sub>2</sub>. USDA will use paintballs and pyrotechnic within 1 mile of the airfield for all permissible species as defined from: 1) Gold Picnic Area on Harrison Road, south to the James River Reserve Fleet parking lot. 2) Mullberry Island Rd between Back River Rd and Klingenhagen Rd; including Back River Rd and Klingenhagen Rd.
3. USDA will contact Military Police prior to discharging pyrotechnics on the installation. USDA will be in a pick-up truck marked with "USDA" on the doors; government issued license plates, and will have an amber beacon on the vehicle. All USDA employees will be wearing USDA marked uniforms.

## **TAB B TO APPENDIX 2 TO ANNEX B TO JBLE BASH PLAN** **FIREARM USAGE**

### **1. Background and Need**

A Wildlife Hazard Assessment (WHA) was conducted at Felker Army Airfield (FAAF) by the United States Department of Agriculture (USDA), Animal and Plant Health Inspection Service, Wildlife Services Program (WS), March 2012 through February 2013. The WHA documented results of a 12-month ecological study of birds and mammals inhabiting the airfield and surrounding environments, evaluated wildlife strike potential, and provided management recommendations to mitigate the presence of hazardous wildlife. This WHA will be used as a basis for developing a comprehensive bird/airstrike hazard (BASH) plan at FAAF. The WHA also documented safety threats on the airfield including but not limited to bald eagles, white-tailed deer, vultures, starlings, gulls, and Canada geese. To assist FAAF in mitigating these threats to aircraft, the 1FW expanded its agreement with USDA to establish USDA personnel at FAAF, to establish a BASH working group, and to conduct wildlife damage management operations.

Wildlife damage management operations at FAAF require the use of rimfire rifles, pellet rifles, centerfire rifles, and shotguns, and specially trained personnel to plan and implement such operations. All participating personnel within the Virginia Wildlife Services (WS) program will have obtained Advanced Firearms Training and/or Sharpshooter Certification. This Standard Operating Procedures Document (SOP) serves as a working guide to aide personnel in planning and implementing safe, efficient, and effective wildlife management operations at FAAF, and enhancing communication regarding these operations.

### **2. Planning**

Proper planning of firearms discharge is paramount to ensuring safe, efficient, and effective operations. Representatives from USDA, Airfield Safety, Ground Safety, Airfield Management Operations (AMOps), Air Traffic Control Tower (ATCT), Range Control (RC), Military Police (MP), and CEIE-Conservation Branch (CE) will be included in the planning stages. A Point of Contact for each party is located in Appendix A. If possible, all personnel who will be involved directly in the operation should also be included during the planning stages.

#### **2.1 Site Evaluation**

Maintaining safe shooting operations requires comprehensive knowledge of the area in which the operation will take place. All WS personnel participating in the operation will become familiar with the site prior to firearms use. This familiarization will aid in maintaining situational awareness at all times. Site evaluation will include the analysis of aerial photography and topography maps if available to identify safe firing zones. Additional ground surveys during daylight hours as well as nighttime hours should be conducted to further identify areas that may be potentially unsafe for shooting. A modified map with zones labeled safe for shooting will be created and available prior to any shooting operation and as a reference during the operation. Shooting zones at FAAF are identified in Appendix B. Air Traffic Control Tower (ATCT) and Airfield Management Operations (AMOps) must approve firearms discharge in areas shaded in yellow. Coordination must be made with Range Control (RC) prior to discharging firearms within training areas, or in areas of the AOA where rounds may enter training areas. These areas of the AOA are shaded in blue. The fuel area of the airfield is shaded in red and is a designated no shooting area. WS will use a 45° cone of shot and the Shot Danger Zone created by RC for

each round to determine if a round may enter a training area. A 45° cone of shot is representative of the area that a shot may be taken from within a vehicle, on top of a vehicle, and the area of movement of the muzzle while being aimed at a target; after a round has been chambered. At times, WS may be asked to remove wildlife outside of the AOA that are a threat to aviation safety. Areas outside of the AOA that will not impact training areas will be addressed through CEIE-Conservation Branch (CE), and a separate site evaluation will be addressed for each location. WS will address firearms safety for these locations with CE, Military Police, and other parties of interest for that location. Firearm selection in these areas will be congruent with those listed in this SOP.

## 2.2 Personnel Requirements

Personnel requirements for shooting operations depend upon the scope of the operation. Operations where the use of a rimfire rifle, pellet rifle, shotgun, or centerfire rifle from a vehicle is necessary can be divided into two classifications: targets of opportunity/ surveys, and culling operations. These classifications will be discussed in further detail in this SOP, and each has separate procedures in place that are specific to FAAF. WS personnel conducting daily shooting operations at FAAF will have completed a NRA Basic Rifle and Basic Shotgun course, will have completed WS approved Advance Firearms Training, and will have been approved to discharge firearms by their supervisor.

## 3. Firearms Selection

Firearms selection at FAAF is critical due to the size of the FAAF and training areas that surround the AOA. Calibers and shot sizes are selected to reduce the shot danger zone, and/or the distance that a round may potentially travel upon firing. Several areas around the AOA are adjacent to training areas that may contain structures, vehicles, personnel, or troops training. WS and RC will coordinate shooting operations in, and around the AOA to mitigate safety threats to those working and training around the AOA. WS at FAAF have incorporated this SOP in daily shooting operations. To further reduce safety concerns, WS will only use calibers and shot sizes that have been approved by 633<sup>rd</sup> Safety Office, shot distances and a 45° cone of shot, to determine if a shooting operation is safe, prior to conducting any of the shooting operations mentioned in this SOP.

All rifles used at FAAF will be fitted with a suppressor or fully suppressed barrel. Although suppressors do not silence a rifle shot, they aid shooting operations by reducing felt recoil, reducing the muzzle blast to safe hearing levels, and masking the direction from which the shot was fired. Reducing the felt recoil of a rifle reduces shooter fatigue, helps prevent off-target shots caused by the shooter anticipation of recoil, and helps the shooter keep the target in view through the scope during and after the shot. Reducing the muzzle blast to safe hearing levels allows personnel to operate with minimal hearing protection, which facilitates clear communication and allows the shooter to listen to what is going on in his or her surrounding area. A reduced rifle muzzle blast also helps to reduce the impact of shooting operations on any nearby communities or other wildlife.

All rifles used at FAAF will be bolt action. The bolt action rifle is considered the most accurate rifle available, and is the preferred rifle action for shooting operations. The slight time delay required to reload between shots offers the shooter a chance to stop and reassess the situation, ensuring any follow up shots taken are safe. Knowing a follow up shot can only be taken after

reloading also forces the shooter to take time to be certain the first shot is on target and keeps the shooter's focus on a single target at a time.

### 3.1 Rimfire Rifles, Pellet Rifles and Shotguns

During regular operations, WS personnel may utilize rimfire rifles, pellet rifles, or shotguns. Centerfire rifles will not be discharged at FAAF except during culling operations, described in detail in Section 6. Rimfire rifles (caliber), pellet rifles (caliber), and shotguns (gauge) used by WS at FAAF will include:

- .177 (pellet)
- .22 (pellet)
- .22LR
- .22LR Subsonic
- .17HMR
- .17Mach2
- 12ga

### 3.2 Centerfire Rifles

Centerfire rifles will only be used during Culling Operations at FAAF; provided that the criteria discussed previously in this SOP are being met. All centerfire rifles used at FAAF will be bolt action and fitted with integral suppressor. Centerfire rifles used at FAAF will include:

- .308 Win
- .243 Win
- .270 Win

## 4. Targets of Opportunity

Targets of opportunity are hazardous wildlife that pose an aviation or human health and safety threat and need to be removed immediately. These animals may present themselves day or night, during management operations, or be brought to the attention of WS personnel by FAAF AM OPS, Pilots, or ATCT. WS personnel stationed at FAAF may use a rimfire rifle, pellet rifle, or shotgun to remove targets of opportunity at FAAF within the SAA AOR provided:

- Familiarity with the safe shooting zones map of FAAF.
- Proper notification of ATCT if shooting in areas within the AOA that will not impact adjacent training areas.
- Proper notification of Range Control in areas that may impact adjacent training areas, and all adjacent training areas that may be impacted have been reserved or cleared of personnel by Range Control.
- Targets of Opportunity will only be taken from within the AOA, and areas controlled by ATCT, or on areas outside of the AOA with prior approval.

Centerfire rifles will not be used to take Targets of Opportunity at FAAF. Targets of Opportunity will not be taken outside of the AOA prior to consultation with CE (for each species to be taken).

Targets of Opportunity may be taken with rimfire rifle or pellet rifle from within a vehicle, on top of a vehicle, or from any elevated rested position. Shooting from elevated positions aids in aiming at a target, being sure of what is beyond the target, and gives an angle of shot that is pointing towards the ground. Targets of Opportunity may be taken from a standing position outside of a vehicle using a shotgun provided that the shot will 1) not contact a structure, personnel, vehicle, or enter a training area; or 2) the training area adjacent to the shooting zone has been reserved or cleared by RC.

## **5. FLIR/Spotlight Surveys**

FLIR and Spotlight Surveys require the use of two WS personnel (driver and spotter). Although the goal of spotlight surveys is population monitoring, mammalian targets of opportunity often present themselves during these operations because they are conducted at night. If a rimfire rifle, pellet rifle, or shotgun is to be used for removal efforts during a FLIR/Spotlight Survey, the following criteria must be met:

- All personnel will be familiar with the safe shooting zones map of FAAF.
- Proper notification of ATCT if shooting in areas within the AOA that will not impact adjacent training areas.
- USDA will contact 733 SFS prior to conducting night surveys. Proper notification of Range Control in areas that may impact adjacent training areas, and all adjacent training areas that may be impacted have been reserved or cleared of personnel by Range Control.
- FLIR and Spotlights must be used in conjunction to determine safe shooting zones, detect structures, non-targets, or other safety concerns prior to discharging any firearm.
- If shooting within training areas during FLIR/Spotlight Surveys, all gates in to, and out of the training area will be locked prior to conducting a FLIR/Spotlight Survey.

If shooting is warranted, the driver also acts as a spotter and must maintain situational awareness as to stop the operation if the situation becomes unsafe. Centerfire rifles will not be used during FLIR/Spotlight Surveys at FAAF. If the need to shoot is anticipated, a culling operation should be planned instead.

## **6. Culling Operations**

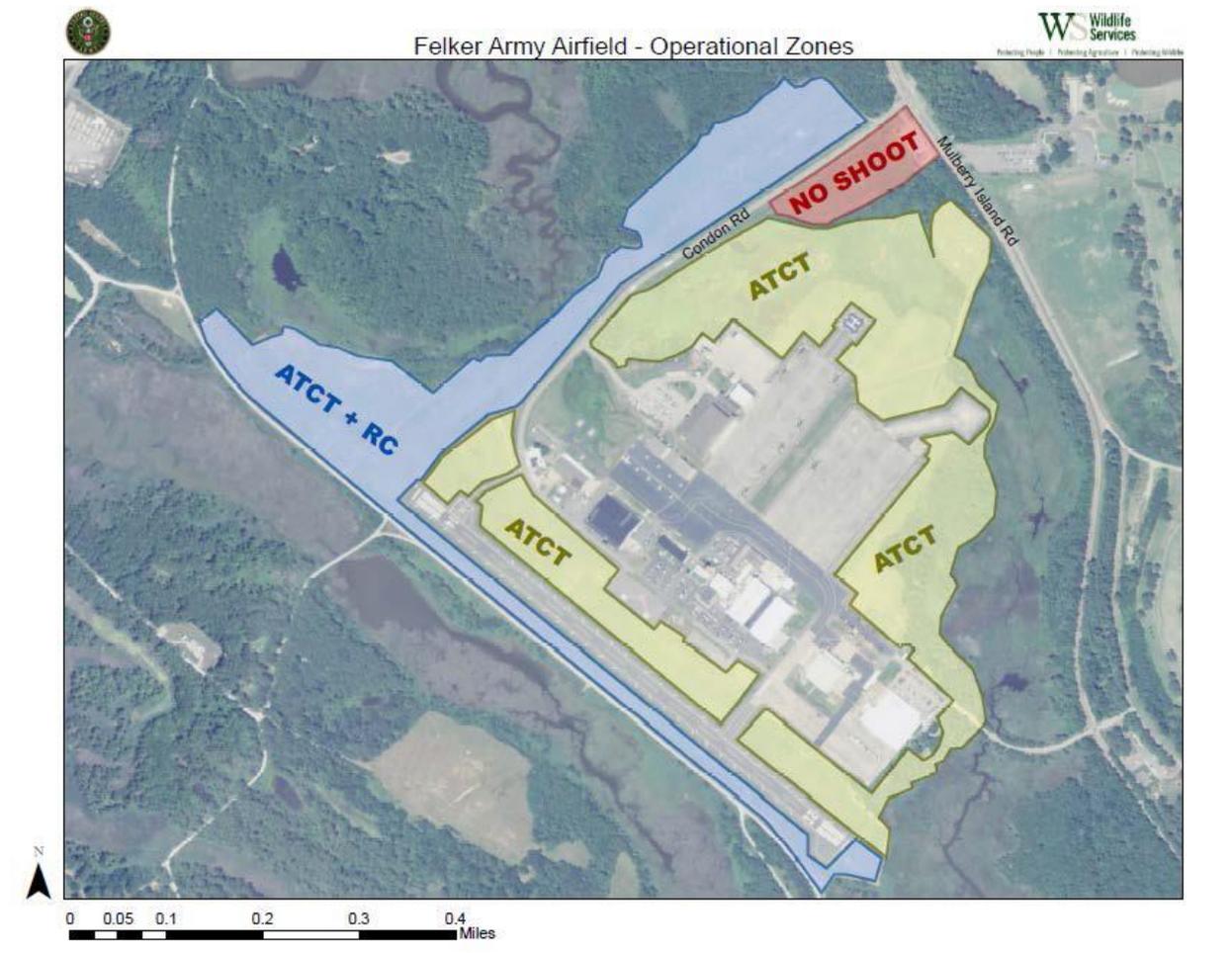
Culling operations using a centerfire rifle require the use of three WS personnel (driver, shooter, and spotter) and the following criteria:

- All personnel will be familiar safe shooting zones at FAAF.
- The shooter must be certified as a Sharpshooter as per WS Virginia Directive 2.615 (a);
  - A non-sharpsheet certified employee may shoot under direct supervision of a certified sharpshooter.
- Means of clear communication among all personnel must exist.
- The Airfield Operations Office, Airfield Safety Manager, Airfield Manager, Post Security, and ATCT must be notified prior to conducting Culling Operations and all parties must be in agreement of the date, time, and methods used for Culling Operations.
- ALL training areas around the AOA will be reserved through RC at least 1 week in advance of Culling Operations at FAAF.
  - Reserving training areas for Culling Operations be coordinated through: Range Control Operations Specialist (757)878-4412
- Gates leading in to, and out of, training areas will be locked and cleared by RC or Post Security personnel prior to Culling Operations.
- Military Police will provide a perimeter of no traffic around the AOA during Culling Operations and will remain in contact with WS during the entire Culling Operation.
  - Culling Operation security will be coordinated through: Military Police Operations (757) 878-3647
- Military Police will stop traffic on Mulberry Island Rd. at Back River Rd, At the intersection of training areas 28 and 19, and Mulberry Island Rd. at the Range Control Building. Traffic should be held until WS is able to suspend Culling Operations and clear all firearms

- Contact will always be kept with ATCT through an airfield radio; contact with Military Police will be kept by whatever means requested by Military Police.

The driver should be thoroughly familiar with FAAF to correctly and safely position the vehicle for the shooter. The shooter must be knowledgeable in the target wildlife's behavior and anatomy to ensure correctly placed shots are executed as safely and humanely as possible. The spotter identifies targets using the FLIR and/or spotlight and additionally illuminates any targets for the shooter. With a superior vantage point than the driver and a better field of view than the shooter, the spotter must maintain situational awareness while the shooter is aiming to ensure the situation does not become unsafe. Any and all personnel should immediately stop the sharpshooting operation if the situation becomes unsafe or the potential exists for the situation to become unsafe.

During culling operations where more than 3 targets are identified, USDA will make every effort to donate deer taken to local food banks or charity. If fewer than 3 targets are taken, or if weather conditions are not conducive to donating deer, USDA will dispose of deer by deep burial.



## **APPENDIX 3 TO ANNEX B TO JBLE BASH PLAN** **BIRD HAZARD WARNING SYSTEM**

1. General. This operation establishes procedures to use for the immediate exchange of information between ground agencies and aircrews concerning the existence and location of birds that could pose a hazard to flight safety.

2. Terminology.

2.1. BWCs. Use the following terminology for rapid communications to disseminate bird activity information and implement unit operational procedures. Give bird locations with the condition code.

2.1.1. BWC SEVERE: Wildlife activity on or immediately above the active runway or other specific location representing high potential for strikes. For example, wildlife are unresponsive to harassment techniques and will not leave the runway area which could be a few large birds towering near the runway or a large number of small birds loafing/foraging on the airfield during flight operations which would have a high probability for a strike. Supervision and aircrews must thoroughly evaluate mission need before conducting operations in areas under condition SEVERE.

2.1.1.1. Operations will be temporarily limited to departures and arrivals only.

2.1.1.2. Formation takeoffs, approaches and landings are not authorized.

2.1.1.3. Fixed wing operations will be suspended until further notice.

2.1.1.4. All air operations will be suspended until further notice.

2.1.2. BWC MODERATE: Wildlife activity near the active runway or other specific location representing increased potential for strikes. For example, one or many groups of small birds flying across the runway, or one large bird loafing/towering in the runway resulting in a potential for a strike. BWC Moderate requires increased vigilance by all agencies and supervisors and caution by aircrews

2.1.2.1. Initial takeoff and final landing is allowed if departure or arrival routes avoid identified bird activity.

2.1.2.2. The necessity to conduct multiple approaches should be seriously considered before conducting such operations.

2.1.2.3. Formation takeoffs, approaches and landings are not authorized.

2.1.3. BWC LOW: Bird activity on and around the airfield representing low probability for bird strikes during normal flight operations.

3. Responsible Authority. The OSF/AFSM or the OSF/MGR is the responsible authority. They also have the ability to change the BWC based on information relayed by airborne aircraft,

observations made by and relayed to OSF/OPS by FAAF ATC and/or airfield support personnel, and observations made by unit flight operations, Unit Aviation Safety, or USDA personnel.

NOTE: The authority that declared the BWC will also downgrade or cancel BWCs, commensurate with updated information.

#### 4. Communications.

4.1. During periods of flight operations, BWC other than LOW at FAAF will be included in advisories from the control tower. When a declaration of BWC MODERATE or SEVERE is made by ATC, OSF/OPS, OSF/AFSM or the OSF/MGR personnel will post the BWC for aircrew personnel, and notify all stations of the change in conditions.

4.2. ATC will notify Airfield Operations anytime they change the BWC.

4.3. The primary means of transmitting BWC to aircrews will be via the control tower broadcasting to all aircraft on frequency of a change in the BWC and on initial contact.

4.4. FAAF Flight Operations or ATC (BWC Severe) will notify the airfield manager of bird conditions as needed.

#### 5. Aircrew Responsibilities and Procedures.

5.1. Aircrews should review the bird activity status prior to conducting low-level training missions to determine the relative BASH potential. Useful information can be found at [www.usahas.com/BAM/](http://www.usahas.com/BAM/).

5.2. Aircrews experiencing a bird strike should abort the mission when possible. While engine ingestion or a windscreen strike may readily be apparent from the cockpit, the damage from many fuselage, rotor system, wing, or tail strikes cannot be adequately assessed. Continuing a mission may cause greater structural damage and a serious in-flight emergency situation later.

5.3. If an aircrew observes or encounters a near miss or any bird activity while in flight which could constitute a hazard, the aircrew will contact the control tower, so that the observed bird activity can be passed on to OSF/OPS. The following information is necessary:

5.3.1. Call sign.

5.3.2. Location.

5.3.3. Altitude.

5.3.4. Time of sighting.

5.3.5. Type of bird (if known).

5.3.6. Approximate number of birds.

5.3.7. Behavior of birds.

5.4. This information should be forwarded to OSF/AFSM for trend analysis. Additional direction to all pilots is provided below based upon the coded BWCs and the location.

5.5. BWC Downgrade. Once the BWC has been elevated ATC will continue to observe for a decrease in the hazard. Once it is apparent that the hazard has subsided the BWC will be downgraded and the new BWC will be communicated as stated in paragraph 4 of this section.

**APPENDIX 4 TO ANNEX B TO JBLE BASH PLAN**  
**WILDLIFE HAZARD OPERATIONS**

1. See APPENDIX 6 TO ANNEX A above for Hazardous Wildlife operations.

**APPENDIX 5 TO ANNEX B TO JBLE BASH PLAN**  
**MAPS AND CHARTS**

1. General. This chapter outlines the use and requirements for the maps and charts required to implement the BASH program.

2. FAAF Habitat Map.

2.1. A basic habitat map is included with this plan (see Tab A to this appendix). Key areas highlighted are low lying areas and ditches which are a major attraction for birds and wildlife.

2.2. Habitat surveys to identify major habitat types available to birds are routinely conducted and are added to the map.

2.3. When a specific hazard is identified and the location of the activity is isolated, use the habitat map to determine if a specific attractant which can be altered within the scope of this plan exists.

2.4. Use the habitat map as a guide for the long-range civil engineering program to reduce actual and potential hazardous environmental factors at FAAF.

3. FAAF Surrounding Area Map.

3.1. A surrounding area map is maintained by OSF/OPS and displayed in the base operations mission planning room.

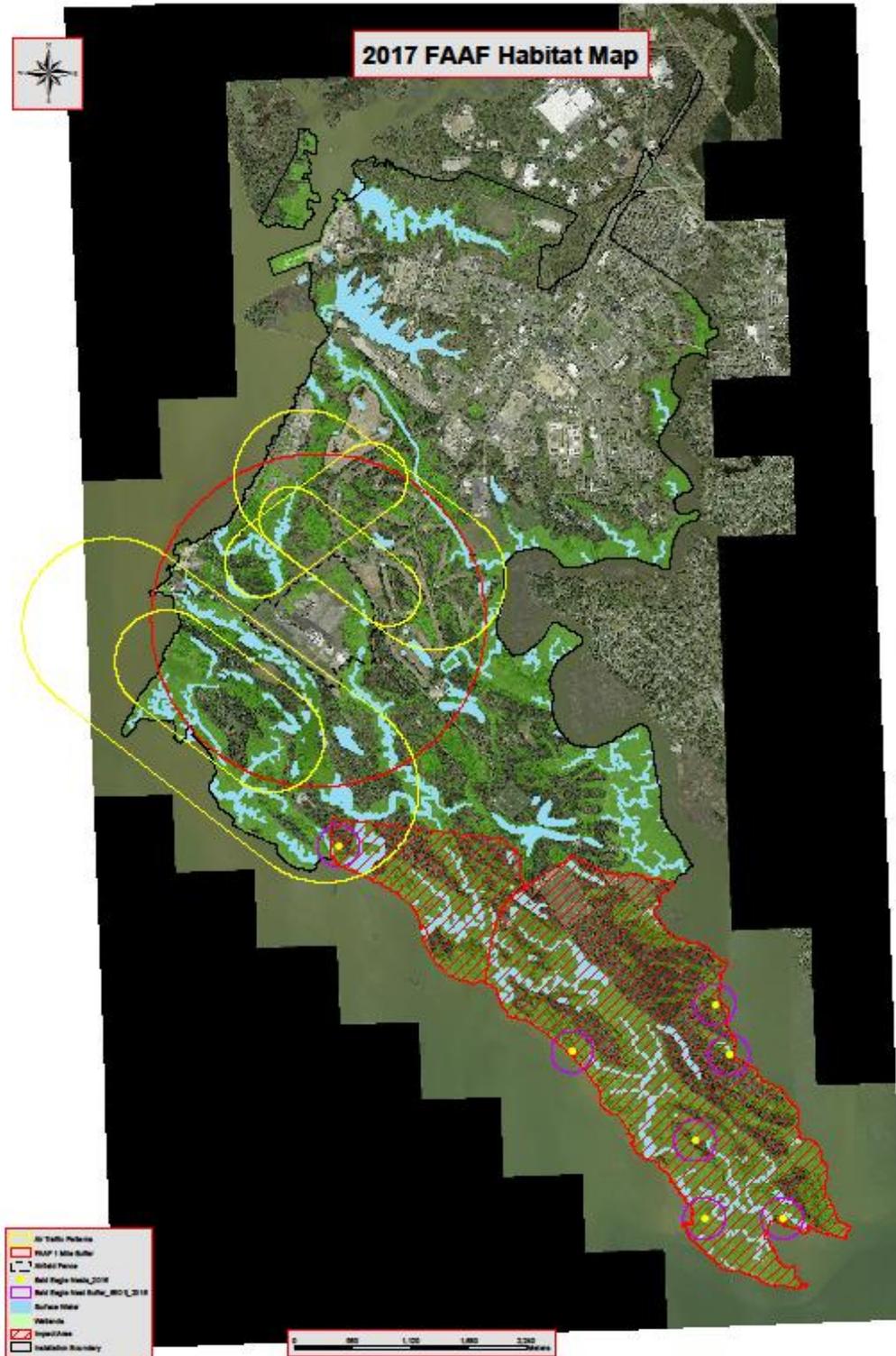
3.2. This map is used to identify specific hazards such as wildlife refuges, wetlands, lakes, landfills, storm sewer (open and closed ditches), additional ERP sites and other environmental impacts.

3.3. Additionally, this map may be used to plot local bird/wildlife aircraft strikes for tracking purposes.

TAB:

A - FAAF Habitat Map

**TAB A TO APPENDIX 5 TO ANNEX B TO JBLE BASH PLAN  
FAAF HABITAT MAP**



## **APPENDIX 6 TO ANNEX B TO JBLE BASH PLAN** **REPORTS AND FORMS**

1. General. This chapter outlines the procedures and forms required to report bird/wildlife
2. Bird/Wildlife Strike Reporting.
  - 2.1. All bird or wildlife strikes (damaging and non-damaging) must be reported using the FE Bird/Wildlife Aircraft Strike Form. Copies of strike reports will be kept on file in the FAAF Safety Office.
  - 2.2. The FAAF Safety Office compiles and tracks all reported bird/wildlife aircraft strike data. Bird/Wildlife aircraft strike reports should be reported and documented within 48 hours of the strike.
  - 2.3. Unit aviation safety officers must report all strikes of unit-owned USA aircraft regardless of the geographic location of the strikes. For strikes occurring at airfields other than home base, send the original report to OSF/AFSM and a copy to the aviation safety office of the installation at which the strike occurred (including non-Army airfields).
  - 2.4. OSF/AFSM will report/enter strikes into the FAA national strike database located at [http://wildlife-mitigation.tc.faa.gov/public\\_html/](http://wildlife-mitigation.tc.faa.gov/public_html/).
  - 2.5. Damaging Bird/Wildlife Aircraft Strike Report: Report bird/wildlife aircraft strikes that cause reportable aircraft damage to appropriate agencies. Include the following information:
    - 2.5.1. Landing lights: on or off.
    - 2.5.2. Strobe lights: on, off, or not applicable (if not installed).
    - 2.5.3. Phase of flight: climb, touch-and-go, low level, etc.
    - 2.5.4. Aircraft speed: (KIAS).
    - 2.5.5. Altitude: (AGL and MSL).
    - 2.5.6. Flight path in relation to clouds: above, below, between layers, etc.
    - 2.5.7. Species and number of bird/wildlife.
    - 2.5.8. Impact point on aircraft.
    - 2.5.9. Pilot warned of bird/wildlife hazard: yes or no.
    - 2.5.10. Low-level route number: (if applicable).
    - 2.5.11. Bird/Wildlife strike resulted in fire: yes or no.
    - 2.5.12. Geographic coordinates: (latitude and longitude).

2.5.13. Remarks.

2.6. Bird Remains Identification:

2.6.1. Preserve any bird remains (feathers, beaks, feet, etc.) following all bird strikes for identification by USDA/WS. Do not discount the possibility of a positive identification due to the lack of a complete feather. With high-powered electron microscopy, even the smallest fragment of a feather can provide positive identification.

2.6.2. FAAF Safety Office will coordinate for identification with USDA/WS .

2.6.3. A copy of the strike report will be available with the post-strike remains for the USDA/WS and 733 CED/CEIE.

2.7. BASH Response Log. The A Section or the designated bird/wildlife dispersal team identified to document bird/wildlife sightings and dispersal measures taken uses this log. A copy of the completed form is forwarded to OSF/AFSM each month for trend analysis purposes.

2.8. BASH Forms are included in this Appendix. Check with the FAAF Safety Office for the currency of these forms.

2.8.1. BASH Form F1 (BIRD/OTHER WILDLIFE STRIKE REPORT)

2.8.2. BASH Form F2 (FAAF BASH RESPONSE LOG)

2.8.3. BASH Form F3 (BIRD SURVEY FORM)

2.8.4. BASH Form F4 (DEER SPOTLIGHT SURVEY FORM)

## AIR FORCE WILDLIFE STRIKE REPORT

<b>1. UNIT-WING/SQUADRON</b>  	<b>7e. LOW-LEVEL ROUTE</b> <input type="checkbox"/> INSTRUMENT ROUTE      IR <input type="text"/> <input type="checkbox"/> SLOW ROUTE              SR <input type="text"/> <input type="checkbox"/> VISUAL ROUTE              VR <input type="text"/> <input type="checkbox"/> UNKNOWN OTHER: <input type="text"/>	<b>14. PHASE OF OPERATION (cont)</b> <input type="checkbox"/> LANDING TRAFFIC PATTERN <input type="checkbox"/> LANDING FLARE ROLLOUT <input type="checkbox"/> MISSED APPROACH/TOUCH & GO <input type="checkbox"/> OTHER
<b>2. AIRCRAFT</b> (alphabetic designation)  	<b>8. STRIKE AWARENESS IN FLIGHT</b> <input type="checkbox"/> YES <input type="checkbox"/> NO <input type="checkbox"/> UNKNOWN <input type="text"/>	<b>15. BIRD AVOIDANCE MODEL</b> <input type="checkbox"/> UNKNOWN <input type="checkbox"/> NO REPORT <input type="checkbox"/> LOW <input type="checkbox"/> MODERATE <input type="checkbox"/> SEVERE
<b>3. TAIL NUMBER/REGISTRATION</b>  	<b>9. LATITUDE (DDMM.M)</b> N <input type="text"/> S <input type="text"/>	<b>16. BIRD WATCH CONDITIONS</b> <input type="checkbox"/> UNKNOWN <input type="checkbox"/> NO REPORT <input type="checkbox"/> LOW <input type="checkbox"/> MODERATE <input type="checkbox"/> SEVERE
<b>4. DATE (dd mmm yyyy)</b>  	<b>10. LONGITUDE (DDMM.M)</b> E <input type="text"/> W <input type="text"/>	<b>17. WILDLIFE STRUCK</b> <input type="checkbox"/> UNKNOWN <input type="checkbox"/> NONE <input type="checkbox"/> ONE <input type="checkbox"/> 2-11 <input type="checkbox"/> 11-100 <input type="checkbox"/> MORE THAN 100
<b>5. TIME (local)</b>  	<b>11. EFFECT ON FLIGHT</b> <input type="checkbox"/> UNKNOWN <input type="checkbox"/> ABORTED TAKE-OFF <input type="checkbox"/> ENGINES SHUTDOWN <input type="checkbox"/> NONE <input type="checkbox"/> OTHER <input type="checkbox"/> PRECAUTIONARY LANDING	<b>18. AVIAN HAZARD ADVISORY SYSTEM</b> <input type="checkbox"/> UNKNOWN <input type="checkbox"/> NO REPORT <input type="checkbox"/> LOW <input type="checkbox"/> MODERATE <input type="checkbox"/> SEVERE
<b>6. DAILY PERIOD</b> <input type="checkbox"/> UNKNOWN <input type="checkbox"/> DAWN <input type="checkbox"/> DAY <input type="checkbox"/> DUSK <input type="checkbox"/> NIGHT	<b>12. SPEED (KIAS)</b> <input type="text"/>	<b>19. REMARKS ON LOCATION</b>  
<b>7a. AIRPORT</b> NAME ICAO <input type="text"/> HOST ID (FAA IDENT) <input type="text"/> RUNWAY <input type="text"/> OTHER <input type="text"/>	<b>13. ALTITUDE (# AGL)</b> <input type="text"/>	
<b>7b. SPECIAL USE AIRSPACE</b> <input type="checkbox"/> ALERT <input type="checkbox"/> DANGER <input type="checkbox"/> MILITARY OPERATIONS AREA <input type="checkbox"/> PROHIBITED <input type="checkbox"/> RESTRICTED <input type="checkbox"/> TEMPORARY RESERVED AIRSPACE <input type="checkbox"/> RESTRICTED <input type="checkbox"/> UNKNOWN NAME: <input type="text"/>	<b>14. PHASE OF OPERATION</b> <input type="checkbox"/> UNKNOWN <input type="checkbox"/> PARKED <input type="checkbox"/> TAXING <input type="checkbox"/> TAKEOFF ROLL <input type="checkbox"/> TAKEOFF INITIAL CLIMB <input type="checkbox"/> CRUISE CLIMB <input type="checkbox"/> CRUISE <input type="checkbox"/> CRUISE LOW LEVEL <input type="checkbox"/> RANGE OPS <input type="checkbox"/> CRUISE DESCENT <input type="checkbox"/> HOVER <input type="checkbox"/> LANDING FINAL APPROACH	

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**APPENDIX 7 TO ANNEX B TO JBLE BASH PLAN**  
**RECORD OF ENVIRONMENTAL CONSIDERATION**

**RECORD OF ENVIRONMENTAL CONSIDERATION**

TO: Director, Public Works

THRU: Chief, Environmental and Natural Resources Division (ENRD), DPW

FROM: Chief, Aviation Branch, DPTMSEC

Project Title: BASH Cannon System

1. Brief Description: In order to provide a safe airfield environment, it was recommended that sonic bird scare devices and pyrotechnics be used to deter birds and wildlife on the airfield. The use of pyrotechnics is covered in the BASH EA. This REC will add the use of a BASH Cannon System supplements and is tiered to the BASH EA. A total of five propane bird scare cannons will be utilized. One between the helipad and compass rose, one on the west side of the runway midfield, one on each end of the runway to the east. The fifth cannon will be mounted in the services vehicle to be used as a mobile unit. All cannons will only be fired on demand. The four emplaced cannons will be remotely activated by the control tower and the truck mounted cannon will be push button activated by the driver of the vehicle. Pyrotechnics to be incorporated include "bird bangers and screamers". These devices will be fired, into the air only, not at birds or wildlife, to scare them away from the airfield. It is estimated that one cannon per day will be fired and pyrotechnics fired approximately twice a month.

2. The following components of environmental impact have been assessed.

- a. Air quality. There will be no significant impact to air quality. An evaluation under the General Conformity Rule of the Clean Air Act was conducted. A Record of Non-Applicability (RONA) was prepared and is attached. The requirements of this rule are not applicable to this project because the total direct and indirect emissions from this project are below the conformity threshold value established by 40 CFR 93.153 (b) of 100 tons VOCs and 100 tons NOx for a facility in an Ozone Maintenance Area.
- b. Water quality. This project is not expected to pose any adverse impacts on water quality and will not result in an increase in water use. The project is not expected to generate any harmful impact to either surface water or groundwater sources. No hazardous materials, wastes, marker dyes, paint or other chemicals will be introduced into any storm drains, sanitary sewer or any water source.
- c. Asbestos-containing materials (ACM), lead-based paint (LBP), Polychlorinated Biphenyls (PCB). This project will not involve the use or release of ACM, LBP, or PCB or any material containing these materials.
- d. Hazardous Materials and Wastes. No hazardous materials will be used during this project.

## REC for BASH Cannon System

- e. Noise. This project will produce occasional noise. The purpose of the project is to create impulse noises to scare away birds and wildlife.
- f. Radiation. The project will not involve the use of ionizing or non-ionizing radiation sources.
- g. Natural resources. The project will take place at Felker Army Airfield only. Although the noise created is intended to scare birds and game from the airfield, no adverse affect is anticipated. These measures are designed to prevent harm to the animals. No significant impact on vegetation, wetland vegetation or fish is anticipated.
- h. Cultural and Archeological Resources. No disturbance to known cultural, historical or archeological sites is anticipated.
- i. Wetlands. No intrusions into wetlands are required.
- j. Environmental Cleanup Program (including Installation Restoration Program (IRP), Compliance-related Cleanup (CC), and Military Munitions Response Program (MMRP)). No IRP, CC, or MMRP sites are located within the footprint of this project. This has been coordinated with Joanna Bateman, Chief, Installation Restoration Branch, ENRD, DPW, 878-4123, est. 303.
- k. Threatened/Endangered Species. No federal or state threatened or endangered species inhabit the immediate area of the airfield.
- l. Bald Eagle Management. Bald eagles were removed from the federal list of threatened and endangered species in July 2007; however, this species is protected under the Bald and Golden Eagle Protection Act and the Migratory Bird Species Act. Six eagle nest sites exist in Training Area 28 and the Impact. Scare devices will be used to chase all types of wildlife from the airfield as a protective measure to them and aircraft. No nests will be sought or disturbed. Consequently, no impact on the Bald Eagles is expected as a result of this project.
- m. Underground and aboveground storage tanks (USTs/ASTs). This project will not take place near or involve use or installation of USTs or ASTs.
- n. Infrastructure. No damage to existing facilities is anticipated.
- o. Aesthetics. Project will have no effect on aesthetics.
- p. Environmental Justice (Executive Order 12898). Project will take place on the Fort Eustis military reservation. No discharge of hazardous substances will occur. Noise generated will not be heard in the civilian community due to the distances involved. Therefore, the proposed project does not pose any disproportionately

REC for BASH Cannon System

high adverse human health or environmental effects on minority or low-income populations residing in the surrounding communities.

- q. Coastal Zone Management. This project will not involve any excavation, alteration or damage to sub-aqueous lands, wetlands, Conservation Sites, Resources Protection Areas or primary sand dunes. IAW the Coastal Zone Management Act (CZMA), 16 U.S.C. Subsection 1456(c), it has been determined that the proposed project will be carried out in a manner that is consistent with Virginia Coastal Resources Management Program.
- r. Sedimentation and Erosion Control. This project will not involve soil disturbance and therefore is exempted from Virginia Regulations requiring a Sedimentation and Erosion Control Plan.
- s. "Protection of Children from Environmental Health and Safety Risks" (Executive Order 13045). This project is located in isolated areas and is not located near any schools, day care centers, playgrounds or housing units. Subsequently, the health and safety of children will not be affected by this project.
- t. Excavation, deposition, and disposal of soil and sediment. None required.
- u. Solid Waste. This project will not generate solid waste requiring disposal.

3. Anticipated Date and/or Duration of Proposed Action: This project will occur as needed for an indefinite period of time. However, anticipated start date for this project is 15 March 09.

4. Reason for Using a Record of Environmental Consideration. It has been determined that the proposed action qualifies for Categorical Exclusion under 32 CFR Part 651 (AR 200-1) dated 29 Mar 2002, Appendix B, Section II, paragraph (g) (1): Routine repair and maintenance of buildings, airfields, grounds, equipment, and other facilities. This REC also supplements and is tiered to the US Army Transportation Center, Bird/Wildlife Air Strike Hazard (BASH) Plan EA. The proponent hereby confirms his/her understanding that the action will comply with the provisions of TCFE Regulation 22-6, Environmental Management. Any changes to the action after approval of the REC will invalidate the REC and require the proponent to create work and coordinate with ENRD, DPW. This may require preparation of a new REC or an EA (or EIS) depending on the situation as recommended by ENRD, DPW.

Proponent:

  
JOHN MUSSER III  
Chief, Aviation Division  
DPTMSEC

Date: 5 MAR 09

REC for BASH Cannon System

Environmental Coordinator:

CONCUR/NONCONCUR

*Susan P. Miller*  
SUSAN P. MILLER  
Chief, Environmental and  
Natural Resources Division, DPW

*9 March 09*  
Date:

APPROVED/DISAPPROVED:

*Mark J. Sciacchitano*  
MARK J. SCIACCHITANO  
Director, Public Works

Date: *10 Mar 09*

**APPENDIX 8 TO ANNEX B TO JBLE BASH PLAN**  
**RECORD OF NON-APPLICABILITY**

**General Conformity – Record of Non-Applicability**

Date Prepared: 5 March 2009

Project Name: BASH Cannon System, Fort Eustis, Virginia

Project Point of Contact: Stephen Strother  
DPW/ENRD

Project Description: In order to provide a safe airfield environment, it was recommended that sonic bird scare devices and pyrotechnics be used to deter birds and wildlife on the air field. A total of five propane bird scare cannons will be utilized.

Begin Date: 15 March 2009.

End Date:

General Conformity under the Clean Air Act, Section 176 has been evaluated for the project described above according to the requirements of 40 CFR 93, Subpart B. The requirements of this rule are not applicable to this project because the project is an exempt action under:

- 40 CFR 93.153 (c)(2)(x): Actions with respect to existing structures, properties, facilities and lands where future activities conducted will be similar in scope and operation to activities currently being conducted at the existing structures, properties, facilities, and lands (e.g. relocation of personnel, disposition of federally owned existing structures, properties, facilities and lands, rent subsidies, operation and maintenance cost subsidies, the exercise of receivership or conservatorship authority, assistance in purchasing structures, and the production of coins and currency).

- 40 CFR 93.153 (c)(2)(xiii): Routine operation of facilities, mobile assets and equipment.

  
Michael Shaffer  
Environmental Protection Specialist

**Record Of Non-Applicability (RONA) Calculations**  
**Project Name: Bird/Wildlife Air Strike Hazard (BASH)**

**Example Equation**

$$\begin{aligned}
 &\text{Pollutant} = \text{Horsepower} \times \text{Operating Hours} \times \text{Emission Factor} = \text{grams} = \text{lbs} \\
 &\text{Diesel Sources: VOC} = 0 \text{ hp} \times 0 \text{ hrs} \times 0.000 \frac{\text{grams}}{\text{hp-hr}} = 0 \\
 &\text{Gasoline Sources: VOC} = 3,360 \text{ miles} \times 1.428 \frac{\text{lbs}}{\text{miles}} \times \frac{1}{16.01} \frac{\text{grams}}{\text{lbs}} = 11 \text{ lbs}
 \end{aligned}$$

Conversion Factor: 1 gram = 0.0022 lbs

Diesel Sources	Number	Fuel	Hp	Hours/Day	Number of Days	Total Hours	Total Hours	Emission Factors <sup>1</sup>		Emissions	
								VOCs (g/hp-hr)	NOx (g/hp-hr)	VOCs (g)	NOx (g)
							0			0	0
<b>Gasoline Vehicles</b>							Potential Miles Driven <sup>3</sup>	Emission Factors <sup>2</sup>		Emissions	
	Number	Fuel	Hours/Day	Number of Days	Total Hours	Potential Miles Driven <sup>3</sup>	VOCs (g/mile)	NOx (g/mile)	VOCs (g)	NOx (g)	
Pick-up Trucks (heavy duty)	2	Gasoline	2	24	96	3,360	1.428	3.99	4,798	13,396	
							Total Grams			4,798	13,396
							Total Pounds			11	29
							Total Tons			0.01	0.01

- Notes: 1. Source: EPA Nonroad Engine and Vehicle Emission Study - Appendixes, dated November 1991  
 2. Source: AP42 Appendix H, Highway Mobile Source Emission Factors - Table H-172, dated 30 June 1995  
 3. Assumes driving 35 miles/hour based on posted speed limit

## General Conformity – Record of Non-Applicability

Date Prepared: 2 March 2005

Project Name: Bird/Wildlife Air Strike Hazard (BASH)  
Fort Eustis, VA

Project Point of Contact: Tim Christensen  
ENRD  
Fort Eustis

Project Description: Bird/Wildlife Air Strike Hazard (BASH) Plan is being developed to alleviate future aircraft accidents. As part of the BASH Plan, it is estimated that two times a month pyrotechnics or firearms maybe used to keep bird away from the airfield. The only emission sources will be from the vehicles involved in driving around the airfield. This activity will be conducted using two trucks running approximately two hours each event.

Begin and End Date: Activities will be conducted as needed but it is estimated two events per month per year.

General Conformity under the Clean Air Act, Section 176 has been evaluated for the project described above according to the requirements of 40 CFR 93, Subpart B. The requirements of this rule are not applicable to this project because:

Total direct and indirect emissions from this project have been estimated at 0.01 tons VOCs and 0.01 tons NOx, which are below the conformity threshold value established at 40 CFR 93.153 (b) of 100 tons VOCs and 100 tons NOx.

Supported documentation and emission estimates are

- Attached
- Appear in the NEPA Documentation
- Other \_\_\_\_\_



DANIEL S. MUSEL  
Environmental Engineer

**APPENDIX 9 TO ANNEX B TO JBLE BASH PLAN**  
**PARTICIPATING ORGANIZATIONS**

1 OSS/CC  
633 ABW/JA  
633 ABW/SEG  
633 ABW/PA  
733 CED/CEIE  
733 SFS/CC  
733 SFS/FP  
ASA  
ATC  
OSF/AFSM  
OSF/OPS  
OSF/MGR  
OSF/FOD

**OFF-POST ASSISTANCE**

USFWS  
Migratory Bird Permit Office  
P.O. Box 779  
Hadley, MA 01035-0779  
(413) 253-8673

USDA/WS  
State Director: Scott S. Barras  
(804) 739-7739  
Assistant State Director: Jennifer Cromwell  
District Supervisor: James Powell  
(757) 925-4391

VDGIF  
Game Warden Sgt. Randy Hickman  
(804) 829-6580

**ANNEX Z TO JBLE BASH PLAN**  
**DISTRIBUTION**

This plan is available electronically at:  
<https://lANGLEY.eim.acc.af.mil/org/633abw/plans/default.aspx>

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633 CES/CC  
633 CONS/CC  
633 CS/CC  
633 FSS/CC  
733 LRS/CC  
633 MDG/CC  
733 MSG/CC  
733 CED  
733 MSD  
1 FW/CC  
1 FW/CV  
1 FW/XP  
1 FW/SE  
1 FW/HO  
1 MXG/CC  
1 AMXS/CC  
1 MXS/CC  
1 MOS/CC  
1 OG/CC  
27 FS/CC  
94 FS/CC  
1 OSS/CC  
192 FW/CC  
192 FW/CV  
192 MXG/CC  
192 OG/CC